

## INSTRUCTIONS

ENDOSCOPE REPROCESSOR

**OER-Pro<sup>™</sup>**

For details on installation and setup, refer to "Instructions - Installation Manual".

## Supplement to OER-Pro Instruction Manual

Some functions are unavailable depending on the software version. Check if the software version number is displayed after the power activation according to Section 4.1, “Power activation and opening the water faucet”. If the software version number is not displayed after the power activation, an older software version is installed and the following functions are unavailable. For software upgrade, contact Olympus.

| Functions unavailable in older version   | Related part in operation manual   |
|--|--|
| Software version number display after the power activation.  | Section 4.1, “Power activation and opening the water faucet” on page 75.   |
| Restarting reprocessing process after the error code [E93] is displayed.   | Section 4.9, “Reprocessing” — “When the error code [E93] is displayed during the alcohol flush process” on page 117.   |
| Print options: <ul style="list-style-type: none"> <li>– Automatic printing</li> <li>– Error history print on the “PRINT TODAY”, “PRINT ALL”</li> </ul> | Section 4.11, “Printing of the reprocessing records”: <ul style="list-style-type: none"> <li>– Table 4.3 on page 130</li> <li>– Table 4.4 on page 131</li> <li>– “AUTOMATIC PRINTING (Prints the reprocessing records automatically)” on page 133</li> </ul> Section 6.11, “Print function setup” on page 180. |
| Print format modifications: <ul style="list-style-type: none"> <li>– Add start time</li> </ul>   | Section 4.11, “Printing of the reprocessing records”: <ul style="list-style-type: none"> <li>– “PRINT FORMAT (Reprocessing Result)” on page 145</li> <li>– “PRINT FORMAT (Error Result)” on page 146</li> <li>– “PRINT FORMAT (PRINT TODAY, PRINT ALL)” on page 147</li> </ul>                                 |
| Continuous buzzer beep while the error code is displayed.  | Section 8.1, “Troubleshooting guide” — “Error codes and remedial actions” on page 276.   |
| Printing function for troubleshooting.   | Section 8.3, “Printing function for troubleshooting” on page 286.  |

Also, “Test strip forceps (GT867700)” described in Chapter 1, “Checking the Package Contents” may not be equipped depending on the version of the device. If the device is not equipped with test strip forceps (GT867700), the following function is unavailable. To obtain the test strip forceps (GT867700), contact Olympus.

| Functions unavailable in older version   | Related part in operation manual  |
|--|---|
| Check the concentration of the disinfectant solution during the reprocessing by using test strip forceps (GT867700). | Section 3.10, “Checking the disinfectant solution concentration level” — “When checking the concentration of the disinfectant solution during the reprocessing” on page 63. |

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Contents

# Labels and Symbols

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



Refer to instructions.



Caution, hot surface



Endoscope reprocessor



Manufacturer



Authorized representative in the European Community



Lot number



Serial number



Date of manufacture

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

○ Front panel

**ENDOSCOPE COMBINATIONS FOR DUAL SCOPE REPROCESSING  
FOR PINK COLORED RETAINING RACK (MAJ-1970)**

**WARNING** ENDOSCOPES LISTED IN GROUP 1 (GASTROINTESTINAL ENDOSCOPES OR BRONCHOSCOPES) SHOULD NOT BE REPROCESSED IN COMBINATION WITH ENDOSCOPES LISTED IN GROUP 2 (SURGICAL ENDOSCOPES). THESE COMBINATIONS MAY LIMIT THE EFFECTIVENESS OF CLEANING AND DISINFECTION.  
 · ANY TWO ENDOSCOPES LISTED IN THE GROUP 1 CAN BE REPROCESSED SIMULTANEOUSLY.  
 · ANY TWO ENDOSCOPES LISTED IN THE GROUP 2 CAN BE REPROCESSED SIMULTANEOUSLY.  
 · THIS CHART APPLIED ONLY FOR THE OER-Pro WITH PINK COLORED RETAINING RACK (MAJ-1970). DO NOT USE THIS CHART FOR THE OER-Pro WITH WHITE COLORED RETAINING RACK (GL830600).

**AVERTISSEMENT** LES ENDOSCOPES ÉNUMÉRÉS DANS LE GROUPE 1 (ENDOSCOPES GASTRO-INTESTINAUX OU BRONCHOSCOPES) NE DEVRAIENT PAS ÊTRE NETTOYÉS CONJOINTEMENT AVEC LES ENDOSCOPES ÉNUMÉRÉS DANS LE GROUPE 2 (ENDOSCOPES CHIRURGICAUX). CES COMBINAISONS PEUVENT EN EFFET LIMITER L' EFFICACITÉ DU NETTOYAGE ET DE LA DÉSINFECTION.  
 N' IMPORTE QUELLE PAIRE D' ENDOSCOPES DU GROUPE 1 PEUT ÊTRE NETTOYÉE SIMULTANÉMENT.  
 N' IMPORTE QUELLE PAIRE D' ENDOSCOPES DU GROUPE 2 PEUT ÊTRE NETTOYÉE SIMULTANÉMENT.  
 CE TABLEAU NE S' APPLIQUE QU' AU MODÈLE OER-Pro ÉQUIPÉ DE L' ENROULEUR DE COULEUR ROSE (MAJ-1970). NE PAS UTILISER CE TABLEAU POUR LE MODÈLE OER-Pro ÉQUIPÉ DE L' ENROULEUR DE COULEUR BLANCHE (GL830600).

**NOTE** THESE ENDOSCOPES MAY NOT BE AVAILABLE IN SOME AREAS.

| <GROUP 1> (GASTROINTESTINAL ENDOSCOPES OR BRONCHOSCOPES ) |            |     |     |     |            |     |     |     |     | <GROUP 2> (SURGICAL ENDOSCOPES) |       |            |     |     |     |            |     |  |  |
|---|------------|-----|-----|-----|------------|-----|-----|-----|-----|---------------------------------|-------|------------|-----|-----|-----|------------|-----|--|--|
| MODEL   | FIBERSCOPE |     |     |     | VIDEOSCOPE |     |     |     |     |                                 | MODEL | FIBERSCOPE |     |     |     | VIDEOSCOPE |     |  |  |
| GIF   | ---        | --- | --- | --- | ---        | --- | --- | --- | --- | ---                             | LF    | ---        | --- | --- | --- | ---        | --- |  |  |
|   | ---        | --- | --- | --- | ---        | --- | --- | --- | --- | ---                             |       | ---        | --- | --- | --- | ---        | --- |  |  |
|   | ---        | --- | --- | --- | ---        | --- | --- | --- | --- | ---                             |       | ---        | --- | --- | --- | ---        | --- |  |  |
| JF  |            |     |     |     | ---        | --- | --- | --- | --- | ---                             | ENF   | ---        | --- | --- | --- | ---        | --- |  |  |
| TJF   |            |     |     |     | ---        | --- | --- | --- | --- | ---                             |       | ---        | --- | --- | --- | ---        | --- |  |  |
| CF  |            |     | --- | --- | ---        | --- | --- | --- | --- | ---                             | HYF   | ---        | --- | --- | --- |            |     |  |  |
|   |            |     | --- | --- | ---        | --- | --- | --- | --- | ---                             |       | ---        | --- | --- | --- |            |     |  |  |
|   |            |     | --- | --- | ---        | --- | --- | --- | --- | ---                             |       | ---        | --- | --- | --- |            |     |  |  |
| PCF   |            |     |     |     | ---        | --- | --- | --- | --- | ---                             | CHF   | ---        | --- | --- | --- |            |     |  |  |
|   |            |     |     |     | ---        | --- | --- | --- | --- | ---                             |       | ---        | --- | --- | --- |            |     |  |  |
|   |            |     |     |     | ---        | --- | --- | --- | --- | ---                             | CYF   | ---        | --- | --- | --- | ---        | --- |  |  |
|   |            |     |     | --- | ---        | --- | --- | --- | --- | ---                             |       | ---        | --- | --- | --- | ---        |     |  |  |
|   |            |     |     | --- | ---        | --- | --- | --- | --- | ---                             |       | ---        | --- | --- | --- | ---        |     |  |  |
| OSF   |            |     |     |     | ---        | --- | --- | --- | --- | ---                             | MAF   |            |     |     |     | ---        | --- |  |  |
|   |            |     |     |     | ---        | --- | --- | --- | --- | ---                             |       | ---        | --- | --- | --- |            |     |  |  |
|   |            |     |     |     | ---        | --- | --- | --- | --- | ---                             |       | ---        | --- | --- | --- |            |     |  |  |
| BF  | ---        | --- | --- | --- | ---        | --- | --- | --- | --- | ---                             | URF   | ---        | --- | --- | --- |            |     |  |  |
|   | ---        | --- | --- | --- | ---        | --- | --- | --- | --- | ---                             |       | ---        | --- | --- | --- |            |     |  |  |
|   | ---        | --- | --- | --- | ---        | --- | --- | --- | --- | ---                             |       | ---        | --- | --- | --- |            |     |  |  |
|   |            |     |     |     |            |     |     |     |     | Gyrus-ACMI                      | DUR   | ---        | --- | --- | --- |            |     |  |  |
|   |            |     |     |     |            |     |     |     |     |                                 | AUR   | ---        | --- | --- | --- |            |     |  |  |
|   |            |     |     |     |            |     |     |     |     |                                 | ICN   |            |     | --- | --- |            |     |  |  |
|   |            |     |     |     |            |     |     |     |     |                                 | ACN   | ---        | --- | --- | --- |            |     |  |  |

THIS CHART IS BASED UPON INFORMATION AVAILABLE AS OF MMM DD, YYYY. PLEASE CONTACT OLYMPUS REGARDING ENDOSCOPES INTRODUCED AFTER MMM DD, YYYY OR REGARDING ANY QUESTIONS ABOUT ENDOSCOPE COMBINATIONS LISTED IN THIS CHART.

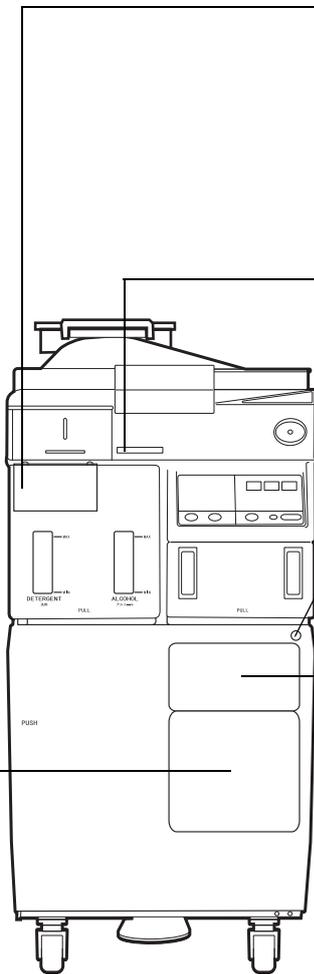
\*1 Steam sterilization is preferred reprocessing method for this model, but it can also be high-level disinfected in the OER-Pro.



For technical questions, accessories and parts inquiries please contact  
Olympus Technical Assistance Center  
1-800-848-9024

Equipment Information

|                   |  |
|-------------------|--|
| Serial Number     |  |
| Installation Date |  |



**UDI label**

A label required by some countries' regulations regarding identification of medical device also known as Unique Device Identification (UDI).



(01) xxxxxxxxxxxxxx  
(11) xxxxxx (21) xxxxxxxx

**RFID marking**

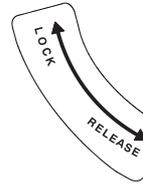
**WARNING**

- THIS EQUIPMENT CAN BE SET UP TO USE THE RFID FUNCTION. PLEASE BE AWARE THAT THE RADIO WAVES EMITTED FROM THE RFID READER OF THE EQUIPMENT MAY CAUSE MEDICAL DEVICES SUCH AS PACEMAKERS TO MALFUNCTION, IF ANY INTERFERENCE WITH THE EQUIPMENT IS SUSPECTED, IMMEDIATELY MOVE AWAY FROM THE RFID READER OR SET THE POWER SWITCH TO OFF. CALL YOUR DOCTOR IF YOU DO NOT BEGIN TO FEEL BETTER.
- DO NOT EXPOSE EQUIPMENT TO OPEN FLAME. USE CARE IN HANDLING OF ALCOHOL TO PREVENT IGNITION AND FIRE HAZARD.
- ALWAYS USE OLYMPUS-VALIDATED/DESIGNATED DETERGENT. IF NO DETERGENT IS USED OR NON-VALIDATED/DESIGNATED DETERGENT IS USED, THE ENDOSCOPES MAY NOT BE PROPERLY REPROCESSED.
- DISCONNECT THE CONNECTING TUBES AND THE LEAK TEST AIR TUBES FROM THE CONNECTORS ON THE EQUIPMENT WHENEVER THE TUBES ARE NOT USED. FAILURE TO DISCONNECT UNUSED CONNECTING TUBES MAY REDUCE THE EFFICACY OF REPROCESSING AND DAMAGE THE ENDSCOPE.
- CONFIRM FLUID FLOW TO THE CONNECTORS BY VISUALIZING FLUID EXITING FROM THE TOP OF THE CONNECTOR. ALSO, CONFIRM FLUID FLOW FROM THE WATER SUPPLY/CIRCULATION NOZZLE (WHITE), WHICH DIRECTS FLUID ONTO THE DOME OF THE LID. IF FLUID FLOW IS NOT OBSERVED, THE ENDSCOPE WILL NOT BE EFFECTIVELY REPROCESSED. PLEASE CONTACT OLYMPUS.
- CLEAN THE MESH FILTERS OF THE CIRCULATION PORT AND THE DRAIN PORT EVERY DAY. OTHERWISE, ENDOSCOPES MAY NOT BE REPROCESSED SUFFICIENTLY.
- BE SURE TO CLOSE THE WATER FAUCET AT THE END OF THE DAY TO PREVENT WATER FROM LEAKING OUT OF THE EQUIPMENT.

**AVERTISSEMENT**

- CET APPAREIL PEUT ÊTRE RÉGLÉ POUR UTILISER LA FONCTION RFID. PRENEZ NOTE QUE LES ONDES RADIO ÉMISES PAR LE LECTEUR RFID DE L' APPAREIL PEUVENT ENTRAÎNER LE DYSFONCTIONNEMENT DE CERTAINS APPAREILS MÉDICAUX TELS QUE LES STIMULATEURS CARDIAQUES. SI VOUS OBSERVEZ UNE INTERFÉRENCE QUELCONQUE AVEC L' APPAREIL, ÉLOIGNEZ-VOUS IMMÉDIATEMENT DU LECTEUR RFID OU RÉGLEZ LE COMMUTATEUR D' ALIMENTATION À OFF. APPELEZ VOTRE MÉDECIN SI VOUS NE COMMENCEZ PAS À VOUS SENTIR MIEUX.
- NE PAS EXPOSER L' APPAREIL À UNE FLAMME NUE; SOYEZ PRUDENT EN MANIPULANT DE L' ALCOOL POUR ÉVITER TOUT RISQUE D' INFLAMMATION ET D' INCENDIE.
- TOUJOURS UTILISER UN DÉTERGENT APPROUVÉ OU DÉSIGNÉ PAR OLYMPUS. SI AUCUN DÉTERGENT N' EST UTILISÉ OU SI UN DÉTERGENT NON APPROUVÉ OU NON DÉSIGNÉ PAR OLYMPUS EST EMPLOYÉ, IL SE PEUT QUE LES ENDOSCOPES NE SOIENT PAS CORRECTEMENT NETTOYÉS.
- LORSQUE LE TUBE D' AIR DE TEST D' ÉTANCHÉITÉ N' EST PAS UTILISÉ POUR LE NETTOYAGE, DÉBRANCHEZ-LE DES CONNECTEURS DE L' APPAREIL. AUTREMENT, LES TUBES QUI RESTENT CONNECTÉS POURRAIENT RÉDUIRE L' EFFICACITÉ DU NETTOYAGE ET ENDOMMAGER L' ENDSCOPE.
- VÉRIFIEZ L' ÉCOULEMENT DE FLUIDE VERS LES CONNECTEURS EN REGARDANT LE FLUIDE SORTIR PAR LE HAUT DU CONNECTEUR. EN OUTRE, CONFIRMEZ L' ÉCOULEMENT DU FLUIDE DE LA BUSE (BLANCHE) D' ALIMENTATION EN EAU/DE CIRCULATION D' EAU QUI DIRIGE LE FLUIDE SUR LE DÔME DU COUVERCLE. SI VOUS NE CONSTATEZ AUCUN ÉCOULEMENT DE FLUIDE, L' ENDSCOPE NE SERA PAS EFFICACEMENT NETTOYÉ. VEUILLEZ COMMUNIQUER AVEC OLYMPUS.
- NETTOYEZ TOUS LES JOURS LES FILTRES À MAILLES DE L' ORIFICE DE CIRCULATION ET DE L' ORIFICE DE VIDANGE. SINON, LE NETTOYAGE DES ENDOSCOPES PEUT NE PAS ÊTRE ADEQUAT.
- FERMEZ LE ROBINET D' EAU À LA FIN DE LA JOURNÉE POUR EMPÊCHER L' EAU DE S'ÉCOULER DE L' APPAREIL.

○ Top panel



**Rotation direction indicator label**

Indicates the rotation directions for locking and releasing each gas filter case.

**WARNING**

■ THE ENDOSCOPES LISTED IN THIS CHART MUST NOT BE REPROCESSED IN COMBINATION WITH ANY OTHER ENDOSCOPE. IF THESE ENDOSCOPES ARE REPROCESSED IN COMBINATION WITH ANOTHER ENDOSCOPE, THE EFFICACY OF CLEANING AND DISINFECTION MAY BE INSUFFICIENT. BE SURE TO INDIVIDUALLY REPROCESS THESE ENDOSCOPES.  
**FOR PINK COLORED RETAINING RACK (MAJ-1970)**

|                       |  |
|-----------------------|--|
| GIF                   | All models that have 2 instrument channels         |
| CF                    | All models that have 2 instrument channels         |
| SIF                   | All models   |
| Ultrasonic endoscopes | All models   |
| Others                | GIF-2TQ260M, PEF-V, CHF-BP30 (in the OER-Pro only) |

■ BEFORE USE, THOROUGHLY REVIEW THE INSTRUCTION MANUAL AND THE PROVIDED "LIST OF COMPATIBLE ENDOSCOPES/CONNECTING TUBES". IF YOU HAVE ANY QUESTIONS ABOUT ANY COMBINATION OF ENDOSCOPES, PLEASE CONTACT OLYMPUS.  
 ■ THIS CHART IS BASED UPON INFORMATION AVAILABLE AS OF MMM DD, YYYY. PLEASE CONTACT OLYMPUS REGARDING ENDOSCOPES INTRODUCED AFTER MMM DD, YYYY OR REGARDING ANY QUESTIONS ABOUT ENDOSCOPE COMBINATIONS LISTED IN THIS CHART.  
 ■ THIS CHART IS APPLIED ONLY FOR THE PINK COLORED RETAINING RACK (MAJ-1970). DO NOT USE THIS CHART FOR THE WHITE COLORED RETAINING RACK (GL830600).

POUR DES INSTRUCTIONS EN FRANÇAIS, VEUILLEZ REPORTER AU MANUEL D'INSTRUCTION EN FRANÇAIS.

FRA

**AVERTISSEMENT**

■ LES ENDOSCOPES RÉPERTORIÉS DANS CE TABLEAU NE DOIVENT PAS ÊTRE NETTOYÉS CONJOINTEMENT AVEC UN AUTRE ENDOSCOPE. SI CES ENDOSCOPES SONT NETTOYÉS CONJOINTEMENT AVEC UN AUTRE ENDOSCOPE, LE NETTOYAGE ET LA DÉSINFECTION RISQUENT DE NE PAS ÊTRE EFFECTUÉS ADÉQUATEMENT. ASSUREZ-VOUS DE NETTOYER CES ENDOSCOPES INDIVIDUELLEMENT.

**POUR L'APPAREIL ÉQUIPÉ DE L'ENROULEUR DE COULEUR ROSE (MAJ-1970)**

|                        |  |
|------------------------|--|
| GIF                    | Tous les modèles dotés de deux canaux d'instrument               |
| CF                     | Tous les modèles dotés de deux canaux d'instrument               |
| SIF                    | Tous les modèles   |
| Endoscopes à ultrasons | Tous les modèles   |
| Autres                 | GIF-2TQ260M, PEF-V, CHF-BP30 (dans le modèle OER-Pro uniquement) |

■ AVANT TOUTE UTILISATION, PASSEZ EN REVUE ATTENTIVEMENT LE MANUEL D'UTILISATION ET LA LISTE DES ENDOSCOPES COMPATIBLES ET DES TUBES DE RACCORDEMENT COMPATIBLES. SI VOUS AVEZ DES QUESTIONS RELATIVES À UNE COMBINAISON D'ENDOSCOPES, VEUILLEZ COMMUNIQUER AVEC OLYMPUS.  
 ■ CE TABLEAU EST FONDÉ SUR LES RENSEIGNEMENTS DISPONIBLES AU JJ MM AAAA. VEUILLEZ COMMUNIQUER AVEC OLYMPUS EN CE QUI CONCERNE LES ENDOSCOPES MIS SUR LE MARCHÉ APRÈS LE JJ MM AAAA OU POUR TOUTE QUESTION CONCERNANT LES COMBINAISONS D'ENDOSCOPES INDIQUÉES DANS CE TABLEAU.  
 ■ CE TABLEAU NE CONCERNE QUE LES APPAREILS ÉQUIPÉS D'UN ENROULEUR DE COULEUR ROSE (MAJ-1970). NE PAS UTILISER CE TABLEAU POUR L'ENROULEUR DE COULEUR BLANCHE (GL830600).

**WARNING**

■ DO NOT TOUCH THE PRINTER OR THE AREA SURROUNDING IT DURING AND IMMEDIATELY AFTER PRINTING. THEY WILL BE VERY HOT AND MAY CAUSE SKIN BURNS.

**CAUTION**

■ ALWAYS KEEP THE PRINTER COVER CLOSED. OTHERWISE, THE PRINTER AND/OR PAPER ROLL MAY GET WET AND MALFUNCTION.

POUR DES INSTRUCTIONS EN FRANÇAIS, VEUILLEZ REPORTER AU MANUEL D'INSTRUCTION EN FRANÇAIS.

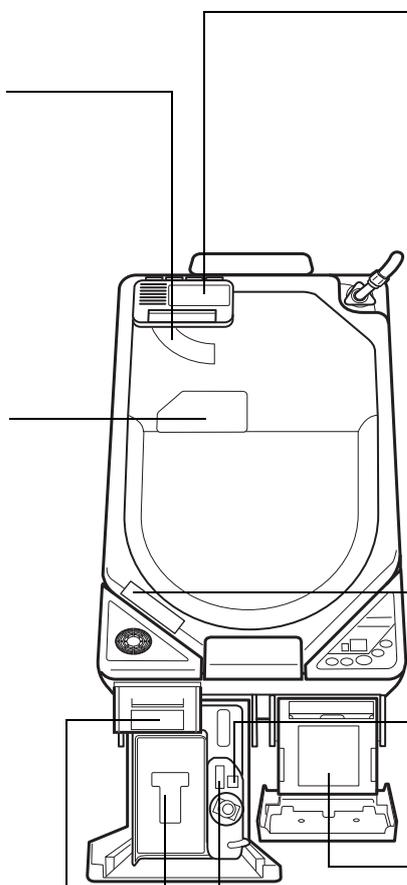
FRA

**AVERTISSEMENT**

■ NE TOUCHEZ PAS L'IMPRIMANTE OU LA ZONE AUTOUR PENDANT OU IMMÉDIATEMENT APRÈS UNE IMPRESSION. ELLES PEUVENT ÊTRE TRÈS CHAUDES ET VOUS POURRIEZ VOUS BRÛLER.

**ATTENTION**

■ VEUILLEZ TOUJOURS GARDER LE COUVERCLE DE L'IMPRIMANTE FERMÉ. DANS LE CAS CONTRAIRE, L'IMPRIMANTE ET/OU LE ROULEAU DE PAPIER POURRAIENT SE MOUILLER ET CAUSER UN DYSFONCTIONNEMENT.



**CAUTION (注意)**  
 NEVER BLOCK THE VENTILATION OPENING ON THE LEFT SIDE. DOING SO COULD CAUSE EQUIPMENT MALFUNCTION.  
 左側の通気口は絶対にふさがらないでください。  
 装置が正常に作動しないおそれがあります。  
 ⓘ POUR DES INSTRUCTIONS EN FRANÇAIS, VEUILLEZ REPORTER AU MANUEL D'INSTRUCTION EN FRANÇAIS.

**FRA**  
**ATTENTION**  
 NE JAMAIS BLOQUER LES OUVERTURES DE VENTILATION SUR LE CÔTÉ GAUCHE. CELA POURRAIT PROVOQUER UN DYSFONCTIONNEMENT DE L'APPAREIL.

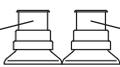
**WARNING (警告)**  
 ■ MAKE SURE THAT A JET OF FLUID EXITS THE HOLE ON THE CONNECTING TUBE DURING REPROCESSING. OTHERWISE IT WILL NOT BE EFFECTIVELY REPROCESSED.  
 ■ 洗浄消毒中には必ず洗浄チューブから噴出した水が洗浄カバー部にあたっていることを確認してください。噴出がないと、洗浄消毒が不十分となるおそれがあります。  
 ⓘ POUR DES INSTRUCTIONS EN FRANÇAIS, VEUILLEZ REPORTER AU MANUEL D'INSTRUCTION EN FRANÇAIS.



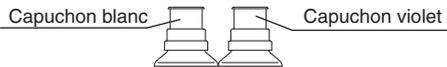
**FRA**  
**AVERTISSEMENT**  
 ■ PENDANT LE NETTOYAGE, ASSUREZ-VOUS QU' UN JET DE LIQUIDE SORT DU TUBE DE RACCORDEMENT. DANS LE CAS CONTRAIRE, CELA SIGNIFIE QUE LE TUBE N' EST PAS NETTOYÉ EFFICACEMENT.

**Alcohol  
 アルコール**

**WARNING (警告)**  
 ■ DO NOT PUT IN YOUR HAND BEHIND THE DRAWER. DOING SO MAY RESULT IN EXPOSURE TO DISINFECTANT SOLUTION OR POSSIBLE INJURY.  
 ■ 奥に手を入れないでください。消毒液との接触により皮膚が白色化したり、突起部に手を当ててけがをすることがあります。  
**CAUTION (注意)**  
 ■ INSTALL THE CASSETTE BOTTLES AS SHOWN IN THIS FIGURE. IF INSTALLED INVERSELY, THE DRAWER CANNOT BE CLOSED.  
 ■ ALWAYS USE THE OLYMPUS-DESIGNATED DISINFECTANT SOLUTION, WHICH IS THE 875 ML CASSETTE BOTTLES OF DISINFECTANT SOLUTION. OTHERWISE, IT MAY LEAD TO DAMAGE TO THE EQUIPMENT OR BOTTLES.  
 ■ 消毒液ボトルの向きを図のようにセットしてください。逆にセットすると、消毒液ボトルレイが閉まりません。  
 ■ 875mLカセットボトルをセットしてください。875mLカセットボトル以外をセットした場合、装置が破損するおそれがあります。  
 White Cap(白キャップ)      Purple Cap(紫キャップ)  
 ⓘ POUR DES INSTRUCTIONS EN FRANÇAIS, VEUILLEZ REPORTER AU MANUEL D'INSTRUCTION EN FRANÇAIS.

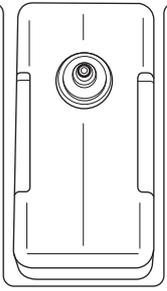


**FRA**  
**AVERTISSEMENT**  
 ■ NE PAS METTRE LA MAIN À L'ARRIÈRE DU TIROIR. CELA POURRAIT PROVOQUER DES BLESSURES OU VOUS EXPOSER À LA SOLUTION DÉSINFECTANTE.  
**ATTENTION**  
 ■ INSTALLEZ LES FLACONS DE PRODUIT COMME ILLUSTRÉ DANS CETTE FIGURE. SI L'INSTALLATION N'EST PAS EFFECTUÉE CORRECTEMENT, LE TIROIR NE SE FERMERA PAS.  
 ■ TOUJOURS UTILISER LA SOLUTION DÉSINFECTANTE DÉSIGNÉE PAR OLYMPUS, À SAVOIR LES FLACONS DE 875 ML DE SOLUTION DÉSINFECTANTE. AUTREMENT, VOUS RISQUERIEZ D'ENDOMMAGER L'APPAREIL OU LES FLACONS.  
 Capuchon blanc      Capuchon violet



**FLAMMABLE  
 火気厳禁**

**CAUTION**  
 Place the detergent tank in the direction shown in the figure. Otherwise, there may be excessive strain on the tube when opening the detergent drawer. This may result in a damaged tube and subsequently, a detergent leak may occur.  
 ⓘ Pour des instructions en Français, veuillez reporter au manuel d'instruction en Français.



**FRA**  
**ATTENTION**  
 Placez le réservoir de détergent dans le sens indiqué sur la figure. Autrement, cela pourrait engendrer une tension excessive sur le tube lors de l'ouverture du tiroir à détergent. Cela pourrait donc endommager un tube, ce qui provoquerait une fuite de détergent.

○ Inner side

**CAUTION (注意)**

NEVER BLOCK THE VENTILATION OPENING ON THE LEFT SIDE. DOING SO COULD CAUSE EQUIPMENT MALFUNCTION.

左側の通気口は絶対にふさがらないでください。  
装置が正常に作動しないおそれがあります。



POUR DES INSTRUCTIONS EN FRANÇAIS, VEUILLEZ  
REPORTER AU MANUEL D'INSTRUCTION EN FRANÇAIS.

FRA

**ATTENTION**

NE JAMAIS BLOQUER LES OUVERTURES DE VENTILATION SUR LE CÔTÉ GAUCHE. CELA POURRAIT PROVOQUER UN DYSFONCTIONNEMENT DE L'APPAREIL.

**CAUTION**

DRAIN AIR FROM THE WATER FILTER COMPLETELY. IF AIR IS LEFT IN THE WATER FILTER, IT COULD BECOME CLOGGED SOONER OR THE WATER SUPPLY MAY BECOME INSUFFICIENT.

**ATTENTION**

ÉVACUEZ COMPLÈTEMENT L'AIR DU FILTRE À EAU. S'IL RESTE DE L'AIR DANS LE FILTRE À EAU, CELUI-CI POURRAIT SE BOUCHER RAPIDEMENT, OU L'ALIMENTATION D'EAU POURRAIT ÊTRE INSUFFISANT.

**注 意**

水フィルターのエア抜きは確実に行ってください。  
エア抜きが確実に行われていない場合、水フィルターの目詰まりが早まったり、給水量不足の原因になります。

 **MAINTENANCE**

**WARNING**

LEAVE THE RUBBER CAP ATTACHED TO THE DISINFECTANT REMOVAL PORT UNLESS THE DISINFECTANT REMOVAL TUBE OR THE DRAIN CONNECTOR IS CONNECTED. LEAKING DISINFECTANT SOLUTION POSES A SAFETY RISK TO THE OPERATOR AND MAY DAMAGE THE SURROUNDING EQUIPMENT.

**警告**

消毒液ドレーンホースまたはドレーンコネクター接続時以外は、ドレーン口にゴムキャップを取り付けてください。消毒液漏れにより装置周囲の機器や設備などに損害を与えるおそれがあります。

 POUR DES INSTRUCTIONS EN FRANÇAIS, VEUILLEZ REPORTER AU MANUEL D'INSTRUCTION EN FRANÇAIS.

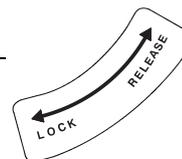
FRA

**AVERTISSEMENT**

Laissez le capuchon en caoutchouc fixé à l'orifice d'évacuation de désinfectant, sauf si le tube d'évacuation de désinfectant ou le raccord de vidange est branché. Une fuite de solution désinfectante compromet la sécurité de l'opérateur et peut endommager les appareils environnants.

**Rotation direction indicator label**

Indicates the rotation direction for locking and releasing each gas filter case.



**Error code table**

Lists error codes, possible causes, and remedial actions. For details, see Section 8.1, "Troubleshooting guide" on page 274 in the "Instructions-Operation Manual".

**Rating plate**

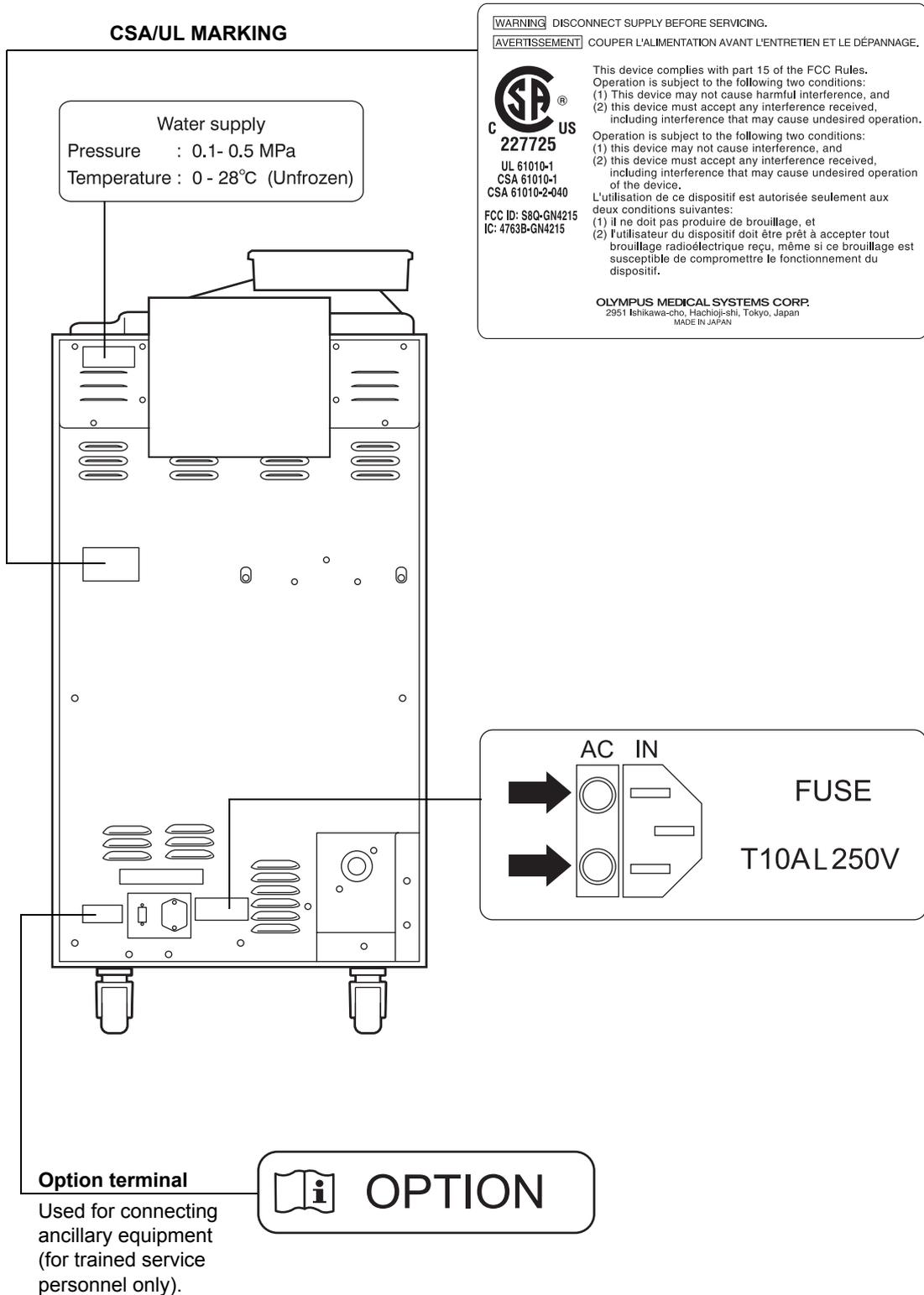
Shows the product model, power rating, and serial number.

|                               |                   |
|-------------------------------|-------------------|
| ENDOSCOPE REPROCESSOR         |                   |
| MODEL                         | OER-Pro           |
| INPUT                         | 120V~5.5A<br>60Hz |
| SN                            | _____             |
| OLYMPUS MEDICAL SYSTEMS CORP. |                   |

**Date of manufacture**



○ Rear panel



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

## ***Intended use***

The OER-Pro is intended for use in cleaning and high-level disinfection of heat sensitive Olympus flexible endoscopes and their accessories. Safe use requires detergent and an FDA-cleared high-level disinfectant/sterilant that Olympus has validated to be efficacious and compatible with the materials of the OER-Pro and Olympus flexible endoscopes and their accessories. Use of a detergent or high-level disinfectant/sterilant that has not been validated by Olympus may be ineffective and can damage the OER-Pro components and the endoscopes being reprocessed. Endoscopes must be subject to cleaning by the user prior to reprocessing; however, use of the OER-Pro enables the user to perform modified manual cleaning of the endoscope prior to automated cleaning and high-level disinfection in the OER-Pro.

## ***Instruction manuals***

The instructions for this equipment are divided into two volumes: “Instructions-Installation Manual”, and “Instructions-Operation Manual”. Instructions regarding the preparation of endoscopes prior to placing them in the OER-Pro are found in “Instructions-Operation Manual”. Each of these manuals contains essential information for using this equipment safely and effectively. The “Instructions-Installation Manual” describes how to install the equipment. The “Instructions-Operation Manual” describes how to operate and maintain the equipment and describes modifications to the manual endoscope cleaning process that can save the user time and inconvenience, if the endoscope is going to be subsequently reprocessed using the OER-Pro. The “List of Compatible Endoscopes/Connecting Tubes <OER-Pro>” identifies all Olympus model endoscopes that are compatible with the OER-Pro, plus the specific connecting tube(s) required for each of these endoscope models. The descriptions in these manuals assume that all endoscopes are reprocessed in the OER-Pro using both an Olympus-validated detergent and disinfectant. Contact Olympus to obtain the list of both Olympus-validated disinfectant solutions and detergents. Before using this reprocessor, be sure to review all of the above-mentioned manuals, the safety information provided with Olympus-validated detergents and disinfectants, and the manuals for all other equipment used in the process. Always use this equipment as instructed. It might cause unexpected danger if you don’t follow the installation and operation manual. Keep these and all related instruction manuals and documents in a safe and accessible location. If you have any questions or comments about any information in these manuals, please contact Olympus.

## ***User qualifications***

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

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

These manuals do not explain or discuss detailed cleaning, disinfection, and sterilization procedures. For more details, please consult your facility's procedures, professional guidelines, and regulatory requirements for reprocessing endoscopes.

## ***Ensuring the safety of reprocessing personnel***

- Disinfectant solution and detergent may irritate the mucous membranes in the eyes and respiratory organs. If disinfectant solution contacts directly on the skin, it may cause irritation or damage. Therefore, before handling high-level disinfectant solution, carefully read the instructions for use and the material safety data sheet.
- During reprocessing, wear appropriate personal protective equipment to prevent contact with or inhalation of infectious substances or disinfectant. Personal protective equipment includes eyewear, 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 disinfectant solution and alcohol, Olympus recommends the use of gas filters and running this equipment in well-ventilated areas.
  - Wear a face mask, 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.

- Operators who exhibit symptoms of an allergic reaction or sensitivity to the reprocessing chemicals should not operate this equipment.
- This equipment can be set up to use the RFID (Radio Frequency Identification) function. Please be aware that the radio waves emitted from the RFID reader of the equipment may cause medical devices such as pacemakers to malfunction. If any interference with the equipment is observed, immediately move away from the RFID reader or set the power switch to OFF. Call your doctor if you do not begin to feel better.

## ***Equipment compatibility***

Use this equipment in combination with ancillary equipment listed in "System chart" in the Appendix. Using incompatible equipment may result in patient or operator injury and equipment damage and/or malfunction.

Olympus has not tested the efficacy of cleaning and high-level disinfection on this equipment in combination with endoscopes that are not listed on the "List of compatible Endoscopes/Connecting Tubes <OER-Pro>". If a nonlisted endoscope is reprocessed using this equipment, be sure to validate in advance that entire part of endoscope including internal channels can be effectively cleaned and high-level disinfected, and it can maintain the function of the endoscope without damage or degradation. Furthermore, verify this reprocess method is appropriate for the endoscope.

## **Care and storage**

After use, reprocess and store this equipment referring to the instructions in Chapter 5, “End-of-Day Checks” in this manual. Inappropriate care and storage could present an infection control risk and/or cause equipment damage or malfunction.

## **Maintenance and Inspection**

- The OER-Pro requires routine maintenance and inspection. In addition to checks before use, the person in charge of maintenance and administration of the medical equipment at the hospital should periodically check all of the items described in this manual. If any irregularity is observed, do not use the equipment and inspect it as described in 8.1, “Troubleshooting guide” on page 274. If the irregularity is still present, the equipment must be repaired prior to next use.
- If the lamp of the PERIODIC MAINTENANCE indicator starts to blink, described in Section 2.5, “Control panels” on page 28, the time for regularly scheduled maintenance is near. When the lamp starts to blink, be sure to contact Olympus immediately and perform the maintenance. If you do not know when the lamp started to blink, do not use the device and contact Olympus. Otherwise, effectiveness of the reprocessing may be compromised.

## **Repair and modification**

Do not disassemble, modify or attempt to repair this equipment and its accessories. Doing so could result in operator or patient injury and/or equipment damage or malfunction. Some problems that appear to be malfunctions may be corrected by referring to Chapter 8, “Troubleshooting and Repair”. If the problem cannot be resolved using the information in Chapter 8, “Troubleshooting and Repair”, contact Olympus.

## ***Disposal of disinfectant solution***

Expired disinfectant solution for this equipment should be handled as directed in the Olympus-validated disinfectant product label and instructions. Follow all applicable national and local guidelines.

## ***Disposal of this equipment***

When disposing of this equipment and accessories, follow all applicable national, state, and local regulations and guidelines.

## ***Signal words***

The following signal words are used throughout these manuals:

### **DANGER**

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

### **WARNING**

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

### **CAUTION**

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices or potential equipment damage.

### **NOTE**

Indicates additional helpful information.

## ***Dangers, warnings, and cautions***

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

### **DANGER**

- Do not insert an EndoTherapy accessory or other object through an opening including the air vent of the equipment. Also, do not allow any liquid (including water or disinfectant solution) to flow into an opening. Contact with an electrical part inside the equipment could cause an electric shock or equipment failure.
- Always remove the tank from the detergent/alcohol drawer before putting detergent or alcohol in the tank. If detergent or alcohol is spilled on the detergent/alcohol drawer, it could get inside the equipment and contact an electrical part inside, causing an electric shock or fire hazard.
- Do not install this equipment in any place where any of the following are present.
  - High oxygen concentration
  - Oxidizing substance such as Nitrous Oxide (N<sub>2</sub>O)
  - Flammable anesthetic gas

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

### **WARNING**

Always use the power cord provided with this equipment. Otherwise, equipment failure or power cord burnout may result. Also, remember that the provided power cord is for use only with this equipment and should not be used with any other equipment.

### **CAUTION**

- Do not press any of the switches on the main or subcontrol panel of this equipment with a pointed or hard object. Otherwise, the switch may be damaged.
- Be sure to turn off the water faucet and the power switch of the equipment at the end of the day to avoid potential water leaks.
- To avoid malfunctions, do not use this equipment in a dusty environment.

**CAUTION**

- To avoid electromagnetic interference from other equipment, do not install any other electrical devices in close proximity to this equipment (aside from ancillary devices used with this equipment).
- This equipment enables radio communication by RFID and emits RF (radio frequency) energy to perform the said intended functions. It may cause electromagnetic interference in nearby electronic equipment, and is labeled with the symbol below. If electromagnetic interference occurs, mitigation measures may be necessary, such as moving the electronic equipment away, reorienting or relocating this instrument, or shielding the location. An electromagnetic interference with other devices may shorten the communications distance of the designated ID tag and cause signals to become unreadable. Try to take mitigation measures such as keeping the affecting device away from this equipment.



## **Terms used in these manuals**

### Cleaning fluid

Refers to filtered water with detergent that is used during the cleaning process.

### Detergent

Olympus-validated detergent. Contact Olympus to obtain the list of Olympus-validated detergents.

### Disinfectant solution

Olympus-validated concentrated disinfectant solution or ready-to-use disinfectant solution. Contact Olympus to obtain the list of Olympus-validated disinfectant solutions.

### Alcohol

70% ethyl alcohol or isopropyl alcohol.

### Process

Generic term for any operation, including cleaning and disinfection, that is performed automatically by this equipment.

### Cleaning process

A series of operations programmed into the equipment that enable it to perform ultrasonic cleaning and detergent cleaning of an endoscope.

### Disinfection process

A series of operations programmed into the equipment that enable it to perform disinfection of an endoscope.

### Leak test

A test to confirm that an endoscope is free of leaks.

### Air purge

In this operation, air is fed into an endoscope channel to blow out residual fluid. This operation is usually performed automatically during a process, but it can also be activated independently. Air purge is also used to drain cleaning fluid or disinfectant solution from inside the equipment when the operation has stopped due to an error code, etc.

### Reprocessing programs

A series of operations for ultrasonic cleaning, detergent cleaning, disinfection, rinsing, air purge, and alcohol flushing of the outer surface or channels of endoscopes that run in a specified sequence and for a specified time. Reprocessing programs [1] to [3] can be selected by the user. Program [1] has a fixed cleaning process time, followed by a 10-minute fixed disinfection process time. The OER-Pro is factory-set for a disinfection process for ready-to-use disinfectant solution. Program changes to the disinfection process time will be released when Olympus-validated disinfectant solutions with different disinfectant contact times are approved. Programs [2] and [3] allow the user to lengthen the cleaning process time, prior to the fixed disinfection process time.

### Alcohol flushing

To assist in drying the channel after reprocessing, alcohol is flushed through the endoscope channels followed by air. This operation can be performed as the last step of the reprocessing program or as an independent operation.

### Disinfectant solution heating

A process for heating disinfectant solution until it reaches the appropriate temperature. When this process is included in a reprocessing program, it is performed automatically during the program. It can also be performed as an independent operation.

### Test strip

Device used to test if the concentration of disinfectant solution is effective for disinfection (i.e., the minimum recommended concentration (MRC) specified by the disinfectant manufacturer).

### Error code

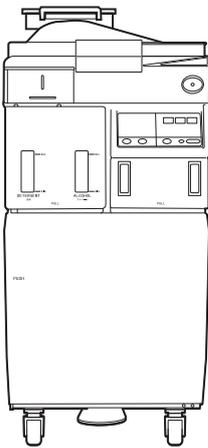
A code consisting of [E] and a two-digit number. This code is displayed on the main control panel if there is a problem with the equipment. When an error code is displayed, check the error code list to find out what corrective measures to take.

### Automatic Processing

When the equipment is stopped by the operator or due to an error, it identifies its status and executes the optimum operation automatically. For example, if the device stops in the middle of the disinfection process, it terminates the disinfection process and removes the disinfectant solution.

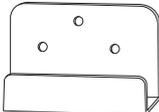
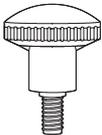
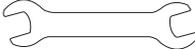
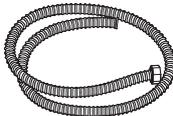
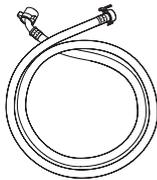
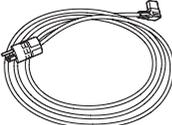
# Chapter 1 Checking the Package Contents

Check that the package contains all the items listed below. Inspect each item for damage. If the device is damaged, a component is missing, or there is any question regarding items, do not use the device and contact Olympus immediately.

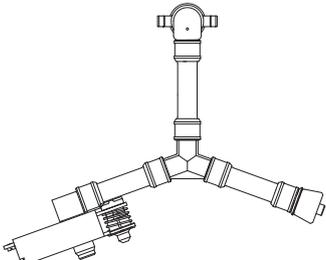
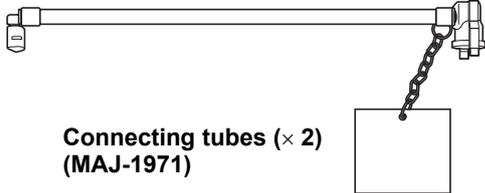
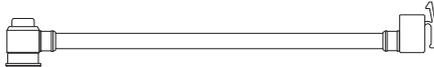


**ENDOSCOPE  
REPROCESSOR  
OER-Pro**

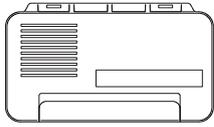
**Accessories for use in installation**

|   |  |  |
|---|--|--|
| <br><b>Buckling guard<br/>(GT143100)</b> | <br><b>Buckling guard<br/>retaining screws (× 3)<br/>(GC783700)</b> | <br><b>Grommets (× 4)<br/>(GC784100)</b>      |
| <br><b>Wrench<br/>(GC748400)</b>       | <br><b>Drain hose<br/>(GJ853400)</b>                              | <br><b>Water supply hose<br/>(GC416500)</b> |
| <br><b>Power cord<br/>(DW662000)</b>   | <br><b>Water supply plug<br/>(GN573800)</b>                     |  |

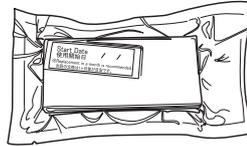
**Accessories for use in reprocessing**

|   |  |
|---|--|
| <br><b>Connecting tubes (× 2)<br/>(MAJ-1500)</b> | <br><b>Connecting tubes (× 2)<br/>(MAJ-1971)</b>   |
|   | <br><b>Leak test air tubes (× 2)<br/>(MAJ-821)</b> |

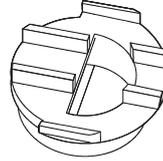
**Accessories to be attached to the equipment**



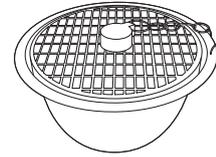
**Gas filter cases (× 2)  
(GJ460700)**



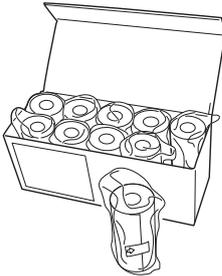
**Gas filters (× 2)  
(MAJ-822)**



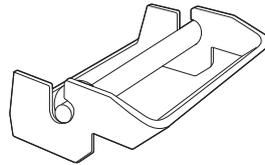
**Gas filter adapter  
(GC949900)**



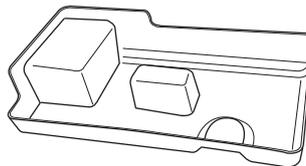
**Washing case  
(MAJ-827)**



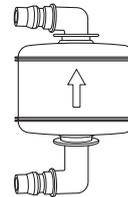
**Printer paper roll  
(MAJ-1497)**



**Paper roll axle  
(MAJ-1498)**



**Water tray  
(GC601400)**

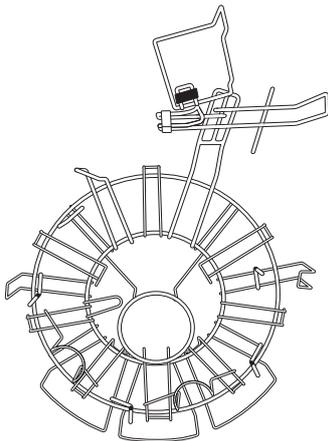


**Air filter  
(MAJ-823)**

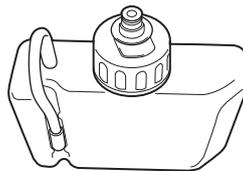


**Water filter  
(MAJ-824)**

**Accessories preattached to the equipment**



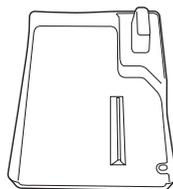
**Retaining rack  
(MAJ-1970)**



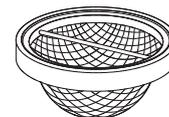
**Alcohol tank  
(GN424800)**



**Circulation port mesh filters  
(GC574000, GC693900)**

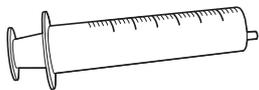


**Detergent/alcohol inner tray  
(GT115400)**

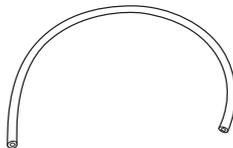


**Drain port mesh filter  
(GC220100)**

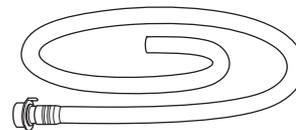
Accessories for use in maintenance



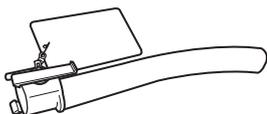
Syringe  
(GT173600)



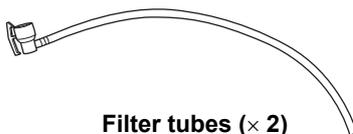
Tube  
(GC651300)



Disinfectant collection hose  
(GJ668000)



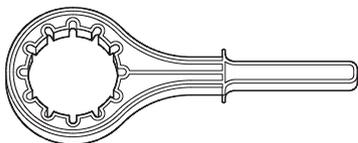
Disinfectant removal tube  
(GJ460200)



Filter tubes (× 2)  
(GJ460500)



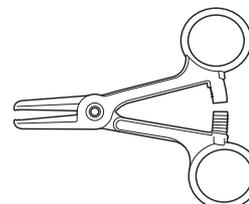
Sampling tube  
(GN513100)



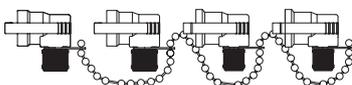
Water filter wrench  
(GC601300)



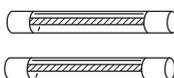
Drain connector  
(GL366300)



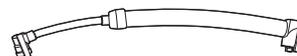
Test strip forceps  
(GT867700)



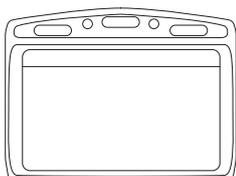
Connector jig  
(GN312400)



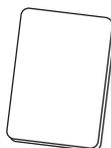
Spare fuses (× 2)  
(DB181500)



Water supply piping disinfection hose  
(GL860800)



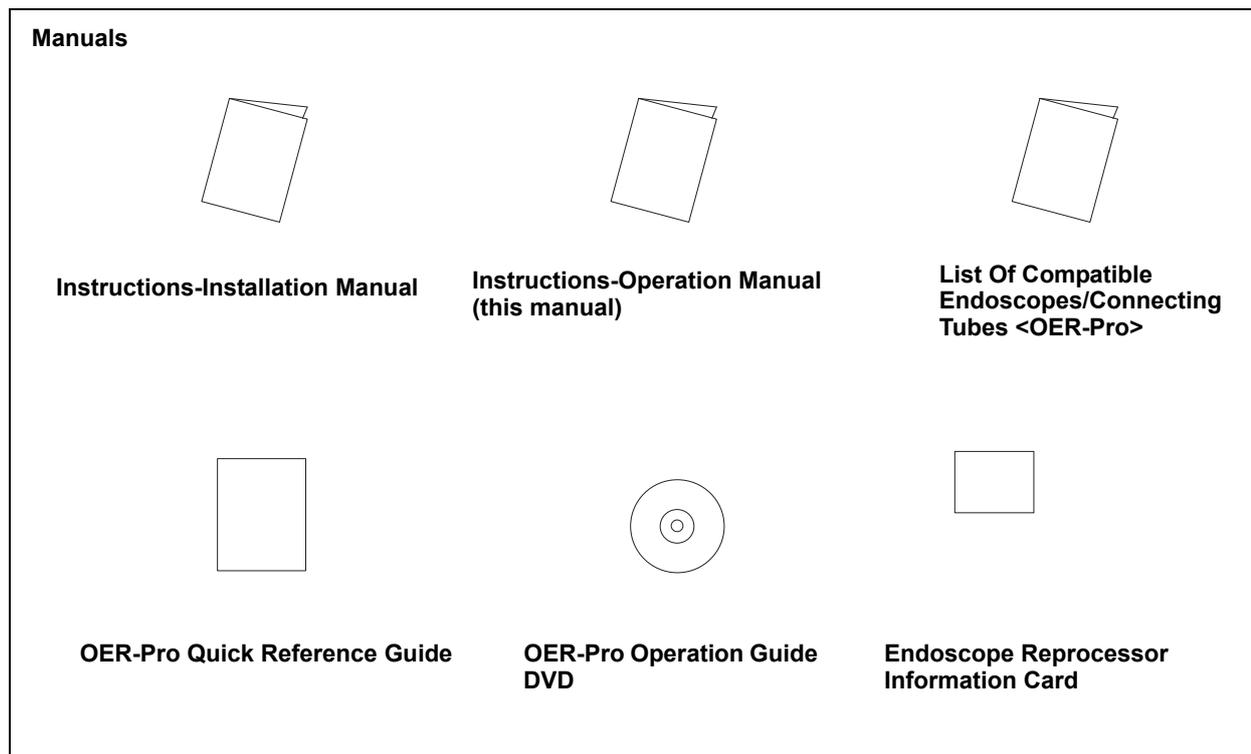
Card holders (× 2)  
(GT271000)



Scope ID master card  
(GT970700)

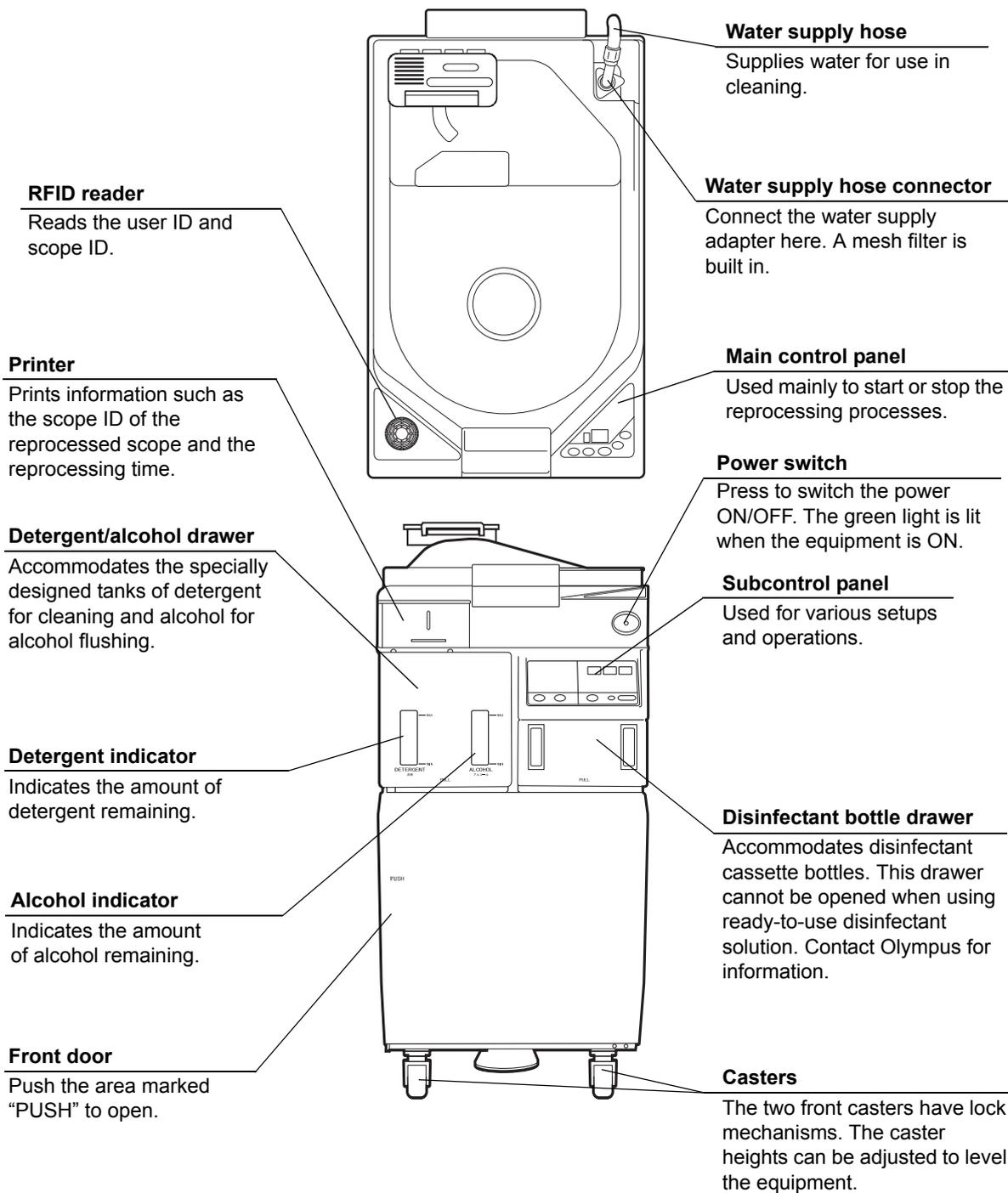


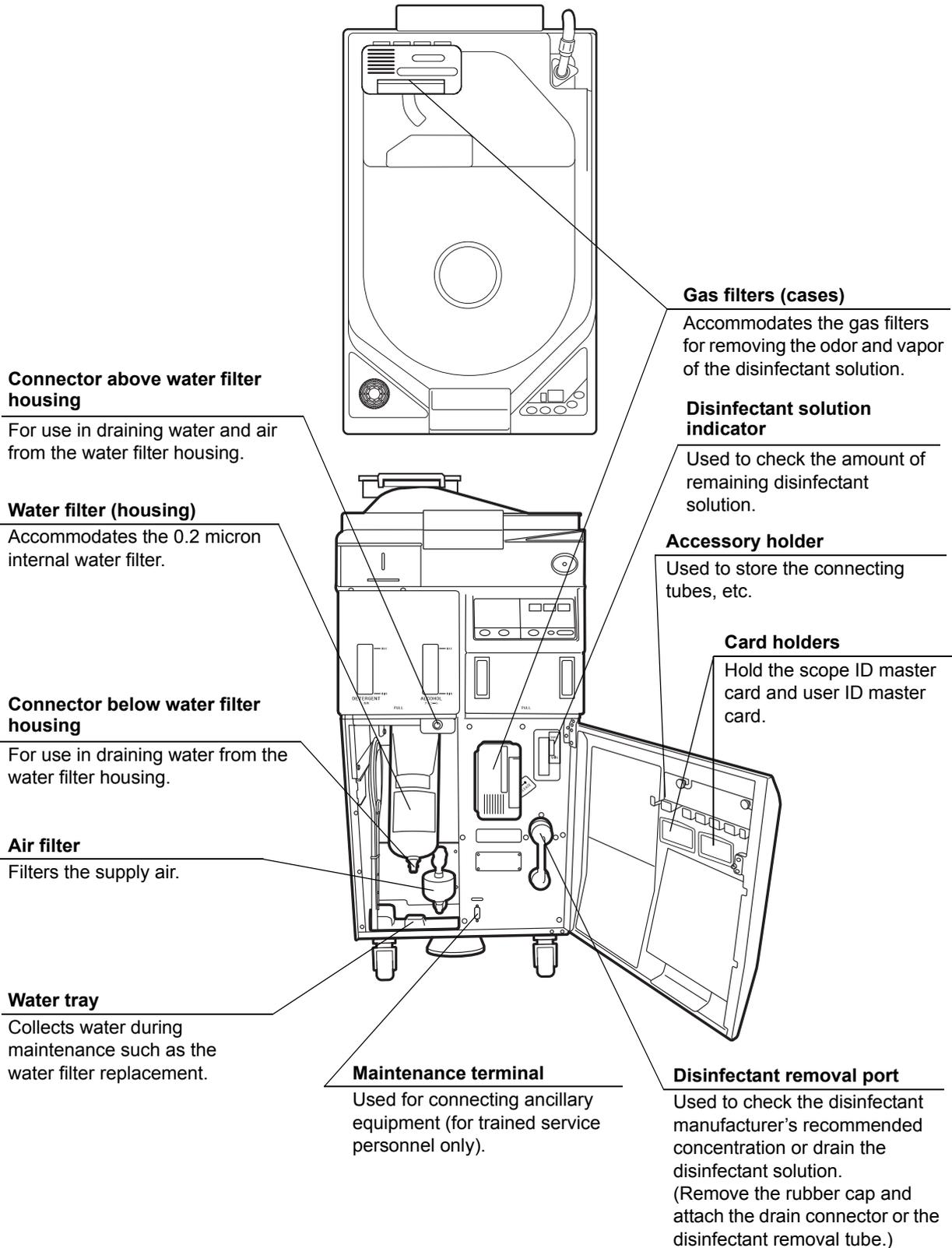
User ID master card  
(GT970600)



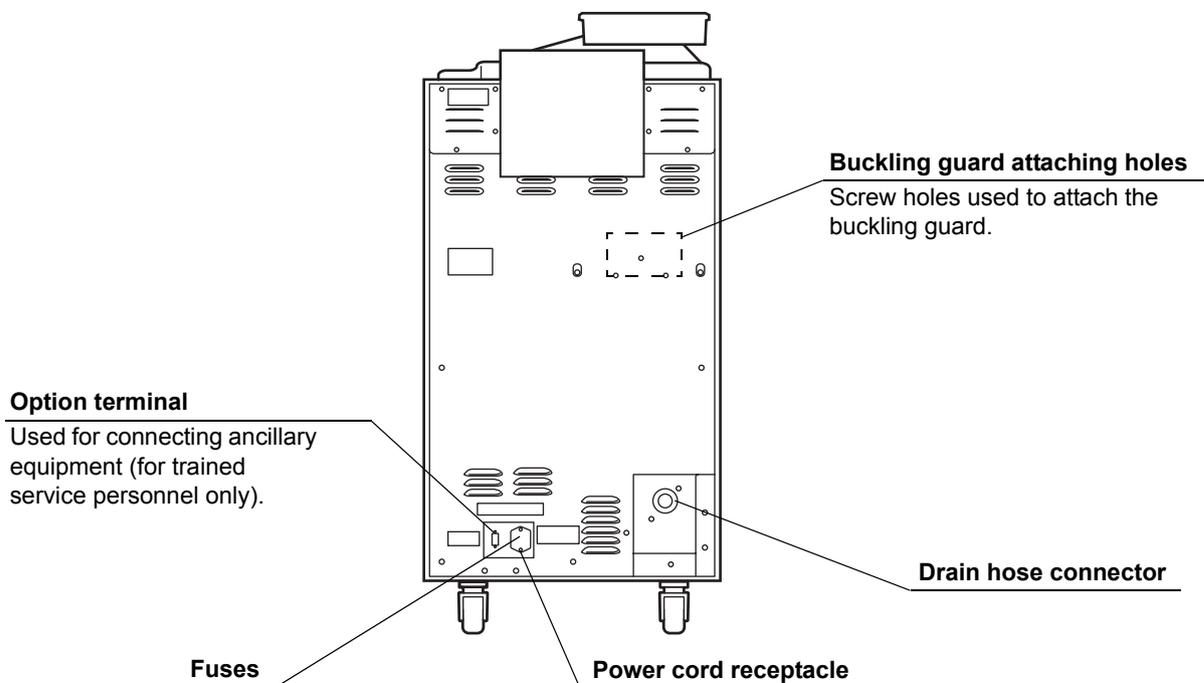
# Chapter 2 Nomenclature and Functions

## 2.1 Front and top panel

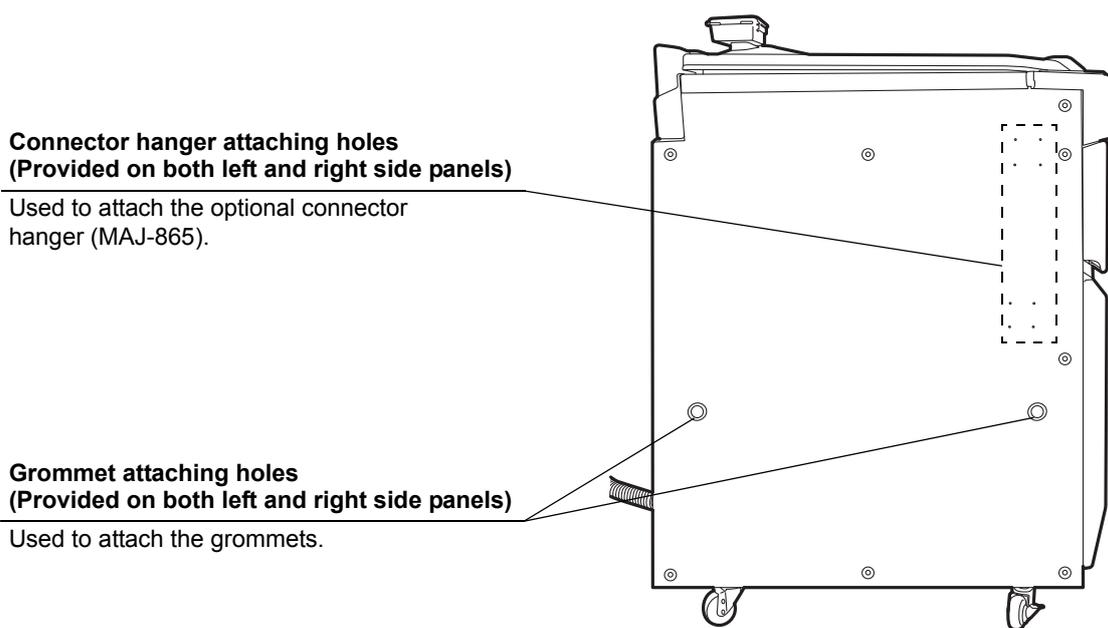




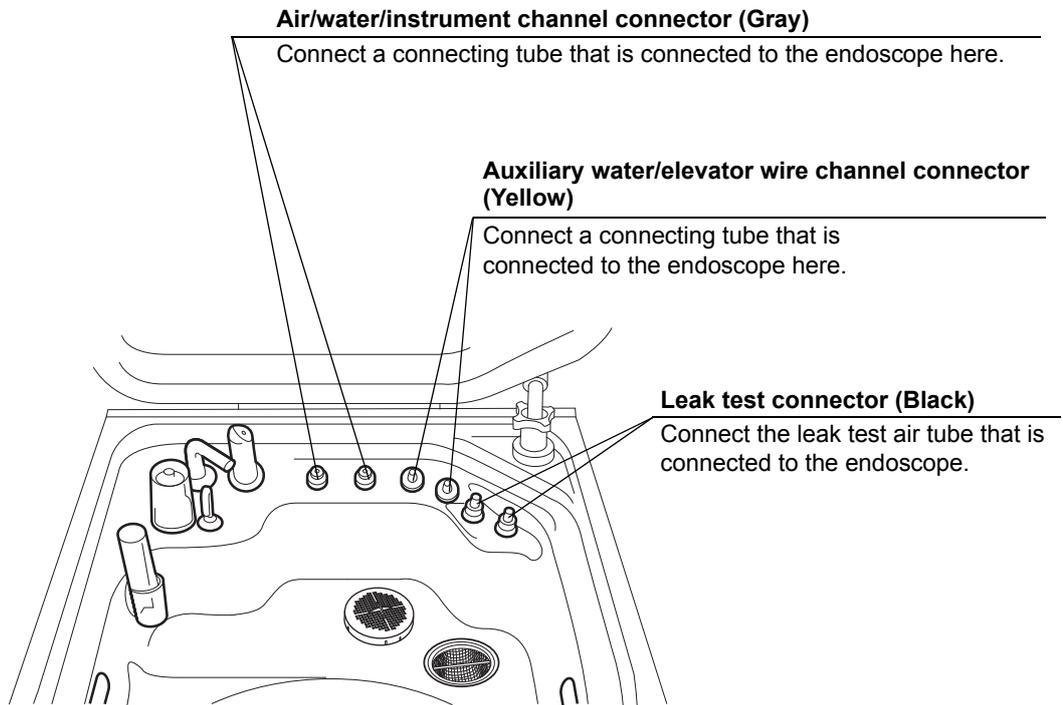
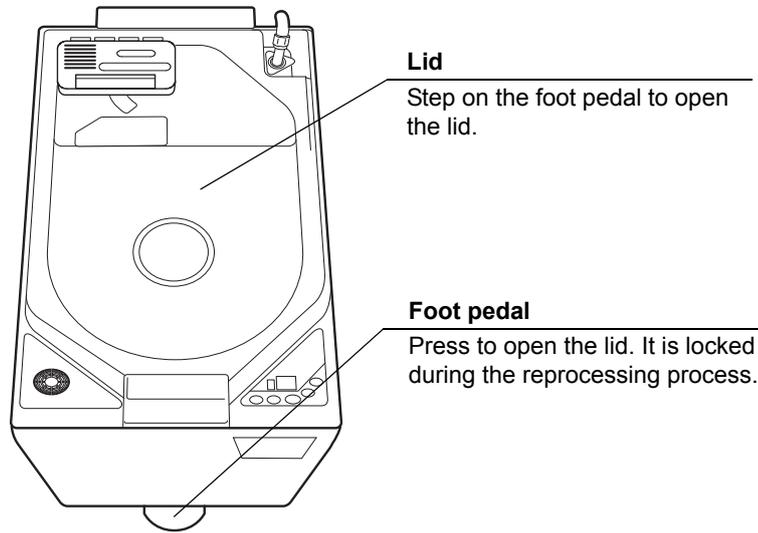
## 2.2 Rear panel

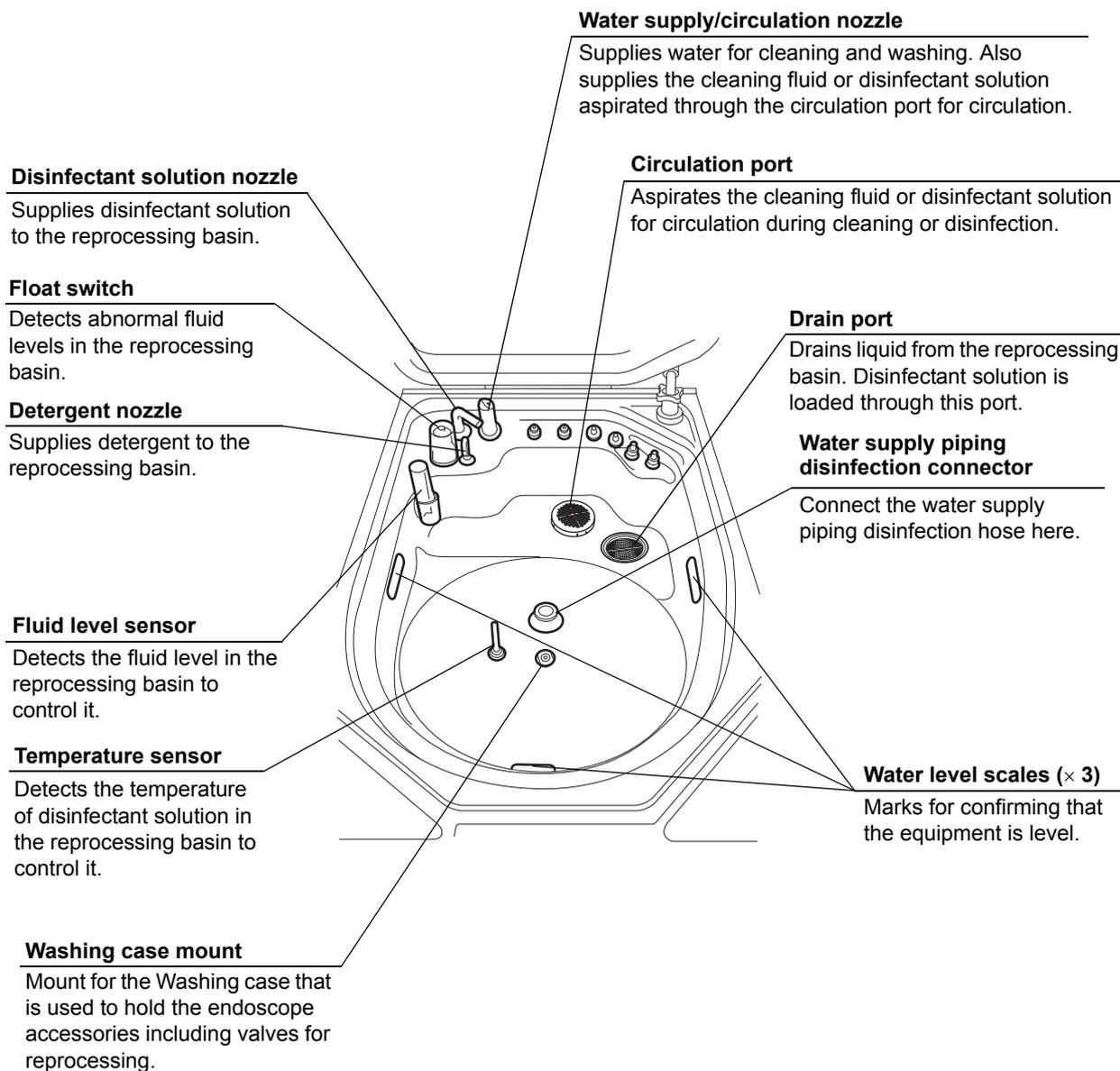


## 2.3 Side panel



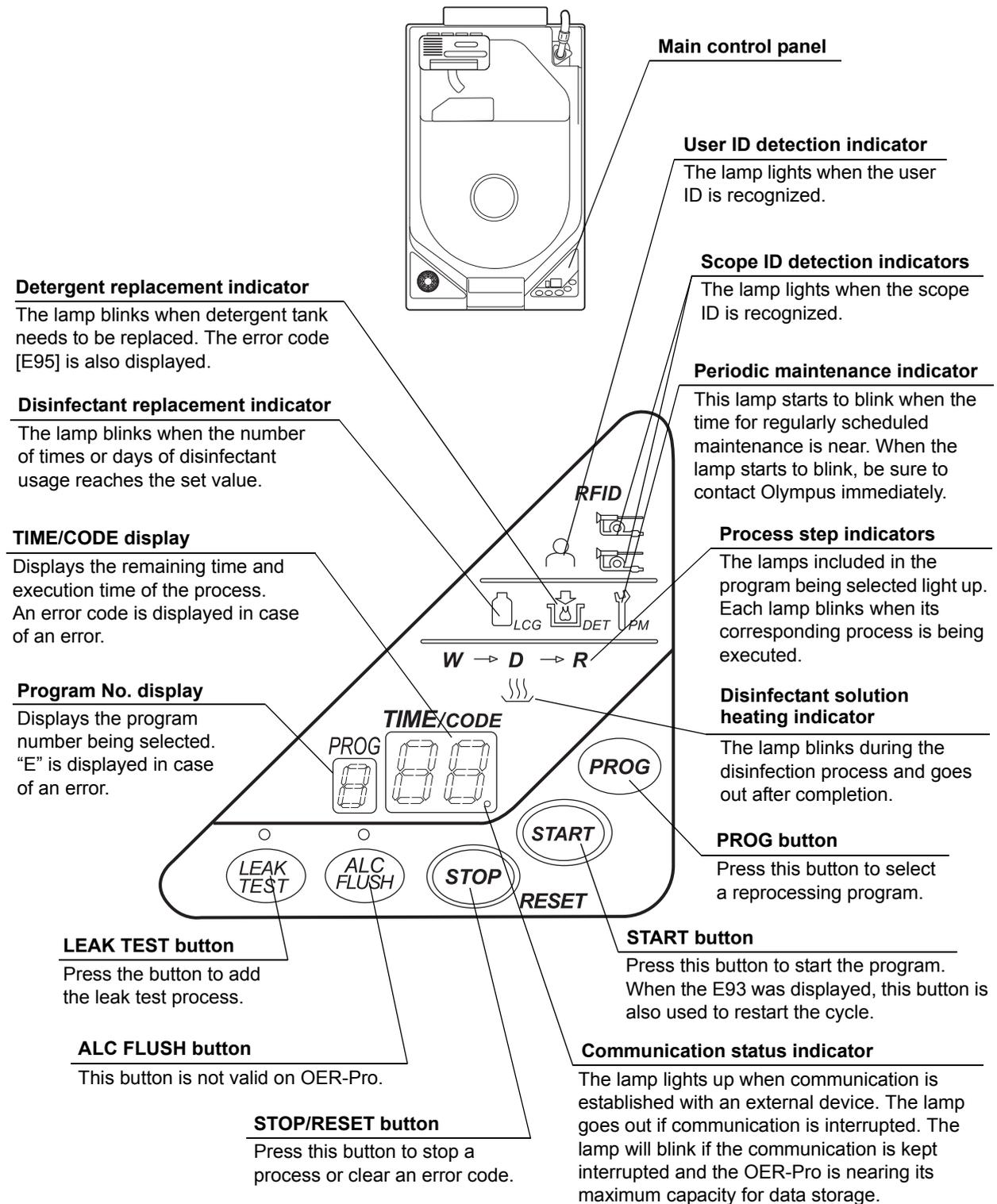
## 2.4 Reprocessing basin



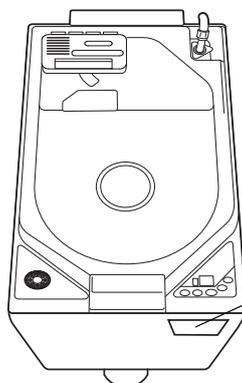


## 2.5 Control panels

### Main control panel



## Subcontrol panel



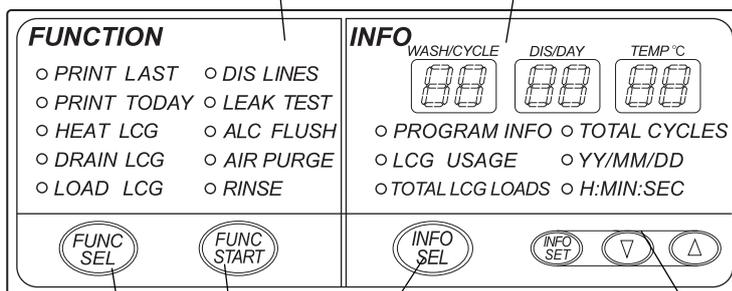
Subcontrol panel

### FUNCTION

The lamp corresponding to the selected function lights. For details, refer to "FUNCTION" on page 30.

### INFO

The lamp corresponding to the selected information lights and the details are displayed. For details, refer to "INFO" on page 31.



### FUNC SEL button

Press this button to select a function.

### FUNC START button

Press this button to start the selected function.

### INFO SEL button

Press this button to select the information to be displayed.

### Set "▼"/"▲" buttons

Press these buttons to set the program details, date, and time. "▼" button is also used for setting the printing functions. For details on the print function setting, refer to Section 6.11, "Print function setup" on page 180.

## ○ FUNCTION

### AUTOMATIC PRINTING

Prints the latest reprocessing record automatically. For details, refer to Section 4.11, "Printing of the reprocessing records" on page 130.

### PRINT LAST

Prints the latest reprocessing record by manual operation of subcontrol panel. For details, refer to Section 4.11, "Printing of the reprocessing records" on page 130.

### PRINT TODAY

Prints all of the reprocessing records recorded that day by manual operation of subcontrol panel. For details, refer to Section 4.11, "Printing of the reprocessing records" on page 130.

### PRINT ALL

Prints all the reprocessing records stored in the equipment by manual operation of subcontrol panel. For details, refer to Section 4.11, "Printing of the reprocessing records" on page 130.

### HEAT LCG

Heats the disinfectant solution before starting the disinfection process. For details, refer to Section 6.2, "Heating the disinfectant solution" on page 156.

### DRAIN LCG

Drains the disinfectant solution from the disinfectant solution tank. For details, refer to Section 7.12, "Replacing the disinfectant solution" on page 225.

### LOAD LCG

Loads the disinfectant solution. For details, refer to Section 7.12, "Replacing the disinfectant solution" on page 225.

### DIS LINES

Disinfects the water supply piping of the equipment. For details, refer to Section 7.3, "Disinfecting the water supply piping" on page 202.

### LEAK TEST

Performs a leak test on the endoscope. For details, refer to Section 4.7, "Leak test" on page 102.

**ALC FLUSH**

Performs alcohol flushing of the endoscope channel. For details, refer to Section 6.9, “Alcohol flushing” on page 172.

**AIR PURGE**

Feeds air into the equipment and endoscope channels to remove residual fluids. For details, refer to Section 6.7, “Air purge” on page 169.

**RINSE**

Rinses the inside of the equipment and endoscope. For details, refer to Section 6.8, “Rinsing” on page 170.

**○ INFO****WASH/CYCLE display**

Pressing the information select button changes the information displayed on the subcontrol panel as shown in Table 2.1 .

**DIS/DAY display**

Pressing the information select button changes the information displayed on the subcontrol panel as shown in Table 2.1.

**TEMP °C display**

Pressing the information select button changes the information displayed on the subcontrol panel as shown in Table 2.1.

|                        | <b>WASH/CYCLE display</b> | <b>DIS/DAY display</b> | <b>TEMP °C display</b> |
|------------------------|---------------------------|------------------------|------------------------|
| <b>PROGRAM INFO</b>    | Cleaning time             | Disinfection time      | Temperature*1          |
| <b>LCG USAGE</b>       | Cycles                    | Days                   | --                     |
| <b>TOTAL LCG LOADS</b> | 6-digit display           |                        |                        |
| <b>TOTAL CYCLES</b>    | 6-digit display           |                        |                        |
| <b>YY/MM/DD</b>        | Year                      | Month                  | Day                    |
| <b>H:MIN:SEC</b>       | Hour                      | Minute                 | Second                 |

\*1 Any temperature equal to or higher than 20°C (68°F) is displayed as “20°C” (68°F). “[ - ]” is displayed if there is not enough disinfectant solution in the disinfectant tank to measure the temperature.

Table 2.1

**NOTE**

Future software versions may enable higher disinfection temperatures.

**PROGRAM INFO**

Displays the cleaning time, disinfection time, and the actual measured value for disinfectant solution temperature.

**LCG USAGE**

Displays the number of times or days the disinfectant solution has been used.

**TOTAL LCG LOADS**

Displays the total number of times that disinfectant solution has been loaded (6 digits).

**TOTAL CYCLES**

Displays the total number of times that the equipment was used (6 digits).

**YY/MM/DD**

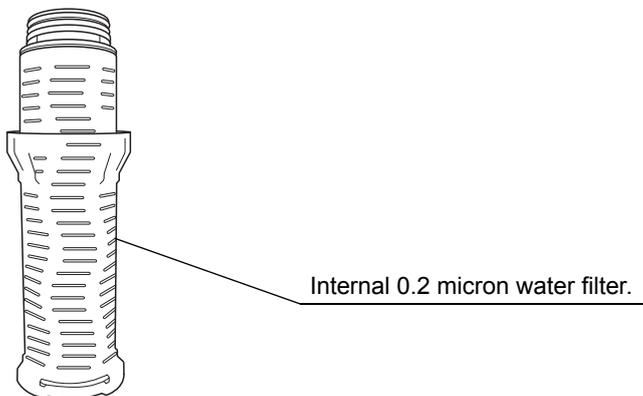
Displays the year, month, and day.

**H:MIN:SEC**

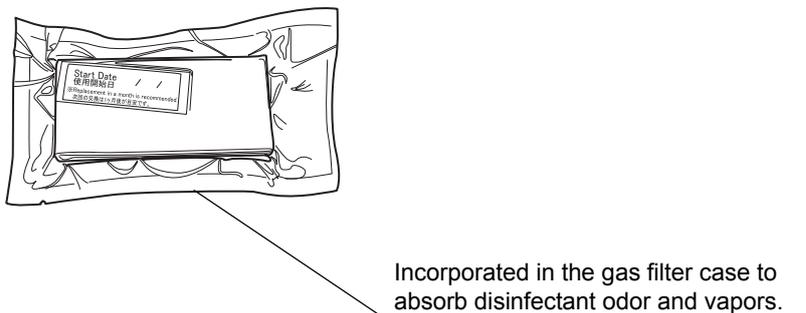
Displays the hour (24 hour system), minute, and second.

## 2.6 Consumable accessories (Optional)

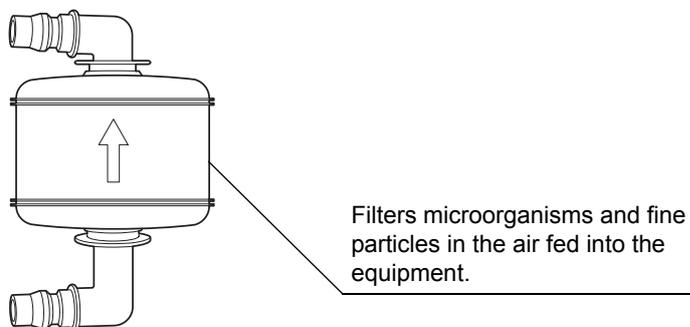
### ○ Water filter (MAJ-824)



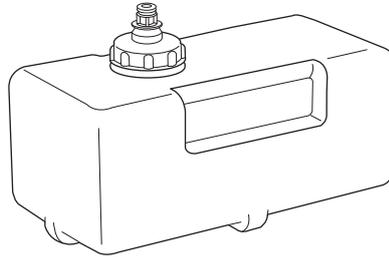
### ○ Gas filters (MAJ-822)



### ○ Air filter (MAJ-823)



○ **Olympus-validated detergent**



| Name      | Type               | Manufacturer  | Remarks             |
|-----------|--------------------|---|---------------------|
| EndoQuick | Alkaline detergent | Best Sanitizers, Inc<br>(154 Mullen Drive,<br>Walton, KY) | 2 L disposable tank |

**NOTE**

EndoQuick is distributed by Olympus America, Inc. To obtain EndoQuick listed above, contact Olympus.

○ **Olympus-validated concentrated disinfectant solution (875 ml cassette bottles)**

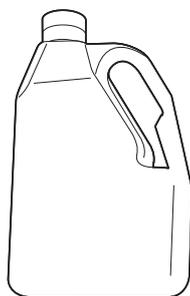


| Name      | Type                 | Manufacturer  | Remarks                                       | 510(k) number |
|-----------|----------------------|---|---|---------------|
| Acecide-C | Peracetic Acid (PAA) | Best Sanitizers, Inc (154 Mullen Drive, Walton, KY) | 875 ml cassette bottles<br>For use in OER-Pro | K091210       |

**NOTE**

Acecide-C is distributed by Olympus America, Inc. To obtain Acecide-C listed above, contact Olympus.

○ **Olympus-validated ready-to-use disinfectant solution**



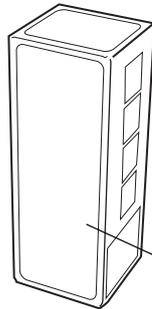
The following ready-to-use disinfectant solutions are recommended to use with the OER-Pro.

| Name        | Type                           | Manufacturer   | Remarks   | 510(k) number |
|-------------|--------------------------------|--|---|---------------|
| Aldahol     | Glutaraldehyde,<br>Isopropanol | Healthpoint Ltd<br>(3909 Hulen<br>Street, Fort<br>Worth, TX) | 3.4% of<br>Glutaraldehyde,<br>approx.<br>20% of IPA | K041360       |
| Aldahol 1.8 | Glutaraldehyde,<br>Isopropanol | Healthpoint Ltd<br>(3909 Hulen<br>Street, Fort<br>Worth, TX) | 3.4% of<br>Glutaraldehyde,<br>approx.<br>20% of IPA | K113015       |

**NOTE**

Aldahol and Aldahol 1.8 are distributed by Olympus America, Inc. To obtain Aldahol and Aldahol 1.8 listed above, contact Olympus.

○ Chemical indicator (test strip)



FDA-cleared Chemical indicator (test strip) used to determine if Olympus-validated disinfectant meets the minimum recommended concentration.

For Acecide-C

| Name                | Manufacturer  | 510(k) number |
|---------------------|---|---------------|
| ACECIDE test strips | Best Sanitizers, Inc (154 Mullen Drive, Walton, KY) | K091210       |

For Aldahol

| Name                                     | Manufacturer                 | 510(k) number |
|--|------------------------------|---------------|
| 3M™ Comply™ Glutaraldehyde Monitors 3989 | 3M (3M Center, St. Paul, MN) | K924681       |

For Aldahol 1.8

| Name  | Manufacturer   | 510(k) number |
|---|--|---------------|
| Aldechek™ Aldahol 1.8 Glutaraldehyde Indicators | Albert Browne Ltd (Chancery House, 190 Waterside Road, Hamilton Industrial Park, Leicester, LE5 1QZ, United Kingdom) | K120435       |

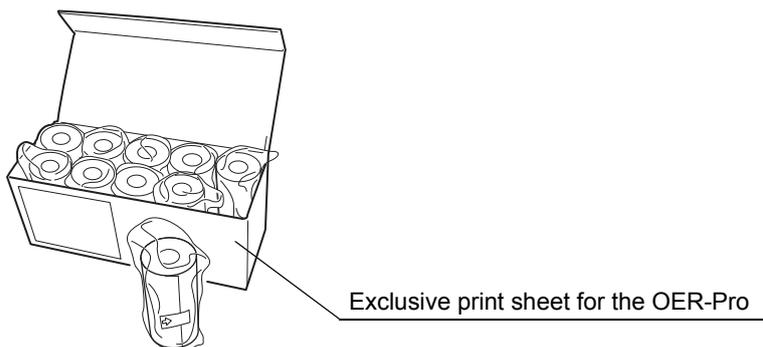
**NOTE**

- ACECIDE test strips is distributed by Olympus America, Inc. To obtain ACECIDE test strips listed above, contact Olympus.
- 3M™ Comply™ Glutaraldehyde Monitors 3989 is distributed by Olympus America, Inc. To obtain 3M™ Comply™ Glutaraldehyde Monitors 3989 listed above, contact Olympus.

**NOTE**

- Aldechek™ Aldahol 1.8 Glutaraldehyde Indicators is distributed by Olympus America, Inc. To obtain Aldechek™ Aldahol 1.8 Glutaraldehyde Indicators listed above, contact Olympus.

**○ Printer paper roll (MAJ-1497)**



# Chapter 3 Inspection Before Use

To ensure that this equipment operates safely and reliably, inspect and clean all parts before use. Also, check all consumables and replace or replenish as necessary.

| Check | Inspection items before the first use of the day           |
|-------|--|
|       | 3.1 Inspecting for fluid leaks                             |
|       | 3.2 Inspecting the lid and lid packing                     |
|       | 3.3 Inspecting the connectors                              |
|       | 3.4 Inspecting the connecting tubes and leak test air tube |
|       | 3.5 Inspecting and replacing the detergent tank            |
|       | 3.6 Inspecting and replenishing alcohol                    |
|       | 3.7 Inspecting the mesh filters                            |
|       | 3.8 Inspecting for disinfectant solution odor              |
|       | 3.9 Inspecting the leak test function                      |

Table 3.1

| Check | Inspection items before each reprocessing                                       |
|-------|---|
|       | 3.10 Checking the disinfectant solution concentration level                     |
|       | 3.11 Inspecting the printer paper roll  |
|       | 3.12 Inspecting the communication status (for connecting with external devices) |

Table 3.2

**WARNING**

- When using the disinfectant solution and alcohol, Olympus recommends the use of gas filters and running this equipment in well-ventilated areas.
  - Wear a face mask, 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.

- Be sure to perform all inspections and replenish consumables as described in this chapter. Otherwise, the equipment may not work properly.
- If any irregularity is observed during the inspections, do not use the equipment and contact Olympus. Using the equipment when an irregularity has been detected may impair operation of the equipment and could cause leakage, electric shock, burns, and/or fire.
- During inspection, always wear appropriate personal protective equipment, such as eyewear, 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.

## 3.1 **Inspecting for fluid leaks**

Confirm that water or fluid does not leak from the water supply piping, inside the equipment, Drain hose connector, etc.

### **DANGER**

Do not continue using the equipment if it is leaking water. Doing so may result in an electric shock or malfunction.

### **WARNING**

If water or fluid leaks from inside the equipment, close the water faucet, set the power switch to OFF, unplug the power cord, and contact Olympus.

1. Slowly open the water faucet.
2. Confirm that water is not leaking from where the water supply hose is connected to the water faucet or equipment.
3. Confirm that water or fluid is not leaking on the floor from inside the equipment.

### **○ If water leaks from the water supply hose connector**

1. Close the water faucet.
2. Check the installation of the water supply devices by referring to Section 4.2, "Connection of the water supply hose" in "Instructions-Installation Manual".

### **○ If water leaks from the water filter housing**

1. Close the water faucet.
2. Check the installation of the water filter housing by referring to Section 3.9, "Installation of the water filter (MAJ-824)" in "Instructions-Installation Manual".

### **○ If water or fluid leaks from inside the equipment**

1. Close the water faucet.
2. Set the power switch of the equipment to OFF.
3. Unplug the power cord from the power outlet.
4. Contact Olympus.

○ **If water leaks from the drain hose connector**

1. Close the water faucet.
2. Check the drain hose installation by referring to Section 4.3, “Connection of the drain hose” in “Instructions-Installation Manual”.

## 3.2 Inspecting the lid and lid packing

Before using the equipment, always check that there is no irregularity regarding the following points on the lid and the lid packing. If there is any irregularity, cleaning fluid or disinfectant solution may leak out.

- The lid is not cracked, broken, or otherwise damaged.
- The packing is not cracked, torn, or otherwise damaged.
- The packing is not separated or detached from the lid.
- The lid can be properly opened and closed without rattle.

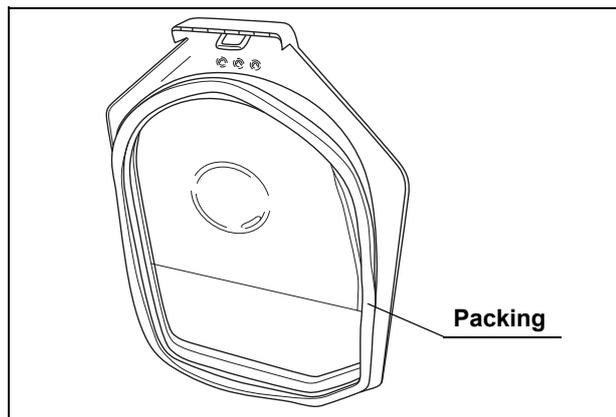


Figure 3.1

If any irregularity is found, do not use the equipment and contact Olympus.

**WARNING**

Do not use the equipment if the lid or the lid packing seems to be damaged or defective. Using the equipment when an irregularity has been detected may interfere with reprocessing. Furthermore, fluid leakage may damage peripheral devices or facilities near the equipment. If any irregularity is observed with the lid or the lid packing, please contact Olympus.

### 3.3 Inspecting the connectors

Check the following for each connector.

- The connector should be fixed firmly.
- The O-rings should be free of abnormalities such as cracks, tears, or dents.

If any irregularity is found, do not use the equipment and contact Olympus.

| Check | Connectors in the reprocessing basin             |
|-------|--|
|       | Air/water/instrument channel connectors          |
|       | Auxiliary water/elevator wire channel connectors |
|       | Leak test connector                              |
|       | Water supply piping disinfecting connector       |

Table 3.3

| Check | Other connectors                     |
|-------|--------------------------------------|
|       | Connector above water filter housing |
|       | Connector below water filter housing |
|       | Disinfectant removal port            |
|       | Tube connector on detergent tank     |
|       | Tube connector on alcohol tank       |

Table 3.4

**WARNING**

Do not use the equipment if any connector seems to be damaged or defective. Using the equipment when an irregularity has been detected may interfere with reprocessing. Furthermore, fluid leakage may damage peripheral devices or facilities near the equipment.

**CAUTION**

Connect each connector firmly by pushing until the connector clicks into place. After connection, pull the connector gently to confirm that it cannot be disconnected easily.

### 3.4 Inspecting the connecting tubes and leak test air tube

Before using the equipment, always check that there is no irregularity regarding the following points on the connecting tubes and leak test air tube.

- All tubes should be free of cracks, breaks, fissures, scratches, or stains.
- There should be no cracks in the lock levers of connecting tube connectors.
- There should be no bends or breaks in the pin of connecting tube connector.
- The tube should not be easy to disconnect once connected.

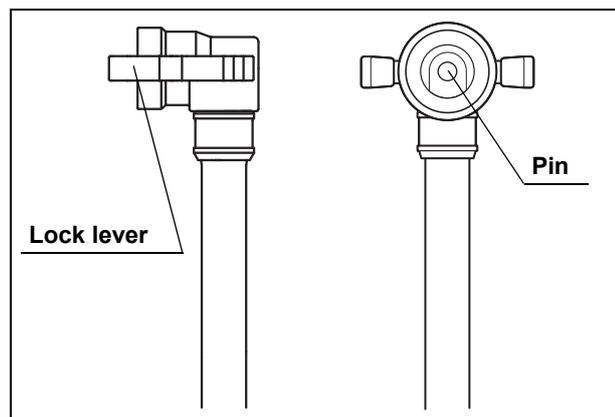


Figure 3.2

If a tube has any irregularity, do not use it and replace with a new one.

#### **WARNING**

Do not use the connecting tubes or leak test air tubes if they have any irregularity. Doing so could prevent effective reprocessing or damage the endoscope.

### 3.5 Inspecting and replacing the detergent tank

| Check | Required items              |
|-------|-----------------------------|
|       | Olympus-validated detergent |

Table 3.5

**NOTE**

Contact Olympus to obtain the list of Olympus-validated detergents.

#### Inspection of the amount of detergent

Check the DETERGENT indicator on the detergent/alcohol drawer of the device to confirm that the amount of the detergent in the detergent tank. If the level reaches “MIN”, replacement of the detergent tank is required within a few reprocessing operations.

Replacement of the detergent tank is required only when the error code [E95] is displayed on the main control panel (and the detergent replacement indicator lights up) after the process is started. In that case, replace detergent tank as described in “Replacing the detergent tank” on page 45.

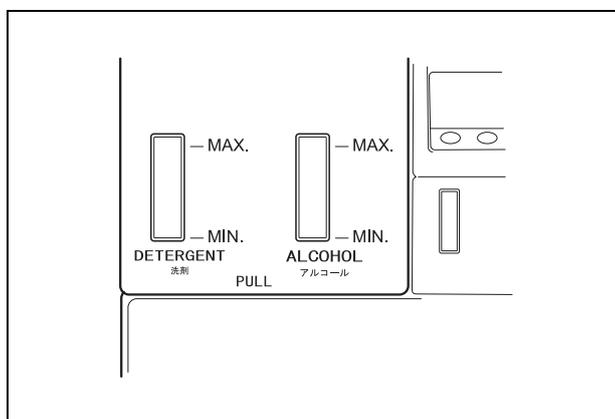


Figure 3.3

**NOTE**

- The detergent tank can hold about 2 L of detergent (which can be used for about 30 reprocessing operations).
- If reprocessing is initiated without detergent, the error code [E95] is displayed and the reprocessing is stopped. The Detergent replacement indicator on the main panel blinks.

## **Replacing the detergent tank**

### **WARNING**

- Before handling the detergent, read the precautions and instructions for use carefully, and use the detergent as instructed. Make sure that you fully understand what measures need to be taken if you get any detergent on your skin.
- Always use an Olympus-validated detergent. Otherwise, the endoscope may not be properly cleaned and as a result, the endoscope may not achieve high-level disinfection.
- When handling the detergent, always wear appropriate personal protective equipment, such as eyewear, 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.
- To prevent the detergent from leaking, do not tilt the detergent tank when there is detergent inside.

### **CAUTION**

Do not add detergent into the detergent tank. Detergent tank is disposable and it is not intended to be reused.

### **NOTE**

- If reprocessing is initiated without detergent, the error code [E95] is displayed and the reprocessing is stopped. The detergent replacement indicator on the main panel blinks.
- Contact Olympus to obtain the list of Olympus-validated detergents.
- The detergent tank can hold about 2 L (67 ounces) of detergent (which can be used for about 30 reprocessing operations).
- When reprocessing is performed with newly-installed equipment or with equipment after Section 7.16, "Preparing the reprocessor for long-term storage" on page 259 is performed, reprocessing may stop with the error code [E95] displayed even though there is enough detergent in the tank. See page 125 ("If the error code [E95] is displayed again after replacing the detergent tank and restarting the reprocessing process:") to solve this problem.

1. Hold the section marked "PULL" of the detergent/alcohol drawer and pull it out.

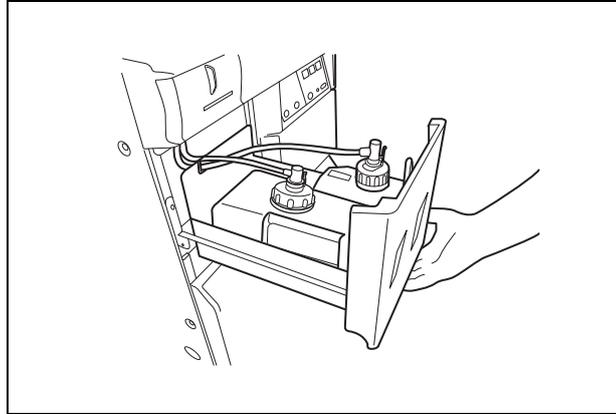


Figure 3.4

2. Push the lock lever on the connector of the tube connected to the detergent tank to detach the tube.

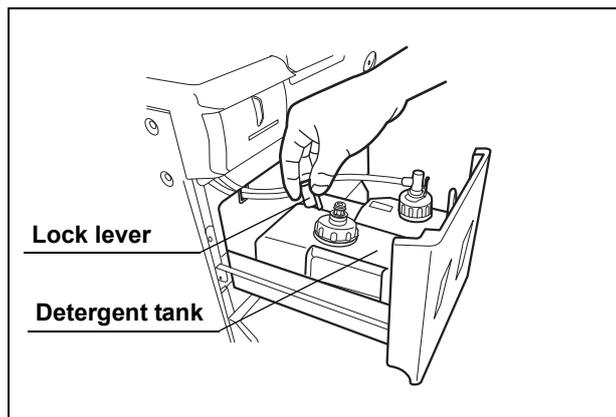


Figure 3.5

**NOTE**

If a few drops of detergent drip from the connector, wipe it with a piece of clean gauze or similar cloth.

3. Remove the detergent tank.

4. Place a new detergent tank on the left side of the detergent/alcohol drawer.

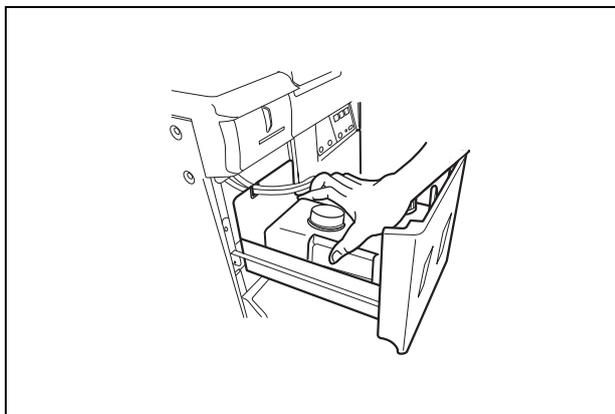


Figure 3.6

5. Detach the detergent tank cap.

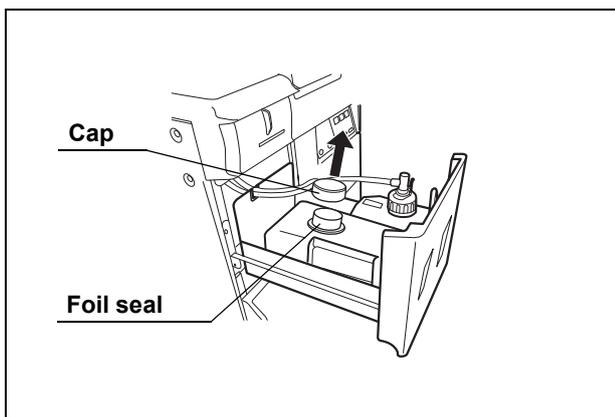


Figure 3.7

6. Remove the seal.
7. Attach the cap with connector to the detergent tank.

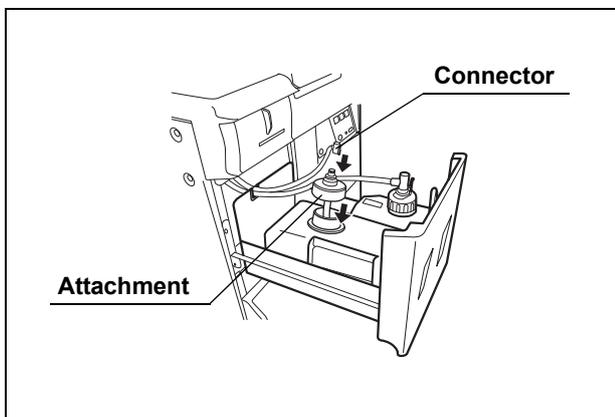


Figure 3.8

8. Insert the white connector into the connector on the detergent tank until it clicks.
9. Turn the connector to correct the tube orientation as shown below. Confirm that the tube is not bent.

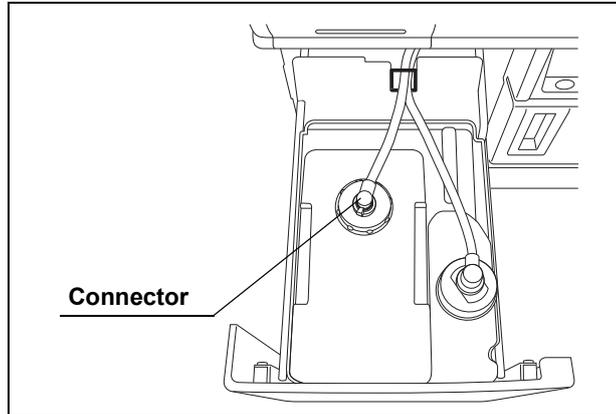


Figure 3.9

10. Close the detergent/alcohol drawer.

### 3.6 Inspecting and replenishing alcohol

Check how much alcohol is in the alcohol tank and add more as required.

| Check | Required items                         |
|-------|--|
|       | 70% ethyl alcohol or isopropyl alcohol |

Table 3.6

#### **WARNING**

- The alcohol used with the equipment must be 70% ethyl alcohol or isopropyl alcohol. Using any other kind of alcohol may result in malfunction of the equipment or the endoscope, difficulty drying the endoscope, fire hazard, or a hazard due to toxic vapor emitted from the alcohol.
- Alcohol is flammable and should be handled with extra care.
- Remove the alcohol in the alcohol tank and replace it with new alcohol at least once a week. Otherwise, the alcohol in the alcohol tank may degrade.
- Before handling the alcohol, carefully read the precautions for use carefully, and use the alcohol as instructed.

**NOTE**

- If alcohol flushing is initiated without alcohol in the tank, the error code [E93] will be displayed and the process will be stopped.
- When reprocessing is performed with newly-installed equipment or with equipment after Section 7.16, “Preparing the reprocessor for long-term storage” on page 259 is performed, reprocessing may stop with the error code [E95] displayed even though there is enough detergent in the tank. See page 174 (“If error code [E93] is displayed while alcohol is still present in the alcohol tank:”) to solve this problem.

### ***Inspection of the amount of alcohol***

Check the ALCOHOL indicator on the detergent/alcohol drawer of the equipment to confirm that alcohol is present. If the amount of alcohol has decreased, add alcohol as described in “Addition of alcohol” before the level reaches “MIN.”.

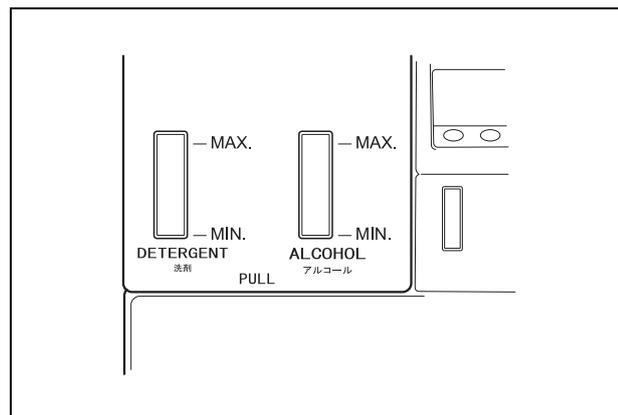


Figure 3.10

**NOTE**

If alcohol flushing is executed when no alcohol is present, the equipment will stop and display an error code [E93].

## Addition of alcohol

1. Hold the section on the detergent/alcohol drawer marked "PULL" and pull it out.

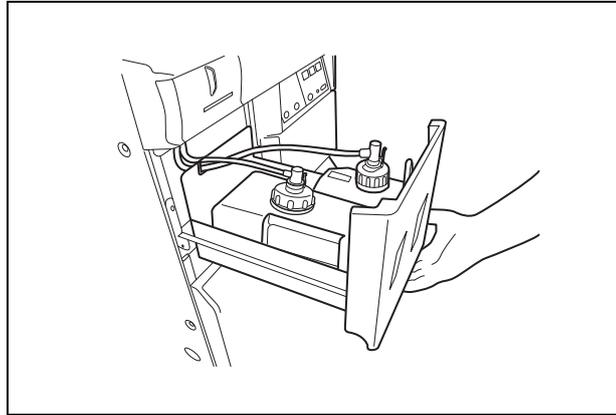


Figure 3.11

2. Push the lock lever on the connector of the tube connected to the cap on the alcohol tank to detach the tube.

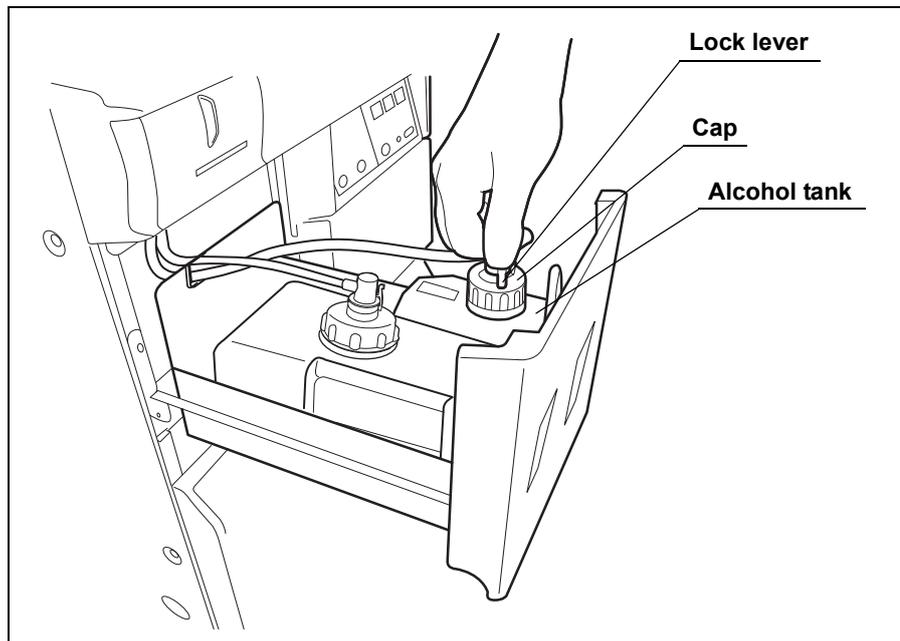


Figure 3.12

3. Remove the alcohol tank and put it in a sink or other tub.

4. Turn the cap on the alcohol inlet in the direction shown to remove the cap.

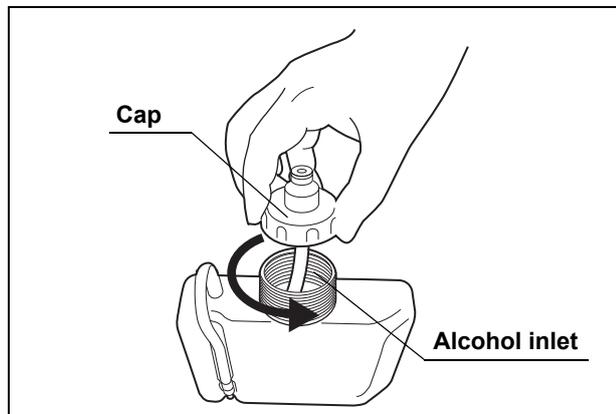


Figure 3.13

**CAUTION**

- Do not add alcohol while the tank is in the detergent/alcohol drawer. If alcohol is spilled on the tray, it could damage the equipment.
- Do not tilt the alcohol tank while there is still alcohol inside. Otherwise, the alcohol may spill.

5. Pour alcohol until it is level with the line inside the alcohol tank. Be careful not to spill any. If any alcohol spills from the tank, wipe it off with a clean cloth. After adding the alcohol, replace the cap on the alcohol tank.

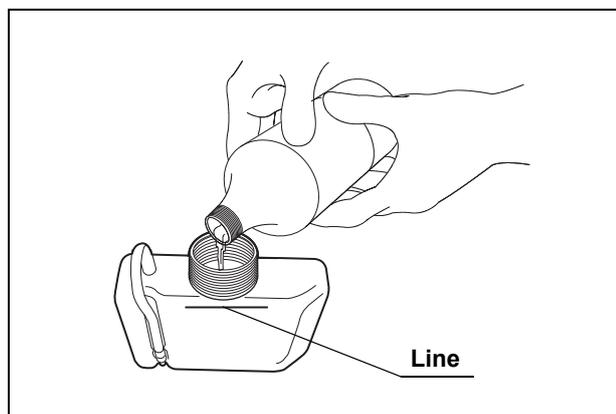


Figure 3.14

**NOTE**

The amount of alcohol required to fill the tank up to the level line is about 500 ml (approximately 16 ounces, enough for about 10 alcohol flushes).

6. Place the alcohol tank in the detergent/alcohol drawer so that the ventilation tube of the alcohol tank sits on the front of the tray.

**CAUTION**

Placing the alcohol tank so that the ventilation tube sits on the deeper side of the tray could damage the alcohol tank.

7. Connect the tube that was originally connected to the cap.

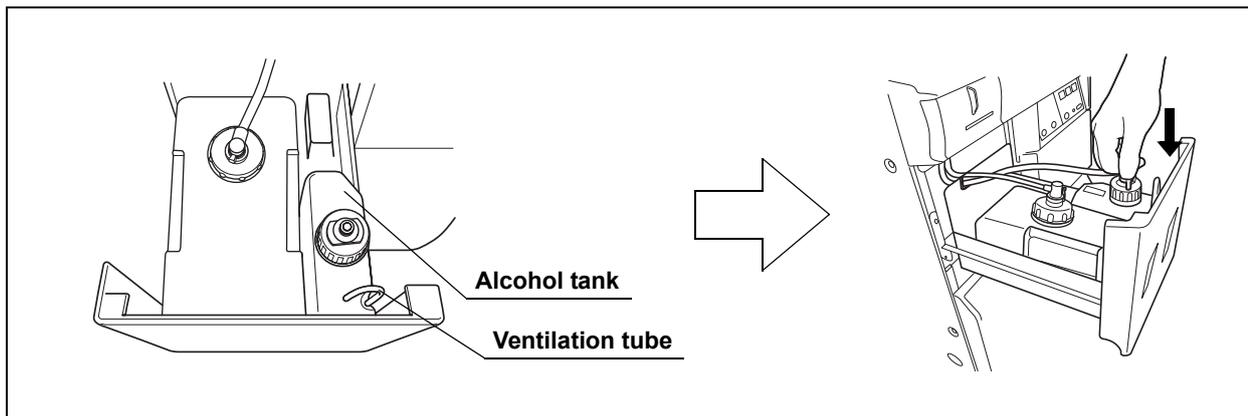


Figure 3.15

8. Turn the connector to correct the tube orientation as shown below. Confirm that the tube is not bent.

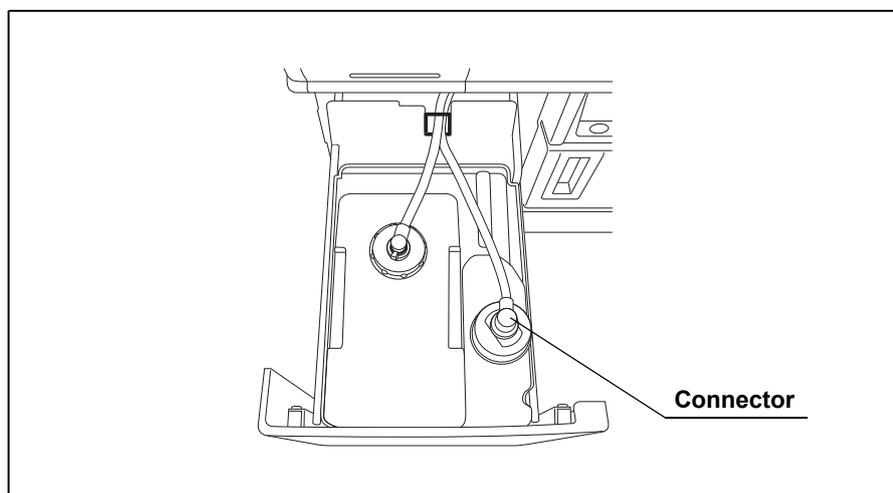


Figure 3.16

9. Close the detergent/alcohol drawer.

## 3.7 Inspecting the mesh filters

Make sure that the circulation port mesh filters (two types) and the drain port mesh filter are not clogged.

### WARNING

A clogged mesh filter not only prevents the equipment from functioning properly, but may also result in ineffective reprocessing.

### CAUTION

- If the mesh filters have been removed, be sure to put them back in their original positions before using the equipment. If you forget to attach the mesh filters, the pump may malfunction and/or foreign objects may enter the endoscope channels including the nozzle and clog them.
- When cleaning the mesh filters, take care not to leave brush hair or cotton swab fiber in the meshes. Otherwise, their filtering effectiveness may be reduced.
- If a mesh filter is dropped or subjected to an impact, make sure that the mesh shape is not deformed. Otherwise, the filtering effect may degrade.
- Two-type mesh filters are installed on the outer and inner sides of the circulation port. Be sure to remove, inspect, and clean both of them.

1. Step on the foot pedal to open the lid.
2. Remove the mesh filters from the reprocessing basin.

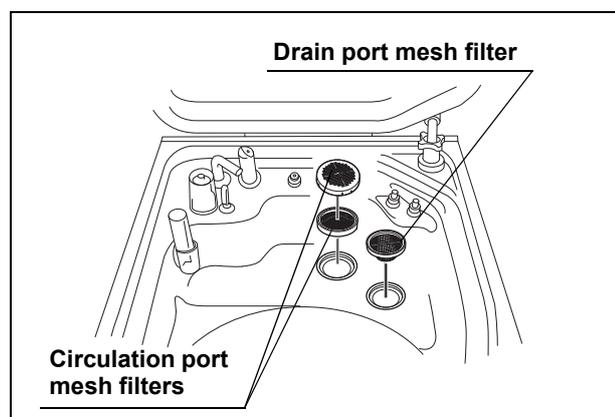


Figure 3.17

3. Check that the mesh filters are not clogged by a foreign object.

4. If any foreign object is found to be clogging the filter, clean the mesh filter in running water using a soft brush.

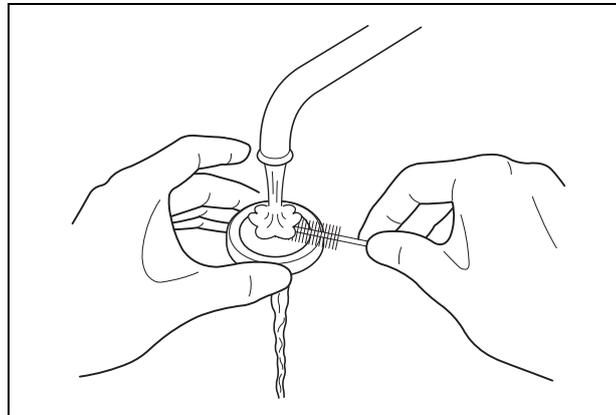


Figure 3.18

5. Attach the mesh filters in their original positions.

### **3.8 Inspecting for disinfectant solution odor**

Check that the disinfectant solution is not producing an abnormal odor.

**WARNING**

Before handling the disinfectant solution, carefully read the precautions attached to the disinfectant solution bottle and use as instructed.

1. Activate the room's ventilation system.
2. Check that there is no abnormal disinfectant solution odor coming from the equipment or its surroundings.

**CAUTION**

If the odor increases after replacement of the gas filters, contact Olympus.

### 3.9 Inspecting the leak test function

To prevent the endoscope from being damaged by water leakage, make sure to inspect the leak test function before use. If any irregularity, such as no air supply from the metal connector of the leak test air tube is found, do not use the equipment and contact Olympus. Endoscope leak testing can be performed outside the OER-Pro, as per existing labeling, or can be performed in the OER-Pro. When the leak test is performed with the OER-Pro, follow the procedure in Section 4.7, “Leak test” on page 102.

| Check | Required item                |
|-------|------------------------------|
|       | Leak test air tube (MAJ-821) |

Table 3.7

#### **CAUTION**

- Make sure that there are no cracks, breaks, fissures, scratches, or stains on the leak test air tube. Using an abnormal or damaged leak test air tube may result in inaccurate inspection of leak test function.
- When connecting the leak test air tube, ensure that the tube connector is fully and properly attached. Improper connection will result in inaccurate inspection of leak test function.
- Prevent water from getting into the leak test air tube. Otherwise, the water inside the tube may damage the endoscope when the leak test is performed next time.
- If water does not start filling the reprocessing basin about 10 seconds after the leak test has started, press the STOP/RESET button to stop testing. Check whether the water faucet is open. If not, open it and start leak test again.

1. Close the lid by pushing it until it clicks.
2. Press the FUNC SEL button on the subcontrol panel to select "LEAK TEST".

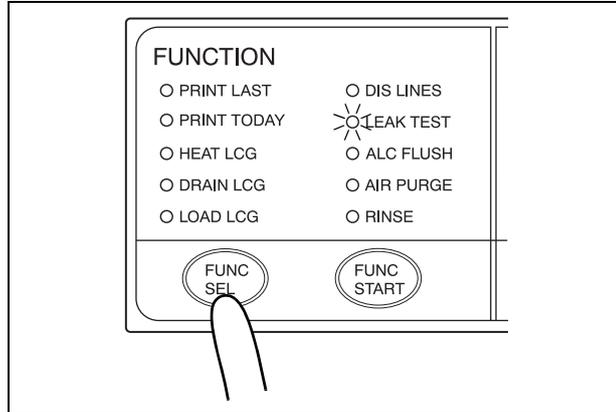


Figure 3.19

3. Press the FUNC START button on the subcontrol panel to start the water supply.

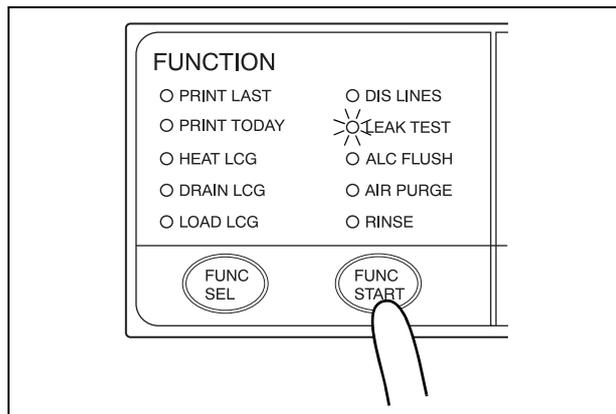


Figure 3.20

- When water supply starts, the TIME/CODE display on the main control panel shows a [□] mark spinning as shown below.

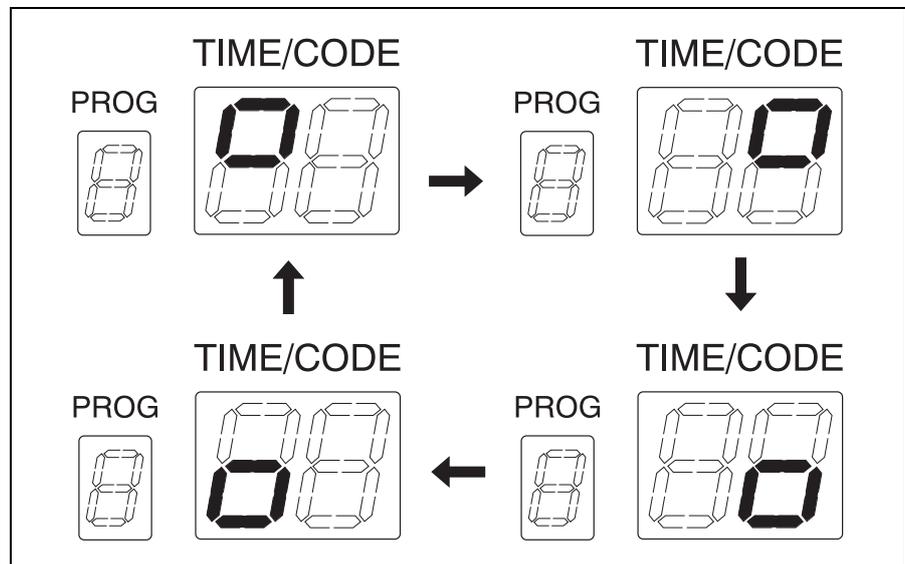


Figure 3.21

- When the water supply is completed, the buzzer beeps three times and the TIME/CODE display shows [10], which indicates 10 minutes. The time displayed on the main control panel counts down every minute.
- When the lid is unlocked, make sure that the water supply has stopped, and then step on the foot pedal to open the lid.
- Wipe off any water on upside of the leak test connector (black) in the reprocessing basin with a clean cloth.
- Connect the leak test air tube connector (black) (MAJ-821) to the reprocessing basin's leak test connector (black).

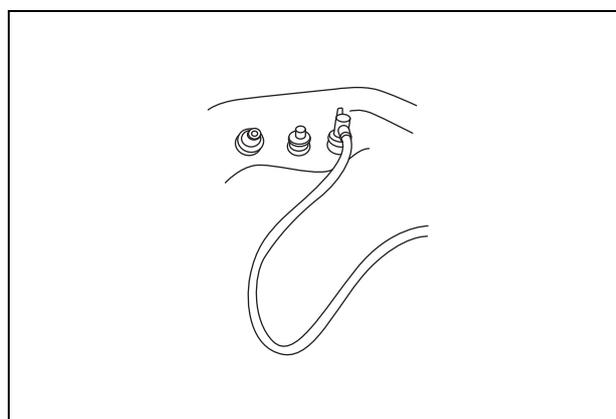


Figure 3.22

9. Press the pin on the center of the metal connector of the leak test air tube to confirm air supply.

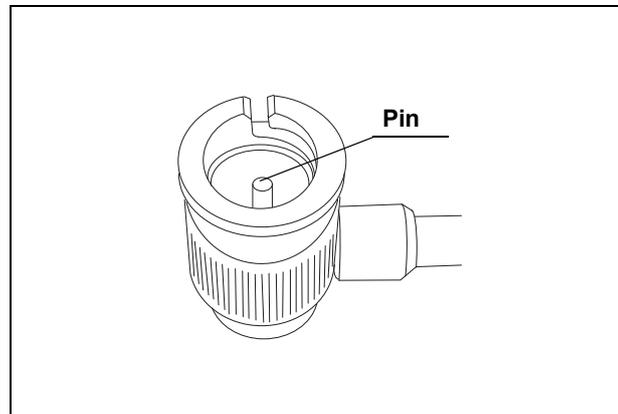


Figure 3.23

10. Disconnect the leak test air tube from the reprocessing basin's leak test connector.
11. With another leak test connector (black), confirm air supply by repeating from Step 7 to 10.

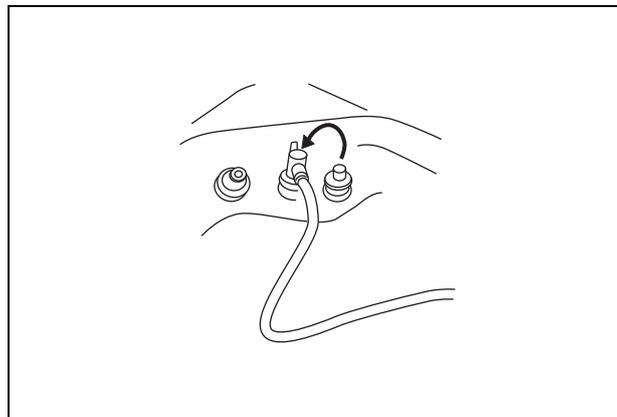


Figure 3.24

12. After removing the leak test air tube from the reprocessing basin, close the lid to drain the water and finish leak test. At this time, the buzzer beeps and the main control panel displays [- -] to indicate the end of testing.

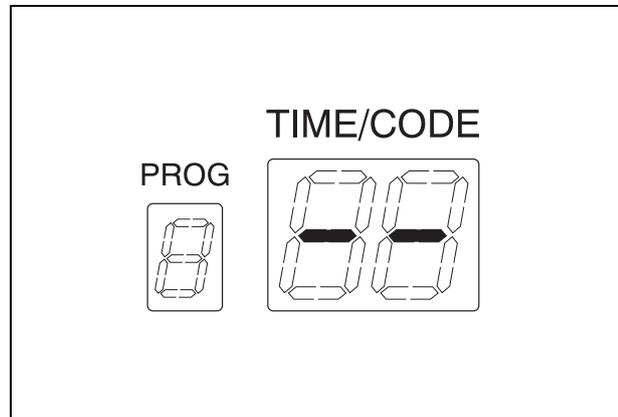


Figure 3.25

13. Wipe off any water on the outer surface of the leak test air tube with a clean cloth, and store it in a clean place.

### 3.10 Checking the disinfectant solution concentration level

Prior to reprocessing, check the concentration of the disinfectant solution using a test strip to verify that the concentration of disinfectant solution meets the minimum recommended concentration. Replace the disinfectant solution when it fails to meet the minimum recommended concentration or beyond the specified use life.

| Check | Required items  |
|-------|---|
|       | FDA-cleared chemical indicator (test strip)   |
|       | Drain connector (should be dry)   |
|       | Cup-shape container with a capacity of about 200 ml, such as a beaker (should be dry) |
|       | Clean cloth   |

Table 3.8

**WARNING**

- The use life of the disinfectant solution may vary depending on many factors, including storage conditions, and the temperature of the environment where the equipment is installed. Routinely check the concentration of the disinfectant solution with the test strip before performing endoscope disinfection. If this check is not performed, the disinfection process may be ineffective. Replace the disinfectant solution when it fails to meet the minimum recommended concentration or beyond the specified use life.
- The container used in the following check, such as a beaker, and the drain connector should be completely dry. Residual moisture will affect the results.
- Before handling the disinfectant solution, read the MSDS and instructions for use of the disinfectant solution carefully, get fully accustomed to the contents, and use the disinfectant solution as instructed. Be sure to fully understand what to do if the disinfectant solution comes in contact with your skin.
- When handling the disinfectant solution, wear appropriate personal protective equipment. Avoid direct physical contact and inhalation of vapors. 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 includes eyewear, 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 block the disinfectant removal port with a finger or other objects when the rubber cap is not attached. Otherwise, the disinfectant solution may flow out.
- To prevent peripheral devices and areas near the equipment from being damaged by leaked disinfectant solution, do not remove the rubber cap from the disinfectant removal port except when connecting the drain connector to the disinfectant removal port.
- 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 274. If leaking does not stop, contact Olympus.

**NOTE**

To obtain disinfectant test strips, contact Olympus.

1. Push [PUSH] on the front door to open the front door. Remove the rubber cap from the disinfectant removal port.

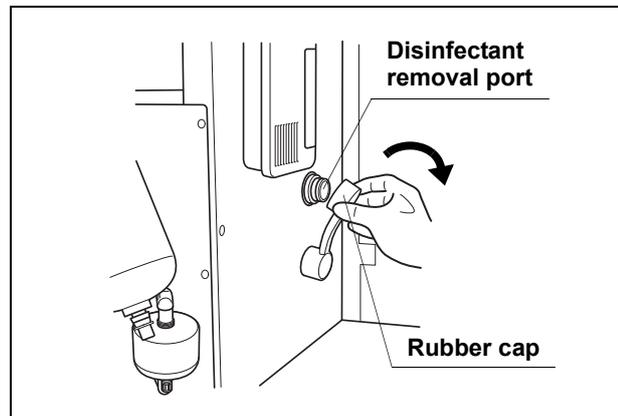


Figure 3.26

2. Push the drain connector into the disinfectant removal port until it clicks.

**WARNING**

When connecting the drain connector to the disinfectant removal port, do not push on the connector's valve. Otherwise, disinfectant solution will leak out of it.

3. Place the prepared container below the drain connector, push the connector's valve, and collect the drained disinfectant solution until it is deep enough to immerse the reaction area of a test strip.

**NOTE**

Recommended volume for sampling of the disinfectant solution is 20 ml or less. If too much disinfectant solution is removed for sampling, over time the level of disinfectant solution in the disinfectant tank will be reduced, and may cause Error Code [E12] or [E14].



Figure 3.27

4. While taking care not to inhale the disinfectant solution vapor, immerse the test strip in the disinfectant solution in the container to check the concentration. If the concentration is below the effective level, replace the disinfectant solution as described in Section 7.12, “Replacing the disinfectant solution” on page 225.
5. Place the prepared cloth under the drain connector, hold the lock lever and slowly disconnect the connector. Wipe off any disinfectant solution if it leaks.

**NOTE**

The disinfectant should not be used beyond the duration of its reuse life, even if tests taken during that time show that it is at or above its minimum recommended concentration. A disinfectant may fall below its minimum recommended concentration before the end of its reuse life.

6. Wipe the disinfectant removal port with a clean cloth and put the rubber cap back on. Rinse the disinfectant drain connector thoroughly in running water, dry it thoroughly and store in a clean place.
7. Close the front door.

**NOTE**

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

### ○ When checking the concentration of the disinfectant solution during the reprocessing

If the concentration of the disinfectant solution was not checked prior to reprocessing, you may check during the disinfection process of the reprocessing cycle. When it fails to meet the minimum recommended concentration, follow the instructions in this section “Restarting the reprocessing after stopping due to disinfectant solution failure” on page 66.

#### NOTE

Reprocessing must be performed again from the beginning if the disinfectant solution fails to meet the minimum recommended concentration. Therefore, it is recommended to check the concentration of the disinfectant solution prior to reprocessing.

| Check | Required items                              |
|-------|---|
|       | FDA-cleared chemical indicator (test strip) |
|       | Test strip forceps (should be dry)          |
|       | Clean cloth                                 |

Table 3.9

#### WARNING

- Stop the reprocessing cycle when the disinfectant solution fails to meet the minimum recommended concentration. Replace the disinfectant solution and perform the reprocessing from the beginning. Otherwise, the reprocessing may be insufficient.
- When handling the disinfectant solution, wear appropriate personal protective equipment. Avoid direct physical contact and inhalation of vapors. 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 includes eyewear, 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.

1. After starting the endoscope reprocessing or disinfection of the water supply piping, firmly pinch the test strip end (opposite side of the reaction zone) with the test strip forceps. Pull the test strip gently to make sure it is properly pinched.

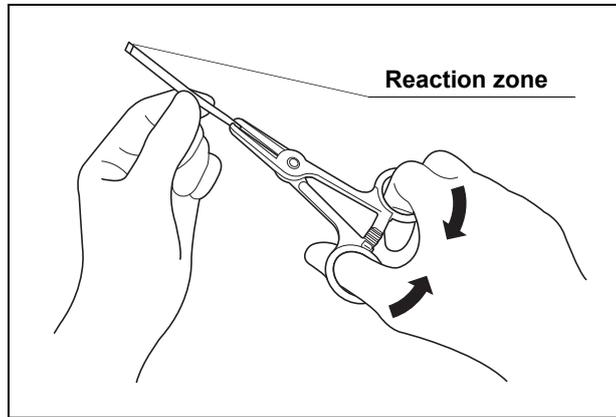


Figure 3.28

2. When the disinfectant solution is supplied to the basin, "D" of the process step indicators and the disinfectant solution heating indicator on the main control panel blinks.

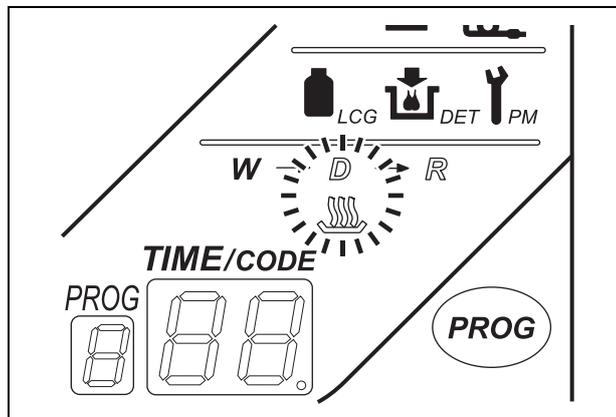


Figure 3.29

In the case of disinfecting the water supply piping, when the reprocessing basin is filled with disinfectant solution, three buzzer beeps are generated and the TIME/CODE display on the main control panel blinks. (State described at sentence 9 in Section 7.3, "Disinfecting the water supply piping" on page 202.)

3. Remove the gas filter case from the dome part of the lid.

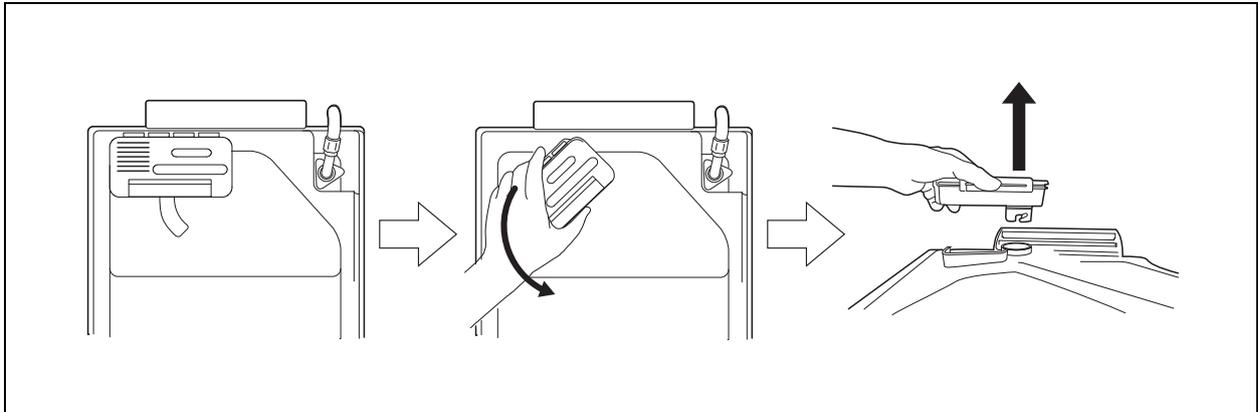


Figure 3.30

4. Insert the test strip through the gas filter case mount and immerse it in the disinfectant solution for the prescribed period of time. In order to properly immerse the test strip in the disinfectant solution, insert the test strip when a jet of disinfectant solution from the water/circulation nozzle is not hitting the dome of the lid. If the concentration is below the effective level, press the STOP/RESET button immediately to stop the reprocessing cycle. Perform rinsing, removal of the endoscopes, replacement of the disinfectant solution, and then start the reprocessing cycle again from the beginning as described in “Restarting the reprocessing after stopping due to disinfectant solution failure” on page 66.

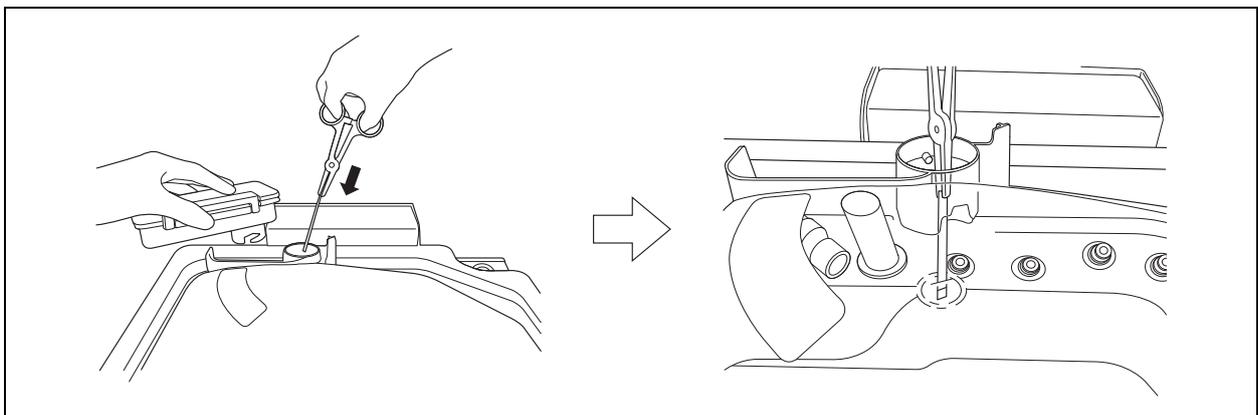


Figure 3.31

5. Attach the gas filter case to the dome part of the lid.

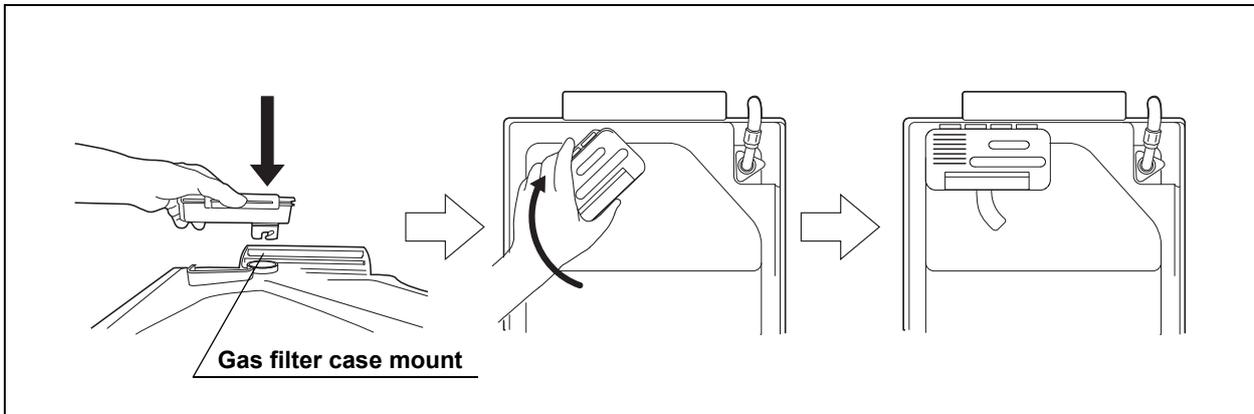


Figure 3.32

6. Rinse the test strip forceps thoroughly in running water, dry it thoroughly and store in a clean place.

○ **Restarting the reprocessing after stopping due to disinfectant solution failure**

If the concentration of the disinfectant solution was checked during the reprocessing and the disinfectant solution failed to meet the minimum recommended concentration, stop the reprocessing and replace the disinfectant solution. Perform the reprocessing cycle again from the beginning.

**WARNING**

- Always wear appropriate personal protective equipment, such as eyewear, face mask, moisture-resistant clothing, and chemical-resistant gloves that fit properly and are long enough so that your skin is not exposed. Otherwise, blood and mucus attached to the endoscopes could cause an infection.
- Replace the disinfectant solution when it fails to meet the minimum recommended concentration. Otherwise, the reprocessing may be insufficient.

**CAUTION**

Once the disinfectant solution failed to meet the minimum recommended concentration, immediately stop the reprocessing process. Otherwise, the reprocessing logs will be incorrect.

1. Press the STOP/RESET button on the main control panel to stop the reprocessing. The main control panel will display error code [E00] at this time. The equipment automatically performs the required processing operations (including recollection of the disinfectant and air purge), after which it stops completely. For detailed instruction, refer to Section 6.10, “Emergency stop and automatic processing after stopping” on page 178.

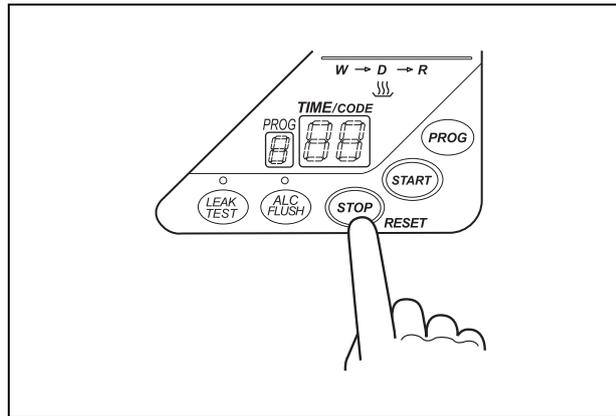


Figure 3.33

2. Perform the rinse as described in Section 6.8, “Rinsing” on page 170.
3. Step on the foot pedal to open the lid, and take all the endoscopes, valves and connecting tubes or water supply piping disinfection hose from the reprocessing basin. Place them into a sink or tray of large enough to place.

**WARNING**

Reprocessing of endoscopes and valves are not completed. Perform the reprocessing from the beginning after replacing the disinfectant solution. Using endoscope that has not been subjected to a complete, error-free process may endanger safety of the patient and operator.

4. Replace the disinfectant solution as described in Section 7.12, “Replacing the disinfectant solution” on page 225.
5. Check the concentration of the disinfectant solution as described in this section 3.10, “Checking the disinfectant solution concentration level” on page 59.
6. Restart the reprocessing of the endoscopes and valves which was once took out as described in Chapter 4, “Reprocessing Operations”. In the case of disinfecting the water supply piping, follow the procedure in Section 7.3, “Disinfecting the water supply piping” on page 202.

**NOTE**

When restarting the reprocessing of the endoscope, restart from Section 4.4, “Scope ID detection” on page 84.

### 3.11 Inspecting the printer paper roll

**CAUTION**

Do not start printing if the end of the printer paper roll is not projecting from the opening on the printer cover. Otherwise, the printer paper roll may jam and/or printing may fail.

1. Confirm that the end of the printer paper roll is projecting from the opening on the printer cover. If not, open the printer cover, unroll about 10 cm of paper and pass it through the opening.

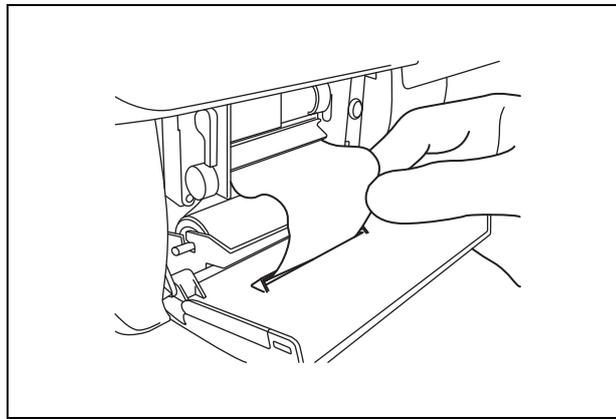


Figure 3.34

2. Close the printer cover and cut any excess paper projecting from the opening.

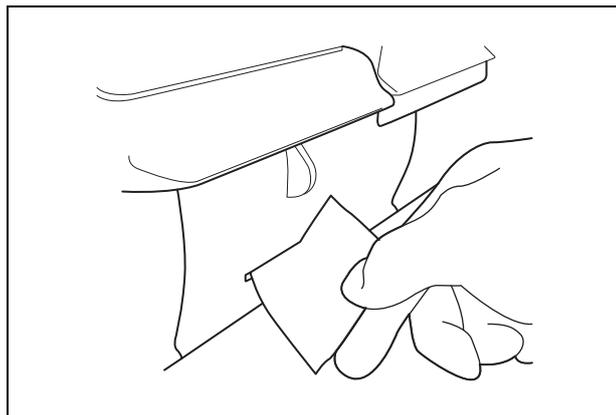


Figure 3.35

## 3.12 Inspecting the communication status (for connecting with external devices)

Inspect the communication status with external devices. This procedure is applied only when the communication is activated.

### CAUTION

- If the communication between the OER-Pro and external device is interrupted, the reprocessing data will be stored in the OER-Pro without being transmitted to external devices. If the communication is kept interrupted, the older data in the OER-Pro may be lost without transmitted to external devices. Immediately resolve the problem when the lamp blinks/goes out to prevent the loss of reprocessing data. If you want to continue the reprocessing program, although the lamp is blinking, print the reprocessing data (including reprocessing results and error results). Otherwise, the loss of reprocessing data may occur.
- Always use Olympus designated external devices for communication with the OER-Pro. Olympus will not support the use of non-designated devices. For more details on external devices available, contact Olympus.

### NOTE

The OER-Pro can store up to 60 reprocessing data (60 reprocessing results and 60 error results). The communication status indicator starts to blink in order to notify that the communication between the OER-Pro and the external devices has been interrupted and the OER-Pro is nearing its maximum capacity for data storage.

Be sure to confirm that the communication status indicator lamp is fully illuminated on the main control panel, and is not blinking.

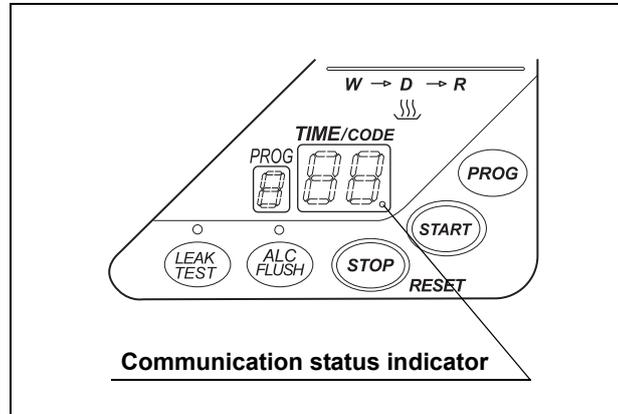


Figure 3.36

○ **When the communication status indicator lamp blinks/goes out**

Check the power supply to the external devices and the connection between the external devices and the OER-Pro. If the problem cannot be resolved, contact Olympus.

# Chapter 4 Reprocessing Operations

Before using this equipment for the first time, full setup is required including installing accessories, connecting power and water supplies and disinfecting the equipment's internal piping. Refer to Instructions-Installation Manual for details. When it has not been used for more than 14 days, refer to Section 7.18, "Care and maintenance after long-term storage" on page 272.

Be sure to perform the preliminary checks before reprocessing endoscopes with this equipment. Otherwise, the equipment may not function at optimal levels. See Chapter 3, "Inspection Before Use" for details on the preliminary checks and Chapter 5, "End-of-Day Checks" for details on the final checks at the end of the day.

Endoscopes must be first cleaned according to one of two ways, prior to reprocessing in the OER-Pro:

## ○ Manual precleaning and cleaning

Immediately after each patient examination, perform bedside cleaning, clean the outer surfaces of the endoscope, brush the forceps elevator (if applicable), brush the suction channel, flush and rinse all channels according to the step-by-step cleaning procedure described in the endoscope's instruction manual. Complete both the prescribed bedside and manual cleaning procedures. After the endoscope undergoes full manual cleaning, it can be reprocessed in the OER-Pro. The OER-Pro then provides supplemental cleaning and high-level disinfection.

## ○ Modified precleaning and cleaning

Immediately after each patient examination, perform the bedside-cleaning and manual-cleaning procedures for the endoscope as described in the endoscope's instruction manual, but with the modifications described in Section 4.3, "Endoscope precleaning and manual cleaning" on page 79. This section describes: 1) how certain steps performed at the bedside can be performed using less fluid volume, and using water in place of detergent, 2) how the manual steps for brushing the channels and the elevator (if applicable), and for cleaning the outside surfaces of the endoscope are unchanged, but 3) how the requirement to connect certain flushing tubes, and the need to manually flush detergent and rinse water through the channels can be omitted. The functions of the modified/omitted steps are covered by the cleaning process of the OER-Pro. After cleaning the endoscope following this modified procedure, the endoscope can be placed in the OER-Pro. The OER-Pro completes the cleaning process and follows this with high-level disinfection.

**WARNING**

- When using the disinfectant solution and alcohol, Olympus recommends the use of gas filters and running this equipment in well-ventilated areas.
  - Wear a face mask, 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.

- Always wear appropriate personal protective equipment, such as eyewear, face mask, moisture-resistant clothing, and chemical-resistant gloves that fit properly and are long enough so that your skin is not exposed. Otherwise, blood and mucus attached to the endoscopes could cause an infection.
- All personal protective equipment should be inspected before use and replaced periodically before it is damaged.
- Before using this equipment for the first time, after storage for 14 days or after the integrity of the water system is compromised, such as water filter replacement, disinfection of the equipment's internal piping is required. If the equipment's internal piping is not properly disinfected, the endoscope will not be properly reprocessed.

**WARNING**

- For any endoscope that requires sterilization, always be sure to sterilize the endoscope as instructed in its instruction manual after cleaning/disinfection in the OER-Pro.
- Certain endoscopes cannot be reprocessed with this equipment. Refer to the provided “List of compatible Endoscopes/Connecting Tubes <OER-Pro>” to see which endoscopes are compatible. Accessories (e.g., valves) that can be reprocessed with this equipment are accessories of endoscopes compatible with this equipment. To reprocess accessories, be sure to put them in the washing case. Do not attempt to reprocess an endoscope and its accessories that are not designated as compatible with the OER-Pro or that are modified by a third party repair company; not only will the equipment be unable to function at optimal levels, the safety of the patient and operator may be endangered and this equipment and/or the endoscope may be damaged.
- When reprocessing JF-140F, TJF-140F, TJF-160F, TJF-160VF, and TJF-Q180V duodenoscopes using OER-Pro, conduct precleaning and manual cleaning as detailed in each duodenoscope’s reprocessing manual.

The following figure shows the general flow of the OER-Pro’s reprocessing steps. For reliable reprocessing, it is important to understand the cleaning and disinfection procedures thoroughly before using the equipment.

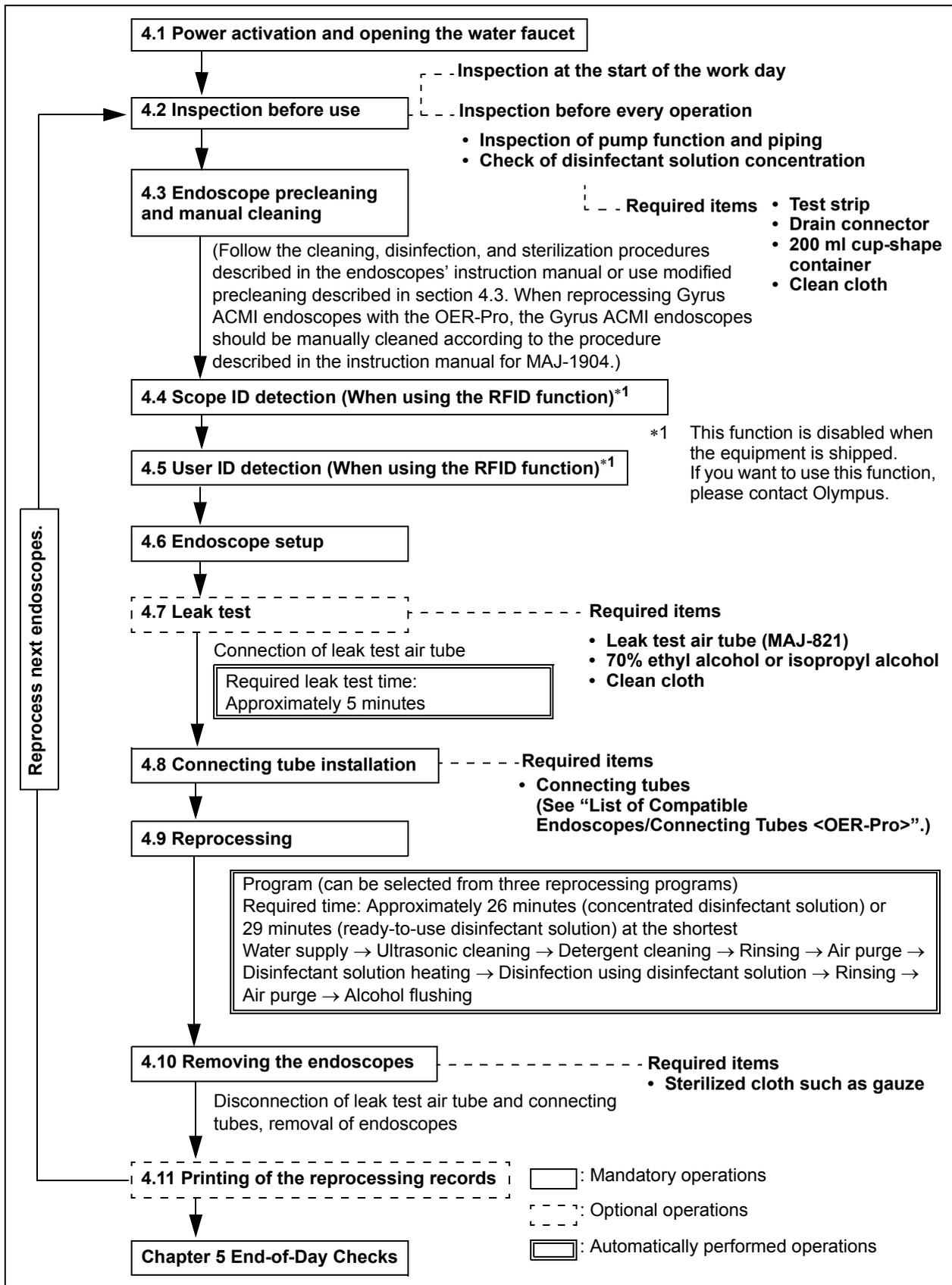


Figure 4.1

## 4.1 Power activation and opening the water faucet

### **WARNING**

If the Periodic Maintenance indicator on the main control panel blinks, the time for regularly scheduled maintenance is near. When the lamp starts to blink, be sure to contact Olympus immediately and perform the maintenance. If you do not know when the lamp started to blink, do not use the device and contact Olympus. Otherwise, effectiveness of the reprocessing may be compromised.

1. Press the power switch ON. When it is turned ON, the lamp (green) in the power switch should light up and the main and subcontrol panel displays should turn ON.

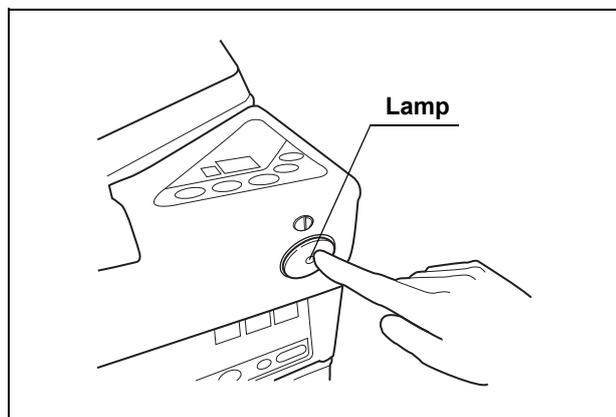


Figure 4.2

**NOTE**

After the power activation, software version number is displayed on the main control panel for only 500 msec. After software version goes out, program number [1] and estimated required time are displayed on the main control panel, and the equipment is in standby.

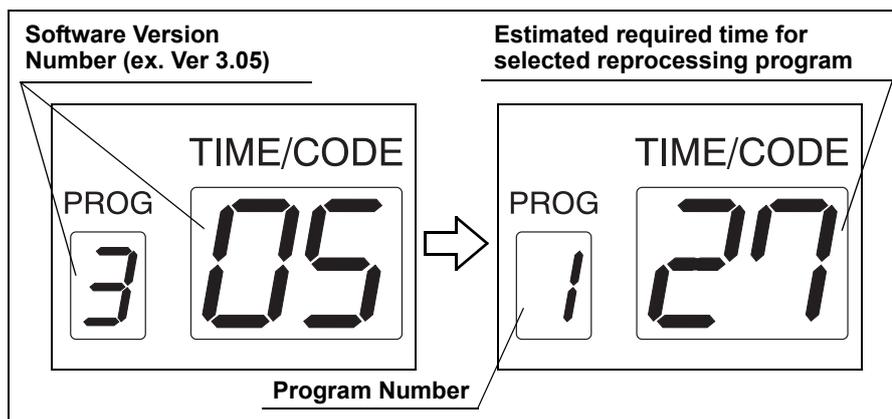


Figure 4.3

2. Open the water faucet. Make sure that no water leaks from the equipment and water supply hose connectors.

**○ If the main and subcontrol panel displays do not turn ON**

Set the power switch to OFF, wait for about 5 seconds, and then set the power switch to ON again. If the same problem recurs, set the power switch to OFF and contact Olympus.

**CAUTION**

Do not set the power switch to ON in less than 5 seconds after setting it to OFF. Otherwise, the equipment may malfunction or fail.

### ○ If the lamp in the power switch does not turn ON

If the lamp in the power switch does not turn ON, check the equipment with the following procedure. If the problem still persists after checking, set the power switch to OFF and contact Olympus.

#### **DANGER**

- Before removing the fuse box, be sure to set the power switch to OFF and unplug the power cord from the connector on the equipment and the hospital-grade power outlet. Otherwise, a fire or an electric shock may result.
- To prevent an electric shock, do not check or inspect the equipment with wet hands.

1. Ensure that the power cord is connected securely to the connector on the equipment and to the hospital-grade power outlet.
2. Set the power switch to OFF and unplug the power cord from the hospital-grade power outlet.
3. Unplug the power cord from the power cord receptacle on the equipment.
4. Push the tabs on the fuse box in the directions shown and take out the fuses (see Figure 4.4).

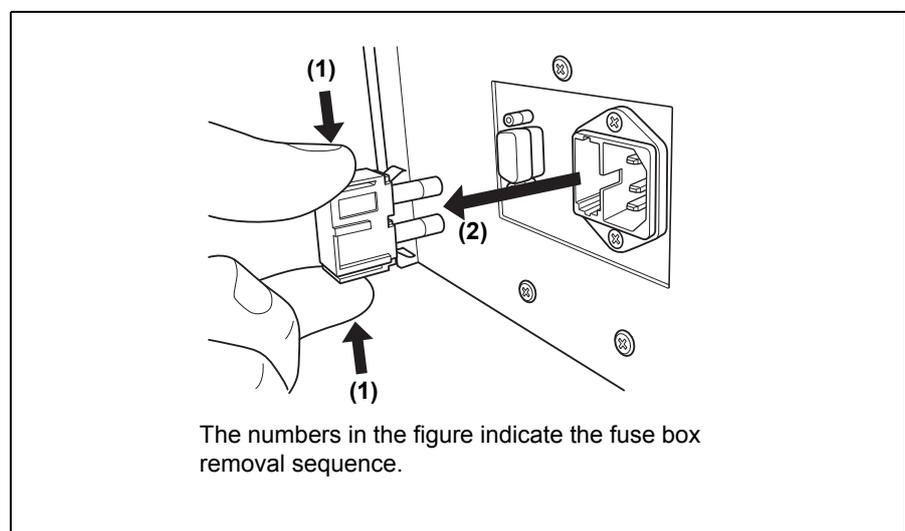


Figure 4.4

5. Visually confirm that neither fuse is blown.

**WARNING**

Always use the fuses specified below. Otherwise, malfunction or failure of the equipment may cause a fire or an electric shock.

- Spare fuses: DB181500

**CAUTION**

If the lamp in the power switch does not light even when neither fuse is blown or after the fuses are replaced, contact Olympus.

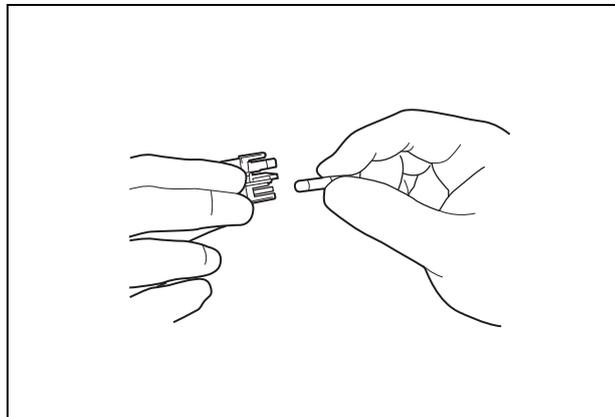


Figure 4.5

6. Push the fuse box into the equipment until it clicks. Confirm that both of the tabs above and below the fuse box are fitted firmly into the equipment body.
7. Connect the power cord, set the power switch to ON and confirm that the lamp in the power switch is illuminated.

**DANGER**

If the lamp in the power switch does not light even after the fuses are replaced, be sure to unplug the power cord from the power outlet. Otherwise, an electric shock may result.

## **4.2 Inspection before use**

The equipment should be inspected before use to ensure safe operation. For details on the items to check and how to check them, see Chapter 3, “Inspection Before Use”.

## **4.3 Endoscope precleaning and manual cleaning**

Endoscopes must be first cleaned according to one of two ways, prior to reprocessing in the OER-Pro:

### **○ Manual precleaning and cleaning**

Immediately after each patient examination, perform bedside cleaning, clean the outer surfaces of the endoscope, brush the forceps elevator (if applicable), brush the suction channel, flush and rinse all channels according to the step-by-step cleaning procedure described in the endoscope’s instruction manual. Complete both the prescribed bedside and manual cleaning procedures. After the endoscope undergoes full manual cleaning, it can be reprocessed in the OER-Pro. The OER-Pro then provides supplemental cleaning and high-level disinfection.

### **○ Modified precleaning and cleaning**

Immediately after each patient examination, perform the bedside-cleaning and manual-cleaning procedures for the endoscope as described in the endoscope’s instruction manual, but with the modifications described in this section. This section describes: 1) how certain steps performed at the bedside can be performed using less fluid volume, and using water in place of detergent, 2) how the manual steps for brushing the channels and the elevator (if applicable), and for cleaning the outside surfaces of the endoscope are unchanged, but 3) how the requirement to connect certain flushing tubes, and the need to manually flush detergent and rinse water through the channels can be omitted. The functions of the modified/omitted steps are covered by the cleaning process of the OER-Pro. After cleaning the endoscope following this modified procedure, the endoscope can be placed in the OER-Pro. The OER-Pro completes the cleaning process and follows this with high-level disinfection.

**WARNING**

- Always preclean each endoscope immediately after the examination. If precleaning is not executed promptly, debris will solidify and may prevent effective reprocessing. Failure to preclean will leave excessive amounts of debris adhering to the endoscope and may compromise the effectiveness of the reprocessing. It may also result in debris accumulating in the endoscope, preventing the endoscope from working correctly.
- Remove all accessories (for Gyrus ACMI video scopes, including the edgecard protector) before performing the manual cleaning procedure. Otherwise, the reprocessing may be insufficient.

***Modified manual cleaning process for preparing Olympus endoscopes for processing in the OER-Pro***

Endoscopes must be subject to cleaning by the user prior to reprocessing in the OER-Pro. However, when using the OER-Pro, the endoscope can be reprocessed according to the modified procedure described below.

**WARNING**

- The cleaning steps for external surfaces, the forceps elevator, and reusable parts must be performed according to the reprocessing instructions provided in the endoscope manual. Failure to preclean may compromise the effectiveness of the reprocessing.
- Valves and accessories must be manually cleaned as per the endoscope manual prior to placement in the OER-Pro. Otherwise, effectiveness of the reprocessing may be compromised.
- Ultrasonic probes must be manually cleaned as per the ultrasonic probe manual prior to placement in the OER-Pro. Otherwise, effectiveness of the reprocessing may be compromised.
- Gyrus ACMI endoscopes must be cleaned as per the instruction manual for MAJ-1904 prior to placement in the OER-Pro. Otherwise, effectiveness of the reprocessing may be compromised.
- When reprocessing JF-140F, TJF-140F, TJF-160F, TJF-160VF, and TJF-Q180V duodenoscopes using OER-Pro, conduct precleaning and manual cleaning as detailed in each duodenoscope's reprocessing manual.

### ***Endoscope Precleaning (Procedure performed at bedside immediately after patient examination)***

Perform the following precleaning procedure when reprocessing Olympus flexible endoscopes with the OER-Pro.

#### **○ Wipe down the insertion section**

Wipe the entire insertion section with a clean, lint-free cloth soaked in clean water. Wipe from the boot of the control section toward the distal end.

### ***Endoscope Precleaning continued (Procedure performed at bedside immediately after patient examination)***

Based upon the Olympus endoscope model described below, suction and/or flush endoscope channels as specified to confirm channels are not obstructed.

#### **○ For endoscopes with an instrument and suction channel, confirm that the instrument and suction channel is not obstructed**

1. Aspirate or flush clean water into the instrument and suction channel to confirm that the channel is not obstructed and to remove gross debris. If aspirating, confirm that a continuous water flow to the suction container is observed. If flushing, confirm that water is emitted from that channel at the distal end. Perform this procedure in accordance with the reprocessing instructions provided in the endoscope manual.
2. Aspirate or flush air into the instrument and suction channel in accordance with the reprocessing instructions provided in the endoscope manual.

#### **○ For endoscopes with an air/water channel, confirm that the air/water channel is not obstructed**

1. Feed clean water through the air/water channels in accordance with the reprocessing instructions provided in the endoscope manual. Remove the distal tip from the water. Check for continuous water flow from the air/water nozzle to confirm that the channel is not obstructed.
2. Feed air through the air/water channels in accordance with the reprocessing instructions provided in the endoscope manual.

- **For endoscopes with an auxiliary water channel, confirm that the auxiliary water channel is not obstructed**
  1. Slowly flush clean water through the auxiliary water channel in accordance with the reprocessing instructions provided in the endoscope manual. In order to confirm that the auxiliary water channel is not obstructed, check for a continuous flow of water exiting from the channel.
  2. Slowly flush air through the auxiliary water channel several times in accordance with the reprocessing instructions provided in the endoscope manual. Perform this operation until a steady stream of air bubbles exits from the distal end.
  
- **For ultrasonic endoscopes with balloon channels, confirm that the balloon channel is not obstructed**
  1. Aspirate or flush clean water through the balloon channel in accordance with the reprocessing instructions provided in the endoscope manual. In order to confirm that the balloon channel is not obstructed, check for a continuous flow of water exiting from the channel.
  2. Aspirate or flush air through the balloon channel in accordance with the reprocessing instructions provided in the endoscope manual.
  
- **For ultrasonic endoscopes with de-aerated water supply channel, confirm that the de-aerated water supply channel is not obstructed**
  1. Aspirate clean water through the de-aerated water supply channel in accordance with the reprocessing instructions provided in the endoscope manual. In order to confirm that the de-aerated water supply channel is not obstructed, check for a continuous flow of water exiting from the channel.
  2. Aspirate air through the de-aerated water supply channel in accordance with the reprocessing instructions provided in the endoscope manual.
  
- **For endoscopes with an elevator wire channel, confirm that the elevator wire channel is not obstructed**
  1. Slowly flush clean water through the elevator wire channel in accordance with the reprocessing instructions provided in the endoscope manual. In order to confirm that the elevator wire channel is not obstructed, check for a flow of water exiting from the channel.
  2. Slowly flush air through the elevator wire channel several times in accordance with the reprocessing instructions provided in the endoscope manual. Perform this operation until a steady stream of air bubbles exits from the distal end.

○ **For all endoscopes - Disconnect the endoscope, reusable parts and reprocessing equipment**

Disconnect the endoscope, reusable parts and reprocessing equipment according to the reprocessing instruction provided in the endoscope's manual. Place the reusable parts such as air/water valve, suction valve and biopsy valve in a container of clean water.

***Leakage testing***

Perform leakage testing on the endoscope according to the reprocessing instruction provided in the endoscope's manual.

***Manual cleaning (Procedure performed in reprocessing area)***

After completing the leakage test, perform manual cleaning according to the procedures described below. In case of excessive bleeding and/or delayed reprocessing, perform "Presoak for excessive bleeding and/or delayed reprocessing after each procedure" according to the reprocessing instructions provided in the endoscope's manual.

○ **Preparation**

Fill a basin with detergent solution at the temperature and concentration recommended by the detergent manufacturer. Use a basin that is at least 40 cm by 40 cm (16" by 16") in size and deep enough to completely immerse the endoscope.

○ **Manual cleaning of the external surfaces**

Perform manual cleaning of the external surfaces in accordance with the reprocessing instructions provided in the endoscope manual.

○ **Brushing the endoscope (i.e., channels, valve cylinders, and other ports if present)**

Brush the endoscope in accordance with the reprocessing instructions provided in the endoscope manual, including the instrument and suction channels, balloon channels, de-aerated water supply channel, suction cylinders, instrument channel ports, forceps elevator and distal end as applicable.

### ○ **Flushing the interior of the forceps elevator**

1. Immerse the distal end in detergent solution, and operate the elevator control lever in accordance with the reprocessing instructions provided in the endoscope manual.
2. With the forceps elevator raised, flush the interior of the forceps elevator in accordance with the reprocessing instructions provided in the endoscope manual.

### ○ **Cleaning the endoscope's accessories**

Manually clean the reusable parts such as the air/water valve, suction valve and biopsy valve, according to the instructions provided in the endoscope manual.

## ***Loading the endoscope and their accessories into the OER-Pro***

Carefully lift the endoscope out of the detergent solution, allowing excess fluid to drain into the basin. Carry the endoscope to the reprocessing basin of the OER-Pro. Place the endoscope in the reprocessing basin and connect the required Connecting Tube(s) to the endoscope and put the valves in the washing case in the center of the retaining rack according to the Instruction Manual of the OER-Pro. Continue reprocessing, according to the Instruction Manual of the OER-Pro.

## **4.4 Scope ID detection**

To maintain an endoscope reprocessing log, this equipment is capable of recognizing the individual scope ID that identifies the endoscope being reprocessed. The RFID function that enables this operation is deactivated at the factory. If you want to use this function, contact Olympus. When the RFID function is disabled, neither the scope nor user ID is detected. If you are not using the scope ID function, you may skip this section and the following section and go to Section 4.6, "Endoscope setup" on page 89.

### **WARNING**

This equipment can be set up to use the RFID function. Please be aware that the radio waves emitted from the RFID reader of the equipment may cause medical devices such as pacemakers to malfunction. If any interference with the equipment is observed, immediately move away from the RFID reader or set the power switch to OFF. Call your doctor if you do not begin to feel better.

**CAUTION**

- When reprocessing two endoscopes simultaneously, be sure to read the scope IDs of both scopes. Otherwise, the reprocessing log will not be accurate.
- Be careful not to bang the scope ID tag on the RFID reader of the equipment during scope ID recognition. Otherwise, the scope ID tag or RFID reader may be damaged.
- Electromagnetic interference with other devices may reduce the communication distance of the designated ID tag and cause signals to become unreadable. Try to take mitigation measures such as keeping other radio frequency emitting or other energy emitting devices, such as electrosurgical units, away from this equipment.

**NOTE**

- The START button on the main control panel will not function until the scope ID has been recognized.
- You can print out the reprocessing log for each endoscope with the printer, including when and under what condition the endoscope is reprocessed.
- If the equipment fails to detect the scope ID, apply the provided scope ID master card to the RFID reader so that the equipment recognizes the scope ID as the master ID. If a problem with the scope ID is observed, contact Olympus.
- In the event that you require a new or additional scope ID tag, for example due to purchase of a new endoscope or use of a demo/loaner endoscope, contact Olympus.
- When reprocessing any products which external ID tags cannot be attached (e.g., auxiliary water tubes, ultrasonic probes), read the scope ID master card.

1. Hold the internal ID-type endoscope connector or the external ID tag to the RFID reader of the equipment, and scan the tag with the reader until a short beep sounds.

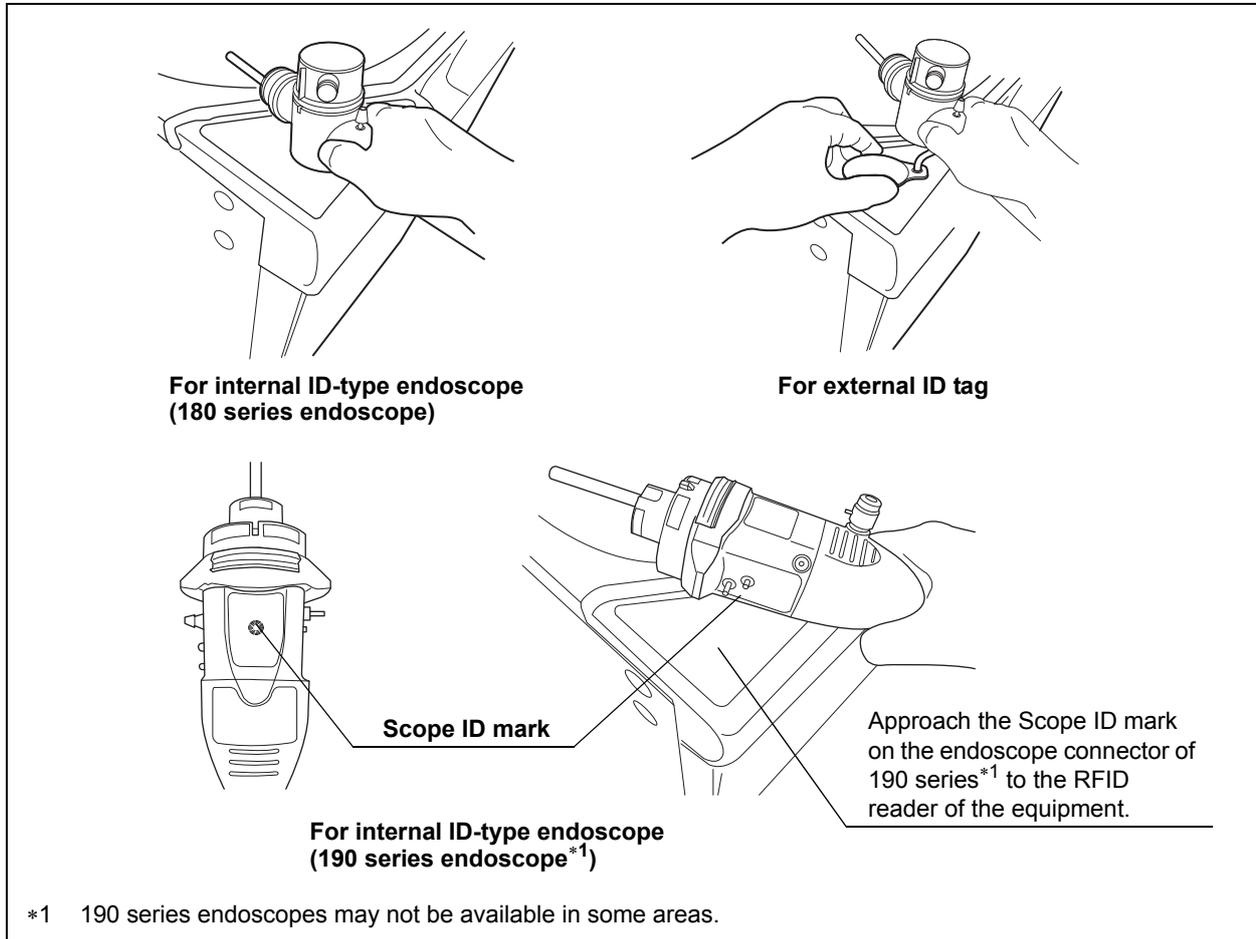


Figure 4.6

2. Make sure that the Scope ID detection indicator on the main control panel lights up.

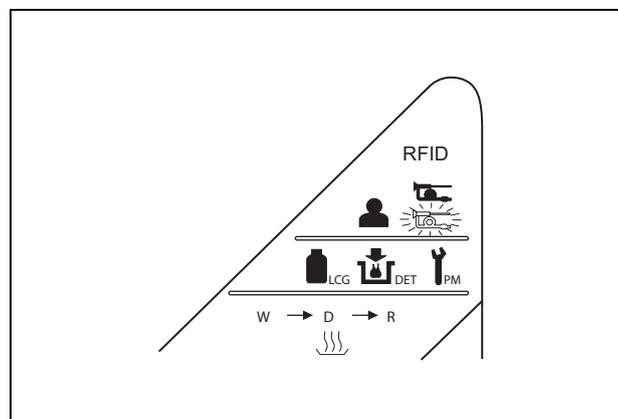


Figure 4.7

3. When reprocessing two endoscopes, ensure that the second scope ID is detected by repeating Steps 1 and 2 with the second endoscope.

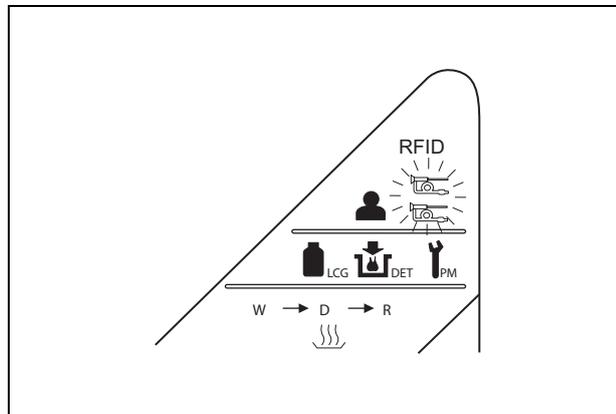


Figure 4.8

**NOTE**

- The lower Scope ID detection indicator lights when the first scope ID has been detected, and the upper Scope ID detection indicator lights when the second scope ID has been detected.
- Up to two scope IDs can be recognized at a time. Error code [E91] is displayed if you attempt to have the equipment detect a third scope ID. If this error code is displayed, press the STOP/RESET button to clear it and restart the scope ID detection procedure from the first endoscope.

## 4.5 User ID detection

To maintain an endoscope reprocessing log, this equipment is capable of recognizing the user ID of the reprocessing operator.

The RFID function that enables this operation is deactivated at the factory. If you want to use this function, contact Olympus. When the RFID function is disabled, neither the endoscope nor user ID is detected. If you are not using this function, you may skip this section and go to Section 4.6, “Endoscope setup” on page 89.

**WARNING**

This equipment can be set up to use the RFID function. Please be aware that the radio waves emitted from the RFID reader of the equipment may cause medical devices such as pacemakers to malfunction. If any interference with the equipment is observed, immediately move away from the RFID reader or set the power switch to OFF. Call your doctor if you do not begin to feel better.

**CAUTION**

Electromagnetic interference with other devices may shorten the communications distance of the designated ID tag and cause signals to become unreadable. Try to take mitigation measures such as keeping other radio frequency emitting or other energy emitting devices, such as electrosurgical units, away from this equipment.

**NOTE**

- The START button on the main control panel will not function until the user ID card has been recognized.
- Do not leave a user ID card near the RFID reader.
- You can print out the user name read from the user ID card with the printer.
- For addition or reissue of a user ID card, contact Olympus.
- If the equipment fails to detect the user ID, apply the provided user ID master card to the RFID reader so that the equipment recognizes the user ID as the master ID. If a problem with the scope ID is observed, contact Olympus.

1. Hold the reprocessing operator's user ID card parallel to the RFID reader and scan the card with the reader until the equipment generates a short beep.

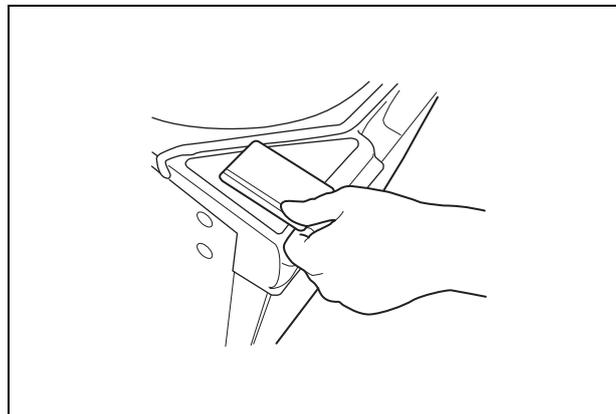


Figure 4.9

2. Make sure that the User ID detection indicator on the main control panel lights up.

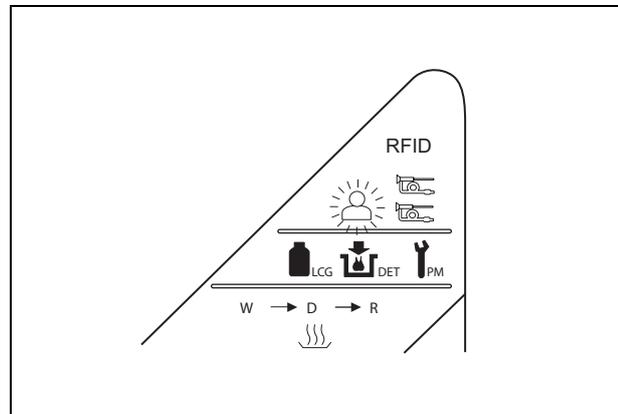


Figure 4.10

**NOTE**

- If the User ID detection indicator on the main control panel does not light up, the equipment has not recognized the user ID card. Try scanning the user ID card with the RFID reader again.
- Only one user ID can be recognized at a time. Error code [E91] is displayed if you attempt to have the equipment recognize a second user ID. If this error code is displayed, press the STOP/RESET button to clear it and restart the user ID recognition procedure.

## 4.6 Endoscope setup

Place the endoscopes to be reprocessed in the reprocessing basin.

**WARNING**

- When placing the endoscopes in the basin, make sure that the major parts such as the insertion tube and universal cord are not piled upon each other. If the endoscopes are placed carelessly with many parts piled on upon one another reprocessing may be ineffective.
- Do not attempt to reprocess an endoscope that is not designated for use with the equipment. Do not reprocess two endoscopes that should not be reprocessed simultaneously with each other. Doing so will prevent the equipment from functioning properly and may endanger the safety of the patient and operator. In this case, the durability of the equipment and its ancillary equipment cannot be guaranteed.

**WARNING**

- Place only the valves and other specified endoscope components in the washing case in the reprocessing basin. If any object other than those specified is placed in the washing case, reprocessing of the endoscope valves will not be effective.
- The injection adapter (MAJ-1235) cannot be reprocessed with the equipment. If it is placed in the washing case, reprocessing of this adapter will not be effective.
- If the endoscope has a forceps elevator, raise the forceps elevator to an angle of approximately 45° and set it so that the back of the forceps elevator can be sufficiently cleaned and disinfected.
- When reprocessing Gyrus ACMI endoscopes, rotate the irrigation/biopsy port to ensure a proper fit into the OER-Pro basin. Follow the instructions outlined in the MAJ-1904 instruction manual for proper endoscope configuration, otherwise reprocessing may be insufficient.
- The biopsy valve should be opened before being placed in the reprocessing basin. Also, other accessories that can be disassembled should be disassembled before being placed in the washing case. Otherwise, they may not be sufficiently reprocessed.
- If the distal end cap of an endoscope is removable, remove the distal end cap before putting the endoscope in the reprocessing basin. Otherwise, reprocessing may be insufficient.
- Do not clog the circulation port inside the reprocessing basin. Otherwise, the liquid feed pressure on the endoscopes will be decreased and reprocessing will be insufficient.
- When placing endoscopes into the reprocessing basin, ensure that the endoscope(s) is loaded in a manner that it will be fully submerged in the disinfectant, i.e., All parts of the endoscope are below in the index bar as instructed in this chapter.
- Do not use the white-colored conventional retaining rack (GL830600) for reprocessing 190 series endoscopes\*<sup>1</sup>. Otherwise, reprocessing may be insufficient.

\*1 190 series endoscopes may not be available in some areas.

**WARNING**

- When reprocessing an ultrasonic endoscope, always use the specially designed retaining rack (MAJ-840: blue colored). If the retaining rack (MAJ-1970: pink colored) is used for the ultrasonic endoscope, reprocessing may be insufficient.

**CAUTION**

- When placing an endoscope that requires a water-resistant cap (EVIS or EXERA video endoscope, ultrasonic endoscope, etc.) in the basin, be sure to attach the water-resistant cap as described in the endoscope's instruction manual. If you forget to attach the water-resistant cap or if you attach the water-resistant cap when it's wet inside, the endoscope may malfunction due to fluid invasion.
- When setting each endoscope in the reprocessing basin, confirm that it is not excessively scratched, which could result in water leakage. If any irregularity is observed, do not place the endoscope in the equipment and contact Olympus for repair.
- To prevent damage, make sure to set up the endoscopes so that the distal ends will not fall out of the retaining rack or come in direct contact with the wall of the reprocessing basin.
- When reprocessing an ultrasonic endoscope, always use the specially designed MAJ-840 retaining rack (optional). Otherwise, the endoscope or reprocessor may be damaged.
- When heating the disinfectant solution, disconnect the leak test air tube from the equipment and remove it from the reprocessing basin. Otherwise, disinfectant solution may get inside the leak test air tube and the endoscope and cause damage.

**NOTE**

You may reprocess four auxiliary water tubes (MAJ-855) simultaneously using two MAJ-1904s. Refer to "List of Compatible Endoscopes/Connecting Tubes <OER-Pro>" for other combinations including endoscopes.

## Endoscope setup sequence and positions

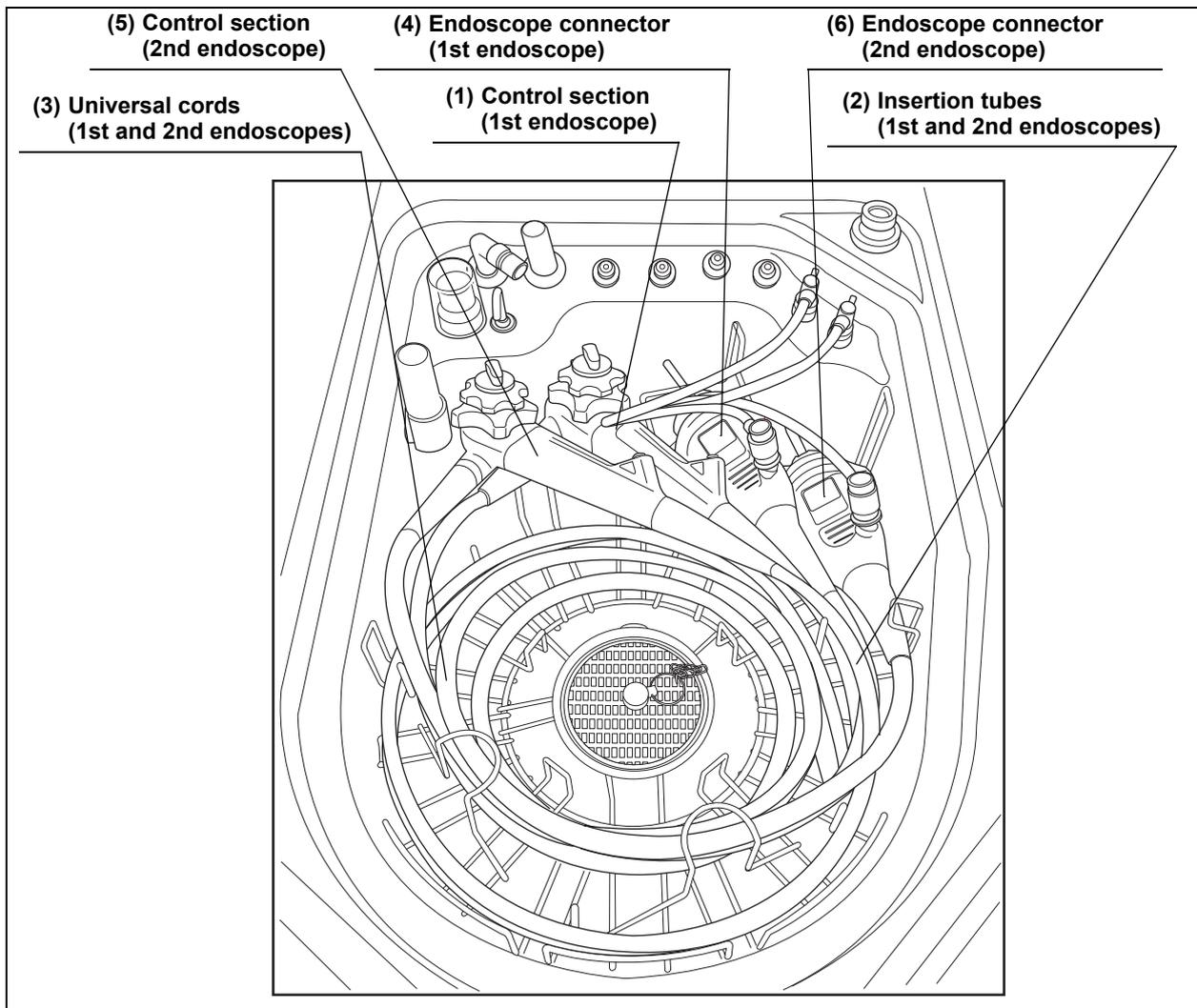


Figure 4.11

When placing one endoscope, place the components in the reprocessing basin in the following order:

- (1) Control section (1st endoscope)
- ↓
- (2) Insertion tube
- ↓
- (3) Universal cord
- ↓
- (4) Endoscope connector (1st endoscope)

When placing the second endoscope, place the components in the reprocessing basin in the following order:

- (5) Control section (2nd endoscope)
- ↓
- (2) Insertion tube
- ↓
- (3) Universal cord
- ↓
- (6) Endoscope connector (2nd endoscope)

1. Step on the foot pedal to open the lid.
2. Gently place the control section of the first endoscope in the specified position (over the white marker) in the retaining rack ensuring that it is below the index bar (place the control section in the deep part of the reprocessing basin so that it will not be scratched) (see Figure 4.12).

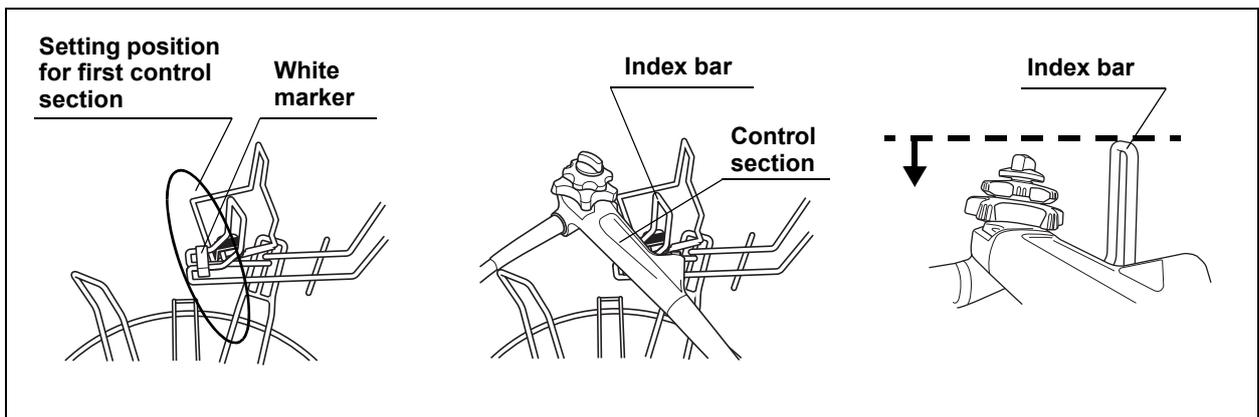


Figure 4.12

3. Wind the insertion tube clockwise around the retaining rack from the perimeter in (wind the first turn of the insertion tube outside the black markings and the second turn inside them) (see Figure 4.13).

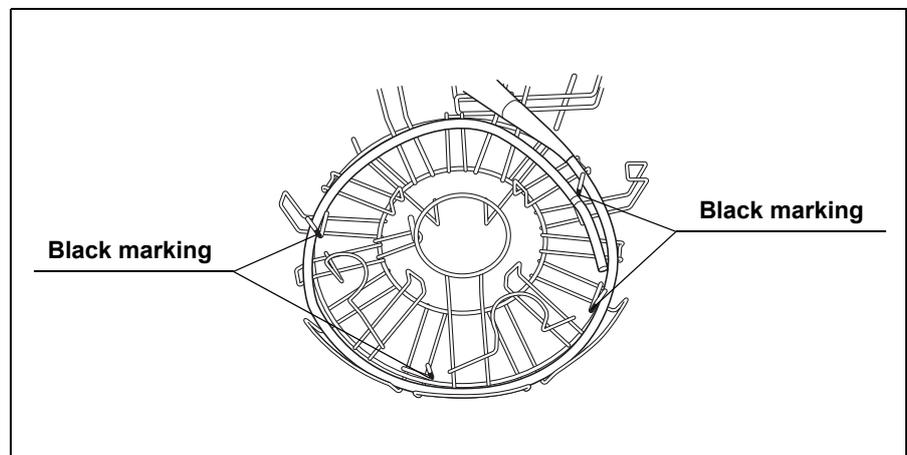


Figure 4.13

4. Wind the universal cord counterclockwise around the inside section of the retaining rack by placing it under the hooks so that it will not move upward (see Figure 4.14). If the scope ID tag is attached to the endoscope, move the scope ID tag toward the endoscope connector. Straighten the ID tag's band if it is twisted.

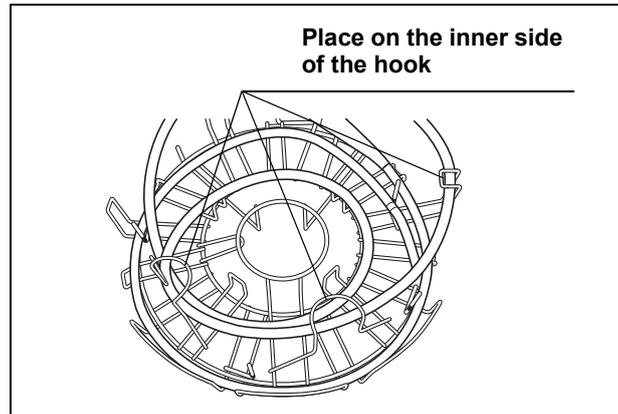


Figure 4.14

○ **When loading a 180 or older series endoscope as a first endoscope**

Tilt the endoscope connector and place it over the black marker located on the left side of the divider as shown in Figure 4.15. If scope ID tag is attached to the endoscope, place the scope ID tag in the position shown in Figure 4.15.

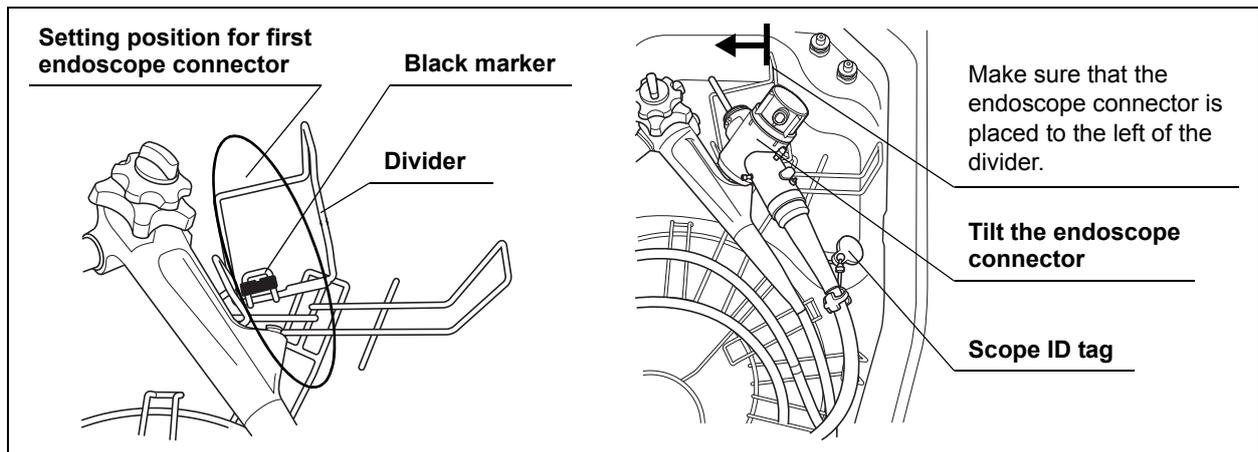


Figure 4.15

**NOTE**

- For setup of “OSF-V60”, “two channel endoscope”, and “ultrasonic endoscope”, refer to the “OER-Pro Quick Reference Guide”.
- When loading only one conventional endoscope or two conventional endoscopes that are 180 series or older, it is possible to place endoscope connector without tilting. In this case, the endoscope connector of the first endoscope should be placed on rear right of the basin horizontally as shown in Figure 4.16. If scope ID tag is attached to the endoscope, place the scope ID tag in the position shown in Figure 4.16.

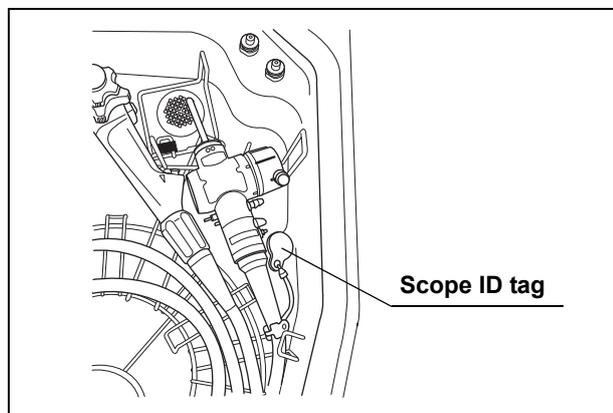


Figure 4.16

○ **When loading a 190 series endoscope\*1 as a first endoscope**

Place the endoscope connector over the black marker located on the left side of the divider as shown in Figure 4.17.

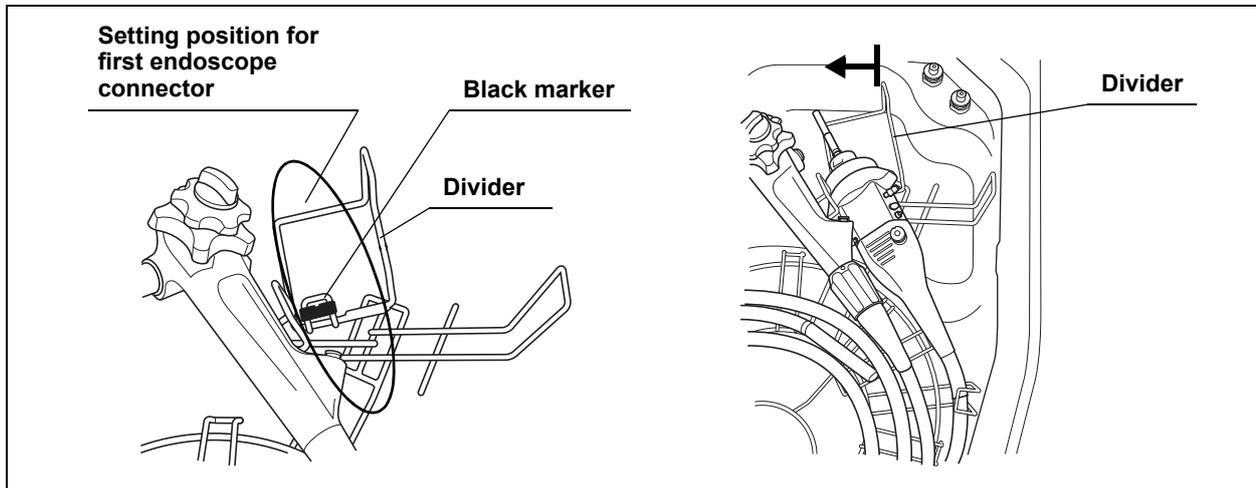


Figure 4.17

5. Adjust the positions of the insertion tube and universal cord to minimize overlapping. Also, adjust the positioning of the insertion tube's distal end by turning the angulation control knobs (lever) on the control section. Again, make sure that the universal cord is placed on the inside of the hook (see Figure 4.14).
6. When placing a second endoscope, repeat Steps 1 to 4 above. The control section of the second endoscope should be placed to the left of the first endoscope as shown in Figure 4.18.

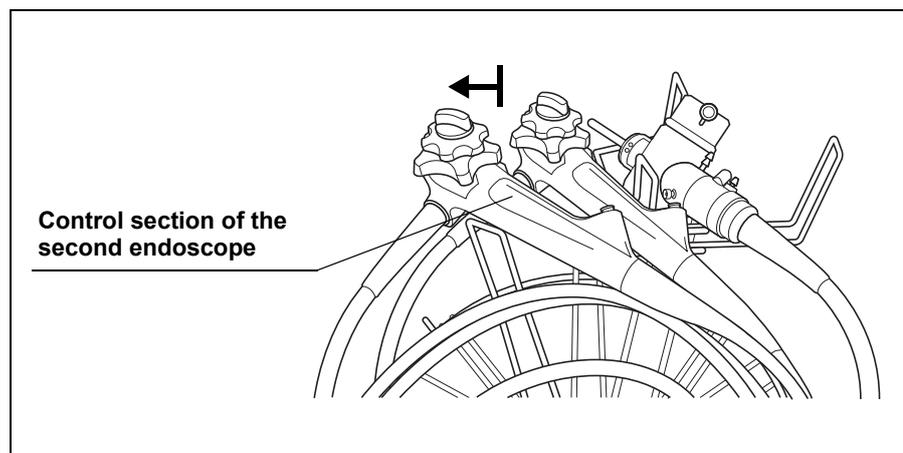


Figure 4.18

\*1 190 series endoscopes may not be available in some areas.

○ **When loading two 180 or older series endoscopes**

As shown in Figure 4.19, tilt the endoscope connector of the second endoscope and put it in place while slightly lifting the endoscope connector of the first endoscope to the left (direction of arrow 1). Place the scope ID tag to the position shown in Figure 4.19.

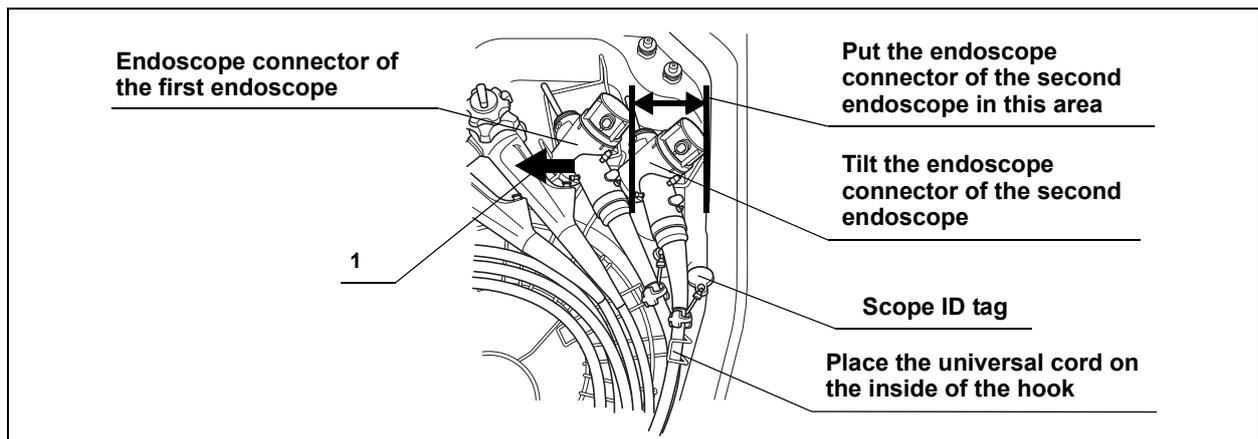


Figure 4.19

**NOTE**

- For setup of “OSF-V60”, “two channel endoscope”, and “ultrasonic endoscope”, refer to the “OER-Pro Quick Reference Guide”.
- When loading only one conventional endoscope or two conventional endoscopes that are 180 series or older, it is possible to place endoscope connector without tilting. In this case, the endoscope connector of the second endoscope should be placed on top of that of the first endoscope as shown in Figure 4.20. Then, place the scope ID tag of the second endoscope to the position shown in Figure 4.20.

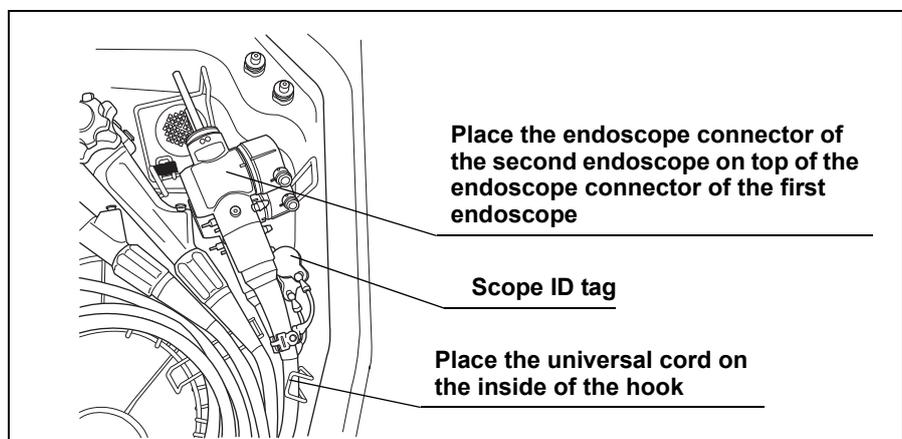


Figure 4.20

○ When loading two 190 series endoscopes\*1

**CAUTION**

When placing the endoscope connector of the second endoscope, hold the endoscope connector of the first endoscope to avoid contact. Otherwise, the endoscope connector of the first endoscope may be damaged by the contact with S-cord connector mount of the second endoscope.

As shown in Figure 4.21, put the endoscope connector of the second endoscope in place while slightly lifting the endoscope connector of the first endoscope to the left (direction of arrow 1).

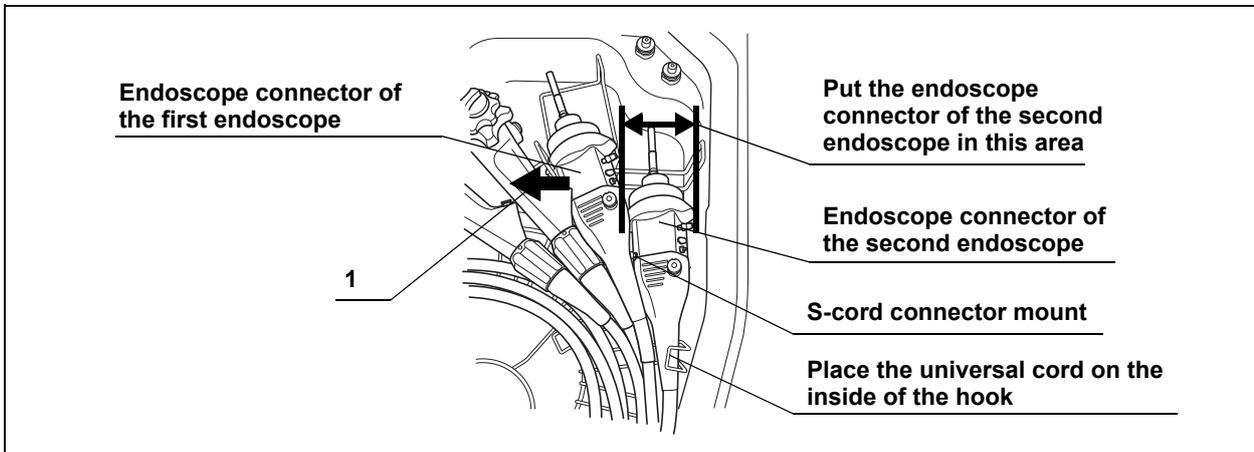


Figure 4.21

\*1 190 series endoscopes may not be available in some areas.

○ **When loading a 180 or older series endoscope and a 190 series endoscope\*<sup>1</sup> simultaneously**

**CAUTION**

When placing the endoscope connector of the second endoscope, hold the endoscope connector of the first endoscope to avoid contact. Otherwise, the endoscope connector of the first endoscope may be damaged by the contact with S-cord connector mount of the second endoscope.

• **Pattern 1**

- First endoscope : 180 or older series endoscope
- Second endoscope : 190 series endoscope\*<sup>1</sup>

As shown in Figure 4.22, put the 190 series endoscope\*<sup>1</sup> connector in place while slightly lifting the endoscope connector of the 180 or older series endoscope to the left (direction of arrow 1).

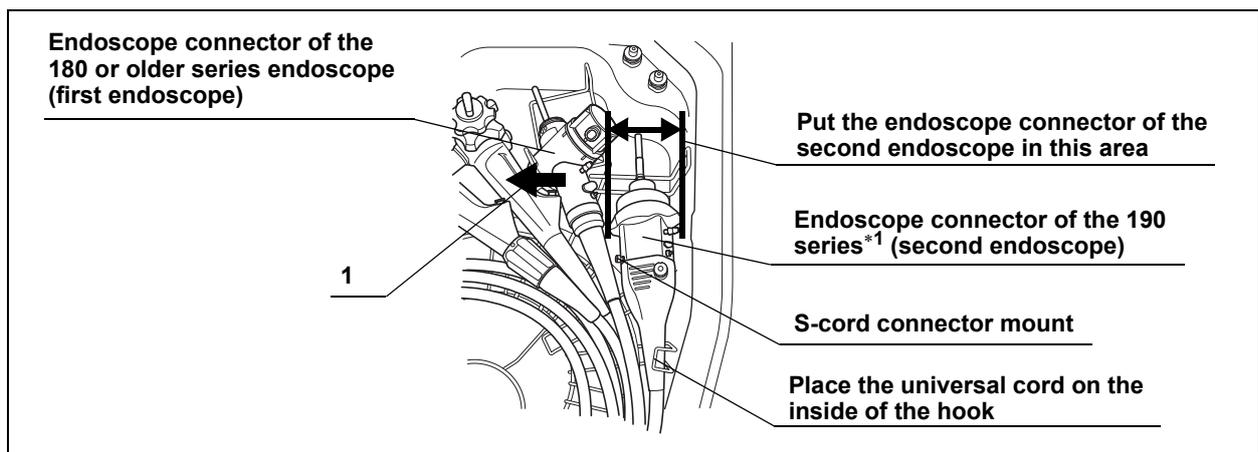


Figure 4.22

• **Pattern 2**

- First endoscope : 190 series endoscope\*<sup>1</sup>
- Second endoscope : 180 or older series endoscope

As shown in Figure 4.23, tilt the endoscope connector of the 180 or older series endoscope in place while slightly lifting the 190 series endoscope\*<sup>1</sup> connector to the left (direction of arrow 1).

\*<sup>1</sup> 190 series endoscopes may not be available in some areas.

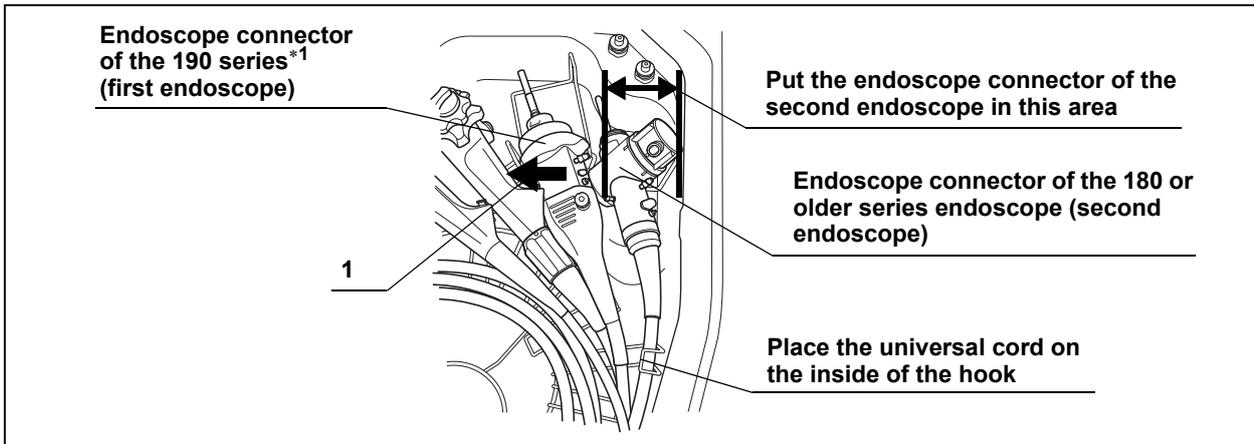


Figure 4.23

**NOTE**

For setup of “OSF-V60”, “two channel endoscope”, and “ultrasonic endoscope”, refer to the “OER-Pro Quick Reference Guide”.

7. Make sure that the endoscope is located below the index bars that mark the disinfectant liquid level (see Figure 4.24).

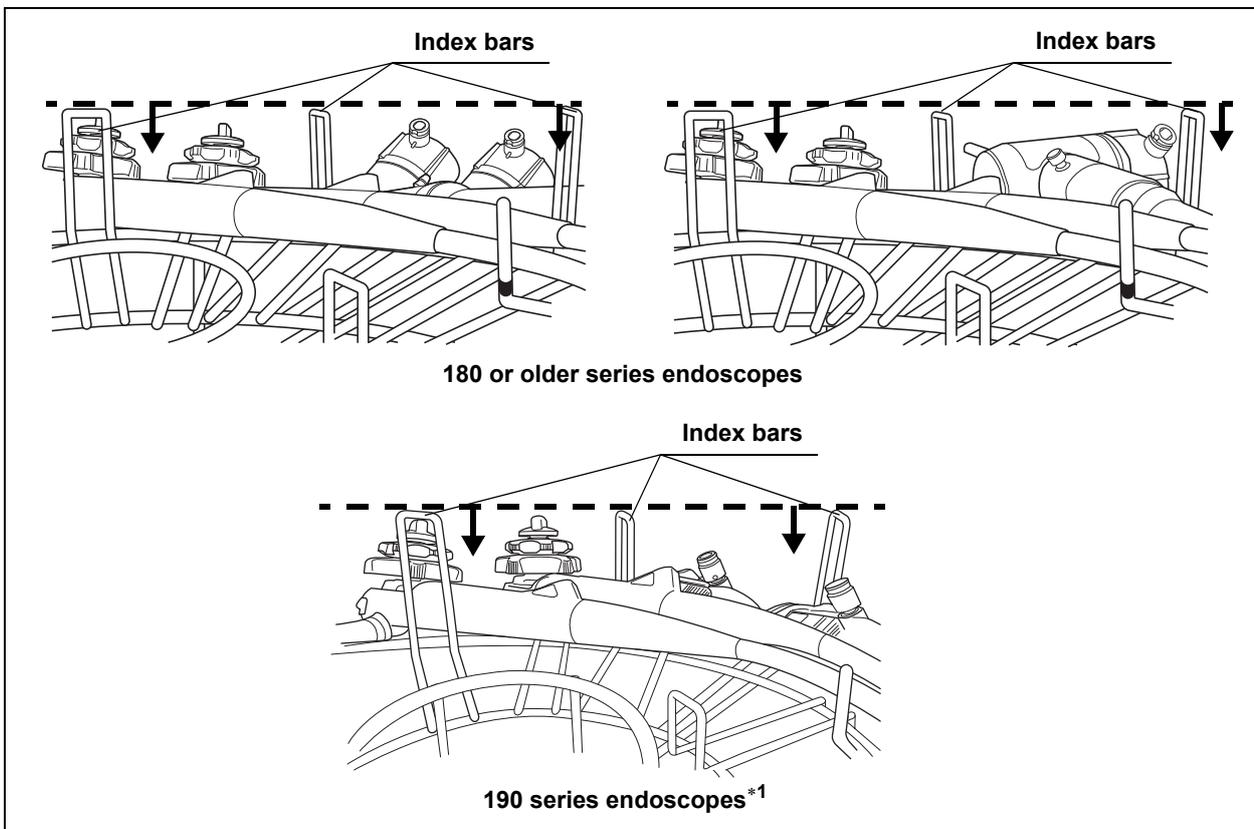


Figure 4.24

\*1 190 series endoscopes may not be available in some areas.

8. Put the valves and other specified endoscope components in the washing case in the center of the retaining rack. Be sure to detach the cap from the main body of the biopsy valve before placing it in the washing case. The auxiliary water inlet cap should be removed from the endoscope and put in the washing case.

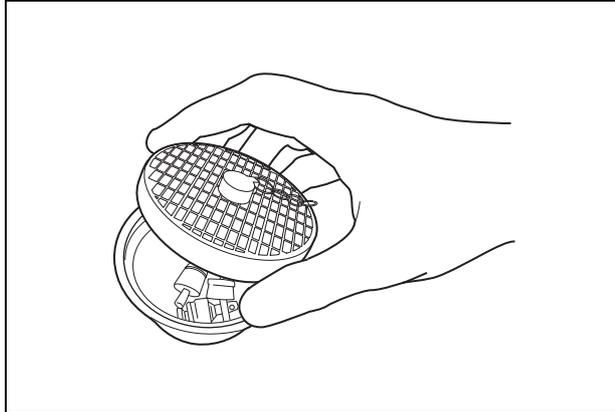


Figure 4.25

9. Close the cover of the washing case.

## 4.7 Leak test

To prevent endoscope damage due to water invasion, always check for leaks before reprocessing the endoscope to ensure that you discover any irregularity, such as small holes, at an early stage. The leak test consists of filling the reprocessing basin with water and observing the endoscope's outer surfaces and the leak test air tube to ensure that air bubbles are not produced continuously from any point and that there is no sound of air leakage. Refer to the "List of Compatible Endoscopes/Connecting Tubes <OER-Pro>" for the necessary tubing required for proper leakage testing.

### CAUTION

- The leak test air tube will disconnect easily if it is not attached properly or if the lock lever is degraded. Air cannot be fed properly if the leak test air tube is bent. In these cases, an accurate leak test is not possible.
- Make sure that there are no cracks, breaks, fissures, scratches, or stains on the leak test air tube. Using an abnormal or damaged leak test air tube may result in an inaccurate leak test or cause the endoscope to malfunction.
- Do not connect the leak test air tube if the inside of the tube, the endoscope's venting connector, or the equipment's leak test connector is wet. Doing so could allow water to get inside the endoscope and cause the endoscope to malfunction.
- When connecting the leak test air tube, ensure that the tube connector is fully and properly attached. Improper connection will prevent the endoscope from being pressurized, preventing an accurate leak test. This could also allow water to get inside the endoscope and cause the endoscope to malfunction.
- Disconnect the connecting tubes before proceeding to leak test. Otherwise, irregularity in the endoscope may not be detected.
- Do not attempt to disconnect the leak test air tube from the endoscope while the test is underway or while water remains in the basin. Doing so will allow water to get inside the endoscope or prevent the endoscope from depressurizing, resulting in damage to the endoscope.
- If water does not start filling the basin about 10 seconds after the leak test has started, press the STOP/RESET button to temporarily stop testing. Check whether the water faucet is open. If not, open it and start leak test again.

**CAUTION**

- If an irregularity is found with the leak test air tube, replace it with a new one and retry the leak test.
- Before starting the leak test, always confirm that there is no foreign material on the ventilation openings on the gas filter cases. Blocking the ventilation not only hinders deodorization but may also cause the device to malfunction.
- Continuous production of air bubbles from a point on the endoscope or the leak test air tube means that water may penetrate at that point. If air bubbles are produced continuously during leak test, discontinue leak test, withdraw the endoscope or the leak test air tube from the reprocessing basin and contact Olympus for endoscope service.

**NOTE**

- During leak test, the angulating section's covering may expand. This is not a malfunction.
- To discontinue the leak test while water is being supplied, press the STOP/RESET button.

1. Place the endoscope carefully, checking the following:
  - The distal end of the insertion tube is straight.
  - The distal end of the insertion tube is not on or beneath another object.
  - The leak test air tube is not twisted.
  - The endoscope is not contacting the lid.
  - The connecting tube is not connected.
2. Wipe the venting connector of the endoscope or the endoscope's water resistant cap with a clean moistened with alcohol.
3. Align the groove on the metal connector of the leak test air tube with the pin on the venting connector of the endoscope or the endoscope's water resistant cap, and turn the connector clock wise by 90° to connect it.
4. If the leak test connector (black) in the reprocessing basin is wet, wipe the entire connector with a clean cloth.

5. Connect the leak test air tube connector (black) to the reprocessing basin's leak test connector (black).

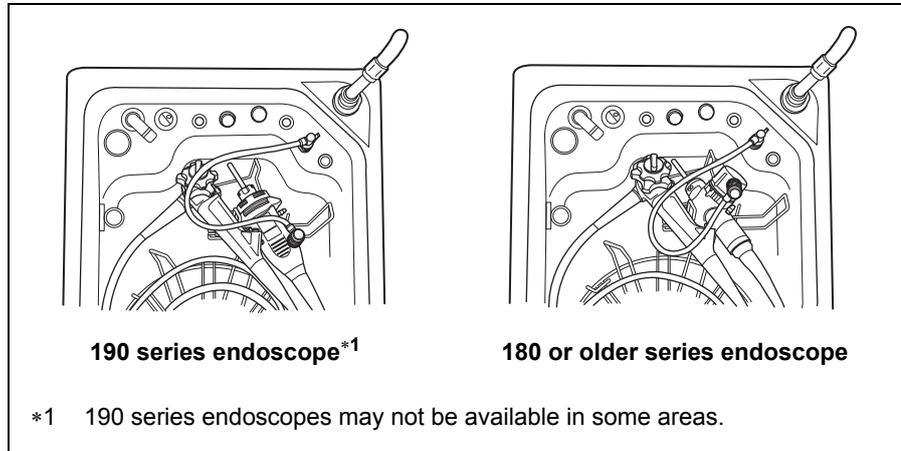


Figure 4.26

6. Close the lid by pushing it until it clicks.

### ***Including leak test in a reprocessing program***

An endoscope leak test can be incorporated in a reprocessing program.

1. Perform Step 1 of the procedure in Section 4.9, "Reprocessing" on page 113.
2. Make sure that the water faucet is open, and then press the LEAK TEST button on the main control panel to select LEAK TEST, and press the START button. The water supply will start and water will fill the reprocessing basin.

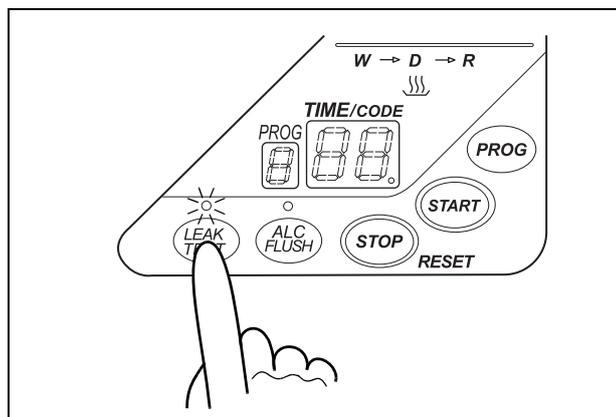


Figure 4.27

3. When the reprocessing basin is filled with water, the buzzer beeps three times and the lid is unlocked.
4. Make sure that the water supply has stopped and then step on the foot pedal to open the lid.

**CAUTION**

When angulating the endoscope's bending section, be careful not to let the bending section touch the reprocessing basin or retaining rack as this could damage the endoscope. After bending, straighten the bending section and place it properly on the retaining rack.

5. Check that there are not any bubbles produced continuously from the outer surface of the endoscope and/or leak test air tube while angulating the bending section of the endoscope. Check for leaks at least for 30 seconds.
6. With the lid open and water in the basin, perform the procedure in Section 4.8, "Connecting tube installation" on page 108 and close the lid. The reprocessing process will start.

**NOTE**

When 10 minutes have passed since the leak test started, the water will drain and the test will finish automatically. At this time, the main control panel displays the error code [E92].

### Performing leak test independently

1. Press the FUNC SEL button on the subcontrol panel to select "LEAK TEST".

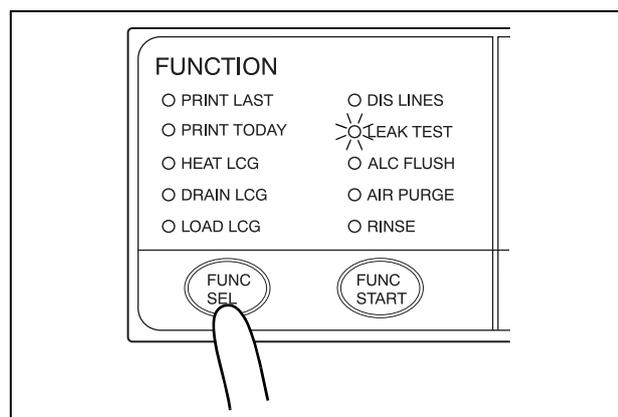


Figure 4.28

2. Press the FUNC START button on the subcontrol panel to start the water supply. When water supply starts, the TIME/CODE display on the main control panel shows a [□] mark spinning as shown below.

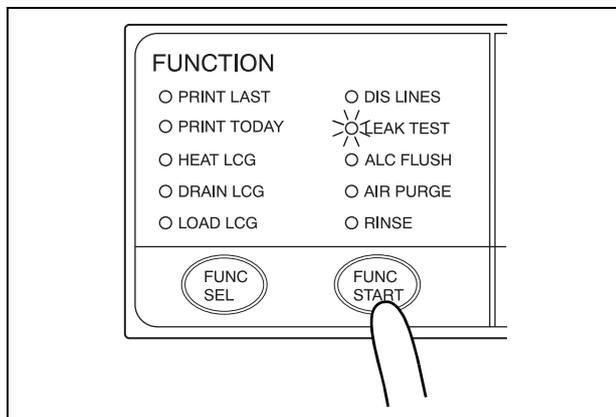


Figure 4.29

3. When the water supply completes, the buzzer beeps three times and the TIME/CODE display shows [10], which indicates 10 minutes. The time displayed on the main control panel counts down every minute.
4. When the lid is unlocked, make sure that the water supply has stopped, and then step on the foot pedal to open the lid.

**NOTE**

When the lid is opened, the TIME/CODE display on the main control panel is reset to [10] and the countdown restarts.

5. Check that there are not any air bubbles produced continuously from the outer surface of the endoscope and/or leak test air tube while angulating bending section of the endoscope. Check for leaks at least for 30 seconds.

6. Close the lid to drain the cleaning fluid and finish leak test. At this time, the buzzer beeps and the main control panel displays [- -] to indicate the end of testing.

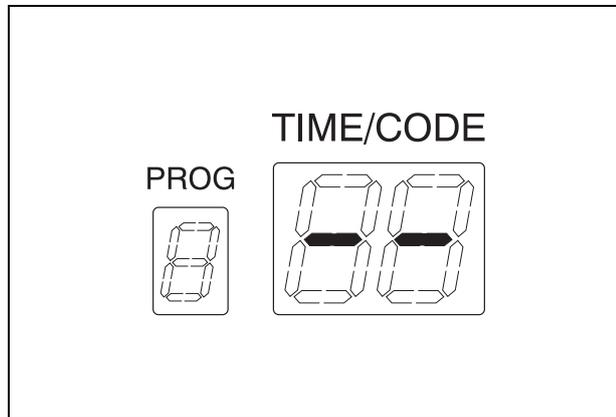


Figure 4.30

**WARNING**

Once the leak test air tube has been connected to a nonreprocessed endoscope, the outer surfaces of the tube should be disinfected. In this case, the leak test air tube should remain connected to the endoscope for the entire reprocessing cycle.

**NOTE**

When 10 minutes have passed since the leak test started, the water will drain and the test will finish automatically. At this time, the main control panel displays the error code [E92].

## 4.8 Connecting tube installation

The OER-Pro is shipped with two connecting tubes – tubes MAJ-1500 and MAJ-1971. Check the “List of Compatible Endoscopes/Connecting Tubes <OER-Pro>” to confirm whether these connecting tubes are the correct connecting tubes for the particular model endoscope that you are reprocessing. If the “List of Compatible Endoscopes/Connecting Tubes <OER-Pro>” indicates that a different connecting tube is required, contact Olympus to obtain the necessary connecting tube. Each model Olympus endoscope requires a specific connecting tube (or tubes). Do not attempt to reprocess any endoscope without the correct connecting tube.

### **WARNING**

- Each connecting tube is supplied with an instruction manual that describes its method of attachment. Follow these instructions to attach the connecting tube to the OER-Pro and the endoscope. Incorrect attachment will result in ineffective reprocessing.
- After attaching each connecting tube, inspect the connections to confirm that each connection is properly mated. Then, gently tug on the tube to confirm that it is firmly attached. If the connecting tube is incorrectly attached, it may accidentally detach during the reprocessing cycle. If the connecting tube detaches during the reprocessing cycle, the channels of the endoscope will not be adequately cleaned and disinfected.
- At the end of the reprocessing cycle, check each connecting tube prior to detaching it, and prior to removing the endoscope from the reprocessing basin. If you find that any connecting tube is kinked, or any connecting tube is not attached at both (all) ends, you must repeat the entire OER-Pro reprocessing cycle from the beginning. A kinked or unattached connecting tube will prevent the channels of the endoscope from receiving sufficient fluid flow to achieve proper cleaning and disinfection.
- Any irregularity in the use of the connecting tubes (improper connecting, kinking, accidental detachment, use of the wrong connecting tube) will cause the OER-Pro reprocessing cycle to become ineffective. The irregularity must be corrected, and the endoscope must be reprocessed again under correct conditions.

**WARNING**

- If you are reprocessing two endoscopes in the OER-Pro, and a problem is observed with the connecting tubes on one of the endoscopes, correct the problem and then reprocess both endoscopes again, starting from the beginning.
- Disconnect the connecting tubes from the connectors on the equipment whenever the tubes are not used for reprocessing. If reprocessing is performed while the unnecessary tubes are connected, the effectiveness of cleaning/disinfection may be reduced.
- When closing the lid, be careful not to get the connecting tube caught between the reprocessing basin and lid and make sure the endoscopes and the washing case are not touching the lid. Close the lid after ensuring that the cover of the washing case is closed. If the endoscopes and the washing case are touching the lid, adjust their positions and close the lid. If the lid is closed while contacting the endoscopes or accessories such as the washing case and the connecting tubes, the endoscopes, the accessories and the equipment may get damaged or water leakage may result.
- To confirm the correct connecting tubes are attached to the endoscope, always refer to the instruction manuals of endoscope or the latest “List of Compatible Endoscopes/Connecting Tubes <OER-Pro>” that is marked “For pink colored retaining rack (MAJ-1970)”. Using incorrect connecting tubes may result in ineffective reprocessing of endoscopes. If you do not have the latest “List of Compatible Endoscopes/Connecting Tubes <OER-Pro>” that is marked “For pink colored retaining rack (MAJ-1970)”, contact Olympus.

**CAUTION**

Disconnect the leak test air tube from the connectors on the equipment whenever the tubes are not used for leak test. If reprocessing is performed while the unnecessary tubes are connected, fluid may get inside the leak test air tube and could cause it to malfunction. The fluid inside the tube may also damage the endoscope when the leak test is performed next time.

**NOTE**

If reprocessing endoscopes, devices, and/or accessories that do not require connecting tubes (ex. endoscopes that do not have an internal lumen), connect the connector jig to the connectors on the reprocessing basin in order to relieve internal pressure within the equipment. Otherwise, the error code [E93] may occur and reprocessing will be interrupted.

If you have checked the “List of Compatible Endoscopes/Connecting Tubes <OER-Pro>” and confirmed that the MAJ-1500 connecting tube and the MAJ-1971 connecting tube are the correct connecting tube for the endoscope that you are reprocessing, follow these steps to connect the endoscope to the OER-Pro.

1. Insert the connector on the endoscope side of the MAJ-1500 connecting tube into the suction cylinder and air/water feed cylinder of the endoscope, push the connecting tube straight into the cylinders and, while continuing to push, slide the connector toward the eyepiece/remote switches to secure it.
2. Attach the rubber cap of the MAJ-1500 connecting tube by pushing the cap into the instrument channel port of the endoscope. Make sure it is firmly connected.

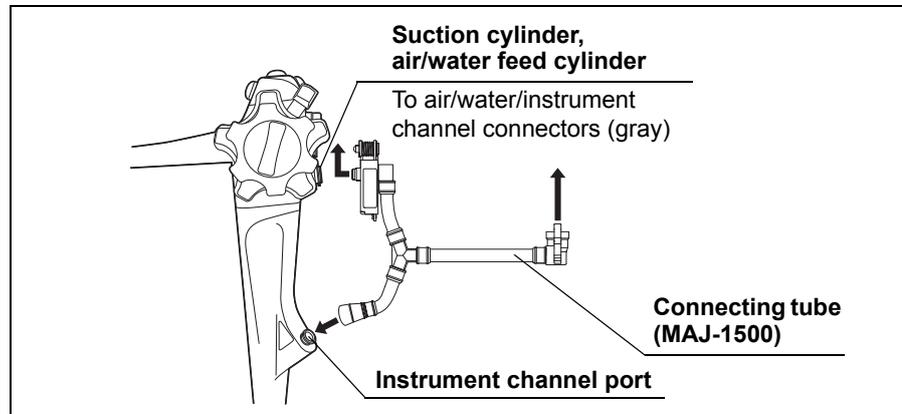


Figure 4.31

3. When using the MAJ-1971, insert the endoscope side connector straight into the endoscope's auxiliary water inlet/elevator channel plug, and turn the outer ring clockwise to connect firmly.

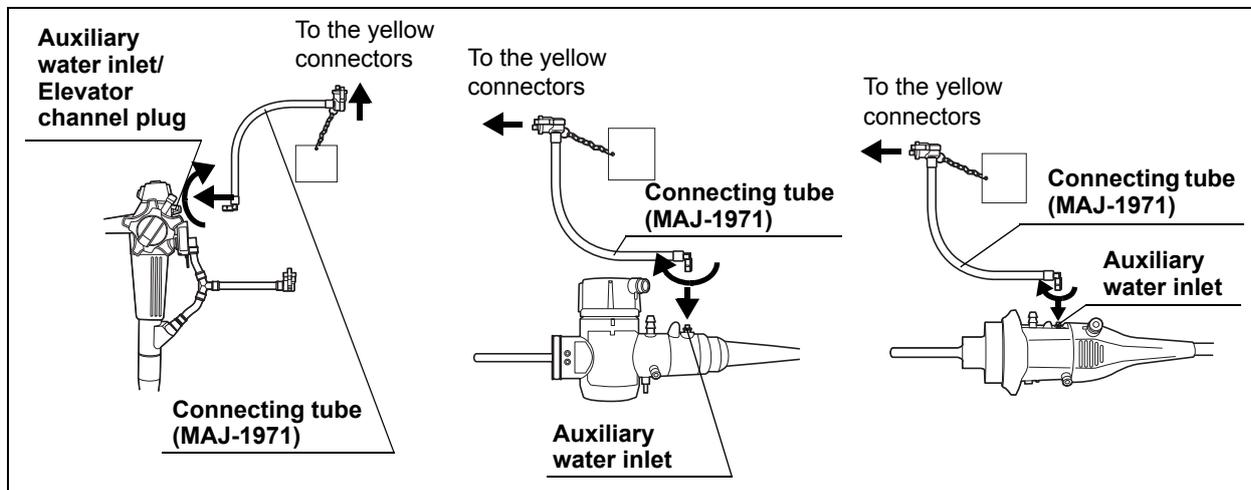


Figure 4.32

4. Connect the equipment-side connector of the connecting tube to the same-colored connector at the rear center of the reprocessing basin by pushing the tube's connector until it clicks. Hang the tag along the reprocessing basin.

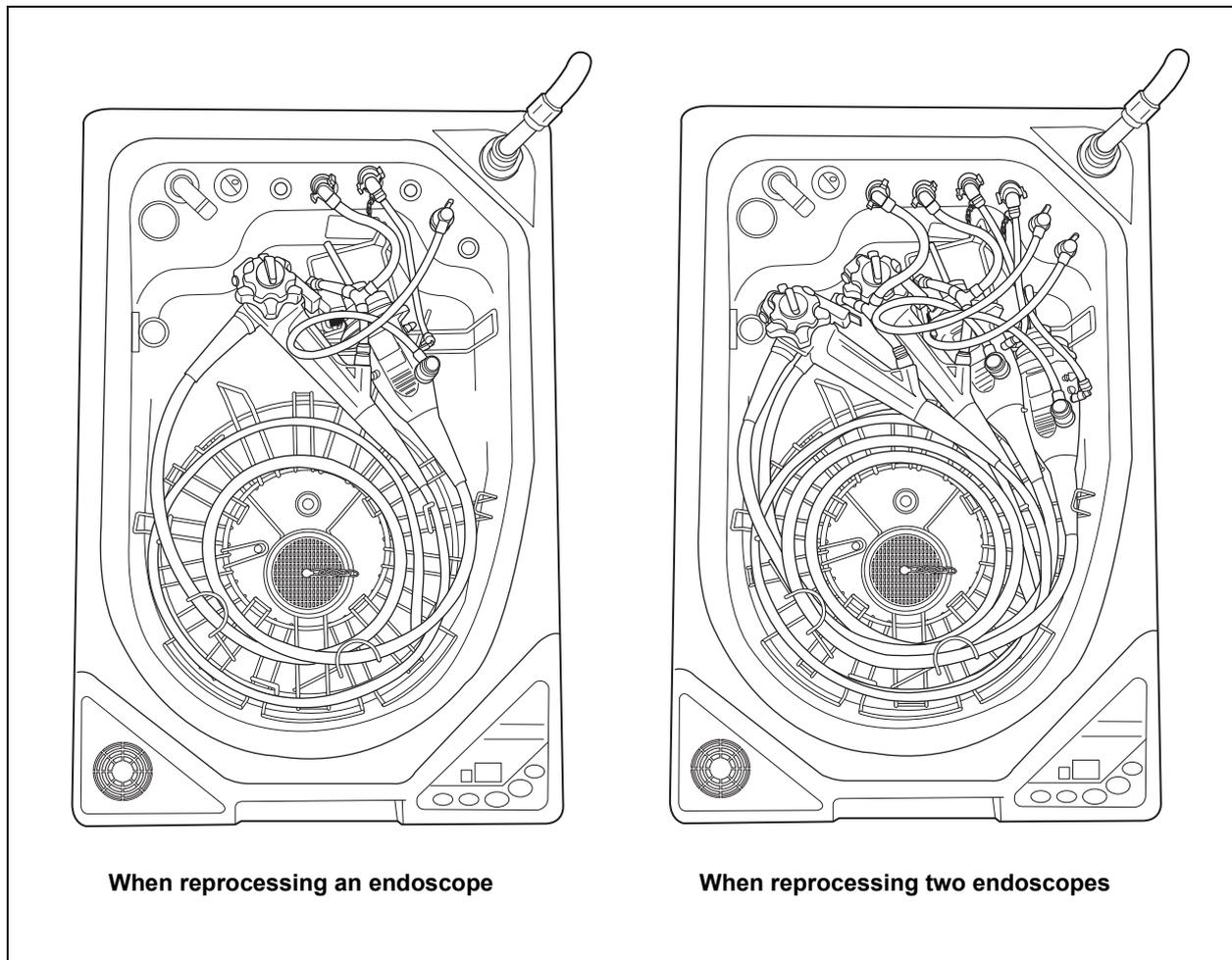


Figure 4.33

5. Gently tug on the connecting tube to confirm that it is firmly attached and that it will not detach during use.
6. Check the following.
  - The connecting tube is not kinked.
  - The endoscopes should not touch the lid.
  - The endoscopes should be located below the pin that marks the disinfecting liquid level.
  - The scope ID tags should be located in the specified positions.
  - The cover of the washing case should be closed and the washing case should be located in the specified position.

7. Close the lid by pushing it until it clicks.

**CAUTION**

Before starting the reprocessing process, always confirm that there is no foreign material on the ventilation openings on the gas filter cases. Blocking the ventilation not only hinders deodorization but may also cause the device to malfunction.

## **4.9 Reprocessing**

This section explains the operation of the OER-Pro for reprocessing endoscopes. Select from three different reprocessing programs [1] to [3]. If the selected reprocessing program incorporates the disinfectant solution heating process, the disinfectant solution is heated during reprocessing. For details on the definitions of the three reprocessing programs and how to set the reprocessing programs, see Section 6.3, “Setting the reprocessing programs” on page 158.

**NOTE**

The reprocessing basin, lid and internal circulation piping within the OER-Pro are automatically disinfected along with the endoscope each time a reprocessing cycle is run, and that no special disinfection cycle for these parts is required.

**WARNING**

- This equipment does not sterilize endoscopes. Therefore, after cleaning/disinfecting an endoscope that requires sterilization, always be sure to sterilize the endoscope as instructed in its instruction manual.
- Make sure that the endoscopes are not touching the lid. If they are touching the lid, reprocessing may not be effective. Adjust the positions of the endoscopes whenever they are touching the lid.
- Visually inspect the output ports of the connecting tubes and water supply/circulation nozzle during reprocessing. If the pipes in the equipment are clogged or the pump has abnormalities, it will not be possible to properly feed fluids into the endoscope channels and the endoscope may not be effectively reprocessed. If a jet of fluid from the output ports to the lid is not observed during reprocessing, contact Olympus.

**WARNING**

- Before starting the reprocessing process, always confirm the Program No. display of the main control panel and the INFO display (WASH/CYCLE, DIS/DAY, TEMP°C) of the subcontrol panel. Press the INFO SEL on the subcontrol panel to select PROGRAM INFO and check the cleaning time, disinfecting time, and disinfectant temperature. Then, press the INFO SEL again to select LCG USAGE and check the disinfection operation count and elapsed day count. If disinfection operation count or elapsed day count is not properly, the endoscope may not be sufficiently reprocessed.

1. Press the PROG button on the main control panel to select a program [1] to [3].

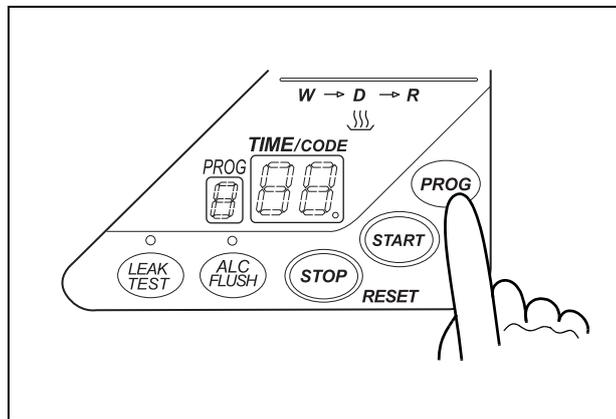


Figure 4.34

2. Press the START button on the main panel. In about 10 seconds, the water supply starts and the TIME/CODE display shows the remaining reprocessing time.

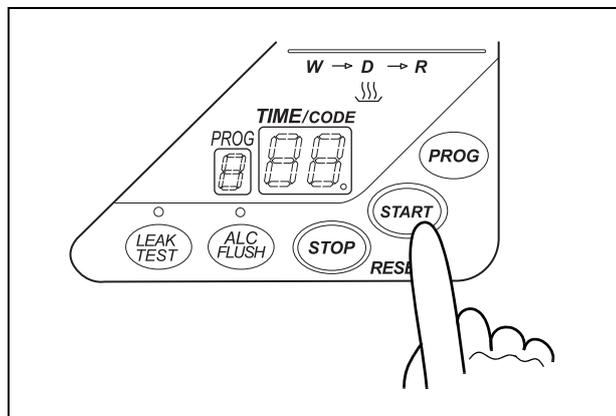


Figure 4.35

3. A jet of fluid exits the hole on the connecting tube during reprocessing. Make sure that the fluid hits the lid (i.e., the air/water supply channels are not clogged or abnormal).

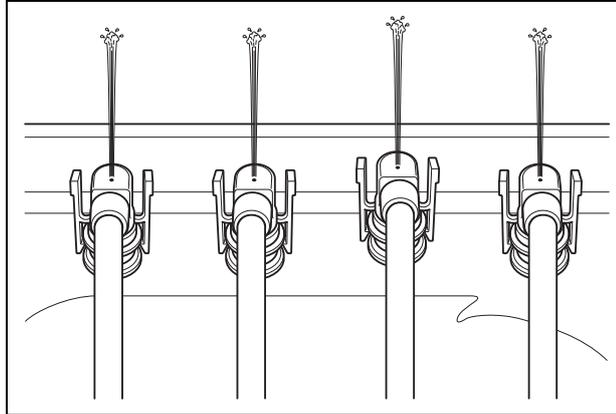


Figure 4.36

4. Make sure that a jet of water is output from the water supply/circulation nozzle to the dome of lid (i.e., the cleaning pump is not clogged or abnormal).

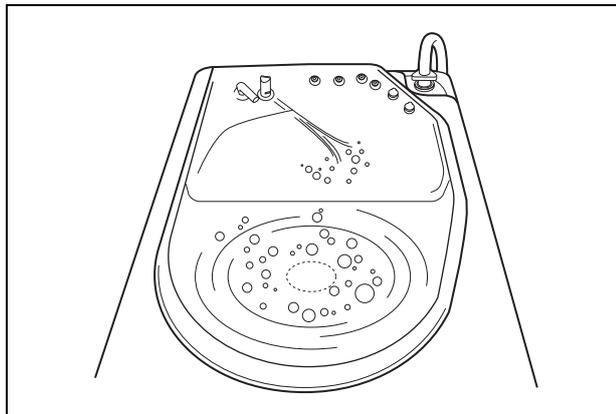


Figure 4.37

5. When reprocessing is finished, the buzzer beeps and the TIME/CODE display shows [- -] indicating that the process has ended.

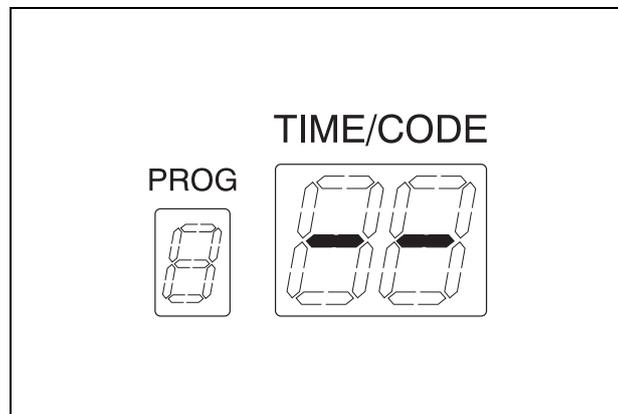


Figure 4.38

**NOTE**

- When the process is started, the standard time required to complete the process will blink on the display.
- The minimum required time for program [1] is about 26 minutes (when using Olympus-validated concentrated disinfectant solution) or 29 minutes (when using Olympus-validated ready-to-use disinfectant solution).
- This varies depending on the models and number of endoscopes, ambient temperature of the disinfectant solution, and water supply volume.
- To display the correct time information, the equipment measures the water supply time of the first process, calculates the required process time automatically, and corrects the displayed value automatically at the beginning of cleaning (or end of water supply) during the reprocessing process.
- The equipment may also update the displayed time information during the rinsing process.
- If the “AUTOMATIC PRINTING” is activated, the printer automatically prints the reprocessing result of completed reprocessing cycle. For more details on the “AUTOMATIC PRINTING”, refer to Section 4.11, “Printing of the reprocessing records” on page 130.

**NOTE**

- The PRINT LAST lamp on the subcontrol panel lights up at the end of reprocessing. You can also print the reprocessing result of completed reprocessing process by manual operation of “FUNC START” button.

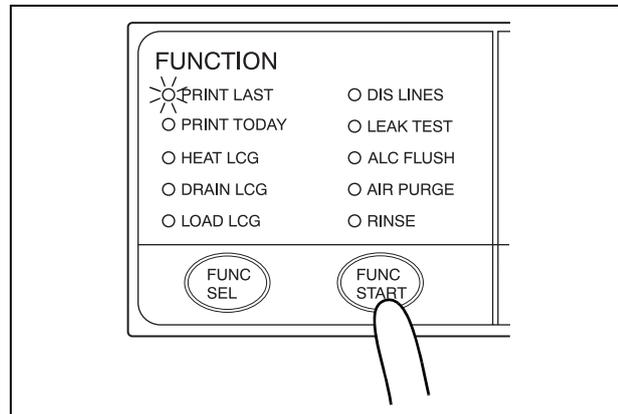


Figure 4.39

### ***When the error code [E93] is displayed during the alcohol flush process***

If alcohol has run out and the error code [E93] is displayed, the equipment will stop the process. In this case, you can restart the reprocessing process from the “Alcohol Flush” by implementing the following procedure.

**NOTE**

- The reprocessing process can be restarted from the “Alcohol Flush” only when the error code [E93] is displayed.
- The error code [E93] can be printed in one of two ways:
  - If the “AUTOMATIC PRINTING” function is activated, the printer automatically prints the error result [E93] when the error code is displayed.
  - If the “AUTOMATIC PRINTING” function is not activated, the “PRINT LAST” lamp on the subcontrol panel lights up when [E93] is displayed. You can print the error result [E93] by manual operation of “FUNC START” button.
- The lid will remain locked until the error code is cleared, and you cannot access the reprocessing basin even after pressing the foot pedal. If you want to interrupt the reprocessing process, press STOP button and follow the procedure described in Section 6.10, “Emergency stop and automatic processing after stopping” on page 178.

**WARNING**

- The alcohol used with the equipment must be 70% ethyl alcohol or isopropyl alcohol. Using any other kind of alcohol may result in malfunction of the equipment or the endoscope, difficulty drying the endoscope, fire hazard, or a hazard due to toxic vapor emitted from the alcohol.
- Alcohol is flammable and should be handled with extra care.
- Remove the alcohol in the alcohol tank and replace it with new alcohol at least once a week. Otherwise, the alcohol in the alcohol tank may degrade.
- Before handling the alcohol, read the precautions carefully and use it as instructed.

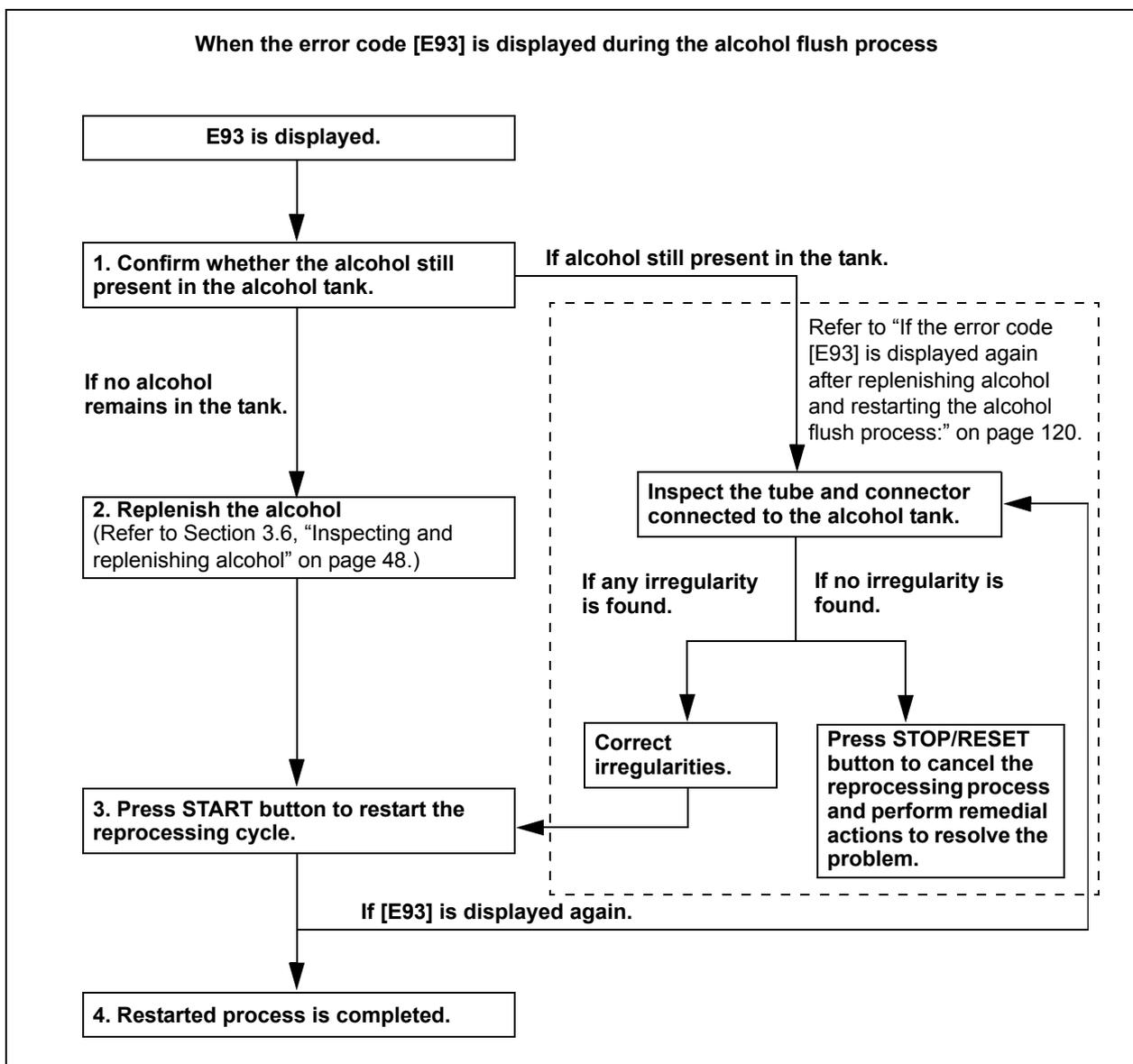


Figure 4.40

1. Inspect the alcohol tank. If alcohol is still present in the alcohol tank, go to the procedure of “If the error code [E93] is displayed again after replenishing alcohol and restarting the alcohol flush process:” described in this section.
2. Replenish alcohol into the alcohol tank as described in Section 3.6, “Inspecting and replenishing alcohol” on page 48.
3. Press START button on the main control panel to restart the reprocessing process. Then the alcohol flush process restarts and the TIME/CODE display shows the remaining reprocessing time.

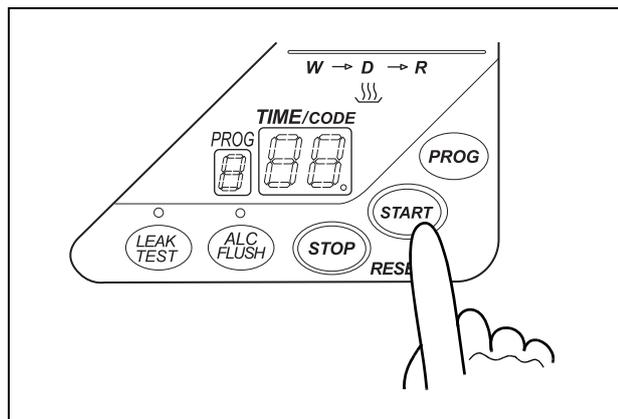


Figure 4.41

4. When reprocessing is completed, the buzzer beeps and the TIME/CODE display shows [- -] indicating that the process has ended.

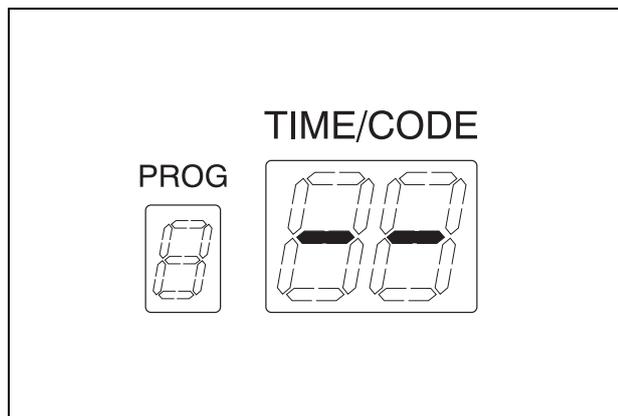


Figure 4.42

**NOTE**

- If the “Automatic Printing Function” is activated, the printer automatically prints reprocessing result of completed reprocessing process after completing the restarted reprocessing process. For more details on the “Automatic Printing Function” refer to Section 4.11, “Printing of the reprocessing records” on page 130.

**NOTE**

- The PRINT LAST lamp on the subcontrol panel lights up at the end of reprocessing. You can also print the reprocessing result of completed reprocessing process by manual operation of “FUNC START” button.

**○ If the error code [E93] is displayed again after replenishing alcohol and restarting the alcohol flush process:**

When error code [E93] is displayed again after restarting the reprocessing process, check that there is no irregularity regarding the following points.

- The tube connected to the alcohol tank is not kinked.
- The connector of alcohol tank is attached firmly.

If any irregularity is found by inspection, correct these points and press start button to restart the alcohol flush process.

If any irregularity is not observed during an inspection or the error code [E93] is displayed again, internal problem with the equipment may be suspected. In this case, follow the procedure below.

| Check | Required items |
|-------|----------------|
|       | Syringe        |
|       | Tube           |

Table 4.1

**WARNING**

- The alcohol used with the equipment must be 70% ethyl alcohol or isopropyl alcohol. Using any other kind of alcohol may result in malfunction of the equipment or the endoscope, difficulty drying the endoscope, fire hazard, or a hazard due to toxic vapor emitted from the alcohol.
- Alcohol is flammable and should be handled with extra care.
- Remove the alcohol in the alcohol tank and replace it with new alcohol at least once a week. Otherwise, the alcohol in the alcohol tank may degrade.
- Before handling the alcohol, read the precautions carefully and use it as instructed.

1. Press STOP/RESET button to cancel the reprocessing process.

**NOTE**

If the reprocessing process is cancelled, reprocessing result will not be recorded. To record reprocessing result, perform reprocessing process again after resolving the problem or by another reprocessing unit.

2. Remove endoscopes from the reprocessing basin.
3. Connect the connector jig to the connector at the rear center of the reprocessing basin by pushing the connector jig's connector until it clicks.
4. Close the lid and make sure that the power switch is ON.
5. Connect the provided syringe and tube.

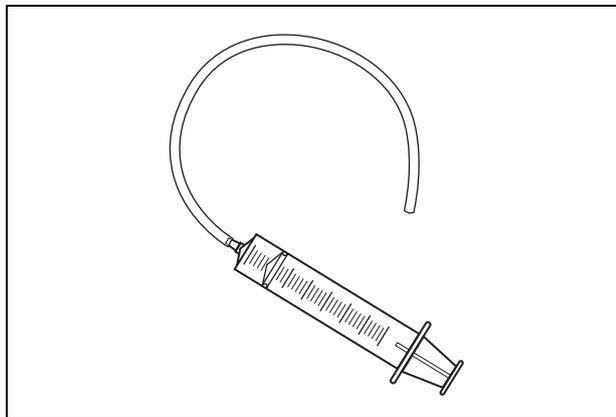


Figure 4.43

6. Disconnect the ventilation tube from the guide of the alcohol tank.

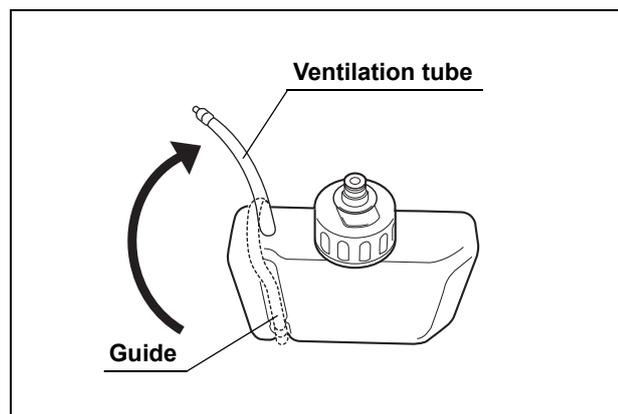


Figure 4.44

7. Fill the syringe with air and insert the tube connected to the syringe all the way into the far end of the alcohol tank ventilation tube.

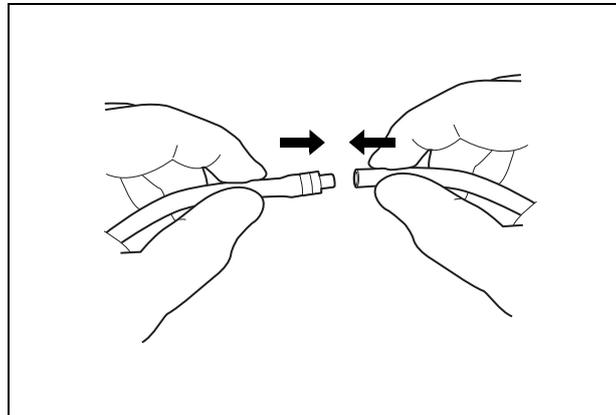


Figure 4.45

8. Press the FUNC SEL button on the subcontrol panel to select “ALC FLUSH”, and press the FUNC START button. Flush air in the syringe within 30 seconds.

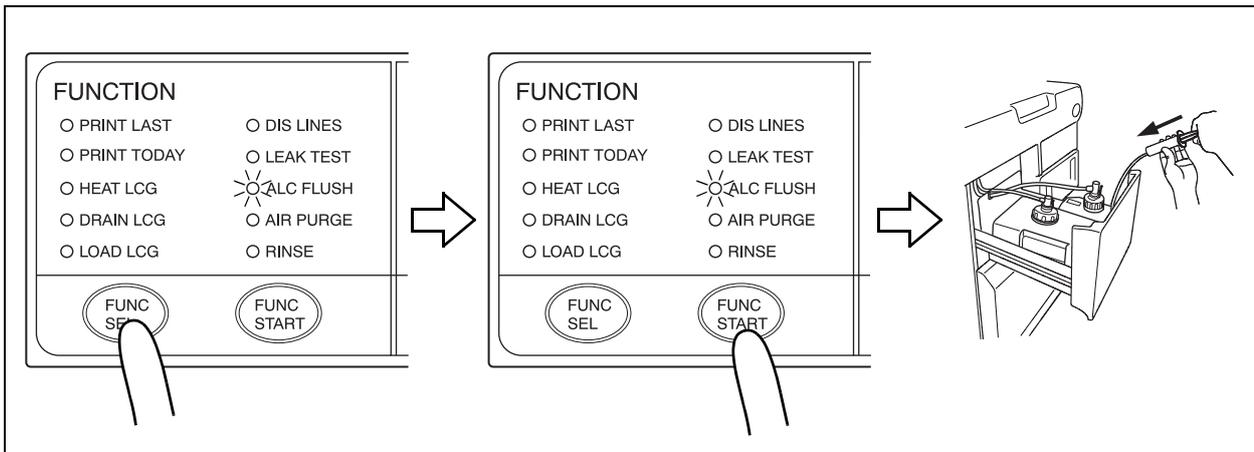


Figure 4.46

9. Press the STOP/RESET button on the main control panel to stop alcohol flushing, and then disconnect the syringe's tube from the ventilation tube.

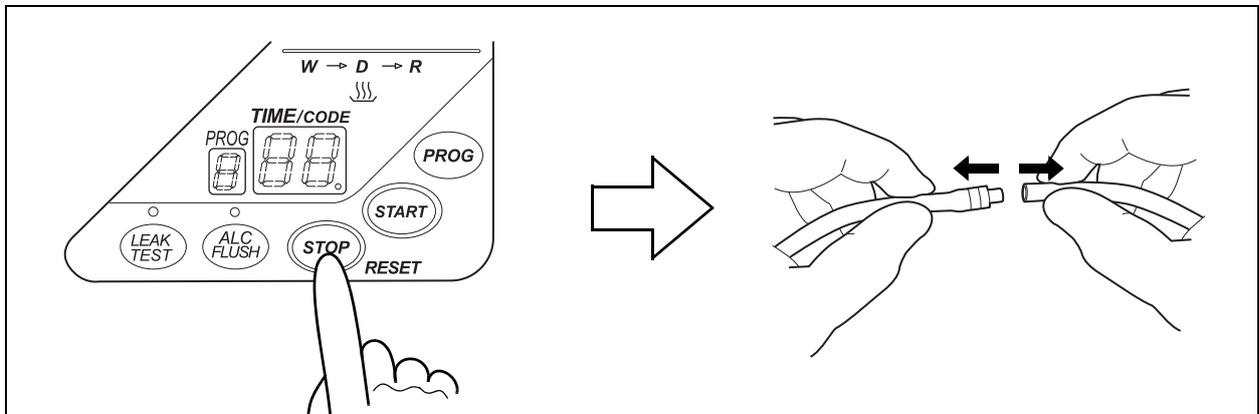


Figure 4.47

10. Disconnect the tube from the cap on the alcohol tank, remove the tank from the detergent/alcohol drawer and insert the ventilation tube into the guide.

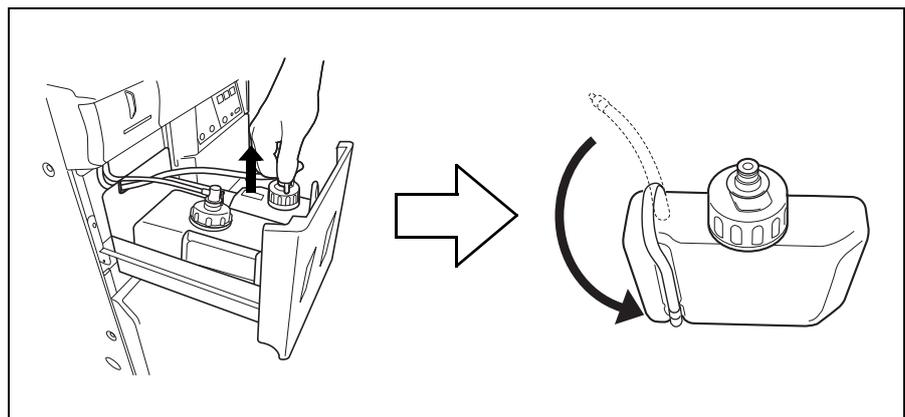


Figure 4.48

11. After confirming that alcohol has not spilled from the alcohol tank and there is enough alcohol remaining in the alcohol tank, place the alcohol tank in the detergent/alcohol drawer and connect the tube that is designed to be connected to the cap of the alcohol tank.

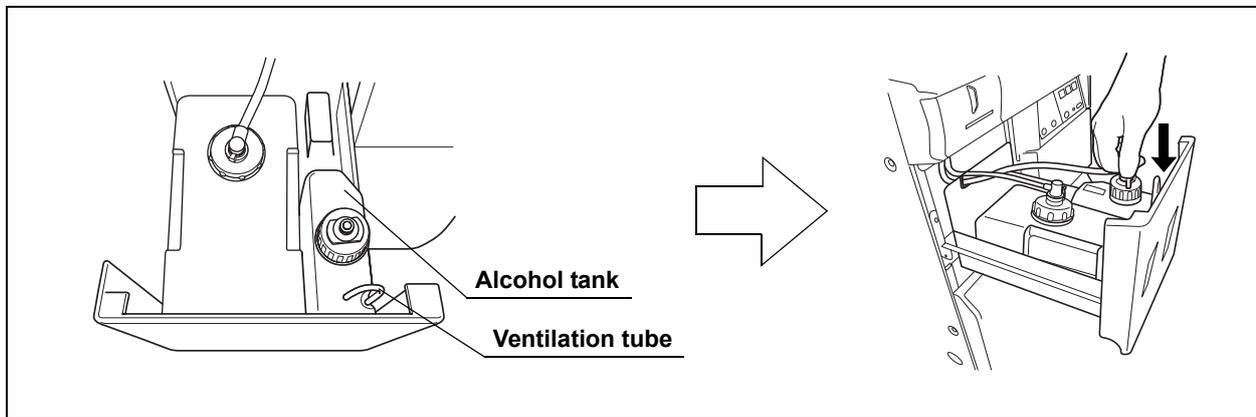


Figure 4.49

12. Close the detergent/alcohol drawer. Rinse the syringe and tube with running water, dry them completely and store in a clean place.
13. Press the FUNC SEL button on the subcontrol panel to select "ALC FLUSH", and press the FUNC START button to perform alcohol flush process again.
14. If alcohol flush is successfully completed, the problem is resolved. If the error code [E93] is displayed again, the device component malfunction is suspected. In this case, do not use the device and contact Olympus.
15. Disconnect the connector jig from the reprocessing basin, wipe off any water using a piece of sterile gauze, and store them in a clean place.

## **When the error code [E95] is displayed during the reprocessing process**

If detergent has run out and the error code [E95] is displayed, the equipment will stop the process. In this case, you need to start the reprocessing process from the beginning after replenishing the detergent. Follow the procedure described in Section 3.5, “Inspecting and replacing the detergent tank” on page 44 for replacing the detergent tank, then press START button to restart the reprocessing process.

1. Press the STOP/RESET button to cancel the reprocessing process.
2. Inspect the detergent tank. If detergent is still present in the detergent tank, go to the procedure of “If the error code [E95] is displayed again after replacing the detergent tank and restarting the reprocessing process:” described in this section.
3. Replace the detergent tank as described in Section 3.5, “Inspecting and replacing the detergent tank” on page 44.
4. Press START button on the main control panel to start the reprocessing process.

### **○ If the error code [E95] is displayed again after replacing the detergent tank and restarting the reprocessing process:**

When the error code [E95] is displayed and the equipment has stopped even when detergent is left in the detergent tank, manually fill the detergent line with detergent as described below.

| Check | Required items |
|-------|----------------|
|       | Syringe        |
|       | Tube           |

Table 4.2

### **WARNING**

Before handling the detergent, 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 detergent on your skin.

**CAUTION**

When handling the detergent, always wear appropriate personal protective equipment, such as eyewear, 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.

**NOTE**

Detergent replacement indicator is turned off when running a reprocessing program after performing 1 to 6 below to fill detergent in the detergent supply piping.

1. Set the power switch to OFF.
2. Confirm that the equipment is not running, and step on the foot pedal to open the lid.
3. Connect the provided syringe and tube.

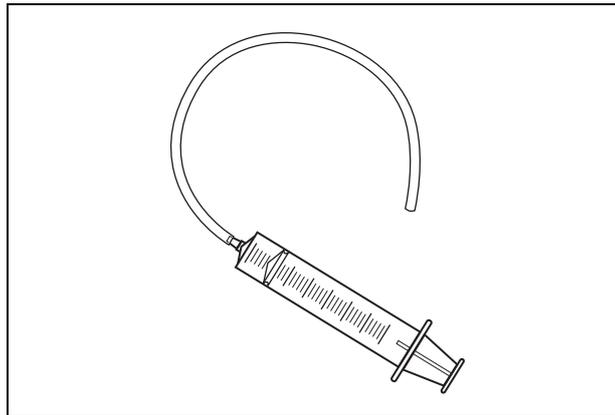


Figure 4.50

4. Connect the tube to the detergent nozzle inside the reprocessing basin and suction it with the syringe until detergent comes out.

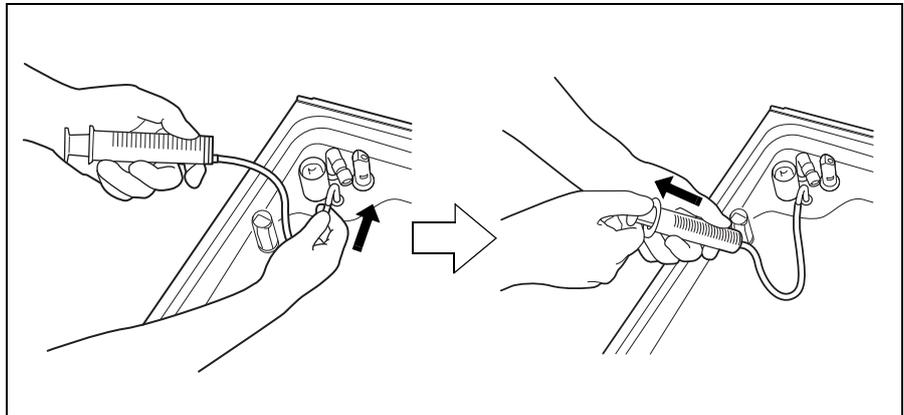


Figure 4.51

5. Pinch the tube at the closest point to the detergent nozzle with your fingers and disconnect the tube from the detergent nozzle.

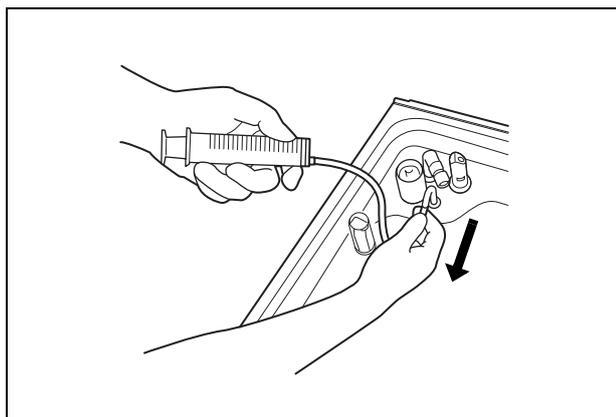


Figure 4.52

6. Rinse the syringe and tube thoroughly in running water, dry them well and store in a clean place.

## 4.10 Removing the endoscopes

This section describes how to take the endoscopes out of the reprocessing basin after disconnecting the connecting tubes. Also be sure to remove the valves and other items from the washing case.

### **WARNING**

- Disinfectant vapor may still be in the reprocessing basin immediately after the lid is opened. Be careful not to inhale too much vapor.
- At the end of the reprocessing cycle, check each connecting tube prior to detaching it, and prior to removing the endoscope from the reprocessing basin. If you find that any connecting tube is kinked, or any connecting tube is not attached at both (all) ends, you must repeat the entire OER-Pro reprocessing cycle from the beginning. A kinked or unattached connecting tube will prevent the channels of the endoscope from receiving sufficient fluid flow to achieve proper cleaning and disinfection.
- Any irregularity in the use of the connecting tubes (improper connecting, kinking, accidental detachment, use of the wrong connecting tube) will cause the OER-Pro reprocessing cycle to become ineffective. The irregularity must be corrected, and the endoscope must be reprocessed again under correct conditions.
- If you are reprocessing two endoscopes in the OER-Pro, and a problem is observed with the connecting tubes on one of the endoscopes, correct the problem and then reprocess both endoscopes again, starting from the beginning.
- When taking the endoscopes out of the equipment, make sure the endoscopes don't touch any parts of the reprocessor that have not been disinfected. This may contaminate the endoscopes. If this happens, you must reprocess the endoscope again.
- Wear sterilized gloves when taking reprocessed endoscopes out of the equipment. Otherwise, the endoscopes may be contaminated and cause infections.
- Dry the external surface and the internal piping before storing the endoscope. Otherwise, miscellaneous bacteria and other sources of contamination may contaminate the endoscope.

**CAUTION**

Prevent water from getting into the leak test air tube or the endoscope may be damaged the next time it is used.

1. Make sure that the program number on the main control panel shows the selected program number and the TIME/CODE display shows [- -] that the reprocessing process is completed.
2. Step on the foot pedal to open the lid.
3. Check the condition of the connecting tubes.
  - The connecting tubes should not be bent.
  - The connecting tubes should be connected firmly to the connectors.
  - The connecting tubes should be free of abnormalities including cracks, scratches, etc.
4. Disconnect the connecting tubes and leak test air tube from each endoscope.
5. Take the endoscopes and valves out of the reprocessing basin. Wipe off any water using a piece of sterile gauze. Attach the auxiliary water inlet cap to the auxiliary water inlet.
6. Store the endoscopes and valves in a clean place.
7. Take the connecting tubes and leak test air tubes out of the reprocessing basin, wipe off any water using a piece of sterile gauze, and store them in a clean place.

## 4.11 Printing of the reprocessing records

You can print the reprocessing records by using built-in printer. Reprocessing records include “Reprocessing Result” and “Error Result”.

**NOTE**

- “Reprocessing Result” is the record provided for a completed reprocessing process. For the printed information about “Reprocessing Results”, refer to “PRINT FORMAT (Reprocessing Result)” on page 145.
- “Error Result” is the record provided when an error is encountered during a reprocessing process, which result in an incomplete reprocessing process. For the printed information about “Error Results”, refer to “PRINT FORMAT (Error Result)” on page 146.
- The print function can print completed reprocessing cycles or error codes that occur during the reprocessing cycle. It cannot print the record of completed/incomplete sub-independent processes and the record of error occurred during the standby operation. For details on the print function of error result, see Table 4.3.

| Print Option       | Error occurred during reprocessing cycle | Error occurred when starting reprocessing cycle (ex. E12, E31, E91) | Error occurred when in standby | Error occurred during sub-independent process |
|--------------------|--|---|--------------------------------|---|
| AUTOMATIC PRINTING | ○  | —   | —                              | —   |
| PRINT LAST         | ○  | ○   | —                              | —   |
| PRINT TODAY        | ○  | —   | —                              | —   |
| PRINT ALL          | ○  | —   | —                              | —   |

○ Print option can print out the subject error result

— Print option cannot print out the subject error result

Table 4.3

As shown in Table 4.4, there are four options for printing of reprocessing records; “AUTOMATIC PRINTING”, “PRINT LAST”, “PRINT TODAY” and “PRINT ALL”.

| Print Option              | Control panel lamps            | Description  |
|---------------------------|--------------------------------|--|
| <b>AUTOMATIC PRINTING</b> | –                              | Prints the latest reprocessing record automatically. For more details, refer to “AUTOMATIC PRINTING (Prints the reprocessing records automatically)” on page 133.  |
| <b>PRINT LAST</b>         | “PRINT LAST”                   | Prints the latest reprocessing record by manual operation of subcontrol panel. For more details, refer to “PRINT LAST (Prints the latest reprocessing records)” on page 136.   |
| <b>PRINT TODAY</b>        | “PRINT TODAY”                  | Prints all of the reprocessing records recorded that day by manual operation of subcontrol panel. For more details, refer to “PRINT TODAY (Prints all of the reprocessing records recorded that day)” on page 139.     |
| <b>PRINT ALL</b>          | “PRINT LAST” and “PRINT TODAY” | Prints all the reprocessing records stored in the equipment by manual operation of subcontrol panel. For more details, refer to “PRINT ALL (Prints all the reprocessing records stored in the equipment)” on page 142. |

Table 4.4

**WARNING**

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

**CAUTION**

- The printed information does not guarantee the reprocessing of endoscopes. Use the printed sheets as a log of the equipment’s operations.
- Printed data may be lost as the paper ages and deteriorates. If you want to store this information for a month or more, transfer it 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.
- To prevent the equipment from malfunctioning, do not moisten the printer or printer paper roll.
- Always keep the printer cover closed. Otherwise, the printer and/or printer paper roll may get wet and cause a malfunction.

**CAUTION**

- To avoid damage to or deterioration of the printout, do not allow the paper to make contact with the following:
  - Alcohol or 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
  - Not exposed to NO<sub>x</sub> (nitrogen oxide(s)), SO<sub>x</sub> (sulfur oxide(s)), or O<sub>3</sub> (ozone)
- To prevent discoloration of paper after printing, store it in a place meeting the following conditions. If it is required to store the printed results for a month or more, it is recommended to copy the information printed on the paper to durable sheets and store the copies.
  - Dark, cool place
  - Not exposed to NO<sub>x</sub>, SO<sub>x</sub>, or O<sub>3</sub> (ozone)
- When red lines appear on both sides of the printer paper roll during printing, replace the printer paper roll.

## ***AUTOMATIC PRINTING (Prints the reprocessing records automatically)***

| Description  | Subjects of printout |               |
|--|----------------------|---------------|
|  | Reprocessing Results | Error Results |
| Prints the latest reprocessing record automatically.*1 | ○                    | -             |

○ can be printed as standard function    - can be printed as optional function\*2

Table 4.5

\*1 For setting of "AUTOMATIC PRINTING", refer to Section 6.11, "Print function setup" on page 180.

\*2 For setting of Error Result Printout, refer to Section 6.11, "Print function setup" on page 180.

### NOTE

- "Reprocessing Result" is the record provided for a completed reprocessing process. For the printed information about "Reprocessing Results", refer to "PRINT FORMAT (Reprocessing Result)" on page 145.
- "Error Result" is the record provided when an error is encountered during a reprocessing process, which result in an incomplete reprocessing process. For the printed information about "Error Results", refer to "PRINT FORMAT (Error Result)" on page 146.
- The print function can print completed reprocessing cycles or error codes that occur during the reprocessing cycle. It cannot print the record of completed/incomplete sub-independent processes and the record of error occurred during the standby operation. For details on the print function of error result, see Table 4.6.

| Print Option       | Error occurred during reprocessing cycle | Error occurred when starting reprocessing cycle (ex. E12, E31, E91) | Error occurred when in standby | Error occurred during sub-independent process |
|--------------------|--|---|--------------------------------|---|
| AUTOMATIC PRINTING | ○  | —   | —                              | —   |
| PRINT LAST         | ○  | ○   | —                              | —   |
| PRINT TODAY        | ○  | —   | —                              | —   |
| PRINT ALL          | ○  | —   | —                              | —   |

○ Print option can print out the subject error result

— Print option cannot print out the subject error result

Table 4.6

Once activating the “AUTOMATIC PRINTING”, no additional operation for using this function is required. Perform the normal operation for reprocessing process. The printing is performed automatically as described below.

1. Perform reprocessing process according to the procedure described in Section 4.9, “Reprocessing” on page 113.
2. At the end of the reprocessing process, the reprocessing results are automatically printed.
3. The buzzer beeps and paper feed stops when printing is finished. Cut the printed part of paper and ensure that the information is printed correctly.

**NOTE**

- If the printout is not satisfactory and the error code is displayed on the main control panel, prints the latest reprocessing record by “PRINT LAST” to confirm whether the reprocessing process is completed (If E94 is displayed, perform the remedial action according to Section 8.1, “Troubleshooting guide” on page 274.). Press the “FUNC SEL” button on the control panel to select “PRINT LAST” and then press the “START” button. If the printer prints the reprocessing results, it shows that the previous reprocessing process was successfully completed. If the printer prints the error results, it shows that the previous reprocessing process was interrupted by error indicated in the printed error results.
- For the printed information about “Reprocessing Result”, refer to “PRINT FORMAT (Reprocessing Result)” on page 145.

## ○ ERROR RESULT PRINTOUT

If setting of Error Result Printout is activated, the printer prints error results automatically when error occurs during the reprocessing process.

### NOTE

- If an error occurs during the error processing, the printer prints the error result that occurred during the reprocessing process. Identify the error code that occurred during the reprocessing process and perform remedial action according to Section 8.1, “Troubleshooting guide” on page 274.
- If the printout is not satisfactory and the error code is displayed on the main control panel, prints the latest reprocessing record by “PRINT LAST” to confirm whether the reprocessing process is completed. Press the “FUNC SEL” button on the control panel to select “PRINT LAST” and then press the “START” button. If the printer prints the reprocessing results, it shows that the previous reprocessing process was successfully completed. If the printer prints the error results, it shows that the previous reprocessing process was interrupted by error indicated in the printed error results.
- For the printed information about “Error Results”, refer to “PRINT FORMAT (Error Result)” on page 146.

## PRINT LAST (Prints the latest reprocessing records)

| Description  | Subjects of printout |               |
|--|----------------------|---------------|
|  | Reprocessing Results | Error Results |
| Prints the latest reprocessing record by manual operation of subcontrol panel. | ○                    | ○             |

○ can be printed as standard function

Table 4.7

**NOTE**

- “Reprocessing Result” is the record provided for a completed reprocessing process. For the printed information about “Reprocessing Results”, refer to “PRINT FORMAT (Reprocessing Result)” on page 145.
- “Error Result” is the record provided when an error is encountered during a reprocessing process, which result in an incomplete reprocessing process. For the printed information about “Error Results”, refer to “PRINT FORMAT (Error Result)” on page 146.
- The print function can print completed reprocessing cycles or error codes that occur during the reprocessing cycle. It cannot print the record of completed/incomplete sub-independent processes and the record of error occurred during the standby operation. For details on the print function of error result, see Table 4.8.

| Print Option       | Error occurred during reprocessing cycle | Error occurred when starting reprocessing cycle (ex. E12, E31, E91) | Error occurred when in standby | Error occurred during sub-independent process |
|--------------------|--|---|--------------------------------|---|
| AUTOMATIC PRINTING | ○  | -   | -                              | -   |
| PRINT LAST         | ○  | ○   | -                              | -   |
| PRINT TODAY        | ○  | -   | -                              | -   |
| PRINT ALL          | ○  | -   | -                              | -   |

○ Print option can print out the subject error result

- Print option cannot print out the subject error result

Table 4.8

1. At the end of the reprocessing process, make sure that “PRINT LAST” is selected on the subcontrol panel.

**NOTE**

The “PRINT LAST” selection on the subcontrol panel is deselected when any button is pressed after the end of the process. If this happens, press the FUNC SEL button on the subcontrol panel to select “PRINT LAST”.

2. Press the FUNC START button on the subcontrol panel. The printer prints the results of the last reprocessing process.

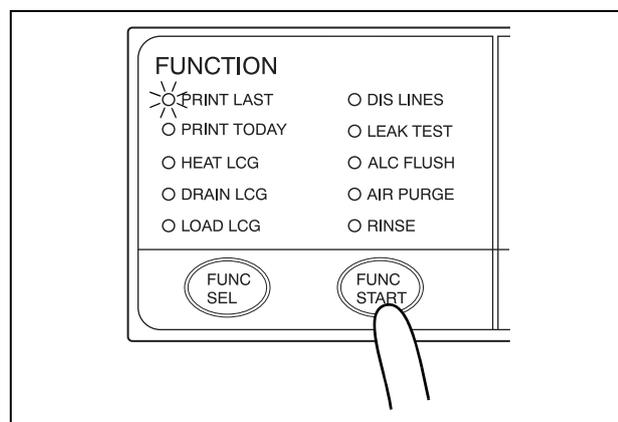


Figure 4.53

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

**NOTE**

- If the printout is not satisfactory, printing can be restarted. Press the FUNC SEL button on the subcontrol panel to select “PRINT LAST” and then press the FUNC START button.
- The same information can be printed several times until the next reprocessing process is started.
- For the printed information about “Reprocessing Result”, refer to “PRINT FORMAT (Reprocessing Result)” on page 145.

## ○ ERROR RESULT PRINTOUT

The printer can print error results by operation of “PRINT LAST” when error occurs during the reprocessing process.

1. When an error code is displayed, press the FUNC SEL button on the subcontrol panel to select “PRINT LAST”.
2. Press the FUNC START button on the subcontrol panel. The printer prints the error code detail information.

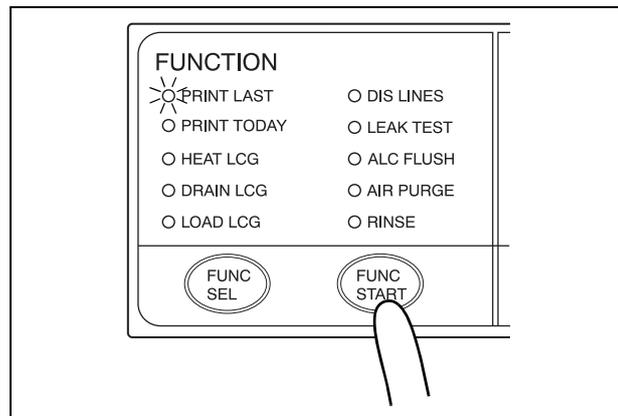


Figure 4.54

3. The buzzer beeps and paper feed stops when printing is finished. Cut the printed part of paper and ensure that the information is printed correctly.

### NOTE

- If the printout is not satisfactory, printing can be restarted. Press the FUNC SEL button on the subcontrol panel so that both the PRINT LAST and PRINT TODAY indicators light up and then press the FUNC START button.
- The same information can be printed several times until the next reprocessing process is started.
- For the printed information about “Error Results”, refer to “PRINT FORMAT (Error Result)” on page 146.

## **PRINT TODAY (Prints all of the reprocessing records recorded that day)**

| Description of function   | Subjects of printout |               |
|---|----------------------|---------------|
|   | Reprocessing Results | Error Results |
| Prints all of the reprocessing records recorded that day by manual operation of subcontrol panel. | ○                    | -             |

○ can be printed as standard function    - can be printed as optional function\*<sup>1</sup>

Table 4.9

\*1 For setting of Error Result Printout, refer to Section 6.11, "Print function setup" on page 180.

### NOTE

- "Reprocessing Result" is the record provided for a completed reprocessing process. For the printed information about "Reprocessing Results", refer to "PRINT FORMAT (Reprocessing Result)" on page 145.
- "Error Result" is the record provided when an error is encountered during a reprocessing process, which result in an incomplete reprocessing process. For the printed information about "Error Results", refer to "PRINT FORMAT (Error Result)" on page 146.
- The print function can print completed reprocessing cycles or error codes that occur during the reprocessing cycle. It cannot print the record of completed/incomplete sub-independent processes and the record of error occurred during the standby operation. For details on the print function of error result, see Table 4.10.

| Print Option       | Error occurred during reprocessing cycle | Error occurred when starting reprocessing cycle (ex. E12, E31, E91) | Error occurred when in standby | Error occurred during sub-independent process |
|--------------------|--|---|--------------------------------|---|
| AUTOMATIC PRINTING | ○  | -   | -                              | -   |
| PRINT LAST         | ○  | ○   | -                              | -   |
| PRINT TODAY        | ○  | -   | -                              | -   |
| PRINT ALL          | ○  | -   | -                              | -   |

- Print option can print out the subject error result
- Print option cannot print out the subject error result

Table 4.10

1. Press the FUNC SEL button on the subcontrol panel to select "PRINT TODAY".
2. Press the FUNC START button on the subcontrol panel. The printer prints the results of the day's reprocessing events in reverse order, beginning with the most recent.

**NOTE**

Only the results of successfully completed reprocessing events are printed. The results of processes that were aborted due to an error code are not printed out.

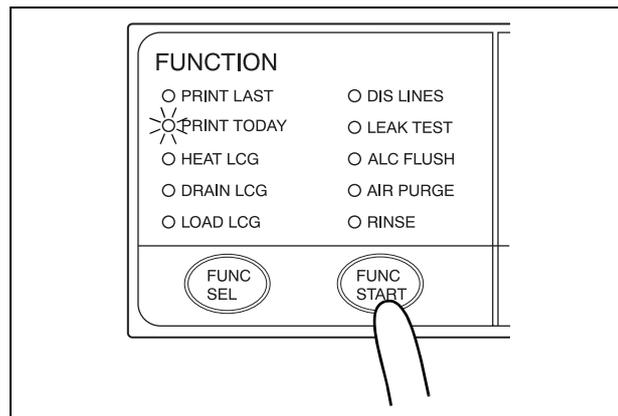


Figure 4.55

3. The buzzer beeps and paper feed stops when printing is finished. Cut the printed part of paper and ensure that information is printed correctly.

**NOTE**

- If the printout is not satisfactory, printing can be restarted. Press the FUNC SEL button on the subcontrol panel to select “PRINT TODAY” and then press the FUNC START button.
- The same information can be printed several times in the same day.
- For the printed information about “PRINT TODAY”, refer to “PRINT FORMAT (PRINT TODAY, PRINT ALL)” on page 147.

***If error code [E94] is displayed during printing***

1. If the paper runs out while printing, the main control panel displays error code [E94]. Press the STOP/RESET button on the main control panel to clear the error code.
2. Replace the printer paper roll.
3. After replacing the printer paper roll, press the FUNC SEL button on the subcontrol panel to select “PRINT TODAY”.
4. Press the FUNC START button on the subcontrol panel. The printer starts printing the reprocessing results again from the beginning.
5. If you want to print only the information after the point where printing was stopped with error code [E94], do not clear the error code and simply replace the printer paper roll.

**PRINT ALL (Prints all the reprocessing records stored in the equipment)**

| Description of function  | Subjects of printout |               |
|--|----------------------|---------------|
|  | Reprocessing Results | Error Results |
| Prints all the reprocessing records stored in the equipment by manual operation of subcontrol panel. | ○                    | -             |

○ can be printed as standard function    -    can be printed as optional function\*1

Table 4.11

\*1 For setting of Error Result Printout, refer to Section 6.11, "Print function setup" on page 180.

**NOTE**

- "Reprocessing Result" is the record provided for a completed reprocessing process. For the printed information about "Reprocessing Results", refer to "PRINT FORMAT (Reprocessing Result)" on page 145.
- "Error Result" is the record provided when an error is encountered during a reprocessing process, which result in an incomplete reprocessing process. For the printed information about "Error Results", refer to "PRINT FORMAT (Error Result)" on page 146.

**NOTE**

- The print function can print completed reprocessing cycles or error codes that occur during the reprocessing cycle. It cannot print the record of completed/incomplete sub-independent processes and the record of error occurred during the standby operation. For details on the print function of error result, see Table 4.12.

| Print Option       | Error occurred during reprocessing cycle | Error occurred when starting reprocessing cycle (ex. E12, E31, E91) | Error occurred when in standby | Error occurred during sub-independent process |
|--------------------|--|---|--------------------------------|---|
| AUTOMATIC PRINTING | ○  | —   | —                              | —   |
| PRINT LAST         | ○  | ○   | —                              | —   |
| PRINT TODAY        | ○  | —   | —                              | —   |
| PRINT ALL          | ○  | —   | —                              | —   |

○ Print option can print out the subject error result

— Print option cannot print out the subject error result

Table 4.12

1. Press the FUNC SEL button on the subcontrol panel so that both the PRINT LAST and PRINT TODAY indicators light up.
2. Press the FUNC START button on the subcontrol panel. The printer prints the results of all of the reprocessing events stored in memory in reverse order, beginning with the most recent.

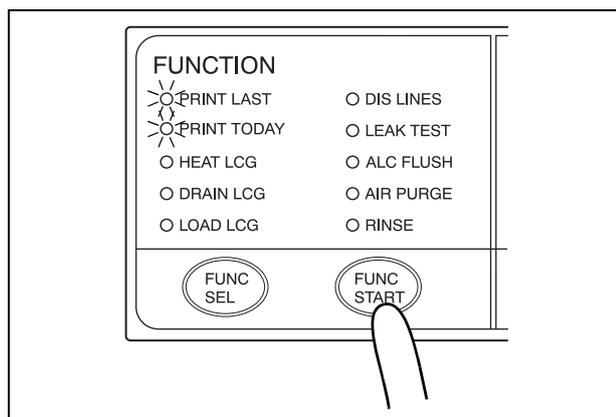


Figure 4.56

3. The buzzer beeps and paper feed stops when printing is finished. Cut the printed part of paper and ensure that the information is printed correctly.

**NOTE**

- To light the PRINT LAST and PRINT TODAY indicators simultaneously, first press the FUNC SEL button so that the PRINT TODAY indicator lights and then press the FUNC SEL button again.
- Only the results of successfully completed reprocessing events are printed. The results of processes that were aborted due to an error code are not printed out.
- If the printout is not satisfactory, printing can be restarted. Press the FUNC SEL button on the subcontrol panel so that both the PRINT LAST and PRINT TODAY indicators light up and then press the FUNC START button.
- The same information can be printed several times until the next reprocessing process is started.
- For the printed information about “PRINT ALL”, refer to “PRINT FORMAT (PRINT TODAY, PRINT ALL)” on page 147.

***If error code [E94] is displayed during printing***

1. If the paper runs out while printing, the main control panel displays error code [E94]. Press the STOP/RESET button on the main control panel to clear the error code.
2. Replace the printer paper roll.
3. After replacement, press the FUNC SEL button on the subcontrol panel so that both the PRINT LAST and PRINT TODAY indicators light up.
4. Press the FUNC START button on the subcontrol panel. The printer starts printing all of the stored reprocessing results again from the beginning.
5. If you want to print only the information after the point where printing was stopped with error code [E94], do not clear the error code and simply replace the printer paper roll.

## PRINT FORMAT (Reprocessing Result)

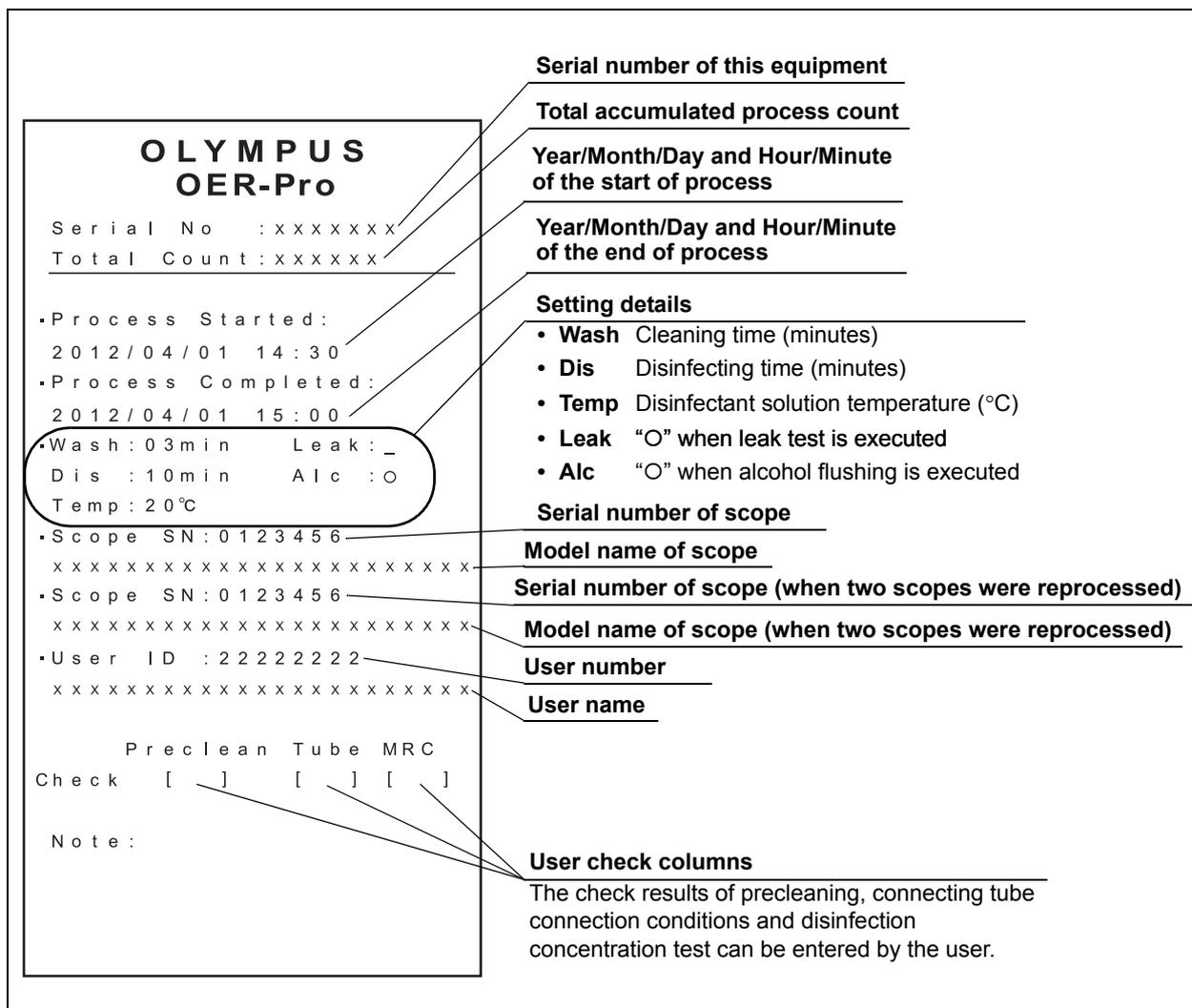


Figure 4.57

**NOTE**

If the RFID function has not been enabled at the factory, the columns for the serial numbers of endoscopes, model names of endoscopes, user number, and user name will be left blank.

## PRINT FORMAT (Error Result)

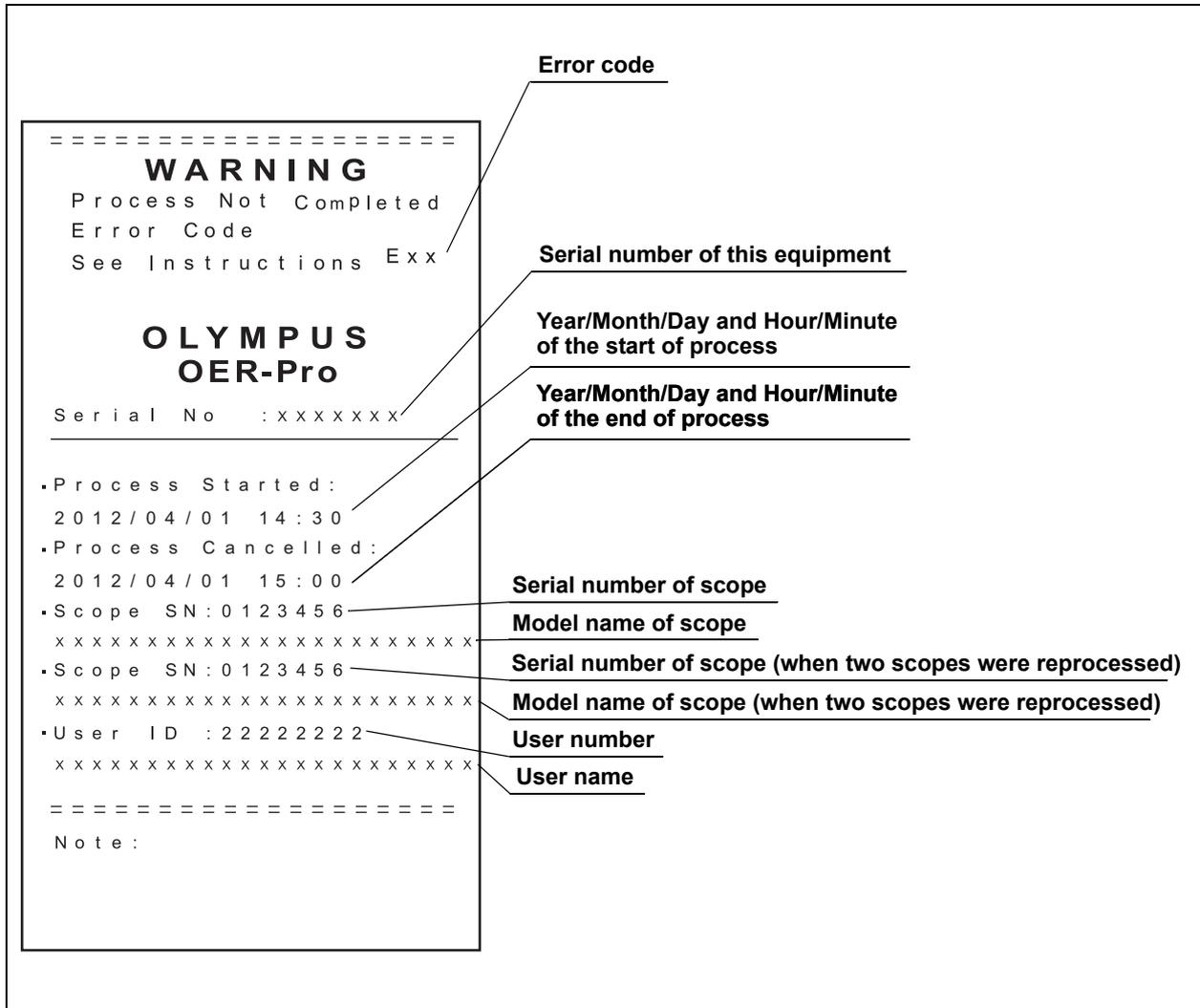


Figure 4.58

**NOTE**

If the RFID function has not been enabled at the factory, the columns for the serial numbers of endoscopes, model names of endoscopes, user number, and user name will be left blank.

## PRINT FORMAT (PRINT TODAY, PRINT ALL)

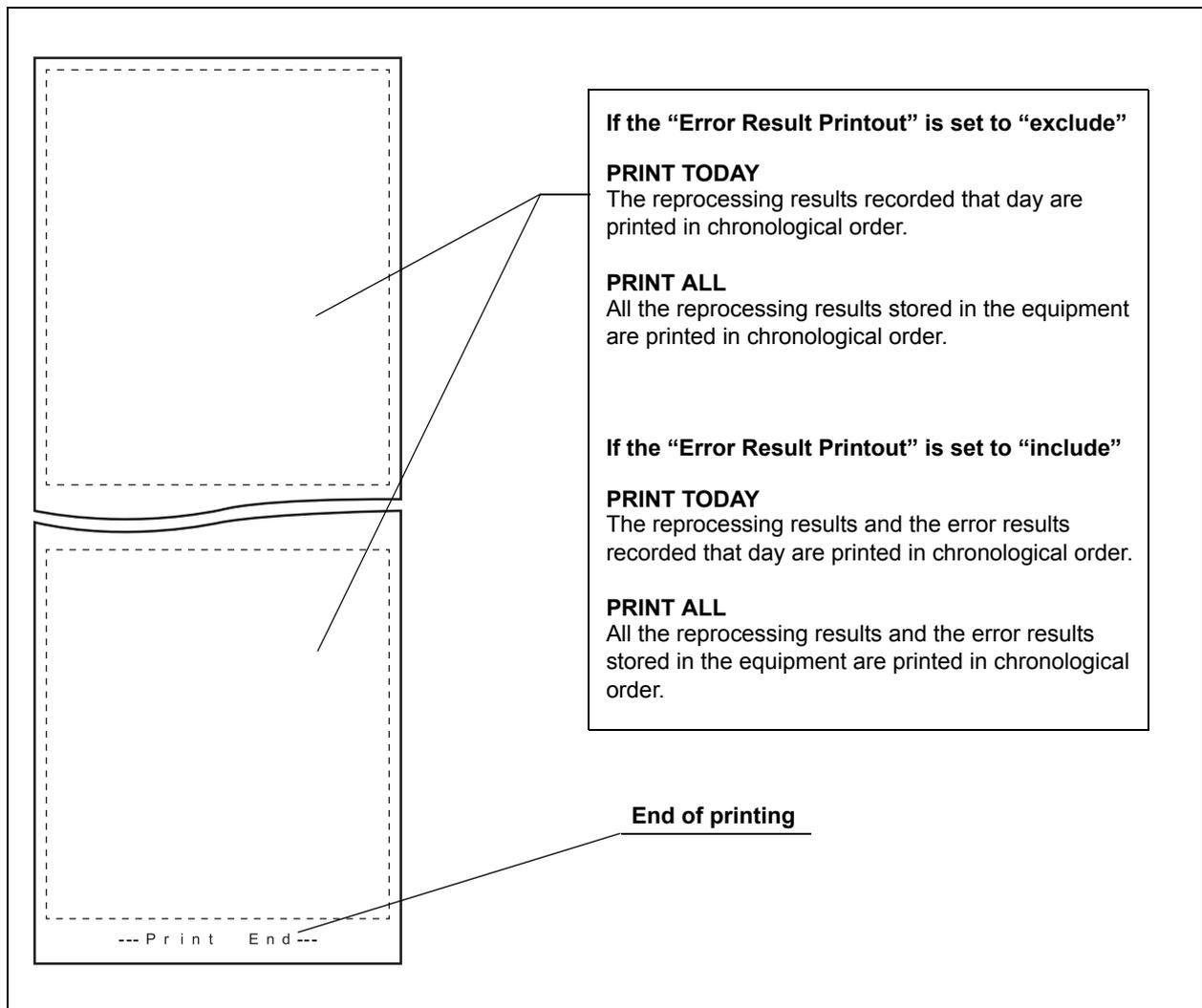


Figure 4.59

**NOTE**

- If the RFID function has not been enabled at the factory, the columns for the serial numbers of endoscopes, model names of endoscopes, user number, and user name will be left blank.
- If the date and/or time setting has been changed in the past than the date and/or time of the latest record stored in the equipment, the reprocessing records of the past may not be printed or not be printed in chronological order. Before changing the date and/or time setting, print records of the past stored in equipment by print function.

# Chapter 5 End-of-Day Checks

To ensure safe, reliable operation, inspect and clean all parts of the device regularly.

| Check | Checks at the end of every working day   |
|-------|--|
|       | 5.1 Turning the power OFF, closing the water faucet and cleaning the outer surface |
|       | 5.2 Cleaning the mesh filters  |
|       | 5.3 Cleaning the fluid level sensor  |

Table 5.1

| Check | Required items                         |
|-------|--|
|       | 70% ethyl alcohol or isopropyl alcohol |
|       | Clean cloth                            |
|       | Filter cleaning brush                  |

Table 5.2

**WARNING**

- Be sure to inspect and clean the equipment as described in this chapter. Otherwise, the functions and performance of the equipment may not operate properly.
- If any irregularity is observed, do not use the device and contact Olympus. If the device is used when an irregularity is observed, the device may malfunction. Water leakage, electric shock, burns, and/or fire may also result.
- When inspecting the device, always wear appropriate personal protective equipment, such as eyewear, 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.

## 5.1 Turning the power OFF, closing the water faucet and cleaning the outer surface

### **WARNING**

- To prevent water leakage, be sure to close the water faucet at the end of the working day.
- After using the device, dry it thoroughly (so that no water remains in the reprocessing basin) and close the lid before storage. Otherwise, microorganisms may proliferate in the device.
- If the equipment has been stored after closing the lid without drying the reprocessing basin completely, thoroughly wipe the inside of the reprocessing basin with a cloth moistened with 70% ethyl alcohol or isopropyl alcohol before the next use.

1. Close the water faucet.
2. Press the power switch to OFF.
3. Using a clean cloth moistened with neutral detergent, clean every part of the device including the front and back of the lid, the lid packing, the edge and inside of the reprocessing basin and the control panel, then wipe with a dry clean cloth. To prevent growth of microorganisms, it is also recommended to wipe every part of the equipment with a cloth moistened with 70% ethyl alcohol or isopropyl alcohol.

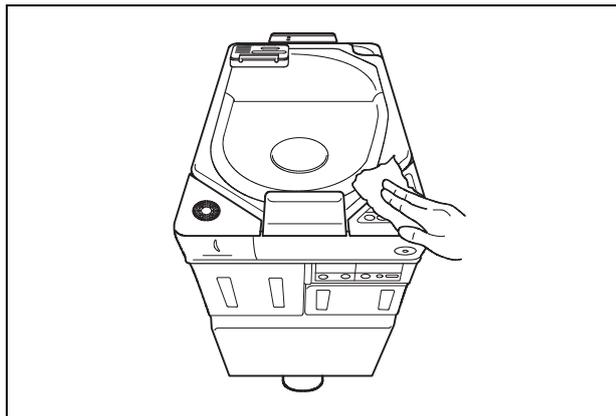


Figure 5.1

4. Step on the foot pedal to open the lid, let the inside of the reprocessing basin dry completely (so that no water remains in the basin), and close the lid. If the device has been stored after closing the lid without drying the reprocessing basin completely, wipe the inside of the reprocessing basin with a cloth moistened with 70% ethyl alcohol or isopropyl alcohol completely before the next use.

## 5.2 *Cleaning the mesh filters*

Clean the two circulation port mesh filters and the drain port mesh filter.

### **WARNING**

A clogged mesh filter not only prevents the equipment from functioning properly, but may also result in ineffective reprocessing.

### **CAUTION**

- If the mesh filters have been removed, be sure to put them back in their original positions before using the device. If you forget to attach the mesh filters, the pump may malfunction and/or foreign matter might get into the pipes or endoscope nozzles and clog them.
- When cleaning the mesh filters, take care not to leave brush hair or cotton swab fiber in the mesh. Otherwise, their filtering effectiveness may be reduced.
- If a mesh filter is dropped or subjected to an impact, make sure that the mesh shape is not deformed. Otherwise, the filtering effect may degrade.
- Two mesh filters are installed on the outer and inner sides of the circulation port. Be sure to remove, inspect, and clean both of them.

1. Step on the foot pedal to open the lid.
2. Remove the mesh filters from the reprocessing basin.

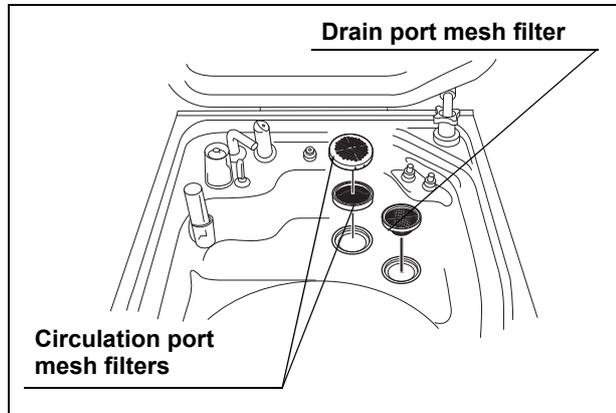


Figure 5.2

3. Clean each mesh filter in running water using a brush.

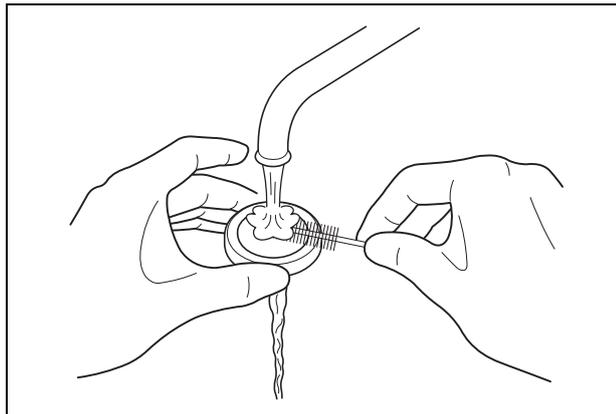


Figure 5.3

4. Attach the mesh filters in their original positions.

## 5.3 Cleaning the fluid level sensor

After using the device, clean the fluid level sensor to ensure correct detection of the fluid level in the reprocessing basin.

### **WARNING**

Take care not to damage the fluid level sensor when cleaning it. If the sensor is damaged, it may not be able to correctly detect the fluid level and the endoscope reprocessing may be insufficient.

### **CAUTION**

- Do not use detergent to clean the fluid level sensor. If any detergent is left on the sensor, it may not be able to correctly detect the fluid level and an error stoppage due to erroneous detection may occur.
- Be sure to wipe any moisture completely off the fluid level sensor. Otherwise, the sensor may not be able to correctly detect the fluid level.
- Be sure to turn the device OFF before cleaning the fluid level sensor. Otherwise, the device may malfunction.
- Be sure to attach the fluid level sensor covers to the fluid level sensor after cleaning. Otherwise, the sensor may not be able to correctly detect the fluid level and the equipment may malfunction.

1. Press the power switch to OFF.
2. Push the fluid level sensor cover (upper) and lift it up to remove as shown with the arrow in Figure 5.4.

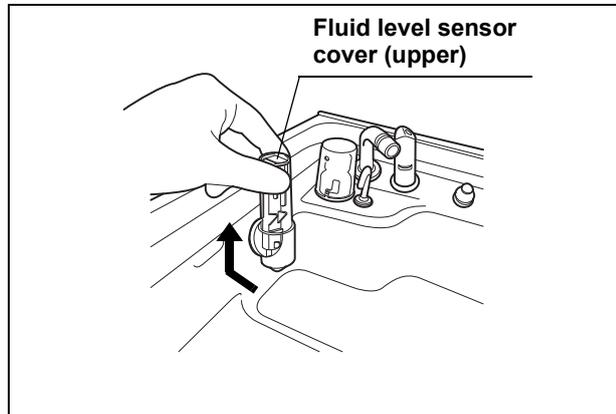


Figure 5.4

3. Lift the lower part of the fluid level sensor cover (lower) and pull it up to remove as shown with the arrow in Figure 5.5.

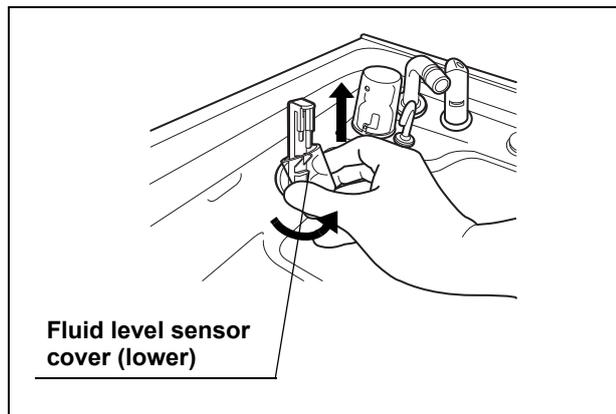


Figure 5.5

4. Clean the fluid level sensor using a soft cloth moistened with 70% ethyl alcohol or isopropyl alcohol.

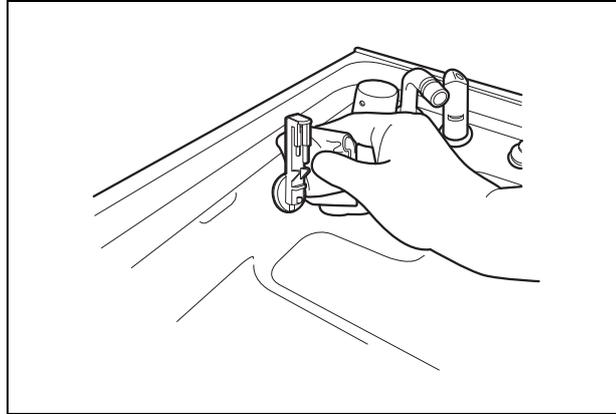


Figure 5.6

5. Wipe away all moisture from the fluid level sensor using a clean soft cloth.
6. Clean the fluid level sensor covers (upper, lower) in running water and remove moisture.
7. Attach the fluid level sensor covers (upper, lower) to their original positions around the fluid level sensor.

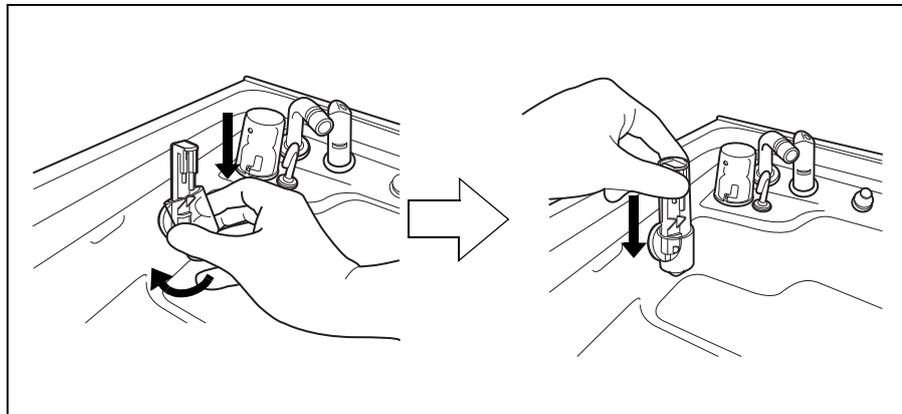


Figure 5.7

## Chapter 6 Other Functions

### 6.1 Confirming the disinfectant solution temperature

Check the temperature of the disinfectant solution as described below.

1. Set the power switch to ON.
2. Press the INFO SEL button on the subcontrol panel to select “PROGRAM INFO”.

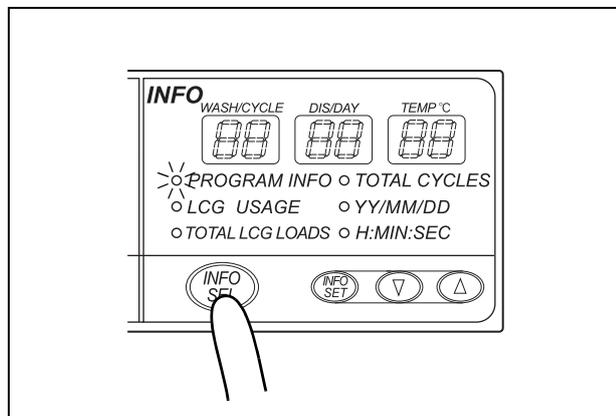


Figure 6.1

3. The current temperature of the disinfectant solution is displayed on the TEMP°C display on the subcontrol panel.

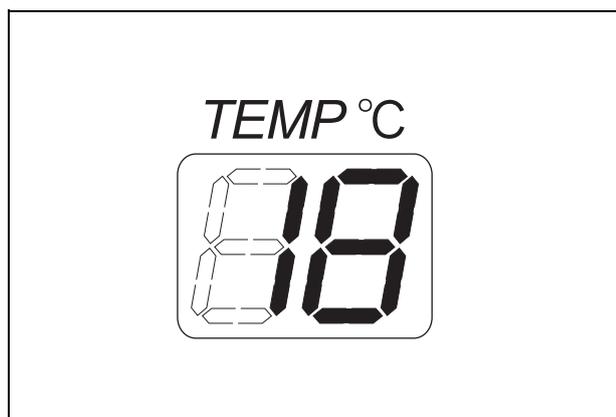


Figure 6.2

**NOTE**

- The following temperatures are displayed if the current disinfectant solution temperature is as described below. Any temperature between 1°C and 20°C are displayed as the actual, measured disinfectant temperature.

| Temperature         | Display |
|---------------------|---------|
| 1°C (34°F) or less  | 1°C     |
| 20°C (68°F) or more | 20°C    |

Table 6.1

- When the current disinfectant solution temperature is below 20°C (68°F), the temperature display blinks.

## 6.2 Heating the disinfectant solution

This section explains how to heat the disinfectant solution independently of the reprocessing programs. The operation consists of heating disinfectant solution to 20°C (68°F) when the disinfectant solution temperature is below 20°C (68°F). For details on how to incorporate the disinfectant solution heating in a reprocessing program, see Section 6.3, “Setting the reprocessing programs” on page 158.

**WARNING**

When heating the disinfectant solution, disconnect the connecting tubes from the equipment. Otherwise, disinfectant solution may spray out of the connecting tubes, and leak from the reprocessing basin.

**CAUTION**

- When heating the disinfectant solution, disconnect the leak test air tube from the equipment and take it out from the reprocessing basin. Otherwise, disinfectant solution may get inside the leak test air tube and the endoscope. This could cause them to malfunction.
- Before starting heating the disinfectant solution, always confirm that there is no foreign material on the ventilation openings on the gas filter cases. Blocking the ventilation not only hinders deodorization but may also cause the device to malfunction.

**NOTE**

For details on how to check the disinfectant solution temperature, see Section 6.1, “Confirming the disinfectant solution temperature” on page 155.

1. Close the lid.
2. Press the FUNC SEL button on the subcontrol panel to select "HEAT LCG".
3. Press the FUNC START button on the subcontrol panel. The heat disinfectant indicator will light to indicate that the operation is in progress and the TIME/CODE display on the main control panel shows a spinning [ ] mark as shown below. Disinfectant solution is then poured into the reprocessing basin and the heating process starts.

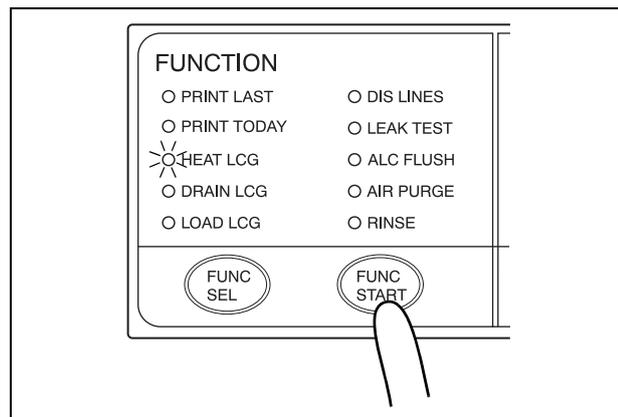


Figure 6.3

**NOTE**

- The disinfectant solution temperature takes about 4 minutes for each 1°C increase.
  - The disinfectant solution is heated to slightly above 20°C (68°F) to compensate for the decrease in temperature inside the equipment.
4. When the disinfectant solution temperature reaches the specified level, the disinfectant solution is automatically collected and the reprocessing basin is rinsed.

5. When heating of the disinfectant solution is completed, the buzzer should beep and the TIME/CODE display on the main control panel should show [- -] indicating the end of the process.

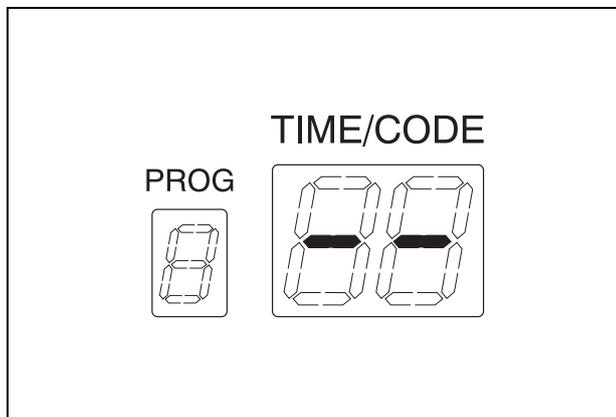


Figure 6.4

### 6.3 Setting the reprocessing programs

Cleaning time can be set in reprocessing programs [2] and [3]. If the temperature of the disinfectant solution in the reprocessing basin is below 20°C (68°F), it will be heated to 20°C (68°F) before the disinfection process starts.

|                                      | Program [1] setup   | Program [2] and [3] setting ranges |
|--------------------------------------|---|------------------------------------|
| <b>Cleaning time</b>                 | 3 min   | 3 – 10 min. (in 1 min. steps)      |
| <b>Disinfecting time</b>             | 7 min (when using Olympus-validated concentrated disinfectant solution)* <sup>1</sup><br>10 min (when using Olympus-validated ready-to-use disinfectant solution)* <sup>1</sup> |                                    |
| <b>Disinfectant solution heating</b> |   | 20°C (68°F)* <sup>1</sup>          |

Table 6.2

- \*1 The OER-Pro is set for a 10-minute and 20°C disinfection process for ready-to-use disinfectant solution at the factory. Program changes to the disinfection process will be released when Olympus-validated disinfectant solutions with different disinfectant contact times and temperatures are approved.

After disinfection, rinse is performed three times. Rinse conditions such as number of rinsing performed and rinsing time cannot be changed. Time and water amount of each rinse cycle are shown below. Time and water amount value vary depending on endoscope models, number of endoscopes loaded and water supply conditions.

| Number of rinses   | 1                     | 2                     | 3                     |
|--------------------|-----------------------|-----------------------|-----------------------|
| Time               | 100 s                 | 110 s                 | 130 s                 |
| Rinse water volume | 12.4 L<br>3.3 gallons | 14.9 L<br>3.9 gallons | 14.9 L<br>3.9 gallons |

Table 6.3

**NOTE**

- Program [1] is preset to the values (cleaning time, disinfecting time and disinfectant solution heating) and the settings of this program cannot be altered.
- Program [2] and [3] allow the user to extend the cleaning time.
- The disinfectant solution temperature takes about 4 minutes for each 1°C increase.
- If you want to change disinfectant solution from ready-to-use disinfectant solution to concentrated disinfectant solution, contact Olympus.

1. Set the power switch to ON.
2. Press the PROG button on the main control panel to select the program to be set.

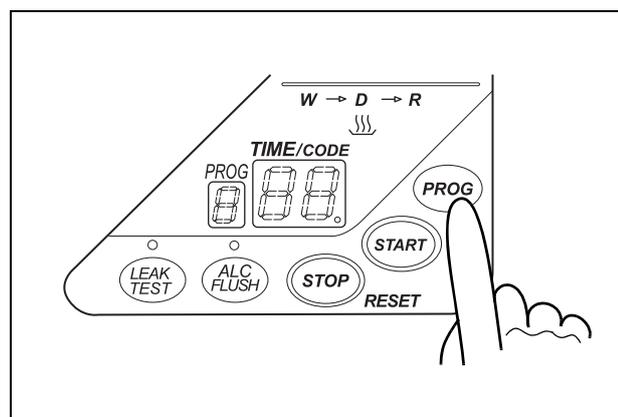


Figure 6.5

3. Press the INFO SEL button on the subcontrol panel to select “PROGRAM INFO”.

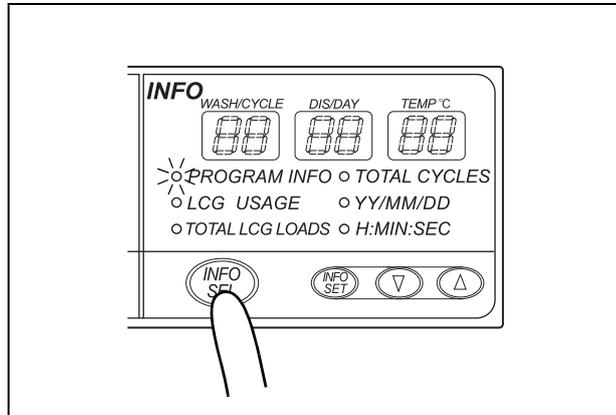


Figure 6.6

4. Press the INFO SET button on the subcontrol panel. The WASH/CYCLE display starts to blink.

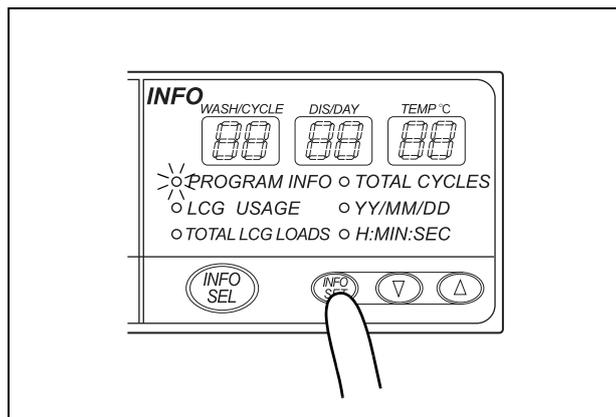


Figure 6.7

5. Press the “▲” or “▼” button on the subcontrol panel to select the cleaning time.

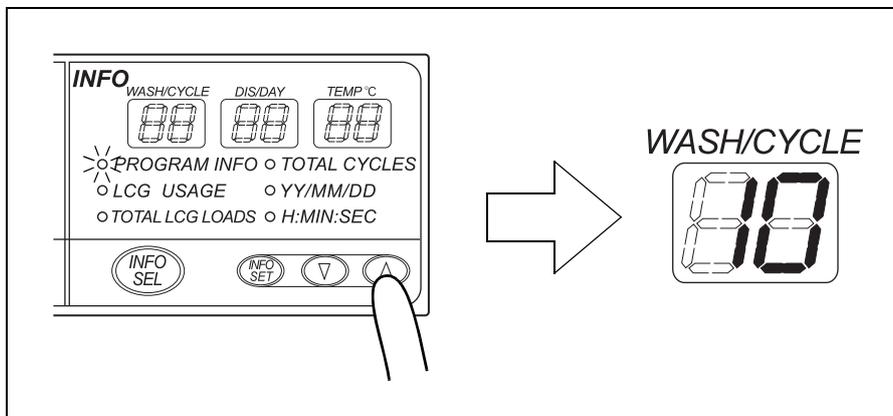


Figure 6.8

6. Press the INFO SET button on the subcontrol panel to set the cleaning time. The DIS/DAY display should start to blink.

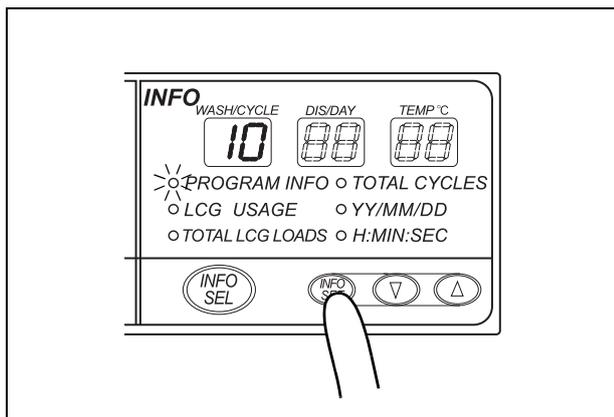


Figure 6.9

7. Check the disinfecting time.

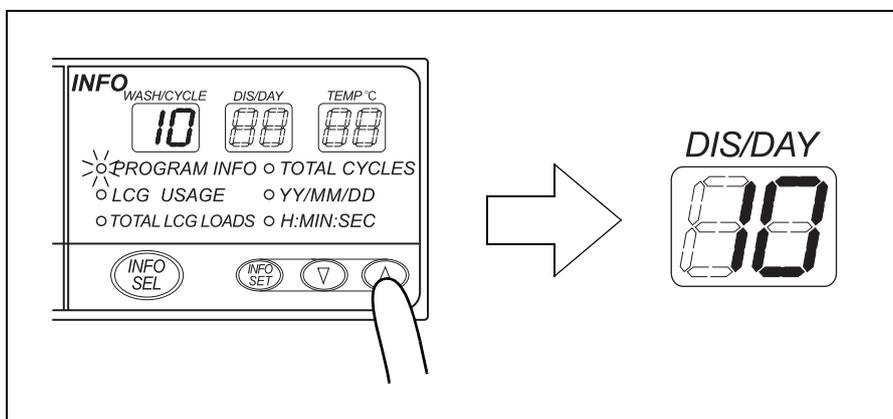


Figure 6.10

8. Press the INFO SET on the subcontrol panel to set the cleaning time. The TEMP °C display should start to blink.

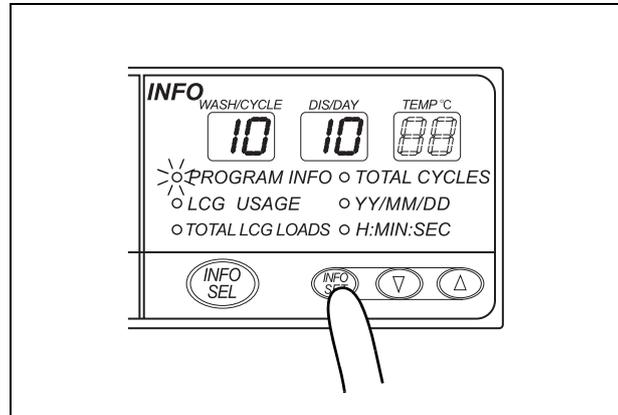


Figure 6.11

9. Check the temperature.

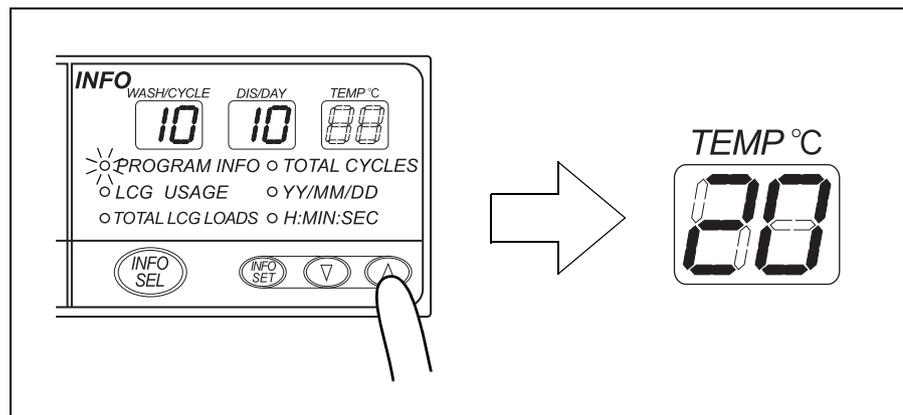


Figure 6.12

10. Press the INFO SET button on the subcontrol panel to finalize the reprocessing program setup.

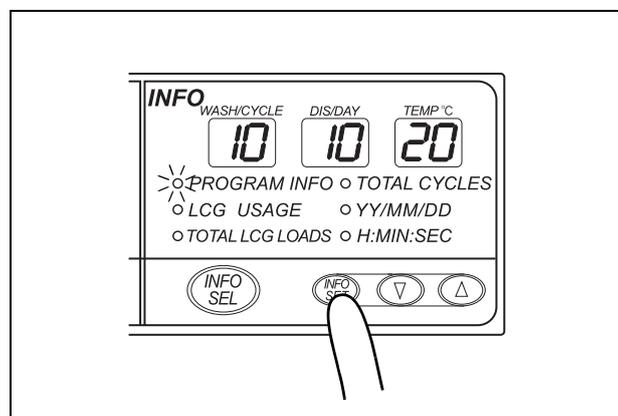


Figure 6.13

## 6.4 Setting the disinfectant solution counter

You can set the number of days and the maximum number of disinfection cycles prior to replacement of the disinfectant solution. The equipment indicates the replacement timing when the set value for the elapsed days or operations is reached. Note that this equipment does not determine the degradation of the disinfectant concentration.

### **WARNING**

Be sure to check the concentration of the disinfectant solution by using the separately available test strips. The disinfectant solution counter does not determine the effectiveness of the disinfectant solution. The expiration of the disinfectant solution varies depending on many factors including the time since activation, the temperature of the environment where the equipment is installed, and the number and types of endoscopes that have been reprocessed. The disinfectant solution counter does not take these and other factors into consideration.

### **NOTE**

Do not add fresh disinfectant solution to the used disinfectant solution when the disinfectant solution in the device is no longer effective or the volume of the disinfectant solution in the device drops below its usable level. Drain the disinfectant solution completely and replace with fresh disinfectant solution.

### **○ Note on the disinfectant solution counter function**

When the test strip indicates that the disinfectant solution is no longer effective or the disinfectant solution beyond the specified use life, it is possible to enter and register the number of disinfection operations and days that have elapsed since preparation/addition of the disinfectant solution. The disinfectant counter lamp on the main control panel will light up when either the set disinfection operation count or elapsed day count is reached so that this information can be used as a reference or reminder for disinfectant solution replacement. Although this function cannot precisely determine when the disinfectant is no longer effective, the display can be used as a reference for preparing the disinfectant solution replacement or as a reminder. It is recommended to update the operation count and elapsed day count data of this function according to changes in the operating environment, etc.

○ **When using Olympus-validated concentrated disinfectant solution**

| Setting range                       |  |
|-------------------------------------|--|
| <b>Disinfection operation count</b> | No setting or 1 – 35 times (Setting possible per time) |
| <b>Elapsed day count</b>            | No setting or 1 – 5 days (Setting possible per day)    |

Table 6.4

○ **When using Olympus-validated ready-to-use disinfectant solution**

| Setting range                       |  |
|-------------------------------------|--|
| <b>Disinfection operation count</b> | No setting or 1 – 99 times (Setting possible per time) |
| <b>Elapsed day count</b>            | No setting or 1 – 14 days (Setting possible per day)   |

Table 6.5

**NOTE**

- When using Olympus-validated concentrated disinfectant solution, the “disinfection operation count” is set to 15 and the “elapsed day count” is set to 3 at the factory.
- When using Olympus-validated ready-to-use disinfectant solution, the “disinfection operation count” is set to 15 and the “elapsed day count” is set to 14 at the factory.

○ **Setting workflow**

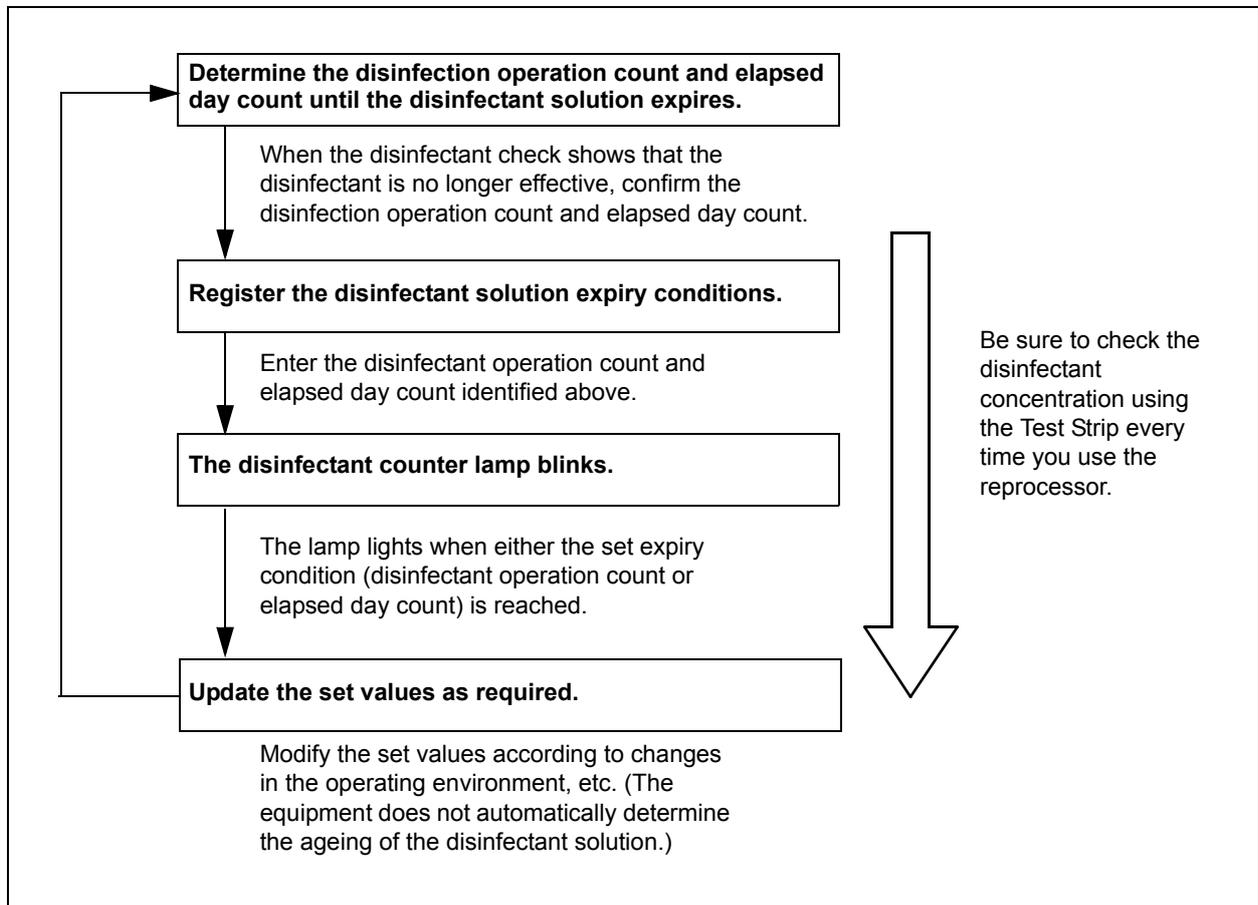


Figure 6.14

## Setting the disinfection cycle and day counter

1. Check the concentration of the disinfectant solution before each use by using the test strip (see Section 3.10, “Checking the disinfectant solution concentration level” on page 59).
2. When the disinfectant has been identified as no longer effective, press the INFO SEL button on the subcontrol panel to select “LCG USAGE”, and then press the INFO SET button. The WASH/CYCLE display starts to blink.

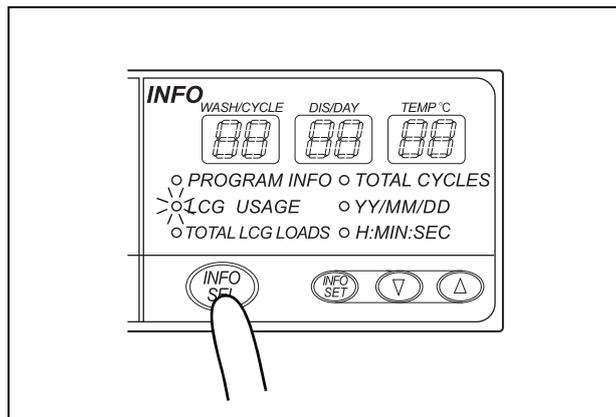


Figure 6.15

3. Press the “▲” or “▼” button on the subcontrol panel to set the disinfection operation count.

**NOTE**

Set [-] if you do not want to set the disinfection cycle count.

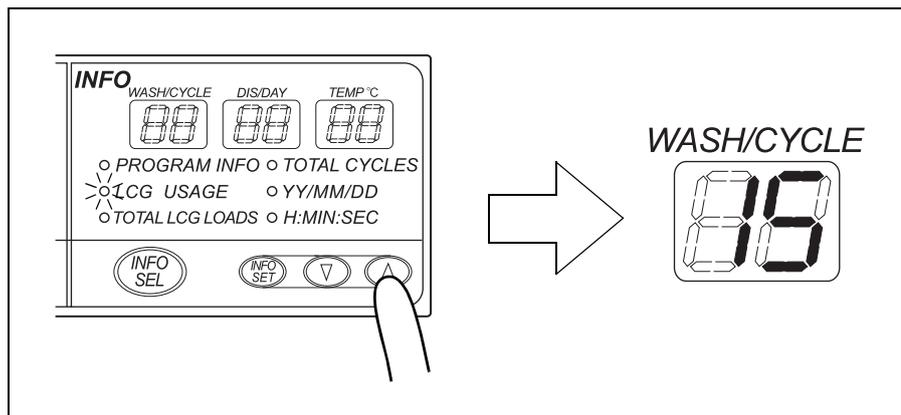


Figure 6.16

4. Press the INFO SET button on the subcontrol panel. The DIS/DAY display should start to blink.

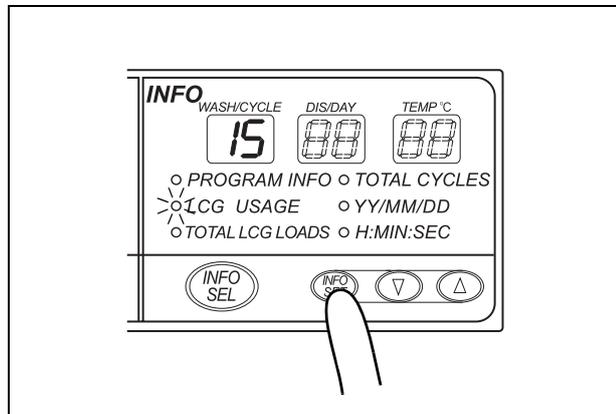


Figure 6.17

5. Press the “▲” or “▼” button on the subcontrol panel to set the elapsed day count.

**NOTE**

Set [- -] if you do not want to set the day counter.

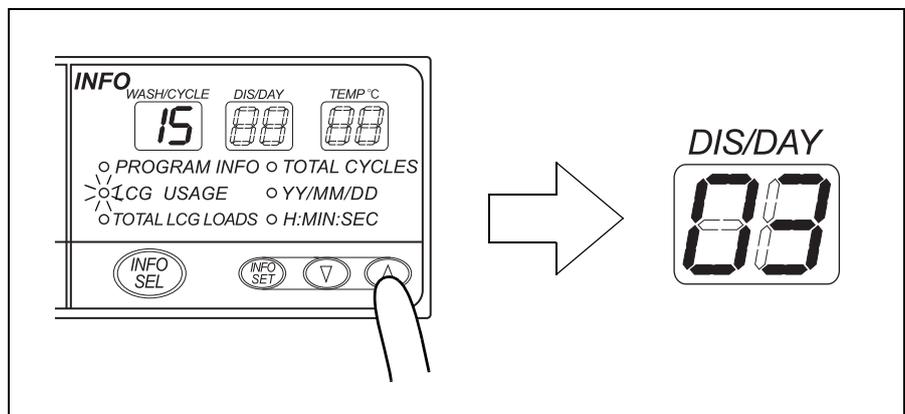


Figure 6.18

6. Press the INFO SET button on the subcontrol panel to finish the setting.

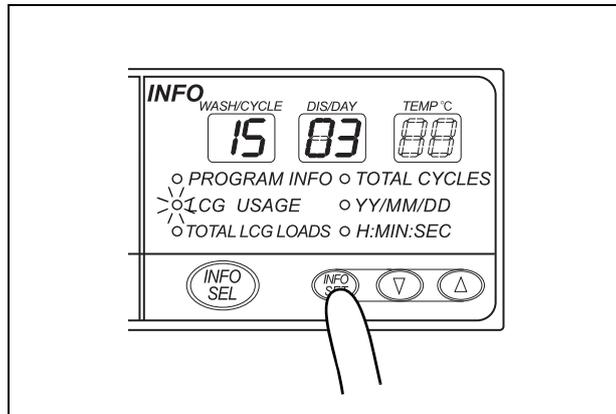


Figure 6.19

## 6.5 **Display of the total number of times the disinfectant solution was loaded**

The equipment can display the total number of times disinfectant solution was loaded into the OER-Pro.

Press the INFO SEL button on the subcontrol panel to select “TOTAL LCG LOADS”. The subcontrol panel displays the total number of disinfectant solution loading used in 6 digits.

**NOTE**

The total number of times disinfectant solution was loaded is counted automatically. It cannot be set by the user.

## 6.6 **Display the total cycle count of the equipment**

The equipment can display the total number of reprocessing cycles executed.

Press the INFO SEL button on the subcontrol panel to select “TOTAL CYCLES”. The subcontrol panel displays the total number of reprocessing operations in 6 digits.

**NOTE**

The total number of operations is counted automatically. It cannot be set by the user.

## 6.7 Air purge

Air purge is performed to drain the remaining cleaning fluid and disinfectant solution from the basin after an irregularity occurs, or if the process is stopped before it completes. Air purge also eliminates residual fluid from the endoscope channels.

1. Close the lid.
2. Press the FUNC SEL button on the subcontrol panel to select "AIR PURGE".

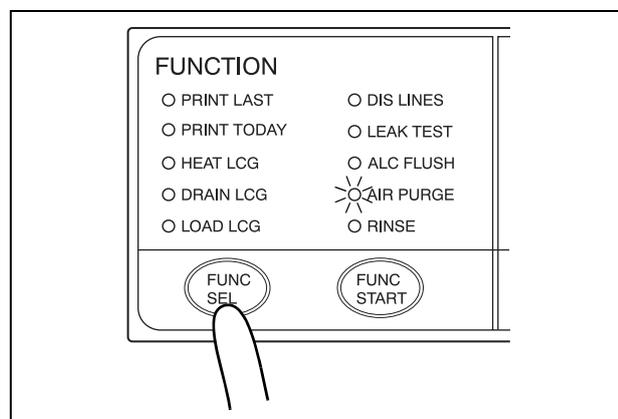


Figure 6.20

3. Press the FUNC START button on the subcontrol panel to start air purge. The TIME/CODE display on the main control panel shows [10], which indicates 10 minutes. The elapsed time displayed on the main control panel counts down every minute.
4. The buzzer beeps and air purge is completed in 10 minutes. The main control panel displays [- -] to indicate the end of air purge.

### NOTE

To stop the air purge process midway, press the STOP/RESET button on the main control panel.

## 6.8 Rinsing

If cleaning fluid or disinfectant solution remains in the reprocessing basin or in the endoscopes after an irregularity occurs or the process is stopped midway, perform the rinsing process after the air purge process.

After disinfection, a water rinse is performed three times. Rinse conditions such as number of rinsings performed and rinsing time cannot be changed. Worst case time and water volume and water of each rinse cycle are shown below. Time and water volume can vary depending on endoscope models, number of endoscopes loaded and water supply conditions.

| Number of rinses   | 1                     | 2                     | 3                     |
|--------------------|-----------------------|-----------------------|-----------------------|
| Time               | 100 s                 | 110 s                 | 130 s                 |
| Rinse water volume | 12.4 L<br>3.3 gallons | 14.9 L<br>3.9 gallons | 14.9 L<br>3.9 gallons |

Table 6.6

### CAUTION

- Be sure to perform the air purge first if cleaning fluid or disinfectant solution is still in the reprocessing basin or endoscopes. Otherwise, rinsing may be insufficient.
- Before starting the rinsing, always confirm that there is no foreign material on the ventilation openings on the gas filter cases. Blocking the ventilation not only hinders deodorization but may also cause the device to malfunction.

1. Close the lid.
2. Press the FUNC SEL button on the subcontrol panel to select "RINSE".

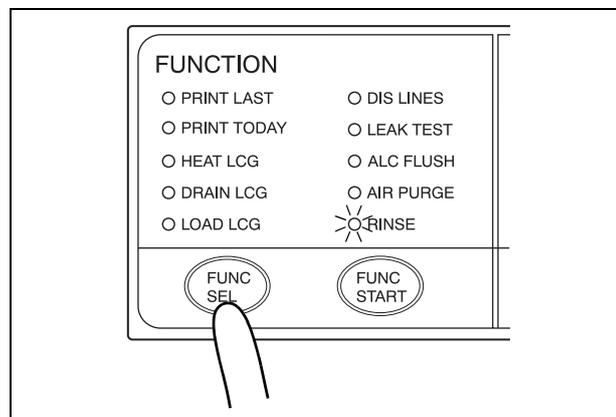


Figure 6.21

3. Press the FUNC START button on the subcontrol panel.

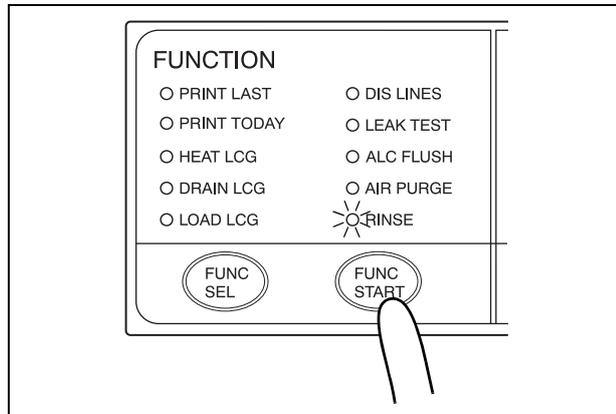


Figure 6.22

4. When rinsing is finished, the buzzer beeps to indicate the end of the process. At this time, the TIME/CODE display on the main control panel shows [- -].

## 6.9 Alcohol flushing

This process automates the flushing of the endoscope channels with alcohol followed by air to help dry the channels.

### **WARNING**

- When using the disinfectant solution and alcohol, Olympus recommends the use of gas filters and running this equipment in well-ventilated areas.
  - Wear a face mask, 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.

- When the alcohol flushing process is stopped due to an equipment error, do not use the endoscope and start the alcohol flushing process again from the beginning. Otherwise, alcohol may remain in the endoscope channel and pose a risk to patient safety.

### **CAUTION**

Do not perform alcohol flushing without connecting the connecting tubes. Otherwise, excessive pressure on the pipes in the equipment may damage it.

1. Make sure that the water faucet is open.
2. Make sure that the lid is closed.
3. Check the ALCOHOL indicator on the equipment's detergent/alcohol drawer to confirm that the alcohol level is above "MIN.". If the amount of alcohol is below the "MIN." line, add more alcohol as described in Section 3.6, "Inspecting and replenishing alcohol" on page 48.

**NOTE**

Alcohol flushing includes the water feed and drain operations. These operations are intended to drain alcohol while diluting it.

**○ Performing alcohol flushing independently**

1. Press the FUNC SEL button on the subcontrol panel to select "ALC FLUSH".
2. Press the FUNC START button on the subcontrol panel. The TIME/CODE display of the main control panel shows [03], which indicates 3 minutes. The time displayed on the main control panel counts down every minute.
3. When the alcohol flushing process finishes, the buzzer beeps and the TIME/CODE display shows [- -].

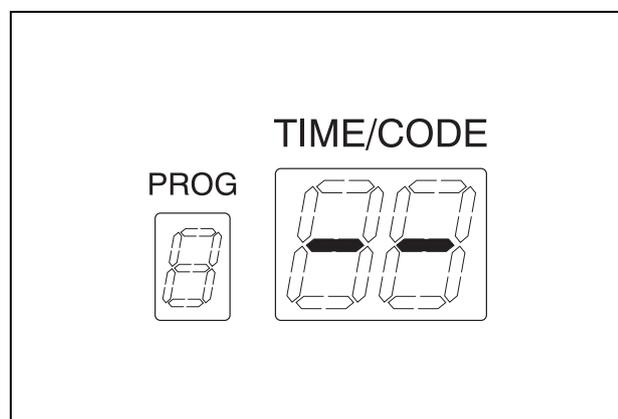


Figure 6.23

○ **If error code [E93] is displayed while alcohol is still present in the alcohol tank:**

If error code [E93] is displayed and the equipment is stopped while alcohol is still present in the alcohol tank, perform the following steps.

**WARNING**

- The alcohol used with the equipment must be 70% ethyl alcohol or isopropyl alcohol. Using any other kind of alcohol may result in malfunction of the equipment or the endoscope, difficulty drying the endoscope, fire hazard, or a hazard due to toxic vapor emitted from the alcohol.
  - Alcohol is flammable and should be handled with extra care.
  - Remove the alcohol in the alcohol tank and replace it with new alcohol at least once a week. Otherwise, the alcohol in the alcohol tank may degrade.
  - Before handling the alcohol, read the precautions carefully and use it as instructed.
1. Connect the connecting tube to the connector at the rear center of the reprocessing basin by pushing the tube's connector until it clicks.
  2. Close the lid and make sure that the power switch is ON.
  3. Connect the provided syringe and tube.

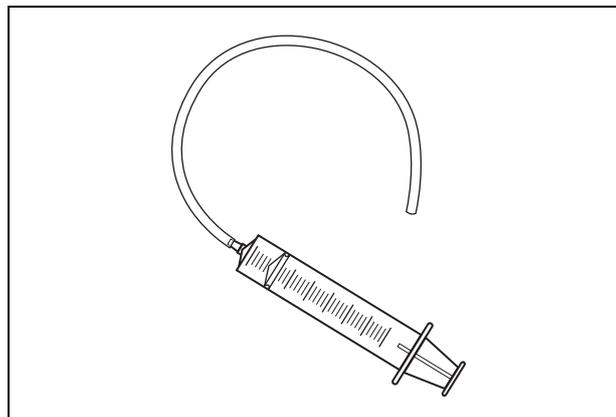


Figure 6.24

4. Disconnect the ventilation tube from the guide of the alcohol tank.

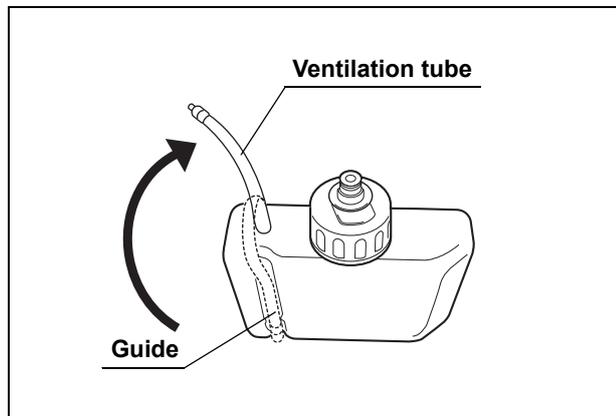


Figure 6.25

5. Fill the syringe with air and insert the tube connected to the syringe all the way into the far end of the alcohol tank ventilation tube.

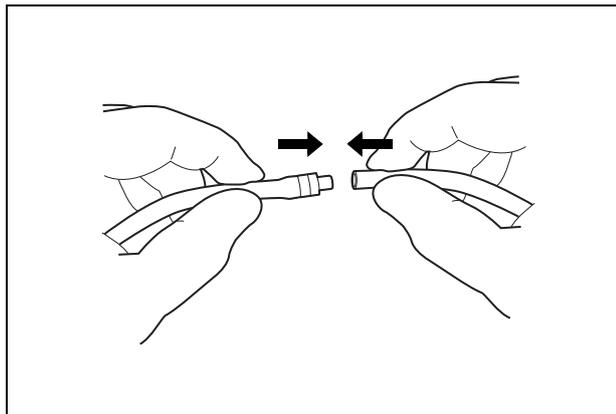


Figure 6.26

6. Press the FUNC SEL button on the subcontrol panel to select "ALC FLUSH", and press the FUNC START button. Flush air in the syringe within 30 seconds.

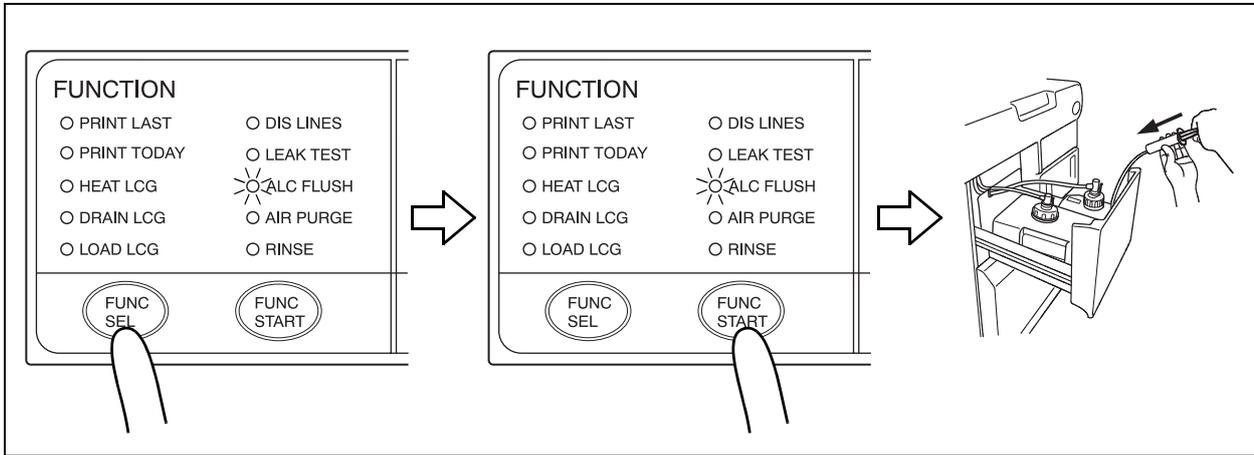


Figure 6.27

7. Press the STOP/RESET button on the main control panel to stop alcohol flushing, and then disconnect the syringe's tube from the ventilation tube.

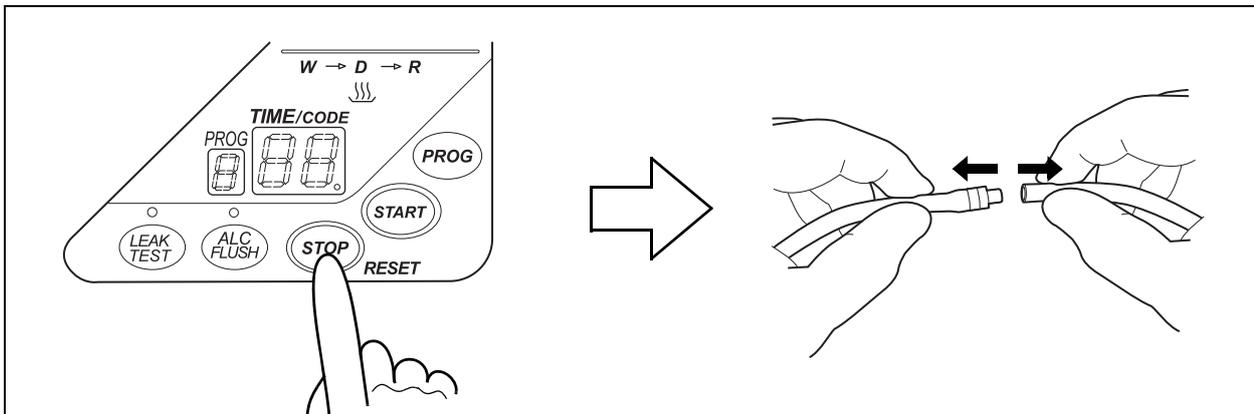


Figure 6.28

8. Disconnect the tube from the cap on the alcohol tank, remove the tank from the detergent/alcohol drawer and insert the ventilation tube into the guide.

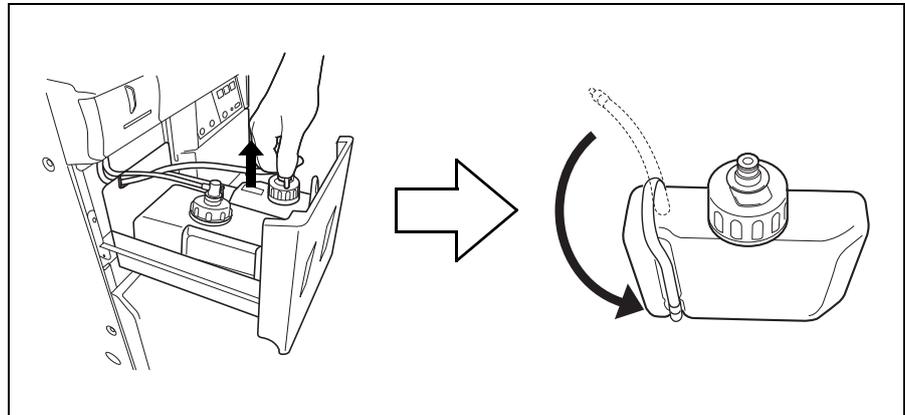


Figure 6.29

9. After confirming that alcohol has not spilled from the alcohol tank, place the alcohol tank on the detergent/alcohol drawer and connect the tube that was connected to the cap.

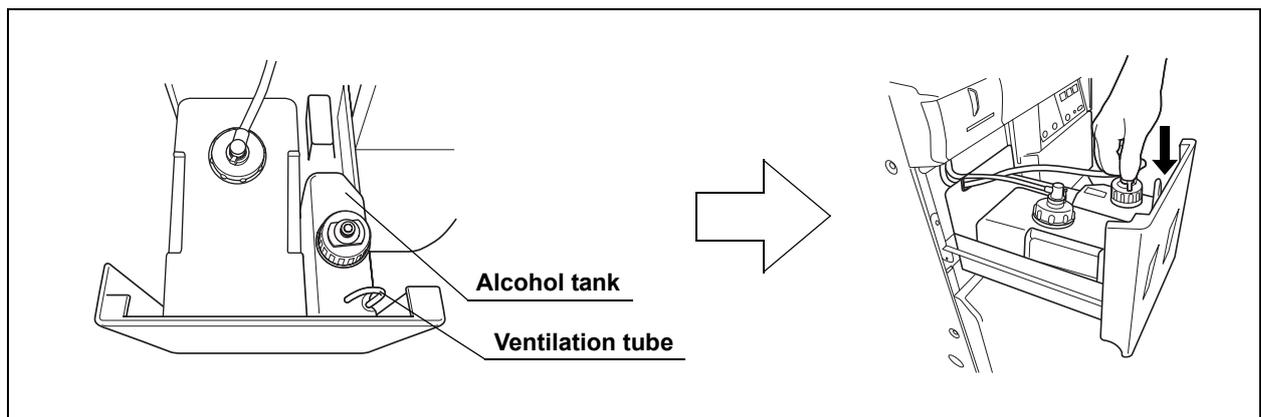


Figure 6.30

10. Close the detergent/alcohol drawer.
11. Rinse the syringe and tube with running water, dry them completely and store in a clean place.

## 6.10 Emergency stop and automatic processing after stopping

The equipment can be stopped at any time during operation by pressing the STOP/RESET button on the main control panel. The main control panel will display error code [E00] at this time. When the equipment is stopped, it identifies the situation in which it was stopped and automatically performs the required processing operations (including draining of the reprocessing basin), after which it stops completely.

### **WARNING**

- When a process is interrupted, be sure to execute it again from the beginning. An endoscope that has not been subjected to a complete, error-free process is not safe for patient use. Otherwise, the endoscope reprocessing may be insufficient.
- If the process is stopped because of a problem with the equipment, contact Olympus.

### **CAUTION**

- Do not set the power switch to OFF to stop the equipment during operation. Otherwise, fluid will remain in the reprocessing basin and the equipment may malfunction.
- Do not set the power switch to OFF during automatic processing. Otherwise, fluid will remain in the reprocessing basin without automatic draining and air purge, and the equipment may malfunction.

There are cases in which automatic processing can be interrupted and those in which it cannot. Whether or not automatic processing can be interrupted should be determined according to the displayed error code.

- When the displayed error code remains lit  
Pressing the STOP/RESET can interrupt the automatic processing.
- When the displayed error code is blinking  
Automatic Processing cannot be interrupted.

○ **Treatment after automatic processing has completed**

Remove the cause of the equipment stoppage, and start the process again from the beginning.

○ **Processing after automatic processing is interrupted**

Remove the cause of the interruption. If water or cleaning fluid remains in the reprocessing basin, clean the basin with the following procedure. Also, the stopped process must be started again from the beginning.

1. Press the FUNC SEL button on the subcontrol panel to select "AIR PURGE".
2. Press the FUNC START button on the subcontrol panel to drain the remaining water or fluid.
3. When air purge is finished, press the FUNC SEL button to select "RINSE".
4. Press the FUNC START button on the subcontrol panel to start the rinsing process.

## 6.11 Print function setup

This section describes the basic setting of the print function. As shown in Table 6.7, there are four options for printing of reprocessing records; “AUTOMATIC PRINTING”, “PRINT LAST”, “PRINT TODAY”, “PRINT ALL”. Reprocessing records include “Reprocessing Result” and “Error Result”. Regarding these printing function, there are two setup menus as shown in Table 6.8.

| Print Function            | Description  |
|---------------------------|--|
| <b>AUTOMATIC PRINTING</b> | Prints the latest reprocessing record automatically.   |
| <b>PRINT LAST</b>         | Prints the latest reprocessing record by manual operation of subcontrol panel.                       |
| <b>PRINT TODAY</b>        | Prints all of the reprocessing records recorded that day by manual operation of subcontrol panel.    |
| <b>PRINT ALL</b>          | Prints all the reprocessing records stored in the equipment by manual operation of subcontrol panel. |

Table 6.7

| Setup Menu                         | Explanation  |
|------------------------------------|--|
| <b>AUTOMATIC PRINTING setup</b>    | Sets the “Automatic Printing function”<br>→ Refer to “Automatic Printing setup (Prints the reprocessing records automatically)” on page 181.                           |
| <b>Error Result Printout setup</b> | Sets the “Error Result Printout” on each printing option.<br>→ Refer to “Error result printout setup (for AUTOMATIC PRINTING, PRINT TODAY and PRINT ALL)” on page 183. |

Table 6.8

### NOTE

- “Reprocessing Result” is the record provided for a completed reprocessing process.
- “Error Result” is the record provided when an error is encountered during a reprocessing process, which result in an incomplete reprocessing process.
- The print function can print completed reprocessing cycles or error codes that occur during the reprocessing cycle. It cannot print the record of completed/incomplete sub-independent processes and the record of error occurred during the standby operation.
- For the printed information about “Reprocessing Result” and “Error Result”, refer to Section 4.11, “Printing of the reprocessing records” on page 130.

## Automatic Printing setup (Prints the reprocessing records automatically)

| Setting item       | Setting option | Explanation                                |
|--------------------|----------------|--|
| AUTOMATIC PRINTING | Activate       | Activate the Automatic Printing function   |
|                    | Deactivate     | Deactivate the Automatic Printing function |

Table 6.9

When activate/deactivate the “AUTOMATIC PRINTING”, follow the operations below.

1. Press the FUNC SEL button on the subcontrol panel to select “PRINT LAST”.

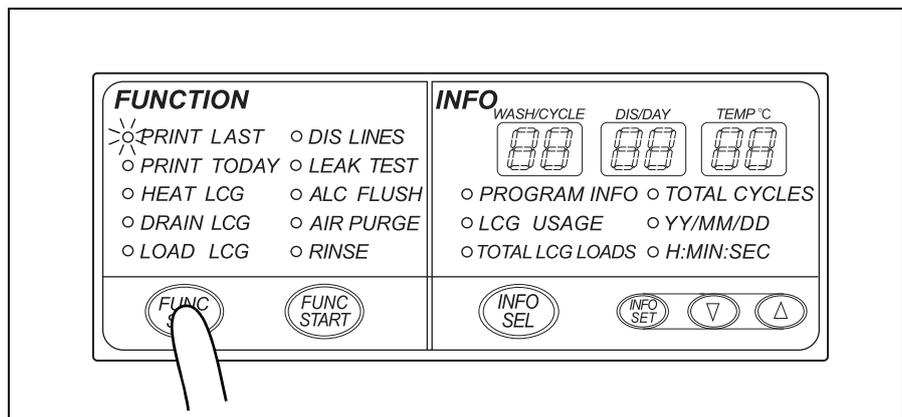


Figure 6.31

2. Press the “▼” button on the subcontrol panel for 5 seconds.

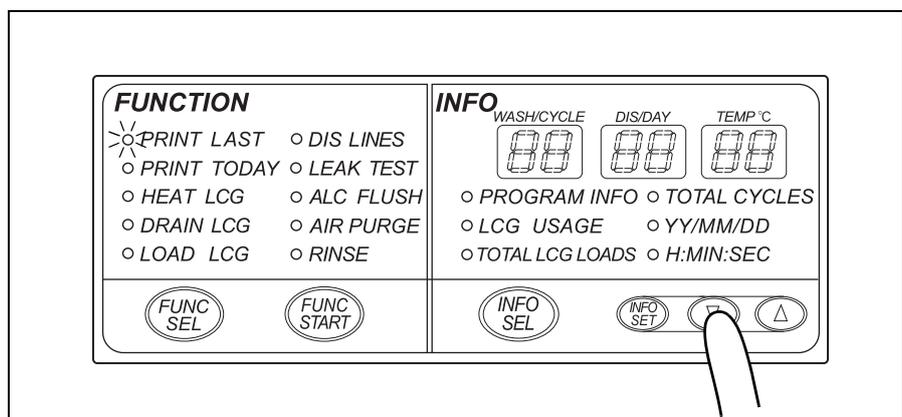


Figure 6.32

3. After pressing the “▼” button for 5 seconds, the “PRINT LAST” function lamp of subcontrol panel starts to blink for indicating the current setting of “AUTOMATIC PRINTING”. Make sure the indication of function lamp on the subcontrol panel and determine the setting of “AUTOMATIC PRINTING” in accordance with the description of Table 6.10. If you want to change the setting, keep pressing the “▼” button and wait for the “PRINT TODAY” function lamp of the subcontrol panel to start blinking. This indicates that “AUTOMATIC PRINTING” has been deactivated. The setting will be changed every 5 seconds by rotation.

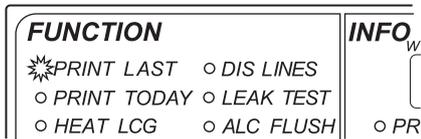
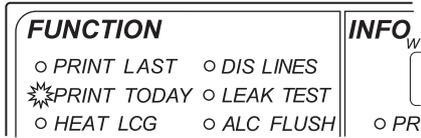
| Panel display of sub-control panel   | Setting of AUTOMATIC PRINTING |
|--|-------------------------------|
| When “PRINT LAST” lamp blinks  |                               |
|  <p>The panel display shows a grid with two columns. The left column is titled 'FUNCTION' and contains four items: 'PRINT LAST' (with a star icon and a dot), 'PRINT TODAY' (with a dot), 'HEAT LCG' (with a dot), and 'ALC FLUSH' (with a dot). The right column is titled 'INFO' and contains 'DIS LINES' (with a dot), 'LEAK TEST' (with a dot), and 'PR' (with a dot). A bracket on the right side of the 'INFO' column is labeled 'W'.</p>   | Activated                     |
| When “PRINT TODAY” lamp blinks   |                               |
|  <p>The panel display shows a grid with two columns. The left column is titled 'FUNCTION' and contains four items: 'PRINT LAST' (with a dot), 'PRINT TODAY' (with a star icon and a dot), 'HEAT LCG' (with a dot), and 'ALC FLUSH' (with a dot). The right column is titled 'INFO' and contains 'DIS LINES' (with a dot), 'LEAK TEST' (with a dot), and 'PR' (with a dot). A bracket on the right side of the 'INFO' column is labeled 'W'.</p> | Deactivated                   |

Table 6.10

**NOTE**

The “Automatic printing function” is set to “Activated” at the factory.

## **Error result printout setup (for AUTOMATIC PRINTING, PRINT TODAY and PRINT ALL)**

| Setting item (for each Print option) | Setting option                   | Explanation                         |  |
|--------------------------------------|----------------------------------|-------------------------------------|--|
| <b>Error Result Printout</b>         | <b>PRINT TODAY and PRINT ALL</b> | <b>Include</b>                      | PRINT TODAY and PRINT ALL include the "Error Results" in its printout. |
|                                      |                                  | <b>Exclude</b>                      | PRINT TODAY and PRINT ALL exclude the "Error Results" in its printout. |
|                                      | <b>AUTOMATIC PRINTING</b>        | <b>Include</b>                      | AUTOMATIC PRINTING includes the "Error Results" in its printout.       |
|                                      |                                  | <b>Exclude</b>                      | AUTOMATIC PRINTING excludes the "Error Results" in its printout.       |
|                                      | <b>PRINT LAST</b>                | <b>No option (Fixed to include)</b> | PRINT LAST includes the "Error Results" in its printout.               |

Table 6.11

When include/exclude the Error Result Printout in each print option, follow the operations below.

**NOTE**

You can select the error printout mode individually for "AUTOMATIC PRINTING" and "PRINT TODAY/PRINT ALL".

1. Press the FUNC SEL button on the subcontrol panel so that both the “PRINT LAST” and “PRINT TODAY” indicators light up.

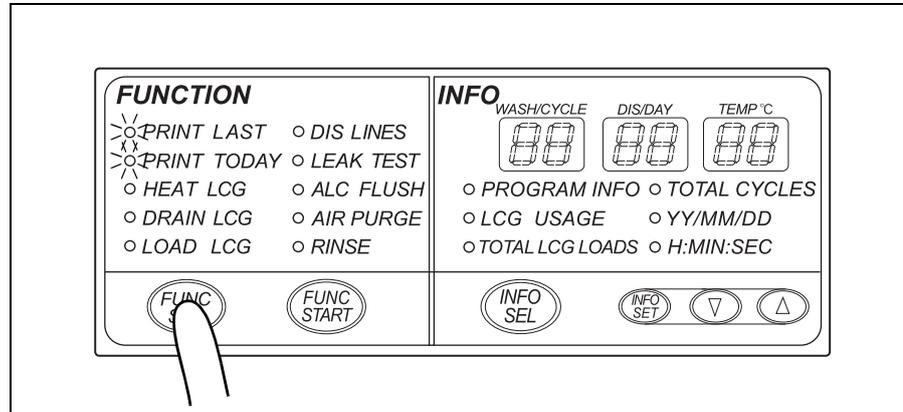


Figure 6.33

2. Press the “▼” button on the subcontrol panel for 5 seconds.

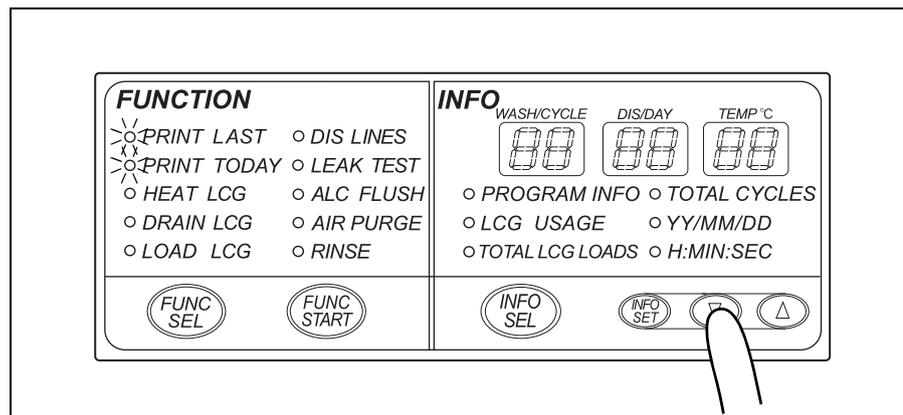
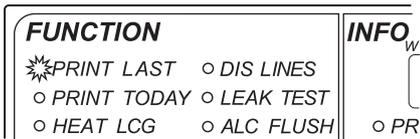
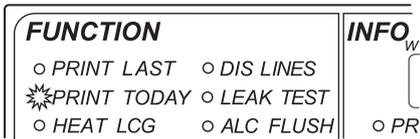
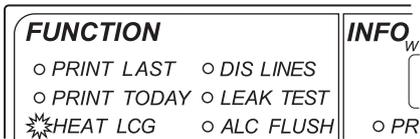


Figure 6.34

- After pressing the “▼” button for 5 seconds, the function lamp of subcontrol panel starts to blink for indicating the current setting of “Error Result Printout”. Make sure the indication of function lamp on the subcontrol panel and determine the setting of “Error Result Printout” in accordance with the description of Table 6.12. If you want to change the setting, keep pressing the “▼” button. The setting will be changed every 5 seconds by rotation.

| Panel display of sub-control panel   | Setting of Error Result Printout |   |              |
|--|----------------------------------|---|--------------|
|  | PRINT TODAY/ALL                  | AUTOMATIC PRINTING  | PRINT LAST   |
| When both “PRINT LAST” and “PRINT TODAY” lamp blink<br><br> | ○                                | ○<br>(If the AUTOMATIC PRINTING is activated, this setting will be reflected) | ○<br>(Fixed) |
| When “PRINT LAST” lamp blinks<br><br>                      | -                                |   |              |
| When “PRINT TODAY” lamp blinks<br><br>                    | ○                                | -<br>(If the AUTOMATIC PRINTING is activated, this setting will be reflected) |              |
| When “HEAT LCG” lamp blinks<br><br>                       | -                                | -   |              |

○ includes the error printout

- excludes the error printout

Table 6.12

**NOTE**

For “AUTOMATIC PRINTING” and “PRINT ALL/PRINT TODAY”, the “Error Result Printout” is set to “include” at the factory.

## Chapter 7 Routine Maintenance

To ensure safe operation of the device, it should be cleaned and inspected regularly. Parts and consumables should be added or replaced as required.

### **WARNING**

- When using the disinfectant solution and alcohol, Olympus recommends the use of gas filters and running this equipment in well-ventilated areas.
  - Wear a face mask, 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.

- Be sure to perform all the inspections, cleaning, replacement of consumables and other tasks described in this chapter. Otherwise, this equipment may not continue to operate and perform as expected.

**WARNING**

- When inspecting or cleaning this equipment, always wear appropriate personal protective equipment, such as eyewear, face mask, moisture-resistant clothing, and chemical-resistant gloves that fit properly and are long enough so that your skin is not exposed.
- If you find any problems or observe an irregularity, do not use the equipment and contact Olympus. If the device is used when an irregularity is observed, the device may malfunction. Water leakage, electric shock, burns, and/or fire may also result.
- Alcohol is flammable and should be handled with extra care.
- Before handling the alcohol, carefully read the precautions for use, become fully acquainted with all safety materials, and use the alcohol as instructed.

| Check | Monthly maintenance                                    |
|-------|--|
|       | 7.1 Replacing the gas filter (MAJ-822)                 |
|       | 7.2 Replacing the water filter (MAJ-824)* <sup>1</sup> |
|       | 7.3 Disinfecting the water supply piping               |
|       | 7.5 Replacing the air filter (MAJ-823)                 |
|       | 7.6 Cleaning the float switch                          |
|       | 7.7 Cleaning the detergent/alcohol drawer              |
|       | 7.8 Cleaning the accessories and accessory holder      |

Table 7.1

- \*1 Using at least a prefilter (0.45 micron or less) can extend the life of the water filter. If the prefilter is properly installed, the water filter and the prefilter should be replaced at least once every 6 months. For information on the Water Pre-filtration system, contact Olympus.

| Check | Weekly maintenance            |
|-------|-------------------------------|
|       | 7.9 Cleaning the alcohol tank |

Table 7.2

|              |  |
|--------------|--|
| <b>Check</b> | Work to be performed as required   |
|              | 7.10 Checking cassette cutters (when using concentrated disinfectant solution)               |
|              | 7.11 Cleaning the disinfectant bottle drawer (when using concentrated disinfectant solution) |
|              | 7.12 Replacing the disinfectant solution   |
|              | 7.13 Cleaning the mesh filter in the water supply hose connector                             |
|              | 7.14 Replacing the fuse  |
|              | 7.15 Disinfecting the internal detergent/alcohol lines                                       |
|              | 7.16 Preparing the reprocessor for long-term storage   |
|              | 7.17 Installing the printer paper roll   |
|              | 7.18 Care and maintenance after long-term storage  |

Table 7.3

## 7.1 Replacing the gas filter (MAJ-822)

Replace the gas filter every month or whenever the odor of the disinfectant solution seems to have increased, whichever comes first.

|              |  |
|--------------|--|
| <b>Check</b> | <b>Required items</b>                    |
|              | Gas filter (MAJ-822) (× 2 pieces)        |
|              | Indelible pen or other writing implement |

Table 7.4

### **WARNING**

The disinfectant vapor generated by the device has been proven safe in in-house testing. Nevertheless, as individual reactions to the disinfectant may vary, Olympus recommend the use of gas filters and enhanced protection by observing the ventilation conditions given in “Ensuring the safety of reprocessing personnel” on page 11. The use of the gas filter does not replace the need for proper room ventilation.

### **CAUTION**

- Do not block the ventilation openings on the gas filter cases with the replacement date indication sticker or any other foreign material. Blocking the ventilation not only hinders deodorization but may also cause the device to malfunction.
- If the odor of the disinfectant solution seems to have increased after replacement of gas filters, contact Olympus.

1. Remove the gas filter case from the deep part of the lid.

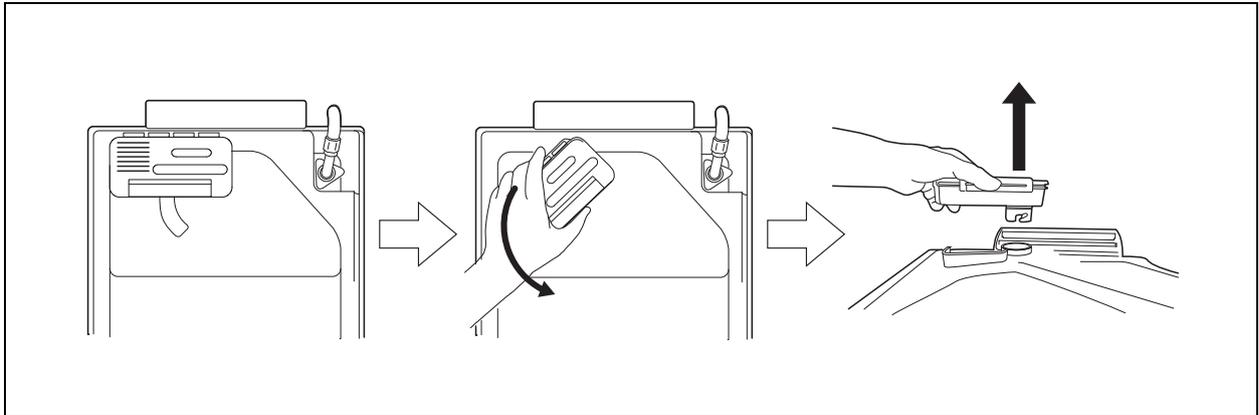


Figure 7.1

**NOTE**

When the device is shipped from the factory, the gas filters are not installed in the device.

2. Open the front door and remove the gas filter case from the top right position.

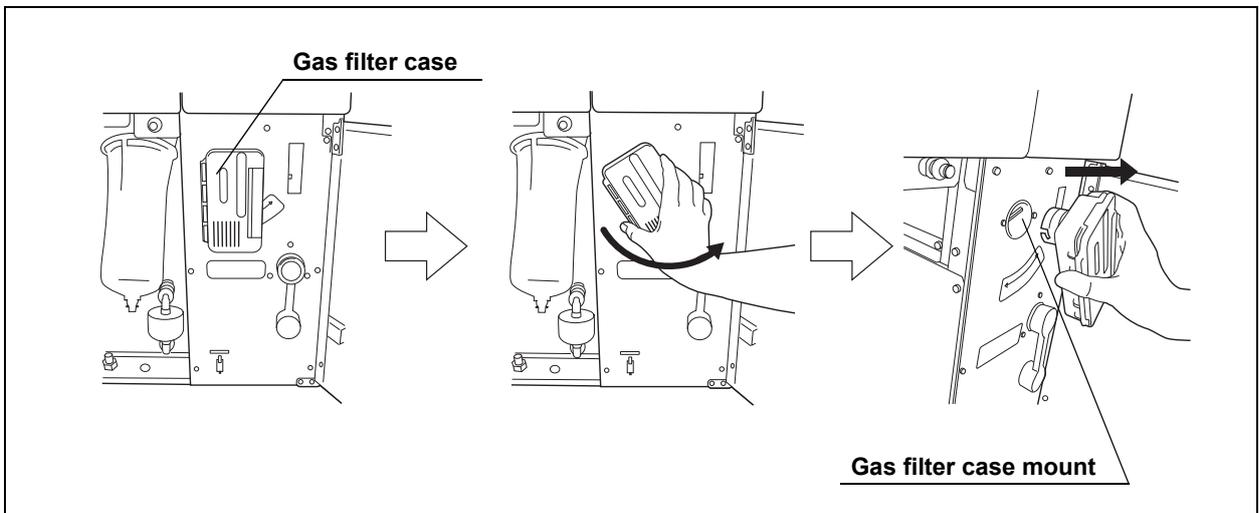


Figure 7.2

3. Unlock each gas filter case cover and open it.

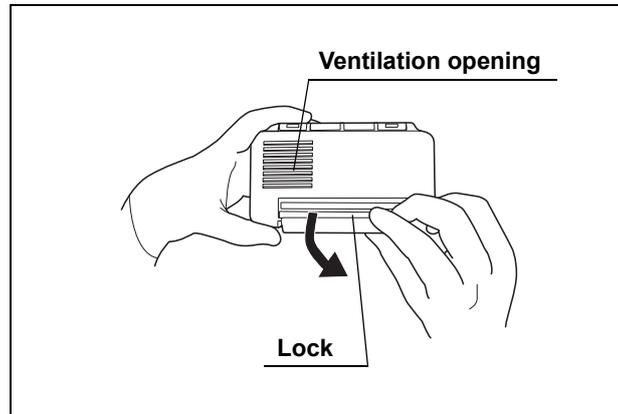


Figure 7.3

4. Remove the old gas filter. The gas filter case designed for the lid has a gas filter adapter inside of it to prevent water droplet penetration.

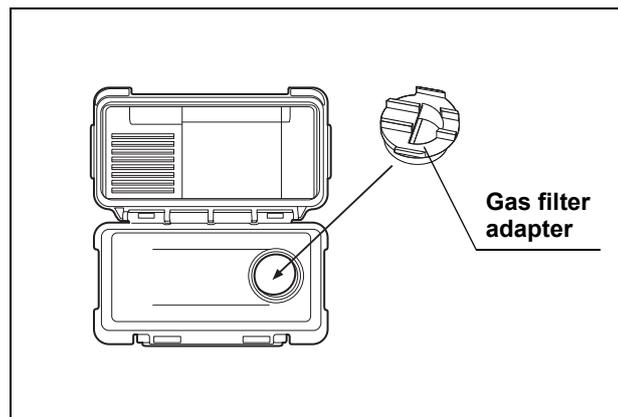


Figure 7.4

5. Place a new gas filter in each gas filter case.

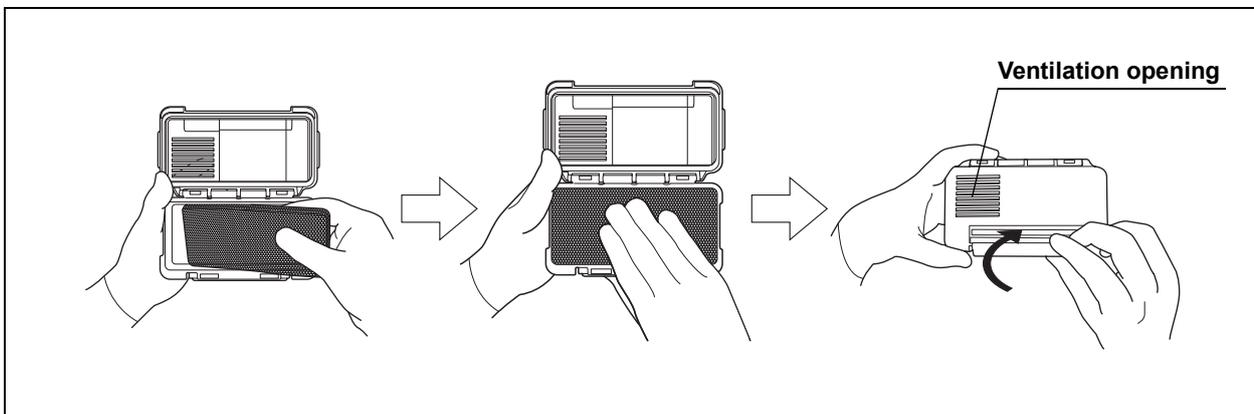


Figure 7.5

6. Close and lock the cover. Be careful not to catch the gas filter when closing the cover.
7. Enter the data on the replacement date indication stickers provided with each gas filter, and attach the stickers to the gas filter cases. Be careful not to block the ventilation opening (remove the previous replacement date indication sticker before attaching the new sticker).
8. Insert the gas filter case designed for the reprocessing basin (the one with gas filter adapter attached to it) into the mount on the deep part of the lid, and then turn it all the way in the direction shown below until it is stopped.

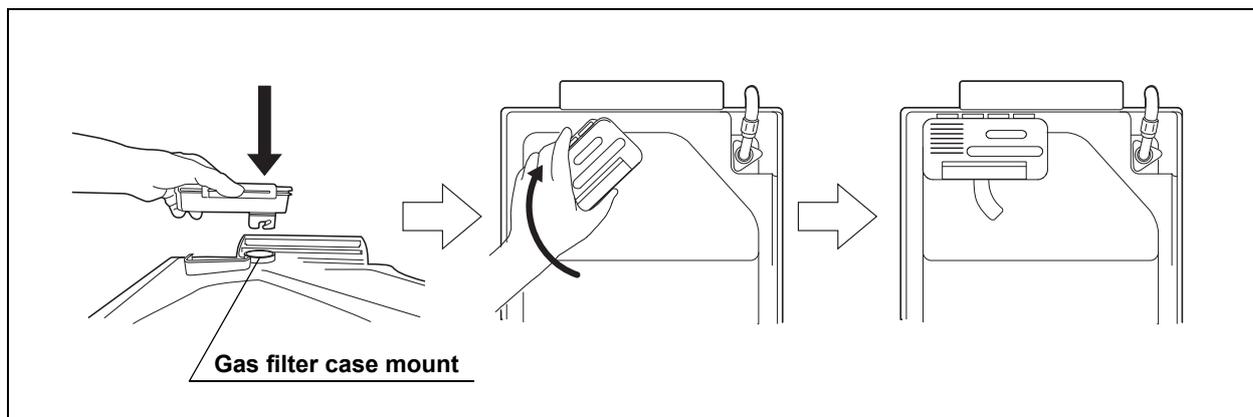


Figure 7.6

9. Insert the gas filter case designed for the disinfectant solution tank into the gas filter case mount at the top right of the inside of the front door, and then turn it all the way in the direction shown below until it is stopped.

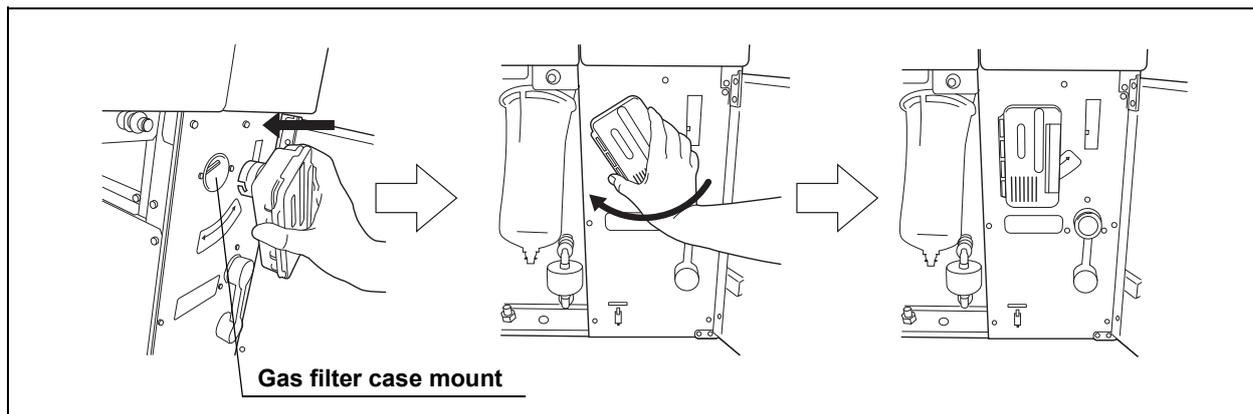


Figure 7.7

10. Close the front door.

## 7.2 Replacing the water filter (MAJ-824)

Replace the water filter at least once a month to prevent contamination of the rinse water. The water filter should also be replaced whenever an error code indicating water supply insufficiency [E01] is displayed. The water filter should be replaced by following the flow shown below.

**NOTE**

- Filter life varies depending on a number of factors including incoming water quality and use volume.
- Using at least a prefilter (0.45 micron or less) can extend the life of the water filter. If the prefilter is properly installed, the water filter and the prefilter should be replaced at least once every 6 months. For information on the Water Pre-filtration system, contact Olympus.

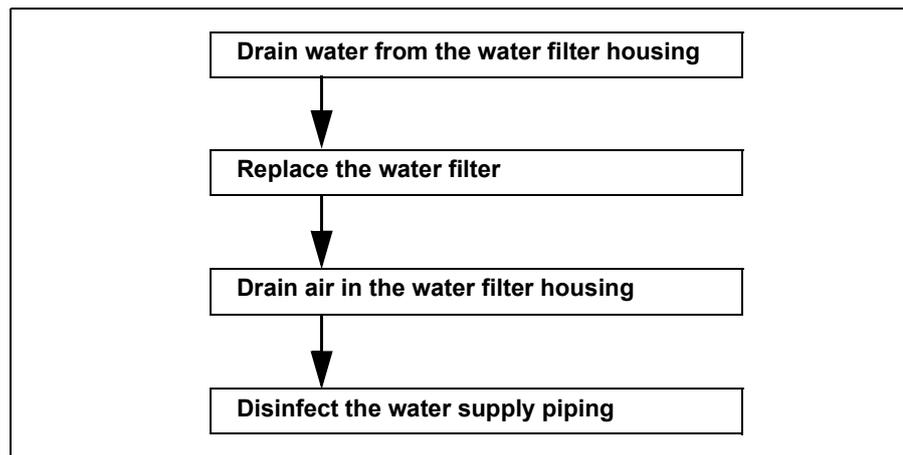


Figure 7.8

| Check | Required items   |
|-------|--|
|       | Water filter (MAJ-824)   |
|       | Water filter wrench  |
|       | Water filter tubes (× 2)   |
|       | Container with 2 L or larger capacity (wide-mouthed container such as a vat) |
|       | Indelible pen or other writing implement                                     |

Table 7.5

**WARNING**

- Replace the water filter in a clean environment. Do not touch the inner side of the water filter or allow dust to get in it.
- After replacing the water filter, be sure to perform the operation described in Section 7.3, “Disinfecting the water supply piping” on page 202 to prevent the growth of water-borne microorganisms. Failure to perform this operation could result in contamination of the device piping and ineffective reprocessing of the endoscope.
- Always be sure to attach the water filter. Otherwise, water-borne microorganisms and particulates in the water may contaminate the device piping and prevent effective reprocessing of the endoscope.

**CAUTION**

- If air gets in the water filter housing, it may extend the process time. In case of an irregularity such as extension of the process time or lack of water supply, drain the air as described in “Draining air in the water filter housing” on page 199.
- Be careful not to drop the removed water filter housing to avoid damaging the connector below the water filter housing. Make sure that the O-ring at the head of the water filter housing is free of abnormalities such as cracks, breaks, rips, scratches, or stains. Water leakage may result if the O-ring is not attached or is abnormal.

**○ Draining water from the water filter housing**

1. Make sure that the power switch is ON.
2. Close the lid by pushing it until it clicks.
3. Open the front door of the device.
4. Place the container with a capacity of 2 L or more in front of the device.
5. Put the tube-side ends of the two filter tubes in the container placed above.
6. Insert the connector ends of the two filter tubes into the connector below the water filter housing and the connector above the water filter housing until they click. Water will start to flow from the tube connected to the connector below the water filter housing.
7. Press the FUNC SEL button on the subcontrol panel to select “AIR PURGE”.

8. Press the FUNC START button on the subcontrol panel.

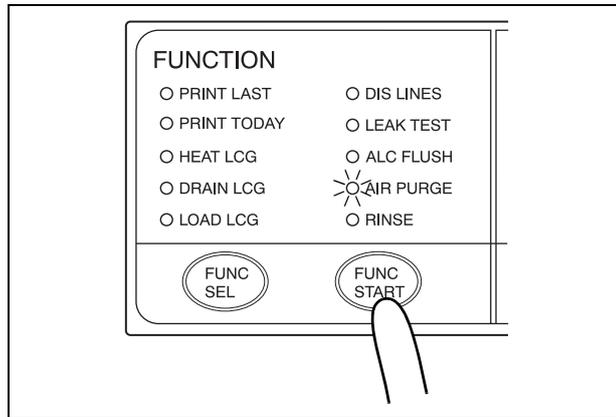


Figure 7.9

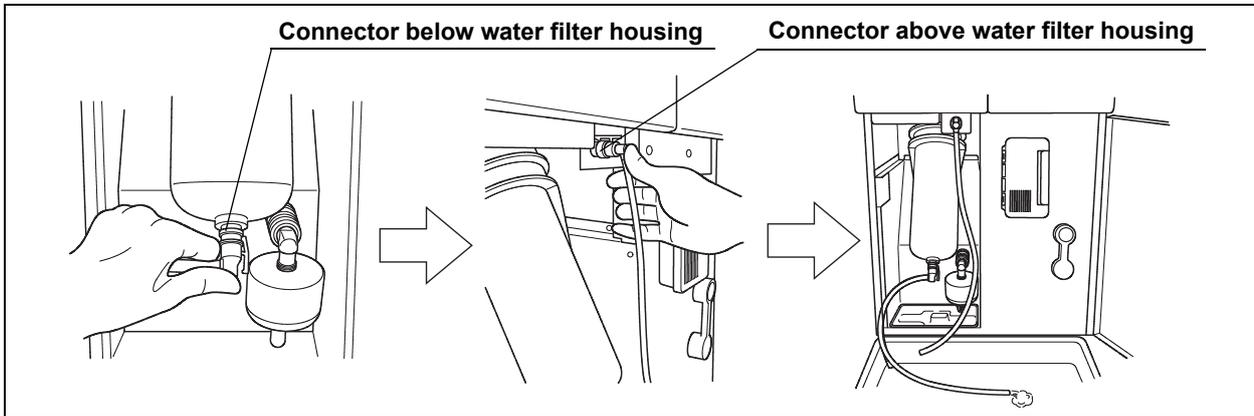


Figure 7.10

9. When the water flow stops, press the STOP/RESET button to end the air purge process, and disconnect the two filter tubes by pushing the lock levers on their connectors.

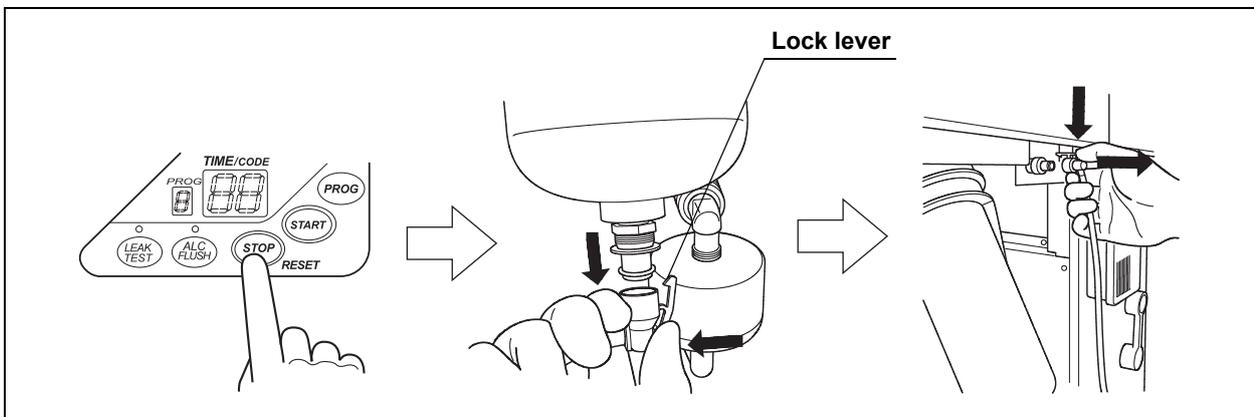


Figure 7.11

## ○ Replacing the water filter

### WARNING

- Replace the water filter in a clean environment. Do not touch the inner side of the water filter or allow dust to get in it.
- Always be sure to attach the water filter. Otherwise, water-borne microorganisms and particulates in the water may contaminate the device piping and prevent effective reprocessing of the endoscope.

### CAUTION

Hold the water filter wrench at a point closer to you than to the projection on the grip. If you hold it at a point closer to the water filter housing connector than the projection, you might catch your finger in the mechanism.

1. Insert the water filter wrench from below the water case and rotate the tool as shown below to loosen the water filter housing.

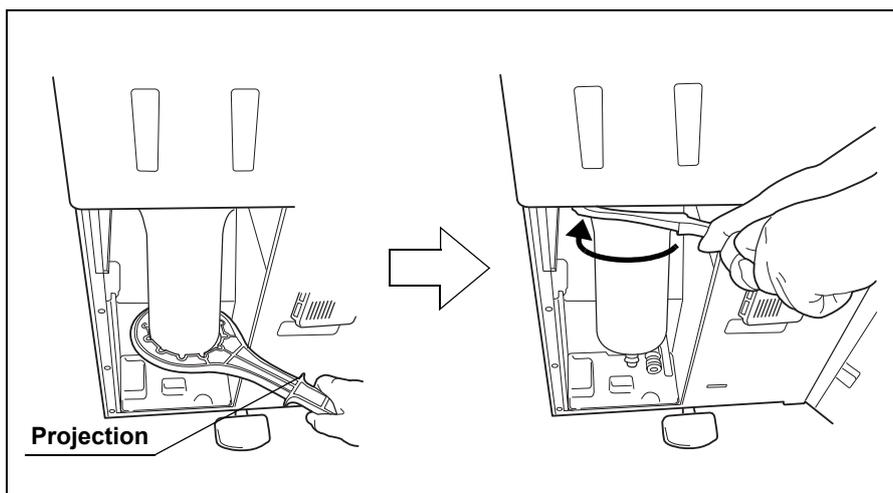


Figure 7.12

### CAUTION

- Once the water filter housing has been fully loosened, hold it with both hands and remove it. If the case is not fully loosened, your hands may slip and you could be injured.
- When the water filter is removed, residual water flows from the connectors. Therefore, you should cover the water filter with the water filter housing when removing so that the residual water is caught in the case. If the water tray fills with residual water, remove the water tray and drain it.

2. Hold the water filter housing with both hands and rotate it in the direction shown to remove it.

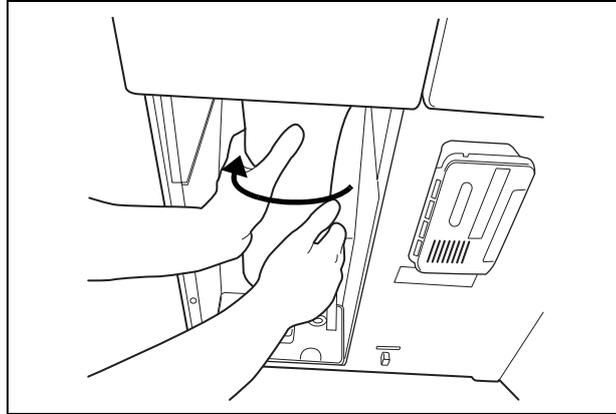


Figure 7.13

3. Pull the old water filter downward to remove.

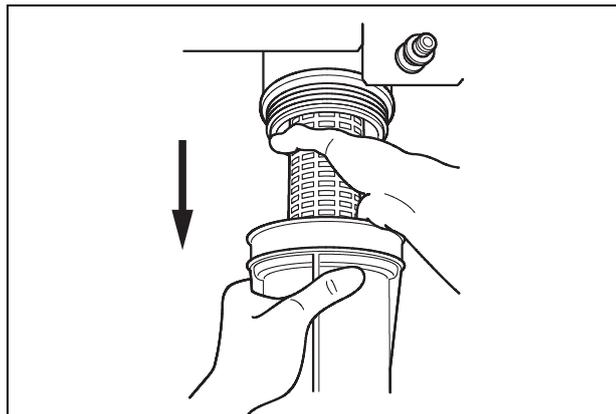


Figure 7.14

**NOTE**

When the device is shipped from the factory, the water filter is not mounted in the water filter housing.

4. Open the bottom (the side without the O-ring) of the package containing the new water filter.

5. Place the new water filter directly from the bag into the water filter housing so that O-ring will be positioned upward.

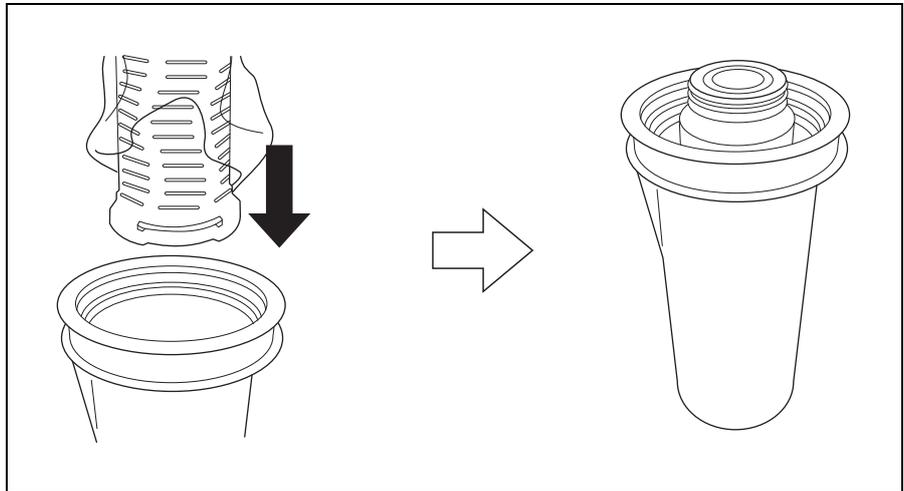


Figure 7.15

6. Rotate the water filter housing in the direction shown to secure temporarily.

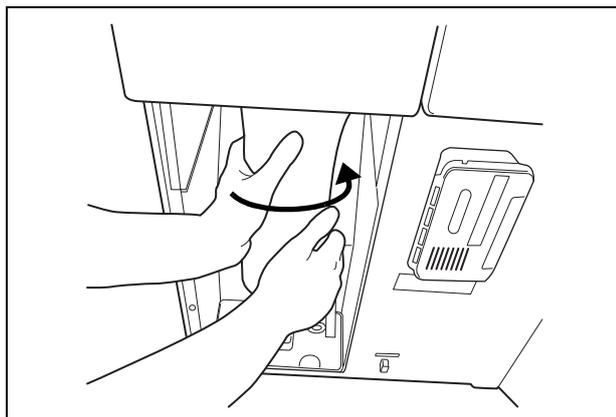


Figure 7.16

**NOTE**

- To ensure smooth installation, it is recommended to moisten the O-ring at the head of the water filter with clean water or ethanol before securing it temporarily.
- The rotation drag increases during temporary securing, but rotate the case all the way until it is stopped.

7. Attach the water filter wrench and rotate it slowly in the direction shown to tighten.

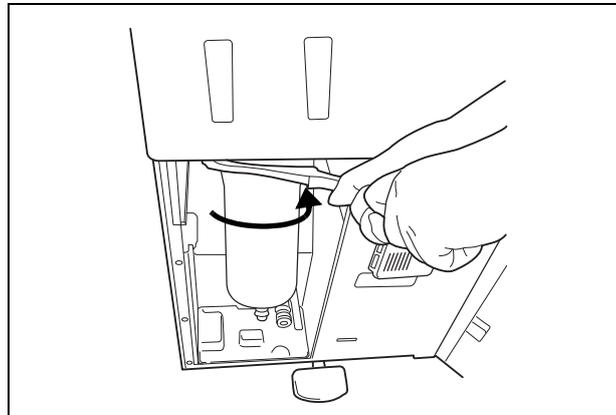


Figure 7.17

8. Remove the water filter wrench and place it in the space on the left of the water filter housing.

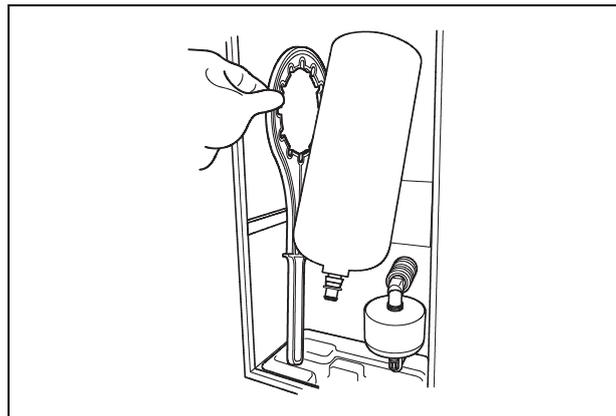


Figure 7.18

9. Enter the date on the replacement date indication sticker provided with the water filter using an indelible ink pen, and attach the sticker to the device where it will be easily visible (Remove the previous replacement date indication sticker before attaching the new sticker).

## ○ Draining air in the water filter housing

### CAUTION

Be sure to drain air from the newly attached water filter. If air gets in the water filter housing, the process time may be extended. Air should also be drained from the water filter housing whenever there is an irregularity such as extension of the process time.

| Check | Required items   |
|-------|--|
|       | Filter tube (× 1)  |
|       | Container with 2 L or larger capacity (wide-mouthed container such as a vat) |

Table 7.6

1. Make sure that the water faucet is open.
2. Close the lid by pushing it until it clicks.
3. Open the front door of the device.
4. Place a container with a capacity of 2 L or more in front of the device.
5. Put the tube-side end of the filter tube in the container, and insert the connector end of the filter tube into the connector above the water filter housing until it clicks. Do not connect anything to the connector below the water filter housing.

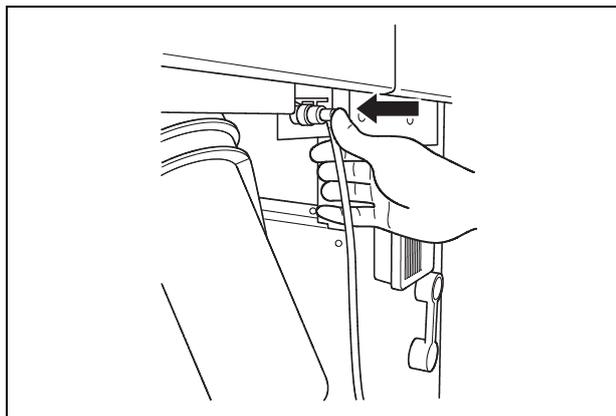


Figure 7.19

6. Press the FUNC SEL button on the subcontrol panel to select "LEAK TEST".

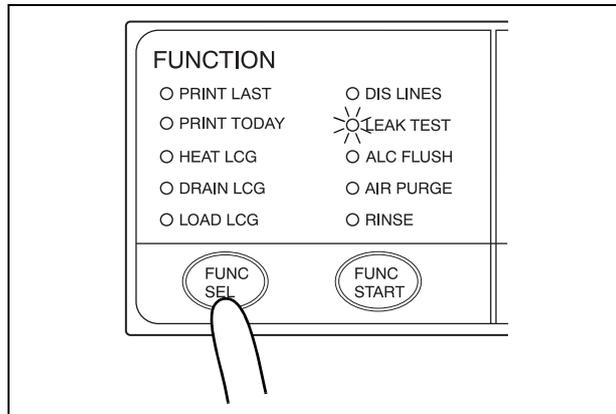


Figure 7.20

7. Press the FUNC START button on the subcontrol panel.

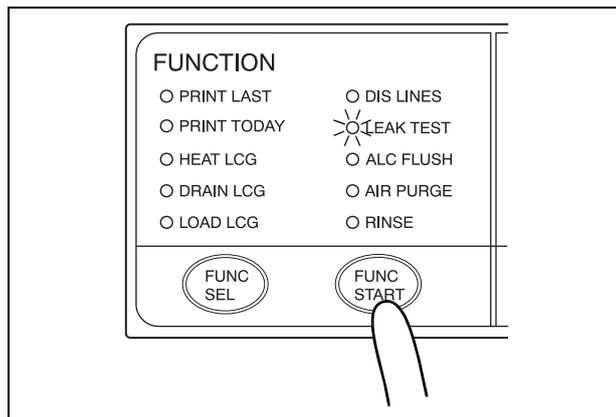


Figure 7.21

8. When water starts to flow continuously from the filter tube, disconnect the tube by pushing its lock lever. Water flow should stop when the filter tube is disconnected.

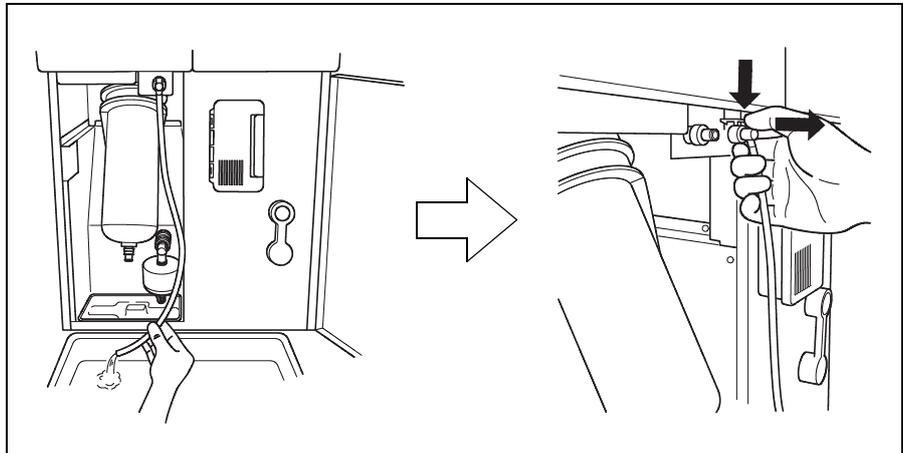


Figure 7.22

9. Make sure that no water leaks from the water filter housing. If a water leak is observed, immediately press the STOP/RESET button to stop water supply and reinstall the water filter (restart procedures beginning with “Draining water from the water filter housing” on page 193).
10. Press the STOP/RESET button to drain water from the reprocessing basin.
11. Close the front door.
12. Rinse the filter tube with running water, dry it completely and store in a clean place.
13. Go to Section 7.3, “Disinfecting the water supply piping” on page 202 and follow the instructions.

## 7.3 Disinfecting the water supply piping

| Check | Required items   |
|-------|--|
|       | Container with 2 L or larger capacity (wide-mouthed container such as a vat) |
|       | Filter tube (× 1)  |
|       | Water supply piping disinfecting hose  |

Table 7.7

Disinfection of water supply piping is required in the following cases.

- Before using this equipment for the first time (after installation of the water filter).
- Immediately after replacement of the water filter.
- Whenever bacteria in the water supply piping is identified.
- Before using the device when it has not been used for more than 14 days.

**NOTE**

- Olympus recommends to perform microbiological sampling of the OER-Pro rinse water quality right after performing the water supply piping disinfection if the device has not been used for more than 14 days. For details on sampling rinse water, see Section 7.4, “Microbiological surveillance” on page 211.
- When disinfection of water supply piping is required, Olympus recommends performing it prior to replacement of the disinfectant solution. The disinfectant solution must still meet the MRC using the test strip. After disinfection of water supply piping, drain the disinfectant solution according to the instructions in the instruction manual and the facility policy. Fill the OER-Pro with fresh disinfectant solution prior to proceeding with endoscope reprocessing.
- There may be instances when the water supply lines are disinfected using fresh disinfectant for the first time. Following disinfection of the water supply piping with fresh disinfectant, the quantity of disinfectant solution might be reduced preventing use of the fresh disinfectant for endoscope reprocessing. In this case, additional fresh disinfectant can be added to the OER-Pro only when using the ready-to-use disinfectant prepared by top loading. Adding fresh disinfectant to increase the volume of the existing fresh disinfectant will achieve typical usage conditions.

The disinfectant solution stored in the equipment is used for disinfection of the water supply piping.

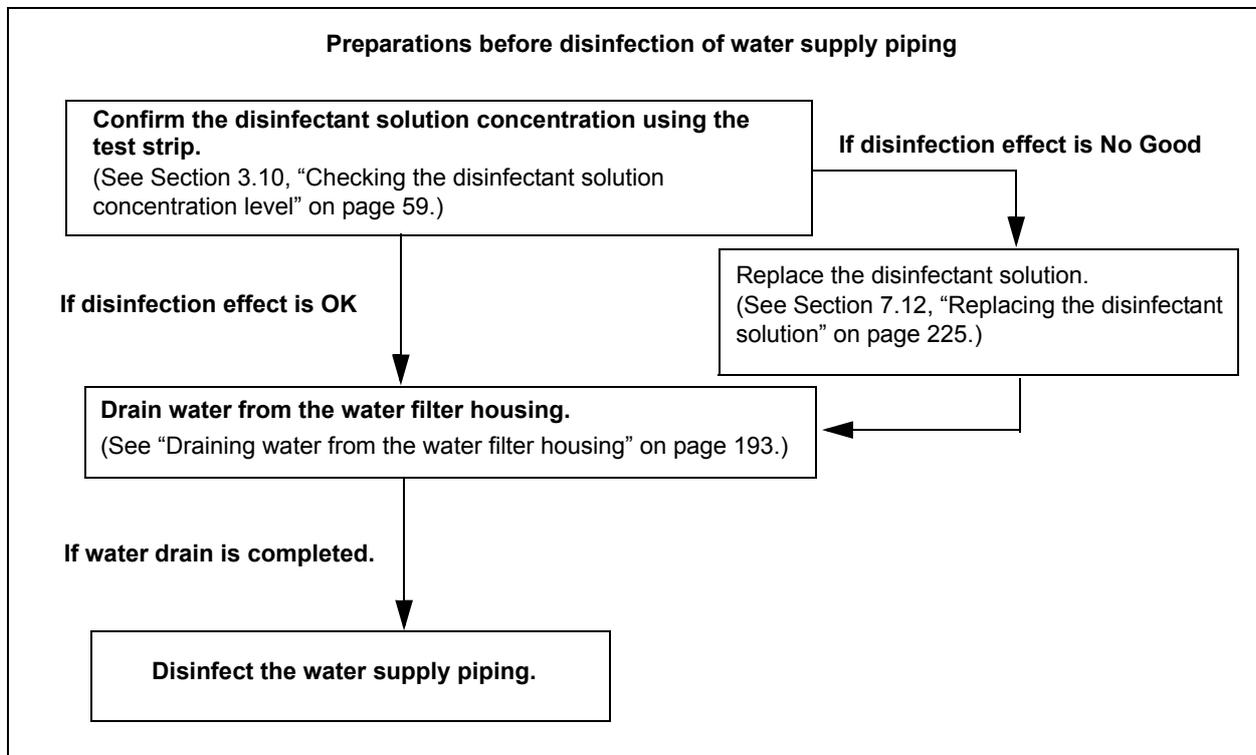


Figure 7.23

**WARNING**

- Before disinfecting the water supply piping, check the concentration of the disinfectant solution with the test strip, and replace the disinfectant solution if the disinfectant concentration is below the required level. If this check is not performed, disinfection may be insufficient.
- Disinfection of the water supply piping is required each time the water filter is replaced (i.e., at least once a month). There may be other circumstances where this is required, for example a flood or hurricane. Microbiological sampling of the OER-Pro rinse water may indicate disinfection is required.
- Disconnect the connecting tubes from the connectors on the device before disinfecting the water supply piping. Otherwise, a jet of disinfectant solution may be output from the connecting tubes and leak from a connector such as the gas filter case connector.
- 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.

**WARNING**

- When handling the disinfectant solution, wear personal protective equipment to prevent any disinfectant from getting on your skin or being inhaled. Avoid direct physical contact and inhalation of vapors. 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 eyewear, 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.

**NOTE**

- For details on replacing the disinfectant solution, see Section 7.12, “Replacing the disinfectant solution” on page 225.
  - After disinfection of the water supply piping, the quantity and/or concentration of the disinfectant solution might be reduced, which prevents additional reprocessing cycles from being performed. Do not add fresh disinfectant solution to the used disinfectant solution. Except for the case of performing water line disinfection with fresh new disinfectant solution, do not add fresh disinfectant solution to increase the volume of the disinfectant solution in the OER-Pro. Drain the disinfectant solution completely and replace with fresh disinfectant solution after disinfection of the water supply piping. It is recommended to perform disinfection of the water supply piping immediately before routine replacement of the disinfectant solution.
  - Disinfecting the water supply piping also disinfects the water filter and other components in the piping.
1. Check the concentration of the disinfectant solution as described in Section 3.10, “Checking the disinfectant solution concentration level” on page 59.
  2. Drain water from the water filter housing as described in “Draining water from the water filter housing” in Section 7.2, “Replacing the water filter (MAJ-824)” on page 192.
  3. Make sure that the water faucet is open.
  4. Step on the foot pedal to open the lid.

5. Connect the water supply piping disinfection hose between the Air/water/instrument channel connector (gray) in the reprocessing basin and the water supply piping disinfection connector.

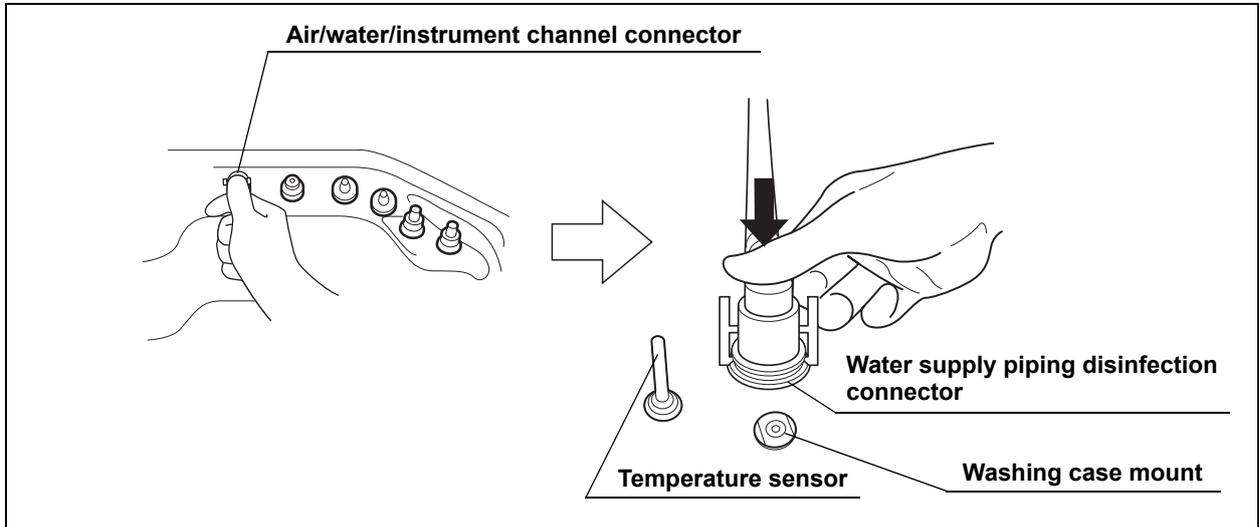


Figure 7.24

6. Close the lid.
7. Press the FUNC SEL button on the subcontrol panel to select "DIS LINES".

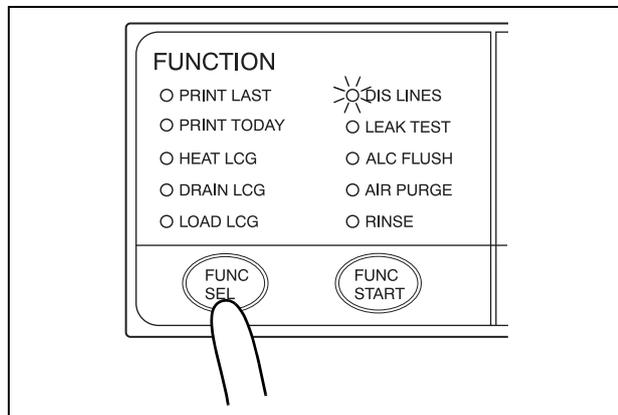


Figure 7.25

8. Press the FUNC START button on the subcontrol panel. The TIME/CODE display on the main control panel shows the remaining time, which is counted down every minute.

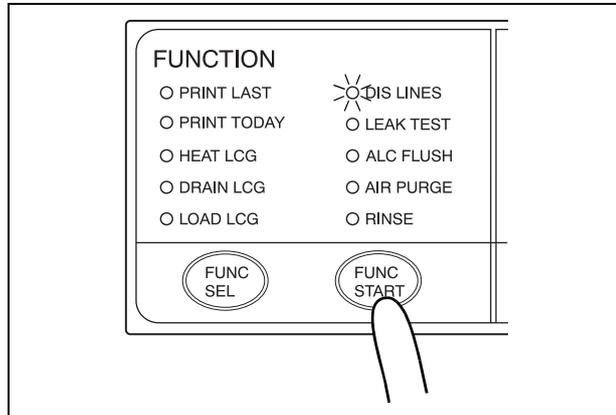


Figure 7.26

9. When the reprocessing basin is filled with disinfectant solution, three buzzer beeps are generated and the TIME/CODE display on the main control panel blinks.
10. Push the area marked "PUSH" on the front door to open it.
11. Prepare a container with a capacity of 2 L or more and place it in front of the device.
12. Hold the tube-side end of the filter tube and put it in the container.
13. Insert the connector end of the filter tube into the connector above the water filter housing.

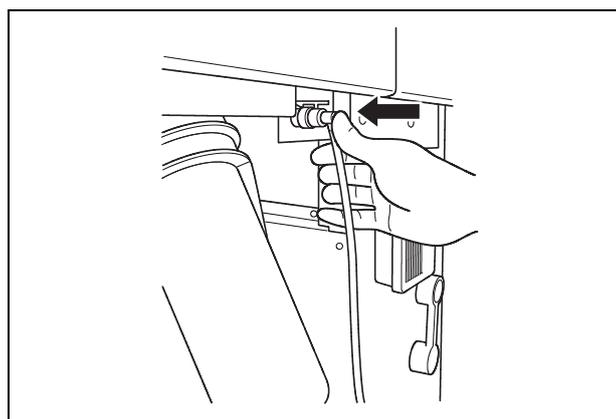


Figure 7.27

**NOTE**

Do not connect a filter tube to the connector below the water filter housing.

14. Press the FUNC START button on the subcontrol panel again.

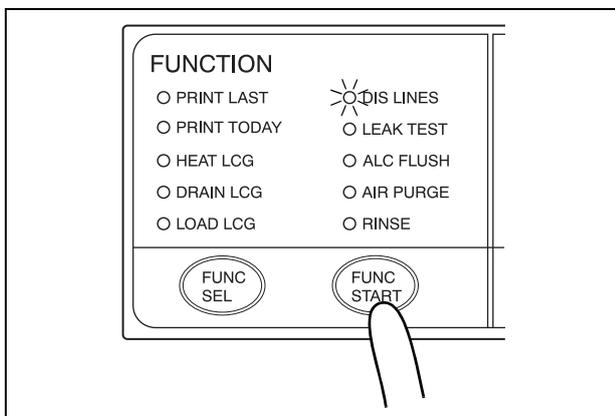


Figure 7.28

15. Disconnect the filter tube as soon as disinfectant solution starts to flow from it continuously.

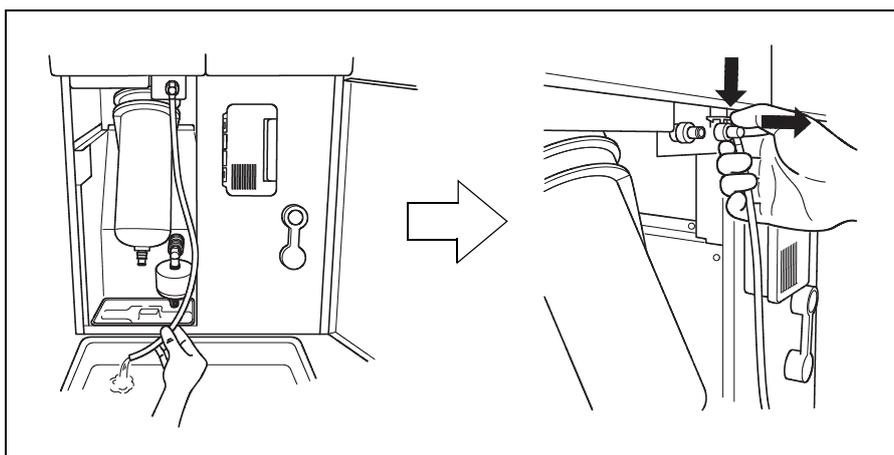


Figure 7.29

**NOTE**

If the temperature of the disinfectant solution is below 20°C (68°F), it is heated to 20°C (68°F). During heating, the TIME/CODE display blinks without counting down. It restarts countdown after completion of heating.

16. A jet of fluid exits the hole on the water supply piping disinfection hose during the process. Make sure that the fluid hits the lid.

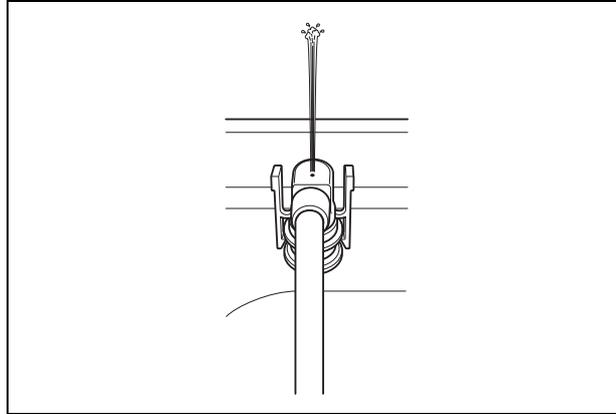


Figure 7.30

17. Make sure that a jet of fluid is output from the water supply/circulation nozzle to the dome of lid during the process.

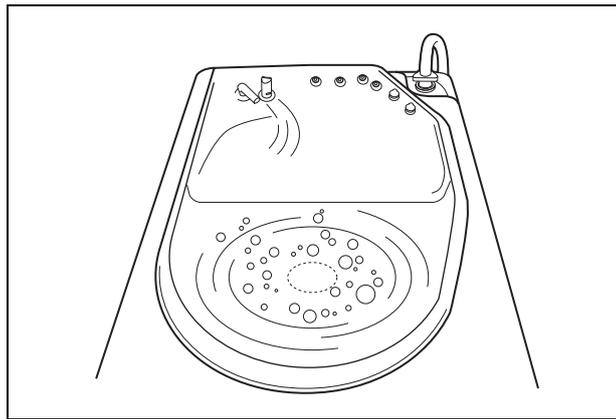


Figure 7.31

**NOTE**

Fluid jet from the water supply/circulation nozzle of this process is gentler than other processes such as the endoscope reprocessing process. As a result, fluid spreads on less than half of dome part of the lid whereas the fluid jet of other process spreads on entire dome part of the lid. This difference is due to use of a different pump and therefore the gentle fluid flow of this process is adequate.

18. When the remaining time displayed on the main control panel reaches [00], the buzzer beeps and the TIME/CODE display shows a [0] mark rotating as shown below.

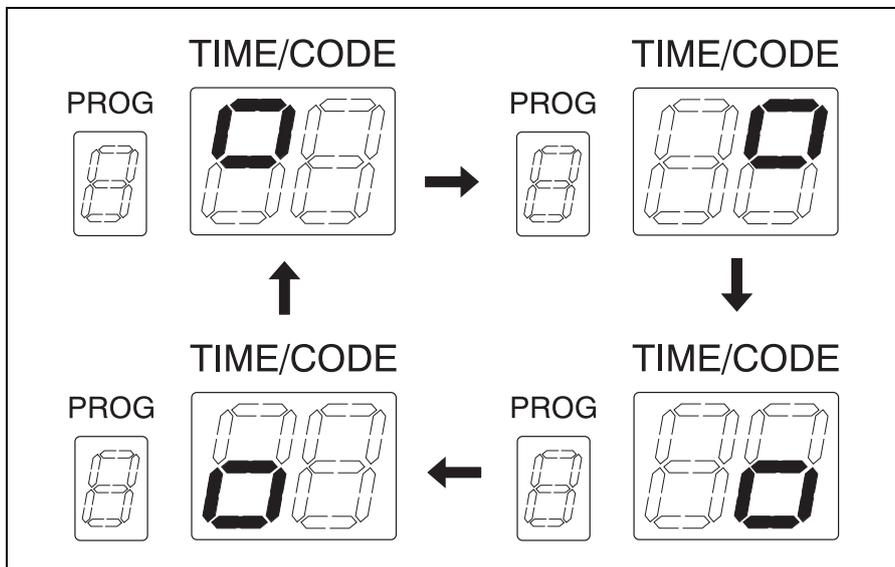


Figure 7.32

19. With the tube-side end of the filter tube held in place in the container, insert the connector end of the filter tube into the connector above the water filter housing until it clicks. Do not connect anything to the connector below the water filter housing.

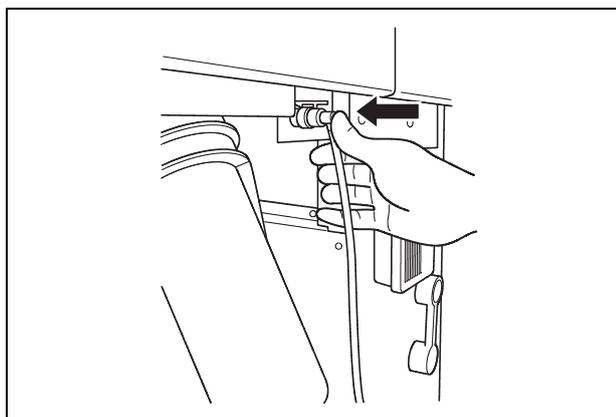


Figure 7.33

20. Press the FUNC START button on the subcontrol panel once again.

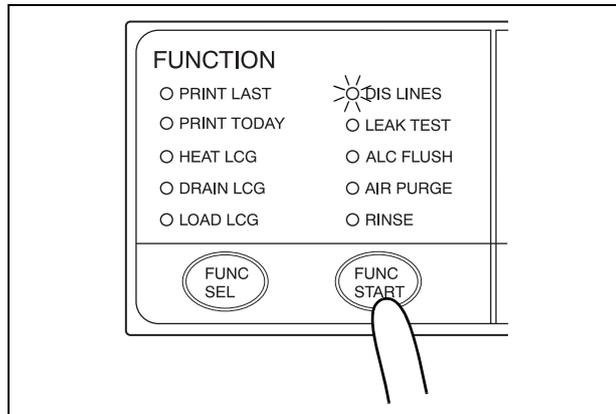


Figure 7.34

21. Water flows continuously from the filter tube. In about 15 seconds, the buzzer beeps indicating the end of the process (the CODE/TIME display on the main control panel shows [- -]).

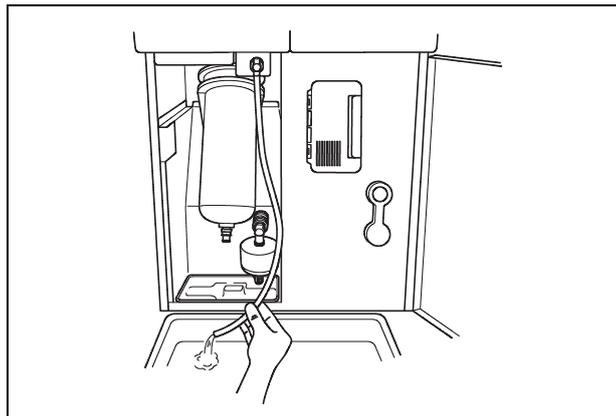


Figure 7.35

22. Disconnect the filter tube by pushing its lock lever.  
23. Close the front door.  
24. Step on the foot pedal to open the lid.

**WARNING**

When disconnecting the water supply piping disinfection hose from the connector, cover the end of the hose with a hand wearing a waterproof glove so that the water inside the hose does not splash.

25. Disconnect the water supply piping disinfection hose and close the lid.

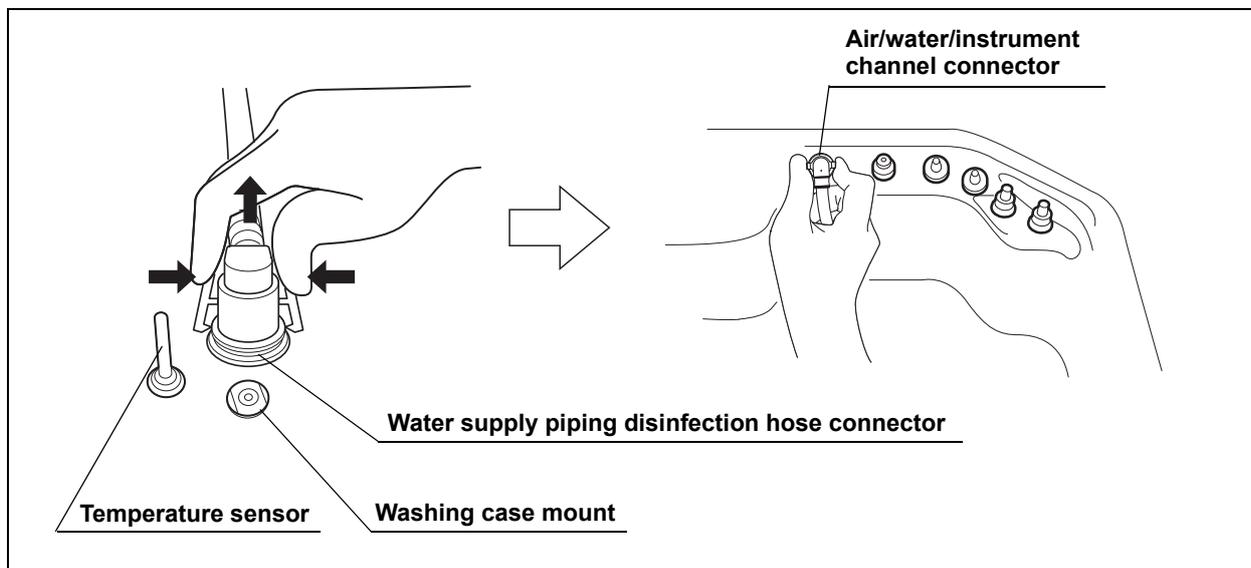


Figure 7.36

26. Rinse the filter tube and water supply piping disinfection hose thoroughly in running water, dry them thoroughly and store in a clean place.

## 7.4 Microbiological surveillance

Perform microbiological sampling of the OER-Pro rinse water quality as required by your hospital's policy. Also Olympus recommends to perform microbiological sampling of the rinse water right after performing the water supply piping disinfection if the device has not been used for more than 14 days. Sampling from the inner piping of the equipment should be conducted by using the following methods.

| Check | Required items  |
|-------|---|
|       | Sampling tube (gray)  |
|       | Container with 2 L or large capacity (wide-mouthed container such as a vat) |
|       | Sterilized bottle   |

Table 7.8

1. Connect the sampling tube connector to the same-colored connector at the rear center of the reprocessing basin by pushing down on the tube's connector until it clicks (see Figure 7.37).

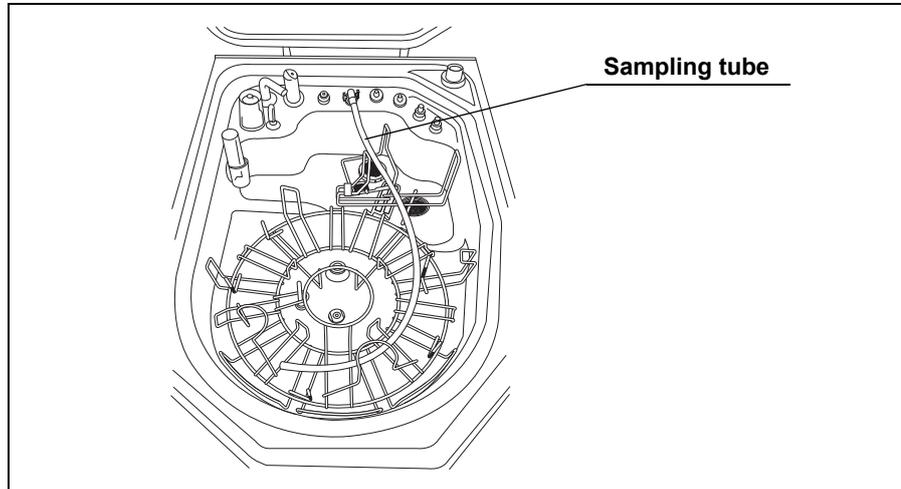


Figure 7.37

**WARNING**

Make sure there are no kinks in the sampling tube after being connected. If the sampling tube is kinked, the cleaning/disinfection of the sampling tube may be insufficient, or may cause equipment malfunction.

2. Close the lid.
3. Press the PROG button on the main control panel to select a program [1] to [3] (see Figure 7.38).

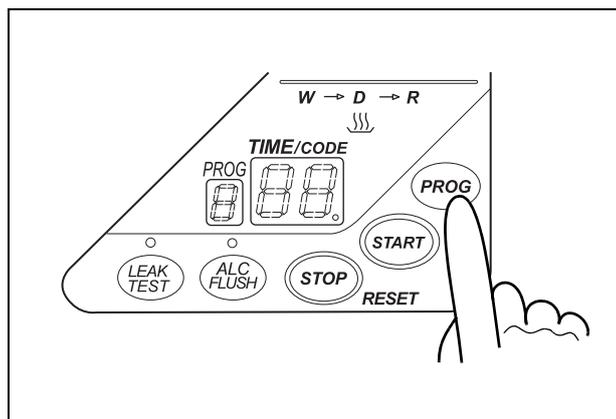


Figure 7.38

**NOTE**

The sampling tube is disinfected first.

4. Press the START button on the main panel. In about 10 seconds, the water supply starts and the TIME/CODE display shows the remaining reprocessing time.

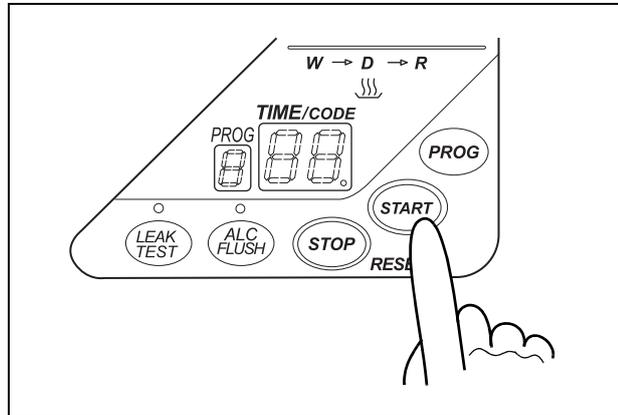


Figure 7.39

5. When reprocessing is finished, the buzzer beeps and the TIME/CODE display shows [- -] indicating that the process has ended.

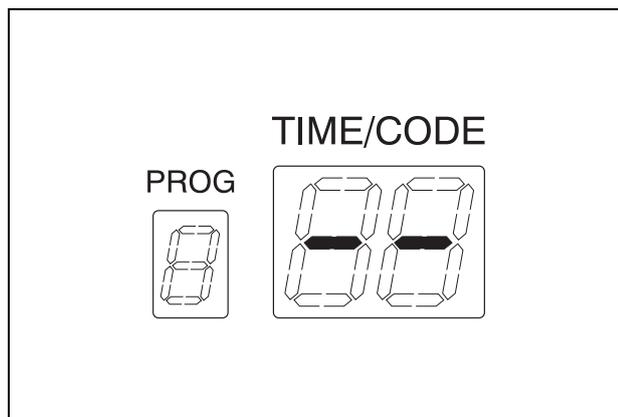


Figure 7.40

6. Step on the foot pedal to open the lid.
7. Remove the gas filter case from the dome part of the lid.

**CAUTION**

Be sure to wear sterile gloves when touching the cleaned/disinfected sampling tube to prevent contamination. Do not touch the lid, the reprocessing basin, the container or any area while wearing the sterile gloves. Otherwise, the collected water may become contaminated.

**CAUTION**

Make sure that the distal end of the sampling tube does not come into contact with the lid, the reprocessing basin, the container, or any other area. Otherwise, collected water may become contaminated.

8. Close the lid while taking the sampling tube out of the gas filter case mount (see Figure 7.41).

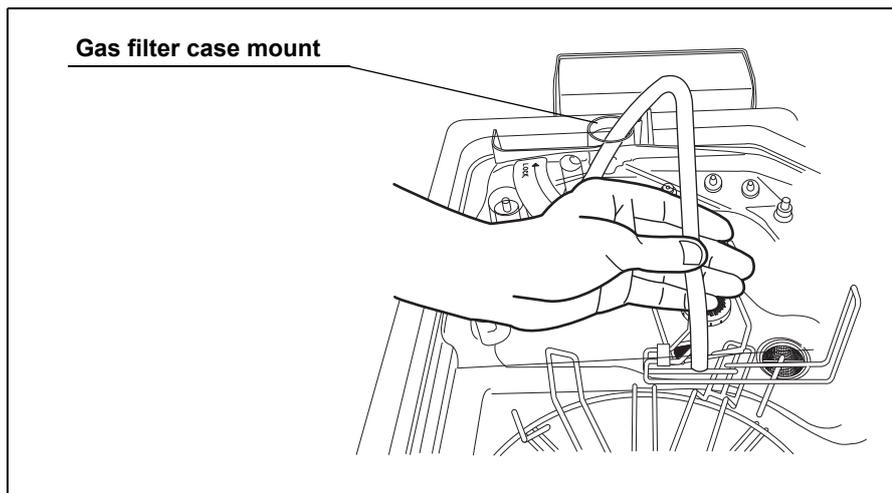


Figure 7.41

9. Place a container with 2 L or large capacity under the end of the sampling tube.
10. Press the FUNC SEL button on the subcontrol panel to select "RINSE" (see Figure 7.42).

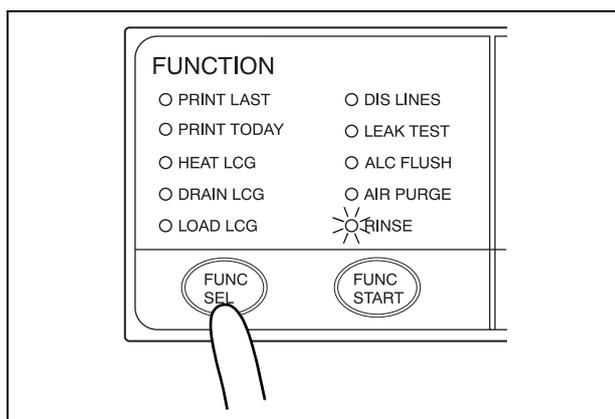


Figure 7.42

**CAUTION**

During rinse, hold the end of the sampling tube. Otherwise, the water may spray out of the sampling tube, and leak from the container.

11. Press the FUNC START button on the subcontrol panel (see Figure 7.43).

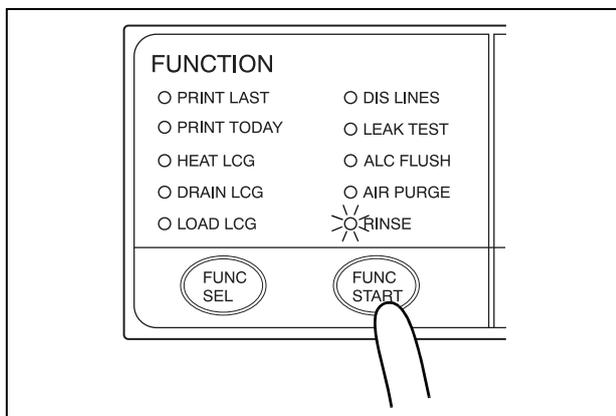


Figure 7.43

12. Make sure that water comes out from the end of the sampling tube and the sampling tube is filled with water (see Figure 7.44).

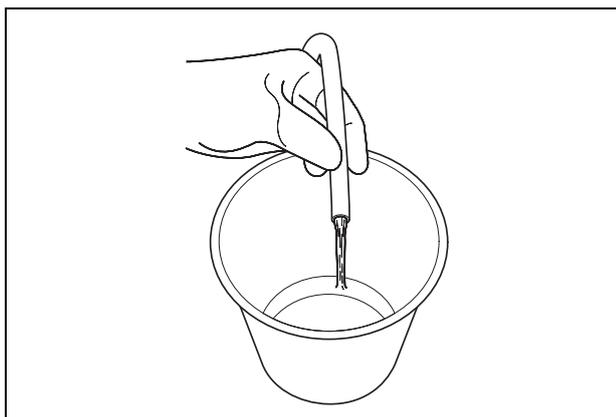


Figure 7.44

13. Hold the end of sampling tube in a sterile collection container. Collect an amount of water required for the microbiological examination.
14. After collection, press the STOP/RESET button twice, and confirm the TIME/CODE display on the main control panel shows the reprocessing time (If the TIME/CODE display on the main panel shows [E00], press the STOP/RESET button again).

**CAUTION**

Be sure to press the STOP/RESET button twice. Otherwise, the water may spray out of the sampling tube and leak from the container during the automatic processing.

15. Step on the foot pedal to open the lid.
16. Place the sampling tube on the retaining rack (see Figure 7.37).

17. Close the lid.
18. Attach the gas filter case to the dome part of the lid.
19. Perform the operation described in Section 6.7, "Air purge" on page 169 to remove water from inner piping of the equipment.
20. Step on the foot pedal to open the lid and take the sampling tube out of the reprocessing basin, wipe off any water using a piece of clean cloth, and store it in a clean place.

## 7.5 Replacing the air filter (MAJ-823)

Replace the air filter every month.

| Check | Required items                           |
|-------|--|
|       | Air filter (MAJ-823)                     |
|       | Indelible pen or other writing implement |

Table 7.9

1. Open the front door of the device.
2. Remove the old air filter by pushing the sleeves on the two connectors toward the device.

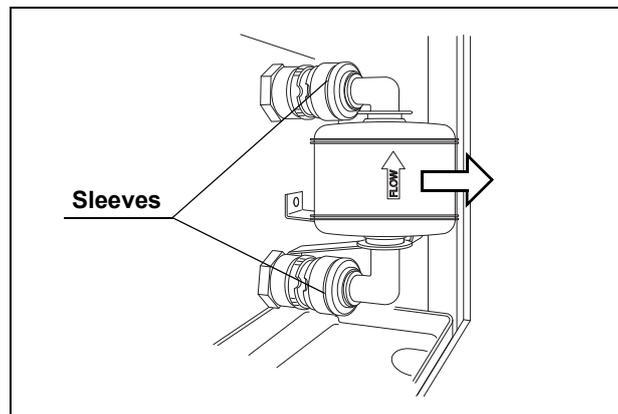


Figure 7.45

**NOTE**

The air filter is not installed on the device when it is shipped from the factory.

3. With the FLOW indicator pointing upwards, attach a new air filter by fitting into the two connectors until they click (see Figure 7.46).

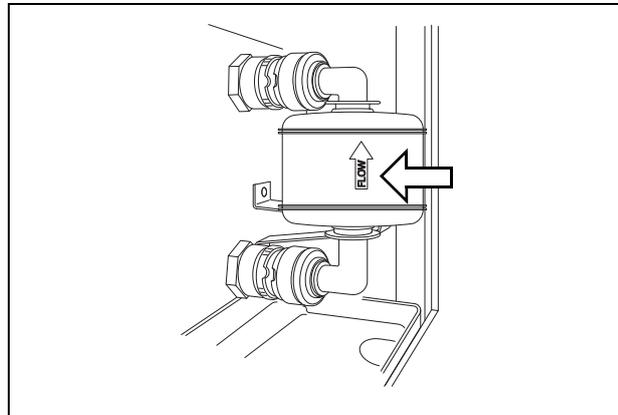


Figure 7.46

4. Enter the date on the replacement date indication sticker provided with the air filter using an indelible ink pen, and attach the sticker to the device where it will be easily visible (remove the previous replacement date indication sticker before attaching the new sticker).
5. Make sure that the power switch of the device is ON.
6. Close the lid by pushing it until it clicks.
7. Press the FUNC SEL button on the subcontrol panel to select "AIR PURGE".
8. Press the FUNC START button on the subcontrol panel.

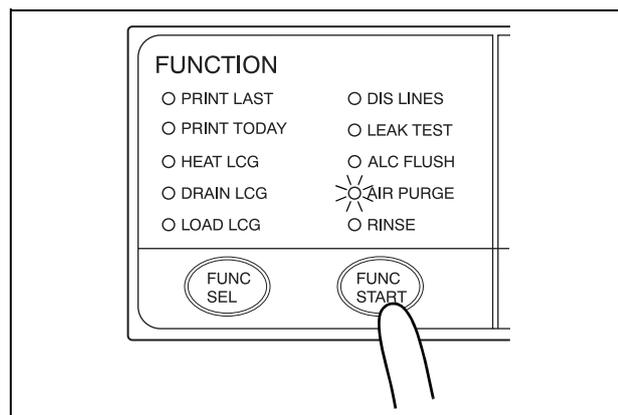


Figure 7.47

**NOTE**

After the FUNC START button is pressed, it takes about 40 seconds before actual air purge starts.

9. When air purge has started, touch the air filter connectors to ensure that air is not leaking out. Also, ensure that the connectors do not produce a whistling sound, which would mean there is an air leak.

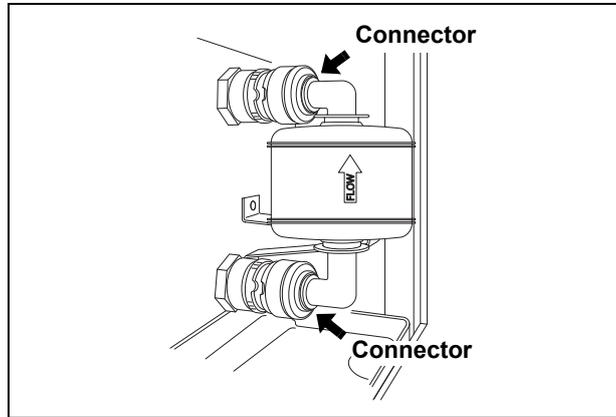


Figure 7.48

10. Press the STOP/RESET button to end air purge. If an air leak is detected, reinstall the air filter as described in Section 3.10, "Installation of air filter (MAJ-823)" in the "Instructions-Installation Manual".
11. Close the front door.

## 7.6 Cleaning the float switch

| Check | Required items |
|-------|----------------|
|       | Detergent      |
|       | Brush          |

Table 7.10

### **CAUTION**

Always press the power switch OFF before cleaning the float switch. Moving the float switch while the power switch is ON will be detected as an error by the device and result in error processing.

1. Make sure that the power switch is OFF.

2. Turn the float switch cover in the direction shown to remove.

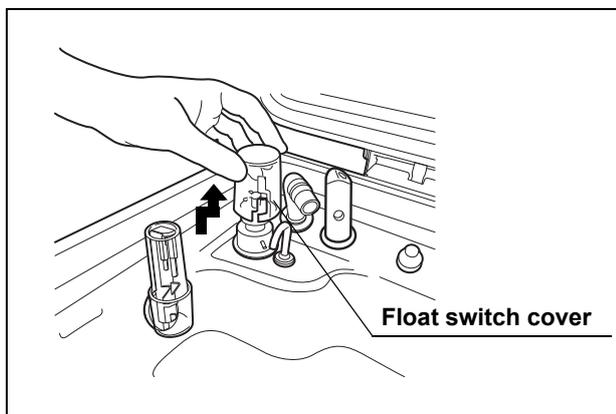


Figure 7.49

3. Clean the float switch cover in running water. Remove dirt using a soft brush with detergent.
4. While applying clean water to the float switch, clean the stem using the brush. Move the float up and down manually and thoroughly clean around the stem. Rinse the float switch by pouring clean water over it.

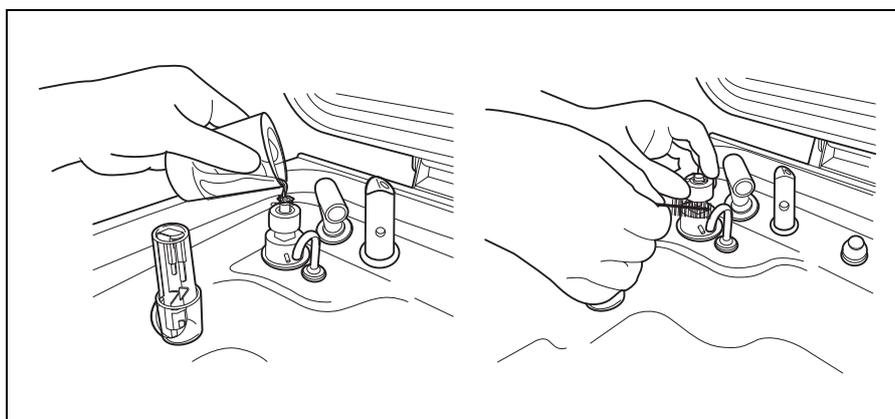


Figure 7.50

5. Wipe the moisture around the float switch using a clean cloth.
6. Attach the float switch cover to the original position above the float switch.

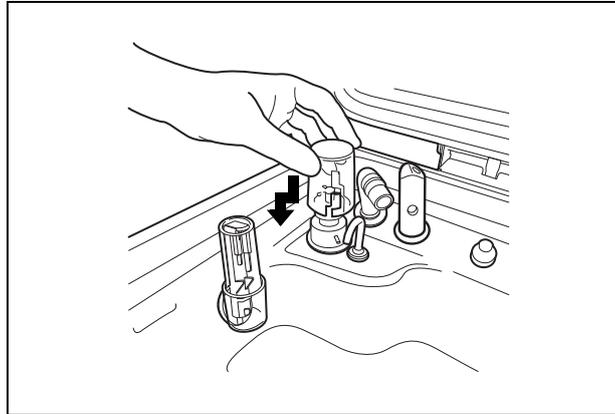


Figure 7.51

## **7.7 Cleaning the detergent/alcohol drawer**

### **CAUTION**

Be careful not to injure your hand by hitting the detergent/alcohol drawer.

1. Pull out the detergent/alcohol drawer.
2. Disconnect the tubes from the detergent tank and alcohol tank, and take the tanks out of the drawer.
3. Take the detergent/alcohol inner tray out of the detergent/alcohol drawer.
4. Clean the detergent/alcohol inner tray in fresh running water.
5. After cleaning, dry it thoroughly with a clean cloth.
6. Place the detergent/alcohol inner tray back on the detergent/alcohol drawer.
7. Place the detergent tank and alcohol tank on the detergent/alcohol drawer and connect the tubes to the original positions on the tanks.

8. Turn the connectors to correct the orientations of the tubes as shown below.

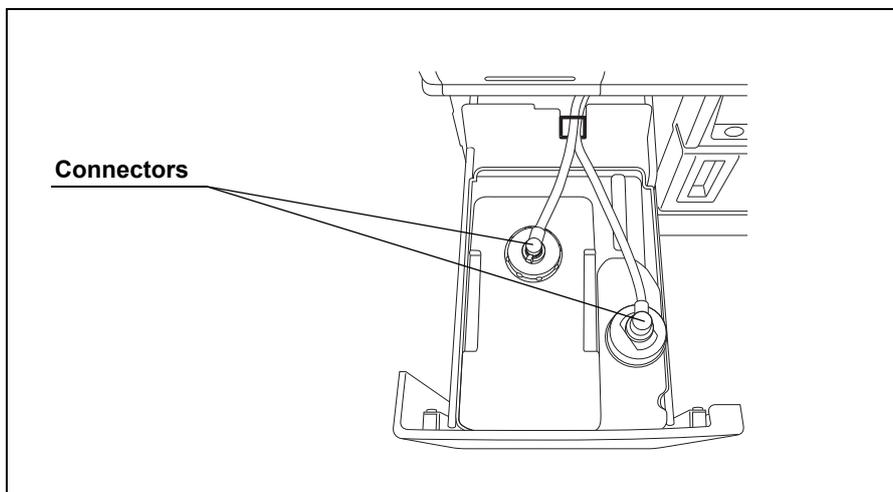


Figure 7.52

9. Close the detergent/alcohol drawer.

## 7.8 *Cleaning the accessories and accessory holder*

As the accessories listed below tend to attract dirt and dust, they should be cleaned periodically and stored in a clean environment. The accessory holder used for storage should also be kept clean in the same way.

- Connecting tubes
- Filter tubes
- Hoses
- Gas filter case excluding the gas filter
- Gas filter adapter, etc.
- Accessory holder
- Card holders

| Check | Required items                         |
|-------|--|
|       | 70% ethyl alcohol or isopropyl alcohol |
|       | Clean cloth                            |

Table 7.11

1. Remove the accessory holder from the back side of the front door by loosening the two retaining screws.

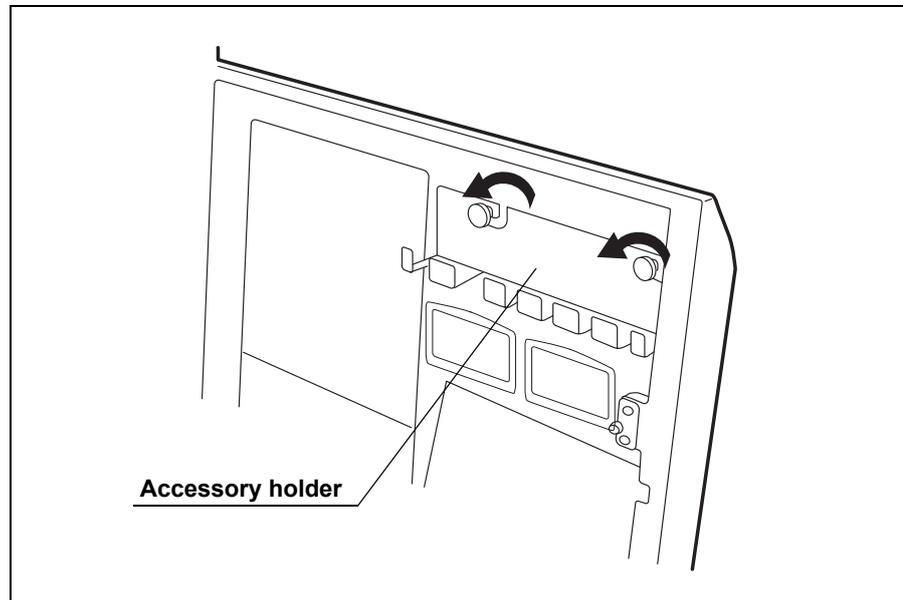


Figure 7.53

2. Using a cloth moistened with neutral detergent, 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.

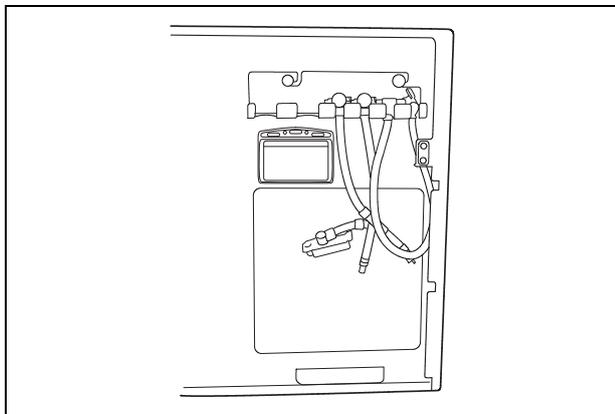


Figure 7.54

**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.

## 7.9 *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. Rinse inside of the tank with running water. Repeat this rinse process several times with fresh water to rinse it thoroughly.
5. Using a cloth moistened with neutral detergent, 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.
6. 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.

7. Turn the connectors to correct the orientations of the tubes as shown below.

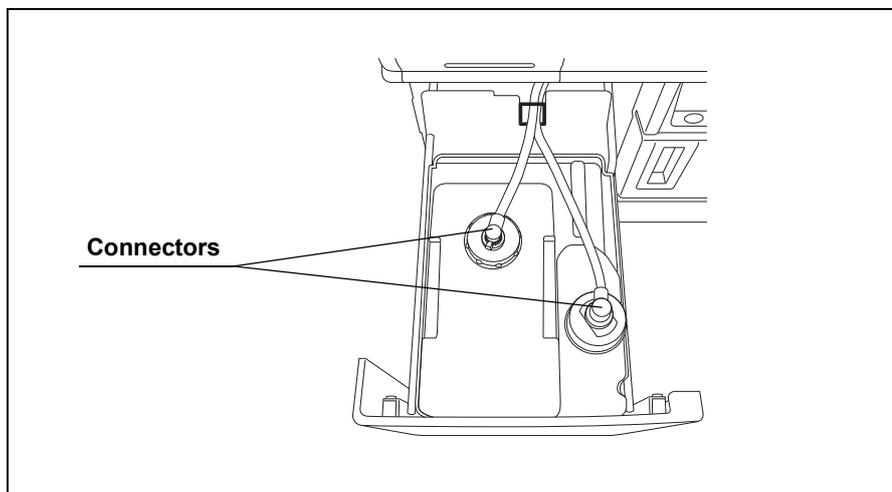


Figure 7.55

8. Close the detergent/alcohol drawer.

## 7.10 Checking cassette cutters

**NOTE**

This procedure is applied only when using concentrated disinfectant prepared by cassette loading. When using ready-to-use disinfectant prepared by top loading, the drawer is locked.

Inspect the cassette cutters when replacing the disinfectant solution. For details, see Section 7.12, "Replacing the disinfectant solution".

## 7.11 Cleaning the disinfectant bottle drawer

**NOTE**

This procedure is applied only when using concentrated disinfectant prepared by cassette loading. When using ready-to-use disinfectant prepared by top loading, the drawer is locked.

It is necessary to clean the disinfectant bottle drawer if the disinfectant bottle drawer is dirty or any disinfectant solution spills into the drawer. The disinfectant solution bottle drawer can be opened only when replacing the concentrated disinfectant solution. For details, see Section 7.12, "Replacing the disinfectant solution".

## 7.12 Replacing the disinfectant solution

When the disinfectant solution in the device is no longer effective, or beyond the specified use life, drain the disinfectant solution completely and replace with fresh disinfectant solution. Expired disinfectant solution should be treated as directed in the documents supplied with the disinfectant solution.

### **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.
- Always use a disinfectant that has been validated by Olympus. High-level disinfectants that are not validated by Olympus for use in the OER-Pro may be unsafe and ineffective due to improper dilution, incorrect contact time and temperature, excessive foaming, inadequate rinsing, and therefore may compromise patient safety. Use of a high-level disinfectant that has not been validated by Olympus may also damage internal OER-Pro components (e.g., seals, valves, etc.) and the endoscopes being reprocessed.
- When handling the disinfectant solution, wear appropriate personal protective equipment to prevent direct contact with your skin or 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 eyewear, 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**

Expired disinfectant solution should be treated in accordance with the instructions supplied with the disinfectant solution. It is recommended to treat the waste fluid properly and to dispose of 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.

**NOTE**

Do not add fresh disinfectant solution to the used disinfectant solution when the disinfectant solution in the device is no longer effective or the volume of the disinfectant solution in the device drops below its usable level. Drain the disinfectant solution completely and replace with fresh disinfectant solution.

### ***Draining the disinfectant solution***

| <b>Drainage disinfectant solution</b> |                                    |
|---------------------------------------|------------------------------------|
| <b>Drainage volume</b>                | Approximately 17.5 L (4.6 gallons) |

Table 7.12

**WARNING**

Before draining the disinfectant solution, disconnect the connecting tubes from the device. Otherwise, the disinfectant solution may spray out of the tube, causing a leak from the reprocessing basin.

#### **○ Draining through the disinfectant collection hose**

| <b>Check</b> | <b>Required items</b>  |
|--------------|--|
|              | 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 beaker) |
|              | Clean cloth  |

Table 7.13

**WARNING**

- Do not push the disinfectant removal port when the rubber cap is not attached. To do so may cause, the disinfectant solution to flow out.
- To prevent the device and areas near the equipment from being damaged by leaking disinfectant solution, do not remove the rubber cap from the disinfectant removal port except when the disinfectant removal tube is connected.

**WARNING**

- 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 274. 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 eyewear, 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 operated 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 areas 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 will fill the reprocessing basin and error code [E72] is displayed. In this case, treat it by following the procedure in Section 8.1, “Troubleshooting guide” on page 274.

1. Make sure that the power switch is ON.
2. Step on 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 reprocessing basin. After connection, pull the hose gently to make sure it is properly attached.

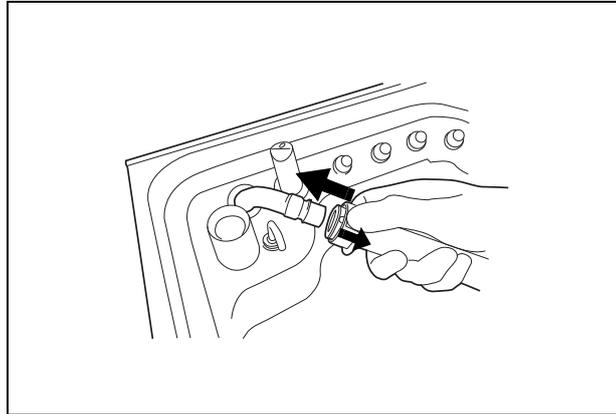


Figure 7.56

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

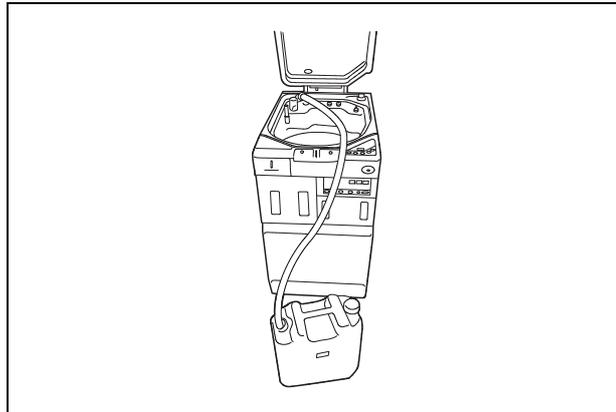


Figure 7.57

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

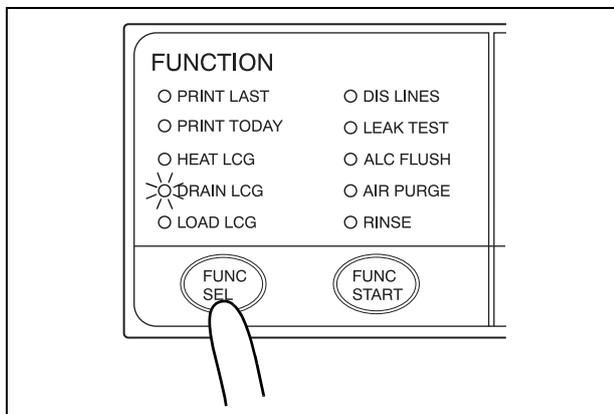


Figure 7.58

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. Hold the disinfectant collection hose so that it does not move, then 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 the process.

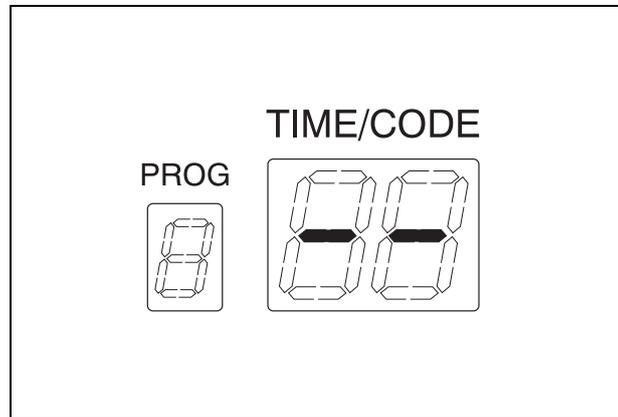


Figure 7.59

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).

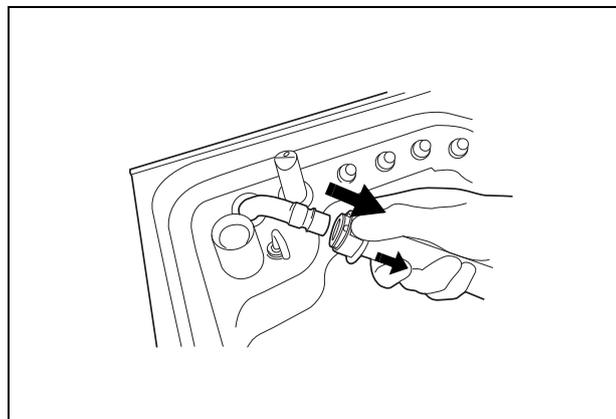


Figure 7.60

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.

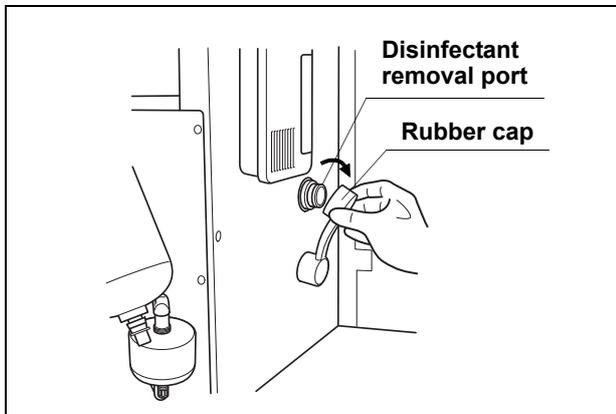


Figure 7.61

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 7.62).

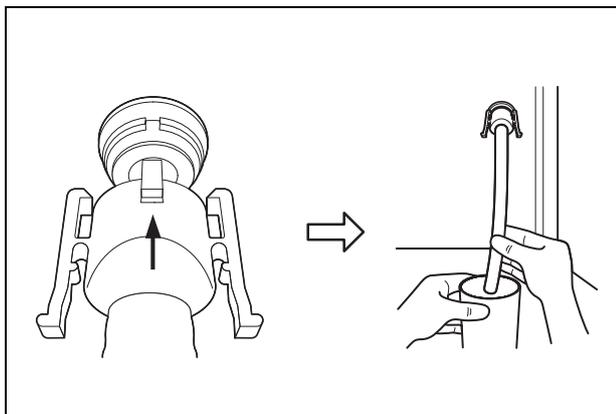


Figure 7.62

15. Hold the lock levers and slowly disconnect the tube (see Figure 7.63).

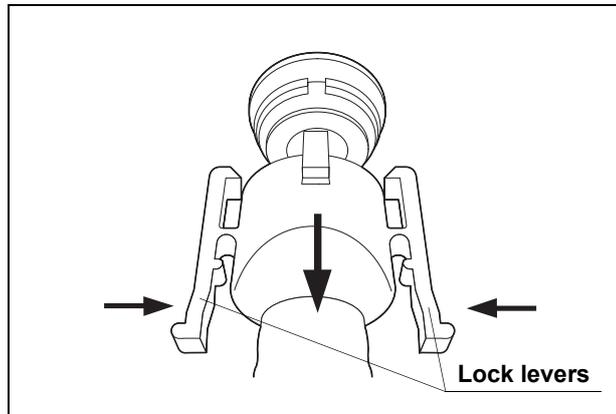


Figure 7.63

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   |
|       | 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 reprocessing basin.
- Remove all endoscopes, valves, and connecting tubes from the reprocessing basin before draining the disinfectant solution through the drain hose. Otherwise, the disinfectant solution cannot be drained properly and the endoscopes and valves may be unable to be rinsed sufficiently.

**WARNING**

- Do not push 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 274. If it does not stop leaking, contact Olympus.

1. Slowly open the water 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”.

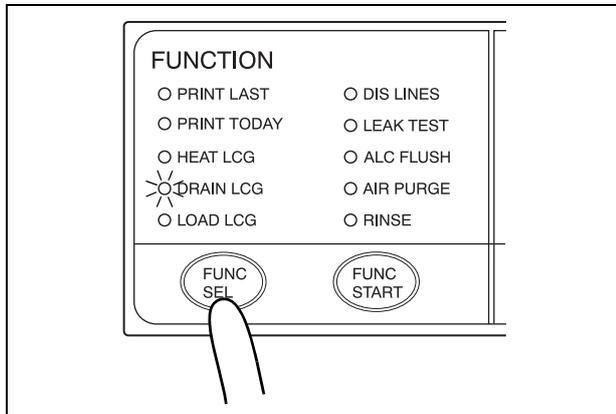


Figure 7.64

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

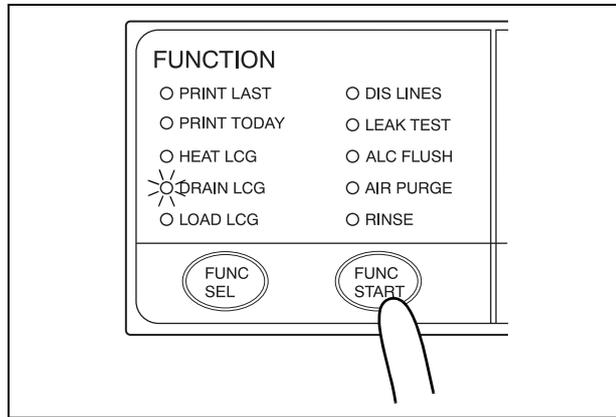


Figure 7.65

**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 will fill the reprocessing basin, 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 274.

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.

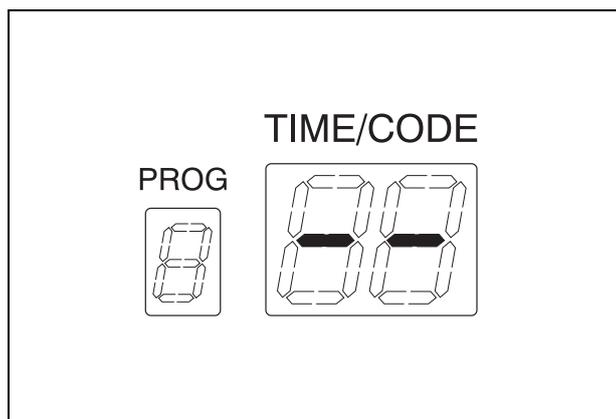


Figure 7.66

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

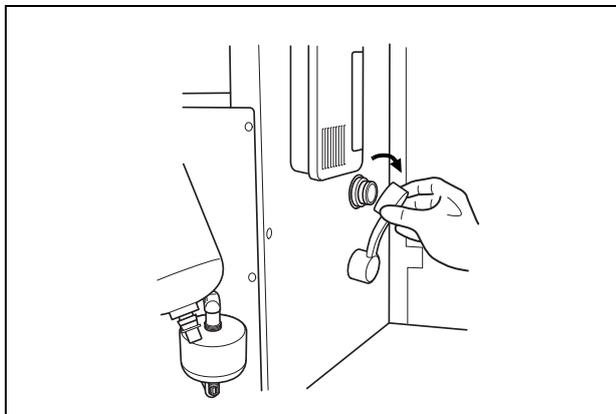


Figure 7.67

8. 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 7.68).

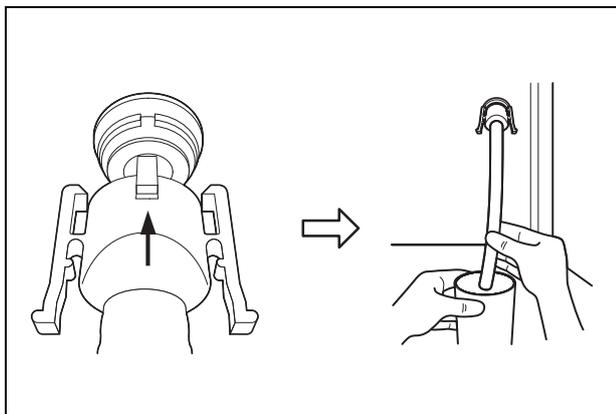


Figure 7.68

9. Hold the lock levers and slowly disconnect the tube (see Figure 7.69).

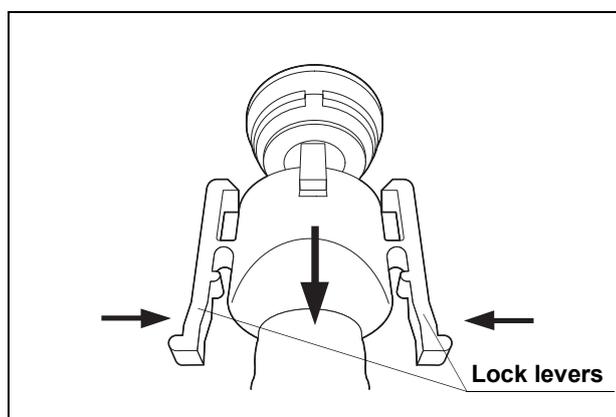


Figure 7.69

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

**NOTE**

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

## ***Setting up the disinfectant solution***

**WARNING**

- Before handling the disinfectant solution, read the precautions carefully and use as instructed. It is especially important to know what to do if the disinfectant solution comes in contact with your skin.
- Always use disinfectant that has been validated by Olympus. High-level disinfectants that are not validated by Olympus for use in the OER-Pro may be unsafe and ineffective due to improper dilution, incorrect contact time and temperature, excessive foaming, inadequate rinsing, and therefore may compromise patient safety. Use of a high-level disinfectant that has not been validated by Olympus may also damage internal OER-Pro components (e.g., seals, valves, etc.) and the endoscopes being reprocessed.

**WARNING**

- When handling the disinfectant solution, wear personal protective equipment to prevent any disinfectant from getting on your skin or being inhaled. Avoid direct physical contact and inhalation of vapors. 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 eyewear, 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 face mask, 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 nonvalidated disinfectant solution is used. Equipment malfunction may also result.

**WARNING**

- Follow the disinfectant manufacturer's instructions for any preparation or activation required prior to loading into the OER-Pro.

**○ When using Olympus-validated concentrated disinfectant solution**

| Check | Required items                             |
|-------|--|
|       | Acecide-C high level disinfectant solution |

Table 7.15

**WARNING**

- Do not put your hand into the disinfectant bottle drawer or near the cassette bottle cutters. Irritation of skin due to contact with concentrated disinfectant solution, injury by touching a projection, or malfunction of this equipment may result.
- If the disinfectant solution in the cassette bottles has not completely drained after preparation of disinfectant solution, do not use the equipment and contact Olympus. Inappropriate preparation of disinfectant solution will prevent proper endoscope reprocessing.
- Do not touch inside the caps of cassette bottles. Do not push or apply strong pressure to the bottle. Otherwise, disinfectant solution may leak from the bottle.

**CAUTION**

To avoid malfunction, do not attempt to pull out the disinfectant bottle drawer while it is locked.

**NOTE**

To obtain Acecide-C high level disinfectant solution, contact Olympus.

1. Make sure that the water faucet is open.
2. Make sure that the power is ON.
3. Close the lid.

4. Press the FUNC SEL button on the subcontrol panel to select "LOAD LCG".

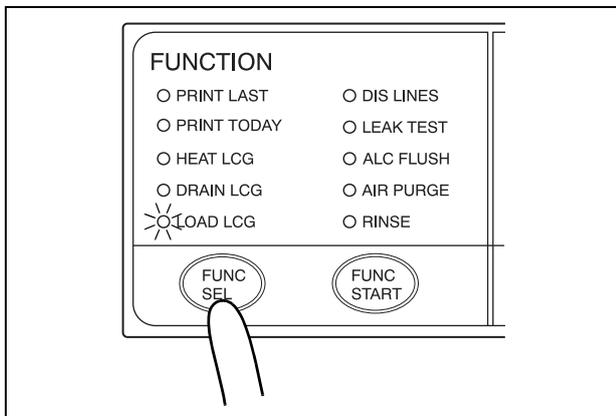


Figure 7.70

5. Press the FUNC START button on the subcontrol panel. This unlocks the disinfectant bottle drawer.

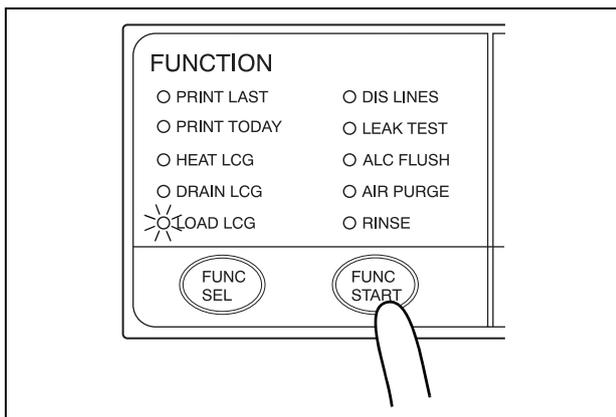


Figure 7.71

**NOTE**

Cassette bottle loading does not work unless the disinfectant solution tank is empty.

6. Pull out the disinfectant bottle drawer.

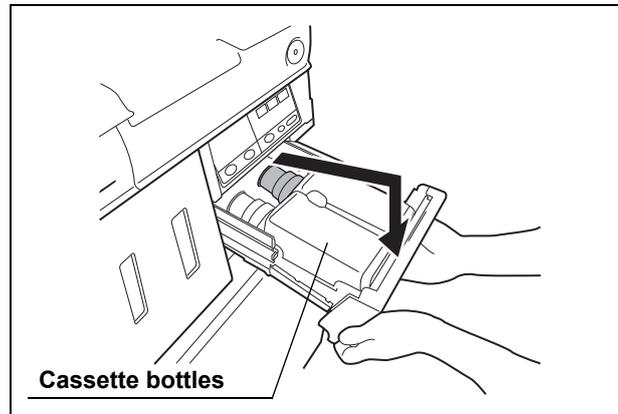


Figure 7.72

7. To remove the empty cassette bottles from the disinfectant bottle drawer, position the bottle mouths upward so that the disinfectant solution does not come out.

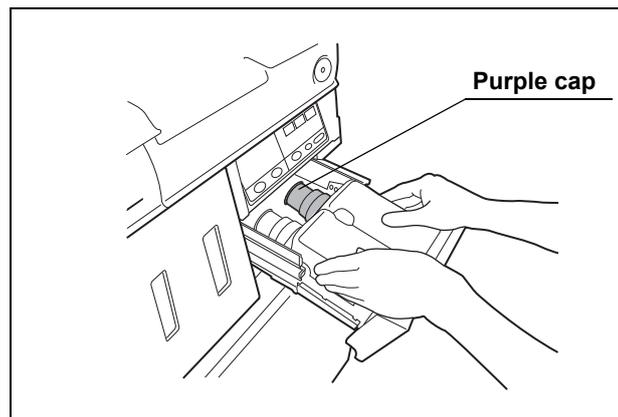


Figure 7.73

8. If any disinfectant solution spills, wipe it away with a clean cloth. If the disinfectant bottle drawer is dirty, clean using a clean cloth moistened with neutral detergent solution and then wipe with a clean cloth.

**WARNING**

- Do not put your hand behind the disinfectant bottle drawer. Irritation of skin due to contact with concentrated disinfectant solution, injury by touching a projection, or malfunction of this equipment may result.
- If the cassette cutters are abnormal, do not use the equipment and contact Olympus. If the cassette cutters are abnormal, the disinfectant solution cannot be properly prepared. This will prevent effective endoscope reprocessing and may cause the equipment to malfunction.

9. Check the two cassette cutters (blades for ripping caps on disinfectant cassette bottles) placed at the back of the disinfectant bottle drawer. Compare the two blades and make sure that neither cutter is bent, cracked or deformed. Changes in color are not a malfunction.

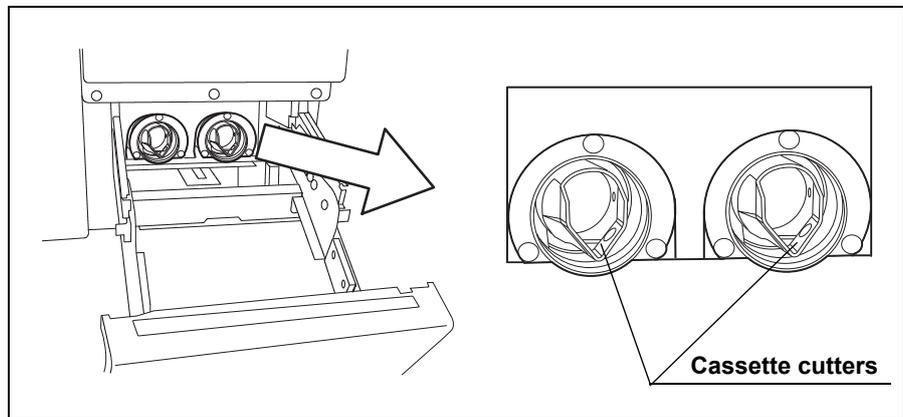


Figure 7.74

10. Hold the new disinfectant cassette bottles together and place them on the disinfectant bottle drawer so that the bottle with the purple cap is on the right.

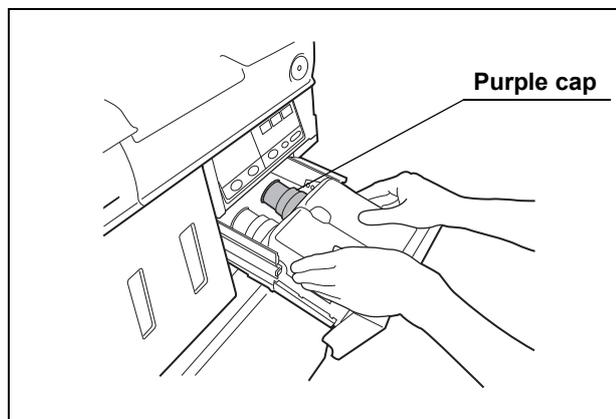


Figure 7.75

11. Lift the disinfectant bottle drawer so that it is level, and insert it all the way. The buzzer should beep, the drawer should lock, and the disinfectant cassette bottles should open automatically.

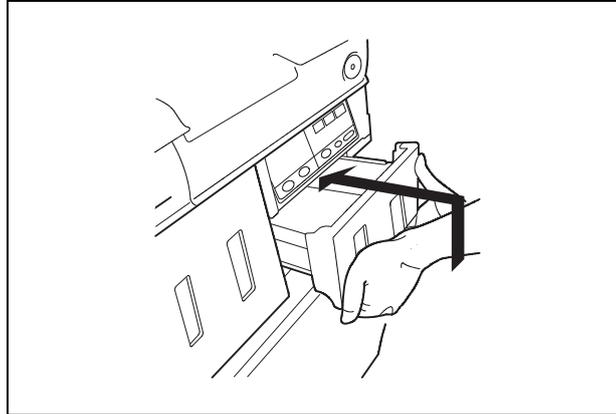


Figure 7.76

12. Look at the disinfectant bottle drawer and check the windows to verify that the disinfectant solution in both bottles has decreased.

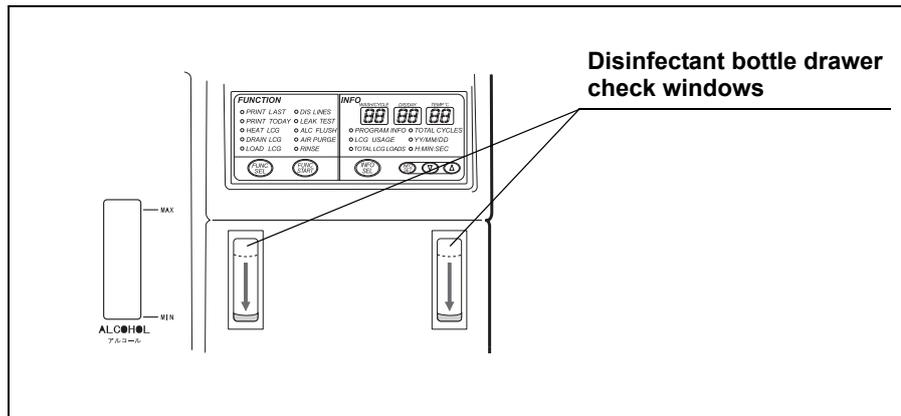


Figure 7.77

13. The buzzer generates short beeps and the TIME/CODE display on the main control panel alternately displays (a) and (b) in Figure 7.78, indicating that the disinfectant solution is being prepared.

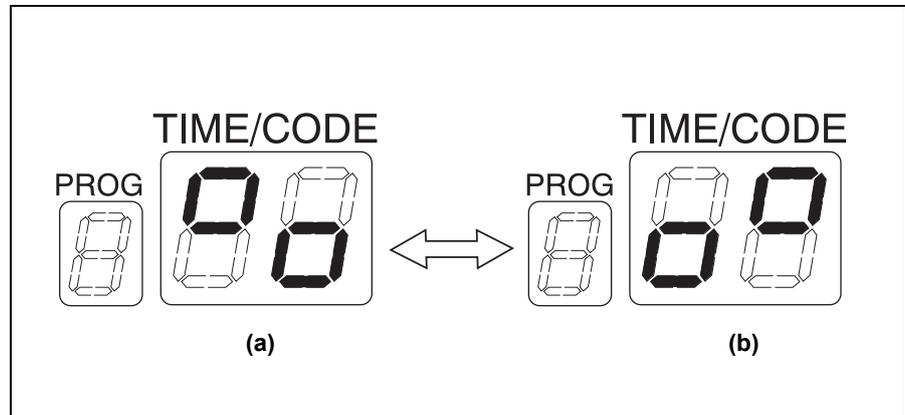


Figure 7.78

**NOTE**

- Preparation of disinfectant solution includes single rinse process to rinse the reprocessing basin, and the required time for preparation of disinfectant solution is about 5 minutes. While executing the preparation of disinfectant solution, buzzer beeps intermittently and the main control panel displays as shown in Figure 7.78. STOP/RESET button is deactivated during the process.
- A small amount of water comes out of the disinfectant solution nozzle in the early stage of the process. And a disinfectant solution is injected from the disinfectant solution nozzle in the middle stage of the process. These operation are not a malfunction.
- The required time for preparation of disinfectant solution may vary depending on the water supply condition.

14. In approximately 5 minutes, the buzzer beeps to indicate the end of preparation, and the TIME/CODE display on the main control panel shows [- -]. This indicates the end of process.

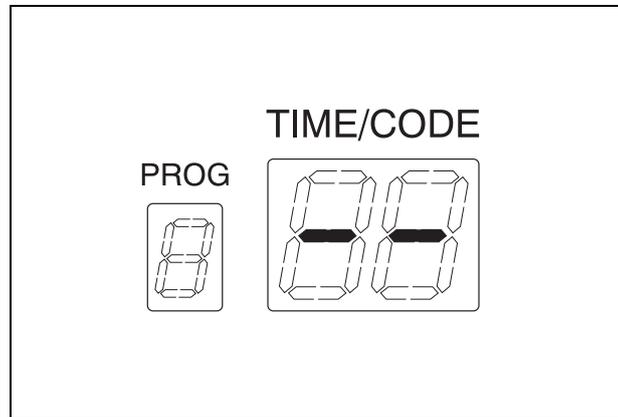


Figure 7.79

## ○ When using Olympus-validated ready-to-use disinfectant solution

| Check | Required items  |
|-------|---|
|       | Olympus-validated ready-to-use disinfectant solution (Approximately 5 gallons to fill reservoir.) |

Table 7.16

The ready-to-use disinfectant solution indicated here is not cassette bottles, but commercially available Olympus-validated disinfectant solution prepared by top loading.

### **WARNING**

- 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. Otherwise, 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 is interrupted 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 236.

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 on the foot pedal to open the lid.
5. As multiple beeps sound, the time display on the main panel alternates between Figure 7.80 (a) and (b) indicating that it is ready to add the disinfectant solution.

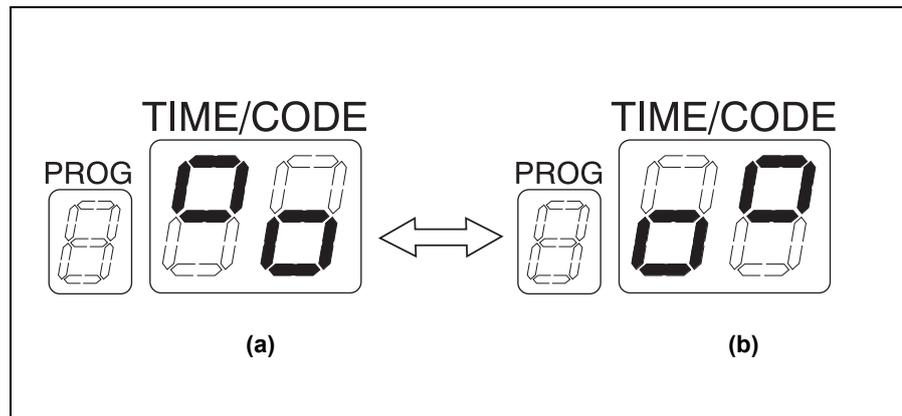


Figure 7.80

6. Slowly pour the disinfectant solution to the drain port into the reprocessing basin (see Figure 7.81).

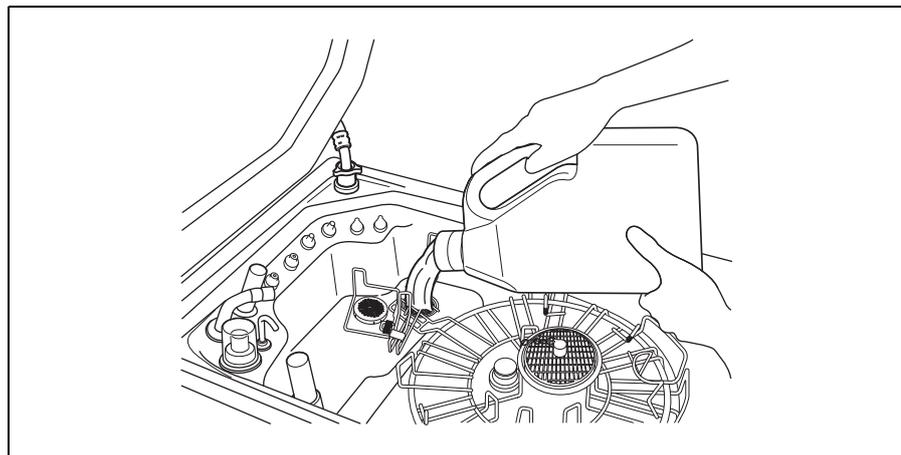


Figure 7.81

7. When the beeps increase in frequency, the level of disinfectant solution is nearly 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 7.82).

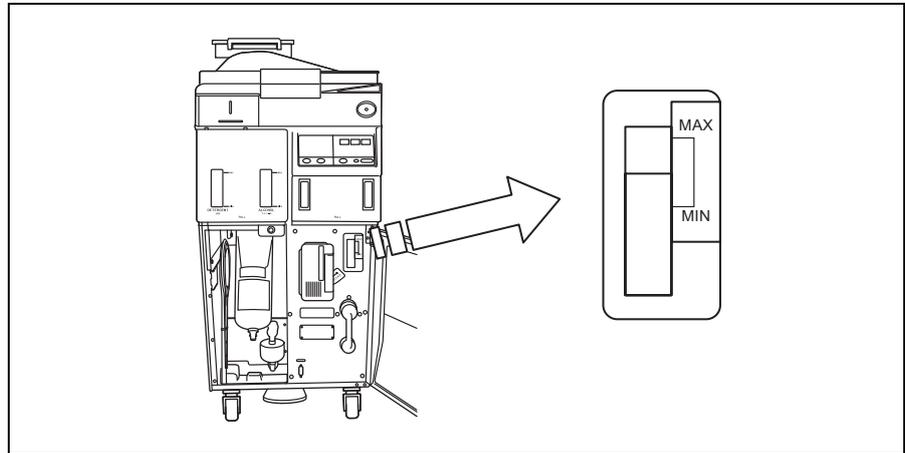


Figure 7.82

**NOTE**

The MAX line and MIN line of the disinfectant solution indicator are the reference line that indicates too much disinfectant solution or insufficient amount of disinfectant solution in the tank. However, the fluid level of the disinfectant solution shown in the indicator may vary depending on the tilt of the equipment. Therefore, error code might not be displayed even if the fluid level in the indicator exceeds these lines or error code might be displayed even if the fluid level in the indicator doesn't exceed these lines. In this case, the equipment is not malfunctioning and can be used. If you have any problems operating the equipment, refer to section 4.9 "Correction of equipment tilt" in the installation manual and correct the tilt of the equipment so that the equipment becomes more horizontal. Then, the indicator will indicate the fluid level more precisely.

**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 7.83).

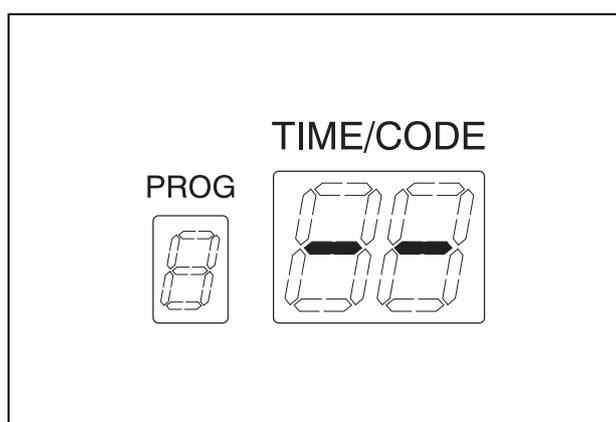


Figure 7.83

9. Make sure that the water faucet is open.
10. Perform the rinsing process following the procedure in Section 6.8, “Rinsing” on page 170. Any residual disinfectant solution in the reprocessing basin is removed by rinsing.

## 7.13 ***Cleaning the mesh filter in the water supply hose connector***

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

1. Close the water faucet. Press the FUNC SEL button on the subcontrol panel to select “LEAK TEST”, and press the FUNC START button to relieve the incoming water pressure.
2. After the pressure has been relieved (approximately 10 seconds), press the STOP/RESET button to stop the leak test.

3. Turn the connection ring on the equipment side of the water supply hose in the direction shown to disconnect the hose from the equipment. If residual water is spilled from the water supply hose, wipe it up with a clean cloth.

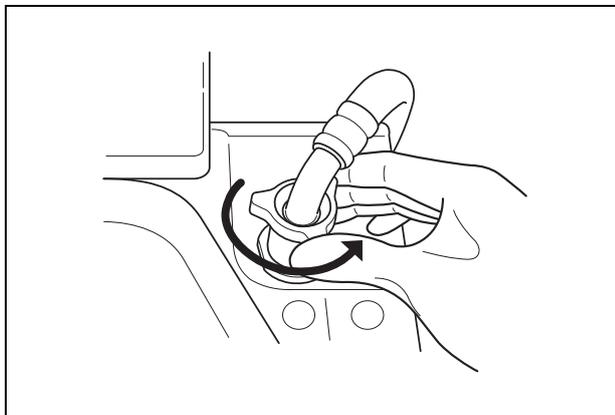


Figure 7.84

4. Using clean tweezers, remove the mesh filter from the water supply hose connector.

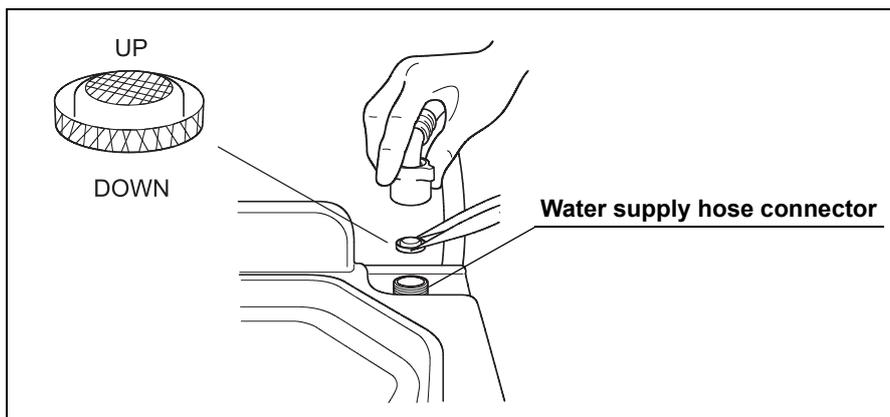


Figure 7.85

**CAUTION**

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

5. Clean the mesh filter in running water using a soft brush.

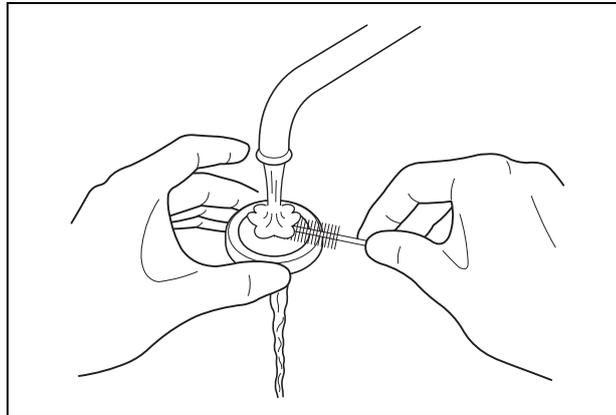


Figure 7.86

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

**CAUTION**

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

7. Attach the connection ring of the water supply hose in the original position on 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 77.

## 7.15 Disinfecting the internal detergent/alcohol lines

### WARNING

- When handling the disinfectant solution and detergent/alcohol, carefully read the precautions for its use 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 eyewear, 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, keep the detergent/alcohol tanks upright.

### ***Draining and using the disinfectant solution from the equipment***

Collect the disinfectant solution as described in Section 3.10, “Checking the disinfectant solution concentration level” on page 59. 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 line

| 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                                |
|       | Sterile water: more than 100 ml   |

Table 7.17

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 7.87).

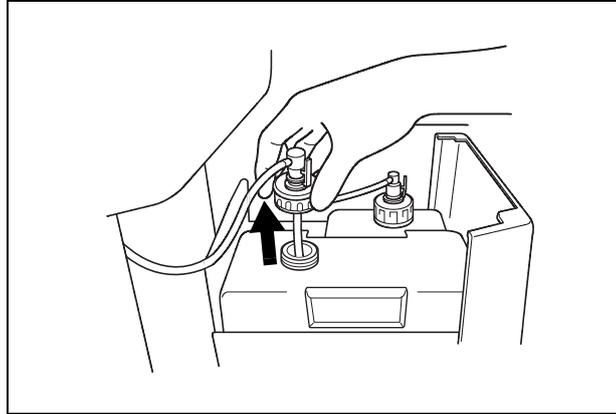


Figure 7.87

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

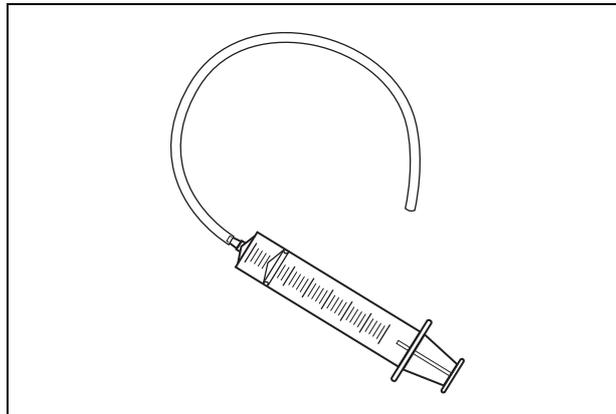


Figure 7.88

5. Connect the tube attached to the syringe to the detergent nozzle inside the reprocessing basin.

6. To remove detergent from inside the line, connect the tube attached to the syringe to the detergent nozzle inside the reprocessing basin. Suction the detergent with the syringe until no more detergent comes out of the line (see Figure 7.89).

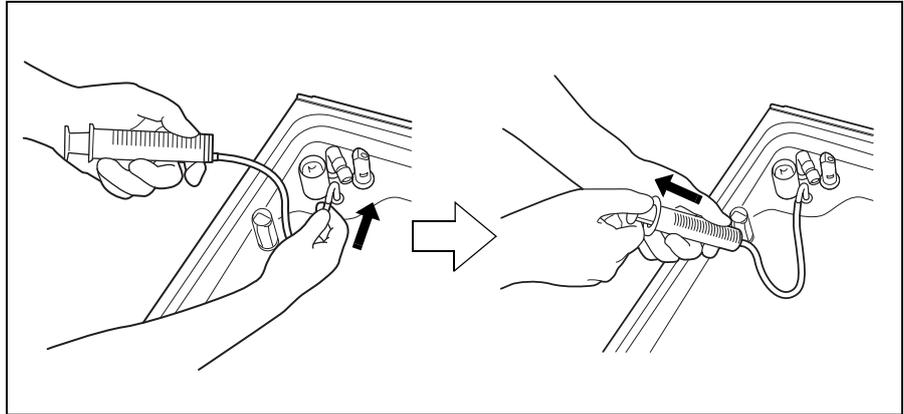


Figure 7.89

7. Prepare a beaker or similar container and pour more than 50 ml of the sterile water into it.
8. Put the cap in the container filled with the sterile water (see Figure 7.90).

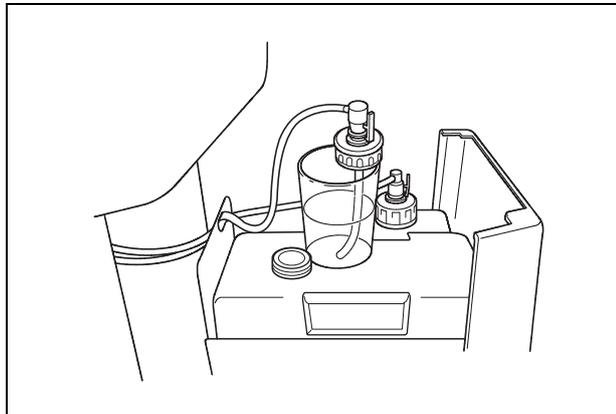


Figure 7.90

9. To rinse the line, connect the tube attached to the syringe to the detergent nozzle and suction more than 50 ml of sterile water with the syringe (see Figure 7.89).
10. To remove rinse water from inside the line, connect the tube attached to the syringe to the detergent nozzle inside the reprocessing basin. Suction the water with the syringe until no more water comes out of the line (see Figure 7.89).
11. Prepare a beaker or similar container and pour about 30 ml of the disinfectant solution into it.

12. Put the detached cap in the container of the disinfectant solution (see Figure 7.90).
13. 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 7.89).
14. Wait until the necessary time for disinfection passes. Refer to the documentation supplied with the disinfectant solution for specifics regarding disinfection.
15. When the disinfection time ends, take the cap out of the container filled with the disinfectant solution.
16. To remove disinfectant solution from inside the line, connect the tube attached to the syringe to the detergent nozzle and suction the disinfectant solution with the syringe until no more disinfectant solution comes out of the line (see Figure 7.89).
17. Prepare a beaker or similar container and pour more than 50 ml of the sterile water into it.
18. Put the cap in the container filled with the sterile water (see Figure 7.90).
19. To rinse the line, connect the tube attached to the syringe to the detergent nozzle and suction more than 50 ml of sterile water with the syringe (see Figure 7.89).
20. Attach the cap to the detergent tank and close the detergent/alcohol drawer (see Figure 7.91).

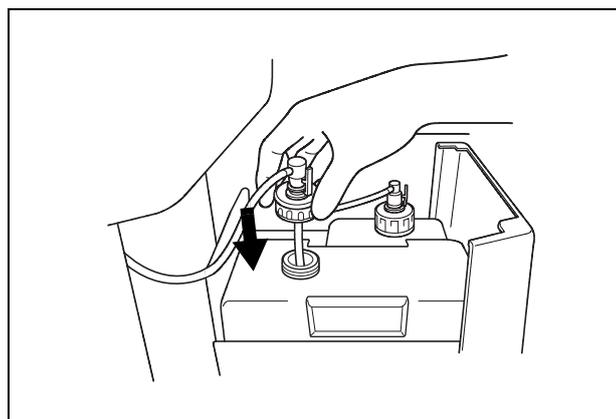


Figure 7.91

21. To remove rinse water from inside the line and fill it 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 7.89).

22. Disconnect the tube from the detergent nozzle and close the lid.
23. Rinse the reprocessing basin by performing the rinsing process on the subcontrol panel.

**○ Disinfecting the alcohol supply line**

**WARNING**

- Make sure to attach the connector jigs. Otherwise, the disinfection of the alcohol supply line may not be effective.
- After disinfecting the alcohol supply line, always rinse it thoroughly. Otherwise, disinfectant solution may remain on the endoscope following reprocessing and pose a patient safety risk.

| Check | Required items   |
|-------|--|
|       | Connector jigs   |
|       | Two cup-shape containers with a capacity of about 200 ml, such as a beaker |
|       | Disinfectant solution: approximately 80 ml                                 |
|       | Sterile water: more than 80 ml   |

Table 7.18

1. Make sure that the power switch of the device is ON.
2. Make sure that the water faucet is open.
3. Step on the foot pedal to open the lid.
4. Attach the connector jigs to the connectors on the reprocessing basin and close the lid.

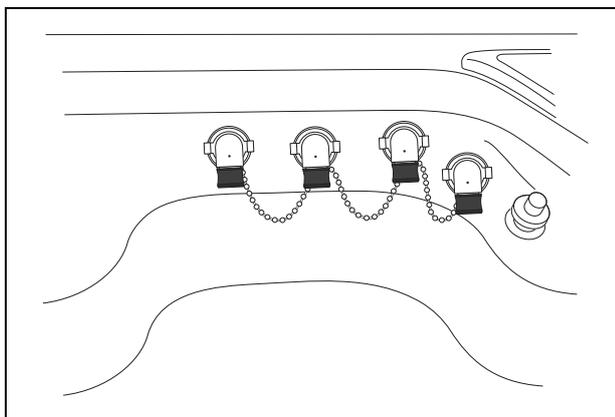


Figure 7.92

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 7.93).

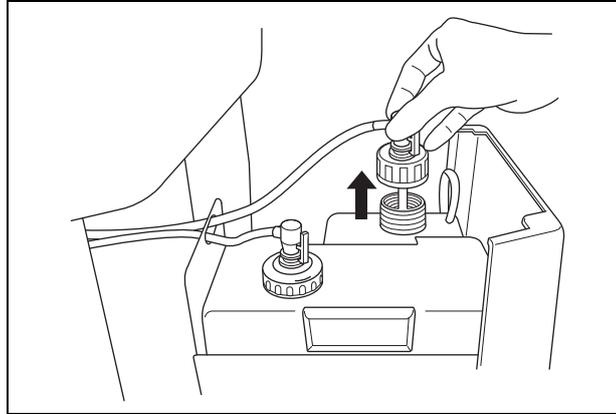


Figure 7.93

7. Remove alcohol from inside the line 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 7.94).

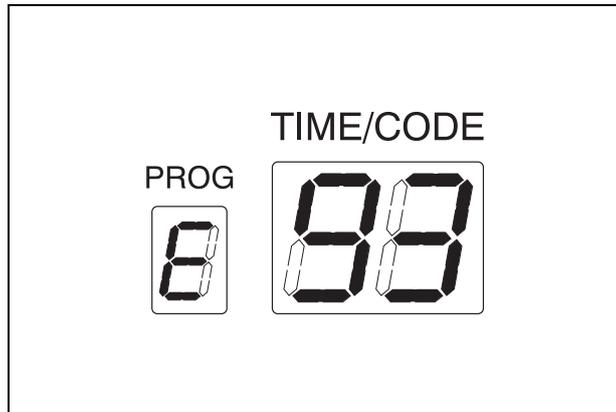


Figure 7.94

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 7.95).

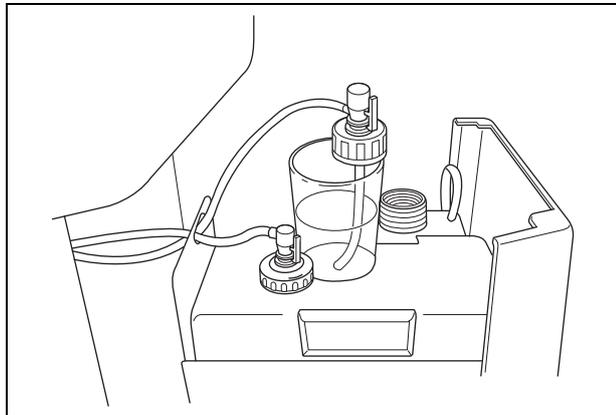


Figure 7.95

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

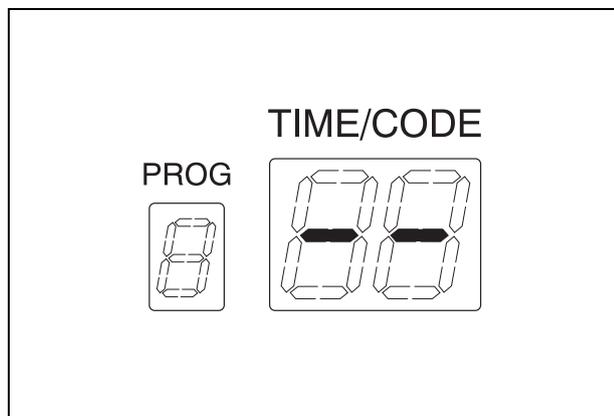


Figure 7.96

11. Maintain the disinfectant solution in the supply line for the amount of time required for disinfection. 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. Remove disinfectant solution from inside the line 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 sterile water.
15. Put the cap in the container filled with the sterile water (see Figure 7.97).
16. Rinse the alcohol supply line by performing the alcohol flushing process on the subcontrol panel. Check that the sterile water in the container is decreasing as the process progresses. The process ends automatically in three minutes (see Figure 7.96).
17. Attach the cap to the alcohol tank and close the detergent/alcohol drawer (see Figure 7.97).

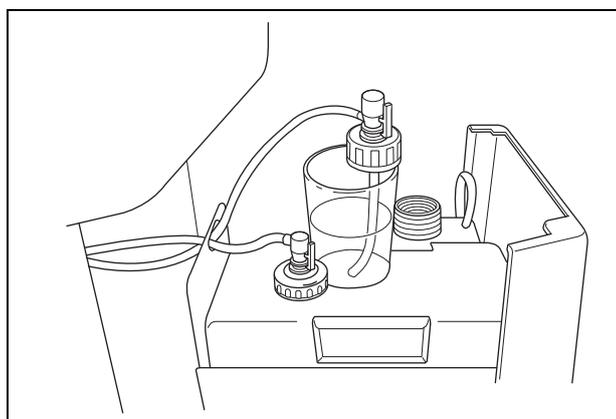


Figure 7.97

18. Remove rinsing water from inside the line and fill the line with alcohol by performing the alcohol flush process on the subcontrol panel. The process ends automatically in three minutes (see Figure 7.96).
19. Rinse the reprocessing basin 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

When the equipment will be stored for more than 14 days, follow the procedure described in this section.

### 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                              |
|       | Container (small) with a capacity of about 200 ml, such as a beaker |
|       | Provided wrench   |
|       | Clean cloth   |
|       | Sterile water: more than 50 ml                                      |

Table 7.19

1. Discharge disinfectant solution from the equipment as described in “Draining through the disinfectant collection hose” on page 226.
2. Pull out the detergent/alcohol drawer.
3. Detach the detergent tank cap to which a tube is connected (Do not disconnect the connector.) (see Figure 7.98).

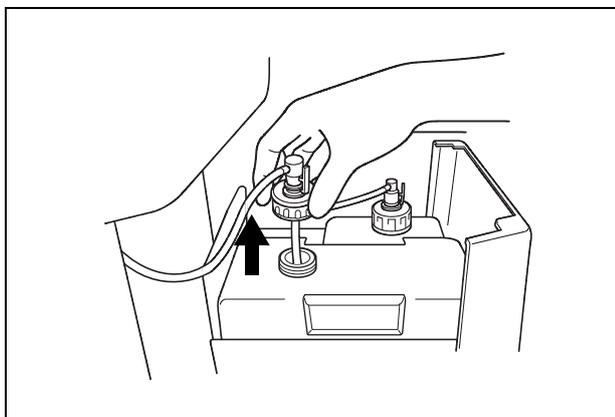


Figure 7.98

4. Step on the foot pedal to open the lid.

5. Connect the provided syringe and tube.

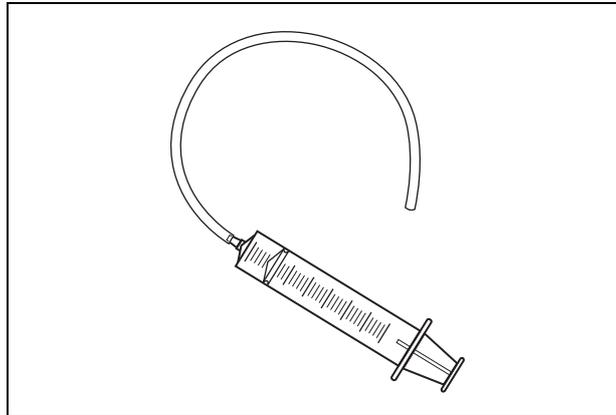


Figure 7.99

6. Connect the tube attached to the syringe to the detergent nozzle inside the reprocessing basin.
7. To remove detergent from inside the line, connect the tube attached to the syringe to the detergent nozzle inside the reprocessing basin. Suction the detergent with the syringe until no more detergent comes out of the line (see Figure 7.100).

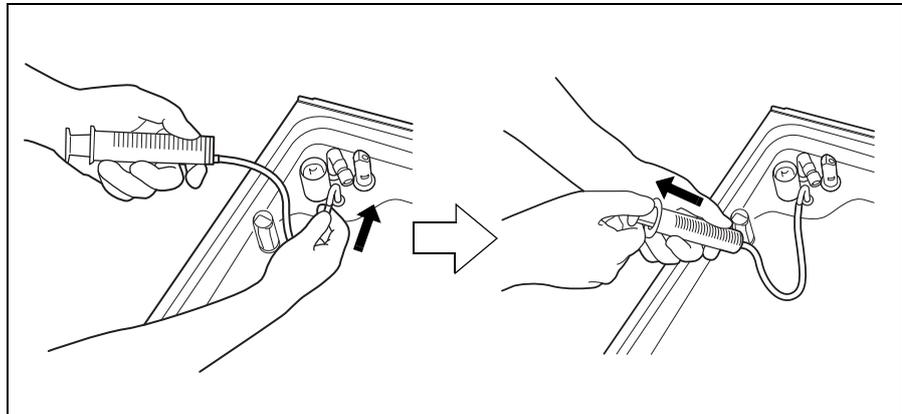


Figure 7.100

8. Prepare a beaker or similar container and pour more than 50 ml of the sterile water into it.

9. Put the cap in the container filled with the sterile water (see Figure 7.101).

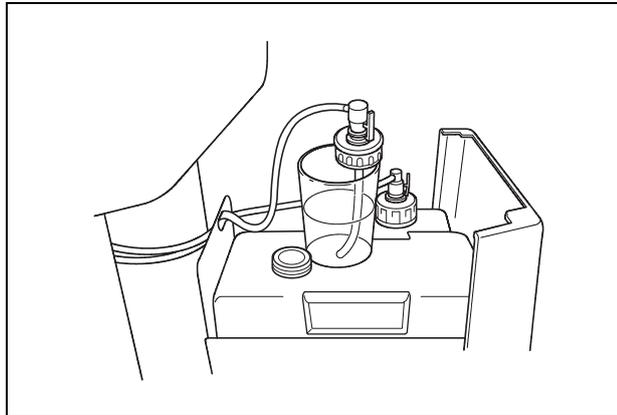


Figure 7.101

10. To rinse the line, connect the tube attached to the syringe to the detergent nozzle and suction more than 50 ml of sterile water with the syringe (see Figure 7.100).
11. To remove rinse water from inside the line, connect the tube attached to the syringe to the detergent nozzle inside the reprocessing basin. Suction the water with the syringe until no more water comes out of the line (see Figure 7.100).
12. Prepare a beaker or similar container and pour about 50 ml of the 70% ethyl alcohol or isopropyl alcohol into it.
13. Put the detached cap in the container of the 70% ethyl alcohol or isopropyl alcohol (see Figure 7.101).
14. To rinse the line, connect the tube attached to the syringe to the detergent nozzle and suction more than 50 ml of 70% ethyl alcohol or isopropyl alcohol with the syringe (see Figure 7.100).
15. To remove 70% ethyl alcohol or isopropyl alcohol from inside the line, connect the tube attached to the syringe to the detergent nozzle inside the reprocessing basin. Suction the alcohol with the syringe until no more alcohol comes out of the line (see Figure 7.100).

16. Remove the tube from the detergent nozzle.

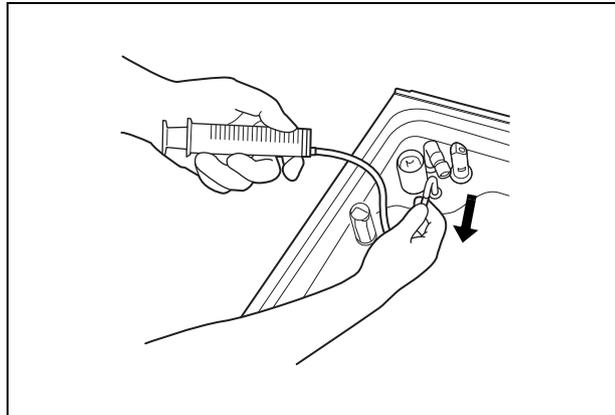


Figure 7.102

17. Remove the detergent tank.
18. To disconnect the tube connected to the alcohol tank cap, push and hold the lock lever on the connector and pull the tube.

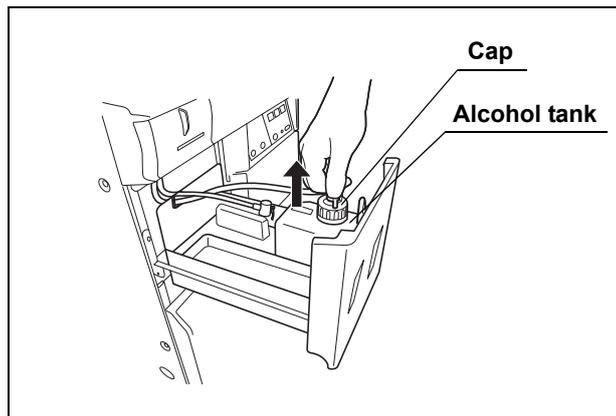


Figure 7.103

19. Take the alcohol tank out of the device.

- 20. Turn the alcohol tank cap to remove it, empty the alcohol from the tank and dry the inside.

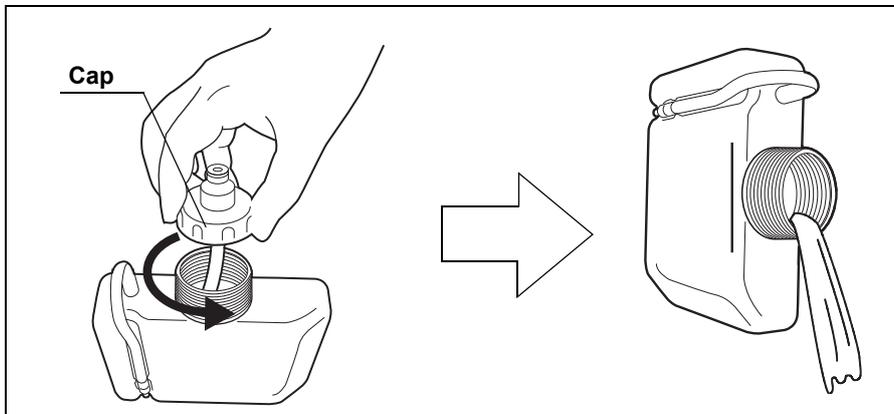


Figure 7.104

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

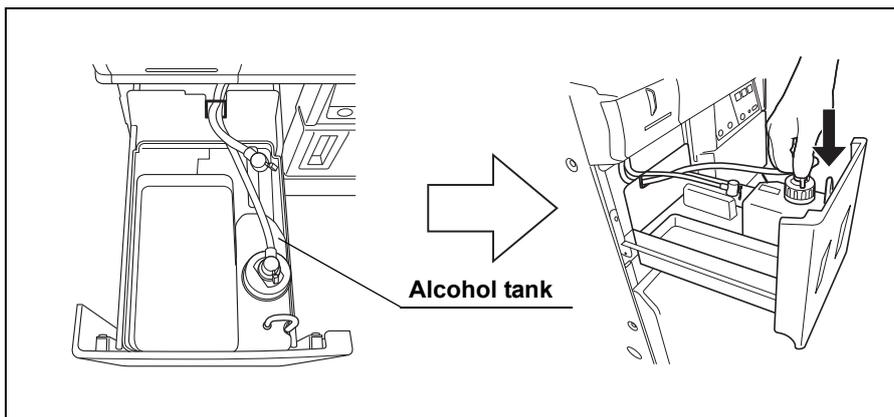


Figure 7.105

- 22. Close the detergent/alcohol drawer.

23. Attach the connector jigs to the connectors on the reprocessing basin.

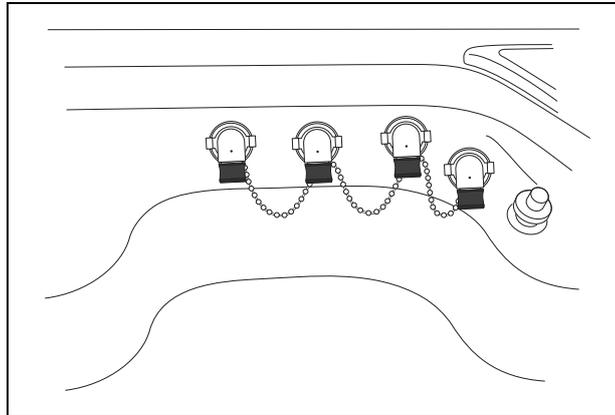


Figure 7.106

24. Close the lid.  
25. Perform the operation described in Section 6.7, "Air purge" on page 169.  
26. Close the water faucet.  
27. Press the FUNC SEL button on the subcontrol panel to select "LEAK TEST", and press the FUNC START button.

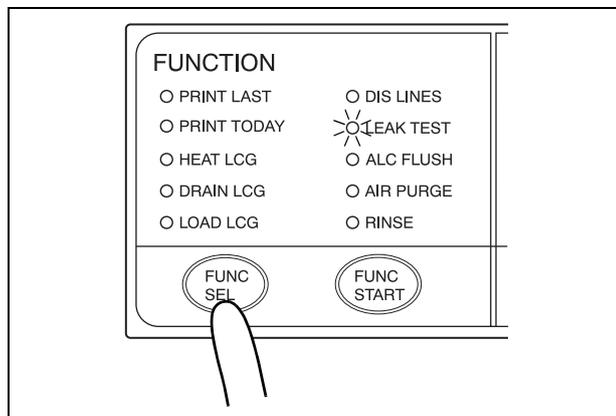


Figure 7.107

28. In about 10 seconds, press the STOP/RESET button to stop the leak test.  
29. Drain water from the water filter housing as described in "Draining water from the water filter housing" on page 193.  
30. Step on the foot pedal to open the lid, disconnect the connecting tubes, dry them thoroughly and store them in a clean place.  
31. Press the power switch to set it to OFF.

32. Turn the connection ring on the equipment side of the water supply hose in the direction shown to disconnect the hose from the equipment. If residual water spills from the water supply hose, wipe it up with a clean cloth.

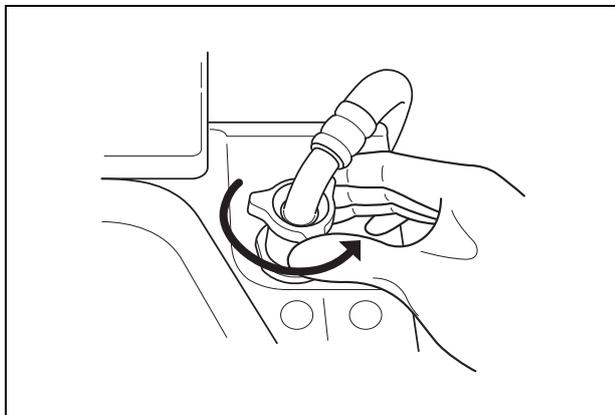


Figure 7.108

33. Put the equipment-side end of the hose in the wide-mouthed container to collect any residual water that may flow from the water supply hose.
34. While holding the lock lever of the water supply socket of the water supply hose, pull the sleeve toward the hose to disconnect the water supply socket from the water faucet.

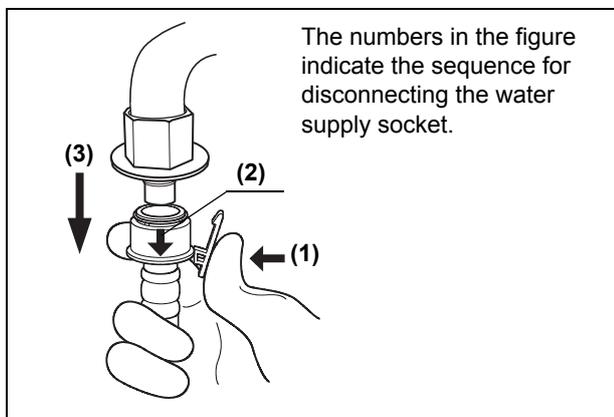


Figure 7.109

35. Step on the foot pedal to open the lid, dry the reprocessing basin thoroughly so that no bacterial growth will occur inside it, and then close the lid.
36. 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 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
  - Environment not exposed to NO<sub>x</sub>, SO<sub>x</sub>, or O<sub>3</sub> (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.

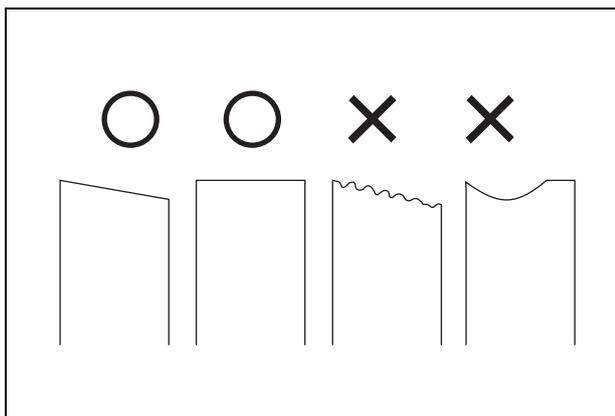


Figure 7.110

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

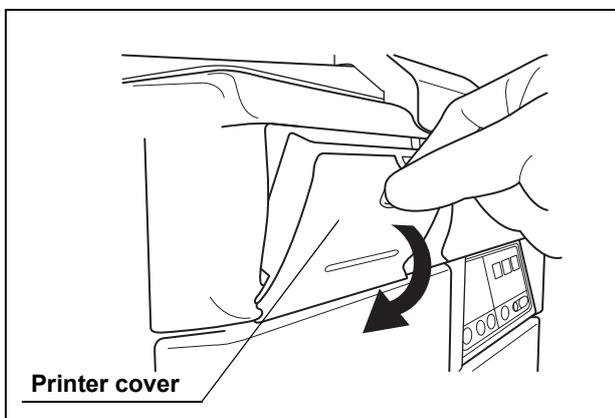


Figure 7.111

4. Take out the roll shaft from the roll holder.

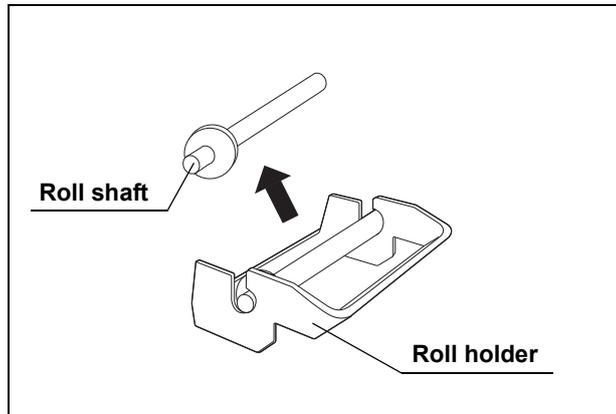


Figure 7.112

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

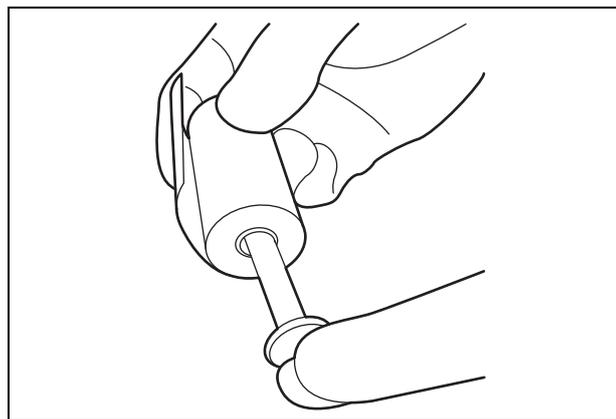


Figure 7.113

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

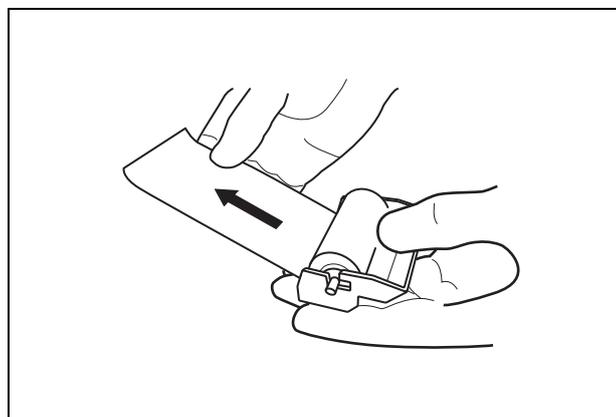


Figure 7.114

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

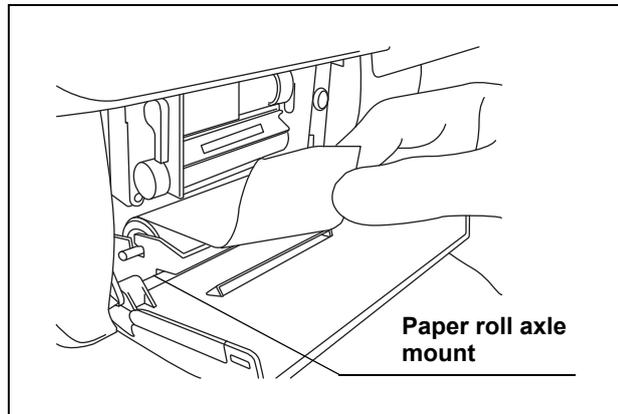


Figure 7.115

8. Hold the two edges of the printer paper roll as shown in Figure 7.116 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 7.117.

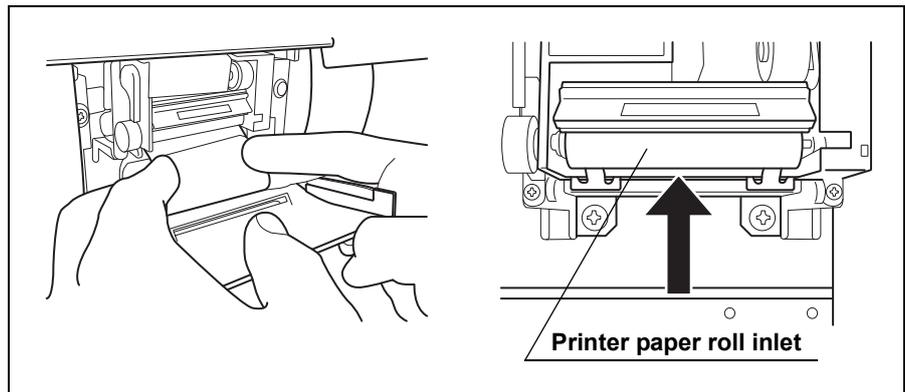


Figure 7.116

9. The printer paper roll is fed automatically.

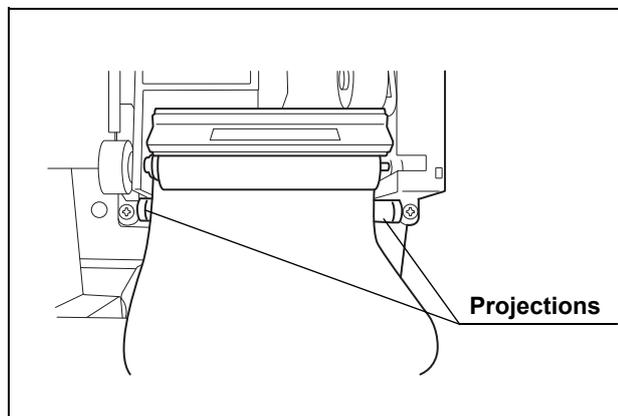


Figure 7.117

**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.

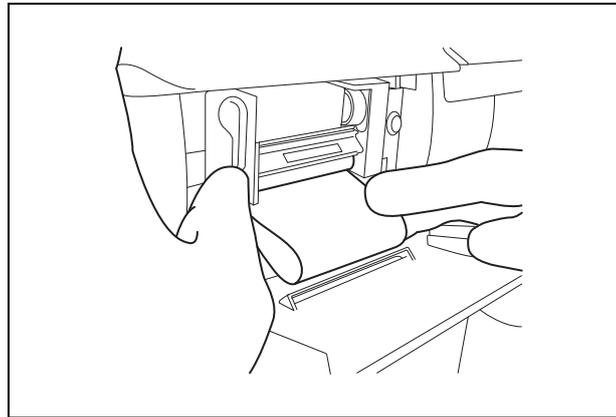


Figure 7.118

- 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.

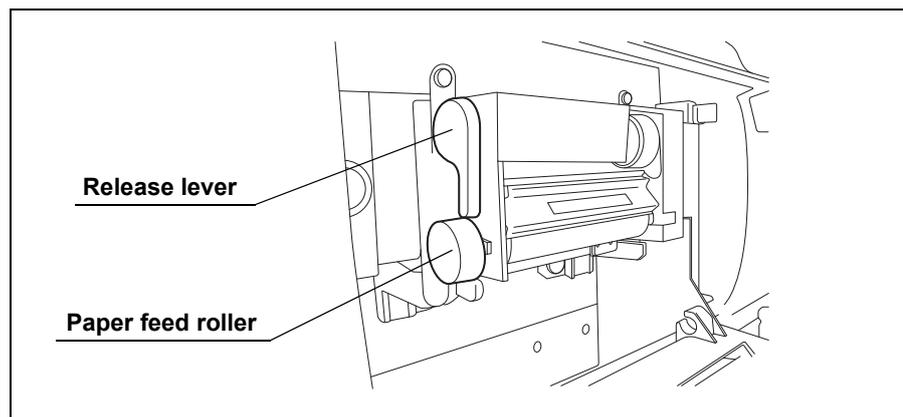


Figure 7.119

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.

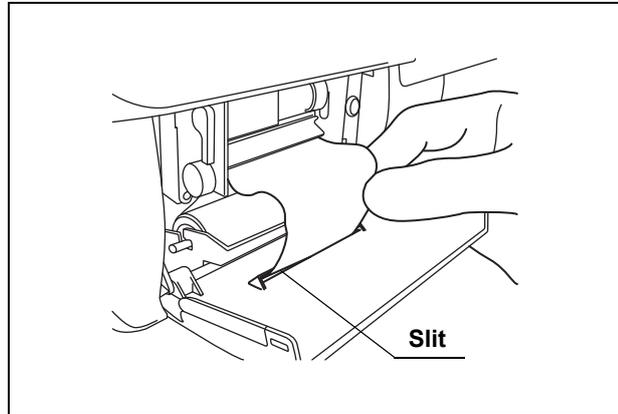


Figure 7.120

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

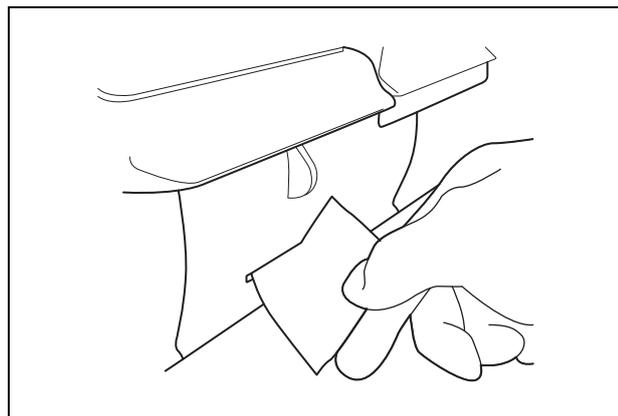


Figure 7.121

## **7.18 Care and maintenance after long-term storage**

When using the equipment after it has been stored for more than 14 days without being used, setting up the equipment, performing the reprocessing program and performing the water supply piping disinfection are required. Perform the following procedure.

### **○ Setting up the equipment**

- 1.** Connect the water supply hose. For detailed instruction, refer to Section 4.2, “Connection of the water supply hose” in “Instructions-Installation Manual”.
- 2.** Connect the power cord. For detailed instruction, refer to Section 4.4, “Connection of the power cord” in “Instructions-Installation Manual”.
- 3.** Confirm the power supply. For detailed instruction, refer to Section 4.5, “Confirmation of the power supply” in “Instructions-Installation Manual”.
- 4.** Install the detergent tank. For detailed instruction, refer to Section 3.13, “Installation of the detergent tank” in “Instructions-Installation Manual”.
- 5.** Add alcohol into the alcohol tank. For detailed instruction, refer to Section 4.10, “Addition of alcohol” in “Instructions-Installation Manual”.
- 6.** Replace the water filter (MAJ-824). For detailed instruction, refer to “Replacing the water filter” on page 195.
- 7.** Drain air in the water filter housing. For detailed instruction, refer to “Draining air in the water filter housing” on page 199.
- 8.** Set up the disinfectant solution. For detailed instruction, refer to “Setting up the disinfectant solution” on page 236 in this manual.
- 9.** Inspect and clean all parts before use. For detailed instruction, refer to Chapter 3, “Inspection Before Use” in this manual.

○ **Performing the reprocess program**

10. Insert the connector jig to the equipment and perform the reprocessing program to disinfect the internal piping except for water supply piping. For detailed instruction, refer to Section 4.15, "Checking functions" in "Instructions-Installation Manual".

○ **Performing the water supply piping disinfection**

11. Disinfect the water supply piping. For detailed instruction, refer to Section 4.17, "Disinfection of the water supply piping" in "Instructions-Installation Manual".
12. Olympus recommends to perform microbiological sampling of the OER-Pro rinse water quality right after performing the water supply piping disinfection if the device has not been used for more than 14 days. For details on sampling rinse water, refer to Section 7.4, "Microbiological surveillance" on page 211.

**NOTE**

Be sure to perform routine maintenance as required depending on the length of unused time. Otherwise, this equipment may not continue to operate and perform as expected. For details on routine maintenance, refer to Chapter 7, "Routine Maintenance".

# 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 274. If the problem cannot be resolved by the described remedial action, do not use the device and contact Olympus.

## 8.1 Troubleshooting guide

### **WARNING**

- 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 personal protective equipment to prevent any disinfectant from getting on your skin or being inhaled. Avoid direct physical contact and inhalation of vapors. 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 eyewear, 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 put your hand behind the disinfectant solution bottle drawer. Irritation of skin due to contact with concentrated disinfectant solution, injury by touching a projection, or malfunction of this equipment may result.

**WARNING**

- In the event, in case the process stops and disinfectant solution remains in the reprocessing basin due to a power failure or malfunction, do not open the reprocessing basin lid. Otherwise, disinfectant vapor could cause adverse physical effects. When power is restored, drain the reprocessing basin.
- When using disinfectant solution and alcohol, Olympus recommends the use of gas filters and operating this equipment in a well-ventilated area.
  - Wear a face mask, 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 a rinse is performed while an error is actively being displayed and disinfectant solution is still in the reprocessing basin, the rinse process will drain the disinfectant out of the device. To prevent this, refer to “Error codes and remedial actions” for instructions for collecting the disinfectant.
- Do not press the power switch OFF when an error code is displayed. Doing so may result in malfunction. The device will automatically start a process to address the error code. (The error code will blink during automatic processing.) After the error code starts blinking, follow the instructions in “Error codes and remedial actions” below.

**○ Error codes and remedial actions**

1. If the equipment detects irregularity, buzzer beeps for three seconds and the error code will be displayed on the main control panel (ex. E95 will be displayed when the detergent has run out). While the error code on the main panel blinks, the equipment executes the automatic processing. In this case, wait few minutes until the blinking of error code changes to a steady light.

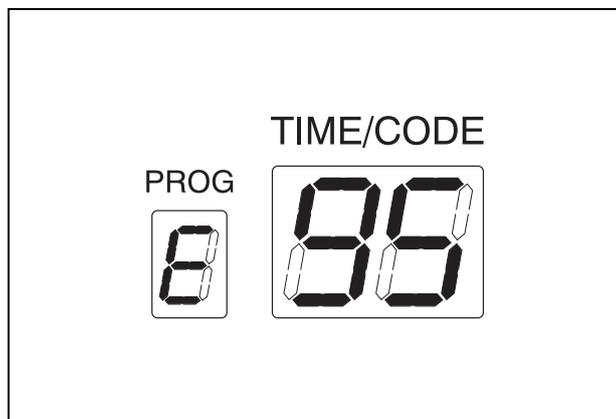


Figure 8.1

2. When the automatic processing is completed, the buzzer beeps for three seconds. The error code remains on the main control panel and the buzzer beeps intermittently until the error code is cleared. Identify the error code and perform remedial actions according to the instruction described in the table below.

**NOTE**

- The error code displayed on the main control panel can be cleared only by pressing the STOP/RESET button.

**NOTE**

- If the automatic printing function is activated and printout is not satisfactory due to the error that occurred during the automatic printing, error code will be displayed on the main control panel. In this case, print the latest reprocessing record by “PRINT LAST” to confirm whether the reprocessing process is completed. Press the “FUNC SEL” button on the control panel to select “PRINT LAST” and then press the “START” button. If the printer prints the reprocessing results, it shows that the previous reprocessing process was successfully completed. If the printer prints the error results, it shows that the previous reprocessing process was interrupted by error indicated in the printed error results.

| <b>Error Code</b> | <b>Problem</b>   | <b>Possible Causes</b>  | <b>Remedial Actions</b>  |
|-------------------|--|---|--|
| <b>E00</b>        | Process is interrupted.  | STOP/RESET 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 equipment, perform air purge. If you want to rinse the basin, perform rinsing. |
| <b>E01</b>        | Filling the basin with water takes too long (water supply time is beyond maximum setting). | <ul style="list-style-type: none"> <li>• The water faucet is not open enough.</li> <li>• Water leakage or clogging in the water supply piping.</li> </ul>                 | <ul style="list-style-type: none"> <li>• Open the water faucet all the way.</li> <li>• Check if water is leaking from the water supply hose.</li> <li>• Replace the water filter.</li> <li>• Clean the mesh filter in the water supply hose connector.</li> </ul>                        |
| <b>E02</b>        | Cleaning fluid is not discharged.  | <ul style="list-style-type: none"> <li>• Irregularity in the drain tubing.</li> <li>• Clogging of the mesh filter in the drain port of the reprocessing basin.</li> </ul> | <ul style="list-style-type: none"> <li>• Check the drain hose for improper installation.</li> <li>• Clean the mesh filter in the drain port of the basin.</li> <li>• Close the lid and perform air purge to remove water.</li> </ul>   |
| <b>E04</b>        | Cleaning fluid decreases during the cleaning process.                                      | Internal problem with the equipment.  | Contact Olympus.   |
| <b>E05</b>        | Cleaning fluid level is too high.  | Irregularity in the fluid level sensor.   | Contact Olympus (if water supply will not stop, close the water faucet).   |

| <b>Error Code</b> | <b>Problem</b>  | <b>Possible Causes</b>  | <b>Remedial Actions</b>   |
|-------------------|---|---|---|
| <b>E06</b>        | Fluid level sensor malfunctions.  | Erroneous detection due to residue attached to the fluid level sensor (middle).   | Clean the fluid level sensor.   |
| <b>E07</b>        | Fluid level sensor malfunctions.  | Erroneous detection due to residue attached to the fluid level sensor (lower).  | Clean the fluid level sensor.   |
| <b>E11</b>        | There is too much disinfectant solution in the disinfectant solution tank.                  | <ul style="list-style-type: none"> <li>• Irregularity in the drain piping.</li> <li>• Irregularity in the disinfectant solution collection piping.</li> </ul> | <ul style="list-style-type: none"> <li>• Close the lid if it is open. Automatic Processing will start after the lid is closed.</li> <li>• Check that the drain hose is installed properly.</li> <li>• Clean the mesh filter in the drain port of the basin.</li> <li>• If you want to continue the use of the equipment, check the disinfectant solution concentration with the test strip and replace the disinfectant solution if it has lost the potency.</li> </ul>   |
| <b>E12</b>        | 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"> <li>• Clean the mesh filters in the circulation port.</li> <li>• Drain the disinfectant solution completely from the disinfectant solution tank and replace with fresh disinfectant solution. Do not add fresh disinfectant solution to the used disinfectant solution.</li> </ul>   |
| <b>E13</b>        | It takes very little time for the reprocessing basin to fill with disinfectant solution.    | Due to improper discharge, fluid remains in the basin before the disinfection process.  | <ul style="list-style-type: none"> <li>• Check the drain hose for proper installation.</li> <li>• Clean the mesh filter in the drain port of the basin.</li> <li>• Discharge the disinfectant solution remaining in the equipment with the following procedure, prepare new disinfectant solution and restart the process.               <ol style="list-style-type: none"> <li>1. Discharging the residual disinfectant solution from the basin: Close the lid and perform the air purge operation to discharge residual disinfectant solution in the basin through the drain hose. If discharge through the drain hose is difficult, contact Olympus.</li> <li>2. Discharging disinfectant solution from the disinfectant solution tank:                   <p>Connect the drain connector to the disinfectant removal port and drain disinfectant solution from the tank.</p> <p>Alternatively, connect the disinfectant collection hose to the disinfectant solution nozzle and perform the "DISINFECTANT DRAIN" operation to drain disinfectant solution from the tank.</p> </li> </ol> </li> </ul> |

| <b>Error Code</b> | <b>Problem</b>   | <b>Possible Causes</b>   | <b>Remedial Actions</b>  |
|-------------------|--|--|--|
| <b>E14</b>        | Disinfectant solution cannot be recollected.                                 | <ul style="list-style-type: none"> <li>• Clogging of the reprocessing basin's drain port mesh filter.</li> <li>• Blocking the ventilation openings on the gas filter cases.</li> </ul> | <ul style="list-style-type: none"> <li>• Check that the ventilation openings on the gas filter cases are not blocked.</li> <li>• Wait until the disinfectant solution is collected.</li> <li>• Remove and clean the mesh filters in both the drain port and circulation port.</li> <li>• If the quantity of the disinfectant solution in the disinfectant solution tank is sufficient, rinse the basin as described in section 6.8, "Rinsing" on page 170 and perform the reprocessing process again.</li> <li>• If the quantity of the disinfectant solution in the disinfectant solution tank is not sufficient, drain the disinfectant solution completely from the tank and replace with fresh disinfectant solution. Do not add fresh disinfectant solution to the used disinfectant solution.</li> </ul> |
| <b>E15</b>        | Fluid level sensor malfunctions.   | <ul style="list-style-type: none"> <li>• Erroneous detection due to residue attached to the fluid level sensor (middle).</li> <li>• Internal problem with the device.</li> </ul>       | <ul style="list-style-type: none"> <li>• Clean the fluid level sensor.</li> <li>• If the quantity of the disinfectant solution in the disinfectant solution tank is sufficient, rinse the basin as described in section 6.8, "Rinsing" on page 170 and perform the reprocessing process again.</li> </ul>  |
| <b>E16</b>        | It takes too long to fill the reprocessing basin with disinfectant solution. | Internal problem with the device.  | Contact Olympus.   |
| <b>E17</b>        | Disinfectant solution cannot be heated.                                      | Internal problem with the device.  | Contact Olympus.   |
| <b>E18</b>        | Temperature sensor malfunctions.   | Internal problem with the device.  | Contact Olympus.   |
| <b>E21</b>        | Air is not purged through scope channels (air purge pressure is low).        | <ul style="list-style-type: none"> <li>• Improper installation of air filter.</li> <li>• Clogging of air filter.</li> </ul>  | <ul style="list-style-type: none"> <li>• Check that the air filter is properly installed.</li> <li>• If the air filter has been installed properly, the air filter may be clogged. Replace the air filter.</li> </ul>  |
| <b>E22</b>        | Insufficient fluid pressure.   | Clogging of the mesh filters in the circulation port.  | Clean the mesh filters in the circulation port of the basin.   |

| <b>Error Code</b> | <b>Problem</b>  | <b>Possible Causes</b>   | <b>Remedial Actions</b>   |
|-------------------|---|--|---|
| <b>E23</b>        | Excessive fluid pressure.   | Internal problem with the device.  | Contact Olympus.  |
| <b>E31</b>        | The lid is open.  | At the beginning of the process:<br>START button was pressed while the lid is open.  | Close the lid firmly and restart the process.   |
|                   |   | During the process:<br>Internal problem with the device.   | Contact Olympus.  |
| <b>E41</b>        | The power was lost and then restored during the process.                      | <ul style="list-style-type: none"> <li>• Power supply was interrupted.</li> <li>• Power cord contact failure.</li> </ul>                                   | 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 irregularity are found, replace the power cord.  |
| <b>E51</b>        | Water leakage inside the device.  | Internal problem with the device.  | Close the water faucet and contact Olympus.   |
| <b>E61</b>        | Ultrasonic cleaning is not functioning.                                       | Irregularity in the ultrasonic oscillator.   | Contact Olympus.  |
| <b>E71</b>        | Abnormalities with the disinfectant bottle drawer sensor.                     | Internal problem with the device.  | Contact Olympus.  |
| <b>E72</b>        | Disinfectant solution in the disinfectant solution tank cannot be discharged. | Internal problem with the equipment.   | If disinfectant solution remains in the basin, perform the same remedial action as [E13]. In other cases, contact Olympus.  |
| <b>E73</b>        | Water supply irregularity during preparation of disinfectant solution.        | <ul style="list-style-type: none"> <li>• Insufficient opening of the water faucet.</li> <li>• Water leakage or blockage of water supply piping.</li> </ul> | <p>After checking and cleaning, perform the setting up the disinfectant solution. After loading, check the effectiveness using the test strip.</p> <ul style="list-style-type: none"> <li>• Fully open the water faucet.</li> <li>• Check the water supply hose for water leakage.</li> <li>• Clean the mesh filter in the water supply hose connector.</li> <li>• Replace the water filter.</li> <li>• Close the lid if it is open.</li> </ul> |

| <b>Error Code</b> | <b>Problem</b>   | <b>Possible Causes</b>   | <b>Remedial Actions</b>   |
|-------------------|--|--|---|
| <b>E74</b>        | Disinfectant solution in the cassette bottles are not supplied to the equipment. | <ul style="list-style-type: none"> <li>Internal problem with the equipment.</li> <li>Disinfectant solution in the cassette bottles are not supplied to the disinfectant solution tank of the equipment.</li> </ul>                                       | Contact Olympus.  |
| <b>E75</b>        | Water supply irregularity during preparation of disinfectant solution.           | <ul style="list-style-type: none"> <li>Insufficient opening of the water faucet.</li> <li>Water leakage or blockage of water supply piping.</li> <li>Temporary drop in the water supply quantity during preparation of disinfectant solution.</li> </ul> | <p>After checking and cleaning, perform the setting up the disinfectant solution. After loading, check the effectiveness using the test strip.</p> <ul style="list-style-type: none"> <li>Fully open the water faucet.</li> <li>Check the water supply hose for water leakage.</li> <li>Clean the mesh filter in the water supply hose connector.</li> <li>Replace the water filter.</li> <li>Close the lid if it is open.</li> </ul> |
| <b>E76</b>        | Irregularity in the fluid level sensor in the disinfectant tank.                 | Internal problem with the equipment.   | Contact Olympus.  |
| <b>E77</b>        | Incomplete positioning of the disinfectant bottle drawer.                        | Disinfectant bottle drawer is closed incompletely.   | Push in the disinfectant bottle drawer until it is closed completely.   |
| <b>E78</b>        | Cassette bottles are empty.  | <p>Irregularity in the cassette bottle detection switches.</p> <p>Empty cassette bottles were installed.</p>   | <p>Check that the cassette bottles are properly installed.</p> <p>Check if the cassette bottles you installed are empty. If they are, install new cassette bottles.</p>   |

| <b>Error Code</b> | <b>Problem</b>                             | <b>Possible Causes</b>  | <b>Remedial Actions</b>   |
|-------------------|--|---|---|
| <b>E81</b>        | The process cannot be properly controlled. | Internal problem with the device.   | Contact Olympus.  |
| <b>E82</b>        | Internal irregularity in the device.       | Irregularity in the electrical circuitry inside the device.   | Contact Olympus.  |
| <b>E83</b>        | The process cannot be properly controlled. | Irregularity in the electrical circuitry inside the device.   | Contact Olympus.  |
| <b>E84</b>        | Malfunction of the RFID reader.            | Irregularity in the electrical circuitry inside the device.   | Contact Olympus.  |
| <b>E91</b>        | ID read error.                             | <ul style="list-style-type: none"> <li>• ID is not read.</li> <li>• Multiple IDs are read.</li> </ul>   | Press the STOP/RESET button, check that the ID detection indicators are not lit on the main control panel, and read the IDs again.  |
| <b>E92</b>        | Exceeded leak test time.                   | Exceeded test time (10 minutes).  | Perform leak test again.  |
| <b>E93</b>        | No alcohol remains.                        | <ul style="list-style-type: none"> <li>• The alcohol has run out.</li> <li>• Alcohol cannot be supplied to the device.</li> <li>• Irregularity in the alcohol sensor.</li> <li>• Clog in the pump or piping.</li> </ul> | <ul style="list-style-type: none"> <li>• If error occurred during the reprocessing process, refer to “When the error code [E93] is displayed during the alcohol flush process” on page 117.</li> <li>• If error occurred during the sub-independent alcohol flush process, check the amount of alcohol in the tank. If alcohol is still present in the alcohol tank, refer to “If the error code [E93] is displayed again after replenishing alcohol and restarting the alcohol flush process:” on page 120.</li> </ul> |
| <b>E94</b>        | The equipment is not printing.             | <ul style="list-style-type: none"> <li>• Printer paper roll has run out.</li> <li>• The release lever is raised.</li> </ul>   | <ul style="list-style-type: none"> <li>• Install the printer paper roll properly (follow the procedure in Section 4.8, “Installation of the printer paper roll” in the “Instructions-Installation Manual”).</li> <li>• Check that the release lever is set in the proper position.</li> </ul>   |

| Error Code | Problem               | Possible Causes  | Remedial Actions   |
|------------|-----------------------|--|--|
| <b>E95</b> | No detergent remains. | <ul style="list-style-type: none"> <li>• The detergent has run out.</li> <li>• The detergent cannot be supplied to the equipment.</li> <li>• Irregularity in the detergent sensor.</li> <li>• Clog in the pump or piping.</li> </ul> | Refer to “When the error code [E95] is displayed during the reprocessing process” on page 125. |

### ○ Other errors and remedial action

| Problem  | Possible Causes  | Remedial Actions   |
|--|--|--|
| The odor of the disinfectant solution is stronger than expected. | <ul style="list-style-type: none"> <li>• The gas filter has expired.</li> <li>• Disinfectant solution is leaking.</li> </ul> | <ul style="list-style-type: none"> <li>• Replace the gas filter as described in Section 7.1, “Replacing the gas filter (MAJ-822)” on page 188. If the problem persists after replacement, contact Olympus.</li> <li>• Check if disinfectant solution is leaking. If it is, do not use the device and contact Olympus.</li> </ul>   |
| Water leaks from the equipment.                                  | <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 192.</p> <p>However, the STOP/RESET button may not work if stopping the water might cause a hazardous situation, for example during disinfectant solution replacement. In this case, close the water faucet, tighten the water filter housing, then open the water 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 water faucet, set the power switch to OFF, disconnect the power cord plug from the wall mains outlet and contact Olympus.</p> |
| Fluid leaks from the disinfectant removal port.                  | Something is clogging the disinfectant removal port.   | Connect the drain connector as described in to Section 3.10, “Checking the disinfectant solution concentration level” on page 59, push the valve on 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.  |

| Problem  | Possible Causes   | Remedial Actions   |
|--|---|--|
| Flow of the water in the reprocessing basin is weaker than before.     | Incomplete opening of the water faucet.   | Open the water 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 192.   |
|  | Clogging of water filter.   | Replace the water filter as described in Section 7.2, "Replacing the water filter (MAJ-824)" on page 192.  |
|  | Clogging of the mesh filter in the water supply hose connector.   | Clean the mesh filter as described in Section 7.13, "Cleaning the mesh filter in the water supply hose connector" on page 248.   |
| Connecting tube cannot be connected.                                   | Not using the appropriate connecting tube.  | Consult the List Of Compatible Endoscopes/Connecting Tubes <OER-Pro>.  |
| The lid cannot be closed.  | The lid is locked.  | Step on the foot pedal to unlock the lid.  |
|  | Internal components are pressing against the lid.   | Check that the lid is not pushed by the fluid level sensor, washing case or scope inside the basin. 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 remains in the reprocessing basin.               | STOP/RESET button was pressed during disinfection process to force it to stop.  | If an error code is displayed, take the corresponding remedial action. Collect or drain the disinfectant solution and then rinse the basin as described in Section 6.8, "Rinsing" on page 170. Since the endoscopes may not be properly disinfected, they should be put through the reprocessing process again from the beginning.   |
| Cleaning fluid remains in the reprocessing basin.                      | STOP/RESET button was pressed during cleaning process to force it to stop.  | Rinse the basin as described in Section 6.8, "Rinsing" on page 170. Since the endoscopes may not be properly disinfected, they should be put through the reprocessing process again from the beginning.  |
| Panel display disappears completely during a operation.                | <ul style="list-style-type: none"> <li>• Power cord is disconnected from the power outlet.</li> <li>• Circuit breaker is activated.</li> <li>• A power failure has occurred.</li> </ul> | <p>Perform the checks described in Section 4.1, "Power activation and opening the water faucet" on page 75. Error code [E41] will be displayed when the device is turned ON.</p> <p>After checking, press the STOP/RESET button to release the error code. However, if the error code is blinking, the disinfectant solution in the basin 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 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.  |

| <b>Problem</b>  | <b>Possible Causes</b>   | <b>Remedial Actions</b>  |
|---|--|--|
| 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 225.  |
| Bacteria were detected as a result of culture test of a reprocessed endoscope.                      | <ul style="list-style-type: none"> <li>Expiration of service life of filters, degradation of disinfectant solution, etc.</li> <li>Water supply piping is not disinfected.</li> </ul> | Inspect the equipment as described in Chapter 3, "Inspection Before Use", preclean the endoscope 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"> <li>Expiration of service life of filters, degradation of disinfectant solution, etc.</li> <li>Water supply piping is not disinfected.</li> </ul> | Inspect the equipment as described in Chapter 3, "Inspection Before Use". If bacteria are detected again in the next culture test, contact Olympus.  |
| Endoscopes were not precleaned before being reprocessed.  | —  | Inspect the equipment as described in Chapter 3, "Inspection Before Use". Then, preclean the endoscopes and reprocess them again from the beginning.   |
| Printed paper is not output from the printer.   | <ul style="list-style-type: none"> <li>Printer paper roll has run out.</li> <li>Paper jam.</li> </ul>  | Take the remedial action by referring to Section 3.11, "Inspecting the printer paper roll" on page 68.   |
| Abnormal noise from the device.   | Internal problem with the device.  | Contact Olympus.   |
| The indicator lamp of the communication status indicator on the main control panel goes out/blinks. | The connection with external device is incomplete or a device malfunctions.  | Check the power supply to the external devices and the connection between the external devices and the OER-Pro. If the problem cannot be resolved, contact Olympus.  |

## 8.2 OER-Pro Return

Contact Olympus for information about packing and shipping the equipment for return. When you return the equipment, include a description of the malfunction or damage and how it occurred.

## 8.3 Printing function for troubleshooting

To analyze problems, this equipment has a special printing function for troubleshooting. If the problem cannot be resolved by the remedial action described in 8.1, “Troubleshooting guide” on page 274 and you need to contact Olympus, Olympus may require this operation to resolve the problem. In this case, perform following procedure to print the information for analyzing the problem and follow the instruction from Olympus.

**NOTE**

This printing function can be used for service purpose only. Do not use this function for reprocessing history management.

1. Press the FUNC SEL button on the subcontrol panel so that the “RINSE” indicator lights up.

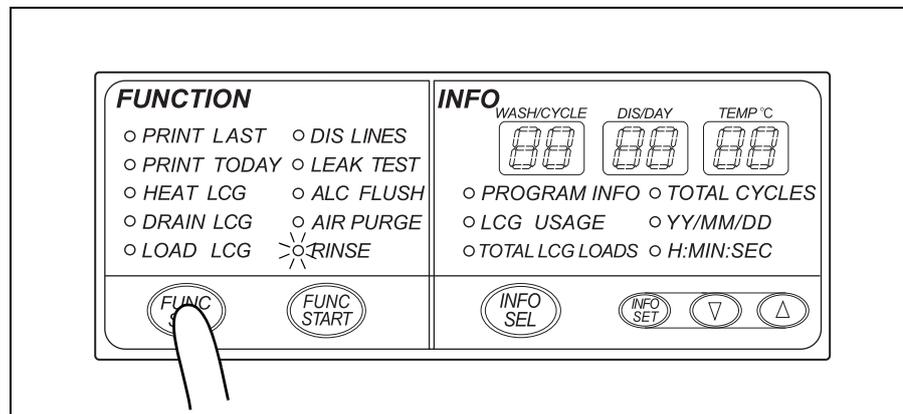


Figure 8.2

2. Press the “▼” button on the subcontrol panel for 5 seconds. The printer prints the information for analyzing the problem.

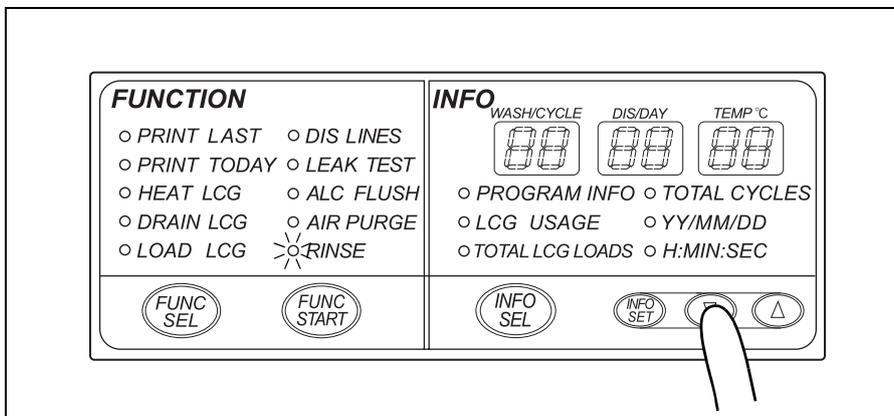


Figure 8.3

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

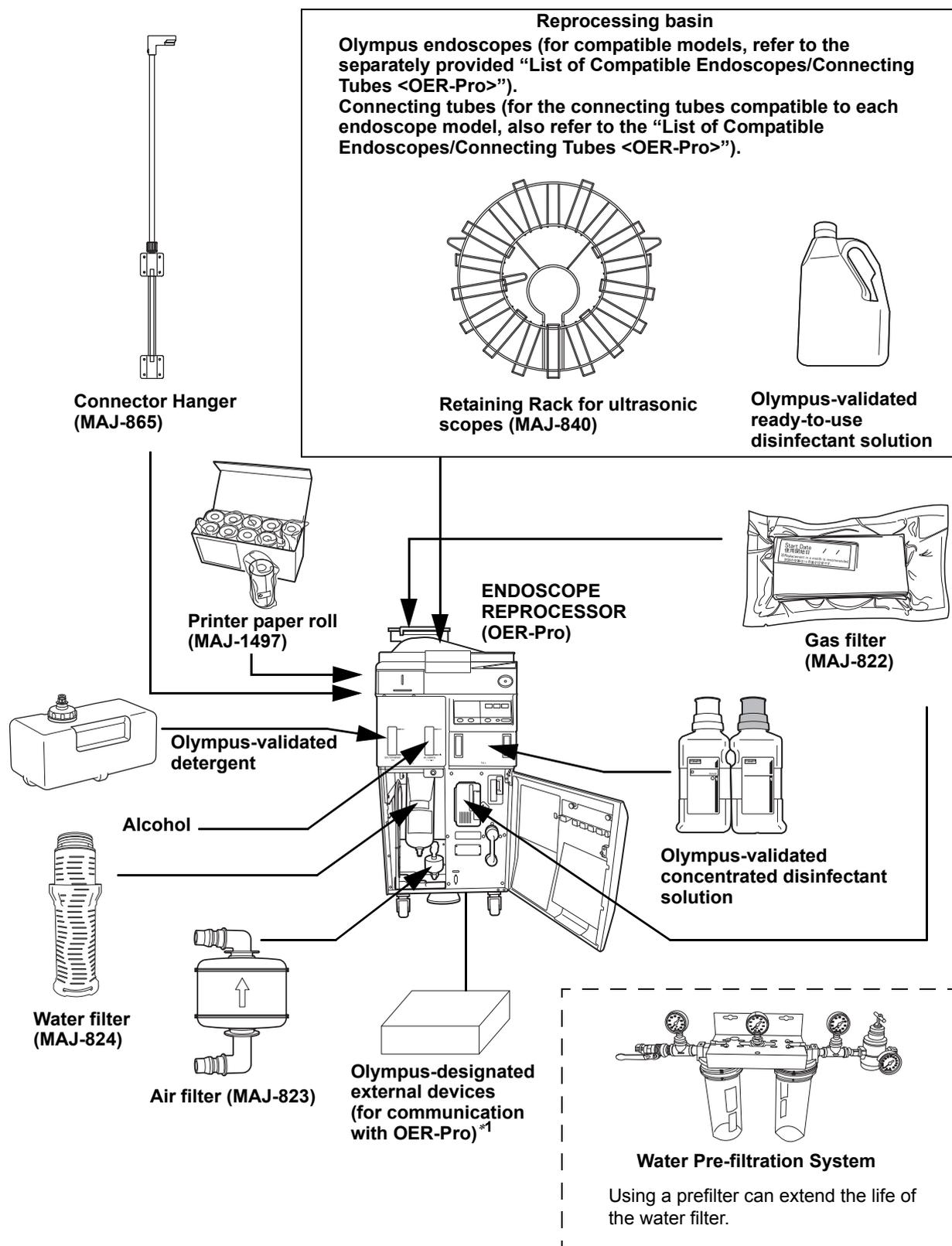
# Appendix

## 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. Nor can Olympus guarantee 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.



\*1 Always use Olympus designated external devices for communication with OER-Pro. If not, Olympus cannot guarantee that the device will perform as expected. For more details on external devices available in your area, contact Olympus.

## Shipping environment

|                      |                      |                              |
|----------------------|----------------------|------------------------------|
| Shipping environment | Ambient temperatures | -47 to +60°C (-52 to +140°F) |
|                      | Relative humidity    | 10 – 90%                     |
|                      | Atmospheric pressure | 700 – 1060 hPa               |

## Operating environment

|                       |                          |   |
|-----------------------|--------------------------|---|
| Operating environment | Ambient temperatures     | 10 – 40°C (50 – 104°F)  |
|                       | Relative humidity        | 30 – 85%  |
|                       | Elevation                | 3000 meters (maximum)   |
|                       | Designed for use         | Indoors   |
|                       | Water supply flow        | 17 l/min. or more when the water faucet is fully open           |
|                       | Water supply pressure    | 0.1 – 0.5 MPa (include water hammer)                            |
|                       | Water supply temperature | Max. 28°C   |
|                       | Water type               | Potable water or Softened water (Purified water cannot be used) |
|                       | Water hardness           | 400 ppm (maximum)<br>0 – 150 ppm (Recommended value) *1         |

\*1 The recommended value is in reference to AAMI TIR34:2007 “Water for the reprocessing of medical devices”.

**NOTE**

Purified water is water that has been produced through the methods of either reverse osmosis (RO), deionization (DI), distillation or other methods that meet USP standards to remove impurities.

## Specifications

|   |   |   |
|---|---|---|
| <b>Compatible scopes</b>                      | Olympus flexible endoscopes   |   |
|   | (Refer to the “List of Compatible Endoscopes/Connecting Tubes <OER-Pro>” for details)   |   |
|   | (Note 1)  | The OER-Pro does not sterilize endoscopes. Therefore, after cleaning/disinfecting an endoscope that requires sterilization, always sterilize the endoscope as instructed in its instruction manual. |
| <b>Number of reprocessed scopes</b>           | Max. 2 (1 with certain models)  |   |
| <b>Cleaning method</b>                        | <b>Exterior surfaces</b>  | Ultrasonic cleaning, turbulent bath   |
|   | <b>Channel interiors</b>  | Fluid flushing  |
|   | <b>Valves</b>   | Ultrasonic cleaning, fluid flushing   |
| <b>Disinfection method</b>                    | <b>Exterior surfaces</b>  | Disinfectant solution immersion   |
|   | <b>Channel interiors</b>  | Disinfectant solution flushing and filling  |
|   | <b>Valves</b>   | Disinfectant solution immersion   |
| <b>Cleaning time setting</b>                  | 3 – 10 minutes (Setting variable in 1 min. increments)  |   |
| <b>Disinfection time setting</b>              | <b>Concentrated disinfectant solution</b>   | 7 minutes* <sup>1</sup>   |
|   | <b>Ready-to-use disinfectant solution</b>   | 10 minutes* <sup>1</sup>  |
| <b>Disinfectant solution heating setting</b>  | 20°C (68°F)* <sup>1</sup><br>(If the temperature of disinfectant solution is below 20°C, it is heated to 20°C (68°F).)  |   |
| <b>Disinfectant solution heating method</b>   | Built-in heater in the reprocessing basin.<br><br>1. Heating immediately before disinfection process in a reprocessing program<br><br>2. Heating before the start of a reprocessing program |   |
| <b>Water discharge method</b>                 | Forced draining using a pump (Floor draining)   |   |
| <b>Disinfectant solution discharge method</b> | 1. Draining through disinfectant collection hose  |   |
|   | 2. Draining through drain hose  |   |
| <b>Reprocessing basin capacity</b>            | Approximately 14 L  |   |

|  |  |  |
|--|--|--|
| <b>Disinfectant solution tank capacity</b> |  | Approximately 17.5 L   |
| <b>Disinfectant solution</b>               |  | Olympus-validated disinfectant solution  |
| <b>Detergent</b>                           |  | Olympus-validated detergent  |
| <b>Visual leakage detection</b>            |  | Bubble detection during immersion  |
| <b>Alcohol flushing</b>                    |  | Automatic flushing/draining using a pump and compressor  |
| <b>Dimensions</b>                          |  | 450 (W) × 977 (H) × 765 (D) mm   |
| <b>Weight</b>                              |  | 120 kg (dry condition)   |
| <b>Power supply</b>                        | <b>Voltage</b>   | 120 V AC   |
|  | <b>Frequency</b>   | 60 Hz  |
|  | <b>Input current</b>   | 5.5 A  |
|  | <b>Voltage fluctuation</b>   | ±10%   |
| <b>Ultrasonic wave</b>                     | <b>Frequency</b>   | 36 ±2 kHz  |
|  | <b>Power</b>   | 100 W ±20%   |
| <b>EMC</b>                                 | <b>Applied standard; IEC 61326: 2012</b>   | This equipment complies with the standards listed in the left column.<br>CISPR 11 of emission:<br>Group1, Class B        |
| <b>Electrical safety</b>                   | <b>Applicable standard; UL 61010-1: 2012<br/>CSA C22.2 No. 61010-1: 2012<br/>CSA C22.2 No. 61010-2-040: 2007<br/>IEC 61010-1: 2010<br/>IEC 61010-2-040: 2005</b> | This equipment complies with the standard listed in the left column.<br>Installation category: II<br>Pollution degree: 2 |
| <b>Radio Transmitter</b>                   | <b>Compliance</b>  | ISO/IEC 18000-3 (Mode1)  |
|  | <b>Center Frequency</b>  | 13.56 MHz  |
|  | <b>Modulation</b>  | ASK  |
|  | <b>Effective Radiated Power</b>  | 300 mW±20%   |

---

| <b>UDI label</b> | <b>Indication</b> |  |
|------------------|-------------------|--|
|                  |                   | A label required by some countries' regulations regarding identification of medical device also known as Unique Device Identification (UDI).<br>The following information is being coded in the 2-dimensional barcode (GS1 Data Matrix): <ul style="list-style-type: none"><li>- (01) 14-digit GS1 Global Trade Item Number;</li><li>- (11) 6-digit date of manufacture;</li><li>- (21) 7-digit serial number.</li></ul> |

---

\*1 The OER-Pro is set for a 10-minute and 20°C disinfection process for ready-to-use disinfectant solution at the factory. Program changes to the disinfection process will be released when Olympus-validated disinfectant solutions with different disinfectant contact times and temperatures are approved.

## EMC information

This model is intended for use in the electromagnetic environments specified below. The user and 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<br>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<br>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<br>conducted<br>emissions<br>CISPR 11           |                |   |
| Harmonic<br>emissions<br>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<br>fluctuations/flicker<br>emissions<br>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)<br>IEC 61000-4-2  | Contact: $\pm 2, \pm 4$ kV<br>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<br>IEC 61000-4-4  | $\pm 2$ kV<br>for power supply lines<br>$\pm 1$ kV<br>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<br>IEC 61000-4-5  | Differential mode:<br>$\pm 1$ kV<br>Common mode:<br>$\pm 2$ 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<br>IEC 61000-4-11 | $< 5\% U_T$<br>( $> 95\%$ dip in $U_T$ )<br>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<br>IEC 61000-4-8  | 30 A/m   | Same as left     | It is recommended to use this equipment by maintaining sufficient 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<br>IEC 61000-4-6 | 3 Vrms<br>(150 kHz – 80 MHz) | 3 V (V <sub>1</sub> )    | Formula for recommended separation distance (V <sub>1</sub> =3 according to the compliance level)<br><br>$d = \left[ \frac{3.5}{V_1} \right] \sqrt{P}$   |
| Radiated RF<br>IEC 61000-4-3  | 10 V/m<br>(80 MHz – 1 GHz)   | 10 V/m (E <sub>1</sub> ) | Formula for recommended separation distance (E <sub>1</sub> =10 according to the compliance level)<br><br>$d = \left[ \frac{3.5}{E_1} \right] \sqrt{P}$ <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, 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 communications equipment and this equipment**

| Rated maximum output<br>power of transmitter<br><br>P (W) | Separation distance according to frequency of transmitter (m)<br>(Calculated as V <sub>1</sub> =3 and E <sub>1</sub> =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 and IC information**

This equipment complies with part 15 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.

## ***Detergents, Disinfectants, and Chemical indicators information***

Dear Olympus Customer,

Re: Detergents and Disinfectants and chemical indicators required for use with the OER-Pro

The purpose of this letter is to list the FDA cleared high-level disinfectants and detergents required for use with the OER-Pro Automated Endoscope Reprocessing machine. The OER-Pro is intended for use in cleaning and high-level disinfection of Olympus flexible endoscopes and their accessories.

- Olympus-validated concentrated disinfectant solution

Olympus requires Acecide-C High-Level Disinfectant and Sterilant for use in the OER-Pro for high level disinfection of Olympus endoscopes and accessories. Acecide-C is manufactured by Best Sanitizers, Inc (154 Mullen Drive, Walton, KY) and cleared by FDA via 510(k) K091210. Olympus has validated Acecide-C as safe and effective for reprocessing of Olympus endoscopes and accessories. Use of a FDA cleared high-level disinfectant that has not been validated by Olympus may be ineffective and can damage the OER-Pro components and the endoscopes being reprocessed.

Olympus recommends using ACECIDE test strips for determining the MRC of Acecide-C. ACECIDE test strips are manufactured by Best Sanitizers, Inc and were cleared by FDA via 510(k) K091210.

- Olympus-validated ready-to-use disinfectant solution (Aldahol)

Olympus requires Aldahol High-Level Disinfectant for use in the OER-Pro for high-level disinfection of Olympus endoscopes and accessories. Aldahol is manufactured by Healthpoint Ltd. (3909 Hulen Street, Fort Worth, TX) and was cleared by FDA via 510(k) K041360. Olympus has validated Aldahol as safe and effective for reprocessing of Olympus endoscopes and accessories. Use of a FDA cleared high-level disinfectant that has not been validated by Olympus may be ineffective and can damage the OER-Pro components and the endoscopes being reprocessed.

Olympus recommends using 3M™ Comply™ Glutaraldehyde Monitors 3989 for determining the MRC of Aldahol. 3M™ Comply™ Glutaraldehyde Monitors 3989 are manufactured by 3M (3M Center, St. Paul, MN) and were cleared by FDA via 510(k) K924681.

- Olympus-validated ready-to-use disinfectant solution (Aldahol 1.8)

Olympus requires Aldahol 1.8 High-Level Disinfectant for use in the OER-Pro for high-level disinfection of Olympus endoscopes and accessories. Aldahol 1.8 is manufactured by Healthpoint Ltd. (3909 Hulen Street, Fort Worth, TX) and was cleared by FDA via 510(k) K113015. Olympus has validated Aldahol 1.8 as safe and effective for reprocessing of Olympus endoscopes and accessories. Use of a FDA cleared high-level disinfectant that has not been validated by Olympus may be ineffective and can damage the OER-Pro components and the endoscopes being reprocessed.

Olympus recommends using Aldecheck™ Aldahol 1.8 Glutaraldehyde Indicators for determining the MRC of Aldahol 1.8. Aldecheck™ Aldahol 1.8 Glutaraldehyde Indicators is manufactured by Albert Browne Ltd (Chancery House, 190 Waterside Road, Hamilton Industrial Park, Leicester, LE5 1QZ, United Kingdom) and was cleared by FDA via 510(k) K120435.

- Olympus-validated detergent

Olympus requires the use of EndoQuick detergent for cleaning of Olympus endoscopes and accessories in the OER-Pro. EndoQuick is manufactured by Best Sanitizers, Inc (154 Mullen Drive, Walton, KY). Use of a detergent that has not been validated by Olympus may be ineffective and can damage the OER-Pro components and endoscopes being reprocessed.

These products can be ordered by calling the Olympus Customer Care number at 800-848-9024, or by contacting your local Olympus Sales Representative.

If you have any questions about these products and the use of the OER-Pro machine please feel free to contact the Olympus Technical Assistance Center at the same phone number 800-848-9024 or by contacting your local Olympus Sales Representative. Thank you.

Sincerely,

Olympus America, Inc.





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