CORIS®

# User Manual




nanosonics
Infection Prevention. For Life.

L05080 7.0 07/2026

This User Manual is for the use of the CORIS® System (CORIS Device and its accessories). Read this manual before operating any of the components of the CORIS System to determine the correct procedures.

For further information, contact your customer service representative or visit the Nanosonics website.

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# Safety Compliance

Complies with: IEC 61010-2-040:2020

Standards Compliance

**CORIS** is designed to meet the requirements of the following Acts:




Health Insurance Portability and Accountability Act of 1996




EU General Data Protection Regulation

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# 1 Introduction

## 1.1 Overview

The CORIS System (shown in *Figure 2*) is intended to replace manual cleaning of the channels of compatible endoscopes with an automated cleaning cycle. The CORIS System uses physical friction from the QUANTUM Cleaning Agent to clean all endoscope channels, including those that are unreachable with a physical brush today.

The fully automated cycle propels precise doses of non-toxic, granular CORIS QUANTUM Cleaning Agent, combined with air and water through all the channels, lifting soils from internal surfaces and leaving them clean.

The cleaning of external surfaces of the endoscope is still required. Endoscopes must be high-level disinfected after cleaning with the CORIS System according to the endoscope manufacturer's instructions.

### 1.1.1 Compatibility

The CORIS System is intended for use only with compatible endoscopes. Refer to the CORIS Compatible Endoscope List on the Nanosonics website for a list of the compatible endoscopes that can be used with the CORIS System.

### 1.1.2 What the CORIS System Cleans

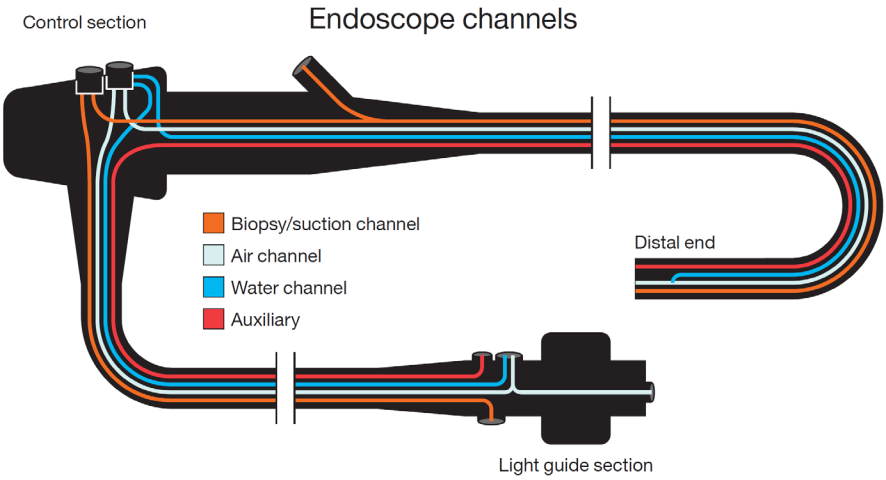
The CORIS System cleans the following internal surfaces of compatible endoscopes shown in *Figure 1* (if the scopes include these channels).

- Ports, cylinders, connectors, inlets, and air pipe
- Biopsy/Suction Channels
- Air and Water Channels
- Auxiliary Channel

The CORIS System does not clean ANY external endoscope surfaces, specifically the external surfaces of:

- Endoscope body
- Control handle
- Ports, cylinders, connectors, outlets, and air pipes
- Port valves
- Components of the distal end, including the instrument channel outlet, objective lens, air/water nozzle, auxiliary water nozzle

**Figure 1: Typical Endoscope Interior Components**



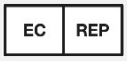

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## 1.2 Advisory Information

### Table 1: Terms or Acronyms

| Term or Acronym | Definition |
|---|---|
| BOM | Bill of materials |
| CARH | CORIS Adaptor Reprocessing Hub |
| CORIS Device | A commercial endoscope channel cleaner device. |
| Cleaning agent | The CORIS QUANTUM product used during endoscope channel cleaning cycles. |
| Disinfectant | 'Revital-Ox RESERT High-level Disinfectant (STERIS®)' is the disinfectant used in the CORIS Self-Disinfection Cycle. |
| HLD | High level disinfection |
| IFU | Instructions for Use, or User Manual (this document) |
| Maintenance Kit | A kit enabling self-disinfection of the CORIS Device (see Section 4.2.3). |
| Primary DI number | Primary Device Identifier number. A unique number to identify a medical device throughout its distribution and use. |
| PSU | Power Supply Unit |
| Purge | The process performed by the CORIS System to fully empty the cleaning agent bottle by heavily diluting and discharging the cleaning agent to the drain. |
| SD | Self-disinfection. A CORIS Device process which disinfects the internal fluidic pathways of the device by flushing with high level disinfectant. |
| User | Anyone using the CORIS Device. Users can have either Operator or Administrator access to the CORIS software which restricts which operations can be performed. |

### Table 2: Labels and Symbols

| | | | |
|---|---|---|---|
|  | **Warning.** This symbol identifies hazards that may cause severe injury or death, or significant property damage. |  | **Caution**. This symbol identifies hazards that may cause moderate injury, or property damage. |
|  | **Information**. Important information or reminders. Ignoring such information may result in failed outcomes (e.g. cleaning cycle failures) |  | EU Importer |
|  | Manufacturer |  | EU Representative |
|  | Product Number |  | Batch Number |
|  | Serial Number |  | Date of Manufacture |
|  | CE Mark |  | Medical Device |
|  | UK Conformity |  | RCM |
|  | Expiry Date |  | This Way Up |
|  | Consult Instruction for Use |  | Separate Collection for Electrical and Electronic Equipment |
|  | CORIS Device Environmental Conditions: Operational Conditions: Temperature range: 18°C to 25°C / 64°F to 77°F |  | CORIS QUANTUM Cleaning Agent Environmental Conditions: Storage and Transport Conditions: Temperature range: 15°C to 30°C / 59°F to 86°F |

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| | | | |
|---|---|---|---|
|  | Inlet for liquid (water) |  | Inlet for gas (air) |
|  | Draining |  | Outlet for gas (air) |
|  | Barcode scanning zone of CORIS Device |  | Do not stack more than 2 boxes |
|  | Heavy goods – Team or mechanical lift recommended |   | RFID scanning zone on CORIS Device |
|  | Compressed Air Present | | |

## 1.3 Warnings and Cautions

Below is a list of the CORIS System general warning statements. There will be additional statements throughout the manual, when applicable to that section.

**Table 3: Safety Warnings and Cautions**

| | |
|---|---|
|  | **Always use the CORIS System as instructed in this Manual. Failure to do so may result in damage to the CORIS System and the endoscope and/or ineffective reprocessing of the endoscope.** |
|  | **The CORIS System is intended to replace manual cleaning of compatible endoscope channels. Consult the endoscope manufacturer's instructions for all other reprocessing steps. Failure to do so may result in ineffective reprocessing of the endoscope.** |
|  | **This Manual does NOT replace your facility's documentation that covers endoscope reprocessing. Refer to your facility's procedures on how to reprocess endoscopes in your facility. Failure to do so may result in ineffective reprocessing of the endoscope** |
|  | **Correct preparation of an endoscope is critical to successful reprocessing. For successful integration of the CORIS System into the endoscope reprocessing workflow, carefully follow your facility's procedures. Failure to do so may result in damage to the CORIS System and the endoscope and/or ineffective cleaning.** |
|  | **It is the responsibility of your facility to ensure users are sufficiently trained to operate the CORIS System. Training should be documented in accordance with your facility's policies and procedures. The CORIS System should only be operated by those who have received proper training and have read the operating instructions. Failure to do so may result in damage to the CORIS System and the endoscope and/or ineffective cleaning.** |
|  | **Appropriate personal protective equipment (PPE) (including gowns, gloves, protective face wear and masks) shall be worn for protection against biological contamination during endoscope reprocessing. Failure to do so can cause exposure to infectious material, causing risk to health and safety.** |
|  | **Visually inspect the endoscope for damage, prior to commencing cleaning with the CORIS System. If the endoscope is damaged, do not run the cleaning cycle and refer to the manufacturer's IFU. Using a damaged endoscope in the CORIS System may cause further damage to the endoscope or result in ineffective reprocessing of the endoscope.** |

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**Visually inspect all CORIS accessories and consumables for damage, prior to use (see *Appendix 1 – CORIS Accessories* for a list of CORIS accessories). Discard if damaged and select a new accessory. Failure to do so may result in damage to the CORIS System and/or the endoscope, ineffective cleaning of the endoscope, or ineffective reprocessing of the CORIS System.**

**Only authorised customer service or suitably trained personnel should service the CORIS Device with genuine parts supplied from Nanosonics.**

## 1.4 Intended Use / Intended Purpose

The Nanosonics CORIS System is intended to clean the channels of endoscopes, when used in accordance with its labelling. The CORIS System is an electro-mechanical system that replaces manual cleaning of endoscope channels with an automated, verified and traceable cleaning process. Manual cleaning of endoscope channels is not required prior to cleaning with the CORIS System.

## 1.5 Indications for Use

The Nanosonics CORIS System is indicated for cleaning of the channels of compatible endoscopes.

The CORIS System is suitable for use in healthcare facilities by trained healthcare personnel.

**Intended Medical Indication**

Not applicable.

**Intended Part of the Body**

Not applicable.

**Intended Patient Population**

The CORIS System is not used in or on patients.

**Intended Users**

The CORIS System is suitable for use in healthcare facilities by trained healthcare personnel.

**Contraindications**

Nil contra-indications.

## 1.6 Pre-installation, Commissioning and Training

Your facility shall work with Nanosonics to identify the appropriate CORIS Device location(s) and perform a site assessment to determine any modifications required to successfully install the CORIS System.

Your facility shall then engage qualified/licensed suppliers to carry out the necessary modifications, including plumbing, woodwork, drilling and electrical wiring to prepare for the mounting of the CORIS Device. The device will need to be connected to utilities, such as electricity, water, air and drain to properly function and meet Nanosonics installation requirements.

Following the installation, Nanosonics or parties trained and authorised by Nanosonics shall perform the initial setup of the CORIS Device and undertake the necessary tests required for adherence to regional requirements and standards. Training should be provided to users before the CORIS Device is used.

Detailed installation instructions are not covered in this manual. For more information about servicing, contact Nanosonics customer service using the contact details for your area at the back of this manual.

The CORIS System is intended to be operated by properly trained users only who are fully qualified and are familiar with its intended use and compatible endoscopes. Before using the CORIS System, ensure that all users are trained in its use, safety procedures and potential hazards, as outlined in this manual.

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**It is the responsibility of your facility to ensure users are sufficiently trained to operate the CORIS System. Training should be documented in accordance with your facility's policies and procedures. The CORIS System should only be operated by those who have received proper training and have read the operating instructions. Failure to do so may result in damage to the CORIS System, the endoscope and/or ineffective cleaning.**

Read and understand the following documentation prior to using the CORIS System:

- CORIS Training Guide and then complete the CORIS Training Checklist, supplied with the CORIS Device. Additional copies can be found on the Nanosonics website or by contacting Nanosonics customer service.
- The CORIS Quick Reference Guide supplied with the CORIS Device.
- This CORIS System User Manual (this document).
- The CORIS Compatible Endoscope List on the Nanosonics website.
- The Endoscope Manufacturer's Instructions for Use (IFU).
- Occupational or Workplace Health and Safety Guidelines (OH&SG, OSHA, WHS) for your institution.
- The CORIS QUANTUM Cleaning Agent Safety Data Sheet on the Nanosonics Website

Users of CORIS are encouraged to report any product defects or problems, including problems with the use or labelling of a product, to Nanosonics and report any serious incidents or adverse events to both Nanosonics and to the relevant regulatory authority in their region/country. Contact details can be found in Section *5.4*.

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# 2 Using the CORIS Device

The CORIS Device and its support systems must be installed and commissioned by Nanosonics personnel or their delegates. This document does not cover the installation or commissioning of the CORIS System. The installed and commissioned CORIS System comprises the following:

- CORIS Device (Section 2.1 and onwards)
- CORIS Device Display (Section 2.2)
- CORIS Adaptor (Section 3.2.3.1) and Smart Drain Adaptor (Section 3.2.3.2)
- CORIS Smart Seals see Section 3.2.3.3
- CORIS Adaptor Reprocessing Hub – See Section 4.2.2
- CORIS Maintenance Kit – see Section 4.2.3

The following consumables will need to be purchased separately, and a sufficient supply will need to be maintained onsite to allow the correct operation of the CORIS System:

- CORIS QUANTUM Cleaning Agent – see Section 3.2.2
- STERIS Revital-Ox RESERT High-level Disinfectant – see Section 4.2.1

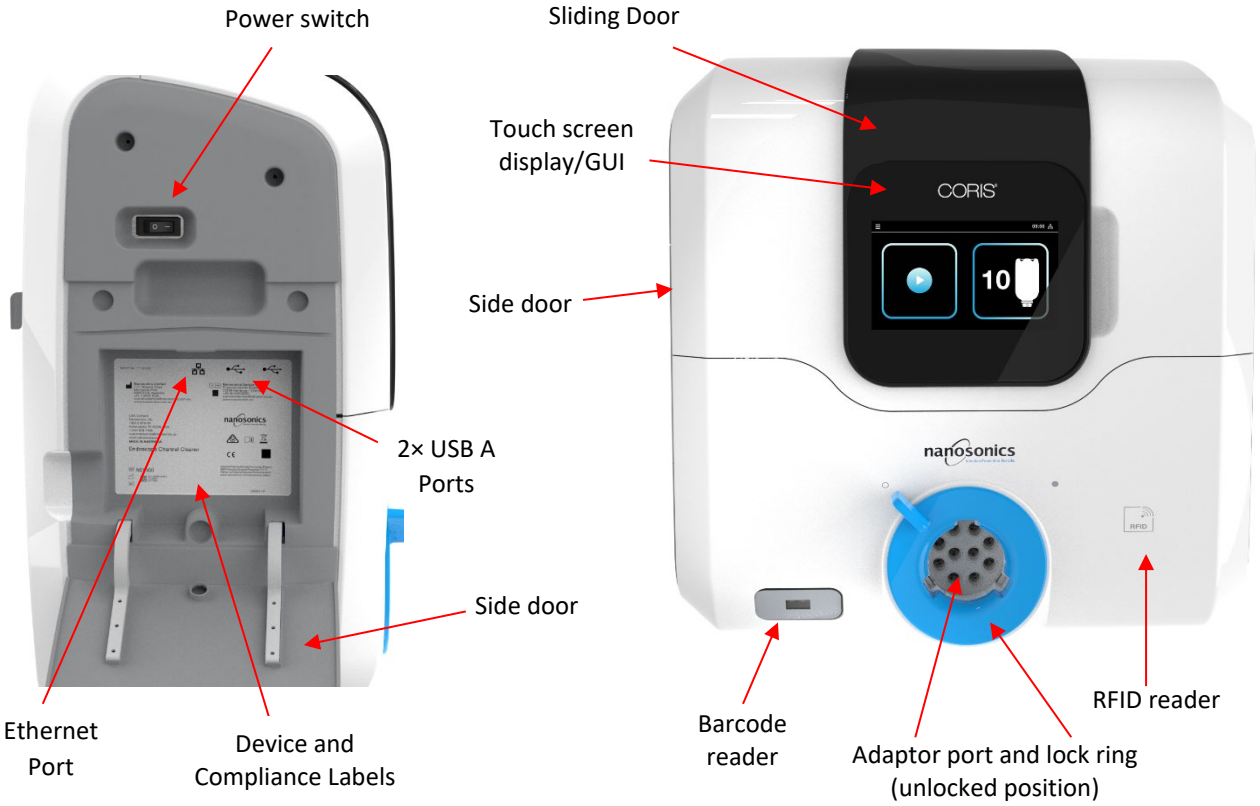
**NOTE:** The CORIS Device should always be left powered on. Do not power off the device unless required in an emergency, or if the machine goes into an unresponsive state. If power is lost during a cleaning cycle, see Section 5.1.

## 2.1 CORIS Device External Features

The external features of the CORIS Device are shown below.

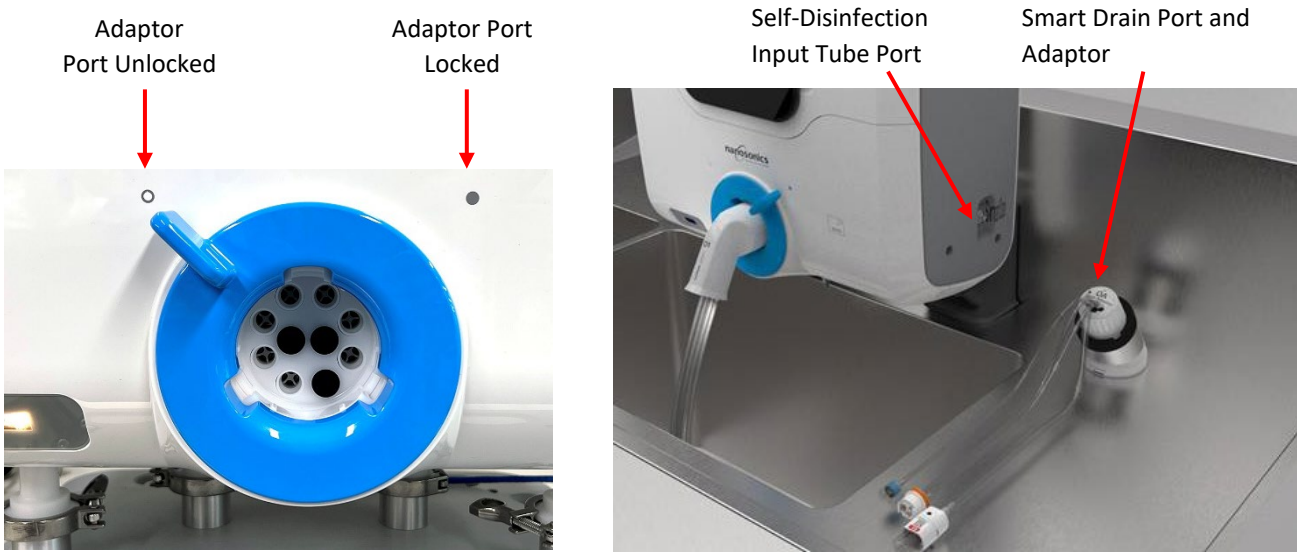
The CORIS Device contains no user serviceable parts. Do not attempt to open the CORIS Device or remove it from its mountings or you may injure yourself and/or damage the unit.

**Figure 2: CORIS Device Features (Front and Left Side)**



Refer to the device label located behind the side door for the applicable regulatory and electrical markings, Nanosonics contact details and the device model and serial number.

**Figure 3: CORIS Device Features (Front and Right Side)**



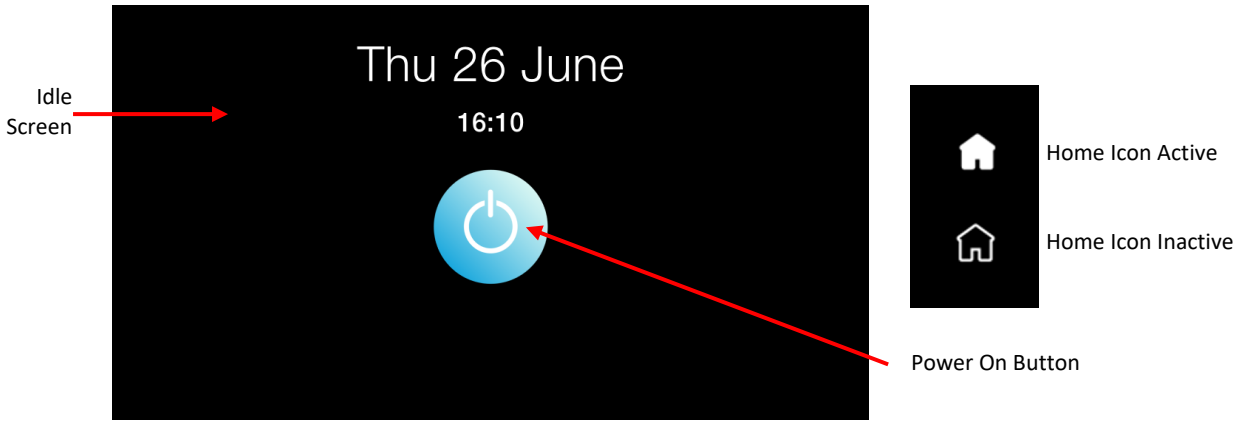

## 2.2 The CORIS Device Display

### 2.2.1 Home Screen

The Home screen (*Figure 4*) is used to interact with the CORIS Device, start a cleaning cycle and to display any errors encountered during operation.

The Home screen can be accessed via the Power On button if the CORIS Device is not in use, or from other screens by using the Home icon (*Figure 4*) located at the top centre of some screens. If the Home Icon is solid white, then it is active, if the Home icon is outlined in white it is not available at that time.

**Figure 4: The CORIS Device Idle Screen and Home Icons**

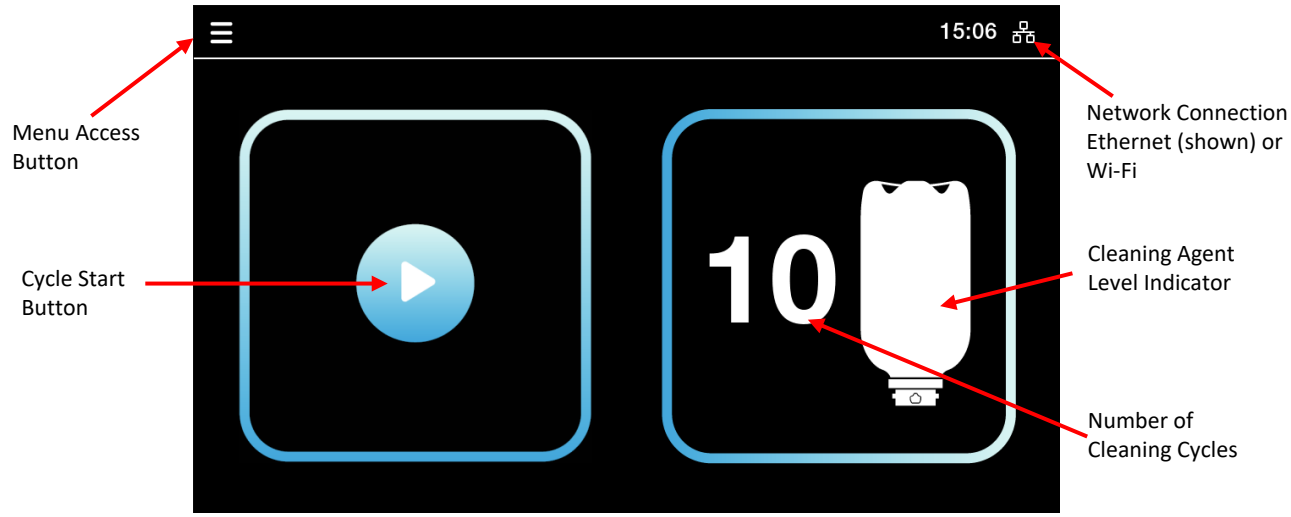



The Home screen (*Figure 5*) displays the number of cleaning cycles remaining in the CORIS QUANTUM bottle before it needs to be replaced. The Cycle Start button starts a cleaning cycle, see Section *3.3* for further information.

The cleaning agent level indicator shows the approximate volume of CORIS QUANTUM Cleaning Agent remaining in the bottle. Tap anywhere on the screen to show the number of cleaning cycles until the cleaning agent bottle must be replaced. See Section *3.2.2* for further information including how to change the cleaning agent bottle.

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**Figure 5: CORIS Device Home Screen**




If the CORIS Device encounters an error or if action is required by the user, the Home screen indicates an error as shown in *Figure 6*. In some cases, the cause of the error may also appear as a message, below the buttons. See Troubleshooting (Section 5.1) for more information for dealing with errors.

**Figure 6: The CORIS Home Screen Showing Active Errors**

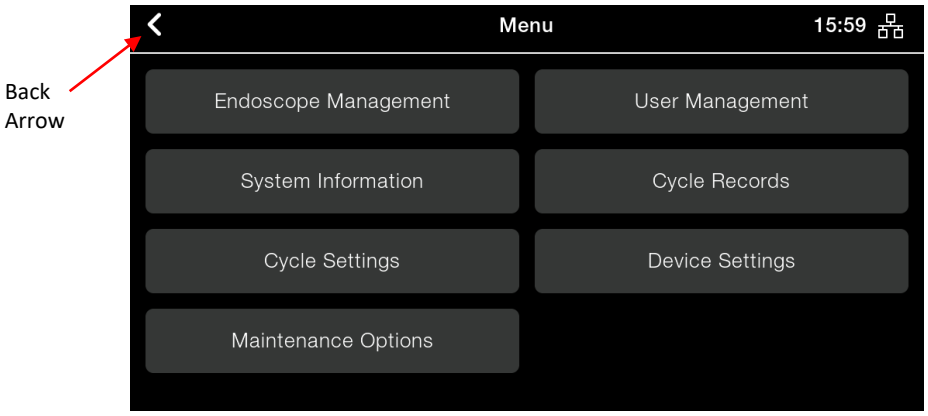



## 2.2.2 Menu Screen

The Menu screen can be accessed by pressing the menu access button in the top left on any screen (Figure 5). The Menu is used to access System, Process and Maintenance settings. Use the Back arrow to return to the Home screen (*Figure 7*). The maintenance menu is covered in detail in Section 4.3. The submenus will require either an Operator or Administrator ID scan to access the settings. Administrators can access any Operator level menus; the Maintenance Options screen does not require an Operator ID scan for access.

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**Figure 7: The CORIS Menu Screen**



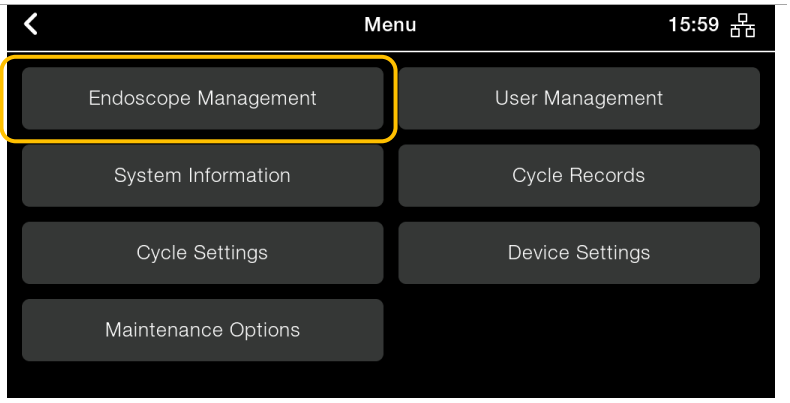

Each Menu screen contains the following functionality options and the user access level (Operator/Administrator) required in brackets:

- *Endoscope Management (Administrator)* – add and archive endoscopes from the active list.
- *User Management (Administrator)* – add, archive and switch user roles within the CORIS Device
- *System Information (Operator)* – access information relating to the CORIS Device
- *Cycle Records (Operator)* – displays records of cleaning and SD cycles including pass and fails
- *Cycle Settings (Administrator)* – toggles various cleaning and self-disinfection cycle settings, including training mode
- *Device Settings (Administrator)* – display localization, network IP address, Wi-Fi settings and technical information
- *Maintenance Options (Operator)* – opens the Maintenance Options menu.

### 2.2.2.1 *Endoscope Management (Administrator)*

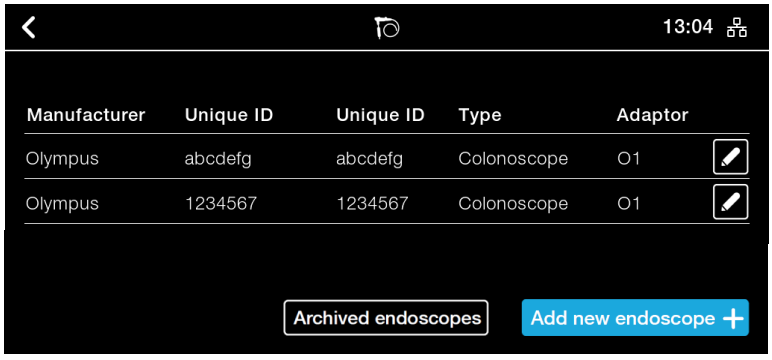
This menu is used to add and remove endoscopes from the active endoscope list.

1. Press Endoscope Management.




2. Press **Add new endoscope +** to add a new endoscope.

**NOTE:** A warning will be shown that only endoscopes that are compatible with the CORIS Device can be registered.

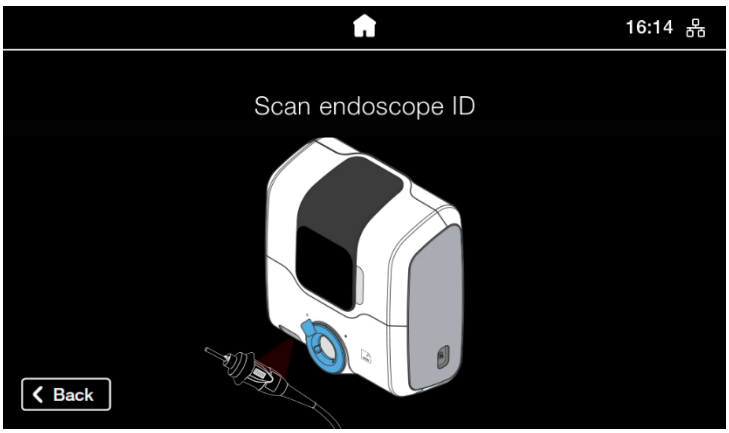


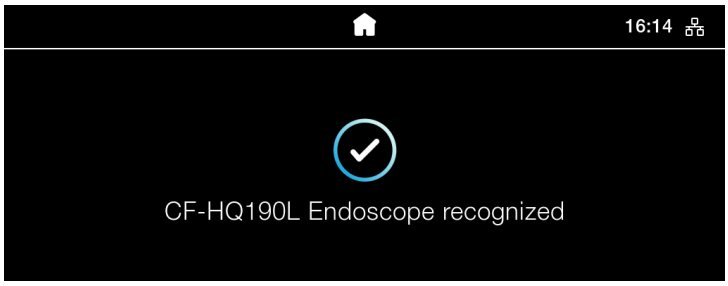

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3. Scan the RFID or barcode of the endoscope you wish to add.

   If your endoscope has an RFID tag and barcode, scan the RFID tag. If your endoscope only has a barcode, then scan it.

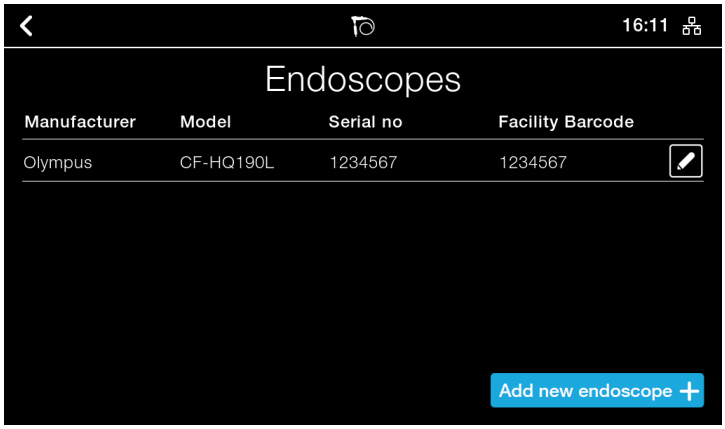
   A confirmation screen will be displayed with the barcode number.



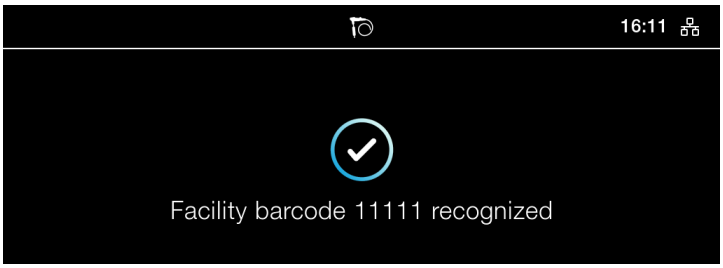




4. If you scanned the endoscope RFID tag, all the endoscope fields will have been added automatically, and the endoscope is ready to use.

   Press the blue button to add another endoscope.




5. If you scanned the endoscope barcode you will see the following message.




6. You will then need to enter the endoscope Manufacturer and the endoscope Model from the drop-down list.

   Press Confirm to save it.

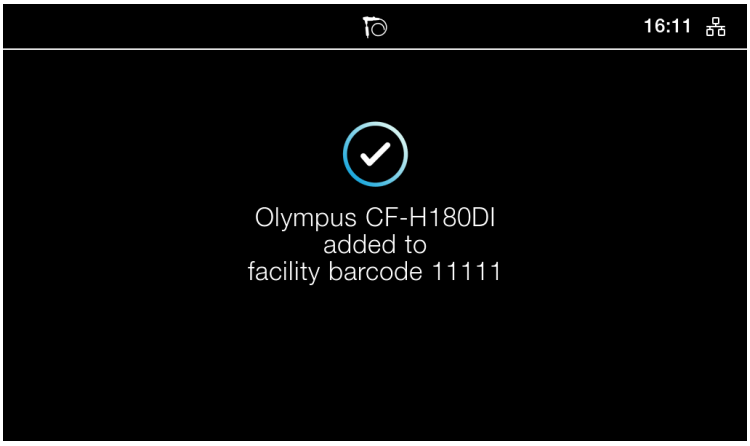
**NOTE:** Once the details have been added the screen will display the compatible accessories (Adaptor, Drain Adaptor and Smart Seal below it.)




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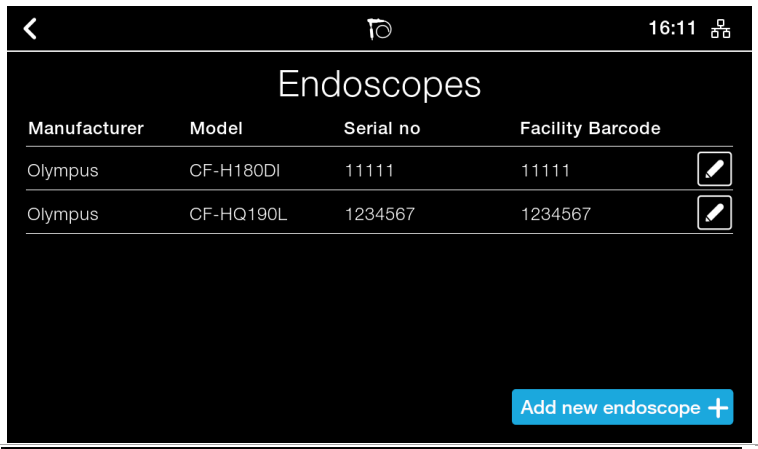
**Selecting the incorrect model type for the endoscope being scanned may result in damage to the CORIS System and the endoscope and/or ineffective cleaning.**

7. A confirmation screen will be displayed.



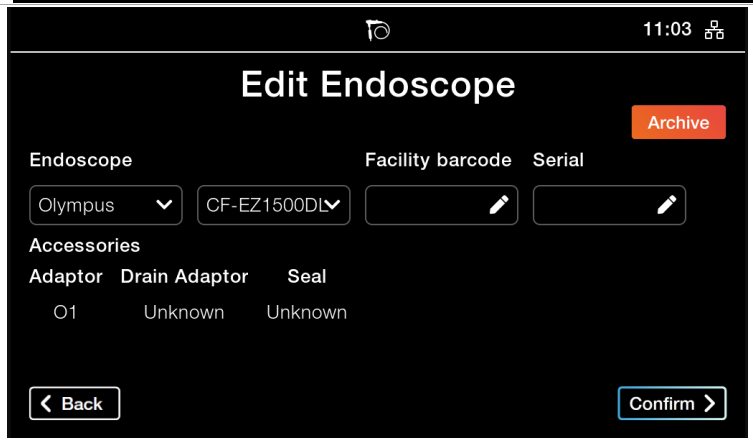

8. The endoscope you have just added will be at the top of the list.

   Once the endoscope has been registered the endoscope details cannot be changed, the endoscope can only be archived.

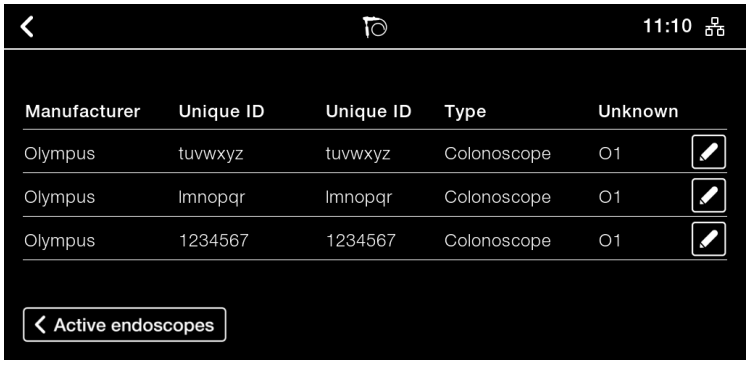



9. To archive the endoscope, press the pen icon next to the facility barcode

   Press the Archive button and then Confirm.

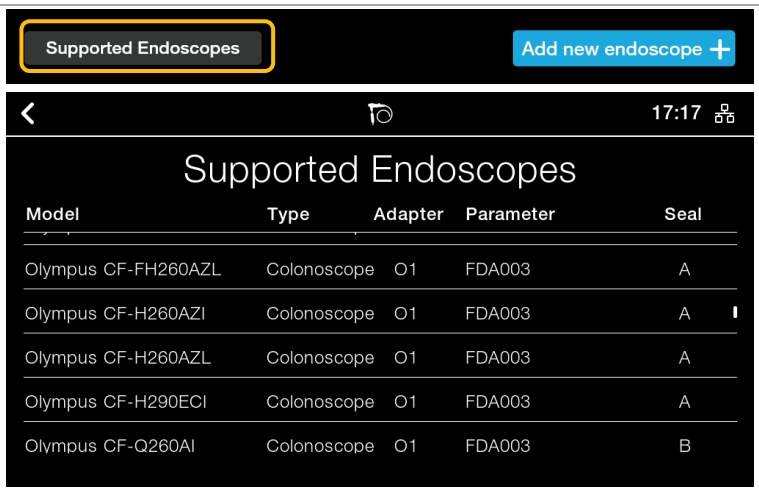



10. A confirmation message will be displayed, and the endoscope will be added to the archived list.




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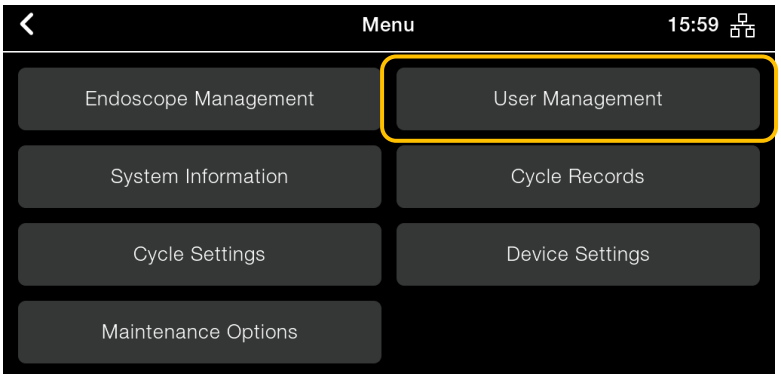
11. The Supported Endoscopes button displays the list of endoscopes that are compatible for use with the CORIS System, as well as the relevant Adaptor and Seal type.




### 2.2.2.2 *User Management (Administrator)*

This screen is used to add and remove (archive) CORIS Device users from the active users list (users permitted to use the CORIS Device).

1. Press User Management and the list of current users will be displayed.




2. Press the blue + to add a user and scan the new user's RFID.

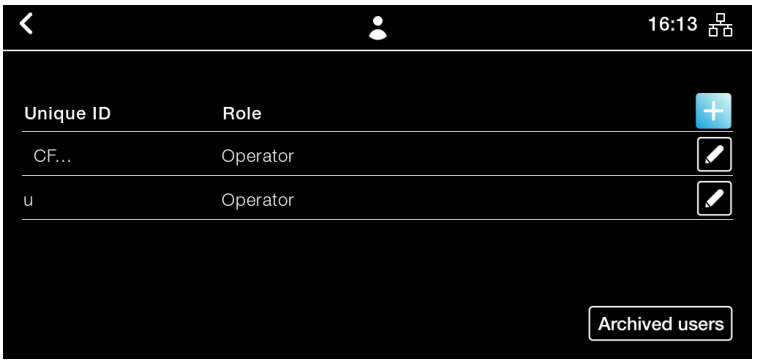
   Select the role of the new user: either an Operator or an Administrator.

   Press Confirm to save.




3. To edit a user, press on the Pen (edit) icon next to the name.

   You can change the user access level (Operator/Administrator) or archive the user.

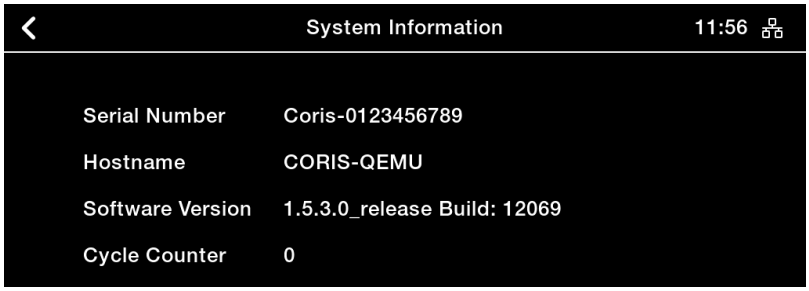



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### 2.2.2.3 *System Information (Operator)*

This screen displays the CORIS System information as shown in *Figure 8*. This information may be required when requesting technical assistance or servicing.

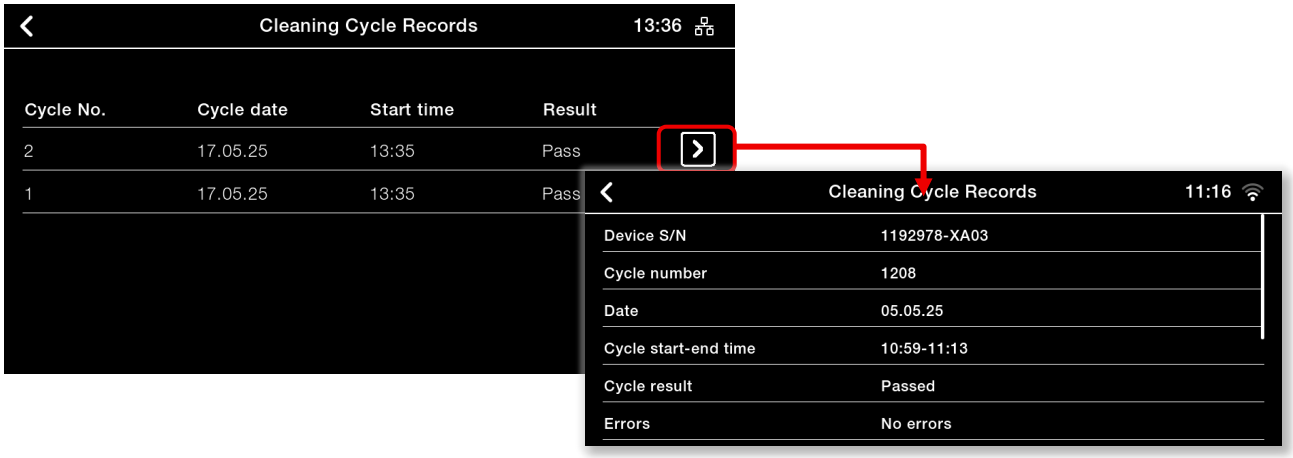
**Figure 8: CORIS System Information Screen**




### 2.2.2.4 *Cycle Records (Operator)*

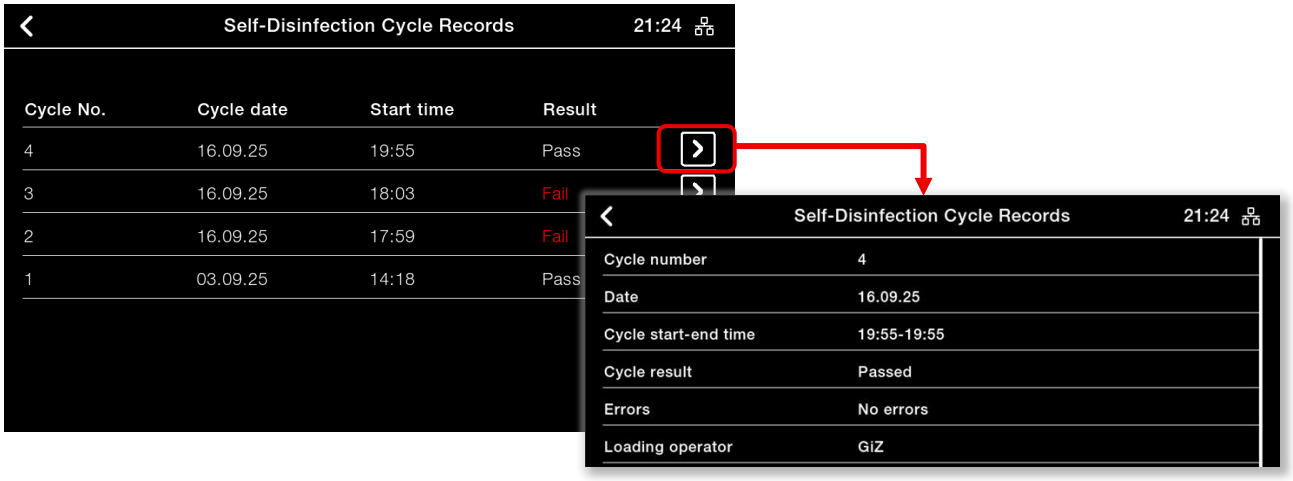
This screen provides access to the cleaning cycle and self-disinfection cycle records. The Cleaning Cycle Records button displays the list of successful and failed cleaning cycles that have been run by the CORIS Device. Press the arrow button next to the record to open the cleaning cycle record (*Figure 9*).

**Figure 9: Example CORIS Cleaning Cycle Records**




The Self-Disinfection Cycles button provides access to the list of successful and failed self-disinfection cycles that have been run by the CORIS Device. Press the arrow button next to the record to open the self-disinfection cycle records (*Figure 10*).

**Figure 10: Example CORIS Self-Disinfection Cycle Records**

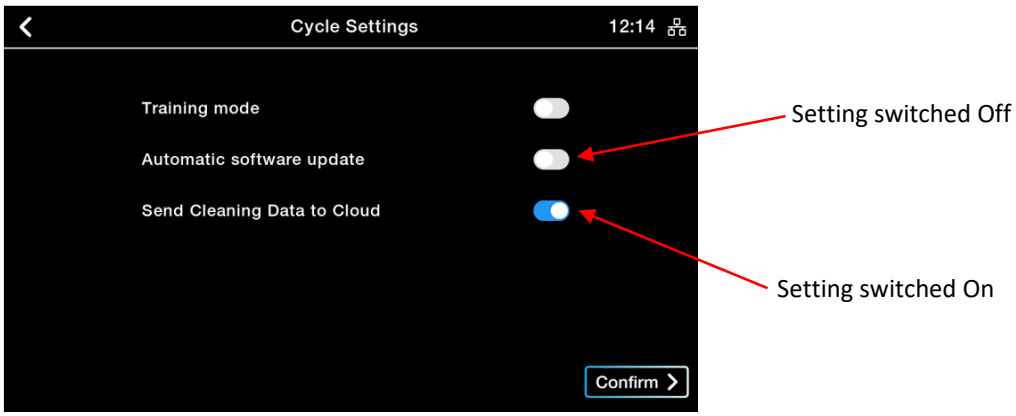



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### 2.2.2.5 *Cycle Settings (Administrator)*

This screen provides access to settings for the cleaning cycle settings as shown in *Figure 11*. Once you have made any changes required, press Confirm to save the settings and press the back arrow to return to the Menu screen.

**Figure 11: CORIS Cycle Settings**



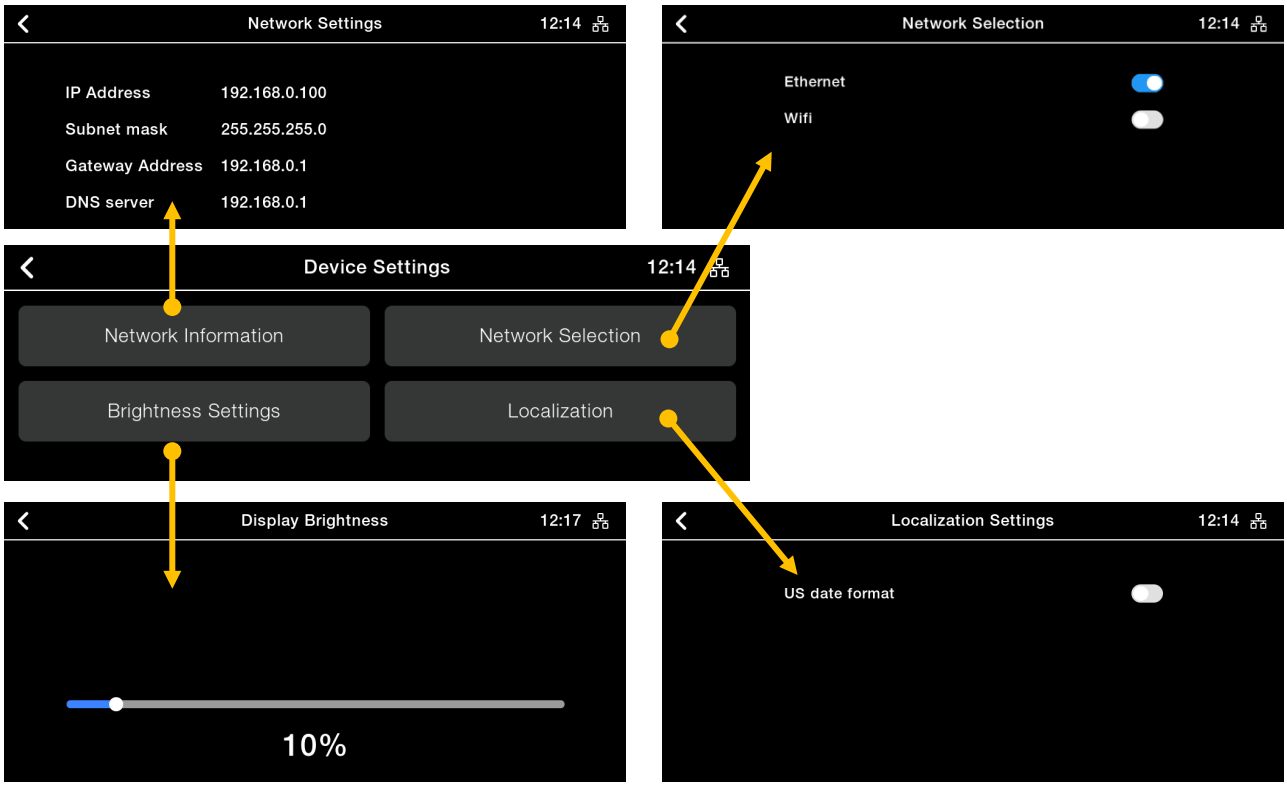

- Training Mode – when On, this allows the CORIS Device to run in a training mode enabling users to practice operating the device without running functioning cycles. An orange band will appear on the CORIS screen to indicate it is training mode.
- Automatic software update – when On, automatically downloads the latest CORIS software from the cloud. The CORIS Device must be connected to the internet for this to function. Contact Nanosonics for further information.
- Send Cleaning Data to Cloud – when On, automatically uploads cleaning and self-disinfection cleaning cycle records to secure cloud servers. Contact Nanosonics for further information.

### 2.2.2.6 *Device Settings (Administrator)*

This screen (*Figure 12*) allows an administrator to change some settings for the CORIS Device, including the network information, network selection, screen brightness and localization settings. Selecting Wi-Fi on the network selection screen will display any detected Wi-Fi network names (SSIDs) and prompt you for a Wi-Fi password when selected.

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**Figure 12: CORIS Device Settings Menu**




### 2.2.2.7 *Maintenance Options (Operator)*

The *Maintenance Options Menu* is used to manually start the CORIS self-disinfection process as well as other maintenance tasks. This menu is described in detail in Section *4.3*.

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# 3 Operation

| | |
|---|---|
| ⚠ | **Always use the CORIS System as instructed in this Manual. Failure to do so may result in damage to the CORIS System and the endoscope and/or ineffective reprocessing of the endoscope.** |
| ⚠ | **The CORIS Endoscope Compatibility List describes the validated and compatible endoscopes that can be safely cleaned with the CORIS System. The use of the CORIS System to clean other endoscopes may be ineffective, unsafe, and may result in damage to the endoscope and/or the CORIS System.** |
| ⚠ | **Appropriate personal protective equipment (PPE) (including gowns, gloves, protective face wear and masks) shall be worn for protection against biological contamination during endoscope reprocessing. Failure to do so can cause exposure to infectious material, causing risk to health and safety.**<br>**See Section *3.1.1* below.** |
| ⚠ | **Visually inspect the endoscope for damage, prior to commencing cleaning with the CORIS System. Do not run the cleaning cycle if the endoscope is damaged and refer to the manufacturer's IFU. Using a damaged endoscope in the CORIS System may cause further damage to the endoscope or result in ineffective reprocessing of the endoscope.**<br>**See Section *3.1.2* below.** |

## 3.1 Before You Begin

### 3.1.1 Personal Protective Equipment

Users must protect themselves from contact with used endoscopes via effective procedures and the use of correct personal protective equipment (PPE). Proper PPE may include, but is not limited to, gloves, protective face wear and masks, eye protection, protective aprons and appropriate footwear. Refer to your standard operating procedures for the correct PPE in your facility. The area around the sink being used by CORIS Device should be clear of other equipment. Failure to follow these instructions may expose the user to infectious material.

**Figure 13: An Example CORIS Device Work Area**



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### 3.1.2 Endoscope Leak Test

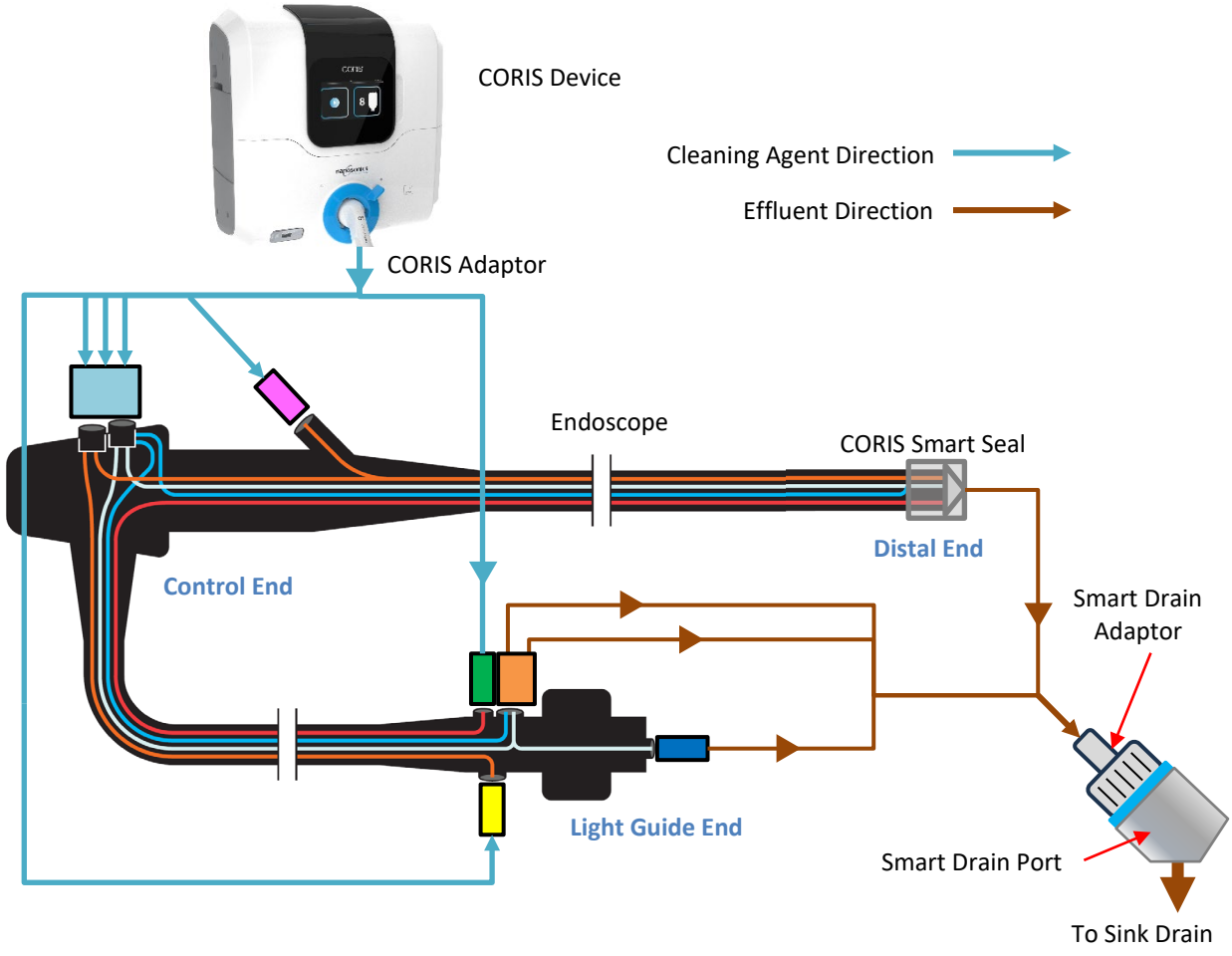
Before being cleaned by the CORIS Device, the endoscope must be leak-tested as per the endoscope manufacturer's instructions. The use of the CORIS Device on an already damaged endoscope may cause further damage.

**Correct preparation of an endoscope is critical to successful reprocessing. For successful integration of the CORIS System into the endoscope reprocessing workflow, carefully follow your facility's procedures. Failure to do so may result in damage to the CORIS System and the endoscope and/or ineffective cleaning.**

## 3.2 Endoscope Cleaning Overview

An overview of the connections used, and the cleaning pathways are shown in *Figure 14*. The fully automated cycle propels the non-toxic granular CORIS QUANTUM Cleaning Agent, combined with air and water through all the endoscope channels. The lifted soils are then expelled from the endoscope and through the Smart Drain Adaptor and down the sink drain.

**Figure 14: CORIS Device and Endoscope Channel Cleaning Illustration**

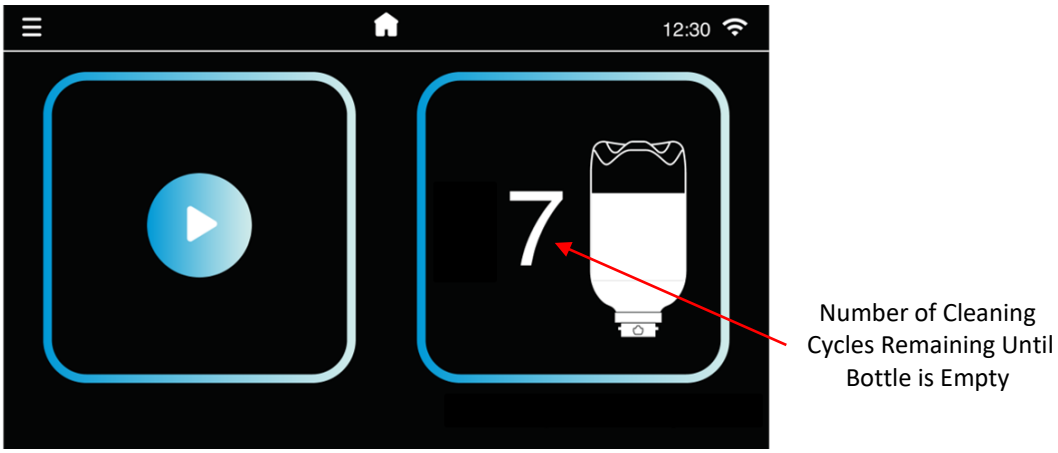



### 3.2.1 CORIS QUANTUM Cleaning Agent

The CORIS Device uses CORIS QUANTUM Cleaning Agent mixed with water to clean the interior channels of the attached endoscope. The CORIS Device will not allow you to proceed if the cleaning agent bottle is empty. Check the Home screen of the CORIS Device for information on the state of the cleaning agent (*Figure 15*). See Section *3.2.2* for instructions on how to change the bottle.

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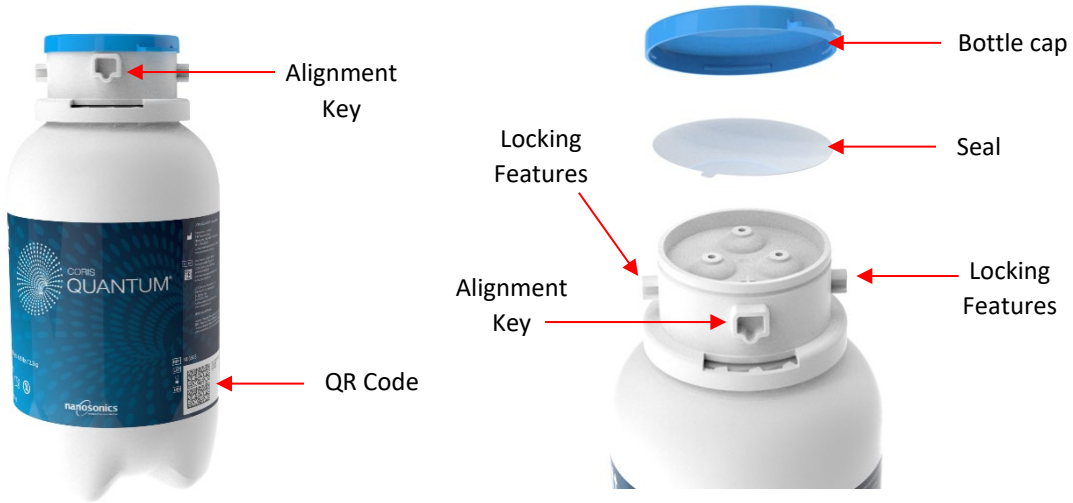
**Figure 15: CORIS Device Home Screen and Cleaning Agent Levels**




## 3.2.2 Changing the CORIS QUANTUM Cleaning Agent Bottle

CORIS QUANTUM Cleaning Agent is the bottle of cleaning agent used with the CORIS Device. New bottles are sealed with both a removable seal and bottle cap as shown in *Figure 16*.

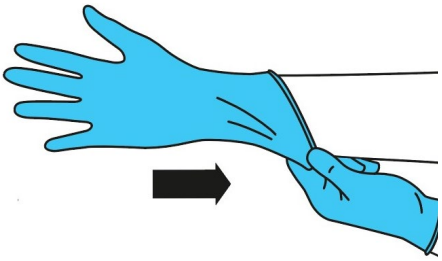
**Figure 16: CORIS QUANTUM Cleaning Agent Bottle**




| | |
|---|---|
| | **The CORIS QUANTUM Cleaning Agent has been specially designed for use with the CORIS System. Only the CORIS QUANTUM Cleaning Agent is validated for use for cleaning endoscope channels with the CORIS System. No other cleaning agent has been validated for this use. Use of other cleaning agents may result in damage to the CORIS System and the endoscope and/or ineffective cleaning.** |
| | **Ensure CORIS QUANTUM Cleaning Agent is stored between 15°C to 30°C / 59°F to 86°F** |
| | **Once a CORIS QUANTUM Cleaning Agent bottle has been installed, it must be used and then discarded when empty. The cleaning agent bottle cannot be removed from the CORIS Device while any product remains in it. The CORIS Device will flush any remaining cleaning agent out of the bottle before it can be removed from the machine.** |
| | **The CORIS Device will not allow the use of CORIS QUANTUM Cleaning Agent that has been installed for longer than 5 days.** |

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1. Put on appropriate PPE including clean gloves before starting this procedure.



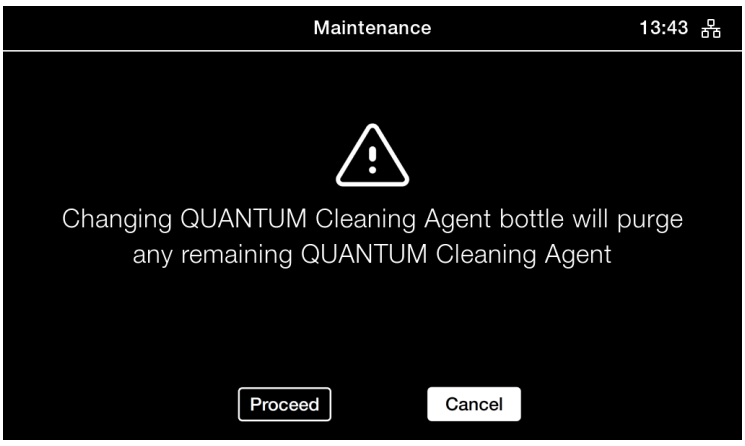
2. If the screen shows the bottle is empty or missing, select the bottle icon on the home screen and initiate a bottle change.

   To change a bottle that is not empty, go to Menu > Maintenance Options, and press Change QUANTUM Cleaning Agent.

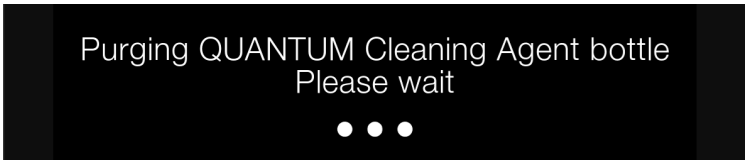


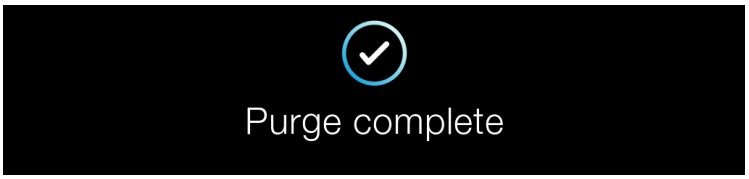

3. If the cleaning agent bottle is not empty and you wish to change it, it will need to be emptied (purged).

   Press Proceed to continue.



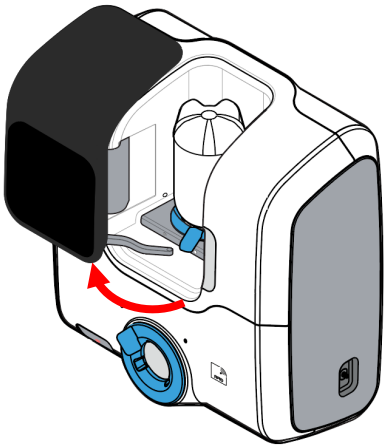

4. Wait for the bottle to be emptied.



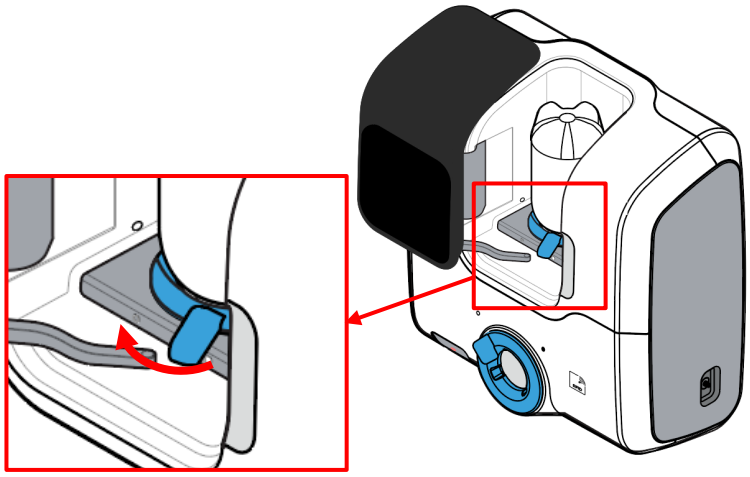




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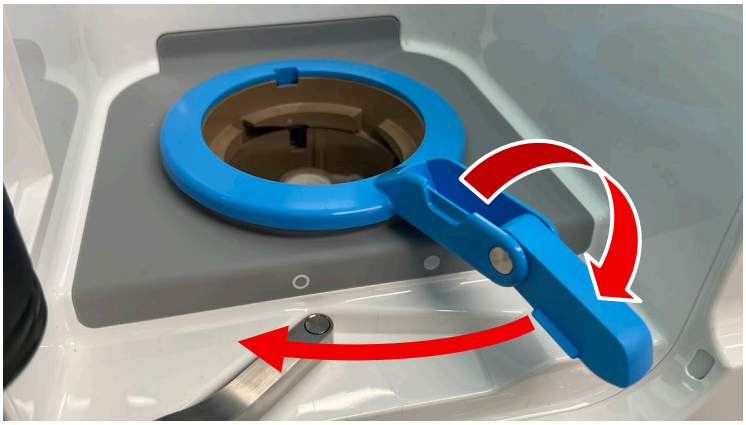
5. When prompted, open the door by moving it to the left.



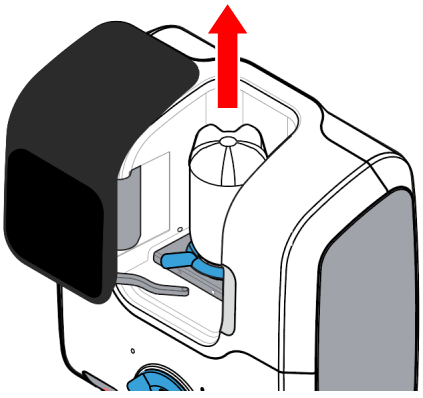
6. Rotate the cleaning agent bottle lock to the left to unlock.



If the bottle lock is hard to rotate, flip out the extension handle as shown to provide more leverage.



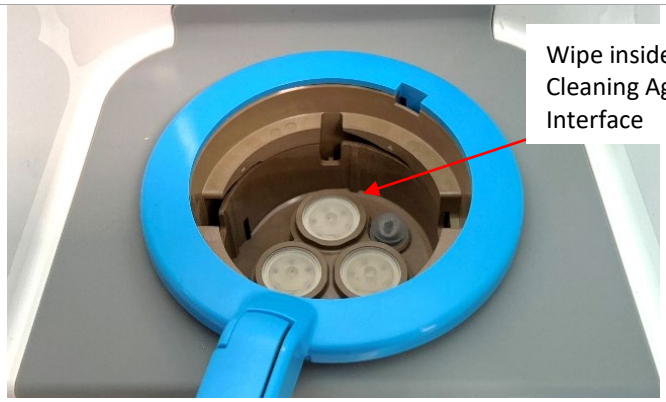
7. Lift out the empty CORIS QUANTUM Cleaning Agent bottle and dispose of it as per your local regulations.



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8. Before installing a new QUANTUM Cleaning Agent bottle, all the surfaces of the Cleaning Agent Interface must be wiped, including the 3 round features, using a wetted wipe (see *Table 5*).

   For additional reprocessing instructions refer to Section *4.4.1*.



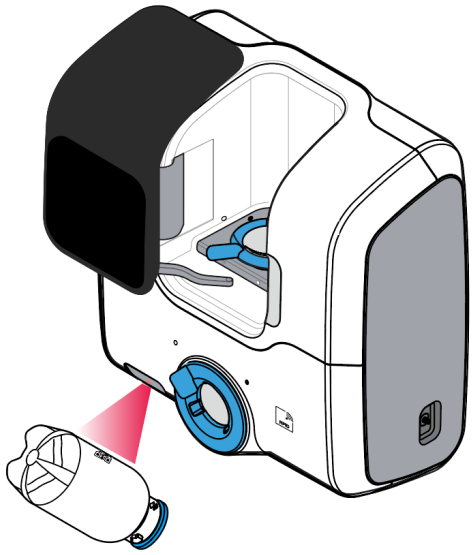

9. Retrieve a new, unopened CORIS QUANTUM Cleaning Agent bottle. Inspect the bottle, especially the locking features and seal (*Figure 16*) for damage. Reject the bottle if any damage is found.

   Scan the bottle QR code on the CORIS Device barcode scanner.

**NOTE:** Ensure you hold the cleaning agent bottle at the correct distance (about 10cm or the width of the bottle) from the barcode scanner.

If the QR code is rejected by the CORIS Device, discard the scanned bottle and scan a new CORIS QUANTUM Cleaning Agent bottle.






10. Remove the bottle cap and peel off the seal. The cap can be recycled; the seal must be disposed of.

    Remove any loose powder present on the top of the bottle. The powder can be safely tipped into a sink or bin. Refer to the material safety data sheet on the Nanosonics website for more information.

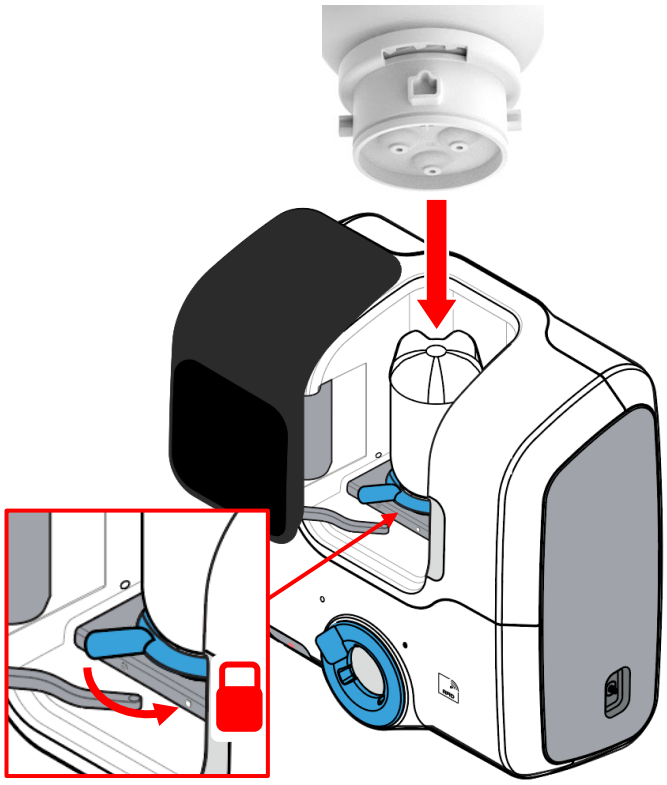





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11. Insert the cleaning agent bottle top end down into the CORIS Device, aligning the alignment key with the front. The bottle can only be inserted one way.

    When the bottle is inserted, rotate the lever to the right to lock it in place.



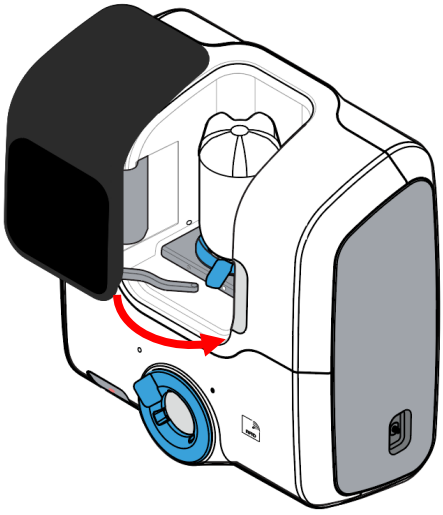
    If you cannot reach the handle safely or the lock is too hard to turn, flip out the extension as shown.

    Ensure you fold the handle back in when finished or the door will not be able to close.



12. Close the CORIS Device door.

**NOTE:** If the door is not closed properly, it will not lock and the CORIS Device will display an error. If the lever will not lock, do not force it and do not force the door closed, contact Nanosonics service.

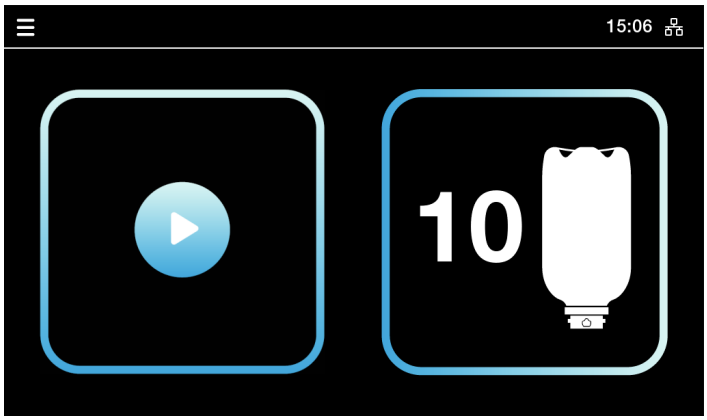


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13. The CORIS Device will prepare and hydrate the cleaning agent for use. This will take approximately 10 minutes, and a countdown will be shown.




14. When hydration is complete, the device is ready to start a cleaning cycle.




## 3.2.3 CORIS Accessories

The CORIS Device can only be used to clean endoscopes when paired with the correct CORIS Adaptor, Smart Drain Adaptor and CORIS Smart Seal to connect to the endoscope. Ensure you have the correct accessories for the endoscope you wish to clean.

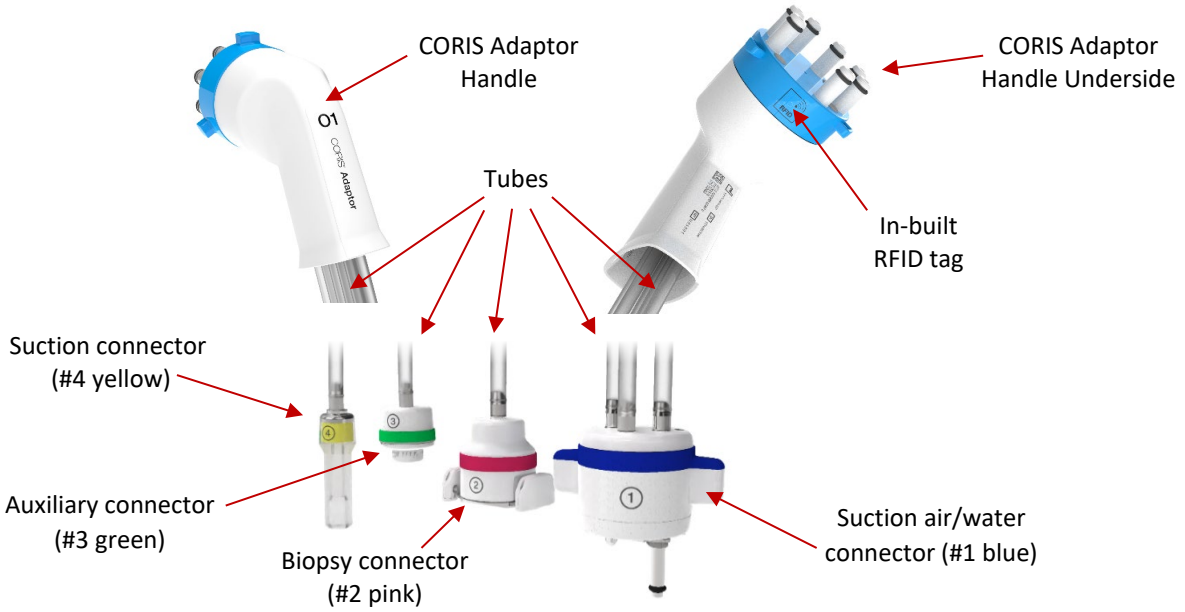
### 3.2.3.1 *CORIS Adaptor*

**The CORIS Adaptor must be reprocessed at least once per day when in use. Use of a CORIS Adaptor that has not been correctly reprocessed may result in ineffective reprocessing of the endoscope.**

The CORIS Adaptor (*Figure 17*) connects the endoscope to the CORIS Device, and the CORIS Device delivers cleaning agent through the Adaptor to the endoscope. Refer to the CORIS Compatible Endoscope List (available from the Nanosonics website) for a full description of the endoscopes that can be used with the CORIS System for the CORIS Adaptor model.

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**Figure 17: CORIS Adaptor (O1 Model)**




The CORIS Adaptor comprises a handle that connects to the CORIS Device adaptor port (*Figure 2*). The rest of the adaptor comprises tubing and various connectors that attach to the appropriate points on the endoscope. The adaptor contains an RFID tag to identify it to the CORIS Device. The RFID tag will be scanned when the adaptor is installed into the adaptor lock.

### 3.2.3.2 *CORIS Smart Drain Adaptor*

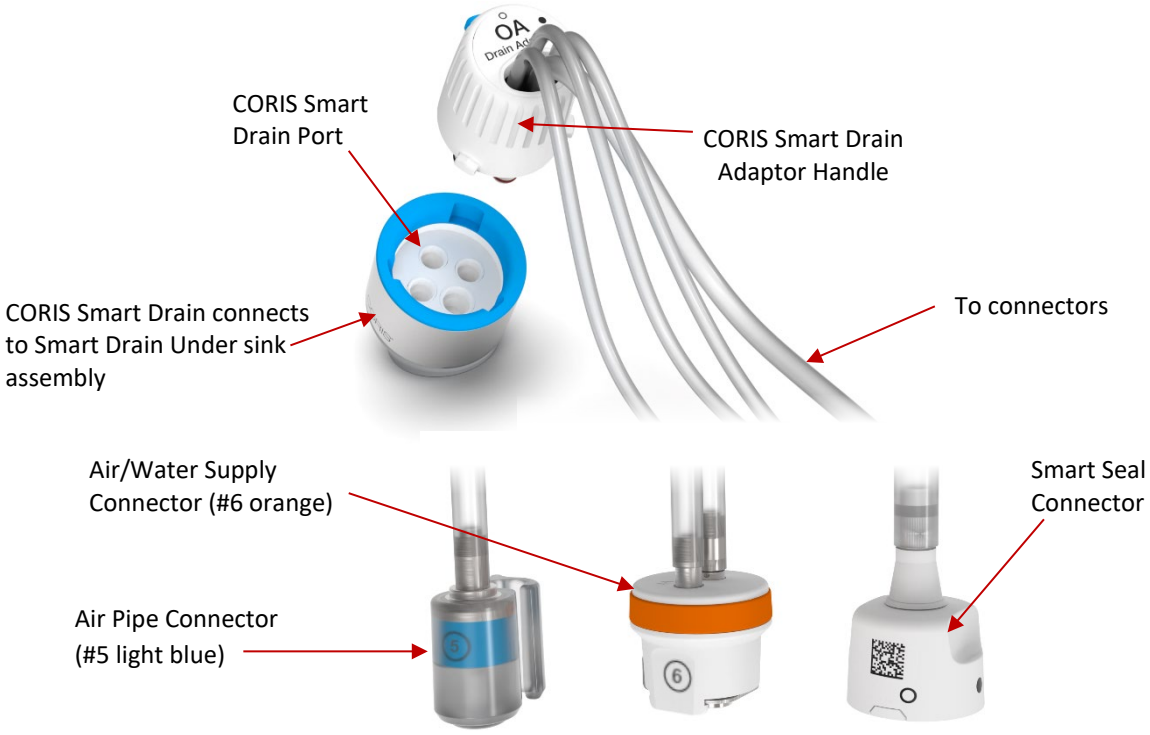
**The CORIS Smart Drain Adaptor must be reprocessed at least once per day when in use. Use of a CORIS Smart Drain Adaptor that has not been correctly reprocessed may result in ineffective reprocessing of the endoscope.**

The CORIS Smart Drain connects the endoscope to the drain and directs cleaning agent effluent from the CORIS cleaning process into the drain (*Figure 14*). Refer to the CORIS Compatible Endoscope List for a full description of the endoscopes that can be used with the CORIS System and the CORIS Smart Drain Adaptor model.

The Smart Drain is connected to the endoscope via the Smart Drain Adaptor; the Smart Drain Adaptor is connected to the endoscope via the Smart Drain Seal and connectors #5/#6. The Smart Drain Adaptor handle is inserted into the Smart Drain Port that is plumbed into the sink drain (*Figure 18*).

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**Figure 18: CORIS Smart Drain Port and Smart Drain Adaptor**



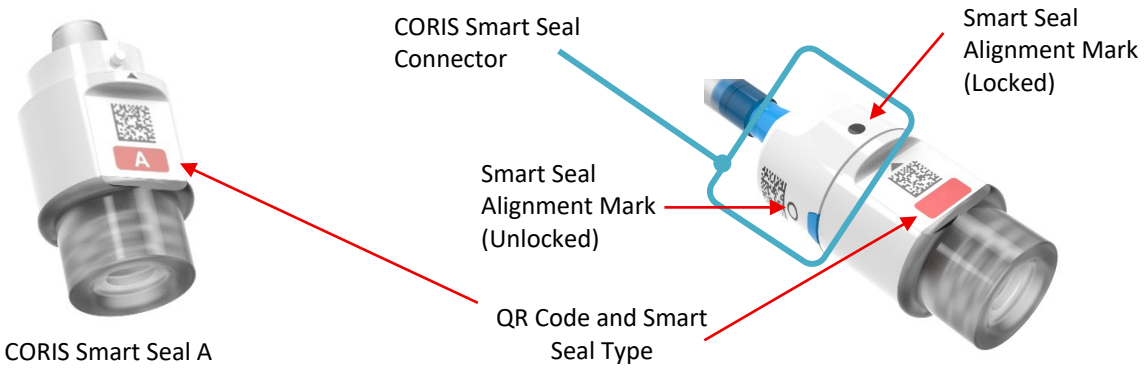

### 3.2.3.3 *CORIS Smart Seal*

**The CORIS Smart Seal is for 24-hour use only and must be discarded after 24 hours. Failure to do so may result in damage to the CORIS System and the endoscope and/or ineffective cleaning.**

**Dispose of the CORIS Smart Seal responsibly, in accordance with facility policies and local guidelines and regulations.**

The CORIS Smart Seal is used to connect the distal end of the endoscope to the Smart Drain Adaptor. (Different endoscope models will require different Smart Seals; the CORIS Device will tell you which one to use and alert you if you attempt to scan an incorrect Smart Seal. The list of compatible endoscopes and their required Smart Seals and is listed in the CORIS Compatible Endoscope List on the Nanosonics website, and in Supported Endoscopes in the Endoscope Management menu (see Section 2.2.2.1).

**Figure 19: CORIS Smart Seal and Markings**




### 3.2.3.4 *CORIS Printer*

If you are using the optional CORIS Printer it must be connected to the CORIS Device via one of the USB A ports shown in *Figure 2*. The CORIS Printer will print endoscope cleaning cycle labels at the end of the

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cleaning cycle. Refer to the CORIS Printer Quick Start Guide for further information on how to load, use and connect it, located at https://www.nanosonics.com/coris-label-printer-instructions.

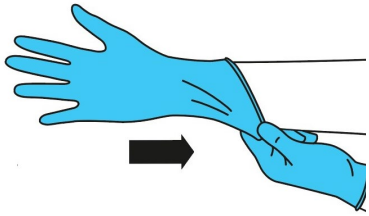
## 3.3 Endoscope Cleaning Cycle

During the cleaning cycle, images and animations will be displayed on the CORIS Device touch screen display to help guide you through the workflow. For animations, the initial screens are shown in this document.

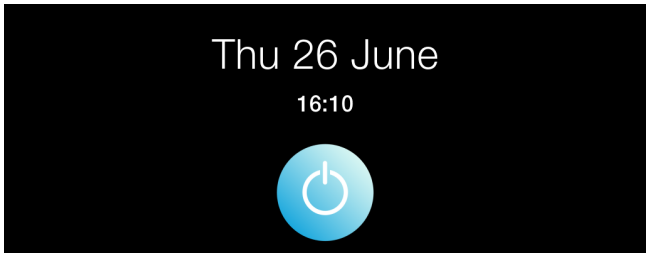
### 3.3.1 Performing the Cleaning Cycle

Cleaning cycles can only be started from the Home screen (*Figure 4*) and if there are no errors or warnings displayed on the CORIS Device.

1. Put on appropriate PPE including clean gloves before starting this procedure.

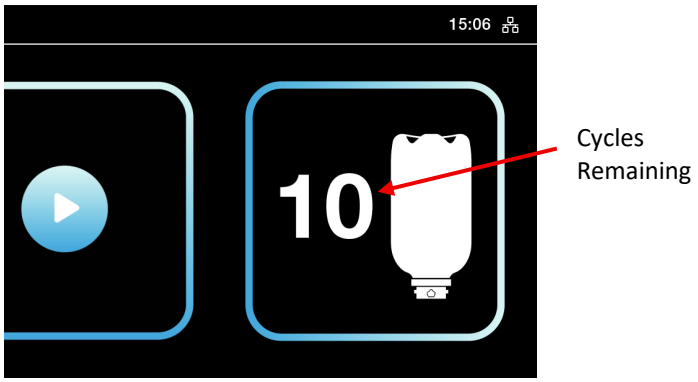


2. If required, press the onscreen power button on the Idle screen to display the Home screen.

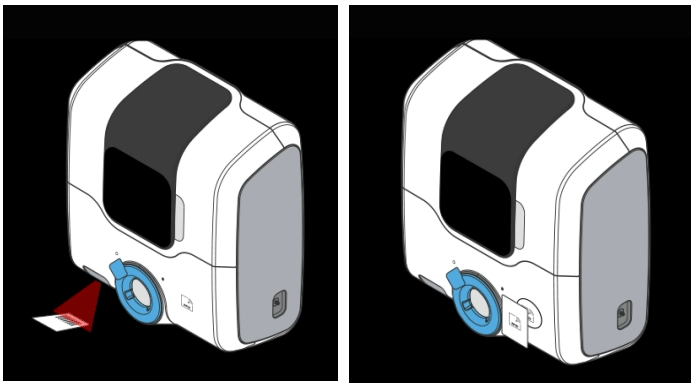



3. Press ▶ to begin.

**NOTE:** To start a cleaning cycle there must be at least 1 cycle left in the QUANTUM Cleaning Agent bottle. If the bottle requires replacing, see Section 3.2.2.



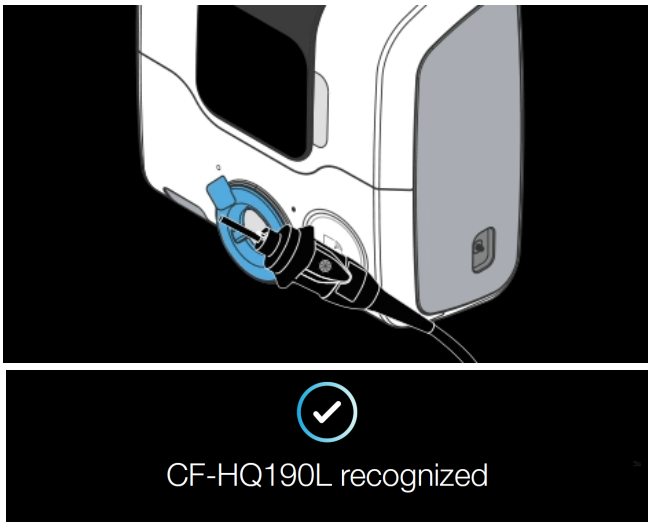

4. Scan your Operator ID using either the RFID or barcode scanner.



5. Scan the endoscope using either the RFID or barcode scanner.

**NOTE:** Refer to the endoscope manufacturer's IFU for the location of the endoscope RFID.

**NOTE:** If you scan an unregistered endoscope RFID, it will be automatically registered by the CORIS Device. If scanning an endoscope barcode, it must first be registered to the CORIS Device, see Section 2.2.2.1.



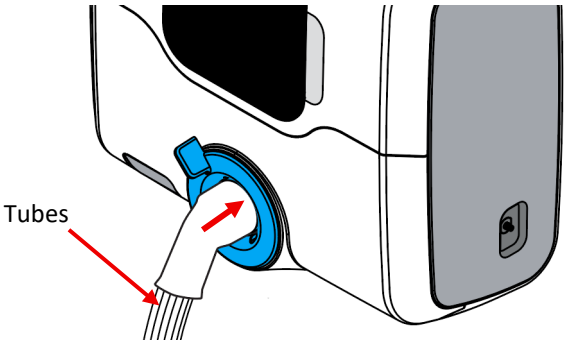

6. Ensure the adaptor lock is set to the **open/unlocked** position on the CORIS Device. Do not force the lever anticlockwise from this position.

**NOTE:** If a compatible adaptor is already present the system will recognise it and move to the next step.




7. Retrieve the adaptor displayed on the screen.

   Insert the adaptor handle into the adaptor port with the tubes pointing downwards.




8. Hold the adaptor in place and rotate the adaptor lock **clockwise** to the lock position as shown.

   Once the CORIS Adaptor has been recognized, a confirmation screen will be briefly displayed.

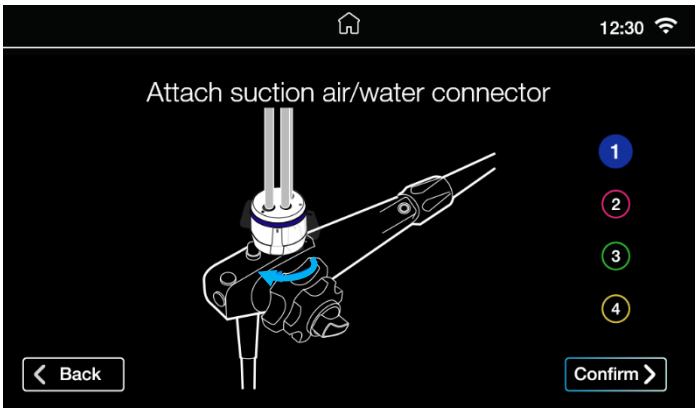


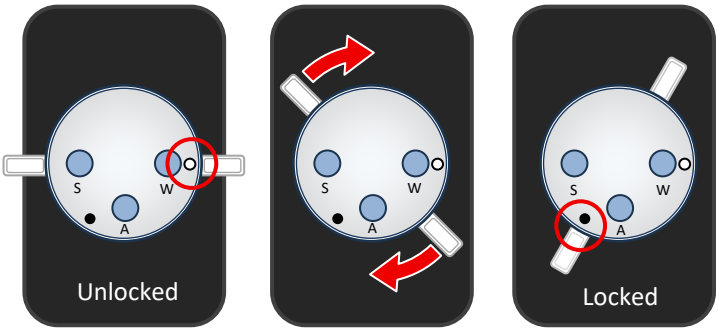

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9. The screen will display animations for each connector. Press the number of the connector you wish to watch again.
10. Pick up the control end of the endoscope. Align the connector pin of the suction air/water connector (#1 dark blue) with the suction and air channels of the endoscope. Follow the animation to insert the correct pin into the correct channel.
11. Push the connector down firmly and twist the connector body clockwise to engage the locking ring of the connector to the suction air/water channels.

    When the ○ symbol on the top of the connector is aligned with one of the connector handles, the connector is unlocked. When the ● symbol is aligned, it shows the connector is locked.

    Gently pull on the connector to ensure it is properly attached.

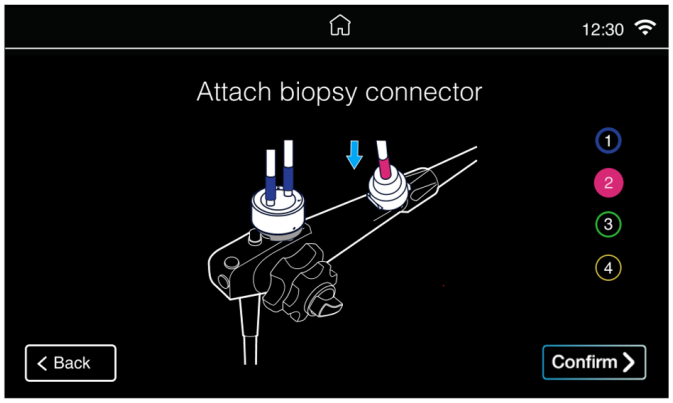



12. Push the biopsy connector (#2 pink) down into place until it clicks.

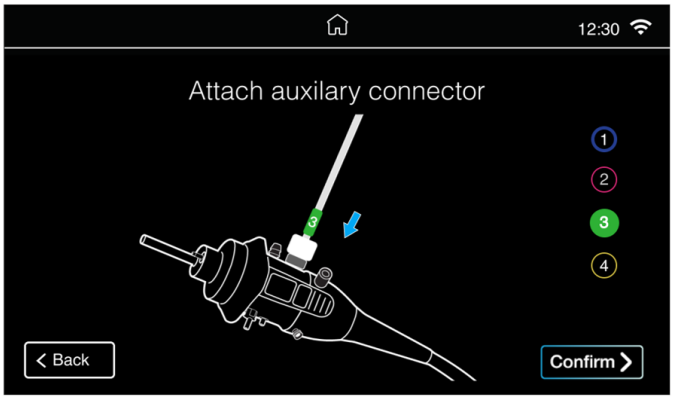
**NOTE:** Do not hold the connector via the two release buttons while trying to attach the connector. Pressing the release buttons during attachment will prevent the connector from latching on.

Gently pull on the connector to ensure it is properly attached.



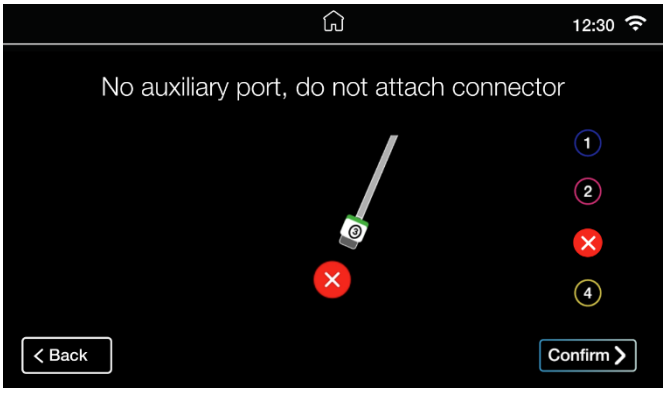

13. Pick up the light guide end of the endoscope and align the thread of the auxiliary connector (#3 green) with the inside of the auxiliary channel and whilst holding the connector, twist the white connector body clockwise to lock the thread into place.

    Gently pull on the connector to ensure it is properly attached.



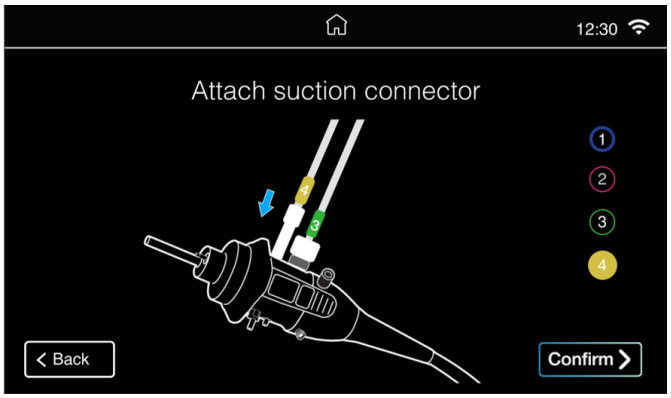

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**NOTE:** Some endoscope models do not require attachment of all CORIS connectors. The CORIS System displays the required connections based on the model of endoscope scanned. Onscreen instructions will indicate which connectors are not required via an ⓧ. Leave connectors that are not required loose and unattached.




14. Press the suction connector (#4 yellow) fully down.

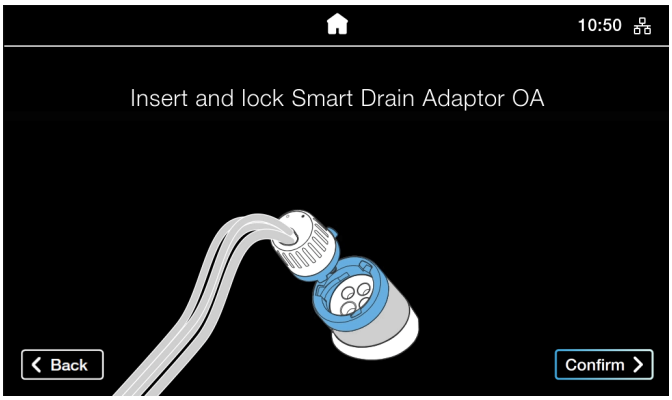
    Press Confirm to continue.



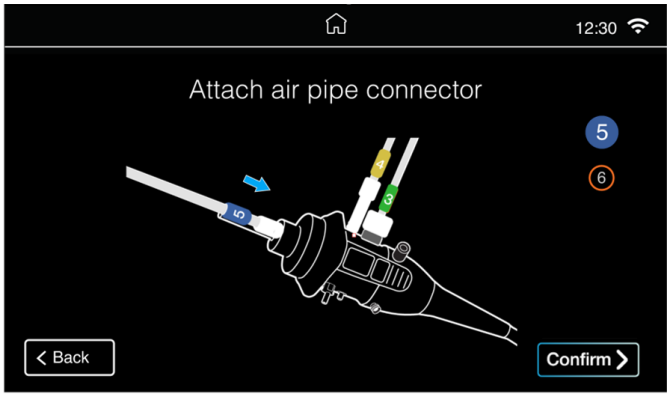

15. Retrieve the Smart Drain Adaptor displayed on the screen. Align the wide lug on the Smart Drain Adaptor with the Smart Drain Port and insert it. Rotate the Smart Drain Adaptor handle clockwise to the lock position to secure it correctly.

    Press Confirm to continue.

**NOTE:** If the Smart Drain adaptor is already inserted and locked then press Confirm.




16. Attach the air pipe connector (#5 light blue) by pushing down, ensuring full coverage of the air pipe. Rotate the connector clip to align with light guide arm and push to clip on.

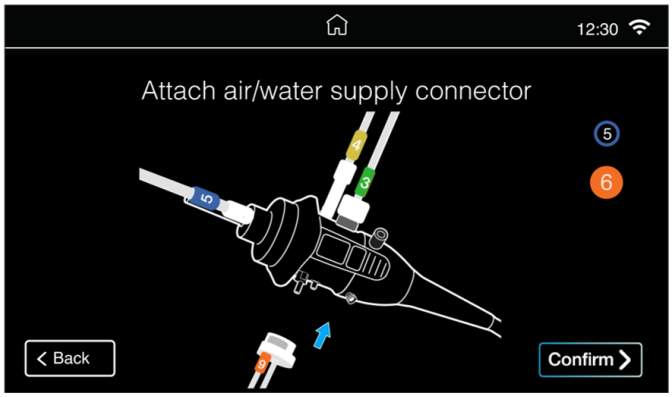



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17. Align the (larger) air inlet pin of the air/water supply connector (orange #6) with the air supply channel and the water inlet pin with the water supply channel of the endoscope. Grip the white connector body and push down firmly until it clicks into place.

    Gently pull on the connector to ensure it is properly attached.

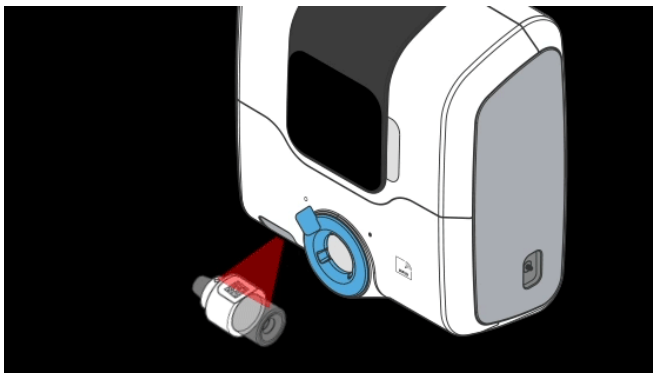
    Press Confirm to continue.



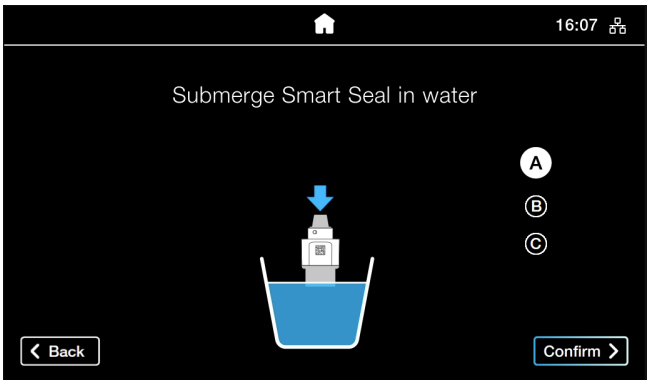

18. Retrieve the Smart Seal displayed on the screen. Inspect the Smart Seal for any damage and if found replace it with a new Smart Seal.

    Scan the QR code on the seal using the barcode scanner.

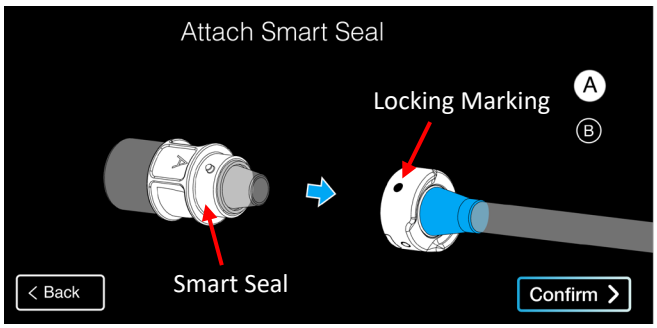
**NOTE:** The CORIS Device will alert you if you scan the wrong type of Smart Seal.



19. Submerge/wet the Smart Seal in tap water.




20. Push the Smart Seal into the end of the Smart Drain Adaptor Smart Seal connector and rotate it to lock it into position making sure the locking markings are followed, see *Figure 19*.



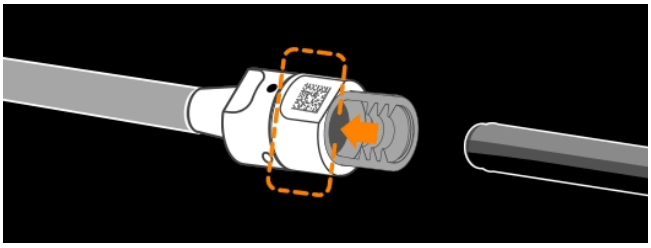

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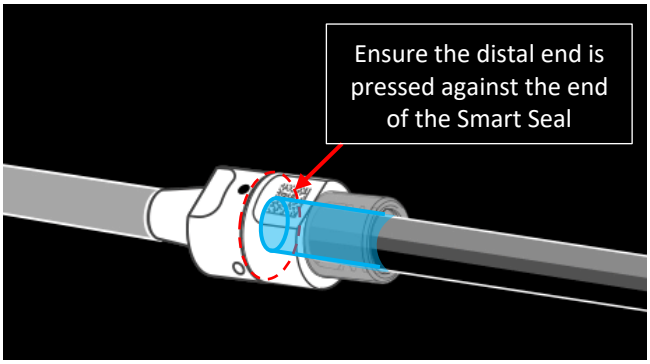
21. Carefully push the distal end of the endoscope fully into the CORIS Smart Seal as shown. Press firmly but do not force it.

    The Smart Seal will prevent you from inserting the endoscope too far.

    Press Confirm to continue.

    Gently place the endoscope in the sink.





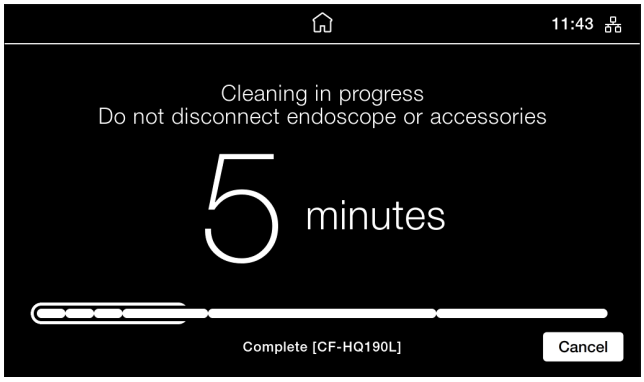

22. Press the start button to start the cleaning cycle.




23. The cleaning cycle time remaining and cycle phase is displayed. The GUI will notify you when the cycle has finished. Leave the endoscope in the sink for the cleaning cycle.

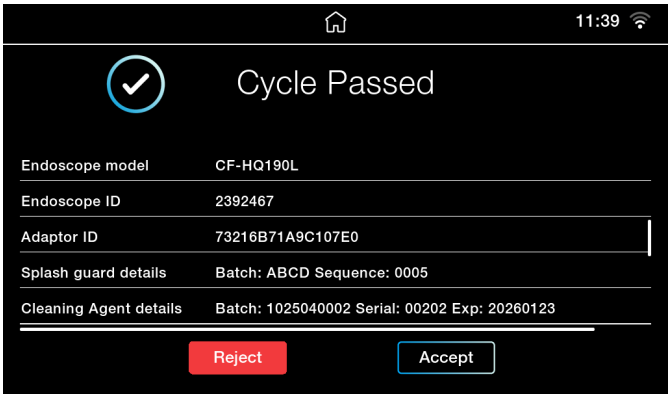
    Do not interrupt the cleaning cycle or disconnect any accessories. Allow the cleaning cycle to finish.

**NOTE:** Any errors during the cleaning cycle will be shown on the CORIS GUI. For more information on error messages, see Section 5.2.




24. After the cycle is complete the cleaning cycle summary will be displayed. Scroll to view the cycle information. Cycle information will be recorded by the CORIS Device and printed if the CORIS printer is detected. Press Accept to continue and scan your Operator ID.
25. If you press Reject, refer to Section 3.5.

**NOTE:** If you are using the CORIS Label Printer, the cleaning cycle label will now be sent to the printer.

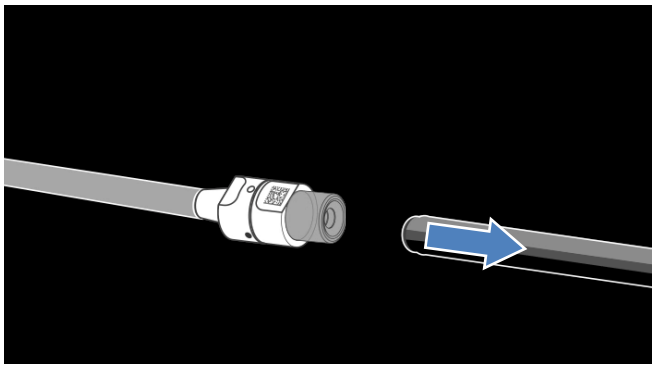



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**When a cycle fails or a "Cycle Passed" message is not displayed, the endoscope is considered not cleaned. If this occurs the endoscope must be cleaned again. Refer to Section 5.2.1 for assistance with any error messages.**

26. Carefully pull the distal end of the endoscope out of the Smart Seal and remove the Smart Seal from the Smart Drain Adaptor if desired.

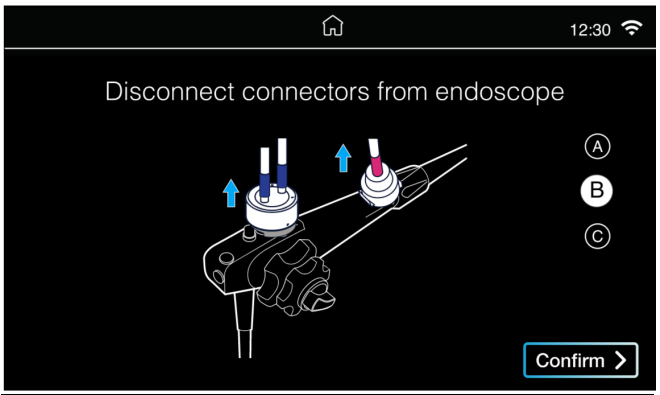
**NOTE:** The Smart Seal can be used for up to 24 hours. Discard after 24 hours.

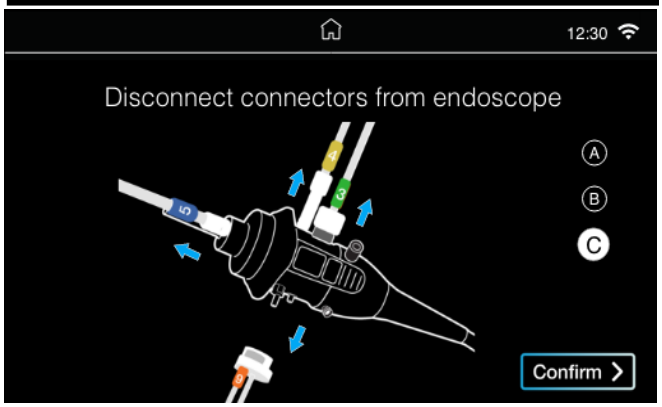


27. Disconnect all connectors from the endoscope.

    Press Confirm to continue.

    The endoscope can now be further reprocessed as per your facility's standard operating procedures.




## 3.4 Aborting Cleaning Cycle

1. If you wish to stop the CORIS Device after a cleaning or self-disinfection cycle has started, then press Cancel during the cleaning cycle.

   Do not disconnect anything from the endoscope until instructed to by the CORIS Device.




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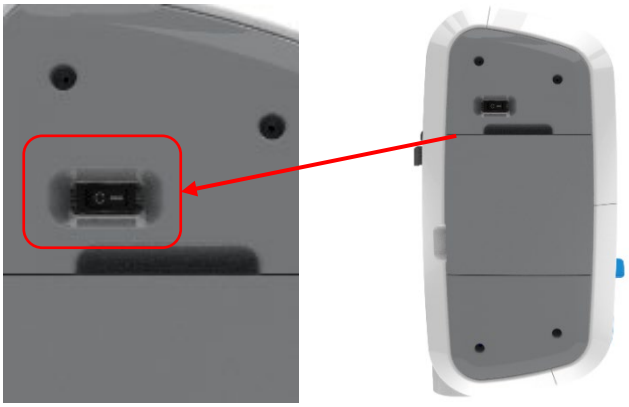
2. An interrupted CORIS cleaning cycle cannot be restarted or resumed. The cleaning cycle must be restarted, or the endoscope must be manually cleaned in accordance with your facility's procedures.

   If you wish to start a new cleaning cycle, return to Section 3.3.



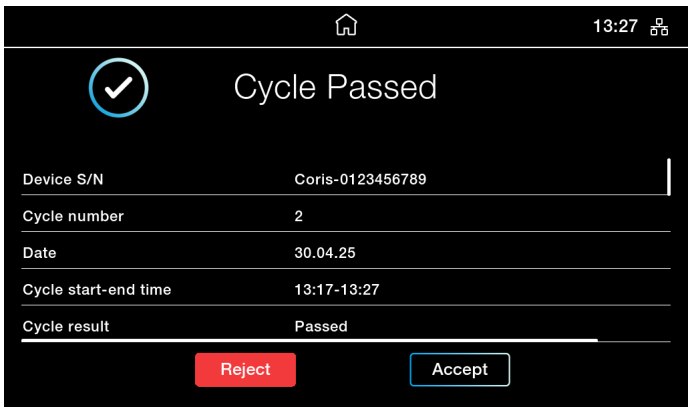

3. In an emergency or if the CORIS Device becomes unresponsive or if there is another unexpected event, the CORIS Device can be turned off using the power switch located on the left-hand side of the unit. This will stop the current process immediately and power off the device.

**NOTE:** If the CORIS Device was switched off during a cleaning cycle refer to Section 5.1.1.



## 3.5 Reject Cleaning Cycle Result

1. At the end of the cleaning cycle, you will be given the option to reject the cleaning cycle pass result according to your facility's Standard Operating Procedures. If you press the Reject button, the cleaning cycle will be recorded as a rejected cycle.




2. Press Yes to confirm the rejected cleaning cycle and scan your Operator ID.

   The endoscope cleaning cycle must be performed again, or the endoscope should be cleaned manually.




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# 4 Maintenance of the CORIS System

## 4.1 Maintenance Schedule

Regular maintenance of the CORIS Device and its accessories must be performed to enable safe and proper use of the CORIS System.

### 4.1.1 Maintenance Schedule

The maintenance requirements and frequency for the CORIS System are shown in *Table 4*.

**Table 4: CORIS System Maintenance Schedule**

| Component Name | Daily | Twice Weekly | Yearly |
|---|---|---|---|
| CORIS Device Reprocessing – External (Section 4.4.1) | ● | | |
| CORIS Device Self-Disinfection – Internal (Section 4.5.1) | | ● | |
| CORIS Smart Drain Port (Section 4.4.2) | ● | | |
| CORIS Adaptor – Exterior (Section 4.4.3.1) | ● | | |
| CORIS Adaptor – Interior (Section 4.4.3.2) | ● | | |
| CORIS Smart Drain Adaptor – Exterior (Section 4.4.3.1) | ● | | |
| CORIS Smart Drain Adaptor – Interior (Section 4.4.3.2) | ● | | |
| CORIS Adaptor Reprocessing Hub (Section 4.4.4) | ● | | |
| CORIS Adaptor Plug (Section 4.4.5) | ● | | |
| CORIS Bottle Plug (Section 4.4.5) | ● | | |
| CORIS SD Input Tube (Section 4.4.5) | ● | | |
| Water Filter Flush (automated by default, can be done as needed) | ● | | |
| Air Filter Replacement (requires maintenance personnel) | | | ● |

## 4.2 Equipment Required for Reprocessing

### 4.2.1 Cleaning and Disinfectant Products

**Only use Revital-Ox RESERT High-level Disinfectant (STERIS) with the CORIS SD cycle. Use of other disinfectants may result in damage to the CORIS System and/or ineffective disinfection.**

**Only use compatible cleaning/disinfectant products with the CORIS System. Failure to do so may result in damage to the CORIS System or ineffective reprocessing (see *Table 5* for compatible chemicals).**

Cleaning and disinfectant products are required for reprocessing the CORIS Device and its accessories. Consult the cleaning and disinfectant product's IFU for general instructions and the contact time.

The reprocessing methods for the CORIS Device and accessories are described in Section *4.4*. The type of product and active ingredient that can be used for reprocessing are described in *Table 5*.

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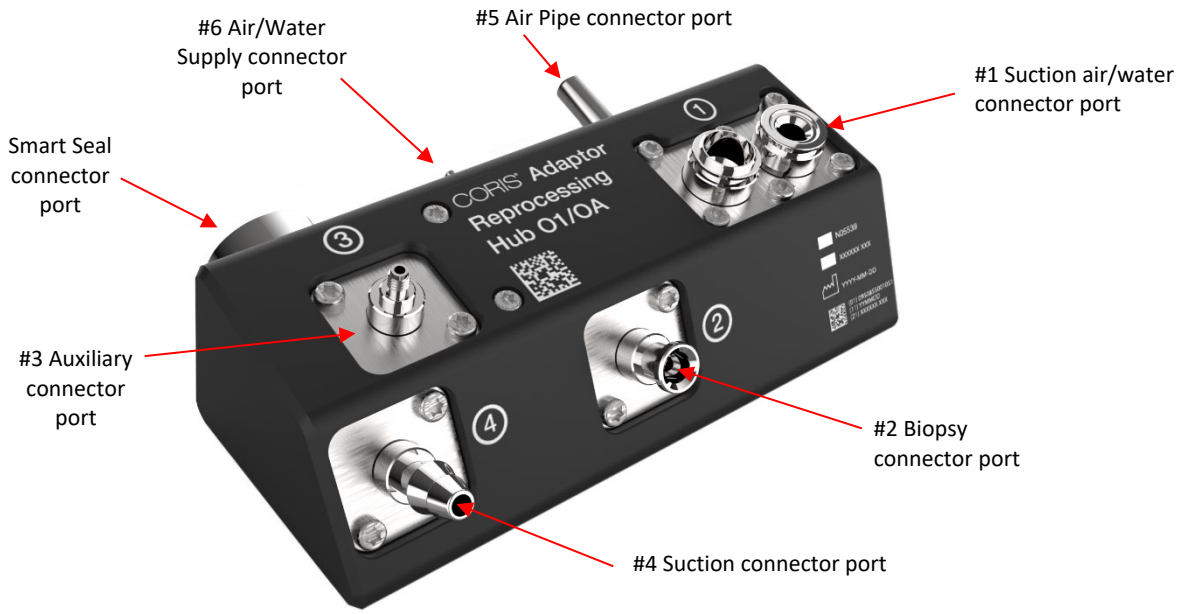
**Table 5: List of Compatible Chemicals for the Reprocessing Methods**

| Method | Product Type | Active Ingredients |
|---|---|---|
| Wipes | Cleaning and low- or intermediate-level disinfectant wipe | Hydrogen Peroxide |
| | | Quaternary ammonium compounds |
| | | Quaternary ammonium compounds and isopropyl alcohol |
| Liquid Disinfection | Revital-Ox RESERT High-level Disinfectant | Hydrogen Peroxide |

## 4.2.2 CORIS Adaptor Reprocessing Hub

The CORIS Adaptor Reprocessing Hub is used for reprocessing of the CORIS Adaptor and CORIS Smart Drain Adaptor. The CORIS Adaptor Reprocessing Hub connects to the CORIS Adaptor and CORIS Smart Drain Adaptor and allows the user to run an automated reprocessing cycle to disinfect the fluidic pathways of these accessories.

**Figure 20: CORIS Adaptor Reprocessing Hub**




## 4.2.3 CORIS Maintenance Kit

The CORIS Maintenance Kit (*Figure 21*) is intended to enable self-disinfection of the CORIS Device during the self-disinfection cycle. See Section 4 for detailed information on running the CORIS self-disinfection cycle.

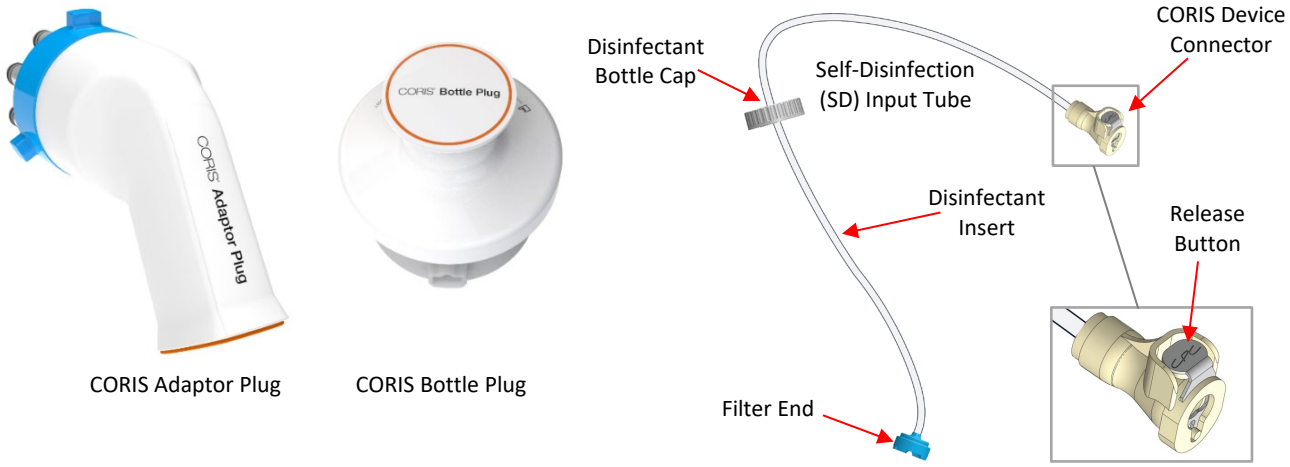
The kit contains:

- 1× CORIS Adaptor Plug
- 1× CORIS Bottle Plug
- 1× CORIS Self-Disinfection Input Tube (SD Input Tube)

Store all components of the CORIS Maintenance Kit in a clean and dry area away from potential contamination or damage, between use. Follow your facility's disinfection procedure for disinfecting the storage area.

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**Figure 21: CORIS Adaptor Plug, Bottle Plug and SD Input Tube**




CORIS Adaptor Plug CORIS Bottle Plug

### 4.2.4 Other Equipment Needed

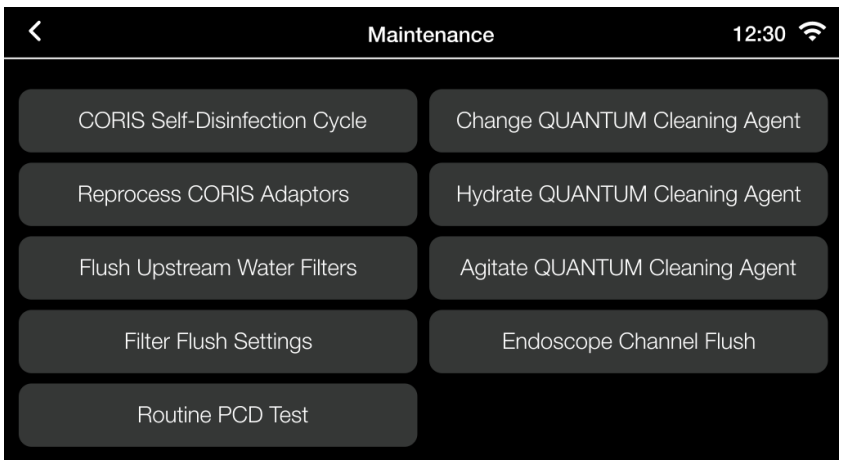
You will also need the following equipment:

- Appropriate PPE
- Clean basin (approximately 10L) or plastic container that is compatible with Revital-Ox RESERT High-level Disinfectant and is deep enough to completely submerge the parts to be reprocessed
- Sterile, low-lint, soft wipes

## 4.3 Maintenance Options Menu

This menu is used to control and run software and system maintenance processes. To access the maintenance menu, press the Maintenance Options button (see *Figure 7*). Each menu requires either an Operator or Administrator scan to access them.

**Figure 22: Maintenance Options Menu**




### 4.3.1 Maintenance Options Descriptions

#### 4.3.1.1 *CORIS Self-Disinfection Cycle (Operator)*

This button starts the CORIS self-disinfection cycle and is covered in detail in Section *4.5.1*. An Operator ID scan is also required at the end of the self-disinfection cycle.

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### 4.3.1.2 *Reprocess CORIS Adaptors (Operator)*

This button starts the CORIS Adaptor Reprocessing cycle and is covered in detail in Section 4.4.4. An Operator ID scan will be required at the start and end of the adaptor reprocessing cycle.

### 4.3.1.3 *Change QUANTUM Cleaning Agent (Administrator)*

**Before the QUANTUM Cleaning Agent bottle can be changed, it must be empty and any QUANTUM Cleaning Agent remaining in the bottle will be purged. Only change the QUANTUM bottle when necessary or if directed for troubleshooting purposes.**

This function starts a manual change of the QUANTUM Cleaning Agent. This may be required as part of troubleshooting steps. After emptying the QUANTUM Cleaning Agent bottle, the bottle can be removed.

**Figure 23: Changing QUANTUM Cleaning Agent Information Screens**





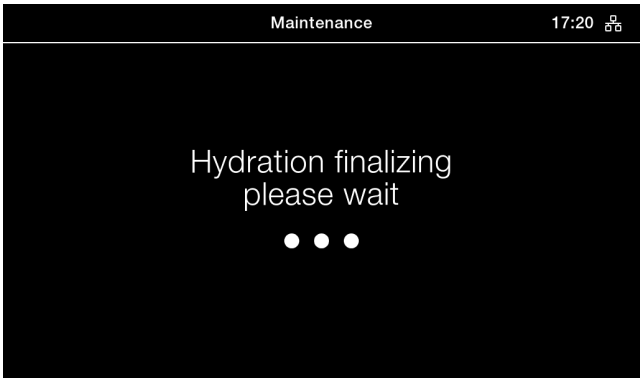


### 4.3.1.4 *Hydrate QUANTUM Cleaning Agent (Administrator)*

During normal operation the QUANTUM bottle is hydrated automatically after the bottle is swapped, however if there is a power interruption during a bottle changeover, the user may need to hydrate the QUANTUM bottle manually using this function. Once the hydration process is started the CORIS Device will display a countdown and then a success screen. If an error occurs during hydration refer to Section 5.2. Hydration typically takes 10 minutes.

**Figure 24: Hydrate QUANTUM Cleaning Agent Information Screens**



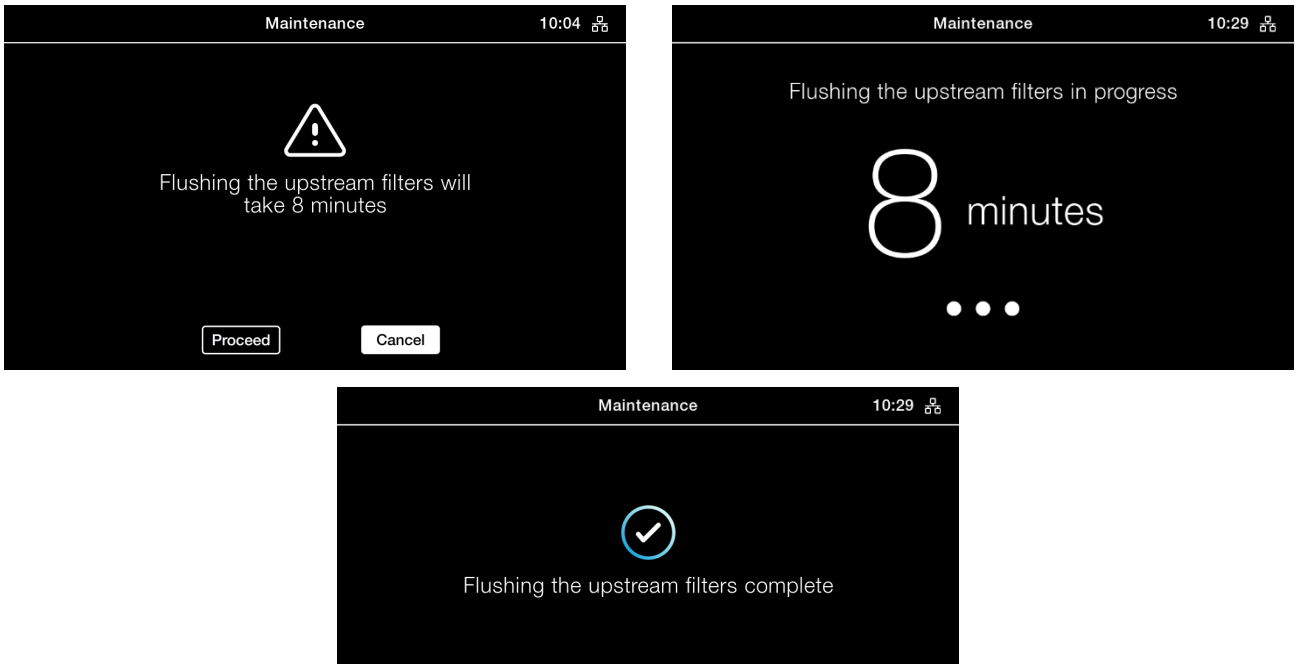




### 4.3.1.5 *Flush Upstream Water Filters (Administrator)*

This function is used to flush the upstream water filters manually. Flushing the filters ensures that only fresh water enters the CORIS Device. This process can be set to occur once every day and up to 7 days but can be altered using the *Flush Upstream Water Filters (Administrator)* settings in Section 4.3.1.6. Flushing the filters will take approximately 8 minutes.

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**Figure 25: Flush Upstream Water Filters Information Screens**




### 4.3.1.6 *Filter Flush Settings (Administrator)*

The upstream filter flush can be set by the user to run automatically every 1 to 7 days. This automatic function can also be disabled. After adjusting the interval, press Confirm for the changes to take effect.

**Figure 26: Filter Flush Settings Screen**




### 4.3.1.7 *Agitate QUANTUM Cleaning Agent (Operator)*

This function inserts air and water into the QUANTUM bottle to agitate/stir the material. Agitation is also performed automatically before the CORIS Device performs a cleaning cycle; however, it may be required to assist with troubleshooting. The agitation process takes several minutes, and a countdown will be displayed.

**NOTE:** Agitation consumes a small amount of QUANTUM Cleaning Agent and should only be performed if necessary or if directed via the Troubleshooting Section *5.2*.

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**Figure 27: QUANTUM Agitation Information Screens**







## 4.4 Daily Maintenance

**Always reprocess the CORIS Device and accessories as instructed in this manual. Failure to do so may result in damage to the CORIS System and/or the ineffective reprocessing of the endoscope.**

**Only use compatible cleaning/disinfectant products with the CORIS System. Failure to do so may result in damage to the CORIS System or ineffective reprocessing (see *Table 5* for compatible chemicals).**

### 4.4.1 CORIS Device Reprocessing

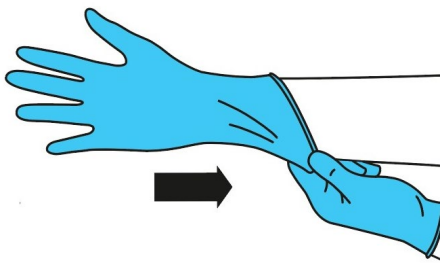
At least once per day when in use, or when required, clean and disinfect the exterior surfaces of the CORIS Device with a cleaning and disinfectant wipe.

#### 4.4.1.1 *Exterior Surface Cleaning and Disinfection*

**NOTE:** This section covers the cleaning and disinfection of the external surfaces of the CORIS Device. For internal disinfection see Section *4.5.1*.

Wipe exterior surfaces of the CORIS Device using compatible cleaning wipes (detailed in section *4.2.1*).

1. Put on appropriate PPE including clean gloves before starting this procedure.



2. Remove any installed Adaptor from the adaptor port.

   Consult the wipe manufacturer's IFU for general instructions. Using a wipe (see *Table 5* ), thoroughly clean all exterior surfaces including the touchscreen, adaptor lock, the sides and along the top of the CORIS Body.

   Ensure all surfaces are visually clean after the cleaning process. The cleaning process should be repeated if the CORIS Device is not visually clean.

   Ensure all surfaces remain wetted for the full contact time for disinfection according to the wipe manufacturer's IFU, using additional wipes if required.

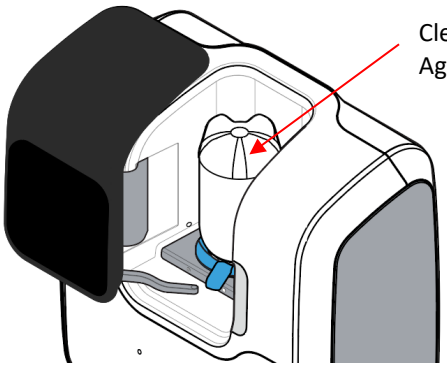


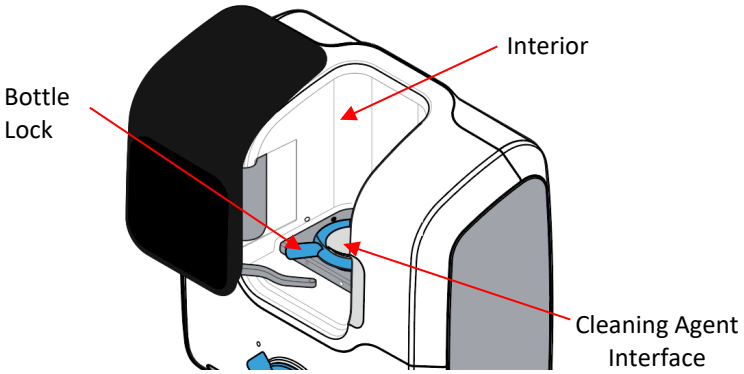

3. When the CORIS QUANTUM bottle requires changing, unlock and remove the bottle as per Section *3.2.2*.

   Before installing a new QUANTUM Cleaning Agent Bottle, use a wetted wipe (see *Table 5*) to wipe all the surfaces of the Cleaning Agent Interface, including the 3 round features.

   Ensure all surfaces are visually clean after the cleaning process. The cleaning process should be repeated if the CORIS Device is not visually clean.

   Ensure all surfaces remain wetted for the full contact time for disinfection according to the wipe manufacturer's IFU, using additional wipes if required.




## 4.4.2 CORIS Smart Drain Port Reprocessing

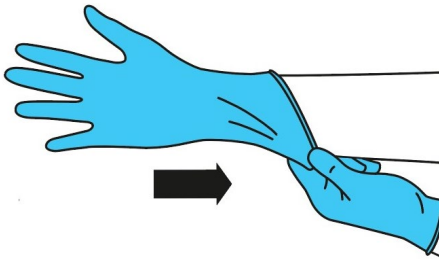
At least once per day when in use, or when required, clean and disinfect the exterior of the CORIS Smart Drain Port with a cleaning and disinfectant wipe.

### 4.4.2.1 *Exterior Cleaning and Disinfection*

Wipe exterior surfaces of the CORIS Smart Drain using compatible cleaning wipes (detailed in section *4.2.1*).

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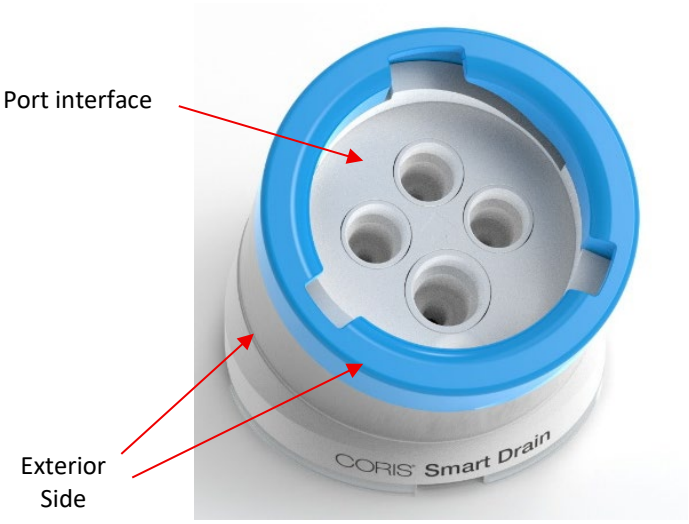
1. Put on appropriate PPE including clean gloves before starting this procedure.



2. If required, unlock and remove CORIS Smart Drain Adaptor from the CORIS Smart Drain Port. Consult the wipe manufacturer's IFU for general instructions.

   With a wipe, thoroughly clean all exterior surfaces of the CORIS Smart Drain Port, including the exterior sides and port interface, indicated here with red arrows.

   Ensure all surfaces are visually clean after the cleaning process. Repeat the cleaning process if the CORIS Smart Drain Port is not visually clean.




3. Ensure all surfaces remain wetted for the full contact time for disinfection according to the wipe manufacturer's IFU, using additional wipes if required.




## 4.4.3 CORIS Adaptor and CORIS Smart Drain Adaptor Reprocessing

At least once per day when in use, or when required, clean and disinfect the CORIS Adaptor and CORIS Smart Drain Adaptor.

**The exterior surfaces of the CORIS Adaptor and CORIS Smart Drain Adaptor are cleaned and disinfected with compatible wipes (Section *4.4.3.1*).**

**The interior surfaces of the CORIS Adaptor and CORIS Smart Drain Adaptor are disinfected using Revital-Ox RESERT High-level Disinfectant (Section *4.4.3.2*).**

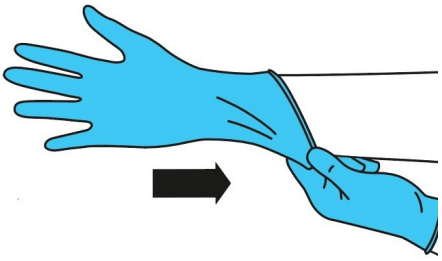
**Ensure both procedures are performed to complete reprocessing of the CORIS Adaptor and CORIS Smart Drain Adaptor. Failure to do so may result in ineffective reprocessing.**

### 4.4.3.1 *Exterior Cleaning and Disinfection*

Wipe exterior surfaces of the CORIS Adaptor and CORIS Smart Drain Adaptor using compatible cleaning wipes (detailed in section *4.2.1)*.

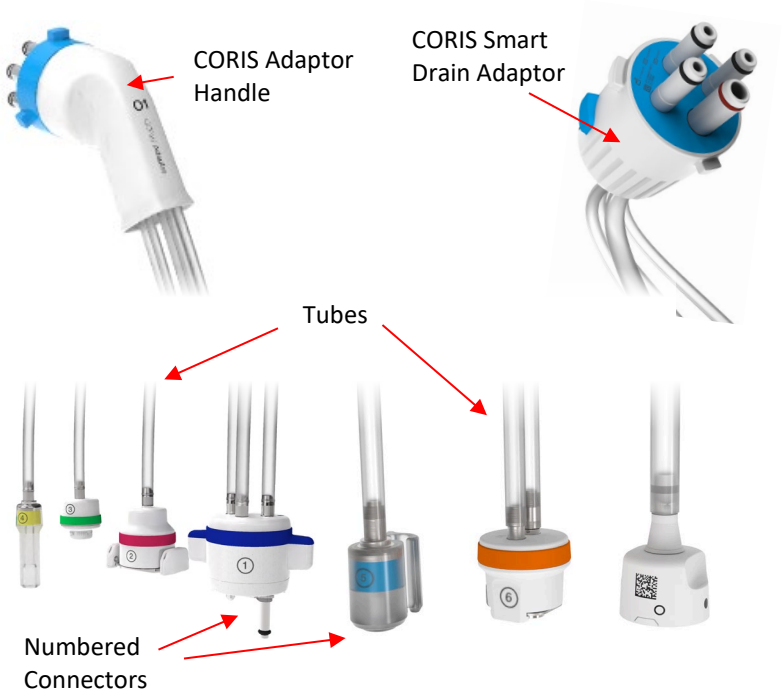
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1. Put on appropriate PPE including clean gloves before starting this procedure.



2. Consult the wipe manufacturer's IFU for general instructions. With a wipe, thoroughly clean the following exterior surfaces:
   - the CORIS Adaptor, including the CORIS Adaptor handle, tubes and connectors.
   - the CORIS Smart Drain Adaptor, including the CORIS Smart Drain Adaptor handle, tubes, and connectors.

   Ensure all surfaces are visually clean after the cleaning process. The cleaning process should be repeated if any part is not visually clean.




3. Ensure all surfaces remain wetted for the full contact time for disinfection according to the wipe manufacturer's IFU, using additional wipes if required.



### 4.4.3.2 *Interior Disinfection*

**Only use Revital-Ox RESERT High-level Disinfectant (STERIS) with the CORIS Adaptor reprocessing cycle. Use of other disinfectants may result in damage to the CORIS Adaptors and/or ineffective disinfection.**

**Follow the Revital-Ox RESERT High-level Disinfectant (STERIS) manufacturer's instructions for disinfection instructions, general information, warnings, open shelf-life storage, handling and safe disposal.**

**Prior to running a CORIS Adaptor reprocessing cycle, ensure the temperature of the Revital-Ox RESERT High-level Disinfectant (STERIS) is 20°C or more, according to the manufacturer's instructions. Failure to do so may result in harm or injury and ineffective disinfection of the CORIS Adaptor.**

**When a cycle fails or a "Cycle Passed" message is not displayed, the adaptors are not considered to be reprocessed. If this occurs the adaptors must be reprocessed again. Refer to Section *5.2.1* for assistance with any error messages.**

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| | |
|---|---|
| ⚠ | **Visually inspect all CORIS accessories and consumables for damage, prior to use (see *Appendix 1 – CORIS Accessories* for a list of CORIS accessories). Discard if damaged and select a new accessory. Failure to do so may result in damage to the CORIS System and/or the endoscope, ineffective cleaning of the endoscope, or ineffective reprocessing of the CORIS System.** |
| ⚠ | **Place CORIS accessories in the sink when performing adaptor reprocessing instructions. On commencement of adaptor reprocessing cycle, do not disturb the CORIS accessories until the cycle has been completed.** |
| ⚠ | **If you notice a leak during the adaptor reprocessing cycle, then the adaptor reprocessing cycle must be cancelled and repeated.** |
| ⓘ | **Always use new Revital-Ox RESERT High-level Disinfectant (STERIS) for each CORIS adaptor reprocessing cycle. Do not re-use disinfectant.** |

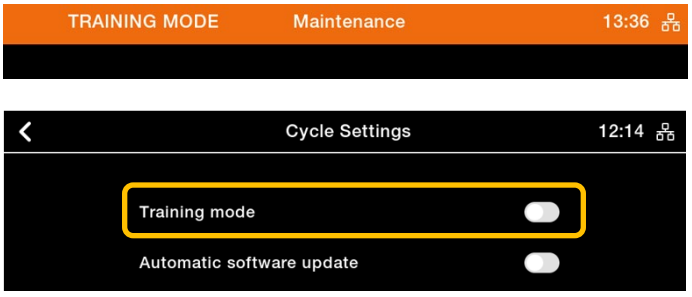
Disinfect the interior surfaces of the CORIS Adaptor and CORIS Smart Drain Adaptor using Revital-Ox RESERT High-level Disinfectant solution with the CORIS Adaptor Reprocessing Hub.

The following equipment is required:

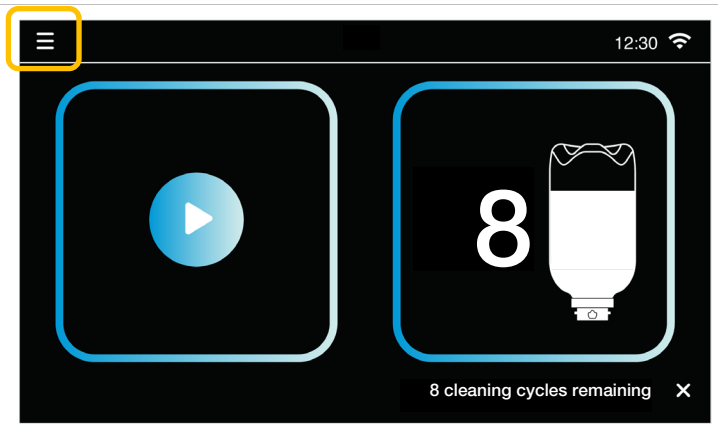
- CORIS Adaptor Reprocessing Hub (Section *4.2.2*)
- Self-Disinfection Input Tube (Section *4.2.3*)
- Revital-Ox RESERT High Level Disinfectant

1. Ensure the CORIS Device is not in training mode.

   If an orange band is present across the top of the screen the Device is in training mode, go to Home > Menu > Cycle Settings (*Figure 11*) and switch it off. You will need to be an administrator to access it.

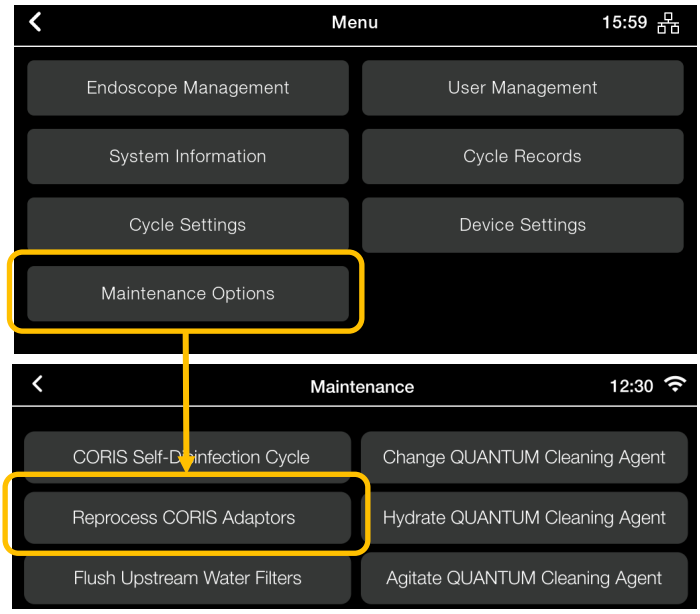



2. To reprocess the CORIS Adaptor and Smart Drain Adaptor, return to the Home screen and press Menu button (shown in the top left) to display the Menu.

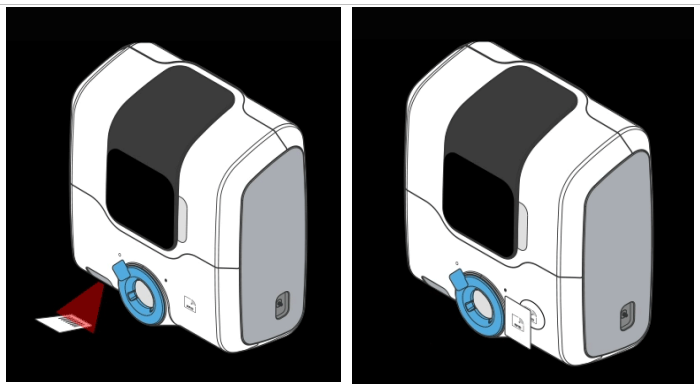



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3. Press Maintenance Options and then press Reprocess CORIS Adaptors.




4. Scan your Operator ID using either the RFID or barcode scanner.



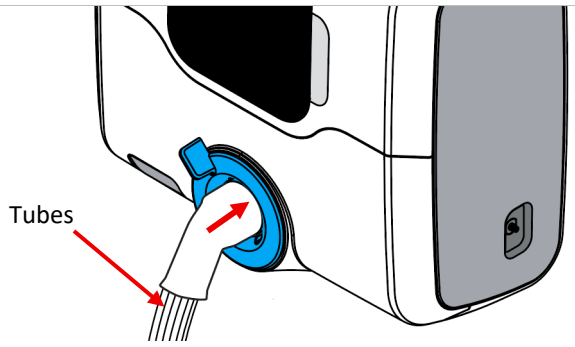
5. Ensure the adaptor lock is set to the **open/unlocked** position on the CORIS Device. Do not force the lever anticlockwise from this position.

**NOTE:** If the CORIS Adaptor to be cleaned is already installed the system will recognise it as shown in step #7 below.




6. Retrieve the CORIS Adaptor that is to be reprocessed.

**NOTE:** Insert the CORIS Adaptor handle into the adaptor port with the tubes pointing downwards.

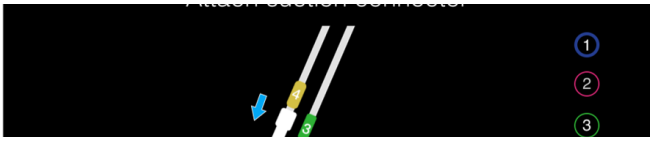



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7. Hold the CORIS Adaptor in place and rotate the lock ring **clockwise** to the lock position as shown.

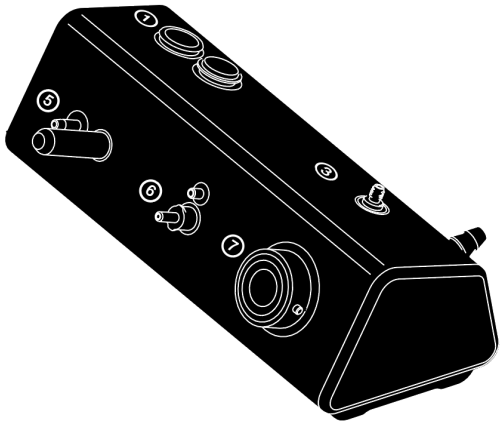
   Once the CORIS Adaptor has been recognized, a confirmation screen will be briefly displayed.




8. Reprocessing should be performed with an empty and preferably dry sink.

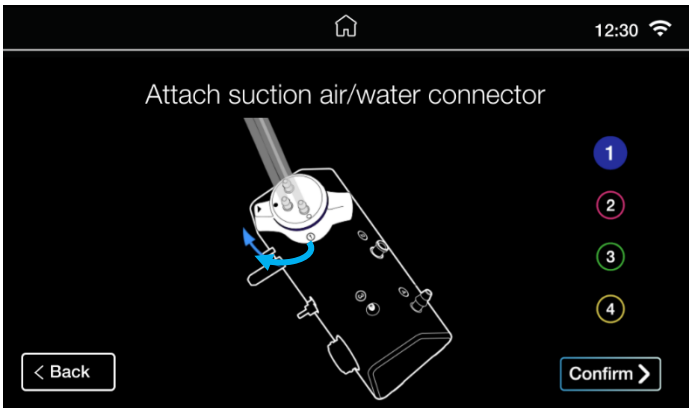
   Retrieve the CORIS Adaptor Reprocessing Hub and gently place in the sink.

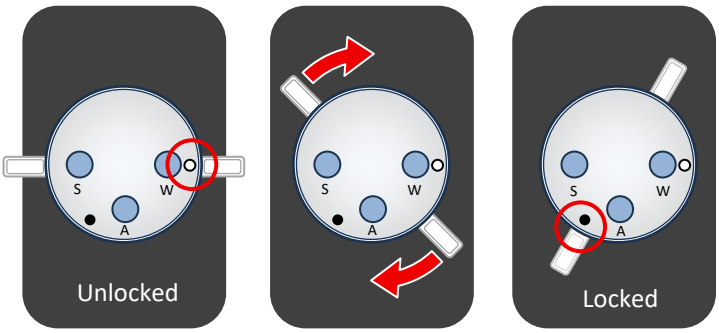


9. The screen will display animations for each connector. Press the number of the connector you wish to watch again.
10. Follow the onscreen instructions; align the connector pin of the #1 suction air/water connector (dark blue) with the #1 suction air/water connector port on the CORIS Adaptor Reprocessing Hub. Follow the animation to insert the correct pin into the correct channel.
11. Push the connector down firmly and twist the connector body clockwise to engage the locking ring of the connector to the suction air/water port.

    When the ○ symbol on the top of the connector is aligned with one of the connector handles, the connector is unlocked. When the ● symbol is aligned, it shows the connector is locked.

    Gently pull on the connector to ensure it is properly attached.



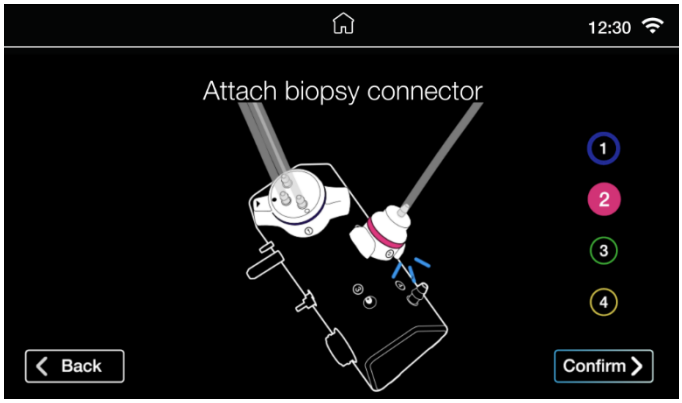




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12. Push the Adaptor biopsy connector (#2 pink) into place until it clicks on the #2 biopsy connector port on the CORIS Adaptor Reprocessing Hub.

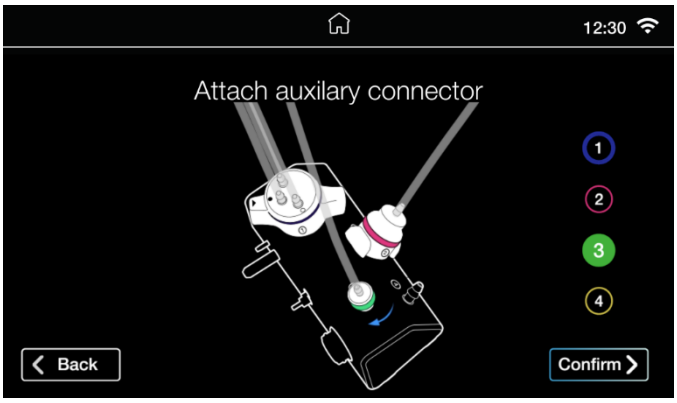
**NOTE:** Do not hold the connector via the two release buttons while trying to attach the connector. Pressing the release buttons during attachment will prevent the connector from latching on.

Gently pull on the connector to ensure it is properly attached.



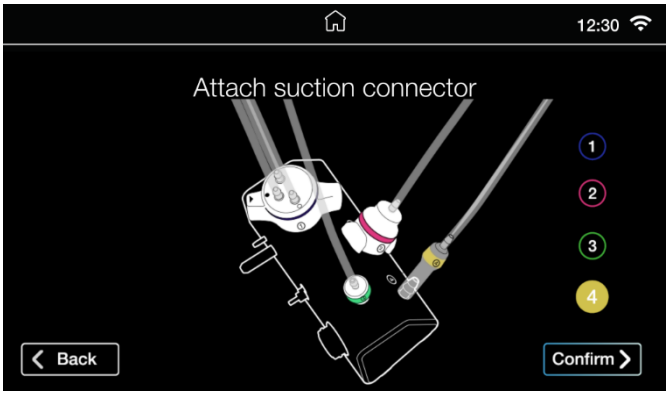

13. Align the thread of the auxiliary connector (#3 green) with the inside of the #3 auxiliary connector port on the CORIS Adaptor Reprocessing Hub and whilst holding the connector, twist the connector body clockwise to lock the thread into place.

Gently pull on the connector to ensure it is properly attached.




14. Press the suction connector (#4 yellow) down onto the #4 suction port on the CORIS Adaptor Reprocessing Hub. Ensure it is pushed on completely.

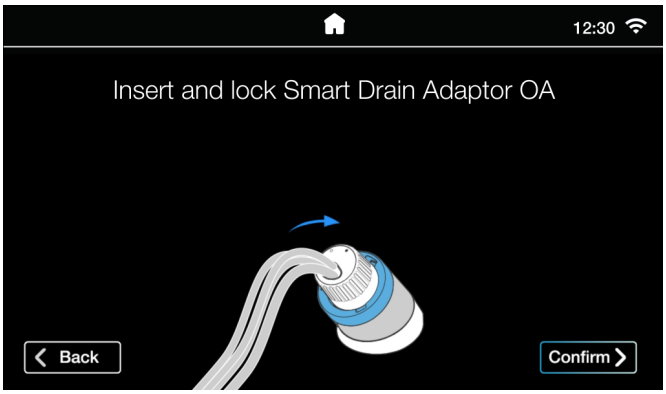
Press Confirm to continue.




15. Retrieve the Smart Drain Adaptor that is being reprocessed. Align the wide lug on the Smart Drain Adaptor with the Smart Drain Port and insert it. Rotate the Smart Drain Adaptor handle clockwise to the lock position to secure it correctly.

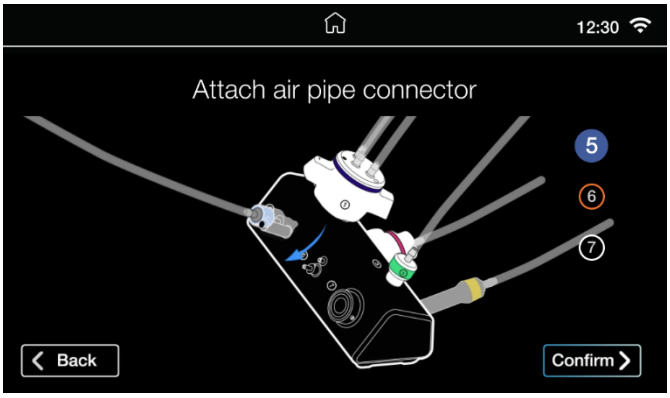
Press Confirm to continue.

**NOTE:** If the Smart Drain Adaptor is already inserted and locked then press Confirm.



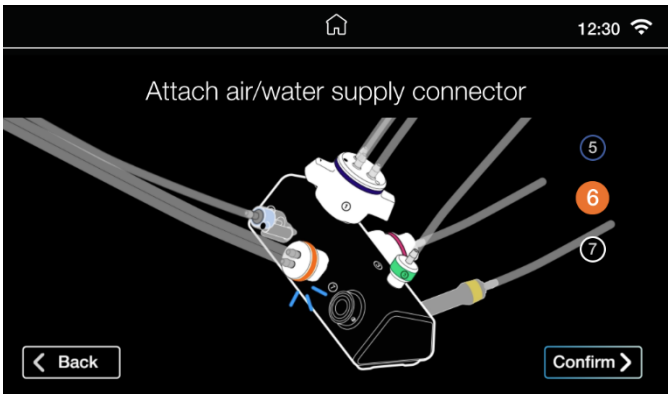

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16. Attach the air pipe connector (#5 light blue) by pushing it down onto the #5 air pipe connector port on the CORIS Adaptor Reprocessing Hub, ensuring full coverage of the air pipe. Rotate the connector clip to align with guide arm and push to clip on.

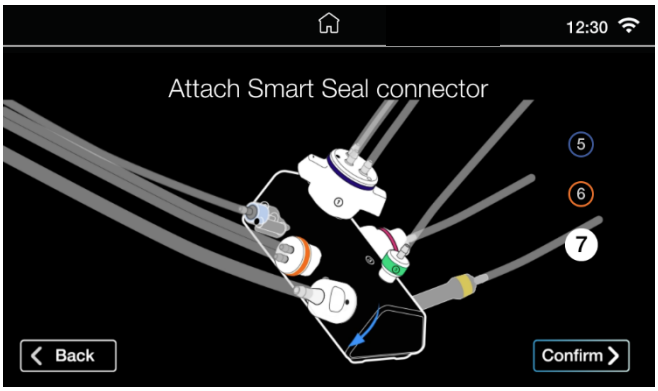



17. Align the (larger) air inlet pin of the air/water supply connector (orange #6) with the air/water supply connector port and the water inlet pin with the CORIS Adaptor Reprocessing Hub. Grip the connector body and push down firmly until it clicks into place.

    Gently pull on the connector to ensure it is properly attached.



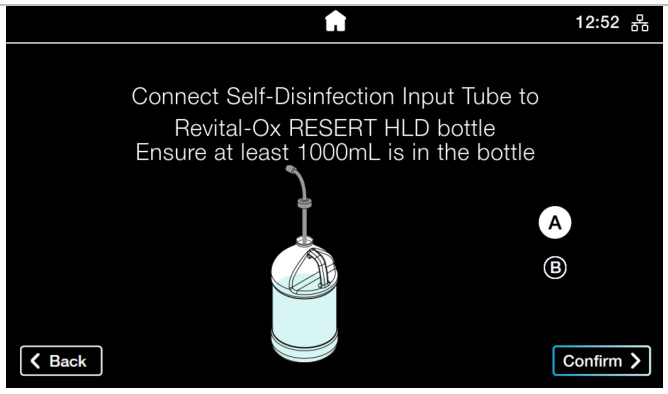

18. Align the Smart Seal connector to the pins of the Smart Seal connector port on the CORIS Adaptor Reprocessing Hub and push and rotate it clockwise to lock it into position making sure the locking markings are followed.
19. Press Confirm to continue.




20. Unscrew the cap of the 4L Revital-Ox bottle containing at least 600mL of disinfectant and insert the filter end of the SD Input Tube into the bottle. Ensure the filter end is sitting on the bottom of the bottle.

    Screw the SD Input Tube disinfectant cap onto the Revital-Ox RESERT bottle.

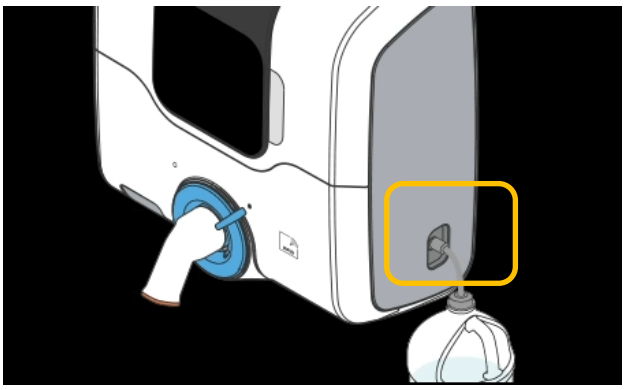
**NOTE:** Keep the disinfectant bottle cap to replace after the adaptor reprocessing cycle.




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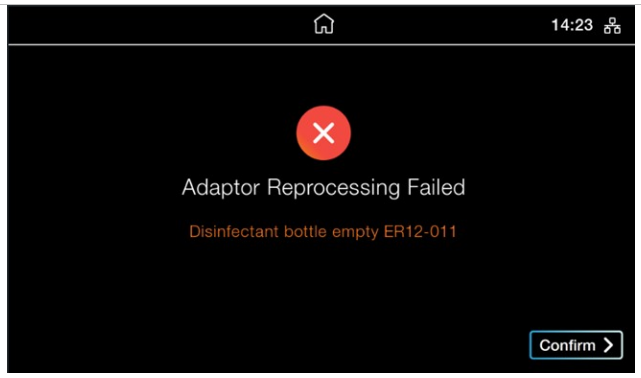
21. Connect the device connector end of the Self-Disinfection Input Tube to the CORIS Self-Disinfection Input Tube port as shown in the animation.

    Press Confirm to continue.



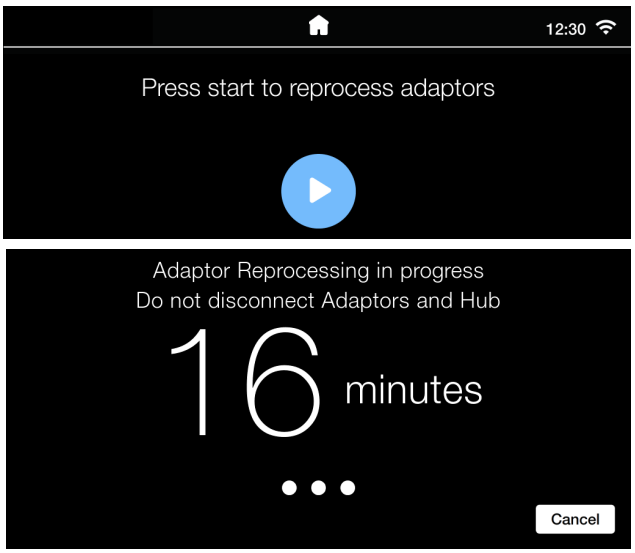
22. If the disinfectant bottle is empty or contains excessive bubbles, a warning screen will be displayed. Unscrew the SD Input Tube cap, check the disinfectant bottle and follow the steps:
    - Replace disinfectant bottle if empty.
    - If bubbles are present, leave the bottle for up to 1 minute, until they have disappeared.

    Screw the SD Input Tube cap to the disinfectant bottle and press Retry on the screen or Cancel to fail the cycle. Follow the on-screen instructions.




23. Press the start button to begin the cycle. A countdown timer will be displayed.

**NOTE:** Confirm there are no leaks and no errors. If you identify any leaks press the Cancel button to fail the cycle and flush with water.

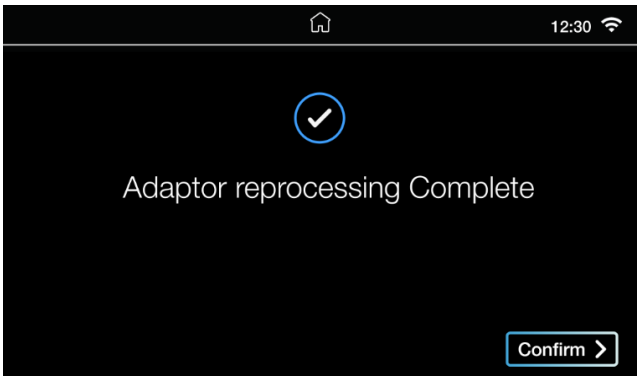



**If you notice a leak during the adaptor reprocessing cycle, then the adaptor reprocessing cycle must be cancelled and repeated.**

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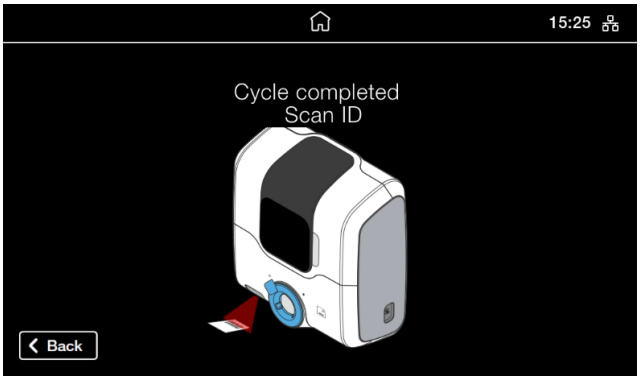
24. When the reprocessing cycle has finished you will be notified on the display. Press Confirm to continue.

**NOTE:** Any errors occurring during the cycle will be reported on the screen, see Step *13*.




25. At the completion of the cycle, scan your Operator ID to confirm the cycle was completed.

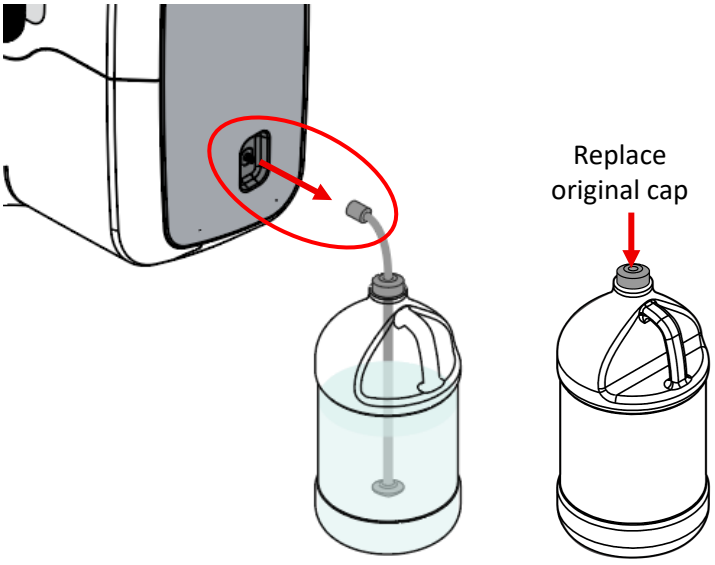
    For traceability records, information from each CORIS Adaptor reprocessing cycle must be captured manually, in accordance with your facility's documentation procedures. This can include the date and time of reprocessing, the cycle result, and the serial numbers of the CORIS Adaptor, CORIS Smart Drain Adaptor and CORIS Adaptor Reprocessing Hub




26. Remove the Self-Disinfection Input Tube from the CORIS Device by pushing the release button and pulling it off the CORIS Device.

    Unscrew the Self-Disinfection Input Tube from the disinfectant bottle and remove the filter end from the disinfectant bottle. Replace the original cap on the disinfectant bottle.

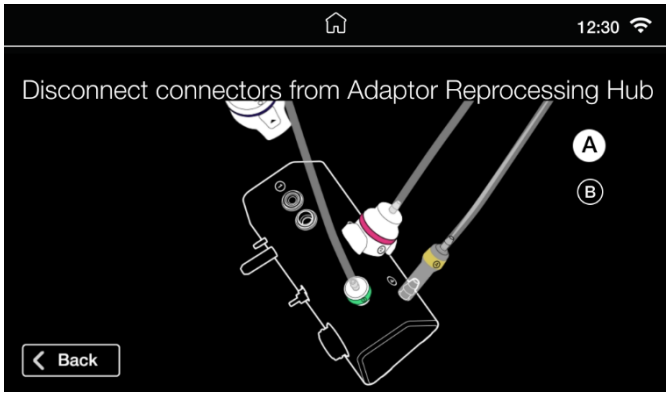
    Put the Self-Disinfection Input Tube aside for reprocessing after use.

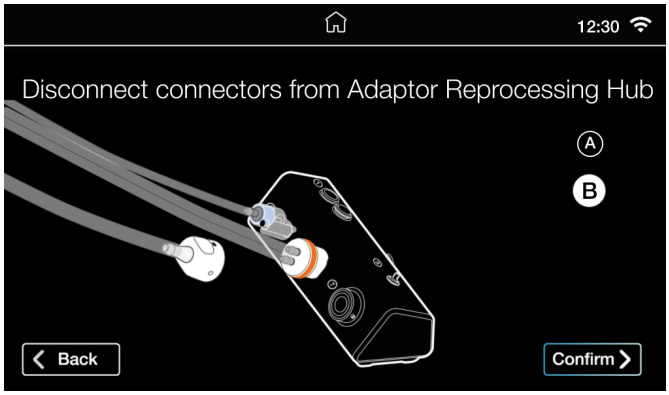



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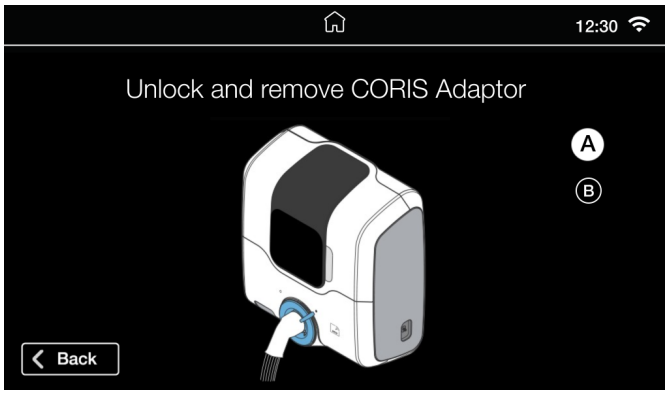
27. Disconnect all connectors from the Adaptor Reprocessing Hub.

    Press Confirm to continue.



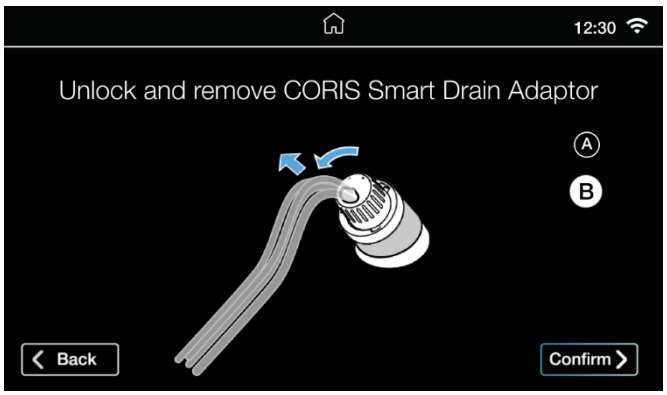




28. Rotate the adaptor lock anticlockwise and pull the Adaptor out of the CORIS Device.




29. Press the Smart Drain Adaptor release button and rotate the adaptor anticlockwise to remove the Smart Drain Adaptor from the Smart Drain port.

    Press Confirm to continue.




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30. For storage, hang the CORIS Adaptor and CORIS Smart Drain Adaptor to dry in a clean, dry area away from potential contamination or damage, until required.



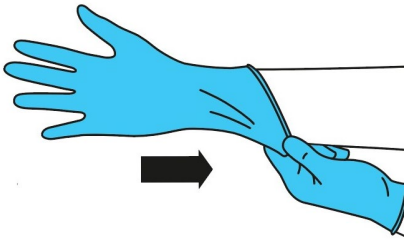
## 4.4.4 CORIS Adaptor Reprocessing Hub

At least once per day when in use, or when required, clean and disinfect the exterior of the CORIS Adaptor Reprocessing Hub with a cleaning and disinfectant wipe, as per the instructions below.

### 4.4.4.1 *Cleaning and Disinfection*

Wipe exterior surfaces of the CORIS Adaptor Reprocessing Hub using compatible cleaning wipes (detailed in section 4.2.1).

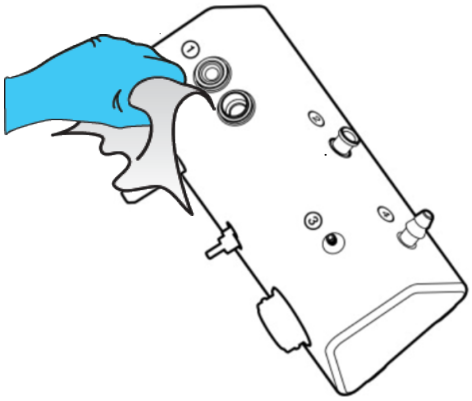
1. Put on appropriate PPE including clean gloves before starting this procedure.



2. Consult the wipe manufacturer's IFU for general cleaning instructions.

   With a wipe, thoroughly clean all exterior surfaces of the CORIS Adaptor Reprocessing Hub, including the channel port surfaces.

   Ensure all surfaces are visually clean after the cleaning process. The cleaning process should be repeated if the accessories are not visually clean.



3. Ensure all surfaces remain wetted for the full contact time for disinfection according to the wipe manufacturer's IFU, using additional wipes if required.

   Store the CORIS Adaptor Reprocessing Hub in a clean, dry area away from potential contamination or damage, until required.



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### 4.4.5 CORIS Adaptor Plug, CORIS Bottle Plug, CORIS SD Input Tube Reprocessing

At least once per day when in use, or when required, clean and disinfect the exterior of the CORIS Adaptor Plug, CORIS Bottle Plug, and CORIS SD Input Tube with a cleaning and disinfectant wipe.

The following equipment is required:

- Cleaning and disinfectant wipe (refer to section 4.2.1)

#### 4.4.5.1 *Cleaning and Disinfection*

1. Consult the wipe manufacturer's IFU for general cleaning instructions.

   With a wipe, thoroughly clean all exterior surfaces of the CORIS Bottle Plug, CORIS Adaptor Plug and CORIS SD Input Tube, including the device connector, disinfectant cap, and filter end.

   Ensure all surfaces are visually clean after the cleaning process. The cleaning process should be repeated if the accessories are not visually clean.




2. Ensure all surfaces remain wetted for the full contact time for disinfection according to the wipe manufacturer's IFU, using additional wipes if required.



3. Store the accessories on a drying rack (or equivalent) in a clean, dry area away from potential contamination or damage, until required.



## 4.5 Twice Weekly Maintenance

**Always reprocess the CORIS Device and accessories as instructed in this manual. Failure to do so may result in damage to the CORIS System and/or ineffective reprocessing of the endoscope.**

### 4.5.1 CORIS Device Self-Disinfection

The CORIS Device uses a self-disinfection cycle (SD cycle) to disinfect the internal fluidic pathways. The SD cycle must be run at least twice per week, or the CORIS Device will display warnings that the SD cycle needs to be run. See Section 4.5.1.1 for details on how the SD cycle warnings work.

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**NOTE:** If the CORIS Device is not used for more than 24 hours it is recommended to run a self-disinfection cycle prior to use.

If the CORIS Device has remained unused for 4 days, then a self-disinfection cycle **must** be run before recommencing use.

A CORIS Maintenance Kit and a 4L Revital-Ox RESERT High-level Disinfectant (STERIS) bottle containing at least 1,000 mL solution will be needed to run a self-disinfection (SD) cycle (*Table 7*).

**Only use Revital-Ox RESERT High-level Disinfectant (STERIS) with the CORIS SD cycle. Use of other disinfectants may result in damage to the CORIS System and/or ineffective disinfection.**

**Appropriate personal protective equipment (PPE) should be worn when using the CORIS Maintenance Kit and validated disinfectant. Follow standard procedures for PPE. Failure to do so can cause exposure to infectious material, causing risk to health and safety.**

**Visually inspect all CORIS accessories and consumables for damage, prior to use (see *Appendix 1 – CORIS Accessories* for a list of CORIS accessories). Discard if damaged and select a new accessory. Failure to do so may result in damage to the CORIS System and/or the endoscope, ineffective cleaning of the endoscope, or ineffective reprocessing of the CORIS System.**

**Follow the Revital-Ox RESERT High Level Disinfectant (STERIS) manufacturer's instructions for disinfection instructions, general information, warnings, open shelf-life storage, handling and safe disposal.**

**Prior to running a CORIS SD cycle, ensure the temperature of the Revital-Ox RESERT High-level Disinfectant (STERIS) is 20°C or more, according to the manufacturer's instructions. Failure to do so may result in harm or injury and ineffective disinfection of the CORIS Device.**

**Always use new Revital-Ox RESERT High-level Disinfectant (STERIS) for each CORIS SD cycle. Do not re-use disinfectant.**

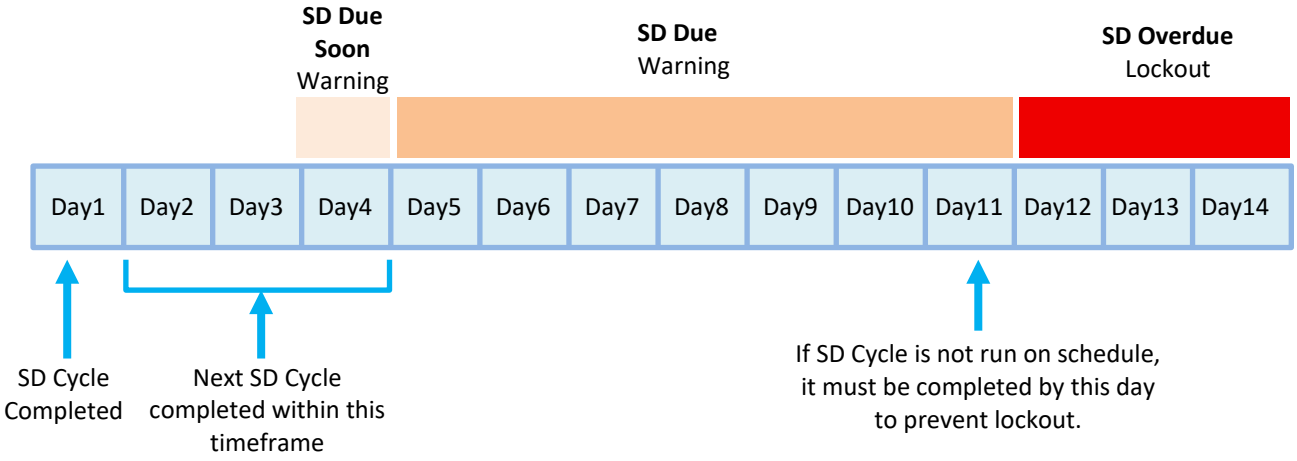
#### 4.5.1.1 *Self-Disinfection Warnings and Lockout*

Self-disinfection must be performed twice per week (as per Section *4.1*), if it is not performed regularly, the CORIS Device software will continue to remind the user until it is performed. If a successful self-disinfection is still not performed, the CORIS Device will escalate the warnings until it locks out all cleaning cycles (except self-disinfection) until a successful self-disinfection is performed. An example two-week warning timeline is shown in *Figure 28* and the warning escalations are described below:

1. **SD Due Soon –** If a successful SD cycle has not been run by the beginning of the 4th calendar day after the last successful SD Cycle, then a **Self-Disinfection Due Soon** message will be displayed. The warning remains active until a successful SD cycle is completed or the warning escalates to the next stage.
2. **SD Due –** If a successful SD cycle has not been run by the 5th day following the last successful SD cycle, then a **Self-Disinfection Due** message will be displayed. The message is added to the Active Error List and users can still run any workflow. This warning remains active until a successful SD cycle is completed or the warning escalates to the next stage.
3. **SD Overdue –** If a successful SD cycle has not been run by the beginning of the 12th calendar day following the last successful SD cycle, then a **Self-Disinfection Overdue** message will be displayed. The device then enters a lockout state, and the message is added to the Active Error List (***Figure 6***) as a persistent error. All user workflows (except disinfection) are disabled until a successful SD cycle is completed.

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**Figure 28: CORIS Self-Disinfection Cycle Warning Example Timeline**




### 4.5.1.2 *Running the CORIS Self-Disinfection Cycle*

During the self-disinfection (SD) cycle, images and animations will be displayed on the CORIS Device touch screen display to help guide you through the workflow.

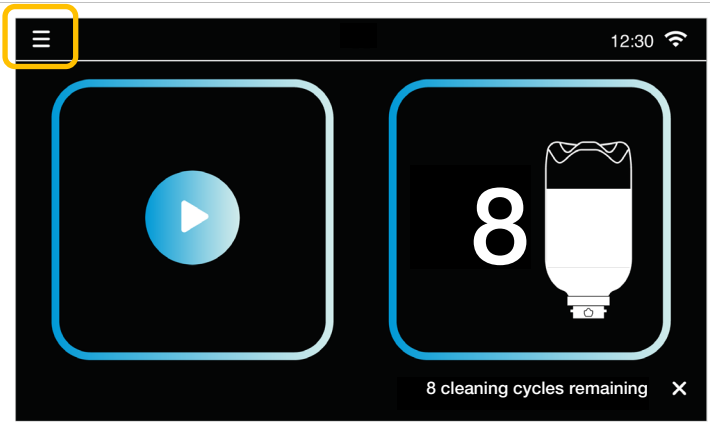
**NOTE:** Self-disinfection will require the removal of the cleaning agent bottle.

1. The CORIS Self-Disinfection Cycle must be run at least twice weekly. If not, the CORIS Self-Disinfection Cycle Due Soon alert will be displayed (Section *4.5.1.1)*. Tap the caution triangle and follow the on-screen instructions to run the cycle.




**NOTE:** To run the SD Cycle, any CORIS QUANTUM Cleaning Agent in the bottle will be purged and the bottle must be removed.

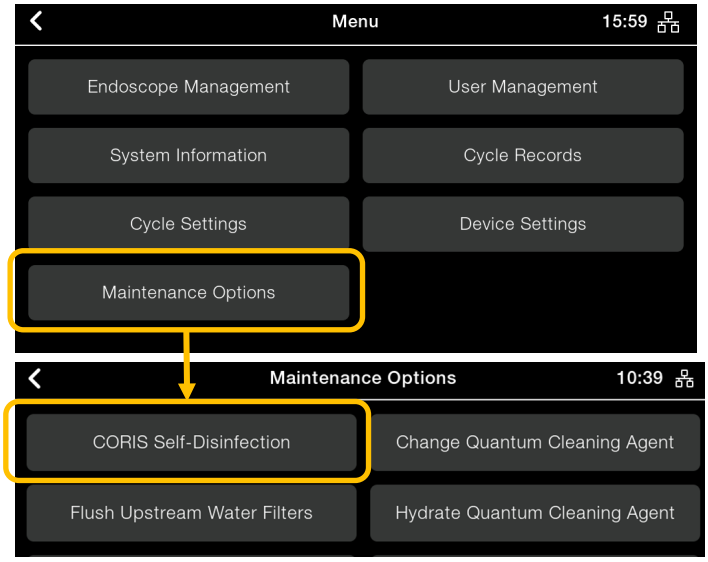
2. To start a Self-Disinfection cycle, return to the Home screen and press Menu button (shown in the top left) to display the Menu.



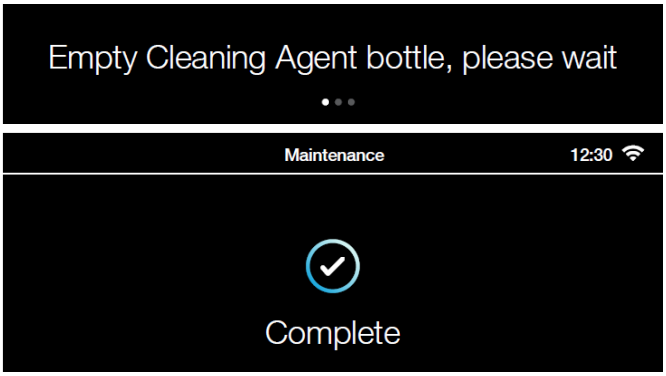

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3. Press Maintenance Options and then press CORIS Self-Disinfection.

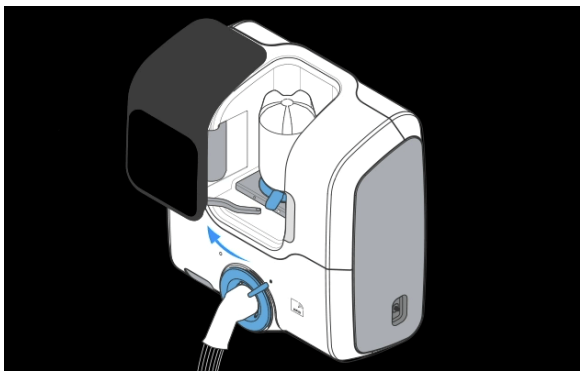
   You will need to have Operator level access to open the self-disinfection menu.




4. Empty the CORIS QUANTUM Cleaning Agent bottle if it still contains cleaning agent.

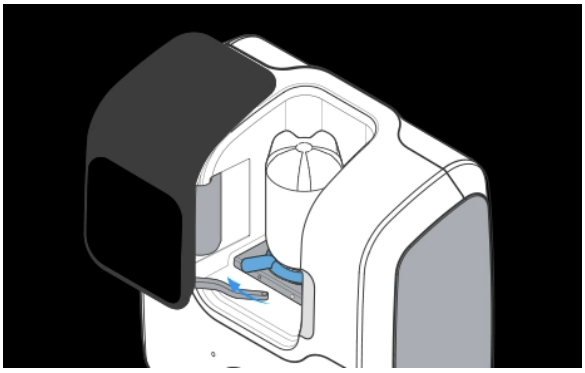



5. When prompted, open the door by moving it to the left.



6. Unlock the cleaning agent bottle and remove it.

**NOTE:** If no bottle is present, or the Bottle Plug is installed already, this step is not required.

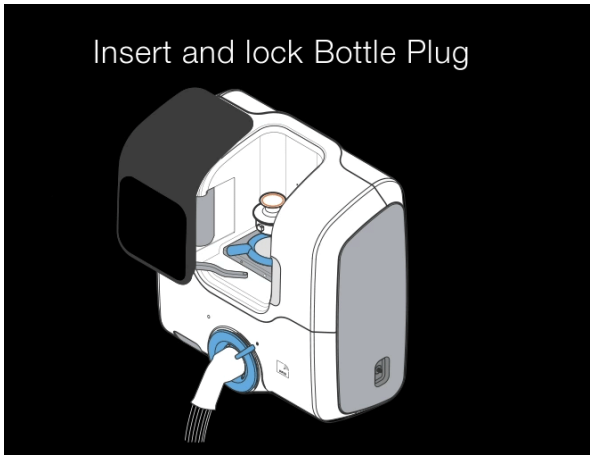


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7. Insert the CORIS Bottle Plug, aligning the alignment key with the front. The plug can only be inserted one way.

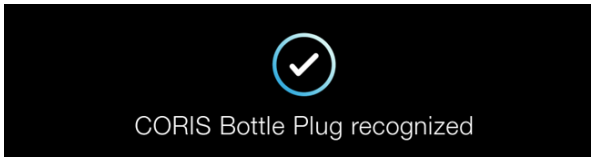
   When the plug is inserted, rotate the lever to the right to lock it in place.

**NOTE:** If the door is not locked properly the CORIS Device will display an error. Ensure the door is closed properly before continuing.




8. If the Bottle Plug is recognized a confirmation audio sound will play. Continue with the next step.

   If an error occurs, remove and reinsert the Bottle Plug.

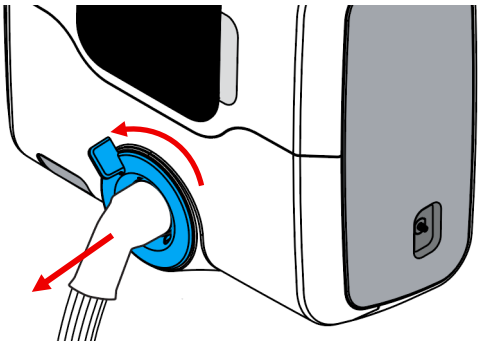






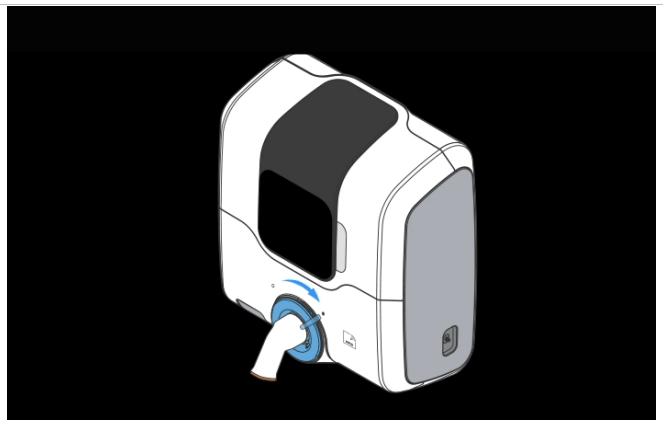
9. If the Adaptor is still connected to the CORIS Device, you will be prompted to remove it.

   To remove the adaptor, rotate the adaptor lock anticlockwise as shown and pull the adaptor out of the CORIS Device.



10. Insert the CORIS Adaptor Plug in the adaptor port. Hold the Adaptor Plug in place and rotate the adaptor lock **clockwise** to the lock position as shown.

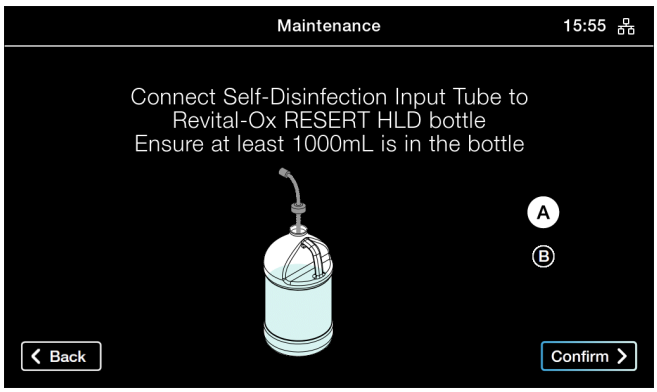
    Once the Adaptor Plug has been recognized, a confirmation screen will be briefly displayed.



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11. Unscrew the cap of the 4L Revital-Ox bottle (bottle must contain at least 1,000mL of disinfectant) and insert the filter end of the SD Input Tube into the bottle. Ensure the filter end is sitting on the bottom of the bottle.

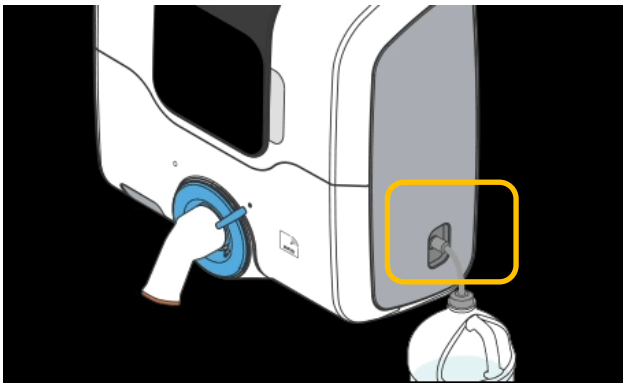
    Screw the SD Input Tube disinfectant cap onto the Revital-Ox RESERT High-level Disinfectant bottle.




**NOTE:** Keep the disinfectant bottle cap to replace after the SD cycle.

12. Connect the device connector end of the Self-Disinfection Input Tube to the CORIS Self-Disinfection Input Tube port as shown in the animation.

    Press Confirm to continue.



13. If the disinfectant bottle is empty or contains excessive bubbles, a warning screen will be displayed. Unscrew the SD Input Tube cap, check the disinfectant bottle and follow the steps:
    - Replace disinfectant bottle if empty.
    - If bubbles are present, leave the bottle for up to 1 minute, until they have disappeared.

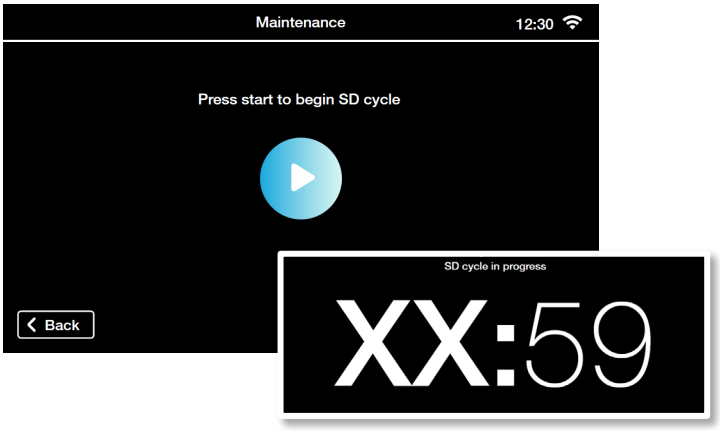
    Screw the SD Input Tube cap to the disinfectant bottle and press Retry on the screen or Cancel to fail the SD cycle. Follow the on-screen instructions.




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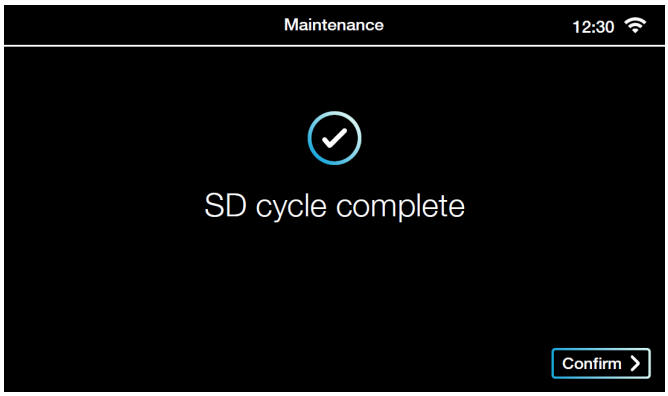
14. Press the start button to begin the cycle. A countdown timer will be displayed.

    If the disinfectant bottle runs out during the SD cycle the warning screen from the previous step will be displayed. Change the disinfectant bottle as per Step 13 and press Retry to continue the SD cycle.

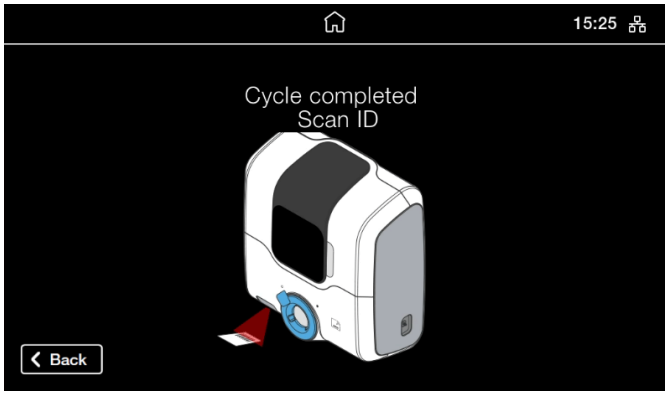



15. When the self-disinfection cycle has finished you will be notified on the display. Press Confirm to continue.

**NOTE:** Any errors occurring during the SD cycle will be reported on the screen, see Step 13.



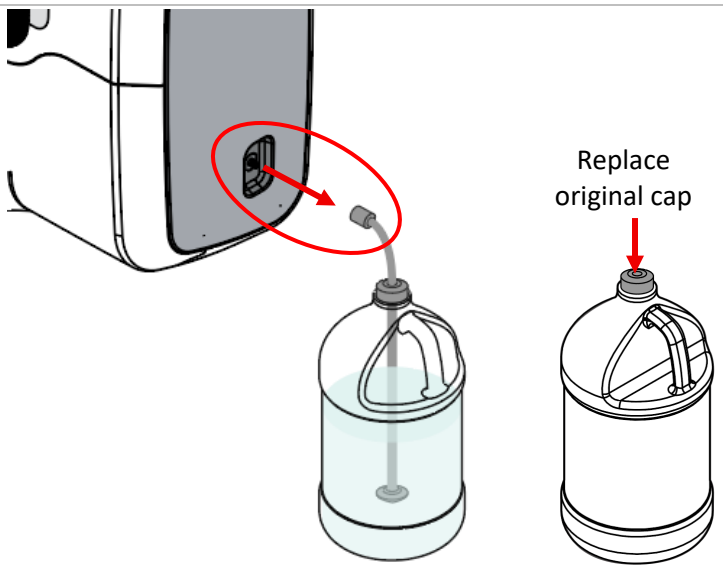

16. At the completion of the cycle, scan your Operator ID to confirm the cycle was completed.




17. Remove the Self-Disinfection Input Tube from the CORIS Device by pushing the release button (*Figure 21*) and pulling it off the CORIS Device.

    Unscrew the disinfectant cap from the disinfectant bottle and remove the filter end from the disinfectant bottle. Replace the original cap on the disinfectant bottle.

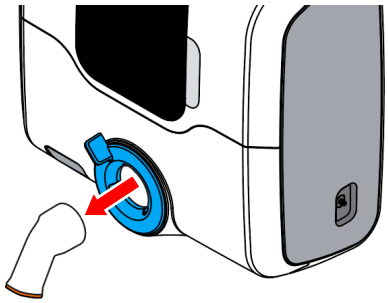
    Put the Self-Disinfection Input Tube aside for reprocessing after use.




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18. Unlock and remove the Adaptor Plug from the CORIS Device.

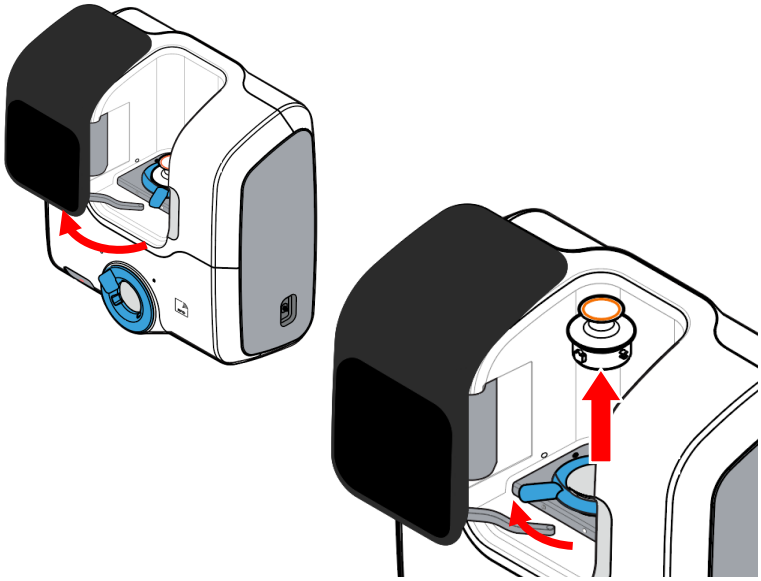
    Put the Adaptor Plug aside for reprocessing after use.



19. Open CORIS Device door and unlock and remove the Bottle Plug.

    Put the Bottle Plug aside for reprocessing after use.

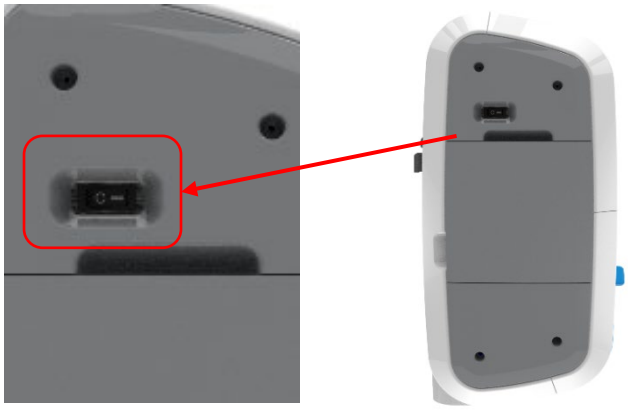
    Follow the on-screen instructions to load a new bottle of CORIS QUANTUM Cleaning Agent, see Section 3.2.2.



### 4.5.1.3 *Aborting the Self-Disinfection Cycle*

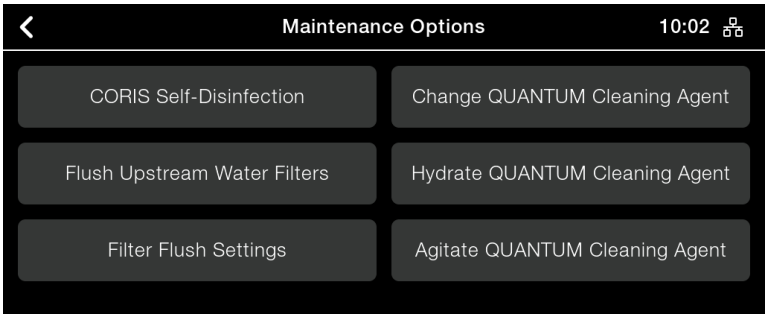
1. The self-disinfection cycle cannot be stopped after it has started.

   In an emergency, if the CORIS Device becomes unresponsive or if there is another unexpected event, the CORIS Device can be turned off using the power switch located on the left-hand side of the unit. This will stop the SD cycle and power off the device.



2. An interrupted CORIS self-disinfection cycle cannot be restarted or resumed; you will need to start a new self-disinfection cycle from the maintenance menu (see Section 4.3 or Error Code ER09-006 in Section 5.2.1).

**NOTE:** If the CORIS Device was powered off, switch it back on and follow the onscreen instructions. Then start a new SD Cycle as above.




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# 5 Troubleshooting and Support

## 5.1 Basic Troubleshooting Problems and Answers

### 5.1.1 Power Loss During Operation or Self-Disinfection

#### 5.1.1.1 *Power Cut While CORIS Device Was Idle*

1. Turn the CORIS Device off using its power switch (*Figure 2*)
2. When the power is restored turn the CORIS Device on and resume normal operation.

#### 5.1.1.2 *Power Cut During a Cleaning Cycle*

1. Turn the CORIS Device off using its power switch (*Figure 2*).
2. When the power returns turn the CORIS Device power switch on.
3. The endoscope should be considered not clean, and you should follow your facility's cleaning procedures on how to proceed with the endoscope cleaning.
4. If you are planning on restarting the CORIS Device, you will need to restart the cleaning cycle you were performing from the beginning before the power cut.
5. When restarting any cleaning cycles, you will need to disconnect and then reconnect any adaptors as instructed by the CORIS software.

#### 5.1.1.3 *Power Cut During Self-Disinfection Cycle*

1. Turn the CORIS Device off using its power switch (*Figure 2*).
2. When the power returns turn the CORIS Device power switch on.
3. You will need to restart the CORIS self-disinfection cycle you were performing from the beginning before the power cut.
4. When restarting any self-disinfection cycles, you will need to disconnect and then reconnect any self-disinfection accessories as instructed by the CORIS software.

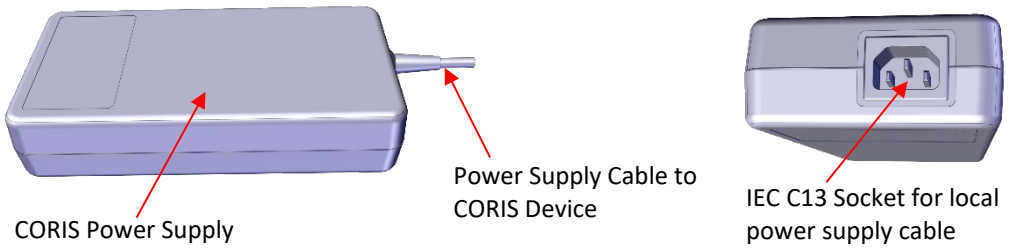
### 5.1.2 CORIS Device Will Not Turn On

- Check the power switch on the side of the device (see *Figure 2*)
- Check power supply unit (see below) and check cables are inserted firmly.

#### 5.1.2.1 *Power Supply Unit*

The CORIS Device is connected to the mains power via the CORIS power supply unit (*Figure 29*) and a region-specific power supply cable. The power supply enters the CORIS Device in the location shown in (*Figure 2*). The power supply will be mounted in a bracket near the CORIS Device; the power supply is not user serviceable. You may need to remove the power supply from the mount to inspect the IEC cable.

**Figure 29: CORIS Power Supply Unit**

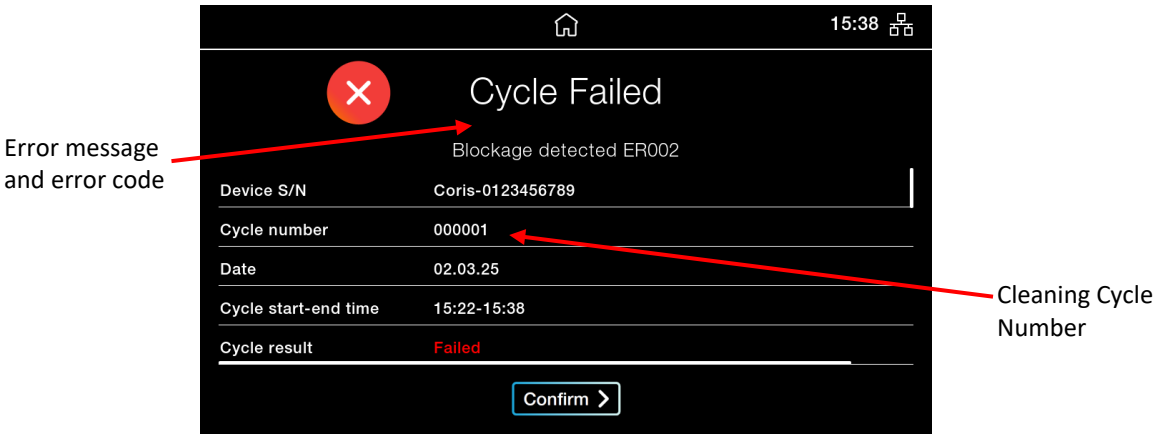



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## 5.2 Errors

If an error occurs a message will be displayed and any cycles running will be aborted. If a blank screen appears, turn the CORIS Device off and then on again (see *Figure 2*). If a cleaning or SD cycle is interrupted, then the cleaning process should be considered failed. Take note of the error code (*Figure 30*), it will also be stored in the System log, then follow the screen instructions to re-start the CORIS cleaning cycle with the endoscope or follow your facility's procedure to manually clean the endoscope. Tap **Confirm** to clear the error and silence any alarms. Follow any onscreen instructions, further troubleshooting steps for each error code can be found in Section *5.2.1*.

**Figure 30: Example Error Code Screen**




**When a cycle fails or a "Cycle Passed" message is not displayed, the endoscope is considered not cleaned. If this occurs the endoscope must be recleaned as per your facility's procedures. Refer to Section *5.2.1* for assistance with any error messages.**

**If you encounter an error not listed below, contact Nanosonics Service.**

**Only authorised customer service or suitably trained personnel should service the CORIS Device with genuine parts supplied from Nanosonics.**

### 5.2.1 Error Codes and Troubleshooting Steps

The following table contains the error codes and any recommended troubleshooting steps.

| Error Code | Error Description | Troubleshooting Steps |
|---|---|---|
| ER00 | ER00-081: Drip tray is full | 1. If this error occurs, run the cleaning cycle again<br>2. If problem persists, contact Nanosonics Service |
| ER01 | ER01-001: Internal Software Error<br>ER01-002: Missing Process Parameter<br>ER01-003: Bottle not present<br>ER01-004 to ER01-006: Internal Software Error | 1. If this error occurs, run the cleaning cycle again<br>2. If the problem persists, contact Nanosonics Service. |
| | ER01-007: Self-disinfection cycle has failed. | 1. If this error occurs, run the self-disinfection cycle again<br>2. If the problem persists, contact Nanosonics Service. |

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| Error Code | Error Description | Troubleshooting Steps |
|---|---|---|
| ER02 | ER02: Blockage Detected Cycle Failed<br>ER02-001: Blockage detected in Suction port at start of cycle<br>ER02-002: Blockage detected in Biopsy port at start of cycle<br>ER02-003: Blockage detected in Auxiliary port at start of cycle<br>ER02-004: Blockage detected in Air/Water port at start of cycle<br>ER02-005: Blockage detected in Air/Water port at start of cycle<br>ER02-006: Blockage detected<br>ER02-007: Blockage detected<br>ER02-011: Blockage detected in Suction port during cleaning cycle<br>ER02-012: Blockage detected in Biopsy port during cleaning<br>ER02-013: Blockage detected in Auxiliary port during cleaning<br>ER02-014: Blockage detected in Air/Water port during cleaning<br>ER02-016: Blockage detected in Air water (AWC1) channel nozzle during cleaning<br>ER02-017: Blockage detected in Air water (AWC2) channel nozzle during cleaning<br>ER02-021: Blockage detected during post cleaning rinse<br>ER02-026: Blockage detected during post cleaning rinse<br>ER02-030: Blockage detected pre-existing blockage detected<br>ER02-031: Blockage detected, Endoscope blockage maintenance workflow failed to unblock the endoscope | For all ER02 error codes:<br>1. Retry the cleaning cycle.<br>2. If the problem persists and you have error code ER02-001, 002, 011 or 012, then follow your facility's procedure for manual cleaning of blocked endoscope as per the manufacturer's instructions.<br>3. For any other ER02 error codes except ER02-032 (see below) contact Nanosonics |
| | ER02-032: Blockage detected | 1. Check the adaptors and tubing for any kinks or damage.<br>2. Retry the workflow.<br>3. If the problem persists, contact Nanosonics Service. |
| ER04 | ER04-001: Self-Disinfection Cycle Has Failed. Purge Failed | 1. Restart the workflow.<br>2. If the problem persists, contact Nanosonics Service. |
| ER07 | Utility input pressure Error<br>ER07-001: Input air under pressure detected<br>ER07-002: Input air over pressure air detected<br>ER07-003: Input water under pressure detected<br>ER07-004: Input water over pressure detected<br>ER07-005: under pressure detected from water pressure regulator<br>ER07-006: Over pressure detected from water pressure regulator<br>ER07-007: Low water pressure detected | For all ER07 error codes:<br>1. Retry the workflow<br>2. If the error persists, contact your facility manager. |
| ER08 | ER08-001 to ER08-006: Loose connection detected | 1. Check all endoscope adaptor connections<br>2. Re-run the cycle |
| | ER08-007: Loose Connection (detected during CORIS Adaptor reprocessing cycle). | 1. Check all CORIS Adaptor Reprocessing Hub connections by disconnecting and reconnecting them all.<br>2. Restart the workflow.<br>3. If the problem persists, contact Nanosonics Service. |
| ER09 | ER09-001: Power Outage during hydration | 1. If the power remains off, turn the CORIS Device off at the power switch (*Figure 2*). |

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| Error Code | Error Description | Troubleshooting Steps |
|---|---|---|
| | | 2. When the power returns turn the CORIS Device power switch on.<br>3. Hydrate the QUANTUM bottle using the hydration function (See 4.3.1.3)<br>4. Change the QUANTUM bottle if hydration fails. |
| | ER09-002 to ER09-005: Power Outage during cleaning | If this occurs during the cleaning cycle, the endoscope is considered not clean. Refer to section 5.1.1. |
| | ER09-006: Power Outage during self-disinfection | If the CORIS Device was performing a self-disinfection during the power cut, refer to Section 5.1.1. |
| | ER09-007: Power Outage | If the CORIS Device was performing a self-disinfection during the power cut, refer to Section 5.1.1. |
| | ER09-008: Power Outage during Adaptor Reprocessing | 1. Turn the CORIS Device off using its power switch (Figure 2).<br>2. When the power returns turn the CORIS Device power switch on.<br>3. You will need to restart the Adaptor Reprocessing workflow you were performing before the power cut.<br>4. Please note that adaptor reprocessing starts automatically upon pressing the Power button in the GUI. Ensure all connections are made beforehand. |
| | ER09-009: Power Outage During Hydration | 1. If the power remains off, turn the CORIS Device off at the power switch (Figure 2).<br>2. When the power returns turn the CORIS Device power switch on.<br>3. Hydrate the QUANTUM bottle using the hydration function (See 4.3.1.3). |
| ER10 | ER10-001 to 002: Water temperature out of range | 1. Check the input water supply to ensure the temperature is within the correct temperature range (Section 6.1).<br>2. Contact your facility management and ensure water temperature is within the correct range.<br>3. Repeat the cleaning workflow.<br>4. If the problem persists, contact Nanosonics Service. |
| ER12 | ER12-001: Disinfectant bottle empty | 1. Make sure the bottle has at least 1,000mL of disinfectant and the filter end of the SD Input Tube is fully submerged.<br>2. Replace the bottle and press retry or re-run the self-disinfection cycle from the start.<br>3. If the problem persists, contact Nanosonics Service |

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| Error Code | Error Description | Troubleshooting Steps |
|---|---|---|
| | ER12-002 and ER12-003: Self-Disinfection priming time out<br>ER12-004: Self-Disinfection tank overflow detected<br>ER12-005 to ER12-006: Self-Disinfection tank error<br>ER12-008 to ER12-010: Self-Disinfection cycle internal error | 1. Re-run the self-disinfection cycle<br>2. If the problem persists, contact Nanosonics Service |
| | ER12-011: Disinfectant Bottle Empty | 1. Make sure the bottle has at least 1,000mL of disinfectant and the filter end of the SD Input Tube is fully submerged.<br>2. Replace the bottle and re-run the Adaptor reprocessing workflow from the start.<br>3. If the problem persists, contact Nanosonics Service |
| ER13 | ER13-001: Cleaning Cycle has been cancelled by the operator<br>ER13-002: Workflow has been cancelled by operator<br>ER13-003: Adaptor Reprocessing cycle has been cancelled by the operator. | Not required. |
| ER14 | ER14-003 to ER14-007: Critical parameters out of range | 1. Re-run the cleaning cycle.<br>2. If the problem persists, agitate the CORIS QUANTUM via the maintenance menu (Section 4.3) or replace the CORIS QUANTUM bottle and re-run the cycle.<br>3. If the problem persists, contact Nanosonics Service. |
| ER15 | ER15-001: Cycle Failed Drip tray is full | 1. Follow the on-screen instructions to remove the CORIS QUANTUM bottle currently installed in the CORIS Device.<br>2. Insert a Bottle Plug and close the device door.<br>3. Contact Nanosonics Service<br>**NOTE:** When this error occurs, the device cannot be used to clean endoscopes until the issue has been resolved. The CORIS Device can still be used to perform self-disinfection and Adaptor Reprocessing functions. |
| | ER15-002: Self-Disinfectant cycle has failed. Drip tray is full. | When this error occurs, the device cannot be used until the issue is resolved. Contact Nanosonics Service. |
| ER17 | ER17-001: Invalid Time | CORIS internal clock is incorrect, contact Nanosonics Service. |
| ER21 | ER21-001: Door is not closed correctly | 1. If this error occurs, make sure door is closed and press it in on the righthand side to ensure it latches.<br>2. Retry the cycle again.<br>3. If the problem persists, contact Nanosonics Service. |
| ER70 | ER70-001 to ER70-006: Internal System Error | 1. Repeat the cleaning cycle.<br>2. If the problem persists, contact Nanosonics Service. |

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| Error Code | Error Description | Troubleshooting Steps |
|---|---|---|
| | ER70-007 to ER70-008: Internal System Error | 1. Repeat the adaptor reprocessing workflow.<br>2. If the problem persists, contact Nanosonics Service. |
| ER77 | ER77-001: QUANTUM Cleaning Agent bottle Pressure Error<br>ER77-003 to 012: QUANTUM Cleaning Agent bottle Pressure Error | 1. Follow the on-screen instructions to remove the CORIS QUANTUM bottle currently installed in the CORIS device.<br>2. Locate a new CORIS QUANTUM bottle and inspect it for damage.<br>3. Insert the new CORIS QUANTUM bottle into the CORIS Device and close the door<br>4. Hydrate the new bottle.<br>5. If the problem persists, contact Nanosonics Service. |

# 5.3 Equipment Maintenance

## 5.3.1 Water Filter Flush

If a water filter is installed upstream of the CORIS Device and the CORIS Device has not been used for some time, there is a possibility that water retained in the filter may become stagnant. To prevent this an automatic water filter flush is performed regularly by the CORIS Device. These settings are controlled via the Filter Flush settings in the Maintenance Menu. See sections *4.3.1.5* and *4.3.1.6* for more detail.

## 5.3.2 Air Preparation Unit

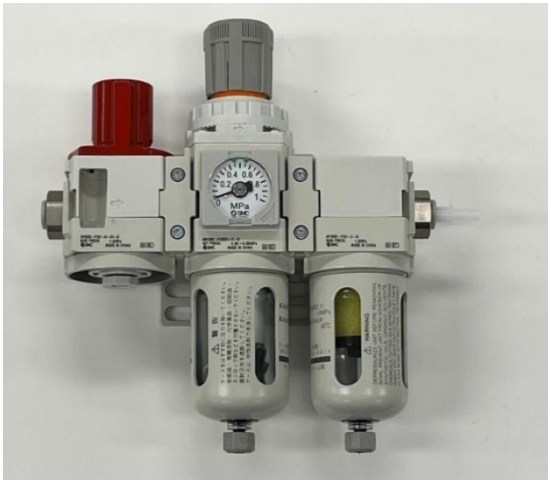
The air preparation system removes moisture/oil and contaminants from the building air supply before being used in the CORIS Device. The air preparation unit will require regular inspection and maintenance.

The air preparation unit (*Figure 31*) will be located near the CORIS Device but slightly separate from it. The unit may be mounted on the wall, near the CORIS water controls or underneath the sink.

- Use the inspection windows to check for fluid buildup in both filters. This should be done regularly by the CORIS user. If fluid is present, unscrew the fluid drain nut to allow any water/fluid to drain out of the housing.
- Depending on the rate of fluid build-up in the filters you may wish to adjust the filter inspection schedule.
- The filters should be changed yearly or more regularly if deemed necessary by facilities management.
- To change the filters, unscrew the retaining screw at the bottom of the filter and remove. Replace the filter with an equivalent filter.

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**Figure 31: CORIS Device Air/Water Separators**



### 5.3.3 Disposing of QUANTUM Cleaning Agent

CORIS QUANTUM is non-hazardous and non-toxic, and it can be disposed of as per your local regulations. Refer to the CORIS QUANTUM safety data sheet on the Nanosonics website for more information.

## 5.4 Contact Us

If you have any further questions or require additional information on how to use the CORIS System, contact your customer service team or visit the websites on the back page of this user manual.

| | | | |
|---|---|---|---|
| | Manufactured by:<br>**Nanosonics Limited**<br>(Australia) | 3-5 Thomas Holt Drive<br>Macquarie Park NSW 2113, Australia | **P:** +61 2 8063 1600<br>**E:** customerservice@nanosonics.com.au<br>**W:** www.nanosonics.com |
| | **Nanosonics, Inc.**<br>(USA) | 7205 E. 87th Street<br>Indianapolis, Indiana 46256 | **P:** +1-844-876-7466<br>**E:** customerservice@nanosonics.us<br>**W:** www.nanosonics.us |
| EC REP | **Nanosonics Europe GmbH** | Poppenbütteler Bogen 66<br>22399 Hamburg, Germany | **P:** +49 40 46856885<br>**E:** customerservice@nanosonics.eu<br>**W:** www.nanosonics.eu |
| | **Nanosonics UK Limited** | Ground Floor at The Forum<br>Unit C1 & C2, Hercules Business Park,<br>Bird Hall Lane, Stockport, SK3 0UX, UK | **P:** +44 (0) 161 686 3030<br>**E:** customerservice@nanosonics.co.uk<br>**W:** www.nanosonics.co.uk |

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# 6 Specifications

## 6.1 Technical

| | |
|---|---|
| **CORIS System Electrical Specification** | **Rated mains input to the power supply unit (PSU)**: 100–240V AC~4 Amp, 50–60 Hz.<br>**Input connector**: IEC type C14.<br>**PSU Output**: 24 VDC @ 10.42A.<br><br>**DC Power Input**<br>**Rated Voltage**: 24V<br>**Rated Frequency**: DC<br>**Rated Input Current**: 10.42 A Class II (Double Insulated).<br><br>**Power Supply to CORIS power cord length (low voltage)**: 2 metres.<br>Equipment must be connected to an earthed outlet using the power supply adaptor provided with the CORIS System. No other adaptor must be used. |
| **Operating System** | Wittenstein's SAFERTOS |
| **Environmental Specifications** | Indoor use only. The CORIS Device and the supplied power supply must not be placed in a wet area. Please refer to local regulatory standards for the minimum distance between the PSU and the wet area for compliance.<br>**Operating temperature range**: 18°C to 25°C (64.4°F to 77°F)<br>**Relative humidity**: 20% to 80% (standard laboratory and endoscope reprocessing conditions.)<br>**Overvoltage Category**: II.<br>**Pollution Degree**: 2<br>**Maximum Altitude**: 2,000m |
| **Physical Characteristics** | **When Packaged**<br>**Weight**: 65 kg (143.3 lbs).<br>**Dimensions** (**H×W×D**): 849 mm × 721mm × 448mm (33.4" × 28.4" × 17.6")<br><br>**When Unpacked**<br>**Weight of CORIS System**: 37kg (81.6 lbs).<br>**Wet** (with cleaning agent and wall mount): ~44kg (97 lbs).<br>**Dimensions of CORIS Device (H×W×D)**: 590 mm × 547 mm × 320 mm (23.2" × 21.5" × 12.6") |

## 6.2 EMC Compliance

**FCC ID:** 2AM5R-CORIS
**IC:** 22999-CORIS

**FCC Label Location:** See ***Figure 2***

### FCC RF Exposure Statement

This equipment complies with the FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 cm (8 inches) between the radiator and all persons during normal operation.

### Notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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This device complies with Part 15 of the FCC Rules and with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference; and
2. This device must accept any interference, including interference that may cause undesired operation of the device.

**Warning. Any changes or modifications not expressly approved by Nanosonics could void the user's authority to operate this equipment.**

The CORIS Device includes a high frequency radio frequency identification (HF RFID) reader that operates at 13.56MHz.

The CORIS is also equipped with a Wi-Fi 5 (IEEE 802.11a/b/g/n/ac) module. It has the following certifications:

- FCC ID: SQG-LWB5PLUS
- Canada (ISED) 3147A-LWB5PLUS
- Japan (MIC) 201-200402

**Complies with:**

- IEC 60601-1-2:2020
- CISPR 11:2015+AMD1:2016+AMD2:2019 Class A
- FCC Part 15 Subpart C Section 15.225
- 47 CFR Part 15 Subpart B
- 47 CFR Part 2.1091
- EN 301 489-1
- EN 300 330
- EN 300 328
- EN 301 893
- KDB447498 (FCC)
- IEC 62311 (CE)
- CAN ICES-003 (A) / NMB-003 (A)
- UK Electrical Equipment Safety Regulations 2016 (SI 2016/1101)
- UK Electromagnetic Compatibility Regulations 2016 (SI 2016/1091)

This device is intended to be used in hospital endoscope reprocessing areas only. It is intended to automatically clean endoscope lumens. If you suspect the CORIS Device is being affected by other devices located close by, try moving the other device further away. If the issue persists then contact Nanosonics Service.

**NOTE:** The emission characteristics of this equipment make it suitable for use in industrial areas and hospitals (CISPR 11 class A) only. If it is used in a residential environment (for which CISPR 11 class B is normally required) this equipment might not offer adequate protection from radio-frequency communication services. The user may need to take mitigation measures, such as relocating or re-orienting the equipment.

**Warning. Use of the CORIS Device adjacent to, or stacked with, other equipment should be avoided as it may result in improper operation. If such use is necessary, this equipment and the other equipment should be observed to verify that they are operating normally.**

**Warning. Use of accessories, transducers and cables other than those specified or provided by the manufacturer of the CORIS Device may result in increased electromagnetic emissions or decreased electromagnetic immunity of this equipment and result in improper operation. The CORIS Device is only to be used with the supplied power adaptor and a Cat 5e or better Ethernet cable.**

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**Warning. Portable RF communications equipment (including peripherals such as antenna cables and external antennae) should be used no closer than 30 cm (12 inches) to any part of the CORIS Device, including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result.**

### Electromagnetic Emission Compliance Information and Guidance

| Guidance and Manufacturer Declaration – Electromagnetic Emissions | | |
|---|---|---|
| The CORIS Device and related components are intended for use in the following prescribed electromagnetic environments only. Customers and users of this product are advised to check that it is being used in such environments. | | |
| **Emissions Test** | **Compliance** | **Electromagnetic Environment - Guidance** |
| Radiated Emissions<br>CISPR 11 | Class A (Group 1) | The emissions characteristics of this equipment make it suitable for use in industrial areas and hospitals only. It is not suitable for use in domestic environments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes. |
| Conducted Emissions<br>CISPR 11 | Class A (Group 1) | |
| Harmonic Emissions<br>IEC 61000-3-2 | Not Applicable | |
| Voltage Fluctuations/Flicker Emissions<br>IEC 61000-3-3 | Not Applicable | |

The CORIS Device includes an HF RFID reader that operates at 13.56MHz using On-Off Keying (OOK). The maximum Effective Radiated Power (ERP) is 1.1µW.

The Wi-Fi module transmits in both the 2.4 GHz and 5 GHz frequency bands using the following modulation types:

- Direct Sequence-Spread Spectrum (DSSS)
- Complementary Code Keying (CCK)
- Orthogonal Frequency Division Multiplexing (OFDM).

The maximum Effective Radiated Power (ERP) is 155mW.

### Electromagnetic Immunity Compliance Information and Guidance

| Guidance and Manufacturer Declaration – Electromagnetic Immunity | | | |
|---|---|---|---|
| The CORIS Device and related components are intended for use in the following prescribed electromagnetic environments only. Customers and users of this product are advised to check that it is being used in such environments. | | | |
| **Immunity Test** | **IEC 60601 Test Level** | **Compliance Level** | **Electromagnetic Environment - Guidance** |
| Electrostatic Discharge (ESD)<br>IEC 61000-4-2 | ± 8 kV contact<br>± 2 kV air<br>± 4 kV air<br>± 8 kV air<br>± 15 kV air | ± 8 kV contact<br>± 2 kV air<br>± 4 kV air<br>± 8 kV air<br>± 15 kV air | Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30% |
| Electrical Fast Transient/Burst<br>IEC 61000-4-4 | ±2 kV for power supply lines<br>±1 kV for input/output lines | ±2 kV for power supply lines<br>±1 kV for input/output lines | Mains power quality should be that of a typical commercial or hospital environment. |
| Surge<br>IEC 61000-4-5 | 0.5 and 1.0 kV (Line to Line)<br>0.5, 1.0 and 2.0 kV (Line to Earth)<br>2.0 kV for Signal Input/Output (Line to Earth) | 0.5 and 1.0 kV (Line to Line)<br>0.5, 1.0 and 2.0 kV (Line to Earth)<br>2.0 kV for Signal Input/Output (Line to Earth) | Mains power quality should be that of a typical commercial or hospital environment. |
| Voltage Dips/ Dropout<br>IEC 61000-4-11 | 0% UT for 0.5 cycles<br>(0°, 45°, 90°, 135°, 180°, 225°, 270°, 315°)<br>@ 50/60 Hz<br><br>0% UT for 1 cycle (0°) @ 50 /60 Hz | 0% UT for 0.5 cycles<br>(0°, 45°, 90°, 135°, 180°, 225°, 270°, 315°)<br>@ 50/60 Hz<br><br>0% UT for 1 cycle (0°) @ 50 /60 Hz | Mains power quality should be that of a typical commercial or hospital environment. |

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| | | | |
|---|---|---|---|
| | 70% UT (30% dip in UT) for 25/30 cycles (0°)<br>@ 50 /60 Hz<br><br>0% UT for 250/300 cycles (0°) @ 50 /60 Hz | 70% UT (30% dip in UT) for 25/30 cycles (0°)<br>@ 50 /60 Hz<br><br>0% UT for 250/300 cycles (0°) @ 50 /60 Hz | |
| Radiated RF<br>IEC 61000-4-3 | 80 MHz to 2.7 GHz; 3 V/m<br>380 – 290 MHz; 27 V/m<br>430 – 470 MHz; 28 V/m<br>704 – 787 MHz; 9 V/m<br>800 – 960 MHz; 28 V/m<br>1700 – 1990 MHz; 28 V/m<br>2400 – 2570 MHz; 28 V/m<br>5100 – 5800 MHz; 9 V/m | 80 MHz to 2.7 GHz; 3 V/m<br>380 – 290 MHz; 27 V/m<br>430 – 470 MHz; 28 V/m<br>704 – 787 MHz; 9 V/m<br>800 – 960 MHz; 28 V/m<br>1700 – 1990 MHz; 28 V/m<br>2400 – 2570 MHz; 28 V/m<br>5100 – 5800 MHz; 9 V/m | Portable RF communications equipment (including peripherals such as antenna cables and external antennae) should be used no closer than 30 cm (12 inches) to any part of the CORIS Device, including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result.<br>Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, should be less than the compliance level in each frequency range. Interference may occur in the vicinity of equipment marked with the symbol: |
| Conducted RF<br>IEC 61000-4-6 | 0.15 to 80 MHz, 3V rms<br>6 V in ISM bands between 0.15 MHz and 80 MHz | 0.15 to 80 MHz, 3V rms<br>6 V in ISM bands between 0.15 MHz and 80 MHz | |
| Proximity magnetic fields<br>IEC 61000-4-39 | 30 kHz, CW Modulation; 8A/m<br><br>134.2 kHz, Pulse modulation 2.1 kHz; 65A/m<br><br>13.56 MHz, Pulse modulation 50 kHz; 7.5A/m | 30 kHz, CW Modulation; 8A/m<br><br>134.2 kHz, Pulse modulation 2.1 kHz; 65 A/m<br><br>13.56 MHz, Pulse modulation 50 kHz; 7.5 A/m | Suitable for use in a typical commercial or hospital environment. |

**Recommended Separation Distances Between Portable and Mobile RF Communications Equipment and the CORIS Device.**

The CORIS Device and related components are intended for use in the electromagnetic environment in which radiated RF disturbances are controlled. The Customer or the user can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the CORIS Device as recommended below, according to the maximum output power of the communications equipment.

| Rated maximum output power of transmitter W | Separation distance according to frequency of transmitter (in metres) | | |
|---|---|---|---|
| | 150 kHz to 80 MHz<br>$d = \left[\frac{3.5}{3}\right]\sqrt{P}$ | 80 MHz to 800 MHz<br>$d = \left[\frac{3.5}{3}\right]\sqrt{P}$ | 800 MHz to 2.5 GHz<br>$d = \left[\frac{7}{3}\right]\sqrt{P}$ |
| 0.01 | 0.12 | 0.12 | 0.23 |
| 0.1 | 0.38 | 0.38 | 0.73 |
| 1 | 1.2 | 1.2 | 2.3 |
| 10 | 3.8 | 3.8 | 7.3 |
| 100 | 12 | 12 | 23 |

For transmitters rated at a maximum output power not listed above, the recommended separation distance *d* in metres (m) can be estimated using the equation applicable to the frequency of the transmitter, where *P* is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

**NOTE:** At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies. These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

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# 6.3 Cybersecurity

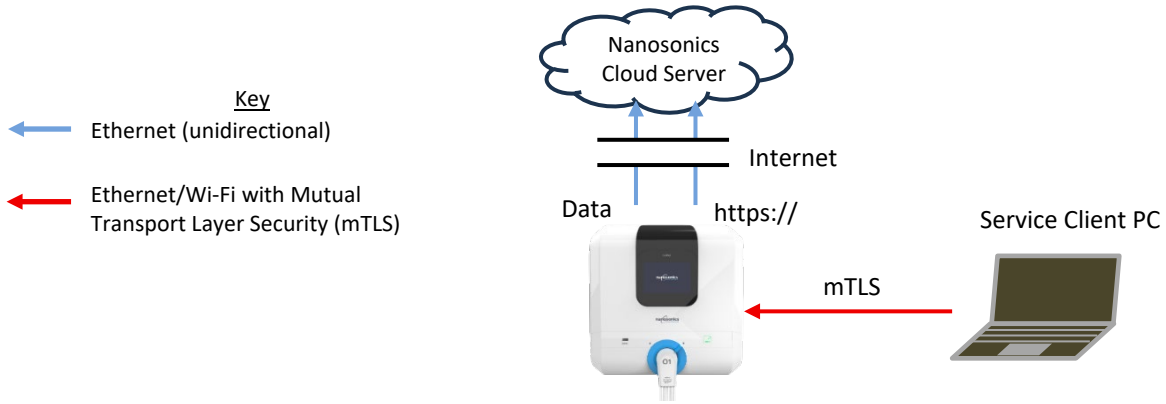
| | |
|---|---|
| ⓘ | **Protect your hospital network and restrict unauthorised access to both the network and any connected medical devices. Monitor network activity and keep antivirus and firewalls updated. Consult Nanosonics Service if you notice any inconsistencies or strange behaviour from the CORIS Device.** |

It is recommended the CORIS Device be connected to the hospital network via Ethernet cable, to ensure software updates can be made. Software updates are critical to ensure the CORIS Device has the latest features and best protection available. Consult your IT department to set up the network at the time of installation. If required, you can request a copy of the Manufacture Disclosure Statement for Medical Device Security (MDS2) from your customer service team. (See Section 5.4).

## 6.3.1 CORIS Cybersecurity Architecture

The network environment used by the CORIS Device is shown in *Figure 32*. All CORIS Devices are installed with a unique, Nanosonics-issued device certificate during the manufacturing process. Service Client PC can only connect to the CORIS Device via mTLS if they also possess a valid Nanosonics-issued digital client certificate. If connection is attempted with a non-Nanosonics-issued certificate the connection will be rejected by the CORIS Device, preventing unauthorised service access.

**Figure 32: Cybersecurity Architecture**




## 6.3.2 CORIS Software

### 6.3.2.1 *Software Bill of Materials (BOM)*

If required, you can request a Software BOM information from your Nanosonics service team. (Section 5.4)

### 6.3.2.2 *Updates*

The CORIS software can be updated via cloud connection and shall automatically reboot when complete. Alternatively, updates can be conducted during a routine service. The upgraded connections are shown within the Cyber Architecture ( *Figure 32*).

### 6.3.2.3 *Software Log Files*

Software log files are not available. Any abnormal events will be recorded in the CORIS Device logs. These are not user-accessible but may be accessed by a Nanosonics representative using Service software.

### 6.3.2.4 *CORIS Device Protective Features*

The CORIS Device implements strong cryptographic protection on network communications (see Section 6.3.1). Network communications are limited to only the essential web services for the CORIS Service

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Software and NanoStudio. These services require approved security certificates to allow access; all other network communications are ignored.

#### 6.3.2.5 *Backup and Restore Features and Restoring Authenticated Users*

Your CORIS Device configuration is verified along with the device software to create an intrinsic set of parameters used to operate the device. Since the device configuration is part of the software, there is no need to backup, restore or change this configuration.

#### 6.3.2.6 *CORIS Device End-of-life and Secure Decommissioning*

The CORIS Device software is prepared by Nanosonics and does not depend upon external components for operation. As such, Nanosonics can provide support for upgrades of the device software into the future. There is no patient information stored on the CORIS Device. Decommissioning of the device is acceptable without erasure of data.

#### 6.3.2.7 *CORIS Device Software Licenses*

The CORIS software uses statically linked components that are under MIT, GPL and Apache-2.0 licenses.

- MIT license **[1]**: LVGL, Microtar, rapidJSON, SMalloc, kk_ihex and coreSNTP
- GPL license **[2]:** PCRE and FFmpeg
- U-boot with GPL-2 license **[3]**.
- Apache-2.0 license **[4]:** WHD
- SAFERTOS **[5]**
- Mongoose **[6]**

Please see below for links to the referenced license notes:

**[1]** https://opensource.org/license/mit

**[2]** https://www.gnu.org/licenses/old-licenses/gpl-1.0.txt

**[3]** https://www.gnu.org/licenses/old-licenses/gpl-2.0.txt

**[4]** https://www.apache.org/licenses/LICENSE-2.0.txt

**[5]** https://www.highintegritysystems.com/safertos/

**[6]** https://mongoose.ws/

- Refer to section *6.3.2.1* if you require the full license list.

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# 7 Appendix 1 – CORIS Accessories

The accessories below are designed for use with the CORIS Device and are available for purchase separately to the CORIS Device:

**CORIS Adaptor**

The CORIS Adaptor is required to connect the CORIS Device to the endoscope.

**CORIS QUANTUM Cleaning Agent**

CORIS QUANTUM Cleaning Agent is the bottle of cleaning agent used with the CORIS Device.

**CORIS Smart Seal**

A 24-hour use only accessory to cover the distal end of the endoscope during each cleaning cycle.

**CORIS Smart Drain Adaptor**

The CORIS Smart Drain Adaptor is required to connect the endoscope to the Smart Drain port to direct effluent into the drain.

**CORIS Adaptor Reprocessing Hub**

A connection hub that allows for automated reprocessing of the CORIS Smart Drain Adaptor and the CORIS Adaptor using the CORIS Device.

**CORIS Maintenance Kit**

A kit enabling self-disinfection of the CORIS Device.

**CORIS Label Printer**

A small label printer that connects to the CORIS Device via USB. Used to print identification labels for cleaned endoscopes. Visit *https://www.nanosonics.com/coris-label-printer-instructions* or scan the QR code below for further information.

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