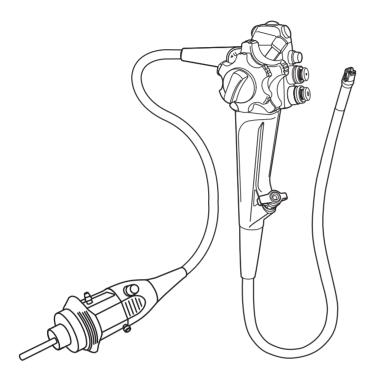
### **OLYMPUS**

## REPROCESSING MANUAL

## **EVIS EXERA III**

DUODENOVIDEOSCOPE

**OLYMPUS TJF-Q190V** 



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Chanter 1

#### **Accessories for Reprocessing**



Channel

plug (MH-944)







Injection tube (MH-946)



Suction cleaning adapter (MH-856)



Distal-end flushing adapter (MAJ-2319)

#### **Accessories for Procedure**





Mouthpiece (MA-392)

Air/water valve (MH-438)







Channel cleaning brush (BW-20T)



Channelopening cleaning brush (MH-507)



Single use combination cleaning brush (BW-412T)



Biopsy valve (MB-358)



Suction valve (MH-443)

Refer to the endoscope's companion manual, the "OPERATION MANUAL" with your endoscope model listed on the cover, for operation information.



#### CAUTION

For USA, Federal law restricts this device to sale by or on the order of a physician.

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# 1

## **General Policy**

#### 1.1 Instructions

#### 1.1.1 About this manual

 This manual provides detailed instructions for reprocessing the EVIS EXERA III DUODENOVIDEOSCOPE OLYMPUS TJF-Q190V and accessories listed below.

#### **Accessories for Reprocessing:**

- Suction cleaning adapter (MH-856)
- Injection tube (MH-946)
- ETO cap (MB-156)
- Channel cleaning brush (BW-20T)
- Distal-end flushing adapter (MAJ-2319)
- Channel plug (MH-944)
- AW channel cleaning adapter (MH-948)
- Channel-opening cleaning brush (MH-507)
- Single use combination cleaning brush (BW-412T)

#### **Accessories for Procedure:**

- Biopsy valve (MB-358)
- Air/water valve (MH-438)
- Suction valve (MH-443)
- Mouthpiece (MA-392)

- This instruction manual contains essential information on reprocessing endoscopes and accessories safely and effectively.
- Before reprocessing, thoroughly review this manual and the manuals for the reprocessing equipment and chemicals that will be used for reprocessing. Reprocess all the devices as instructed.
- The accessories listed cannot be refurbished or repaired. The accessories need to
  be replaced once they show any signs of wear and tear. Should any irregularity be
  observed, use a replacement accessory instead. Using defective accessories may cause
  equipment malfunction, reduce the efficacy of reprocessing, present a risk to patients
  and/or operators, or damage the endoscope and/or accessories.



- The "Reprocessing" manual (this manual) and the "Operation" manual together form the complete set of instructions for the EVIS EXERA III DUODENOVIDEOSCOPE OLYMPUS TJF-Q190V and the listed accessories. Both manuals accompanied the endoscope at shipment.
- Keep this manual and all related manuals in a safe and accessible location (e.g., in the reprocessing area).
- If you have any questions or comments about any information in this manual, or if a problem occurs while reprocessing, contact Olympus. Refer to the contacts listed on the last page.

#### 1.1.2 User qualification

All individuals engaged in reprocessing must receive the reprocessing training with training materials of TJF-Q190V provided by Olympus and this manual. Each institution is responsible for ensuring that only appropriately trained personnel perform reprocessing. For further details about training, contact Olympus.

#### 1.1.3 Terms used in this manual

AER/WD	AER and WD are abbreviations for Automated Endoscope Reprocessor and Washer-Disinfector, which are used for reprocessing endoscopes and accessories.
Disinfection	Some countries classify the disinfection level and define "high-level disinfection", and other countries do not. In the manual, the term "disinfection" includes the meaning for "high-level disinfection".  For more information about disinfectant solution, read the instructions as described in Chapter 3.4, "Disinfectant solution".

## 1.1.4 Symbols used in this manual

The table below lists symbols that appear in this manual. These symbols may also be accompanied by a word or short phrase, and are meant to visually reinforce specific statements and/or conditions.

Symbol	Description	What the symbol indicates
$\triangle$	Safety symbol	Indicates Warnings and Cautions, which include a safety message.
<b>*</b>	Check mark	Indicates a condition or action that should occur, or part that is compatible (i.e., can be used).
×	Red X mark	Indicates a part that should not is not compatible (i.e., should not be used).
0	Do Not	Indicates a condition or action that should not occur.
	No damage	Indicates that there should be no damage.
	No debris	Indicates that there should be no debris.
THE WAY	No bristle damage	Indicates that there should not be any loose, missing, or damaged bristles.
	No water (or fluid)	Indicates that there should be no water (or fluid) (e.g., on a component or connector).
	No air bubbles	Indicates that there should be no air bubbles.

	Keep endoscope immersed	Indicates that the endoscope should be kept immersed.
Accessories	Keep accessories immersed	Indicates that the accessories should be kept immersed.
	Specific timer	Indicates the amount of time a condition or action should last. The "" will be replaced with the amount of time in seconds (sec.) or hours (hr) (e.g., 10 sec., 15 sec., 30 sec., 2 hr).
	General timer	Indicates that a condition or action should last a specified time that might vary depending on information outside of this manual (e.g., described in another manual).
X	Number of times	Indicates the number of times an action should be conducted. The "" will be replaced with the number of times (e.g., 1, 3, 5, 6).

## 1.1.5 Highlight colors used in this manual

Example	Highlight color	What the highlight color indicates
	Light Orange	The component of attention. The light orange highlighted component is the component with which you will interact with in this step.
	Red	Incorrect position. The red highlighted component shows how you should not position the component of attention.

#### **NOTE**







In some images, this manual uses colors such as dark grey, green, blue, and the red dot on Suction valve (MH-443), only as a convenient way to visually distinguish some component parts that have these colors.

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#### 1.2 Importance of reprocessing

The medical literature reports incidents of cross-contamination resulting from improper reprocessing. It is strongly recommended that all individuals engaged in reprocessing closely observe all instructions described in this manual and the manuals for all ancillary equipment.

All individuals engaged in reprocessing should have a thorough understanding of the following items:

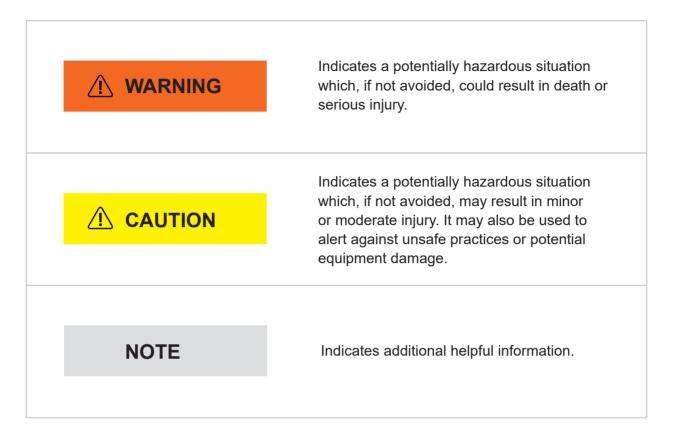
- Professional health and safety policies of your hospital
- Instruction manuals for the endoscope, accessories, and all the other reprocessing equipment
- The construction and handling of the endoscope and accessories
- Handling of pertinent chemicals.

When selecting appropriate methods and conditions for cleaning, disinfection, and sterilization, always follow:

- · The policies at your institution
- Applicable national laws and standards
- · Professional society guidelines and recommended practices
- The instructions given in this manual.

## 1.3 Signal words

The following signal words are used throughout this manual:



## $\triangle$

#### WARNING

- An insufficiently reprocessed endoscope and/or accessory may pose an infection control risk to patients and/or operators.
- Equipment used in conjunction with reprocessing the endoscope and accessories may pose an infection control risk. These can include:
  - The endoscope reprocessor
  - Video system center
  - · Light source
  - · Front panels of other equipment
  - Mouthpiece
  - Tap and/or basin

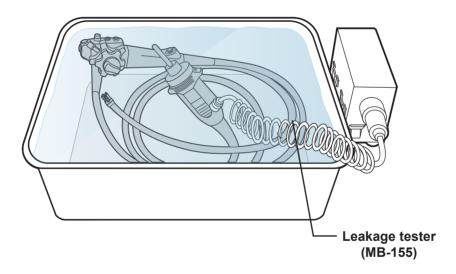
Properly replace, clean and/or disinfect these items as described in their manuals.

- All disinfection methods (manually or by using an AER/WD) and all sterilization methods (using ethylene oxide gas or steam) require thorough prior cleaning of the instruments before getting reprocessed. If the instruments are not adequately cleaned prior to disinfection/sterilization, these processes will be ineffective.
- Preclean the endoscope and the accessories at the bedside immediately after each patient procedure. If the endoscope and accessories are not immediately cleaned after each patient procedure, residual organic debris will begin to dry and solidify, thereby hindering reprocessing efficacy.
- Reprocess all channels of the endoscope, including the instrument channel, and all accessories after each patient procedure, even if the channels or accessories were not used during the patient procedure. Insufficient reprocessing of these components may pose an infection control risk to patients and/or operators.
- Rinse all external surfaces and channels of the endoscope and accessories thoroughly with water to remove any residual solution after disinfection or cleaning. Residual disinfectant and detergent solution may cause adverse reactions in patients.
- The results of sterilization depend on various factors. These factors include how the equipment was packaged and the placing and loading of the package in the sterilization device. Verify the sterilization process using biological and/ or chemical indicators. Follow the guidelines for sterilization issued by national authorities, professional organizations, and infection control professionals, including the frequency of the above verification, as well as the instruction manual for the sterilization device.



## **WARNING**

- Clearly identify contaminated endoscopes and accessories from the
  reprocessed endoscopes and accessories to prevent mix-ups and crosscontamination. Some national or professional guidelines recommend separating
  the dirty (contaminated) area, clean area, and storage area. Touching a
  reprocessed endoscope and/or accessories with contaminated gloves or
  placing them on a contaminated hanger or surface, including touching the floor,
  will recontaminate the endoscope and/or accessories.
- Prior to each patient procedure, confirm that the endoscope and accessories have been properly reprocessed and stored. If there are any doubts or questions, reprocess them again before the patient procedure, following the instructions given in this manual.
- Perform the leakage test after each precleaning procedure. Confirm there is no leak from the forceps elevator, while raising and lowering the forceps elevator. Do not use the endoscope if a leak is detected. Using an endoscope with a leak may cause loss of the endoscopic image, damage to the bending mechanism or other malfunctions, and may also pose an infection control risk.



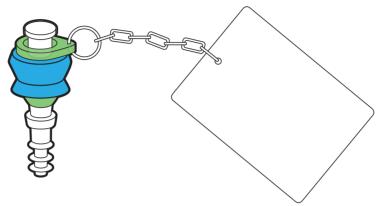
• Store alcohol in an airtight container. Alcohol stored in an open container may cause a fire hazard and may result in a loss of efficacy due to evaporation.



## $\bigwedge$

#### **WARNING**

• Do not use the AW channel cleaning adapter (MH-948) for patient procedures. It will cause continuous insufflation and could result in patient injury.



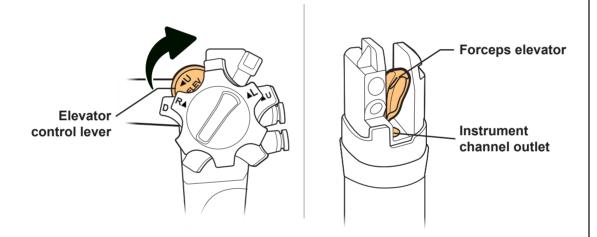
AW channel cleaning adapter (MH-948)

- The accessories listed in Chapter 1.1.1 "About this manual" cannot be refurbished or repaired. The accessories need to be replaced once they show any signs of wear and tear. Should any irregularity be observed, use a replacement accessory instead. Using defective accessories may cause equipment malfunction, reduce the efficacy of reprocessing, present a risk to patients and/or operators, or damage the endoscope and/or accessories.
- Single use brushes, such as the single use combination cleaning brush (BW-412T), are designed to clean one endoscope and related accessories.
   Dispose of the single use brush immediately after use. If a single use brush is used to clean multiple endoscopes and/or accessories, it may reduce the efficacy of preprocessing and may damage the brush. A damaged brush may break, which may damage the endoscope or accessories.
- Patient debris and used reprocessing chemicals pose infection control risks. Always wear appropriate protective equipment during reprocessing to protect yourself from dangerous chemicals and potentially infectious material. Protective equipment should include appropriate eyewear, face mask, cap, moisture-resistant clothing, shoe covers, and chemical-resistant gloves that fit properly and are long enough to prevent skin exposure.
- The reprocessing room must be adequately ventilated to minimize the risks from chemical vapors.
- Always remove contaminated personal protective equipment before leaving the reprocessing area to prevent contamination from spreading.
- Only use Olympus-recommended or Olympus-endorsed AERs/WDs. If you use an AER/WD that is not recommended by Olympus, the AER/WD manufacturer is responsible for validating compatibility with each Olympus endoscope and accessory.



## **!** WARNING

- Confirm that the AER/WD is able to reprocess the endoscope, including all channels and the forceps elevator recess, and accessories. If these items are insufficiently reprocessed, it may pose an infection control risk. If you are uncertain about the ability of your AER/WD, contact the manufacturer of the AER/WD for specific instructions and information on compatibility and the required connectors. Always conduct all steps of precleaning and manual cleaning as instructed in this manual, even if you are using an AER/WD that has instructions that state you can skip some steps.
- If using an Olympus OER-AW or OER-Pro, ensure that the distal end's
  instrument channel outlet is open. If closed, open the instrument channel outlet
  by moving the elevator control lever as shown below until the forceps elevator
  stops. Then, attach the dedicated connecting tube to the endoscope's distal
  end, and set in your OER-AW or OER-Pro according to the manufacturer's
  instructions.



- Do not use this manual to reprocess an Olympus endoscope that has been repaired by a non-Olympus facility. The reprocessing instructions have not been validated for endoscopes repaired by a non-Olympus facility. Contact the repair facility for the appropriate reprocessing instructions.
- Prions, which are the pathogenic agents of the Creutzfeldt-Jakob disease (CJD), cannot be destroyed or deactivated by the reprocessing methods described in this manual. If you have a patient with CJD or variant CJD, only use the endoscope and accessories for these type of patients or dispose of the endoscope and accessories immediately after the patient procedure. Make sure to dispose of the equipment in an appropriate manner, to prevent the usage of exposed endoscopes and accessories on other patients. Handle CJD and variant CJD according to the guidelines in your country.



#### / WARNING

- Reprocessing methods that destroy or deactivate prions may damage the endoscope and accessories. Olympus cannot guarantee the effectiveness, safety, and durability of reprocessing methods not described in this reprocessing manual. Contact Olympus for more information about the durability of Olympus equipment when using a different reprocessing method.
- If you use a different reprocessing method, the local institution and physicians are responsible for the safety and efficacy of the Olympus equipment. Carefully inspect all equipment for irregularities (damage) prior to each patient procedure. Do not use the equipment if any irregularity is observed.
- Good quality control practices require appropriate documentation as they are conducted. This can include, among other practices:
  - Local SOPs (Standard Operating Procedures)
  - Confirmation of operator training
  - Routine testing of the disinfectant's MEC (Minimal Effective Concentration),
  - Confirmation of the disinfectant's use-life
- If you perform any test on the endoscope using extraction fluid (e.g., a microbrial), reprocess the endoscope again before the patient procedure.

#### /!\ CAUTION

- Confirm that the ETO cap (MB-156) is not attached to the endoscope, before immersing the endoscope in reprocessing fluids. If the ETO cap is attached, reprocessing fluids will enter the endoscope, causing damage to the endoscope.
- When aerating or irrigating the endoscope channels, the air or water pressure must not exceed 0.5 MPa (5 kgf/cm², 71 psig). Higher pressures may damage the endoscope.
- DO NOT remove spare accessories from their original package until they are needed.
- To prevent damage, do not apply excessive force to the endoscope and accessories during reprocessing.
- Vapors from disinfectant solution and alcohol may damage electronic devices such as computers. Properly manage the quality and durability of the devices used in reprocessing rooms and the ventilation performance of the rooms.



## 1.5 Reprocessing before first use

New endoscopes, repaired endoscopes, new accessories, and the carrying case for endoscopes are not reprocessed prior to shipping from Olympus. Whether that equipment is for new purchase, demo, or loaner purposes, always reprocess the endoscope and accessories received from Olympus as described in this manual before storage or a patient procedure.



#### 1.6 Reprocessing before patient procedure

### Æ

#### **WARNING**

Improper handling of a reprocessed endoscope and/or accessories, will recontaminate the endoscope and/or accessories. Improper handling can include:

- Touching a reprocessed endoscope and/or accessories with contaminated gloves
- Placing reprocessed equipment on a contaminated hanger or surface
- · Equipment touching the floor.

If the endoscope has been improperly handled, reprocess the equipment again before storage or patient procedure.

#### **NOTE**

Some national or professional guidelines recommend reprocessing endoscopes prior to their first use of the day.

Confirm that the endoscope and accessories have been properly reprocessed and stored following their last use:

- Storage period of reprocessed endoscopes (storage period depends of your facility's equipment and processes)
- There is no surface contamination (e.g., dust)
- Expiration date marked on all items is not past due
- · There are no tears or breaches in sterile packaging

If there are any doubts or questions concerning whether a device is contaminated, reprocess it again following the instructions given in this manual.



#### 1.7 Reprocessing and storage after use

#### WARNING

- · Do not reuse detergent solution.
- · Do not reuse rinse water.
- Disinfectant solution is only effective when used according to the disinfectant manufacturer's instructions. Follow the manufacturer's instructions regarding activation (if required), concentration, temperature, contact time and use life required to achieve disinfection.
- If the disinfectant solution is reused, always check the efficacy recommended by the disinfectant manufacturer before reprocessing the endoscope.
- Do not reuse alcohol.
- Alcohol is not a sterilant or high-level disinfectant.
- To maintain sterility of equipment following sterilization, use sterilization pouches and wraps according to national guidelines.
- Store the endoscope and accessories in a proper storage cabinet, following the policies at your institution, applicable national laws and standards, and professional society guidelines and recommended practices.



## Chapter

# 2

# Function and Inspection of the Accessories for Reprocessing

This chapter describes the function of the accessories needed for reprocessing and how to inspect them before reprocessing.

#### 2.1 Accessories

Below is a list of the accessories and the subchapters in which they are described:



ETO cap (MB-156) See Chapter 2.2



Channel plug (MH-944) See Chapter 2.3



Injection tube (MH-946) See Chapter 2.4



Suction cleaning adapter (MH-856) See Chapter 2.5



AW channel cleaning adapter (MH-948) See Chapter 2.6



Distal-end flushing adapter (MAJ-2319) See Chapter 2.7



Single use combination cleaning brush (BW-412T)
See Chapter 2.8



Channel-opening cleaning brush (MH-507) See Chapter 2.9



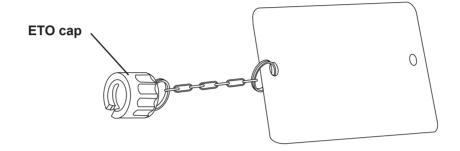
Channel cleaning brush (BW-20T) See Chapter 2.10

#### NOTE

Chapter 2.11 provides a table describing which brushes can be used for different parts of the endoscope.

#### 2.2.1 Function

The ETO cap (MB-156) is used for ethylene oxide gas sterilization of the endoscope.



## **CAUTION**

Attach the ETO cap to the venting connector on the endoscope connector prior to ethylene oxide gas sterilization. If the ETO cap is not attached to the venting connector during the ethylene oxide gas sterilization, the air inside the endoscope will expand and could rupture the bending section cover and/or damage the angulation mechanism.

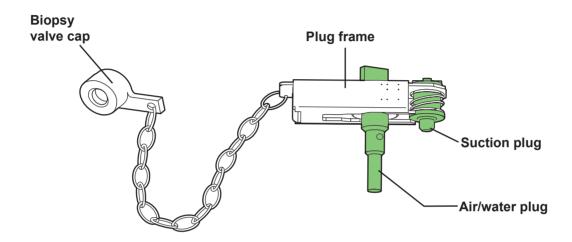
## 2.2.2 Inspection

Confirm that the ETO cap is free from damage and debris.



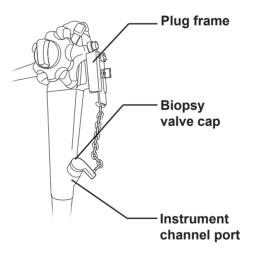
#### 2.3.1 Function

The channel plug is used to plug the openings of the endoscope's instrument channel port and the suction and air/water cylinders.



The channel plug will be attached to the endoscope whenever the injection tube (MH-946) is used to flush the endoscope's suction and air/water channels with reprocessing fluids.

#### Channel plug attached to endoscope

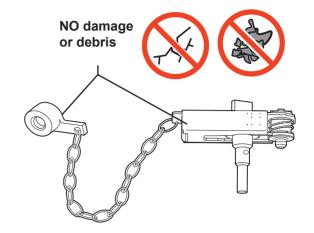


#### **NOTE**

The channel plug is designed to allow a small amount of fluid to exit the openings of the endoscope, when attached to the endoscope. This enables reprocessing fluids to contact the endoscope openings.

## 2.3.2 Inspection

Confirm that the suction plug, air/water plug, and the biopsy valve cap of the channel plug are free from damage and debris.

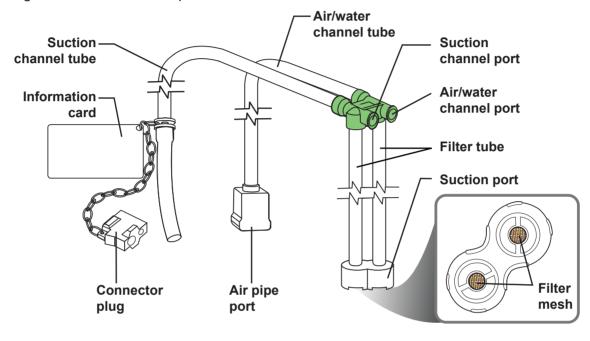


#### **NOTE**

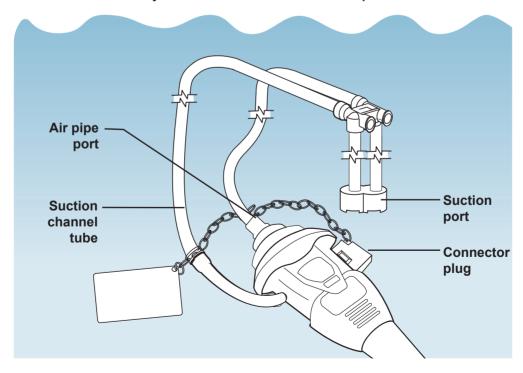
The channel plug does not need to be reprocessed prior to its first use.

#### 2.4.1 Function

The injection tube is used to inject reprocessing fluids into the instrument channel, suction channel, and air/water channels of the endoscope. It is also used to flush air through these channels to expel fluids.



Injection tube attached to endoscope

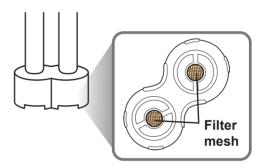


## 2.4.2 Inspection

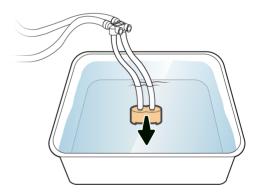
Confirm that all components of the injection tube are free from damage and debris.



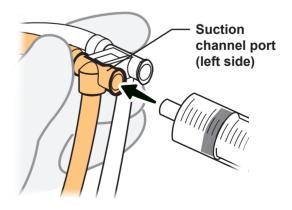
Confirm that the filter mesh is in the suction port of the injection tube.



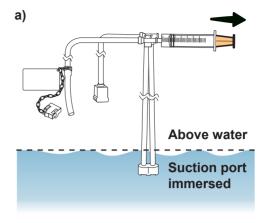
Completely immerse the injection tube's suction port in the water.

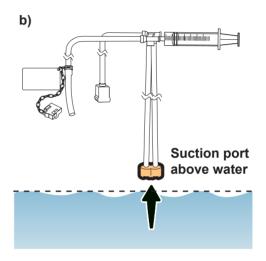


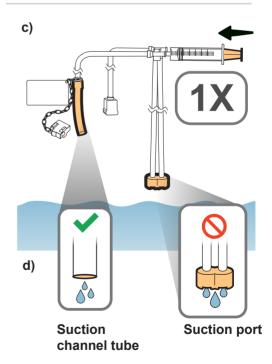
Attach a clean 30 mL syringe to the suction channel port (port on the left) of the injection tube.



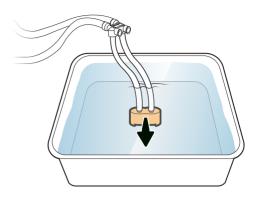
- **5** Keeping the 30 mL syringe attached, flush the suction channel tube, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with water;
  - b) Lift the suction port out of the water;
  - c) Then forcefully flush with 30 mL of water:
  - d) Confirm that water comes out of suction channel tube and confirm that no water comes out of the suction port during the flush.



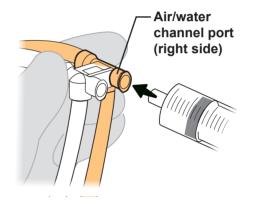




Completely immerse the injection tube's suction port in the water.



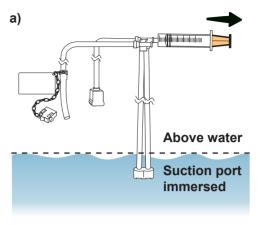
Move the syringe from the suction channel port to the injection tube's air/water channel port (port on the right).

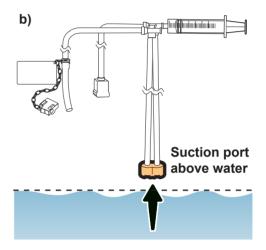


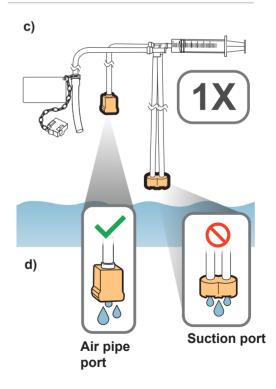
- Keeping the 30 mL syringe attached, flush the air/water channel tube, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with water;
  - b) Lift the suction port out of the water;
  - c) Then forcefully flush with 30 mL of water:
  - d) Confirm that water exits from the air pipe port and confirm that no water comes out of the suction port during the flush.

#### **NOTE**

The injection tube does not need to be reprocessed prior to its first use.





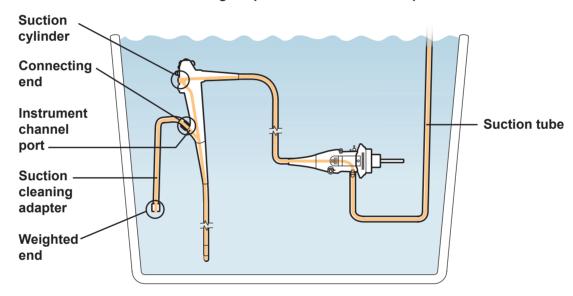


#### 2.5.1 Function

The suction cleaning adapter is used to aspirate detergent solution through the endoscope's instrument channel port.



#### Suction cleaning adapter attached to endoscope



## 2.5.2 Inspection

Confirm that the suction cleaning adapter is free from damage and debris.



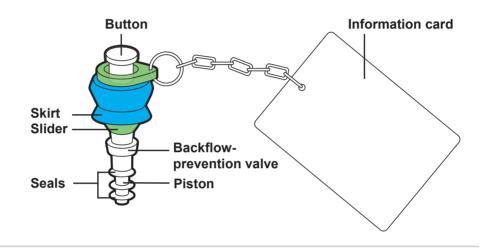
#### **NOTE**

The suction cleaning adapter does not need to be reprocessed prior to its first use.

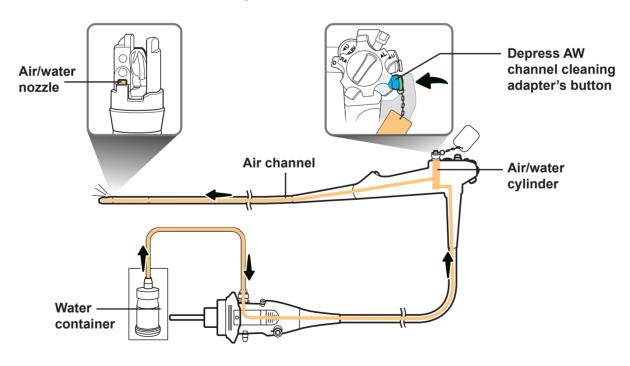
#### 2.6.1 Function

During precleaning, the AW channel cleaning adapter is attached to the endoscope's air/water cylinder. When the AW channel cleaning adapter's button is depressed, water from the water container is fed through the air/water nozzle into the air channel of the insertion section.

If the button is not depressed, air is continuously fed through the air/water channels of the insertion section.



AW channel cleaning adapter attached to endoscope, cleaning the nozzle and air channel



## 2.6.2 Inspection

Confirm that the AW channel cleaning adapter is free from damage and debris.

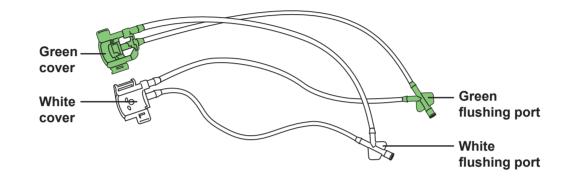


#### **NOTE**

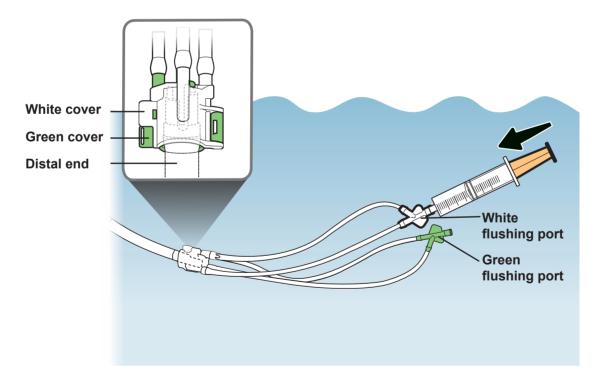
The AW channel cleaning adapter does not need to be reprocessed prior to its first use.

### 2.7.1 Function

The distal-end flushing adapter is used to flush the endoscope's distal end with reprocessing fluids.

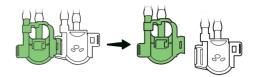


## Distal end flushing adapter attached to the endoscope's distal end



### 2.7.2 Inspection

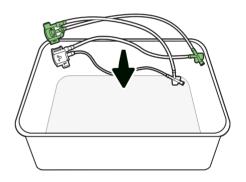
Separate the white and green covers, if they are assembled together.



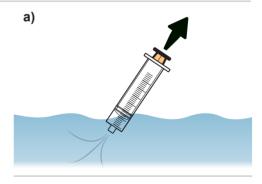
Confirm that all components of the distal-end flushing adapter are free from damage and debris.

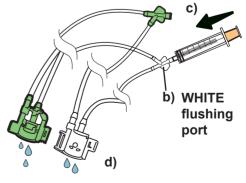


Place the distal-end flushing adapter in a clean basin (without water).

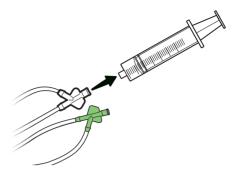


- Use a 30mL syringe to flush water through the WHITE flushing port, as follows:
  - a) Before attaching the syringe to the white flushing port (so that you do not pull air into the syringe that might be inside the flushing tube), slowly pull the syringe plunger to fill the syringe with water;
  - b) Attach it to the white flushing port of the distal-end flushing adapter;
  - c) Then forcefully flush the distal end with 30 mL of water;
  - d) Confirm that water is emitted from openings in both the white and green covers.



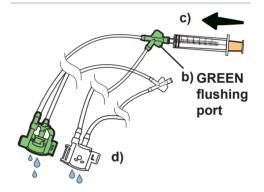


## Detach the syringe from the distalend flushing adapter.



- Use the 30 mL syringe to flush water through the GREEN flushing port, as follows:
  - a) Before attaching the syringe to the green flushing port (so that you do not pull air into the syringe that might be inside the flushing tube), slowly pull the syringe plunger to fill the syringe with water;
  - b) Attach it to the green flushing port of the distal-end flushing adapter;
  - c) Then forcefully flush the distal end with 30 mL of water;
  - d) Confirm that water is emitted from openings in both the white and green covers.





#### **NOTE**

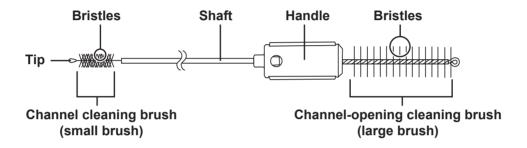
The distal-end flushing adapter does not need to be reprocessed prior to its first use.

#### 2.8 Single use combination cleaning brush (BW-412T)

#### 2.8.1 Function

The single use combination cleaning brush has two different brushes, one at each end:

- Channel cleaning brush part (small brush)
- Channel-opening cleaning brush part (large brush with handle)



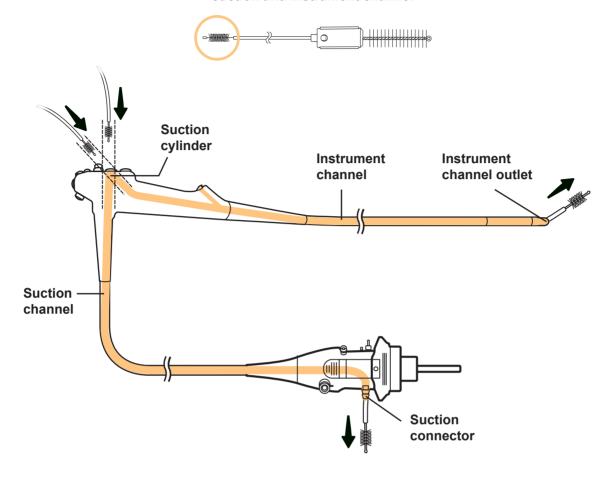
The small brush without a handle is similar to the channel cleaning brush (BW-20T) and is used to brush similar areas:

- Inside of the instrument channel and suction channel of the endoscope
- Holes of the suction valve (MH-443)
- Holes of the air/water valve (MH-438)
- The hole and the slit of the biopsy valve (MB-358)

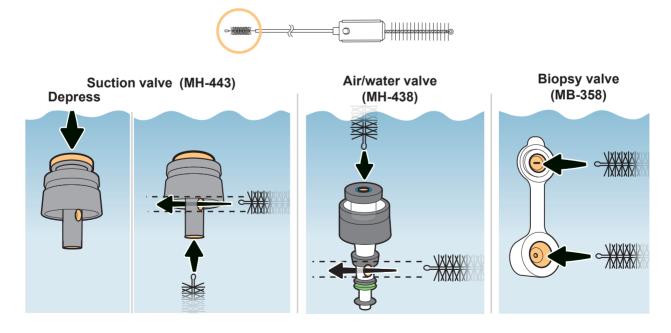
The large brush with a handle is similar to the channel-opening cleaning brush (MH-507) and is used to brush similar areas:

- Suction cylinder
- Instrument channel port
- Distal end
- Distal ring
- Forceps elevator and the forceps elevator recess

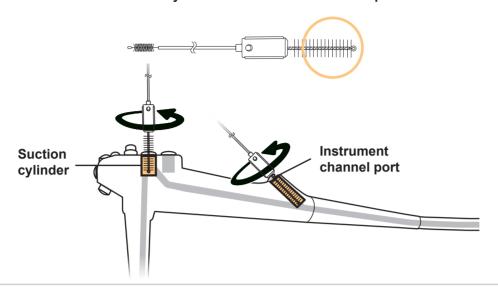
## Channel cleaning brush (small brush) used to clean the endoscope's suction and instrument channel



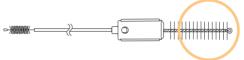
Channel cleaning brush (small brush) used to clean the suction valve, air/water valve and biopsy valve.

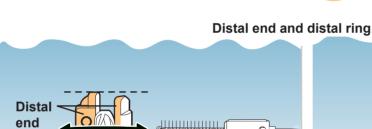


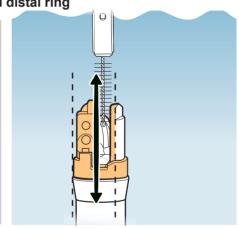
Channel-opening cleaning brush (large brush) used to clean the suction cylinder and instrument channel port.



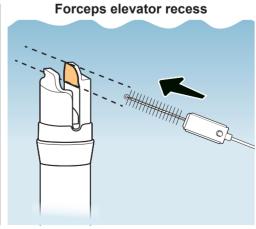
Channel-opening cleaning brush (large brush) used to clean the distal end, distal ring, forceps elevator and the forceps elevator recess.







Forceps elevator



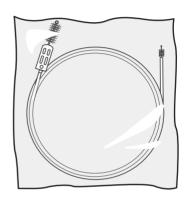
Distal ring

## 2.8.2 Inspection

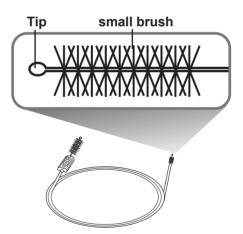
## **CAUTION**

Do not reprocess the single use combination cleaning brush prior to use. The brush may be damaged.

Keep the brush in its package until you are ready to use it.



Confirm that the small brush and the tip are securely attached.



- Confirm that there are no loose, missing, or damaged bristles on both ends:
  - · small brush without a handle
  - large brush with handle



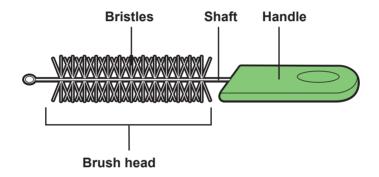
Confirm that the shaft is free from damage.



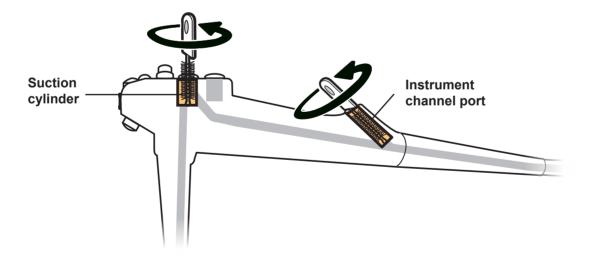
## 2.9.1 Function

The channel-opening cleaning brush is used to brush the endoscope's:

- Suction cylinder
- Instrument channel port
- Distal end
- Distal ring
- Forceps elevator and the forceps elevator recess

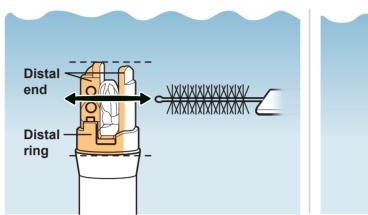


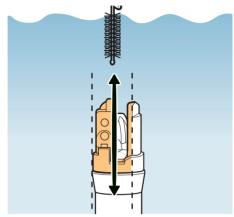
Channel-opening cleaning brush used to clean the suction cylinder and instrument channel port.



Channel-opening cleaning brush used to clean the distal end, distal ring, forceps elevator and the forceps elevator recess.

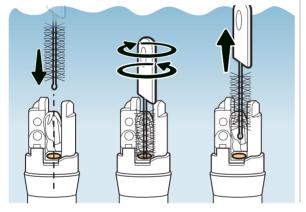
### Distal end and distal ring

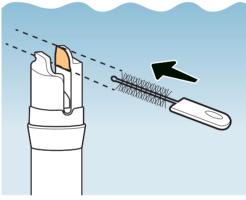




Forceps elevator





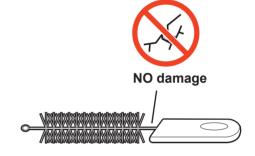


## 2.9.2 Inspection

Confirm that there are no loose, missing, or damaged bristles.

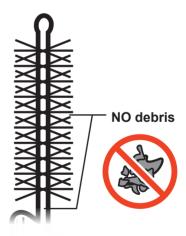


Confirm that the shaft is free from damage.



Confirm that the shaft and bristles are free from debris.

If there is debris on the brush, reprocess the brush according to Chapter 6, "Reprocessing the Accessories".



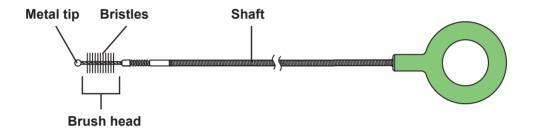
### **NOTE**

The channel-opening cleaning brush does not need to be reprocessed prior to its first use.

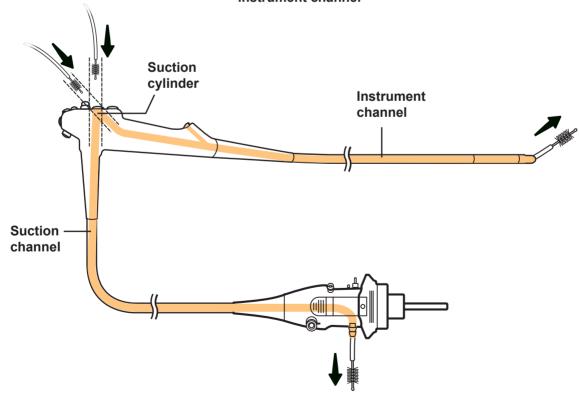
## 2.10.1 Function

The channel cleaning brush is used to brush:

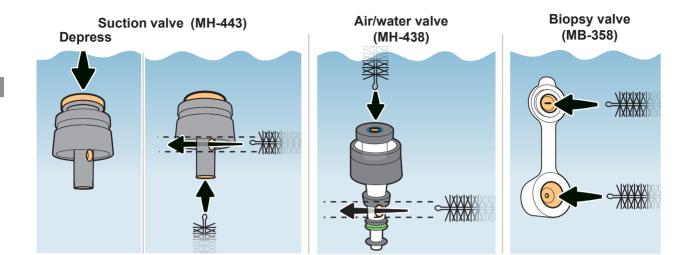
- Inside of the endoscope's instrument channel and suction channel
- Holes of the suction valve (MH-443)
- Holes of the air/water valve (MH-438)
- The hole and the slit of the biopsy valve (MB-358)



## Channel cleaning brush used to clean the endoscope's suction and instrument channel

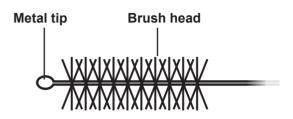


## Channel cleaning brush used to clean the suction valve, air/water valve and biopsy valve.



## 2.10.2 Inspection

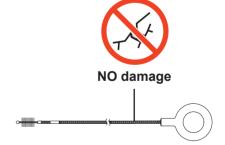
Confirm that the brush head and the metal tip are securely attached.



Confirm that there are no loose, missing, or damaged bristles.

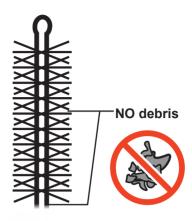


Confirm that the shaft is free from damage.



Confirm that the shaft and bristles are free from debris.

If there is debris on the brush, reprocess the brush according to Chapter 6, "Reprocessing the Accessories".



### **NOTE**

The channel cleaning brush does not need to be reprocessed prior to its first use.

The following table describes which brushes can be used for different parts of the endoscope and accessory valves.

		Channel-opening cleaning brush (MH-507)	cleaning (BW-	combination g brush 412T)	Channel cleaning brush (BW-20T)
			Large brush	Small brush	
	Suction valve (MH-443)			<b>✓</b>	<b>✓</b>
	Air/water valve (MH-438)			<b>/</b>	<b>✓</b>
	Biopsy valve (MB-358)			<b>✓</b>	<b>✓</b>
	Instrument channel			<b>✓</b>	<b>/</b>
	Suction channel			<b>✓</b>	<b>/</b>
Endoscope	Instrument channel port	<b>✓</b>	<b>/</b>		
	Suction cylinder	<b>✓</b>	<b>/</b>		
	Forceps elevator	<b>✓</b>	<b>/</b>		
	Forceps elevator recess	<b>✓</b>	<b>/</b>		
	Distal end	<b>✓</b>	<b>/</b>		
	Distal ring	<b>/</b>	<b>/</b>		

## Chapter

# 3

# Compatible Reprocessing Methods and Chemical Agents

## 3.1 Compatibility summary

The endoscope and accessories are compatible with several methods of reprocessing. Reprocessing with incompatible methods can cause equipment damage even if the number of reprocessing cycles is small. For appropriate reprocessing methods, see Table 3.1 to 3.4.

Follow the policies at your local institution when choosing a reprocessing method listed in Table 3.1 to 3.4.

## **CAUTION**

Repeated use and reprocessing of endoscopes and accessories leads to gradual wear and tear. To ensure best performance:

- Use the methods listed in Table 3.1 to 3.4 for routine use only when you can do so according to the manufacturer's instructions.
- Keep in mind that reprocessing methods that employ higher temperatures and more caustic/corrosive materials may lead to faster deterioration. In general, sterilization processes are harsher on equipment than disinfection processes.
- Before each patient procedure, inspect the endoscope and accessories for damage, according to the instructions described in this manual and its companion "OPERATION MANUAL".

## **!** CAUTION

The instructions provided in this manual regarding reprocessing methods and chemical agents are not valid for Olympus devices repaired by a non-Olympus facility. Please note that:

- Olympus repairs devices to manufacturer's specifications using original equipment manufacturer's (OEM) materials.
- The use of non-OEM materials to repair an Olympus device may affect the material compatibility and reprocessing efficacy of the device with certain reprocessing chemicals or methods.
- In the event that your device has been repaired by a non-Olympus facility, contact the repair facility for instructions regarding compatible reprocessing methods and chemical agents.



Table 3.1

Compatibility for cleaning	Detergent solution	Ultrasonic cleaning
Endoscope	<b>✓</b>	*1
TO cap (MB-156)	×	×
Channel cleaning brush (BW-20T)  Channel-opening cleaning brush (MH-507)  Distal-end flushing adapter (MAJ-2319)	<b>✓</b>	<b>✓</b>
Suction valve (MH-443) Siopsy valve (MB-358)	<b>✓</b>	<b>✓</b>
Channel plug (MH-944) Injection tube (MH-946)  AW channel cleaning adapter (MH-948)  Suction cleaning adapter (MH-856)  Mouthpiece (MA-392)	<b>✓</b>	<b>✓</b>

<sup>\*1</sup> The endoscope is only compatible with ultrasonic cleaning as performed in an Olympus-recommended reprocessor, such as OER-AW and OER-Pro (OER-AW and OER-Pro may not be available in some areas). When using an AER/WD that is recommended by Olympus other than listed above, contact Olympus.

Table 3.2

Compatibility for alcohol flush	70% ethyl or 70% isopropyl alcohol
Endoscope	<b>✓</b>
ETO cap (MB-156)	×
Channel cleaning brush (BW-20T)	
Channel-opening cleaning brush (MH-507)	
Distal-end flushing adapter (MAJ-2319)	<b>✓</b>
Air/water valve (MH-438)	
Suction valve (MH-443)	
Biopsy valve (MB-358)	<b>✓</b>
Channel plug (MH-944)	
Injection tube (MH-946)	
AW channel cleaning adapter (MH-948)	
Suction cleaning adapter (MH-856)	<b>✓</b>
Mouthpiece (MA-392)	
Broom	





not compatible

Table 3.3

Compatibility for disinfection	ACECIDE disinfectant solution*2	2 - 3.5% glutaraldehyde
Endoscope	<b>✓</b>	<b>✓</b>
ETO cap (MB-156)	×	×
Channel cleaning brush (BW-20T)  Channel-opening cleaning brush (MH-507)  Distal-end flushing adapter (MAJ-2319)	×	<b>✓</b>
Air/water valve (MH-438) Suction valve (MH-443) Biopsy valve (MB-358)	<b>✓</b>	<b>✓</b>
Channel plug (MH-944) Injection tube (MH-946)  AW channel cleaning adapter (MH-948)  Suction cleaning adapter (MH-856)  Mouthpiece (MA-392)	×	

<sup>\*2</sup> ACECIDE disinfectant solution is exclusively for an Olympus-recommended endoscope reprocessor, such as OER-AW and OER-Pro (ACECIDE may not be available in some areas).

compatible

not compatible

Table 3.4

Table 3.4			
Compatibility for sterilization	Steam sterilization	Ethylene oxide gas sterilization (gas mixture: 20% ethylene oxide gas /80% CO <sub>2</sub> for coun- tries other than the USA)	Ethylene oxide gas sterilization (100% ethylene oxide gas)
Endoscope	×	<b>✓</b>	<b>✓</b>
ETO cap (MB-156)	×	<b>✓</b>	<b>✓</b>
Channel cleaning brush (BW-20T)  Channel-opening cleaning brush (MH-507)  Distal-end flushing adapter (MAJ-2319)	<b>✓</b>	×	×
Air/water valve (MH-438) Suction valve (MH-443) Biopsy valve (MB-358)	<b>✓</b>	<b>✓</b>	×
Channel plug (MH-944) Injection tube (MH-946)  AW channel cleaning adapter (MH-948)  Suction cleaning adapter (MH-856)  Mouthpiece (MA-392)	<b>✓</b>		

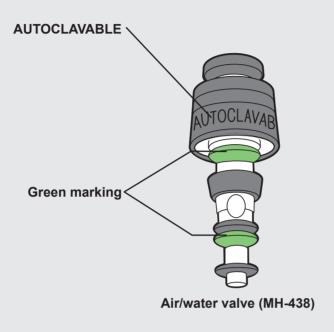




not compatible

### **NOTE**

Accessories that are marked by the words "AUTOCLAVE" or "AUTOCLAVABLE", or with green markings (such as a green component or label) are compatible with steam sterilization (autoclaving).



## 3.2 Water (for reprocessing)

Water is used for precleaning, leakage testing, and manual cleaning of the endoscope and accessories. For these purposes, use either:

- Fresh, drinkable tap water
- Processed water (e.g., filtered, deionized\*1, or purified, to improve its chemical and/or microbiological quality)

Consult with your hospital's infection control committee.

When rinsing the endoscope and accessories following disinfection, use the water as described in Chapter 3.5, "Rinse water".

\*1 Deionized means to remove ionized salts from the water by using specially manufactured ion-exchange resin.

## 

- Excessive foaming prevents detergent solution from properly contacting the surfaces and channel walls of the endoscope and accessories, and may impair effective cleaning.
- Do not reuse detergent solution.

Use a low-foaming and neutral pH detergent that is labeled for use on medical device, which may or may not contain enzymes. Follow the instructions provided by the detergent manufacturer regarding concentration, temperature, contact time, and expiration date. Contact Olympus for the names of specific brands of detergent solution that have been tested for compatibility with endoscopes and accessories.

## **WARNING**

If the disinfectant solution is reused, check its efficacy by proper methods, such as using a test strip, according to the disinfectant manufacturer's recommendations prior to use.

Use a disinfectant cleared/approved by your national regulatory agency for use in reprocessing flexible endoscopes. If national or professional guidelines applicable to your institution define "high-level disinfection" and require using a high-level disinfectant for the flexible endoscopes, follow the requirement. Follow the disinfectant manufacturer's instructions regarding activation (if required), concentration, temperature, contact time, and expiration date.

For further information regarding the compatibility of glutaraldehyde-based or non glutaraldehyde-based disinfectant solution, contact Olympus.

## **WARNING**

Do not reuse rinse water.

There are various national or professional guidelines that provide different recommendations for rinsing the endoscope and accessories.

For example, some national or professional guidelines recommend:

- Using sterile water for rinsing endoscopes and accessories. If sterile water is not available, these guidelines recommend to:
  - Rinse with fresh, drinkable tap water. You may use fresh, drinkable tap water or water that has been processed (e.g., filtered, deionized\*1, or purified) to improve its chemical and/or microbiological quality.
  - After rinsing, flush the channels and accessories with medical-grade 70% ethyl or 70% isopropyl alcohol.

Other national or professional guidelines recommend:

- Removing disinfectant solution with at least drinking quality water, then conducting a final rinse with sterile water. You may use sterile water and/or fresh, drinkable tap water or water that has been processed (e.g., filtered, deionized\*1, or purified) to improve its chemical and/or microbiological quality.
- Drying the endoscope channels with compressed filtered air at each reprocessing procedure and with alcohol at the end of the day.

Consult with your hospital's infection control committee regarding local policies on water quality and the use of alcohol.

\*1 Deionized means to remove ionized salts from the water by using specially manufactured ion-exchange resin.

## **WARNING**

- Do not reuse alcohol.
- Alcohol is not a sterilant or high-level disinfectant.

Use medical-grade 70% ethyl or 70% isopropyl alcohol.

## **!** CAUTION

Exceeding the recommended parameters may cause equipment damage.

## 3.7.1 Parameters for 100% ethylene oxide gas sterilization cycles

The endoscope and accessories listed as compatible with ethylene oxide gas sterilization in Table 3.4 can be sterilized by 3M<sup>™</sup>Steri-Vac<sup>™</sup> 5XL or STERIS Amsco<sup>®</sup> Eagle<sup>®</sup> 3017 ethylene oxide gas sterilizers with the "55°C cycle" given in Table 3.5, and aerated with 12 hours or more at 55°C (130°F). When performing ethylene oxide gas sterilization, follow all national, professional, and institutional reprocessing protocols as well as the instructions provided by the manufacturer of your sterilization equipment.

Table 3.5

Process phase	Parameter	Value
	Temperature	55°C (130°F)
	Relative humidity	50 - 80%
Sterilization	Ethylene oxide gas concentration	0.735 - 0.740 mg/cm³ (735 - 740 mg/L)
	Exposure time	60 minutes
Aeration	Minimum aeration parameters	12 hours in an aeration chamber at 55°C (130°F)

## 3.7.2 Parameters for 20% ethylene oxide gas/ 80% CO2 gas sterilization cycles for countries other than the USA

The endoscope and accessories listed as compatible with ethylene oxide gas sterilization in Table 3.4 can be sterilized by ethylene oxide gas and aerated within the parameters given in Table 3.6. When performing ethylene oxide gas sterilization, follow all national, professional, and institutional reprocessing protocols as well as the instructions provided by the manufacturer of your sterilization equipment.

Table 3.6

Process phase	Parameter	Value	
	Temperature	55°C (130°F)	
	Relative pressure	0.1 - 0.17 MPa	
Sterilization	Relative humidity	35 - 85%	
<b></b>	Ethylene oxide gas concentration	0.6 - 0.7 mg/cm³ (600 - 700 mg/L)	
	Exposure time	2 - 4 hours	
Aeration	Minimum aeration parameters	12 hours in an aeration chamber at 50 - 57°C (122 - 135°F) or 7 days at room temperature	

The accessories listed as compatible with steam sterilization in Table 3.4 can be sterilized by steam within the parameters given in Table 3.7. When steam sterilizing, follow all national, professional, and institutional reprocessing protocols as well as the instructions provided by the manufacturer of your sterilization equipment.

### /!\ CAUTION

- Do not steam sterilize the endoscope. Steam sterilization will cause severe damage.
- If the setting parameters of the steam sterilization exceed the parameters (i.e., 134°C (274°F), 5 minutes) given in Table 3.7, the accessories may be damaged.
- Actual maximum temperature of the accessories (137°C [279°F]) should not be exceeded during the sterilization.

## 3.8.1 Parameters for prevacuum steam sterilization cycle

Parameters for prevacuum steam sterilization cycle

Table 3.7

		Value	
Process phase	Parameter		For countries other than the USA
Prevacuum steam	Setting temperature	132°C (270°F)	134°C (274°F)
sterilization cycle	Setting exposure time	4 minutes	3 minutes
	Setting drying time	a minimum of 20 minutes	
Drying	<ul> <li>If the sterilization pouch of accessory taken out of the sterilizer is wet, sterilization effect may not be maintained. Reconsider conditions such as drying time and sterilize again.</li> <li>Drying time depends on various factors including kinds of sterilizer, type of sterilization pouch and volume of loading. Confirm the appropriate drying time beforehand.</li> </ul>		

## Chapter

4

## **Reprocessing Workflows**

## 4.1 Summary of reprocessing workflows

This chapter provides charts depicting the workflows for reprocessing the endoscope and accessories. The charts list the component and the sequence of chapters in this manual that you will follow to reprocess each component.

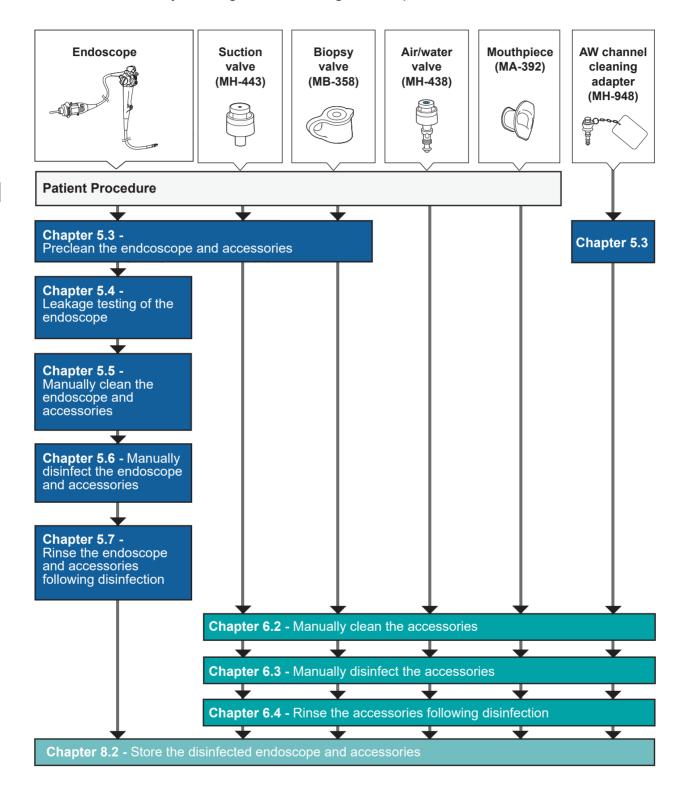


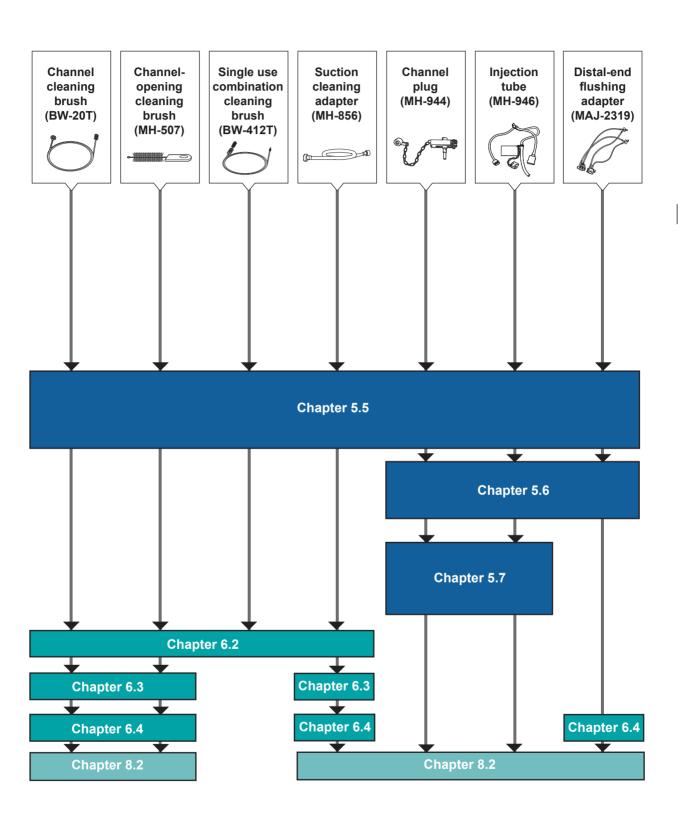
### **WARNING**

Deviation from the recommended workflow may pose an infection control risk.

## 4.2 Workflow for manually cleaning and disinfecting endoscopes and accessories

Workflow for manually cleaning and disinfecting endoscopes and accessories





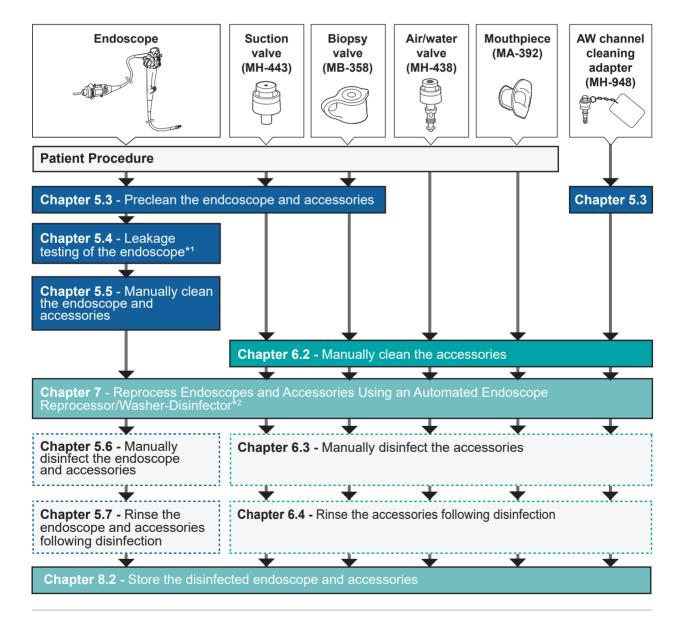
## 4.3 Workflow for cleaning and disinfecting endoscopes and accessories using an AER/WD

Workflow for cleaning and disinfecting endoscopes and accessories using an AER/WD

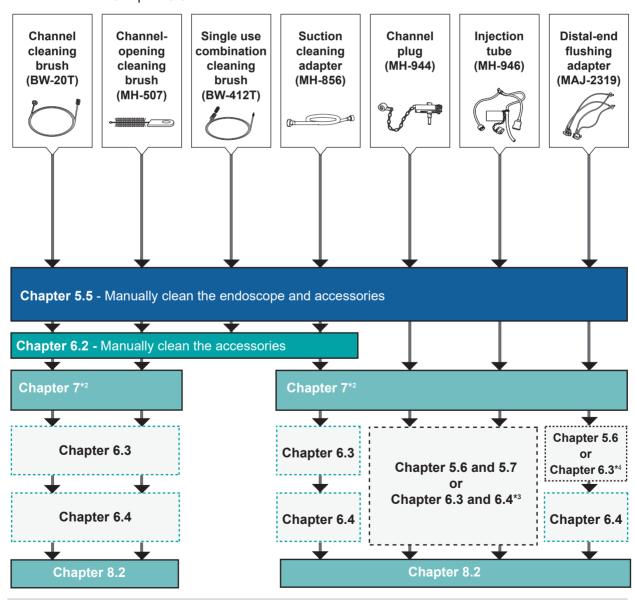
Some endoscopes and accessories cannot be cleaned and disinfected with an AER/WD, and must be manually disinfected. Endoscopes and accessories that can be cleaned and disinfected with an AER/WD vary, based on the AER/WD model. Check the AER's/WD's instruction manual to confirm which endoscopes can be cleaned and disinfected in the AER/WD.

## **⚠ WARNING**

Conduct all steps of precleaning and manual cleaning as instructed in this manual even when you use an AER/WD that has instructions that would allow you to skip some steps in precleaning and manual cleaning of endoscopes.



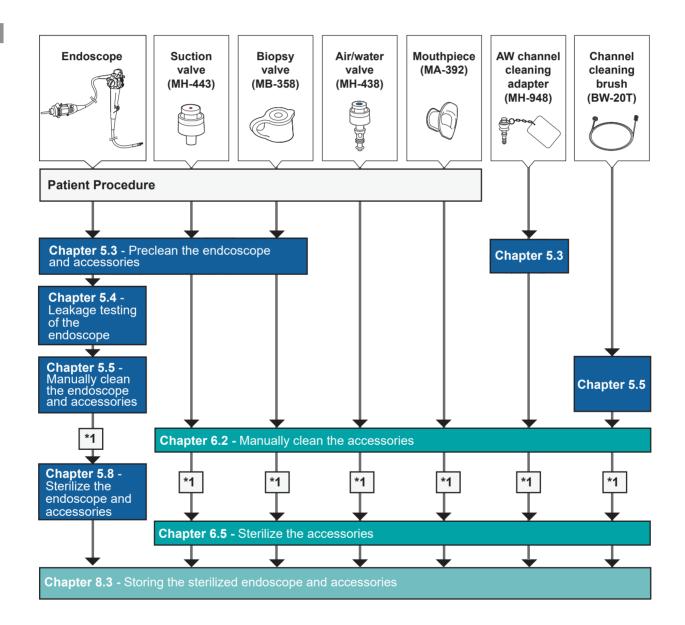
- \*1 Check the instruction manual for the AER/WD to determine how to test the endoscope for leakages using the AER/WD. When leakage testing an endoscope within an AER/WD basin, it may be difficult to fully angulate the bending section and move the elevator control lever. Perform leakage testing in the AER/WD and/or manually while angulating the bending section and moving the elevator control lever.
- \*2 If the endoscope and/or the accessories are compatible with the AER/WD, clean and disinfect them in the AER/WD, following the AER's/WD's instruction manual. If the endoscope and/or the accessories are not compatible with the AER/WD, manually disinfect and rinse them following the instructions of this manual, as shown in the dotted boxes.
- \*3 If the endoscope and the accessories are not compatible with the AER/WD, manually disinfect and rinse them as described in Chapters 5.6 and 5.7. If the endoscope is compatible and the accessories are not compatible, manually disinfect and rinse the accessories as described in Chapters 6.3 and 6.4.
- \*4 If the endoscope and the distal-end flushing adapter are not compatible with the AER/WD, manually disinfect them as described in Chapter 5.6. If the endoscope is compatible and the distal-end flushing adapter is not compatible, manually disinfect the distal-end flushing adapter as described in Chapter 6.3.

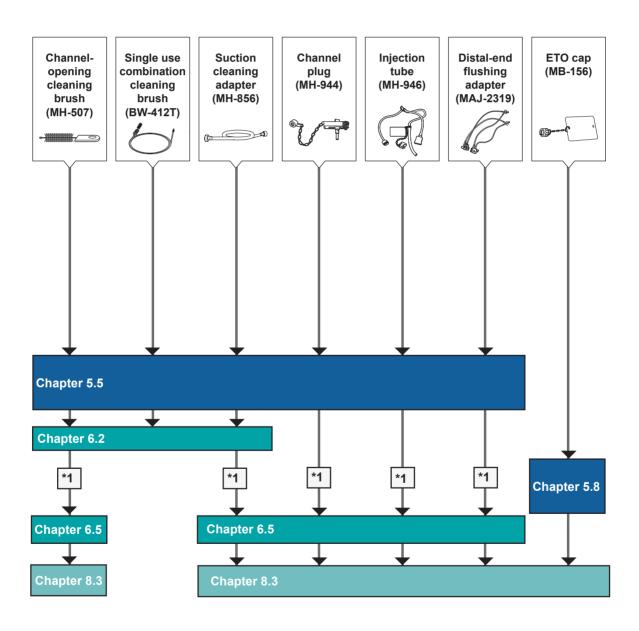


## 4.4 Workflow for manually cleaning and sterilizing endoscopes and accessories

Workflow for manually cleaning and sterilizing endoscopes and accessories

\*1 If required by the local policy of your institution, disinfect and rinse the endoscope and accessories manually, or clean and disinfect them with an AER/WD between the manual cleaning and sterilization.





## Chapter

5

# Reprocess the Endoscope (and related reprocessing accessories)

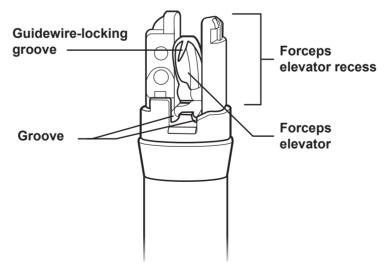
### 5.1 Summary

Some accessories are reprocessed with the endoscope, and others are reprocessed independently. You will find different instructions for reprocessing in chapters 4, 5, and 6:

- Chapter 4, "Reprocessing Workflows", provides an overview workflow diagram of the reprocessing steps for the endoscope and all accessories.
- (This chapter) Chapter 5, "Reprocess the Endoscope (and related reprocessing accessories)", provides detailed instructions for reprocessing the endoscope and the accessories needed to reprocess the endoscope.
- Chapter 6, "Reprocess the Accessories", provides detailed instructions for reprocessing accessories that are reprocessed independently.

## **WARNING**

The surface and surrounding area of the TJF-Q190V endoscope's forceps elevator has a complex shape, featuring the groove, guidewire-locking groove, and forceps elevator recess. Reprocess these parts and areas carefully, following the steps in Chapter 5, "Reprocess the Endoscope (and related reprocessing accessories)". Insufficient reprocessing may pose an infection control risk to the patient and/or operators.





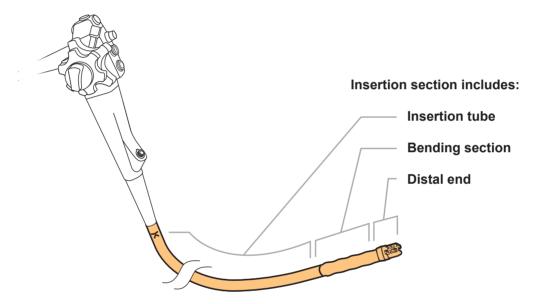
## **CAUTION**

Improper handling may damage the endoscope and/or cause the endoscope to leak.

To prevent damage to the entire endoscope:

- Do not immerse the endoscope with objects other than the required reprocessing equipment.
- Do not coil the insertion tube or the endoscope's universal cord with a diameter of less than 12 cm.

The insertion section of the endoscope is composed of the insertion tube, the bending section, and the distal end. The bending section is covered by a thin, easily damaged elastic covering.



To prevent damage to the endoscope's insertion section:

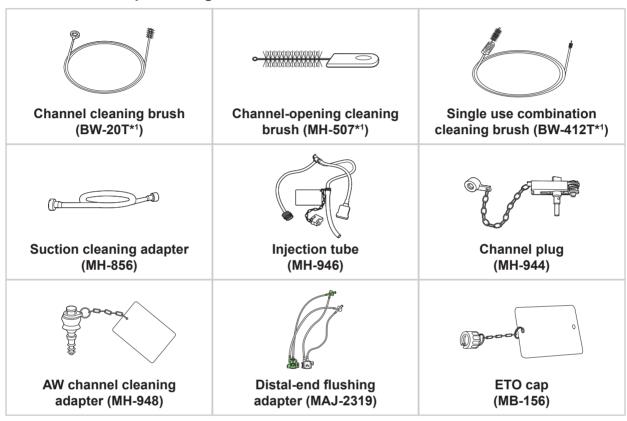
- Do not allow reprocessing equipment to forcefully contact the bending section.
- Do not allow any sharp edges, such as the distal ends of EndoTherapy accessories (e.g., needles, forceps, snares, etc. used in the instrument channel of the endoscope) to contact the bending section.
- Handle the insertion section carefully. Tightly gripping, or bending the insertion tube or the bending section at a sharp angle can stretch or severely damage the insertion tube and/or the covering of the bending section.

## 5.2 Prepare equipment for reprocessing

## 5.2.1 Equipment needed

The following accessories and equipment are required to perform the reprocessing steps described in this chapter.

#### Accessories for reprocessing:



#### Accessories and equipment for leakage testing:



#### **Equipment:**



Suction pump (KV-6, KV-5, SSU-2) and suction tube (Sold separately. Refer to its instruction manual.)

#### Personal protective equipment:





Face mask





Moisture-resistant clothing

Chemical-resistant gloves\*2

#### Fluids used for reprocessing:

- Detergent solution (Refer to Chapter 3.3, "Detergent solution")
- Rinse water (Refer to Chapter 3.5, "Rinse water")
- 70% ethyl or 70% isopropyl alcohol (Refer to Chapter 3.6, "Alcohol")
- Water (for reprocessing) (Refer to Chapter 3.2, "Water (for reprocessing)")
- Disinfectant solution (Refer to Chapter 3.4, "Disinfectant solution")

#### Other:

- Clean 2000 mL containers
- Clean lint-free cloths\*3
- Clean sponges
- · Clean, soft brushes
- · Clean 30 mL (30 cc) syringes
- Sterile lint-free cloths\*3, \*4
- Sterile cotton swabs\*4
- Sterile 30 mL (30 cc) syringes\*4
- Sterilization pouches\*5
- Sterilization wraps\*5

- Clean, large basins with tight-fitting lids (size: 40 (W) x 40 (D) x 25 (H) cm or more)
- Clean, large basins (size: 40 (W) × 40 (D) × 25 (H) cm or more)
- Sterile, large basins\*4
   (size: 40 (W) × 40 (D) × 25 (H) cm or more)
- Sterile, small basins with tight-fitting lids\*4 (size: 25 (W) × 10 (D) × 25 (H) cm or more)
- Air compressor (Filtered)
- Stainless steel wire mesh basket (size: 50 (W) x 30 (D) x 10 (H) cm or more)

<sup>\*1</sup> Prepare a single use combination cleaning brush (BW-412T) OR prepare a channel cleaning brush (BW-20T) and channel-opening cleaning brush (MH-507).

<sup>\*2</sup> Long sleeve gloves are recommended to prevent skin exposure.

<sup>\*3</sup> Lint-free cloths are recommended for reprocessing to prevent lint or cloth fibers from lodging or being trapped in the endoscope's components such as channels or air/water nozzle.

<sup>\*4</sup> Following disinfection, it is very important not to recontaminate the endoscope and accessories with potentially infectious microorganisms. When rinsing and drying the endoscope and accessories following disinfection, the use of sterile equipment (basins, cloths, syringes, etc.) is recommended. If sterile equipment is not available, use clean equipment that does not recontaminate the endoscope and accessories with potentially infectious microorganisms. Consult with your hospital's infection control committee regarding local policies or requirements regarding reprocessing equipment.

<sup>\*5</sup> For U.S. customers: Use legally U.S. marketed sterilization wraps and sterilization pouches.

### 5.3 Preclean the endoscope and accessories

#### Workflow for precleaning the endoscope and accessories:

#### Prepare equipment

- 5.3.1 Equipment needed
- 5.3.2 Prepare for precleaning



### Wipe external surfaces

- 5.3.3 Wipe the insertion section
- 5.3.4 Detach the single use distal cover (MAJ-2315)



#### Flush channels

- 5.3.5 Aspirate water and air
- 5.3.6 Flush the air/water channel with water and air



### **Detach equipment**

- 5.3.7 Detach the suction tube and the water container's metal tip
- 5.3.8 Detach the endoscope from the light source



### Ŵ

#### **WARNING**

Preclean the endoscope and the accessories at the bedside immediately after each patient procedure. If the endoscope and accessories are not immediately cleaned after each patient procedure, residual organic debris will begin to dry and solidify, thereby hindering reprocessing efficacy.

#### NOTE

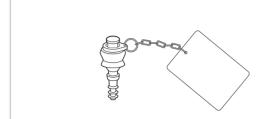
Some national or professional guidelines recommend using a detergent solution for precleaning. Consult with your hospital's infection control committee regarding use of a detergent solution.



### 5.3.1 Equipment needed

Prepare the following equipment.

#### Accessories and equipment for precleaning:



AW channel cleaning adapter (MH-948)



Suction pump (KV-6, KV-5, SSU-2) and suction tube (Sold separately. Refer to its instruction manual.)

#### Fluids used for precleaning:

• Water (for reprocessing) (Refer to Chapter 3.2, "Water (for reprocessing)")

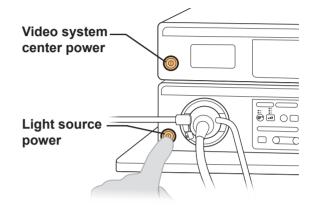
#### Other:

- · Clean lint-free cloths
- Clean sponges

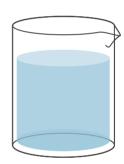
• Clean 2000 mL containers

At the patient bedside, immediately after the patient procedure, with the endoscope still connected to the procedure equipment (i.e., the light source, video system center, and suction pump), perform the following precleaning steps.

Turn the video system center and light source OFF.



Prepare a clean 2000 mL container filled with water (for reprocessing).



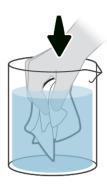
### **NOTE**

As described in Chapter 3.2, "Water (for reprocessing)", reprocessing water might be:

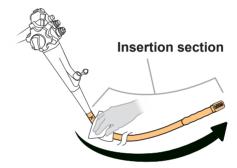
- Fresh, drinkable tap water
- Processed water (e.g., filtered, deionized, or purified, to improve its chemical and/or microbiological quality)

## 5.3.3 Wipe the insertion section

Immerse clean lint-free cloths or sponges in the water.

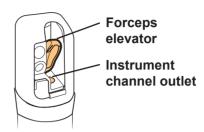


Wipe the endoscope's entire insertion section (i.e., from the control section's boot to the endoscope's distal end).

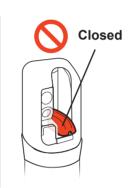


Ensure that the distal end's instrument channel outlet is fully open.

> If closed, open the instrument channel outlet by moving the elevator control lever as shown below until the forceps elevator stops.

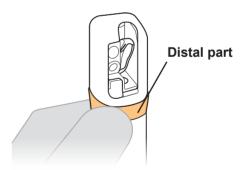








Gently hold the distal part of the bending section.



**78** 

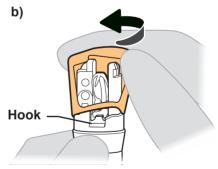
### **MARNING**

- When detaching the single use distal cover from the endoscope, hold the single use distal cover tightly. Otherwise, your fingers may slip and cause patient debris and/or fluid to splatter off, which may pose an infection control risk.
- Do not reuse the single use distal cover. Reusing the single use distal cover could pose an infection risk. After use, dispose of it in an appropriate manner.

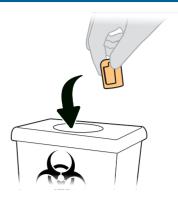
### **!** CAUTION

- After removing the single use distal cover, carefully handle the forceps elevator while cleaning, disinfecting, sterilizing, storage, and/or preparing the endoscope. This helps to prevent any damage to the forceps elevator.
- Do not forcefully grasp other parts of the bending section when detaching the single use distal cover because it can result in damage to the bending section's mechanism or damage its covering.
- While gently holding the distal part of the bending section, remove the single use distal cover, as follows:
  - a) Push back the top of the single use distal cover's gripper to begin removal.
  - b) Rotate the single use distal cover until its bottom is free from the distal ring's hook.





- 3. Wipe external surfaces
- 4. Detach distal cover
- 5. Aspirate water
- Discard the single use distal cover into a biohazard container.



Immerse a new clean lint-free cloth in the water.

If you are using a sponge, immerse an area of the sponge that is still clean. Otherwise, use a new sponge.



Wipe the endoscope's distal end.



### 5.3.5 Aspirate water and air

### **NOTE**

Monitor the suction bottle on the suction pump carefully to ensure that it does not overflow.

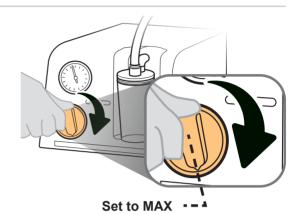
If using the KV-6 or KV-5 suction pump, turn the vacuum regulator knob clockwise until the knob stops and sets to maximum.

### **NOTE**

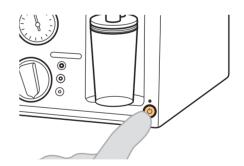
The maximum vacuum pressure of the suction pump is:

• KV-6: -95 kPa

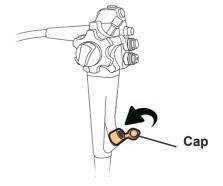
KV-5: -85 kPa



Turn the suction pump ON (if suction pump is off).



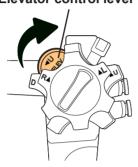
Close the biopsy valve cap.



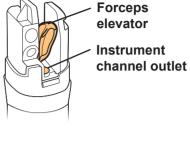
Ensure that the distal end's instrument channel outlet is fully open.

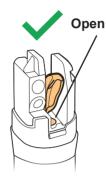
If closed, open the instrument channel outlet by moving the elevator control lever as shown below until the forceps elevator stops.



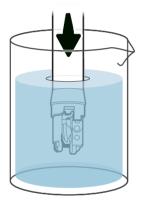








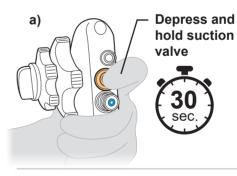
Immerse the endoscope's distal end in the water.

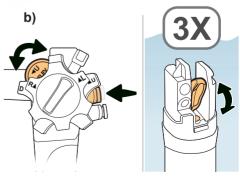


- Aspirate water for 30 seconds or more, as follows:
  - a) Depress and hold the suction valve (MH-443) on the endoscope.
  - b) While depressing the suction valve, move the elevator control lever in each direction three times to move the forceps elevator up and down.

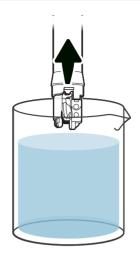
### **NOTE**

Use a clock or a timer to accurately measure 30 seconds or more.





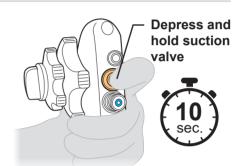
Remove the endoscope's distal end from the water.



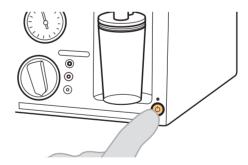
Depress and hold the suction valve and aspirate air for 10 seconds or more.

### **NOTE**

Use a clock or a timer to accurately measure 10 seconds or more.



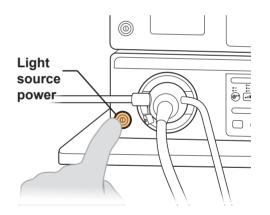
Turn the suction pump OFF.



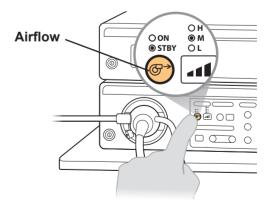
### 5.3.6 Flush the air/water channel with water and air

### **CAUTION**

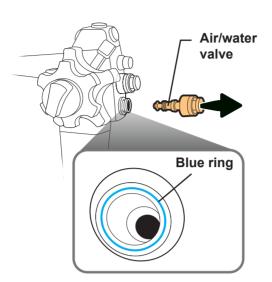
- After each patient procedure, to prevent the air/water nozzle from clogging, use the AW channel cleaning adapter (MH-948) to flush the endoscope's air channel with water.
- Do not apply lubricants to the AW channel cleaning adapter. Lubricants may cause malfunction of the AW channel cleaning adapter.
- If using the endoscopic CO<sub>2</sub> regulation unit (UCR), ensure that the UCR's gas flow is stopped. If the UCR's gas flow is on, press the UCR start/stop switch to stop gas flow.
- **7** Turn the light source ON.

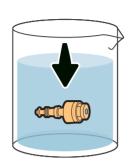


Set the light source's airflow to STBY to turn the airflow off.



Detach the air/water valve (MH-438) from the endoscope and place the air/water valve in the water.

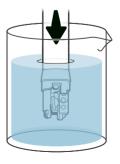




### **NOTE**

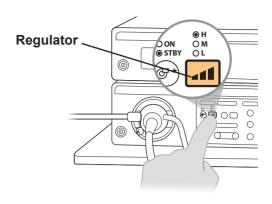
- Set aside the air/water valve (which is currently in water). You will reprocess this accessory as described in Chapter 6, "Reprocess the Accessories".
- Water may drip from the air/water cylinder when the air/water valve is detached. If this occurs, hold the control section higher than the water container. The water (i.e., sterile water in the water container) dripping from the air/water cylinder is clean.
- Attach the AW channel cleaning adapter (MH-948) to the endoscope's air/water cylinder.

  Blue ring
- Immerse the endoscope's distal end in the water.

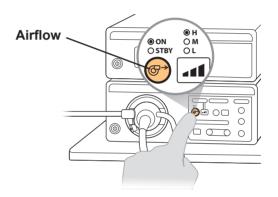


Chapter 5

Turn the light source's airflow regulator to HIGH.



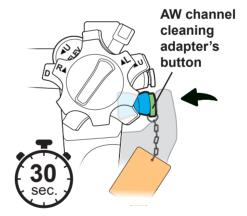
Turn the light source's airflow ON.



Depress and hold the AW channel cleaning adapter's button for 30 seconds or more to flush the air channel with water from the water container.

### NOTE

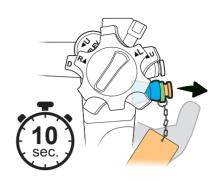
Use a clock or a timer to accurately measure 30 seconds or more.



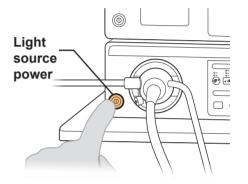
Release the AW channel cleaning adapter's button for 10 seconds or more to flush the air/water channel with air.

### **NOTE**

Use a clock or a timer to accurately measure 10 seconds or more.

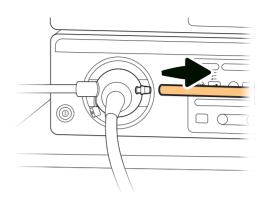


1 1 Turn the light source OFF.

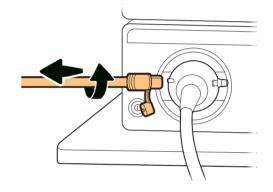


Detach the suction tube from the endoscope connector's suction connector.

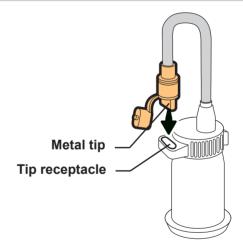
metal tip



Rotate the water container's metal tip (MAJ-901 or MAJ-902) counterclockwise and detach from the endoscope's air/water supply connectors.



As described in the water container instruction manual, place the metal tip into the water container's tip receptacle.



### 5.3.8 Detach the endoscope from the light source

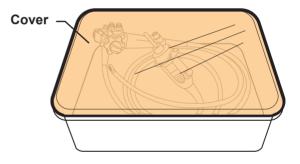
### **!** WARNING

Do not touch the endoscope connector's light guide immediately after detaching it from the light source because it is extremely hot, and could cause injury.

Detach the endoscope connector from the light source.



Transport the endoscope to the reprocessing area. Use a covered container to avoid environmental contamination if required by local policies.



### 5.4 Leakage testing of the endoscope

#### Workflow for leakage testing the endoscope:

### Prepare equipment

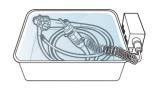
5.4.1 Equipment needed

5.4.2 Detach the accessories from the endoscope



### Perform leakage test

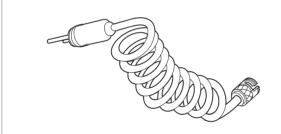
5.4.3 Perform the leakage test



### 5.4.1 Equipment needed

Prepare the following equipment.

#### Accessories and equipment for leakage testing:



Leakage tester (MB-155) (Sold separately. Refer to its instruction manual.)



Maintenance unit (MU-1) (Sold separately. Refer to its instruction manual.)

#### Fluids used for leakage testing:

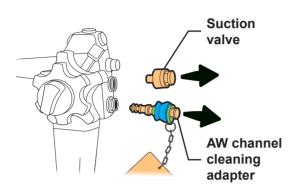
- Detergent solution (Refer to Chapter 3.3, "Detergent solution")
- Water (for reprocessing) (Refer to Chapter 3.2, "Water (for reprocessing)")

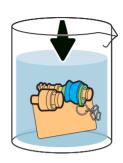
#### Other:

- Clean, large basins (size: 40 (W) × 40 (D) × 25 (H) cm or more)
- · Clean lint-free cloths

### 5.4.2 Detach the accessories from the endoscope

Detach the AW channel cleaning adapter (MH-948) and the suction valve (MH-443) from the endoscope and place them in the detergent solution.

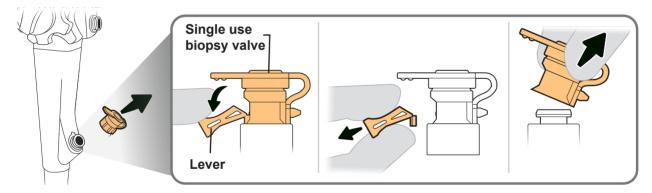




#### NOTE

Set aside the AW channel cleaning adapter and the suction valve. You will reprocess these accessories as described in Chapter 6, "Reprocess the Accessories".

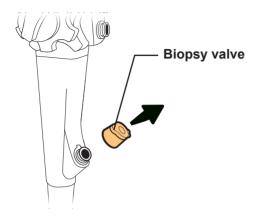
If using the single use biopsy valve (MAJ-1555), break off the single use biopsy valve's lever. Then, detach the single use biopsy valve from the instrument channel port and discard it in a biohazard container.



### **WARNING**

- Break off the single use biopsy valve's lever, then remove the single use biopsy valve from the instrument channel port. Otherwise, the valve might spray patient debris or fluids, which poses an infection control risk.
- Do not reuse the single use biopsy valve. Reusing the single use biopsy valve could
  pose an infection control risk and cause the endoscope to malfunction. After use,
  dispose of it in a biohazard container.

If using the biopsy valve (MB-358), detach the valve from the instrument channel port and place it in the detergent solution.





### **NOTE**

Set aside the biopsy valve. You will reprocess this accessory as described in Chapter 6, "Reprocess the Accessories".



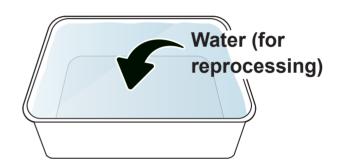
### 5.4.3 Perform the leakage test

### **WARNING**

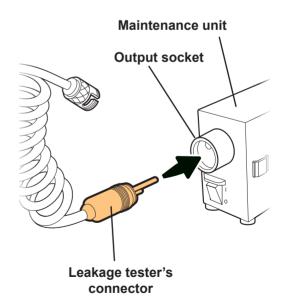


Once you immerse the endoscope, keep it immersed at all times when performing the leakage test, unless the instructions state otherwise. Holding the endoscope out of the fluid while performing the leakage test may pose an infection control risk.

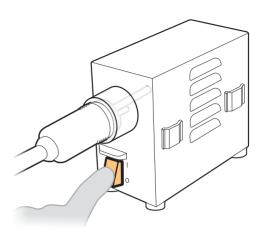
Fill a clean, large basin with water (for reprocessing).



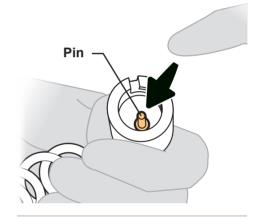
Attach the leakage tester's connector (MB-155) to the maintenance unit's output socket (MU-1).

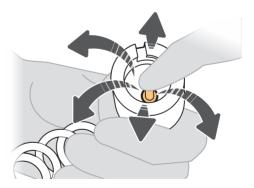


Turn the maintenance unit ON.



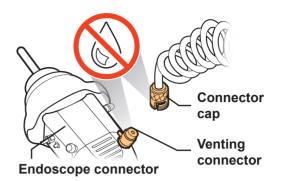
Depress the pin located inside the leakage tester's connector cap.
Confirm that air is emitted from the connector cap (listen for a whoosh sound).





5 Ensure that both the leakage tester's connector cap and the endoscope's venting connector are dry.

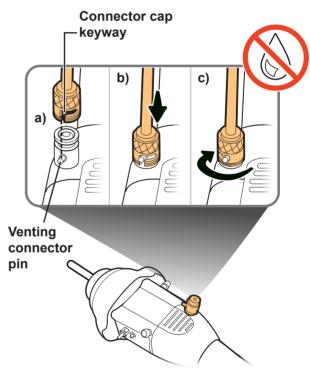
If the leakage tester's connector cap or the endoscope's venting connector is not dry, dry it with clean lint-free cloths.



### **!** CAUTION

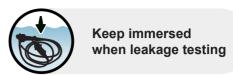
When attaching the leakage tester's connector cap (MB-155) to the endoscope's venting connector make sure that both the connector cap and the venting connector are thoroughly dry. Water on the surface of either component may enter the endoscope and could cause endoscope damage.

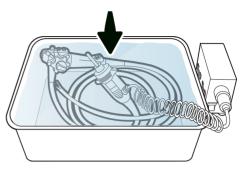
- Attach the leakage tester's connector cap to the endoscope connector's venting connector, as follows:
  - a) Align the keyway on the connector cap with the pin on the venting connector;
  - b) Push the connector cap towards the endoscope connector until it stops;
  - c) Rotate the connector cap clockwise (approximately 90°) until it stops.



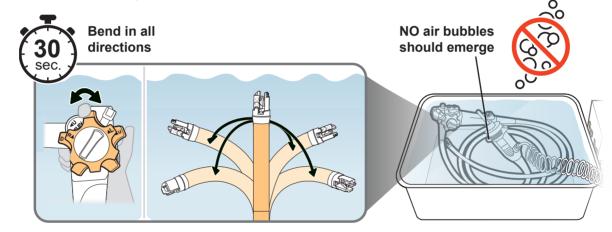
### **CAUTION**

- Do not attach/detach the leakage tester while immersing the endoscope in water because this could allow water to enter the endoscope, resulting in endoscope damage.
- Push on and rotate the connector cap clockwise fully until it stops. If it is not fully and properly attached, the interior of the endoscope will not be properly pressurized and leakage testing will not be accurate.





Reeping the endoscope completely immersed in the water, turn the endoscope's U/D and R/L angulation control knobs for 30 seconds or more in total and confirm that air bubbles do not emerge continuously or intermittently from the endoscope.



### **!** CAUTION

If you identify a leak during leakage testing, remove the endoscope from the water with the leakage tester still attached. Contact Olympus regarding instructions for reprocessing a leaking endoscope in preparation for returning the endoscope to Olympus for repair.

#### NOTE

Use a clock or a timer to accurately measure 30 seconds or more.



Keeping the endoscope completely immersed in the water, move the endoscope's elevator control lever for 30 seconds or more and confirm that after 30 seconds NO air bubbles emerge continuously or intermittently around the endoscope's forceps elevator.



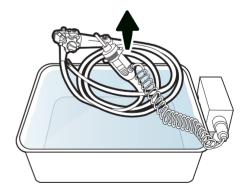
### **∕!**\ WARNING

The elevator control lever must be moved during leakage testing to detect leaks that occur only when the forceps elevator is up or down. Use of an endoscope with a leak may pose an infection control risk.

### **NOTE**

- During the leakage test, it is normal for the bending section's covering to expand as the air pressure inside the endoscope increases.
- Use a clock or a timer to accurately measure 30 seconds or more.

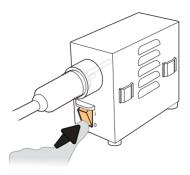
10 With the leakage tester attached, remove the endoscope from the water.



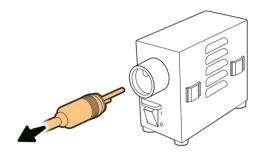
### **CAUTION**

Do not attach/detach the leakage tester while immersing the endoscope in water because this could allow water to enter the endoscope, resulting in endoscope damage.

Turn the maintenance unit OFF.



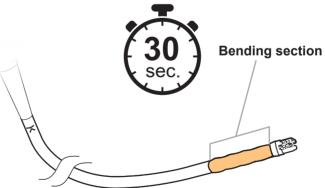
Detach the leakage tester's connector from the maintenance unit.



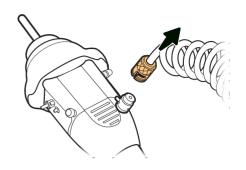
### P. CAUTION

Detach the leakage tester from the maintenance unit (MU-1) before detaching the leakage tester from the endoscope. If the leakage tester is detached from the endoscope before detaching the leakage tester from the maintenance unit, the air pressure inside the endoscope will not vent properly, which may damage the endoscope.

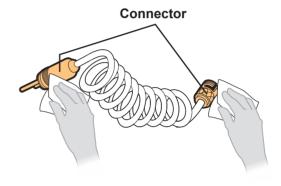
Wait about 30 seconds until the bending section's covering contracts to its pre-expansion size.



Detach the leakage tester from the endoscope.



Thoroughly dry both connectors of the leakage tester using clean lint-free cloths.



### 5.5 Manually clean the endoscope and accessories

#### Workflow for manually cleaning the endoscope and accessories:

#### Prepare equipment

5.5.1 Equipment needed



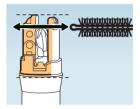
#### Clean endoscope surfaces

5.5.2 Clean the endoscope's external surfaces



#### Brush distal end and channels

- 5.5.3 Brush the forceps elevator and forceps elevator recess
- 5.5.4 Brush the endoscope's distal end and distal ring surfaces
- 5.5.5 Brush the endoscope's channels



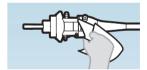
### Flush distal end, aspirate and flush channels

- 5.5.6 Flush the endoscope's distal end with detergent solution
- 5.5.7 Aspirate detergent solution through the instrument channel and the suction channel
- 5.5.8 Flush the air/water channel with detergent solution



### Immerse then wipe external surfaces

5.5.9 Immerse and then wipe the endoscope and accessories in detergent solution



#### Remove detergent solution

- 5.5.10 Remove detergent solution from the distal end and all channels
- 5.5.11 Dry the external surfaces



Ensure that you perform manual cleaning within 1 hour after the patient procedure.

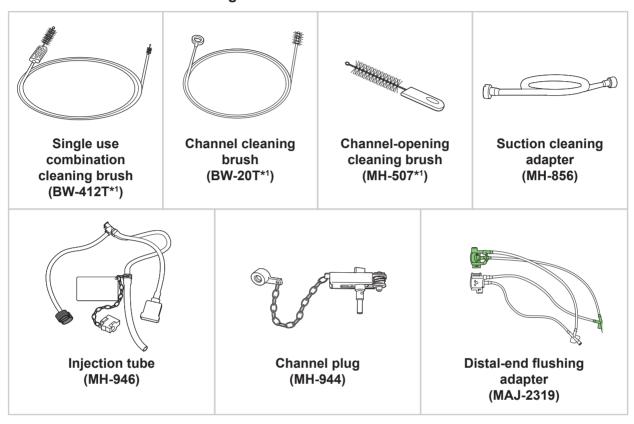
If manual cleaning cannot be performed within 1 hour after the patient procedure or if you are not sure whether manual cleaning was performed within 1 hour, presoak the endoscope in the detergent solution, as described in Chapter 5.9, "Presoak the endoscope", before manually cleaning the endoscope.



### 5.5.1 Equipment needed

Prepare the following equipment.

#### Accessories for manual cleaning:



<sup>\*1</sup> Prepare a single use combination cleaning brush (BW-412T) OR prepare a channel cleaning brush (BW-20T) and channel-opening cleaning brush (MH-507).

#### **Equipment:**



Suction pump (KV-6, KV-5, SSU-2) and suction tube (Sold separately. Refer to its instruction manual.)

1. Equipment needed

2. Clean surfaces

#### Fluids used for manual cleaning:

- Detergent solution (Refer to Chapter 3.3, "Detergent solution")
- Water (for reprocessing)
   (Refer to Chapter 3.2, "Water (for reprocessing)")

#### Other:

- Clean, soft brushes OR clean sponges OR clean lint-free cloths
- Clean, large basins (size: 40 (W) × 40 (D) × 25 (H) cm or more)
- Clean 30 mL (30 cc) syringes
- · Clean lint-free cloths

### 5.5.2 Clean the endoscope's external surfaces



#### **WARNING**

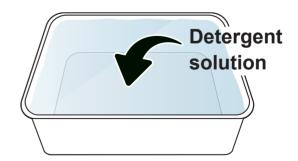


Once you immerse the endoscope, keep it immersed at all times when performing the cleaning steps, unless the instructions state otherwise. Holding the endoscope out of the fluid while cleaning may pose an infection control risk.

### 5.5.2.1 Prepare for manual cleaning

Fill a clean, large basin with the detergent solution at the temperature and concentration recommended by the detergent manufacturer.

Refer to the detergent manufacturer's instructions for the recommended temperature and concentration.



# Completely immerse the endoscope in the detergent solution.

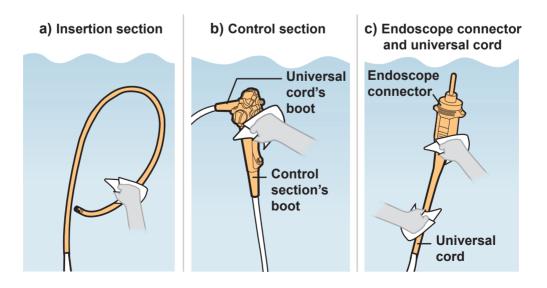


Keep immersed

### 5.5.2.2 Clean the endoscope's external surfaces

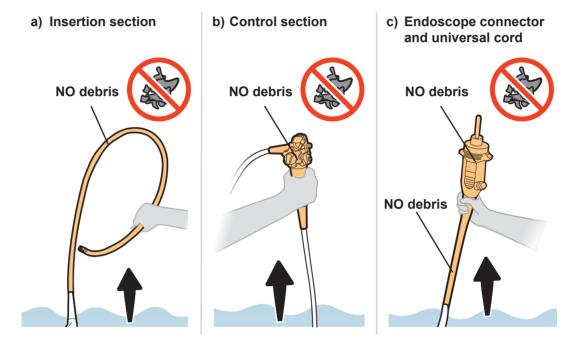
This section describes how to clean the external surfaces of the endoscope's:

- Insertion section
- Control section (including its surrounding parts)
- · Endoscope connector and universal cord
- Keeping the endoscope immersed in the detergent solution, use clean lint-free cloths, sponges, or brushes, to thoroughly wipe or brush all the external surfaces of the endoscope's:
  - a) Insertion section
  - b) Control section (including the universal cord's boot, the control section's boot)
  - c) Endoscope connector and universal cord



- Remove the following parts from the detergent solution and confirm that no debris remains on the external surfaces of these parts:
  - a) Insertion section
  - b) Control section (including the universal cord's boot, the control section's boot)
  - c) Endoscope connector and universal cord

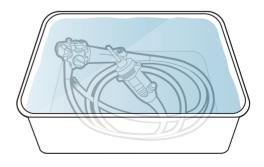
If any debris remains, repeat Steps 1 and 2 until no debris remains.



#### **NOTE**

Remove debris from the endoscope's distal end and distal ring later in this chapter as described in the following chapters:

- Chapter 5.5.3, "Brush the forceps elevator and forceps elevator recess"
- Chapter 5.5.4, "Brush the endoscope's distal end and distal ring surfaces", and
- Chapter 5.5.6, "Flush the endoscope's distal end with detergent solution"
- When all debris is removed, put all parts back in the detergent solution.



### 5.5.3 Brush the forceps elevator and forceps elevator recess

### <u>(İ</u>)

### **WARNING**



- Once you immerse the endoscope, keep it immersed at all times when performing the cleaning steps, unless the instructions state otherwise. Holding the endoscope out of the fluid while cleaning may pose an infection control risk.
- To avoid splashing the detergent solution, keep the endoscope immersed in the detergent solution while brushing the forceps elevator and the forceps elevator recess.

### <u>/i\</u>

### CAUTION

- Gently brush the forceps elevator and forceps elevator recess using a channelopening cleaning brush (MH-507) or a single use combination cleaning brush (BW-412T).
- Do not use a stiff brush or brush with excessive force. Using a stiff brush or brushing with excessive force may damage the endoscope's distal end and cause the endoscope to leak.



Channel-opening cleaning brush (MH-507)



Single use combination cleaning brush (BW-412T)

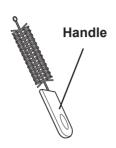
### 5.5.3.1 Brush the front of the forceps elevator

3. Brush forceps

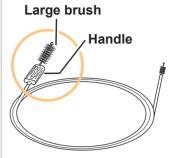
elevator and recess

You may use the channel-opening cleaning brush (MH-507) or the large brush with handle on the single use combination cleaning brush (BW-412T).

> Always grip the brush's handle while brushing.



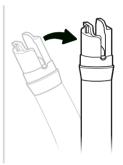
**Channel-opening** cleaning brush (MH-507)



Single use combination cleaning brush (BW-412T)

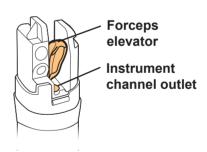
Turn the endoscope's U/D and R/L angulation control knobs to straighten the endoscope's bending section.





Ensure that the distal end's instrument channel outlet is fully open.

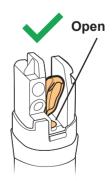
> If closed, open the instrument channel outlet by moving the elevator control lever as shown below until the forceps elevator stops.



#### Elevator control lever



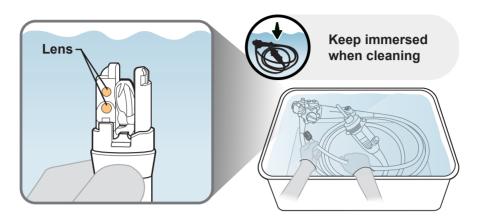




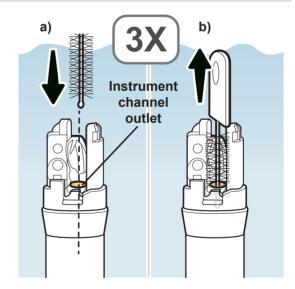
Chapter 5

Hold the endoscope's distal end so you can see the lens.

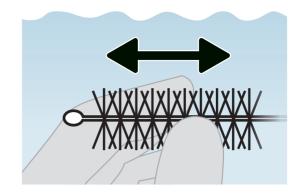
While brushing, keep the endoscope's distal end completely immersed in the detergent solution.



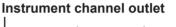
- Perform the following brushing action:
  - a) Insert the brush into the instrument channel outlet, along the forceps elevator, until the brush handle touches the distal end.
  - b) Pull the brush out of the instrument channel outlet completely.
  - c) Repeat Steps a) and b) two more times, for a total of three times.

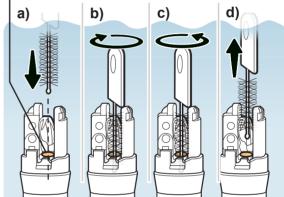


Clean the brush's bristles in the detergent solution using your gloved fingertips to remove any debris.

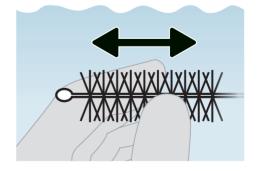


- Perform the following brushing action:
  - a) Insert the brush into the instrument channel outlet, along the forceps elevator, until the brush handle touches the distal end.
  - b) Rotate the brush one full rotation (360 degrees) clockwise.
  - c) Rotate the brush one full rotation (360 degrees) counterclockwise.
  - d) Pull the brush out of the instrument channel outlet completely.





Clean the brush's bristles in the detergent solution using your gloved fingertips to remove any debris.

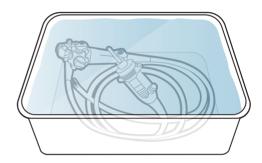


Remove the distal end from the detergent solution and confirm that no debris remains on the front of the forceps elevator.

If any debris remains, repeat Steps 7 through 9 until no debris remains.

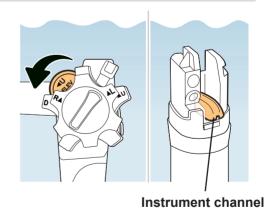


When all debris is removed, put the distal end back in the detergent solution.



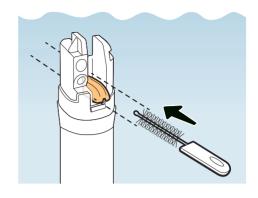
### 5.5.3.2 Brush the back of the forceps elevator

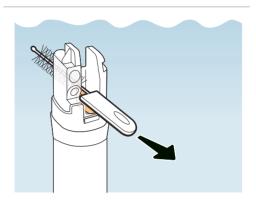
Close the instrument channel outlet by moving the elevator control lever in the direction shown in the image on the right until the forceps elevator stops. Confirm the instrument channel outlet is closed.

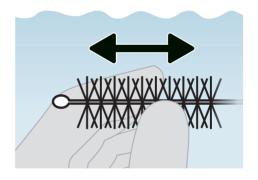


outlet closed

- 2.
- Perform the following brushing action:
- a) Insert the brush into the forceps elevator recess, along the back of the forceps elevator, until the brush handle touches the distal end.
- b) Pull the brush out of the forceps elevator recess completely.

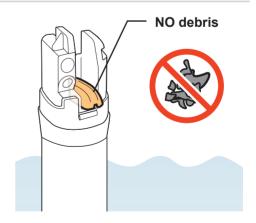




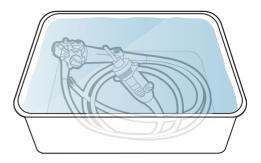


Remove the distal end from the detergent solution and confirm that no debris remains on the back of the forceps elevator.

If any debris remains, repeat Steps 2 through 4 until no debris remains.



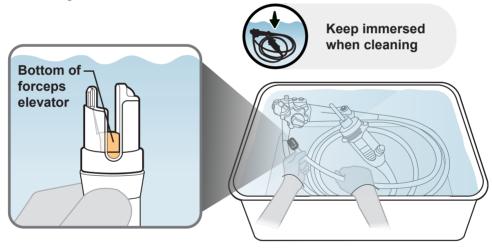
When all debris is removed, put the distal end back in the detergent solution.



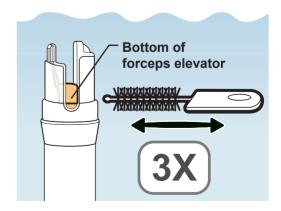
# 5.5.3.3 Brush the bottom of the forceps elevator and recess from the back side

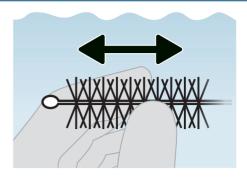
Hold the endoscope's distal end with the lens facing down, so that you can see the distal end's back side and bottom of the forceps elevator (highlighted in light orange).

While brushing, keep the endoscope's distal end completely immersed in the detergent solution.

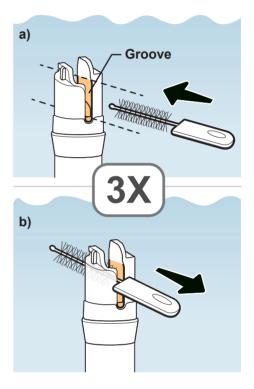


Brush the bottom of the forceps elevator back and forth, three times as shown in the image on the right.

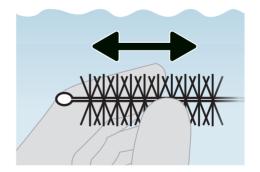




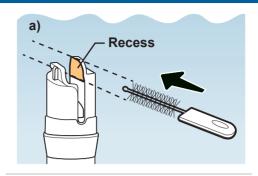
- Perform the following brushing action:
  - a) Insert the brush into the groove along the back of the forceps elevator until the brush handle touches the distal end.
  - b) Pull the brush out of the groove completely.
  - c) Repeat Steps a) and b) two more times, for a total of three times.

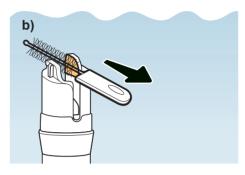


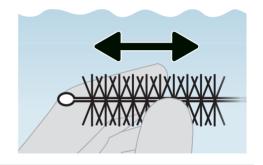
Clean the brush's bristles in the detergent solution using your gloved fingertips to remove any debris.



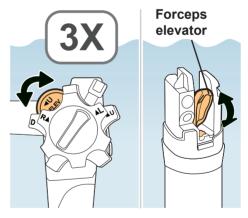
- Perform the following brushing action:
  - a) Insert the brush into the forceps elevator recess until the brush handle touches the distal end.
  - b) Pull the brush out of the forceps elevator recess completely.





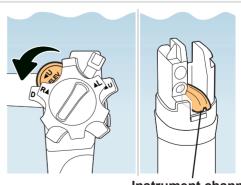


Keeping the endoscope immersed in the detergent solution, move the elevator control lever in each direction three times to move the forceps elevator up and down.



Confirm the instrument channel is closed.

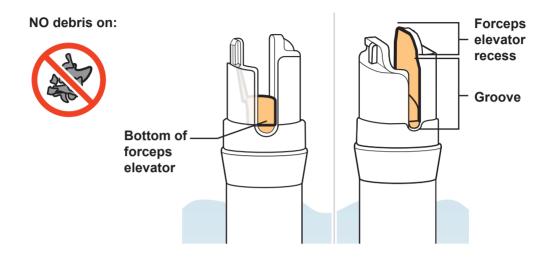
If the instrument channel outlet is open, close the outlet by moving the elevator control lever as shown in the image on the right until the forceps elevator stops.



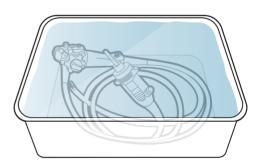
Instrument channel outlet closed

Remove the distal end from the detergent solution, and confirm that no debris remains on the bottom of the forceps elevator, forceps elevator recess, and groove.

If any debris remains, repeat Steps 2 through 10 until no debris remains.

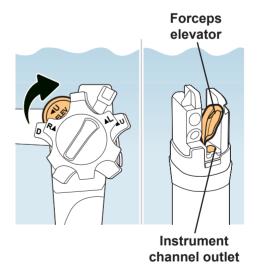


When all debris is removed, put the distal end back in the detergent solution.



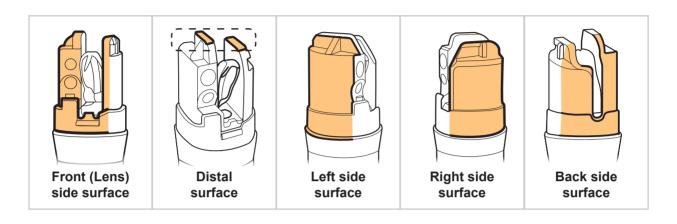
Open the instrument channel outlet by moving the elevator control lever as shown in the image on the right until the forceps elevator stops.

Confirm the instrument channel outlet is open.



# 5.5.4 Brush the endoscope's distal end and distal ring surfaces

This chapter describes how to brush the five external surfaces of the distal end and the distal ring. The five surfaces are pictured here:



## **!** WARNING



- Once you immerse the endoscope, keep it immersed at all times when performing the cleaning steps, unless the instructions state otherwise. Holding the endoscope out of the fluid while cleaning may pose an infection control risk.
- To avoid splashing the detergent solution, keep the endoscope immersed in the detergent solution while brushing the distal end and the distal ring.

# **CAUTION**

- Gently brush the forceps elevator and forceps elevator recess using a channelopening cleaning brush (MH-507) or a single use combination cleaning brush (BW-412T).
- Do not use a stiff brush or brush with excessive force. Using a stiff brush or brushing with excessive force may damage the endoscope's distal end and cause the endoscope to leak.





Single use combination cleaning brush

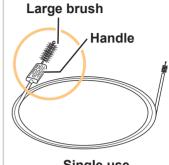
# 5.5.4.1 Brush the lens side surface of the distal end and the distal ring

You may use the channel-opening cleaning brush (MH-507) or the large brush with handle on the single use combination cleaning brush (BW-412T).

Always grip the brush's handle while brushing.



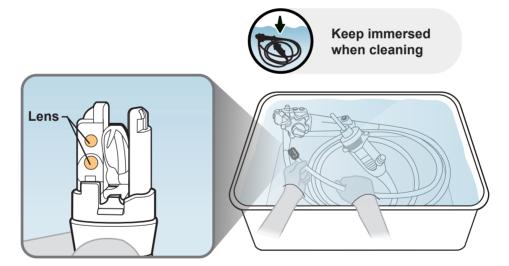
Channel-opening cleaning brush (MH-507)



Single use combination cleaning brush (BW-412T)

Hold the endoscope's distal end so you can see the lens.

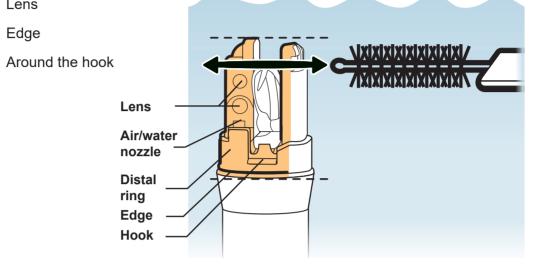
While brushing, keep the endoscope's distal end completely immersed in the detergent solution.



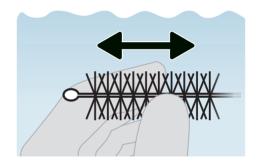
Brush back and forth across the lens side surface (highlighted in light orange) of the distal end and the distal ring, as shown in the image below.

Ensure that you do not leave any debris on the:

- Air/water nozzle opening
- Lens
- Edge

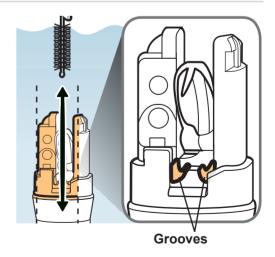


Clean the brush's bristles in the detergent solution using your gloved fingertips to remove any debris.

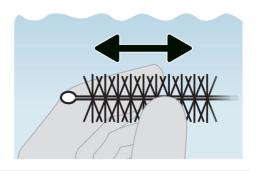


5. Brush up and down, along the distal end's lens side surface (highlighted in light orange) and the distal ring, as shown in the image on the right.

> Ensure that you do not leave any debris along the grooves beside the distal ring.



elevator and recess

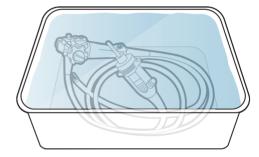


Remove the distal end from the detergent solution, and confirm that no debris remains on the lens side surface of the distal end and the distal ring.

If any debris remains, repeat Steps 3 through 7 until no debris remains.



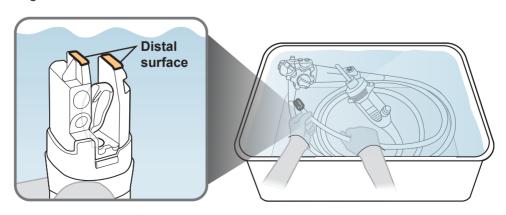
When all debris is removed, put the distal end back in the detergent solution.



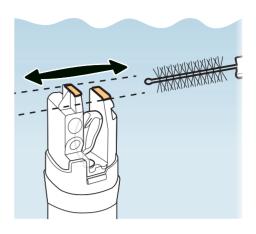
### 5.5.4.2 Brush the distal end's distal surface

Hold the endoscope's distal end so you can see the distal surface (highlighted in light orange).

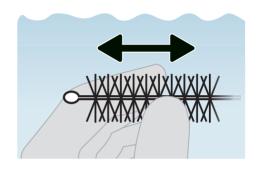
While brushing, keep the endoscope's distal end completely immersed in the detergent solution.



Brush back and forth across the distal end's distal surface (highlighted in light orange), as shown in the image on the right.



Clean the brush's bristles in the detergent solution using your gloved fingertips to remove any debris.

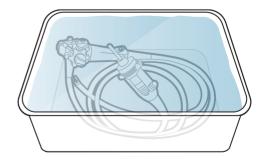


Remove the distal end from the detergent solution, and confirm that no debris remains on the distal surface of the distal end.

If any debris remains, repeat Steps 2 through 4 until no debris remains.



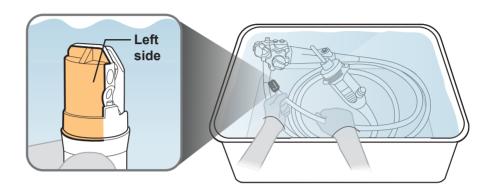
When all debris is removed, put the distal end back in the detergent solution.



# 5.5.4.3 Brush the left side surface of the distal end and the distal ring

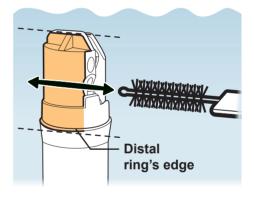
Hold the endoscope's distal end with the lens facing right, so you can see the left side surface (highlighted in light orange).

While brushing, keep the endoscope's distal end completely immersed in the detergent solution.

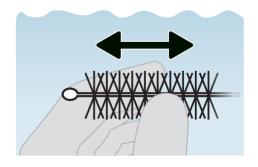


Brush back and forth across the left side surface (highlighted in light orange) of the distal end and the distal ring, as shown in the image on the right.

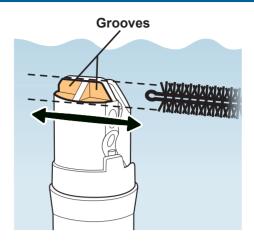
Ensure that you do not leave any debris along the distal ring's edge.



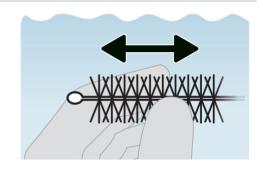
Clean the brush's bristles in the detergent solution using your gloved fingertips to remove any debris.



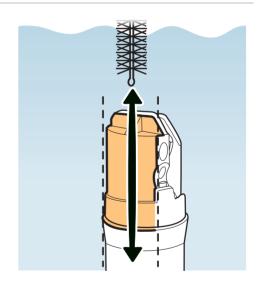
Brush back and forth along the two grooves (highlighted in light orange) on the distal end's left side surface, as shown in the image on the right.



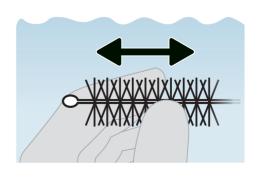
Clean the brush's bristles in the detergent solution using your gloved fingertips to remove any debris.



Brush up and down, along the distal end's left side surface (highlighted in light orange) and the distal ring, as shown in the image on the right.



Clean the brush's bristles in the detergent solution using your gloved fingertips to remove any debris.

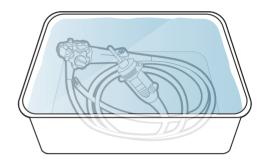


Remove the distal end from the detergent solution, and confirm that no debris remains on the left side surface of the distal end and the distal ring.

If any debris remains, repeat Steps 2 through 8 until no debris remains.



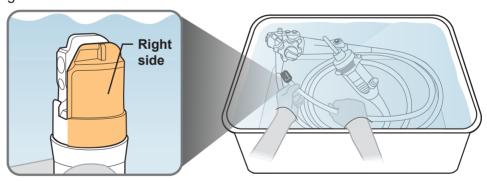
When all debris is removed, put the distal end back in the detergent solution.



# 5.5.4.4 Brush the right side surface of the distal end and the distal ring

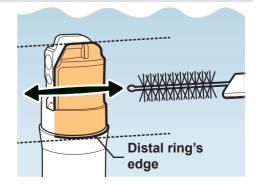
Hold the endoscope's distal end with the lens facing left, so you can see the right side surface (highlighted in light orange).

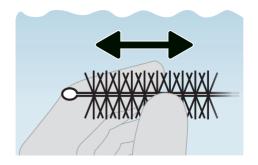
While brushing, keep the endoscope's distal end completely immersed in the detergent solution.



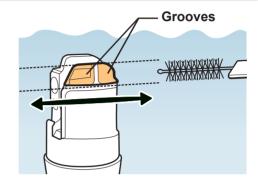
Brush back and forth across right side surface (highlighted in light orange) of the distal end and the distal ring, as shown in the image on the right.

Ensure that you do not leave any debris along the distal ring's edge.

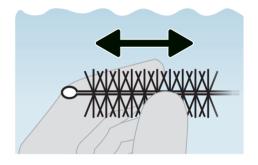




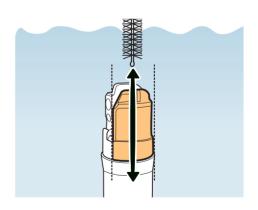
Brush back and forth along the two grooves (highlighted in light orange) on the distal end's right side surface, as shown in the image on the right.



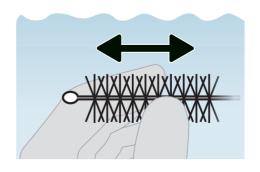
Clean the brush's bristles in the detergent solution using your gloved fingertips to remove any debris.



Brush up and down, along the distal end's right side surface (highlighted in light orange) and the distal ring, as shown in the image on the right.



Clean the brush's bristles in the detergent solution using your gloved fingertips to remove any debris.

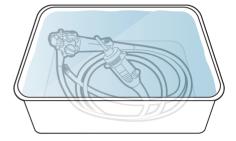


Remove the distal end from the detergent solution, and confirm that no debris remains on the right side surface of the distal end and the distal ring.

If any debris remains, repeat Steps 2 through 8 until no debris remains.



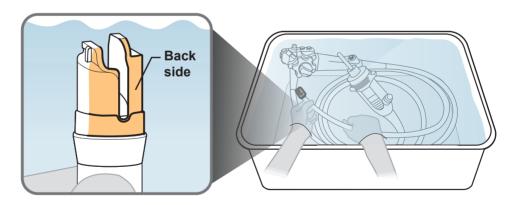
When all debris is removed, put the distal end back in the detergent solution.



# 5.5.4.5 Brush the back side surface of the distal end and the distal ring

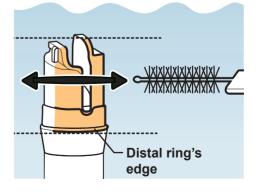
Hold the endoscope's distal end with the lens facing down, so you can see the back side surface (highlighted in light orange).

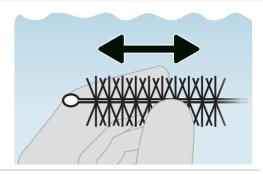
While brushing, keep the endoscope's distal end completely immersed in the detergent solution.



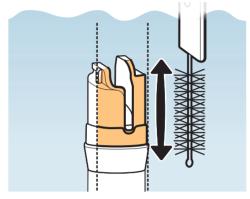
Brush back and forth across the back side surface (highlighted in light orange) of the distal end and the distal ring, as shown in the image on the right.

Ensure that you do not leave any debris along the distal ring's edge.

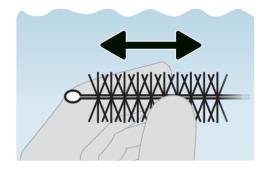




Brush up and down along the back side surface of the distal end and distal ring, as shown in the image on the right.



Clean the brush's bristles in the detergent solution using your gloved fingertips to remove any debris.

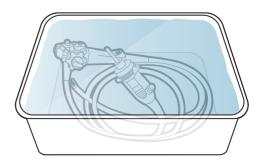


Remove the distal end from the detergent solution, and confirm that no debris remains on the back side surface of the distal end and the distal ring.

If any debris remains, repeat Steps 2 through 6 until no debris remains.



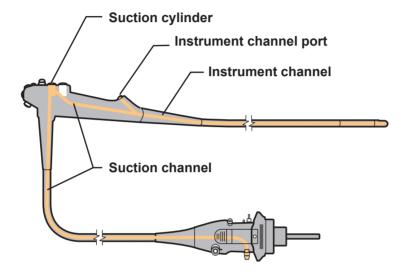
When all debris is removed, put the distal end back in the detergent solution.



# <u>/i\</u>

#### **WARNING**

Follow the instructions in this chapter to ensure you thoroughly brush the inside
of the instrument channel, the instrument channel port, the suction channel, and
the suction cylinder of the endoscope. Insufficient brushing may pose an infection
control risk.



- To avoid splashing the detergent solution when the brush is pulled out from the endoscope, keep the endoscope completely immersed in the detergent solution.
- Channel cleaning brushes can become damaged or broken, leading to device malfunction and/or patient injury. Note that:
  - The channel cleaning brush (BW-20T) degrades as it is used.
  - The single use combination cleaning brush (BW-412T) is for single use.
  - Repeated usage of these brushes may cause the brush head to become bent or kinked, which could cause it to come off during use.
  - Before and after use, confirm that the brush is free from any damage or other irregularities.
  - If a piece of the brush comes off inside the endoscope channel, immediately retrieve it. Confirm that no parts remain inside either the instrument channel or the suction channel of the endoscope by carefully passing a new brush through both channels. Any part left in the channels can drop into the patient during a subsequent patient procedure. Depending on the location of the missing part, the part may not be retrievable by passing a new brush. In this case, contact Olympus.

# <u>^i\</u>

#### **WARNING**

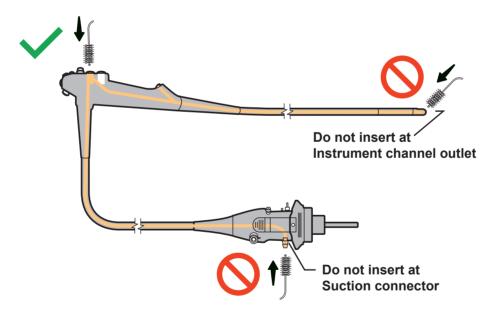


 Once you immerse the endoscope, keep it immersed at all times when performing the cleaning steps, unless the instructions state otherwise. Holding the endoscope out of the fluid while cleaning may pose an infection control risk.

# **!** CAUTION

To avoid potential damage to the endoscope and cleaning brushes:

 Do not attempt to pass the channel cleaning brush (BW-20T) or the single use combination cleaning brush (BW-412T) backwards (i.e., by inserting the brush directly into the instrument channel outlet at the endoscope's distal end or directly into the suction connector on the endoscope connector). It may get caught, making retrieval impossible.



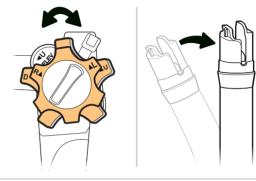
 Do not coil the insertion section or the universal cord of the endoscope with a diameter of less than 40 cm. If the diameter is less than 40 cm, it may be difficult to pass the brush completely through the channels.

## <u>/i\</u>

### **CAUTION**

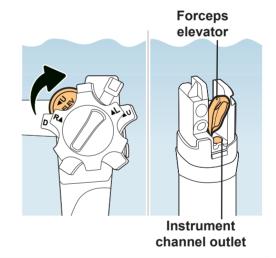
When withdrawing the channel cleaning brush (BW-20T) from the endoscope's suction cylinder, make sure that the shaft of the brush does not rub against the cylinder opening. Excessive rubbing of the brush against the cylinder edge may damage the cylinder.

Turn the endoscope's U/D and R/L angulation control knobs to straighten the endoscope's bending section.



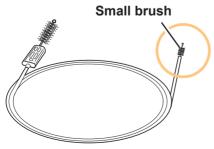
Ensure that the distal end's instrument channel outlet is fully open.

If closed, open the instrument channel outlet by moving the elevator control lever as shown on the right until the forceps elevator stops.

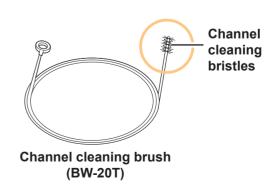


You may use the small brush without a handle on the single use combination cleaning brush (BW-412T) or the channel-cleaning brush (BW-20T).

Grip the channel cleaning brush end 3 cm down from the bristles.



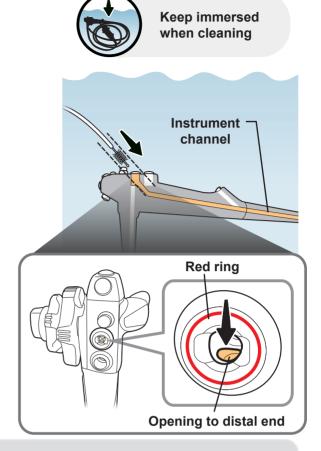
Single use combination cleaning brush (BW-412T)



While brushing, keep the endoscope completely immersed in the detergent solution.

Insert the brush at a 45° angle into the opening located in the side wall of the suction cylinder (marked with a red ring).

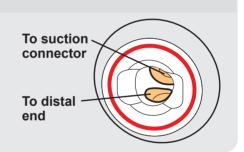
Using short strokes, feed the brush through the instrument channel until it emerges from the endoscope's distal end.



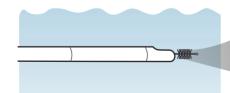
### **NOTE**

The suction cylinder contains two openings:

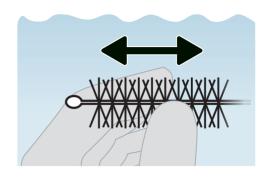
- The opening further back, and straight in, leads to the suction connector.
- The opening in the side wall, closer to the front, leads to the instrument channel and distal end.



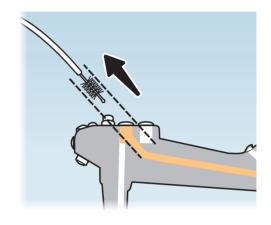
When the brush emerges from the endoscope's distal end, inspect the bristles for debris.



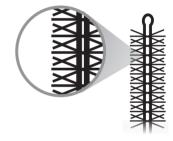




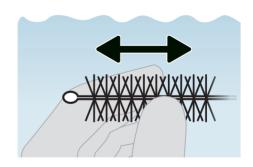
Carefully pull the brush back through the instrument channel and the suction channel and out of the suction cylinder.



When the brush emerges from the endoscope's suction cylinder, inspect the bristles for debris.



Clean the brush's bristles in the detergent solution using your gloved fingertips to remove any debris.



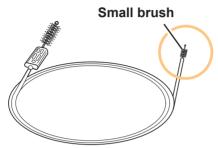
10 If any debris remains, repeat
Steps 4 through 9 until no debris remains.



# 5.5.5.2 Brush the suction channel from the suction cylinder to the endoscope connector

You may use the small brush without a handle on the single use combination cleaning brush (BW-412T) or the channel cleaning brush (BW-20T).

Grip the channel cleaning brush end 3 cm down from the bristles.



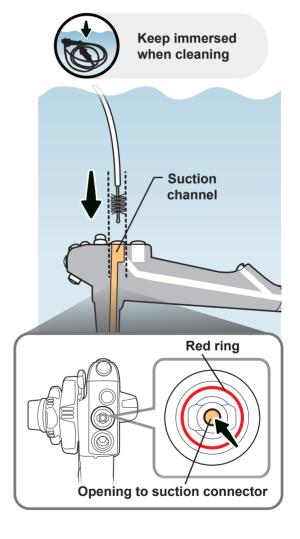
Single use combination cleaning brush (BW-412T)

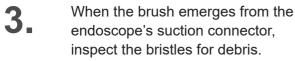


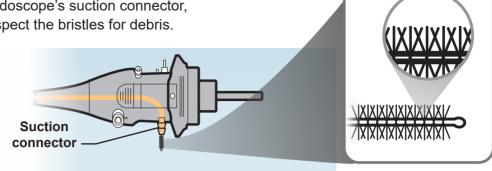
While brushing, keep the endoscope completely immersed in the detergent solution.

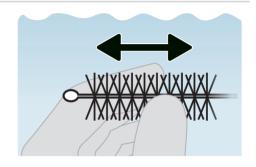
Insert the brush straight into the opening that is at the back of the suction cylinder (marked with a red ring).

Using short strokes, feed the brush through the suction channel until it emerges from the endoscope's suction connector.

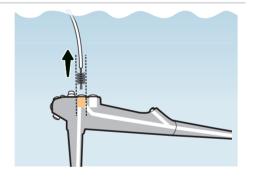




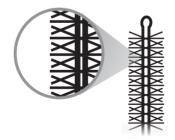




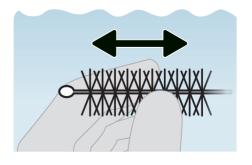
Carefully pull the brush back through the suction channel and out of the suction cylinder.



When the brush emerges from the endoscope's suction cylinder, inspect the bristles for debris.



Clean the brush's bristles in the detergent solution using your gloved fingertips to remove any debris.



If any debris remains, repeat
Steps 2 through 7 until no debris remains.



### **NOTE**

You will use the channel cleaning brush (BW-20T) later to brush the accessories, as described in Chapter 6, "Reprocess the Accessories".

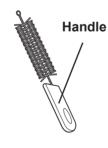
### 5.5.5.3 Brush the suction cylinder

### **CAUTION**

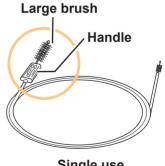
When inserting the large brush with handle on the single use combination cleaning brush (BW-412T) or the channel-opening cleaning brush (MH-507) into the suction cylinder, do not forcibly insert the brush beyond the mid portion of the brush. Doing so could cause the brush to get stuck.

You may use the channel-opening cleaning brush (MH-507) or the large brush with handle on the single use combination cleaning brush (BW-412T).

Always grip the brush's handle while brushing.



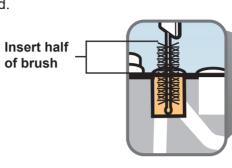
Channel-opening cleaning brush (MH-507)



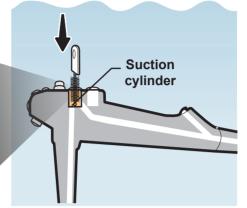
Single use combination cleaning brush (BW-412T)

While brushing, keep the endoscope completely immersed in the detergent solution.

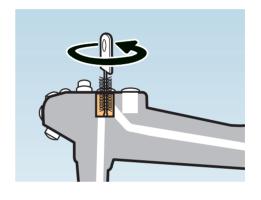
Insert the brush into the suction cylinder until half of the brush section is inserted.



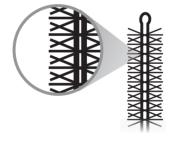




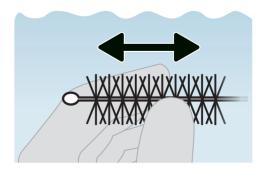
- Perform the following brushing action:
  - a) Rotate the inserted brush one full rotation (i.e., 360 degrees).
  - b) Pull the brush out of the suction cylinder.



Inspect the brush's bristles for debris.



Clean the brush's bristles in the detergent solution using your gloved fingertips to remove any debris.



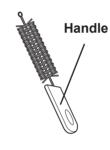
If any debris remains, repeat
Steps 2 through 5 until no debris remains.



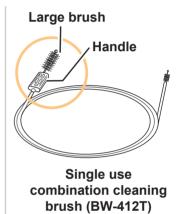
### 5.5.5.4 Brush the instrument channel port

You may use the channel-opening cleaning brush (MH-507) or the large brush with handle on the single use combination cleaning brush (BW-412T).

Always grip the brush's handle while brushing.



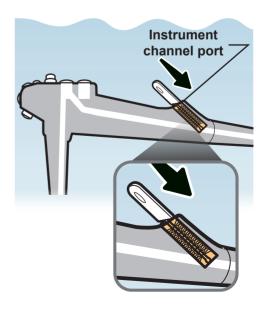
Channel-opening cleaning brush (MH-507)



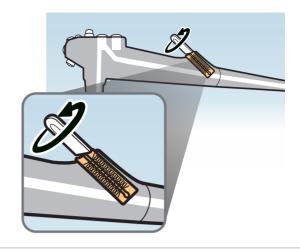
While brushing, keep the endoscope completely immersed in the detergent solution.

Insert the brush into the instrument channel port until the brush handle touches the channel opening.

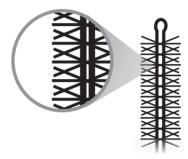




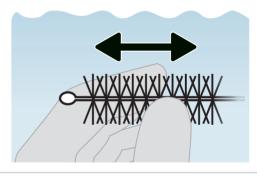
- Perform the following brushing action:
  - a) Rotate the inserted brush one full rotation. (i.e., 360 degrees)
  - b) Pull the brush out of the instrument channel port.



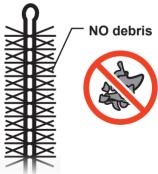
Inspect the brush's bristles for debris.



Clean the brush's bristles in the detergent solution using your gloved fingertips to remove any debris.



6 If any debris remains, repeat Steps 2 through 5 until no debris remains.



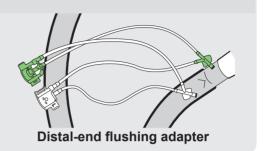
#### NOTE

- You will reprocess the channel-opening cleaning brush (MH-507), as described in Chapter 6, "Reprocess the Accessories".
- You will use the single use combination cleaning brush (BW-412T) later to brush the accessories, as described in Chapter 6, "Reprocess the Accessories".

### 5.5.6 Flush the endoscope's distal end with detergent solution

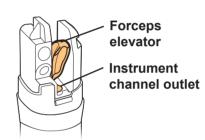
#### NOTE

You will use the distal-end flushing adapter (MAJ-2319) to flush the endoscope's distal end.



Ensure that the distal end's instrument channel outlet is fully open.

If closed, open the instrument channel outlet by moving the elevator control lever as shown below until the forceps elevator stops.





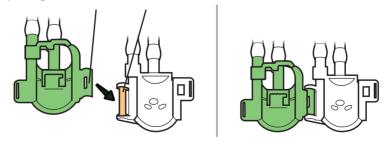




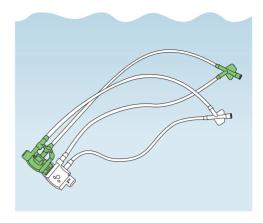


Assemble the distal-end flushing adapter (MAJ-2319) by attaching the clip on the green cover to the shaft on the white cover.

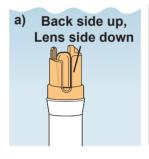
Clip on green cover Shaft on white cover

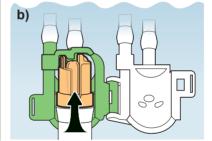


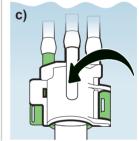
Completely immerse the distal-end flushing adapter in the detergent solution.



- Keeping the distal-end flushing adapter immersed in the detergent solution, attach the distal-end flushing adapter to the endoscope's distal end, as follows;
  - a) Hold the distal end so you can see the back side surface (lens side is down);
  - b) Put the distal end in the green cover so the lens is against the green cover and the top lines up against the top of the green cover;
  - c) Shut the white cover onto the green cover so that it snaps closed.





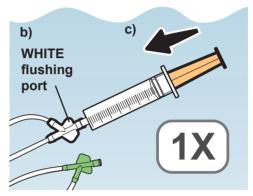


Keeping the endoscope and the distal-end flushing adapter immersed in the detergent solution, hold the distal-end flushing adapter and gently pull the endoscope to ensure that the distal end does not come out of the distal-end flushing adapter.

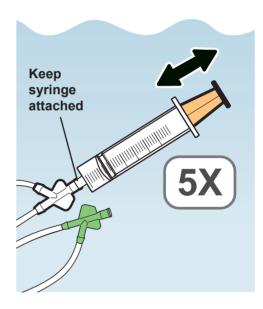


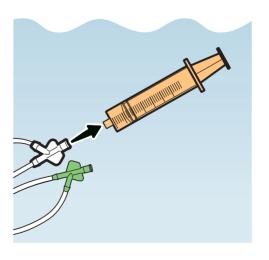
- Immerse a clean 30 mL syringe in the detergent solution and flush through the WHITE flushing port, as follows:
  - a) Before attaching the syringe to the white flushing port (so that you do not pull air into the syringe that might be inside the flushing tube), slowly pull the syringe plunger to fill the syringe with the detergent solution;
  - b) Attach it to the white flushing port of the distal-end flushing adapter;
  - c) Then forcefully flush the distal end with 30 mL of the detergent solution.



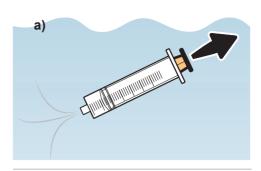


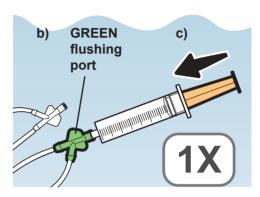
- Keeping the 30 mL syringe attached and immersed, flush an additional 150 mL of the detergent solution through the WHITE flushing port, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with the detergent solution;
  - b) Then forcefully flush the distal end with 30 mL of the detergent solution.
  - c) Repeat Steps a) and b) four more times, for a total of five times.
- Detach the syringe from the distalend flushing adapter.



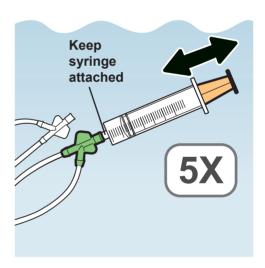


- Keeping the 30 mL syringe immersed, flush the detergent solution through the GREEN flushing port, as follows:
  - a) Before attaching the syringe to the green flushing port (so that you do not pull air into the syringe that might be inside the flushing tube), slowly pull the syringe plunger to fill the syringe with the detergent solution;
  - b) Attach it to the green flushing port of the distal-end flushing adapter;
  - c) Then forcefully flush the distal end with 30 mL of the detergent solution.

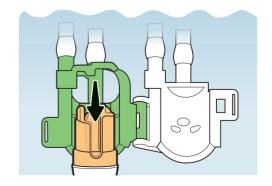




- **10** Keeping the 30 mL syringe attached and immersed, flush an additional 150 mL of the detergent solution through the GREEN flushing port, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with the detergent solution;
  - b) Then forcefully flush the distal end with 30 mL of the detergent solution.
  - c) Repeat Steps a) and b) four more times, for a total of five times.

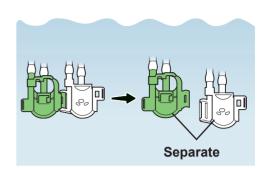


Keeping the distal-end flushing adapter immersed in the detergent solution, open the white cover and green cover and detach the distal-end flushing adapter from the endoscope.



Keeping the distal-end flushing adapter immersed in the detergent solution, separate the white cover and the green cover.

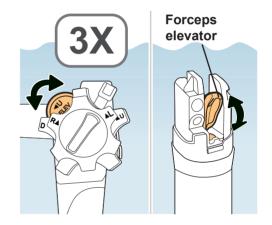
> After separating the covers, keep the distal-end flushing adapter completely immersed in the detergent solution.



### **!** CAUTION

Debris can remain trapped between the white and green cover if they are not separated from each other.

Keeping the endoscope immersed in the detergent solution, move the elevator control lever in each direction three times to move the forceps elevator up and down.



# 5.5.7 Aspirate detergent solution through the instrument channel and the suction channel

6. Flush with

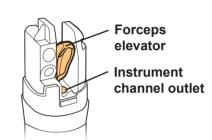
detergent

#### NOTE

Monitor the suction bottle on the suction pump carefully to ensure that it does not overflow.

Ensure that the distal end's instrument channel outlet is fully open.

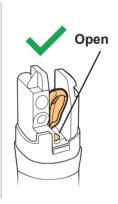
If closed, open the instrument channel outlet by moving the elevator control lever as shown below until the forceps elevator stops.



#### Elevator control lever





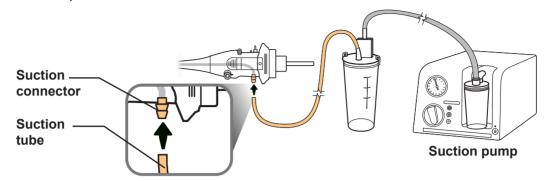


port

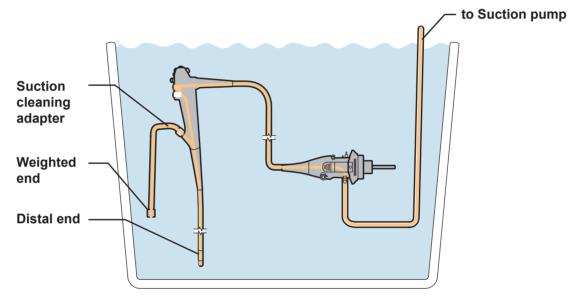
Attach the suction cleaning adapter's (MH-856) connecting end to the instrument channel port.

Suction cleaning adapter's connecting end

Attach the suction pump's suction tube to the suction connector on the endoscope connector.



Ensure the endoscope's distal end and the suction cleaning adapter's weighted end are completely immersed in the detergent solution.

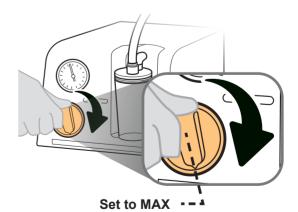


If using the KV-6 or KV-5 suction pump, turn the vacuum regulator knob clockwise until the knob stops and sets to maximum.

### **NOTE**

The maximum vacuum pressure of the suction pump is:

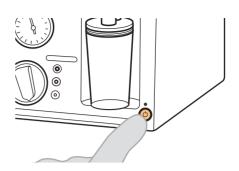
- KV-6: -95 kPa
- KV-5: -85 kPa



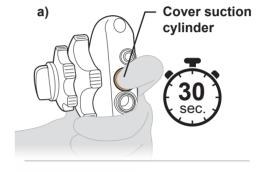
Turn the suction pump ON (if suction pump is off).

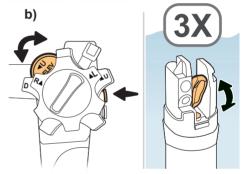
6. Flush with

detergent



- Aspirate detergent solution for 30 seconds or more as follows:
  - a) Cover the endoscope's suction cylinder with your gloved fingertip.
  - b) While covering the suction cylinder, move the elevator control lever in each direction three times to move the forceps elevator up and down.

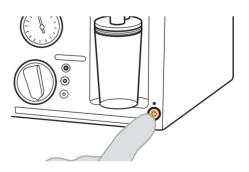




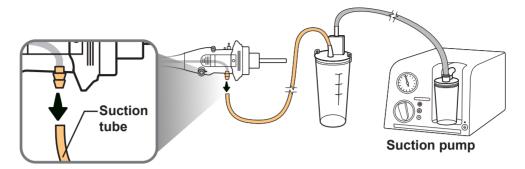
### NOTE

Use a clock or a timer to accurately measure 30 seconds or more.

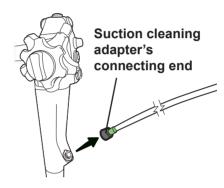
Turn the suction pump OFF.



Detach the suction pump's suction tube from the endoscope.



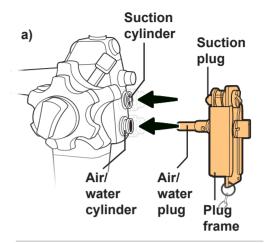
**10** Detach the suction cleaning adapter from the endoscope.

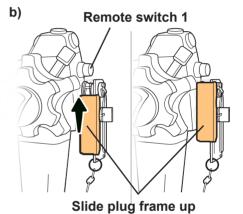


### **NOTE**

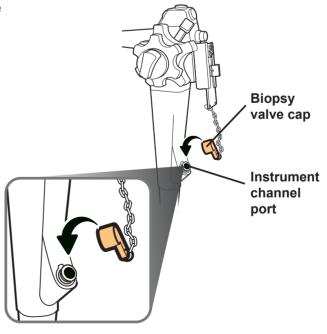
You will reprocess the suction cleaning adapter (MH-856) later, as described in Chapter 6, "Reprocess the Accessories".

- Attach the channel plug (MH-944) to the endoscope's air/water and suction cylinders, as follows:
  - a) Insert the channel plug's air/ water plug into the air/water cylinder, then continue, inserting the channel plug's suction plug into the suction cylinder until the channel plug's plug frame contacts the control section;
  - b) Continue to push the channel plug's plug frame against control section, and slide the plug frame towards remote switch 1, until the plug frame stops, locking the channel plug firmly in place.

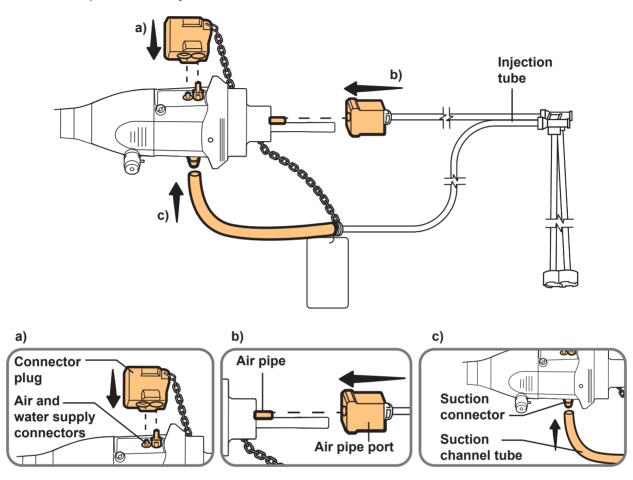




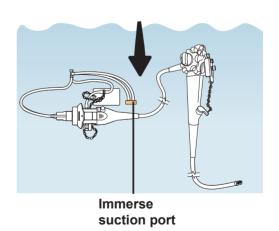
Attach the biopsy valve cap of the channel plug to the endoscope's instrument channel port.



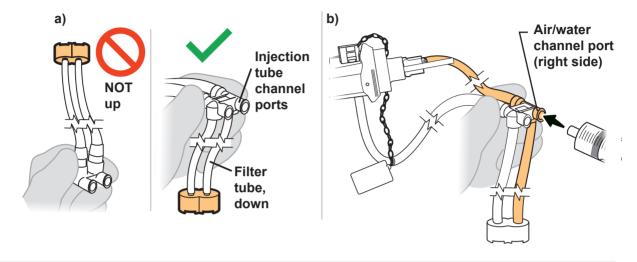
- Attach the injection tube (MH-946) to the endoscope connector, as follows:
  - a) Attach the injection tube's connector plug to the air and water supply connectors;
  - b) Attach the injection tube's air pipe port to the air pipe;
  - c) Attach the injection tube's suction channel tube to the suction connector.



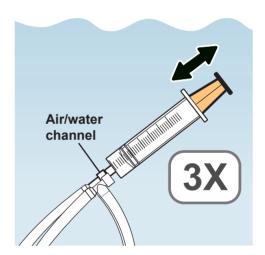
Completely immerse all accessories in the detergent solution and confirm that the suction port of the injection tube is completely immersed.



- J.
- Attach a clean 30 mL syringe to the injection tube's air/water channel port, as follows:
- a) Hold the injection tube's channel ports so that the filter tube points down, NOT up;
- b) Attach the syringe to the air/water channel port (the right side port with the tube that connects to the endoscope connector's air pipe).

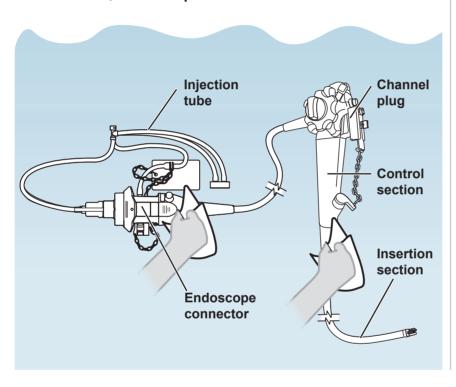


- Keeping the 30 mL syringe attached and immersed, flush the air/water channel with 90 mL of detergent solution, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with the detergent solution;
  - b) Then forcefully flush with 30 mL of the detergent solution;
  - c) Repeat Steps a) and b) two more times, for a total of three times.



# 5.5.9 Immerse and then wipe the endoscope and accessories in detergent solution

- Keeping the endoscope, all attached accessories, and the distal-end flushing adapter immersed in the detergent solution, use clean lint-free cloths, sponges, or brushes, to wipe all of the external surfaces of the:
  - a) Endoscope and attached accessories
  - b) Distal-end flushing adapter (MAJ-2319).
    - a) Endoscope and attached accessories



b) Distal-end flushing adapter (MAJ-2319)



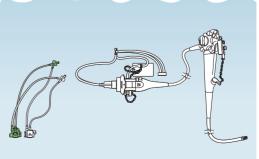
Leave the endoscope, all its attached accessories, and the distalend flushing adapter completely immersed in the detergent solution for the detergent manufacturer's recommended contact time

#### NOTE

Use a clock or a timer to accurately measure the detergent contact time.

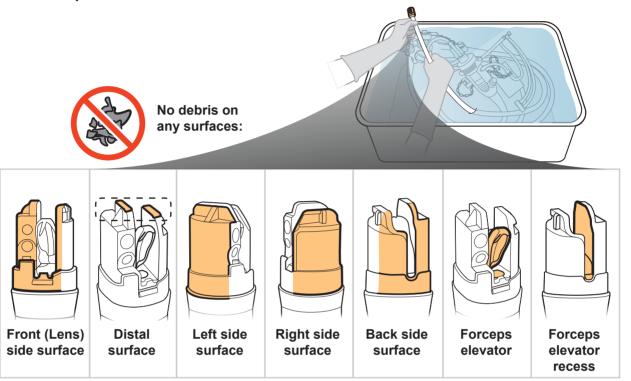


Detergent manufacturer's recommended contact time.

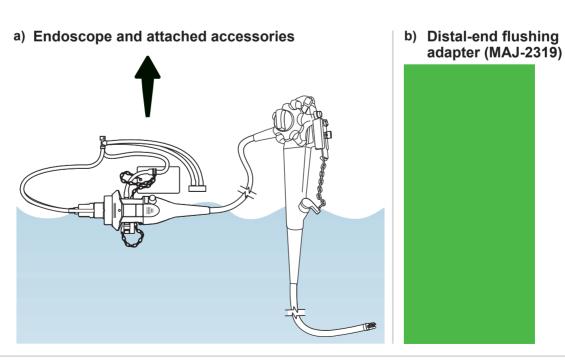


Remove the endoscope's distal end from the fluid and confirm no debris remains.

If any debris remains, return to the beginning of Chapter 5.5, "Manually clean the endoscope and accessories" and repeat the entire cleaning procedure until no debris remains.



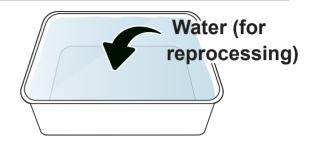
- Remove the following items from the detergent solution:
  - a) Endoscope and attached accessories
  - b) Distal-end flushing adapter.



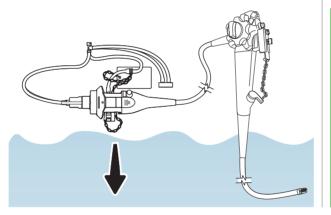
## 5.5.10 Remove detergent solution from the distal end and all channels

### 5.5.10.1 Remove detergent solution from the distal end

Fill a clean, large basin with water (for reprocessing).

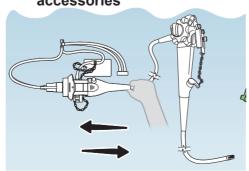


- 2 Completely immerse the following items in the water:
  - a) Endoscope and attached accessories
  - b) Distal-end flushing adapter (MAJ-2319).
    - a) Endoscope and attached accessories



b) Distal-end flushing adapter (MAJ-2319)

- Gently move the following items back and forth in the water to thoroughly rinse the detergent solution from the external surfaces of the:
  - a) Endoscope and attached accessories
  - b) Distal-end flushing adapter.
    - a) Endoscope and attached accessories

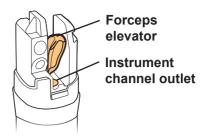


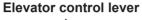
b) Distal-end flushing adapter (MAJ-2319)



Move ALL components back and forth in water Ensure that the distal end's instrument channel outlet is fully open.

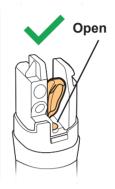
If closed, open the instrument channel outlet by moving the elevator control lever as shown below until the forceps elevator stops.



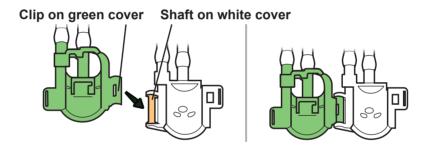




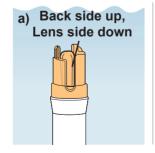


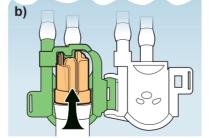


Assemble the distal-end flushing adapter (MAJ-2319) by attaching the clip on the green cover to the shaft on the white cover.



- Keeping the distal-end flushing adapter immersed in the water, attach the distalend flushing adapter to the endoscope's distal end, as follows;
  - a) Hold the distal end so you can see the back side surface (lens side is down);
  - b) Put the distal end in the green cover so the lens is against the green cover and the top lines up against the top of the green cover;
  - c) Shut the white cover onto the green cover so that it snaps closed.



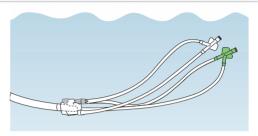




Keeping the endoscope and the distal-end flushing adapter immersed in the water, hold the distal-end flushing adapter and gently pull the endoscope to ensure that the distalend does not come out of the distalend flushing adapter.

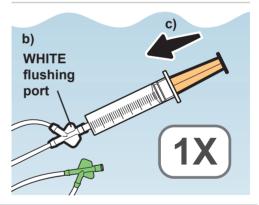


Completely immerse the distal-end flushing adapter in the water.

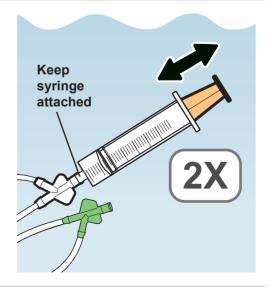


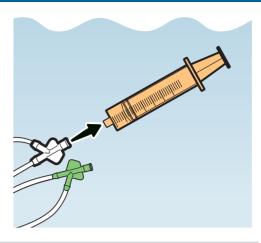
- Immerse a clean 30 mL syringe in the water and flush through the WHITE flushing port, as follows:
  - a) Before attaching the syringe to the white flushing port (so that you do not pull air into the syringe that might be inside the flushing tube), slowly pull the syringe plunger to fill the syringe with water;
  - b) Attach it to the white flushing port of the distal-end flushing adapter;
  - c) Then forcefully flush the distal end with 30 mL of water.





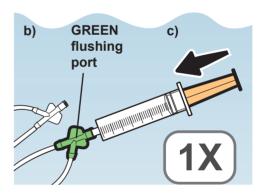
- 10 Keeping the 30 mL syringe attached and immersed, flush an additional 60 mL of the water through the WHITE flushing port, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with water;
  - b) Then forcefully flush the distal end with 30 mL of water;
  - c) Repeat Steps a) and b) one more time, for a total of two times.



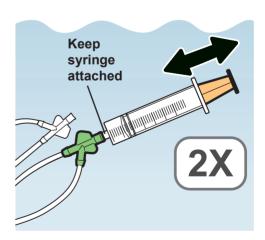


- Keeping the 30 mL syringe immersed, flush the water through the GREEN flushing port, as follows:
  - a) Before attaching the syringe to the green flushing port (so that you do not pull air into the syringe that might be inside the flushing tube), slowly pull the syringe plunger to fill the syringe with water;
  - b) Attach it to the green flushing port of the distal-end flushing adapter;
  - c) Then forcefully flush the distal end with 30 mL of water.



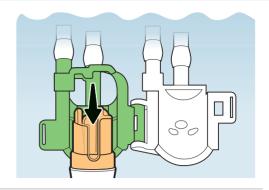


- 13 Keeping the 30 mL syringe attached and immersed, flush an additional 60 mL of the water through the GREEN flushing port, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with water;
  - b) Then forcefully flush the distal end with 30 mL of water;
  - c) Repeat Steps a) and b) one more time, for a total of two times.

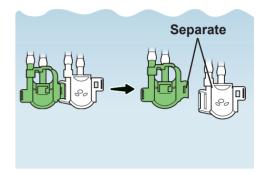




Open the white cover and green cover and detach the distal-end flushing adapter from the endoscope.



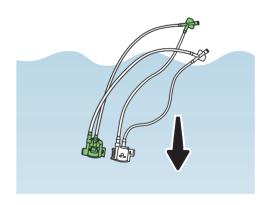
15. Separate the white cover and the green cover.



## **!** CAUTION

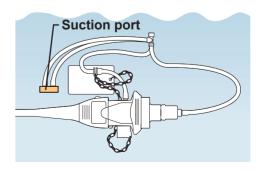
Debris can remain trapped between the white and green cover if they are not separated from each other.

Completely immerse the distal-end flushing adapter in the water.

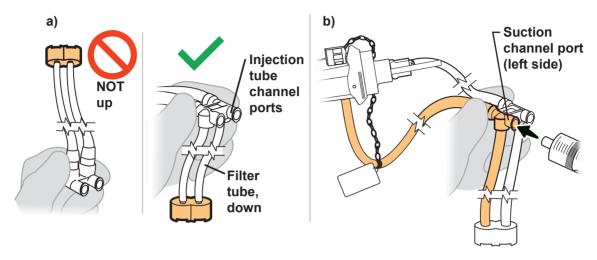


## 5.5.10.2 Remove detergent solution from all channels

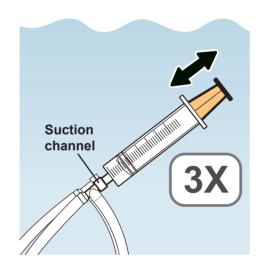
Confirm that the injection tube's (MH-946) suction port is completely immersed in the water.



- Attach the 30 mL syringe to the injection tube's suction channel port, as follows:
  - a) Hold the injection tube's channel ports so that the filter tube points down, NOT up;
  - b) Attach the syringe to the suction channel port (the left side port with the tube that connects to the endoscope connector's suction connector).



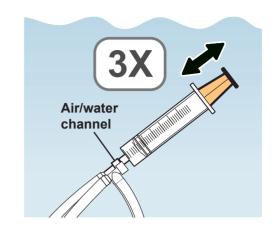
- Keeping the 30 mL syringe attached and immersed, flush the suction channel with 90 mL of the water, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with water;
  - b) Then forcefully flush 30 mL of water;
  - c) Repeat Steps a) and b) two more times, for a total of three times.



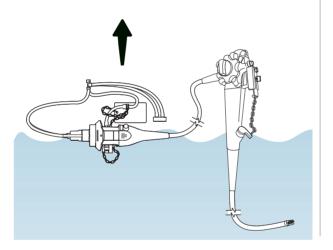
Move the syringe from the suction channel port to the injection tube's air/water channel port (port on the right).

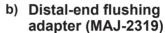


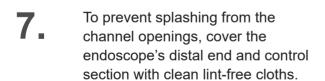
- Keeping the 30 mL syringe attached and immersed, flush the air/water channel with 90 mL of the water, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with water;
  - b) Then forcefully flush 30 mL of water;
  - c) Repeat Steps a) and b) two more times, for a total of three times.

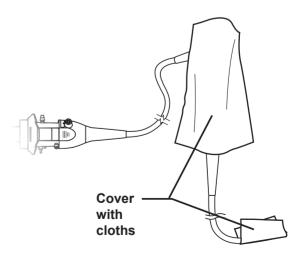


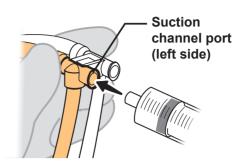
- Remove the following items from the water and place in a clean basin:
  - a) Endoscope and attached accessories
  - b) Distal-end flushing adapter.
    - a) Endoscope and attached accessories



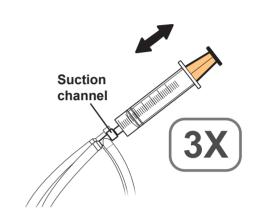




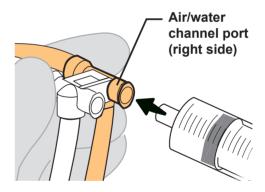




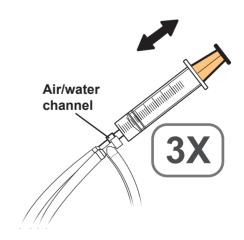
- Keeping the 30 mL syringe attached, flush the suction channel with 90 mL of air, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with air;
  - b) Then forcefully flush 30 mL of air;
  - c) Repeat Steps a) and b) two more times, for a total of three times.



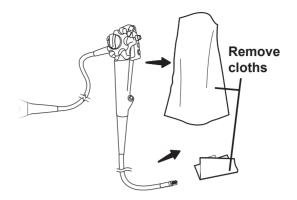
Move the syringe from the suction channel port to the injection tube's air/ water channel port (port on the right).



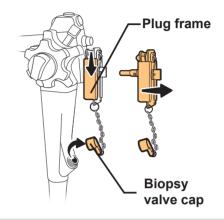
- Keeping the 30 mL syringe attached, flush the air/water channel with 90 mL of air, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with air;
  - b) Then forcefully flush 30 mL of air;
  - c) Repeat Steps a) and b) two more times, for a total of three times.



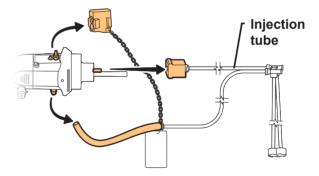
## Remove the cloths from the endoscope.



Slide the channel plug's (MH-944) plug frame down and detach the channel plug from the endoscope.



**14.** Detach the injection tube from the endoscope.



# 5.5.10.3 Remove detergent solution from the distal-end flushing adapter (MAJ-2319)

To prevent splashing from the cover's openings, cover the distalend flushing adapter's white and green covers in clean lint-free cloths.

The distal-end flushing adapter will not be attached to the endoscope.

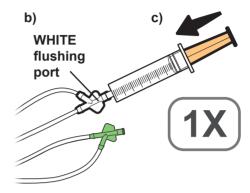


2.

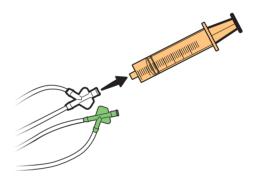
Flush air through the WHITE flushing port, as follows:

- a) Before attaching the syringe to the white flushing port (so that you do not pull water into the syringe that might be inside the flushing tube), slowly pull the syringe plunger to fill the syringe with air;
- b) Attach it to the white flushing port of the distal-end flushing adapter;
- c) Then forcefully flush with 30 mL of air.



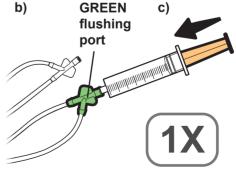


Detach the syringe from the distalend flushing adapter.

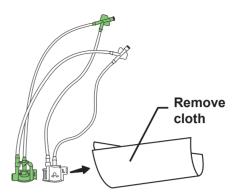


- Flush air through the GREEN flushing port, as follows:
  - a) Before attaching the syringe to the green flushing port (so that you do not pull water into the syringe that might be inside the flushing tube), slowly pull the syringe plunger to fill the syringe with air;
  - b) Attach it to the green flushing port of the distal-end flushing adapter;
  - c) Then forcefully flush with 30 mL of air.



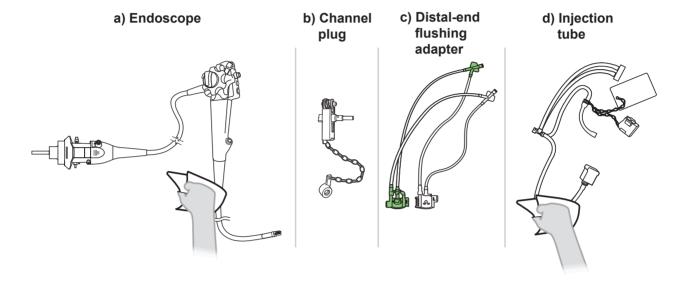


Remove the cloths from the distalend flushing adapter.



## 5.5.11 Dry the external surfaces

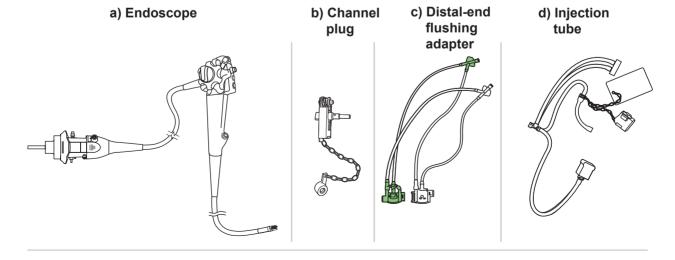
- Using clean lint-free cloths, wipe the external surfaces of these parts until they are dry:
  - a) Endoscope
- c) Distal-end flushing adapter
- b) Channel plug
- d) Injection tube.



- 2. Inspect all items and confirm no residual debris remains on the:
  - a) Endoscope
- c) Distal-end flushing adapter
- b) Channel plug
- d) Injection tube.

If any debris remains, repeat all of Chapter 5.5, "Manually cleaning the endoscope and accessories" steps until no debris remains.





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## 5.6 Manually disinfect the endoscope and accessories

#### Workflow for manually disinfecting the endoscope and accessories:

### **Prepare equipment**

5.6.1 Equipment needed

5.6.2 Prepare for manual disinfection



#### Flush distal end and channels

5.6.3 Flush the distal end and all channels with disinfectant solution



#### Immerse in disinfectant

5.6.4 Immerse the endoscope and accessories in disinfectant solution



#### Remove disinfectant solution from all channels

5.6.5 Remove disinfectant solution from all channels



Once you have immersed the endoscope and accessories in disinfectant solution for the disinfectant manufacturer's recommended time, only use sterile equipment, such as sterile syringes, cloths, and sterile gloves, for all reprocessing steps. Otherwise, it may pose an infection control risk.

## 5.6.1 Equipment needed

Prepare the following equipment.

#### Fluids used for disinfecting:

• Disinfectant solution (Refer to Chapter 3.4, "Disinfectant solution")

#### Other:

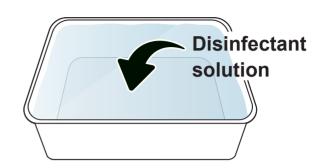
- · Clean lint-free cloths
- Sterile 30 mL (30 cc) syringes\*1
- Clean 30 mL (30 cc) syringes
- Clean, large basins with tight-fitting lids (size: 40 (W) x 40 (D) x 25 (H) cm or more)

<sup>\*</sup>¹ Following disinfection, it is very important not to recontaminate the endoscope and accessories with potentially infectious microorganisms. When rinsing and drying the endoscope and accessories following disinfection, the use of sterile equipment (basins, cloths, syringes, etc.) is recommended. If sterile equipment is not available, use clean equipment that does not recontaminate the endoscope and accessories with potentially infectious microorganisms. Consult with your hospital's infection control committee regarding local policies or requirements regarding reprocessing equipment.

## 5.6.2 Prepare for manual disinfection

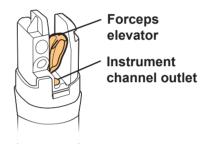
Fill a clean, large basin with the disinfectant solution at the temperature and concentration recommended by the disinfectant manufacturer.

Refer to the disinfectant manufacturer's instructions for the recommended temperature and concentration.



Ensure that the distal end's instrument channel outlet is fully open.

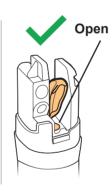
If closed, open the instrument channel outlet by moving the elevator control lever as shown below until the forceps elevator stops.



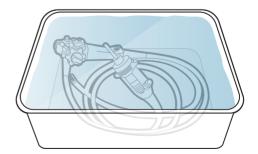
Elevator control lever



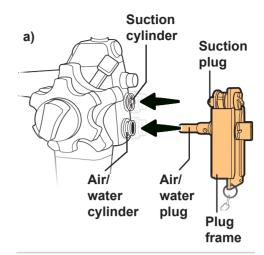


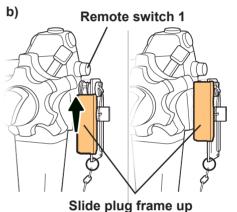


Completely immerse the endoscope in the disinfectant solution.

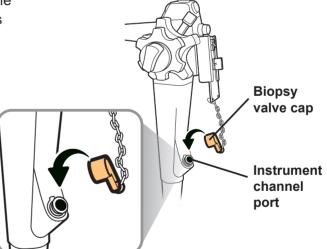


- Attach the channel plug (MH-944) to the endoscope's air/water and suction cylinders, as follows:
  - a) Insert the channel plug's air/ water plug into the air/water cylinder, then continue, inserting the channel plug's suction plug into the suction cylinder until the channel plug's plug frame contacts the control section.
  - b) Continue to push the channel plug's plug frame against control section, and slide the plug frame towards remote switch 1, until the plug frame stops, locking the channel plug firmly in place.





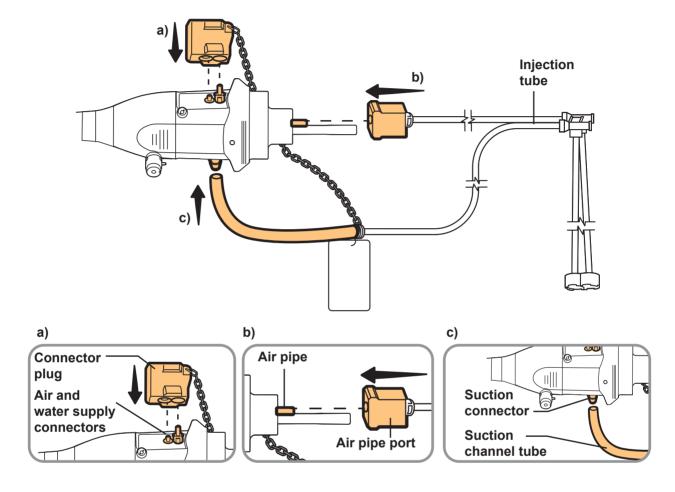
Attach the biopsy valve cap of the channel plug to the endoscope's instrument channel port.



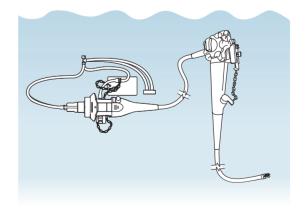
6.

Attach the injection tube (MH-946) to the endoscope connector, as follows:

- a) Attach the injection tube's connector plug to the air and water supply connectors;
- b) Attach the injection tube's air pipe port to the air pipe;
- c) Attach the injection tube's suction channel tube to the suction connector.

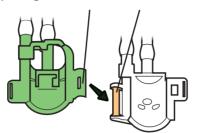


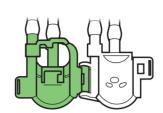
Completely immerse the channel plug and the injection tube in the disinfectant solution.



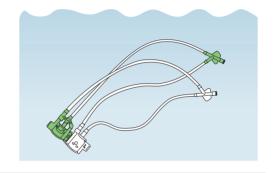
Assemble the distal-end flushing adapter (MAJ-2319) by attaching the clip on the green cover to the shaft on the white cover.

Clip on green cover Shaft on white cover

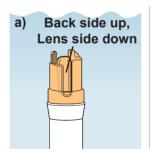


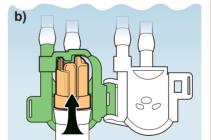


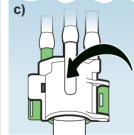
Completely immerse the distal-end flushing adapter in the disinfectant solution.



- **10** Keeping the distal-end flushing adapter immersed in the disinfectant solution, attach the distal-end flushing adapter to the endoscope's distal end, as follows;
  - a) Hold the distal end so you can see the back side surface (lens side is down);
  - b) Put the distal end in the green cover so the lens is against the green cover and the top lines up against the top of the green cover;
  - c) Shut the white cover onto the green cover so that it snaps closed.







Keeping the endoscope and the distal-end flushing adapter immersed in the disinfectant solution, hold the distal-end flushing adapter and gently pull the endoscope to ensure that the distal end does not come out of distal-end flushing adapter.



## 5.6.3 Flush the distal end and all channels with disinfectant solution

## \j\

#### WARNING



Once you immerse the endoscope and/or accessories, keep it immersed at all times when performing the disinfecting steps, unless the instructions state otherwise. Holding the endoscope out of the fluid while disinfecting may pose an infection control risk.

Make sure that the disinfectant solution contacts all internal channel surfaces of the endoscope and accessories by completely removing all air bubbles from all channels. Air bubbles may inhibit disinfection of the channel's surfaces. When filling the channels with the disinfectant solution, flush until no more air bubbles are seen exiting the channel openings.

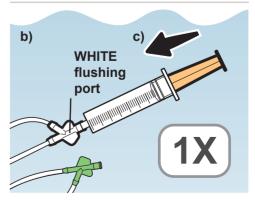
#### NOTE

Forcefully flushing the disinfectant solution through the channels will improve your ability to remove air bubbles.

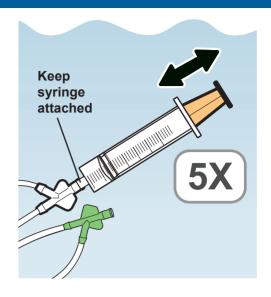
- Immerse a clean 30 mL syringe in the disinfectant solution and flush through the WHITE flushing port, as follows:
  - a) Before attaching the syringe to the white flushing port (so that you do not pull air into the syringe that might be inside the flushing tube), slowly pull the syringe plunger to fill the syringe with the disinfectant solution;
  - b) Attach it to the white flushing port of the distal-end flushing adapter;
  - c) Then forcefully flush the distal end with 30 mL of the disinfectant solution.



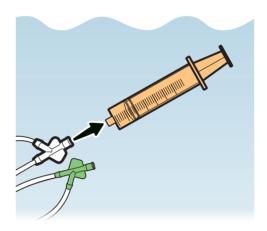




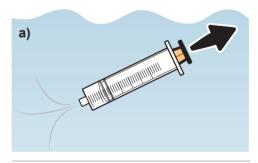
- Keeping the 30 mL syringe attached and immersed, flush an additional 150 mL of disinfectant solution through the WHITE flushing port, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with the disinfectant solution;
  - b) Then forcefully flush the distal end with 30 mL of the disinfectant solution:
  - c) Repeat Steps a) and b) four more times, for a total of five times.

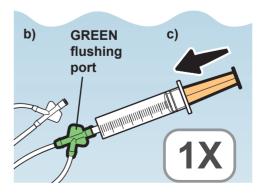


Detach the syringe from the distalend flushing adapter.

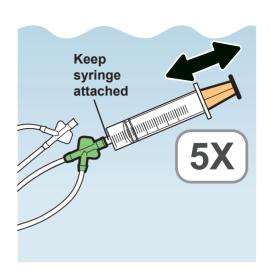


- Keeping the 30 mL syringe immersed, flush through the GREEN flushing port, as follows:
  - a) Before attaching the syringe to the green flushing port (so that you do not pull air into the syringe that might be inside the flushing tube), slowly pull the syringe plunger to fill the syringe with the disinfectant solution;
  - b) Attach it to the green flushing port of the distal-end flushing adapter;
  - c) Then forcefully flush the distal end with 30 mL of the disinfectant solution.

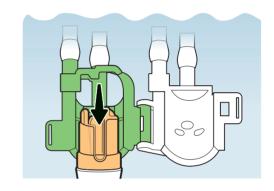




- Keeping the 30 mL syringe attached and immersed, flush an additional 150 mL of disinfectant solution through the GREEN flushing port, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with the disinfectant solution;
  - b) Then forcefully flush the distal end with 30 mL of the disinfectant solution;
  - c) Repeat Steps a) and b) four more times, for a total of five times.

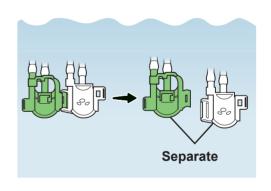


Keeping the distal-end flushing adapter immersed in the disinfectant solution, open the white cover and green cover and detach the distal-end flushing adapter from the endoscope.

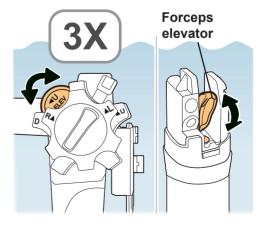


Keeping the distal-end flushing adapter immersed in the disinfectant solution, separate the white cover and the green cover.

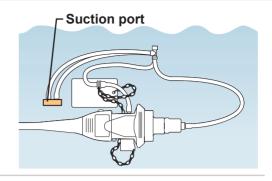
> After separating the covers, keep the distal-end flushing adapter completely immersed in the disinfectant solution.



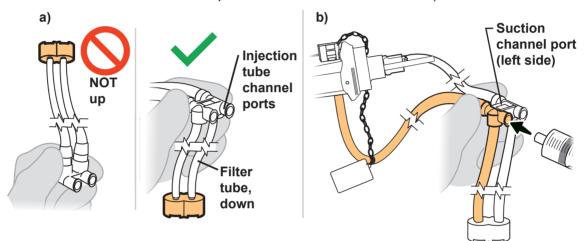
Keeping the endoscope immersed in the disinfectant solution, move the elevator control lever in each direction three times, to move the forceps elevator up and down.



Confirm that the suction port of the injection tube (MH-946) is completely immersed in the disinfectant solution.

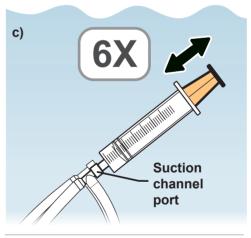


- 10. Attach the 30 mL syringe to the injection tube's suction channel port, as follows:
  - a) Hold the injection tube's channel ports so that the filter tube points down, NOT up;
  - b) Attach the syringe to the suction channel port (the left side port with the tube that connects to the endoscope connector's suction connector).



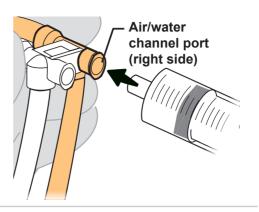
- Keeping the 30 mL syringe attached and immersed, flush the suction channel with 180 mL of the disinfectant solution, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with the disinfectant solution;
  - b) Then forcefully flush with 30 mL of the disinfectant solution;
  - c) Repeat Steps a) and b) five more times, for a total of six times;
  - d) Confirm that no air bubbles exit from the endoscope's distal end during the last flush.

If air bubbles still exit, flush the channel with the disinfectant solution until no air bubbles exit.



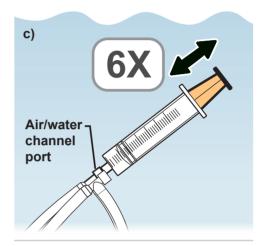


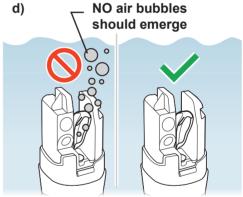
Move the syringe from the suction channel port to the injection tube's air/water channel port (port on the right).



- 13. Keeping the 30 mL syringe attached and immersed, flush the air/ water channel with 180 mL of the disinfectant solution, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with the disinfectant solution;
  - b) Then forcefully flush with 30 mL of the disinfectant solution;
  - c) Repeat Steps a) and b) five more times, for a total of six times;
  - d) Confirm that no air bubbles exit from the endoscope's distal end during the last flush.

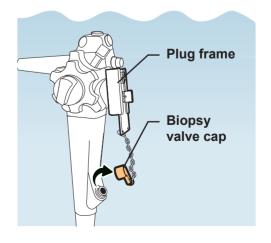
If air bubbles still exit, flush the channel with the disinfectant solution until no air bubbles exit.





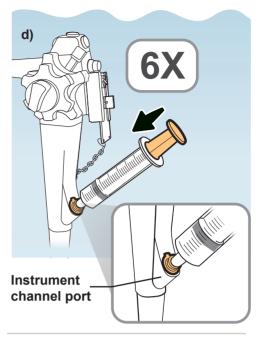
Keeping the endoscope immersed in the disinfectant solution, remove the biopsy valve cap of the channel plug (MH-944) from the endoscope's instrument channel port.

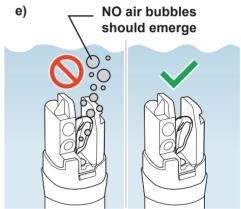
Keep the channel plug's plug frame attached to the control section.



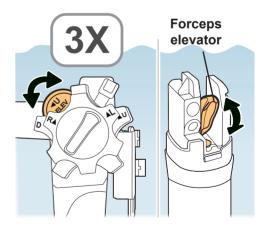
- 15. Keeping the 30 mL syringe immersed, flush the instrument channel with 180 mL of disinfectant solution, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with the disinfectant solution.
  - b) Put the distal end of the syringe in the instrument channel port (do so firmly to minimize disinfectant solution leakage from the port);
  - c) Then forcefully flush the instrument channel with 30 mL of the disinfectant solution.
  - d) Repeat Steps a) to c) five more times, for a total of six times;
  - e) Confirm that no air bubbles exit from the endoscope's distal end during the last flush.

If air bubbles still exit, flush the channel with the disinfectant solution until no air bubbles exit.





16. Keeping the endoscope immersed in the disinfectant solution, move the elevator control lever in each direction three times, to move the forceps elevator up and down.

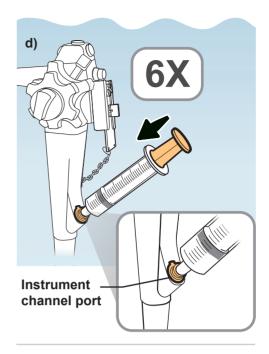


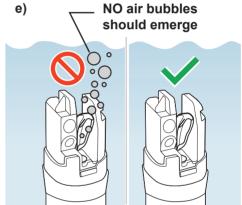
17.

Same as Step **15**  Keeping the 30 mL syringe immersed, flush the instrument channel **for a second time** with 180 mL of disinfectant solution, as follows:

- a) Slowly pull the syringe plunger to fill the syringe with the disinfectant solution.
- b) Put the distal end of the syringe in the instrument channel port (do so firmly to minimize disinfectant solution leakage from the port);
- c) Then forcefully flush the instrument channel with 30 mL of the disinfectant solution.
- d) Repeat Steps a) to c) five more times, for a total of six times;
- e) Confirm that no air bubbles exit from the endoscope's distal end during the last flush.

If air bubbles still exit, flush the channel with the disinfectant solution until no air bubbles exit.





### 5.6.4 Immerse the endoscope and accessories in disinfectant solution

#### **WARNING**

To ensure proper disinfection:

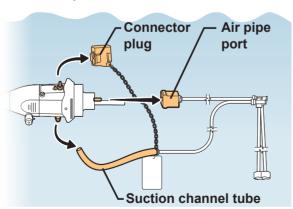
- Keep the channel plug, the injection tube, and the distal-end flushing adapter detached from the endoscope. If these accessories remain attached to the endoscope during disinfection, the disinfectant solution cannot adequately contact the mated surfaces between the endoscope and the accessory.
- Keep the endoscope and accessories completely immersed below the surface of the disinfectant solution (i.e., all external surfaces of the endoscope and accessories contact the disinfectant solution). If the endoscope and accessories are not completely immersed, any protruding section(s) of the device(s) will not be adequately disinfected.

### /!\ CAUTION

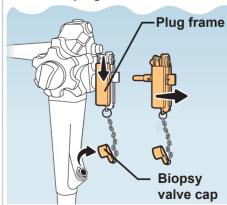
Do not immerse the endoscope and accessories in the disinfectant solution for a longer contact time, at a higher temperature, or at a greater concentration than recommended by the disinfectant manufacturer. Such immersion may cause damage to the endoscope and accessories.

Keeping the endoscope and all accessories immersed in the disinfectant solution, detach the channel plug (MH-944) and the injection tube (MH-946) from the endoscope.









Chapter 5

Keeping the endoscope immersed in the disinfectant solution, wipe endoscope's distal end using your gloved fingertips to remove air bubbles.



- Keeping the endoscope and all accessories immersed in the disinfectant solution, wipe all external surfaces using a clean lint-free cloth to remove any air bubbles:
  - a) Endoscope

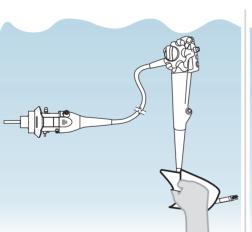
a) Endoscope

b) Channel plug

- c) Distal-end flushing adapter
- d) Injection tube

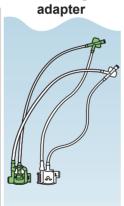
c) Distal-end

flushing











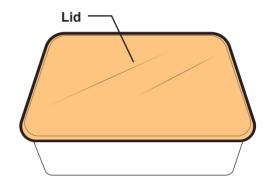
d) Injection

Confirm that there are no air bubbles on the surfaces of the endoscope and all accessories.

If air bubbles adhere to the surfaces, keep the endoscope immersed, and wipe them off using your gloved fingertips or a clean lint-free cloth. Or, use a syringe filled with disinfectant solution to flush the air bubbles off.



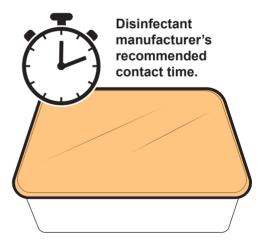
Cover the disinfectant solution basin with a tight-fitting lid to minimize the diffusion of disinfectant vapors.



Leave the endoscope, the channel plug, the injection tube, and the distal-end flushing adapter completely immersed in the disinfectant solution for the disinfectant manufacturer's recommended contact time.

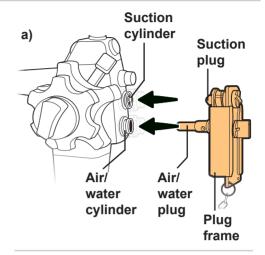
#### NOTE

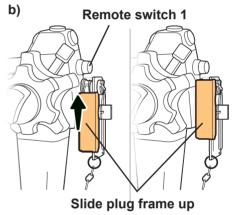
Use a clock or a timer to accurately measure the disinfection contact time.



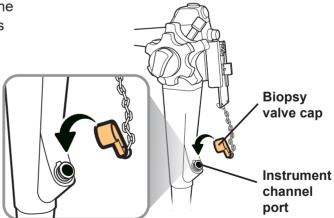
#### 5.6.5 Remove disinfectant solution from all channels

- Attach the channel plug (MH-944) to the endoscope's air/water and suction cylinders, as follows:
  - a) Insert the channel plug's air/ water plug into the air/water cylinder, then continue, inserting the channel plug's suction plug into the suction cylinder until the channel plug's plug frame contacts the control section.
  - b) Continue to push the channel plug's plug frame against control section, and slide the plug frame towards remote switch 1, until the plug frame stops, locking the channel plug firmly in place.

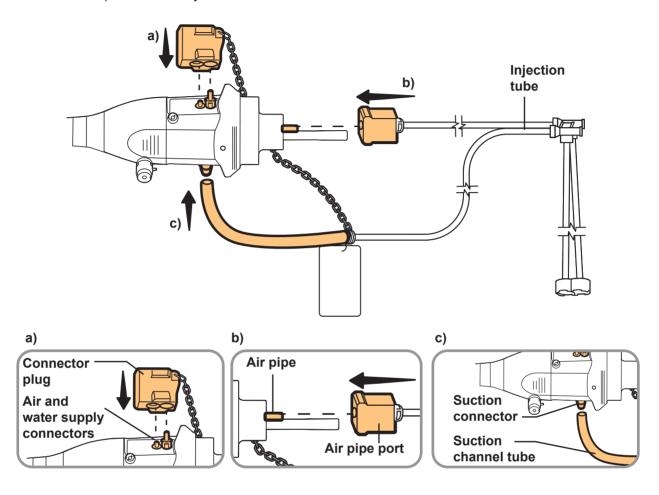




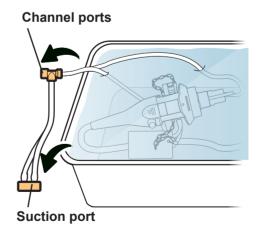
Attach the biopsy valve cap of the channel plug to the endoscope's instrument channel port.



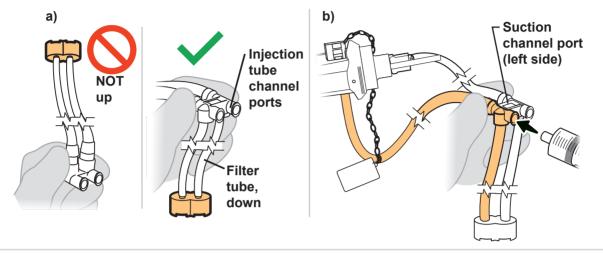
- Attach the injection tube (MH-946) to the endoscope connector, as follows:
  - a) Attach the injection tube's connector plug to the air and water supply connectors;
  - b) Attach the injection tube's air pipe port to the air pipe;
  - c) Attach the injection tube's suction channel tube to the suction connector.



Keeping the endoscope immersed in the disinfectant solution, remove the injection tube's suction port and channel ports from the disinfectant solution.

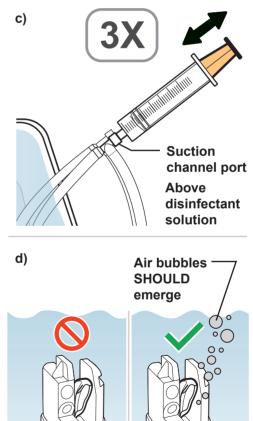


- Attach a sterile 30 mL syringe to the injection tube's suction channel port, as follows:
  - a) Hold the injection tube's channel ports so that the filter tube points down, NOT up;
  - b) Attach the syringe to the suction channel port (the left side port with the tube that connects to the endoscope connector's suction connector).

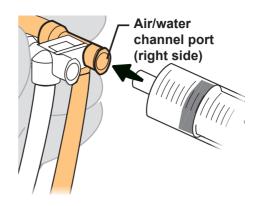


- Keeping the 30 mL syringe attached and out of the disinfectant solution, flush the suction channel with 90 mL of air, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with air;
  - b) Then forcefully flush 30 mL of air;
  - c) Repeat Steps a) and b) two more times, for a total of three times;
  - d) Confirm that air bubbles exit from the endoscope's distal end during the last flush.

If air bubbles do not exit, flush the channel with air until air bubbles exit.



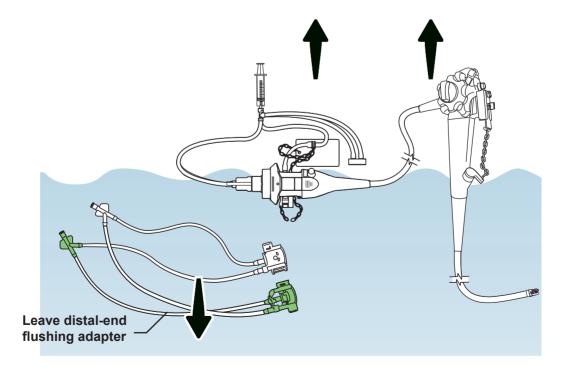
Move the syringe from the suction channel port to the injection tube's air/water channel port (port on the right).



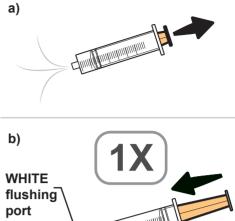
- Keeping the 30 mL syringe attached and out of the disinfectant solution, flush the air/water channel with 90 mL of air, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with air;
  - b) Then forcefully flush 30 mL of air;
  - c) Repeat Steps a) and b) two more times, for a total of three times.

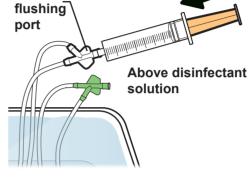


Remove the endoscope and all attached accessories from the disinfectant solution. Leave the distal-end flushing adapter in the disinfectant solution.

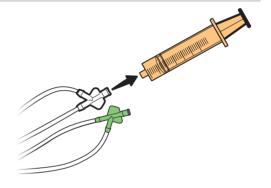


- Lift the distal-end flushing adapter's WHITE flushing port out of the disinfectant solution. Flush air through the WHITE flushing port, as follows:
  - a) Before attaching the syringe to the white flushing port (so that you do not pull disinfectant solution into the syringe that might be inside the flushing tube), fill the syringe with 30 mL of air;
  - b) Then attach the syringe to the white flushing port of the distalend flushing adapter (MAJ-2319) and flush the adapter with 30 mL of air.



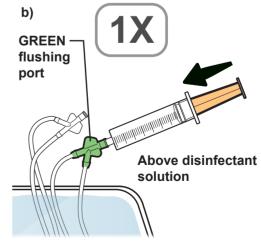


Detach the syringe from the flushing adapter's distal-end.

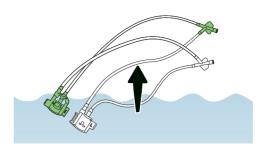


- 12. Lift the GREEN flushing port out of the disinfectant solution. Flush air through the GREEN flushing port, as follows:
  - a) Before attaching the syringe to the green flushing port (so that you do not pull disinfectant solution into the syringe that might be inside the flushing tube), fill the syringe with 30 mL of air;
  - b) Then attach the syringe to the green flushing port of the distalend flushing adapter and flush the adapter with 30 mL of air.





Remove the distal-end flushing adapter from the disinfectant solution.



# **NOTE**

Rinse the distal-end flushing adapter as described in Chapter 6.4, "Rinse the accessories following disinfection".

# 5.7 Rinse the endoscope and accessories following disinfection

#### Workflow for rinsing the endoscope and accessories:

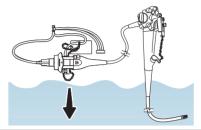
# **Prepare equipment**

5.7.1 Equipment needed



# Rinse the endoscope and accessories

5.7.2 Rinse the endoscope and accessories



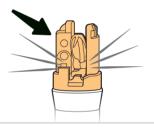
# Flush with alcohol

5.7.3 Flush with alcohol



# Dry the endoscope

5.7.4 Dry the endoscope



This instruction manual describes procedures for rinsing the endoscope and accessories. flushing them with alcohol, and drying them following disinfection.



#### WARNING

After rinsing, thoroughly dry the endoscope's channels and accessories. Otherwise, bacteria may proliferate in the channels and pose an infection control risk.

# **∕!**\ CAUTION

After rinsing, thoroughly dry the electrical contacts of the endoscope connector by wiping with sterile lint-free cloths. Otherwise, hard water residue may be deposited on the electrical contacts, which may cause an abnormal endoscopic image when the endoscope is used.

### NOTE

There are various national or professional guidelines that provide different recommendations for rinsing the endoscope. For example:

- Some national or professional guidelines recommend using sterile water for rinsing endoscopes. If sterile water is not available, these guidelines recommend using fresh, drinkable tap water and flushing endoscope channels with alcohol.
- Some other national or professional guidelines recommend flushing endoscope channels with 70% ethyl or 70% isopropyl alcohol regardless of whether sterile or nonsterile water is used to rinse the endoscope.
- Some other national or professional guidelines recommend using water of at least drinking quality to remove disinfectant solution, and preferably sterile water for the final rinse. These guidelines also recommend drying endoscope channels with compressed filtered air at each reprocessing procedure and with alcohol at the end of the day.
- Some other national or professional guidelines do not recommend using alcohol.

Follow the guidelines applicable to your institution.

Prepare the following equipment.

#### **Equipment:**



Suction pump (KV-6, KV-5, SSU-2) and sterile suction tube\*1 (Sold separately. Refer to its instruction manual.)

### Fluids used for rinsing:

- 70% ethyl or 70% isopropyl alcohol (Refer to Chapter 3.6, "Alcohol")
- Rinse water (Refer to Chapter 3.5, "Rinse water")

#### Other:

- Sterile lint-free cloths\*1
- Sterile 30 mL (30 cc) syringes\*1
- Sterile, small basins with tight-fitting lids (size: 25 (W) x 10 (D) x 25 (H) cm or more)\*1
- Sterile cotton swabs\*1

- Sterile, large basins\*1
   (size: 40 (W) × 40 (D) × 25 (H) cm or more)
- Air compressor (Filtered)

<sup>\*</sup>¹ Following disinfection, it is very important not to recontaminate the endoscope and accessories with potentially infectious microorganisms. When rinsing and drying the endoscope and accessories following disinfection, the use of sterile equipment (basins, cloths, syringes, etc.) is recommended. If sterile equipment is not available, use clean equipment that does not recontaminate the endoscope and accessories with potentially infectious microorganisms. Consult with your hospital's infection control committee regarding local policies or requirements regarding reprocessing equipment.

# 5.7.2 Rinse the endoscope and accessories

Use appropriate rinse water as instructed in Chapter 3.5, "Rinse water".

# <u>\i\</u>

### **WARNING**



Once you immerse the endoscope and/or accessories, keep it immersed at all times when performing the rinsing steps, unless the instructions state otherwise. Holding the endoscope out of the fluid while rinsing may cause adverse reactions in patients because of residual reprocessing fluids.

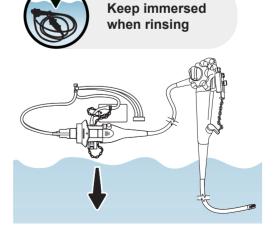
#### NOTE

Some national or professional guidelines recommend drying endoscope channels with compressed filtered air after rinsing.

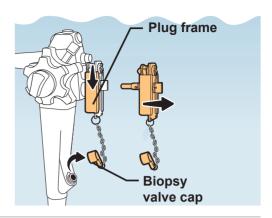
Fill a sterile, large basin with rinse water.



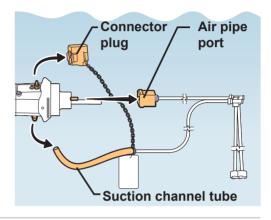
Completely immerse the endoscope in the rinse water with accessories attached.



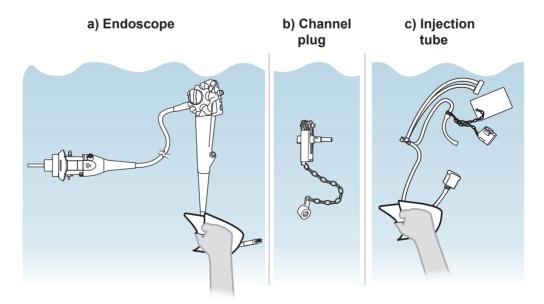
Slide the channel plug's (MH-944) plug frame down and detach the channel plug from the endoscope.



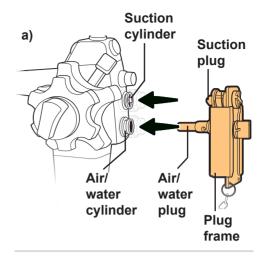
Detach the injection tube (MH-946) from the endoscope.

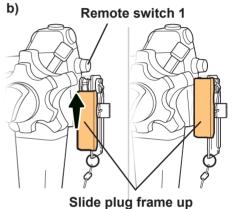


- Keeping the endoscope and all accessories completely immersed in the rinse water, wipe all external surfaces of the endoscope and all accessories using sterile lint-free cloths:
  - a) Endoscope
  - b) Channel plug
  - c) Injection tube

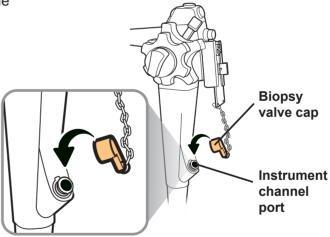


- Attach the channel plug to the endoscope's air/water and suction cylinders, as follows:
  - a) Insert the channel plug's air/ water plug into the air/water cylinder, then continue, inserting the channel plug's suction plug into the suction cylinder until the channel plug's plug frame contacts the control section.
  - b) Continue to push the channel plug's plug frame against control section, and slide the plug frame towards remote switch 1, until the plug frame stops, locking the channel plug firmly in place.

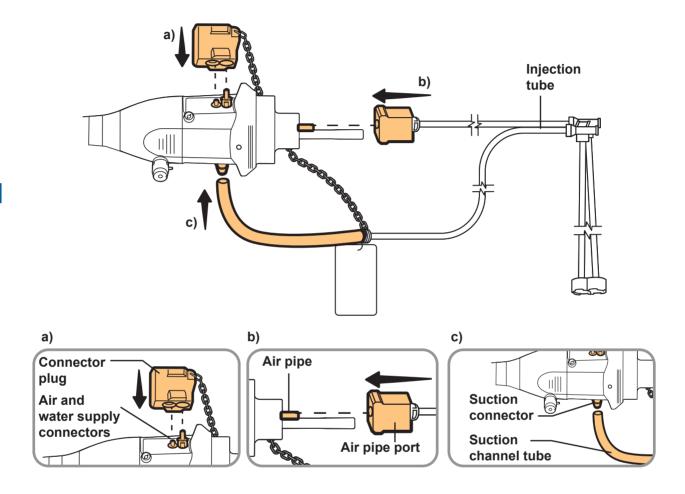




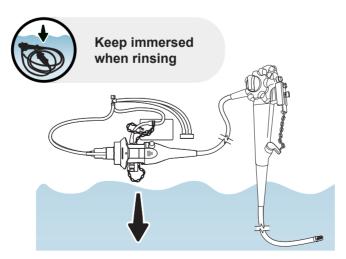
Attach the biopsy valve cap of the channel plug to the endoscope's instrument channel port.



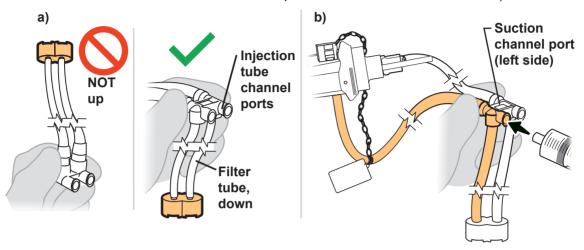
- Attach the injection tube (MH-946) to the endoscope connector, as follows:
  - a) Attach the injection tube's connector plug to the air and water supply connectors;
  - b) Attach the injection tube's air pipe port to the air pipe;
  - c) Attach the injection tube's suction channel tube to the suction connector.



Make sure the endoscope and attached accessories are completely immersed in the rinse water and confirm that the suction port of the injection tube is completely immersed.

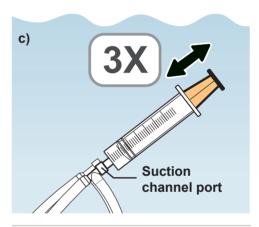


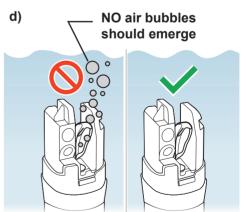
- Attach a sterile 30 mL syringe to the injection tube's suction channel port, as follows:
  - a) Hold the injection tube's channel ports so that the filter tube points down,
     NOT up;
  - b) Attach the syringe to the suction channel port (the left side port with the tube that connects to the endoscope connector's suction connector).



- Keeping the 30 mL syringe attached and immersed, flush the suction channel with 90 mL of the rinse water, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with the rinse water;
  - b) Then forcefully flush 30 mL of the rinse water;
  - c) Repeat Steps a) and b) two more times, for a total of three times;
  - d) Confirm that no air bubbles exit from the endoscope's distal end during the last flush.

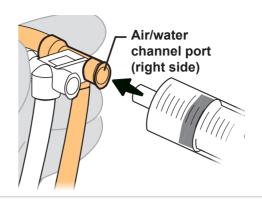
If air bubbles still exit, flush the channel with the rinse water until no air bubbles exit.





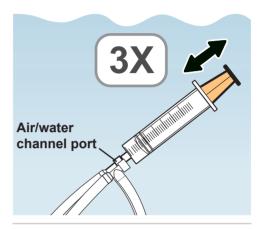
Chapter 5

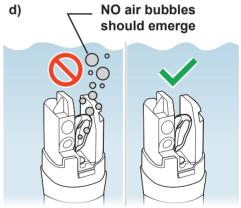
Move the syringe from the suction channel port to the injection tube's air/water channel port (port on the right).



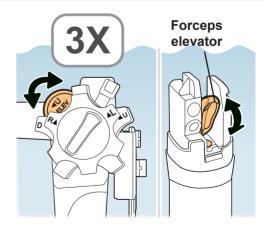
- Keeping the 30 mL syringe immersed and attached, flush the air/water channel with 90 mL of the rinse water, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with the rinse water;
  - b) Then forcefully flush 30 mL of the rinse water;
  - c) Repeat Steps a) and b) two more times, for a total of three times;
  - d) Confirm that no air bubbles exit from the endoscope's distal end during the last flush.

If air bubbles still exit, flush the channel with the rinse water until no air bubbles exit.



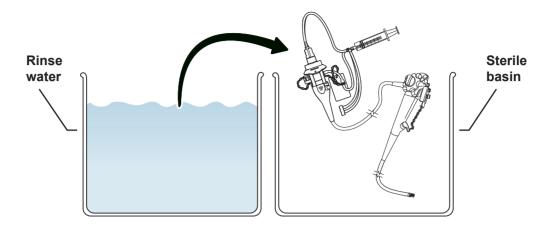


14. Keeping the endoscope immersed in the rinse water, move the elevator control lever in each direction three times, to move the forceps elevator up and down.

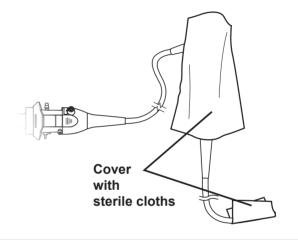


Repeat Steps 1 through 14 for the number of times required by the disinfectant manufacturer's instructions.

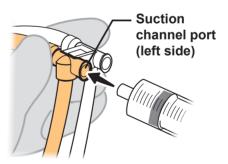
Remove the endoscope from the rinse water with accessories attached and place them in a sterile basin.



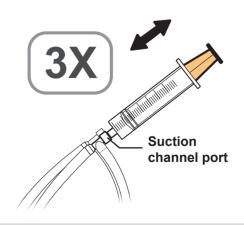
To prevent splashing from the channel openings, cover the endoscope's distal end and control section with sterile lint-free cloths.



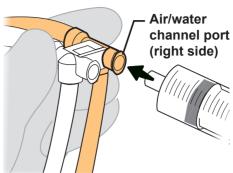
Move the syringe from the air/water channel port to the injection tube's suction channel port (port on the left).



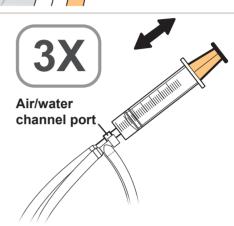
- 19 Keeping the 30 mL syringe attached, flush the suction channel with 90 mL of air, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with air;
  - b) Then forcefully flush 30 mL of air;
  - c) Repeat Steps a) and b) two more times, for a total of three times.



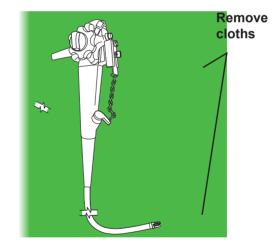
Move the syringe from the suction channel port to the injection tube's air/water channel port (port on the right).



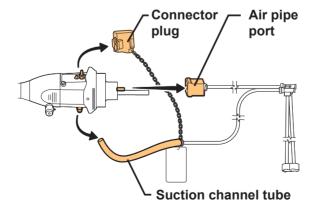
- Keeping the 30 mL syringe attached, flush the air/water channel with 90 mL of air, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with air;
  - b) Then forcefully flush 30 mL of air;
  - c) Repeat Steps a) and b) two more times, for a total of three times.



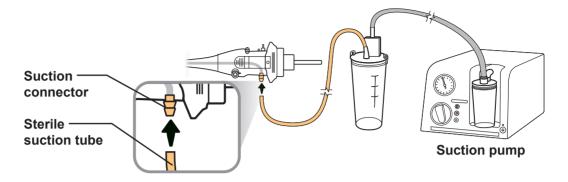
Remove the cloths from the endoscope.



**23.** Detach only the injection tube from the endoscope.



Attach the suction pump's sterile suction tube to the suction connector on the endoscope connector.



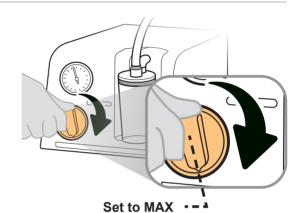
25 If using the KV-6 or KV-5 suction pump, turn the vacuum regulator knob clockwise until the knob stops and sets to maximum.

# **NOTE**

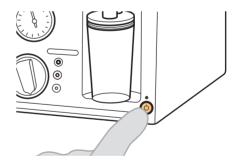
The maximum vacuum pressure of the suction pump is:

• KV-6: -95 kPa

KV-5: -85 kPa



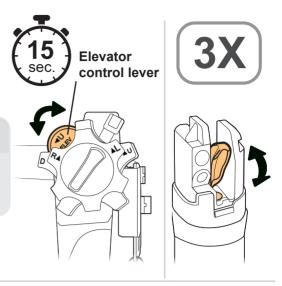
**26.** Turn the suction pump ON.



While aspirating air for 15 seconds or more, move the elevator control lever in each direction three times, to move the forceps elevator up and down.

# NOTE

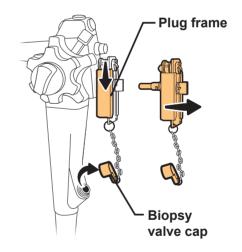
Use a clock or a timer to accurately measure 15 seconds or more.



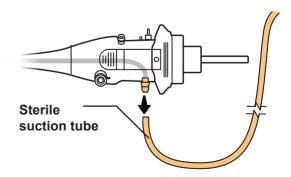
**28.** Turn the suction pump OFF.



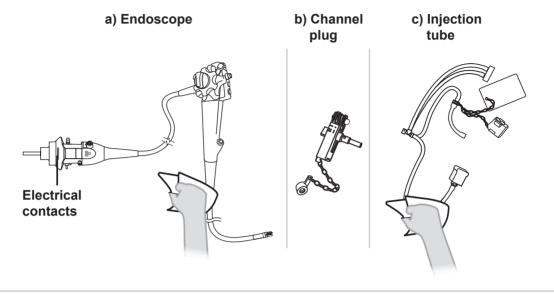
29 Slide the channel plug's plug frame down and detach the channel plug from the endoscope.



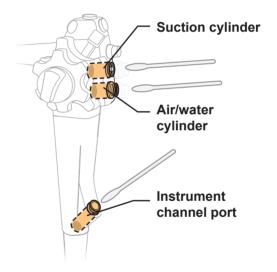
Detach the suction pump's sterile suction tube from the endoscope.



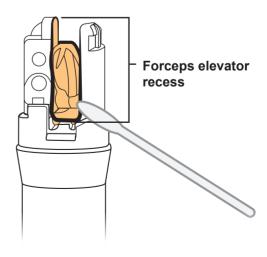
- Using sterile lint-free cloths, wipe all external surfaces until thoroughly dry:
  - a) Endoscope (including the electrical contacts)
  - b) Channel plug
  - c) Injection tube



Using sterile cotton swabs, wipe the inside of the endoscope's suction cylinder, the air/water cylinder, and the instrument channel port until thoroughly dry.



Using sterile cotton swabs, wipe the forceps elevator and its recess until thoroughly dry.

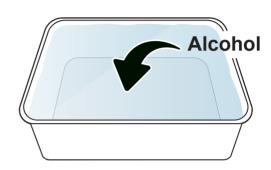


# 5.7.3 Flush with alcohol

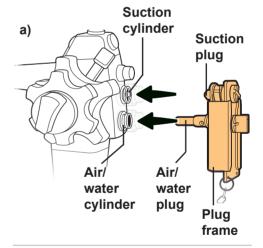
# **!** WARNING

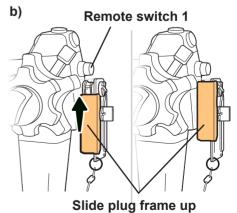
Remove residual alcohol from endoscope channels to reduce the risks of residual alcohol contacting patient's mucosa during electrosurgical procedures.

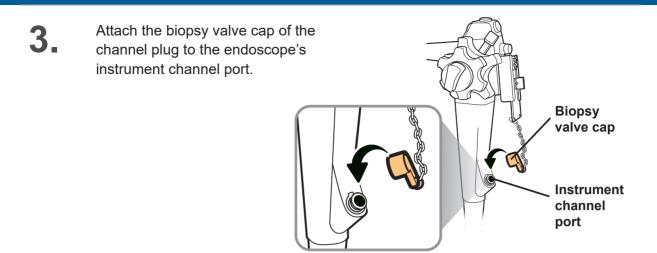
Fill a sterile, small basin with alcohol.



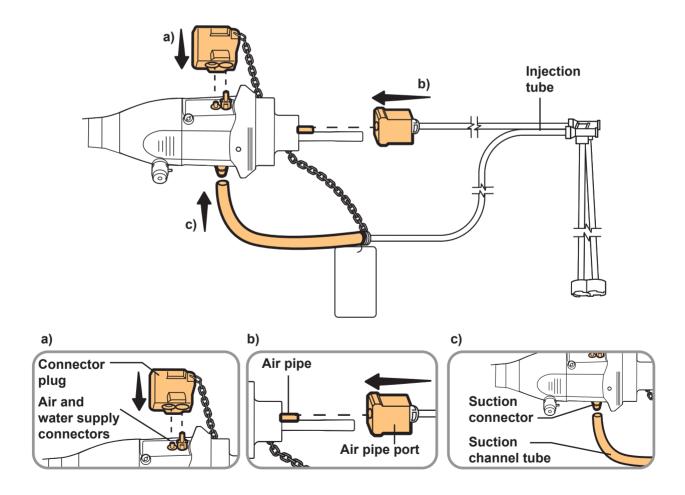
- Attach the channel plug (MH-944) to the endoscope's air/water and suction cylinders, as follows:
  - a) Insert the channel plug's air/ water plug into the air/water cylinder, then continue, inserting the channel plug's suction plug into the suction cylinder until the channel plug's plug frame contacts the control section;
  - b) Continue to push the channel plug's plug frame against control section, and slide the plug frame towards remote switch 1, until the plug frame stops, locking the channel plug firmly in place.



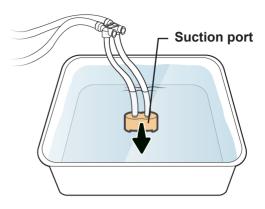




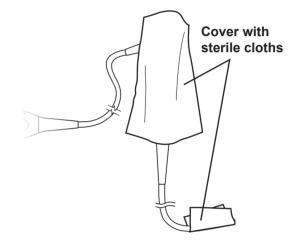
- Attach the injection tube (MH-946) to the endoscope connector, as follows:
  - a) Attach the injection tube's connector plug to the air and water supply connectors;
  - b) Attach the injection tube's air pipe port to the air pipe;
  - c) Attach the injection tube's suction channel tube to the suction connector.



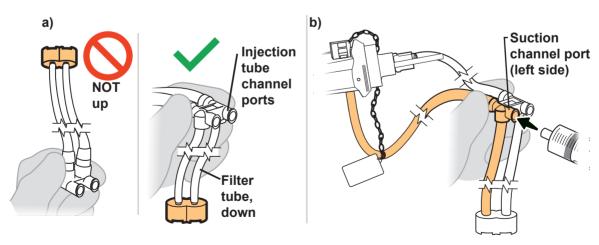
Completely immerse the injection tube's suction port in the alcohol.



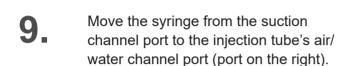
To prevent splashing from the channel openings, cover the endoscope's distal end and control section with sterile lint-free cloths.

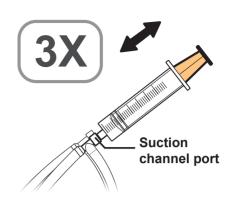


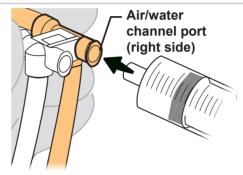
- Attach a sterile 30 mL syringe to the injection tube's suction channel port, as follows:
  - a) Hold the injection tube's channel ports so that the filter tube points down, NOT up;
  - b) Attach the syringe to the suction channel port (the left side port with the tube that connects to the endoscope connector's suction connector).



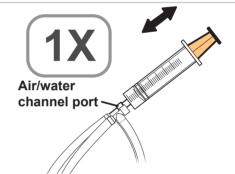
- Keeping the 30 mL syringe attached, flush the suction channel with 90 mL of the alcohol, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with the alcohol;
  - b) Then forcefully flush 30 mL of the alcohol;
  - c) Repeat Steps a) and b) two more times, for a total of three times.

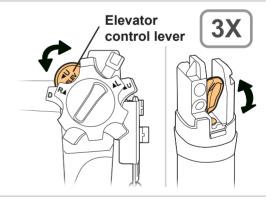




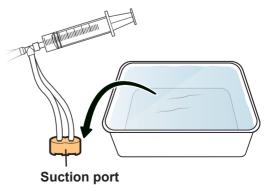


- 10. Keeping the 30 mL syringe attached, flush the air/water channel with the alcohol, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with the alcohol;
  - b) Then forcefully flush with 30 mL of the alcohol.
- Move the elevator control lever in each direction three times, to move forceps elevator up and down.

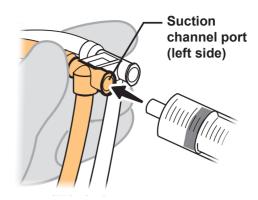




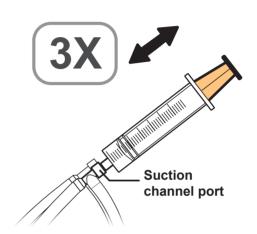
Remove the injection tube's suction port from the alcohol.



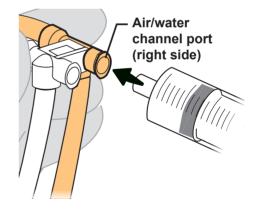
Move the syringe from the air/water channel port to the injection tube's suction channel port (port on the left).



- 14 Keeping the 30 mL syringe attached, flush the suction channel with 90 mL of air, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with air;
  - b) Then forcefully flush 30 mL of air;
  - c) Repeat Steps a) and b) two more times, for a total of three times.



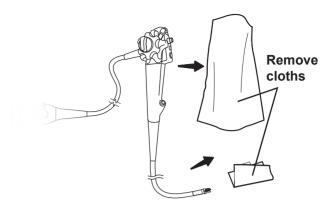
Move the syringe from the suction channel port to the injection tube's air/water channel port (port on the right).



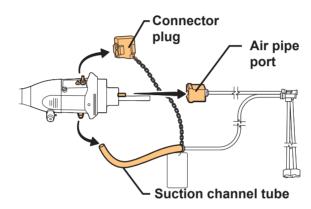
- **16.** Keeping the 30 mL syringe attached, flush the air/water channel with 90 mL of air, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with air;
  - b) Then forcefully flush 30 mL of air;
  - c) Repeat Steps a) and b) two more times, for a total of three times.



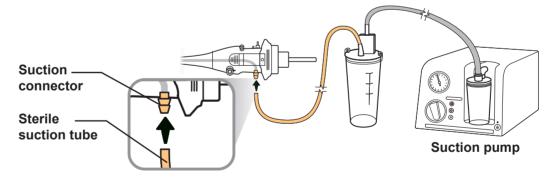
**17.** Remove the cloths from the endoscope.



**18.** Detach only the injection tube from the endoscope.



19 Attach the suction pump's sterile suction tube to the suction connector on the endoscope connector.

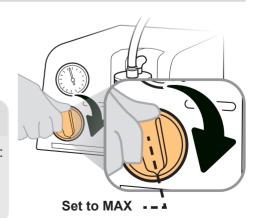


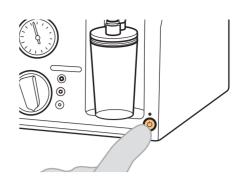
20 If using the KV-6 or KV-5 suction pump, turn the vacuum regulator knob clockwise until the knob stops and sets to maximum.

# **NOTE**

The maximum vacuum pressure of the suction pump is:

- KV-6: -95 kPa
- KV-5: -85 kPa





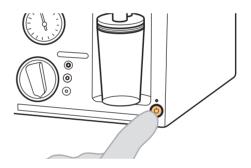
**22.** Aspirate air for 30 seconds or more.

# NOTE

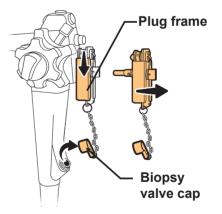
Use a clock or a timer to accurately measure 30 seconds or more.



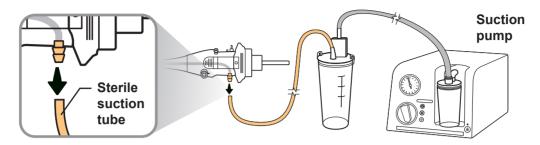
**23.** Turn the suction pump OFF.



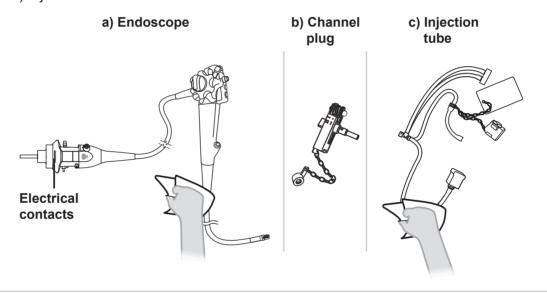
Slide the channel plug's plug frame down and detach the channel plug from the endoscope.



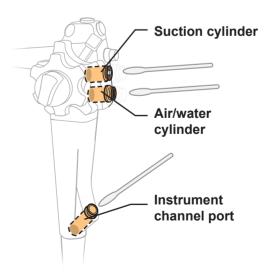
**25.** Detach the suction pump's sterile suction tube from the endoscope.



- 26. Using sterile lint-free cloths, wipe all external surfaces until thoroughly dry:
  - a) Endoscope (including the electrical contacts)
  - b) Channel plug
  - c) Injection tube



Using sterile cotton swabs, wipe the inside of the endoscope's suction cylinder, the air/water cylinder, and the instrument channel port until thoroughly dry.



# 5.7.4 Dry the endoscope

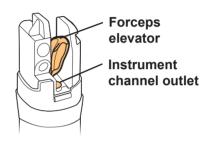
# /i\

# **CAUTION**

When aerating the endoscope channels, the air pressure must not exceed 0.5 MPa (5 kgf/cm², 71 psig). Higher pressures may cause damage to the endoscope.

Ensure that the distal end's instrument channel outlet is fully open.

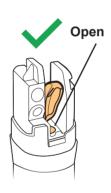
If closed, open the instrument channel outlet by moving the elevator control lever as shown below until the forceps elevator stops.



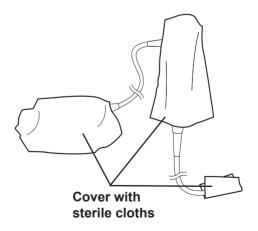
#### **Elevator control lever**



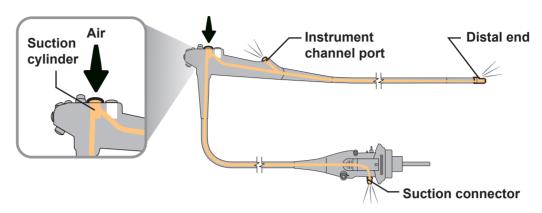




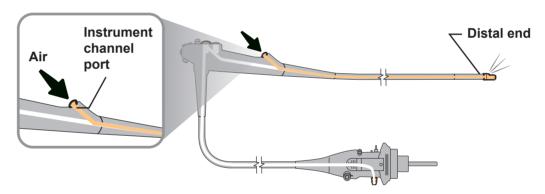
To prevent splashing alcohol from the channel openings, cover the endoscope's distal end, the control section, and the endoscope connector in sterile lint-free cloths.



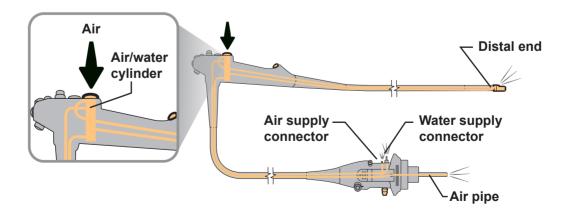
Blow compressed filtered air of less than 0.5 MPa from the endoscope's suction cylinder through the suction channel and the instrument channel until no alcohol exits from the endoscope's distal end, the instrument channel port, and the suction connector.



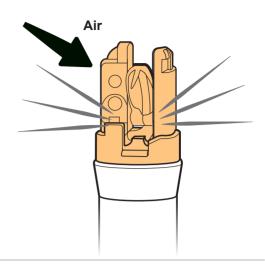
Blow compressed filtered air of less than 0.5 MPa from the endoscope's instrument channel port through the instrument channel until no alcohol exits from the endoscope's distal end.



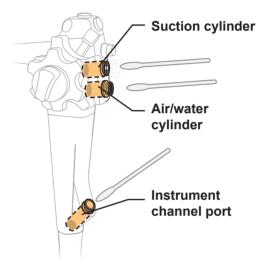
Blow compressed filtered air of less than 0.5 MPa from the endoscope's air/ water cylinder through the air/water channel until no alcohol exits from the endoscope's distal end, the air supply connector, the water supply connector, and the air pipe.



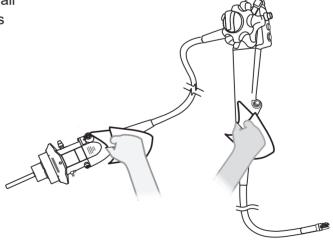
Blow compressed filtered air of less than 0.5 MPa on the endoscope's distal end until no alcohol remains.



Using sterile cotton swabs, wipe the inside of the endoscope's suction cylinder, the air/water cylinder, and the instrument channel port until thoroughly dry.



Using sterile lint-free cloths, wipe all the endoscope's external surfaces until thoroughly dry.



# 5.8 Sterilize the endoscope and accessories

# 5.8.1 Equipment needed

Prepare the following equipment.

#### Accessory for sterilization:



#### Other:

- Sterilization wraps\*1
- Sterilization pouches\*1
- Stainless steel wire mesh basket (size: 50 (W) × 30 (D) × 10 (H) cm or more)

# 5.8.2 Ethylene oxide gas sterilization of the endoscope and accessories

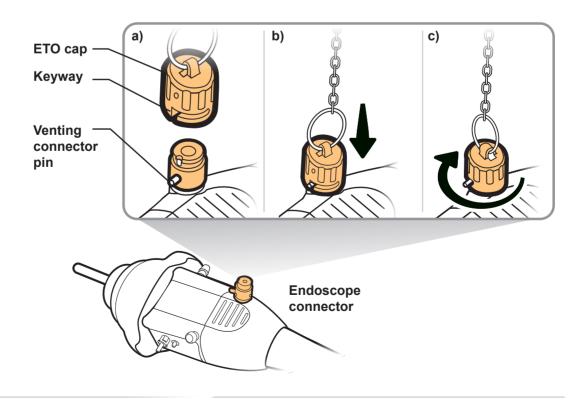
# **№ WARNING**

- Thoroughly dry the endoscope and accessories before sterilization.
- All instruments must be properly aerated following ethylene oxide gas sterilization to remove toxic ethylene oxide residuals.
- Use only ethylene oxide gas sterilization compatible sterilization wraps and sterilization pouches.

<sup>\*1</sup> For the USA: Use sterilization wraps and sterilization pouches that are legally marketed in the USA.

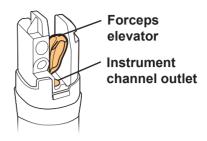


- Exceeding the recommended sterilization parameters may cause damage to the endoscope and/or accessories.
- Attach the ETO cap (MB-156) to the venting connector on the endoscope connector
  prior to ethylene oxide gas sterilization. If the ETO cap is not attached to the venting
  connector during the ethylene oxide gas sterilization, the air inside the endoscope
  will expand and could rupture the bending section cover and/or damage the
  angulation mechanism.
- Flush and dry all of the endoscope's channels, the channel plug (MH-944), and the injection tube (MH-946) with alcohol and air as described in:
  - Chapter 5.7.3, "Flush with alcohol"
  - Chapter 5.7.4, "Dry the endoscope"
  - Chapter 6.4.4, "Flush and dry accessories with alcohol"
- Attach the ETO cap (MB-156) to the venting connector on the endoscope connector, as follows:
  - a) Align the pin on the venting connector with the keyway on the ETO cap;
  - b) Push the ETO cap towards the endoscope connector of the endoscope until it stops;
  - c) Rotate the ETO cap clockwise (approximately 90°) until it stops.



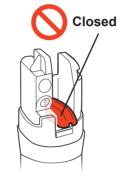
Ensure that the distal end's instrument channel outlet is fully open.

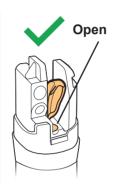
If closed, open the instrument channel outlet by moving the elevator control lever as shown below until the forceps elevator stops.



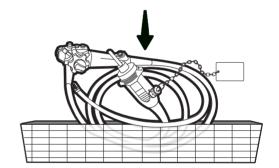








Put the endoscope in a stainless steel wire mesh basket.



- Wrap the basket containing the endoscope with sterilization wrap for ethylene oxide gas sterilization, according to your institution's protocol.
- Seal the accessories in individual sterilization pouches appropriate for ethylene oxide gas sterilization, according to your institution's protocol.
- Sterilize and aerate the packaged endoscope and accessories, according to the parameters described in Chapter 3.7, "Ethylene oxide gas sterilization". In addition, always follow the sterilizer manufacturer's instructions.

Sterilize accessories as described in Chapter 6.5.3, "Steam sterilization (autoclaving) of the accessories".

# 5.9 Presoak the endoscope

#### Workflow for presoaking the endoscope:

### Prepare equipment

5.9.1 Equipment needed



#### **Presoak**

5.9.2 Presoak the endoscope



Follow the procedure described in this chapter if manual cleaning could not be started within 1 hour after the patient procedure or if you are not sure whether manual cleaning was started within 1 hour. Presoaking the endoscope in detergent solution before manually cleaning the endoscope may be required to wet and loosen debris that has dried and hardened onto the endoscope's surfaces.

# WARNING

- If manual cleaning could not be performed within 24 hours after the patient procedure
  or if you are not sure whether manual cleaning could be performed within 24 hours,
  dried debris may not be removed and endoscope reprocessing may not be performed
  effectively. Consult with your hospital's infection control committee what to do if the
  endoscope could not be reprocessed within 24 hours after the procedure.
- Do not reuse the detergent solution used for presoak. If performing manual cleaning with the detergent solution used for presoak, endoscope reprocessing may not be performed effectively.

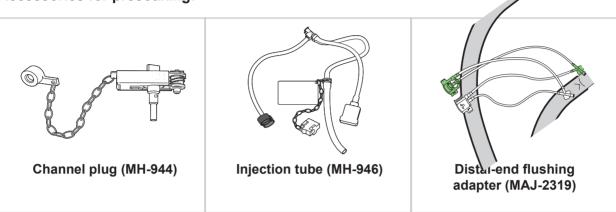
# **CAUTION**

- Presoak the endoscope only if you could not manually clean the endoscope within 1 hour of the patient's procedure or if you are not sure whether manual cleaning took place within 1 hour.
- Avoid unnecessary long-term immersions. Consecutive reprocessing sessions using extended immersion may damage the endoscope.

# 5.9.1 Equipment needed

Prepare the following equipment.

# Accessories for presoaking:



#### Fluids used for presoaking:

• Detergent solution containing enzymes (Refer to Chapter 3.3, "Detergent solution")

#### Other:

- · Clean, soft brushes
- Clean, large basins (size: 40 (W) × 40 (D) × 25 (H) cm or more)
- Clean sponges
- · Clean lint-free cloths
- Clean 30 mL (30 cc) syringes

## 5.9.2 Presoak the endoscope

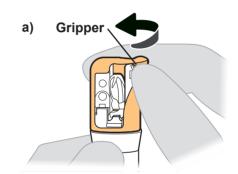
## $\triangle$

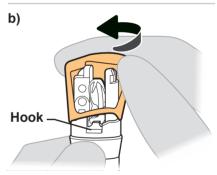
### **WARNING**



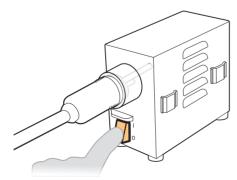
Once you immerse the endoscope and/or accessories, keep it immersed at all times when performing the cleaning steps, unless the instructions state otherwise. Holding the endoscope out of the fluid while cleaning may pose an infection control risk.

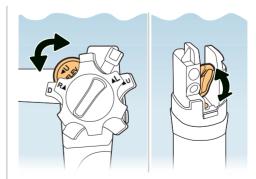
- If the single use distal cover (MAJ-2315) has not been detached, while gently holding the distal part of the bending section, remove the single use distal cover, as follows:
  - a) Push back the top of the single use distal cover's gripper to begin removal.
  - b) Rotate the single use distal cover until its bottom is free from the distal ring's hook.





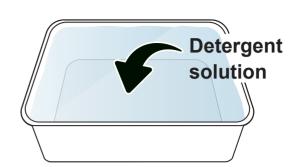
If you have not performed a leakage test, perform a leakage test according to Chapter 5.4, "Leakage testing of the endoscope".



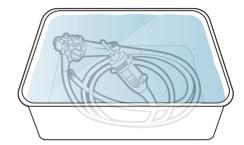


Fill a clean, large basin with the detergent solution containing enzymes at the temperature and concentration recommended by the detergent manufacturer.

Refer to the detergent manufacturer's instructions for the recommended temperature and concentration.



Completely immerse the endoscope in the detergent solution.



**5** Ensure that the distal end's instrument channel outlet is fully open.

If closed, open the instrument channel outlet by moving the elevator control lever as shown below until the forceps elevator stops.

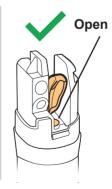


**Forceps** 

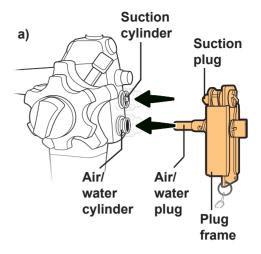


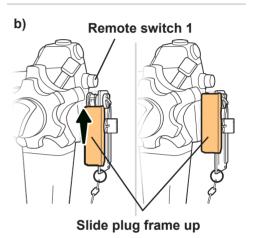




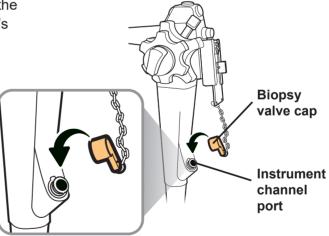


- Attach the channel plug (MH-944) to the endoscope's air/water and suction cylinders, as follows:
  - a) Insert the channel plug's air/ water plug into the air/water cylinder, then continue, inserting the channel plug's suction plug into the suction cylinder until the channel plug's plug frame contacts the control section.
  - b) Continue to push the channel plug's plug frame against control section, and slide the plug frame towards remote switch 1, until the plug frame stops, locking the channel plug firmly in place.

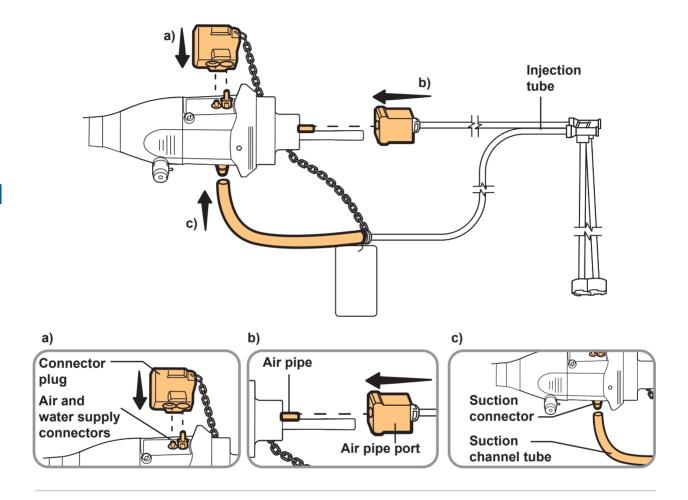




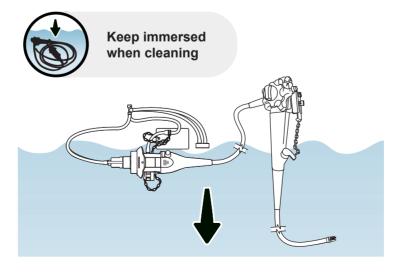
Attach the biopsy valve cap of the channel plug to the endoscope's instrument channel port.



- Attach the injection tube (MH-946) to the endoscope connector, as follows:
  - a) Attach the injection tube's connector plug to the air and water supply connectors;
  - b) Attach the injection tube's air pipe port to the air pipe;
  - c) Attach the injection tube's suction channel tube to the suction connector.

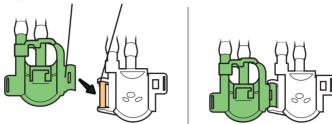


Completely immerse the channel plug and the injection tube in the detergent solution.

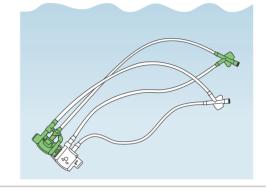


# Assemble the distal-end flushing adapter (MAJ-2319) by attaching the clip on the green cover to the shaft on the white cover.

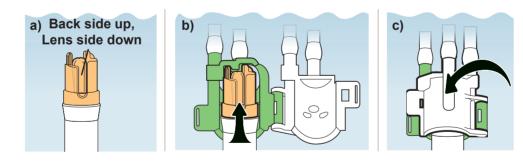
Clip on green cover Shaft on white cover



Completely immerse the distal-end flushing adapter in the detergent solution.



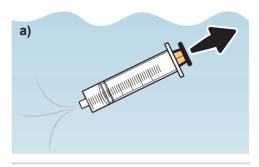
- Keeping the distal-end flushing adapter immersed in the detergent solution, attach the distal-end flushing adapter to the endoscope's distal end, as follows;
  - a) Hold the distal end so you can see the back side surface (lens side is down);
  - b) Put the distal end in the green cover so the lens is against the green cover and the top lines up against the top of the green cover;
  - c) Shut the white cover onto the green cover so that it snaps closed.

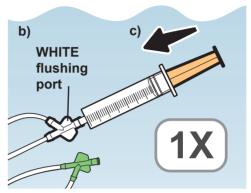


Keeping the endoscope and the distal-end flushing adapter immersed in the detergent solution, hold the distal-end flushing adapter and gently pull the endoscope to ensure that the distal end does not come out of distal-end flushing adapter.

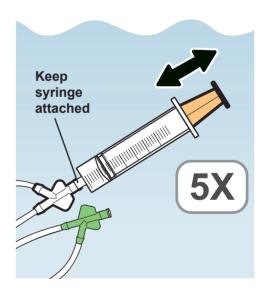


- Immerse a clean 30 mL syringe in the detergent solution and flush through the WHITE flushing port, as follows:
  - a) Before attaching the syringe to the white flushing port (so that you do not pull air into the syringe that might be inside the flushing tube), slowly pull the syringe plunger to fill the syringe with the detergent solution;
  - b) Attach it to the white flushing port of the distal-end flushing adapter;
  - c) Then forcefully flush the distal end with 30 mL of the detergent solution.

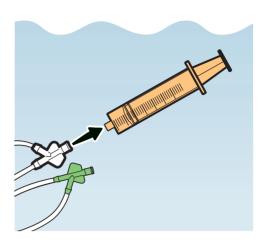




- 15. Keeping the 30 mL syringe attached and immersed, flush an additional 150 mL of the detergent solution through the WHITE flushing port, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with the detergent solution;
  - b) Then forcefully flush the distal end with 30 mL of the detergent solution;
  - c) Repeat Steps a) and b) four more times, for a total of five times.

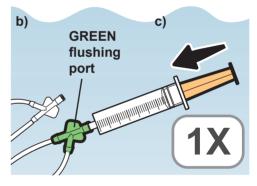


# Detach the syringe from the distalend flushing adapter.

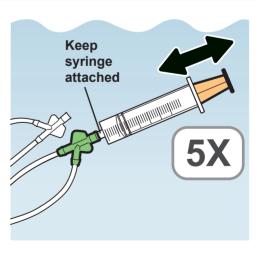


- 17 Keeping the 30 mL syringe immersed, flush the detergent solution through the GREEN flushing port, as follows:
  - a) Before attaching the syringe to the green flushing port (so that you do not pull air into the syringe that might be inside the flushing tube), slowly pull the syringe plunger to fill the syringe with the detergent solution;
  - b) Attach it to the green flushing port of the distal-end flushing adapter;
  - c) Then forcefully flush the distal end with 30 mL of the detergent solution.

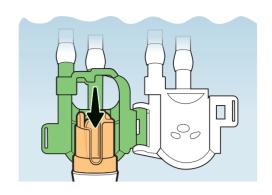




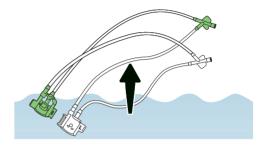
- 18 Keeping the 30 mL syringe attached and immersed, flush an additional 150 mL of detergent solution through the GREEN flushing port, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with the detergent solution;
  - b) Then forcefully flush the distal end with 30 mL of the detergent solution;
  - c) Repeat Steps a) and b) four more times, for a total of five times.



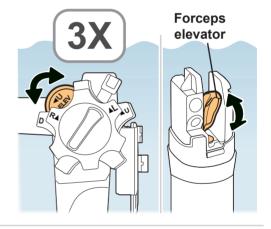
Keeping the distal-end flushing adapter immersed in the detergent solution, open the white cover and green cover and detach the distal-end flushing adapter from the endoscope.



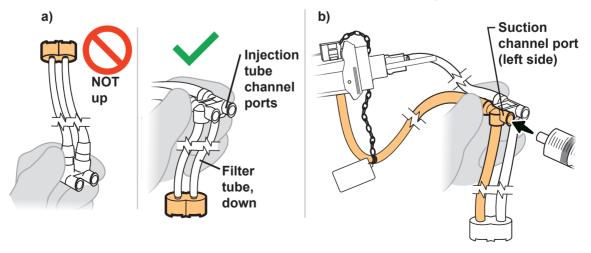
Remove only the distal-end flushing adapter from the detergent solution.



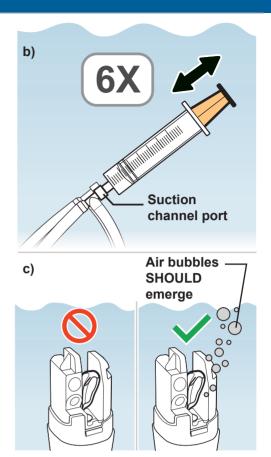
Keeping the endoscope immersed in the detergent solution, move the elevator control lever in each direction three times to move the forceps elevator up and down.



- 22. Attach the 30 mL syringe to the injection tube's suction channel port, as follows:
  - a) Hold the injection tube's channel ports so that the filter tube points down, NOT up;
  - b) Attach the syringe to the suction channel port (the left side port with the tube that connects to the endoscope connector's suction connector).



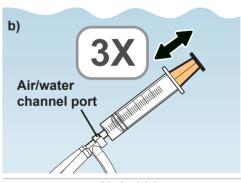
- Keeping the 30 mL syringe attached and immersed, flush the suction channel with 180 mL of the detergent solution:
  - a) Slowly pull the syringe plunger to fill the syringe with the detergent solution;
  - b) Then forcefully flush with 30 mL of the detergent solution;
  - c) Confirm that air bubbles exit from the distal end of the endoscope during the flush to make sure that the suction channel is not clogged;
  - d) Repeat Steps a) through c) five more times, for a total of six times.



Move the syringe from the suction channel port to the injection tube's air/water channel port (port on the right).

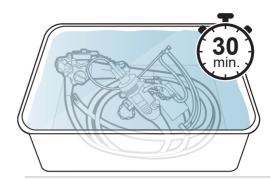


- **25.** Keeping the 30 mL syringe immersed and attached, flush the air/water channel with 90 mL of the detergent solution:
  - a) Slowly pull the syringe plunger to fill the syringe with the detergent solution;
  - b) Then forcefully flush with 30 mL of the detergent solution;
  - c) Confirm that air bubbles exit from the distal end of the endoscope during the flush to make sure that the air/water channel is not clogged;
  - d) Repeat Steps a) through c) two more times, for a total of three times.





- 26 If air bubbles did not exit the endoscope's distal end while performing Steps 22 through 25, the suction channel, and/or the air/water channel might be clogged. If so, conduct the following steps:
  - a) Immerse the endoscope in the detergent solution for 30 minutes;
  - b) After 30 minutes, perform additional suction and air/water channel flushes by repeating Steps 22 through 25.

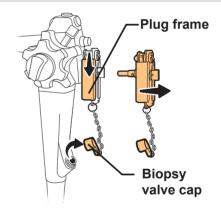


Steps 22 - 25

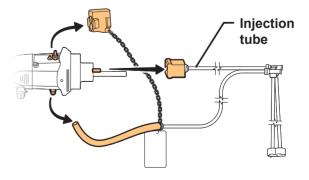
If air bubbles exited the endoscope's distal end during flushing of BOTH the suction channel and air/water channel, proceed to Step 27.

#### **NOTE**

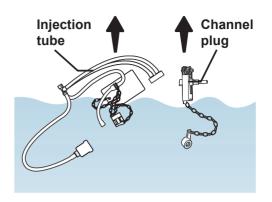
- Use a clock or a timer to accurately measure detergent contact time.
- If air bubbles did not exit the endoscope's distal end during the second flushing of the channels, contact Olympus.
- 27 Slide the channel plug's plug frame down and detach the channel plug from the endoscope.



**28** Detach the injection tube from the endoscope.



Remove the channel plug and the injection tube from the detergent solution.



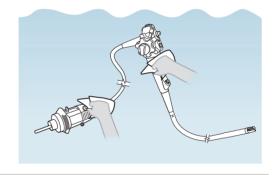
Allow the endoscope to soak completely in the detergent solution for more than 2 hours, but no more than 10 hours.

#### NOTE

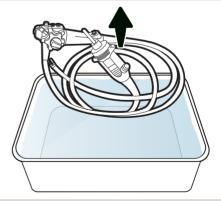
Use a clock or a timer to accurately measure the detergent contact time.



Keeping the endoscope immersed in the detergent solution, wipe or brush all external surfaces using clean lint-free cloths, sponges, or brushes to remove any debris.



Remove the endoscope from the detergent solution.



Return to Chapter 5.5, "Manually clean the endoscope and accessories" on page 100 and reprocess according to the procedure. Use the detergent solution containing enzymes in manual cleaning.

Even when using an AER, perform all procedures according to Chapter 5.5 after presoaking.

# Chapter



# **Reprocess the Accessories**

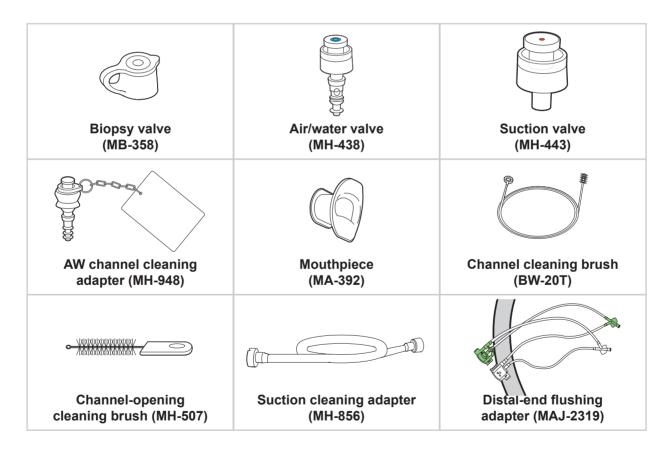
## 6.1 Summary



#### **WARNING**

All reuasble accessories must be reprocessed after each use to prevent an infection control risk.

The following accessories cannot get cleaned or disinfected with the endoscope in Chapter 5, "Reprocess the endoscope (and related reprocessing accessories)". These accessories must be reprocessed according to the instructions described in this Chapter.



## **Exceptions for Channel plug and Injection tube**

The following accessories are manually cleaned and disinfected with the endoscope during manual cleaning and disinfection of the endoscope as described in Chapter 5, "Reprocess the Endoscope (and related reprocessing accessories)".



However, you may have to reprocess these accessories individually. For example, if the endoscope is compatible with an AER/WD and these accessories are not compatible with the AER/WD, these accessories must be manually cleaned and disinfected separately from the endoscope.

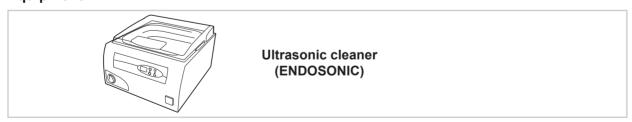
## 6.1.1 Equipment needed

The following accessories and equipment are required to perform the reprocessing steps described in this chapter.

#### Accessories for reprocessing:



#### **Equipment:**



#### Personal protective equipment:







**Face mask** 



Moisture-resistant clothing



Chemical-resistant gloves\*2

#### Fluids used for reprocessing:

- Detergent solution (Refer to Chapter 3.3, "Detergent solution")
- Rinse water (Refer to Chapter 3.5, "Rinse water")
- Water (for reprocessing (Refer to Chapter 3.2, "Water (for reprocessing)")
- Disinfectant solution (Refer to Chapter 3.4, "Disinfectant solution")
- 70% ethyl or 70% isopropyl alcohol (Refer to Chapter 3.6, "Alcohol")

#### Other:

- · Clean lint-free cloths
- Sterile lint-free cloths\*3
- Sterile 30 mL (30 cc) syringes\*3
- · Clean basins or containers
- Sterile basins or containers\*3

- Clean sponges
- Clean 30 mL (30 cc) syringes
- Sterile, small basins or containers\*3
- Clean basins or containers with tight-fitting lids
- Sterilization pouches\*4

<sup>\*1</sup> Prepare the brush that has been used to clean the endoscope (i.e., while conducting steps in Chapter 5,

<sup>&</sup>quot;Reprocess the Endoscope (and related reprocessing accessories)" ): the single use combination cleaning brush (BW-412T) OR the channel cleaning brush (BW-20T).

<sup>\*2</sup> Long sleeve gloves are recommended to prevent skin exposure.

<sup>\*3</sup> Use of sterile equipment (e.g., basins, lint-free cloths, syringes) for rinsing and drying is recommended after disinfection of the accessories to prevent introducing potentially infectious microorganisms and recontamination. If sterile equipment is not available, use clean equipment which will not recontaminate the accessories. Consult with your hospital's infection control committee regarding local policies or requirements regarding reprocessing equipment.

<sup>\*4</sup> For U.S. customers: Use legally U.S. marketed sterilization pouches.

# 6.2 Manually clean the accessories

### Workflow for manually cleaning the accessories:

## **Prepare equipment**

6.2.1 Equipment needed



#### Clean accessories' surfaces

6.2.2 Clean the accessories' external surfaces



#### Brush the valves

6.2.3 Brush the valves



#### Flush the accessories

- 6.2.4 Flush the accessories with detergent solution
- 6.2.5 Immerse the accessories in detergent solution



## **Remove detergent solution**

- 6.2.6 Remove detergent solution from all accessories
- 6.2.7 Dry the external surfaces



- 1. Equipment needed
- 2. Clean external surfaces
- 3. Brush

## 6.2.1 Equipment needed

Prepare the following equipment.

#### Accessories and equipment for manual cleaning:



<sup>\*</sup>¹ Prepare the brush that has been used to clean the endoscope (i.e., while conducting steps in Chapter 5, "Reprocess the Endoscope (and related reprocessing accessories)" ): the single use combination cleaning brush (BW-412T) OR the channel cleaning brush (BW-20T).

#### Fluids used for manual cleaning:

- Water (for reprocessing)
   (Refer to Chapter 3.2, "Water (for reprocessing)")
- Detergent solution (Refer to Chapter 3.3, "Detergent solution")

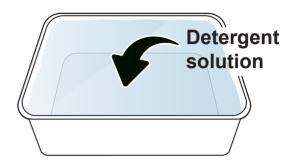
#### Other:

- · Clean lint-free cloths
- Clean 30 mL (30cc) syringes
- · Clean sponges
- · Clean basins or containers

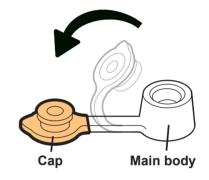
## 6.2.2 Clean the accessories' external surfaces

Fill a clean, large basin with the detergent solution at the temperature and concentration recommended by the detergent manufacturer.

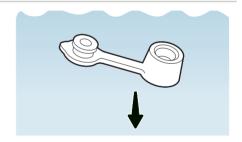
Refer to the detergent manufacturer's instructions for the recommended temperature and concentration.



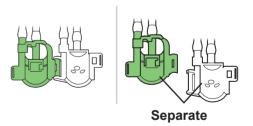
Detach the biopsy valve's (MB-358) cap from the biopsy valve's main body.



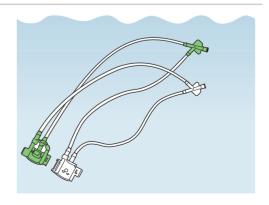
Completely immerse the biopsy valve in the detergent solution.



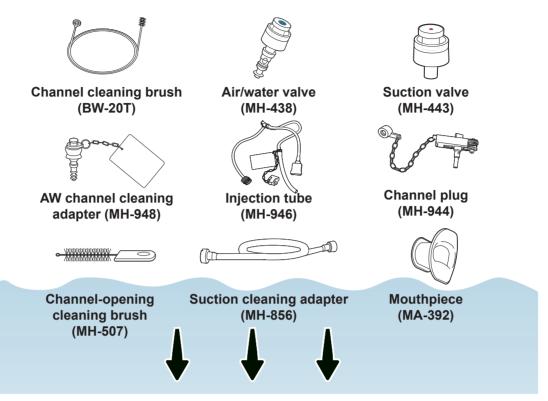
If the distal-end flushing adapter's (MAJ-2319) white cover and green cover are assembled, separate the white cover and the green cover.



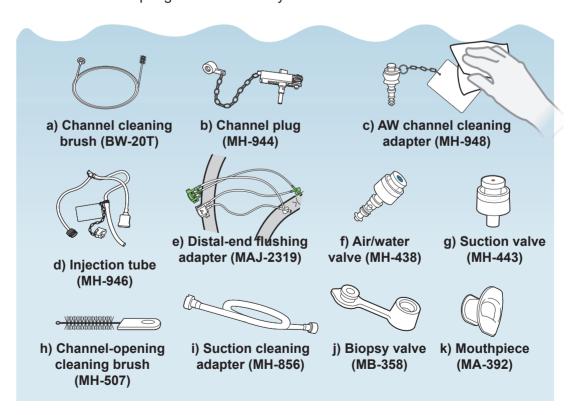
5 Completely immerse the distal-end flushing adapter in the detergent solution.



- 1. Equipment
- 2. Clean external surfaces
- 3. Brush valves
- 6 Completely immerse all other accessories in the detergent solution.

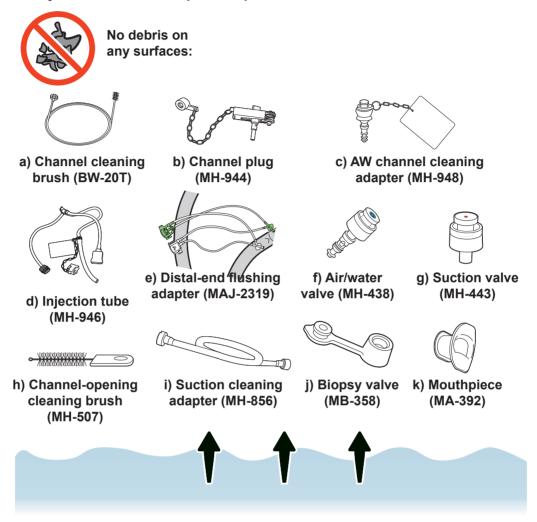


Keeping the accessories immersed in the detergent solution, wipe all external surfaces (i.e., eleven items from a) through k) as shown below) using a clean lint-free cloth or sponges to remove any debris.

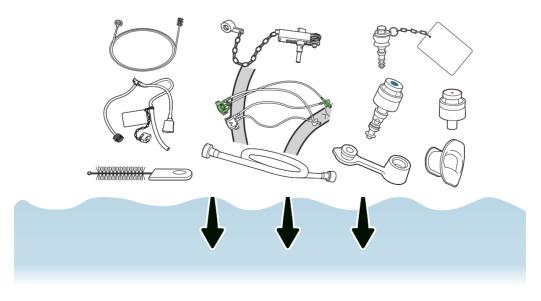


Take all accessories out of the detergent solution and confirm that no debris remains on all their external surfaces (i.e., eleven items from a) through k) as shown below).

If any debris remains, repeat Steps 7 and 8 until no debris remains.



When all debris is removed, put the accessories back in the detergent solution.



2. Clean external

3. Brush valves

4. Flush accessories

#### 6.2.3 Brush the valves



#### **WARNING**



Once you immerse the endoscope's accessories, keep them immersed at all times when performing the cleaning steps, unless the instructions state otherwise. Holding the accessories out of the fluid while cleaning may pose an infection control risk.

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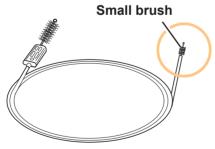
### CAUTION

Make sure that you do not scratch the seals on the air/water valve (MH-438), and the biopsy valve (MB-358) while brushing. Doing so could cause water or air leaks.

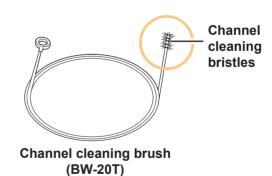
## 6.2.3.1 Brush the suction valve (MH-443)

You may use the small brush without a handle on the single use combination cleaning brush (BW-412T) or the channel-cleaning brush (BW-20T).

Grip the channel cleaning brush end 3 cm down from the bristles.

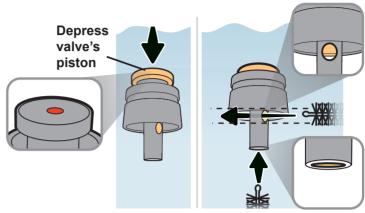


Single use combination cleaning brush (BW-412T)

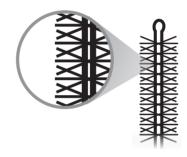


Keeping the suction valve (with the red mark) immersed in the detergent solution, depress the valve's piston and brush both of the valve's holes.

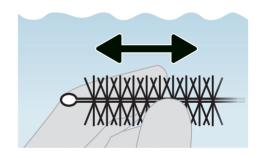




Inspect the brush's bristles for debris.



Clean the brush's bristles in the detergent solution using your gloved fingertips to remove any debris.

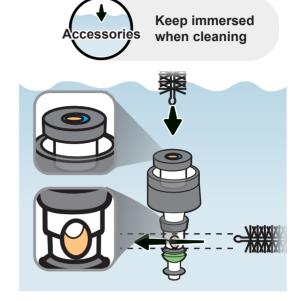


5 If any debris remains, repeat Steps 2 through 4 until no debris remains.

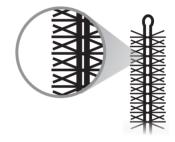


## 6.2.3.2 Brush the air/water valve (MH-438)

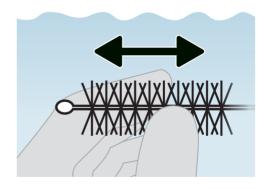
Keeping the air/water valve (with the blue mark) immersed in the detergent solution, brush both of the valve's holes.



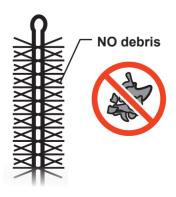
2 Inspect the brush's bristles for debris.



Clean the brush's bristles in the detergent solution using your gloved fingertips to remove any debris.



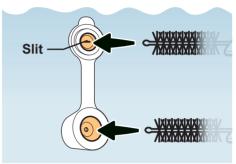
If any debris remains, repeat Steps 1 through 3 until no debris remains.



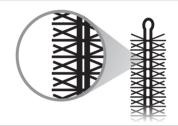
## 6.2.3.3 Brush the biopsy valve (MB-358)

Keeping the biopsy valve immersed in the detergent solution, brush the valve's hole and the valve's slit.

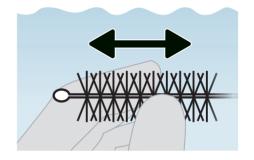




Inspect the brush's bristles for debris.



Clean the brush's bristles in the detergent solution using your gloved fingertips to remove any debris.



If any debris remains, repeat
Steps 1 through 3 until no debris remains.



If you used the single use combination cleaning brush (BW-412T), discard the brush into a biohazard container.



## 6.2.4 Flush the accessories with detergent solution

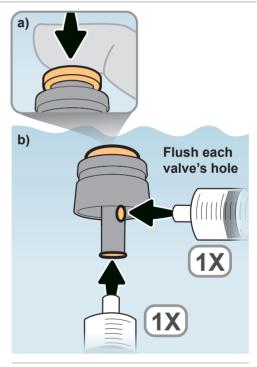
## 6.2.4.1 Flush the suction valve (MH-443)

Keeping the suction valve (with the red mark) immersed in the detergent solution, depress and release the valve's piston several times until no air bubbles exit the valve.



- Immerse a clean 30 mL syringe and the suction valve in the detergent solution and flush the valve's holes, as follows:
  - a) Depress the suction valve's piston;
  - b) Flush each hole with30 mL of the detergent solution;
  - c) Confirm that no air bubbles exit the valve during the flush;

If air bubbles exit, flush the part where air bubbles exit with 30 mL of the detergent solution until no air bubbles exit.

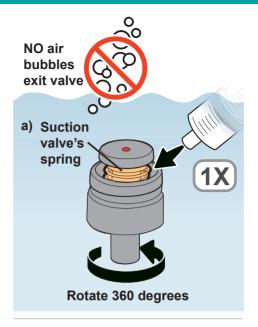


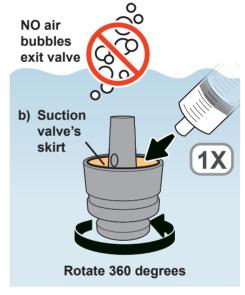
c) NO air bubbles should exit



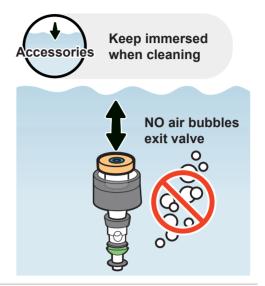
- Keeping the 30 mL syringe and the suction valve immersed, continuously rotate the valve 360 degrees while flushing the valve, as follows;
  - a) Flush the valve's spring with 30 mL of the detergent solution and confirm that no air bubbles exit the valve;
  - b) Flush the valve's skirt (i.e., underside) with 30 mL of the detergent solution and confirm that no air bubbles exit the valve;

If air bubbles exit, flush the part where air bubbles exit with 30 mL of the detergent solution until no air bubbles exit.



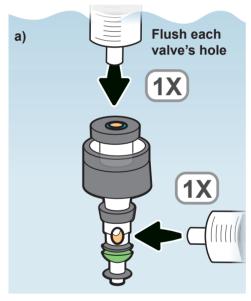


Keeping the air/water valve (with the blue mark) immersed in the detergent solution, depress and release the valve's piston several times until no air bubbles exit the valve

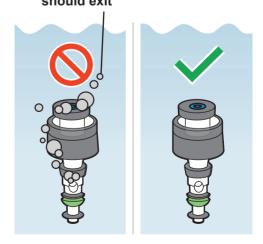


- Keeping the 30 mL syringe and the air/water valve immersed, flush the valve's holes, as follows:
  - a) Flush each hole with 30 mL of the detergent solution;
  - b) Confirm that no air bubbles exit the valve during the flush;

If air bubbles exit, flush the part where air bubbles exit with 30 mL of the detergent solution until no air bubbles exit.

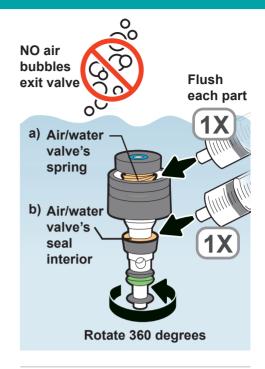


b) NO air bubbles should exit



- Keeping the 30 mL syringe and the air/water valve immersed, continuously rotate the valve 360 degrees while flushing the valve, as follows:
  - a) Flush the valve's spring with 30 mL of the detergent solution and confirm that no air bubbles exit the valve;
  - b) Flush the valve's seal interior with 30 mL of the detergent solution and confirm that no air bubbles exit the valve:
  - c) Flush the valve's skirt (i.e., underside) with 30 mL of the detergent solution and confirm that no air bubble exit the valve;

If air bubbles exit, flush the part where air bubbles exit with 30 mL of the detergent solution until no air bubbles exit.





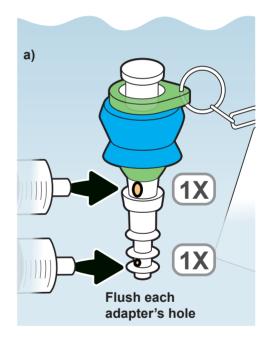
# 6.2.4.3 Flush the AW channel cleaning adapter (MH-948)

Keeping the AW channel cleaning adapter immersed in the detergent solution, depress and release the adapter's piston several times until no air bubbles exit the adapter.

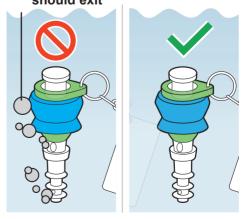


- Keeping the 30 mL syringe and the adapter immersed, flush the adapter's holes, as follows:
  - a) Flush each hole with 30 mL of the detergent solution;
  - b) Confirm that no air bubbles exit the adapter during the flush;

If air bubbles exit, flush the part where air bubbles exit with 30 mL of the detergent solution until no air bubbles exit.



b) NO air bubbles should exit



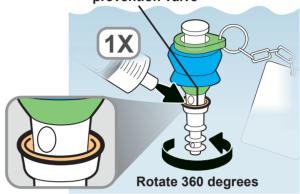


- Keeping the 30 mL syringe and the adapter immersed, continuously rotate the adapter 360 degrees while flushing the adapter, as follows:
  - a) Flush the adapter's backflowprevention valve interior with 30 mL of the detergent solution and confirm that no air bubbles exit the adapter;
  - b) Flush the adapter's skirt (i.e., underside) with 30 mL of the detergent solution and confirm that no air bubbles exit the adapter;

If air bubbles exit, flush the part where air bubbles exit with 30 mL of the detergent solution until no air bubbles exit.

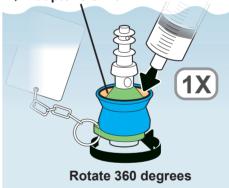


a) Adapter's backflowprevention valve





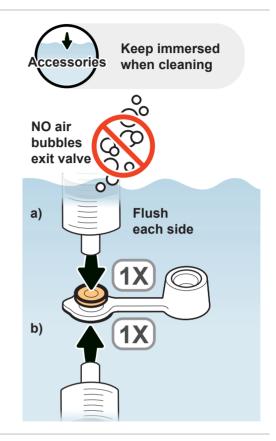
b) Adapter's skirt



## 6.2.4.4 Flush the biopsy valve (MB-358)

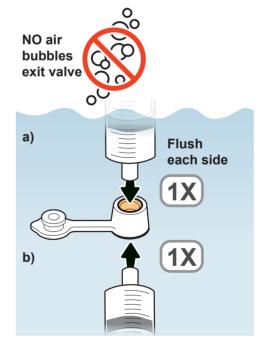
- Keeping the 30 mL syringe and the biopsy valve immersed, flush the biopsy valve's cap with the detergent solution, as follows:
  - a) Flush the interior of the valve's cap with 30 mL of the detergent solution and confirm that no air bubbles exit the valve:
  - b) Flush the other side of the valve's cap (i.e., underside) with 30 mL of the detergent solution and confirm that no air bubbles exit the valve;

If air bubbles exit, flush the part where air bubbles exit with 30 mL of the detergent solution until no air bubbles exit.



- Keeping the 30 mL syringe and the biopsy valve immersed, flush the biopsy valve's hole with detergent solution, as follows:
  - a) Flush the hole with 30 mL of the detergent solution and confirm that no air bubbles exit the valve;
  - b) Flush the other side of the hole (i.e., underside) with 30 mL of the detergent solution and confirm that no air bubbles exit the valve;

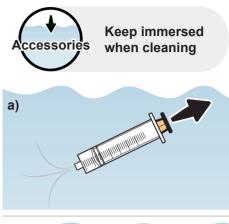
If air bubbles exit, flush the part where air bubbles exit with 30 mL of the detergent solution until no air bubbles exit.

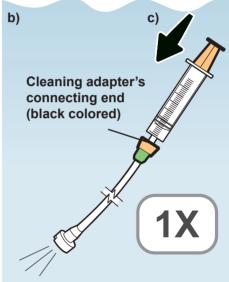


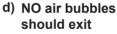
## 6.2.4.5 Flush the suction cleaning adapter (MH-856)

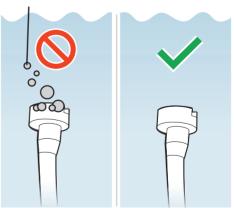
- Keeping the 30 mL syringe and the suction cleaning adapter immersed, flush the adapter with 30 mL of the detergent solution, as follows:
  - a) Before attaching the syringe to the cleaning adapter's connecting end (so that you do not pull any air into the syringe that might be inside the cleaning adapter), slowly pull the syringe plunger to fill the syringe with the detergent solution;
  - b) Hold the syringe tip against the cleaning adapter's connecting end (black colored);
  - c) Then forcefully flush the cleaning adapter with 30 mL of the detergent solution;
  - d) Confirm that no air bubbles exit from the cleaning adapter during the flush;

If air bubbles exit, repeat Step 1 until no air bubbles exit.

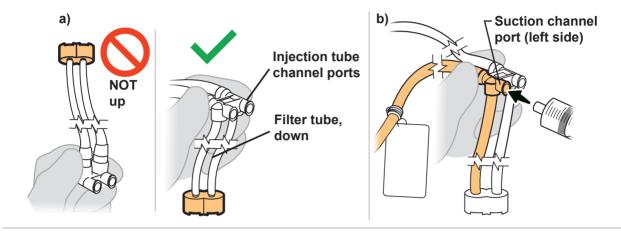








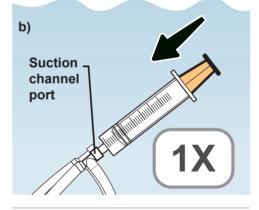
- Attach the 30 mL syringe to the injection tube's suction channel port, as follows:
  - a) Hold the injection tube's channel ports so that the filter tube points down, NOT up;
  - b) Attach the syringe to the suction channel port (the left side port);

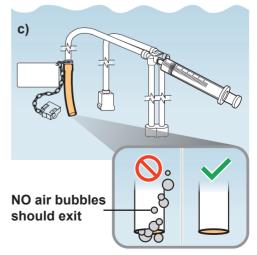


- Keeping the 30 mL syringe and the injection tube attached and immersed, flush the suction channel tube with 30 mL of the detergent solution, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with the detergent solution;
  - b) Then forcefully flush with 30 mL of the detergent solution;
  - c) Confirm that no air bubbles exit from the tube during the flush;

If air bubbles exit, repeat Step 2 until no air bubbles exit.

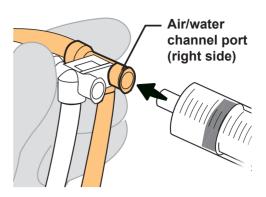






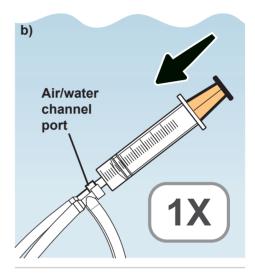


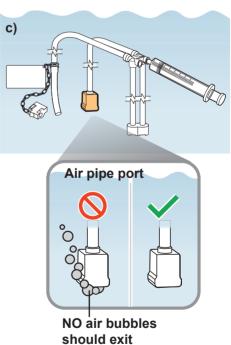
Move the syringe from the suction channel port to the injection tube's air/water channel port (port on the right).



- Keeping the 30 mL syringe and the injection tube attached and immersed, flush the air/water channel tube with 30 mL of the detergent solution, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with the detergent solution;
  - b) Then forcefully flush with 30 mL of the detergent solution;
  - c) Confirm that no air bubbles exit from air pipe port during the flush;

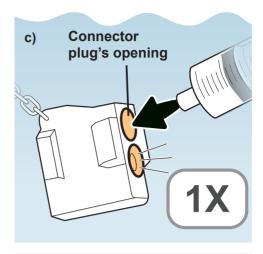
If air bubbles exit, repeat Step 4 until no air bubbles exit.

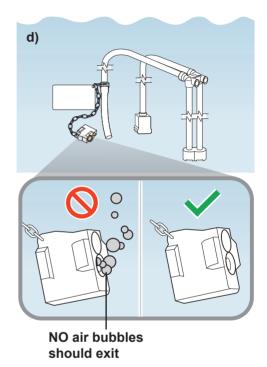




- Keeping the 30 mL syringe and the connector plug immersed, flush the connector plug with 30 mL of the detergent solution, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with the detergent solution;
  - b) Press the syringe tip to one side of the connector plug's opening;
  - c) Then forcefully flush with 30 mL of the detergent solution;
  - d) Confirm that no air bubbles exit from the other side of the connector plug's opening during the flush;

If air bubbles exit, repeat Step 5 until no air bubbles exit.

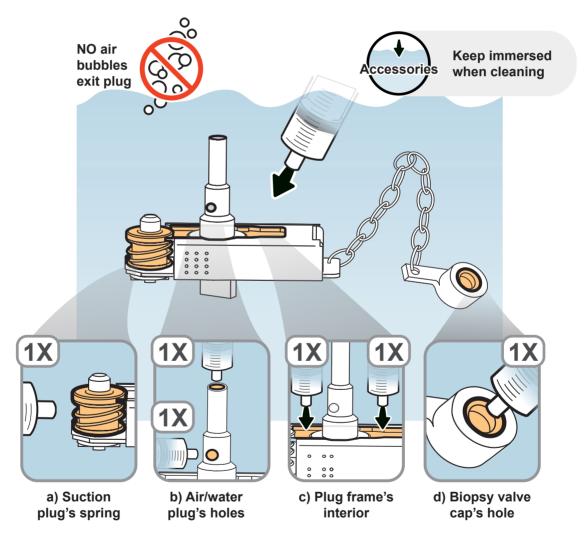




## 6.2.4.7 Flush the channel plug (MH-944)

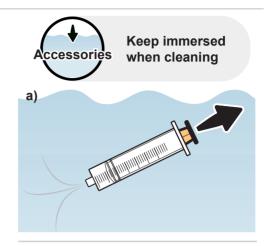
- Keeping the 30 mL syringe and the channel plug immersed, flush each of the following channel plug parts with 30 mL of the detergent solution, as follows:
  - a) The **suction plug's spring** and confirm that no air bubbles exit the plug;
  - b) The air/water plug's holes and confirm that no air bubbles exit the plug;
  - c) The **plug frame's interior** and confirm that no air bubbles exit the plug;
  - d) The biopsy valve cap's hole and confirm that no air bubbles exit the plug;

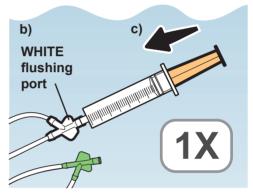
If air bubbles exit, flush the part where air bubbles exit with 30 mL of the detergent solution until no air bubbles exit.



## 6.2.4.8 Flush the distal-end flushing adapter (MAJ-2319)

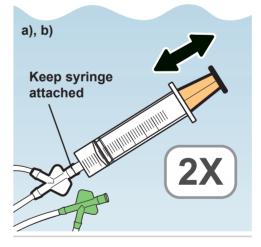
- Keeping the 30 mL syringe and the distal-end flushing adapter immersed, flush the adapter through the WHITE flushing port with 30 mL of the detergent solution, as follows:
  - a) Before attaching the syringe to the white flushing port (so that you do not pull any air into the syringe that might be inside the flushing tube), slowly pull the syringe plunger to fill the syringe with detergent solution;
  - b) Attach it to the white flushing port of the distal-end flushing adapter;
  - c) Then forcefully flush the distal-end flushing adapter with 30 mL of the detergent solution;

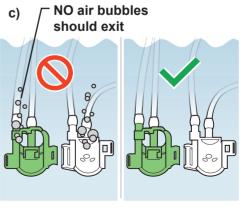




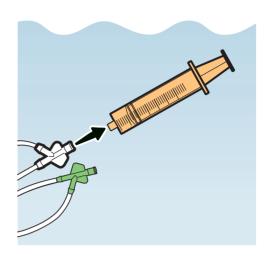
- Keeping the 30 mL syringe and the distal-end flushing adapter attached and immersed, flush an additional 60 mL of the detergent solution through the WHITE flushing port, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with detergent solution;
  - b) Then forcefully flush the distalend flushing adapter with 30 mL of the detergent solution;
  - c) Repeat Steps a) and b) one more time, for a total of two times, and confirm that no air bubbles exit from either of the openings during the last flush.

If air bubbles exit, detach the syringe from the distal-end flushing adapter and repeat Steps 1 and 2 until no air bubbles exit.



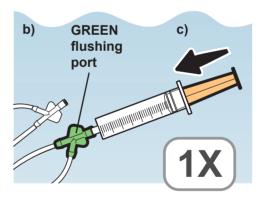


# Detach the syringe from the distalend flushing adapter.



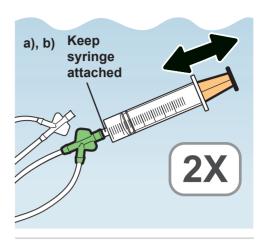
- Keeping the 30 mL syringe and the distal-end flushing adapter immersed, flush the adapter through the GREEN flushing port with 30 mL of the detergent solution, as follows:
  - a) Before attaching the syringe to the green flushing port (so that you do not pull any air into the syringe that might be inside the flushing tube), slowly pull the syringe plunger to fill the syringe with detergent solution;
  - b) Attach it to the green flushing port of the distal-end flushing adapter;
  - c) Then forcefully flush the distal-end flushing adapter with 30 mL of the detergent solution;

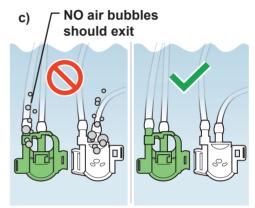




- Keeping the 30 mL syringe and distal-end flushing adapter attached and immersed, flush an additional 60 mL of the detergent solution through the GREEN flushing port, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with detergent solution;
  - b) Then forcefully flush the distalend flushing adapter with 30 mL of the detergent solution;
  - c) Repeat Steps a) and b) one more time, for a total of two times, and confirm that no air bubbles exit from either of the openings during the last flush;

If air bubbles exit, detach the syringe from the distal-end flushing adapter and repeat Steps 4 and 5 until no air bubbles exit.

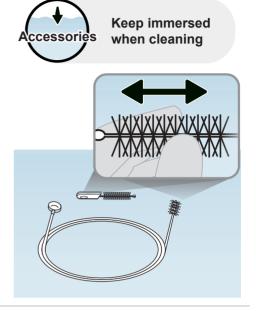






### 6.2.4.9 Clean the brushes

- Clean the brushes as follows:
  - a) Keep the channel cleaning brush (BW-20T) and the channel-opening cleaning brush (MH-507) completely immersed in the detergent solution;
  - b) Clean the brush's bristles in the detergent solution using your gloved fingertips to remove any debris.



Confirm that all debris is removed from the brush's bristles.

If any debris remains, repeat Steps 1 and 2 until no debris remains.



4. Flush

5. Immerse accessories

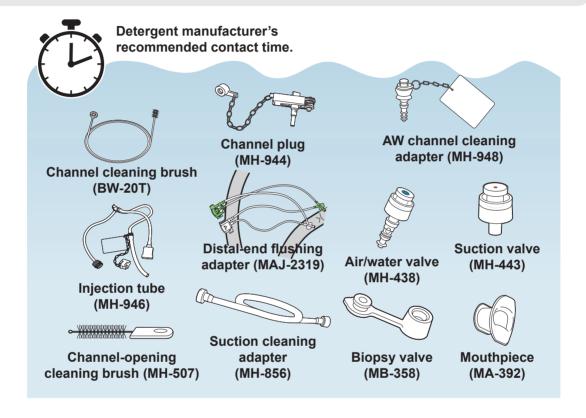
6. Remove detergent

### 6.2.5 Immerse the accessories in detergent solution

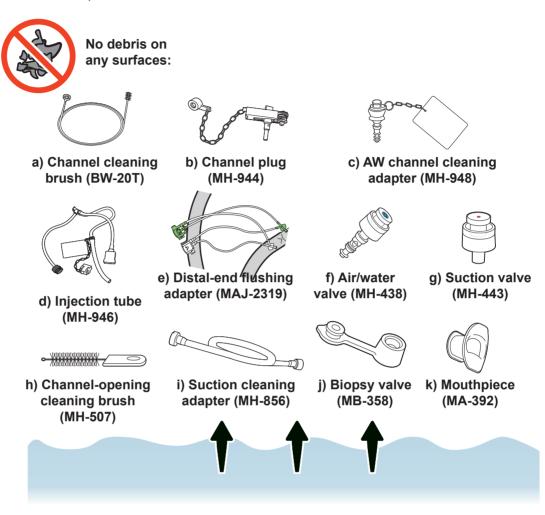
Leave all accessories completely immersed in the detergent solution for the detergent manufacturer's recommended contact time.

#### NOTE

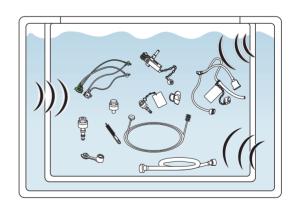
Use a clock or a timer to accurately measure the detergent contact time.



Remove all accessories from the detergent solution and confirm **no debris remains** on all their external surfaces (i.e., eleven items from a) through k) as shown below).



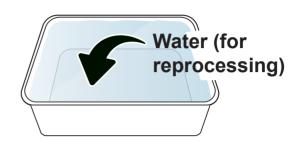
- If any debris remains, ultrasonically clean it at 38 47 kHz for 5 minutes. For the suction cleaning adapter, the injection tube, or the distal-end flushing adapter, flush it to fill with the detergent solution according to the flushing steps respectively before starting ultrasonic cleaning.
  - Suction cleaning adapter: Chapter 6.2.4.5, "Flush the suction cleaning adapter (MH-856)".
  - Injection tube: Chapter 6.2.4.6, "Flush the injection tube (MH-946)".
  - Distal-end flushing adapter: Chapter 6.2.4.8, "Flush the distal-end flushing adapter (MAJ-2319)".



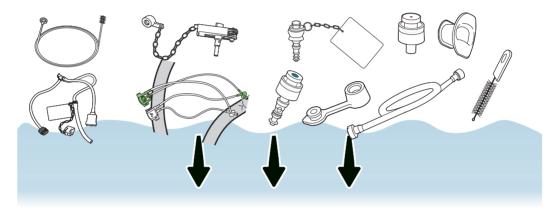
# 6.2.6 Remove detergent solution from all accessories

### 6.2.6.1 Immerse the accessories in water

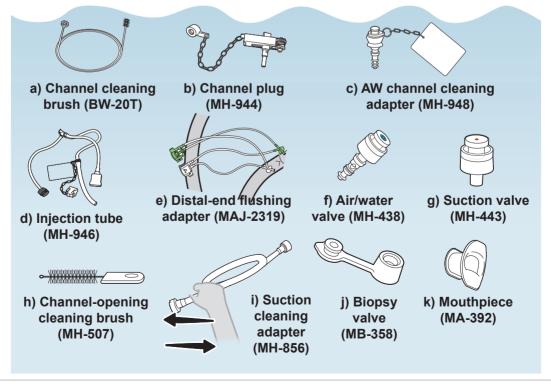
Fill a clean basin with water (for reprocessing).



Completely immerse all accessories in the water.



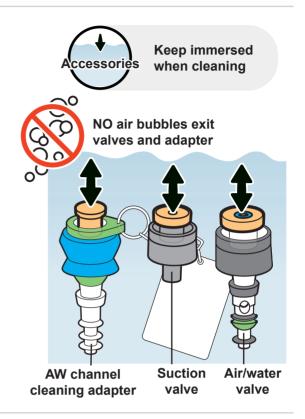
Gently move the accessories (i.e., eleven items from a) through k) as shown below) back and forth in the water to thoroughly rinse the detergent solution from the external surfaces of the accessories.



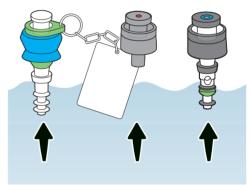
### 6.2.6.2 Depress and release the valves

- Keep the following accessories immersed in the water:
  - Suction valve (MH-443)
  - Air/water valve (MH-438)
  - AW channel cleaning adapter (MH-948)

Then depress and release the valves' and adapter's pistons several times until no air bubbles exit the valves and adapter.



Remove the valves from the water.

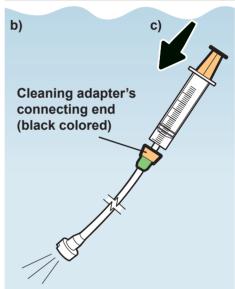


### 6.2.6.3 Flush the suction cleaning adapter (MH-856)

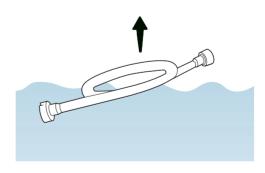
- Keeping the 30 mL syringe and the suction cleaning adapter immersed, flush the cleaning adapter with 30 mL of water, as follows:
  - a) Before attaching the syringe to the cleaning adapter's connecting end (so that you do not pull any air into the syringe that might be inside the cleaning adapter), slowly pull the syringe plunger to fill the syringe with the water;
  - b) Hold the syringe against the cleaning adapter's connecting end (black colored);
  - c) Then forcefully flush the cleaning adapter with 30 mL of the water.







Remove the suction cleaning adapter from the water.

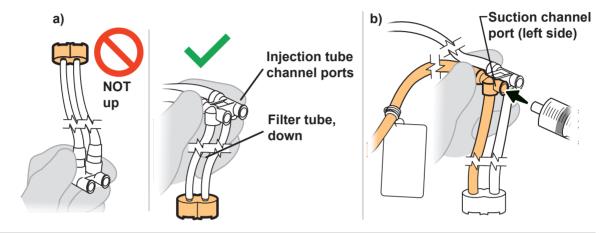


Tilt the adapter to expel any remaining water.



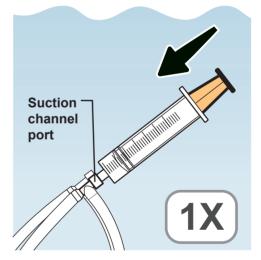
### 6.2.6.4 Flush the injection tube (MH-946)

- Attach the 30 mL syringe to the injection tube's suction channel port, as follows:
  - a) Hold the injection tube's channel ports so that the filter tube points down, NOT up;
  - b) Attach the syringe to the suction channel port (the left side port).

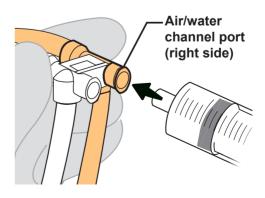


- Keeping the 30 mL syringe and injection tube attached and immersed, flush the suction channel tube with 30 mL of the water, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with the water;
  - b) Then forcefully flush with 30 mL of the water.



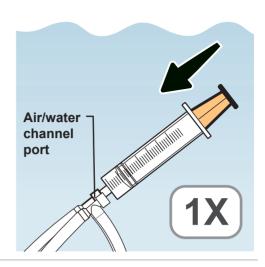


Move the syringe from the suction channel port to the injection tube's air/water channel port (port on the right).

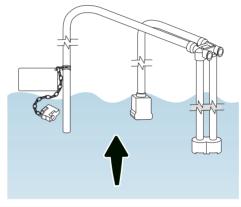


Chapter 6

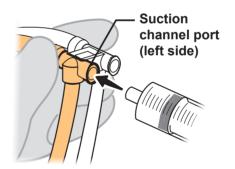
- Keeping the 30 mL syringe and injection tube attached and immersed, flush the air/water channel tube with 30 mL of the water, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with the water;
  - b) Then forcefully flush with 30 mL of the water.



Remove the injection tube from the water.

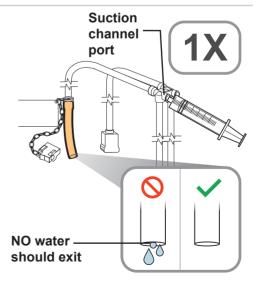


Move the syringe to the injection tube's suction channel port (the left side port).

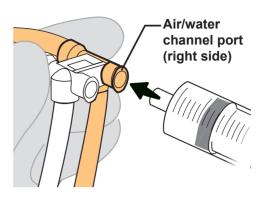


- Keeping the 30 mL syringe attached, flush the suction channel tube with 30 mL of air, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with air;
  - b) Then forcefully flush 30 mL of air and confirm that no water exits from the tube during the flush.

If water exits, repeat Step 7 until no water exits.

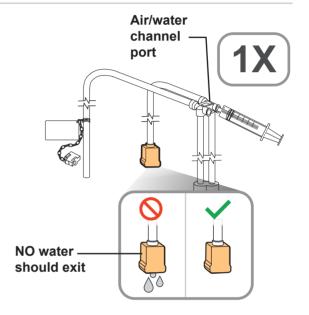


Move the syringe from the suction channel port to the injection tube's air/water channel port (port on the right).



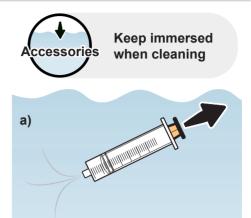
- **9** Keeping the 30 mL syringe attached, flush the air/water channel tube with 30 mL of air, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with air;
  - b) Then forcefully flush 30 mL of air and confirm that no water exits from the air pipe port during the flush.

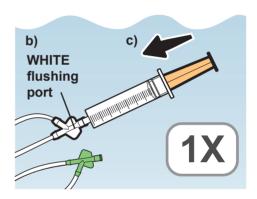
If water exits, repeat Step 9 until no water exits.



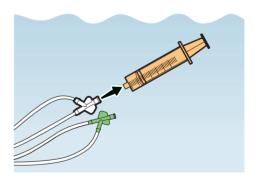
### 6.2.6.5 Flush the distal-end flushing adapter (MAJ-2319)

- Keeping the 30 mL syringe and the distal-end flushing adapter immersed, flush the adapter through the WHITE flushing port with 30 mL of the water, as follows:
  - a) Before attaching the syringe to the white flushing port (so that you do not pull any air into the syringe that might be inside the flushing tube), slowly pull the syringe plunger to fill the syringe with the water;
  - b) Attach it to the white flushing port of the distal-end flushing adapter;
  - c) Then forcefully flush the distal-end flushing adapter with 30 mL of the water.

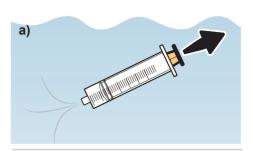


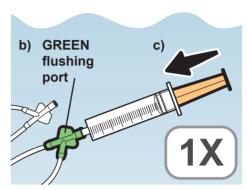


**2** Detach the syringe from the distalend flushing adapter.

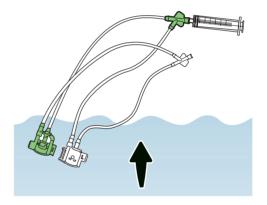


- Keeping the 30 mL syringe and the distal-end flushing adapter immersed, flush the adapter through the GREEN flushing port with 30 mL of the water, as follows:
  - a) Before attaching the syringe to the green flushing port (so that you do not pull any air into the syringe that might be inside the flushing tube), slowly pull the syringe plunger to fill the syringe with the water;
  - b) Attach it to the green flushing port of the distal-end flushing adapter;
  - c) Then forcefully flush the distal-end flushing adapter with 30 mL of the water.

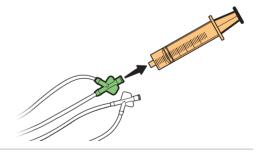




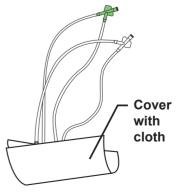
Remove the distal-end flushing adapter from the water and place it in a clean basin.



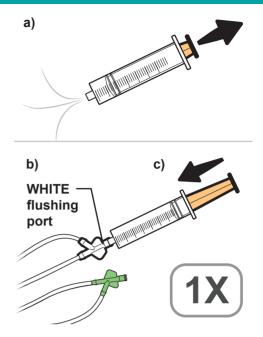
Detach the syringe from the flushing adapter's distal-end.



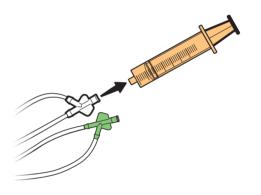
To prevent splashing from the cover's openings, cover the distalend flushing adapter's white and green covers in clean lint-free cloths.



- Flush the adapter through the WHITE flushing port with 30 mL of air, as follows:
  - a) Before attaching the syringe to the white flushing port (so that you do not pull water into the syringe that might be inside the flushing tube), slowly pull the syringe plunger to fill the syringe with air;
  - b) Attach it to the white flushing port of the distal-end flushing adapter;
  - c) Then forcefully flush with 30 mL of air.

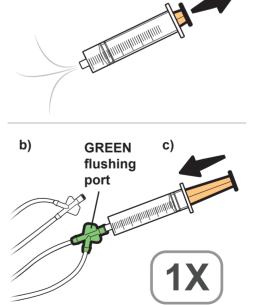


Detach the syringe from the flushing adapter's distal-end.

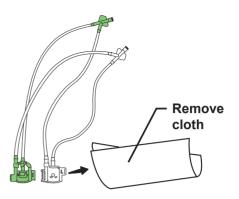


a)

- Flush the adapter through the GREEN flushing port with 30 mL of air, as follows:
  - a) Before attaching the syringe to the green flushing port (so that you do not pull water into the syringe that might be inside the flushing tube), slowly pull the syringe plunger to fill the syringe with air;
  - b) Attach it to the green flushing port of the distal-end flushing adapter;
  - c) Then forcefully flush with 30 mL of air.



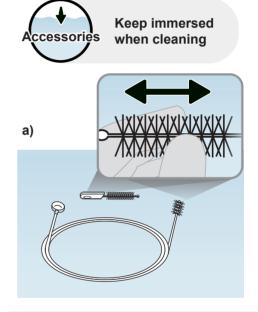
Remove the cloths from the flushing adapter's distal-end.

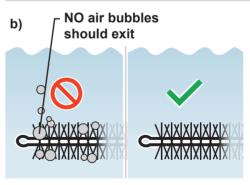


### 6.2.6.6 Rub the brushes

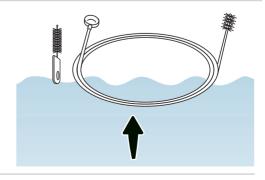
- Rub the brushes as follows:
  - a) Keep the channel cleaning brush (BW-20T) and the channelopening cleaning brush (MH-507) completely immersed in the water;
  - b) Rub the brushes' bristles in the water using your gloved fingertips and confirm that no air bubbles exit from the bristles during the rubbing.

If air bubbles exit, repeat Step 1 until no air bubbles exit.



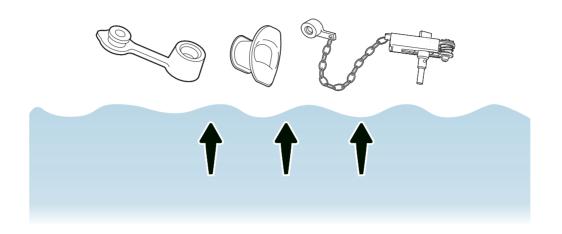


**?** Remove the brushes from the water.

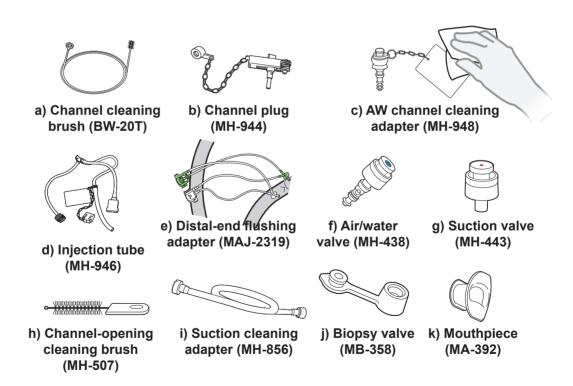


# 6.2.7 Dry the external surfaces

Remove all other accessories from the water.



Using clean lint-free cloths, wipe and dry the accessories' external surfaces (i.e., eleven items from a) through k) as shown below).



Inspect all items and confirm no residual debris remains on all their external surfaces (i.e., eleven items from a) through k) as shown below).

If any debris remains, repeat all of Chapter 6.2, "Manually clean the accessories" steps until no debris remains.



No debris on any surfaces:



a) Channel cleaning brush (BW-20T)



b) Channel plug (MH-944)



c) AW channel cleaning adapter (MH-948)



d) Injection tube (MH-946)



e) Distal-end flushing adapter (MAJ-2319)



f) Air/water valve (MH-438)



g) Suction valve (MH-443)



h) Channel-opening cleaning brush (MH-507)



i) Suction cleaning adapter (MH-856)



j) Biopsy valve (MB-358)



k) Mouthpiece (MA-392)

### 6.3 Manually disinfect the accessories

#### Workflow for manually disinfecting the accessories:

### Prepare equipment

- 6.3.1 Equipment needed
- 6.3.2 Prepare for manual disinfection



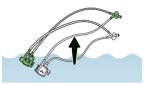
#### Flush the accessories

- 6.3.3 Flush the accessories with disinfectant solution
- 6.3.4 Immerse the accessories in disinfectant solution



#### Remove the accessories

6.3.5 Remove the accessories from disinfectant solution



Use sterile syringes and cloths for all reprocessing steps occurring after accessories are immersed in the disinfectant solution.

# 6.3.1 Equipment needed

Prepare the following equipment.

#### Fluids used for manual disinfection:

• Disinfectant solution (Refer to Chapter 3.4, "Disinfectant solution")

#### Other:

- · Clean lint-free cloths
- Clean 30 mL (30 cc) syringes
- Sterile 30 mL (30 cc) syringes\*1
- Clean basins or containers with tightfitting lids

<sup>\*1</sup> Following disinfection, it is very important not to recontaminate the accessories with potentially infectious microorganisms. When rinsing and drying the accessories following disinfection, the use of sterile equipment (basins, cloths, syringes, etc.) is recommended. If sterile equipment is not available, use clean equipment that does not recontaminate the accessories with potentially infectious microorganisms. Consult with your hospital's infection control committee regarding local policies or requirements regarding reprocessing equipment.



### 6.3.2 Prepare for manual disinfection

# <u>/i\</u>

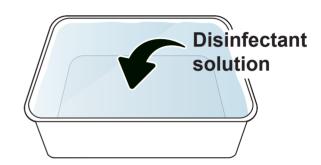
#### **WARNING**



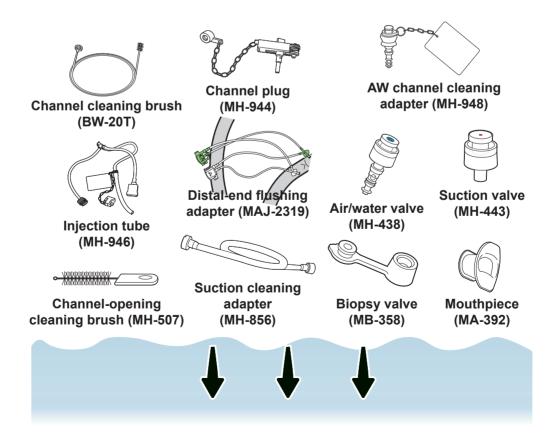
Once you immerse the endoscope's accessories, keep them immersed at all times when performing the disinfecting steps, unless the instructions state otherwise. Holding the accessories out of the fluid while disinfecting may pose an infection control risk.

Fill a clean, large basin with the disinfectant solution at the temperature and concentration recommended by the disinfectant manufacturer.

Refer to the disinfectant manufacturer's instructions for the recommended temperature and concentration.

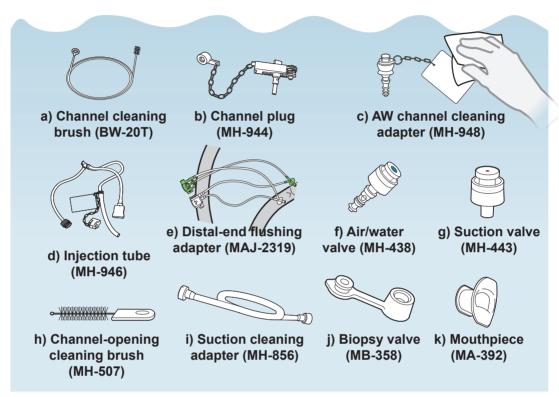


**?** Completely immerse all accessories in the disinfectant solution.



- Prepare for manual disinfection
- 3. Flush accessories
- 4. Immerse accessories
- Keeping the accessories immersed in the disinfectant solution, wipe all external surfaces (i.e., eleven items from a) through k) as shown below) using your gloved fingertips or clean lint-free cloths to remove any air bubbles.





### 6.3.3 Flush the accessories with disinfectant solution

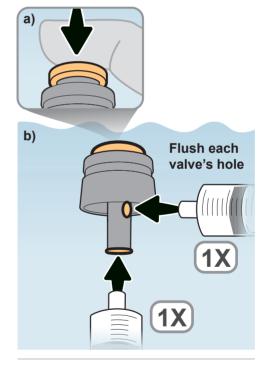
### 6.3.3.1 Flush the suction valve (MH-443)

Keeping the suction valve (with the red mark) immersed in the disinfectant solution, depress and release the valve's piston several times until no air bubbles exit the valve



- Immerse a clean 30 mL syringe and the suction valve in the disinfectant solution and flush the valve's holes, as follows:
  - a) Depress the suction valve's piston;
  - b) Flush each hole with30 mL of the disinfectant solution;
  - c) Confirm that no air bubbles exit the valve during the flush.

If air bubbles exit, flush the part where air bubbles exit with 30 mL of the disinfectant solution until no air bubbles exit.

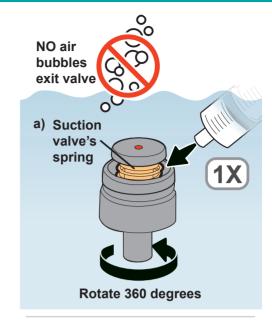


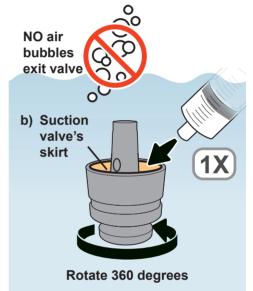
c) NO air bubbles should exit



- Keeping the 30 mL syringe and the suction valve immersed, continuously rotate the valve 360 degrees while flushing the valve, as follows;
  - a) Flush the valve's spring with 30 mL of the disinfectant solution and confirm that no air bubbles exit the valve;
  - b) Flush the valve's skirt (i.e., underside) with 30 mL of the disinfectant solution and confirm that no air bubbles exit the valve.

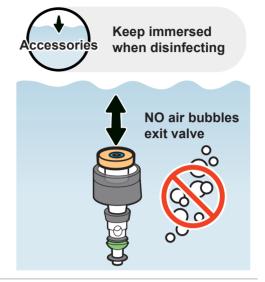
If air bubbles exit, flush the part where air bubbles exit with 30 mL of the disinfectant solution until no air bubbles exit.





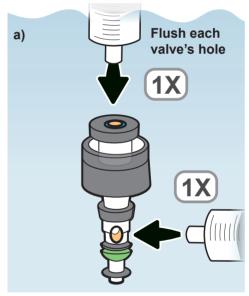
### 6.3.3.2 Flush the air/water valve (MH-438)

Keeping the air/water valve (with the blue mark) immersed in the disinfectant solution, depress and release the valve's piston several times until no air bubbles exit the valve.

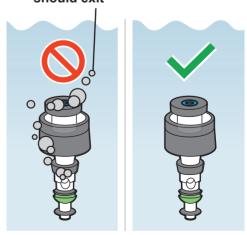


- Keeping the 30 mL syringe and the air/water valve immersed, flush the valve's holes, as follows:
  - a) Flush each hole with 30 mL of the disinfectant solution.
  - b) Confirm that no air bubbles exit the valve during the flush.

If air bubbles exit, flush the part where air bubbles exit with 30 mL of the disinfectant solution until no air bubbles exit.

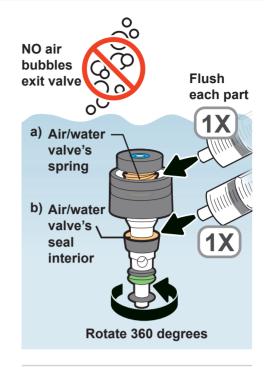


b) NO air bubbles should exit



- Keeping the 30 mL syringe and the air/water valve immersed, continuously rotate the valve 360 degrees while flushing the valve, as follows:
  - a) Flush the valve's spring with 30 mL of the disinfectant solution and confirm that no air bubbles exit the valve;
  - b) Flush the valve's seal interior with 30 mL of the disinfectant solution and confirm that no air bubbles exit the valve:
  - c) Flush the valve's skirt (i.e., underside) with 30 mL of the disinfectant solution and confirm that no air bubbles exit the valve.

If air bubbles exit, flush the part where air bubbles exit with 30 mL of the disinfectant solution until no air bubbles exit.





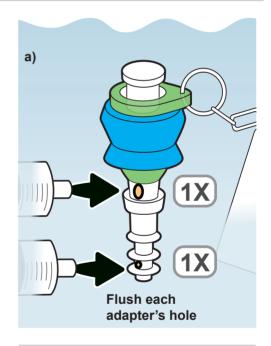
# 6.3.3.3 Flush the AW channel cleaning adapter (MH-948)

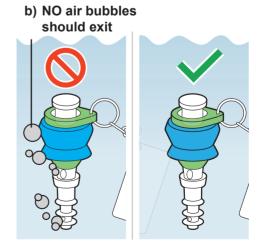
Keeping the AW channel cleaning adapter immersed in the disinfectant solution, depress and release the adapter's piston several times until no air bubbles exit the adapter.



- 2 Keeping the 30 mL syringe and the adapter immersed, flush the adapter's holes, as follows:
  - a) Flush each hole with 30 mL of the disinfectant solution;
  - b) Confirm that no air bubbles exit from the adapter during the flush.

If air bubbles exit, flush the part where air bubbles exit with 30 mL of the disinfectant solution until no air bubbles exit.



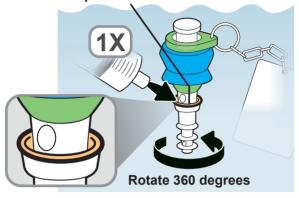


- Keeping the 30 mL syringe and the adapter immersed, continuously rotate the adapter 360 degrees while flushing the adapter, as follows:
  - a) Flush the adapter's backflowprevention valve interior with 30 mL of the disinfectant solution and confirm that no air bubbles exit the adapter;
  - b) Flush the adapter's skirt (i.e., underside) with 30 mL of the disinfectant solution and confirm that no air bubbles exit the adapter;

If air bubbles exit, flush the part where air bubbles exit with 30 mL of the disinfectant solution until no air bubbles exit.

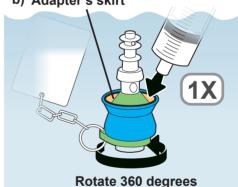


a) Adapter's backflowprevention valve





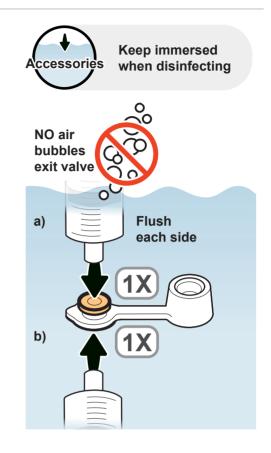
b) Adapter's skirt



### 6.3.3.4 Flush the biopsy valve (MB-358)

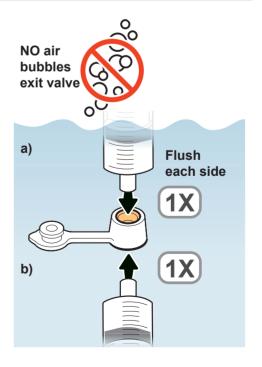
- Keeping the 30 mL syringe and the biopsy valve immersed, flush the biopsy valve's cap with disinfectant solution, as follows:
  - a) Flush the interior of the valve's cap with 30 mL of the disinfectant solution and confirm that no air bubbles exit the valve:
  - b) Flush the other side of the valve's cap (i.e., underside) with 30 mL of the disinfectant solution and confirm that no air bubbles exit the valve;

If air bubbles exit, flush the part where air bubbles exit with 30 mL of the disinfectant solution until no air bubbles exit.



- Keeping the 30 mL syringe and the biopsy valve immersed, flush the biopsy valve's holes with disinfectant solution, as follows:
  - a) Flush the hole with 30 mL of the disinfectant solution and confirm that no air bubbles exit the valve;
  - b) Flush the other side of the hole (i.e., underside) with 30 mL of the disinfectant solution and confirm that no air bubbles exit the valve;

If air bubbles exit, flush the part where air bubbles exit with 30 mL of the disinfectant solution until no air bubbles exit.

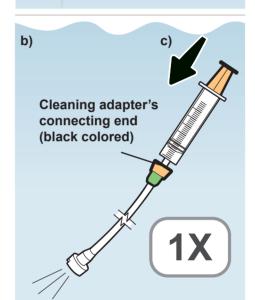


# 6.3.3.5 Flush the suction cleaning adapter (MH-856)

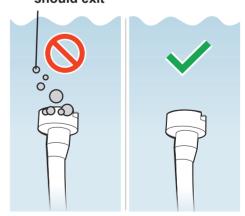
- Keeping the 30 mL syringe and the suction cleaning adapter immersed, flush the adapter with 30 mL of the disinfectant solution, as follows:
  - a) Before attaching the syringe to the cleaning adapter's connecting end (so that you do not pull any air into the syringe that might be inside the cleaning adapter), slowly pull the syringe plunger to fill the syringe with the disinfectant solution;
  - b) Hold the syringe tip against the cleaning adapter's connecting end (black colored);
  - c) Then forcefully flush the cleaning adapter with 30 mL of the disinfectant solution:
  - d) Confirm that no air bubbles exit from the cleaning adapter during the flush.

If air bubbles exit, repeat Step 1 until no air bubbles exit.



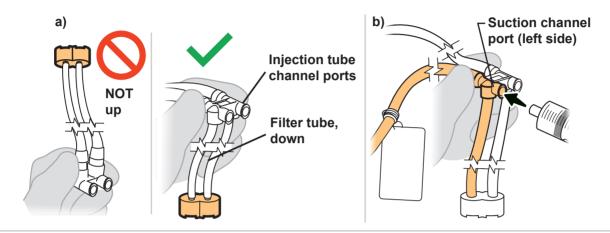


d) NO air bubbles should exit



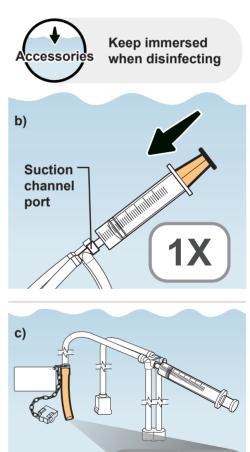
### 6.3.3.6 Flush the injection tube (MH-946)

- Attach the 30 mL syringe to the injection tube's suction channel port, as follows:
  - a) Hold the injection tube's channel ports so that the filter tube points down,
     NOT up;
  - b) Attach the syringe to the suction channel port (the left side port).



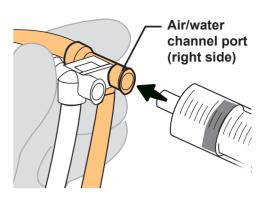
- Keeping the 30 mL syringe and the injection tube attached and immersed, flush the suction channel tube with 30 mL of the disinfectant solution, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with the disinfectant solution;
  - b) Then forcefully flush with 30 mL of the disinfectant solution:
  - c) Confirm that no air bubbles exit from the tube during the flush.

If air bubbles exit, repeat Step 2 until no air bubbles exit.



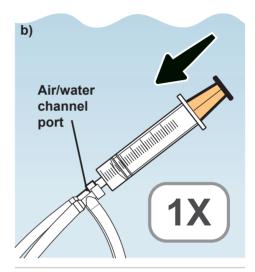
NO air bubbles should exit

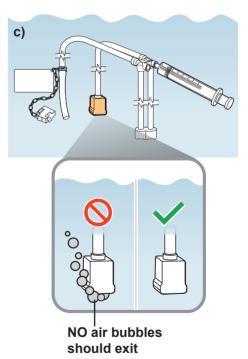
Move the syringe from the suction channel port to the injection tube's air/water channel port (port on the right).



- Keeping the 30 mL syringe and the injection tube attached and immersed, flush the air/water channel tube with 30 mL of the disinfectant solution, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with the disinfectant solution;
  - b) Then forcefully flush with 30 mL of the disinfectant solution;
  - c) Confirm that no air bubbles exit from the air pipe port during the flush.

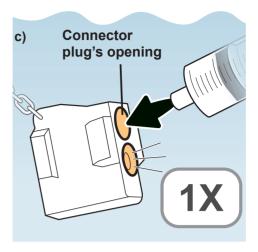
If air bubbles exit, repeat Step 4 until no air bubbles exit.

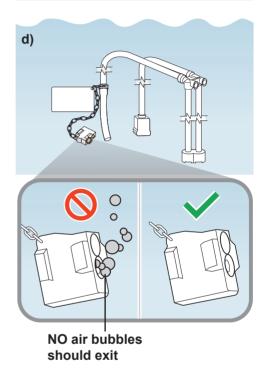




- Keeping the 30 mL syringe and the connector plug immersed, flush the connector plug with 30 mL of the disinfectant solution, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with the disinfectant solution;
  - b) Press the syringe tip to one side of the connector plug's opening;
  - c) Then forcefully flush with 30 mL of the disinfectant solution.
  - d) Confirm that no air bubbles exit from the other side of the connector plug's opening during the flush.

If air bubbles exit, repeat Step 5 until no air bubbles exit.



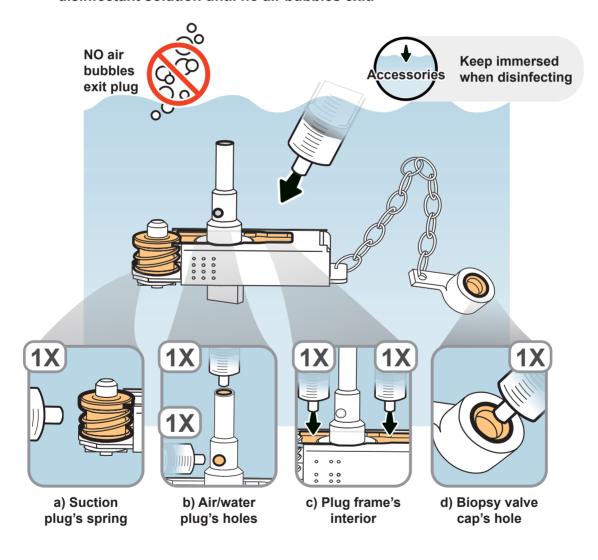


Chapter 6

### 6.3.3.7 Flush the channel plug (MH-944)

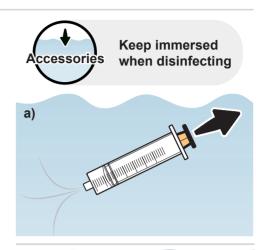
- Keeping the 30 mL syringe and the channel plug immersed, flush each of the following channel plug parts with 30 mL of the disinfectant solution, as follows:
  - a) The suction plug's spring and confirm that no air bubbles exit the plug;
  - b) The air/water plug's holes and confirm that no air bubbles exit the plug;
  - c) The plug frame's interior and confirm that no air bubbles exit the plug;
  - d) The biopsy valve cap's hole and confirm that no air bubbles exit the plug;

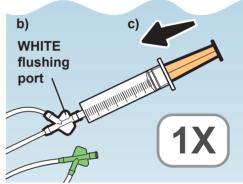
If air bubbles exit, flush the part where air bubbles exit with 30 mL of the disinfectant solution until no air bubbles exit.



### 6.3.3.8 Flush the distal-end flushing adapter (MAJ-2319)

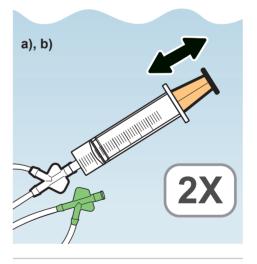
- Keeping the 30 mL syringe and the distalend flushing adapter immersed, flush the adapter through the WHITE flushing port with 30 mL of the disinfectant solution, as follows:
  - a) Before attaching the syringe to the white flushing port (so that you do not pull any air into the syringe that might be inside the flushing tube), slowly pull the syringe plunger to fill the syringe with the disinfectant solution;
  - b) Attach it to the white flushing port of the distal-end flushing adapter;
  - c) Then forcefully flush the distal-end flushing adapter with 30 mL of the disinfectant solution.

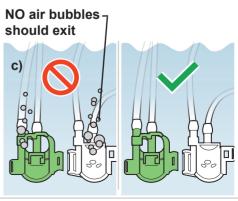




- Keeping the 30 mL syringe and distal-end flushing adapter attached and immersed, flush an additional 60 mL of the disinfectant solution through the WHITE flushing port, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with the disinfectant solution;
  - b) Then forcefully flush the distal-end flushing adapter with 30 mL of the disinfectant solution;
  - c) Repeat Steps a) and b) one more time, for a total of two times, and confirm that no air bubbles exit from either of the openings during the last flush.

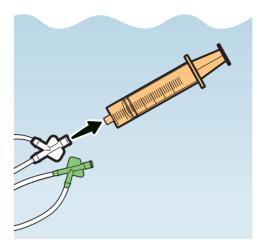
If air bubbles exit, detach the syringe from the distal-end flushing adapter and repeat Steps 1 and 2 until no air bubbles exit.





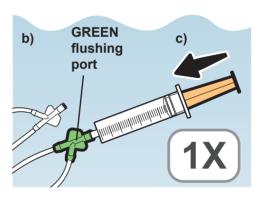
- 2. Prepare for manual
- 3. Flush accessories
- 4. Immerse accessories

Detach the syringe from the distalend flushing adapter.



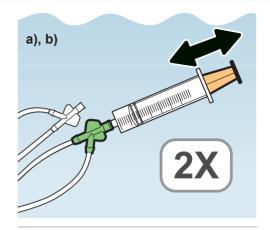
- Keeping the 30 mL syringe and the distal-end flushing adapter immersed, flush the adapter through the GREEN flushing port with 30 mL of the disinfectant solution, as follows:
  - a) Before attaching the syringe to the green flushing port (so that you do not pull any air into the syringe that might be inside the flushing tube), slowly pull the syringe plunger to fill the syringe with the disinfectant solution;
  - b) Attach it to the green flushing port of the distal-end flushing adapter;
  - c) Then forcefully flush the distal-end flushing adapter with 30 mL of the disinfectant solution.

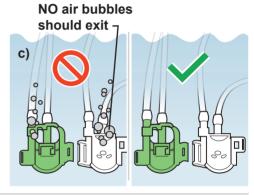




- Keeping the 30 mL syringe and the distal-end flushing adapter attached and immersed, flush an additional 60 mL of the disinfectant solution through the GREEN flushing port, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with the disinfectant solution;
  - b) Then forcefully flush the distal-end flushing adapter with 30 ml of the disinfectant solution;
  - c) Repeat Steps a) and b) one more time, for a total of two times, and confirm that no air bubbles exit from either of the openings during the last flush.

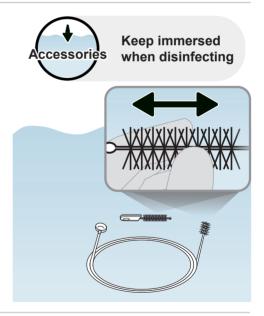
If air bubbles exit, detach the syringe from the distal-end flushing adapter and repeat Steps 4 and 5 until no air bubbles exit.



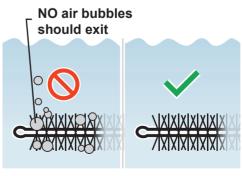


### 6.3.3.9 Rub the brushes

- Rub the brushes as follows:
  - a) Keep the channel cleaning brush (BW-20T) and the channel-opening cleaning brush (MH-507) completely immersed in the disinfectant solution;
  - b) Rub the brush's bristles in the disinfectant solution using your gloved fingertips and confirm that no air bubbles exit from the bristles during the rubbing.



If air bubbles exit, repeat Step 1 until no air bubbles exit.



3. Flush

4. Immerse accessories

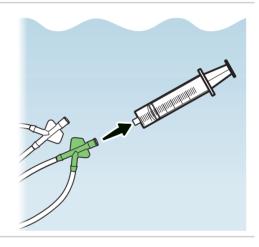
5. Remove

### 6.3.4 Immerse the accessories in disinfectant solution

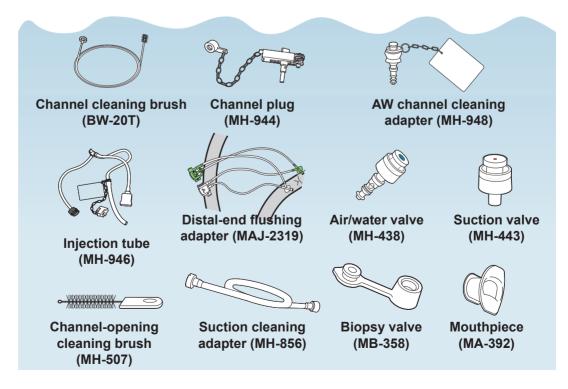
# **WARNING**

During disinfection, keep the syringe detached from the accessories. If a syringe remains attached to an accessory during disinfection, the disinfectant solution cannot adequately contact the mated surfaces between the syringe and the accessory. In addition, completely immerse the accessories below the disinfectant solution's surface so that all accessories' external surfaces contact the disinfectant solution. If the accessories are not completely immersed, any protruding section(s) of the device(s) will not be adequately disinfected.

Keeping the distal-end flushing adapter and attached syringe are completely immersed, detach the syringe from the distal-end flushing adapter.



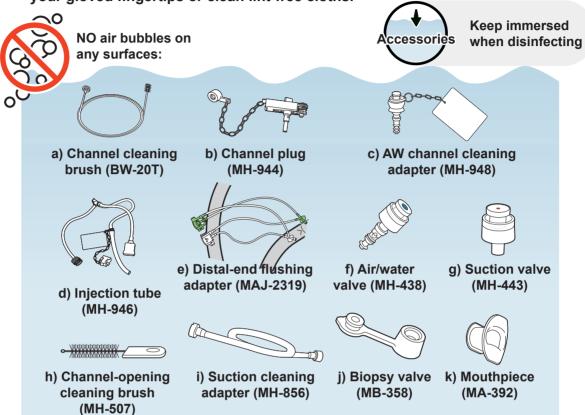
2. Confirm that all accessories are completely immersed in the disinfectant solution.



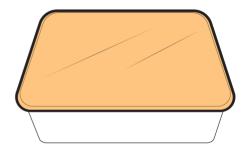
Inspect all items and confirm that there are no air bubbles on the accessories' surfaces (i.e., eleven items from a) through k) as shown below).

If any air bubbles adhere to the accessories' surfaces, wipe them using





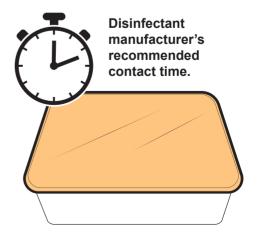
Cover the disinfectant solution basin with a tight-fitting lid to minimize the diffusion of disinfectant vapors.



Leave all accessories completely immersed in the disinfectant solution for the disinfectant manufacturer's recommended contact time.

#### NOTE

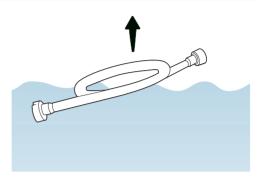
Use a clock or a timer to accurately measure the disinfectant contact time.



#### 6.3.5 Remove the accessories from disinfectant solution

#### 6.3.5.1 Remove the suction cleaning adapter (MH-856)

Remove the suction cleaning adapter from the disinfectant solution.

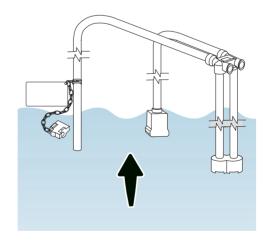


Tilt the adapter to expel any remaining disinfectant solution.

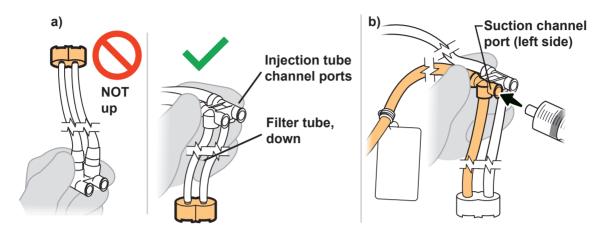


# 6.3.5.2 Remove the injection tube (MH-946)

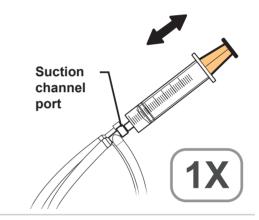
Remove the injection tube from the disinfectant solution.



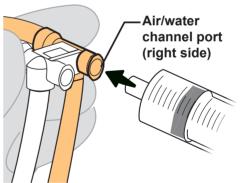
- Attach a sterile 30 mL syringe to the injection tube's suction channel port, as follows:
  - a) Hold the injection tube's channel ports so that the filter tube points down, NOT up;
  - b) Attach the syringe to the suction channel port (the left side port).



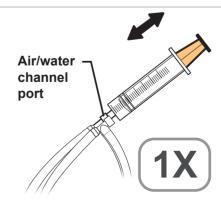
- Keeping the 30 mL syringe attached, flush the suction channel tube with 30 mL of air, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with air;
  - b) Then forcefully flush with 30 mL of air to expel the disinfectant solution.



Move the syringe from the suction channel port to the injection tube's air/water channel port (port on the right).

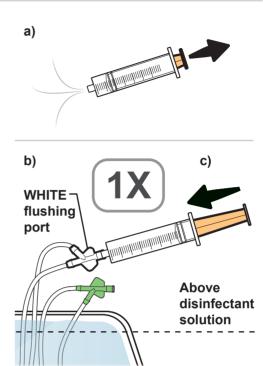


- Keeping the 30 mL syringe attached, flush the air/water channel tube with 30 mL of air, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with air;
  - b) Then forcefully flush with 30 mL of air to expel the disinfectant solution.

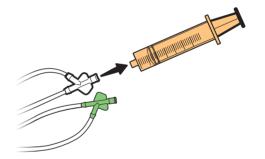


#### 6.3.5.3 Remove the distal-end flushing adapter (MAJ-2319)

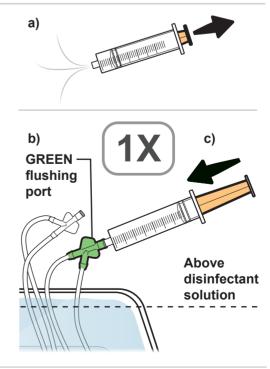
- Lift the WHITE flushing port out of the disinfectant solution. Flush the adapter through the WHITE flushing port with 30 mL of air, as follows:
  - a) Before attaching the syringe to the white flushing port (so that you do not pull disinfectant solution into the syringe that might be inside the flushing tube), slowly pull the syringe plunger to fill the syringe with air;
  - b) Attach it to the white flushing port of the distal-end flushing adapter;
  - c) Then forcefully flush the adapter with 30 mL of air.



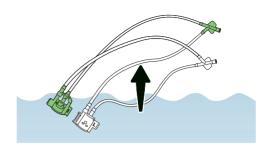
Detach the syringe from the distalend flushing adapter.



- Lift the GREEN flushing port out of the disinfectant solution. Flush the adapter through the GREEN flushing port with 30 mL of air, as follows:
  - a) Before attaching the syringe to the white flushing port (so that you do not pull disinfectant solution into the syringe that might be inside the flushing tube), slowly pull the syringe plunger to fill the syringe with air;
  - b) Attach it to the green flushing port of the distal-end flushing adapter;
  - c) Then forcefully flush the adapter with 30 mL of air.

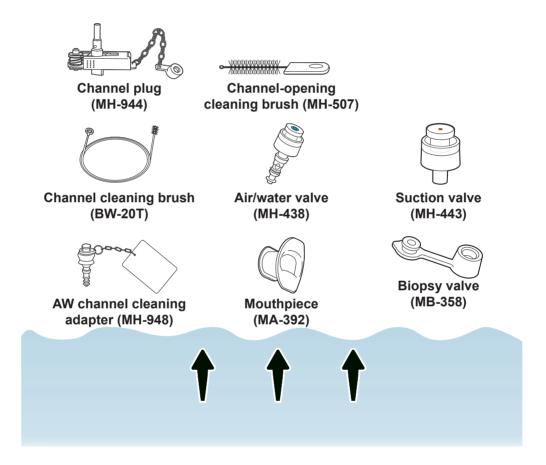


Remove the distal-end flushing adapter from the disinfectant solution.



#### 6.3.5.4 Remove all other accessories

Remove all other accessories from the disinfectant solution.



# 6.4 Rinse the accessories following disinfection

Workflow for manually Rinsing the accessories:

#### Prepare equipment

6.4.1 Equipment needed



#### Rinse the accessories

- 6.4.2 Rinse the accessories
- 6.4.3 Remove the accessories from rinse water



#### Flush and dry the accessories with alcohol

6.4.4 Flush and dry accessories with alcohol



This instruction manual describes procedures for rinsing the accessories, flushing them with alcohol, and drying them following disinfection.



#### **WARNING**

After rinsing all accessories, dry them thoroughly otherwise bacteria may proliferate and pose an infection control risk.

#### NOTE

Consult with your hospital's infection control committee regarding rinse water quality and the use of alcohol as described in Chapter 3.5, "Rinse water".

# 6.4.1 Equipment needed

Prepare the following equipment.

#### Fluids used for rinsing:

- Rinse water (Refer to Chapter 3.5, "Rinse water")
- 70% ethyl or 70% isopropyl alcohol (Refer to Chapter 3.6, "Alcohol")

#### Other:

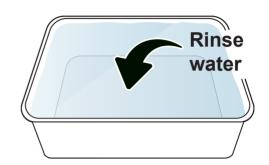
- Sterile lint-free cloths\*1
- Sterile 30 mL (30 cc) syringes\*1
- Sterile, small basins or containers\*1
- Sterile basins or containers\*1

<sup>\*1</sup> Following disinfection, it is very important not to recontaminate the accessories with potentially infectious microorganisms. When rinsing and drying the accessories following disinfection, the use of sterile equipment (basins, cloths, syringes, etc.) is recommended. If sterile equipment is not available, use clean equipment that does not recontaminate the accessories with potentially infectious microorganisms. Consult with your hospital's infection control committee regarding local policies or requirements regarding reprocessing equipment.

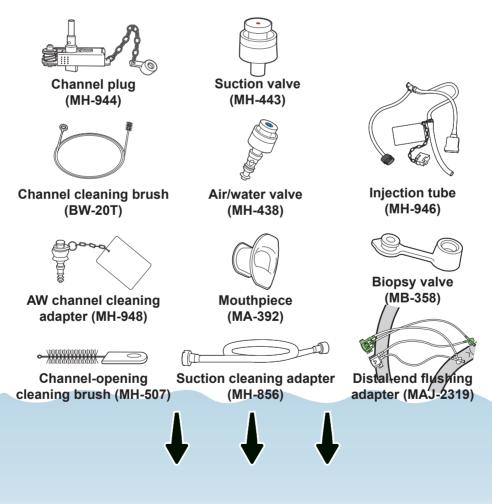
Use appropriate rinse water as instructed in Chapter 3.5, "Rinse water".

#### 6.4.2.1 Prepare for rinsing the accessories

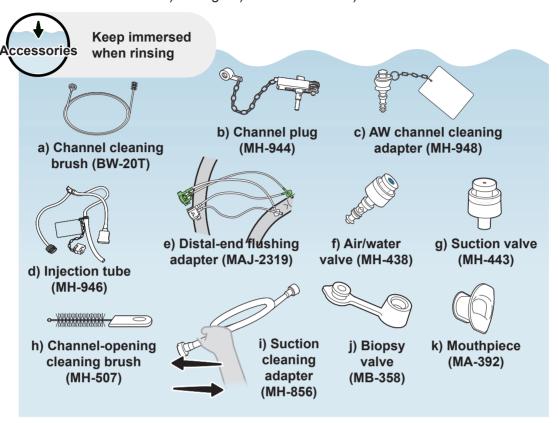
Fill a sterile basin with rinse water.



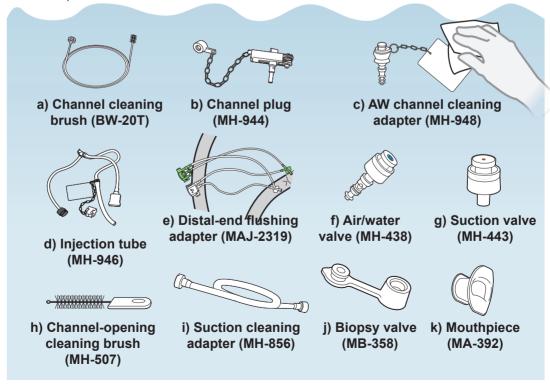
Completely immerse all accessories in the rinse water.



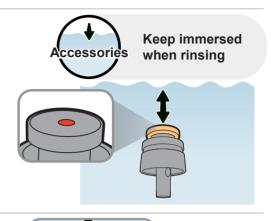
Gently move the accessories back and forth in the rinse water to thoroughly rinse the disinfectant solution from the external surfaces of the accessories (i.e., eleven items from a) through k) as shown below).



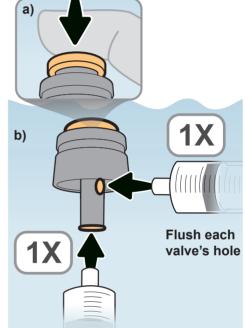
Keeping the accessories immersed, use sterile lint-free cloths to wipe all accessories' external surfaces (i.e., eleven items from a) through k) as shown below).



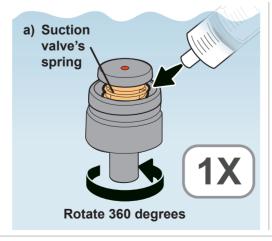
Keeping the suction valve (with the red mark) immersed in the rinse water, depress and release the valve's piston several times.

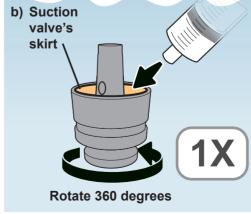


- Immerse a sterile 30 mL syringe and the suction valve in the rinse water and flush the valve's holes, as follows:
  - a) Depress the suction valve's piston;
  - b) Flush each valve's hole with 30 mL of the rinse water.



- Keeping the 30 mL syringe and the suction valve immersed, continuously rotate the valve 360 degrees while flushing the valve, as follows:
  - a) Flush the valve's spring with 30 mL of the rinse water;
  - b) Flush the valve's skirt (i.e., underside) with 30 mL of the rinse water.

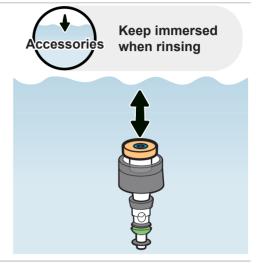




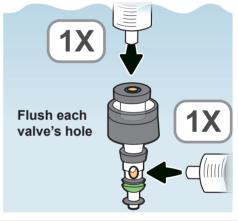
Chapter 6

#### 6.4.2.3 Flush the air/water valve (MH-438)

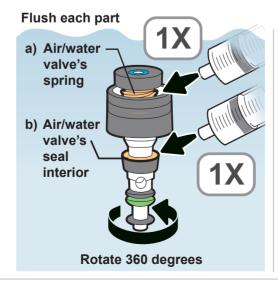
 Keeping the air/water valve (with the blue mark) immersed in the rinse water, depress and release the valve's piston several times.

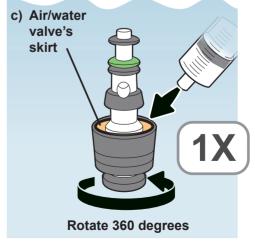


Keeping the 30 mL syringe and the air/water valve immersed in the rinse water, flush each valve's hole with 30 mL of the rinse water.



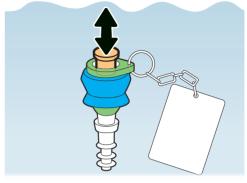
- Keeping the 30 mL syringe and the air/water valve immersed, continuously rotate the valve 360 degrees while flushing the valve, as follows:
  - a) Flush the valve's spring with 30 mL of the rinse water;
  - b) Flush the valve's seal interior with 30 mL of the rinse water;
  - c) Flush the valve's skirt (i.e., underside) with 30 mL of the rinse water.



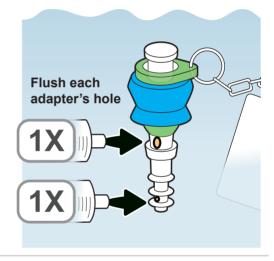


 Keeping the AW channel cleaning adapter immersed in the rinse water, depress and release the adapter's piston several times.

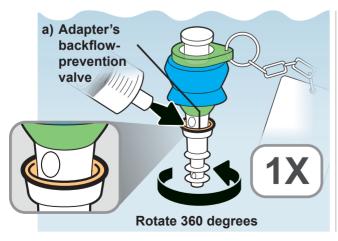


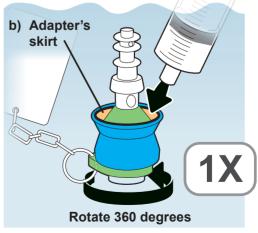


Keeping the 30 mL syringe and the AW channel cleaning adapter immersed, flush the each adapter's hole with 30 mL of the rinse water.



- Keeping the 30 mL syringe and the AW channel cleaning adapter immersed, continuously rotate the adapter 360 degrees while flushing the adapter, as follows:
  - a) Flush the adapter's backflow-prevention valve interior with 30 mL of the rinse water;
  - b) Flush the adapter's skirt (i.e., underside) with 30 mL of the rinse water.

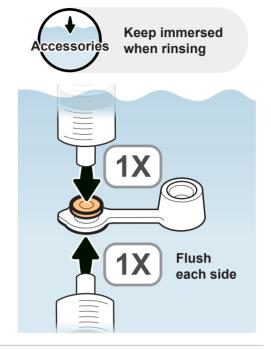




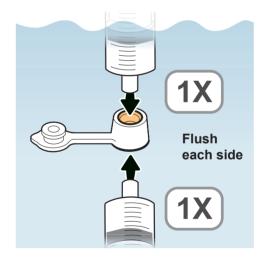
Chapter 6

#### 6.4.2.5 Flush the biopsy valve (MB-358)

- Keeping the 30 mL syringe and the biopsy valve immersed, flush the biopsy valve's cap with the rinse water, as follows:
  - a) Flush the interior of the valve's cap with 30 mL of the rinse water;
  - b) Flush the other side of the valve's cap (i.e., underside) with 30 mL of the rinse water.



- Keeping the 30 mL syringe and the biopsy valve immersed, flush the biopsy valve's hole with the rinse water, as follows:
  - a) Flush the hole with 30 mL of the rinse water;
  - b) Flush the other side of the hole (i.e., underside) with 30 mL of the rinse water.



1. Equipment needed

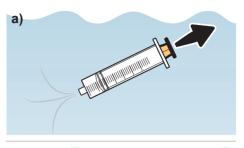
2. Rinse accessories

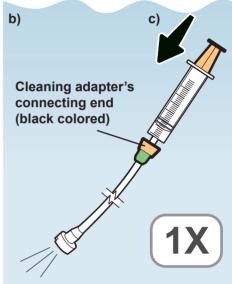
3. Remove

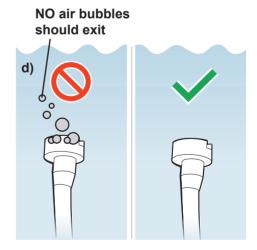
#### 6.4.2.6 Flush the suction cleaning adapter (MH-856)

- Keeping the 30 mL syringe and the suction cleaning adapter immersed, flush the cleaning adapter with 30 mL of the rinse water, as follows:
  - a) Before attaching the syringe to the cleaning adapter's connecting end (so that you do not pull any air into the syringe that might be inside the cleaning adapter), slowly pull the syringe plunger to fill the syringe with the rinse water;
  - b) Hold the syringe against the cleaning adapter's connecting end (black colored);
  - c) Then forcefully flush the cleaning adapter with 30 mL of the rinse water;
  - d) Confirm that no air bubbles exit from the cleaning adapter during the flush.

If air bubbles exit, repeat Step 1 until no air bubbles exit.

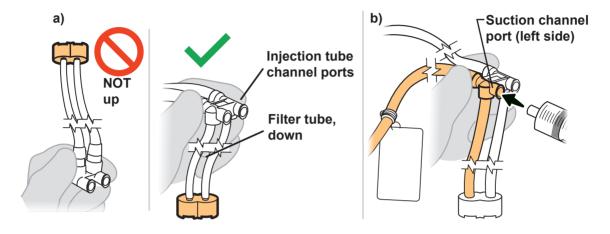






#### 6.4.2.7 Flush the injection tube (MH-946)

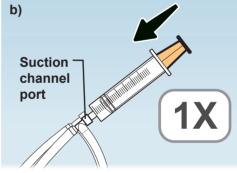
- Attach the 30 mL syringe to the injection tube's suction channel port, as follows:
  - a) Hold the injection tube's channel ports so that the filter tube points down, NOT up;
  - b) Attach the syringe to the suction channel port (the left side port).

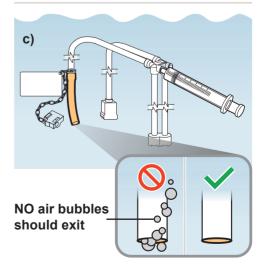


- Keeping the 30 mL syringe and the injection tube attached and immersed, flush the suction channel tube with 30 mL of the rinse water, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with the rinse water;
  - b) Then forcefully flush with 30 mL of the rinse water;
  - c) Confirm that no air bubbles exit from the tube during the flush.

If air bubbles exit, repeat Step 2 until no air bubbles exit.





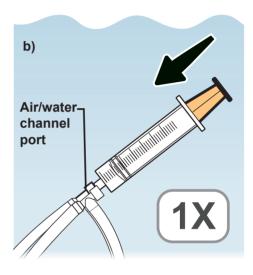


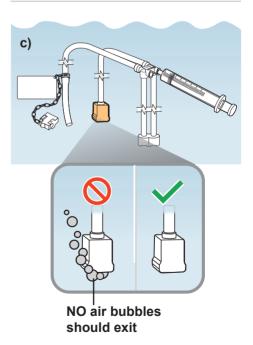
Move the syringe from the suction channel port to the injection tube's air/water channel port (port on the right).



- Keeping the 30 mL syringe and the injection tube attached and immersed, flush the air/water channel tube with 30 mL of the rinse water, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with the rinse water;
  - b) Then forcefully flush with 30 mL of the rinse water
  - c) Confirm that no air bubbles exit from the air pipe port during the flush.

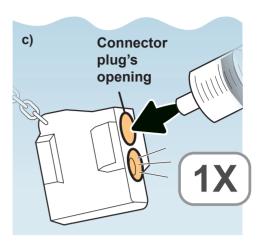
If air bubbles exit, repeat Step 4 until no air bubbles exit.

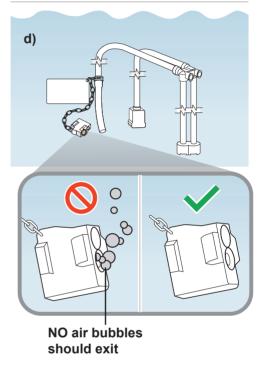




- Keeping the 30 mL syringe and the connector plug immersed, flush the connector plug with 30 mL of the rinse water, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with the rinse water;
  - b) Press the syringe tip to one side of the connector plug's opening;
  - c) Then forcefully flush with 30 mL of the rinse water.
  - d) Confirm that no air bubbles exit from the other side of the connector plug's opening during the flush.

If air bubbles exit, repeat Step 5 until no air bubbles exit.

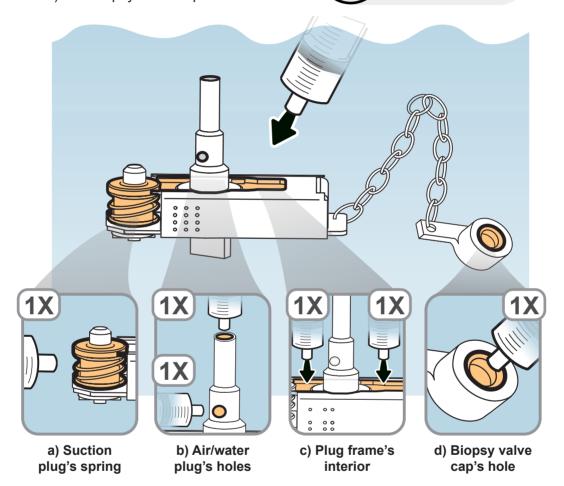




- Keeping the 30 mL syringe and the channel plug immersed, flush each of the following channel plug parts with 30 mL of the rinse water, as follows:
  - a) The suction plug's spring
  - b) The air/water plug's holes
  - c) The plug frame's interior
  - d) The biopsy valve cap's hole



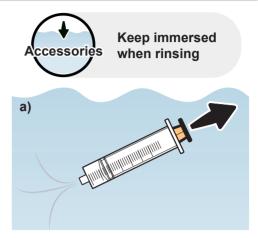
Keep immersed when rinsing

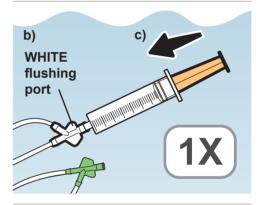


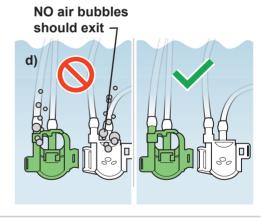
#### 6.4.2.9 Flush the distal-end flushing adapter (MAJ-2319)

- Keeping the 30 mL syringe and the distal-end flushing adapter immersed, flush the adapter through the WHITE flushing port with 30 mL of the rinse water, as follows:
  - a) Before attaching the syringe to the white flushing port (so that you do not pull any air into the syringe that might be inside the flushing tube), slowly pull the syringe plunger to fill the syringe with rinse water;
  - b) Attach it to the white flushing port of the distal-end flushing adapter;
  - c) Then forcefully flush the distal-end flushing adapter with 30 mL of the rinse water;
  - d) Confirm that no air bubbles exit from either of the openings during the flush.

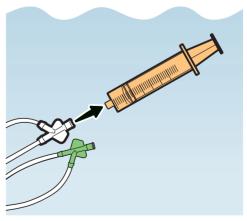
If air bubbles exit, detach the syringe from the distal-end flushing adapter and repeat Step 1 until no air bubbles exit.







Detach the syringe from the distalend flushing adapter.



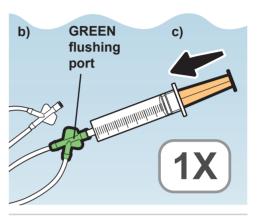
2. Rinse accessories

3. Remove

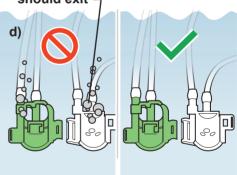
- Keeping the 30 mL syringe and the distal-end flushing adapter immersed, flush the adapter through the GREEN flushing port with 30 mL of the rinse water, as follows:
  - a) Before attaching the syringe to the green flushing port (so that you do not pull any air into the syringe that might be inside the flushing tube), slowly pull the syringe lunger to fill the syringe with rinse water;
  - b) Attach it to the green flushing port of the distal-end flushing adapter;
  - c) Then forcefully flush the distal-end flushing adapter with 30 mL of the rinse water;
  - d) Confirm that no air bubbles exit from either of the openings during the flush.

If air bubbles exit, detach the syringe from the distal-end flushing adapter and repeat Step 3 until no air bubbles exit.







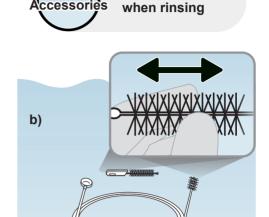


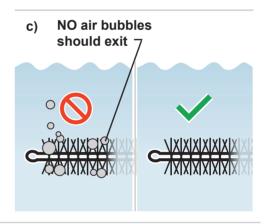
Keep immersed

#### 6.4.2.10 Rub the brushes

- Rub the brushes as follows:
  - a) Keep the channel cleaning brush (BW-20T) and the channelopening cleaning brush (MH-507) completely immersed in the rinse water;
  - b) Rub the brushes' bristles in the rinse water with your gloved fingertips.
  - c) Confirm that no air bubbles exit from the bristles during the rubbing.

If air bubbles exit, repeat Step 1 until no air bubbles exit.





# 6.4.2.11 Repeat rinsing

Return to the beginning of Chapter 6.4.2, "Rinse the accessories" and repeat the procedures for the necessary number of times described in the disinfectant manufacturer's instructions.

2. Rinse

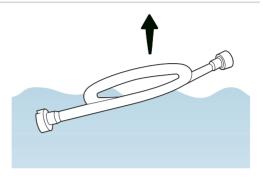
3. Remove accessories

4. Flush accessories

#### 6.4.3 Remove the accessories from rinse water

# 6.4.3.1 Remove the suction cleaning adapter (MH-856)

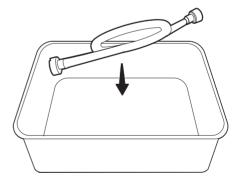
Remove the suction cleaning adapter from the rinse water.



Tilt the adapter to expel any remaining rinse water.

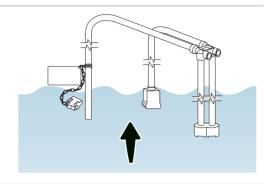


Place the suction cleaning adapter in a sterile basin.

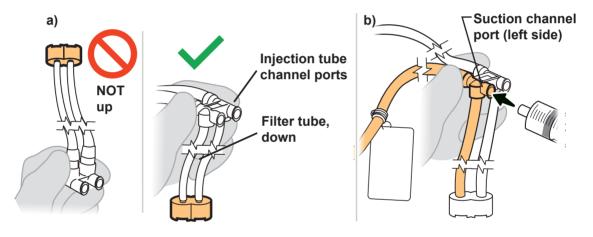


#### 6.4.3.2 Remove the injection tube (MH-946)

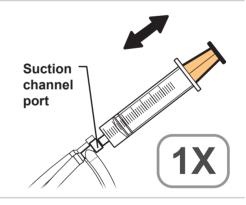
Remove the injection tube from the rinse water.

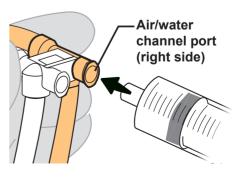


- Attach the 30 mL syringe to the injection tube's suction channel port, as follows:
  - a) Hold the injection tube's channel ports so that the filter tube points down, NOT up;
  - b) Attach the syringe to the suction channel port (the left side port).

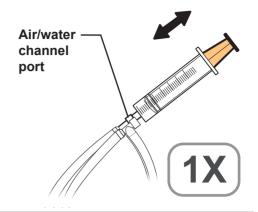


- Keeping the 30 mL syringe attached, flush the suction channel tube with 30 mL of air, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with air;
  - b) Then forcefully flush with 30 mL of air.
- Move the syringe from the suction channel port to the injection tube's air/water channel port (port on the right).

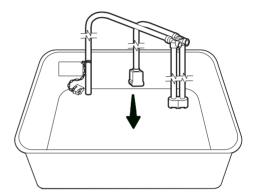




- **5** Keeping the 30 mL syringe attached, flush the air/water channel tube with 30 mL of air, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with air;
  - b) Then forcefully flush with 30 mL of air.

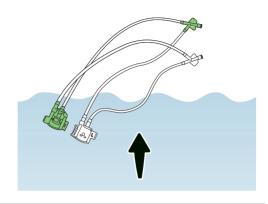


Place the injection tube in the sterile basin.



#### 6.4.3.3 Remove the distal-end flushing adapter (MAJ-2319)

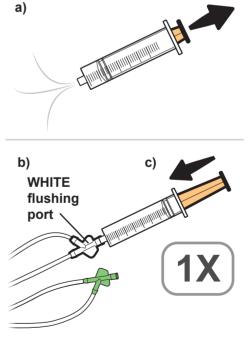
Remove the distal-end flushing adapter from the rinse water and place it in the sterile basin.



To prevent splashing from the cover's openings, cover the distalend flushing adapter's white and green covers in sterile lint-free cloths.



- Flush the adapter through the WHITE flushing port with 30 mL of air, as follows:
  - a) Before attaching the syringe to the white flushing port (so that you do not pull water into the syringe that might be inside the flushing tube), slowly pull the syringe plunger to fill the syringe with air;
  - b) Attach it to the white flushing port of the distal-end flushing adapter;
  - c) Then forcefully flush with 30 mL of air to expel the rinse water.

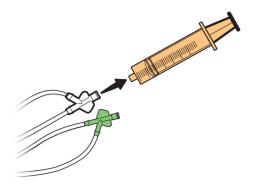


2. Rinse accessories

3. Remove accessories

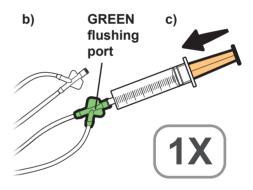
4. Flush accessories

Detach the syringe from the distalend flushing adapter.

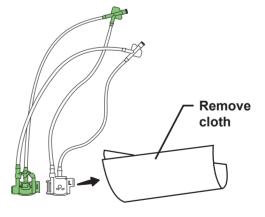


- Flush the adapter through the GREEN flushing port with 30 mL of air, as follows:
  - a) Before attaching the syringe
     to the green flushing port (so
     that you do not pull water into
     the syringe that might be inside
     the flushing tube), slowly pull the
     syringe plunger to fill the syringe
     with air;
  - b) Attach it to the green flushing port of the distal-end flushing adapter;
  - c) Then forcefully flush with 30 mL of air to expel the rinse water.





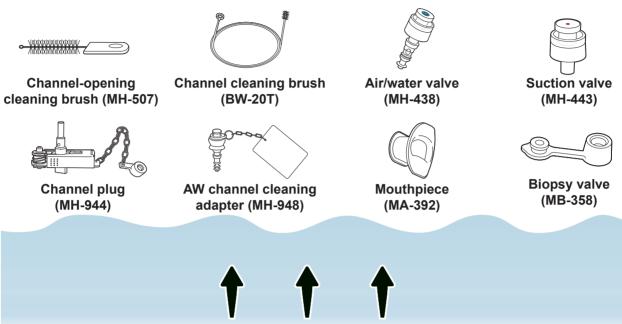
Remove the cloths from the distalend flushing adapter.



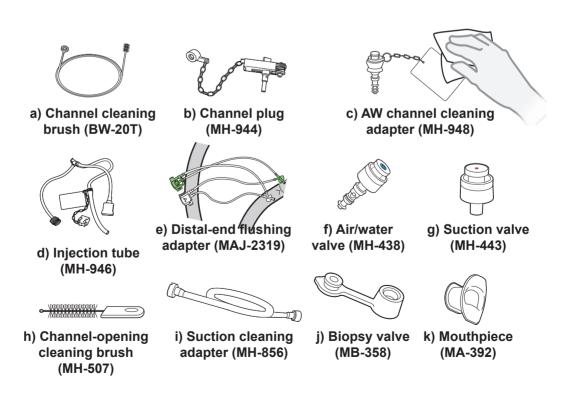
# hapter 6

#### 6.4.3.4 Dry external surfaces

Remove all other accessories from the rinse water and place them in the sterile basin.



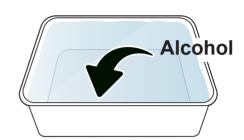
Using sterile lint-free cloths, wipe all the accessories' external surfaces (i.e., eleven items from a) through k) as shown below) until thoroughly dry.



# 6.4.4 Flush and dry accessories with alcohol

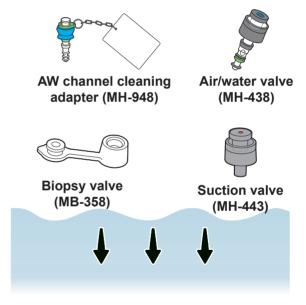
# 6.4.4.1 Prepare for alcohol flush

Fill a sterile, small basin with alcohol.

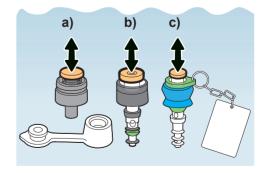


# 6.4.4.2 Depress and release the valves

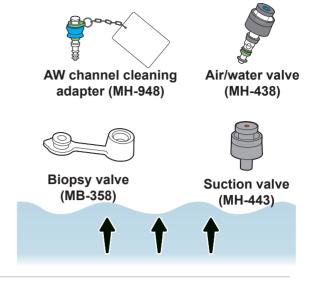
- Completely immerse the following accessories in the alcohol:
  - Suction valve (MH-443)
  - Air/water valve (MH-438)
  - AW channel cleaning adapter (MH-948)
  - Biopsy valve (MB-358)



- While keeping the accessories immersed, depress and release the pistons of the following accessories several times:
  - a) Suction valve (MH-443)
  - b) Air/water valve (MH-438)
  - c) AW channel cleaning adapter (MH-948)



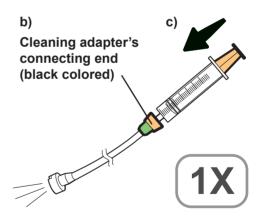
- Remove the accessories from the alcohol:
  - Suction valve (MH-443)
  - Air/water valve (MH-438)
  - AW channel cleaning adapter (MH-948)
  - Biopsy valve (MB-358)



# 6.4.4.3 Flush the suction cleaning adapter (MH-856)

- Flush the suction cleaning adapter with 30 mL of the alcohol, as follows:
  - a) Before attaching a sterile
     30 mL syringe to the cleaning adapter's connecting end,
     slowly pull the syringe plunger to fill the syringe with the alcohol;
  - b) Hold the syringe against the cleaning adapter's connecting end (black colored);
  - c) Then forcefully flush the cleaning adapter with 30 mL of the alcohol.



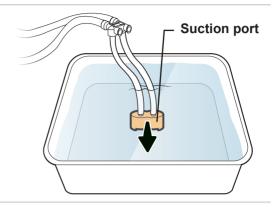


Tilt the adapter to expel any remaining alcohol.

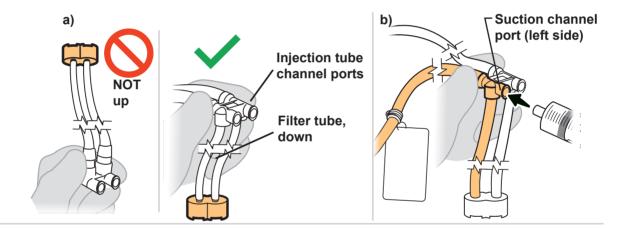


#### 6.4.4.4 Flush the injection tube (MH-946)

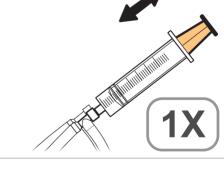
Completely immerse the injection tube's suction port in the alcohol.



- Attach the 30 mL syringe to the injection tube's suction channel port, as follows:
  - a) Hold the injection tube's channel ports so that the filter tube points down, NOT up;
  - b) Attach the syringe to the suction channel port (the left side port).

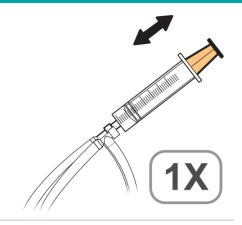


- Keeping the 30 mL syringe attached, flush the suction channel tube with 30 mL of the alcohol, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with the alcohol;
  - b) Then forcefully flush with 30 mL of the alcohol.
- Move the syringe from the suction channel port to the injection tube's air/water channel port (port on the right).

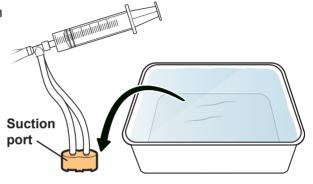




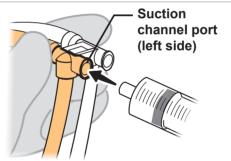
- 5. Keeping the 30 mL syringe attached, flush the air/water channel tube with 30 mL of the alcohol, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with the alcohol;
  - b) Then forcefully flush with 30 mL of the alcohol.



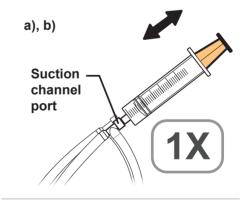
Remove the injection tube's suction 6. port from the alcohol.



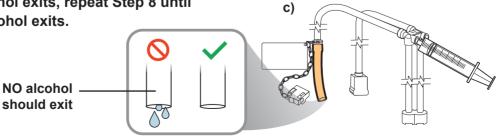
7. Move the syringe from air/water channel port to the injection tube's suction channel port (port on the left).



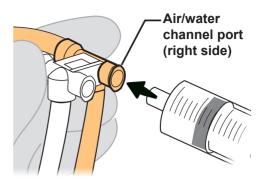
- 8. Keeping the 30 mL syringe attached, flush the suction channel tube with 30 mL of air. as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with air;
  - b) Then forcefully flush with 30 mL of air.
  - c) Confirm that no alcohol exits the tube during the flush.



If alcohol exits, repeat Step 8 until no alcohol exits.

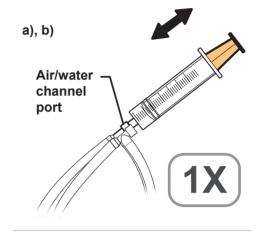


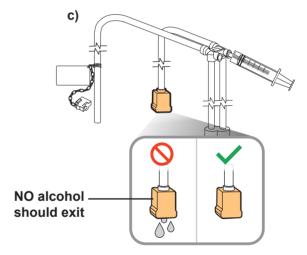
Move the syringe from the suction channel port to the injection tube's air/water channel port (port on the right).



- **10** Keeping the 30 mL syringe attached, flush the air/water channel tube with 30 mL of air, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with air;
  - b) Then forcefully flush with 30 mL of air.
  - c) Confirm that no alcohol exits the air pipe port during the flush.

If alcohol exits, repeat Step 10 until no alcohol exits.





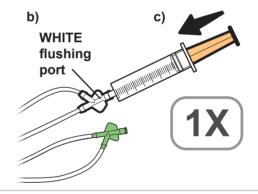
#### 6.4.4.5 Flush the distal-end flushing adapter (MAJ-2319)

To prevent splashing from the covers' openings, cover the distal-end flushing adapter's white and green covers in sterile lint-free cloths.

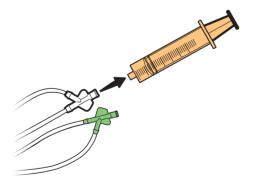


- Flush the distal-end flushing adapter through the WHITE flushing port with 30 mL of the alcohol, as follows:
  - a) Before attaching the syringe to the white flushing port (so that you do not pull air into the syringe that might be inside the flushing tube), slowly pull the syringe plunger to fill the syringe with the alcohol;
  - b) Attach it to the white flushing port of the distal-end flushing adapter;
  - c) Then forcefully flush with 30 mL of the alcohol.





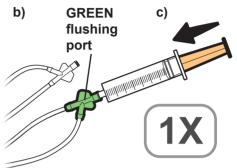
Detach the syringe from the distalend flushing adapter.



a)

- Flush the distal-end flushing adapter through the GREEN flushing port with 30 mL of the alcohol, as follows:
  - a) Before attaching the syringe to the green flushing port (so that you do not pull air into the syringe that might be inside the flushing tube), slowly pull the syringe plunger to fill the syringe with the alcohol;
  - b) Attach it to the green flushing port of the distal-end flushing adapter;
  - c) Then forcefully flush with 30 mL of the alcohol.



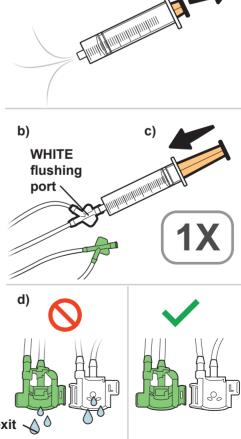


Detach the syringe from the distalend flushing adapter.



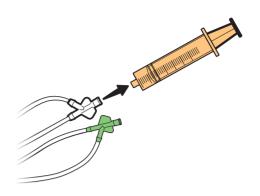
- Flush the adapter through the WHITE flushing port with 30 mL of air, as follows:
  - a) Before attaching the syringe to the white flushing port (so that you do not pull alcohol into the syringe that might be inside the flushing tube), slowly pull the syringe plunger to fill the syringe with air;
  - b) Attach it to the white flushing port of the distal-end flushing adapter;
  - c) Then forcefully flush with 30 mL of air.
  - d) Confirm that no alcohol exits from either of the adapter openings.

If alcohol exits, repeat Step 6 until no alcohol exits.



NO alcohol should exit ~

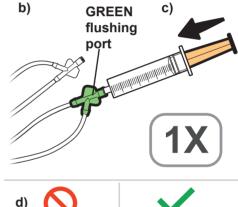
# **7** Detach the syringe from the distalend flushing adapter.

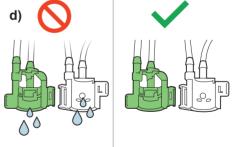


- Flush the adapter through the GREEN flushing port with 30 mL of air, as follows:
  - a) Before attaching the syringe to the green flushing port (so that you do not pull alcohol into the syringe that might be inside the flushing tube), slowly pull the syringe plunger to fill the syringe with air;
  - b) Attach it to the green flushing port of the distal-end flushing adapter;
  - c) Then forcefully flush with 30 mL of air.
  - d) Confirm that no alcohol exits from either of the adapter openings.

If alcohol exits, repeat Step 8 until no alcohol exits.





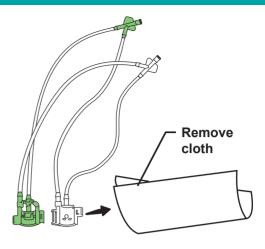


NO alcohol should exit

3. Remove accessories

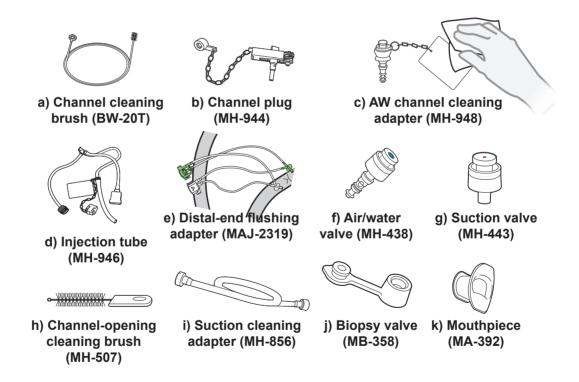
4. Flush accessories

Remove the cloths from the distalend flushing adapter.



# 6.4.4.6 Dry the accessories

Thoroughly dry all accessories' external surfaces (i.e., eleven items from a) through k) as shown below) by wiping with sterile lint-free cloths.



# 6.5 Sterilize the accessories

This chapter describes the methods for sterilizing those accessories that are listed in Table 3.4 in Chapter 3.1, "Compatibility summary" as being compatible with ethylene oxide gas sterilization or steam sterilization (autoclaving).

# 6.5.1 Equipment needed

Prepare the following equipment.

### Other:

Sterilization pouches\*1

# 6.5.2 Ethylene oxide gas sterilization of the accessories

# WARNING

- Thoroughly dry all accessories before sterilization.
- All accessories must be properly aerated following ethylene oxide gas sterilization to remove toxic ethylene oxide residuals.
- Use only ethylene oxide gas sterilization compatible sterilization pouches.

# 

Exceeding the recommended sterilization parameters may cause damage to the accessories.

- Flush and dry all accessories with alcohol and air as described in Chapter 6.4.4, "Flush and dry accessories with alcohol".
- Seal the accessories in individual sterilization pouches appropriate for ethylene oxide gas sterilization, according to your institution's protocol.
- Sterilize and aerate the packaged accessories, according to the parameters described in Chapter 3.7, "Ethylene oxide gas sterilization". In addition, always follow the instructions of the sterilizer manufacturer.

<sup>\*1</sup> For the USA: Use sterilization pouches that are legally marketed in the USA.

# 6.5.3 Steam sterilization (autoclaving) of the accessories

# 

- Before taking the accessories out of the autoclave, let them cool down to room temperature. Otherwise, they may cause burns.
- You must perform steam sterilization of the accessories according to the conditions specified in Chapter 3.8, "Steam sterilization (autoclaving)". Autoclaving the accessories using a sterilization cycle that does not meet the specified conditions may result in a failure to achieve sterilized accessories.
- Inspect each equipment package for openings, tears, or other damage. If the equipment package is open or damaged, seal the equipment in a new package and resterilize it as described in this chapter.
- Use only steam sterilization compatible sterilization pouches.

# **CAUTION**

- Exceeding the recommended sterilization parameters may cause damage to the accessories.
- After steam sterilization (i.e., autoclaving), let all components gradually cool down to room temperature. Sudden changes in temperature may damage the accessories.
- Flush and dry all accessories with alcohol and air as described in Chapter 6.4.4, "Flush and dry accessories with alcohol".
- Seal the accessories in individual sterilization pouches appropriate for steam sterilization, according to your institution's protocol.
- Sterilize the packaged accessories, according to the parameters described in Chapter 3.8, "Steam sterilization (autoclaving)". In addition, always follow the instructions of the sterilizer manufacturer.

# Chapter

7

# Reprocess Endoscopes and Accessories Using an Automated Endoscope Reprocessor/Washer-Disinfector

# 7.1 Summary

Follow the workflow described in Chapter 4.3, "Workflow for cleaning and disinfecting endoscopes and accessories using an AER/WD" when reprocessing endoscopes and accessories with an Automated Endoscope Reprocessor/Washer-Disinfector (AER/WD).

Be sure to attach all required connectors to the endoscope and accessories. For details concerning appropriate connectors, refer to the AER/WD manufacturer's instructions.

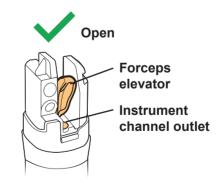
Manually clean and disinfect any endoscopes and accessories that are not compatible with the AER/WD.

# /i\

### **WARNING**

- Always conduct all steps of precleaning and manual cleaning as instructed in this manual, even if you are using an AER/WD that has instructions that state you can skip some steps.
- Set the forceps elevator based on the AER/WD you will be using:
  - If using an Olympus OER-AW or OER-Pro, ensure that the distal end's
    instrument channel outlet is open. If closed, open the instrument channel
    outlet by moving the elevator control lever as shown below until the
    forceps elevator stops. Then, attach the dedicated connecting tube to the
    endoscope's distal end, and set in your OER-AW or OER-Pro according to
    the manufacturer's instructions.





• If using an AER/WD that is not recommended by Olympus, set the forceps elevator according to the AER/WD manufacturer's instructions.



### **CAUTION**

After reprocessing the endoscope using an endoscope reprocessor or a washerdisinfector, dry the endoscope connector's electrical contacts by wiping with sterile lint-free cloths. Do not allow the contacts to air-dry. Doing so can cause hard water residue to deposit on the electrical contacts, which may cause an abnormal endoscopic image when the endoscope is used.

When setting the endoscopes in OER-AW or OER-Pro, refer to the respective manufacturer's instruction manual.

### NOTE

When cleaning and disinfecting the endoscope in OER-AW or OER-Pro, use connectors or a retaining rack that are compatible with the endoscope model. Using incompatible connectors or retaining racks can lead to insufficient endoscope cleaning and disinfection, or sterilization, which may pose an infection control risk to the patient and/or operators performing the next procedure with the endoscope. The compatible connectors and retaining racks for the endoscope model should be listed in the OER-AW or OER-Pro instruction manuals. Table 7.1 below also provides information about compatible connectors and retaining racks.

**Table 7.1 Compatible connectors** 

	Connectors				
	For air/water channel	For instrument channel	For suction channel	For forceps elevator	Retaining rack
OER-AW*1 OER-Pro*1		MAJ-1500*2		MAJ-2358	MAJ-1970

<sup>\*1</sup> These products may not be available in some areas.

<sup>&</sup>lt;sup>12</sup> The air/water channel, instrument channel, and suction channel can be reprocessed at the same time by connecting only the connecting tube (MAJ-1500 connector) to the endoscope.

### NOTE

• If cleaning and disinfecting an endoscope together with another endoscope of the same or different model using OER-AW or OER-Pro, check the group numbers of each endoscope and confirm that the combination of these group numbers are allowed when performing combination reprocessing. The group number is listed in the "List of Compatible Endoscopes/Connecting Tubes" of the endoscope reprocessor instruction manual. If the endoscopes are cleaned and disinfected in incompatible combinations, insufficient cleaning and disinfection can occur, which may pose an infection control risk to patients and/ or operators performing the next procedure. The group number of TJF-Q190V should be listed in Table 7.2 below.

Table 7.2 Endoscope model group number

	OER-AW	OER-Pro
TJF-Q190V	Group 3	Group 3

 Aldahol and Aldahol 1.8 are not available for reprocessing TJF-Q190V with OER-Pro. The Applicable/Not applicable disinfectant solutions for TJF-Q190V are listed in Table 7.3 below.

**Table 7.3 Disinfectant solutions for OER-Pro** 

	Disinfectant solution for OER-Pro		
	Acecide-C	Aldahol / Aldahol 1.8	
TJF-Q190V	Applicable	Not applicable	

# Chapter

8

# **Storage and Disposal**

# 8.1 Precautions for disposal and storage of the reprocessed endoscope and accessories

# /į\

## **WARNING**

- Maintain appropriate transportation and storage procedures so that reprocessed endoscopes and accessories are kept away from contaminated equipment. If the reprocessed endoscope or accessories become contaminated before subsequent patient procedures, they could pose an infection control risk to patients and/or operators who touch them.
- Establish a local policy regarding the method and frequency of cleaning and disinfecting the endoscope storage cabinet. Include all relevant factors such as which staff members can access the cabinet, and which items can be stored in the cabinet.
- Improper storage practices, such as not thoroughly drying external and internal surfaces (lumens) prior to storage, will lead to an infection control risk.

# CAUTION

To prevent endoscope damage during storage:

- Store the endoscope and accessories in an endoscope storage cabinet that also protects the equipment from physical damage.
- Do not store the endoscope and/or accessories in direct sunlight, at high temperatures, in high humidity, or exposed to X-rays, ultraviolet rays, or ozone.
- Do not store the endoscope and/or accessories with chemicals or in a gasgenerating area.
- Do not coil the endoscope's insertion tube or universal cord with a diameter of less than 20 cm (7.9 inch).



# 8.2 Store the disinfected endoscope and accessories

### **WARNING**

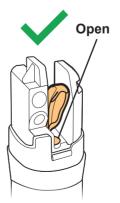
Proper storage procedures are as important as proper reprocessing procedures in maintaining good infection control practices. To maintain proper storage procedures:

- Be sure that the endoscope storage cabinet is properly maintained, clean, dry, and well ventilated. All equipment must be thoroughly dried prior to storage. Microorganisms proliferate in wet/moist environments. Keep the cabinet doors closed to protect the equipment from environmental contaminants and accidental contact.
- · Limit access to stored equipment by unauthorized personnel.
- Store only adequately reprocessed endoscopes and accessories in the endoscope storage cabinet.
- Do not store the endoscope and/or accessories in the endoscope's carrying case. The carrying case does not provide a proper storage environment for patient-ready endoscopes. Storing patient-ready endoscopes in the carrying case may pose an infection control risk. Use the carrying case only for shipping the endoscope and/or accessories. Any endoscope or accessory removed from a carrying case must be reprocessed prior to patient use or storage in an endoscope storage cabinet.
- Never put a dirty endoscope into the carrying case, as it will contaminate the carrying case. It is not possible to adequately decontaminate a contaminated carrying case for further use as a shipping case.

# **/!**\ CAUTION

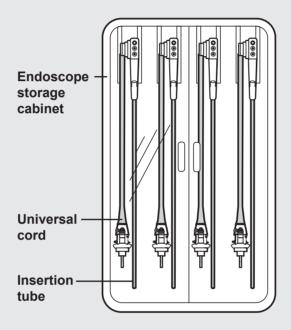
To prevent damaging the forceps elevator, make sure that the distal end's instrument channel outlet is opened or that the forceps elevator does not strike any objects.



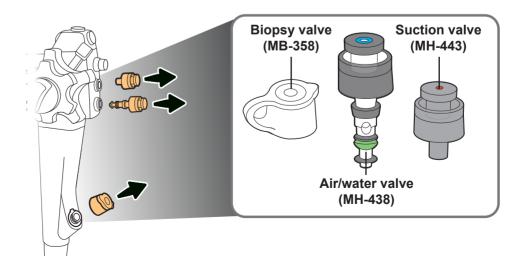


### NOTE

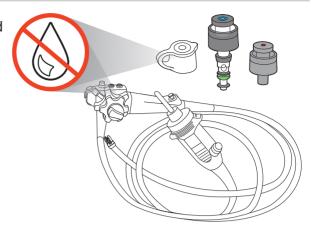
- Some national or professional guidelines recommend checking the quality of the final drying and if necessary, drying endoscopes manually with compressed filtered air before storage.
- Some professional guidelines as well as Olympus recommend storing endoscopes in an endoscope storage cabinet with the insertion tube and the universal cord hanging vertically, as pictured below.



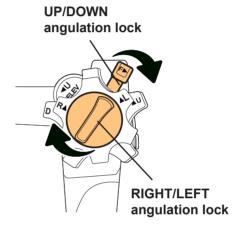
- Confirm that the following accessories are detached from the endoscope:
  - Air/water valve (MH-438)
  - Suction valve (MH-443)
  - Biopsy valve (MB-358)



Confirm that all the endoscope's and accessories' surfaces are dry.

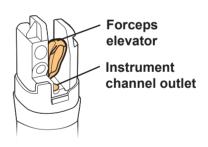


Place the endoscope's angulation locks in the "F ▶" position.



Ensure that the distal end's instrument channel outlet is fully open.

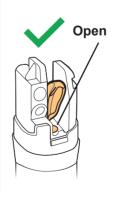
If closed, open the instrument channel outlet by moving the elevator control lever as shown below until the forceps elevator stops.



### **Elevator control lever**







**5.** Store the disinfected endoscope and accessories properly.

# 8.3 Store the sterilized endoscope and accessories

# Æ

# **CAUTION**

Do not damage the sterile packaging.

Store the sterilized endoscope and accessories in a proper storage cabinet, following your institutional guidelines.

# **NOTE**

Sterile endoscopes may be stored flat in their sterilization wraps.



# 8.4 Disposal

When disposing of the endoscope, accessories, packaging, and reprocessing supplies (such as gloves, cloths, and the liquids used for reprocessing), handle these items in a manner that will prevent the spread of contamination from the reprocessing area, and follow all applicable national and local laws regarding disposal.

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