

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

#### 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.

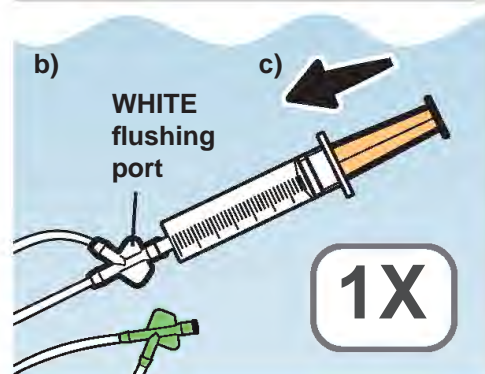
#### NOTE

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

1. 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.

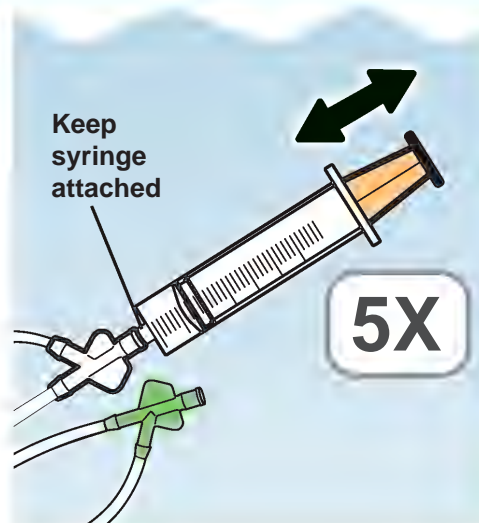


**Keep immersed when cleaning**



**2.** 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.**

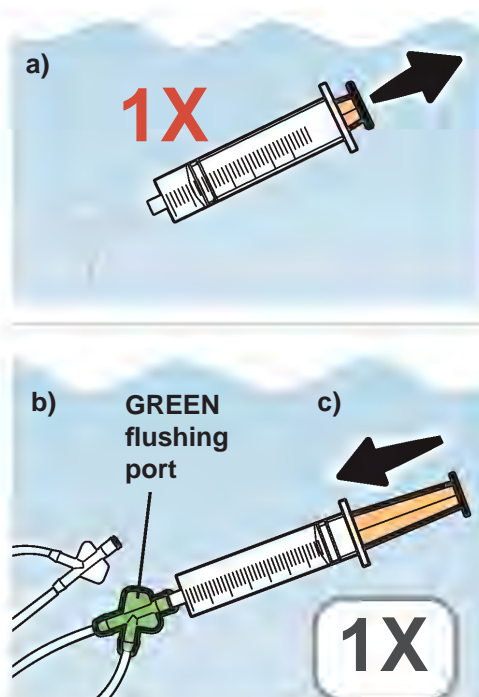


**3.** Detach the syringe from the distal-end flushing adapter.



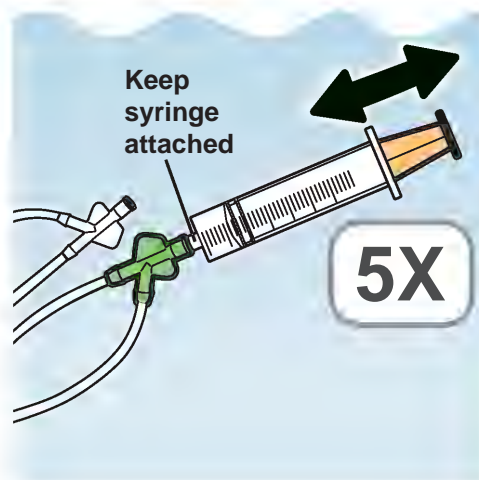
**4.** Keeping the 30 mL syringe immersed, flush through the GREEN flushing port, as follows:

- 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.

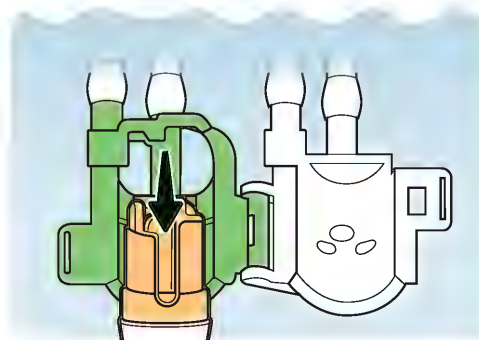


**5.** Keeping the 30 mL syringe attached and immersed, flush an additional 150 mL of disinfectant solution through the GREEN flushing port, as follows:

- Slowly pull the syringe plunger to fill the syringe with the disinfectant solution;
- Then forcefully flush the distal end with 30 mL of the disinfectant solution;
- Repeat Steps a) and b) four more times, for a total of five times.**

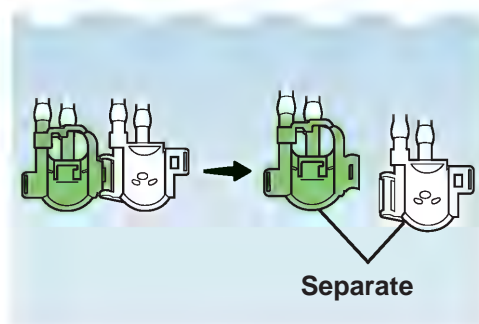


**6.** Keeping the distal-end flushing adapter immersed in the disinfectant solution, open the white cover and green cover and detach the distal-end flushing adapter from the endoscope.

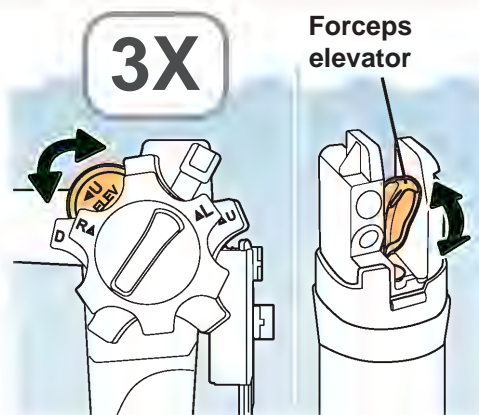


**7.** Keeping the distal-end flushing adapter immersed in the disinfectant solution, separate the white cover and the green cover.

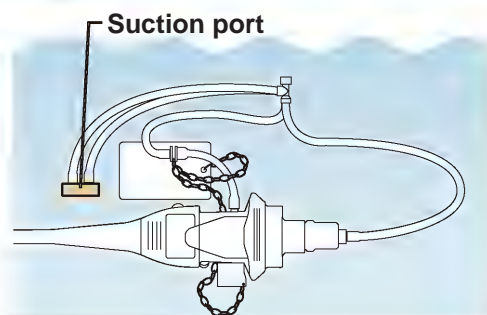
After separating the covers, keep the distal-end flushing adapter completely immersed in the disinfectant solution.



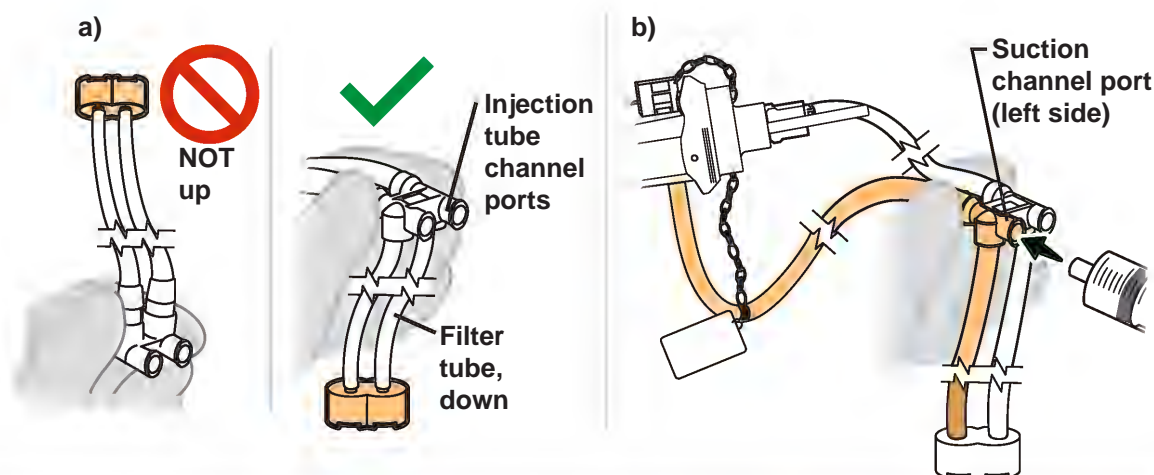
**8.** Keeping the endoscope immersed in the disinfectant solution, move the elevator control lever in each direction three times, to move the forceps elevator up and down.



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



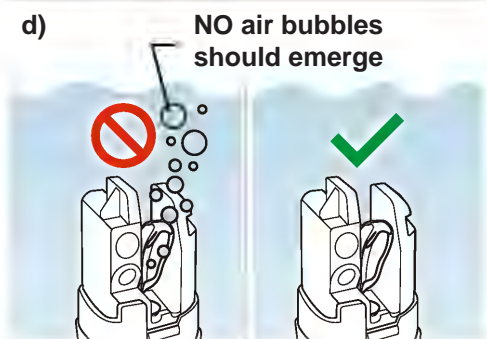
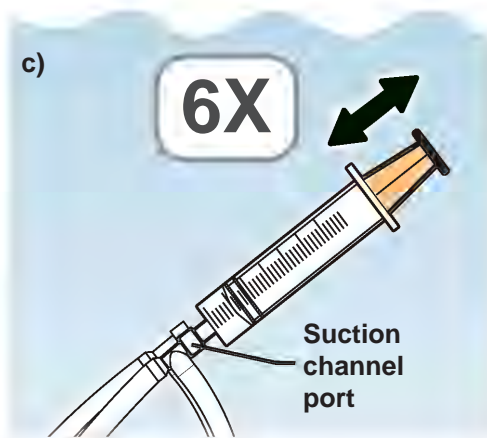
10. Attach the 30 mL syringe to the injection tube's suction channel port, as follows:
- Hold the injection tube's channel ports so that the filter tube points down, NOT up;
  - Attach the syringe to the suction channel port (the left side port with the tube that connects to the endoscope connector's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



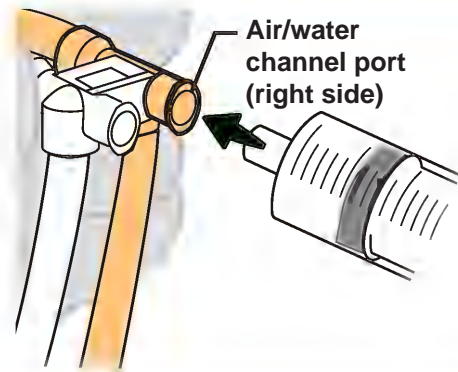
11. Keeping the 30 mL syringe attached and immersed, flush the suction channel with 180 mL of the disinfectant solution, as follows:

- Slowly pull the syringe plunger to fill the syringe with the disinfectant solution;
- Then forcefully flush with 30 mL of the disinfectant solution;
- Repeat Steps a) and b) five more times, for a total of six times;**
- 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.**



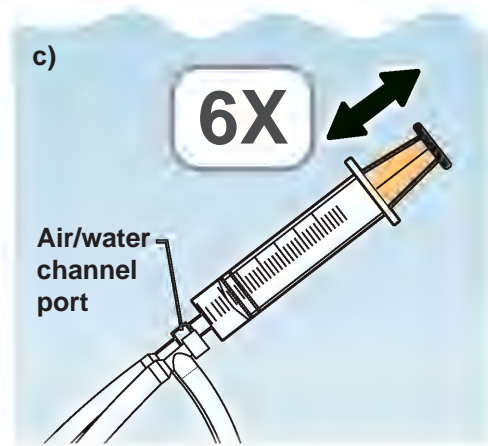
- 12.** Move the syringe from the suction channel port to the injection tube's air/water channel port (port on the right).



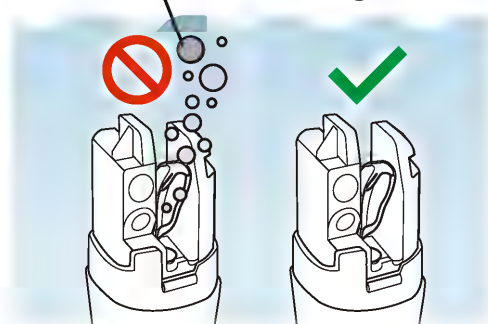
- 13.** Keeping the 30 mL syringe attached and immersed, flush the air/water channel with 180 mL of the disinfectant solution, as follows:

- Slowly pull the syringe plunger to fill the syringe with the disinfectant solution;
- Then forcefully flush with 30 mL of the disinfectant solution;
- Repeat Steps a) and b) five more times, for a total of six times;**
- 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.**

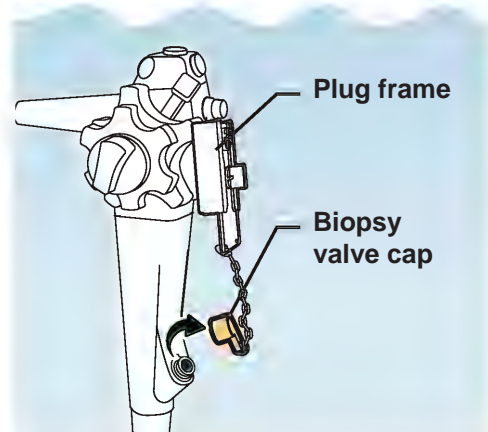


- d) NO air bubbles should emerge**



- 14.** 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.

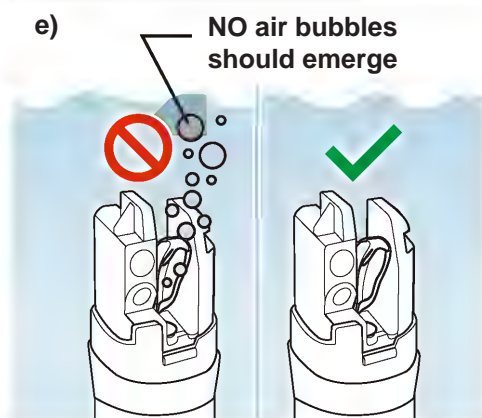
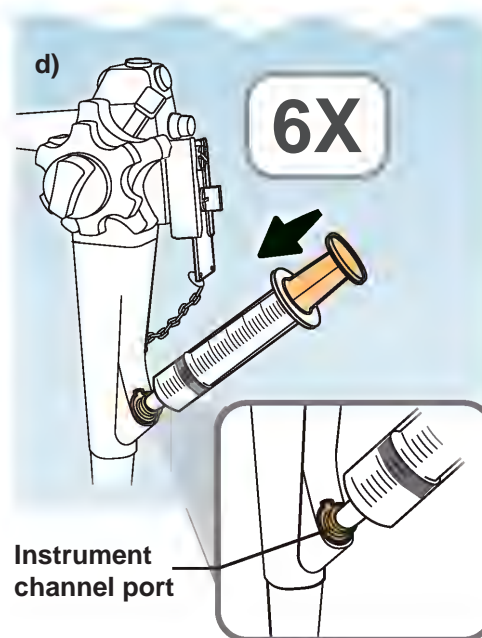
Keep the channel plug's plug frame attached to the control section.



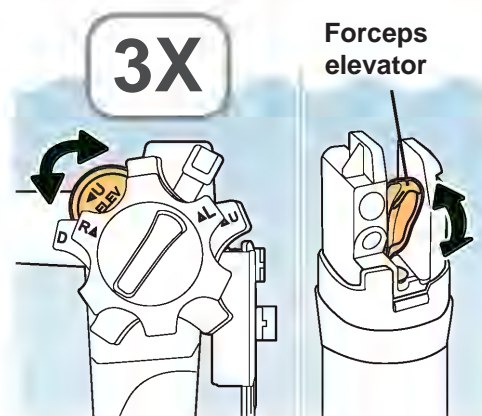
**15.** Keeping the 30 mL syringe immersed, flush the instrument channel with 180 mL of disinfectant solution, as follows:

- Slowly pull the syringe plunger to fill the syringe with the disinfectant solution;
- Put the distal end of the syringe in the instrument channel port (do so firmly to minimize disinfectant solution leakage from the port);
- Then forcefully flush the instrument channel with 30 mL of the disinfectant solution;
- Repeat Steps a) to c) five more times, for a total of six times;**
- 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.



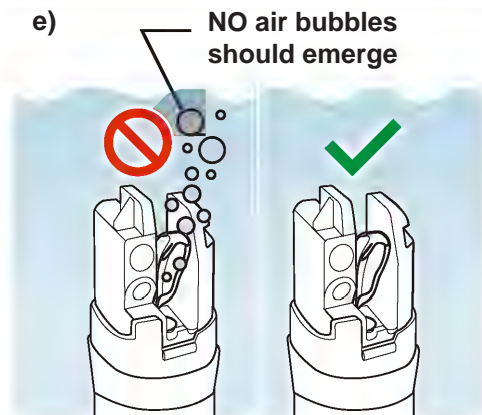
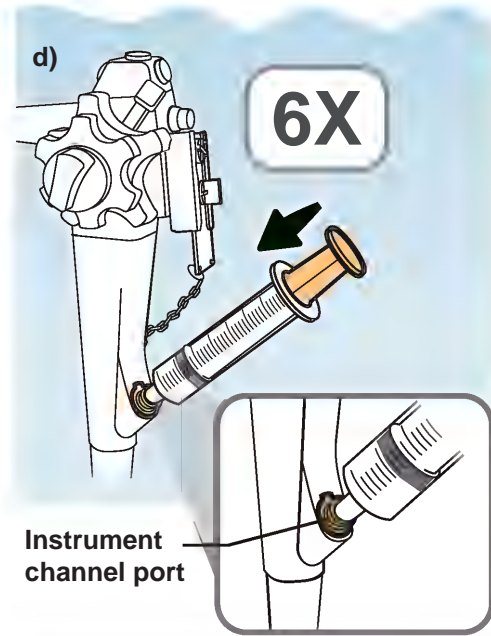
17.

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:

- Slowly pull the syringe plunger to fill the syringe with the disinfectant solution;
- Put the distal end of the syringe in the instrument channel port (do so firmly to minimize disinfectant solution leakage from the port);
- Then forcefully flush the instrument channel with 30 mL of the disinfectant solution;
- Repeat Steps a) to c) five more times, for a total of six times;**
- 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**

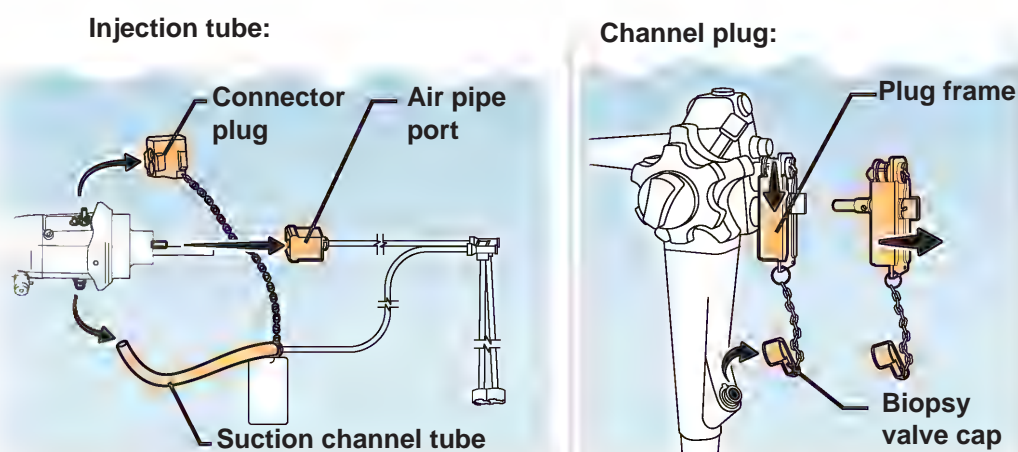
To ensure proper disinfection:

- 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.

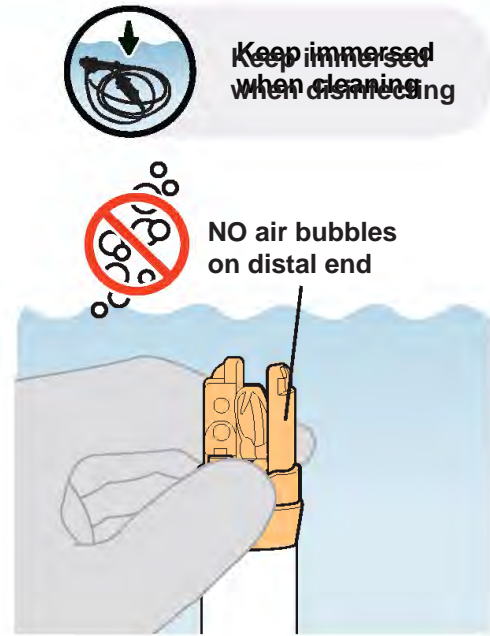
### **⚠ CAUTION**

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.

1. 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.

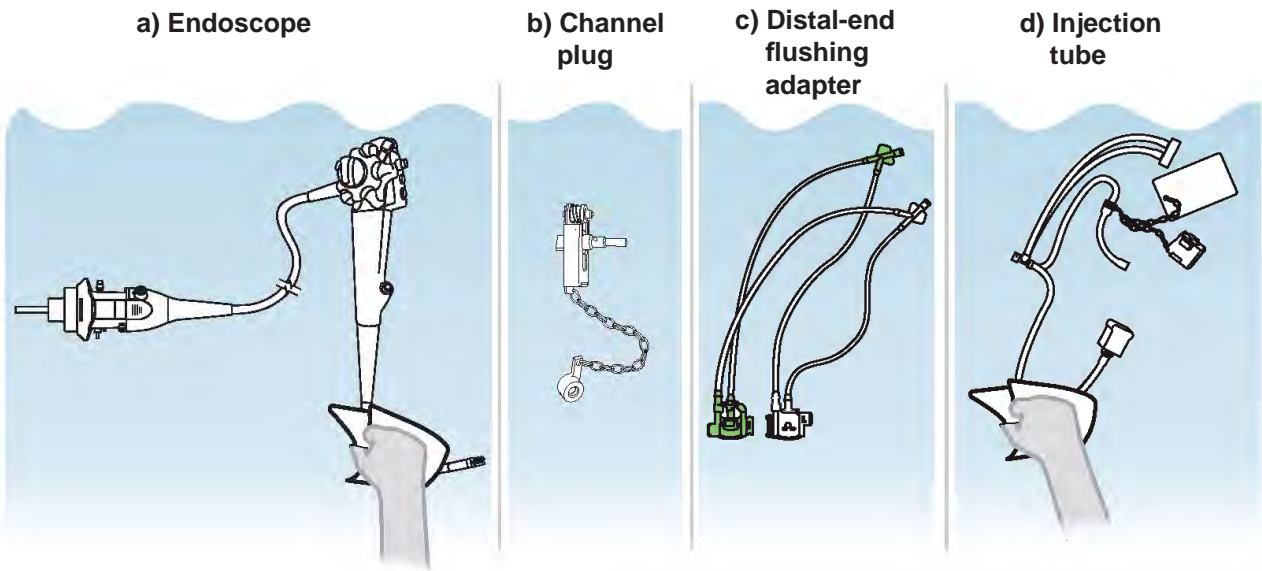


- 2.** Keeping the endoscope immersed in the disinfectant solution, wipe endoscope's distal end using your gloved fingertips to remove air bubbles.



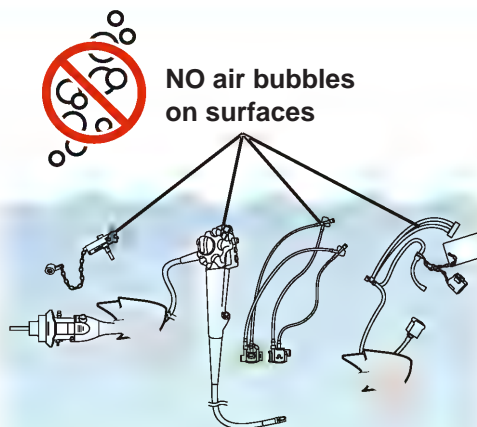
- 3.** Keeping the endoscope and all accessories immersed in the disinfectant solution, wipe all external surfaces using a clean lint-free cloth to remove any air bubbles:

- a) Endoscope
- b) Channel plug
- c) Distal-end flushing adapter
- d) Injection tube

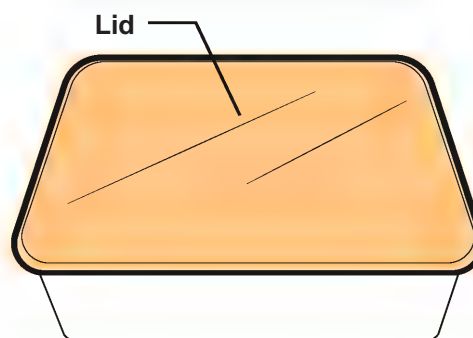


4. Confirm that there are no air bubbles on the surfaces of the endoscope and all accessories.

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.



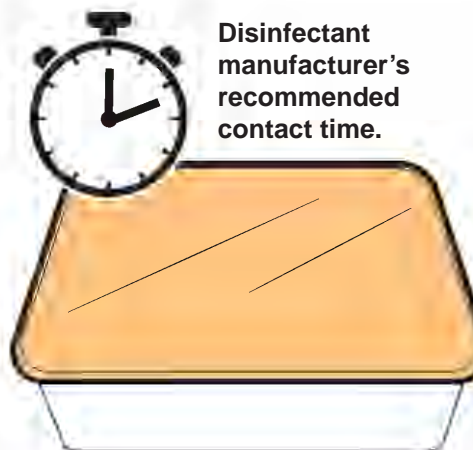
5. Cover the disinfectant solution basin with a tight-fitting lid to minimize the diffusion of disinfectant vapors.



6. 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**

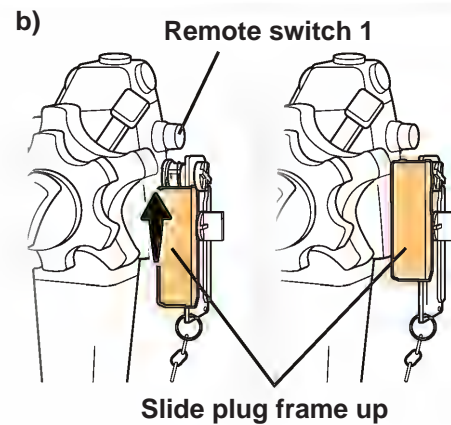
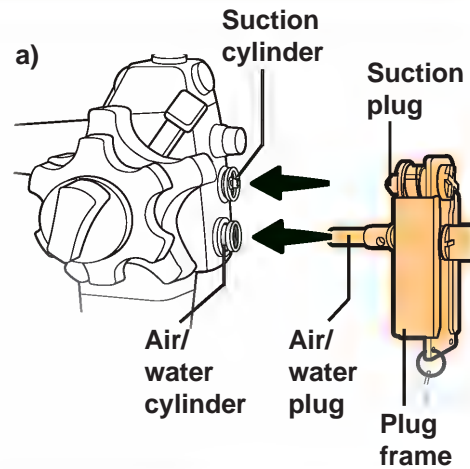
Use a clock or a timer to accurately measure the disinfection contact time.



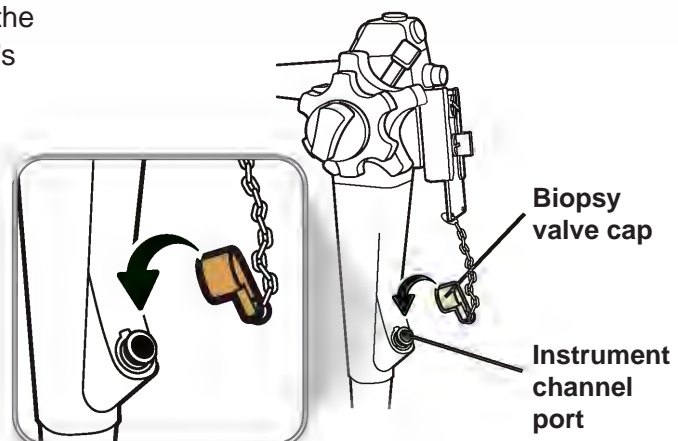
### 5.6.5 Remove disinfectant solution from all channels

**1.** 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.



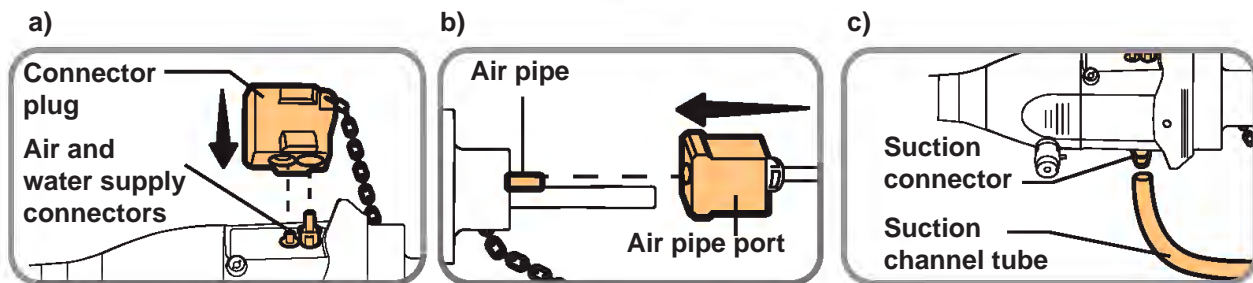
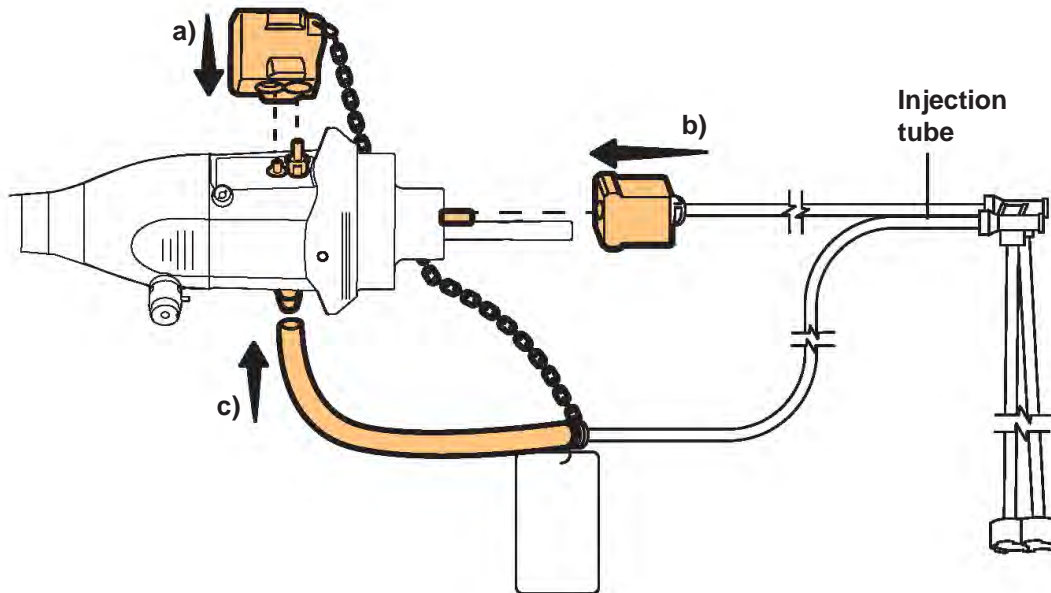
**2.** Attach the biopsy valve cap of the channel plug to the endoscope's instrument channel port.



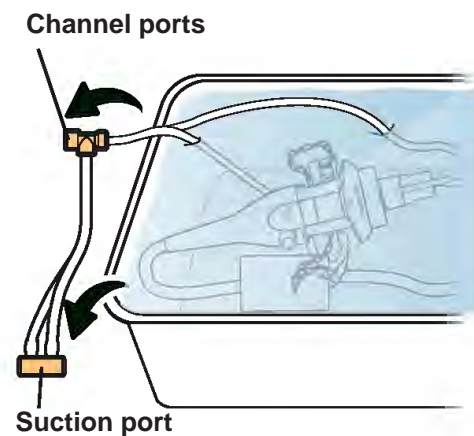
**3.**

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

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

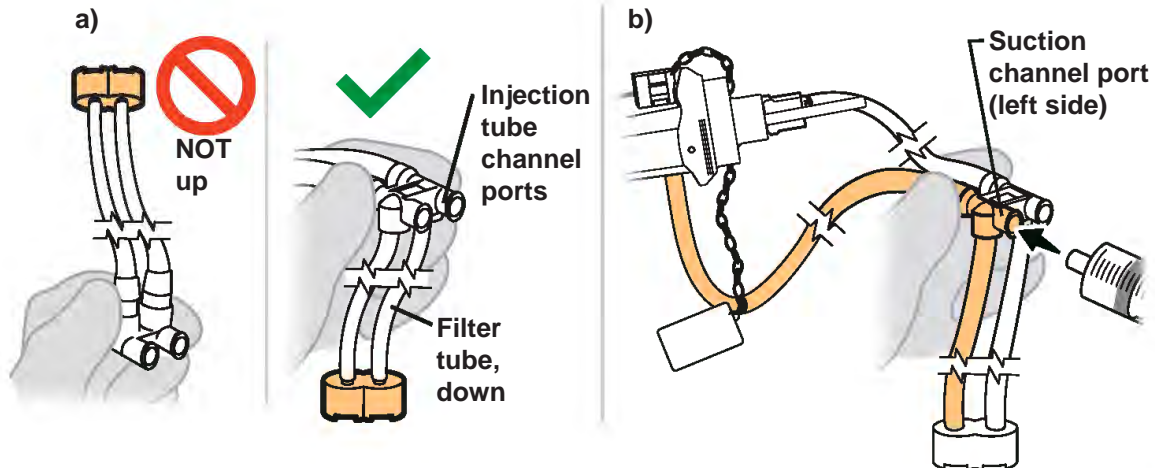
**4.**

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



**5.** Attach a sterile 30 mL syringe to the injection tube's suction channel port, as follows:

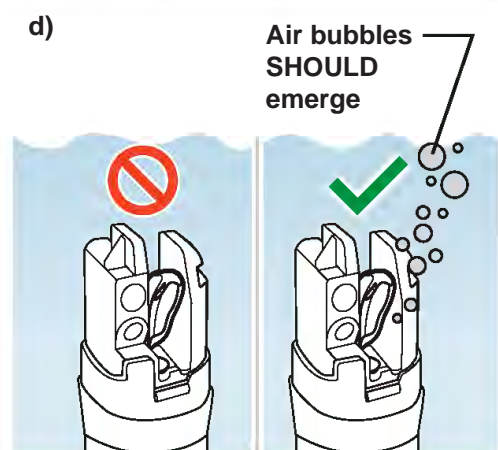
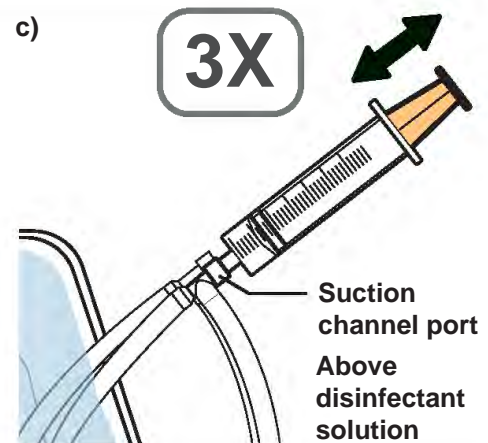
- Hold the injection tube's channel ports so that the filter tube points down, NOT up;
- Attach the syringe to the suction channel port (the left side port with the tube that connects to the endoscope connector's suction connector).



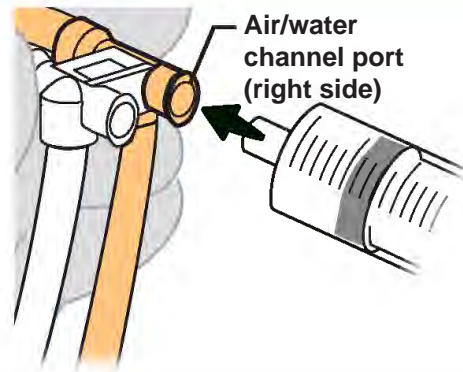
**6.** Keeping the 30 mL syringe attached and out of the disinfectant solution, flush the suction channel with 90 mL of air, as follows:

- Slowly pull the syringe plunger to fill the syringe with air;
- Then forcefully flush 30 mL of air;
- Repeat Steps a) and b) two more times, for a total of three times;**
- 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.**

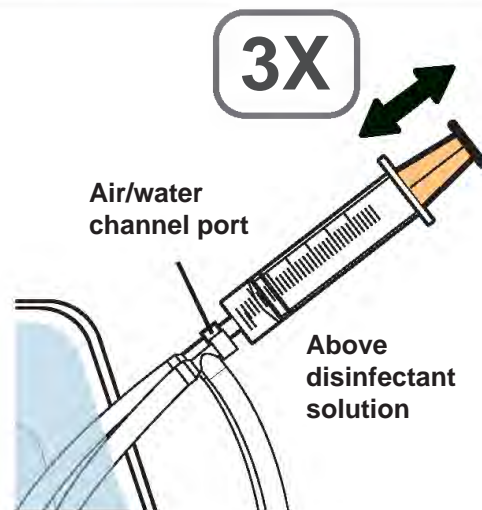


7. Move the syringe from the suction channel port to the injection tube's air/water channel port (port on the right).

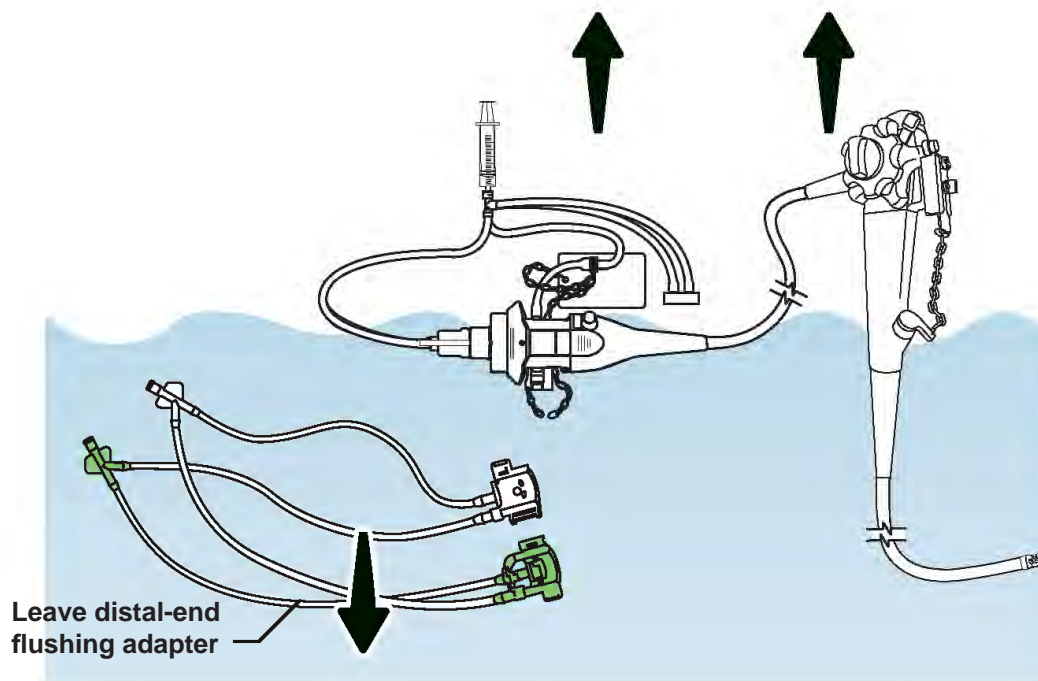


8. Keeping the 30 mL syringe attached and out of the disinfectant solution, flush the air/water channel with 90 mL of air, as follows:

- Slowly pull the syringe plunger to fill the syringe with air;
- Then forcefully flush 30 mL of air;
- Repeat Steps a) and b) two more times, for a total of three times.**

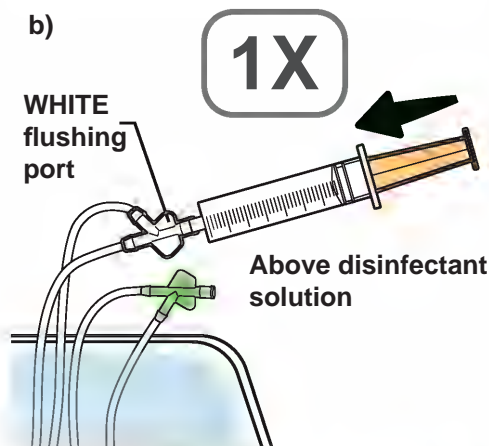


9. Remove the endoscope and all attached accessories from the disinfectant solution. Leave the distal-end flushing adapter in the disinfectant solution.

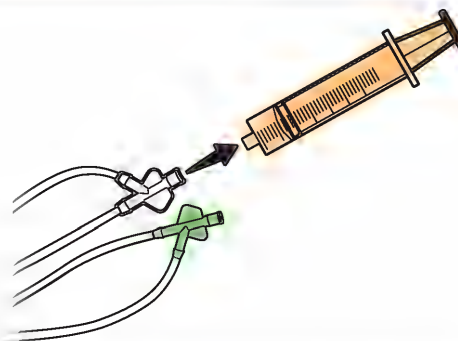


**10.** Lift the distal-end flushing adapter's WHITE flushing port out of the disinfectant solution. Flush air through the WHITE flushing port, as follows:

- 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 distal-end flushing adapter (MAJ-2319) and flush the adapter with 30 mL of air.

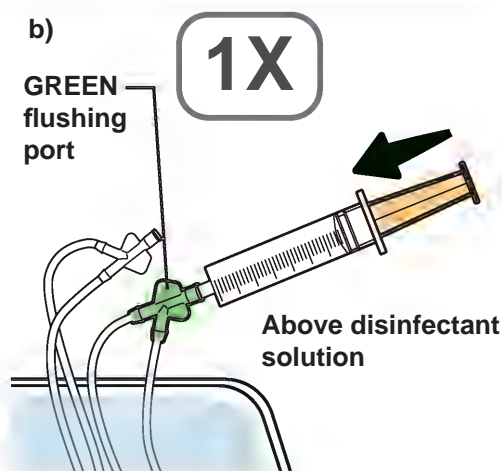


**11.** Detach the syringe from the flushing adapter's distal-end.

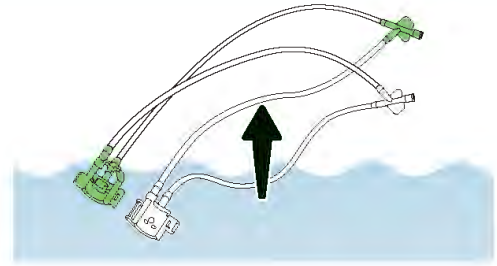


**12.** Lift the GREEN flushing port out of the disinfectant solution. Flush air through the GREEN flushing port, as follows:

- 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 distal-end flushing adapter and flush the adapter with 30 mL of air.



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



## NOTE

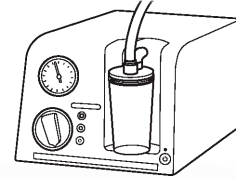
Rinse the distal-end flushing adapter as described in Chapter 6.4, “Rinse the accessories following disinfection”.

## 5.7 Rinse the endoscope and accessories following disinfection

Workflow for rinsing the endoscope and accessories:

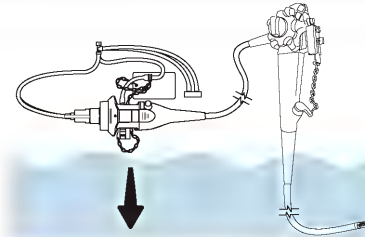
### Prepare equipment

5.7.1 Equipment needed



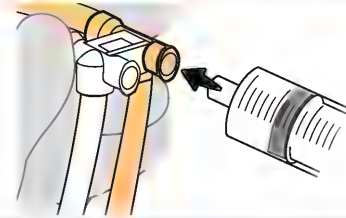
### Rinse the endoscope and accessories

5.7.2 Rinse the endoscope and accessories



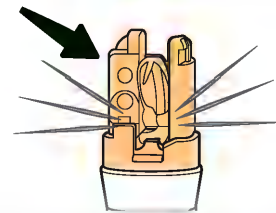
### Flush with alcohol

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:

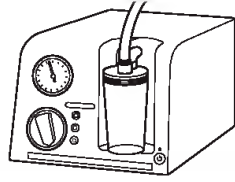
- Some national or professional guidelines recommend using sterile water for rinsing endoscopes. If sterile water is not available, these guidelines recommend using fresh, drinkable tap water and flushing endoscope channels with alcohol.
- Some other national or professional guidelines recommend flushing 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.

## 5.7.1 Equipment needed

Prepare the following equipment.

### Equipment:



**Suction pump (KV-6, KV-5, SSU-2) and sterile suction tube\*<sup>1</sup> (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\*<sup>1</sup>
- Sterile 30 mL (30 cc) syringes\*<sup>1</sup>
- Sterile, small basins with tight-fitting lids (size: 25 (W) × 10 (D) × 25 (H) cm or more)\*<sup>1</sup>
- Sterile cotton swabs\*<sup>1</sup>
- Sterile, large basins\*<sup>1</sup> (size: 40 (W) × 40 (D) × 25 (H) cm or more)
- Air compressor (Filtered)

\*<sup>1</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 healthcare facility'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".

### 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.

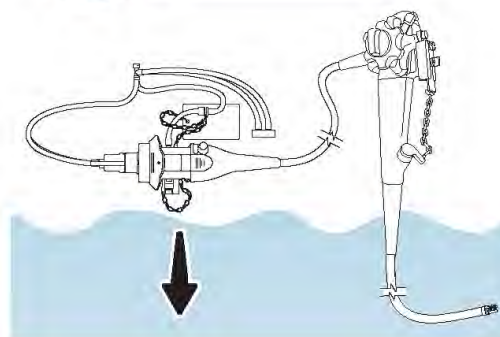
1. Fill a sterile, large basin with rinse water.



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



**Keep immersed when cleaning**



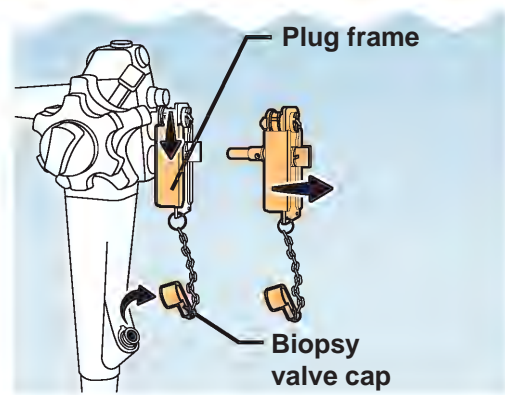
## 5.7 Rinsing

1. Equipment needed

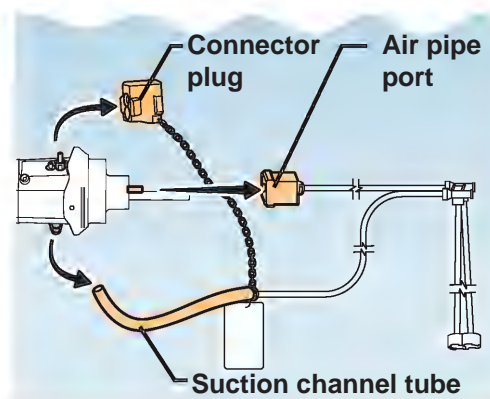
2. Rinse endoscope and accessories

3. Flush with alcohol

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



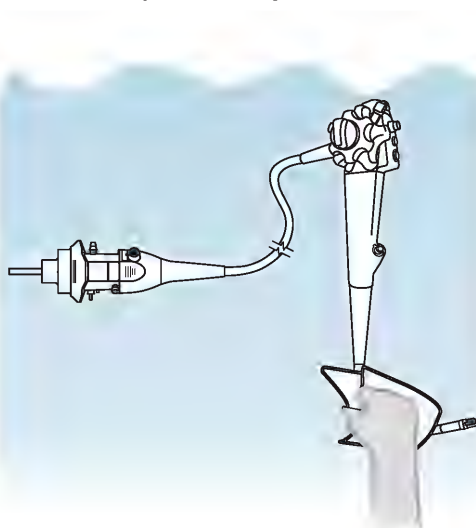
- 4.** Detach the injection tube (MH-946) from the endoscope.



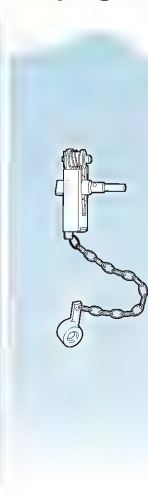
- 5.** Keeping the endoscope and all accessories completely immersed in the rinse water, wipe all external surfaces of the endoscope and all accessories using sterile lint-free cloths:

- a) Endoscope
- b) Channel plug
- c) Injection tube

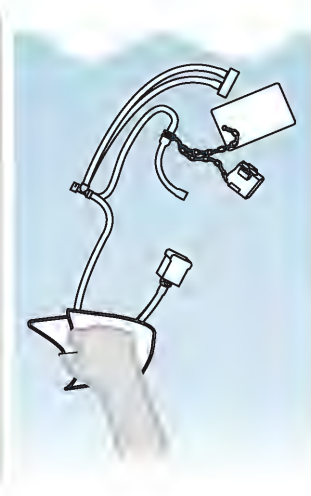
**a) Endoscope**



**b) Channel plug**

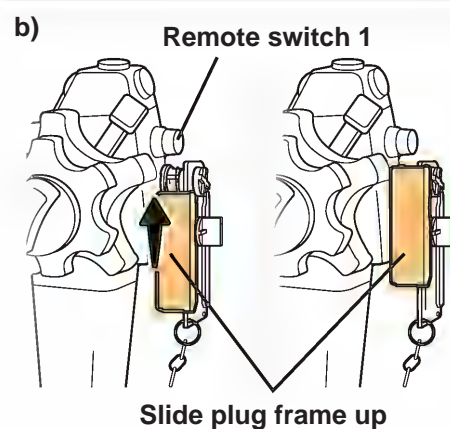
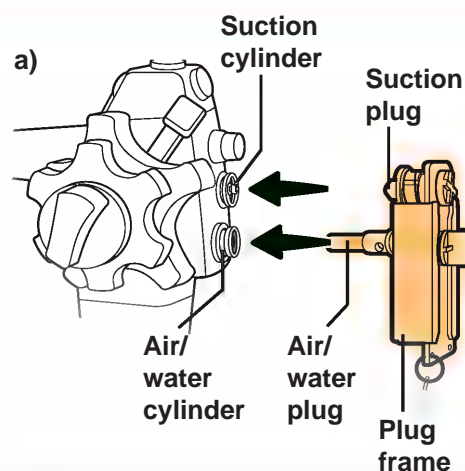


**c) Injection tube**

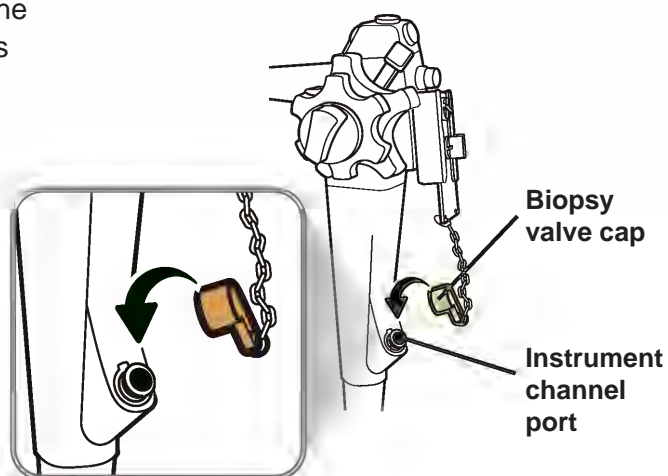


**6.** Attach the channel plug to the endoscope's air/water and suction cylinders, as follows:

- 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.



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



## 5.7 Rinsing

1. Equipment needed

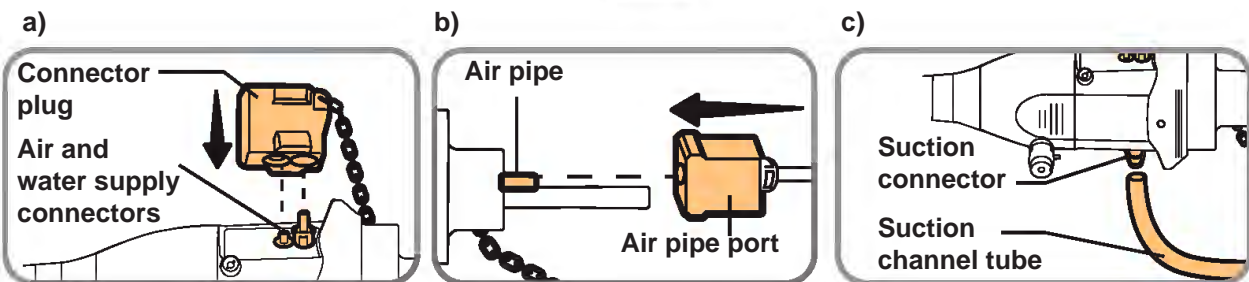
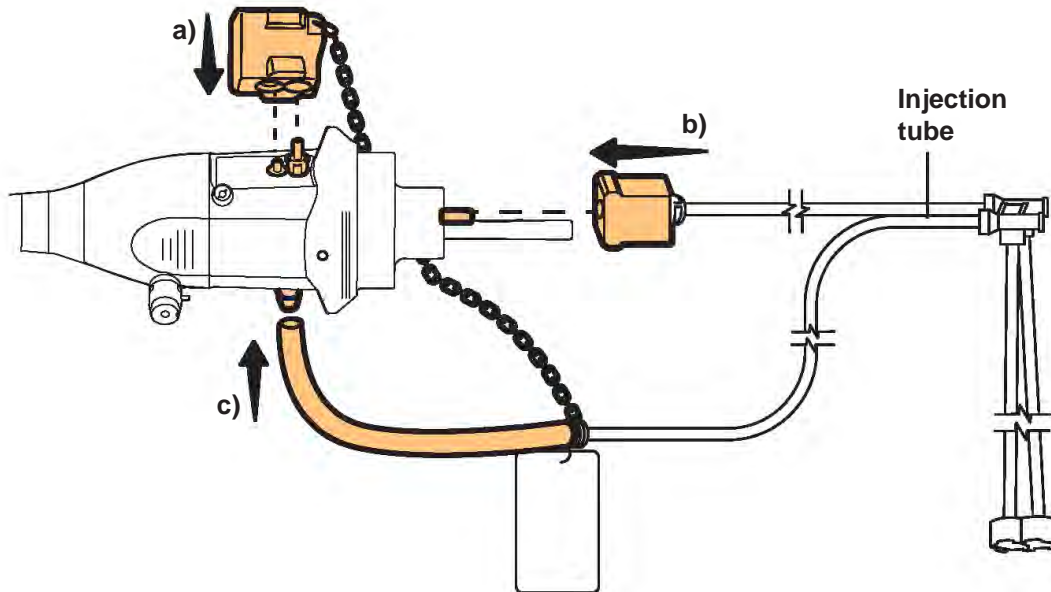
2. Rinse endoscope and accessories

3. Flush with alcohol

8.

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

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

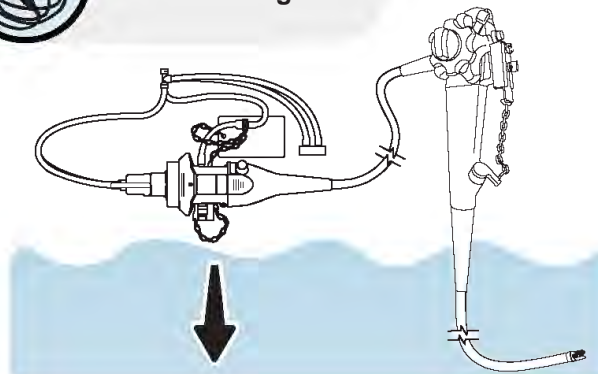


9.

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.

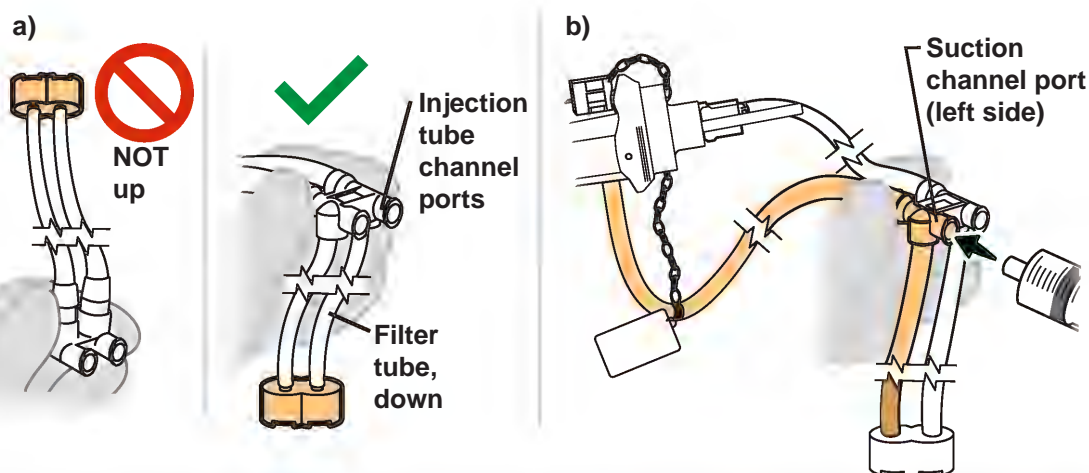


Keep immersed when cleaning



**10.** Attach a sterile 30 mL syringe to the injection tube's suction channel port, as follows:

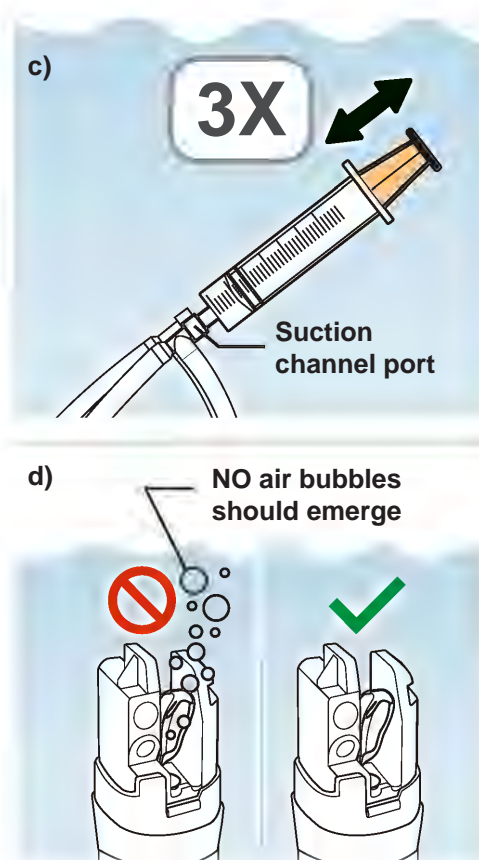
- Hold the injection tube's channel ports so that the filter tube points down, NOT up;
- Attach the syringe to the suction channel port (the left side port with the tube that connects to the endoscope connector's suction connector).



**11.** Keeping the 30 mL syringe attached and immersed, flush the suction channel with 90 mL of the rinse water, as follows:

- Slowly pull the syringe plunger to fill the syringe with the rinse water;
- Then forcefully flush 30 mL of the rinse water;
- Repeat Steps a) and b) two more times, for a total of three times;**
- 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.**



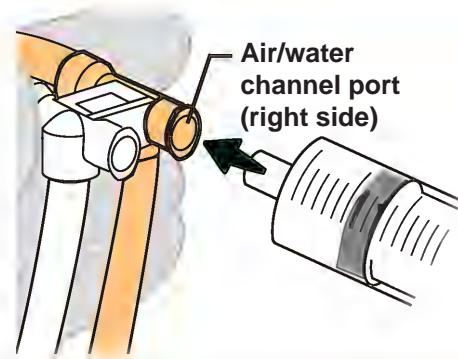
## 5.7 Rinsing

1. Equipment needed

2. Rinse endoscope and accessories

3. Flush with alcohol

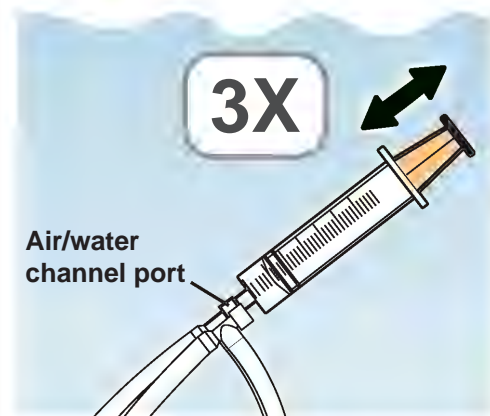
- 12.** Move the syringe from the suction channel port to the injection tube's air/water channel port (port on the right).



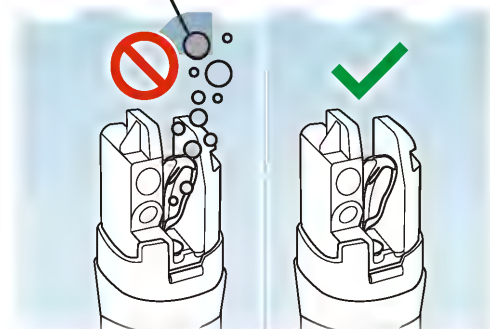
- 13.** Keeping the 30 mL syringe immersed and attached, flush the air/water channel with 90 mL of the rinse water, as follows:

- Slowly pull the syringe plunger to fill the syringe with the rinse water;
- Then forcefully flush 30 mL of the rinse water;
- Repeat Steps a) and b) two more times, for a total of three times;**
- Confirm that no air bubbles exit from the endoscope's distal end during the last flush.

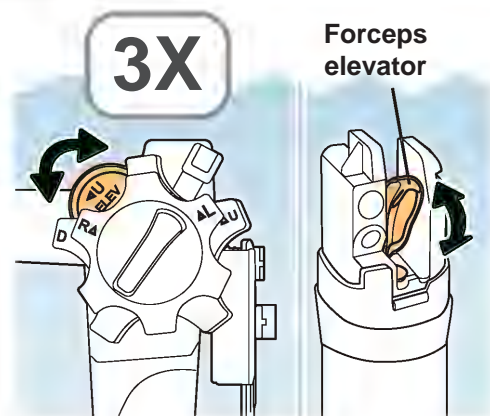
**If air bubbles still exit, flush the channel with the rinse water until no air bubbles exit.**



- d) **NO air bubbles should emerge**

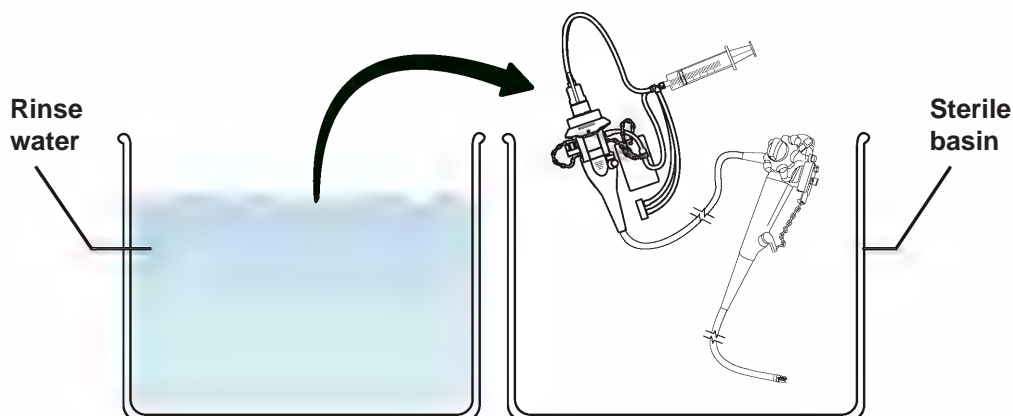


- 14.** Keeping the endoscope immersed in the rinse water, move the elevator control lever in each direction three times, to move the forceps elevator up and down.



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

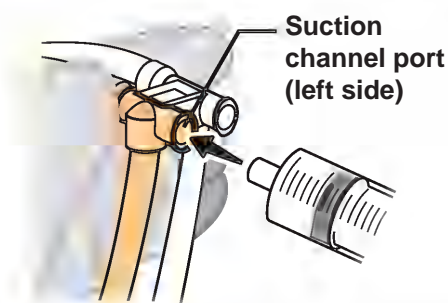
- 16.** Remove the endoscope from the rinse water with accessories attached and place them in a sterile basin.



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

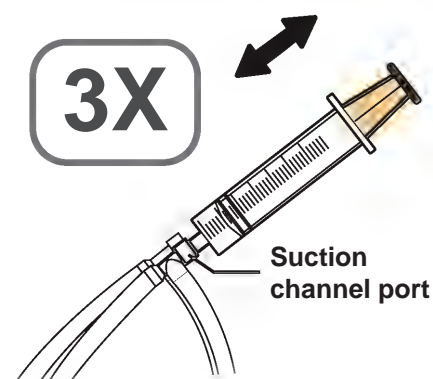


- 18.** Move the syringe from the air/water channel port to the injection tube's suction channel port (port on the left).



- 19.** Keeping the 30 mL syringe attached, flush the suction channel with 90 mL of air, as follows:

- Slowly pull the syringe plunger to fill the syringe with air;
- Then forcefully flush 30 mL of air;
- Repeat Steps a) and b) two more times, for a total of three times.**



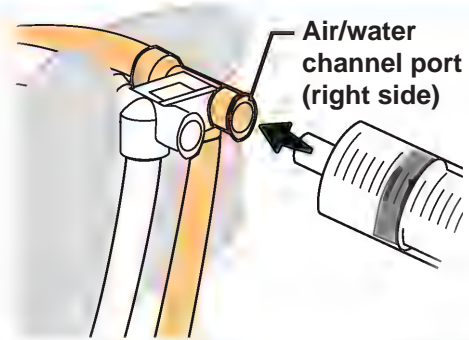
## 5.7 Rinsing

1. Equipment needed

2. Rinse endoscope and accessories

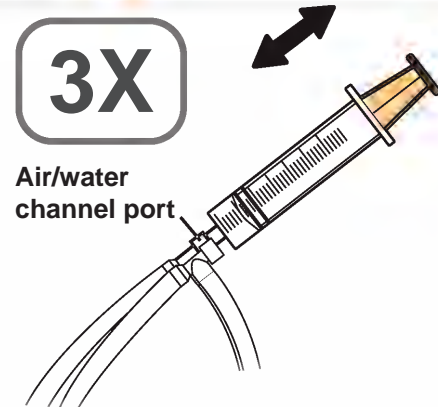
3. Flush with alcohol

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

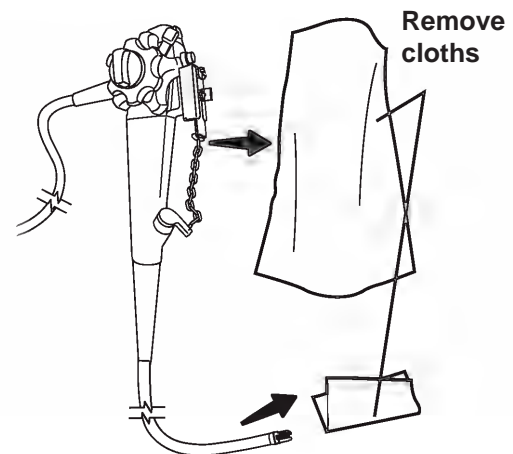


- 21.** Keeping the 30 mL syringe attached, flush the air/water channel with 90 mL of air, as follows:

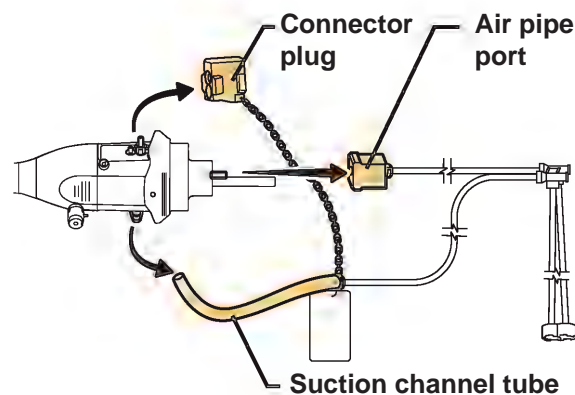
- Slowly pull the syringe plunger to fill the syringe with air;
- Then forcefully flush 30 mL of air;
- Repeat Steps a) and b) two more times, for a total of three times.**



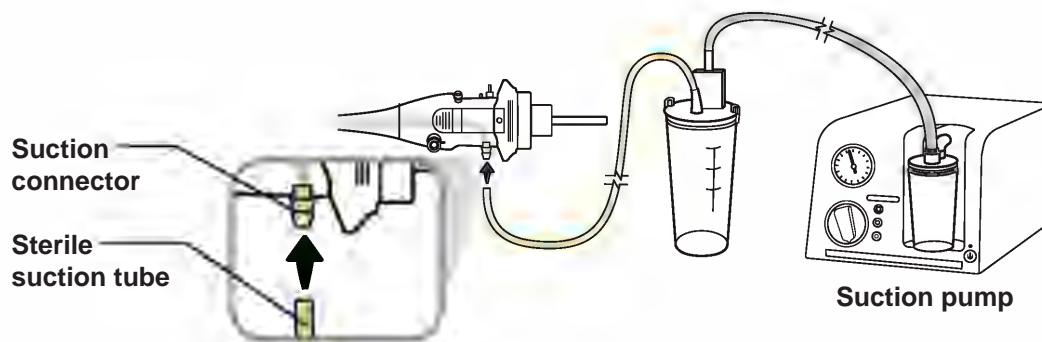
- 22.** Remove the cloths from the endoscope.



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



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

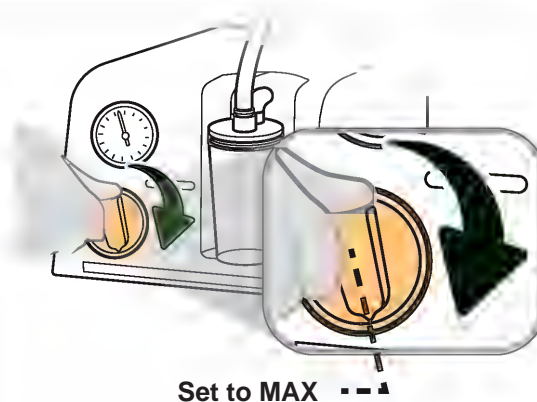


- 25.** If using the KV-6 or KV-5 suction pump, turn the vacuum regulator knob clockwise until the knob stops and sets to maximum.

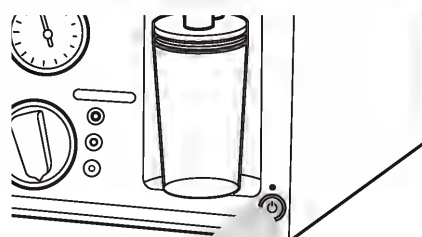
#### NOTE

The maximum vacuum pressure of the suction pump is:

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



- 26.** Turn the suction pump ON.



## 5.7 Rinsing

1. Equipment needed

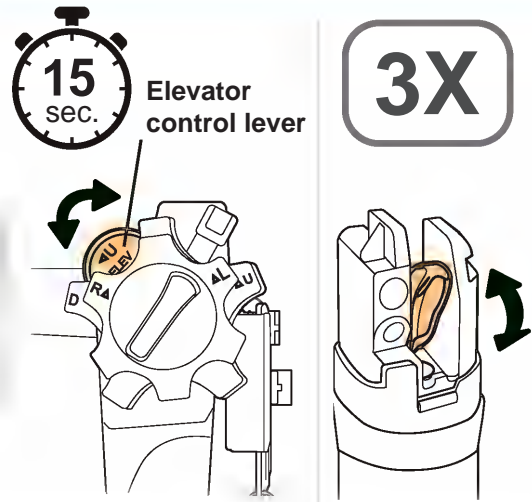
2. Rinse endoscope and accessories

3. Flush with alcohol

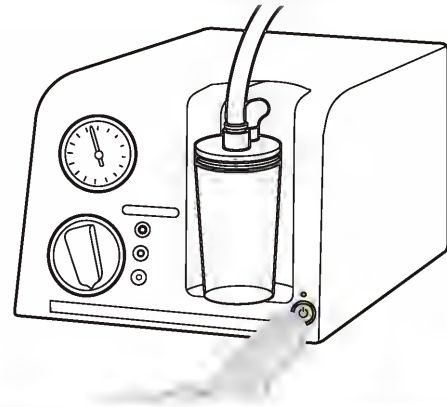
- 27.** While aspirating air for 15 seconds or more, move the elevator control lever in each direction three times, to move the forceps elevator up and down.

### NOTE

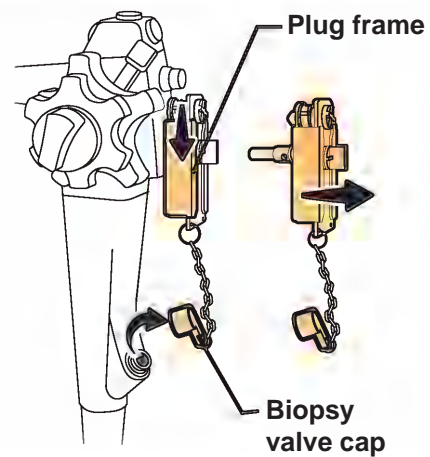
Use a clock or a timer to accurately measure 15 seconds or more.



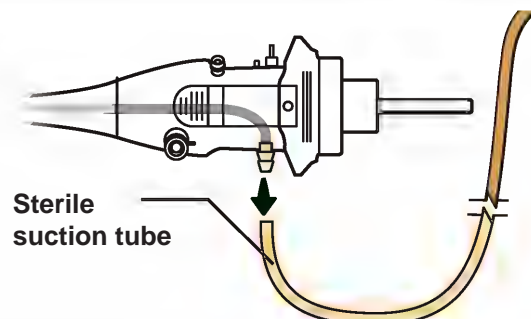
- 28.** Turn the suction pump OFF.



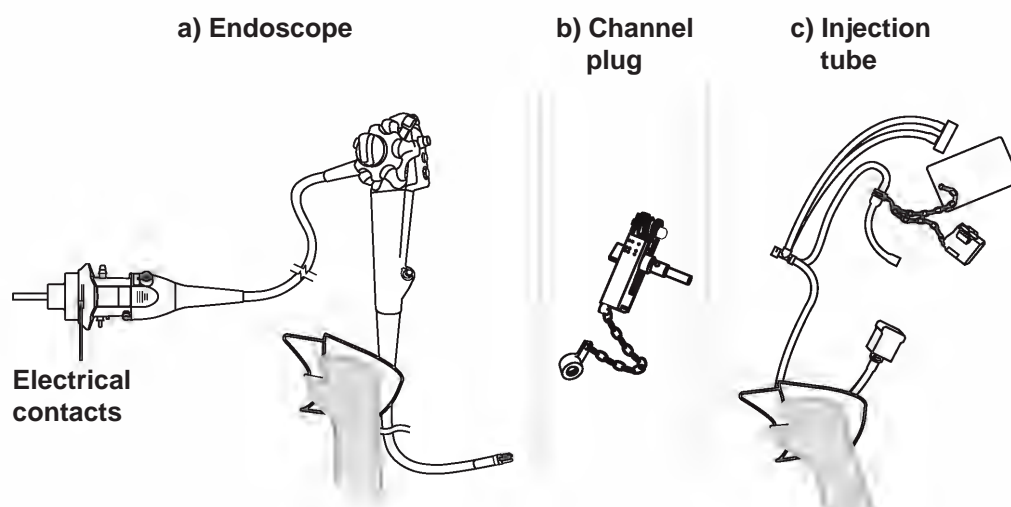
- 29.** Slide the channel plug's plug frame down and detach the channel plug from the endoscope.



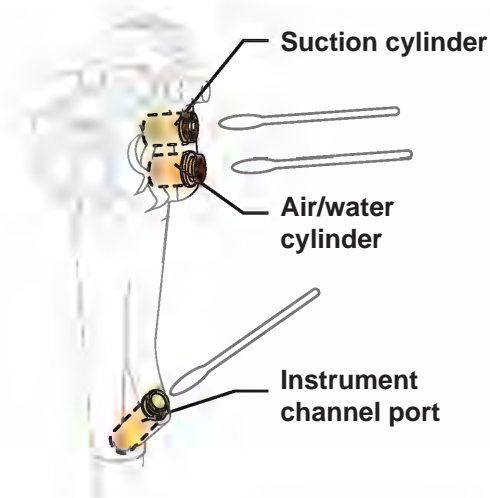
- 30.** Detach the suction pump's sterile suction tube from the endoscope.



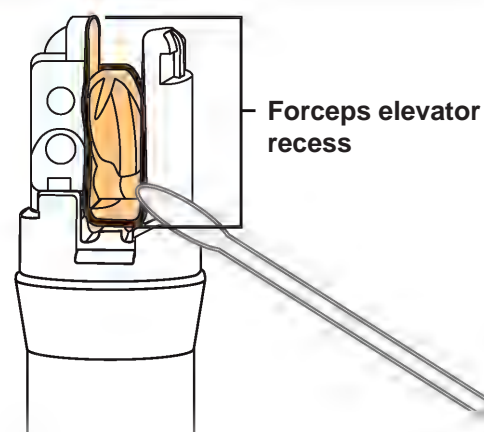
- 31.** Using sterile lint-free cloths, wipe all external surfaces until thoroughly dry:
- Endoscope (including the electrical contacts)
  - Channel plug
  - Injection tube



- 32.** 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.



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



## 5.7.3 Flush with alcohol

**⚠ WARNING**

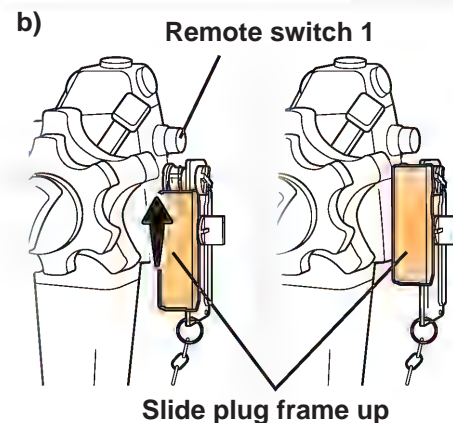
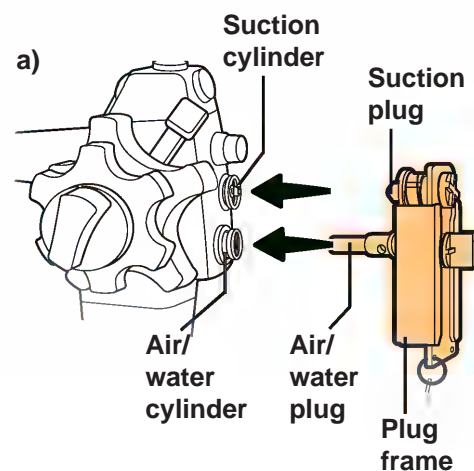
Remove residual alcohol from endoscope channels to reduce the risks of residual alcohol contacting patient's mucosa during electrosurgical procedures.

1. Fill a sterile, small basin with alcohol.

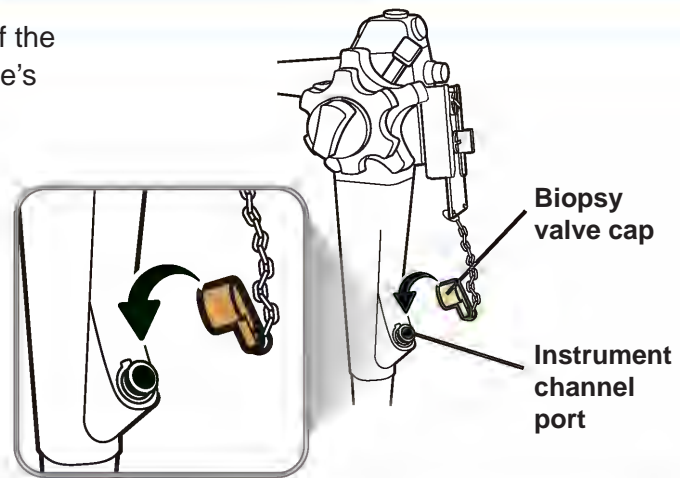


2. Attach the channel plug (MH-944) to the endoscope's air/water and suction cylinders, as follows:

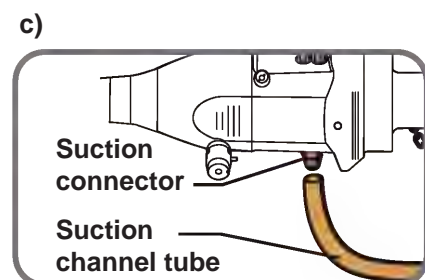
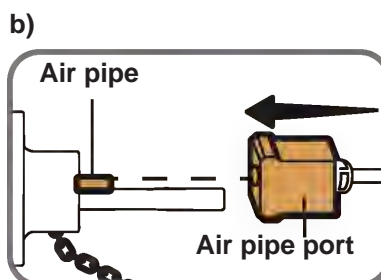
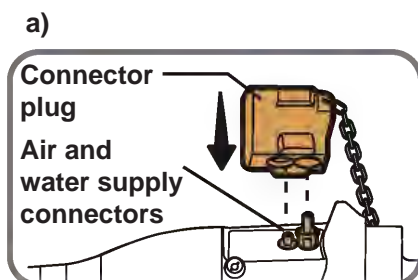
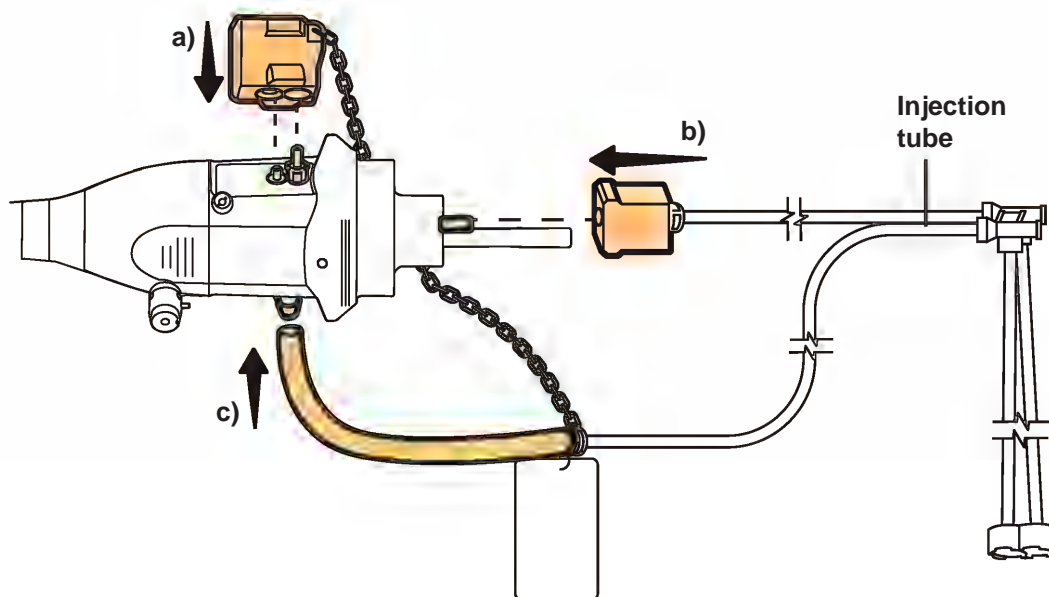
- a) Insert the channel plug's air/water plug into the air/water cylinder, then continue, inserting the channel plug's suction plug into the suction cylinder until the channel plug's plug frame contacts the control section;
- b) Continue to push the channel plug's plug frame against control section,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



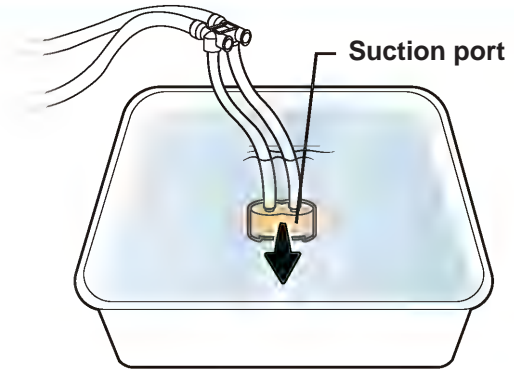
- 3.** Attach the biopsy valve cap of the channel plug to the endoscope's instrument channel port.



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



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

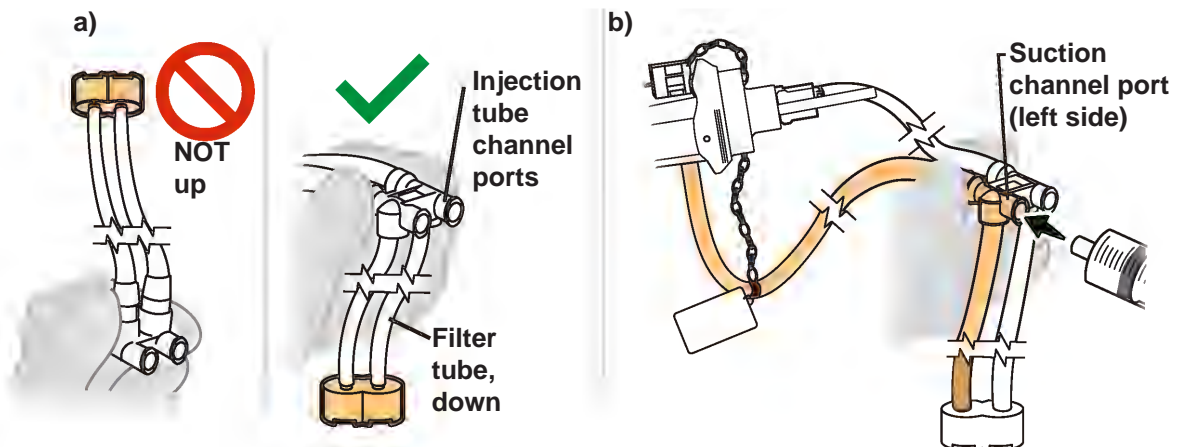


6. To prevent splashing from the channel openings, cover the endoscope's distal end and control section with sterile lint-free cloths.

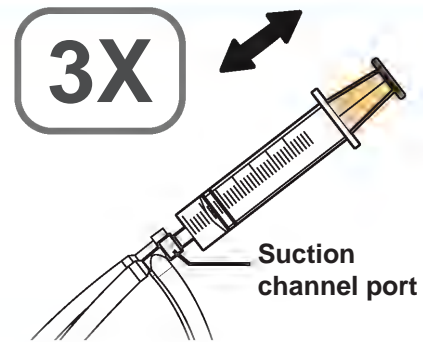


7. Attach a sterile 30 mL syringe to the injection tube's suction channel port, as follows:

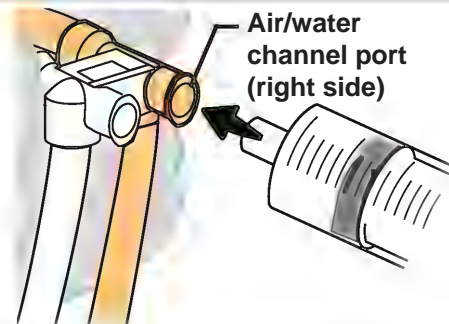
- a) Hold the injection tube's channel ports so that the filter tube points down, NOT up;
- b) Attach the syringe to the suction channel port (the left side port with the tube that connects to the endoscope connector's suction connector).



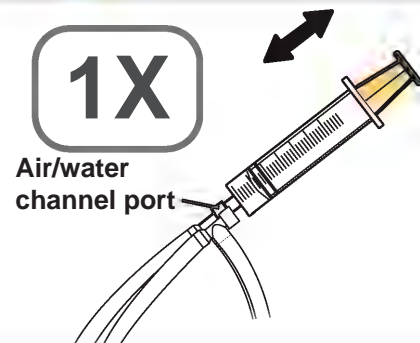
- 8.** Keeping the 30 mL syringe attached, flush the suction channel with 90 mL of the alcohol, as follows:
- Slowly pull the syringe plunger to fill the syringe with the alcohol;
  - Then forcefully flush 30 mL of the alcohol;
  - Repeat Steps a) and b) two more times, for a total of three times.**



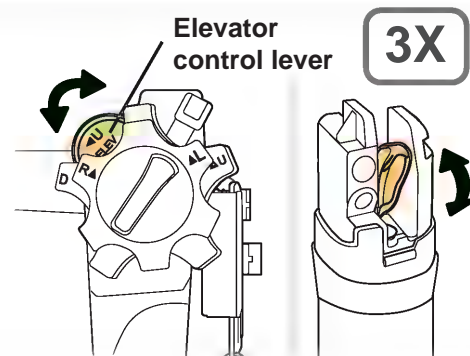
- 9.** Move the syringe from the suction channel port to the injection tube's air/water channel port (port on the right).



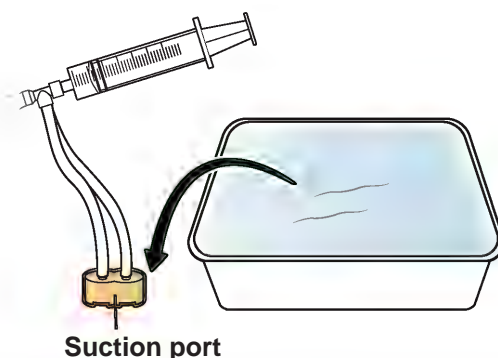
- 10.** Keeping the 30 mL syringe attached, flush the air/water channel with the alcohol, as follows:
- Slowly pull the syringe plunger to fill the syringe with the alcohol;
  - Then forcefully flush with 30 mL of the alcohol.



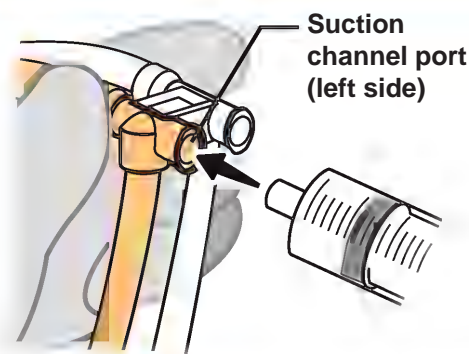
- 11.** Move the elevator control lever in each direction three times, to move forceps elevator up and down.



- 12.** Remove the injection tube's suction port from the alcohol.

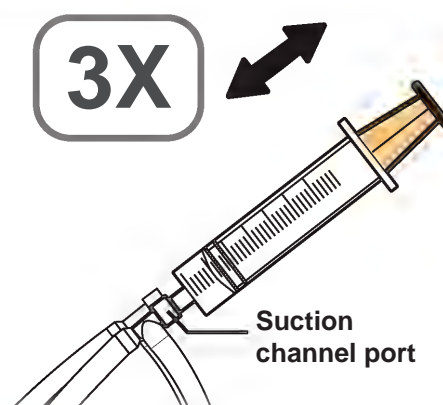


- 13.** Move the syringe from the air/water channel port to the injection tube's suction channel port (port on the left).

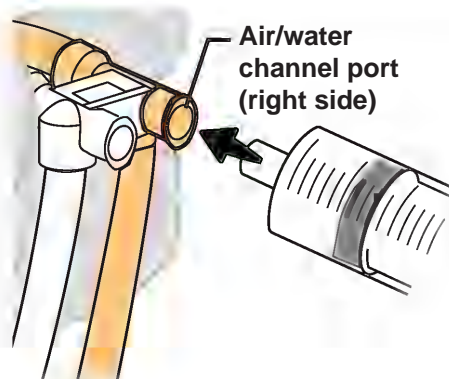


- 14.** Keeping the 30 mL syringe attached, flush the suction channel with 90 mL of air, as follows:

- Slowly pull the syringe plunger to fill the syringe with air;
- Then forcefully flush 30 mL of air;
- Repeat Steps a) and b) two more times, for a total of three times.**

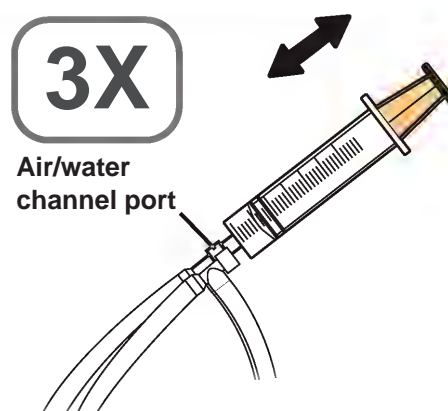


- 15.** Move the syringe from the suction channel port to the injection tube's air/water channel port (port on the right).

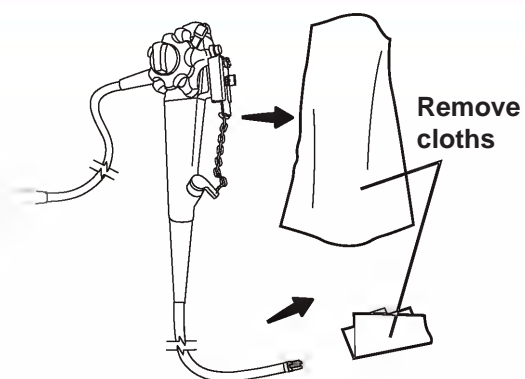


- 16.** Keeping the 30 mL syringe attached, flush the air/water channel with 90 mL of air, as follows:

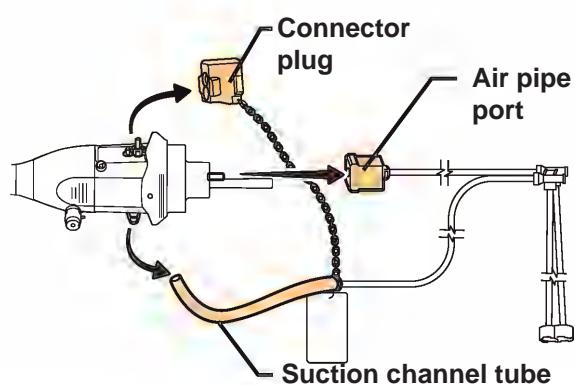
- Slowly pull the syringe plunger to fill the syringe with air;
- Then forcefully flush 30 mL of air;
- Repeat Steps a) and b) two more times, for a total of three times.**



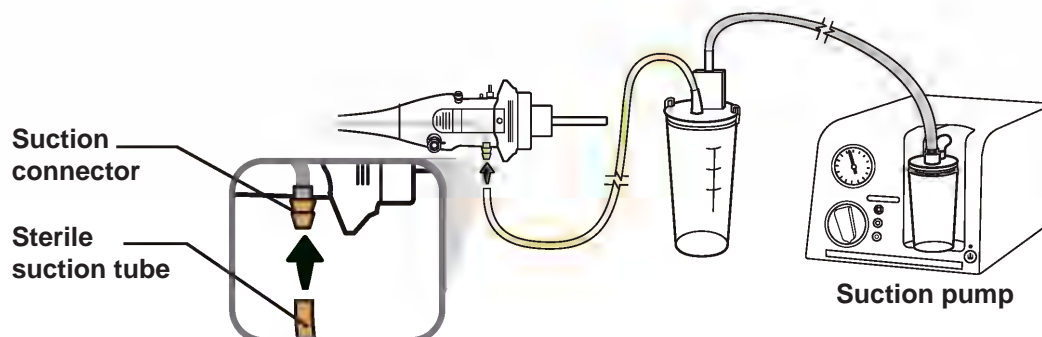
- 17.** Remove the cloths from the endoscope.



- 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.

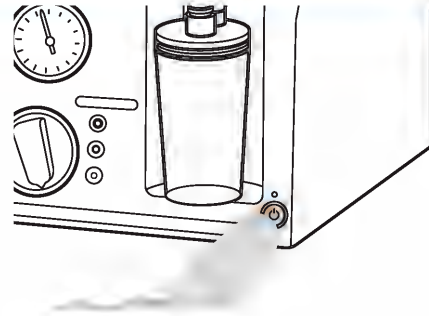
#### NOTE

The maximum vacuum pressure of the suction pump is:

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



- 21.** Turn the suction pump ON.



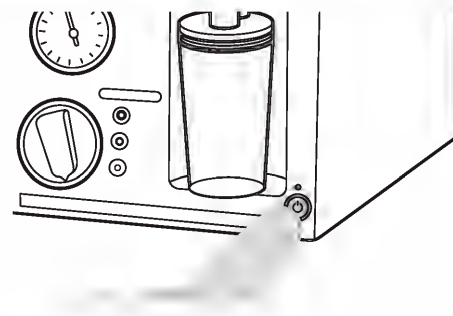
- 22.** Aspirate air for 30 seconds or more.

**NOTE**

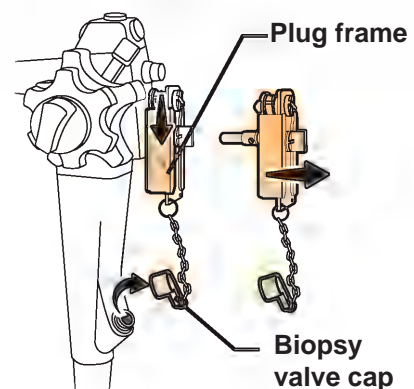
Use a clock or a timer to accurately measure 30 seconds or more.



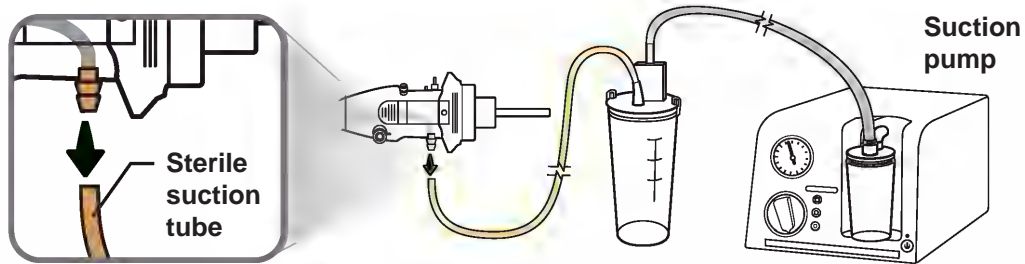
- 23.** Turn the suction pump OFF.



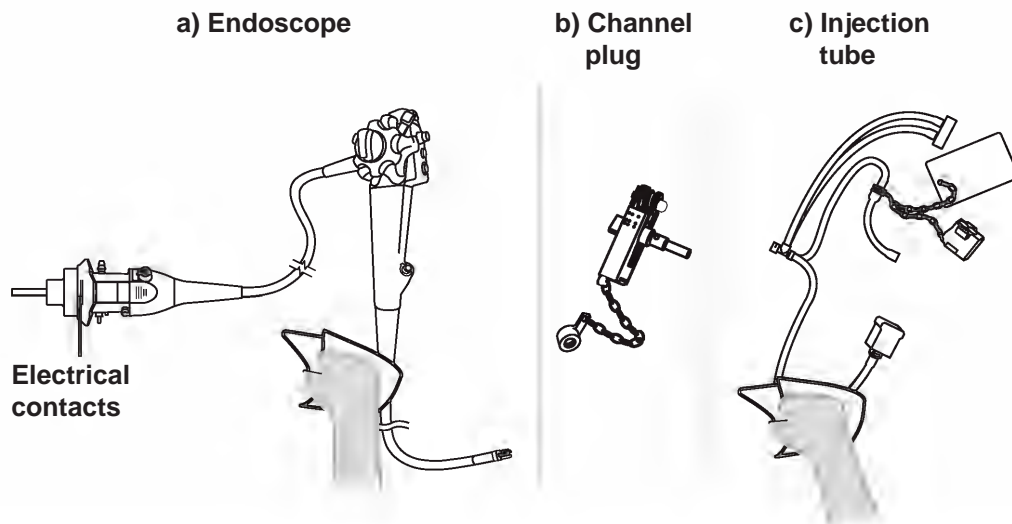
- 24.** Slide the channel plug's plug frame down and detach the channel plug from the endoscope.



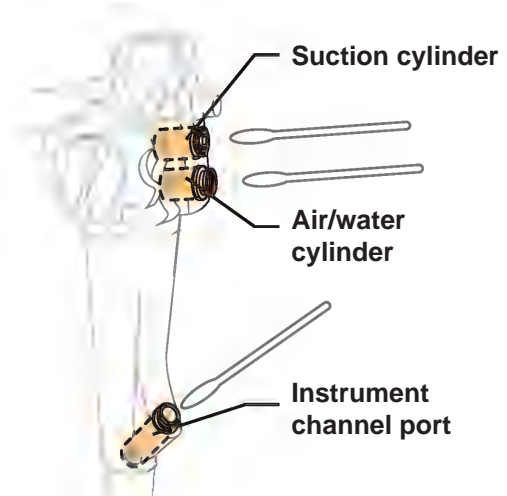
- 25.** Detach the suction pump's sterile suction tube from the endoscope.



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



- 27.** 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.



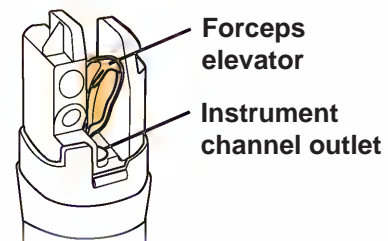
### 5.7.4 Dry the endoscope

#### CAUTION

When aerating the endoscope channels, the air pressure must not exceed 0.5 MPa (5 kgf/cm<sup>2</sup>, 72 psig). Higher pressures may cause damage to the endoscope.

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

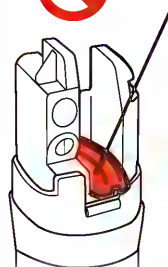
If closed, open the instrument channel outlet by moving the elevator control lever as shown below until the forceps elevator stops.



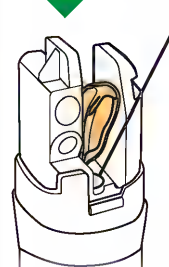
Elevator control lever



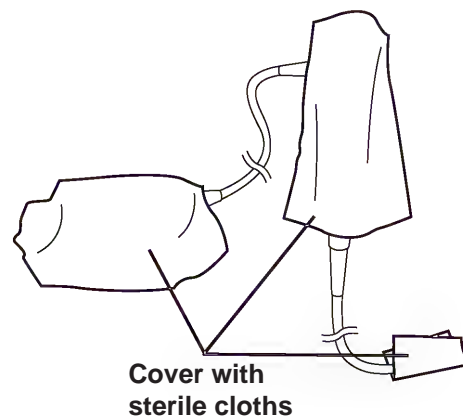
 Closed



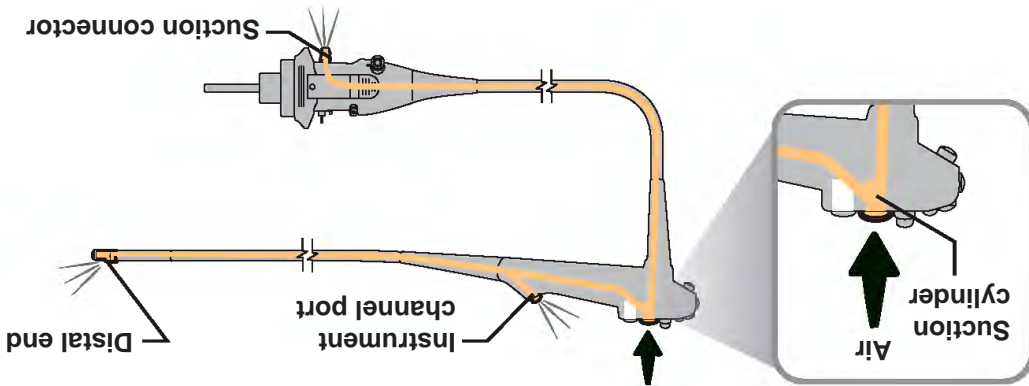
 Open



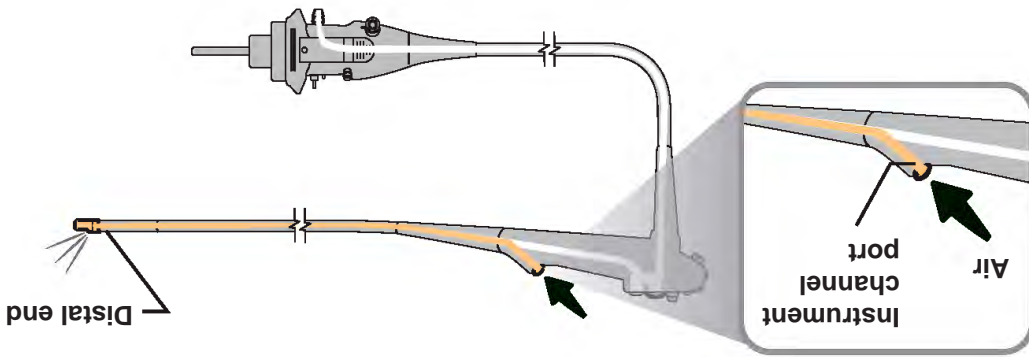
2. To prevent splashing alcohol from the channel openings, cover the endoscope's distal end, the control section, and the endoscope connector in sterile lint-free cloths.



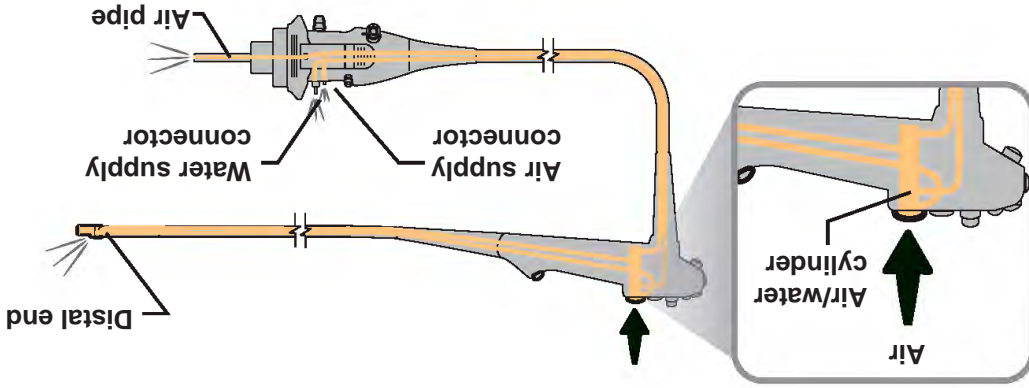
3. Blow compressed filtered air of less than 0.5 MPa from the endoscope's suction cylinder through the suction channel and the instrument channel until no alcohol exits from the endoscope's distal end, the instrument channel port, and the suction connector.



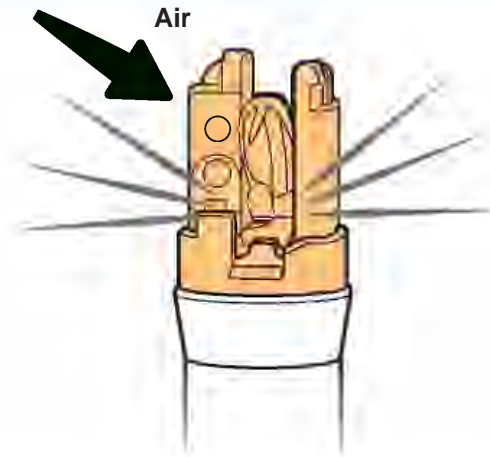
4. Blow compressed filtered air of less than 0.5 MPa from the endoscope's instrument channel port through the instrument channel until no alcohol exits from the endoscope's distal end.



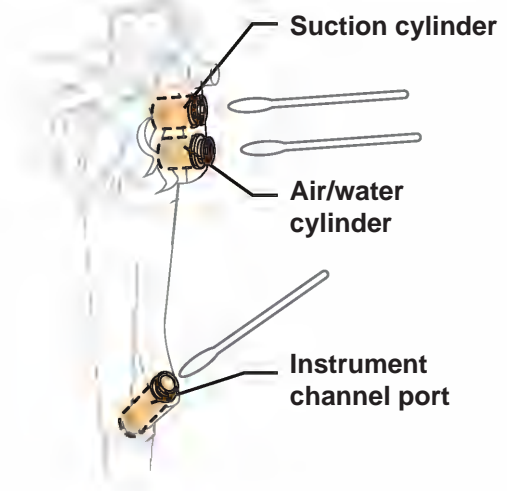
5. Blow compressed filtered air of less than 0.5 MPa from the endoscope's air/water cylinder through the air/water channel until no alcohol exits from the endoscope's distal end, the air supply connector, the water supply connector, and the air pipe.



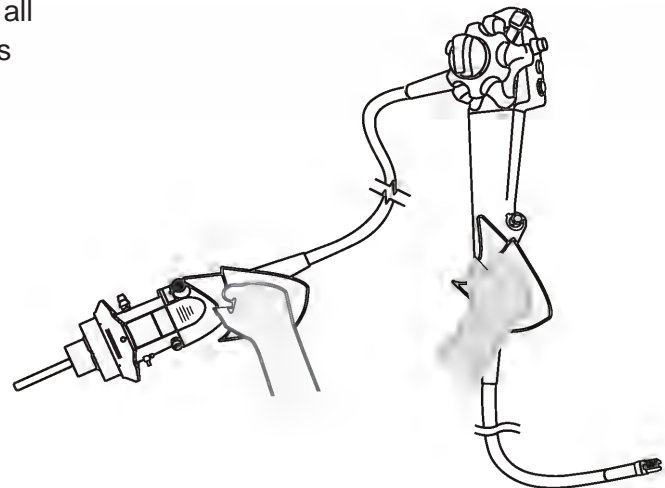
- 6.** Blow compressed filtered air of less than 0.5 MPa on the endoscope's distal end until no alcohol remains.



- 7.** 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.



- 8.** 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:



ETO cap (MB-156)

#### Other:

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

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

### 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.

## ⚠ CAUTION

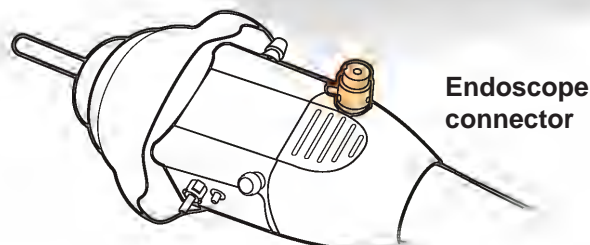
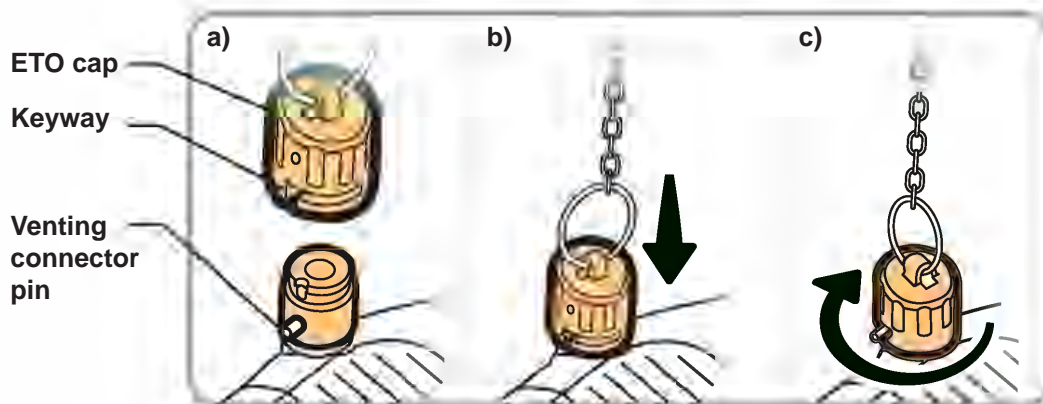
- Exceeding the recommended sterilization parameters may cause damage to the endoscope and/or accessories.
- Attach the ETO cap (MB-156) to the venting connector on the endoscope connector prior to ethylene oxide gas sterilization. If the ETO cap is not attached to the venting connector during the ethylene oxide gas sterilization, the air inside the endoscope will expand and could rupture the bending section cover and/or damage the angulation mechanism.

### 1. 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"

### 2. Attach the ETO cap (MB-156) to the venting connector on the endoscope connector, as follows:

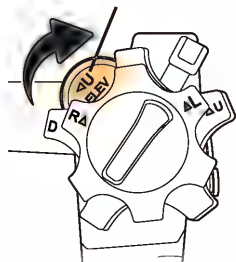
- Align the pin on the venting connector with the keyway on the ETO cap;
- Push the ETO cap towards the endoscope connector of the endoscope until it stops;
- Rotate the ETO cap clockwise (approximately 90°) until it stops.



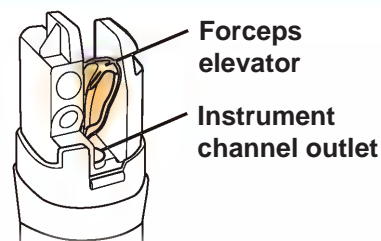
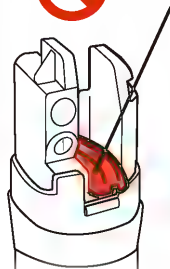
- 3.** Ensure that the distal end's instrument channel outlet is fully open.

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

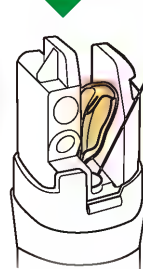
Elevator control lever



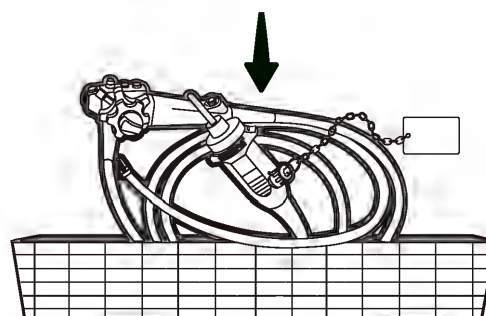
 Closed



 Open



- 4.** Put the endoscope in a stainless steel wire mesh basket.



- 5.** Wrap the basket containing the endoscope with sterilization wrap for ethylene oxide gas sterilization, according to your institution's protocol.

- 6.** Seal the accessories in individual sterilization pouches appropriate for ethylene oxide gas sterilization, according to your institution's protocol.

- 7.** 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.

1. Equipment  
needed

2. Ethylene oxide gas  
sterilization

3. Steam  
sterilization

### 5.8.3 Steam sterilization (autoclaving) of the accessories

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

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# Chapter 6

## Reprocess the Accessories


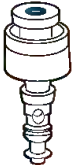
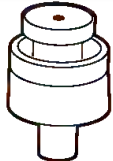
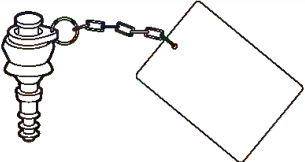
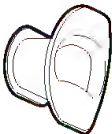
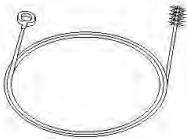


### 6.1 Summary



#### WARNING

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

The following accessories cannot be 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.

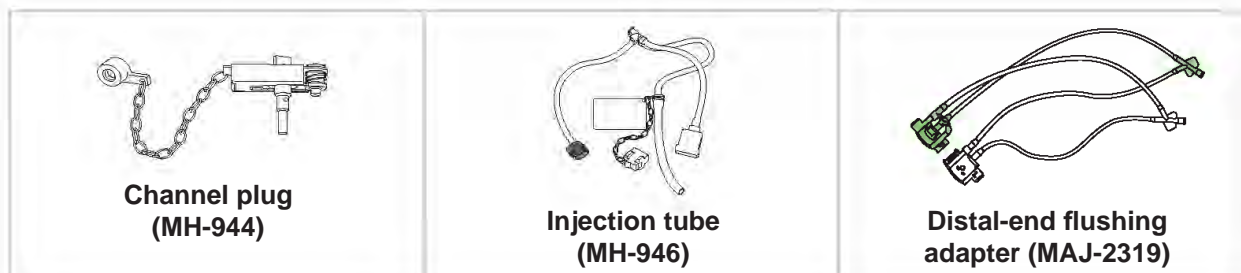
 <p><b>Biopsy valve (MB-358)</b></p>	 <p><b>Air/water valve (MH-438)</b></p>	 <p><b>Suction valve (MH-443)</b></p>
 <p><b>AW channel cleaning adapter (MH-948)</b></p>	 <p><b>Mouthpiece (MA-392)</b></p>	 <p><b>Channel cleaning brush (BW-20T)</b></p>
 <p><b>Channel-opening cleaning brush (MH-507)</b></p>	 <p><b>Suction cleaning adapter (MH-856)</b></p>	

## Exceptions for channel plug, injection tube, and distal-end flushing adapter

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)”.

### NOTE

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

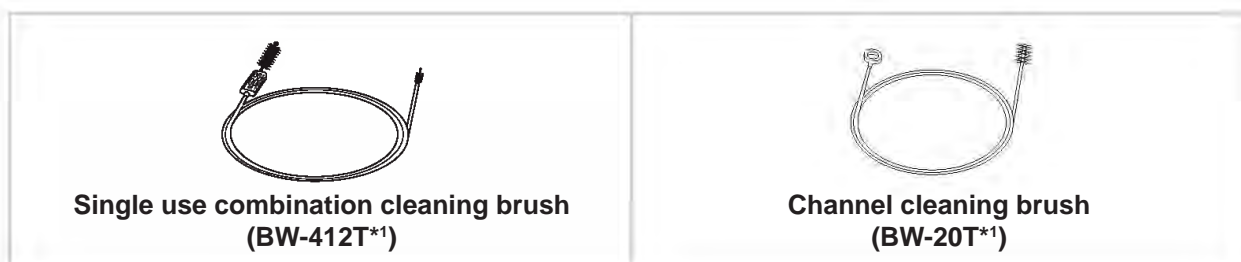


However, you may have to reprocess these accessories individually. For example, if the endoscope is compatible with an AER/WD and these accessories are not compatible with the AER/WD, these accessories must be manually cleaned and disinfected separately from the endoscope.

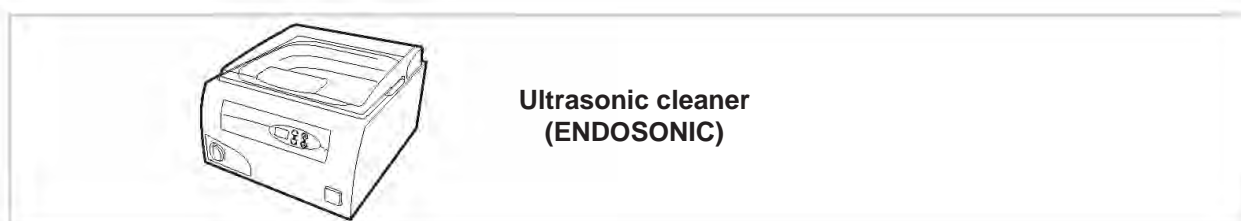
## 6.1.1 Equipment needed

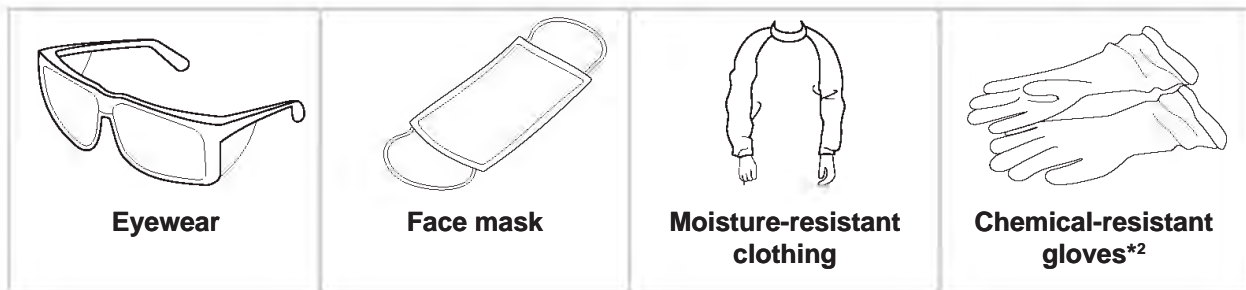
The following accessories and equipment are required to perform the reprocessing steps described in this chapter.

### Accessories for reprocessing:



### Equipment:



**Personal protective equipment:****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<sup>\*3</sup>
- Sterile 30 mL (30 cc) syringes<sup>\*3</sup>
- Clean basins or containers
- Sterile basins or containers<sup>\*3</sup>
- Clean sponges
- Clean 30 mL (30 cc) syringes
- Sterile, small basins or containers<sup>\*3</sup>
- Clean basins or containers with tight-fitting lids
- Sterilization pouches<sup>\*4</sup>

<sup>\*1</sup> 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).

<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 healthcare facility’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:

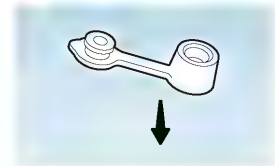
#### Prepare equipment

6.2.1 Equipment needed



#### Clean accessories' surfaces

6.2.2 Clean the accessories' external surfaces



#### Brush the valves

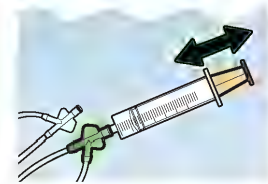
6.2.3 Brush the valves



#### Flush the accessories

6.2.4 Flush the accessories with detergent solution

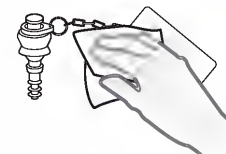
6.2.5 Immerse the accessories in detergent solution



#### Remove detergent solution

6.2.6 Remove detergent solution from all accessories

6.2.7 Dry the external surfaces



## 6.2 Manually clean the accessories

1. Equipment needed

2. Clean external surfaces

3. Brush valves

### 6.2.1 Equipment needed

Prepare the following equipment.

#### Accessories and equipment for manual cleaning:



\*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”)

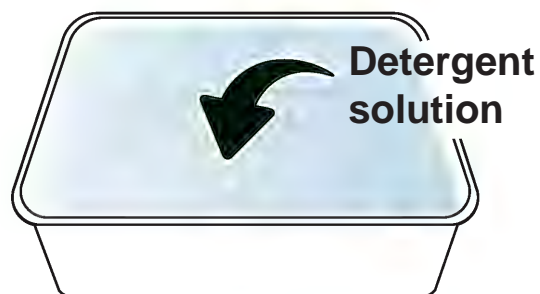
#### Other:

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

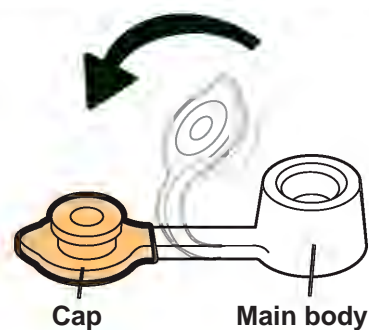
## 6.2.2 Clean the accessories' external surfaces

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

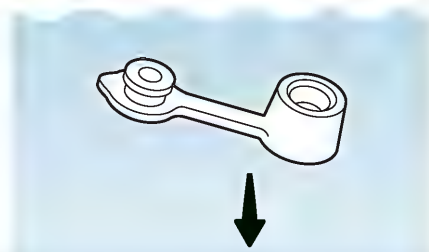
Refer to the detergent manufacturer's instructions for the recommended temperature and concentration.



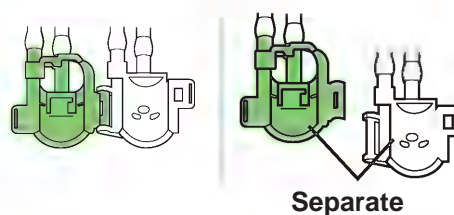
2. Detach the biopsy valve's (MB-358) cap from the biopsy valve's main body.



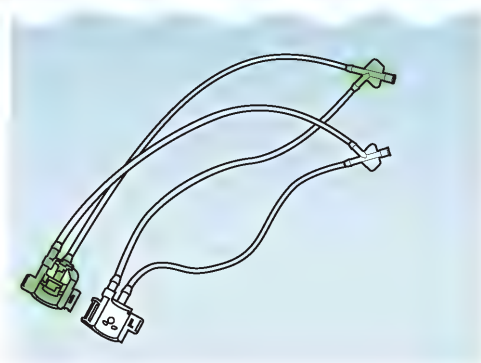
3. Completely immerse the biopsy valve in the detergent solution.



4. 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.



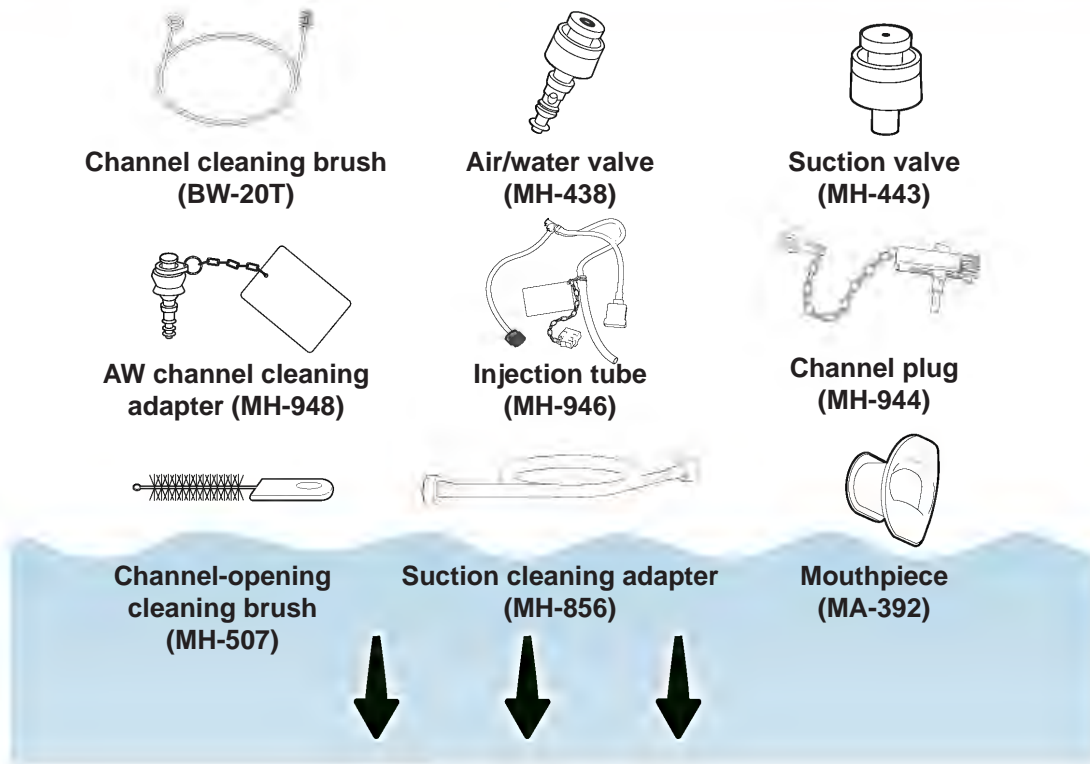
## 6.2 Manually clean the accessories

1. Equipment needed

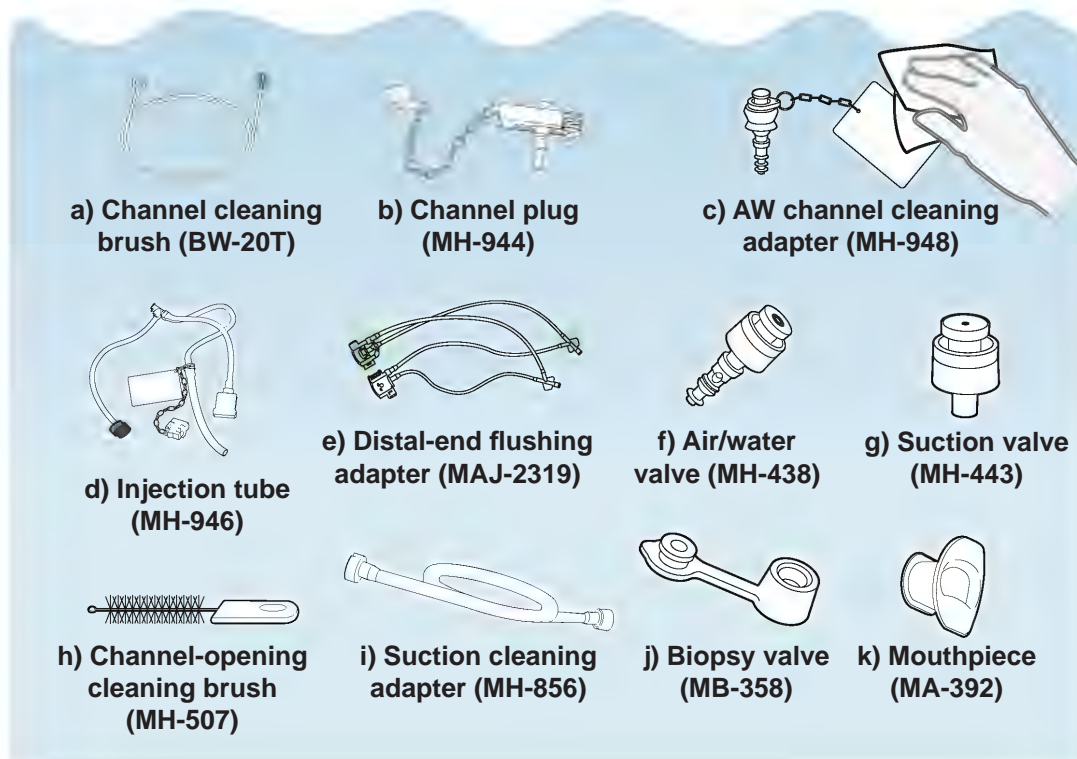
2. Clean external surfaces

3. Brush valves

**6.** Completely immerse all other accessories in the detergent solution.



**7.** 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.

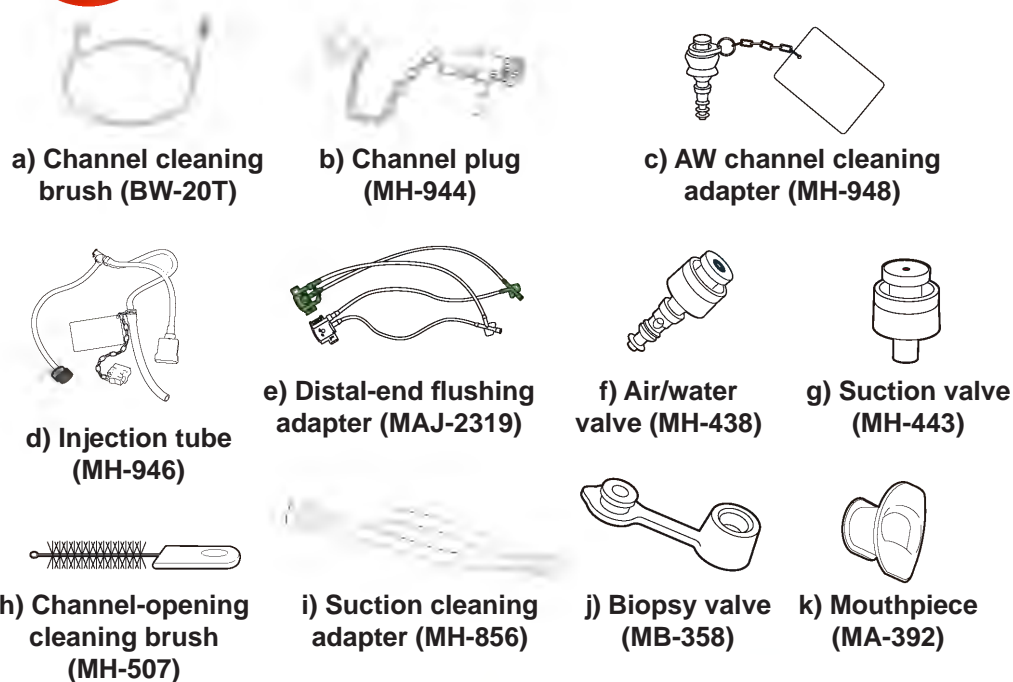


**8.** Take all accessories out of the detergent solution and confirm that no debris remains on all their external surfaces (i.e., eleven items from a) through k) as shown below).

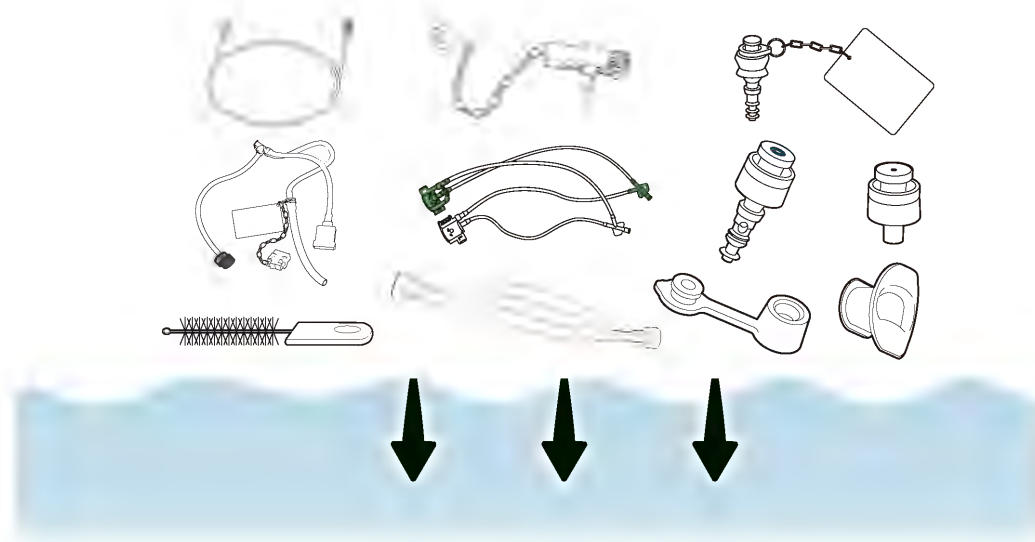
If any debris remains, repeat Steps 7 and 8 until no debris remains.



No debris on any surfaces:



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



### 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.



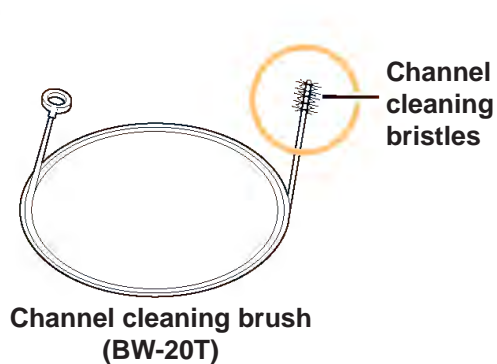
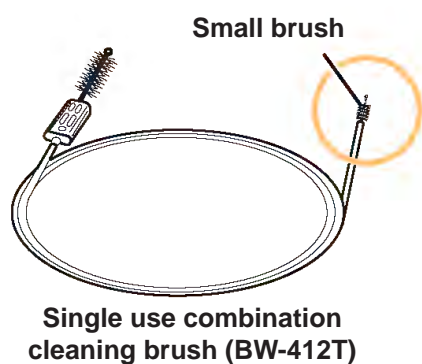
#### CAUTION

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.

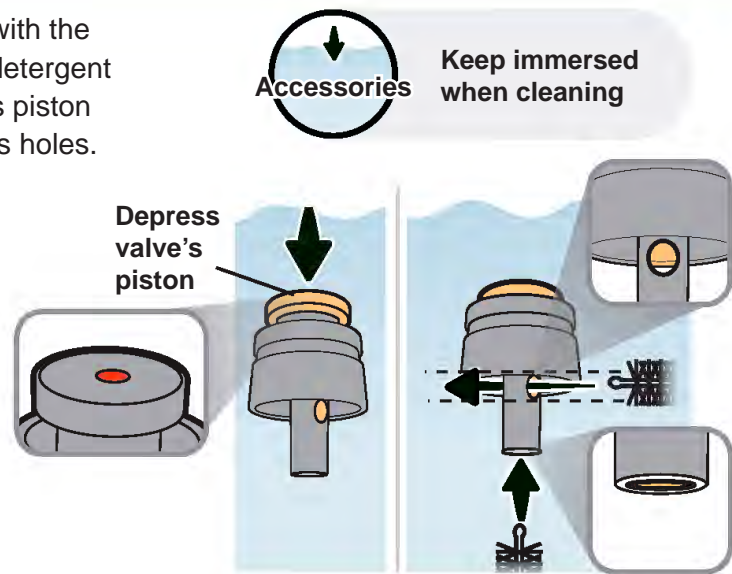
#### 6.2.3.1 Brush the suction valve (MH-443)

1. 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).

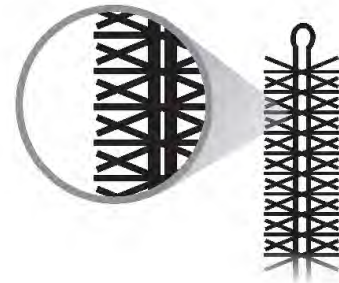
Grip the channel cleaning brush end 3 cm down from the brush's bristles.



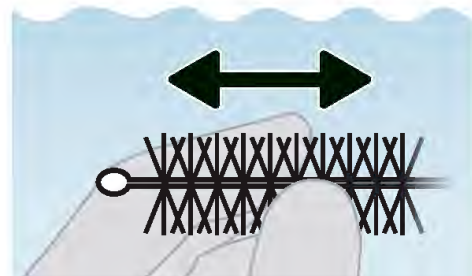
- 2.** Keeping the suction valve (with the red mark) immersed in the detergent solution, depress the valve's piston and brush both of the valve's holes.



- 3.** Inspect the brush's bristles for debris.



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

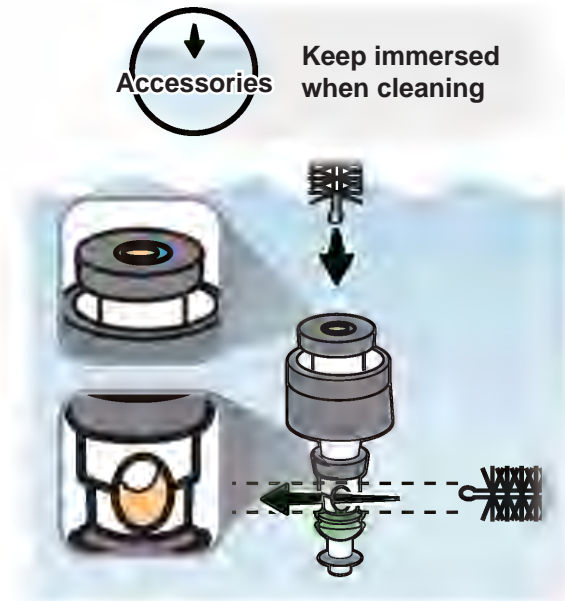


- 5.** If any debris remains, repeat Steps 2 through 4 until no debris remains.

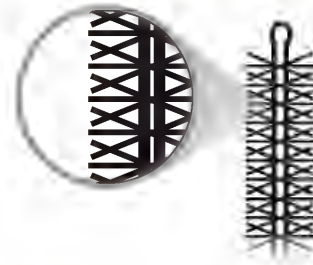


### 6.2.3.2 Brush the air/water valve (MH-438)

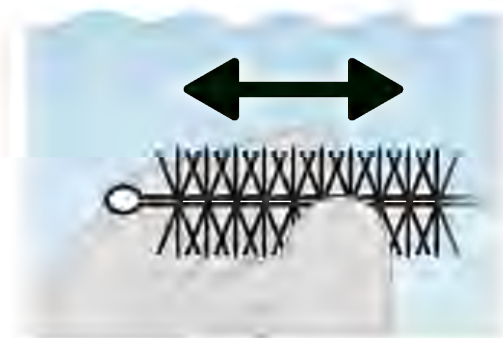
1. Keeping the air/water valve (with the blue mark) immersed in the detergent solution, brush both of the valve's holes.



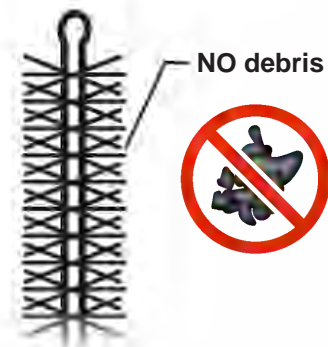
2. Inspect the brush's bristles for debris.



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

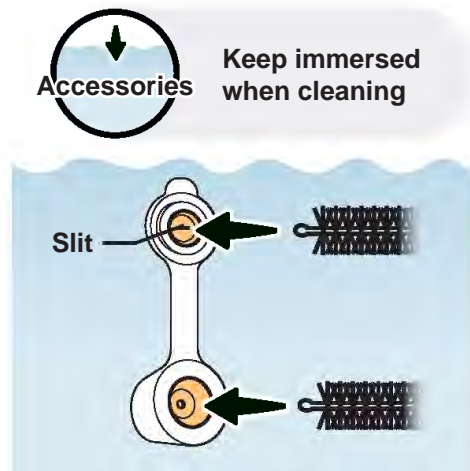


4. If any debris remains, repeat Steps 1 through 3 until no debris remains.

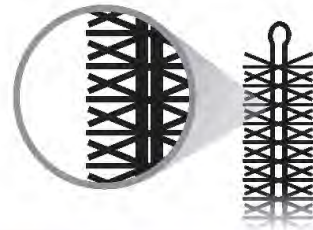


### 6.2.3.3 Brush the biopsy valve (MB-358)

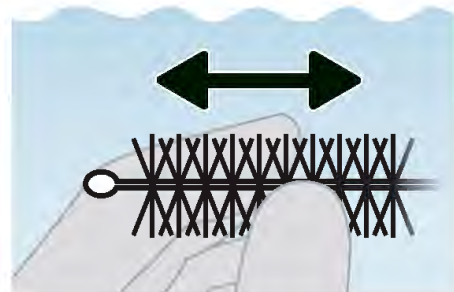
1. Keeping the biopsy valve immersed in the detergent solution, brush the valve's hole and the valve's slit.



2. Inspect the brush's bristles for debris.



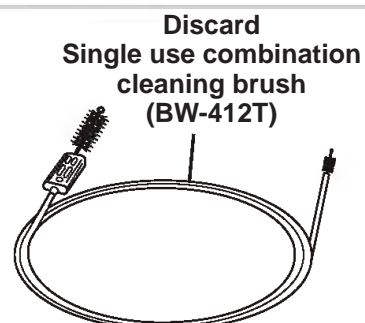
3. Clean the brush's bristles in the detergent solution using your gloved fingertips to remove any debris.



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



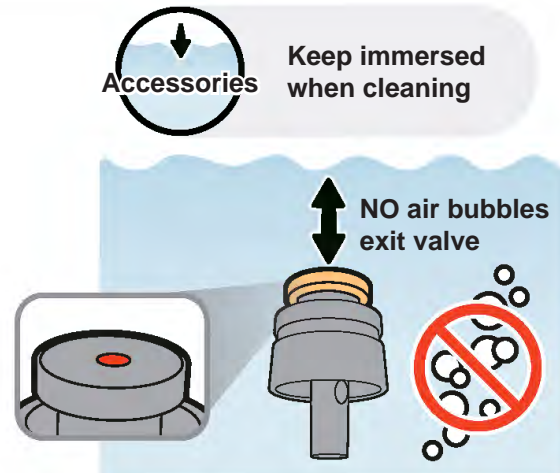
5. If you used the single use combination cleaning brush (BW-412T), discard the brush into a biohazard container.



## 6.2.4 Flush the accessories with detergent solution

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

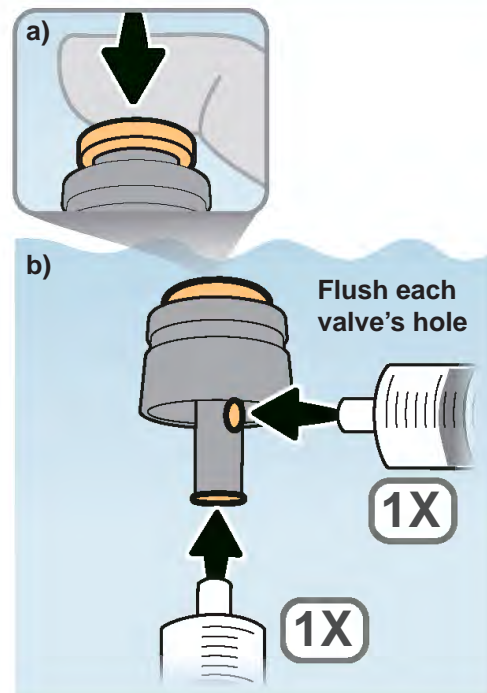
1. Keeping the suction valve (with the red mark) immersed in the detergent solution, depress and release the valve's piston several times until no air bubbles exit the valve.



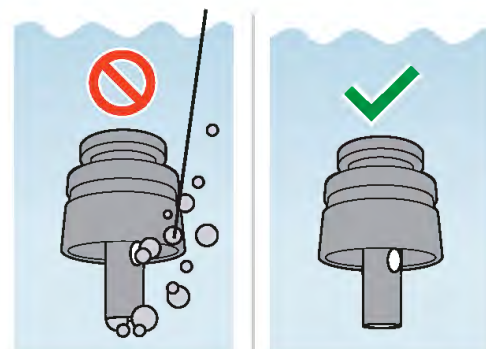
2. Immerse a clean 30 mL syringe and the suction valve in the detergent solution and flush the valve's holes, as follows:

- a) Depress the suction valve's piston;
- b) Flush each hole with 30 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.**



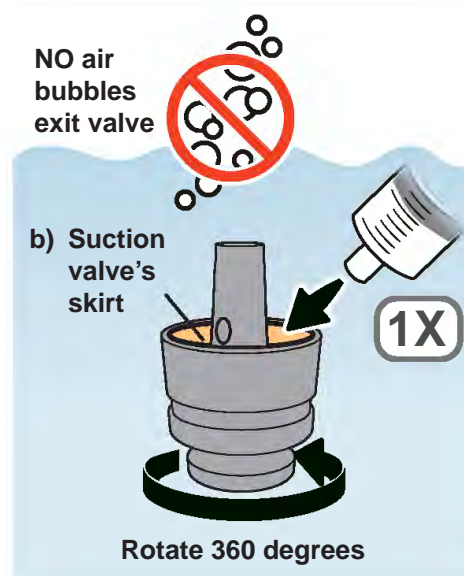
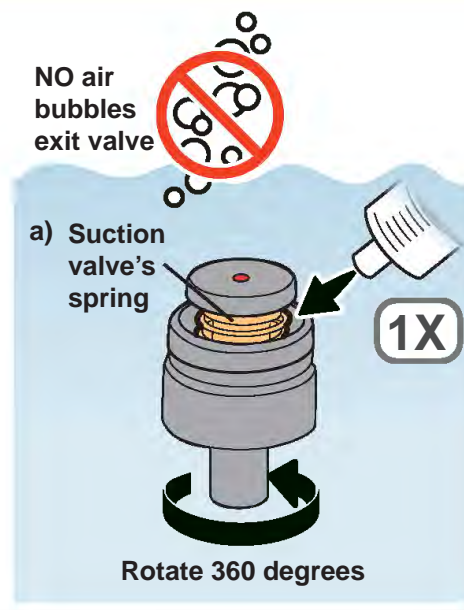
- c) NO air bubbles should exit



**3.** Keeping the 30 mL syringe and the suction valve immersed, continuously rotate the valve 360 degrees while flushing the valve, as follows:

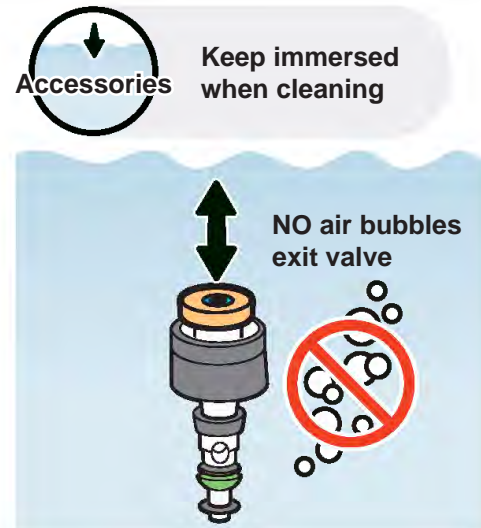
- a) Flush the valve's spring with 30 mL of the detergent solution and confirm that no air bubbles exit the valve;
- b) Flush the valve's skirt (i.e., underside) with 30 mL of the detergent solution and confirm that no air bubbles exit the valve.

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



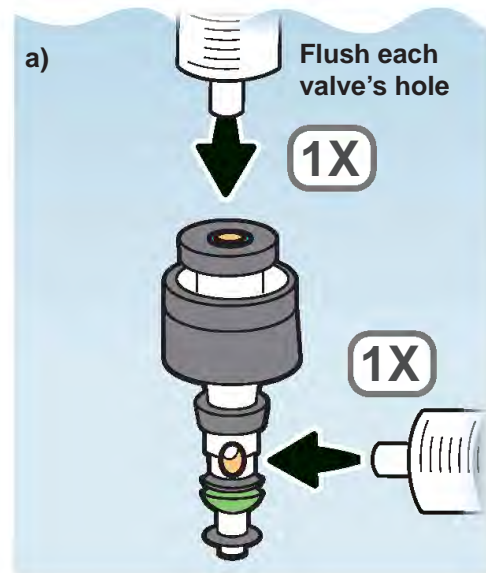
## 6.2.4.2 Flush the air/water valve (MH-438)

1. 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.

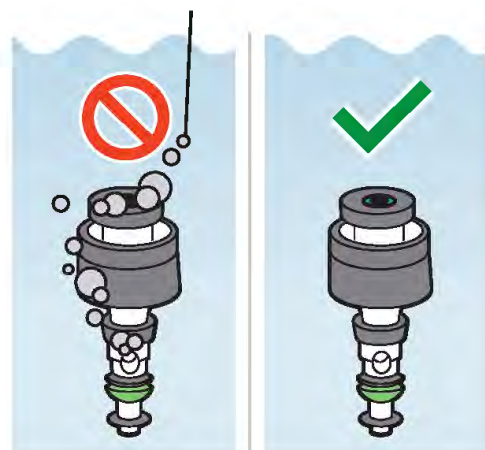


2. Keeping the 30 mL syringe and the air/water valve immersed, flush the valve's holes, as follows:
  - a) Flush each hole with 30 mL of the detergent solution;
  - b) Confirm that no air bubbles exit the valve during the flush.

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



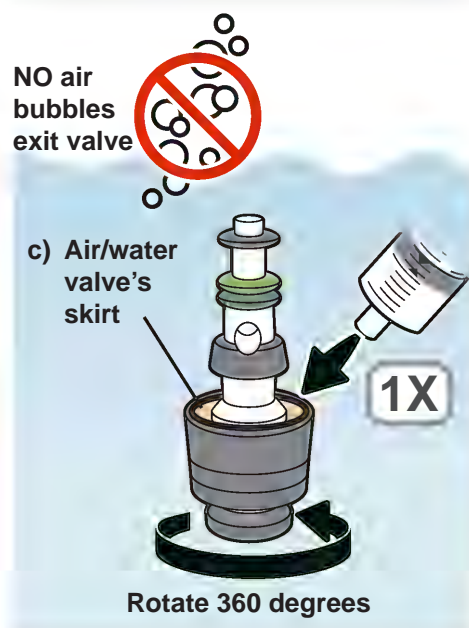
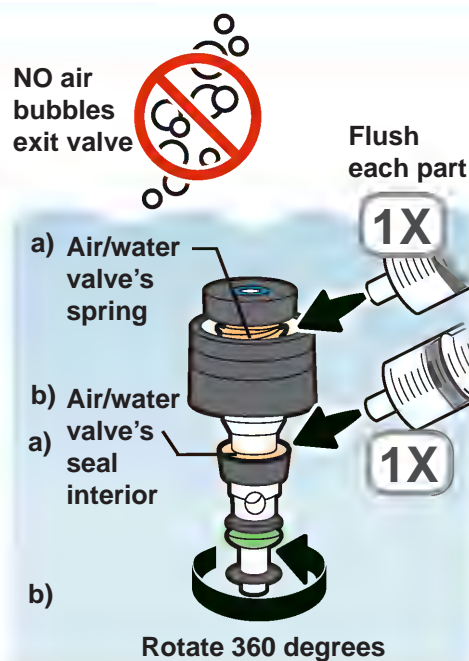
- b) NO air bubbles should exit



**3.** 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 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.**



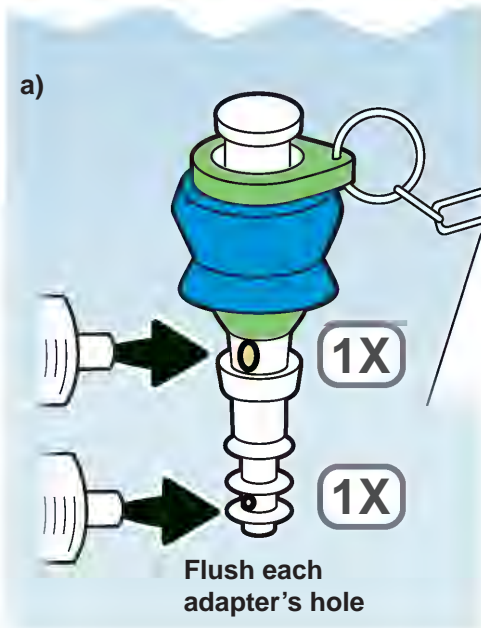
### 6.2.4.3 Flush the AW channel cleaning adapter (MH-948)

1. 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.

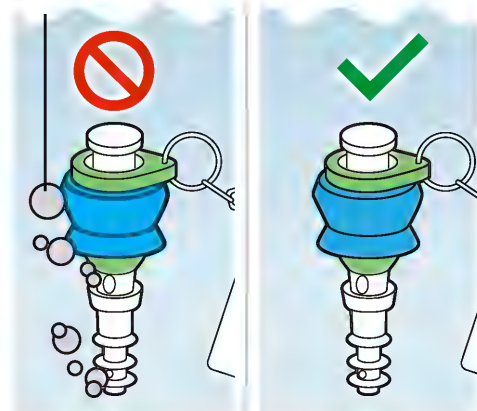


2. Keeping the 30 mL syringe and the adapter immersed, flush the adapter's holes, as follows:
  - a) Flush each hole with 30 mL of the detergent solution;
  - b) Confirm that no air bubbles exit the adapter during the flush.

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



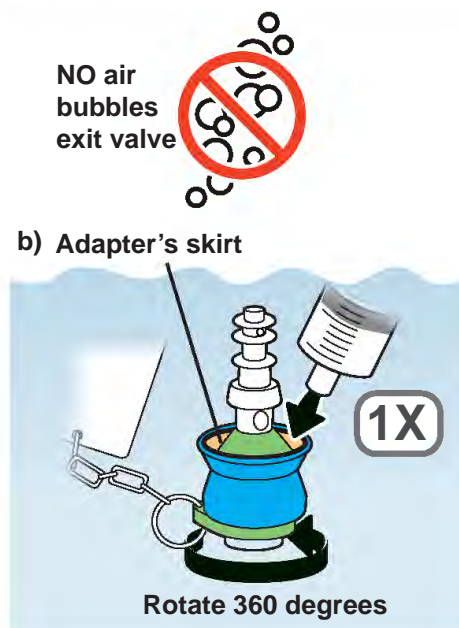
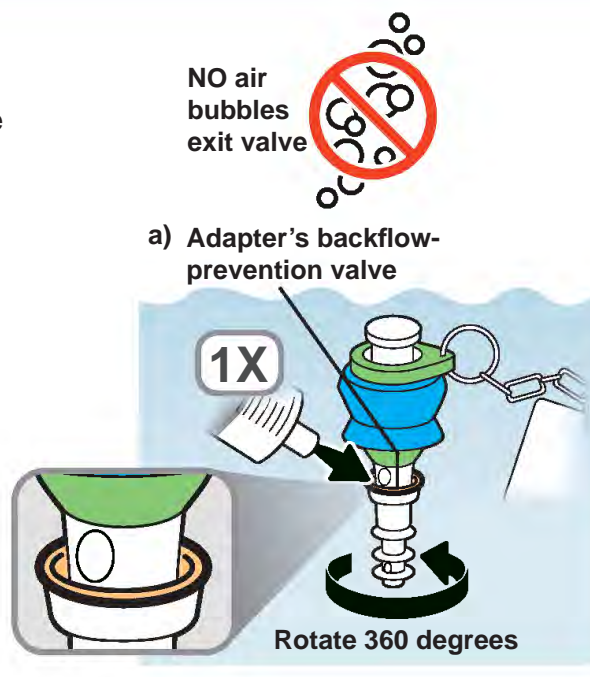
**b) NO air bubbles should exit**



**3.** 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 backflow-prevention 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.**

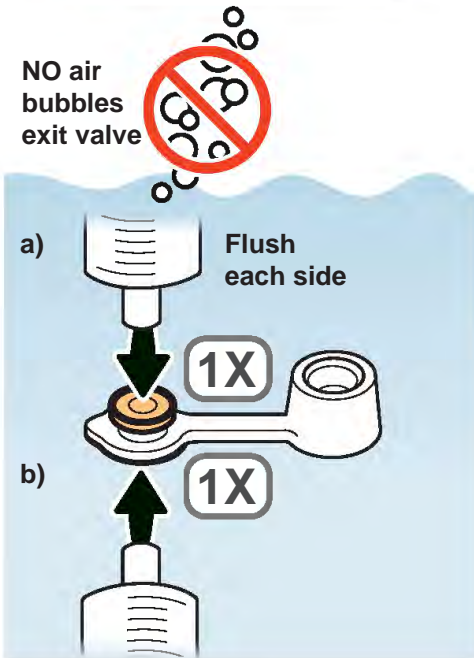
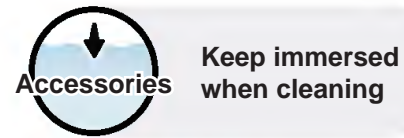


## 6.2.4.4 Flush the biopsy valve (MB-358)

1. 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.

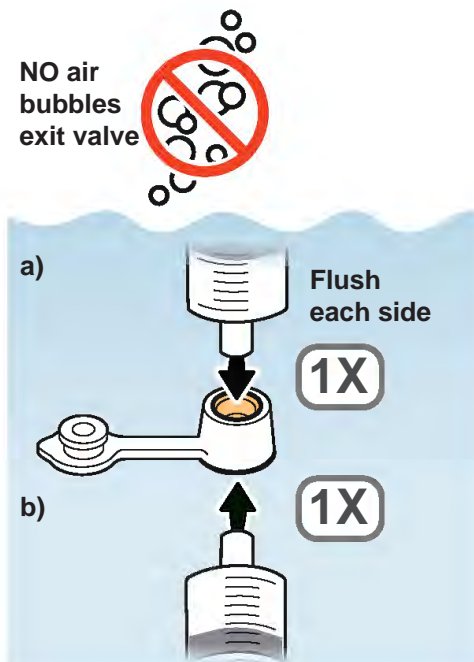
**If air bubbles exit, flush the part where air bubbles exit with 30 mL of the detergent solution until no air bubbles exit.**



2. 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.

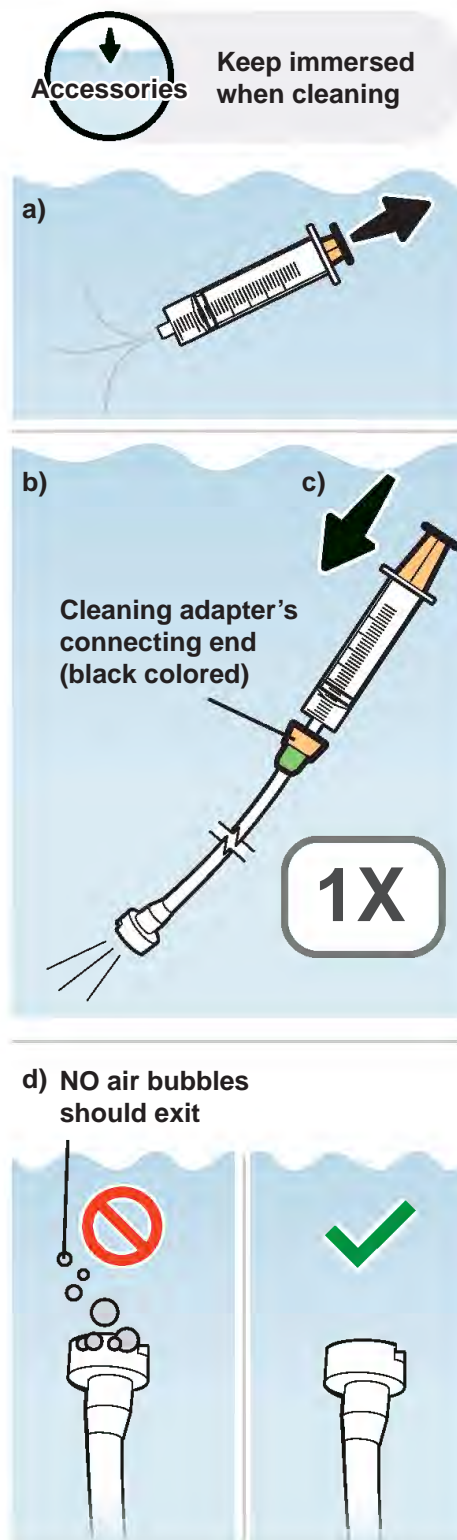
**If air bubbles exit, flush the part where air bubbles exit with 30 mL of the detergent solution until no air bubbles exit.**



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

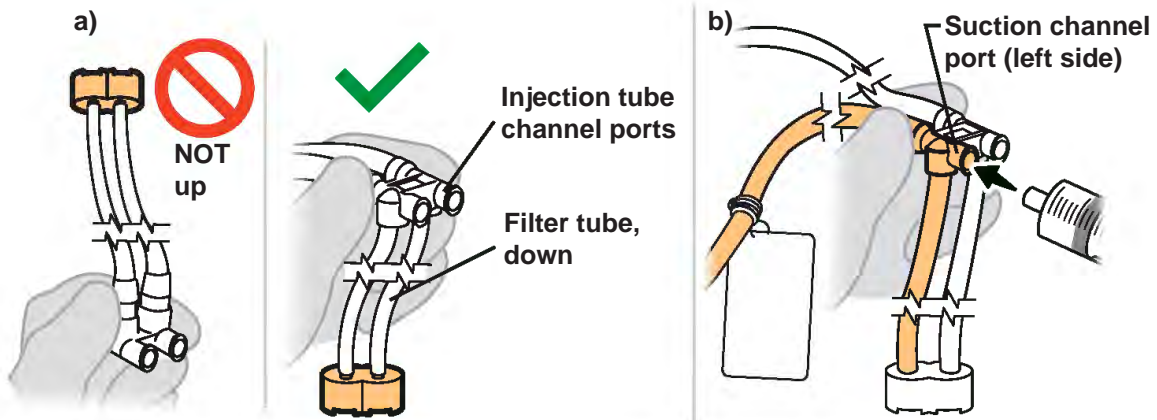
1. Keeping the 30 mL syringe and the suction cleaning adapter immersed, flush the adapter with 30 mL of the detergent solution, as follows:
  - a) **Before attaching the syringe to the cleaning adapter's connecting end** (so that you do not pull any air into the syringe that might be inside the cleaning 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.**



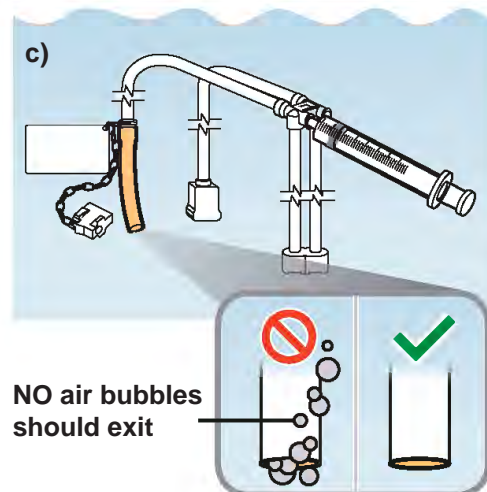
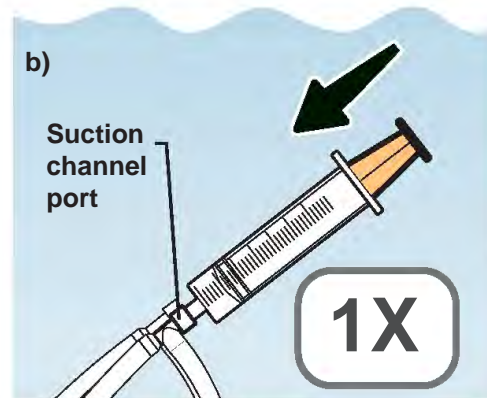
## 6.2.4.6 Flush the injection tube (MH-946)

1. 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).

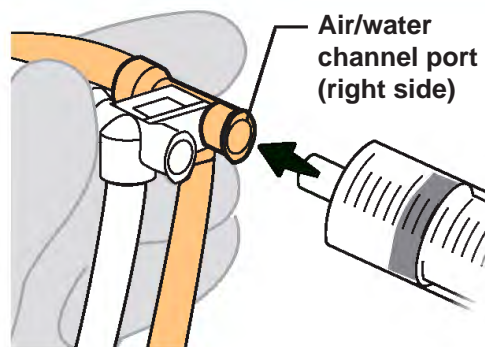


2. Keeping the 30 mL syringe and the injection tube attached and immersed, flush the suction channel tube with 30 mL of the detergent solution, as follows:
  - a) Slowly pull the syringe plunger to fill the syringe with the detergent solution;
  - b) Then forcefully flush with 30 mL of the detergent 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.**

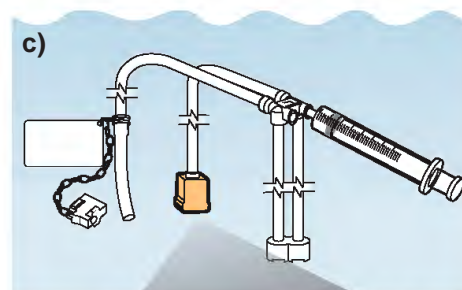
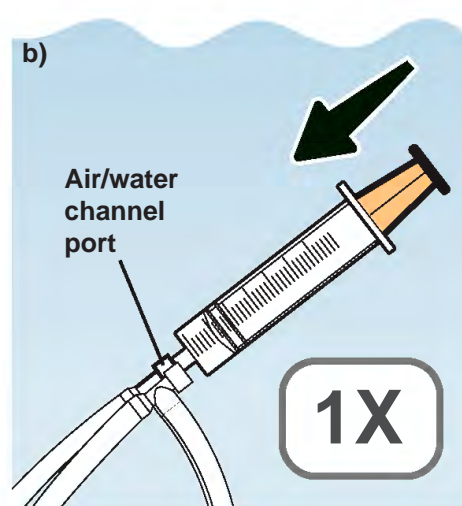


- 3.** Move the syringe from the suction channel port to the injection tube's air/water channel port (port on the right).



- 4.** 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:
- Slowly pull the syringe plunger to fill the syringe with the detergent solution;
  - Then forcefully flush with 30 mL of the detergent solution;
  - 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.**



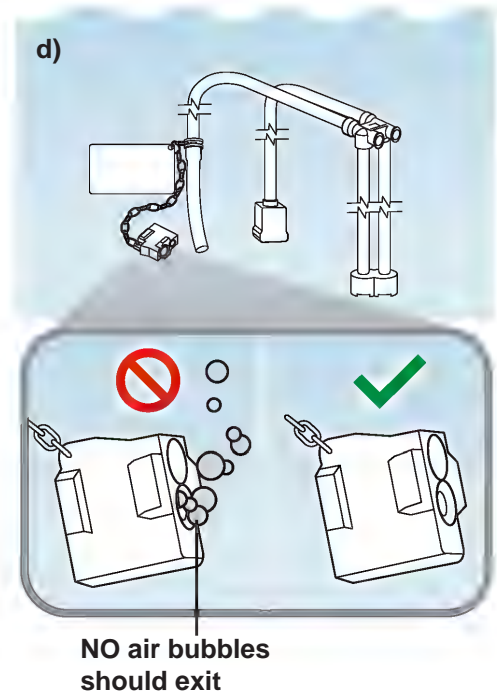
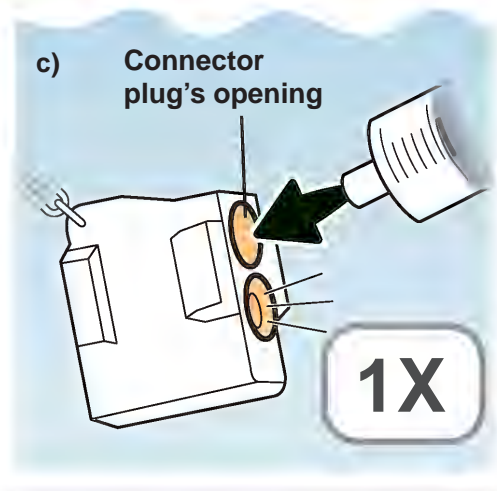
**NO air bubbles should exit**

**5.**

Keeping the 30 mL syringe and the connector plug immersed, flush the connector plug with 30 mL of the detergent solution, as follows:

- Slowly pull the syringe plunger to fill the syringe with the detergent solution;
- Press the syringe tip to one side of the connector plug's opening;
- Then forcefully flush with 30 mL of the detergent solution;
- Confirm that no air bubbles exit from the other side of the connector plug's opening during the flush.

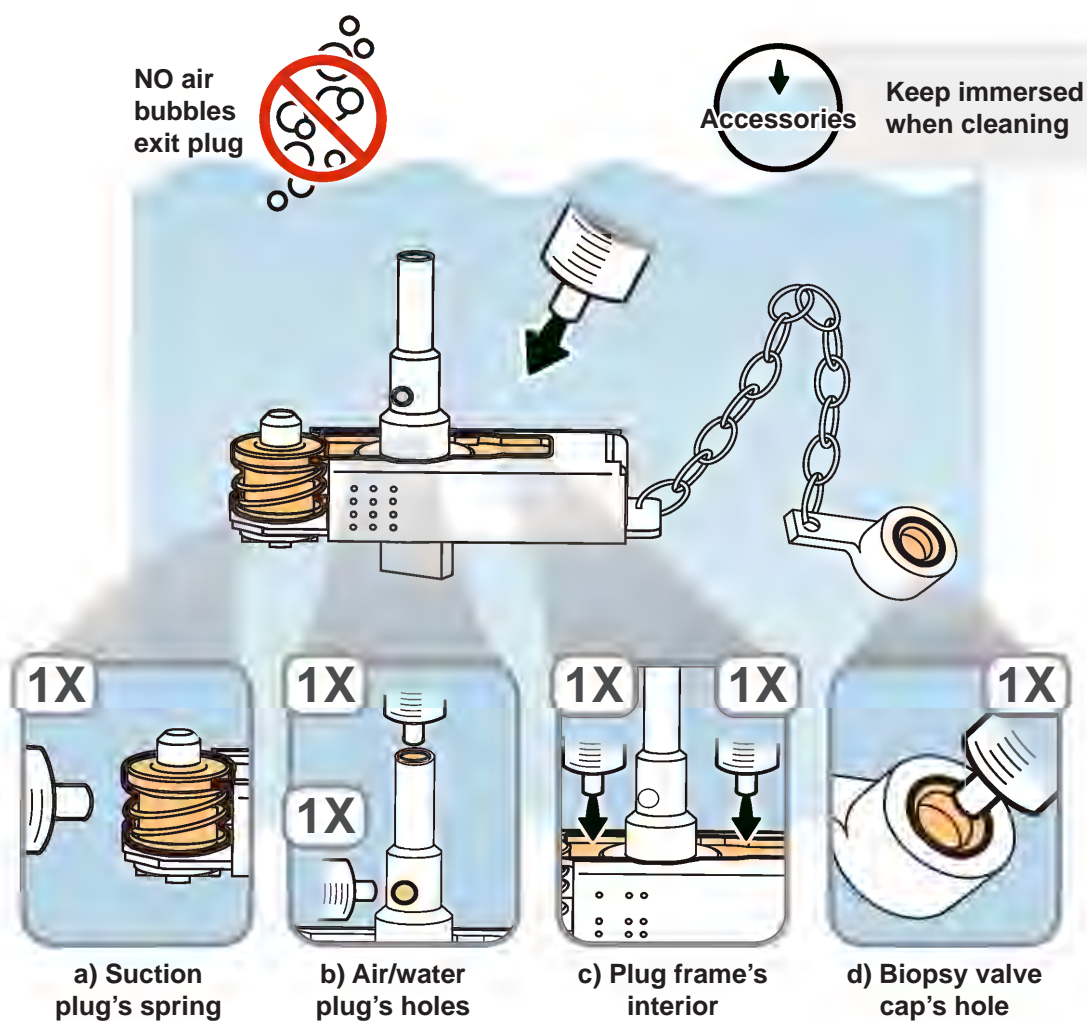
**If air bubbles exit, repeat Step 5 until no air bubbles exit.**



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

1. 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.

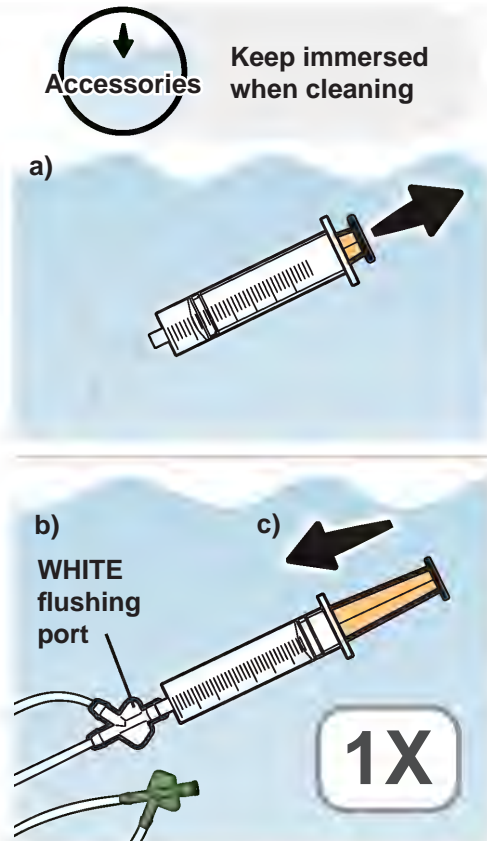
If air bubbles exit, flush the part where air bubbles exit with 30 mL of the detergent solution until no air bubbles exit.



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

1. 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:

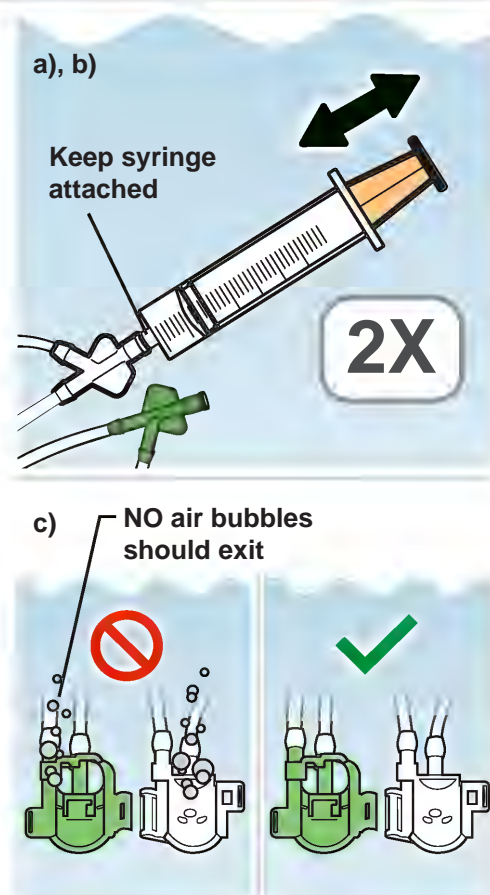
- Before attaching the syringe to the white flushing port** (so that you do not pull any air into the syringe that might be inside the flushing tube), slowly pull the syringe plunger to fill the syringe with detergent solution;
- Attach it to the white flushing port of the distal-end flushing adapter;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



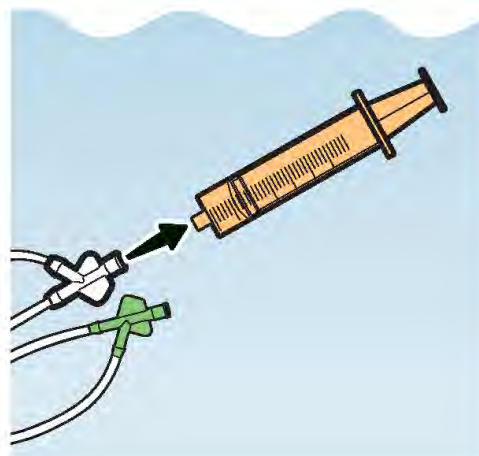
2. Keeping the 30 mL syringe and the distal-end flushing adapter attached and immersed, flush an additional 60 mL of the detergent solution through the WHITE flushing port, as follows:

- Slowly pull the syringe plunger to fill the syringe with detergent solution;
- Then forcefully flush the distal-end flushing adapter with 30 mL of the detergent solution;
- 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.

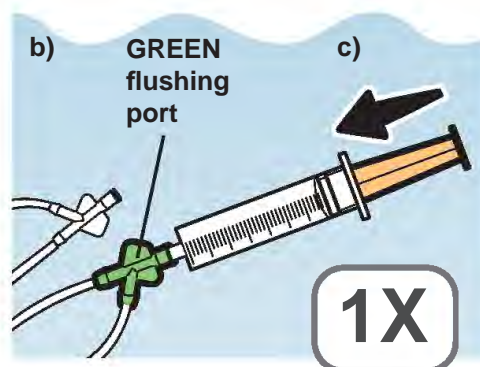


3. Detach the syringe from the distal-end flushing adapter.



4. 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:

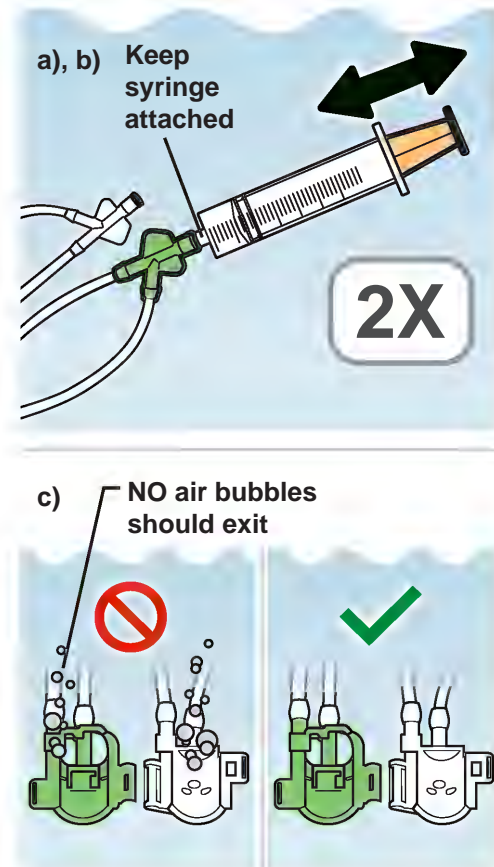
- Before attaching the syringe to the green flushing port** (so that you do not pull any air into the syringe that might be inside the flushing tube), slowly pull the syringe plunger to fill the syringe with detergent solution;
- Attach it to the green flushing port of the distal-end flushing adapter;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



**5.** 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 distal-end 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.**

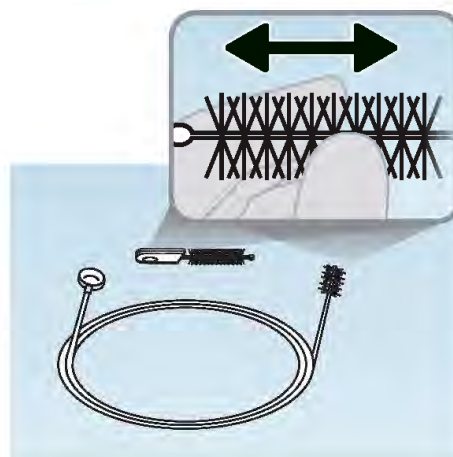


### 6.2.4.9 Clean the brushes

1.

Clean the brushes as follows:

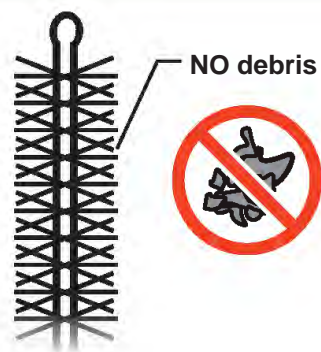
- a) Keep the channel cleaning brush (BW-20T) and the channel-opening cleaning brush (MH-507) completely immersed in the detergent solution;
- b) Clean the brush's bristles in the detergent solution using your gloved fingertips to remove any debris.



2.

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

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

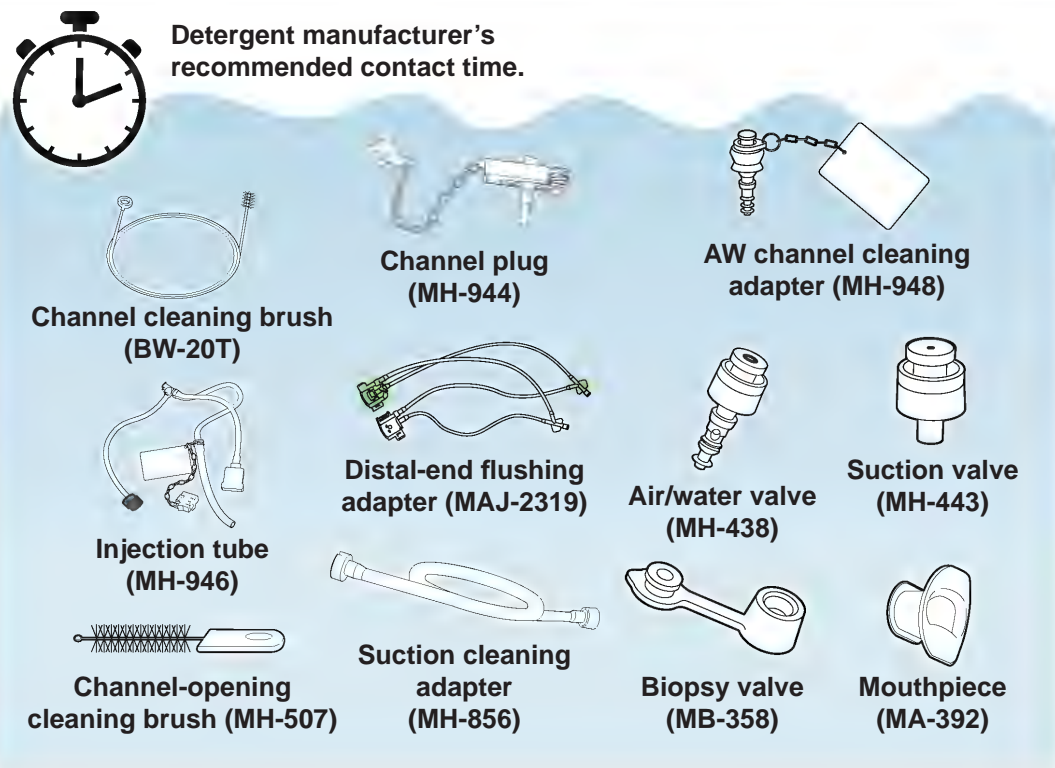


### 6.2.5 Immerse the accessories in detergent solution

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

#### NOTE

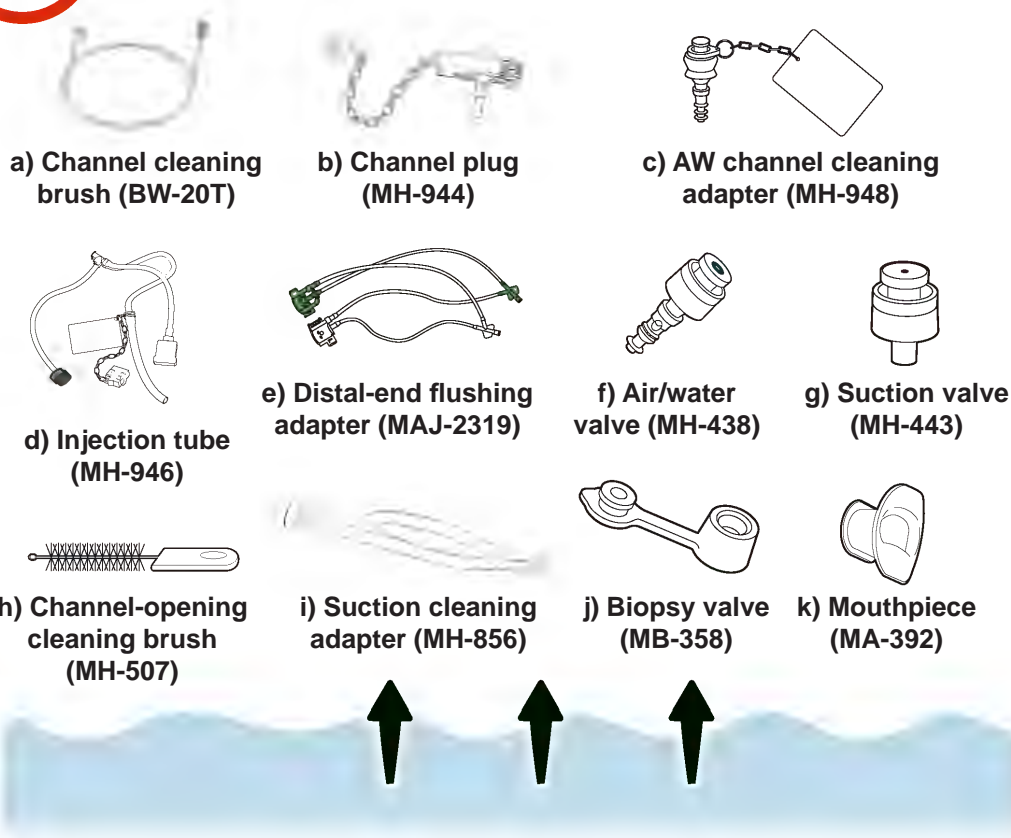
Use a clock or a timer to accurately measure the detergent contact time.



- 2.** 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).

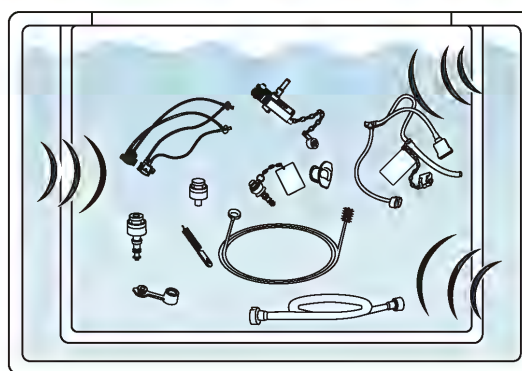


No debris on any surfaces:



- 3.** 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)”.



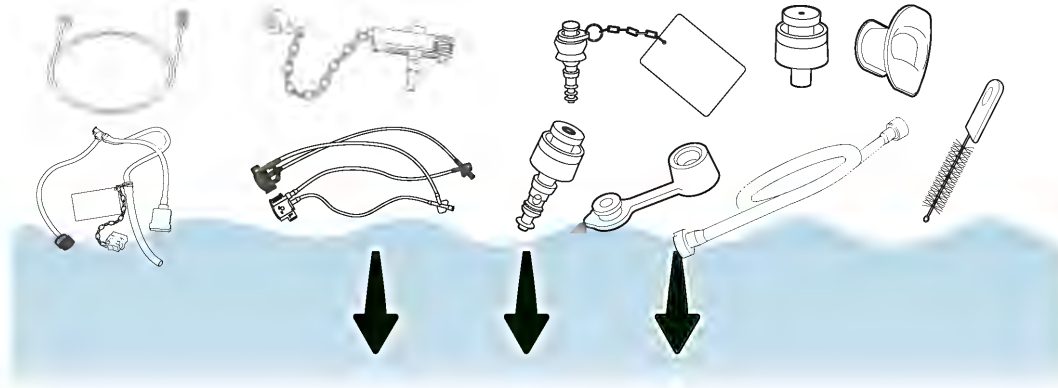
## 6.2.6 Remove detergent solution from all accessories

### 6.2.6.1 Immerse the accessories in water

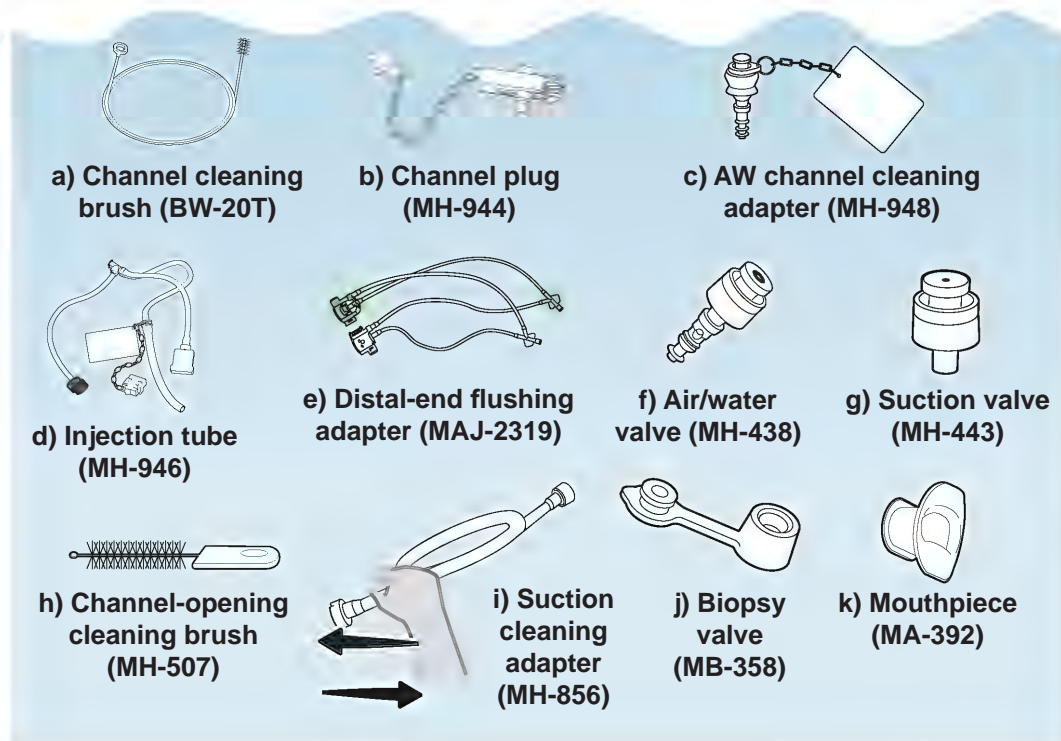
1. Fill a clean basin with water (for reprocessing).



2. Completely immerse all accessories in the water.



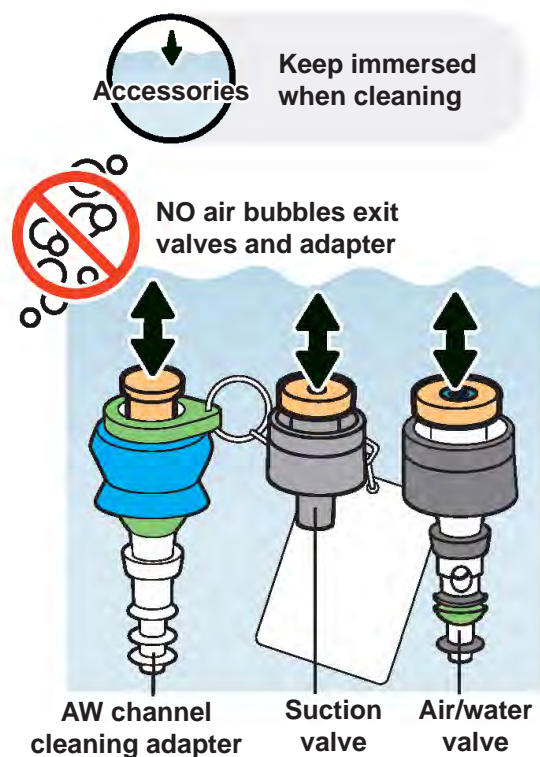
3. Gently move the accessories (i.e., eleven items from a) through k) as shown below) back and forth in the water to thoroughly rinse the detergent solution from the external surfaces of the accessories.



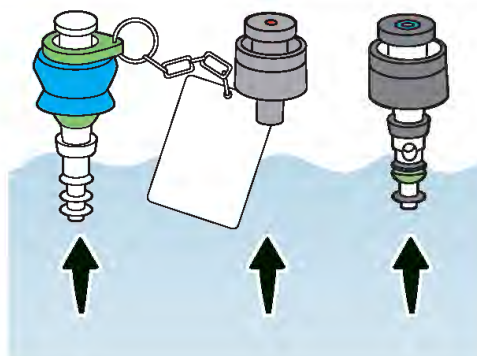
### 6.2.6.2 Depress and release the valves

1. 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.



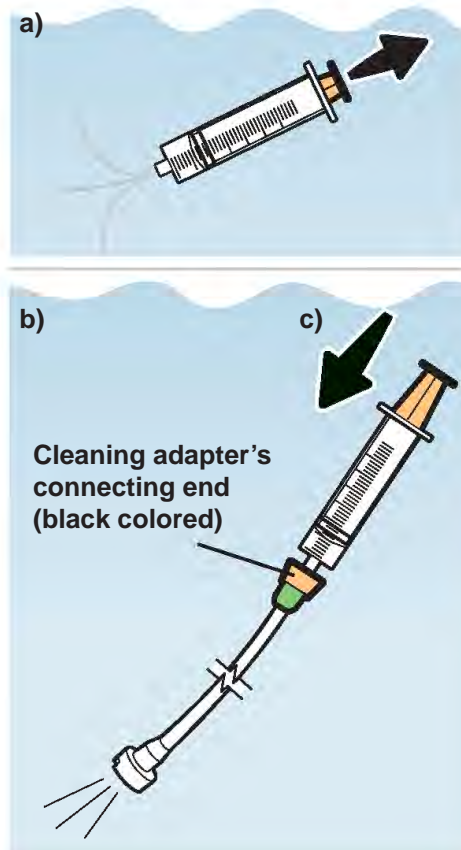
2. Remove the valves from the water.



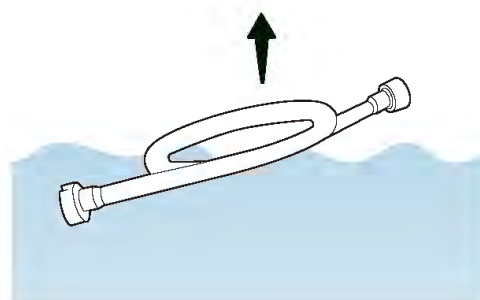
## 6.2.6.3 Flush the suction cleaning adapter (MH-856)

1. Keeping the 30 mL syringe and the suction cleaning adapter immersed, flush the cleaning adapter with 30 mL of water, as follows:

- 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;
- Hold the syringe against the cleaning adapter's connecting end (black colored);
- Then forcefully flush the cleaning adapter with 30 mL of the water.



2. Remove the suction cleaning adapter from the water.

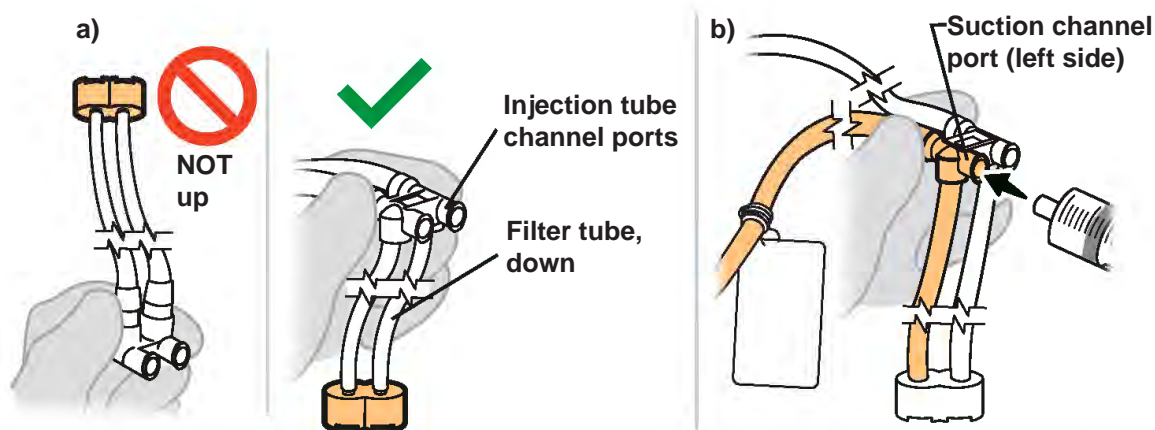


3. Tilt the adapter to expel any remaining water.

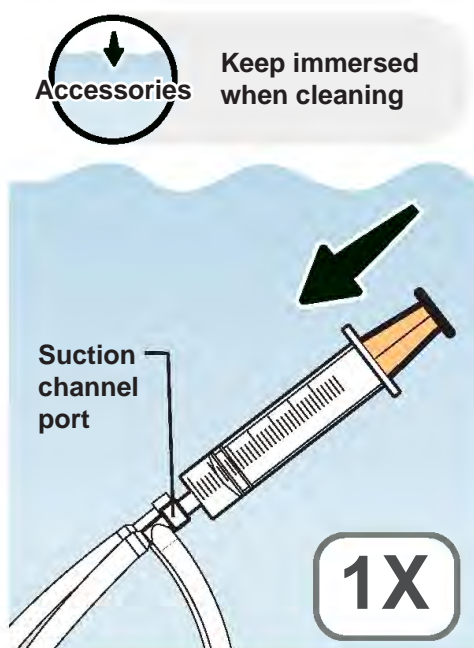


### 6.2.6.4 Flush the injection tube (MH-946)

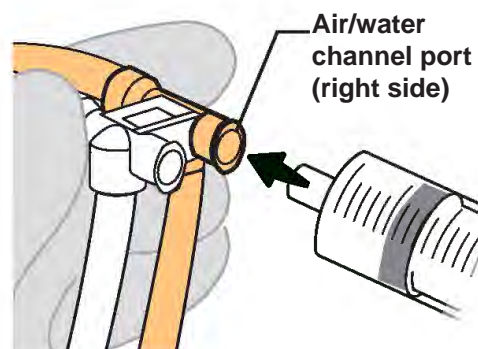
1. Attach the 30 mL syringe to the injection tube's suction channel port, as follows:
  - a) Hold the injection tube's channel ports so that the filter tube points down, NOT up;
  - b) Attach the syringe to the suction channel port (the left side port).



2. 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.



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



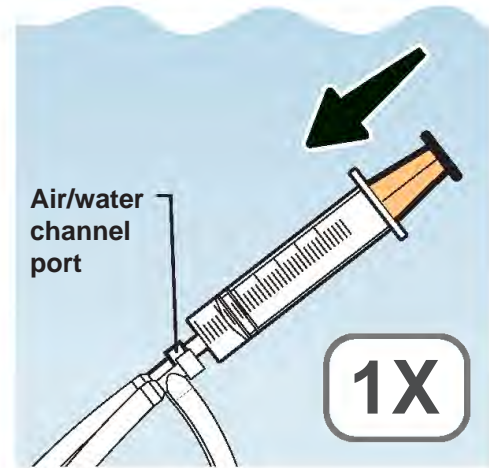
## 6.2 Manually clean the accessories

5. Immerse accessories

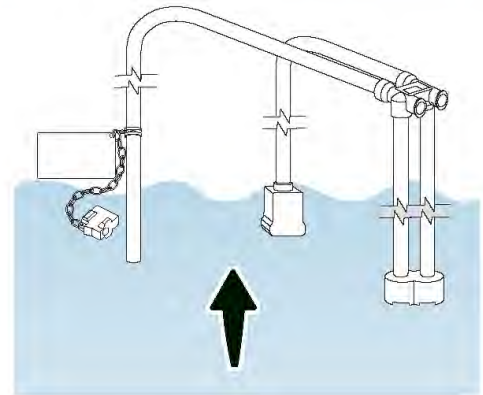
6. Remove detergent

7. Dry external surfaces

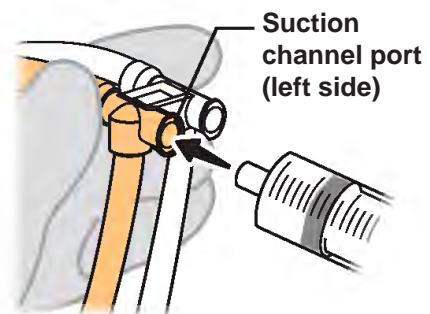
- 4.** Keeping the 30 mL syringe and injection tube attached and immersed, flush the air/water channel tube with 30 mL of the water, as follows:
- Slowly pull the syringe plunger to fill the syringe with the water;
  - Then forcefully flush with 30 mL of the water.



- 5.** Remove the injection tube from the water.

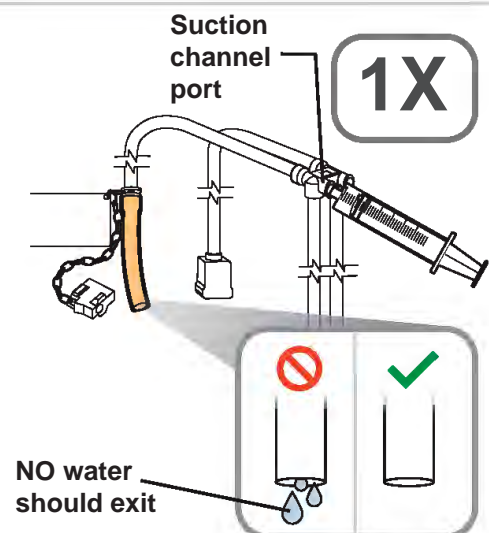


- 6.** Move the syringe to the injection tube's suction channel port (the left side port).

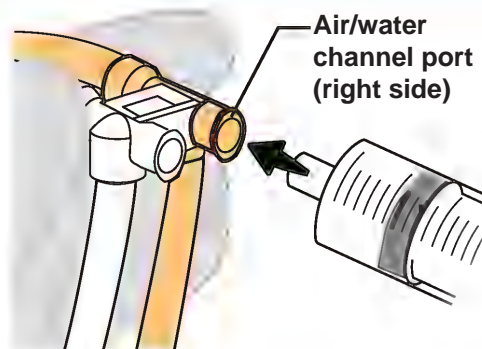


- 7.** Keeping the 30 mL syringe attached, flush the suction channel tube with 30 mL of air, as follows:
- Slowly pull the syringe plunger to fill the syringe with air;
  - Then forcefully flush 30 mL of air and confirm that no water exits from the tube during the flush.

**If water exits, repeat Step 7 until no water exits.**



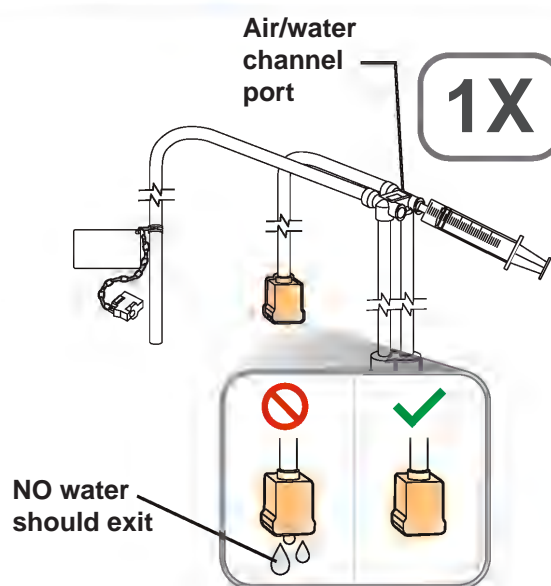
8. Move the syringe from the suction channel port to the injection tube's air/water channel port (port on the right).



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.

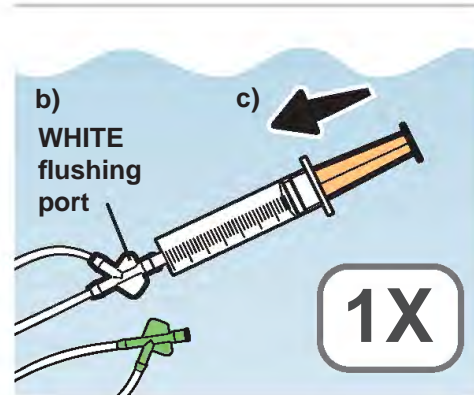
**If water exits, repeat Step 9 until no water exits.**



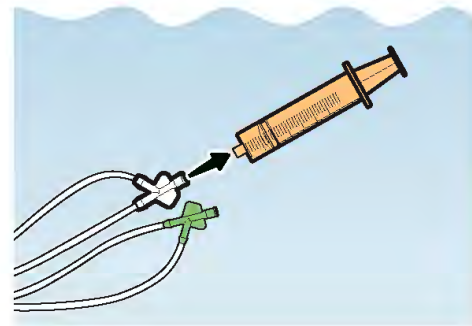
### 6.2.6.5 Flush the distal-end flushing adapter (MAJ-2319)

1. 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.

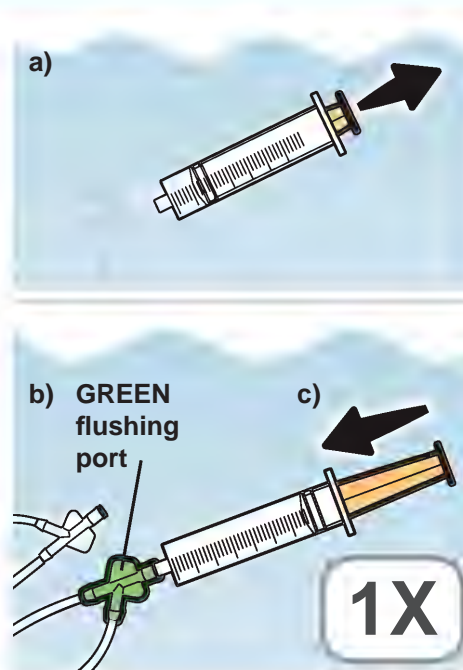


2. Detach the syringe from the distal-end flushing adapter.

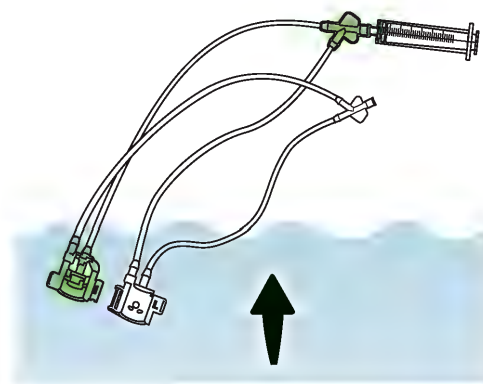


- 3.** Keeping the 30 mL syringe and the distal-end flushing adapter immersed, flush the adapter through the GREEN flushing port with 30 mL of the water, as follows:

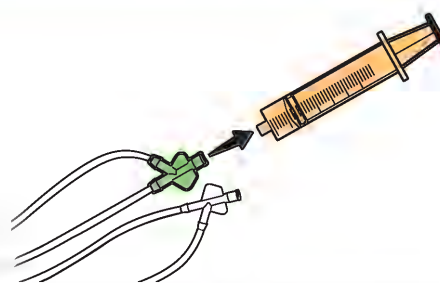
- a) **Before attaching the syringe to the green flushing port** (so that you do not pull any air into the syringe that might be inside the flushing tube), slowly pull the syringe plunger to fill the syringe with the water;
- b) Attach it to the green flushing port of the distal-end flushing adapter;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



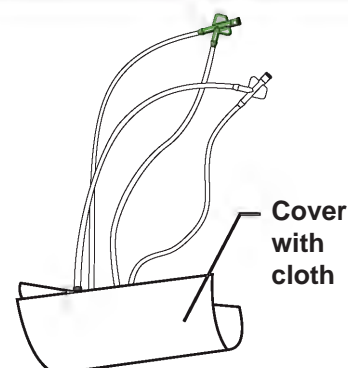
- 4.** Remove the distal-end flushing adapter from the water and place it in a clean basin.



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



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



## 6.2 Manually clean the accessories

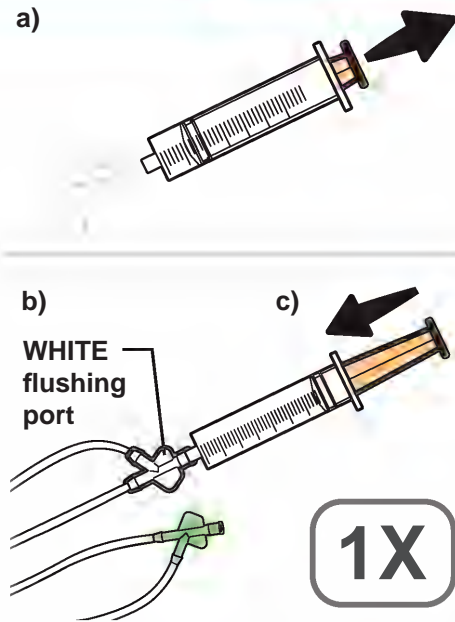
5. Immerse accessories

6. Remove detergent

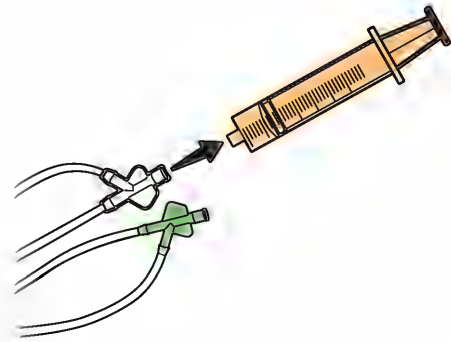
7. Dry external surfaces

**7.** Flush the adapter through the WHITE flushing port with 30 mL of air, as follows:

- 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;
- Attach it to the white flushing port of the distal-end flushing adapter;
- Then forcefully flush with 30 mL of air.

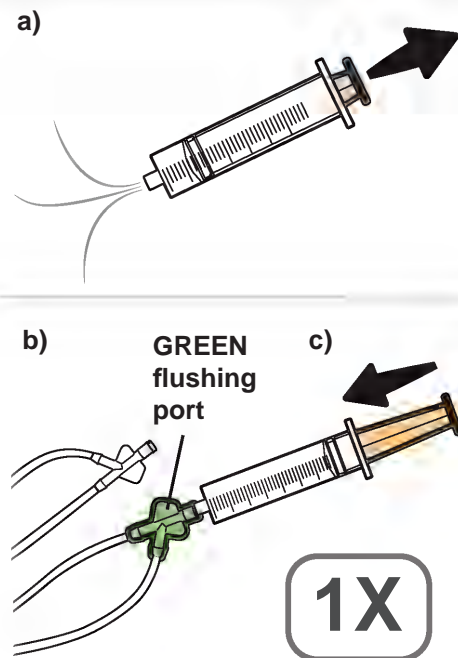


**8.** Detach the syringe from the flushing adapter's distal-end.

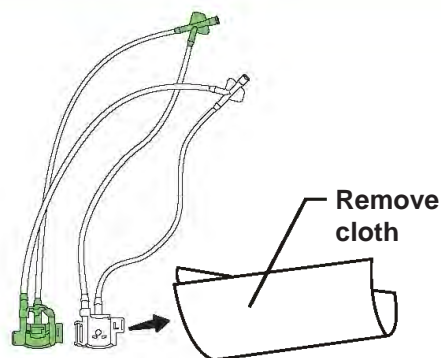


**9.** Flush the adapter through the GREEN flushing port with 30 mL of air, as follows:

- 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;
- Attach it to the green flushing port of the distal-end flushing adapter;
- Then forcefully flush with 30 mL of air.



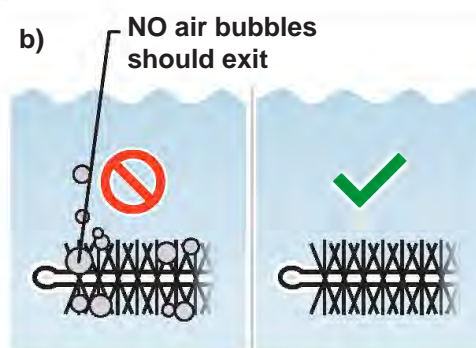
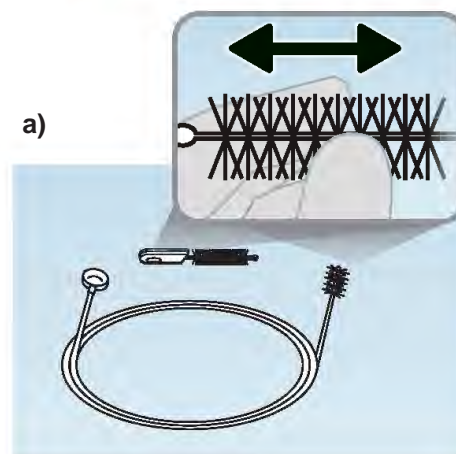
- 10.** Remove the cloths from the flushing adapter's distal-end.



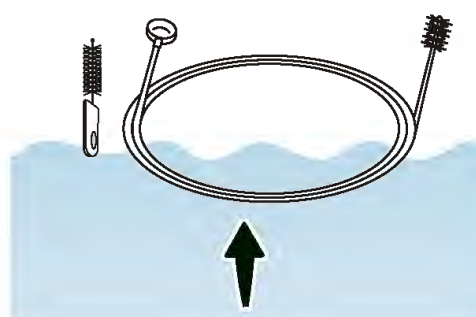
### 6.2.6.6 Rub the brushes

- 1.** Rub the brushes as follows:
- Keep the channel cleaning brush (BW-20T) and the channel-opening cleaning brush (MH-507) completely immersed in the water;
  - Rub the brushes' bristles in the water using your gloved fingertips and confirm that no air bubbles exit from the brush's bristles during the rubbing.

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

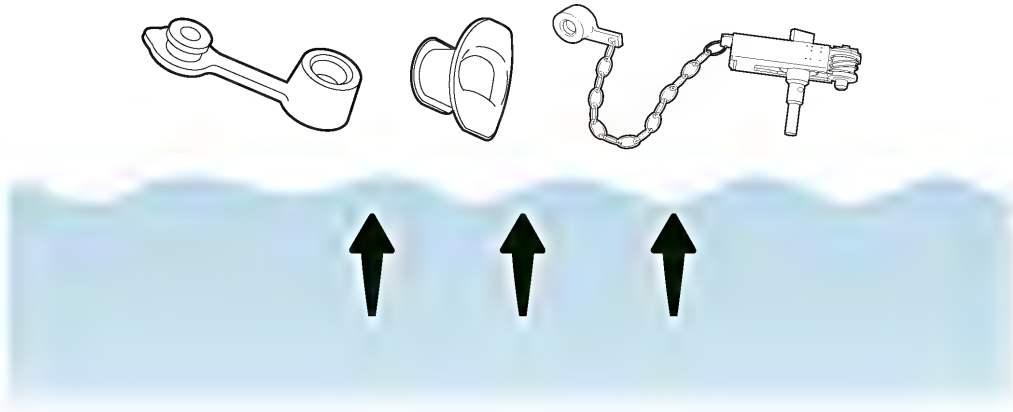


- 2.** Remove the brushes from the water.

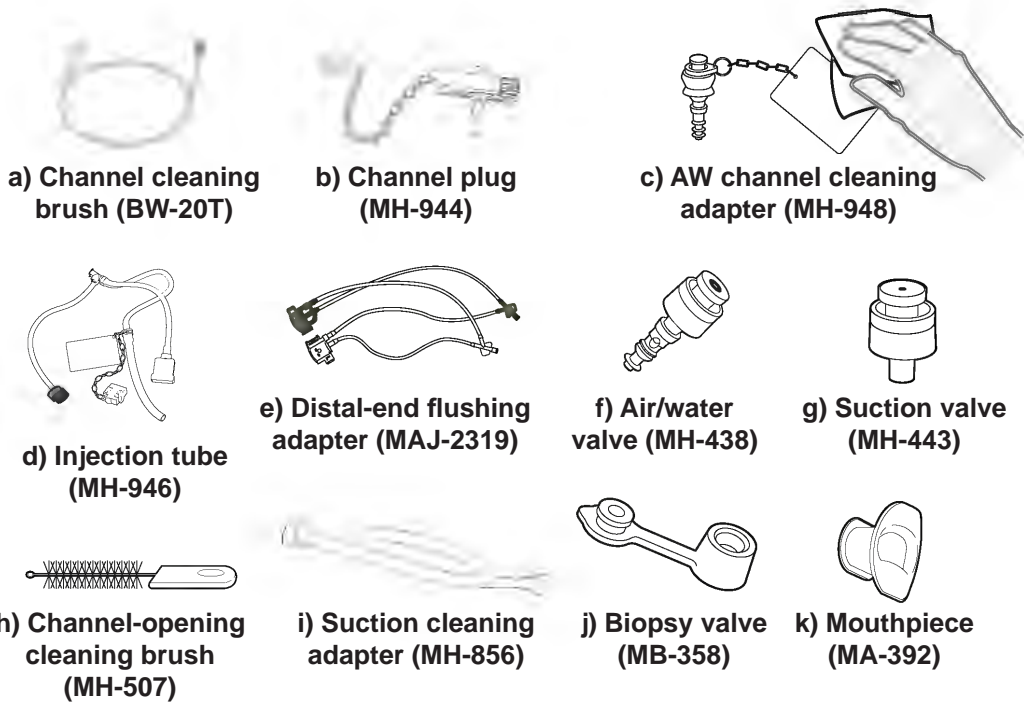


### 6.2.7 Dry the external surfaces

1. Remove all other accessories from the water.



2. Using clean lint-free cloths, wipe and dry the accessories' external surfaces (i.e., eleven items from a) through k) as shown below).



- 3.** 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.



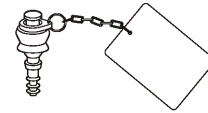
No debris on any surfaces:



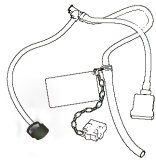
a) Channel cleaning brush (BW-20T)



b) Channel plug (MH-944)



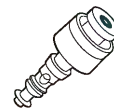
c) AW channel cleaning adapter (MH-948)



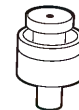
d) Injection tube (MH-946)



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

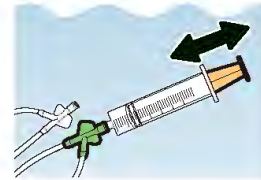
6.3.2 Prepare for manual disinfection



#### Flush the accessories

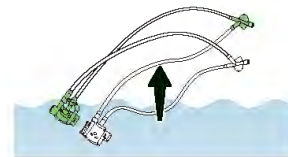
6.3.3 Flush the accessories with disinfectant solution

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\*<sup>1</sup>
- Clean basins or containers with tight-fitting 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 healthcare facility’s infection control committee regarding local policies or requirements regarding reprocessing equipment.

## 6.3.2 Prepare for manual disinfection

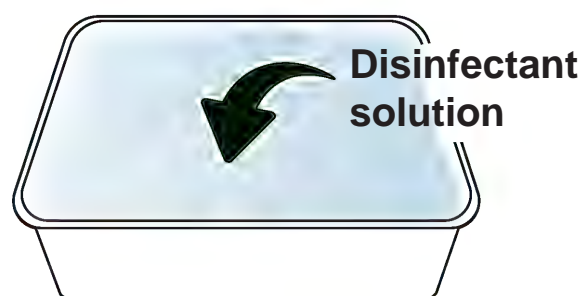
### WARNING



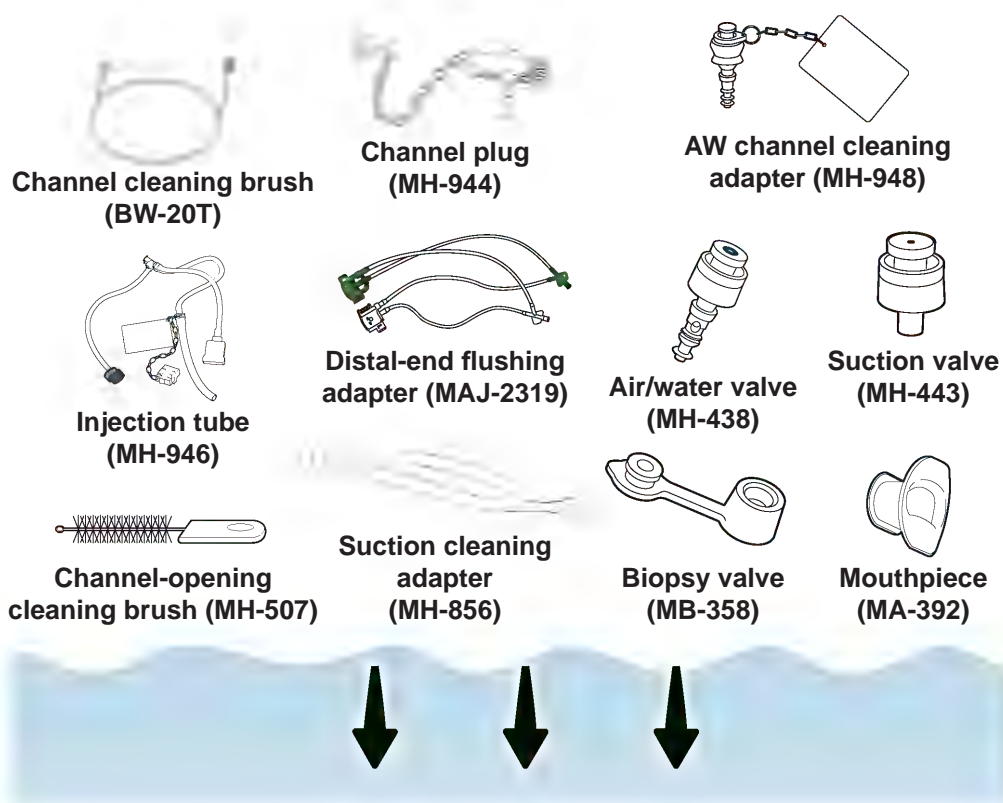
Once you immerse the endoscope's accessories, keep them immersed at all times when performing the disinfecting steps, unless the instructions state otherwise. Holding the accessories out of the fluid while disinfecting may pose an infection control risk.

1. 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.



2. Completely immerse all accessories in the disinfectant solution.



## 6.3 Manually disinfect the accessories

2. Prepare for manual disinfection

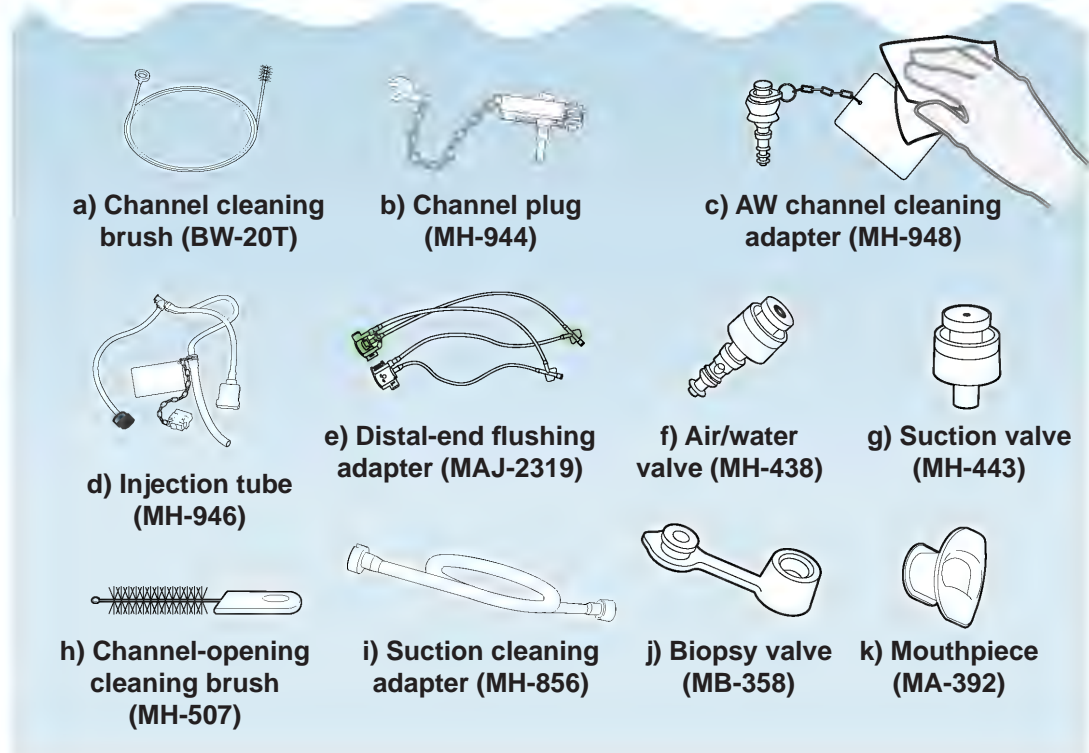
3. Flush accessories

4. Immerse accessories

# 3.

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.

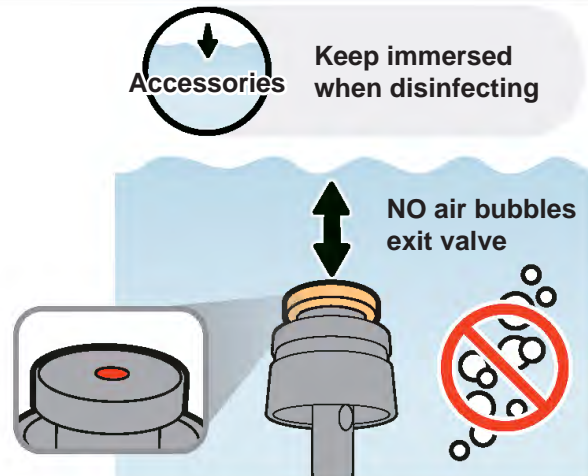
 Accessories  
Keep immersed when disinfecting



## 6.3.3 Flush the accessories with disinfectant solution

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

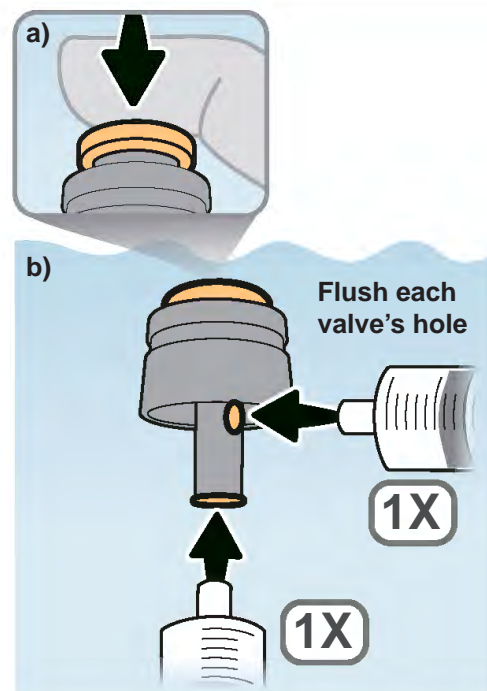
1. Keeping the suction valve (with the red mark) immersed in the disinfectant solution, depress and release the valve's piston several times until no air bubbles exit the valve.



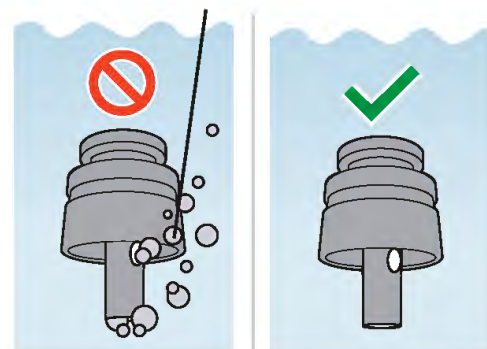
2. Immerse a clean 30 mL syringe and the suction valve in the disinfectant solution and flush the valve's holes, as follows:

- a) Depress the suction valve's piston;
- b) Flush each hole with 30 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



## 6.3 Manually disinfect the accessories

2. Prepare for manual disinfection

3. Flush accessories

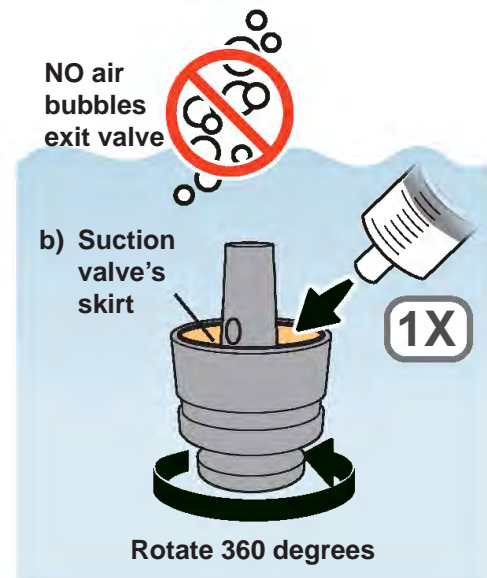
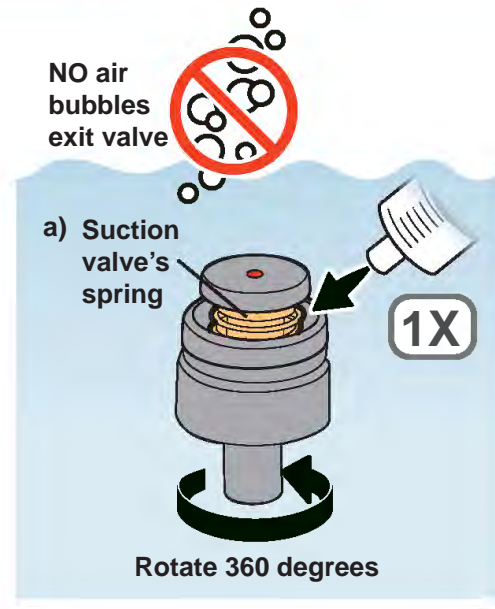
4. Immerse accessories

### 3.

Keeping the 30 mL syringe and the suction valve immersed, continuously rotate the valve 360 degrees while flushing the valve, as follows:

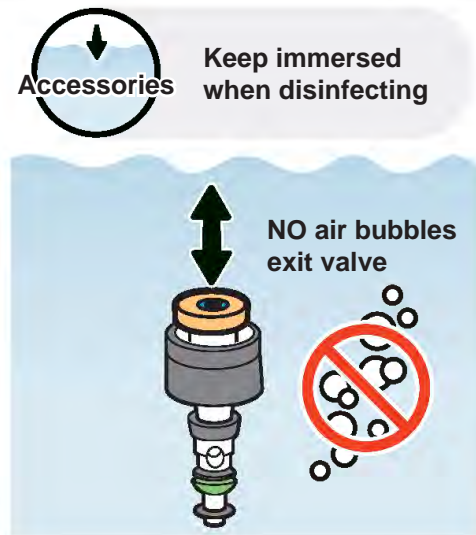
- Flush the valve's spring with 30 mL of the disinfectant solution and confirm that no air bubbles exit the valve;
- Flush the valve's skirt (i.e., underside) with 30 mL of the disinfectant solution and confirm that no air bubbles exit the valve.

**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)

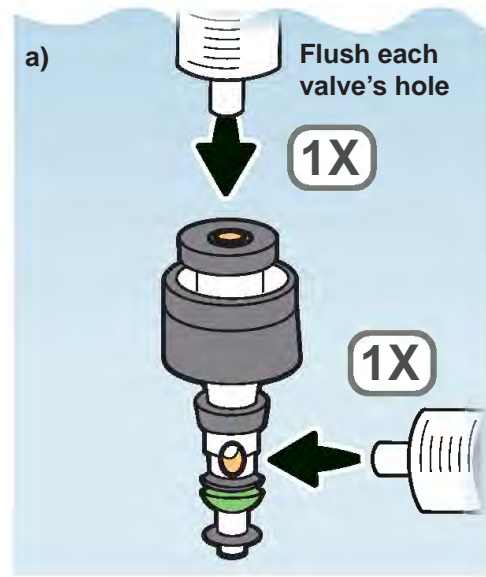
1. Keeping the air/water valve (with the blue mark) immersed in the disinfectant solution, depress and release the valve's piston several times until no air bubbles exit the valve.



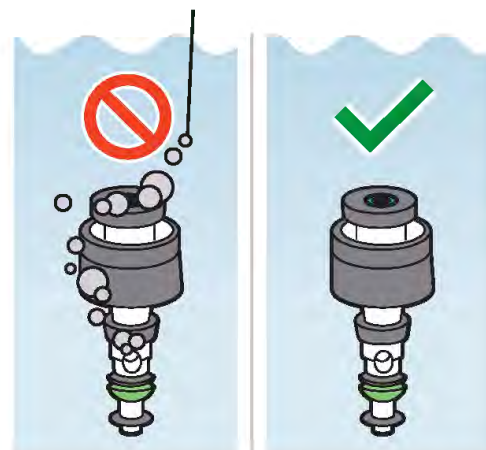
2. Keeping the 30 mL syringe and the air/water valve immersed, flush the valve's holes, as follows:

- 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



## 6.3 Manually disinfect the accessories

2. Prepare for manual disinfection

3. Flush accessories

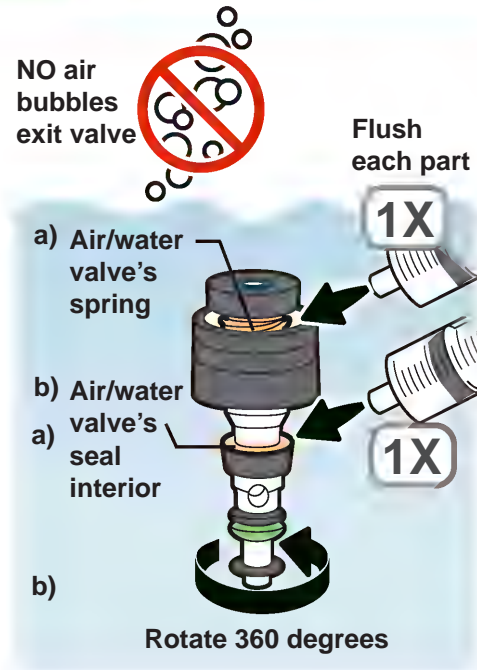
4. Immerse accessories

### 3.

Keeping the 30 mL syringe and the air/water valve immersed, continuously rotate the valve 360 degrees while flushing the valve, as follows:

- Flush the valve's spring with 30 mL of the disinfectant solution and confirm that no air bubbles exit the valve;
- Flush the valve's seal interior with 30 mL of the disinfectant solution and confirm that no air bubbles exit the valve;
- 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.**



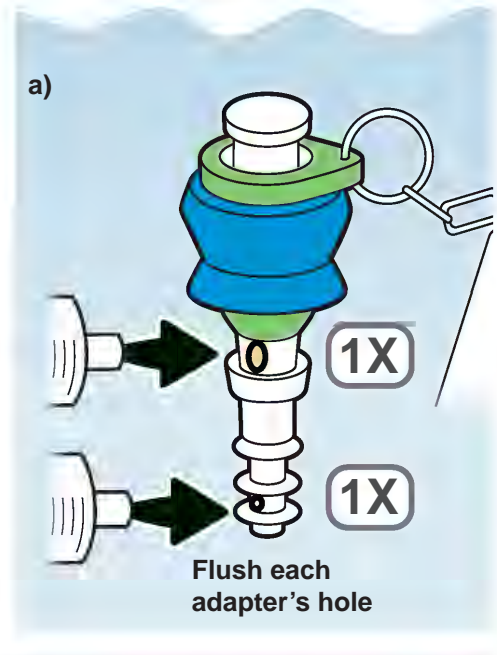
### 6.3.3.3 Flush the AW channel cleaning adapter (MH-948)

1. 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.

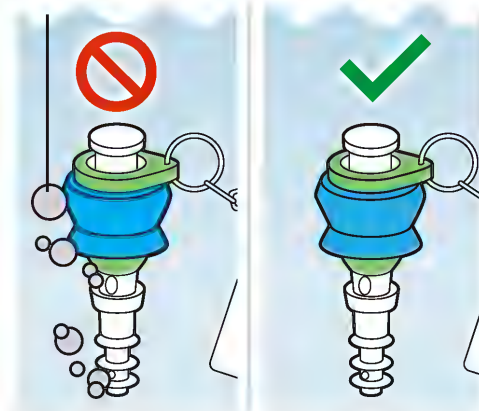


2. Keeping the 30 mL syringe and the adapter immersed, flush the adapter's holes, as follows:
  - a) Flush each hole with 30 mL of the disinfectant solution;
  - b) Confirm that no air bubbles exit from the adapter during the flush.

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



- b) NO air bubbles should exit



## 6.3 Manually disinfect the accessories

2. Prepare for manual disinfection

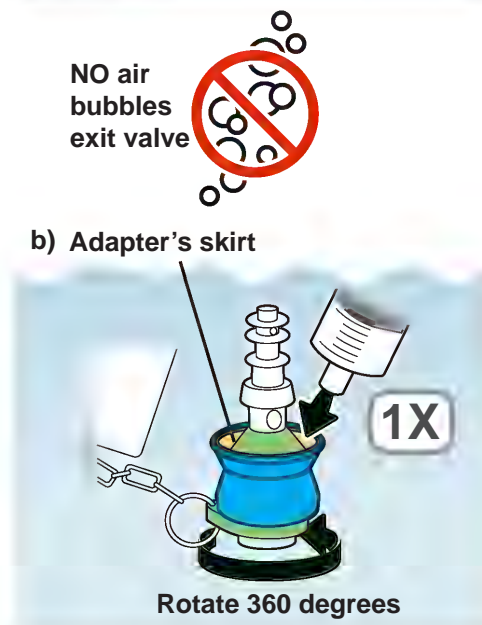
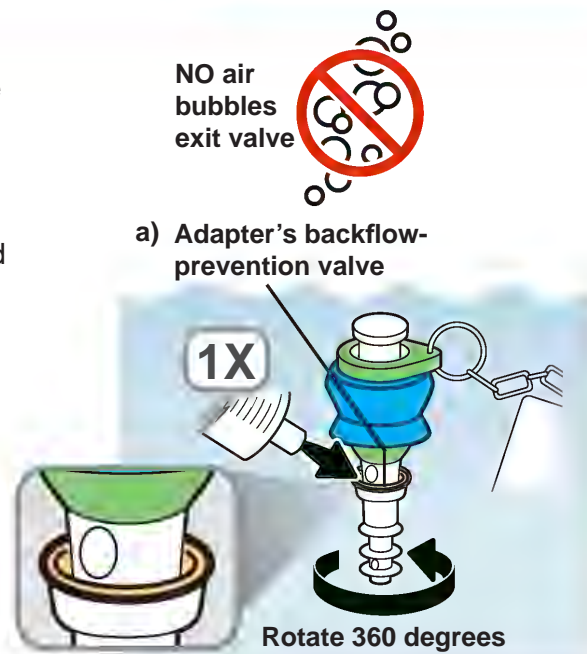
3. Flush accessories

4. Immerse accessories

**3.** Keeping the 30 mL syringe and the adapter immersed, continuously rotate the adapter 360 degrees while flushing the adapter, as follows:

- Flush the adapter's backflow-prevention valve interior with 30 mL of the disinfectant solution and confirm that no air bubbles exit the adapter;
- 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.**

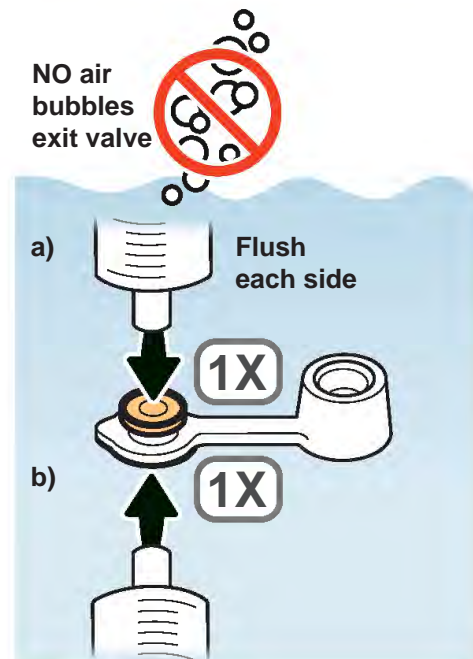


### 6.3.3.4 Flush the biopsy valve (MB-358)

1. Keeping the 30 mL syringe and the biopsy valve immersed, flush the biopsy valve's cap with disinfectant solution, as follows:

- Flush the interior of the valve's cap with 30 mL of the disinfectant solution and confirm that no air bubbles exit the valve;
- 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.

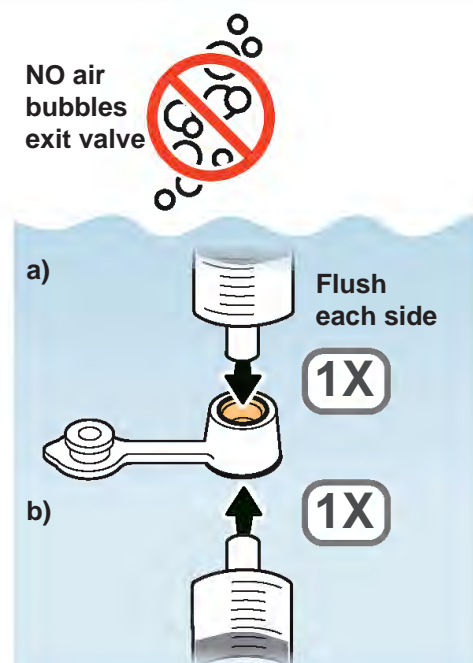
**If air bubbles exit, flush the part where air bubbles exit with 30 mL of the disinfectant solution until no air bubbles exit.**



2. Keeping the 30 mL syringe and the biopsy valve immersed, flush the biopsy valve's holes with disinfectant solution, as follows:

- Flush the hole with 30 mL of the disinfectant solution and confirm that no air bubbles exit the valve;
- 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.

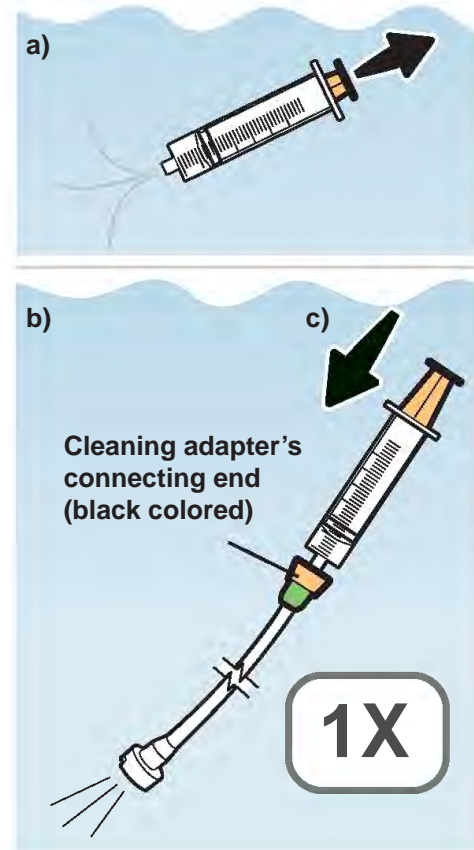
**If air bubbles exit, flush the part where air bubbles exit with 30 mL of the disinfectant solution until no air bubbles exit.**



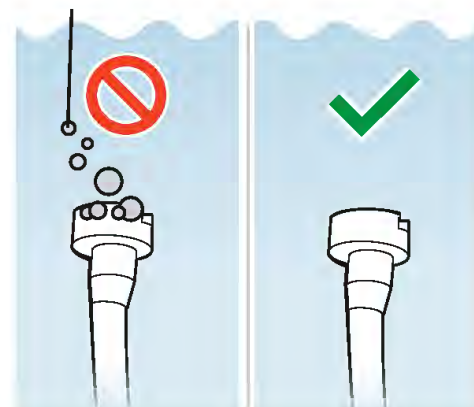
## 6.3.3.5 Flush the suction cleaning adapter (MH-856)

1. 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.**

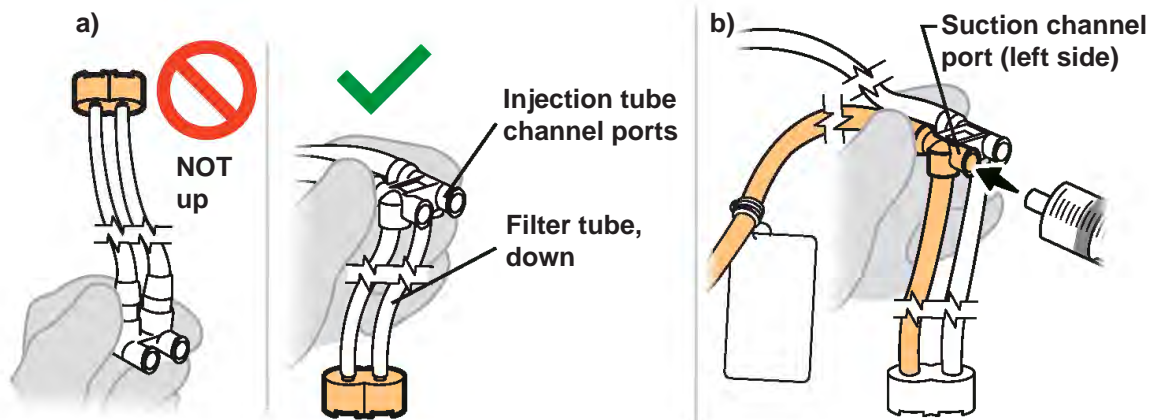


- d) **NO air bubbles should exit**



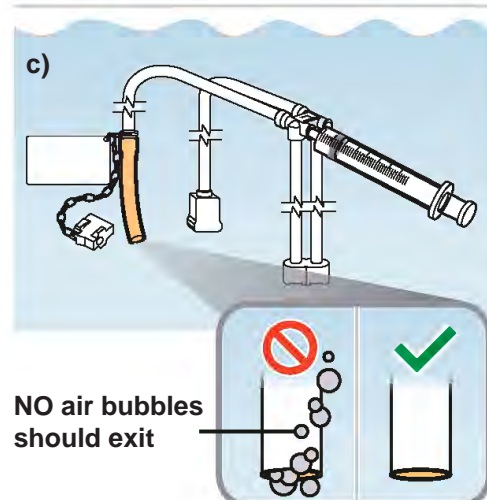
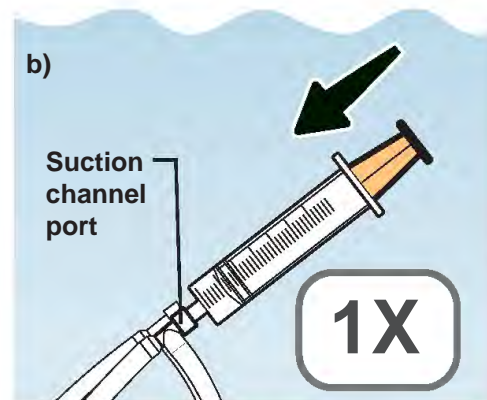
### 6.3.3.6 Flush the injection tube (MH-946)

1. 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).



2. 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.**



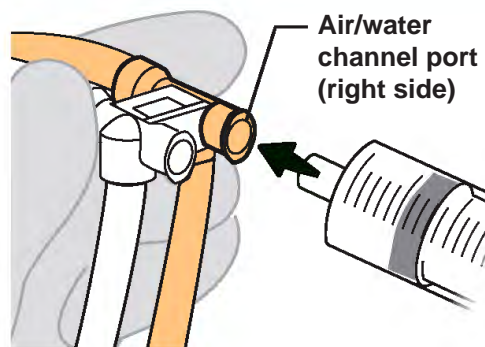
## 6.3 Manually disinfect the accessories

2. Prepare for manual disinfection

3. Flush accessories

4. Immerse accessories

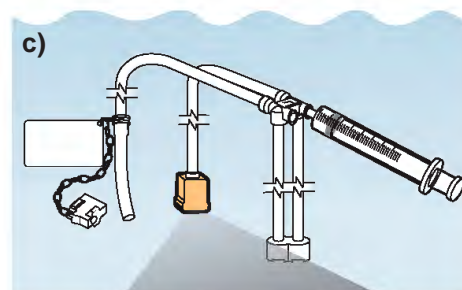
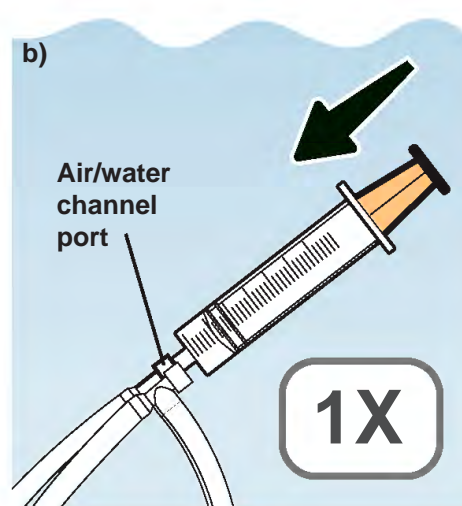
- 3.** Move the syringe from the suction channel port to the injection tube's air/water channel port (port on the right).



- 4.** 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:

- Slowly pull the syringe plunger to fill the syringe with the disinfectant solution;
- Then forcefully flush with 30 mL of the disinfectant solution;
- 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.**



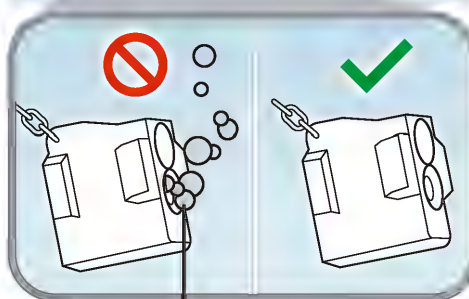
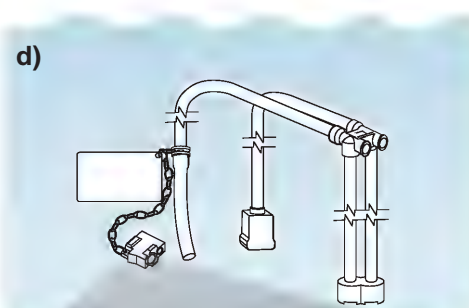
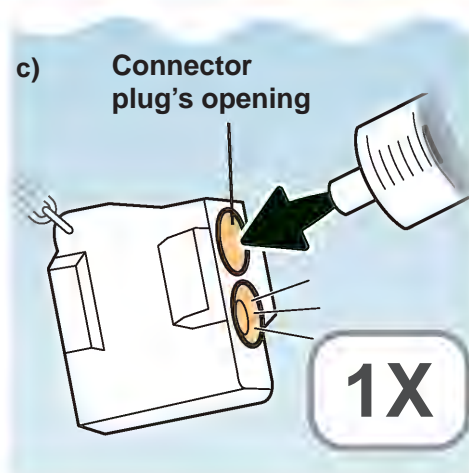
**NO air bubbles should exit**

**5.**

Keeping the 30 mL syringe and the connector plug immersed, flush the connector plug with 30 mL of the disinfectant solution, as follows:

- Slowly pull the syringe plunger to fill the syringe with the disinfectant solution;
- Press the syringe tip to one side of the connector plug's opening;
- Then forcefully flush with 30 mL of the disinfectant solution;
- 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.**



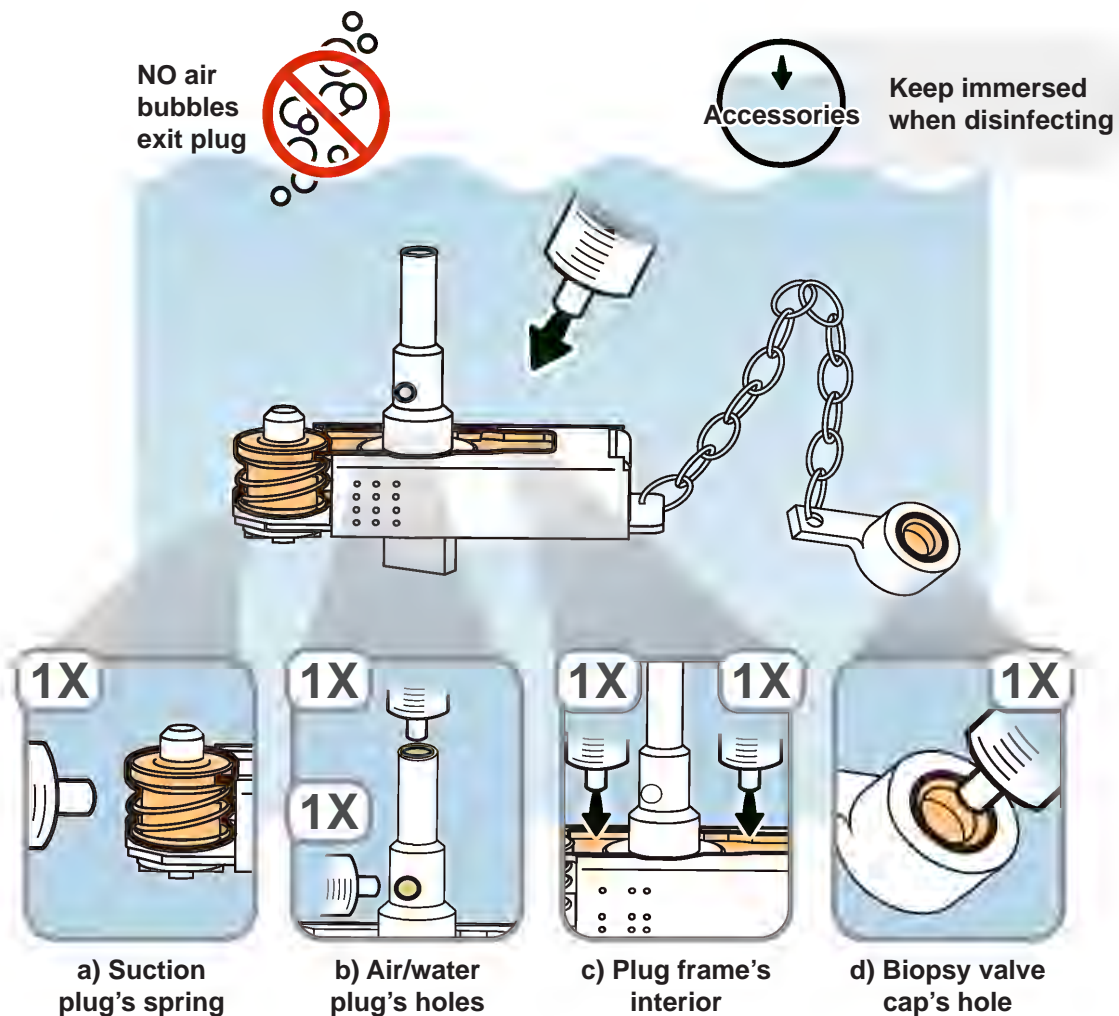
**NO air bubbles should exit**

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

1. 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:

- The **suction plug's spring** and confirm that no air bubbles exit the plug;
- The **air/water plug's holes** and confirm that no air bubbles exit the plug;
- The **plug frame's interior** and confirm that no air bubbles exit the plug;
- The **biopsy valve cap's hole** and confirm that no air bubbles exit the plug.

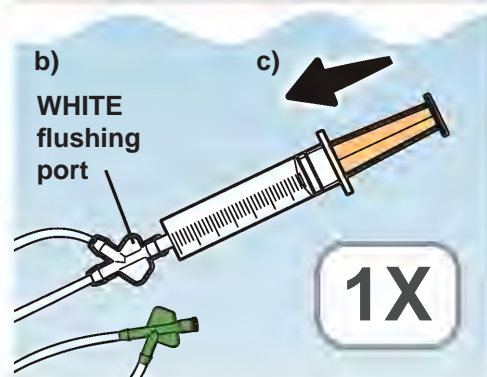
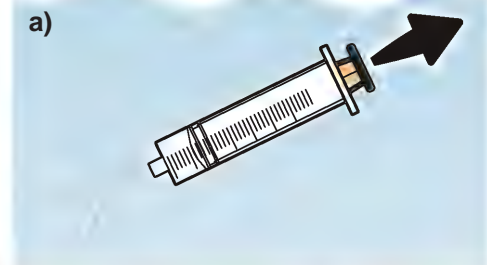
If air bubbles exit, flush the part where air bubbles exit with 30 mL of the disinfectant solution until no air bubbles exit.



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

- 1.** 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 disinfectant solution, as follows:

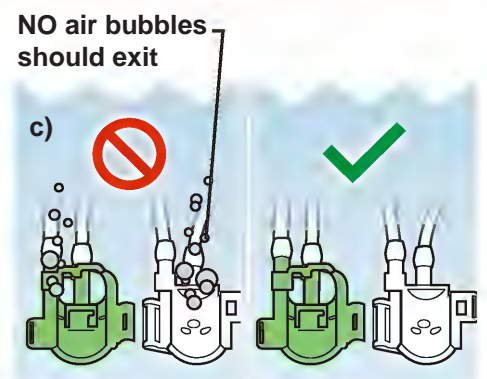
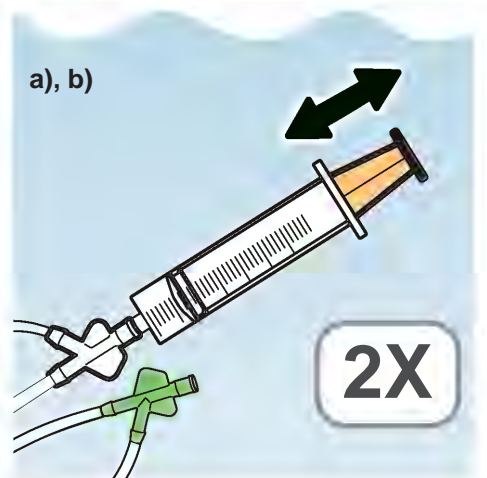
- Before attaching the syringe to the white flushing port** (so that you do not pull any air into the syringe that might be inside the flushing tube), slowly pull the syringe plunger to fill the syringe with the disinfectant solution;
- Attach it to the white flushing port of the distal-end flushing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



- 2.** 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:

- Slowly pull the syringe plunger to fill the syringe with the disinfectant solution;
- Then forcefully flush the distal-end flushing adapter with 30 mL of the disinfectant solution;
- 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.**



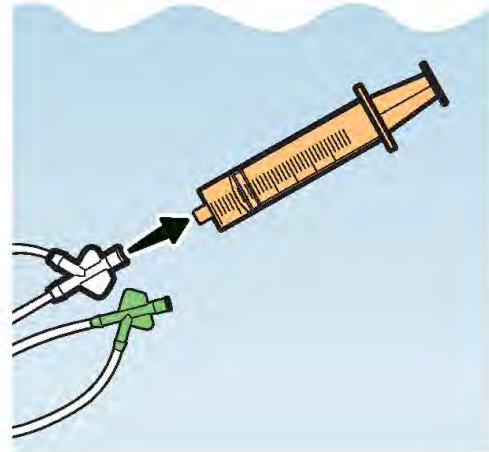
## 6.3 Manually disinfect the accessories

2. Prepare for manual disinfection

3. Flush accessories

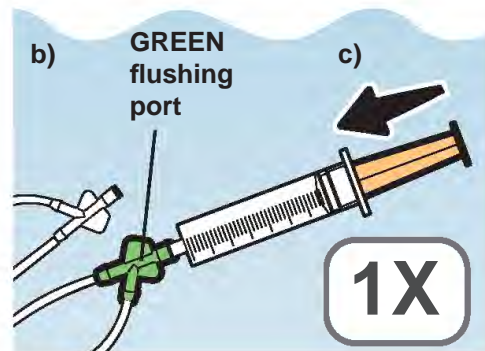
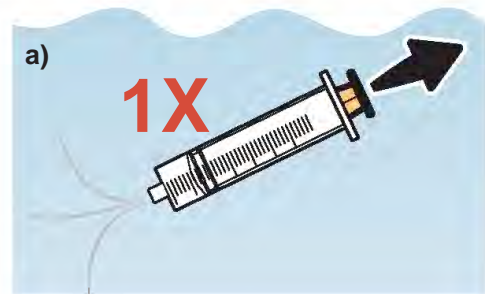
4. Immerse accessories

- 3.** Detach the syringe from the distal-end flushing adapter.



- 4.** 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:

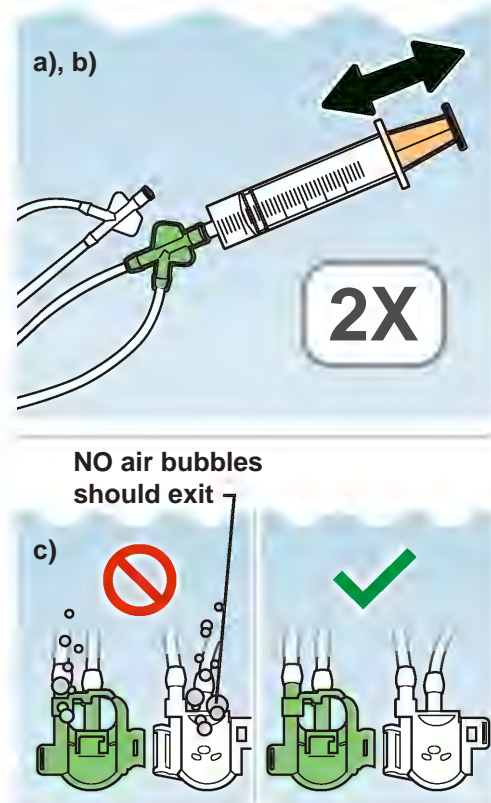
- Before attaching the syringe to the green flushing port** (so that you do not pull any air into the syringe that might be inside the flushing tube), slowly pull the syringe plunger to fill the syringe with the disinfectant solution;
- Attach it to the green flushing port of the distal-end flushing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



**5.** 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:

- Slowly pull the syringe plunger to fill the syringe with the disinfectant solution;
- Then forcefully flush the distal-end flushing adapter with 30 ml of the disinfectant solution;
- 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.**

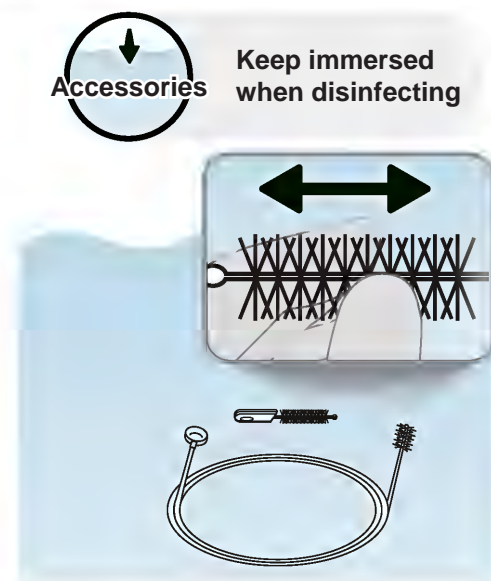
If air bubbles exit, detach the syringe from the distal-end flushing adapter and repeat Steps 4 and 5 until no air bubbles exit.



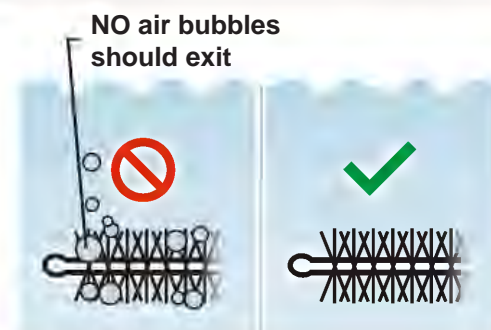
### 6.3.3.9 Rub the brushes

**1.** Rub the brushes as follows:

- Keep the channel cleaning brush (BW-20T) and the channel-opening cleaning brush (MH-507) completely immersed in the disinfectant solution;
- Rub the brush's bristles in the disinfectant solution using your gloved fingertips and confirm that no air bubbles exit from the brush's bristles during the rubbing.



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

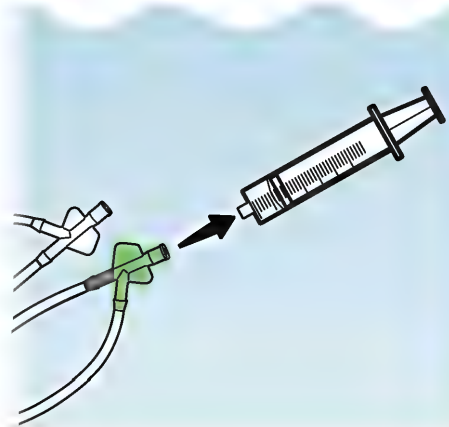


### 6.3.4 Immerse the accessories in disinfectant solution

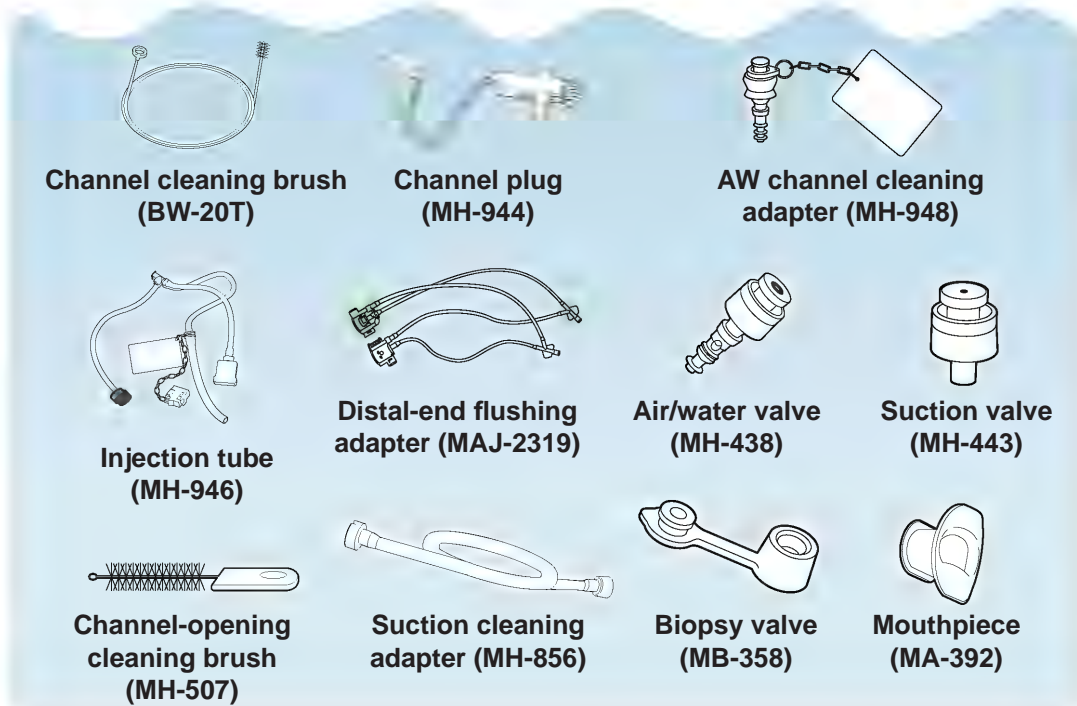
#### **! WARNING**

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.

1. 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.




**3.** 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 your gloved fingertips or clean lint-free cloths.

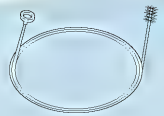


**NO air bubbles on any surfaces:**




**Accessories**


**Keep immersed when disinfecting**



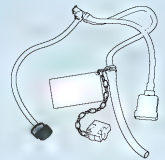
**a) Channel cleaning brush (BW-20T)**




**b) Channel plug (MH-944)**



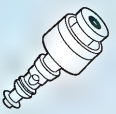
**c) AW channel cleaning adapter (MH-948)**




**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)**

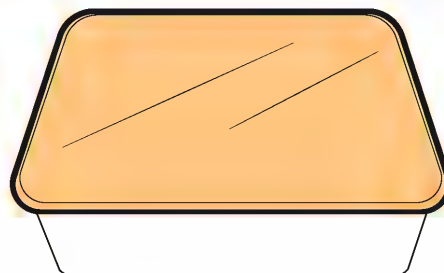


**j) Biopsy valve (MB-358)**



**k) Mouthpiece (MA-392)**

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

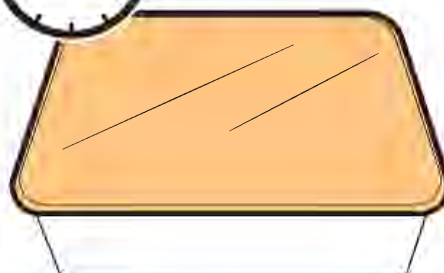


**5.** Leave all accessories completely immersed in the disinfectant solution for the disinfectant manufacturer's recommended contact time.



**NOTE**

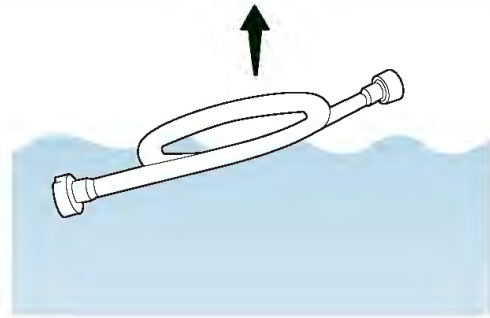
Use a clock or a timer to accurately measure the disinfectant contact time.



### 6.3.5 Remove the accessories from disinfectant solution

#### 6.3.5.1 Remove the suction cleaning adapter (MH-856)

1. Remove the suction cleaning adapter from the disinfectant solution.

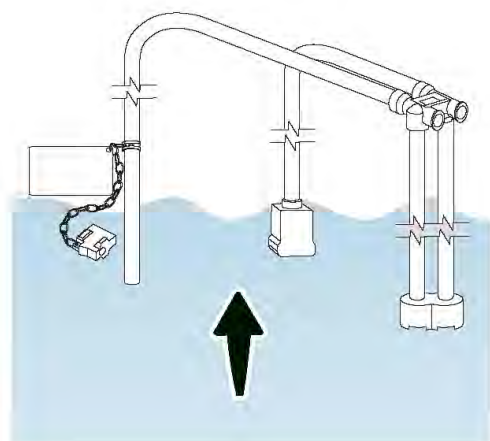


2. Tilt the adapter to expel any remaining disinfectant solution.

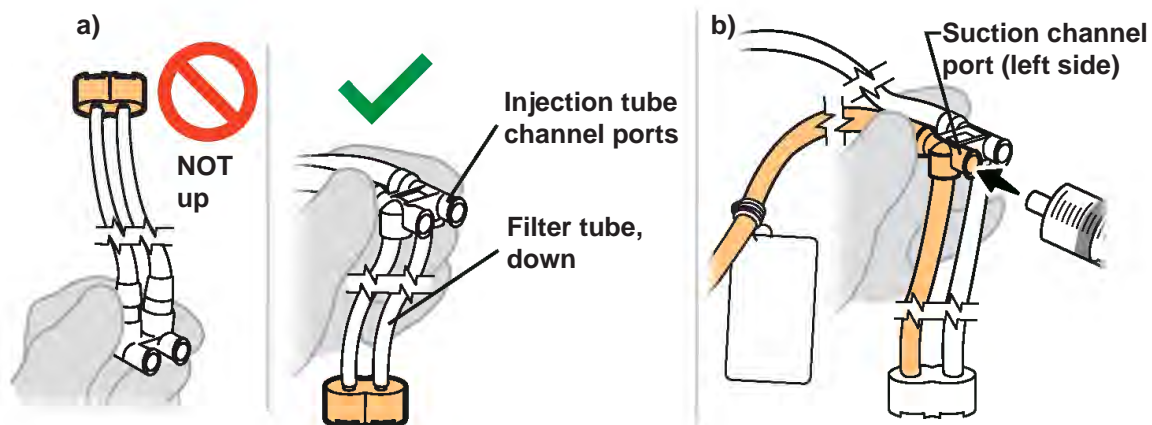


#### 6.3.5.2 Remove the injection tube (MH-946)

1. Remove the injection tube from the disinfectant solution.

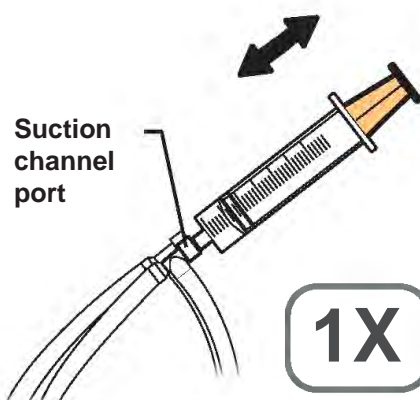


- 2.** Attach a sterile 30 mL syringe to the injection tube's suction channel port, as follows:
- Hold the injection tube's channel ports so that the filter tube points down, NOT up;
  - Attach the syringe to the suction channel port (the left side port).

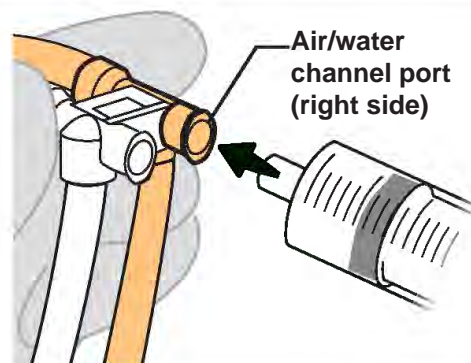


- 3.** Keeping the 30 mL syringe attached, flush the suction channel tube with 30 mL of air, as follows:

- Slowly pull the syringe plunger to fill the syringe with air;
- Then forcefully flush with 30 mL of air to expel the disinfectant solution.

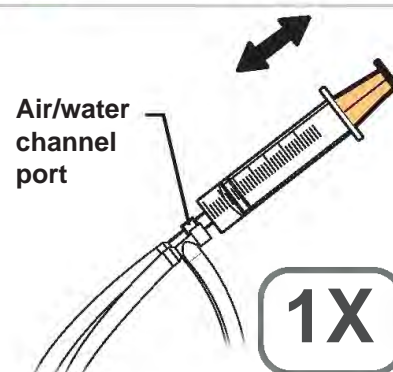


- 4.** Move the syringe from the suction channel port to the injection tube's air/water channel port (port on the right).



- 5.** Keeping the 30 mL syringe attached, flush the air/water channel tube with 30 mL of air, as follows:

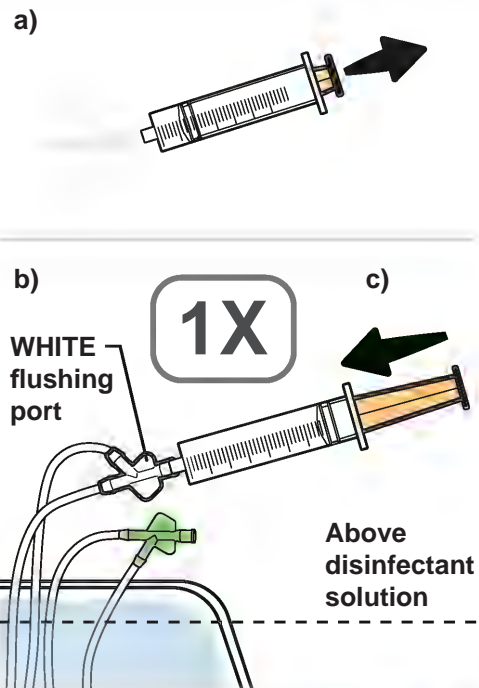
- Slowly pull the syringe plunger to fill the syringe with air;
- Then forcefully flush with 30 mL of air to expel the disinfectant solution.



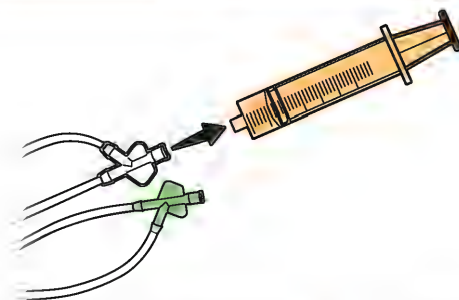
## 6.3.5.3 Remove the distal-end flushing adapter (MAJ-2319)

1. 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:

- 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;
- Attach it to the white flushing port of the distal-end flushing adapter;
- Then forcefully flush the adapter with 30 mL of air.

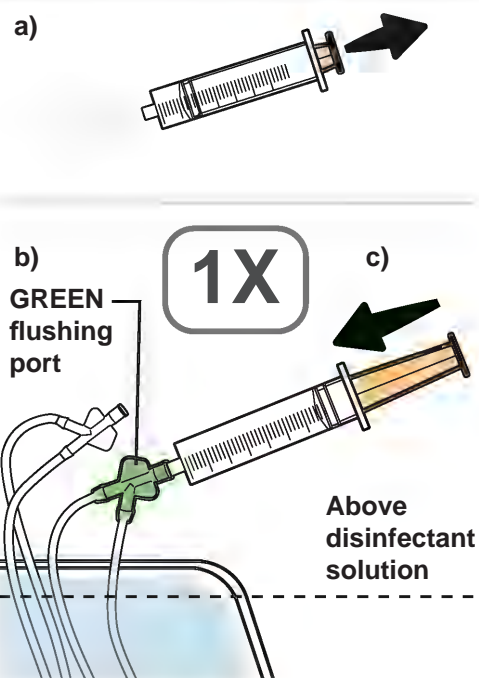


2. Detach the syringe from the distal-end flushing adapter.

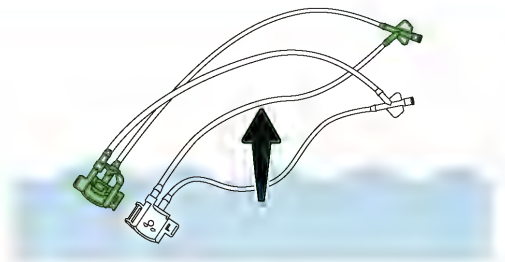


3. Lift the GREEN flushing port out of the disinfectant solution. Flush the adapter through the GREEN flushing port with 30 mL of air, as follows:

- 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), slowly pull the syringe plunger to fill the syringe with air;
- Attach it to the green flushing port of the distal-end flushing adapter;
- Then forcefully flush the adapter with 30 mL of air.

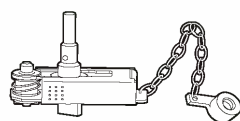


4. Remove the distal-end flushing adapter from the disinfectant solution.



### 6.3.5.4 Remove all other accessories

1. Remove all other accessories from the disinfectant solution.



**Channel plug  
(MH-944)**



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



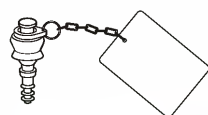
**Channel cleaning brush  
(BW-20T)**



**Air/water valve  
(MH-438)**



**Suction valve  
(MH-443)**



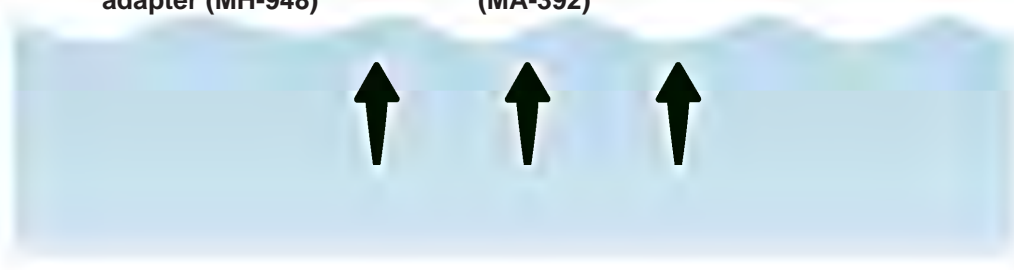
**AW channel cleaning  
adapter (MH-948)**



**Mouthpiece  
(MA-392)**



**Biopsy valve  
(MB-358)**



## 6.4 Rinse the accessories following disinfection

Workflow for manually Rinsing the accessories:

### Prepare equipment

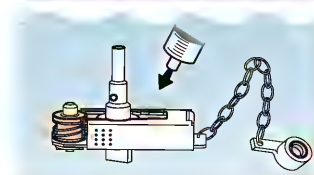
6.4.1 Equipment needed



### Rinse the accessories

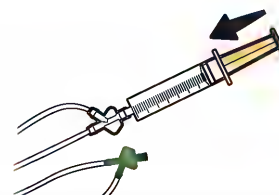
6.4.2 Rinse the accessories

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 healthcare facility'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\*<sup>1</sup>
- Sterile, small basins or containers\*<sup>1</sup>
- Sterile 30 mL (30 cc) syringes\*<sup>1</sup>
- Sterile basins or containers\*<sup>1</sup>

\*<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 healthcare facility's infection control committee regarding local policies or requirements regarding reprocessing equipment.

## 6.4 Rinse the accessories following disinfection

1. Equipment needed

2. Rinse accessories

3. Remove accessories

### 6.4.2 Rinse the accessories

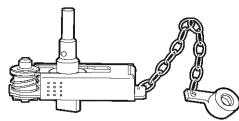
Use appropriate rinse water as instructed in Chapter 3.5, "Rinse water".

#### 6.4.2.1 Prepare for rinsing the accessories

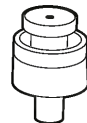
1. Fill a sterile basin with rinse water.



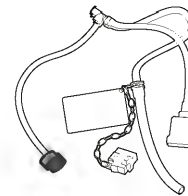
2. Completely immerse all accessories in the rinse water.



Channel plug  
(MH-944)



Suction valve  
(MH-443)



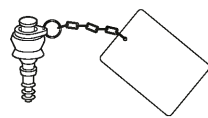
Injection tube  
(MH-946)



Channel cleaning brush  
(BW-20T)



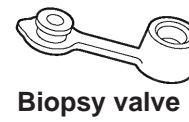
Air/water valve  
(MH-438)



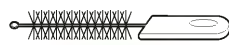
AW channel cleaning  
adapter (MH-948)



Mouthpiece  
(MA-392)



Biopsy valve  
(MB-358)



Channel-opening  
cleaning brush (MH-507)



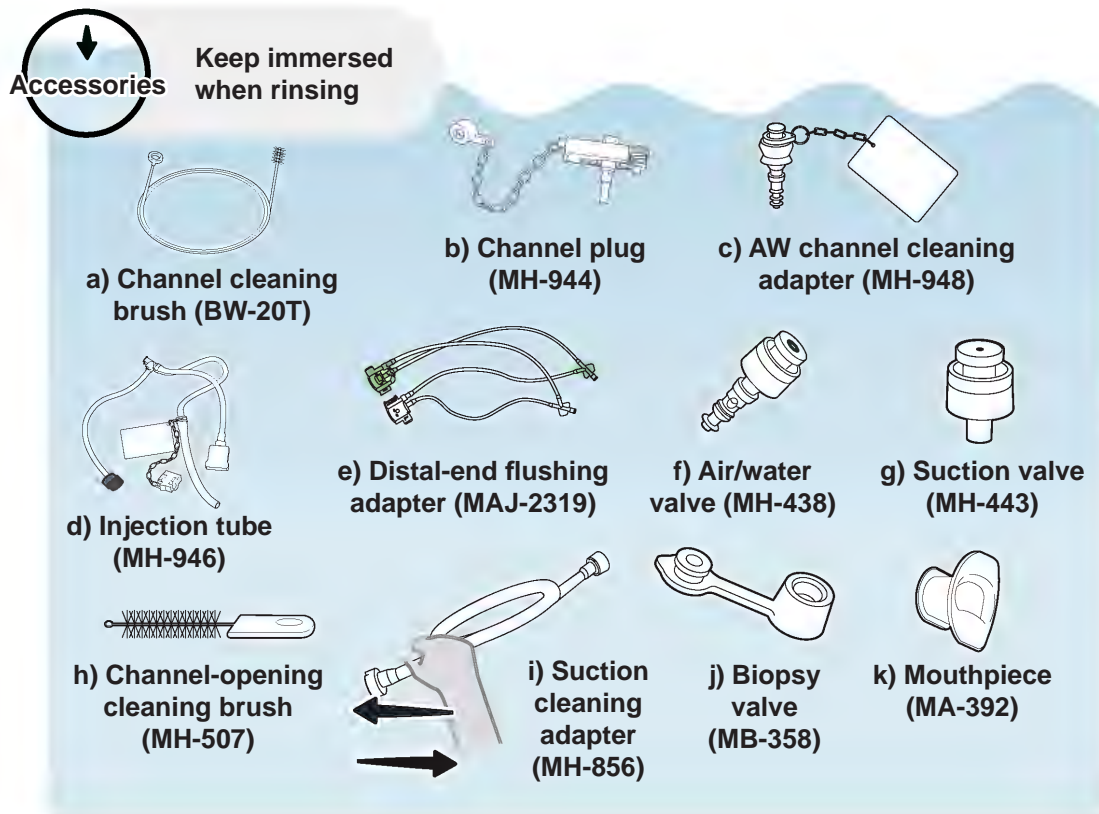
Suction cleaning adapter  
(MH-856)



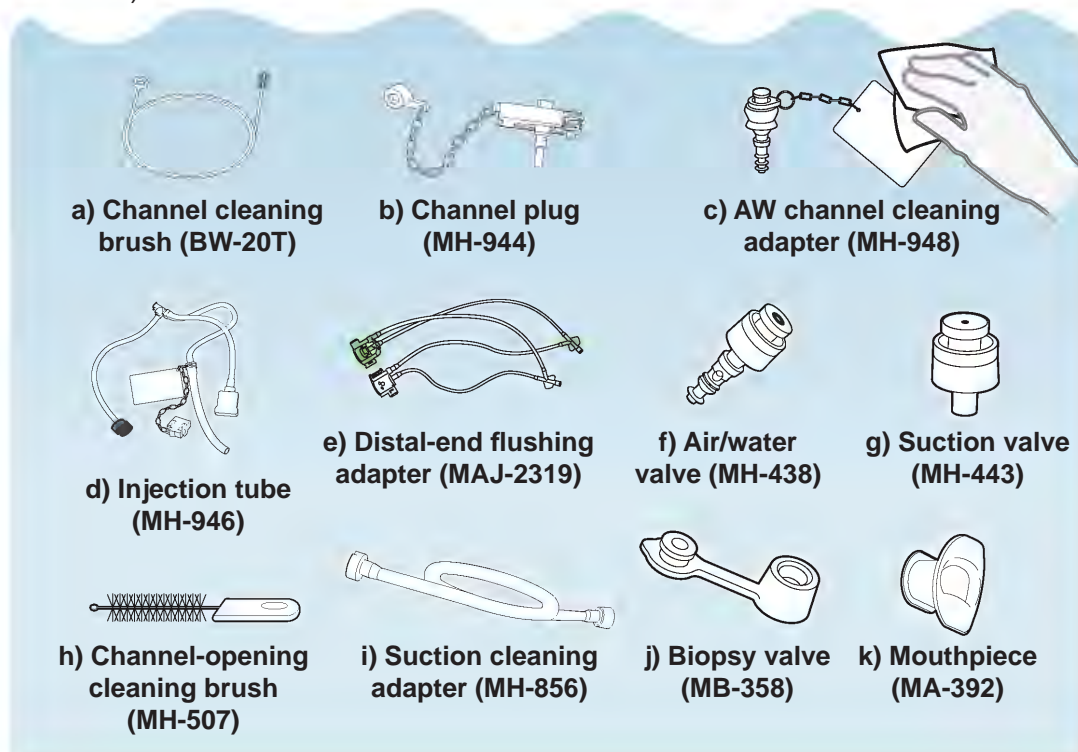
Distal-end flushing  
adapter (MAJ-2319)



- 3.** 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).



- 4.** 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).



## 6.4 Rinse the accessories following disinfection

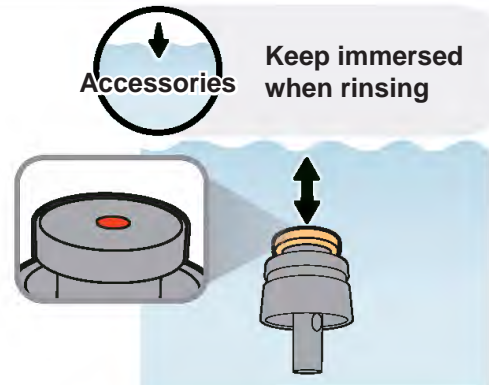
1. Equipment needed

2. Rinse accessories

3. Remove accessories

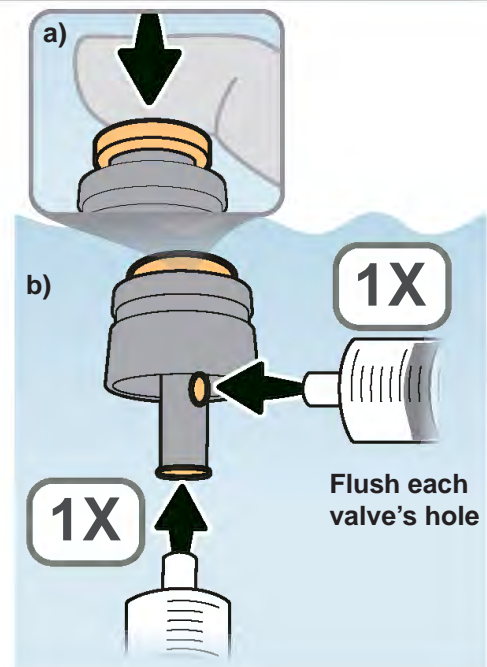
### 6.4.2.2 Flush the suction valve (MH-443)

1. Keeping the suction valve (with the red mark) immersed in the rinse water, depress and release the valve's piston several times.



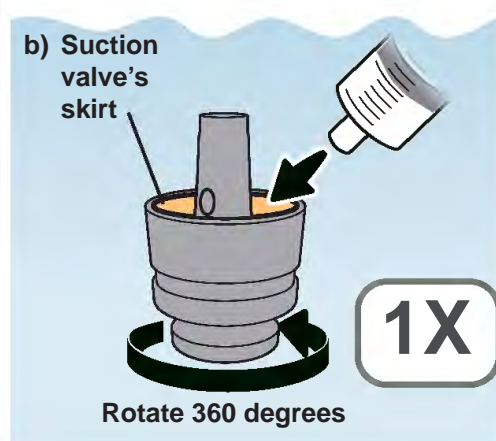
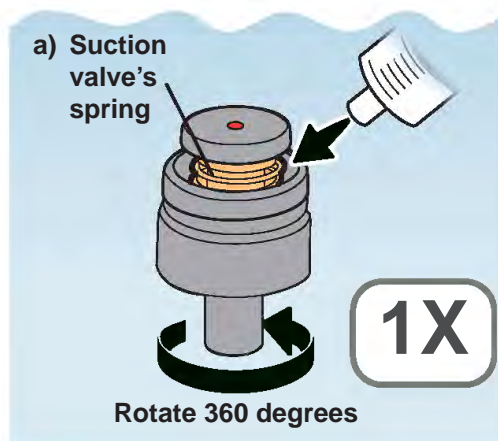
2. Immerse a sterile 30 mL syringe and the suction valve in the rinse water and flush the valve's holes, as follows:

- a) Depress the suction valve's piston;
- b) Flush each valve's hole with 30 mL of the rinse water.



3. 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.

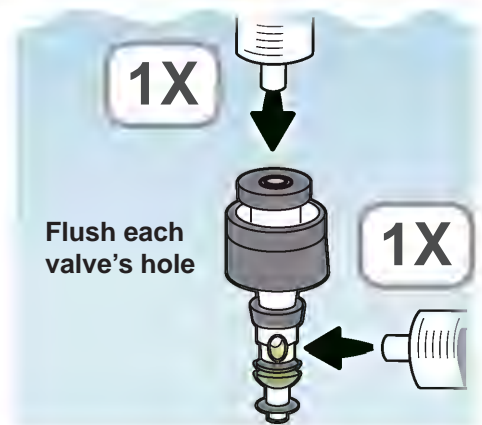


### 6.4.2.3 Flush the air/water valve (MH-438)

1. Keeping the air/water valve (with the blue mark) immersed in the rinse water, depress and release the valve's piston several times.

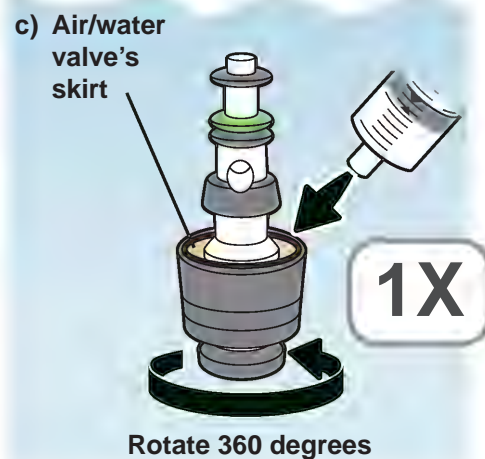
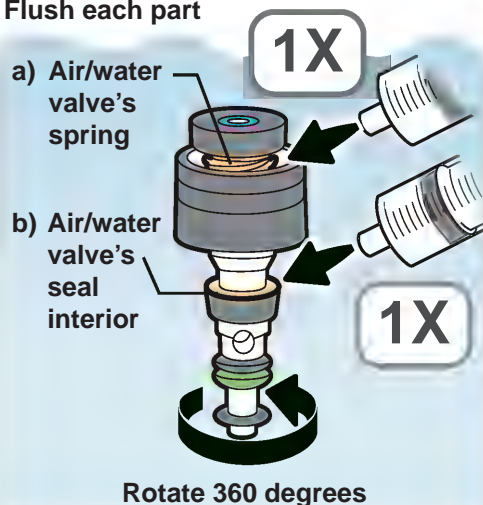


2. Keeping the 30 mL syringe and the air/water valve immersed in the rinse water, flush each valve's hole with 30 mL of the rinse water.



3. 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.

Flush each part



## 6.4 Rinse the accessories following disinfection

1. Equipment needed

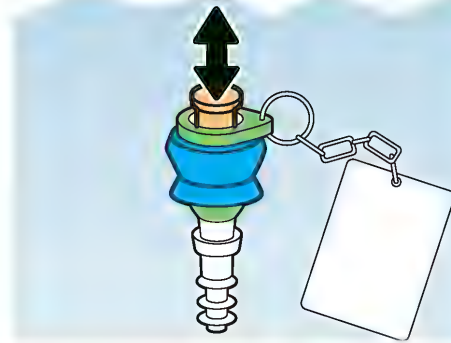
2. Rinse accessories

3. Remove accessories

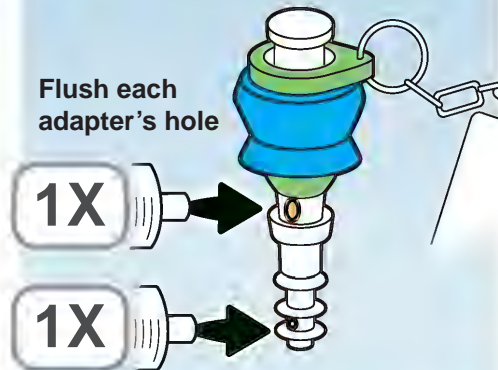
### 6.4.2.4 Flush the AW channel cleaning adapter (MH-948)

1. Keeping the AW channel cleaning adapter immersed in the rinse water, depress and release the adapter's piston several times.

Accessories  
Keep immersed when rinsing

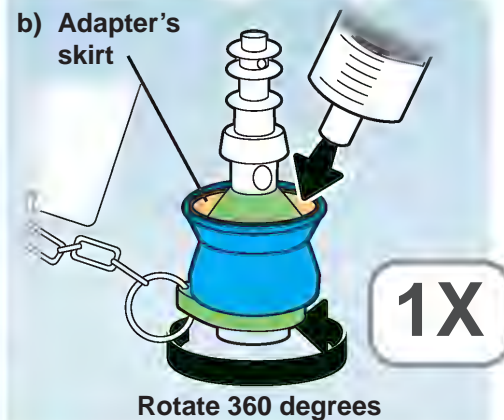
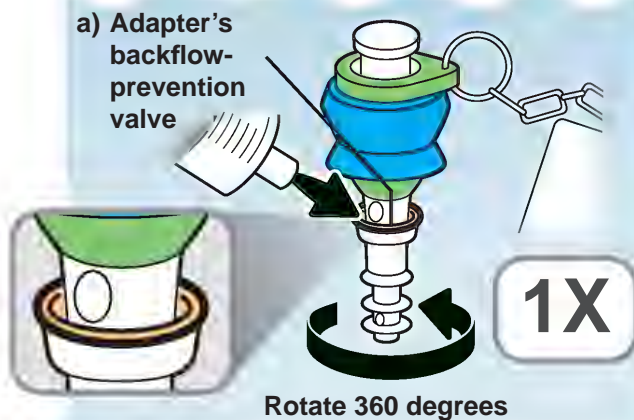


2. Keeping the 30 mL syringe and the AW channel cleaning adapter immersed, flush the each adapter's hole with 30 mL of the rinse water.



3. Keeping the 30 mL syringe and the AW channel cleaning adapter immersed, continuously rotate the adapter 360 degrees while flushing the adapter, as follows:

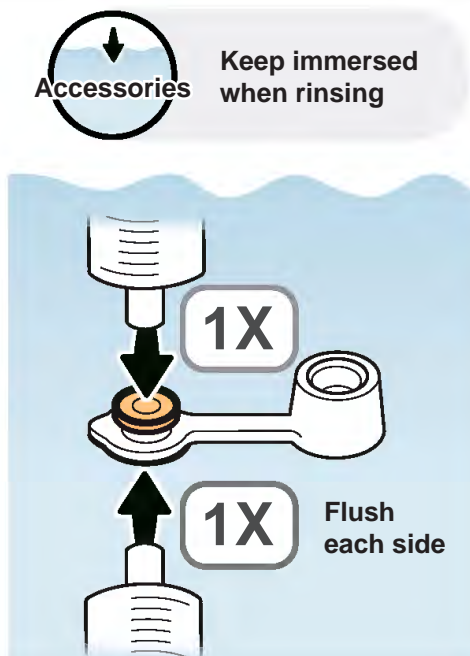
- a) Flush the adapter's backflow-prevention valve interior with 30 mL of the rinse water;
- b) Flush the adapter's skirt (i.e., underside) with 30 mL of the rinse water.



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

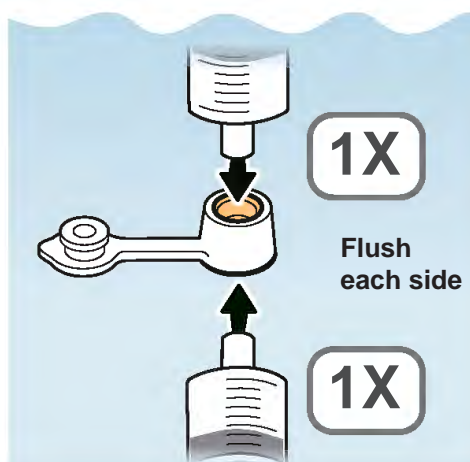
- 1.** Keeping the 30 mL syringe and the biopsy valve immersed, flush the biopsy valve's cap with the rinse water, as follows:

- Flush the interior of the valve's cap with 30 mL of the rinse water;
- Flush the other side of the valve's cap (i.e., underside) with 30 mL of the rinse water.



- 2.** Keeping the 30 mL syringe and the biopsy valve immersed, flush the biopsy valve's hole with the rinse water, as follows:

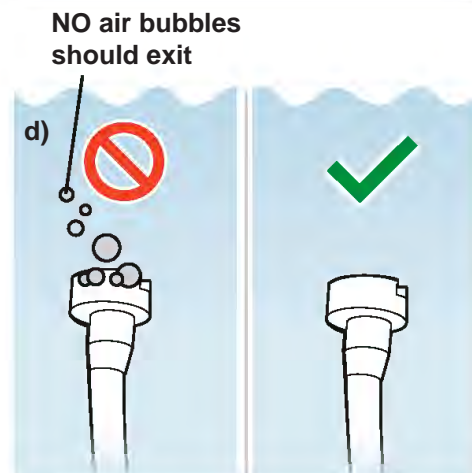
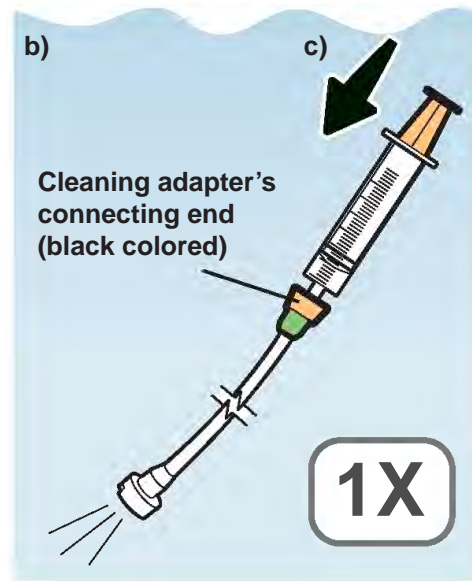
- Flush the hole with 30 mL of the rinse water;
- Flush the other side of the hole (i.e., underside) with 30 mL of the rinse water.



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

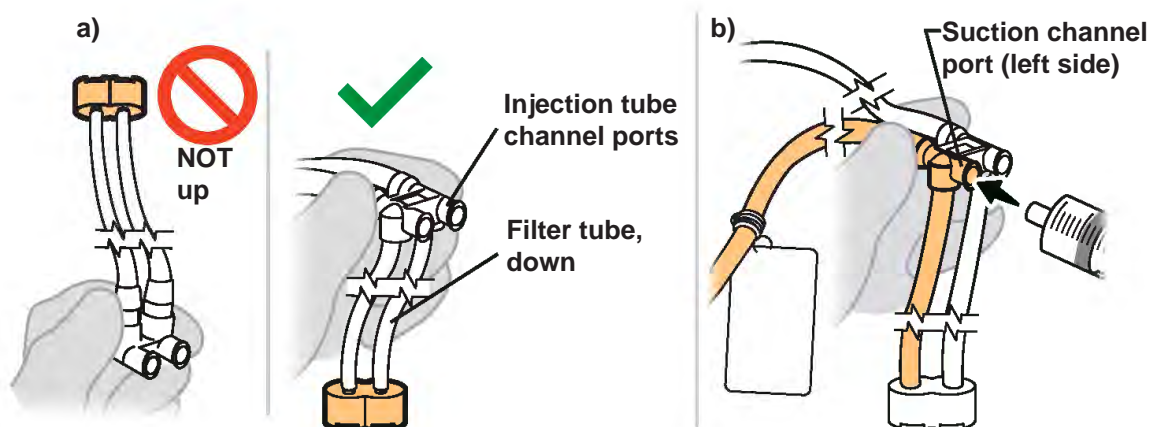
1. Keeping the 30 mL syringe and the suction cleaning adapter immersed, flush the cleaning adapter with 30 mL of the rinse water, as follows:
  - a) **Before attaching the syringe to the cleaning adapter's connecting end** (so that you do not pull any air into the syringe that might be inside the cleaning 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.**



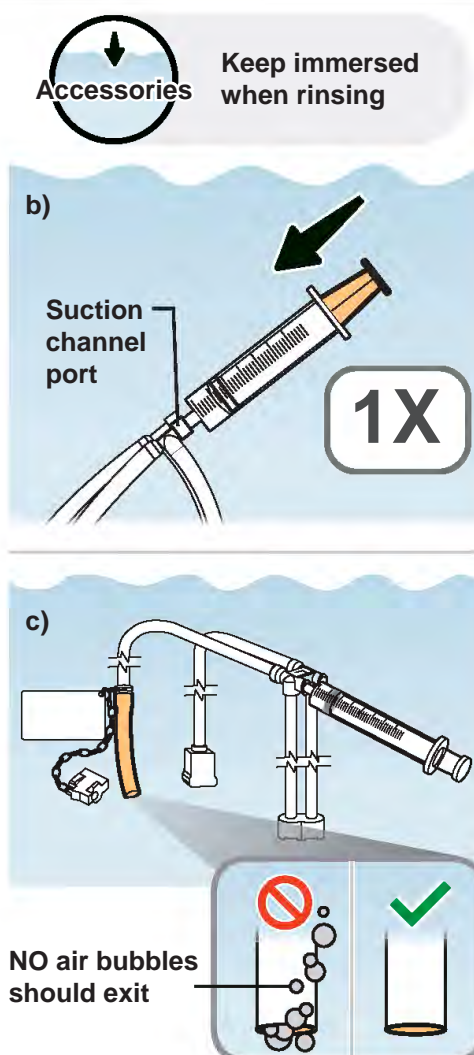
### 6.4.2.7 Flush the injection tube (MH-946)

1. 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).



2. 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.**



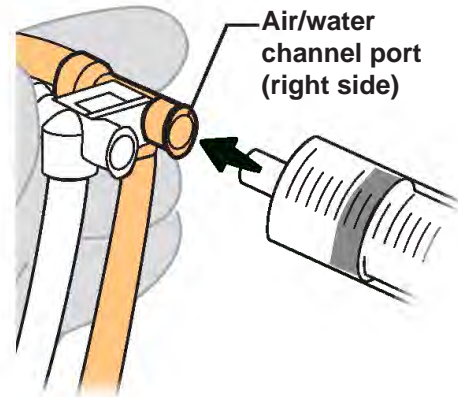
## 6.4 Rinse the accessories following disinfection

1. Equipment needed

2. Rinse accessories

3. Remove accessories

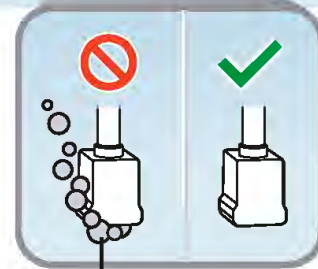
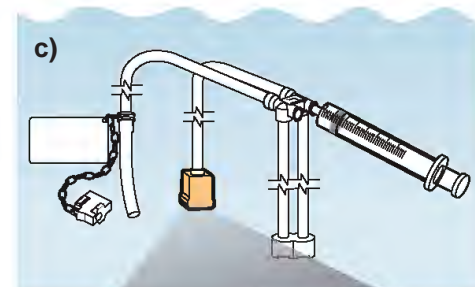
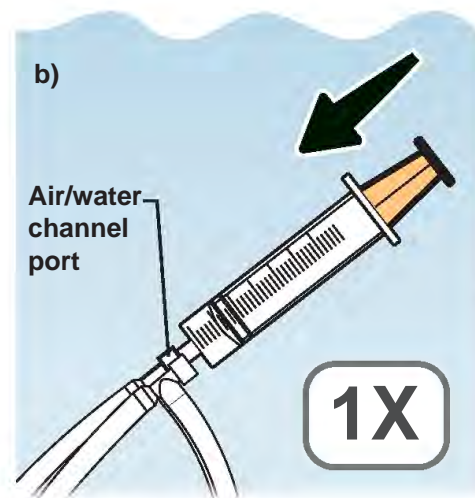
- 3.** Move the syringe from the suction channel port to the injection tube's air/water channel port (port on the right).



- 4.** 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:

- Slowly pull the syringe plunger to fill the syringe with the rinse water;
- Then forcefully flush with 30 mL of the rinse water;
- Confirm that no air bubbles exit from the air pipe port during the flush.

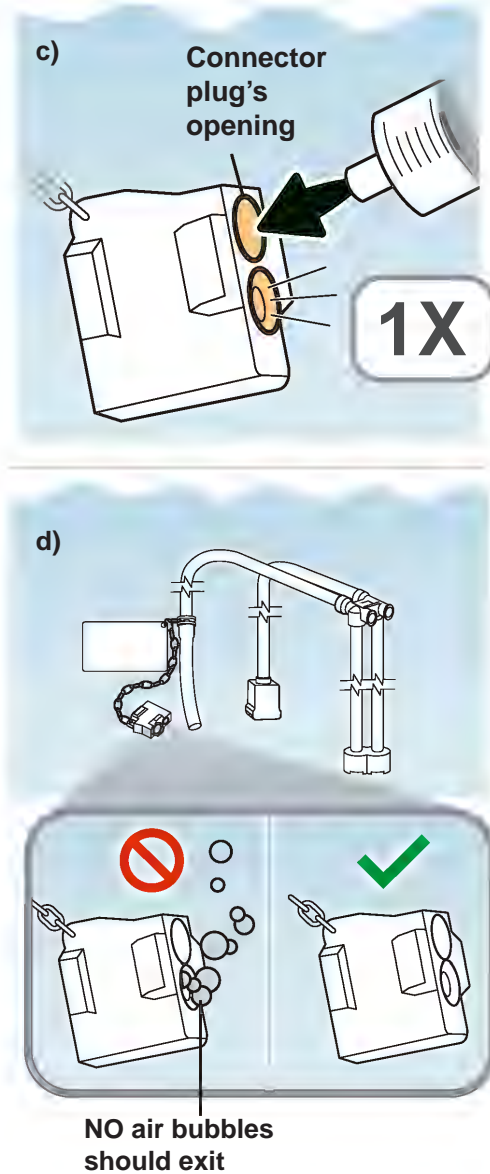
**If air bubbles exit, repeat Step 4 until no air bubbles exit.**



**NO air bubbles should exit**

- 5.** Keeping the 30 mL syringe and the connector plug immersed, flush the connector plug with 30 mL of the rinse water, as follows:
- Slowly pull the syringe plunger to fill the syringe with the rinse water;
  - Press the syringe tip to one side of the connector plug's opening;
  - Then forcefully flush with 30 mL of the rinse water;
  - 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.**



## 6.4 Rinse the accessories following disinfection

1. Equipment  
needed

2. Rinse  
accessories

3. Remove  
accessories

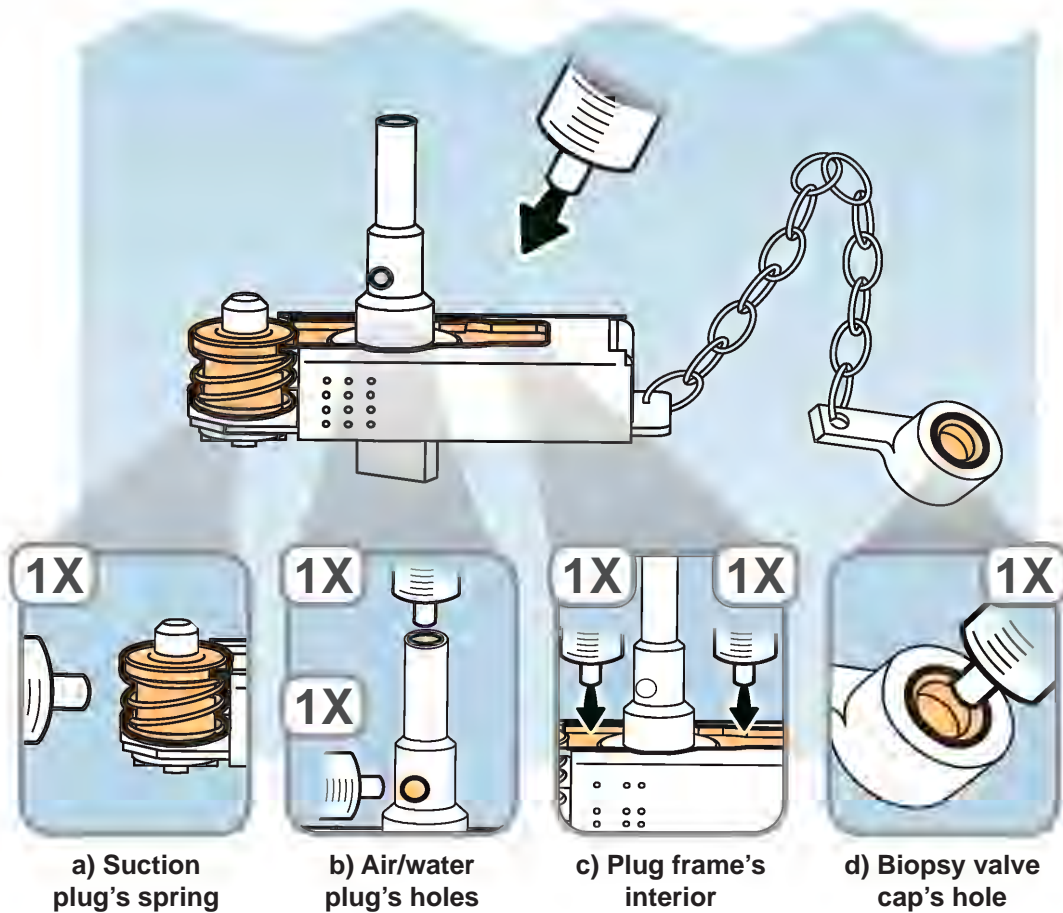
### 6.4.2.8 Flush the channel plug (MH-944)

1. 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

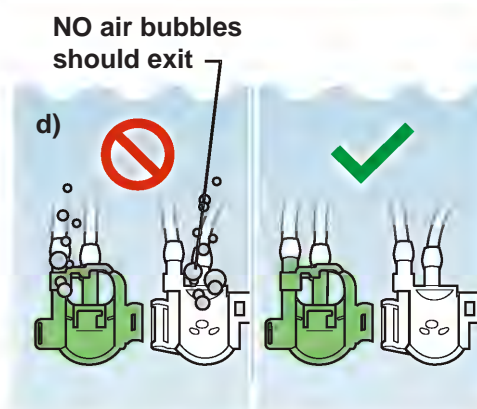
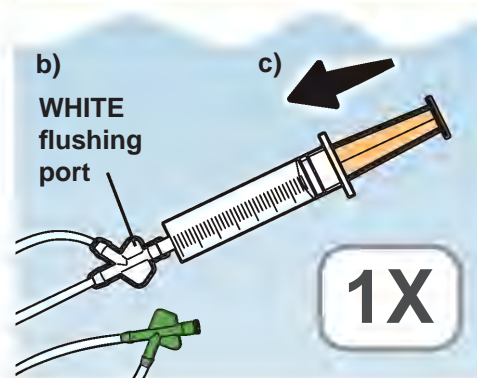


### 6.4.2.9 Flush the distal-end flushing adapter (MAJ-2319)

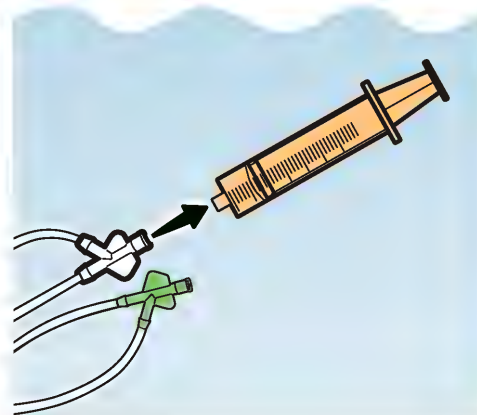
- 1.** Keeping the 30 mL syringe and the distal-end flushing adapter immersed, flush the adapter through the WHITE flushing port with 30 mL of the rinse water, as follows:

- 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;
- Attach it to the white flushing port of the distal-end flushing adapter;
- Then forcefully flush the distal-end flushing adapter with 30 mL of the rinse water;
- 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.**



- 2.** Detach the syringe from the distal-end flushing adapter.



## 6.4 Rinse the accessories following disinfection

1. Equipment needed

2. Rinse accessories

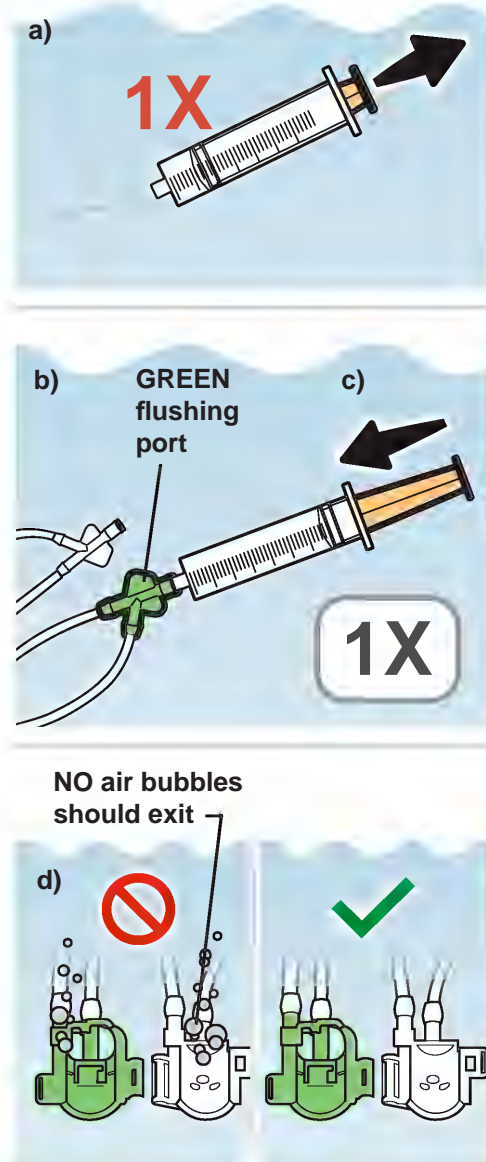
3. Remove accessories

### 3.

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:

- 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 rinse water;
- Attach it to the green flushing port of the distal-end flushing adapter;
- Then forcefully flush the distal-end flushing adapter with 30 mL of the rinse water;
- 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.**



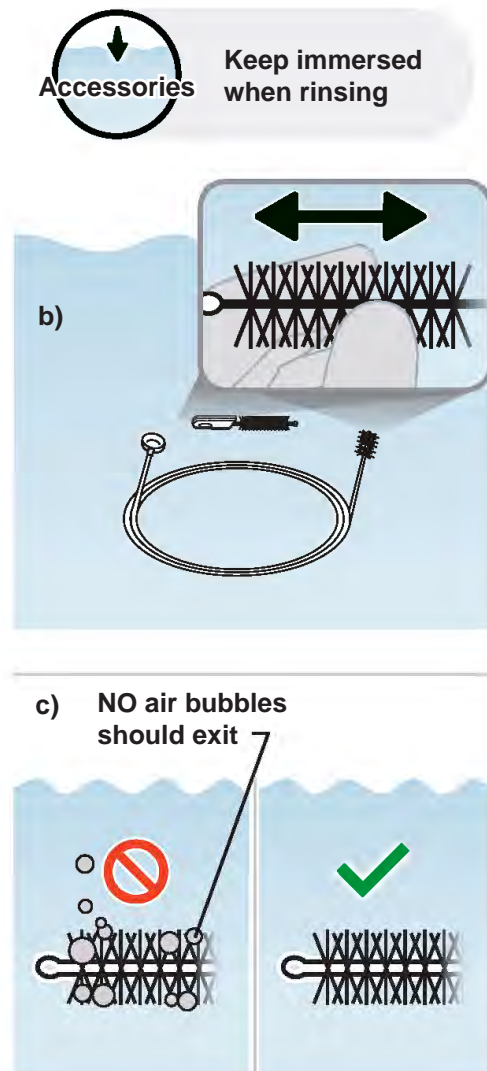
### 6.4.2.10 Rub the brushes

1.

Rub the brushes as follows:

- Keep the channel cleaning brush (BW-20T) and the channel-opening cleaning brush (MH-507) completely immersed in the rinse water;
- Rub the brushes' bristles in the rinse water with your gloved fingertips;
- Confirm that no air bubbles exit from the brush's bristles during the rubbing.

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



### 6.4.2.11 Repeat rinsing

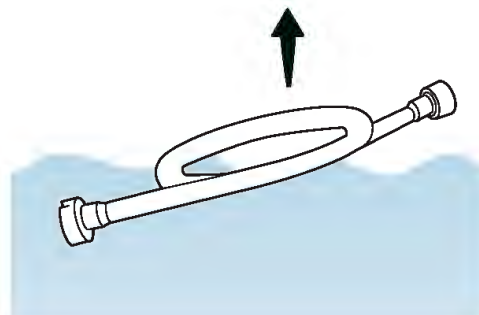
1.

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.

### 6.4.3 Remove the accessories from rinse water

#### 6.4.3.1 Remove the suction cleaning adapter (MH-856)

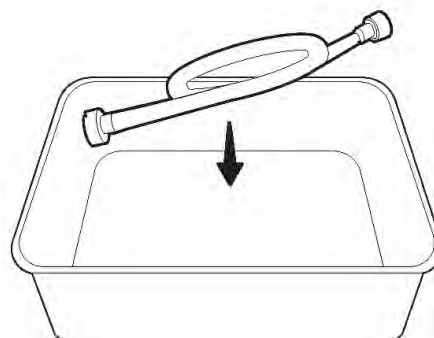
1. Remove the suction cleaning adapter from the rinse water.



2. Tilt the adapter to expel any remaining rinse water.

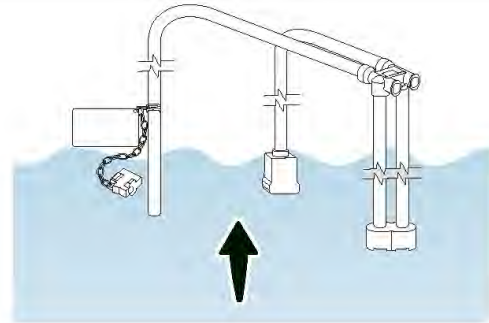


3. Place the suction cleaning adapter in a sterile basin.

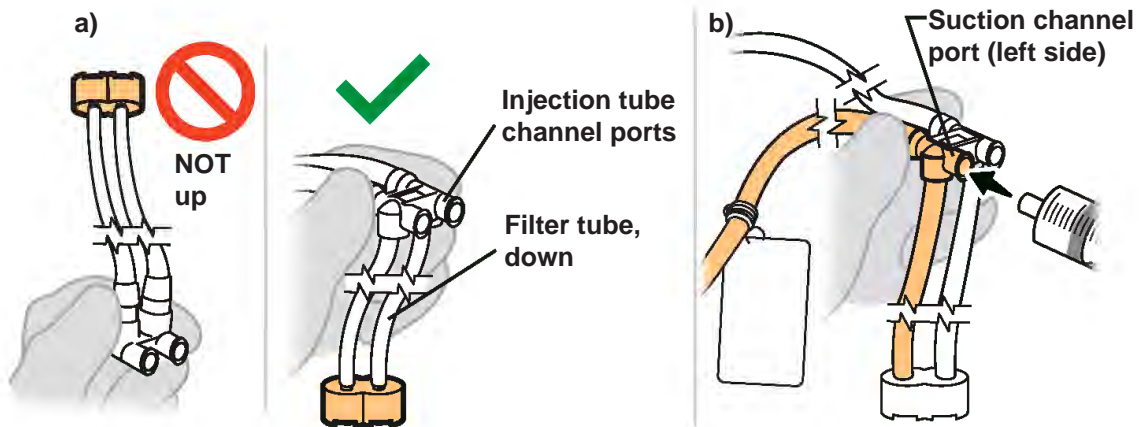


### 6.4.3.2 Remove the injection tube (MH-946)

1. Remove the injection tube from the rinse water.

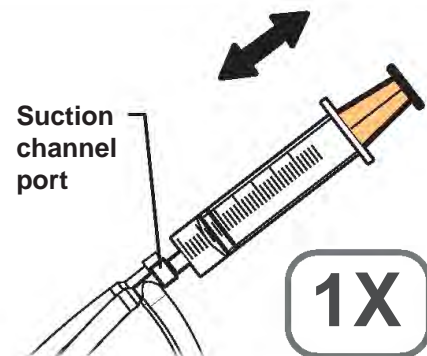


2. Attach the 30 mL syringe to the injection tube's suction channel port, as follows:
- Hold the injection tube's channel ports so that the filter tube points down, NOT up;
  - Attach the syringe to the suction channel port (the left side port).

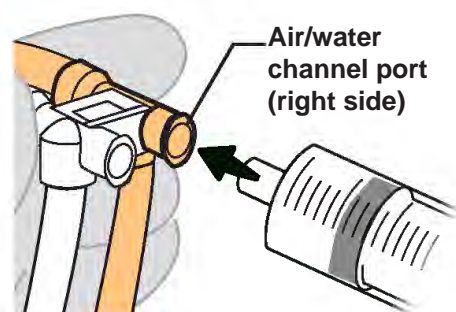


3. Keeping the 30 mL syringe attached, flush the suction channel tube with 30 mL of air, as follows:

- Slowly pull the syringe plunger to fill the syringe with air;
- Then forcefully flush with 30 mL of air.



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



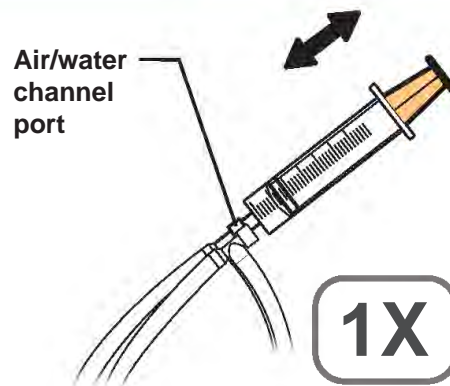
## 6.4 Rinse the accessories following disinfection

2. Rinse accessories

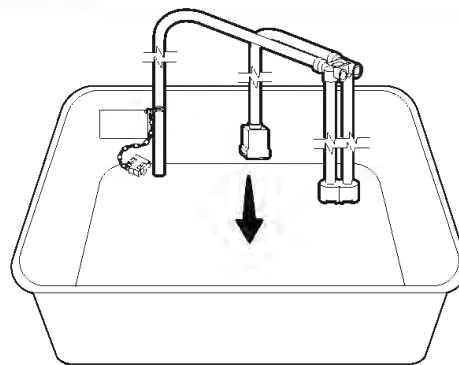
3. Remove accessories

4. Flush accessories

- 5.** Keeping the 30 mL syringe attached, flush the air/water channel tube with 30 mL of air, as follows:
- Slowly pull the syringe plunger to fill the syringe with air;
  - Then forcefully flush with 30 mL of air.

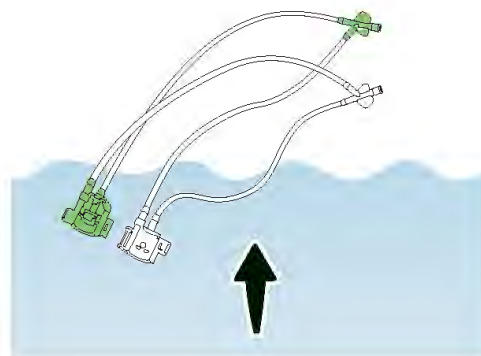


- 6.** Place the injection tube in the sterile basin.

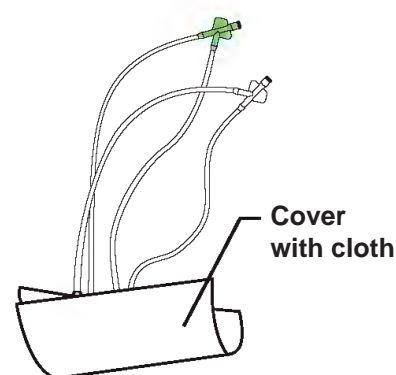


### 6.4.3.3 Remove the distal-end flushing adapter (MAJ-2319)

1. Remove the distal-end flushing adapter from the rinse water and place it in the sterile basin.

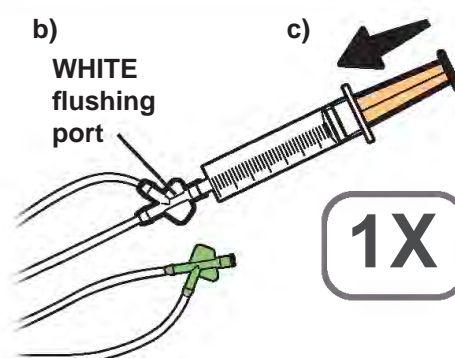
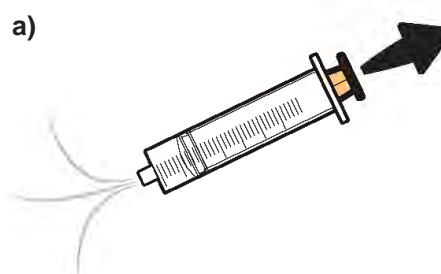


2. To prevent splashing from the cover's openings, cover the distal-end flushing adapter's white and green covers in sterile lint-free cloths.



3. 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.



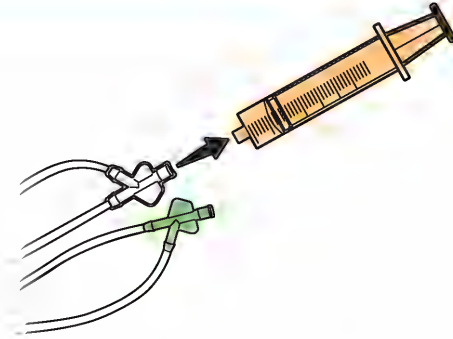
## 6.4 Rinse the accessories following disinfection

2. Rinse accessories

3. Remove accessories

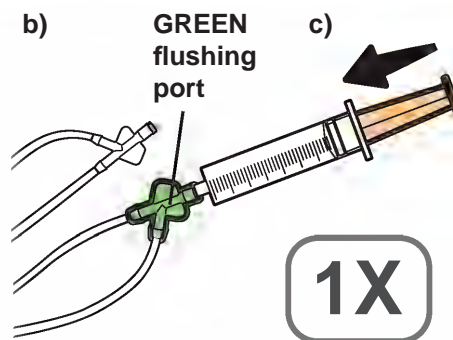
4. Flush accessories

4. Detach the syringe from the distal-end flushing adapter.

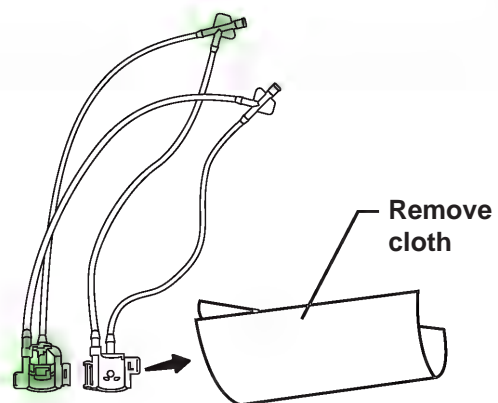


5. Flush the adapter through the GREEN flushing port with 30 mL of air, as follows:

- 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;
- Attach it to the green flushing port of the distal-end flushing adapter;
- Then forcefully flush with 30 mL of air to expel the rinse water.

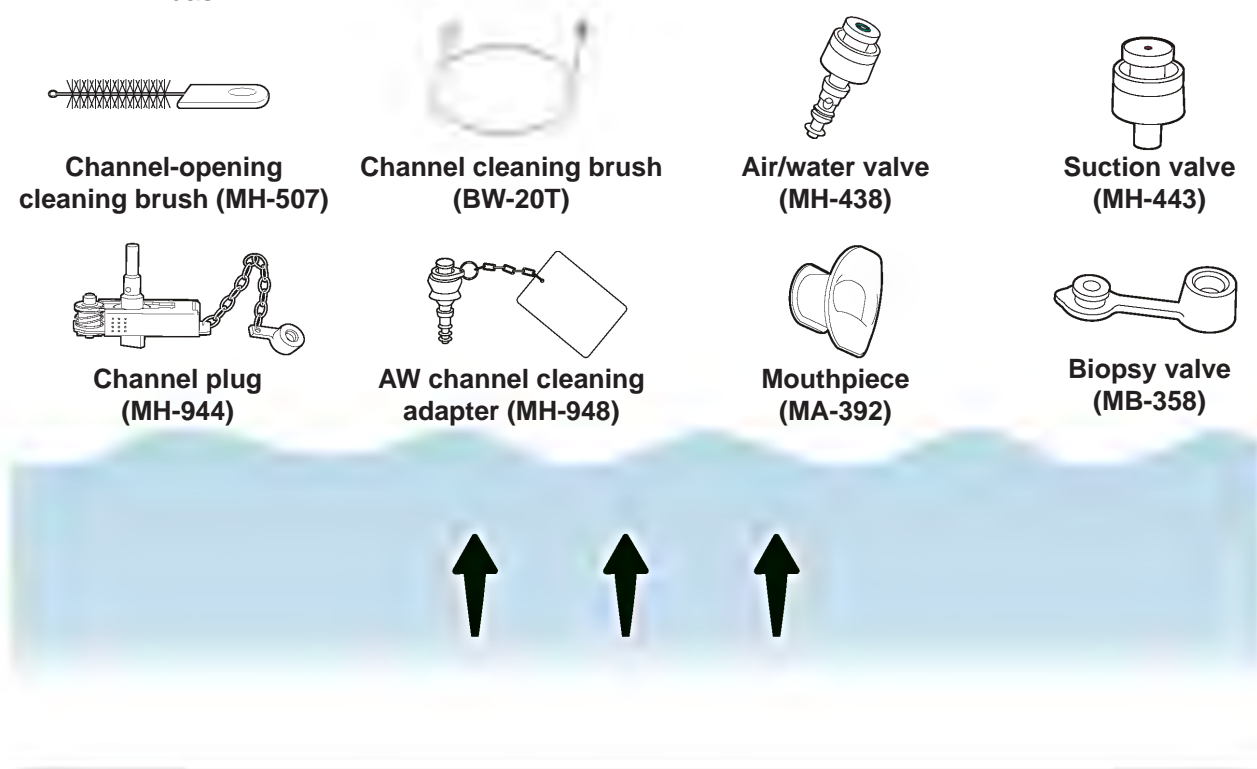


6. Remove the cloths from the distal-end flushing adapter.

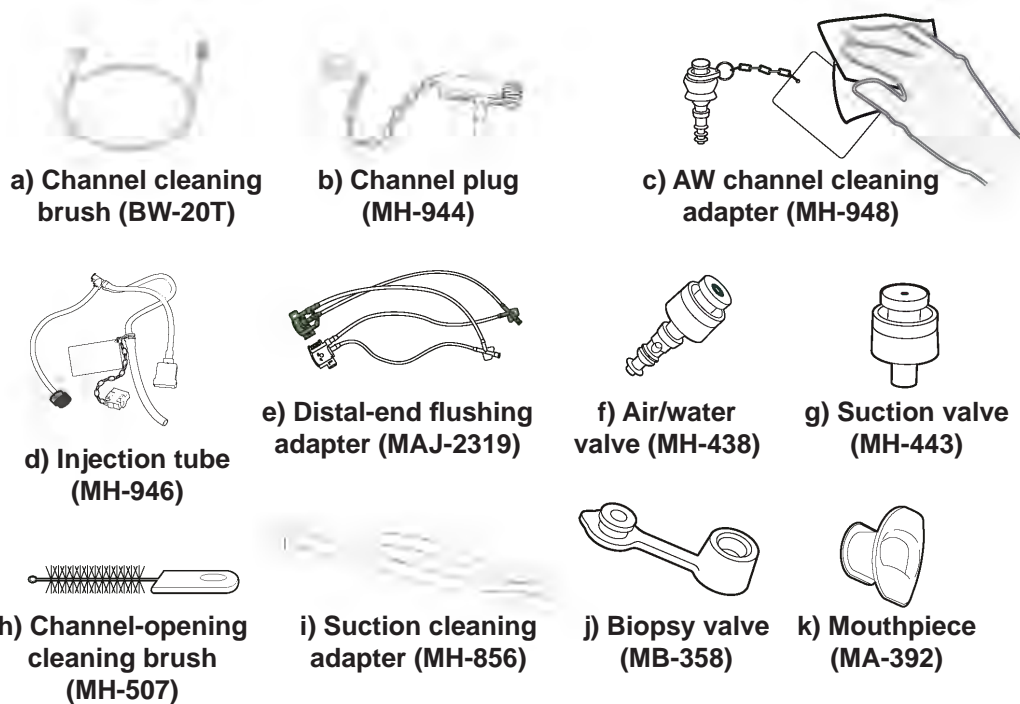


### 6.4.3.4 Dry external surfaces

1. Remove all other accessories from the rinse water and place them in the sterile basin.



2. 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

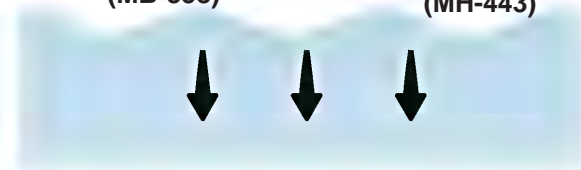
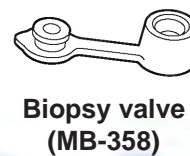
1. Fill a sterile, small basin with alcohol.



### 6.4.4.2 “Immerse the valves” unify the description

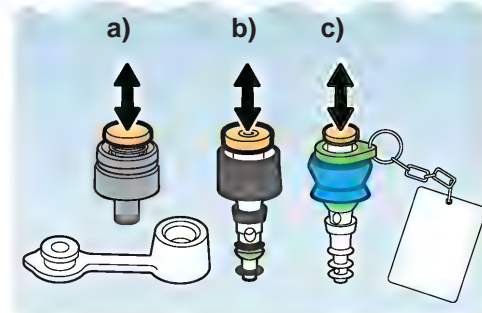
1. Completely immerse the following accessories in the alcohol:

- Suction valve (MH-443)
- Air/water valve (MH-438)
- AW channel cleaning adapter (MH-948)
- Biopsy valve (MB-358)



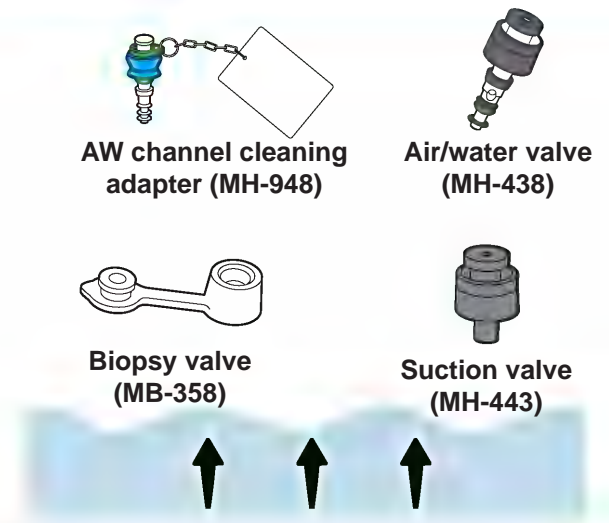
2. While keeping the accessories immersed, depress and release the pistons of the following accessories several times:

- a) Suction valve (MH-443)
- b) Air/water valve (MH-438)
- c) AW channel cleaning adapter (MH-948)



### 3. Remove the accessories from the alcohol:

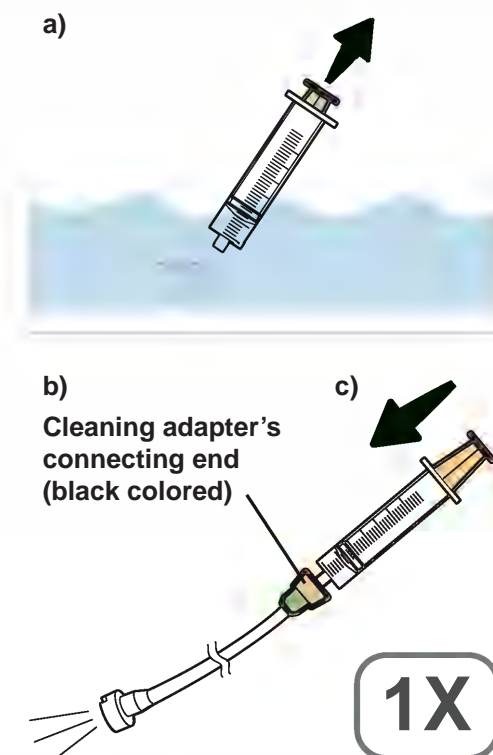
- Suction valve (MH-443)
- Air/water valve (MH-438)
- AW channel cleaning adapter (MH-948)
- Biopsy valve (MB-358)



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

### 1. Flush the suction cleaning adapter with 30 mL of the alcohol, as follows:

- 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;
- Hold the syringe against the cleaning adapter's connecting end (black colored);
- Then forcefully flush the cleaning adapter with 30 mL of the alcohol.

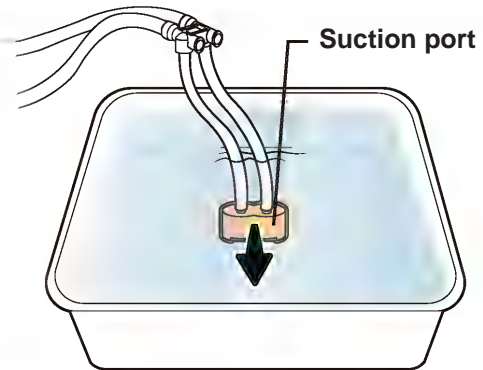


### 2. Tilt the adapter to expel any remaining alcohol.

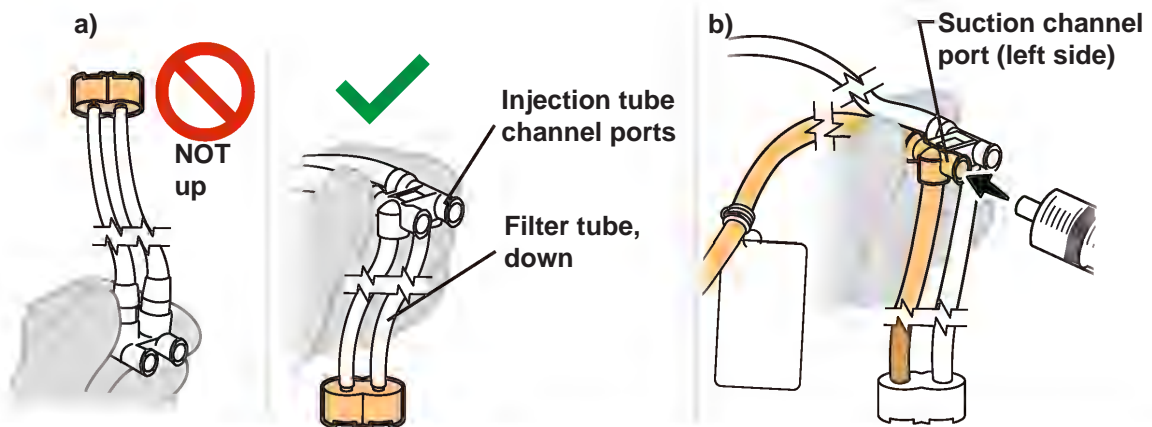


## 6.4.4.4 Flush the injection tube (MH-946)

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

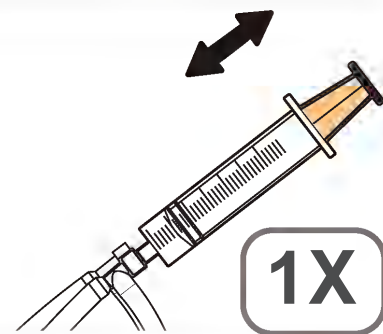


2. Attach the 30 mL syringe to the injection tube's suction channel port, as follows:
- Hold the injection tube's channel ports so that the filter tube points down, NOT up;
  - Attach the syringe to the suction channel port (the left side port).

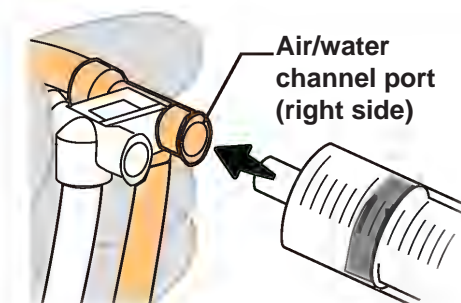


3. Keeping the 30 mL syringe attached, flush the suction channel tube with 30 mL of the alcohol, as follows:

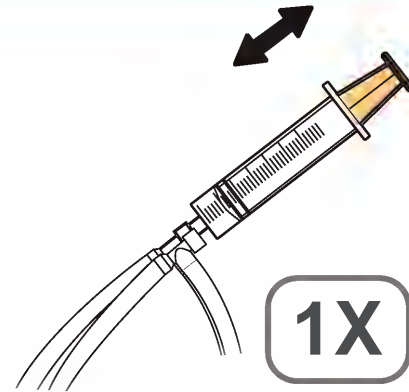
- Slowly pull the syringe plunger to fill the syringe with the alcohol;
- Then forcefully flush with 30 mL of the alcohol.



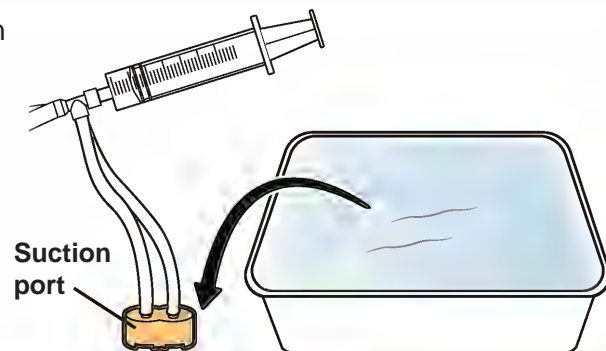
4. Move the syringe from the suction channel port to the injection tube's air/water channel port (port on the right).



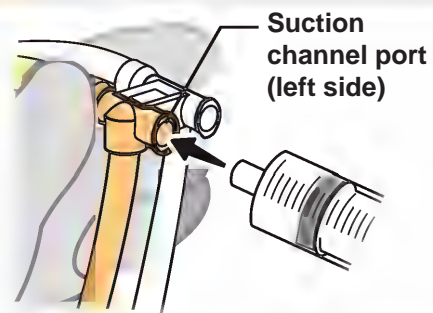
- 5.** Keeping the 30 mL syringe attached, flush the air/water channel tube with 30 mL of the alcohol, as follows:
- Slowly pull the syringe plunger to fill the syringe with the alcohol;
  - Then forcefully flush with 30 mL of the alcohol.



- 6.** Remove the injection tube's suction port from the alcohol.

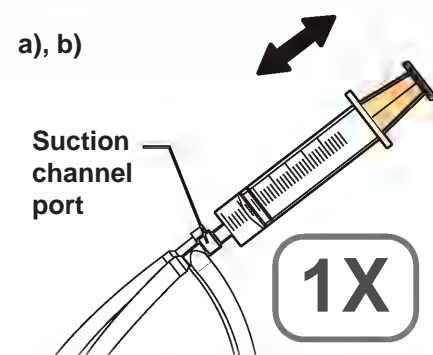


- 7.** Move the syringe from air/water channel port to the injection tube's suction channel port (port on the left).



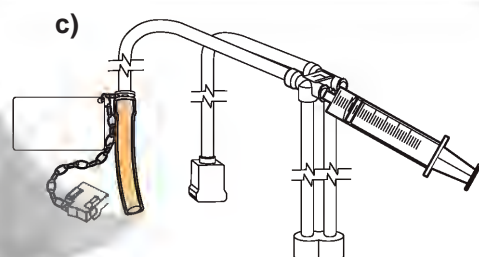
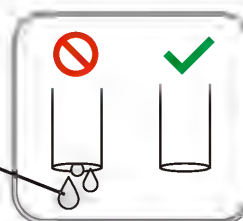
- 8.** Keeping the 30 mL syringe attached, flush the suction channel tube with 30 mL of air, as follows:

- Slowly pull the syringe plunger to fill the syringe with air;
- Then forcefully flush with 30 mL of air;
- Confirm that no alcohol exits the tube during the flush.

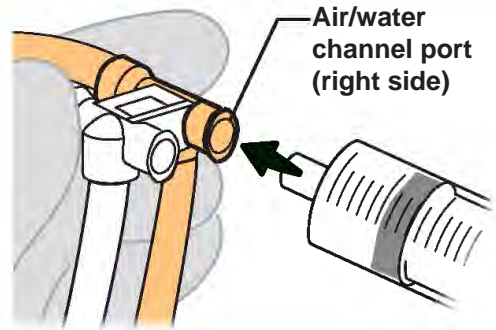


**If alcohol exits, repeat Step 8 until no alcohol exits.**

**NO alcohol should exit**

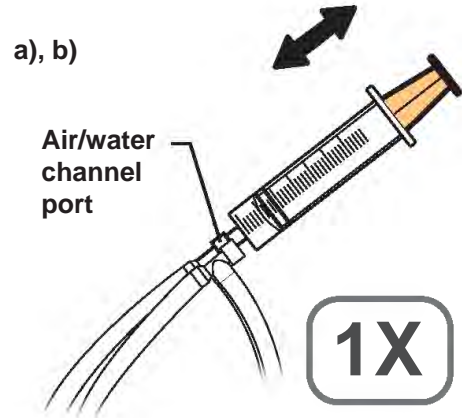


9. Move the syringe from the suction channel port to the injection tube's air/water channel port (port on the right).

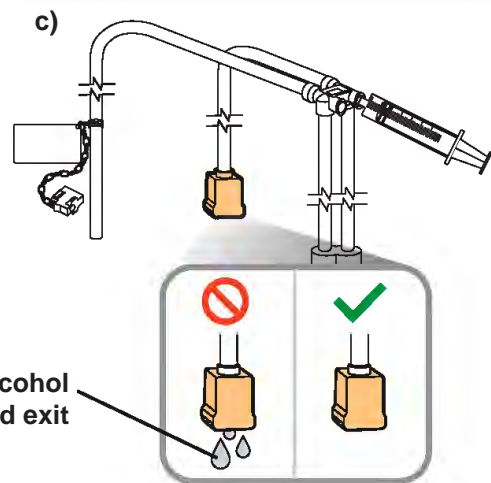


10. Keeping the 30 mL syringe attached, flush the air/water channel tube with 30 mL of air, as follows:

- 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.

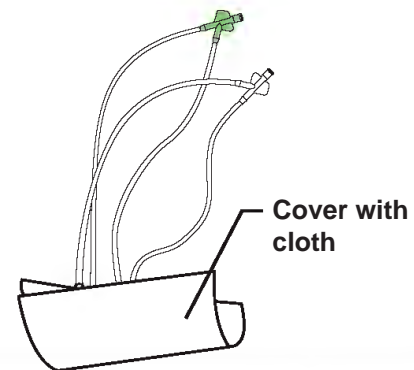


**If alcohol exits, repeat Step 10 until no alcohol exits.**



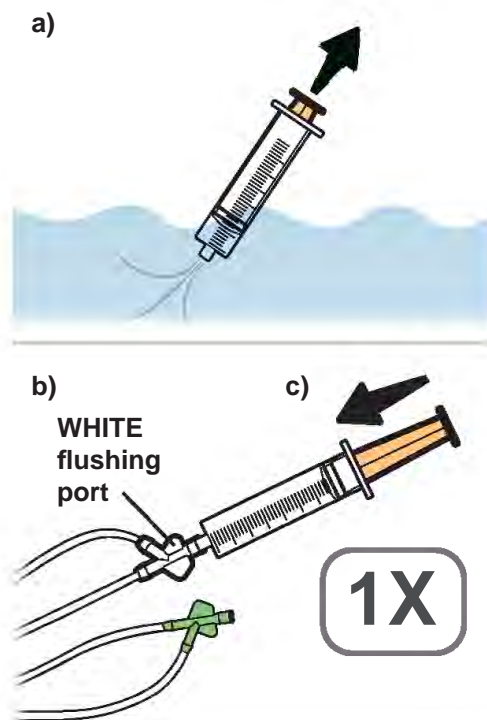
### 6.4.4.5 Flush the distal-end flushing adapter (MAJ-2319)

1. To prevent splashing from the covers' openings, cover the distal-end flushing adapter's white and green covers in sterile lint-free cloths.

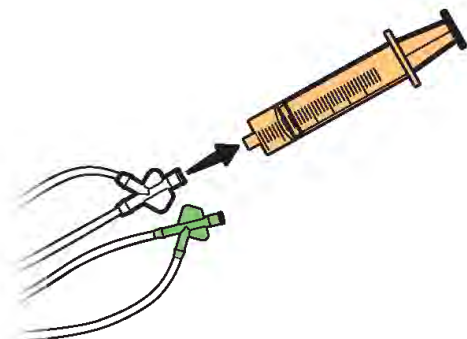


2. Flush the distal-end flushing adapter through the WHITE flushing port with 30 mL of the alcohol, as follows:

- 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.

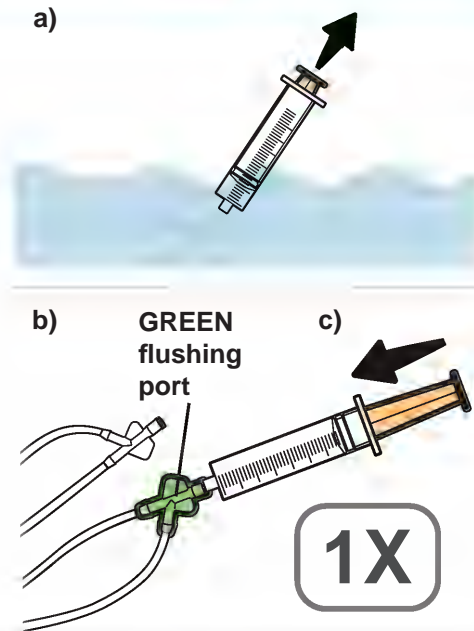


3. Detach the syringe from the distal-end flushing adapter.

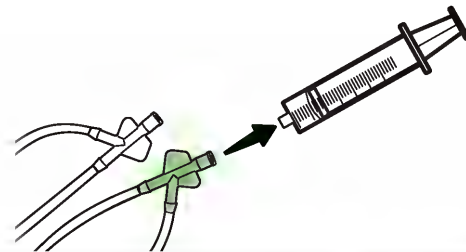


**4.** Flush the distal-end flushing adapter through the GREEN flushing port with 30 mL of the alcohol, as follows:

- 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;
- Attach it to the green flushing port of the distal-end flushing adapter;
- Then forcefully flush with 30 mL of the alcohol.



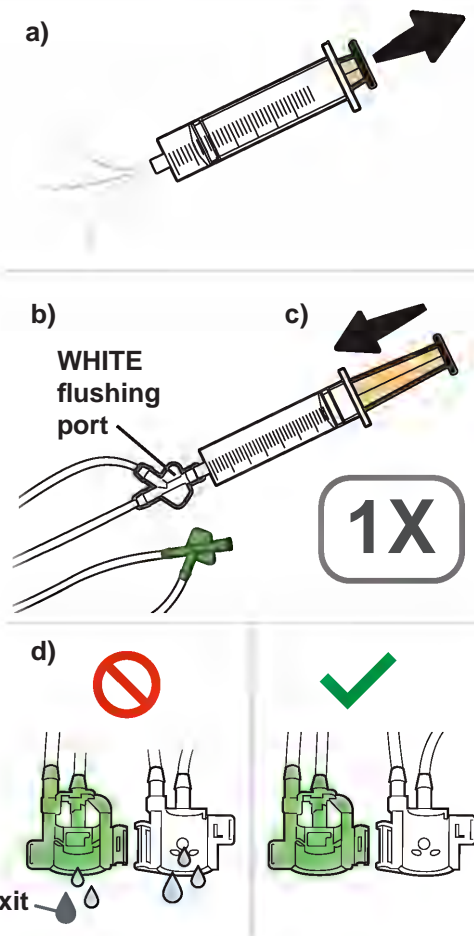
**5.** Detach the syringe from the distal-end flushing adapter.



**6.** Flush the adapter through the WHITE flushing port with 30 mL of air, as follows:

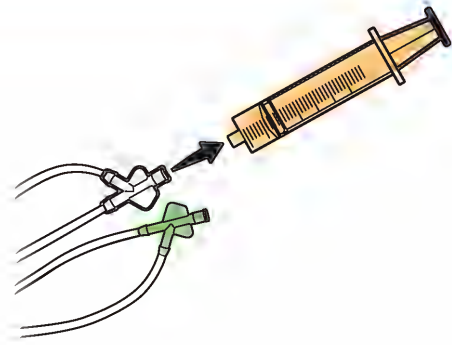
- Before attaching the syringe to the white flushing port** (so that you do not pull alcohol into the syringe that might be inside the flushing tube), slowly pull the syringe plunger to fill the syringe with air;
- Attach it to the white flushing port of the distal-end flushing adapter;
- Then forcefully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

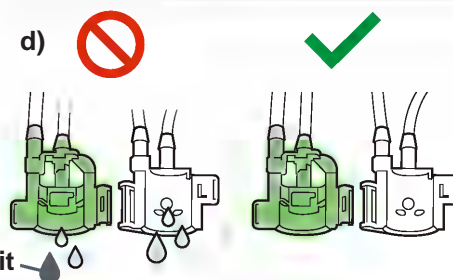
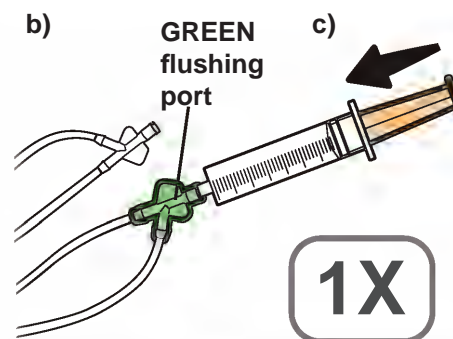
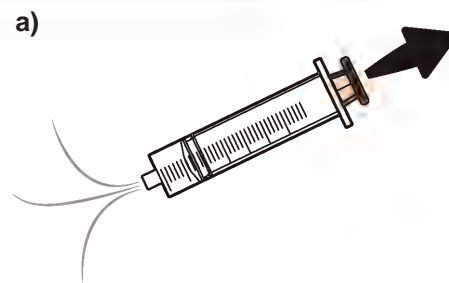
7. Detach the syringe from the distal-end flushing adapter.



8. Flush the adapter through the GREEN flushing port with 30 mL of air, as follows:

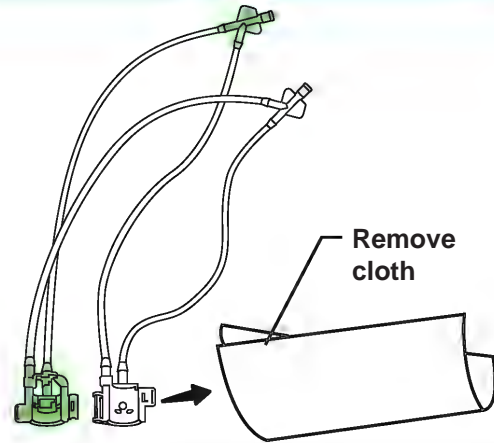
- Before attaching the syringe to the green flushing port** (so that you do not pull alcohol into the syringe that might be inside the flushing tube), slowly pull the syringe plunger to fill the syringe with air;
- Attach it to the green flushing port of the distal-end flushing adapter;
- Then forcefully flush with 30 mL of air;
- Confirm that no alcohol exits from either of the adapter openings.

**If alcohol exits, repeat Step 8 until no alcohol exits.**



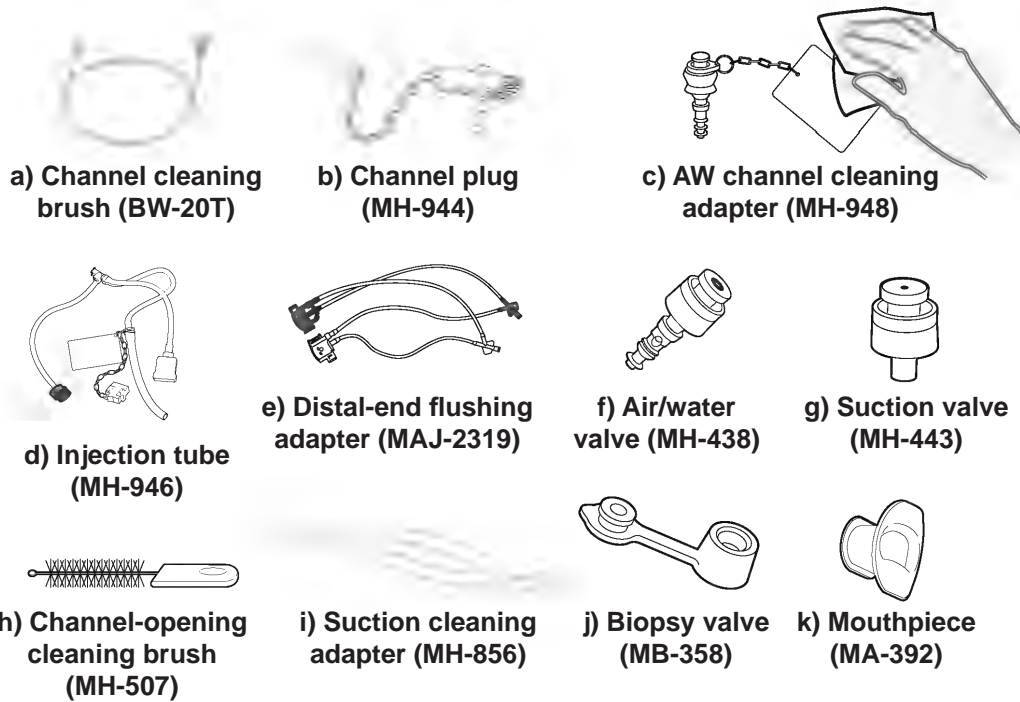
**NO alcohol should exit**

9. Remove the cloths from the distal-end flushing adapter.



### 6.4.4.6 Dry the accessories

1. 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\*<sup>1</sup>

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

### 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.



#### CAUTION

Exceeding the recommended sterilization parameters may cause damage to the accessories.

1. Flush and dry all accessories with alcohol and air as described in Chapter 6.4.4, “Flush and dry accessories with alcohol”.
2. Seal the accessories in individual sterilization pouches appropriate for ethylene oxide gas sterilization, according to your institution’s protocol.
3. 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.

### 6.5.3 Steam sterilization (autoclaving) of the accessories

#### **WARNING**

- 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.

1. Flush and dry all accessories with alcohol and air as described in Chapter 6.4.4, “Flush and dry accessories with alcohol”.
2. Seal the accessories in individual sterilization pouches appropriate for steam sterilization, according to your institution’s protocol.
3. 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.

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# 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).

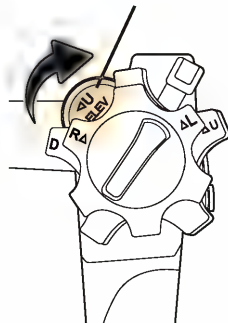
Be sure to attach all required connectors to the endoscope and accessories. For details concerning appropriate connectors, refer to the AER/WD manufacturer’s instructions.

Manually clean and disinfect any endoscopes and accessories that are not compatible with the AER/WD.

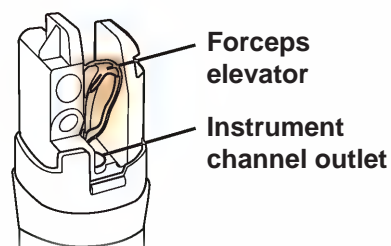
#### **WARNING**

- 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, OER-Pro, or OER-Elite, 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, OER-Pro, or OER-Elite according to the manufacturer’s instructions.

Elevator control lever



 Open



- 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 washer-disinfector, 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, OER-Pro, or OER-Elite, refer to the respective manufacturer's instruction manual.

## NOTE

When cleaning and disinfecting the endoscope in OER-AW, OER-Pro, or OER-Elite, 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, OER-Pro, or OER-Elite instruction manuals. Table 7.1 below also provides information about compatible connectors and retaining racks.

**Table 7.1 Compatible connectors**

	Connectors				Retaining rack	Leak test air tube
	For air/water channel	For instrument channel	For suction channel	For forceps elevator		
<b>OER-AW</b> <sup>*1</sup>	MAJ-1500 <sup>*3</sup>			MAJ-2358	MAJ-1970	MAJ-821
<b>OER-Pro</b> <sup>*2</sup>	MAJ-1500 <sup>*3</sup>			MAJ-2358	MAJ-1970	MAJ-821
<b>OER-Elite</b> <sup>*2</sup>	MAJ-2110	MAJ-2111	MAJ-2112	MAJ-2330 <sup>*4</sup>	GT943000	MAJ-2127 <sup>*5</sup>

<sup>\*1</sup> This product is available in some areas other than the USA.

<sup>\*2</sup> These products are available in the USA and some areas.

<sup>\*3</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.

<sup>\*4</sup> When cleaning and disinfecting TJF-Q190V in OER-Elite, disconnection of MAJ-2330 from TJF-Q190V cannot be detected. Refer to the "List of Compatible Endoscopes/Connecting Tubes" and the instruction manual of OER-Elite for details.

<sup>\*5</sup> When cleaning and disinfecting TJF-Q190V in OER-Elite, TJF-Q190V is unavailable for automated leakage testing. Refer to the "List of Compatible Endoscopes/Connecting Tubes" and the instruction manual of OER-Elite for details.

**NOTE**

- If cleaning and disinfecting an endoscope together with another endoscope of the same or different model using OER-AW, OER-Pro, or OER-Elite, 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	OER-Elite
TJF-Q190V	Group 3	Group 3	Group 1

- 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

### 8.1 Precautions for disposal and storage of the reprocessed endoscope and accessories

#### **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 gas-generating 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

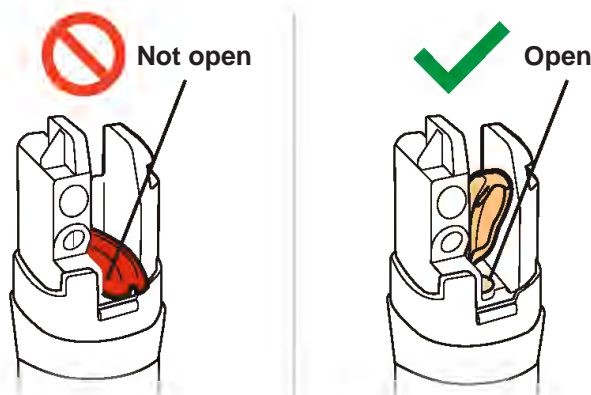
### **WARNING**

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.

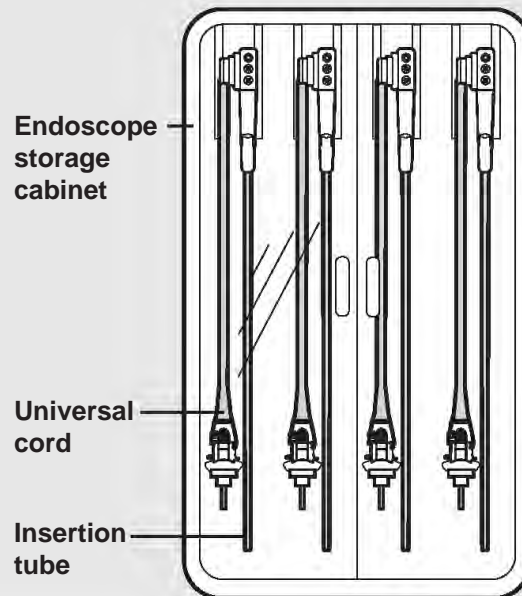
### **CAUTION**

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

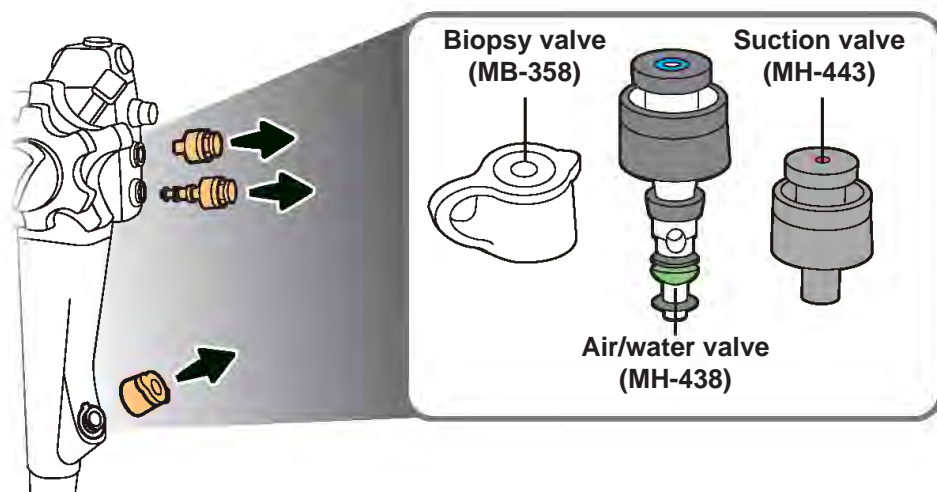
- Some national or professional guidelines recommend checking the quality of the final drying and if necessary, drying endoscopes manually with compressed filtered air before storage.
- Some professional guidelines as well as Olympus recommend storing endoscopes in an endoscope storage cabinet with the insertion tube and the universal cord hanging vertically, as pictured below.



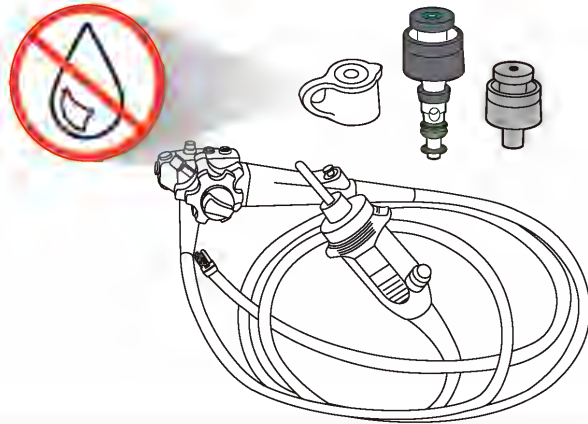
# 1.

Confirm that the following accessories are detached from the endoscope:

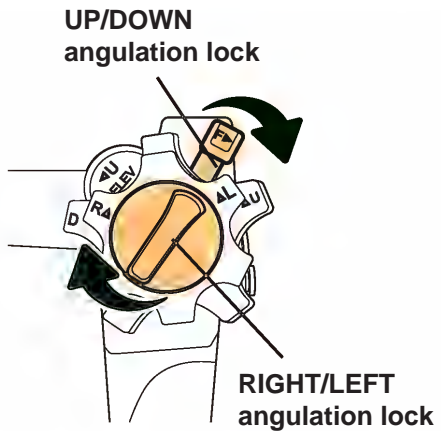
- Air/water valve (MH-438)
- Suction valve (MH-443)
- Biopsy valve (MB-358)



2. Confirm that all the endoscope's and accessories' surfaces are dry.

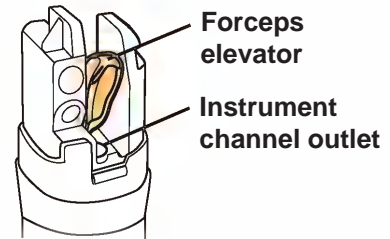


3. Place the endoscope's angulation locks in the "F" position.

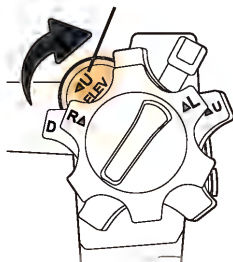


4. Ensure that the distal end's instrument channel outlet is fully open.

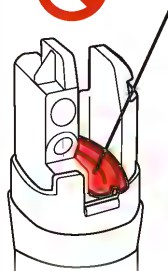
If closed, open the instrument channel outlet by moving the elevator control lever as shown below until the forceps elevator stops.



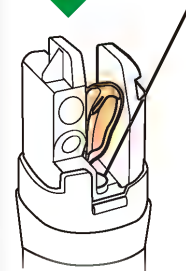
Elevator control lever



Closed



Open



5. Store the disinfected endoscope and accessories properly.

## 8.3 Store the sterilized endoscope and accessories

### 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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