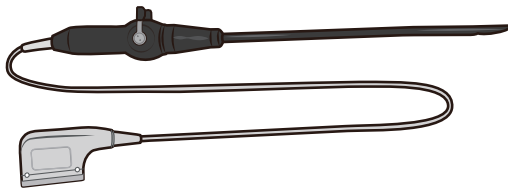


# Laparoscopic Transducer Cleaning and Sterilization

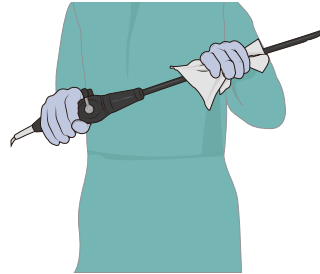


## Cleaning

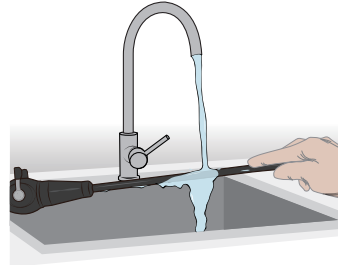
- Wear protective devices such as surgical caps, masks, gloves, goggles or face shield, and dedicated lab suit when cleaning and sterilizing the laparoscopic probe.
- After using the probe, freeze the image, power off the ultrasound system, and disconnect the probe from the ultrasound system, to prevent data loss due to hot plug. If the sheath is used, take off the sheath and dispose it as directed by the hospital. Cleaning and sterilization are required even if the sheath is used.

Perform the following procedure:

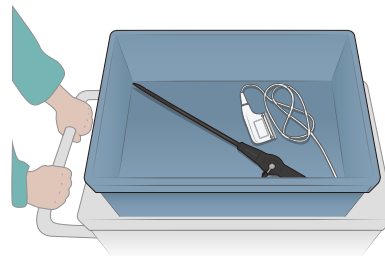
1. Wipe away the ultrasound gel or other visible dirt on the surface of the probe by using a damp piece of disposable lint-free soft cloth or tissue.



2. Rinse the probe insertion part under flowing water for about 1 minute to preliminarily remove the contaminants from the probe surface.

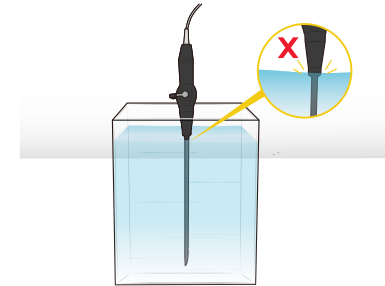


3. Place the contaminated probe in the probe container and transport it to the decontamination room. During transportation, avoid colliding or squeezing the probe. Do not touch the acoustic head with heavy objects. Keep the probe moist during transportation to prevent body fluid from drying up on the probe surface. If cleaning cannot be performed immediately, immerse the insertion part of the probe in the detergent or water to avoid drying for more than 30 minutes.

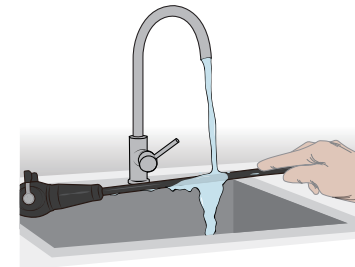


4. Select an appropriate cleaner. For details, see "Table 1 Validated Cleaner/ Sterilant/Sterilization System" for the laparoscopic probe. Follow the manufacturer's instructions to prepare and use the cleaner.
5. Cleaning the insertion part: soak the probe insertion part thoroughly in the cleaner solution for at least 5 minutes or follow the manufacturer's instructions. Wipe and wash the probe surface gently by using a piece of lint-free soft cloth or soft sponge until no dirt is visible. When necessary, wash the locating groove and other items by using disposable cotton swabs. Avoid using a brush to wash the lens because it may damage the probe.

Only the section from distal end to the hard shaft can be immersed in the cleaner solution.



6. Cleaning other parts (except for the insertion part): use a disposable soft cloth soaked with cleaner solution and screw it dry until no liquids drip to wipe the strain relief, control handle, deflection lever, cable, and probe connector for at least 1 minute or follow the manufacturer's instructions until the probe is clean.
7. Avoiding touching the internal pins of the connector with any cleaner.
8. Rinse the probe insertion part thoroughly with plenty of clean flowing water at room temperature for about 1 minute to remove the residual dirt and cleaner solution. Or follow the rinsing method specified by the manufacturer. Use moistened dust-free soft cloth to wipe the residual dirt or cleaners on the parts except for the insertion part.



9. Dry the probe with a disposable lint-free soft cloth or tissue. Do not dry the probe by heating.
10. Inspect the probe. If visible dirt still exists, repeat the preceding steps to clean the probe until it is all clean.

## Sterilization

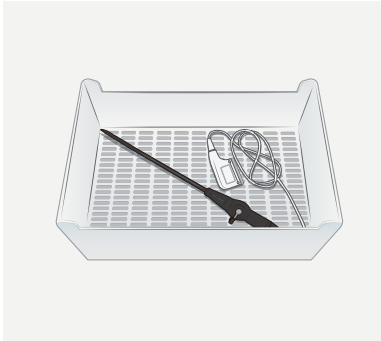
- Clean the probe thoroughly in accordance with the cleaning procedure before sterilization.

- Sterilization using systems or sterilant both can achieve sterilization effect. You can select an appropriate sterilization method as required.

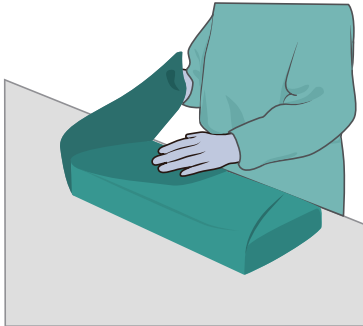
### Sterilization using System

Perform the following procedure:

1. Select an appropriate sterilization system. For details, see "Table 1 Validated Cleaner/Sterilant/Sterilization System".
2. Place the probe into a clean probe container.



3. Wrap the probe container including probe with sterilization wrap which had already cleared by the authorities.



4. Put the sterilization wrap into the sterilization system.



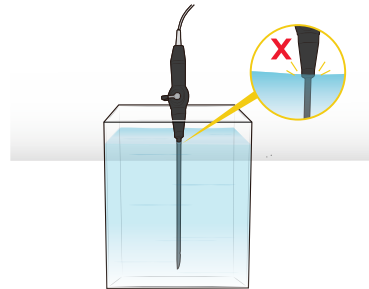
5. Start the sterilization system according to the instructions provided by the manufacturer.
6. Keep the sterilization wrap together with other sterilized surgical instruments in a sterile item storage area.

7. Before next use, check whether the probe has defects such as peeling, rifts, bumps, cracks, or liquid spill. If such defects exist, the probe has reached the end of its service life. In this case, stop using it and contact the Mindray service department.

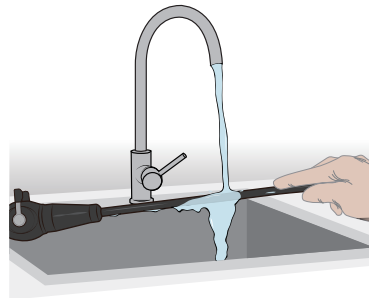
### Sterilization using Sterilant

Perform the following procedure:

1. Select an appropriate sterilant to sterilize the probe. For details, see "Table 1 Validated Cleaner/Sterilant/Sterilization System".
2. Follow the manufacturer's instructions to prepare and use the sterilant. Prepare a sterilant by using sterile distilled or softened water when necessary.
3. Soak the probe insertion part in the sterilant solution and shake the probe properly to remove bubbles on the surface of the probe. For the probe soaking duration, see the sterilant manufacturer's instructions. Only the section from distal end to the hard shaft can be immersed in the sterilant solution.



4. Rinse the probe insertion part thoroughly with plenty of sterile distilled water at room temperature for about 1 minute to remove the residual sterilant. Or follow the rinsing method specified by the manufacturer.



5. Dry the probe with a piece of disposable sterile lint-free soft cloth.
6. Do not dry the probe by heating.
7. Check whether the probe has defects such as peeling, rifts, bumps, cracks, or liquid spill. If such defects exist, the probe has reached the end of its service life. In this case, stop using it and contact the Mindray service department.
8. Store the probe in the sterilized probe container.  
If necessary, repeat the cleaning, sterilization process before next use.

**Table 1 Validated Cleaner/Sterilant/Sterilization System**

Type	Item
Cleaner	MetriZyme
	Liquinox
	Prolystica 2X Concentrate Enzymatic Cleaner
	DDN9
Sterilant	Cidex Activated Dialdehyde Solution
Sterilization System	V-PRO Low Temperature Sterilization System
	STERRAD® Low Temperature Sterilization System

**Table 2 Material Compatible Disinfectant**

Type	Item
Disinfectant	Anioxyde 1000
	Anios Clean Excel D
	Bodedex Forte
	Cidex OPA TM
	Gigasept AF
	Korsolex Extra
	Perasafe
	Revital-Ox® Resert® High Level Disinfectant
	UltrOx™ High-Level disinfectant
	Sani Cloth HB
	Sekusept Aktiv
	Tristel Trio
	Virex II 256

### NOTES:

- The probe must be placed along the placement guide line that is laser carved at the bottom of the probe container.
- For "Table 2 Material Compatible Disinfectant", these disinfectants are only compatible with the probe materials, but the efficacy of realizing the appropriate level of disinfection has not been validated by Mindray.
- The laparoscopic probe, as a critical probe, must undergo cleaning and sterilization completely after each use.
- The laparoscopic probe and sterilization system pictures displayed in this document are only for reference. The actual probe and system that you purchase shall prevail.
- Do not soak the probe for a period longer than the maximum time specified by the manufacturer. Otherwise, the probe may be damaged.
- Since the probe connector is not waterproof, during the cleaning and sterilization (soaking) process, be sure to put the seal cover on the probe connector to prevent the liquid from entering the connector. Do not use the seal cover during sterilization using systems to avoid damage to the probe due to device air pressure of the sterilization system.
- For additional information, please refer to the laparoscope operator's manual.