

Ultrasound Transducer

Care and Handling Guidelines

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Care and Handling of Transducers

Ultrasound transducers are sensitive instruments which can easily be damaged by rough handling. Take extreme care when handling or storing transducers. The manufacturer is not liable for damage of the transducer caused by improper use. Any improper use will void the warranty.

Transducer Handling

Take the following precautions with transducers:

- Do not subject the transducer to mechanical shock or impact, which may result in cracks or chips in the housing and degrade performance.
- Do not allow the transducer head to hang freely. Impact to the probe head may result in irreparable damage.
- Do not drop the transducer. Always keep the transducer secure when you do not use it.
- You always use the carrying case when you transport the transducer.
- Using an inappropriate cleaning or disinfecting agent may damage or discolor the transducer. Be sure to use the proper disinfectant and disinfection method recommended by ALPINION MEDICAL SYSTEMS. Refer to Download Center on website (<http://www.alpinion.com>) for the latest list of compatible cleaning solutions and disinfectants.
- The transducer have been designed and tested to be able to withstand high-level disinfection as recommended by the manufacturer of the disinfectant product. Carefully follow the disinfectant manufacturer's instructions.
- To avoid damage to the transducer, do not use transducer sheaths containing an oil-based coating or petroleum- or mineral oil-based ultrasound coupling agents. Use only a water-based ultrasound coupling agent.
- Do not attempt to repair or alter any part of the transducer. Contact your service representative at ALPINION MEDICAL SYSTEMS immediately if a transducer appears to be damaged or malfunctions in any way.

Transducer Cable Handling

Take the following precautions with transducer cables:

- Carefully wind the cable into the carrying case when storing or transporting the transducer.
- Do not attempt to move the console using any cables or fixtures, such as the transducer connectors.
- Do not subject the cables to bending or twisting. Excessive bending or twisting of cables can cause a failure or intermittent operation.
- Do not let transducer cables dangle loosely from the ultrasound system where they might be caught in the casters while moving.
- Do not place the transducer cable on the floor where the cable can be run over by equipment wheels, etc.
- Do leave the cable under any heavy object.
- Avoid crossing cables between transducers.
- Kinks can cause damage to the cable over time. Do not allow the cable to kink.

Cleaning and Disinfecting Transducers

All Ultrasound transducers must be cleaned and disinfected after each use. For cleaning and disinfecting the transducer, carefully follow the proper disinfectant and disinfectant method recommended by ALPINION MEDICAL SYSTEMS. Using an inappropriate cleaning or disinfecting agent may damage the transducer and will void the transducer warranty.

Transducer Components

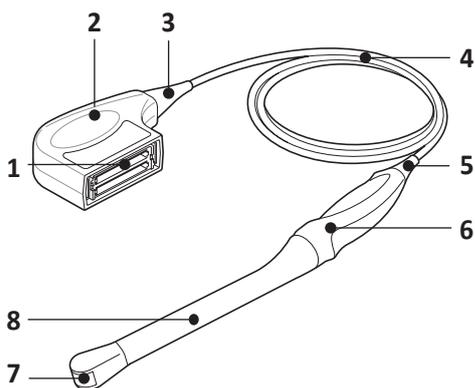


Figure 1. Transducer components

No.	Component
1	Connector electrical contacts
2	Connector housing
3	Connector strain relief
4	Transducer cable
5	Transducer strain relief
6	Transducer handle
7	Transducer lens
8	Transducer neck

Cleaning the transducer

Cleaning is an important procedure that is carried out before disinfecting the transducer. The transducer must be cleaned after each use.

- 1 Disconnect the transducer from the system.
- 2 Moisten a clean gauze pad with purified water and wipe the transducer to remove any gel or particles remaining on the transducer. If purified water is not effective, then you can use an approved pre-cleaner or low-level disinfectant. Follow the solution manufacturer's instructions for the cleaning of transducers.
- 3 Carefully wipe the entire transducer, including the cable and connector. When cleaning the connector, do not allow any type of fluid to enter through the connector strain relief, electrical contacts or areas surrounding the locking-lever shaft and the strain relief.
- 4 To remove remaining particulate and cleaning residue, use cleaning wipes according to the manufacturers' instructions, or rinse thoroughly with water up to the immersion point. Do not immerse the connector, connector strain relief, or cable that is within 5 cm of the connector strain relief.

NOTE

If you place the transducer into the water or cleaning solution, make sure not to immerse the transducer into the liquid beyond the immersion level.

- 5 Dry the transducer using a sterile cloth or gauze after rinsing. Do not dry the transducer by heating it.

NOTE

To dry the lens, use a soft cloth and a blotting motion instead of a wiping motion.

- 6 Examine the housing, strain relief, lens and seal for damage, and check for any functional problem. If any damage is found, do not use a transducer and contact your ALPINION MEDICAL service engineer or an authorized agent.

Disinfecting the transducer

WARNING

- Always use protective eyewear and gloves when cleaning and disinfecting any equipment.
- If a pre-mixed solution is used, be sure to observe the solution expiration date.

CAUTION

- Only wipe the cable, strain relief and parts of the transducer. Do not wipe the connector of the transducer.
- Do not immerse transducers in a solution for longer than one hour, unless under disinfectant manufacturer's instructions.
- Using a non-recommended disinfectant or not following the recommended disinfection method can damage and/or discolor the transducer and will void the transducer warranty.

Low-level disinfection

To low-level disinfect a transducer,

- 1** Disconnect the transducer from the system.
- 2** Thoroughly clean, rinse, and dry the transducer.
- 3** After cleaning, choose a low-level disinfection solution compatible with your transducer.
- 4** Low-level disinfect the transducer by following the disinfection method recommended by the disinfection solution manufacturer.
- 5** After disinfecting, examine the housing, strain relief, lens and seal for damage, and check for any functional problem. If any damage is found, do not use a transducer and contact your ALPINION MEDICAL service engineer or an authorized agent.



NOTE

Any ultrasound gels, cleaning or disinfectant products containing surfactants, methanol, ethanol, benzyl or methyl alcohol, bleach, methyl or ethyl paraben, polyethylene glycol, mineral oil, lubricant oil, oil based lotions, acetone, ammonia, anhydrous ammonia, iodine, iodine compounds, acids with pH5 or greater may damage or discolor your transducer.

High-level disinfection

To high-level disinfect a transducer,

- 1** Disconnect the transducer from the system.
- 2** Thoroughly clean, rinse, and dry the transducer.
- 3** After cleaning, choose a high-level disinfection solution compatible with your transducer. If a pre-mixed solution is used, be sure to observe the solution expiration date.
- 4** Disinfect or high-level disinfect the transducer by following the disinfection method recommended by the disinfection solution manufacturer. High-level disinfection is recommended for general transducers and is required for endocavity transducers.



NOTE

If you place the transducer into the disinfection solution, make sure not to immerse the transducer into the liquid beyond the immersion level.

- 5** Rinse the transducer with plenty of sterile water to remove all chemical residues on it. Or follow the rinsing method recommended by the disinfectant manufacturer to rinse the transducer.
- 6** Wipe off the water on the transducer with sterile cloth or gauze after rinsing it. Do not dry the transducer by heating.
- 7** Examine the housing, strain relief, lens and seal for damage, and check for any functional problem. If any damage is found, do not use a transducer and contact your ALPINION MEDICAL service engineer or an authorized agent.

Transducer Immersion Level

! CAUTION

- Make sure not to immerse the transducer into any liquid beyond the immersion level specified for that transducer.
- Do not immerse the transducer connector and cable in liquid.

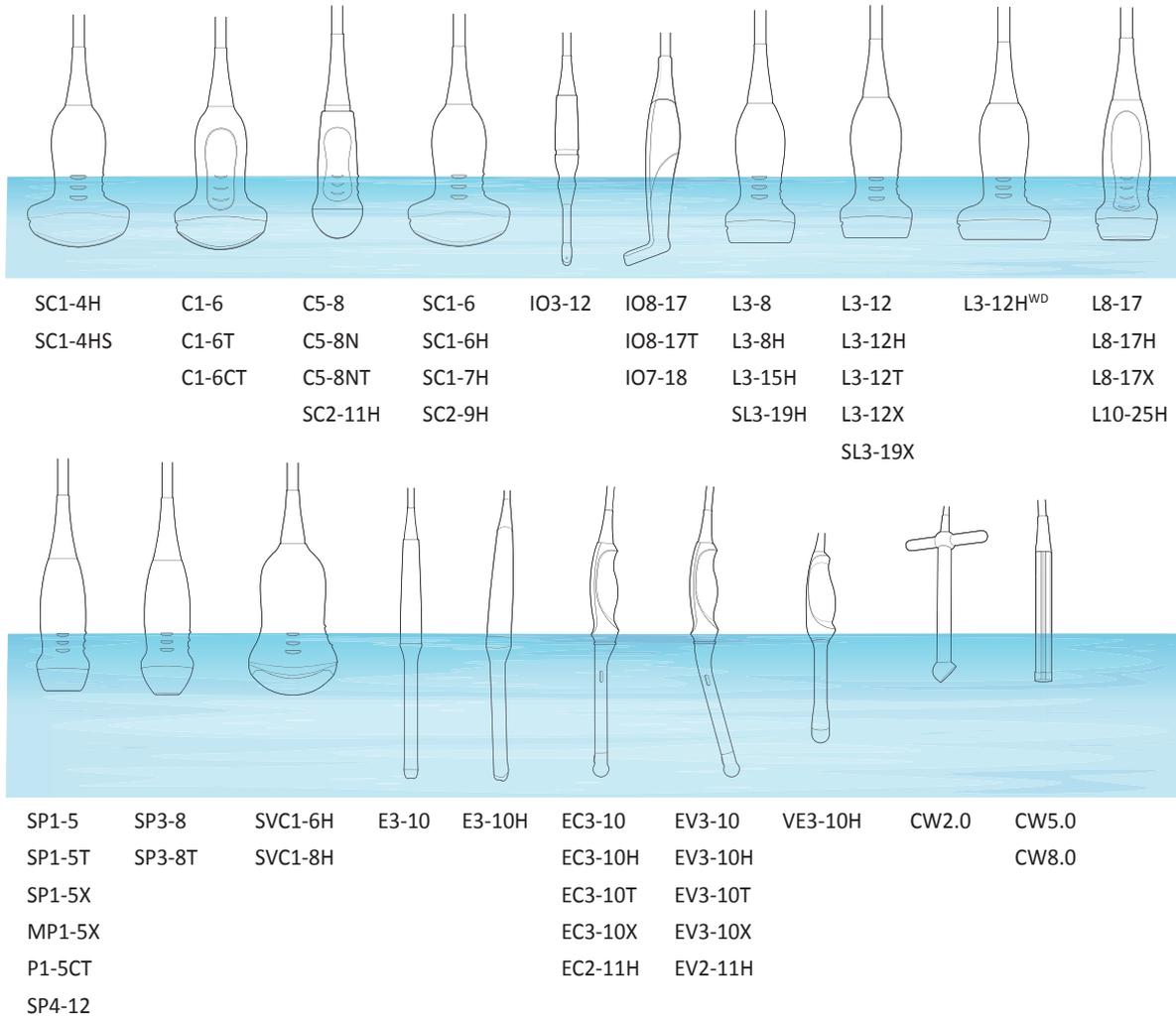


Figure 2. Transducer immersion level

List of Compatible Disinfectants and Cleaning Solutions

ALPINION MEDICAL SYSTEMS routinely reviews new cleaning and disinfection solutions for compatibility with the materials used in the transducer housing, cable and lens in order to provide users with options in choosing a cleaning or disinfection solution. Refer to Download Center on website (<http://www.alpinion.com>) for the latest list of compatible cleaning solutions and disinfectants.

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