Research Technical Note

Extending Flowprobe Life: Cleaning & Sterilization Instructions

Whether your measurement device be a fine Swiss watch or a Transonic® Flowprobe, proper care is crucial to its continued reliable functioning. Because of their size, it is sometimes easy to forget that Transonic Flowprobes are highly technological pieces of equipment. The exact alignment of the reflector in relationship to the probe is critical for accurate measurements. Abuse of the Probe can result in inaccurate measurements, malfunction or non-function of the Probe. We recommend that you carefully examine your Probes when you receive them and store them in their boxes when they are not being used.

Never boil or autoclave your Flowprobes. Also, do not attempt to clean them in an ultrasonic cleaner.

Cleaning Perivascular Flowprobes

PS-, PR-, PAX-, PAA-, S-, R-, A-, V-SERIES PROBES (AFTER USE)

1. Disassemble the Probe, if applicable, keeping all parts of each Probe together because parts are not interchangeable amongst Probes.
2. Thoroughly wash the Flowprobe and its reflector bracket in soap and warm water (≤55°C, 130° F). Remove any visible foreign material with a soft bristled brush.
3. Reinstall the reflector bracket in the alignment groove recessed on either side of the Probe body taking care not to distort the shape of the groove or bracket.

PMP-SERIES (HANDLE STYLE) INTRAOPERATIVE PROBES BEFORE STERILIZATION:

1. Thoroughly wash the Flowprobe in soap and warm water (≤55°C, 130° F). Remove any visible foreign material with a soft brush.
2. Wrap carefully for sterilization.

Extracorporeal Tubing Flowsensors

XL-, OR C-SERIES STERILE TUBING FLOWSENSORS; XN-, OR N-SERIES INLINE SENSORS

Tubing Flowsensors can be damaged by immersion in saline or wet storage. They should not be boiled, or autoclaved. Nor should they be sterilized by cold liquid sterilization.

1. Wipe with soap and water (≤55°C, 130° F).
2. Rinse with ethyl alcohol to promote drying.
3. Do not use alcohol or hydrogen peroxide with PXN Inline Sensors (sizes 1,2,3) with Pebax® tubing ends or damage may result.

Ethylene Oxide (EO) Gas Sterilization

Ethylene oxide, standard hospital cold (≤60°C, 140°F), gas sterilization can be used for sterilization. Before sterilization, the Probe may be rinsed and wiped in 70% alcohol.

Follow the standard sterilization cycle time for your EO system. Recommended parameters:

- Chamber temperature: 119° - 131°F
- Chamber humidity: 45 - 75 % RH
- Load temperature: 104° - 141°F
- Load humidity: 20 - 90% RH
- Gas Mix: 10%EO, 90%HCFC
- Pressure: 24.2 - 27.2 PSIA
- Aeration Time:
  - Heated Aeration 12 - 48 Hours
  - Ambient Aeration 47 hours minimum

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STERRAD Sterilization

Transonic Flowprobes are also sterilizable with STERRAD (not Steris). Total process time is a little over one hour. No aeration is required, and there are no toxic residues or emissions.

Liquid Sterilization and Disinfecting Solutions

Various solutions are widely used to disinfect surgical equipment. Great care should be used when applying any of these agents to Transonic Flowprobes. Note: Transonic has not performed any tests to determine the efficacy of any of these solutions for disinfecting our research Flowprobes and we firmly recommend sterilization of Flowprobes destined for chronic implantation. Additionally, Transonic has not tested the following solutions to determine the effect on Flowprobe performance.

Use of any solution should be undertaken with great care. In general, soaking for a relatively short time at low temperature, in dilute solution will be safer for the Probes. It is up to the customer to determine if this will result in a satisfactory degree of decontamination without damage to the Flowprobe.

Early Transonic Flowprobes (dark blue), manufactured with a formulated resin epoxy, absorbed liquid agents and damaged Probe performance. In recent years, we have used Conap epoxy (light blue color) which is more resistant to liquid absorption. Conap Probes have been soaked by customers in the following solutions without damaging effects. Details about concentration, temperature and soak time have not been given:

- Formaldehyde
- Glutaraldhyde
- Commercial Preparations
- Cidex

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Transonic Systems Inc. is a global manufacturer of innovative biomedical measurement equipment. Founded in 1983, Transonic sells "gold standard" transit-time ultrasound Flowmeter s and monitors for surgical, hemodialysis, pediatric critical care, perfusion, interventional radiology and research applications. In addition, Transonic provides pressure and pressure volume systems, laser Doppler Flowmeter s and telemetry systems.

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