

## ELECTRO SURGICAL INSTRUMENT COMPANY

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### General Care and Cleaning of ESI Instruments including lighted and non-lighted instruments and fiber optic cables

All ESI instruments are shipped clean, but not sterile, and must be sterilized before use.

Examine all instruments before each use, being careful to check for cracks in insulating coatings and cracks or bends in fiber optic cables. Do not use damaged instruments or cables. Do not attempt to make repairs to instruments as this will void the warranty.

All instruments should be cleaned and disinfected immediately after use. Do not allow blood or tissue to dry on instruments. Clean with soft brushes only; never use stiff brushes or abrasives to clean instruments. Use only neutral pH solutions for cleaning. If using an approved cleaning solution, make sure to follow all manufacturer instructions with regard to concentration of solution and duration. Do not leave instruments in disinfecting solutions overnight, as this may destroy the instrument. Never soak instruments in bleach. Flush instruments well with distilled water after disinfecting.

Disassemble or unlock instruments for cleaning where applicable. Do not mix instruments made of different metals such as chrome, aluminum and stainless steel during the cleaning process as this will cause rusting, and should be avoided.

For gravity displacement steam sterilization: 250° F (121° C) with a 30 minute exposure time is recommended. Or 270° F (132° C) with a 5 minute exposure time.

For pre-vacuum conditioned steam sterilization, 270° F (132° C) with a 5 minute exposure time is recommended. Sterilization temperatures should not exceed 280° F. Other temperatures should be validated by the autoclave manufacturer. For coated instruments, we recommend steam sterilization exclusively. Use only distilled water in the sterilizer reservoir. Tap water contains minerals that will stain instruments if left to dry on the instrument. Fiber optic cables should be loosely coiled for autoclaving. Do not stretch or kink cables, as the fibers within the protective sheath will break. Do not place sharp or heavy objects on coiled cables. At the end of the autoclaving cycle, unlock the door and open only slightly. Run the dry cycle for the recommended time. Fully opening the door before the dry cycle will allow condensation to form on instruments and water stains will appear.

Chemical or Cold sterilization solutions render instruments sterile only after 10-hour immersion. The prolonged chemical action can be more detrimental than the usual autoclave cycle. If instruments need to be disinfected only, a cold sterilization soak is acceptable, as disinfection will take approximately 10-20 minutes. Follow manufacturer's specifications. Remember that "Sterile" is an absolute term- no living organism survives. "Disinfected" means that some organisms may survive. Please use the proper technique to render instruments in the required condition for use.



## Fiber Optic Cables:

The most important aspect in the care of fiber optic lighted instruments is that the fiber bundle is made of glass sealed in a protective metal tube. **DO NOT BEND THE LIGHT CARRIER** as some fibers will break causing a loss of light.

The first step in good care after use is to clean cables using soap and water and thoroughly rinse.

Wipe light input and output ends with soft gauze being careful not to scratch glass faces.

The flexible fiber optic cable is constructed entirely of high temperature components which will withstand normal 250° F autoclaving and flash autoclaving at 270°F. The cause of most problems in autoclaving fiber optic cables is careless handling such as tying fiber optic cables with rubber bands, kinking and stacking heavy instruments on them. We have not found routine flash autoclaving to be a problem when handled properly.

**Simple and careful handling of ESI "Quick-On" Connectors (ESI cables 01-0011, 01-0350, 01-0350-10, 01-0080, 01-0500 and 01-0500-10):**



**Grasp the knurled portion at the cable end to disconnect from the instrument.**

**DO NOT PULL ON THE FLEXIBLE CABLE TO DISCONNECT! Doing so will not release the latch and can cause damage to the cable.**

**IT IS NECESSARY THAT THE SIZE OF THE ACTUAL FIBER BUNDLE IS MATCHED WITH THE SIZE OF THE BUNDLE ON THE INSTRUMENT LIGHT CARRIER BEING USED TO OBTAIN MAXIMUM EFFICIENCY IN LIGHT TRANSMISSION. LIGHT THAT IS NOT TRANSFERRED FROM THE CABLE TO THE INSTRUMENT GENERATES HEAT AT THE CONNECTION SITE.**

3.5mm



5.0mm



6.5mm



The above image may not be to scale, but is given as a depiction of the glass fiber diameter within a 7.54mm (ACMI) cable.

**We do not recommend using ESI lighted instruments or cables with a high wattage light source or a Xenon light source without heat-absorbing filters.**

**A 300 WATT LIGHT SOURCE SHOULD ONLY BE USED IF AT LEAST 94% OF THE INFRARED RADIATION IS FILTERED TO PREVENT EXCESSIVE HEAT TRANSFER.**

**CAUTION: NEVER DRAPE OR COVER THE END OF ANY FIBEROPTIC CABLE OR INSTRUMENT WITH ANY FLAMMABLE MATERIAL OR ITEM. NEVER LAY A LIGHTED INSTRUMENT OR CABLE ON A PATIENT OR ON PATIENT DRAPES.**

The following statements are from a letter sent to our customers in July, 2003:

"We have noted an increased use of xenon and other high wattage light sources; also the use of large diameter fiber optic cables on instruments with small diameter fiber optic bundles. Such practices can create a hazardous situation.

ESI fiber optic light carriers are designed and manufactured for use with 150 watt halogen light sources and fiber optic cables of an appropriate size for the instrument. Generally, instruments such as nasal retractors and specula, anosopes, rectal retractors and most smaller instruments have a light carrier of 3.5mm. They should be used only with small diameter fiber optic cables. Larger instruments like operating retractors such as St. Mark retractors, Deep Pelvic retractors, Harrington retractors and large Deaver retractors have a large light carrier of 6.5mm and can safely be used with large diameter fiber optic cables.

Use of higher wattage light sources and/or oversized fiber optic cables can generate heat at the fiber optic connector and possibly accelerate the depletion of the fiber optics.

We are, therefore, notifying our customers to be sure and use compatible components with fiber optic instruments as noted above. We suggest that you check your cable, light source and instrument configuration to verify that the assembly will not present an unsafe situation when used in the operating room. Additionally, be aware that broken fibers or contaminants that negatively effect the transmission of light through the fiber optic light carrier will compound the problem."

Please call ESI with any questions regarding the information provided in this document.