



Electro Surgical Instrument Company/Weco Manufacturing Group

275 Commerce Drive
Rochester, NY 14623

Phone: 585-444-0980
Fax: 585-444-9810
Toll Free: 888-464-2784

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. Remove any residual blood, protein material and contaminants from instruments with a stiff nylon (not metal) bristle brush and/or soft cloths. Do not allow blood or tissue to dry on instruments. Never use abrasives to clean instruments.

Use only cleaning solutions with a verified **pH of 7 (neutral)**. Some products marketed or labeled as "neutral" are not formulated at true pH 7 and may fall in a mildly alkaline range of approximately pH 8 to 9. Solutions above pH 7, even those labeled neutral, can leave a visible surface deposit or staining on stainless steel instruments. Solutions below pH 7 are acidic and can damage the stainless steel surface. Before use, confirm the actual pH of a cleaning solution with the product manufacturer or by testing, and select only a product verified at **pH 7**.

If using an approved cleaning solution, follow all manufacturer instructions regarding 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. After cleaning, inspect instruments and cables for signs of damage. Worn or damaged instruments should be removed for repair or replacement.

Always use the proper cleaning and sterilization technique to render instruments in the required condition for use.

CAUTION: The approved sterilization parameters are only valid with sterilization equipment that is properly maintained and calibrated. The sterilizer manufacturer's written instructions should be followed. Any deviation from the recommended parameters for sterilization should be validated by the user.

Steam sterilization has been validated as an effective process for reusable instruments. Ensure your autoclave is operating correctly for effective sterilization. Consult your autoclave manual for specific instructions, conditions, and exposure periods.

Sterilization Method	Temperature	Minimum Exposure Time
Gravity displacement steam	250° F (121° C)	30 minutes
Gravity displacement steam (alternate)	270° F (132° C)	5 minutes
Pre-vacuum conditioned steam	270° F (132° C)	5 minutes

Do not exceed 280° F. Sterilization at any other temperature must 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.

Instrument light carriers are comprised of glass fibers sealed in a protective metal tube. DO NOT BEND THE LIGHT CARRIER as some fibers will break causing a loss of light.

Fiber optic cables:

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.

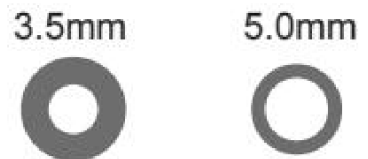
Simple and careful handling of ESI "Quick-On" Connectors (ESI cables 01-0350, 01-0350-10, 01-0011, 01-0500, 01-0500-10, and discontinued 01-0080):

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.

The image may not be to scale, but is given as a depiction of the glass fiber diameter within a 7.54mm (ACMJ) 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. Light sources use high intensity lamps which produce heat as well as brilliant light. The bright light produced by both the light source and the instrument light carrier can cause burns. Do not place a drape over the light source or cable while the light source is turned on. And never place a lighted instrument on a table drape or patient while the light source is on.

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, anoscopes, 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 Deep Pelvic 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 affect 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.

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