

## **Standard AEI Class I instruments and Accessories (Including Cassettes)**

The above categories of instruments, whether designed, manufactured, and/or distributed by American Eagle Instruments Inc are intended solely for use by trained dental or medical professionals. Specific instrument usage and associated usage techniques should be inclusive within the training received.

### **Preface/Introduction**

As with any piece of technical equipment, the key to efficient operation and longevity of all AEI instruments is rigorous and precise care and maintenance. Although AEI uses the highest quality raw material, specific characteristic of those materials at times may make them susceptible to deterioration if proper care is not taken. When cleaning and sterilizing, it is imperative that the AEI product instructions be followed and that all suitability of all cleaning agents and disinfectants (pH value and chlorine content) be checked prior to use. The importance of *thorough rinsing and drying of instruments during cleaning and sterilization processes* cannot be overstressed. Improper cleaning and/or sterilization can corrode, pit, crack, or stain instruments. Ideally neutral pH7 solutions should be targeted. Generally, a pH less than six is acidic and may breakdown the protective surfaces of stainless steels, resulting in pitting and/or black staining; and a pH more than eight is alkaline and can cause brown staining which can also interfere with the smooth operation of instruments (Most brown stains are not rust and are easily removed with surgical stain remover.)

### **Start with quality**

Each AEI (American Eagle Instruments Inc.) instrument is subject to comprehensive quality controls during all phases of production, thus guaranteeing the high quality standard expected of AEI instruments.

Since AEI's inception, we have processed only certified high grade surgical stainless steels (which contain various percentages of carbon and chrome) and other applicable high grade metals. A specially designed hardening process gives AEI instruments their unique balance of flexibility and optimal durability.

The majority AEI instruments are hand-crafted; shaped, sharpened, and polished by hand. Tips are prepared individually by highly skilled precision crafts-persons. Each instrument is continually held a series of strict quality controls during each stage of fabrication.

With joint cooperation of various universities and major dental institutions world-wide, AEI is able to offer a range of instruments which include the most recent scientific innovations, fabricated using state-of-the-art technology. AEI is constantly expanding its manufacturing horizons - to meet your expectations.

## **Care - Longer life for your instruments**

Each AEI instrument has been designed and manufactured with the greatest of care to fulfill specific functional criteria. Incorrect handling or misuse reduces the service life of these ultra-fine precision instruments. Resultant damage caused by incorrect use is not necessarily related to specific instrument characteristics or aspects of fabrication, however, instrument damage can be minimized with proper instrument care. As we all know, a pair of scissors should not be used as cutting pliers; a needle clamp is not a pair of tweezers; and scalers should not be used as root elevators. Designed use is therefore an integral part of proper instrument care. When handling, processing and storing AEI instruments care must be taken when grouping instruments - potentials for damaging sharpened edges, changing critical instrument angles, and scratching the micro surface are thus reduced and add to instrument longevity. Any instrument that has been dropped must be thoroughly inspected for potential damage such as cracks at the bends and chips on the cutting edges. Keep all instruments as dry as possible and keep all instrument surfaces as debris-free as possible. AEI instruments are professional tools and when cared in a professional manner will reflect that care during usage.

### **Cleaning/Disinfection**

Sterilization cannot be a substitute for cleaning! Caution: an instrument exposed to high temperatures before being properly cleaned and rinsed, can cause the initiation of permanent stains into the instrument surface.

The physical characteristics of most AEI instrument groups allow a wide range of cleaning option, including manual cleaning, ultra sonic cleaning, and disinfectant/washer cleaning.

Manual cleaning is thought to be the most compatible process, using a mild, neutral soap solution. AEI recommends that resin-handled instruments be disinfected using only phenol-free solutions. Phenol solution may be detrimental to the raw material composition, and induce potential for weakening or cracking within the handle material.

Some dental surgeries incorporate ultrasonic units or disinfectant/washers within their cleaning systems. Although these units are compatible with this category of AEI instruments, extreme care is also required to ensure that the cleaning agents and chemicals being used do not damage the instrument subsurface. Follow the unit recommendations precisely. AEI reminds its end users who use these cleaning methods that *they clean but do not sterilize!* When using an ultra sonic or disinfectant/washer cleaning unit, instruments should be cleaned in a non-corrosive, neutral cleaning agent with minimal foaming characteristics.

Stubborn impurities and debris should be removed with a soft brush (never with steel wool, drill brushes or abrasive items). The instrument should be rinsed in distilled water only (not tap water, which may contain chlorines or other additives harmful to stainless steels). AEI recommends that when cleaning instruments, dissimilar metals be segregated: the potential galvanic reactions are therefore lessened.

## Sterilization

AEI instruments are designed to be compatible with a variety of sterilization processes, including autoclaving, chemclaving, dry heat sterilization and cold sterilization (although to a lesser degree: see below). Regardless of sterilization process, temperatures should never exceed 300°F/148°C. As a part of sterilization protocol, temperature ranges of sterilization units should periodically be verified for accuracy. Processing must, at all time, be completed within the recommendations of the processing unit. Any solutions used within the sterilizing unit must be assessed by the processor to assure as neutral pH as possible and assurances must be made that instruments are thoroughly dried and that the micro surfaces remain debris free afterward. Although cold sterilization processes can be completed successfully, due to the potential from chemical damage (especially on AEI's resin handles) during processing, this process is not recommended by AEI.

No matter the venue of sterilization, processed instruments should always be inspected prior to use.

## Dos and don'ts

Regardless of sterilization method, always inspect your equipment for remaining debris and organic or mineral deposits. These can be transferred to the instruments and potentially cause corrosion.

Do not batch stainless steel, aluminum, brass or copper instruments together during the cleaning or sterilization processes. If batched together, a potential for electrolysis reactions between dissimilar metals will exist, which can produce etching and corrosion on the instrument surfaces.

Use only distilled or de-mineralized water when caring for dental instruments. High mineral levels in the water, or water that is too soft, can cause permanent stains on the instrument surface.

Whether you use autoclave, dry heat or germicidal solvents, always follow the manufacturer's instructions **precisely** regarding specific recommendations for temperatures and times.

Careful drying of instruments during cleaning and sterilizing processes is extremely important. Any remaining water or condensation can cause potential rust or corrosion on the instrument surface and into the substrate. This is particularly important when pouch-sterilized process is used or when the autoclave has been opened prematurely. It is advisable to remove any remaining moisture with a sterile cloth.

Instruments consisting of multiple parts, e.g. pliers, gouging pliers, scissors etc. should always be well oiled. Regular use of AEI *Proform* oil will prevent stiffness, rusting and/or corrosion, and will ensure these items perform smoothly. Hinged instruments should always be 'opened' when cleaning or sterilizing.

Identification or engraving added to the instrument surface by the end-user is discouraged. When the polished surface is compromised, a potential inroad for oxidation and/or corrosion is created. 'Slip-on' ID rings is a recommended alternative for custom instrument identification.

Instruments should not be in contact with the following chemicals for more than a couple hours (then immediately and thoroughly rinsed): aluminum chloride, barium chloride, mercury dichloride, calcium chloride, carbolic acid, citric acid, cresol, mercury chloride, mercury salts, phenol, permanganic acid potash, potassium thicyanate, ferrous chloride, stanniferous chloride, tartaric acid.

The following chemicals should be avoided completely: Aqua Regia, iron chloride, sulphuric & hydrochloric acid, and iodine.

With proper care, the longevity and performance of all your professional dental instruments can be extended. We hope that the above has been helpful to you in achieving this goal.

For additional information on care, instructions, usage, and other tutorial information, please visit our website at [www.am-eagle.com](http://www.am-eagle.com), or contact American Eagle Instruments Inc. directly at (800) 551-5172 or (406) 549-7451.