Instruments – Instructions for Use

CLEANING AND MAINTENANCE

A) Rinsing
Directly after surgery, rinse instruments under hot running water, removing all body fluids and debris.

B) Disinfecting (the protection for medical personnel from accidental contamination during cleaning)
To avoid blood and other proteins from sticking to instrument surfaces, an enzymatic cleaner bath (soaking) should be used on all instruments. After soaking for a minimum of 10 minutes, rinse all instruments in running tap water.
Immerse instruments completely in hospital approved disinfectant for an additional 10 minutes then rinse again under running water.
DO NOT USE BLEACH. Exposure to bleach will damage instruments.

C) Cleaning
Instruments should be submerged in a solution of water and neutral pH (7) detergent.

Ultrasonic Cleaning
Place instruments in an open position into the ultrasonic cleaner. Make sure all "sharp" (i.e. scissors, knives, blades, etc.) do not touch other instruments. All instruments must be completely submerged. Instruments should be processed in the ultrasonic cleaner for the full recommended cycle time, which is typically 5-10 minutes. A lid should cover the ultrasonic cleaner during the operation to avoid splashing. Never place different metals in the same cleaning cycle. For example, stainless steel and copper, etc.
Change solution frequently per manufacturer recommendations. Rinse all instruments after an ultrasonic cleaning with water to remove the excess cleaning solution.

Automatic Washing Sterilization
Follow all manufacturers' recommendations. Ensure all instruments are lubricated after and before the sterilization cycle.

Manual Cleaning
Ultrasonic cleaning is the preferred method of cleaning and strongly recommended to ensure all dirt, debris and are fully removed – particularly with instruments with hinges, locks, and other moving parts. If ultrasonic cleaning is not available, follow the below instructions.

a) Use stiff nylon cleaning brushes. Do not use steel wool or wire brushes unless specifically recommended for cleaning brushes for instrument-serrated areas or on bone files, burs or on stained areas in knurled handles.

Recommended Cleaning Procedure for Cleaning Maintenance and Sterilization of Surgical Instruments
b) Use only neutral pH (7) detergents, low pH (acidic less than 6 pH) detergents will cause breakdown of stainless steel protective surface (pitting) and black staining. Higher pH detergents (alkaline – more than 8 pH) will cause a surface deposit of a brown stain (phosphates), which will also interfere with a smooth operation of the instrument. Most brown stains are not rust, but merely a high pH surface (phosphate) deposit and can easily be removed with a stain remover.

c) Brush delicate instruments carefully. These should be handled separately from all other general instruments.

d) Make sure all instrument surfaces are visibly clean and free from stains and tissue. The stain remover will aid in the elimination of residue stains.
Each instrument should be inspected for functionality and general condition, this would include, but is not limited to:

- Forceps have properly aligned tips.
- Hemostats and needle holders should not show light between the jaws, when closed in the first ratchet position (hemostats may show a small open space halfway in from the closed tips), lock and unlock easily at joints and make sure they are not too loose. Check needle holders for wear on jaw surfaces.
- Check suction tubes to ensure they are clean inside.
- Ensure biopsy punches are clean by punching a hole into tissue paper.
- Check working functions of all retractors.
- Make sure that all cutting instruments and knives have sharp undamaged blades.

e) After scrubbing, rinse all instruments thoroughly under running water. While rinsing, open and close scissors, hemostats, needle holders and other hinged instruments to make sure the hinged areas are rinsed out, as well as the outside of the instruments.

D) After Cleaning
If instruments are to be stored, let them air dry then store them in a clean and dry area.

E) Autoclaving
Lubricate all instruments that have any "metal to metal" action (i.e. scissors, hemostats, etc.). Non-silicone, water-soluble surgical lubricants, such as spray lube is recommended. Do not sure industrial lubricants. Put instruments up for sterilization either individually or in sets.

For Individual Instruments
Disposable paper or plastic pouches are ideal. Make sure you use a wide enough pouch (4 inches or wider) for instruments with ratchet locks (i.e. hemostats and needle holders, etc.) so the instrument can be sterilized in an open (unlocked) position. Locking instruments during autoclaving will result in cracked hinges and other defects because of heat expansion. If you wrap instruments, make sure your towels do not contain detergent residue, which can stain your instruments. Make sure that the towels used in sterilization of instruments have no detergent residue and are neutral pH (7) if immersed in water. This can be a problem, as laundries will frequently use inexpensive but high pH (9-13) detergents and do not properly rinse out or neutralize those detergents in the final wash or rinse cycle. Also, sometimes bleaches are added and are not neutralized. Hospitals use a "sour" rinse cycle to neutralize all detergent residue.

For Instrument Sets
Unlock all instruments and sterilize them in an open position. Place the heavier instruments on the bottom of the set, when two layers are required. Never lock an instrument during autoclaving. Steam cannot penetrate contacting surfaces and this will compromise the sterility of the instruments. The instrument will develop cracks in hinges (lock box) areas because of the heat expansion during sterilization. Do not overload autoclave chambers as pockets may form and will not permit steam to penetrate. Place a towel on the bottom of the pan to absorb the excess moisture during autoclaving.

CAUTION: With most portable, tabletop autoclaves, at the end of the autoclave cycle – before drying cycle – unlock the door and open it no more than a crack (approximately 1/4"). Then run dry cycle for the period recommended by the autoclave manufacturer. If the autoclave door is opened fully before the drying cycle, cold room air will rush into the chamber, causing condensation on the instruments. This will result in water stains on the instruments and also cause wet packs. Make sure the autoclave filters and chambers are cleaned periodically. A stain remover will remove stains and clean the autoclave chamber.

F) Cold Sterilization
Most cold sterilization solutions render instruments sterile only after 10-hour immersions. This prolonged chemical action can be more detrimental to surgical instruments than the usual 20-minute autoclave cycle. If the instrument needs to be, "disinfected" only, a cold sterilization soak is okay, as disinfecting will take place in 10-minutes or more. Check the manufacturer's specifications. Also, see the warning sign on using bleach (section B).

Keep in mind the difference between:
STERILE – No living microorganisms
DISINFECTED – Kills most but not all microorganisms

CAUTION: For instruments with Tungsten Carbide inserts (hemostats, scissors, needle holders – also identified by a gold handle), we do not recommend cold sterilization or solutions containing Benzyl Ammonium Chloride, which will deteriorate the Tungsten Carbide, inserts.