

Rinsing

- Immediately after surgery, rinse instruments under warm running water to remove all blood, body fluids and tissue. If not cleaned immediately after rinsing, instruments should be submerged in a solution of water and neutral pH (7) detergent until they can be cleaned.

Cleaning

Ultrasonic Cleaning

- Place instruments in open position into the ultrasonic cleaner. Make sure that instruments with sharp blades (scissors, etc.) do not touch other instruments. All instruments must be fully submerged.
- Do not place dissimilar metals (stainless, copper, chrome plated, etc.) in the same cleaning cycle.
- Instruments should be processed in the cleaner for 5 to 10 minutes.
- After ultrasonic cleaning, rinse instruments with water to remove ultrasonic cleaning solution.

Automatic Washer Sterilizers

- Follow manufacturer's recommendations. Be sure to lubricate instruments after last rinse cycle and before sterilization cycle.

Manual Cleaning

- Ultrasonic cleaning is the most effective way to clean surgical instruments, especially those with hinges, locks and moving parts. If ultrasonic cleaning is not available, follow these steps:
 - Use stiff plastic cleaning brushes. Do not use steel wool or wire brushes.
 - Use only neutral pH (7) detergents. (Low pH detergents, if not rinsed off properly, will cause breakdown of stainless protective surface and black staining. High pH detergents will cause surface deposit of brown stain, which will also interfere with smooth operation of the instrument.)
 - Brush delicate instruments carefully and, if possible, handle them separately from general instruments.
 - Make sure all instrument surfaces are visibly clean and free from stains and tissue.

Inspect each instrument for proper function and condition. Make sure that scissor blades glide smoothly all the way (blades must not be loose when in closed position). Check that forceps tips are properly aligned. Make sure that hemostats and needle holders do not show light between the jaws, that they lock and unlock easily, and that the joints are not too

loose. Check needle holder jaws for wear. Examine cutting instruments and knives to be sure their blades are sharp and undamaged.

- After scrubbing, rinse instruments thoroughly under running water. While rinsing, open and close scissors, hemostats, needle holders and other hinged instruments to ensure that hinge areas are also rinsed out.

Autoclaving

- Lubricate all instruments which have any metal-to-metal action such as scissors, hemostats, needle holders, self retaining retractors, etc. Surgical instrument lubricants should be used. Do not use WD-40 oil or other industrial lubricants.
- Instruments may be autoclaved individually or in sets.
 - *Individual instruments*—Disposable paper or plastic pouches are ideal. Make sure you use a wide enough pouch (4" or wider) for instruments with ratchet locks (such as needle holders and hemostats) so the instrument can be sterilized in an open (unlocked) position.
 - *Instrument Sets*—Unlock all instruments and sterilize them in an open position. Place heavy instruments on bottom of set (when two layers are required).
- Never lock an instrument during autoclaving. This will prevent the steam from reaching and sterilizing the metal-to-metal surfaces. Furthermore, heat expansion during autoclaving can cause cracks in hinge areas.
- Do not overload the autoclave chamber, as this may also hinder steam penetration. Place a towel on bottom of pan to absorb excess moisture during autoclaving. Make sure the towels contain no detergent residue and are neutral pH (7) when immersed in water. (Laundries frequently use inexpensive but high pH (9-13) detergents and do not properly rinse out or neutralize those detergents in the final wash/rinse cycle. Also, sometimes bleaches are added and are not neutralized.)

CAUTION—At the end of the autoclave cycle (before the drying cycle) unlock autoclave door and open it no more than a crack (about 3/4"). 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 instruments and also cause wet packs.

Cold Sterilization

Most cold sterilization solutions require a 10-hour immersion to render instruments sterile, but this prolonged chemical action may be more detrimental to surgical instruments than the 20-minute autoclave cycle. If the instruments need only to be disinfected (basically clean), cold sterilization is acceptable since disinfection will take place in only 10 minutes. But to render the instruments sterile (with absolutely no living organism surviving), autoclaving is recommended. For instruments with tungsten carbide inserts (needle holders, scissors, tissue forceps), do not use solutions containing benzyl ammonium chloride which will destroy the tungsten carbide inserts.

After Cleaning

If instruments are to be stored, let them air dry and store them in a clean and dry environment.