



# Laparoscopic Instruments Costly and Difficult to Clean

## How to Reduce the Risks

**L**APAROSCOPIC INSTRUMENTS are expensive (ranging from roughly \$600 to \$1,200 each) and are often very difficult to clean, which may result in patient safety issues. Cleaning challenges begin with the design of the instrument. Three generations of laparoscopic instruments are currently being used. Instruments with the original design, called first generation, are the most difficult to clean because they are unable to be disassembled or flushed. (Photo A)

Second generation instruments are designed with a cleaning port to allow flushing of the shaft during the decontamination process. (Photo B)

The latest design, third generation, can be completely disassembled by removing the drive rod, tubing and handle. (Photo C)

Proper inspection begins at the distal tip of the instrument. (Photo D)

Technicians should begin by inspecting the jaws for blood and tissue. From there, they should inspect the “linkage” for cracks on both sides. If cracks are present, the instrument should be immediately removed from service and sent out for repair.

The next step is to inspect the ‘collar’ where the stainless steel tip meets the insulation. No gap or separation should

be seen in this area. If a gap exists, the instrument must be sent out for re-insulation; this is necessary because a gap will allow blood and fluids to get under the insulation. (Photo E)

To test laparoscopic insulation, the entire shaft should be inspected for nicks and cuts, especially at the distal tips of the spatulas (Photo F), the “L” hooks (Photo G) and “J” hooks. A laparoscopic insulation tester will detect damage that cannot be identified visually, such as a

pinhole or thinning of insulation.

Next, technicians should gently pull back on the insulated shaft. If the insulation moves/slides back, the instrument should be immediately removed from service and sent out for repair.

To determine if the inner linkage is worn, stretched or fatigued, the ring handle should be wiggled back and forth. If the jaw does not move, the instrument should be sent out for repair. When the ring moves, the jaw should move precisely as well.

Handle styles include axial (A), ratcheted (B), non-ratcheted (C) and sliding lock (D). (Photo H)

Inspection of Veress needles should begin at the distal tip. The tip should be inspected for burrs and dents, and then the shaft should also be inspected for burrs and dents. The lever should move freely and removable parts should be secured. For cleaning, it is important to select the proper diameter brush that is long enough to exit the distal tip. (Photo I)

Finally, if the laparoscopic instrument is a needle holder (also known as needle driver), it is necessary to inspect the jaws for tread wear, as well as for cracks in the tungsten carbide inserts. If either or both of these issues are present, the instrument should be removed from service and sent



Photo A

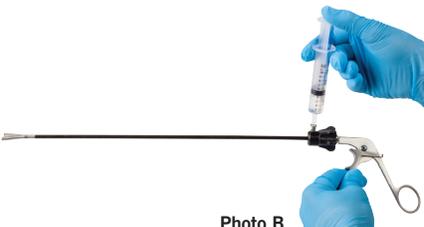


Photo B



Photo C



Inspect for blood and tissue.



Photo D

Inspect for cracks on both sides.

Inspect collar for secure fit. There should be no gap.



Photo E

Insulation should be snug with the metal tip. There should not be any space or gap. Send out for repair.

Torn insulation. Remove from service immediately and send out for repair.



Photo F

Example of damaged insulation. Send out for repair immediately.



Photo G

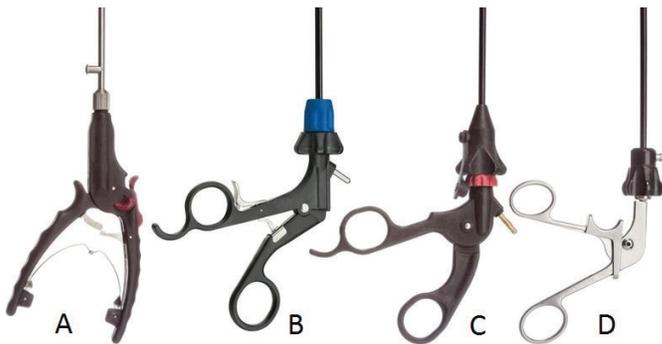


Photo H

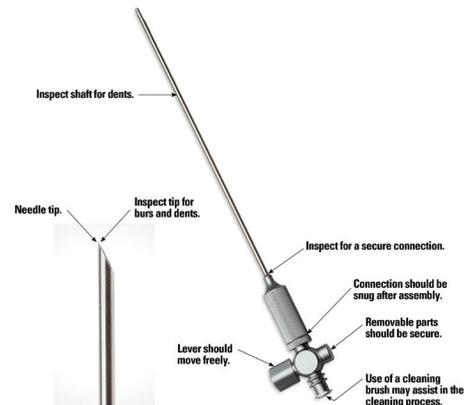


Photo I

out for repair.

Once the visual inspection process is complete, laparoscopic scissors must be tested for sharpness. To test, blades should cut cleanly through one thickness of “gift wrap style” tissue paper. If snagging or tearing of the test material occurs, the blades are dull and the instrument needs to be sharpened. (Photo J)

For improved surgeon satisfaction and patient safety, it is necessary to partner with the facility’s instrument

repair vendor to schedule staff education on proper inspection and testing of laparoscopic instruments, and to establish a proactive repair program. In most cases, it is much less expensive to repair laparoscopic instruments than it is to replace them. A successful maintenance program will focus on these expensive and difficult to clean assets. **C**

Send your questions to Rick@instrumentwhisperer.com.



Photo J



**RICK SCHULTZ**, the Instrument Whisperer™, is an author, inventor and lecturer, and the retired Chief Executive Officer of Spectrum Surgical Instruments Corp. He served as contributing editor of IAHCSSM’s Central Service Technical Manual (Fifth, Sixth, Seventh, Eighth Editions) and authored the textbook, *Inspecting Surgical Instruments: An Illustrated Guide*. Schultz was named IAHCSSM’s Educator of the Year in 2002, and in 2006, was named American Hospital Association Educator of the Year. In 2007, he was named by Healthcare Purchasing News as one of the 30 Most Influential People in Healthcare Sterile Processing. Schultz currently provides educational lectures to Central Service professionals at IAHCSSM’s annual conferences and conducts operating room personnel lectures across the country.