



Scissor and Needle Holders 101

BY RICK SCHULTZ



Most surgical procedures begin with a scissor and end with a needle holder. To the surgeon, the first impression of surgical set's quality is the scissor's sharpness and their final perception is the needle holder's ability to hold the needle to close the incision. Because these instruments are frequently used, they require the most attention when it comes to not only cleaning, but ensuring they maintain the highest standard of functionality and sharpness.

An important part of every Sterile Processing (SP) professional's job is to be proactive and have a quality system in place to check scissors and needle holders prior to their arrival on the sterile field. Every scissor goes dull, regardless of its size, specialty, manufacturer or design. In addition, every needle holder will wear out over time.

When sending instruments out for repair, it is essential to use an experienced repair technician, and to ask questions and verify their experience. On average, a repair technician needs a minimum nine to 12 months of training. When choosing a repair vendor, a hospital should inquire about the extent of experience their technicians have and verify that these experienced technicians will be at the facility every day. Hospitals should specify that repair technicians will not earn their training by working on the facility's expensive instruments. Inexperienced repair technicians can also

over sharpen scissors, which decreases the life of the instrument.

Scissor Testing

The industry standard for scissor sharpness testing is to use red scissor test material for scissors longer than 4 1/2" in overall length, and yellow scissor test material for scissors 4 1/2" and shorter.

Red Scissor Testing



Red Scissor Test Material
Used to test scissors longer than 4 1/2" in overall length.

Yellow Scissor Testing



Yellow Scissor Test Material
Used to test scissors 4 1/2" and shorter in overall length.

Scissors should be tested once a week, if possible. For all scissor testing, the scissor

must cut through to the tip because the distal portion of a scissor dulls first. After testing the scissor's sharpness, visually inspect the tips, blades and screw hinges for cracks, burrs, dents and bioburden.

The final quality check is called "taking the scissor for a walk." This involves opening and closing the scissor three to five times and determining whether the cutting action is smooth. When opening and closing a scissor, it should have a smooth sliding feel, with no grinding.

A proactive approach would be to plan two days a week for scissor testing. For example, every Monday and Wednesday, each scissor that passes through the tray assembly process would be tested on correct scissor sharpness test material. This proactive approach will keep the scissor inventory in top condition. Using an instrument tracking system will ensure all scissors are being tested regularly and will also allow the facility to track which instruments have been sharpened and how frequently.

When testing scissors in a set, one may find that not every scissor in a set needs to be sharpened. It is important to test the scissors and only send out the ones in need of sharpening. *Note: Every scissor can be re-sharpened, including serrated-edge scissors. Serrated-edge scissors require a special technique to sharpen. Ensure the repair vendor is properly trained to sharpen these types of scissors.*

SuperCut (black-handled) scissors have a knife edge that typically requires more frequent sharpening (three to four



times per year). When inspecting black-handled scissors, special attention should be given to the knife edge. The scissors should be sent out for sharpening, when needed.

Gold-handled scissors stay sharper longer because the blades contain tungsten carbide. They will not require sharpening as often as other scissors; however, sharpness should be tested with appropriate scissor test material.

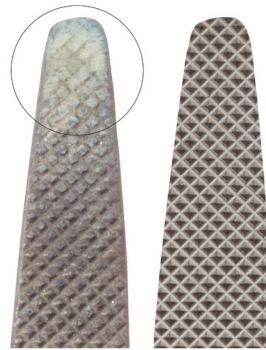
Scissor with Tungsten Carbide Blades



Needle Holder Inspection

Just as all scissors eventually going dull, all needle holder jaws will eventually wear out. SP professionals should inspect all needle holder jaws prior to placing them in the surgical tray. A quick inspection technique is simply to separate the rings and visually inspect both jaws for wear, as well as blood and tissue. The only place a needle holder shows wear is at the very tip, where the needle holder grasps the needle. If the needle holder's jaw is chipped upon inspection, it should be immediately removed from service and repaired/replaced.

Jaw Tread Wear



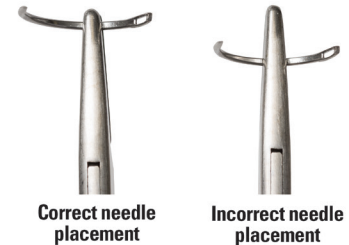
Worn Tread. Remove from service and replace immediately.

Even the most popular needle holders made with tungsten carbide jaws (designated by gold-ringed handles) will wear out. Tungsten carbide jaws may last longer than stainless steel jaws, but they will eventually require repair. The difference is with a gold-handled needle holder, the jaws can be replaced by an experienced repair technician instead of having to replace the entire instrument. A standard non-gold, German needle holder cannot be re-jawed once the jaws wear out; it must be replaced.

Black handles on a needle holder indicate diamond dust jaws. Diamond dust needle holders have jaws that are impregnated with tungsten carbide particles; it is applied using an electrical applicator with a carbide electrode. Diamond dust needle holders are designed to grasp and hold very fine needles. When jaw wear is discovered, the instrument should be sent out to an experienced repair vendor who can reapply the diamond dust surface.

Other important parts of the needle holder that require regular inspection are the box lock (inspect for cracks) and the ratchets (perform ratchet test). When inspecting needle holders, be sure to inspect these areas closely, as well. To test ratchets, click each ratchet slowly to

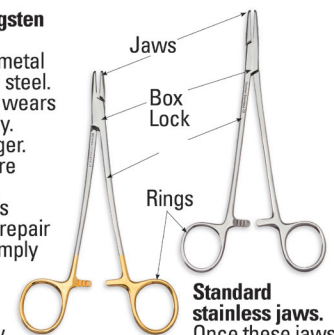
Correct Needle Placement at Tip of Needle Holder



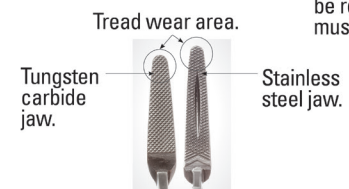
Mayo-Hegar Needle Holder, Tungsten Carbide Jaws & Standard Jaws

Benefits of Tungsten Carbide Jaws.

- Much harder metal than stainless steel.
- The jaw tread wears out very slowly. Jaws last longer.
- Grips the suture needle better.
- When the jaws wear out, the repair vendor can simply replace.
- Tungsten carbide is indicated by 24-karat gold rings.




Standard stainless jaws. Once these jaws wear out, the instrument cannot be re-jawed and must be replaced.



see if the needle holder firmly engages. If it does not, put the needle holder on the first ratchet and gently tap it on a flat work surface (not the palm of the hand). If after three to four taps the ratchet holds, flip the instrument over and repeat the test. If the ratchet springs open during either test, the instrument should be sent out for repair.

Needle holders can crack in the neck when a large needle is used in a small needle holder. Also, a needle holder is



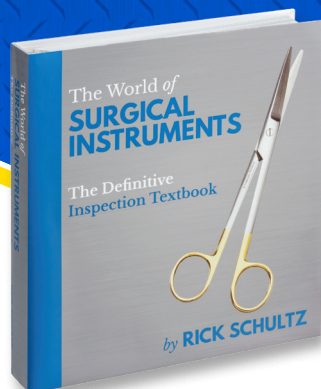
sometimes incorrectly used like a pair of pliers to pull pins and twist wire. This type of crack is not repairable. The instrument must be replaced. 

Q Our repair vendor used to send the same repair team to our facility every time. Now, I'm getting different technicians and more instruments are being marked "beyond repair" than before. Why is this?

A I suspect the biggest reason is inexperienced repair technicians and their lack of supervision by the repair team's managers. To have a large increase in instruments being marked "beyond repair" with different technicians seems to indicate that the repair vendor will do the simple repairs but is marking difficult-to-repair instruments as "beyond repair" because they don't have the parts or skills to do the repair. Another sign of a weak repair team/company is sending instruments off site to be repaired. Again, the reasoning for this is lack of repair technician training and a lack of parts on the repair vehicle.



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 IAHCMM's Central Service Technical Manual (Fifth, Sixth, Seventh, Eighth Editions). Rick authored the textbooks *Inspecting Surgical Instruments: An Illustrated Guide* and *The World of Surgical Instruments: The Definitive Inspection Textbook*, which was released in June 2018. Schultz was named IAHCMM'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 IAHCMM's annual conferences and conducts operating room personnel lectures across the country.



By reading this book you will increase patient safety.

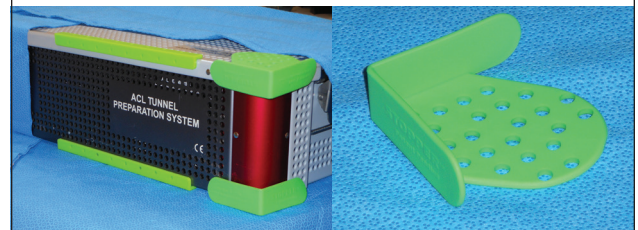
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