The World of SURGICAL INSTRUMENTS

The Definitive Inspection Textbook

501 full color pages
1,198 high resolution photos
Glossy, hard cover
Lay flat design

by RICK SCHULTZ
Frequently Asked Questions

Q: Do all scissors go dull?
A: Yes. Every scissor goes dull no matter what size, specialty, manufacturer, or design.

Q: Does sterilization dull a scissor?
A: Generally, no. However, when old autoclaves produce dirty steam, the scissor blade edges can become stained, which can cause the scissor not to cut.

Q: Can all scissors be resharpened?
A: Yes. Every scissor can be resharpened. Make sure the repair vendor is properly trained, especially on SuperCut scissors (black-handled).

Q: How often should scissors be tested?
A: Scissors should be tested 1 to 2 times per week. The proactive approach is picking 2 days per week as scissor testing days. Using an instrument tracking system will allow the facility to track sharpening frequency. Eventually, a large percentage of scissors will be sharp.

Q: Is the scissor testing standard red and yellow scissor test material?
A: Yes. The industry standard is to use red scissor test material for scissors longer than $4\frac{1}{2}''$ in overall length and yellow scissor test material for scissors that measure $4\frac{1}{2}''$ and shorter. Yellow scissor test material is used on $4\frac{1}{2}''$ scissors.

Q: Do all repair technicians know how to sharpen scissors?
A: No. Experience and proper training is key, and many times repair technicians are learning on your expensive instrument inventory. The hospital should verify how many months of training/employment the repair technician has. On average, a repair technician needs 9 to 12 months of training. This training should not be performed on the facility’s inventory of instruments. You cannot teach experience.

Q: Is it true that certain scissors need to be sharpened more often?
A: Yes. The black-handled SuperCut scissor needs to be sharpened the most (quarterly) because it has a knife edge.

Q: Can scissors be over-sharpened?
A: Yes. Scissors can be over-sharpened by inexperienced repair technicians. Only send out dull scissors for resharpening. Not all scissors in a set need to be sharpened.

Q: Can serrated scissors be sharpened?
A: Yes. The repair technician should know how to sharpen a serrated scissor. But remember, experience cannot be taught. An inexperienced repair technician may not know the correct method.

Q: Do all black-handled scissors have a serrated edge?
A: No. Black-handled SuperCut scissors have the option of serrated edges or not. One serrated blade and one knife blade is the most popular configuration.

Q: Should gold-handled scissors be sharpened more often?
A: No. Gold-handled scissors stay sharper longer. They should first be tested before sending them out for sharpening.

Q: What is the reason tungsten carbide is used in scissors?
Mayo Scissor, Tungsten Carbide

**Instrument Name:** Mayo Scissor, Tungsten Carbide

**Also Known As:** Gold Mayo

**Similar Instruments with Same Inspection:** All scissors

**Overall Length:** 5 1/2” (14 cm), 6 3/4” (17.1 cm), 9” (22.9 cm), straight or curved

**Instrument Use:** Cutting non-delicate tissue/tougher tissue (cartilage/tendons)

**Tray Assembly Tip:** Sterilize with rings slightly open

**Sharpness Test Standard:** Red scissor test material

- Tips should be rounded.
- Inspect both blades for cracks and dents.
- Inspect seams for pitting.
- Inspect for separation of metal.
- Inspect blades for cracks.
- Inspect for cracks on both sides.
- Inspect seams for pitting.
- Separate the rings and inspect for blood and tissue on both sides.
- Open and close rings. Cutting action should be smooth.
Mayo-Hegar Needle Holder, Tungsten Carbide Jaws and Standard Jaws

**Instrument Name:** Mayo-Hegar Needle Holder, Tungsten Carbide Jaws and Standard Jaws  
**Also Known As:** Needle driver  
**Similar Instruments with Same Inspection:** All other needle holders  
**Overall Length:** 7” (17.8 cm)  
**Instrument Use:** Driving suture needles in the suturing process  
**Tray Assembly Tip:** Sterilize with ratchets in the open position

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**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 rejawed and must be replaced.

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**Tread wear area.**  
- Tungsten carbide jaw.  
- Stainless steel jaw.
Types of Needle Holders

Closed position
- Olsen-Hegar
- Heaney
- Crile-Wood
- Ryder
- Mayo-Hegar
- Tungsten Carbide
- Mayo-Hegar Standard, non-carbide

Open position
- Olsen-Hegar
- Heaney
- Crile-Wood
- Ryder
- Mayo-Hegar
- Tungsten Carbide
- Mayo-Hegar Standard, non-carbide
Frequently Asked Questions

Q: There is a space between the insulation and the tip of the instrument. Is this okay?
A: No. The instrument must be immediately removed from service and sent out for repair. A gap can allow blood and fluids to enter under the insulation. If the abdomen is insufflated, it will cause the blood to be forced under the insulation.

Q: How is loose laparoscopic insulation visually tested?
A: To test the insulation visually, inspect the entire shaft for any nicks or cuts. Next, lightly pull back on the insulation. If the insulation slides back, the instrument is in need of re-insulation.

Q: What is the port near the handle used for?
A: This port is used to flush the instrument during the cleaning process.

Q: Where are the most difficult areas to clean on a laparoscopic instrument?
A: The most challenging areas to clean are the jaws and distal working portion (linkage). This is where blood and fluids can hide. Manual cleaning and the use of an ultrasonic irrigator will assist in cleaning these areas.

Q: How are laparoscopic scissors tested for sharpness?
A: Unless stated differently in the Instructions For Use (IFU), laparoscopic scissors are tested on one thickness of gift wrap tissue paper or yellow scissor test material.

Q: How is the jaw tension tested on laparoscopic graspers?
A: Gently clamp a lint-free towel with the laparoscopic grasper and pull back. The grasper should not slip from the towel.

Q: What methods can be used to prevent damage to the tips of laparoscopic instruments?
A: Using a tip protector will help protect sharp tips and delicate instruments from damage or place instruments in a secure instrument rack and tray.

Proper Flushing and Irrigation
With the distal tip underwater, connect syringe to irrigation port and draw up water from cleaning sink. Force cleaning fluids in and out of shaft.
Laparoscopic Claw Forcep, 10 mm

Instrument Name: Laparoscopic Claw Forcep, 10 mm
Also Known As: Claw grasper, Clickline®
Similar Instruments with Same Inspection: All three-piece laparoscopic grasping forceps
Overall Length: Shaft: 36 cm, 43 cm
Width: Diameter: 5 mm, 10 mm
Instrument Use: Grasping tissue during minimally invasive procedures

Inspect teeth for blood and tissue.
Inspect collar for secure fit. There should be no gap.
Inspect for cracks on both sides.
Inspect for missing/torn insulation.
Proper size brush may assist with cleaning.
*Inspect for missing/torn insulation.
*Insulation testing may assist in locating pin holes which are usually not visible.

Drive rod/insert.
Inspect post for bends/damage.
Inspect handle for cracks.
Inspect for cracks on both sides.
*Inspect for missing/torn insulation.
Press to remove drive rod.
Proper size brush may assist with cleaning.

Flushing may assist during the cleaning process.
Inspect handle for cracks.
Inspect for cracks.

Rotating knob should move left and right.
Laparoscopic Claw Forcep, Disassembled
Laparoscopic Claw Forcep, Assembled

*Inspect for missing/torn insulation.
Proper size brush may assist with cleaning.

*Inspect for missing/torn insulation.
Press to remove drive rod.
Proper size brush may assist with cleaning.
Kelly Forcep

**Instrument Name:** Kelly Forcep

**Also Known As:** Snaps (often confused with Rochester Pean)

**Similar Instruments with Same Inspection:** All hemostats

**Overall Length:** 5 1/2” (14 cm), half serrated jaws

**Instrument Use:** Clamping off vessels

**Tray Assembly Tip:** Sterilize with ratchets in the open position

Inspect both jaws for dents. Inspect serrations for blood and tissue.

Tips should meet evenly with no overlap.

Separate the rings and inspect for blood and tissue on both sides.

Inspect both jaws for blood and tissue.

Inspect for cracks on both sides.

Test ratchet. Verify it locks in each position.

Crile forcep has fully serrated jaws.

Kelly forcep has half serrated jaws.

Dr. Howard Atwood Kelly (1858-1943)

Credited with establishing gynecology as a specialty by developing new surgical approaches to GYN diseases. One of the founders of Johns Hopkins University School of Medicine (Baltimore, MD, 1893)
Most Common Hemostats

Hartman  Halsted  Kelly  Crile  Rochester-Pean  Ochsner (Kocher)
**Resectoscope**

**Instrument Name:** Resectoscope

**Also Known As:** Bipolar resectoscope, Urology resectoscope

**Instrument Use:** Removal or biopsy of lesions of the bladder, prostate, or urethra

**Tray Assembly Tip:** Very delicate instrument. A protection case may reduce damage.

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**Resectoscope, assembled**

- Connection should be secure.
- Inspect ceramic tip for cracks and chips.
- Inspect holes for blood and tissue.
- Inspect for bent handles/levers.
- Inspect for cracks on both sides.
- Proper size brush may assist with cleaning.
- Color indicates the diameter of the sheath. Yellow indicates 26 French (Fr.).
- Color indicates scope degree. Red indicates 30°.
- Verify connection is secure.
- Open and close testing spring tension.
Damaged Laparoscopic Spatula

**Cause:** The insulation may have been damaged during use. Over time, the insulation may become brittle and chip off.

**Effect:** The insulation is torn/missing. The instrument should be removed from service immediately and sent for repair. Continued use may result in the insulation dropping into the surgical site and cause a significant patient risk.

**Prevention:** This instrument requires visual inspection and insulation testing after every use.
Testimonials

“IT is the Encyclopedia Britannica® for surgical instruments. The picture-in-picture detail is awesome to show proper inspection points.” - B.C.R., North Carolina

“Nothing short of being the go-to resource for instrument knowledge and care and handling for the novice and expert.” - R.W.S., MBA, CRCST, CIS, CHL, Ohio

“The textbook even provides an unprecedented, behind the scenes look into instrument repair and maintenance. Rick’s new book is a home run and a must read for Sterile Processing professionals.” - J.P., BSN, RN, CCSVP, CMRP, Pennsylvania

“An outstanding instructional guide. I would have loved to have such a work when I started 37 years ago!” – J.M.E, PhD, Ohio

About The Book

» 501 pages with 1,198 high resolution photos
» Hardcover “lay flat” hidden spiral binding
» 70 lb super white paper with 20 section tabs
» FAQ’s for each section
» Includes Surgical Instrument Repair and How to Measure sections
» Authored by multiple award-winning surgical instrument expert, Rick Schultz

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