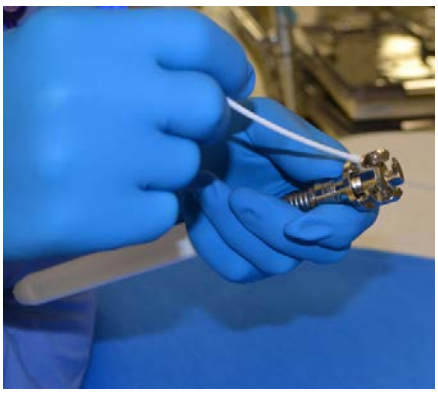
BY SUSAN KLACIK

Common inspection points for surgical instrumentation

Inspecting surgical devices is a time-consuming process. However, diligently checking every instrument prior to sterilization is essential to ensuring safe, proper functioning.

As the last people to see devices before they are used for patient care, sterile processing technicians must be thorough. Exterior surfaces should be inspected for flaws such as nicks, rust, and staining. Surgical instruments with crevices, serrations, lumens, and other areas that can be difficult to see and clean may require enhanced inspection, whether with a handheld magnifier, a tabletop/swivel-arm tool, or even computer-supported magnification.



Borescopes—small, flexible, fiber-optic devices available in many lengths and widths—are particularly useful for identifying flaws such as debris, scratches, and foreign objects during inspections of internal channels and ports. Although these tools are commonly associated with inspecting flexible endoscopes, they can also be effective for the inner components of suction devices and even some power equipment, some of which have instructions for use (IFU) calling specifically for borescope inspection. Borescope inspection occurs in both the decontamination process in the decontamination room and during the final preparation step in the clean prep area.

Other cleaning verification processes used for directly testing instruments for residual soils include adenosine triphosphate (ATP), protein, and hemoglobin. Cleaning verification tests are commercially available and are rapid, easy to use, repeatable and free of interfering substances. To assure accurate results are obtained cleaning verification processes including borescopes should only be used following the IFU and after training.

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Whatever the tools employed, certification courses, textbooks, and other resources can provide education on the latest inspection techniques. With so many types of devices, some with multiple inspection points, consulting IFU also is essential. The following provides a general overview of essential testing points for most traditional, handheld surgical instruments:

- Tips and shanks can distort or bend. Ensure shanks are straight and that tips align and meet precisely.
- Box locks with visible scratches could be misaligned due to wear. Cracks could indicate a risk of the instrument breaking under pressure.
- Ratchets benefit from two checks. The first is locking the instrument in each position to ensure closure throughout the full range of motion. The second inspection checks the locking function by locking the instrument on the first rachet and gently tapping the rings on the surface of the table, on both sides. During this test, the instrument should not open.
- Serrations or teeth should be inspected for excessive wear or breakage.
- Screws should be tightened if loose or replaced if missing.
- Instrument tape often degrades by flaking or chipping, and may need to be replaced if instruments are not easy to identify
- Cutting edges with nicks, chips, and scratches could compromise proper functioning of single-piece sharp instruments (such as osteotomes). Check sharpness with a testing dowel.
- Adjustment tools and interfaces (sockets, wrenches, screwdriver tips) could become stripped or otherwise ineffective from excessive wear or misuse.
- Moving parts should actuate smoothly and easily. Stickiness or resistance may indicate residual soil, misalignment, or lack of lubrication.
- Scissors should be tested on ma-

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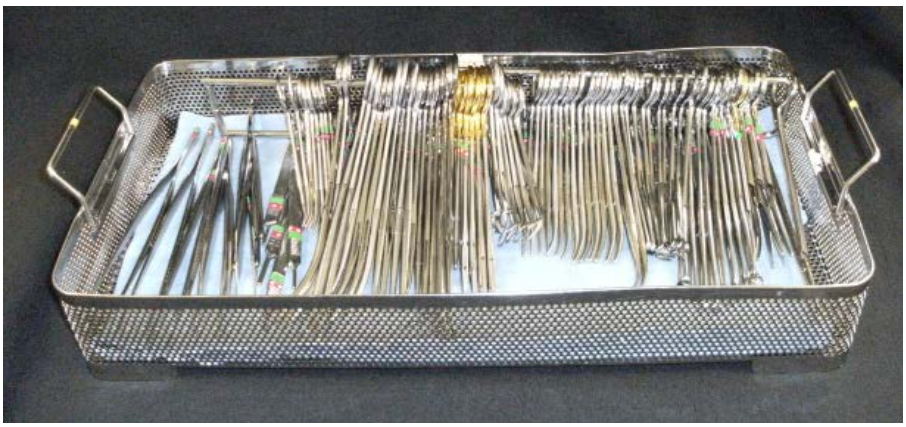

terial created specifically for this purpose. Various types of testing material are available for different instrument sizes.

- Rongeurs should take a clear, clean bite out of an index card to demonstrate proper cutting motion.
- Multipart instruments should be assembled to ensure all parts are present and are in good working order. Unless otherwise stated in the IFU, these instruments should be disassembled before sterilization.
- Locking mechanisms on self-retaining instruments should be actuated to ensure proper hold.
- Insulation of electrosurgical instruments should be inspected with an active electrode insulation integrity tester.
- Borescopes should be cleaned and inspected between use. Also take care to use the right size. A borescope that is too thin will not provide effective inspection of the dinner lumen, and a borescope that is too wide can damage the borescope.

These examples cover only some of the instrument inspection points found in a typical sterile processing department. Beyond hand tools, technicians must contend with power equipment, endoscopes, and cords. They also must stay abreast of new generations and types of instruments. As witnessed with the introduction of robotics, the complexity of devices increases along with the complexity of surgical procedures. Any review of a new procedure using a new device should account for more stringent processing requirements, such as additional equipment and increased inspection time.

Whatever the requirements, instrument inspection is a vital process that must never be skipped or expedited. All technicians must be trained in various inspection processes and techniques and manage the process properly and consistently. Doing so will help to ensure that all instruments and equipment are clean and well-functioning, inside and out. **ORM**

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