Veterinary
Instrumentation

Instrument Care Guide

Care and maintenance of surgical instruments

In an effort to reduce the costs and expenses associated with surgical instruments, many practices are finding that prevention is better than cure. As a result, more and more veterinary practices are developing standards and programs for proper instrument care.

No Steel is Truly 'Stainless'

It is a fact that so-called stainless steel is subject to both water spotting and staining. However, what many people identify as a 'rust' problem usually turns out to be something else.

Most often the problem is actually a stain caused by a surface deposit. These deposits appear in a variety of colours, depending upon the type of deposit involved. Once the cause is found and eliminated, most of the time the problem quickly diminishes or disappears completely.

More than 75% of all surgical instruments are made from stainless steel. Stainless steel is ideally suited for the surgical suite because it is rust resistant, it can be honed to an extremely sharp edge or fine point, and it can be hardened to maintain the delicate, yet precise requirements of the surgeon. But it is this hardened quality – the amount of carbon used during the manufacturing process - coupled with harsh chemicals and improper care that renders stainless steel susceptible to corrosion.

To increase stainless steel's resistance to corrosion, surgical instrument manufacturers use a special corrosion prevention process called passivation. This is a process that treats the surface of the metal in order to reduce its surface chemical reactivity. Whilst the passive layer is extremely resistant to many sources of chemical damage, chlorides are one of the few substances that can attack and damage the protective passive layer. Sources of chlorides that surgical instruments are regularly exposed to include tap water, water softening agents, saline solutions, organic residues, inappropriate cleaning agents and laundry detergent residues.

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Developing a Comprehensive Instrument Care Program

Cleanliness, lubrication, correct handling and storage procedures should ensure proper instrument performance. If you want to significantly lengthen the serviceable life of your surgical instruments, you should also trouble shoot during the entire instrument cleaning process, regularly inspecting your instruments for signs of corrosion, stain and wear.

Storage and Handling:

- If not used immediately, leave instruments in their original protective packaging
- Avoid rough handling or contact that may cause scratching of the surface and subsequent damage to the protective finish
- Avoid sudden or hard impacts that may cause heat-treated instruments with cutting edges to chip or crack
- Make sure that instruments are completely dry. Dry by hand and avoid air-drying
- Place all sharps so that they don't touch each other
- Protect the tip of sharps
- Place instruments in holders in an opened position

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Cleanliness:

Cleanliness is the most important consideration in the care of surgical instruments. Any foreign material left on the surface of the stainless steel can promote corrosion. Blood, chlorides and salt solutions leave residue that can:

- Clog working mechanism
- Hold moisture that precipitates corrosion and impairs functions

Cleaning Protocol:

- Immediately after use, soak the instruments in a highly effective pH neutral solution, designed for the purpose of cleaning instruments
- Scrub instruments with a suitable pH neutral cleaning solution following manufacturer's instructions and a soft brush that has been designed for cleaning instruments before bloodstains and other solutions are allowed to harden
- Minimise contact with cutting edges
- Dismantle instruments as much as possible and clean each part separately
- Pay special attention to cleaning debris from box locks, hinges, ratchets, and serration
- Rinse several times with demineralised or distilled water
- Dry thoroughly by hand to prevent trapped moisture and use lubricants prior to autoclaving

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Ultrasonic Cleaning:

This is the most effective and efficient way to clean the instruments. Follow the manufacturer's recommendation for mixing the solution and the duration of the cleaning cycle.

Before putting soiled instruments into an ultrasonic cleaner, we recommend that they be cleaned, according to guidelines on previous page, in an appropriate pH neutral cleaning solution, of all visible debris clinging to them.

Please follow the instructions:

- Do not mix different metals (like chrome and stainless) in the same cycle
- Open all instruments so ratchets and box locks are accessible
- When loading, avoid piling instruments on top of each other. This could damage delicate instruments
- After the cycle is finished, remove instruments immediately and rinse them. Dry instruments immediately after rinsing
- Use of distilled or demineralized water is recommended for rinsing

If stains or deposits occur:

- Use a quality polish that removes the toughest stains and mineral deposits
- Do not use abrasive powders or steel wool

Sterilising Instruments:

Most metal instruments can be sterilized:

- Steam
- Flash
- Gas

The autoclave can corrode. Corrosion while using the autoclave can occur if:

- Autoclave is not working properly
- Corrosive materials are in contact with instruments
- Tap water instead of distilled water is used to generate steam
- Surgical wrappings have residue from soap, bleach etc. Avoid the use of cloth drapes to wrap kits
- Improper drying time after sterilization

To avoid problems in sterilization:

- Ensure there is no rust or foreign material in steam pipes
- Door seal must be tight
- Entire cycle should be run in order to reduce condensation and ensure through drying
- Valves should be in good repair

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Care of New Vi Instruments

When purchasing a new instrument the following instructions are recommended. Failure to do this may cause staining from the transport oil. This is not a fault.

Ongoing Routine Care of your Instruments (Autoclaveable)

1. Rinse with tepid water immediately after use

2. Manual cleaning using an appropriate instrument brush and an appropriate proprietary enzyme based neutral pH detergent cleaning solution. - follow the manufacturer's instructions re: dilution, water temperature and exposure time

3. It is recommended that the cleaning solution's pH value is greater than 6 and less than 9. Using solutions outside of this range may cause damage or corrosion to the instrument

4. Thoroughly rinse the instrument in clean running water. Use of distilled or demineralized water is recommended for rinsing

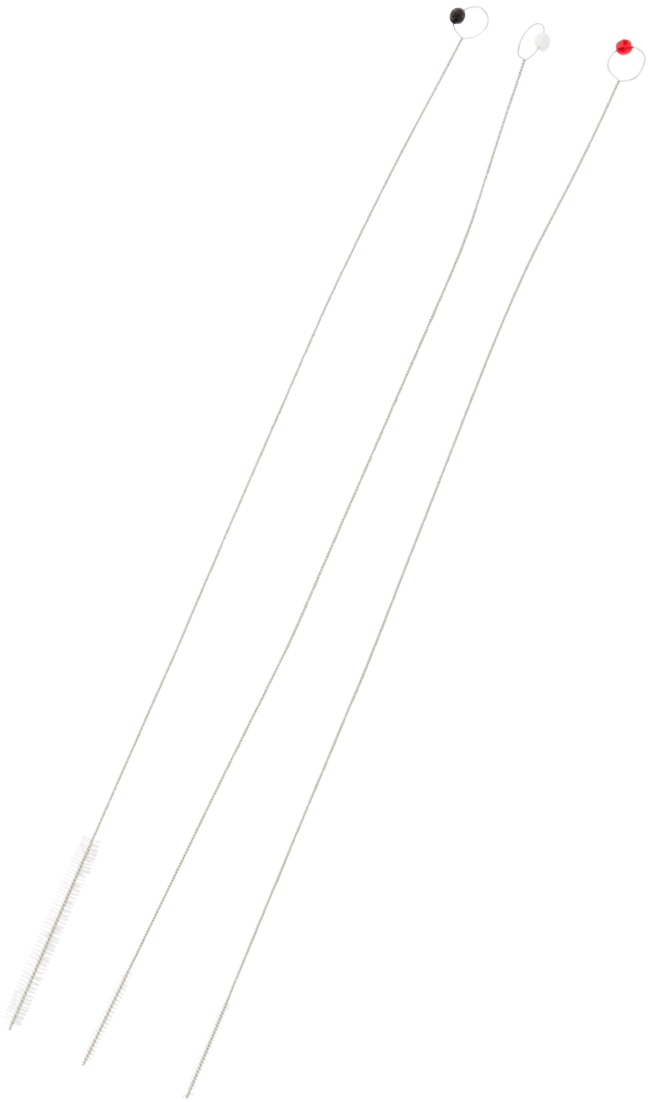
5. Ultrasonic cleaning is recommended - follow the manufacturer's instructions and refer to the previous steps when cleaning the instrument

6. Thoroughly rinse following ultrasonic cleaning - use clean running water. Use of distilled or demineralized water is recommended for rinsing

7. Manually dry instruments - do not leave to air dry

8. Thorough lubrication using a proprietary instrument lubricant - remove any excess lubricant prior to packing for sterilisation

9. Sterilise/autoclave instrument following manufacturer's instructions. Use distilled water only in autoclaves. Ensure that the autoclave is maintained both correctly and regularly



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Please note that if you purchase an instrument from Vi that is not suitable to be autoclaved, the package insert provided will state the following:

This product is not suitable for autoclave sterilisation. Please soak sterilise in an appropriate solution, following the manufacturer's instructions re: dilution, temperature and contact time.

Ongoing Routine Care of your Instruments (Non-Autoclaveable)

1. Rinse with tepid water immediately after use

2. Clean manually using an appropriate instrument brush and an appropriate proprietary enzyme based, neutral pH detergent surgical instrument cleaning solution - follow manufacturer's instruction re: dilution, water temperature and exposure time

3. It is recommended that the cleaning solutions pH value is greater than 6 and less than 9. Using solutions outside of this range may cause damage or corrosion to the instrument

4. Rinse thoroughly in clean running water. Use of distilled or demineralized water is recommended for rinsing

5. Soak sterilize in an appropriate solution - follow manufacturer's instructions re dilution, water temperature and exposure time

6. Manually dry

7. Lubricate periodically as necessary

8. Store dry

The Green Book published by the Instrument Preparation Working Group (AKI) is an excellent source of very detailed information on care and maintenance of surgical instruments: https://8ad5d244-3245-4d36-bc7f-7e3589f4c29b.filesusr.com/ugd/e5e300_b38f0821c69e4a23a1f933fc85e84826.pdf?index=true

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