Care & Handling

Your Instrument Care is Patient Care
Effective Reprocessing & Correct Handling of Duckworth & Kent ophthalmic surgical devices will prolong their life and ensure they are reliable and safe during operation. Duckworth & Kent manufacture their products from quality sourced materials. Titanium, the primary material for all Duckworth & Kent devices, can withstand repeat sterilisation without compromise to the devices edge or surface quality. It is corrosion resistant not just to steam, but to a vast range of chemicals (acids to alkalis), lead it to be ideal for the harsh environments devices are exposed to during cleaning. Other materials used include the plastic PEEK, Ultem and PTFE. These plastics are strong and durable and can withstand repeated cleaning and sterilisation at temperatures up to 170°C.

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**Do...**
- Handle instruments with care during surgical procedures.
- Take extra care to protect instruments with fine tips in order to reduce the risk of damage to the tip. Use protective covers when provided.
- After use, rinse instruments as soon as possible.
- Always examine movable components, including connecting and interlocking parts of the instruments.
- Assess your instruments regularly.
- Protect instruments by storing them correctly when not in use.

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**Don’t...**
- Drop instruments individually or onto one another.
- Store on top of each other or store instruments with curved tips at conflicting angles.
- Use instruments with damaged tips, missing components or mis-aligned parts.
- Abuse instruments, as this will impair the functionality of the instrument.
- Keep using an instrument that is damaged in any way.
- Use an instrument for a purpose it was not intended or designed for.
Why we use Titanium

For centuries traditional hand held surgical instruments have been made from stainless steel. In the 1960’s, the aerospace industry embraced the benefits of titanium alloy and in the 1970’s a metallurgist advised the owner of Duckworth & Kent to consider titanium alloy (Ti 6Al-4V). Duckworth & Kent saw the advantages of working with this modern metal and moved away from manufacturing in steel. The new material proved to be very well suited to the requirements for surgical instrumentation, offering advantages such as no oxidation, non-magnetic, lightweight and yet extremely durable. The new metal required new techniques in manufacturing and Duckworth & Kent began to learn how to work with titanium alloy. Duckworth & Kent soon became a specialist in titanium manufacturing, pushing the metal to its limits to produce some of the finest, delicate and precise medical devices. Today Duckworth & Kent is regarded as one of the pioneers in titanium medical devices and a world specialist in manufacturing from titanium alloy. Titanium alloy is naturally grey in colour, but our products come in a variety of colours. There are no dyes or paints in the colouring process, instead we change the properties of the surface of the titanium. The process is called anodising, whereby the titanium instrument is submerged in an electrolyte and an electric current applied. This creates a reaction with the titanium surface which changes the way light reflects back, giving the perception of colour. Blue is the most common colour, as it helps reduce the glare from microscopes.

Key Benefits of Titanium

- Titanium’s lightness is a positive aid to assisting instrument handling by the surgeon.
- Instruments are anodised to provide a non-reflecting surface, invaluable in microsurgical operations.
- Titanium instruments withstand repeat sterilisation without compromise to strength and edge or surface quality, as well as being corrosion resistant.
- Titanium is non-magnetic and therefore does not cause adverse reactions with other steel instruments or equipment.
Calipers

- Mishandling of Calipers or Gauges can impair their accuracy.
- Check that the movement of the caliper is smooth.
- Check the scale is readable and that all graduations are visible.

- Check the marking points are smooth, look for irregular edges or spots.
- Avoid other instruments hitting the fine tips as this could place the tips out of alignment and impair their accuracy.

Cannulas

- Tubes of Cannulas and I/A handpieces can be delicate. Care must be taken when touching the tips.
- Manual cleaning is recommended for devices with long tubes. Flush inside devices to ensure unobstructed flow.
- Check that tips have smooth edges.

- Check for irregular edges.
- Verify instrument tip angle, as damaged tips will effect direction of jets.
- Verify instrument - straight, curved or angled.
- Make sure silicone tubing is not damaged in any way and that all components fit together.
Diamond knives have an exceptionally sharp cutting edge. For personal protection and care of the blade, ALWAYS have the blade protected and retracted into the handle when not in use or not being manually cleaned. The diamond blade is honed from the highest quality gem stone and the cutting edge will not lose its sharpness unless it is damaged. Chips along the cutting edge and other damage to the diamond blade is usually the result of other instruments coming in contact with the diamond. If possible, keep your diamond knife separate from other instruments and allow restricted access by staff.

- Inspect the blade before each use for smoothness, chips or irregular shapes.
- Check the moving mechanisms and make sure that the blade retracts smoothly into the handle.
- Clean the diamond blade as soon as it is reasonably practical following use.
- Extend the diamond blade from the handle and gently wipe the blade from back to tip with a detergent wipe. We would NOT recommend that any type of brush be used on the diamond blade.
- NEVER exert any form of sideways pressure on the blade as it can cause the blade to break.
- Diamond knives can be cleaned by an automated method after the blade has been manually cleaned and retracted into its handle. We advise that diamond knives are stored in sterilising trays during automated cleaning and for storage.
- ALWAYS ensure the diamond is fully retracted into the handle and only extended when in use, for manual cleaning and inspecting.

After Care

For more information on how to effectively care for your Duckworth & Kent reusable instruments, visit our mobile friendly “After Care” web page by scanning the QR Code on the side of our packaging.
Fixation Rings

- Fixation rings have small delicate points that grip and fixate the eye. These precision machined points can become damaged.
- Check that all fixation points are present.
- Fixation points should not be sharp.
- Ensure that all fixation points are at the same height for constant fixation.
- Check the movement of pivoting fixation rings.

Forceps

- Mishandling can impair the performance of forceps, especially their delicate tips. Misuse can create improper alignment of the tips, this will heavily impact the functionality of the instrument.
- Check that tips align and that if they have an interlocking feature they interlock correctly.
- Cross-action tips should operate freely.
- Check that tying platforms align and have no irregular edges.
- Tips should not overlap when tightly closed.
- Each forceps should be used for its purpose/design and no other.
Injectors and Inserters have been validated to be used with specific products/devices, NEVER use the injectors or inserters with non-validated products/devices. The moving mechanisms in the injectors and inserters can be subjected to repeated cleaning and sterilisation. ALWAYS refer to the enclosed instructions / directions for use with these products for guidance on operating, handling, cleaning and sterilising.

- DO NOT attempt to modify or alter these devices or any of the components, as this can significantly affect the function and/or structural integrity of the device.

- Check the tip end for scratches, chips and irregular shapes.

- Check the mechanism and ensure it operates through its entire movement.

Irrigation & Aspiration

- Tubes of Cannulas and I/A handpieces can be delicate. Care must be taken when touching the tips.

- Manual cleaning is recommended for devices with long tubes. Flush inside devices to ensure unobstructed flow. Alternatively attach to an automated instrument rinse system and rinse for a minimum of 30 seconds

- Check that tips have smooth edges.

- Check for irregular edges.

- Verify instrument tip angle, as damaged tips will effect direction of jets.
Markers

• Markers feature regular and irregular patterns that leave impressions on the eyes surface. The marking faces should be smooth with no sharp edges. ALWAYS clean the marking faces immediately after use.

• Check marker surface has a smooth finish.

• Check for irregularities in the surface of the instrument.

• Check the marking pattern is correct.

Needle Holders

• Made from non-magnetic material, the titanium needle holders will never cause adverse reactions to steel needles. The locking feature is available within the range enabling the needle holder to be transferred with a needle locked in the jaws. Precision made fine delicate jaws are suitable for the fine sutures used in ophthalmic surgery.

• Large needles may damage the jaws of a delicate needle holder intended for ophthalmic surgery.

• Misuse may move the jaws out of alignment and reduce holding power.

• Check that the locking mechanism fastens securely and closes easily.

• Make sure to match needle holder jaws to the needle size for which it is intended.
**Punches**

- Ensure working parts move freely.
- Ensure the punch fully retracts in and out of the handle.
- Check for a smooth finish and that the instrument is free of irregularities.
- Punches may require routine inspection and refurbishment after repeated use.

**Probes**

- Probes, including hooks, manipulators, rotators, dividers, phaco choppers and spatulas have delicate intricate tips. Some detailed features of the tips can not be seen by the naked eye. NEVER handle a probe by its tip, ALWAYS use the handle. Probes with delicate tips are not recommended for an ultrasonic cleaning cycle.
- Verify instrument shaft - straight, curved or angled.
- Check surface finish - matt finish, highly polished, textured or non-textured.
- Check for irregular edges.
- Take extra care when storing double ended instruments so as not to damage either tip end.
Scissors

- Scissors should only be used to cut the material they were designed to cut. If they are used to cut other materials this may cause misalignment, loss of sharpness and damage to the blades. Abuse will impair functionality and can cause blades and edges to dull.
- Check the alignment of the scissor tips, when closed the tips should have no space between them.
- Check sharpness of instrument blades.
- Look out for irregular edges and spots.

Specula

- Ensure blades are smooth and free of surface irregularities.
- Make sure all moving parts work freely without obstructions.
Reprocess all devices as soon as it is reasonably practical following use. However, where blood, tissue, saline or viscoelastic has been left to dry, it is recommended that the devices are left to soak for 30 minutes in the detergent solution prior to cleaning.

- ALWAYS protect the tip with the supplied covers.
- These are fragile/delicate tips.
- For added care purchase the special guard to protect and back flush the tips. Product no. 6-675.
- Make sure tips screw on with a smooth action.
- Look out for irregular edges and spots.

The following is guidance for care and handling of Duckworth & Kent devices. A copy of our guidelines for reprocessing which include validated cleaning and sterilisation can be obtained from our website: [www.duckworth-and-kent.com/care](http://www.duckworth-and-kent.com/care)

All cleaning and sterilisation processes require validation at the point of use. Due to the different reprocessing options, Duckworth & Kent cannot validate all possible process variations. The user is responsible for qualifying any method that deviates from Duckworth & Kent’s recommended method of cleaning and sterilising.

**Preparations for Cleaning**

Reprocess all devices as soon as it is reasonably practical following use. However, where blood, tissue, saline or viscoelastic has been left to dry, it is recommended that the devices are left to soak for 30 minutes in the detergent solution prior to cleaning.

- To remove all blood, debris or bodily fluids use a soft bristled brush, soft enough to avoid damaging delicate tips.
- Disassemble only where intended and without the use of tools, unless specifically provided by Duckworth & Kent. Where instructions for disassembly are required, these are available with the device.
- If supplied, ensure protective caps and guards are fitted to devices.
- Ensure that cutting edges are protected and diamond blades are retracted into their handle.
- Duckworth & Kent devices can be cleaned be either an automated or manual method unless otherwise stated, although an automated cleaning method is preferred. Manual cleaning is not advised if an automatic washer-disinfector is available.
Automated Cleaning

- Use only either CE marked or validated washer-disinfector machines and low-foaming, non-ionising cleaning agents and detergents following the manufacturer’s instructions for use, warnings, concentrations and recommended cycles.
- When preparing the devices for cleaning, ensure that they do not touch each other and the devices are in a relaxed state (locks unlocked, hinges open etc).
- Place heavy devices with care in the bottom of containers, taking care not to overload wash baskets.
- Place devices with concave surfaces (e.g. curettes) facing down to prevent pooling of water.
- Where available, use appropriate flushing adaptor attachments to flush inside devices with lumens or cannulations. Ensure lumens and cannulas have unobstructed flow prior to fitting flushing adaptors to ensure thorough cleaning and disinfection.
- It is recommended to disinfect thermally (at least 1 minute at 90°C) to reduce the risk of disinfectant residuals.
- Disinfectant solution may be used in accordance with label instructions of the disinfectant manufacturer.
- Ensure that soft, freshly distilled or de-ionised water, which is sterile or controlled for bacterial endotoxins, is used in the final rinse stage.
- When unloading check cannulations, holes etc for complete removal of visible soil. If necessary repeat cycle or repeat manual cleaning.
- Care must be taken not to damage delicate tips on devices by the use of hard brushes, scouring agents or by excessive force.

Manual Cleaning

Manual cleaning is not advised if an automatic washer-disinfector is available. If this equipment is not available, use the following processes:

- Rinse excess soil from device.
- Fully immerse device into a detergent solution not exceeding 30°C.
- It is recommended that the device be cleaned as soon after use as possible, however where blood, tissue, saline or viscoelastic has been left to dry it is recommended that the device is left to soak for 30 minutes in the detergent solution.
- Using a brush, wash and scrub vigorously applying detergent solution to all surfaces ensuring that hinged devices are cleaned in both open and closed positions.
- It is important to ensure that no air is trapped inside the devices with lumens or cannulations and that the detergent covers all surfaces. These devices should also be flushed through with a clean detergent solution for a minimum of 3 times.
- After manual cleaning, rinse the device for a minimum of 3 times. Ensure that running water passes through cannulations, and that blind holes are repeatedly filled and emptied.