JOHN WEISS INSTRUMENTS

How to take care of your surgical instruments

HAAG-STREIT
JOHN WEISS

Look closer. See further.

Care of Instruments
Prolong the life of your instrument

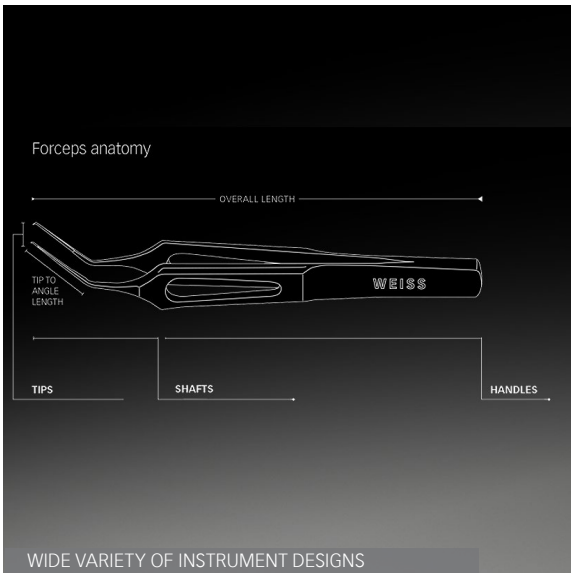
The correct care of microsurgical instruments not only reduces costs by extending instrument life, it also impacts on surgical outcomes and a reduction in complications. Special attention should be paid to the handling, storage, cleaning and sterilisation of instruments.

Instrument design

Instruments should only be handled by professionals trained in their use. It is the responsibility of the individual to ensure that they are familiar with the design and correct appearance of each instrument, so that they might quickly recognise when one is damaged or flawed. They must also be fully aware of an instrument's function to ensure it is always used appropriately.

An instrument is generally named according to its function and may also carry the name of the person (generally an Ophthalmologist) who originally designed it (e.g. Barraquer needle holder). Sometimes, a modern modification is made to an established instrument, such as making the teeth finer. In these cases it will generally retain its original name (e.g. Castroviejo forceps with 0.9mm teeth in stainless steel is now also available as Castroviejo forceps with 0.12mm teeth in titanium).

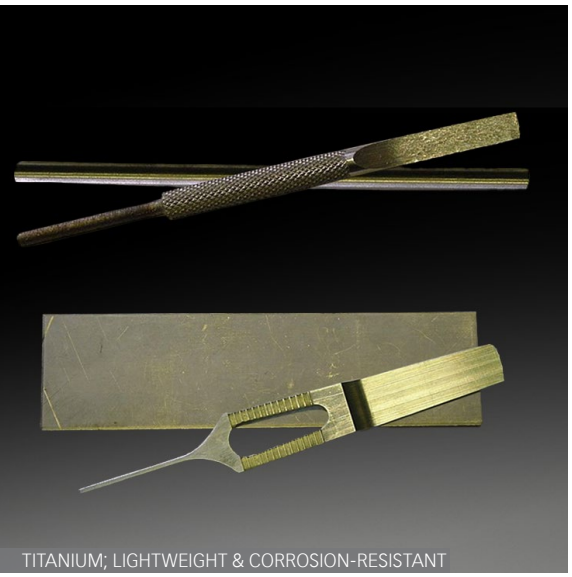
Whilst new designs are being developed constantly to meet the demands of modern surgery, the names and designs of many instruments have remained unchanged for over a hundred years or more.



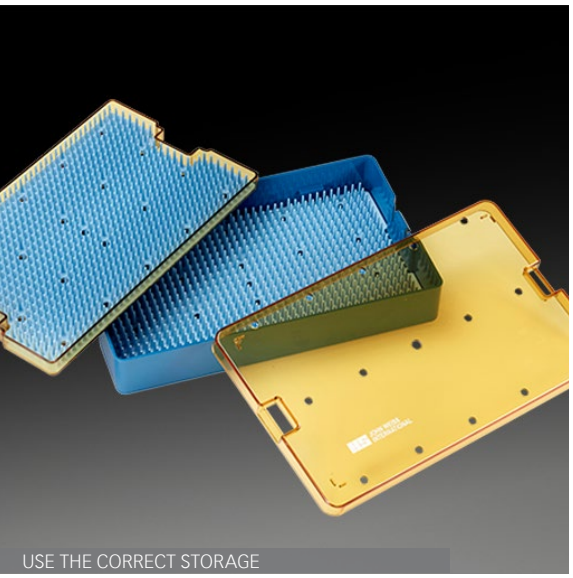
WIDE VARIETY OF INSTRUMENT DESIGNS

INSTRUMENT GROUP	FUNCTION	EXAMPLE
Forceps	Grasp, hold, lift, tear and pull. May be highly specialised for one function only e.g. capsulorhexis, or generic with multiple uses e.g. Moorfields Forceps.	0109025 Weiss toothed forceps
Needle Holders	Grasp and manipulate suture needle. Jaw size depends on gauge of suture (needle). May also be used to grasp suture when tying.	0109205 Micro needle holder, curved, no catch
Scissors	Cut tissue or other material e.g. suture, dressing etc. It is critical that they are only used for the action they are designed for.	0103106 Curved Vannas scissors
Phaco Choppers	Cutting, splitting or cleaving through crystalline lens when performing 'pha-co chop' procedure.	0109314 Green's phaco chopper
Manipulators	Moving or manipulating tissue or implant. Push, pull, lift, smooth, press or probe. Although mainly used during cataract surgery, they may be used during other procedures. Hooks and spatulas included in this group.	0109316 Mushroom manipulator
Vectis	Support of tissue e.g. dislocated crystalline lens. Originally developed for intracapsular cataract extraction (ICCE). May be cannulated for irrigation.	0108062 Snellen vectis
Specula	Maintain an opening to allow access. Usually used to hold eyelids apart. Retractors included in this group.	0104142 Lieberman speculum
Extraocular	Specifically designed for extraocular use. While not generally as fine as those for intraocular use, they may be any of the above or may be designed for a specific use, examples below:	
	Curettes - scraping or scooping, may also be called spoons.	0114216 Sharp spoon size D
	Lid clamps (forceps) - grasping and holding eyelid.Back plate gives base to operate on, Isolates area and helps to reduce bleeding during surgery.	0101423 Desmarres chalazion forceps
	Probes - exploration, prodding or testing patency. Includes dilators.	0105033 Nettleship dilator
	Chisels - cutting/carving bone. Requires a mallet.Includes osteotomes.	0114087 Chisel 6mm
	Rongeurs - cuts/bites/gouges a hole in bone. Usually available in a range of different sizes to cut a measured bite. May also be called punches.	0104163 Kerrison punch
Specialist	Have highly developed designs to meet the needs of specific surgery. Often suitable for one function or one type of surgery only. Examples below:	
	Vitreoretinal - Ultrafine tips. Designed to work deep within the eye near the delicate retina. Highly specialised and delicate, often co-axial in design available in a range of gauges from 23G - 30G. Extensive range with forceps, scissors, manipulators etc.	
	Corneal - Mainly specific to keratoplasty or refractive surgery.	0109532 Bristol spatula
	Glaucoma - Mainly specific to trabeculectomy or canaloplasty.	0101491 Kelly punch
	Knives - Made of high carbon quality stainless steel. Also available with diamond blade. Trephines included in this group.	0113052 Diamond knife 45 degree blade
	Measuring - used when accurate measurement is required.	0120283 Caliper and rule

HAND-FINISHED BY EXPERTS



TITANIUM; LIGHTWEIGHT & CORROSION-RESISTANT



USE THE CORRECT STORAGE

Manufacture

John Weiss instruments are manufactured to the highest standards, strict regulations regarding quality of materials, accredited procedures and good manufacturing practice.

Each instrument is crafted and hand-finished by our expert instrument makers. Finishing processes include passivation and hardening, providing corrosion resistance and durability for stainless steel instruments; and anodising to give titanium its distinctive colour.

Stainless steel

Stainless steel is the most widely used metal for surgical instrument manufacture. It is extremely hard, strong and durable. Although highly resistant to rusting or flaking, instruments can corrode if not correctly processed / stored, or if an inferior quality steel has been used in manufacture. John Weiss ensure that only the highest quality steel is used.

Possible disadvantages to stainless steel instruments are that they may become magnetised. They may also be reflective under microscope lights.

Titanium

Titanium is an incredibly strong and durable metal that is highly resistant to corrosion even in seawater. It is totally inert, lightweight and non-magnetic. A final anodising treatment makes it non-reflective and gives it its distinctive colour.

Titanium is perfect for the manufacture of microsurgical instruments however, it is not as suitable for scissors as it is inclined to blunt more quickly than stainless steel. Generally, it is more expensive than stainless steel but its benefits make it a cost-effective option.

Storage

Instruments should be stored in trays specifically designed for microsurgical instruments, such as those in the John Weiss range. Care should be taken to use the correct tray size so that instruments are not packed in too tightly with the risk of them touching. Check that adequate space is given to curved or angled instruments.

Particular care should be given to securing slim instruments, such as phaco choppers or manipulators, as it is easy for them to roll or slide. Protective tip-covers may be used on the delicate tips, however, be aware when fitting and removing these that it is easy to inadvertently damage the tips.

Ensure that instruments are completely dry, including any joints, before storage. Always store in a clean and dry environment.

Cleaning instruments

Correct cleaning is imperative if instruments are to be kept in prime condition. Instructions provided with each John Weiss instrument have been tested and validated, and should be strictly followed.

As general advice, instruments should be rinsed as soon as possible after use so that body fluids (e.g. blood, aqueous humour) or solutions used during surgery (e.g. viscoelastic, saline) are not allowed to dry on the surface or in the joints.

Particular care should be taken with cannulated instruments and saline should never be used to rinse or soak instruments. At the end of surgery all instruments in the tray (or on the trolley) must be cleaned, whether used or not, as they may have been inadvertently contaminated either by splashing or transferred by gloves from used instruments, swabs etc.

During cleaning, care should be taken to prevent the delicate instrument tips from coming into contact with other instruments, hard surfaces or drapes. Specialist fibre-free microsurgical instrument wipes are recommended for cleaning fine tips, whilst fibre-free PVA blocks are recommended for cleaning diamond knives.

Open box joints and hinges to allow adequate cleaning (some simple disassembly may be required with spring scissors/ needle holders). Ultrasonic cleaning for 5 - 10 minutes may help remove the bioburden but always check that the instrument is suitable for this technique as it may be contraindicated e.g. diamond knives. Always use validated equipment and recommended neutral pH solutions.

Automated washer/cleaners may be used, if CE marked and validated for microsurgical instruments, with low foaming, non-ionising cleaning agents and neutral detergents. The final rinse should be with reverse osmosis (RO) quality water. Where appropriate, suitable attachments should be used to flush through cannula and devices with a lumen.

Following cleaning and thorough rinsing with sterile distilled or sterile de-ionised water, instruments should be lubricated with a water-soluble lubricant specifically designed for microsurgical instruments. Particular attention should be paid to joints, hinges and moveable parts.

Prior to sterilisation, the completely dry instruments should be carefully inspected, both by eye and under magnification, and tested to ensure correct functionality. Tips should be checked for alignment, cutting instruments checked for sharpness, hinged instruments checked for stiffness, and locks/ratchets checked for grip.

Sterilisation

Only clean instruments, checked for functionality and fitness for use, should be sterilised. The sensitivity of an instrument to heat, pressure and water will determine the method of sterilisation that may be used. Always follow the manufacturers recommendations, together with your unit's protocol.

ENSURE CORRECT CLEANING PROCEDURES

USE INSTRUMENT WIPES & PVA BLOCKS

CHECK CUTTING INSTRUMENTS FOR SHARPNESS

Use & handling

It is important to make sure that instruments are handled correctly and only used for the purpose for which they are designed. This ensures that they remain in peak condition to perform their function and to minimise damage.

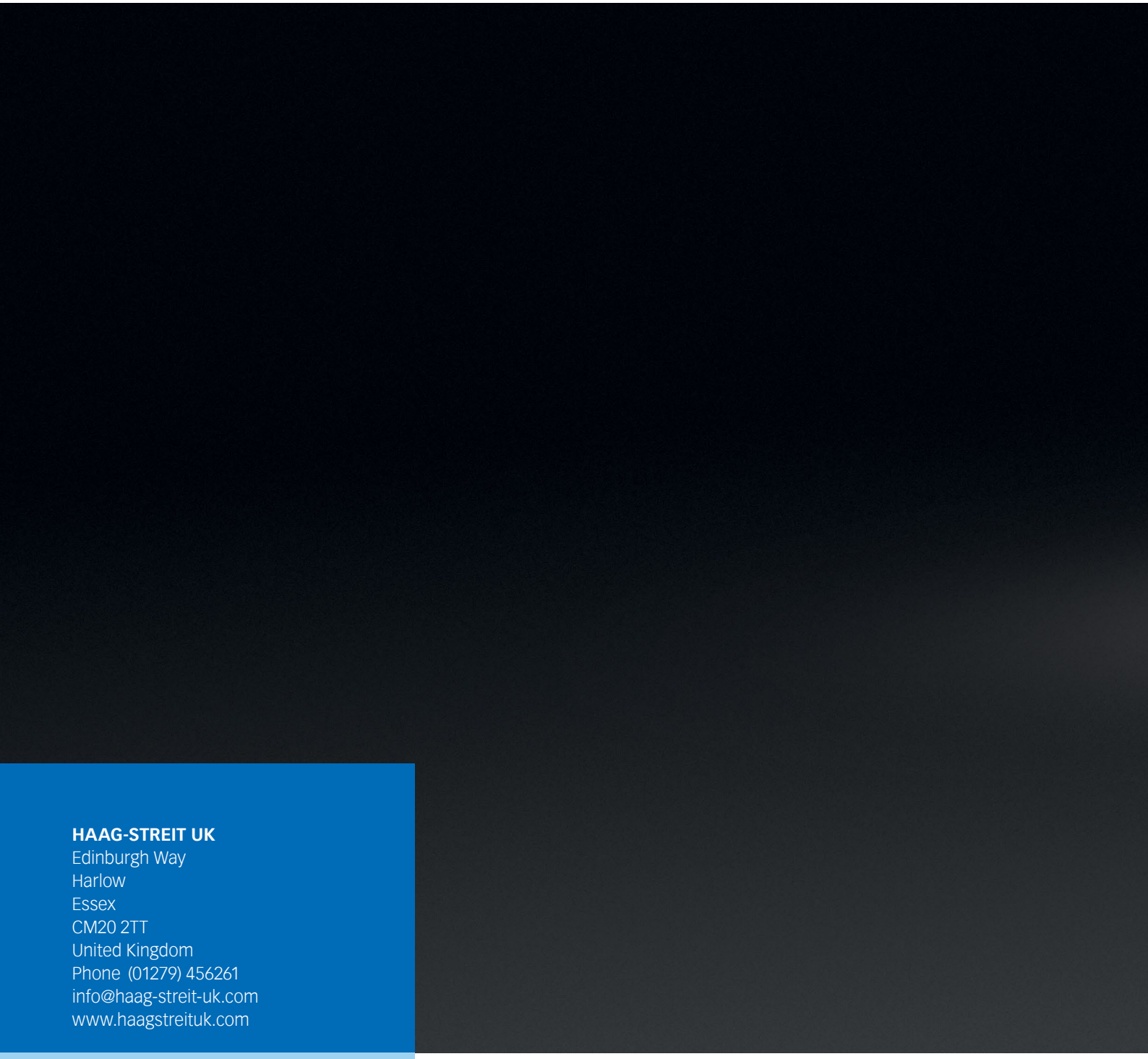
Only those who have been trained in the use or care of microsurgical instruments should handle them, and all handling should be kept to a minimum, whether before, during or after the surgical procedure.

All those who use and handle instruments should know the correct name, function and specification of each instrument. The specialist practitioner (Scrub Nurse, Ophthalmic Assistant or Practitioner) should also be aware of the instruments required for each procedure, including the order of use and any that might be required to deal with complications. This will enable them to anticipate the next instrument required, giving time to locate and prepare it. Good support makes the Surgeon's job easier, optimises patient outcomes and helps provide smooth and efficient surgery.

Handling guidelines

Please note that these guidelines are of a general nature and are not intended to replace any country or institution specific protocol or procedures.

- Only store microsurgical instruments in trays specifically designed for them, as standard trays may not offer adequate grip for such small and delicate instruments and may also damage them by applying too much pressure in the wrong place.
- Always try to keep microsurgical instruments in their purpose designed tray when not in use. Avoid placing them on the trolley surface and never allow them to lay loose together where they may touch one another. Avoid stainless steel instruments from coming into contact with any magnetised objects as this may transfer to them making their use difficult e.g. suture needles may be difficult to, let go of' when a stainless steel needle holder becomes magnetised.
- Always inspect instruments carefully, both before and after use, under magnification. Look to ensure that they function as they should, that any joints do not stick, that blades are sharp and that tips meet correctly and are not barbed. If there is any doubt that an instrument is not in perfect condition it should be removed from the set and sent for thorough checking and repair if appropriate.
- Only professionals trained in the use of microsurgical instruments should handle them. Cleaning and sterilisation should be performed by staff with additional training in this specialised area, as treating them as general instruments may result in damage.
- Instruments should only be used for their intended purpose, anything else may result in damage e.g. cutting a patient drape with Westcott scissors.
- Never pick up instruments by the tips or let tips touch anything other than the tissue they are designed for. Touching the tips could result in a transfer of contaminate e.g. from an instrument that has touched the skin surface to one that is used intraocularly. It also reduces the risk of damage to the instrument and possible injury to the user.
- If possible avoid laying instruments on the sterile trolley, instead work directly from the instrument tray. Never let the instrument tips touch the trolley drape as it may cause damage to the fine points or teeth and there is also a risk of puncturing the drape and compromising the sterile field.
- If tissue, matter or fibres adhere to an instrument's tips during the procedure, the tips may be wiped clean using a fibre free instrument wipe designed for this purpose. The wipe should be dampened with sterile water and great care must be taken not to damage the instrument.
- The use of scalpel blades, knives and scissors require particular care:
- If available with a blade cover, a knife or scalpel should always be passed between practitioners with the blade sheathed and by the handle. The user should then un-sheath the blade, use it, then re-sheath it before passing the knife back.
- If the instrument does not have a blade cover, it must be passed between practitioners by its handle so that the cutting blade and its point face downwards.
- Particular care should be taken when fitting or removing a blade from a scalpel handle. This should only be performed when absolutely necessary and only by trained staff. Fingers should never be used directly on the blade, instead a blade gripper or artery forceps should be used, angled away from the practitioner's body.



HAAG-STREIT UK
Edinburgh Way
Harlow
Essex
CM20 2TT
United Kingdom
Phone (01279) 456261
info@haag-streit-uk.com
www.haagstreituk.com

@HS_UK
@haagstreituk
@haagstreituk
/haagstreituk
https://hsuk.co/youtube