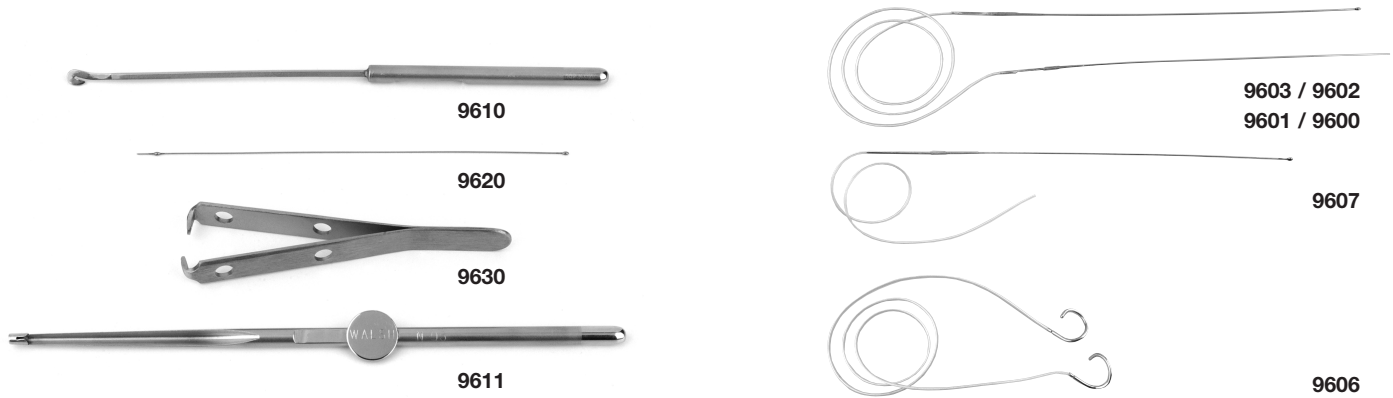


# CRAWFORD

## LACRIMAL INTUBATION SYSTEM



**9600 \*Crawford Lacrimal Intubation Set (without suture):**

Two flexible stainless steel probes (0.40 mm dia. wires) with an olive-shaped tip and the other ends joined by a length of silicone tubing (outside dia. 0.64 mm, inside dia. 0.30 mm). This is the original Crawford Lacrimal Intubation Set.

**9602 \*Crawford II Lacrimal Intubation Set (without suture):**

Same as 9600 above except the silicone tubing is 0.94mm dia. outside x 0.51mm dia. inside.

**9601 \*Crawford Lacrimal Intubation Set (with suture):**

Same as 9600 (above) except this version contains a 6-0 braided silk suture within the lumen (center) of the silicone tube to aid in tying off the tubing ends after intubation.

**9603 \*Crawford II Lacrimal Intubation Set (with suture):**

Same as 9601 (above) except the silicone tubing is 0.94mm dia. outside x 0.51mm dia. inside.

**9607 \*Crawford Mono-Canalicular Intubation Set**

This Mono-Canalicular intubation set incorporates all the same great features as the original Crawford Lacrimal Intubation system. A fine retention mechanism holds the silicone tube firmly in the punctum.

**9606 \*Crawford Bellan Pigtail Probe:**

The set uses the same silicone tube and 6-0 silk suture as a normal Crawford Intubation System. The two probes have been modified to facilitate placement in the upper lacrimal system. This product will be particularly useful in trauma cases involving a severed upper or lower canaliculus.

**9620 \*Crawford Tubing Remover:**

A specially designed probe on which the silicone tubing may be threaded. See "Post Surgical Problems" on the opposite page for details.

**9630 Crawford Tubing Stripper:**

Used to cut and remove excess tubing from the silk suture. This exposes the suture for unimpeded tying. This device is only required when using Crawford Lacrimal Intubation Sets with a suture (9601, 9603, 9606).

**9610 Crawford Retrieval Hook:**

Used to pick up the probe (after insertion) under the inferior turbinate in the nose.

**9611 Anderson-Hwang Grooved Director:**

This Grooved Director greatly simplifies retrieval of the olive tip probe. The Grooved Director has the following advantages: 1) minimizes trauma and bleeding of the nasal mucosa; 2) greatly simplifies the intubation technique by trapping the olive tip probe; 3) allows infraction of the inferior turbinate if required. The Grooved Director also simplifies placement of tubes during a DCR. The olive tip of the Crawford Set may be engaged either under direct visualization or with use of an endoscope.

**9650 Instructional Video:**

A video tape demonstrating the use of the Crawford Lacrimal Intubation System is available at no charge. Please contact our Customer Service Department.

**9651 Codère Endonasal Procedure:**

A CD Rom demonstrating Dr François Codère's technique performing an Endonasal DCR is available at no charge.

*\*Note: Intubation sets are supplied sterile and are single use products. The hook, stripper, and grooved director are intended to be sterilized at the hospital and can be reused provided they are not damaged.*

*The Crawford Lacrimal Intubation System, developed by the late Dr. John Crawford, Chief of Ophthalmology at the Hospital for Sick Children in Toronto, Canada and Professor of Ophthalmology at the University of Toronto, has proven to be a simple yet effective means of achieving intubation of the Lacrimal System (1) (2).*

**References**

1. Crawford, J.S. *Intubation of Obstruction in the Lacrimal System.* Can J. Ophthal. 12:289-292 (1977)
2. Kraft, S.P. and Crawford, J.S. *Silicone Tube Intubation in Disorders of the Lacrimal System in Children.* Amer J. Ophthalmol 94:290-299 (1982)

**Indications for Lacrimal Intubation:**

1. Where probing of the lacrimal system has not cured the tearing
2. Where there are definite obstructions of the lacrimal system that would close if they were not kept open
3. Repair of injuries involving cut canaliculi
4. During a dacryocystorhinostomy



**Walsh Medical Devices Inc.**

1200 South Service Rd., W., Unit 3, Oakville, ON L6L 5T7  
 Tel: 905-844-8344 Fax: 905-338-0488  
 Toll Free: 800-449-7615

**⚠ CAUTION**

These devices are intended to be used only by a qualified physician.

**⚠ WARNING**

Separation of the silicone tubing from the probe may occur when intubating patients with severe blockage/narrowing of the lower naso-lacrimal duct or pronounced bony prominence. Refer to "Procedural Problems."

**⚠ WARNING**

Ease of passage of the probes through the lacrimal system will vary widely from patient to patient with placement of the tubes in some patients being quite difficult due to narrow openings in the lacrimal system, especially at the lower end of the bony canal.

**GENERAL INSERTION INSTRUCTIONS**

Each punctum should be dilated.

The lacrimal system is probed to open any blockages by using a standard lacrimal probe such as a Bowman 00. It is suggested that successful probing be confirmed by inserting a second probe into the inferior meatus of the nostril and making metal to metal contact.

The Crawford Probe is passed through the upper punctum and across the upper canaliculus and then oriented down through the lacrimal system into the nose approximately 4cm (Fig. 1). If any difficulties are experienced in locating the wire probe, a Bowman probe may be used to establish metal to metal contact and define the position of the wire.

The probe is located in the nose using the Crawford Retrieval Hook. Note that the flat on the hook handle indicates the orientation of the hook in the nose. Those performing the procedure infrequently or for the first few times may have difficulty locating the probe in the nose. It is generally found more laterally and posteriorly than one would expect. If one pictures the junction of the lateral wall of the nose and the floor of the nose, the wire probe can usually be found by inserting the hook with the hook vertical so it follows this junction. The wire will be located lateral to the inferior turbinate in the inferior meatus of the nose. The wire is touched by the hook and then engaged by rotating the hook 90° in the direction of the wire. The probe is pulled back to nest the olive tip of the probe in the hook. Using the hook, the probe is pulled from the nose (Fig. 1). Often a push/pull technique and some working of the hook with the wire will be required to complete the intubation.

Refer to CAUTION at the top of this page and the paragraph titled "Procedural Problems." Care should be exercised to ensure the probe is pulled back so the olive tip is resting firmly in the hook.

The Grooved Director may be used as an alternative to retrieve the probe in the nose. The Grooved Director is located under the inferior turbinate below the exit from the lower lacrimal nasal duct. The probe is picked up by the groove and directed into the slot, which traps the probe olive tip at the front of the Grooved Director. If desired the Grooved Director maybe used to infracture the inferior turbinate.

The second probe is passed down the inferior canaliculus and out of the nose in a similar fashion.

**PROCEDURAL PROBLEMS**

Occasionally, the wire probe is passed and engaged by the hook but a significant resistance is noted. This may occur because the junction of the wire and tubing has become stuck at the lower end of the nasolacrimal duct. In these cases, the nasolacrimal duct has a downward and slightly posterior direction and the wire has to be pulled around the bony prominence. Although the tubing is highly elastic and quite strong for its size, it is still much weaker than the wire and can easily be broken or stripped from the wire probe.

When significant resistance is encountered, the loop of an ear curette is slid over and down the wire pushing it posteriorly until the tubing is back in the nose and off the bony prominence (Fig. 3). The wire with the tubing attached is then worked around the bony prominence and pulled out of the nose.

**Cat. # 9600 / 9602 (without Suture)**

The original Crawford Set (without suture) is inserted in exactly the same manner as described above, however, the tubing itself is tied and the knotted. The silicone tubing may be secured by a fine suture of the surgeon's choice, for example, 8-0 silk. The knotted tubes are then tucked up into the nose. Because of the bulk of the knot, it will not pass through the canaliculus and the tubes must be removed through the nose. In older patients, it may be possible to expel the knot by having the patient blow their nose, but in small children a second general anesthetic may be required to locate the knot and remove the tubes.

**Cat # 9601 / 9603 (with Suture)**

With the silicone tube in place, the wire probes are removed and the silicone tubes placed under slight tension using a clamp with tubing protected jaws (Fig.2). Using the Crawford Tubing Stripper, the excess silicone tube is removed revealing the 6-0 silk suture (Fig.2). The suture is tied securing the tubes in place. Excess suture is removed, and the clamp released, allowing the tubes to be located up into the nose. The tubes are checked for tightness at the medial canthus and tension eased as required. Removal of the tubes is accomplished by locating the tube in the eye between the upper and lower puncta and pulling the tubing upward. The tubing is then cut and removed. The 6-0 silk suture may have to be removed separately from the tubes. This method of removal can be performed during an office visit and eliminates the need for a second anaesthetic during removal.

**POST SURGICAL PROBLEMS**

When using the original, non-suture product, the large knot may occasionally be pulled up into the lacrimal sac. The Crawford Tubing Remover can be used in this situation. The remover is a probe similar to the ones supplied with the Crawford Sets but with an additional enlarged portion a short distance from the end of the wire. If a knot is pulled up into the lacrimal sac, locate the tubing in the eye and pull up on the tubing to create some slack. Feed the remover through the lacrimal system alongside the tubing, locating it in the nose with a Crawford Hook. Position the remover so that the enlarged portion of the remover is just outside the punctum. Cut the tubing and feed the end of the tubing, which is now alongside the remover, onto the probe and over the enlarged portion of the remover. Using a fine suture, secure the tubing so it will not pull off the remover. Carefully pull the remover out of the nose with the tubing. Work the knot back down and out of the lacrimal sac by gently pulling on the tubing (Fig.4).

Occasionally, a patient may pull the tubing out from between the upper and lower puncta. In this case the set should be removed. If desired, a replacement set may be inserted in the normal manner.

The remover may be used in any situation where the surgeon wishes to reattach a tube to a probe.

It is important to note that tearing may persist while the tubes are in place since they do not act as a passage for the tears.

