**COR-KNOT® QUICK LOAD® UNIT EU TECHNOLOGY GUIDE**

**CRIMPED COR-KNOT® FASTENER**

**OVERALL QUALITATIVE AND QUANTITATIVE COMPOSITION**
The only portion of the COR-KNOT® QUICK LOAD® UNIT which is an implant is the COR-KNOT® FASTENER, which is made up of 100% commercially pure titanium.

**COR-KNOT® QUICK LOAD® UNIT DESCRIPTION**
Each COR-KNOT® QUICK LOAD® UNIT provides one sterile COR-KNOT® FASTENER 1 held in a customized loading unit consisting of a purple target 2, a wire snare 3, and a blunt curved handle 4. Made from medical grade titanium, a COR-KNOT® FASTENER is a mushroom-shaped hollow sleeve, which is crimped by the COR-KNOT® DEVICE to fasten together segments of suture. Use only with LSI SOLUTIONS® specified 2-0 Polyester suture and a COR-KNOT® DEVICE or COR-KNOT® MINI® DEVICE.

**INDICATIONS**
The COR-KNOT® DEVICE used in conjunction with LSI SOLUTIONS® specified 2-0 polyester suture and a COR-KNOT® titanium fastener is indicated for use to fasten and trim suture in general and cardiovascular surgical applications.
LOADING WITH A COR-KNOT® QUICK LOAD® UNIT

Use proper operating room technique to pass the sterile COR-KNOT® QUICK LOAD® UNIT from its packaging. While maintaining appropriate sterile technique, follow the steps indicated in the illustrations.

**AT SCRUB TABLE**

1 **INSERT**

**INSERT** the blunt tip of the curved handle into the distal slot at the end of the COR-KNOT® DEVICE shaft. **ROTATE** the curved handle through the distal slot and out of the suture hole until the COR-KNOT® FASTENER occupies the shaft’s distal slot. **FULLY ENGAGE** the COR-KNOT® FASTENER within the tip of the COR-KNOT® DEVICE by pushing on the purple target or by pulling on curved handle.

2 **PUSH-OUT**

**PUSH-OUT** and remove the purple target.

3 **RELEASE**

**RELEASE** the curved handle from the distal slot at the end of the COR-KNOT® DEVICE shaft.

4A **INSPECT**

**INSPECT** to ensure that the COR-KNOT® FASTENER is well loaded and fully seated.

4B
In the text below, the COR-KNOT® DEVICE refers to the LSI SOLUTIONS® COR-KNOT® DEVICE or COR-KNOT MINI® DEVICE. Refer to the corresponding COR-KNOT® Technology Guide Indications for compatibility with the COR-KNOT® QUICK LOAD® UNIT.

**ACTIONS**

When the COR-KNOT® DEVICE is loaded with a COR-KNOT® FASTENER and appropriately positioned at a suture closure site, squeezing the purple lever can instantly secure and trim the suture. The surgical titanium used in a COR-KNOT® FASTENER is not absorbed by the body and is generally not associated with significant inflammatory reactions.

**CONTRAINDICATIONS**

- Endoscopic procedures should only be performed by physicians having adequate training and familiarity with endoscopic techniques. Medical literature should be consulted relative to techniques, complications and hazards prior to the performance of endoscopic procedures.
- The COR-KNOT® QUICK LOAD® UNIT is not intended to be used with any device other than the COR-KNOT MINI® DEVICE or the COR-KNOT® DEVICE. The COR-KNOT MINI® DEVICE and the COR-KNOT® DEVICE are not intended to be loaded with anything other than a COR-KNOT® QUICK LOAD® UNIT.
- The COR-KNOT® FASTENER is NOT intended for placement into circulating blood unless used with compatible suture under conditions judged by the surgeon to be clinically appropriate.
- Use only with LSI SOLUTIONS® specified 2-0 polyester suture.
- Each COR-KNOT® DEVICE is not intended to be fired more than 12 times.

**WARNINGS**

- Users should be familiar with standard procedures and techniques involving surgical suture and titanium usage before employing the COR-KNOT® DEVICE with a COR-KNOT® QUICK LOAD® UNIT for fastening and trimming suture.
- Adequate COR-KNOT® FASTENER security requires reasonable clinical judgment and appropriate surgical techniques as warranted by surgical circumstances and the experience of the surgeon.
- When securing suture with a COR-KNOT® DEVICE, ensure any needle caps or needles are removed from the suture ends to be loaded prior to loading the suture through the COR-KNOT® DEVICE.
- Single patient use only. Do not reclean or resterilize. Adequate cleaning or removal of blood and other foreign materials from used COR-KNOT® products cannot be guaranteed. Validation of resterilization is not established. Failure to eliminate inflammatory or infectious agents may cause patient harm. Product functional performance may be compromised in reprocessed devices or COR-KNOT® FASTENERS.
- Discard any open (unsealed), unused, expired or damaged COR-KNOT® product.
- COR-KNOT® QUICK LOAD® UNIT components and each COR-KNOT® DEVICE, along with packaging, must be inspected, handled and disposed of consistent with standard, accepted medical device disposal procedures.
- Direct contact between sensitive tissue structures (e.g., pulsatile arteries, cardiac valve leaflets, valve chordae, etc.) and foreign materials can lead to tissue injury or damage, such as tissue erosion. Always orient COR-KNOT® FASTENERS and remnant suture tails to avoid direct contact between delicate tissue or prosthetic structures.
- As with any foreign body, prolonged contact of any suture with salt solutions, such as those found in the urinary or biliary tracts, may result in calculus formation.
- While the titanium of the COR-KNOT® FASTENER is physiologically very inert, routine surgical precautions must be employed whenever foreign materials are left in a patient.

**PRECAUTIONS**

- When handling the COR-KNOT® QUICK LOAD® UNIT care should be taken to avoid damage.
- Do not squeeze the purple lever of COR-KNOT® DEVICE while loading the COR-KNOT® QUICK LOAD® UNIT. Irreparable damage to COR-KNOT® DEVICE suture cutting blade will occur if the purple lever is squeezed while the COR-KNOT® QUICK LOAD® UNIT curved handle is in place at the tip of the instrument.
- Ensure that obstructions do not interfere with the firing of COR-KNOT® DEVICE.
- Do not squeeze the purple lever of the loaded COR-KNOT® DEVICE, until the COR-KNOT® FASTENER has been appropriately positioned directly upon the tissue or prosthetic material and the suture accurately tensioned at the targeted site.
- Always squeeze and hold the purple lever and then fully release it before moving the COR-KNOT® DEVICE tip. Failure to appropriately release the purple lever can cause suture breakage. Inspect each COR-KNOT® FASTENER and its suture tails.
- Do not squeeze the purple lever on the same COR-KNOT® FASTENER more than once.
- Cut suture with scissors if the device fails to trim suture or release COR-KNOT® FASTENER.
- Avoid crushing or crimping damage to the COR-KNOT® FASTENER due to inappropriate squeezing of COR-KNOT® DEVICE purple lever and/or to application of surgical instruments like forceps, needle holders, clamps, etc.
- If COR-KNOT® FASTENER falls out of tip or is not properly loaded, retrieve loose fastener, reload with new fastener and start again.
- If the purple lever of the COR-KNOT® DEVICE does not return completely forward on its own (i.e., without assistance), manually push the lever forward all the way to release the COR-KNOT® FASTENER.
- Check for hemostasis or leakage where appropriate.
- Before endoscopic instruments and accessories from different manufacturers are employed together in a procedure, verify compatibility and ensure that electrical isolation or grounding are not compromised.

**ADVERSE REACTIONS**

Adverse effects associated with the use of surgical suture and titanium can include, but are not limited to: wound dehiscence, thrombus formation, embolism, calculus formation in urinary and biliary tracts when prolonged contact with salt solutions such as urine and bile occurs, infected wounds, minimal acute inflammatory tissue reaction, and transitory local irritation. Surgical titanium is not absorbed by the body and is generally not associated with inflammatory reactions. Any serious incident that has occurred in relation to the device should be reported to the manufacturer and the country competent authority.

**MRI SAFETY INFORMATION – MR CONDITIONAL**

Non-clinical testing demonstrated that the COR-KNOT® Titanium Fastener is MR Conditional. A patient with this device can be scanned safely in an MR system under the following conditions:

- Static magnetic field of 1.5-Tesla and 3-Tesla, only
- Maximum spatial gradient magnetic field of 4,000-Gauss/cm (40-T/m)
- Maximum MR system reported, whole body averaged specific absorption rate (SAR) of 2-W/kg for 15 minutes of scanning (i.e., per pulse sequence) in the Normal Operating Mode.

Under the scan conditions defined, the COR-KNOT® Titanium Fastener is expected to produce a maximum temperature rise of 1.5°C after 15-minutes of continuous scanning (i.e., per pulse sequence).

In non-clinical testing, the image artifact caused by the COR-KNOT® Titanium Fastener extends approximately 2-mm from this implant when imaged using a gradient echo pulse sequence and a 3-Tesla MR system.
The Summary of Safety and Clinical Performance (SSCP) Report, with information on device suitability and patient target group, shall be made available in the European database on medical devices (EUDAMED) at http://ec.europa.eu/tools/eudamed once the database is publicly accessible. The Basic UDI-DI for this device is 0850200006COR-KNOT2N.

Patents: www.lsisolutions.com/patents

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