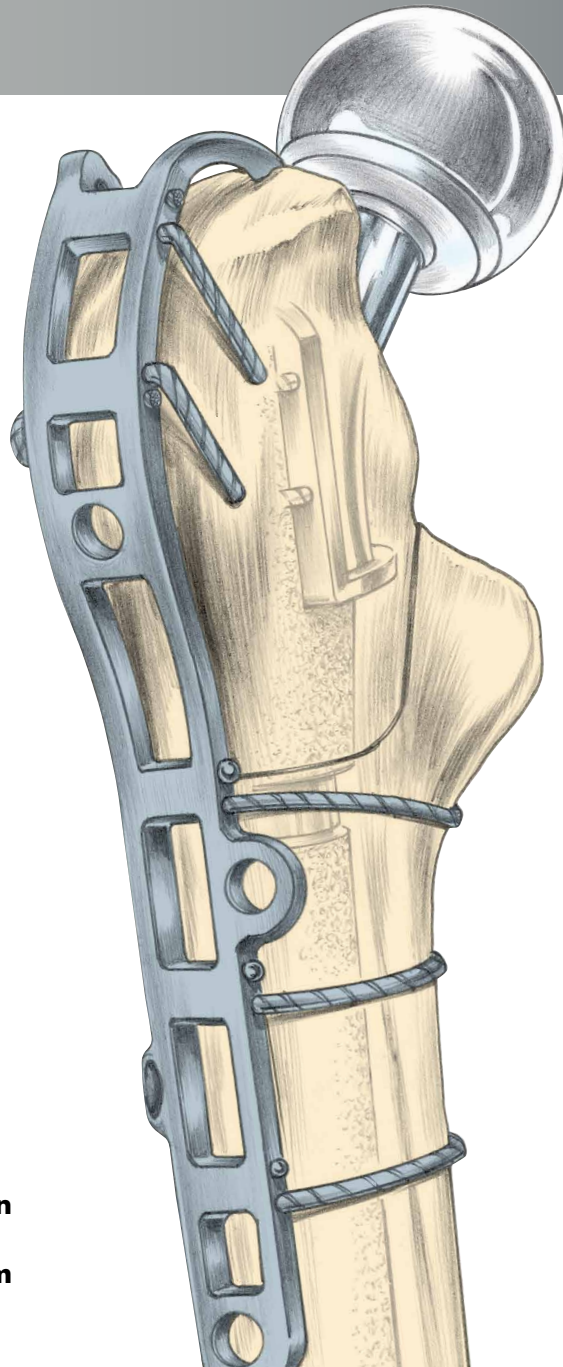


# Dall-Miles® Recon and Trauma Cable System

## Surgical protocol

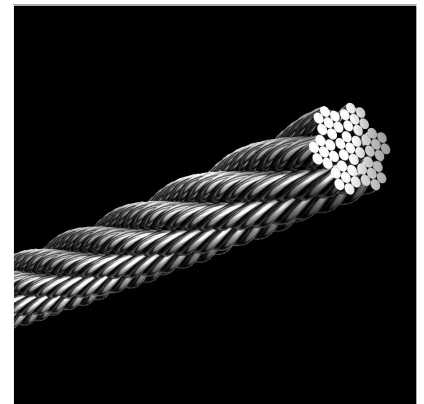


**Trochanteric Grip Plate shown  
with Restoration Modular  
Calcar Body and Plasma Stem**

- Trochanteric reattachment using the Trochanteric Grip or Grip Plate
- Cerclage applications



**Trochanteric Grip**



**Dall-Miles Cable**

# Dall-Miles Recon and Trauma Cable System surgical protocol

## Product overview

### Trochanteric Grips

- Low profile, 4 mm thickness
- Diverging proximal hooks to capture trochanter
- Sharp, distal spikes designed for rotational stability
- Available in Small, Medium, and Large sizes in Vitallium and stainless steel



**Dall-Miles  
Trochanteric Grip**

### Trochanteric Grip Plates

- Low profile, 4 mm thickness
- Diverging proximal hooks to capture trochanter
- Screw hole options to augment fixation and to help provide rotational stability
- Available in two proximal sizes with three length options each in Vitallium and stainless steel



**Dall-Miles  
Trochanteric Grip Plate**

### Dall-Miles Cables

- Available in Vitallium and stainless steel, 1.6 mm and 2.0 mm sizes



**Dall-Miles Cable**

## Ordering information

### Trochanteric Grips and Grip Plates

Cat. no.	Description
Vitallium Trochanteric Grips	
6704-3-070	Small Grip w/two 2.0 mm Cables
6704-3-080	Medium Grip w/two 2.0 mm Cables
6704-3-090	Large Grip w/two 2.0 mm Cables
6704-0-110	Small Grip & 1.6 mm Cables Set
6704-0-210	Medium Grip & 2.0 mm Cables Set
6704-0-310	Large Grip & 2.0 mm Cables Set
6704-5-016	Small Grip
6704-6-020	Medium Grip
6704-7-020	Large Grip
Vitallium Trochanteric Grip Plates	
6704-3-081	Medium, 100 mm long w/two 2.0 mm Cables
6704-3-082	Medium, 150 mm long w/two 2.0 mm Cables
6704-3-083	Medium, 200 mm long w/two 2.0 mm Cables
6704-3-091	Large, 110 mm long w/two 2.0 mm Cables
6704-3-092	Large, 160 mm long w/two 2.0 mm Cables
6704-3-093	Large, 210 mm long w/two 2.0 mm Cables
Stainless Steel Trochanteric Grips	
3704-2-070	Small Grip
3704-2-080	Medium Grip
3704-2-090	Large Grip
Stainless Steel Trochanteric Grip Plates	
3704-2-081	Medium, 100 mm long
3704-2-082	Medium, 150 mm long
3704-2-083	Medium, 200 mm long
3704-2-091	Large, 110 mm long
3704-2-092	Large, 160 mm long
3704-2-093	Large, 210 mm long

### Screws

Cat. no.	Description
Titanium SPS 4.5 Cortical Screws, Self Tapping	
601014	14 mm Titanium Screw
601016	16 mm Titanium Screw
601018	18 mm Titanium Screw
601020	20 mm Titanium Screw
601022	22 mm Titanium Screw
601024	24 mm Titanium Screw
601026	26 mm Titanium Screw
601028	28 mm Titanium Screw
601030	30 mm Titanium Screw
601032	32 mm Titanium Screw
601034	34 mm Titanium Screw
601036	36 mm Titanium Screw
601038	38 mm Titanium Screw
601040	40 mm Titanium Screw
601042	42 mm Titanium Screw
601044	44 mm Titanium Screw
601046	46 mm Titanium Screw
601048	48 mm Titanium Screw
601050	50 mm Titanium Screw
601052	52 mm Titanium Screw
601054	54 mm Titanium Screw
601056	56 mm Titanium Screw
601058	58 mm Titanium Screw
601060	60 mm Titanium Screw
601062	62 mm Titanium Screw
601064	64 mm Titanium Screw
601066	66 mm Titanium Screw
601068	68 mm Titanium Screw
601070	70 mm Titanium Screw

## Ordering information

### Cables and sleeves

Cat. no.	Description
Vitallium Cables and Sleeves	
6704-8-236	1.6 mm Vitallium Cable
6704-8-240	2.0 mm Vitallium Cable
6704-4-016	Small Vitallium Cable Sleeve (for use with 1.6 mm Cable)
6704-4-020	Medium Vitallium Cable Sleeve (for use with 2.0 mm Cable)
6704-0-420	1.6 mm Vitallium Beaded Cable/Sleeve Set
6704-0-520	2.0 mm Vitallium Beaded Cable/Sleeve Set
6704-0-410	1.6 mm Vitallium Cable/Sleeve Set
6704-0-510	2.0 mm Vitallium Cable/Sleeve Set
6704-8-030	Mini Cleat
Stainless Steel Cables and Sleeves	
3704-8-236	1.6 mm SS Cable
3704-8-240	2.0 mm SS Cable
3704-1-100	Small SS Cable Sleeve (for use with 1.6 mm Cables)
3704-1-110	Medium SS Cable Sleeve (for use with the 2.0 mm Cables)
3704-0-040	1.6 mm Beaded SS Cable/Sleeve Set
3704-0-050	2.0 mm Beaded SS Cable/Sleeve Set
3704-0-410	1.6 mm SS Cable/Sleeve Set
3704-0-510	2.0 mm SS Cable/Sleeve Set

### Screws

Cat. no.	Description
Stainless Steel SPS 4.5 Cortical Screws, Self Tapping	
340614	14 mm Stainless Steel Screw
340616	16 mm Stainless Steel Screw
340618	18 mm Stainless Steel Screw
340620	20 mm Stainless Steel Screw
340622	22 mm Stainless Steel Screw
340624	24 mm Stainless Steel Screw
340626	26 mm Stainless Steel Screw
340628	28 mm Stainless Steel Screw
340630	30 mm Stainless Steel Screw
340632	32 mm Stainless Steel Screw
340634	34 mm Stainless Steel Screw
340636	36 mm Stainless Steel Screw
340638	38 mm Stainless Steel Screw
340640	40 mm Stainless Steel Screw
340642	42 mm Stainless Steel Screw
340644	44 mm Stainless Steel Screw
340646	46 mm Stainless Steel Screw
340648	48 mm Stainless Steel Screw
340650	50 mm Stainless Steel Screw
340652	52 mm Stainless Steel Screw
340654	54 mm Stainless Steel Screw
340656	56 mm Stainless Steel Screw
340658	58 mm Stainless Steel Screw
340660	60 mm Stainless Steel Screw
340662	62 mm Stainless Steel Screw
340664	64 mm Stainless Steel Screw
340666	66 mm Stainless Steel Screw
340668	68 mm Stainless Steel Screw
340670	70 mm Stainless Steel Screw

## Ordering information

### Instruments

<b>Cat. no.</b>	<b>Description</b>
Instruments	
6704-9-960	Tray 1
6704-9-350	Double-Sided Tensioner
6704-9-460	Cable Removal Cutter
6704-9-520	Sleeve Holding Forceps
6704-9-720	Grip Impactor
6704-9-760	Small: Trochanter Cable Passer
6704-9-770	Large: Trochanter Cable Passer
6704-9-800	Small: Femoral Cable Passer
6704-9-820	Large: Femoral Cable Passer
6704-9-970	Tray 2
6704-9-120	Crimp Tool Gauge
6704-9-150	Crimp Tool
6704-9-250	Tension Retaining Device
6704-9-320	Single-Sided Tensioner
6704-9-420	Cable Cutter
6704-9-550	Trochanter Holding Forceps
6704-9-715	Grip Introducer
6136-0-940	Full Height Sterilization Case

# Dall-Miles Recon and Trauma Cable System surgical protocol

Surgical protocol for trochanteric reattachment using the Trochanteric Grip or Grip Plate and for cerclage applications using Beaded Cables and Single-Sided Tensioner

## System overview

The Dall-Miles Grips and Grip Plates are designed to be used with 2.0 mm cables. Non-beaded cables are recommended for the Grip and the proximal portion of the Grip Plate while beaded or non-beaded can be used in the distal section of the Grip Plate.

The Dall-Miles Grip Plate is available in both Vitallium and stainless steel. Vitallium cables must be used with the Vitallium Grip/Grip Plate and stainless steel cables must be used with the Stainless Steel Grip/Grip Plate.

The Dall-Miles Trochanteric Grip Plate can be augmented with Stryker SPS cortical bone screws to provide additional rotational stability. A range of Ø4.5 mm screws commencing with 14 mm length are available in both titanium and stainless steel. Titanium screws must be used with the Vitallium Grip Plate and stainless steel screws must be used with the Stainless Steel Grip Plate. A Ø3.2 mm drill bit should be used to prepare a pilot hole for the screw.

## Indications

The DALL-MILES System is indicated for reattachment of the trochanter in any hip procedure using the trochanteric osteotomy (total or partial) approach.

The DALL-MILES Mini Cleat is indicated for vertical reattachment or reinforcement of the trochanter in any situation where the surgeon feels that the trochanter is at risk for detachment.

The Mini Cleat is intended for use with the DALL-MILES System for trochanteric reattachment only.

The DALL-MILES Cables and Cable Sleeves are indicated for trochanteric reattachment and trauma surgery of the hip; to stabilize bone graft material; and for supplementary cerclage fixation with plates and screws for fracture fixation.

The DALL-MILES Trochanteric Grips and Grip Plates are indicated for use in the fixation of the greater trochanter due to trochanteric fracture or osteotomy with intramedullary fixation as the primary device.

The DALL-MILES Trochanteric Grip Plate is additionally indicated for use in the fixation of the greater trochanter due to trochanteric osteotomies.

## Contraindications

### Absolute contraindications include:

- 1) overt infection;
- 2) distant foci of infections (which may cause hematogenous spread to the implant site);
- 3) skeletally immature patients;
- 4) cases where there is a loss of abductor musculature, poor bone stock, poor skin coverage around the hip joint which would make the procedure unjustifiable; and,
- 5) compromised vascularity that would inhibit adequate blood supply to the fracture or operative site.

### Conditions presenting an increased risk of failure include:

- 1) mental, physical, or neurological conditions which may impair the patient's ability to cooperate with the postoperative regimen; and,
- 2) insufficient quality or quantity of bone which would inhibit rigid device fixation.

### Additional Grip Plate contraindication:

- 1) periprosthetic fractures.



This publication sets forth recommended procedures for using Stryker Orthopaedics devices and instruments. It offers guidance that you should heed, but, as with any such technical guide, each surgeon must consider the particular needs of each patient and make appropriate adjustments when and as required.

## Trochanteric reattachment surgical protocol

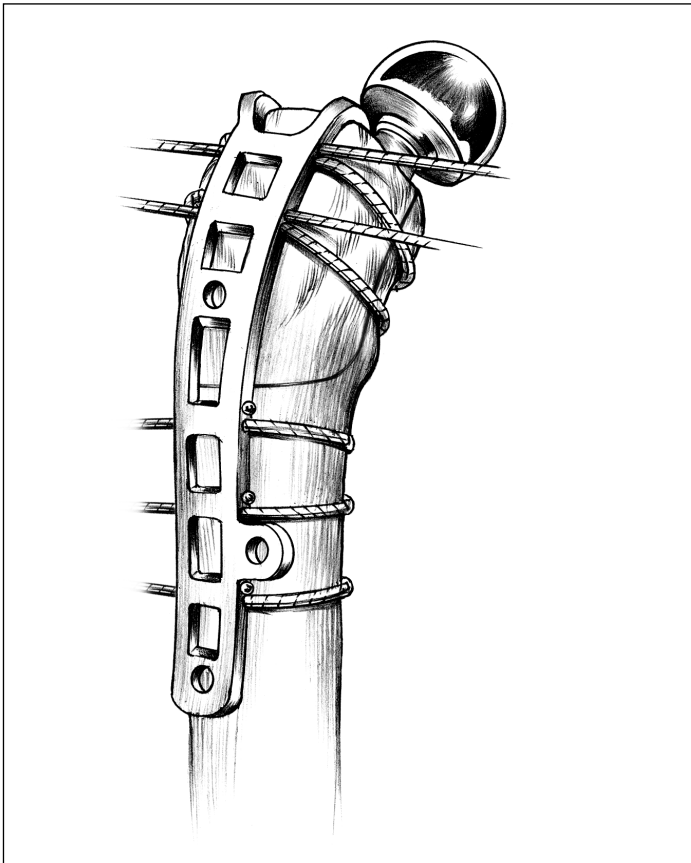


Figure 1

The following technique assumes that the acetabular component has been implanted and that the femur has been prepared for the selected femoral prosthesis.

1. Position the Trochanteric Cable Passer around the proximal femur (from posterior to anterior) and pass the two cables necessary for the proximal portion of the implant.
2. Using the Grip Introducer, position the Grip/Grip Plate on the femur, adjusting to obtain appropriate trochanter placement. The Trochanter Holding Forceps may be used to assist in retaining the desired position of the trochanter.
  - 3a. If implanting a Grip, engage the distal spikes in the bone once the position of the proximal hooks is obtained.
  - 3b. If implanting a Grip Plate, note the fit on the femur. The Grip Plate may be bent at the grip/plate junction to better fit the femur using standard bending irons.

**Note optional Mini Cleat:** The Mini Cleat is an hour-glass shaped component with a central slot. Cables are passed through this slot, and with the use of the Cable Sleeve, a single cable may be used to help with the vertical reattachment or reinforcement of the trochanter. The Mini Cleat is intended for use with the Trochanteric Grips and cables for trochanter reattachment only.

4. Pass the free ends of the cable through the implant, adjusting to have approximately equivalent lengths on each side of the implant. For the distal section of the Grip Plate, pass the appropriate number of beaded or non-beaded cables (1, 3, or 5 depending on the length of the Grip Plate chosen).

**Note:** Non-beaded cables are recommended for the Grip and the proximal portion of the Grip Plate.

5. Using the Femoral Cable Passers, pass cables around femur and through distal portion of Grip Plate (**Figure 1**).

**Note:** Beaded or Non-Beaded Cables may be used according to surgeon preference. The Single-Sided Tensioner must be used with the Beaded Cables and the Double-Sided Tensioner must be used with the Non-Beaded Cables.

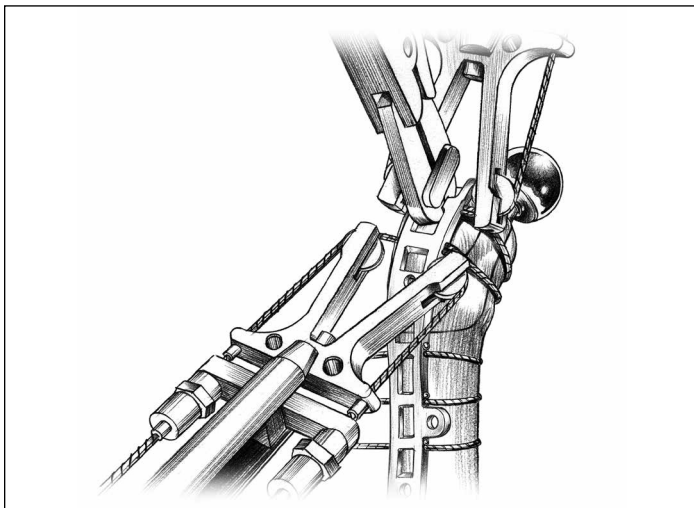


Figure 2

6. Apply the two Double-Sided Tensioners to the proximal cables and tighten the cables by turning the Tensioner knob clockwise. The two cables may be tensioned simultaneously or sequentially, maintaining the position of the implant and trochanter. Using the appropriate Tensioner, tighten the distal cables that pass through the plate portion of the implant.

**Note:** The Single-Sided Tensioner must be used with the Beaded Cables and the Double-Sided Tensioner must be used with the Non-Beaded Cables.

**Note:** The Tension-Retaining Device may be used in conjunction with the Beaded Cables in the distal portion of the Grip Plate. This will allow retensioning of the cables as the bone fragment is compressed. Please see page 10 of this technique for instructions on how to use the Tension-Retaining Device.

7. Crimp the bridges of the Grip/Grip Plate after desired tension is obtained (**Figure 2**). The order of crimping is not important. It may be necessary to remove soft tissue adjacent to the bridges in order to ensure proper location and seating of the Crimp Tool's jaws.

**Note:** Prior to using the Crimp Tool, check the instrument jaws using the instructions found on the Crimp Tool Gauge.

Place the Crimp Tool on the bridge of Grip and squeeze the handles until the ratchet mechanism disengages. The ratchet will hold the tool in place if it is necessary to reposition the hands. Once all bridges have been thoroughly crimped, the tensioners are removed.

8. Use the Cable Cutter to cut the free ends of the cables. Pass the free end of the cable through the Cutter tip, introducing it on the side with the laser mark that reads: "CUT THIS SIDE" (**Figure 3**).

Push the Cutter as flush against the Grip or Grip Plate as possible (**Figure 4**). This is important in order to leave as short a tag as possible. Pull the Cutter handle to cut the cable.

Do not use an ordinary wire cutter as a long tag may be left and may cause soft tissue irritation.

9. Plate fixation may be augmented using Stryker SPS Ø4.5 mm cortical bone screws in the provided screw holes. A Ø3.2 mm drill bit should be used to prepare a pilot hole for the screw.

**Note:** A range of Ø4.5 mm screws commencing with 14 mm length are available in both titanium and stainless steel. Titanium screws must be used with the Vitallium Grip Plate and stainless steel screws must be used with the Stainless Steel Grip Plate. Please see page 3 and 4 of this technique for corresponding catalog numbers.

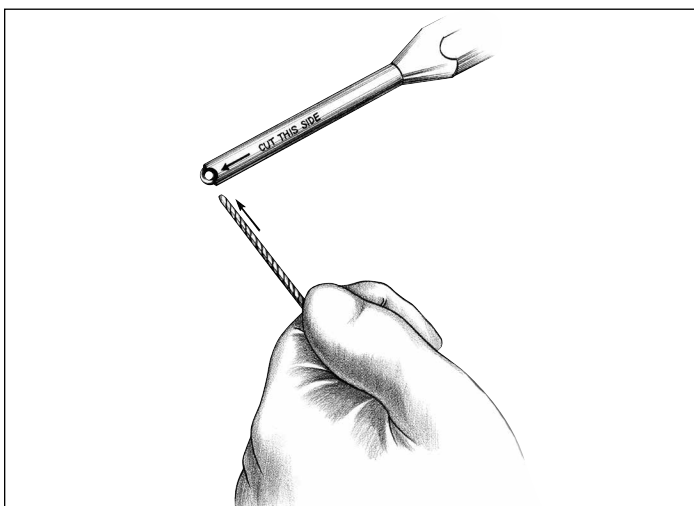


Figure 3

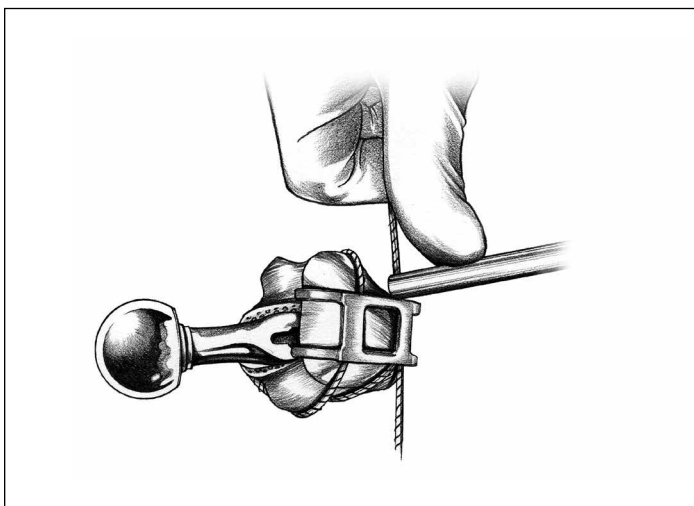


Figure 4



## Cerclage protocol using Beaded Cables

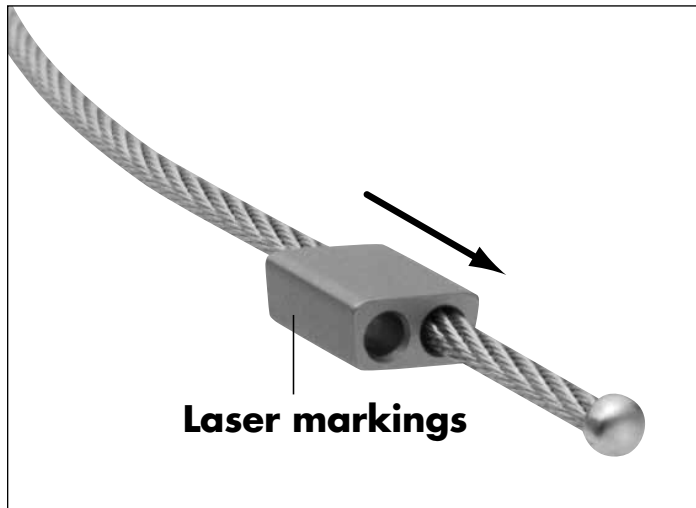


Figure 1



Figure 2

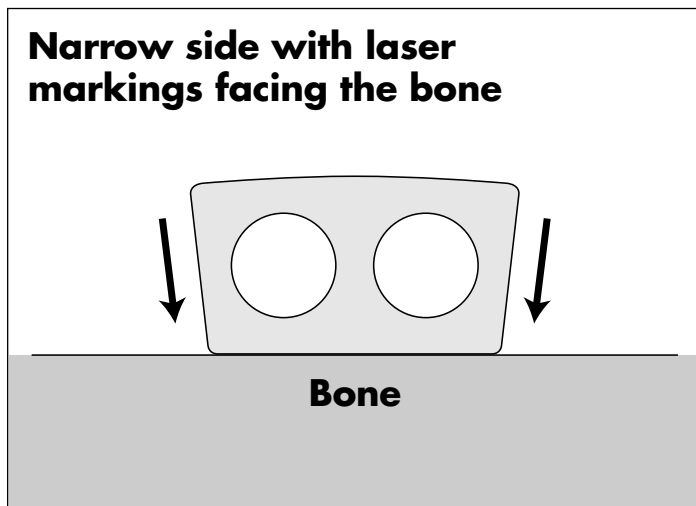


Figure 3

Dall-Miles Beaded Cables are recommended for use with the Single-Sided Tensioner for cerclage, while Dall-Miles Non-Beaded Cables are recommended for use with the Double-Sided Tensioner.

1. Position the sleeve at the beaded end of the cable (**Figure 1**).
2. Once the Cable Passer is positioned, insert the cable through the end of the passer farthest from the passer handle (**Figure 2**). Remove the passer.

Pass the free end of the cable through the sleeve and always position the sleeve with the narrow, laser-marked side facing the bone (**Figure 3**). Manually tighten the sleeve against the bone (**Figure 4**). If necessary, the Sleeve Holding Forceps can be used to position the sleeve (**Figure 4 inset**).

3. With the Single-Sided Tensioner in the fully open position (Tensioner knob turned fully counter-clockwise), insert the cable end through the nozzle tip; position the tip flush against the side of the sleeve. Turn knob clockwise until desired tension is achieved (do not exceed 150 lb tension) (**Figure 5**).

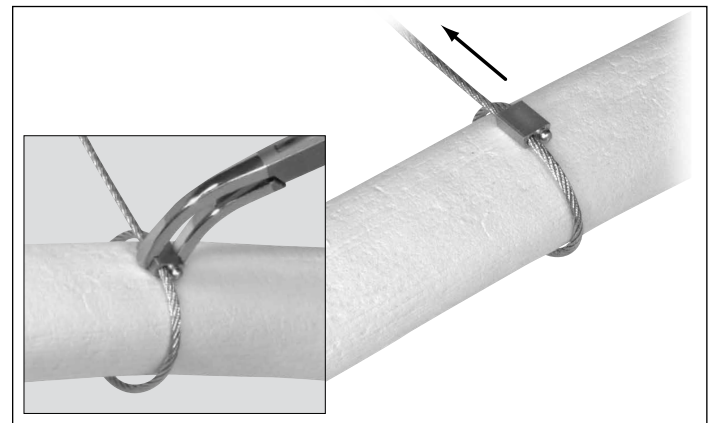


Figure 4

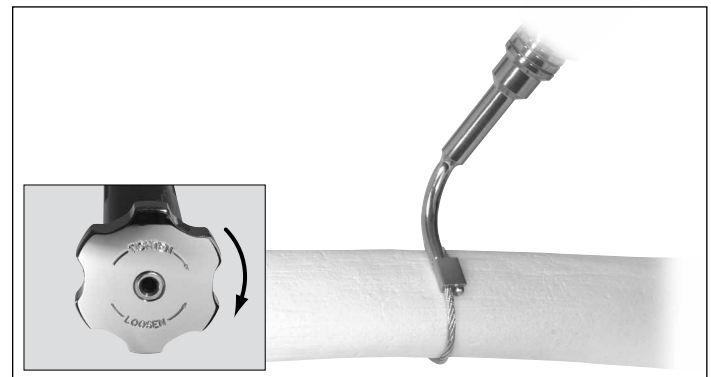


Figure 5



Figure 6

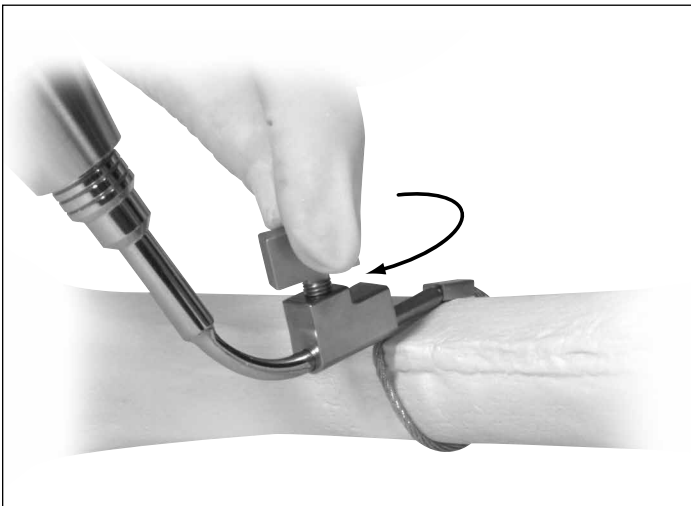


Figure 7

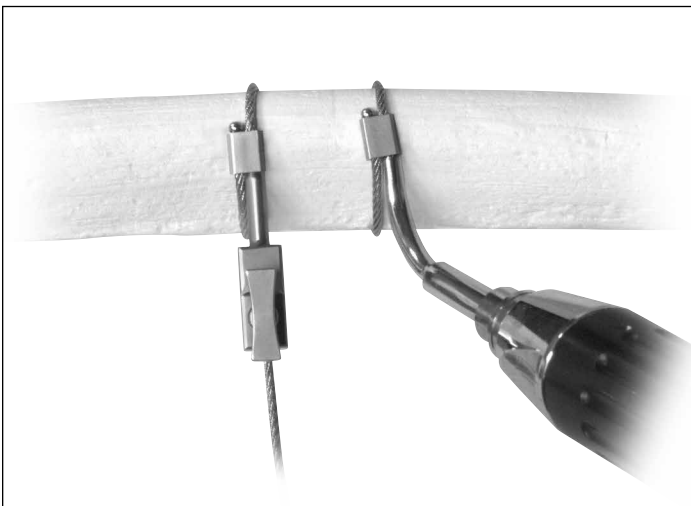


Figure 8

### Optional technique using Tension Retaining Devices

An optional technique is to use the Dall-Miles Tension Retaining Device to hold a tensioned cable in place while additional cables are placed using the same Single-Sided Tensioner. Once several cables are in place and sequentially tensioned, the Tension Retaining Devices enable the surgeon to go back and retension cables as needed before final crimping.

**3a.** Turn winged screw on the Tension Retaining Device counterclockwise until it is opened.

**3b.** Insert the free cable end through the long nozzle tip of the Tension Retaining Device. Advance the Tension Retaining Device along the cable until the long nozzle tip is flush against the sleeve.

**3c.** With the Single-Sided Tensioner knob in the fully opened position, insert the free cable end through the curved Tensioner nozzle tip. While advancing, take up any cable slack and position the Tensioner tip inside the recessed body of the Tension Retaining Device (**Figure 6**).

**3d.** Turn the Single-Sided Tensioner knob clockwise until desired tension is achieved (do not exceed 150 lb of tension). Turn winged screw on Tension Retaining Device clockwise until it is tightened (**Figure 7**). Remove the Tensioner by turning knob counterclockwise until it releases. Each cable can then be incrementally tensioned before final crimping (**Figure 8**).

### Retensioning with Tension Retaining Device already applied

In order to achieve satisfactory retensioning, the following steps must be taken:

**3e.** Follow instructions in Step 3c.

**3f.** Release the tensioned cable in the Tension Retaining Device by turning the winged screw counterclockwise. Once released, the cable is now ready to be tensioned.

**3g.** Follow instructions in Step 3d.

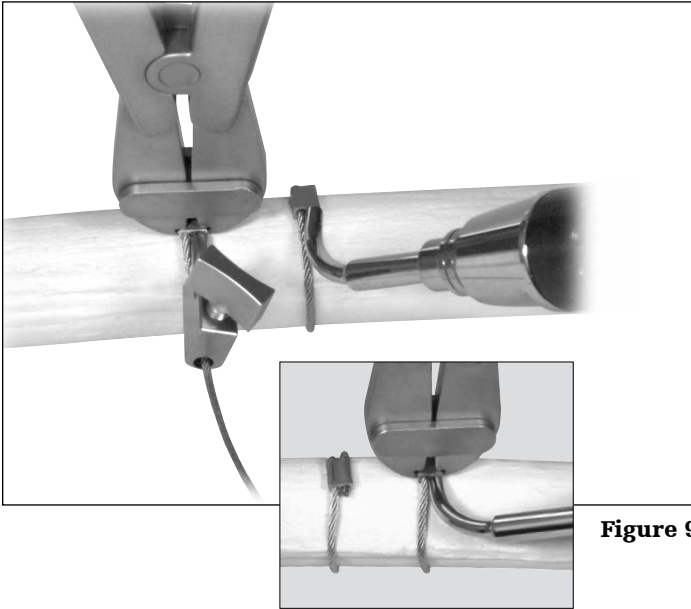


Figure 9

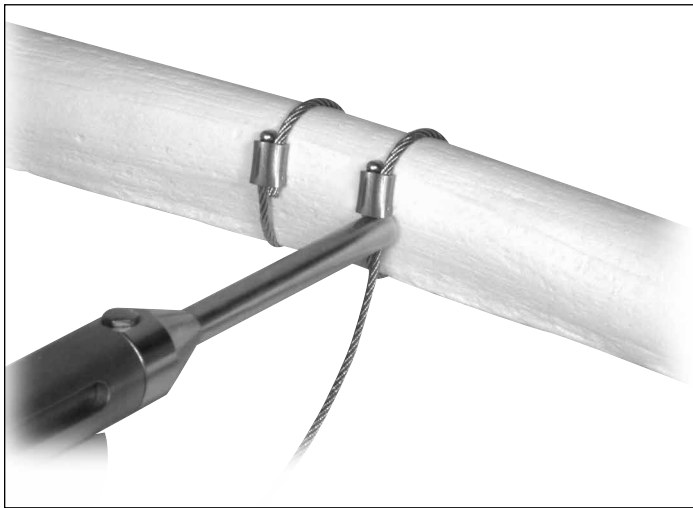


Figure 10

4. Before placing the Crimp Tool on the sleeve, be sure the ratchet mechanism is disengaged. If it is not, squeeze the handles slightly and push the release lever to disengage the ratchet and open the handles fully.

**Note:** Prior to using the Crimp Tool, check the instrument jaws using the instructions found on the Crimp Tool Gauge.

Place the Crimp Tool on the sleeve and squeeze the handles (**Figure 9**). The ratchet mechanism will engage as crimping starts. The ratchet will hold the tool in place if it is necessary to reposition the hands.

Squeeze the handles until the ratchet mechanism disengages. At that point, crimping is complete.

Remove the Single-Sided Tensioner or Tension Retaining Device (whichever is applicable) by turning the knob or winged screw counterclockwise until it releases.

5. Use the Dall-Miles Cable Cutter to cut the free ends of the cable.

The free end of the cable is passed through the Cutter tip, introducing it on the side with the laser mark that reads: "CUT THIS SIDE."

While applying longitudinal tension on the cable, advance the Cutter tip over the cable and push it as flush against the Sleeve as possible (**Figure 10**). This is important in order to leave as short a tag as possible. Pull the Cutter handle to cut the cable.

Do not use an ordinary wire cutter because a long tag may be left and may cause soft tissue irritation.

### Cable and implant removal

In the event the physician decides to remove the implants, the number of cables to be removed should first be identified radiographically.

After clearly exposing the cables, the cables should be cut using the Cable Removal Cutter. Place the jaws of the Cable Removal Cutter onto the cable and squeeze the handles to cut the cable. Once the cables are cut, the implants can be removed.

To aid in removing the Grip or Grip Plate, the surgeon may need to tap the Grip or Grip Plate in a proximal direction to fully disengage the proximal hooks.

This document is intended solely for healthcare professionals.

A surgeon must always rely on his or her own professional clinical judgment when deciding whether to use a particular product when treating a particular patient. Stryker does not dispense medical advice and recommends that surgeons be trained in the use of any particular product before using it in surgery.

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