

Cerclage Solutions for General Surgery

# Orthopaedic Cable System

Surgical Technique



# Table of Contents

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|                            |                                  |    |
|----------------------------|----------------------------------|----|
| <b>Introduction</b>        | Orthopaedic Cable System         | 2  |
|                            | Indications                      | 4  |
|                            | Contraindications                | 4  |
| <hr/>                      |                                  |    |
| <b>Surgical Technique</b>  | Cerclage Technique               | 5  |
|                            | Tension Band Technique—Olecranon | 17 |
|                            | Tension Band Technique—Patella   | 23 |
| <hr/>                      |                                  |    |
| <b>Product Information</b> | Care and Maintenance             | 28 |
|                            | Implants                         | 29 |
|                            | Instruments                      | 30 |
|                            | Set List                         | 32 |

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## MR Information

The Orthopaedic Cable System has not been evaluated for safety and compatibility in the MR environment. It has not been tested for heating, migration, or image artifact in the MR environment. The safety of the Orthopaedic Cable System in the MR environment is unknown. Scanning a patient who has this device may result in patient injury.

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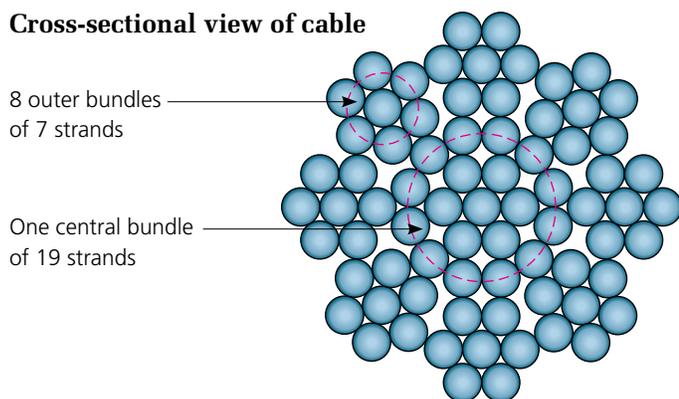
# Orthopaedic Cable System



## Orthopaedic cable

- Available in 1.0 mm and 1.7 mm diameters with an (8 x 7) + (1 x 19) weave for greater flexibility and control
- Assemblies available in 316L stainless steel, titanium alloy,\* and L605 cobalt chromium alloy with titanium crimp
- Compatible with all DePuy Synthes stainless steel or titanium plates and screws
- 1.0 mm titanium needle cable with crimp allows for easier passing of the cable when a cable passer is not used

## Cross-sectional view of cable



1.0 mm titanium needle cable with crimp

\*Ti-6Al-7Nb.

### Cerclage positioning pins

- Seat directly into screw hole to maintain position of the cable relative to the plate
- Threaded pins thread into locking holes
- Pins with posts are held in place by inserting the post in a 3.2 mm pilot hole in the bone. For use with 3.5 mm and 4.5 mm DCP®, LC-DCP® and LCP® Plates
- Accept 1.0 mm and 1.7 mm cables
- Available in titanium and 316L stainless steel
- Available sterile only



Threaded cerclage positioning pin



Cerclage positioning pin with post

### Crimp positioning pins

- Combines a crimp and positioning pin into one
- Used to maintain the position of the cable relative to the plate
- May decrease incision size because the crimp sits on the plate
- Two sizes, to fit 5.0 mm locking or 4.5 mm LCP Plate holes and 7.3 mm locking holes
- For use with 1.7 mm cable
- 5.0 mm available in titanium and 316L stainless steel, 7.3 mm available in stainless steel only
- Available sterile only



5.0 mm



7.3 mm

### Cerclage buttons

- Fit into screwhead recess to provide fixation, when a screw may not have adequate purchase
- May be used with unicortical screws around prostheses to provide fixation
- Three sizes designed to fit into 2.5 mm hex/T15, 3.5 mm hex/T25 or cannulated 4 mm hex screwhead recess
- Fits T25 StarDrive™ Recess and 3.5 mm hex
- Accept 1.0 mm and 1.7 mm cables
- Available in titanium and 316L stainless steel
- Available sterile only



For solid screws



For cannulated screws

# Indications and Contraindications

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## **Cables with Crimp**

For general orthopaedic trauma surgery involving the olecranon, patella, femur (including periprosthetic fractures), humerus and ankle; acromioclavicular dislocations, pelvic and acetabular fractures, prophylactic banding during total joint procedures, and temporary reduction during open reduction procedures.

## **Cerclage Positioning Pin**

The cerclage positioning pin is intended for use with cerclage monofilament wire and multifilament cable to augment fracture stabilization with plates used in long bone fixation when the use of screws is contraindicated, as in the presence of intramedullary implants.

The Cerclage Positioning Pins are designed for use with plates having locking compression or dynamic compression screw holes that accept 3.5 mm or 4.5 mm bone screws. The Cerclage Positioning Pin (and cerclage wire or cable) can be used with a variety of Synthes plates.

## **Hex Button**

The hex button device is indicated for fractures that may not be securely held by either a screw or a cerclage device alone.

The hex button device is intended for use where wire, cable, or band cerclage is used in combination with bone screws and/or plates, of the same material type to provide internal fixation of fractured bone.

## **5.0 mm and 7.3 mm Crimp Positioning Pins**

The 5.0 mm and 7.3 mm crimp positioning pins are intended for use with multifilament cable to augment fracture stabilization with plates used in long bone fixation when the use of screws is contraindicated, as in the presence of intramedullary implants.

The 5.0 mm crimp positioning pins are designed for use in the 5.0 mm locking or 4.5 mm LCP Plate holes of Synthes plates. The 7.3 mm crimp positioning pins are designed for use in the 7.3 mm locking holes of Synthes plates.

## **Trochanteric Reattachment Device**

The trochanteric reattachment device is indicated for the reattachment of the greater trochanter following osteotomy in total hip arthroplasty, or following fracture of the greater trochanter.

The 1.0 mm cable with crimp and the 1.0 mm titanium needle cable are contraindicated for use in the femur ORIF and prophylactic banding during total joint procedures.

These devices are intended as single use items.

# Cerclage Technique

## 1. Pass cable

### Instruments

|         |                                |
|---------|--------------------------------|
| 391.103 | Medium Cable Passer, curved    |
| 391.104 | Large Cable Passer, curved     |
| 391.105 | Medium Cable Passer            |
| 391.106 | Medium Cable Passer, 45° angle |
| 391.107 | Large Cable Passer             |
| 391.108 | Large Cable Passer, 45° angle  |

Select the appropriate cable passer.

The size and shape of the cable passer selected is dependent upon the circumference of the bone and access to the site.

Select a cable passer that will allow passage of the instrument around the bone without causing significant damage to soft tissues or excessive stripping of the periosteum.

Place the cable passer around the bone (Figure 1). Thread the free end of the cable into the end hole of the cable passer until the cable exits through the shaft hole (Figure 2).

Remove the cable passer leaving the cable wrapped around the bone (Figure 3).

**Precaution: Do not thread the cable into the shaft hole of the cable passer since the cable crimp (attached to the other end of the cable) will prevent release of the cable passer.**



Figure 1

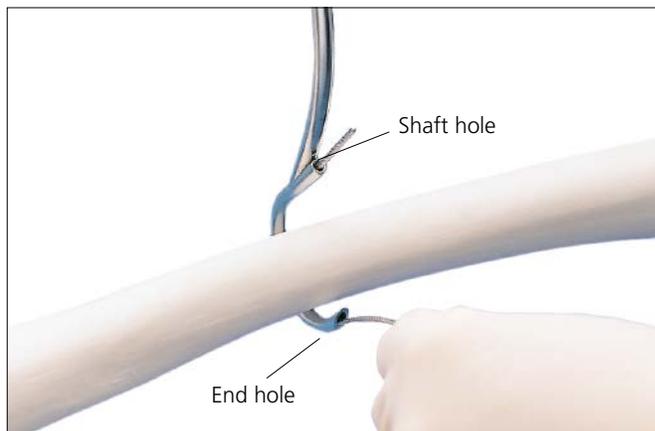


Figure 2

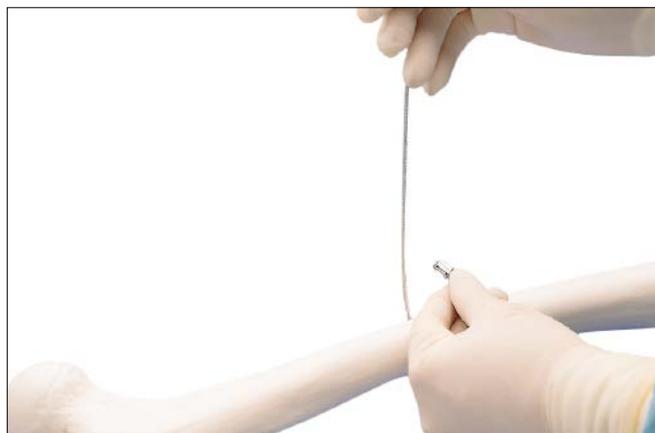


Figure 3

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## 2. Position cable crimp

Insert the free end of the cable into the open hole in the cable crimp and place the crimp in the desired position on the bone.

The location for the crimp must allow adequate soft tissue coverage and ensure that the crimp remains fixed on the bone.

Ensure that the points on the under surface of the cable crimp are in contact with the bone—the smooth surface should be facing up.



### 3. Tension cable

#### Instruments

|         |                               |
|---------|-------------------------------|
| 391.201 | Cable Tensioner               |
| 391.883 | Attachment Bit                |
| 391.884 | Provisional Tensioning Device |

Attach the provisional tensioning device and the attachment bit to the cable tensioner.

Turn the fluted knob at the end of the tensioner counterclockwise until it stops, and thread the cable through the cable tensioner.

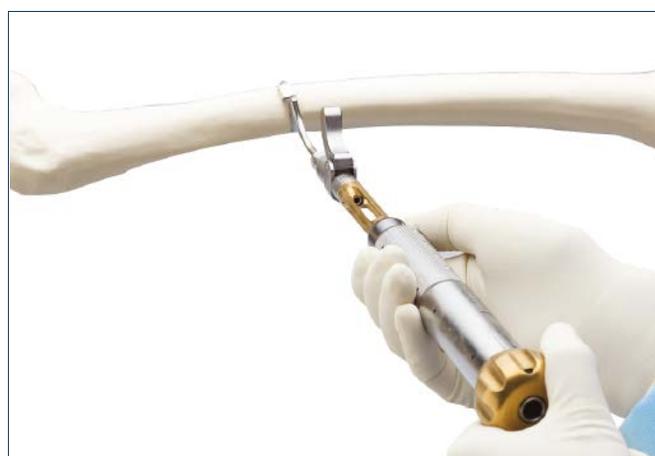
Advance the tensioner along the cable until it rests against the cable crimp. Carefully take up any slack in the cable by hand. Confirm placement of the crimp on the bone.

Turn the knob on the tensioner clockwise until the desired tension is reached. The amount of tension being applied to the cable is indicated by the position of the knob relative to the numbered lines etched on the body of the tensioner. These lines indicate tension levels from 20 kg to 50 kg.

When the desired tension is reached, the cable is ready for crimping.

**Warning: The tension of the cerclage cable should not exceed 40 kg (for the 1.0 mm cable) and 50 kg (for the 1.7 mm cable). Applying more tension may cause fraying or breakage of the cable.**

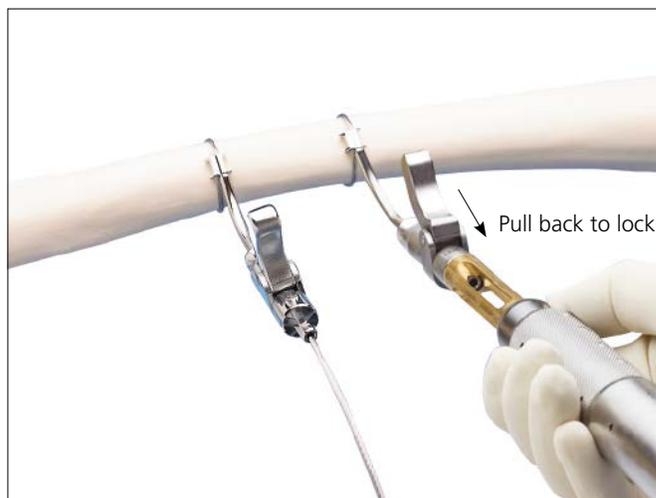
**Precaution: Take care not to exceed 50 kg of tension. Applying more tension may cause the cable to cut through soft or osteoporotic bone. It may also cause crushing of bone fragments and loss of reduction.**



**Optional technique**

The provisional tensioning device may be detached from the tensioner to hold tension in the cable while additional cables are placed. Engage the cam lock by pulling back on the provisional tensioning device lever. Turn the fluted knob of the tensioner counterclockwise until it stops and remove it from the provisional tensioning device. Each cable can then be incrementally tensioned before final crimping.

**Warning: Repeated tensioning of the cable at high loads may cause fraying of the cable.**



## 4. Crimp cable

### Instrument

391.882 Cable Crimper

Use the cable crimper to precisely deform the cable crimp.

Place the jaws of the cable crimper over the cable crimp and squeeze the handles together.

The ratchet mechanism in the crimper precisely controls the amount of crimp deformation, thus preventing under- or over-crimping.

The crimper will automatically release when the cable has been crimped.

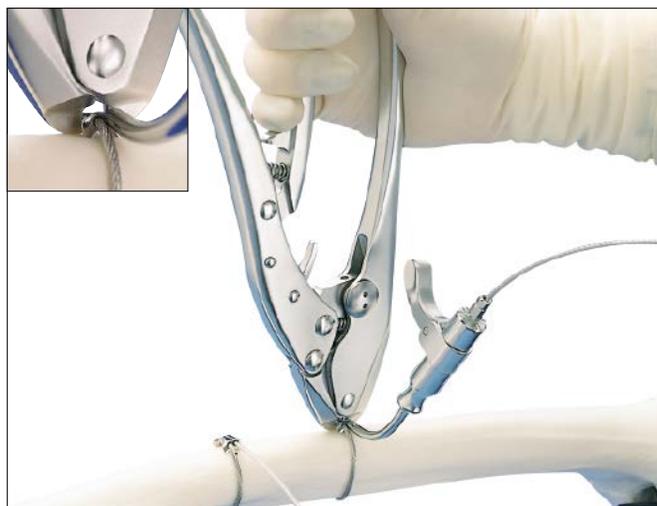
**Precaution: Visually check to ensure that the cable crimp is centered and fully seated in the crimper jaws prior to crimping the cable. Improper placement may lead to cable slippage or crimp failure.**

**Note: Use the starter handle to begin squeezing the crimper until the outer handle can be easily grasped.**

After the cable has been crimped, remove the tensioner from the cable by turning the knob counterclockwise until the cable slides freely through the tensioner.

If a provisional tensioning device was used, remove it at this time by pushing the provisional tensioning device lever forward.

Crimp additional cables using the same procedure.



## 5. Cut cable

### Instrument

|         |                        |
|---------|------------------------|
| 391.905 | Cable Cutter, standard |
| or      |                        |
| 391.906 | Cable Cutter, large    |

To cut the cable, pass the free end of the cable through the jaws of the cable cutter and squeeze the handles together.

Cut each cable as close to the cable crimp as possible, taking care not to damage the adjacent cable.

**Note: Place the cable completely in the cutter jaws, but near the tip. Cut in one motion to ensure a clean cut.**



# Cerclage Technique Using Cerclage Positioning Pins (optional)

**Note:** When using cables in conjunction with plates and screws (and cerclage positioning pins or cerclage buttons), it is important to first reduce the plate to the bone. This is necessary because the fully tensioned cable will interfere with screw fixation if a gap exists between the plate and the bone.

## Instruments

|         |   |
|---------|---|
| 310.31* | 3.2 mm Drill Bit  |
| 310.25* | 2.5 mm Drill Bit  |
| 323.36* | 3.5 mm Universal Drill Guide                                |
| 323.46* | 4.5 mm Universal Drill Guide                                |
| 391.885 | Forceps, for use with cerclage buttons and positioning pins |



Figure 1

The cerclage positioning pin may be used when the fracture is treated with a plate. The positioning pin maintains the location of the cable on the plate relative to the plate hole.

After reducing the plate to the bone, select the type of cerclage positioning pin to be used (post or threaded) and decide upon the location for the pin in the plate.

### For nonthreaded pins

For 4.5 mm nonthreaded pins, drill a pilot hole into the bone, at the selected location for the pin, using a 3.2 mm drill bit and a 4.5 mm universal drill guide (Figure 1).

For 3.5 mm nonthreaded pins, drill a pilot hole using a 2.5 mm drill bit and a 3.5 mm universal drill guide.

\*Also available.

**Note: Since the positioning pin is asymmetrically designed to fit into the majority of DePuy Synthes plates, ensure that the pin is appropriately oriented with respect to the pilot hole in the bone and the hole in the plate before loading the pin on the cable.**

**For example:**

Consider the following situation when fixing a femur from a lateral approach using this technique.

- A pilot hole is drilled in the proximal half of a plate hole. The cable passer is inserted from posterior to anterior, which requires passing the cable from anterior to posterior.

In this example, the non-threaded pin should be loaded onto the cable and fed down to the crimp with the post to the right when viewing the cable from the beaded end.

Load the pin onto the cable and slide it down to the crimp before passing the cable around the bone (Figure 2).

Pass the cable around the bone as described in Steps 1–2 (pages 5 and 6).

Placing the post of the positioning pin in the pilot hole may be done by hand, or using the forceps for use with cerclage buttons and positioning pins.

Seat the pin in the plate hole. Complete the remaining cerclage cable technique outlined in Steps 3–5 (pages 7 through 10).

**For threaded pins**

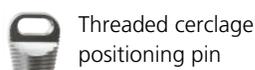
For the threaded pins, place the pin into locking holes before passing the cable around the bone (this can be done either before or after implantation of the plate).

Ensure that the threads properly engage the plate, and the cable slot is perpendicular to the direction the cable will be passed around the bone (threaded pins do not have to be fully tightened into the plate).

Insert the free end of the cable through the pin. Pass the cable around the bone, as described in Step 1 (page 5) and then into the crimp. Continue with the remaining cerclage cable technique outlined in Steps 3–5 (pages 7 through 10).



Figure 2



Threaded cerclage positioning pin



Cerclage positioning pin with post

# Cerclage Technique Using Cerclage Buttons (optional)

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## Instrument

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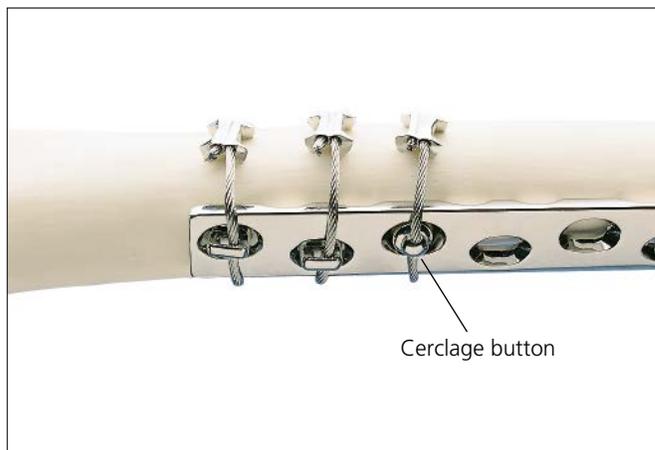
391.885      Forceps, for use with cerclage buttons and positioning pins

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A cerclage button may be used to provide additional fixation when a screw alone does not provide adequate fixation. Place a cerclage button in the head of a screw to provide fixation with a cable. Three sizes are available to fit small screwheads (T15 StarDrive or 2.5 mm hex Recess), large screwheads (T25 StarDrive or 3.5 mm hex Recess) or cannulated screws with 4 mm hex recess (5.0 mm cannulated locking, 6.5 mm cannulated, 7.3 mm cannulated, and 7.3 mm cannulated locking screws).

Load the proper size cerclage button onto the cable and slide it down to the crimp before passing the cable around the bone. Pass the cable around the bone, as described in Step 1 (page 5).

Place the button in the head of the screw using the forceps for use with cerclage buttons and positioning pins. Complete the remaining cerclage cable technique outlined in Steps 2–5 (pages 6 through 10).



# Cerclage Technique Using Crimp Positioning Pins (optional)

After reducing the plate to the bone, decide upon the location for the crimp positioning pin in the plate. The pin should be located in a locking hole, or the locking portion of a Combi hole.

Remove the original crimp from the cable.

Load the crimp positioning pin onto the cable and slide it down to the ball end of the cable.

Pass the cable around the bone, as described in Step 1 (page 5).

Insert the free end of the cable into the open hole of the crimp positioning pin and place the crimp positioning pin in the desired screw hole on the plate, while removing the cable slack.

Complete the remaining cerclage cable technique outlined in Steps 3–5 (pages 7 through 10).



# Cerclage Technique Using the 1.0 mm Titanium Needle Cable (optional)

## 1. Pass the cable

### Instrument

|         |                        |
|---------|------------------------|
| 391.905 | Cable Cutter, standard |
|---------|------------------------|

Holding the end of the cable and the crimp in one hand, pass the needle tip of the cable around the bone and through the soft tissues.

Cut the needle leader, but do not cut the cable in order to prevent fraying.

Pass the cable through the open hole in the crimp. Confirm placement of the crimp on the bone—the smooth surface should be facing up.



## 2. Tension the cable

### Instrument

|         |                 |
|---------|-----------------|
| 391.201 | Cable Tensioner |
|---------|-----------------|

|         |                |
|---------|----------------|
| 391.883 | Attachment Bit |
|---------|----------------|

|         |                               |
|---------|-------------------------------|
| 391.884 | Provisional Tensioning Device |
|---------|-------------------------------|

Attach the provisional tensioning device and the attachment bit together. Thread the assembly onto one end of the cable so that the attachment bit butts up against the crimp. Engage the cam lock by pulling back the provisional tensioning device lever to lock the assembly in place. This will hold the cable against the crimp while applying tension to the other side.



## 2. Tension the cable continued

Attach the cable tensioner to the provisional tensioning device and the attachment bit. Turn the fluted knob at the end of tensioner fully clockwise until it stops, and thread the cable through the cable tensioner. Advance the tensioner along the cable until it rests against the cable crimp. Carefully take up any slack in the cable by hand. Confirm placement of the crimp on the bone.

Turn the knob on the tensioner clockwise until the desired tension is reached. The amount of tension being applied to the cable is indicated by the position of the knob relative to the numbered lines etched on the body of the tensioner. These lines indicate tension levels from 20 kg to 40 kg. When the desired tension is reached, the cable is ready for crimping.

**Warning: The tension of the cerclage cable should not exceed 40 kg (for the 1.0 mm cable) and 50 kg (for the 1.7 mm cable). Applying more tension may cause fraying or breakage of the cable.**

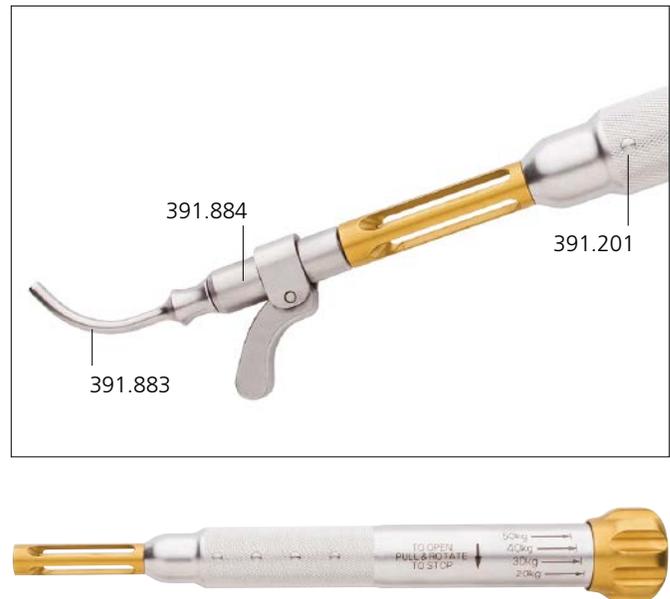
**Precaution: Take care not to exceed 50 kg of tension. Applying more tension may cause the cable to cut through soft or osteoporotic bone. It may also cause crushing of bone fragments and loss of reduction.**

### Optional technique

The provisional tensioning device may be detached from the tensioner to hold tension in the cable while additional cables are placed. Engage the cam lock by pulling back on the provisional tensioning device. Each cable can then be incrementally tensioned before final crimping.

**Warning: Repeated tensioning of the cable at high loads may cause fraying or breakage of the cable.**

Complete the remaining cerclage cable technique outlined in Steps 4–5 (pages 9 and 10).



# Tension Band Technique—Olecranon

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Tension band technique is mainly indicated in avulsion fractures at the site of a ligament or tendon attachment, such as with fractures of the olecranon (osteotomy or transverse fractures) and patella (simple transverse fracture). Fractures (or osteotomies) of the greater trochanter and avulsion fractures of the medial or lateral malleolus may also be treated with a tension band. If strong rotational forces act upon the fracture site, two parallel Kirschner wires may be inserted before the tension band is applied. (For patella tension band technique, see page 23.)

---

## **1** **Reduce fracture**

With the patient in the supine position and the arm draped free across the chest, reduce and temporarily fix the fracture, using pointed reduction forceps.

## 2. Insert Kirschner wires

### Instruments

|         |  |
|---------|--|
| 310.19* | 2.0 mm Drill Bit, quick coupling, 100 mm     |
| 312.20* | 2.0 mm Parallel Drill Guide and Drill Sleeve |

Using a drill sleeve for aiming and tissue protection, insert two parallel (1.6 mm or 2.0 mm) Kirschner wires into the olecranon (in the direction of the long axis of the ulna) and across the fracture site.

The Kirschner wires may be drilled into the anterior cortex of the ulna or placed within the medullary canal.

In hard bone, predrilling with the 2.0 mm drill bit may be necessary.

Drill a 2.0 mm hole perpendicular to the long axis of the ulna and distal to the fracture site, at a distance approximately equal to the length of the proximal fracture fragment.

This hole must go through both cortices and the medullary canal of the ulna and may be drilled before or after fracture reduction and Kirschner wire placement.



\*Also available.

### 3. Create tension band

Place the crimp alongside the ulna and pass the 1.0 mm cable through the distal drill hole.

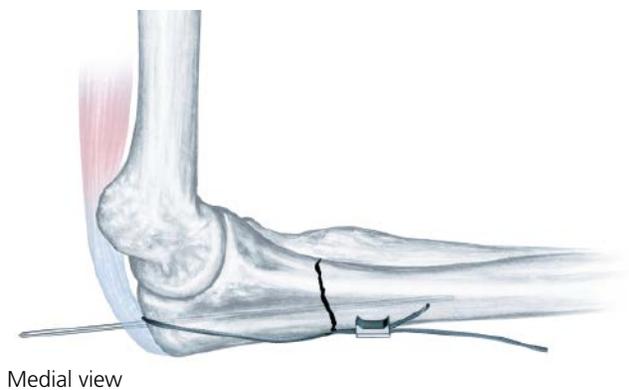
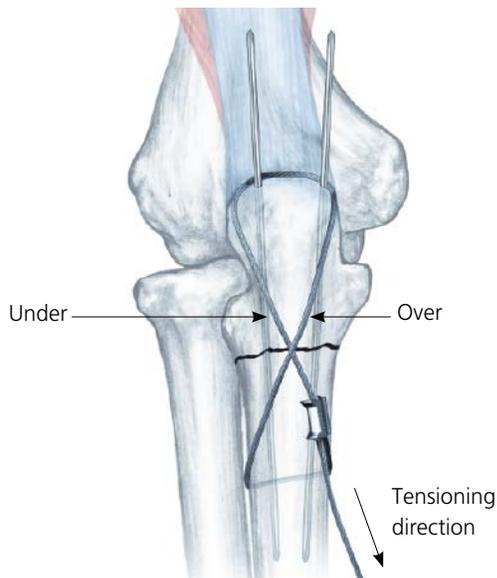
Cross the cable over the dorsal surface of the olecranon and pass it deep to the triceps tendon and behind the Kirschner wires.

Pass the cable end UNDER the cable on the dorsal surface of the ulna in a figure-of-eight and insert it into the open hole of the crimp.

Gently pull any slack out of the cable by hand.

#### Optional technique

Use one or two screws (standard or cannulated) with cerclage buttons instead of the Kirschner wires.



Optional configuration

# Tension Band Technique—Olecranon

## 4. Tension cable

### Instruments

|         |                               |
|---------|-------------------------------|
| 391.201 | Cable Tensioner               |
| 391.883 | Attachment Bit                |
| 391.884 | Provisional Tensioning Device |

Attach the provisional tensioning device and the attachment bit to the cable tensioner.

Turn the fluted knob at the end of the tensioner counterclockwise until it stops, and thread the cable through the cable tensioner.

Advance the tensioner along the cable until it rests against the cable crimp.

Carefully take up any slack in the cable by hand. Confirm placement of the crimp on the bone.

Place the elbow in extension.

Turn the knob on the tensioner clockwise until the desired tension is reached.

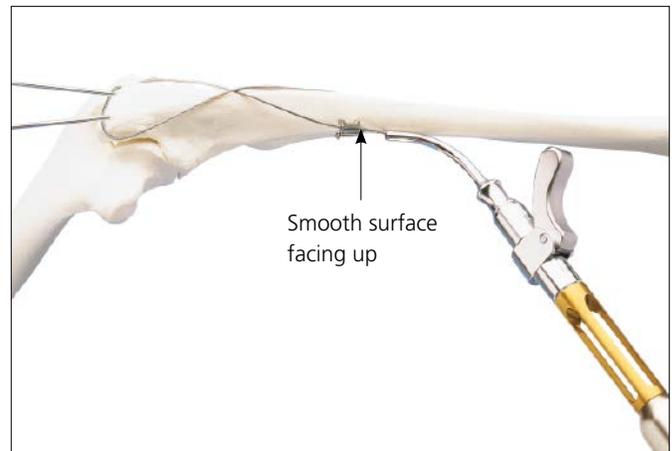
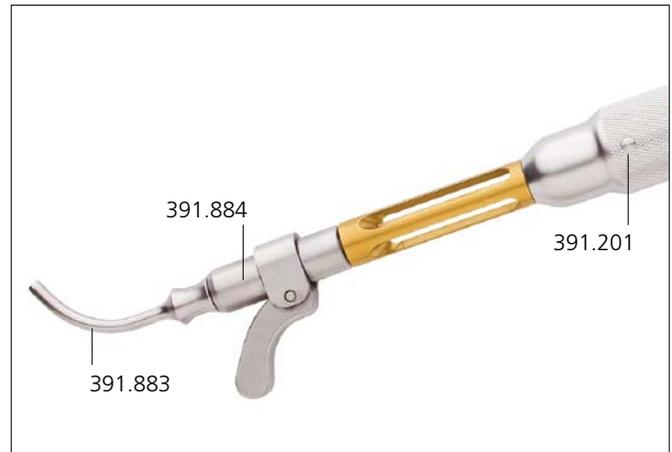
The amount of tension being applied to the cable is indicated by the position of the knob relative to the numbered lines etched on the body of the tensioner.

These lines indicate tension levels from 20 kg to 50 kg.

When the desired tension is reached, the cable is ready for crimping.

**Warning: The tension of the cerclage cable should not exceed 40 kg (for the 1.0 mm cable) and 50 kg (for the 1.7 mm cable). Applying more tension may cause fraying or breakage of the cable.**

**Precaution: Take care not to exceed 50 kg of tension. Applying more tension may cause the cable to cut through soft or osteoporotic bone. It may also cause crushing of bone fragments and loss of reduction.**



## 5. Crimp cable

### Instrument

391.882 Cable Crimper

Place the jaws of the cable crimper over the cable crimp and squeeze the handles together.

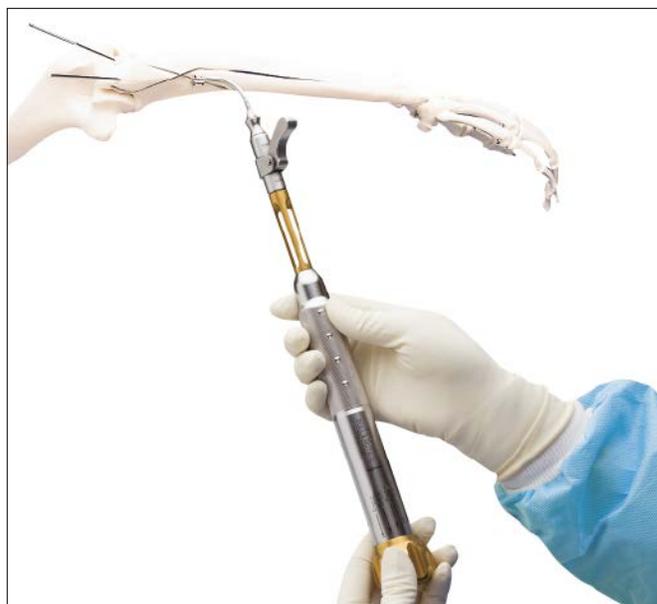
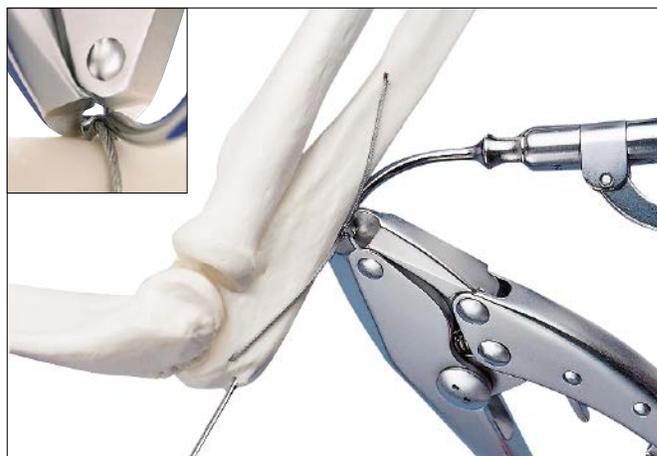
The ratchet mechanism in the crimper precisely controls the amount of crimp deformation, thus preventing under- or over-crimping.

The crimper will automatically release when the cable has been crimped.

**Precaution: Visually check to ensure that the cable crimp is centered and fully seated in the crimper jaws before crimping the cable. Improper placement may lead to cable slippage or crimp failure.**

**Note: Use the starter handle to begin squeezing the crimper until the outer handle can be easily grasped.**

After the cable has been crimped, remove the tensioner from the cable by turning the knob counterclockwise until the cable slides freely through the tensioner.



## 6. Cut cable

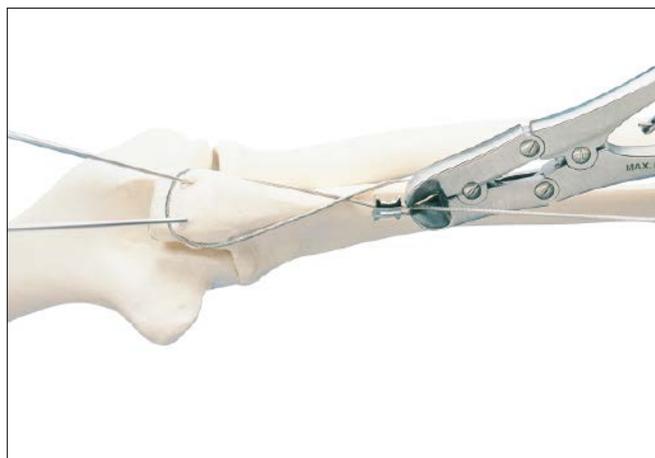
### Instrument

391.905 Cable Cutter, standard

To cut the cable, pass the free end of the cable through the jaws of the cable cutter and squeeze the handles together.

Cut the cable as close to the cable crimp as possible, taking care not to damage the adjacent cable.

**Note: Place the cable completely in the cutter jaws, but near the tip. Cut in one motion to ensure a clean cut.**



## 7. Cut and position Kirschner wires

### Instruments

391.82\* Wire-Bending Pliers, 160 mm

392.00\* Bending Iron, for Kirschner Wires

Pull the Kirschner wires back slightly and cut obliquely to create a sharp point.

Using the wire bending pliers, bend the Kirschner wires past 180° to form a small hook.

Using the bending iron for Kirschner wires as a punch, tap the ends into the bone making sure the cable passes under the small hook.

**Precaution: Do not use the cable cutters to cut the K-wires; doing so will damage the cutters.**



\*Also available.

# Tension Band Technique—Patella

## 1. Reduce the fracture

### Instrument

310.19\*      2.0 mm Drill Bit, quick coupling, 100 mm

Tilt the superior fracture fragment to expose the fracture surface.

Using a 2.0 mm drill bit, drill two parallel holes in a retrograde fashion through the superior fragment.

Insert a 1.6 mm Kirschner wire through each hole, blunt end first, and out through the quadriceps tendon.

Advance the wires until the sharp tip is fully within the superior fragment.

Reduce and provisionally fix the fracture with pointed reduction forceps.

Inspect both the anterior cortical and posterior articular surfaces to ensure that the articular surface is anatomically reduced.



## 2. Insert Kirschner wires

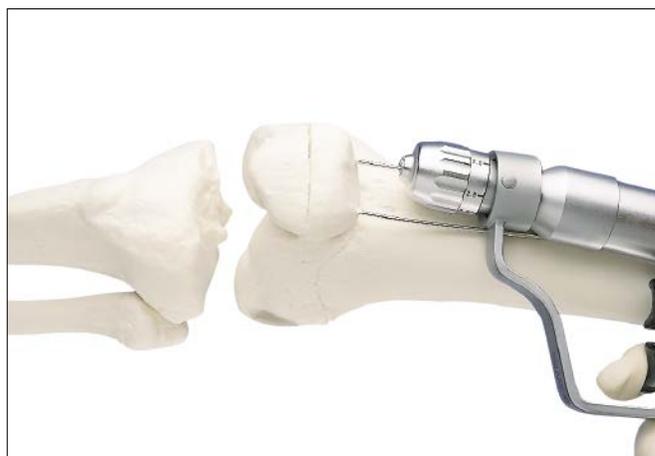
### Instrument

391.82\*      Wire-Bending Pliers, 160 mm

Sequentially advance the Kirschner wires into the inferior fragment.

They should be advanced at least 1 cm beyond the inferior pole of the patella.

Check reduction and provisional fixation. Using the wire bending pliers, bend the superior end of the Kirschner wires posteriorly past 180° to form a small hook, and cut obliquely to form sharp points.



**Precaution: Do not use the cable cutters to cut the Kirschner wires; doing so will damage the cutters.**

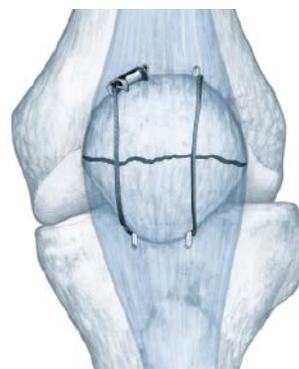
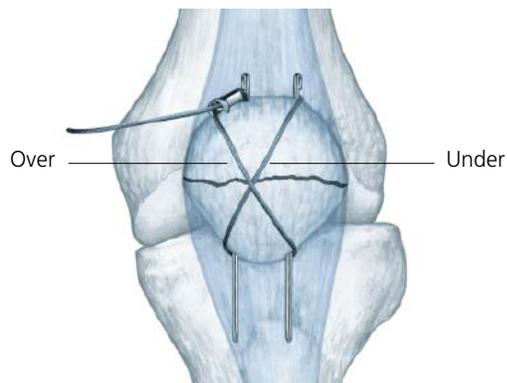
\*Also available.

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### 3. Create tension band

Place the crimp on the lateral or medial side of either pole of the patella.

Pass a 1.0 mm cable deep to the quadriceps and patellar tendons and behind the Kirschner wires (superiorly and inferiorly), over the front of the patella in a figure-of-eight and back through the open hole in the crimp.



Optional configuration



Lateral view

## 4. Tension cable

### Instruments

|         |                               |
|---------|-------------------------------|
| 391.201 | Cable Tensioner               |
| 391.883 | Attachment Bit                |
| 391.884 | Provisional Tensioning Device |

Attach the provisional tensioning device and the attachment bit to the cable tensioner.

Turn the fluted knob at the end of the tensioner counterclockwise until it stops and thread the cable through the cable tensioner.

Advance the tensioner along the cable until it rests against the cable crimp.

Carefully take up any slack in the cable by hand. Confirm placement of the crimp on the bone.

Turn the knob on the tensioner clockwise until the desired tension is reached.

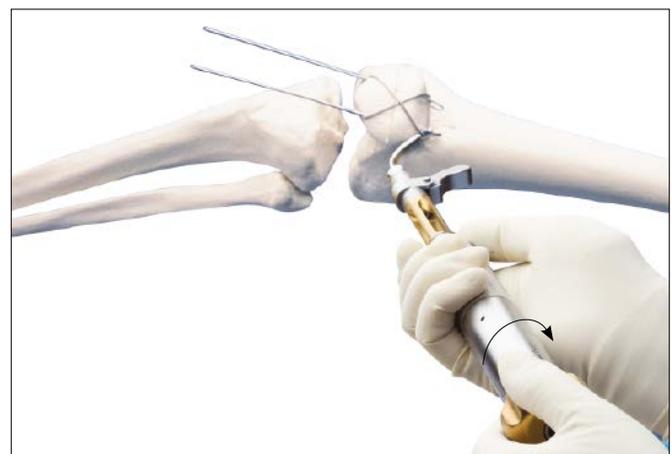
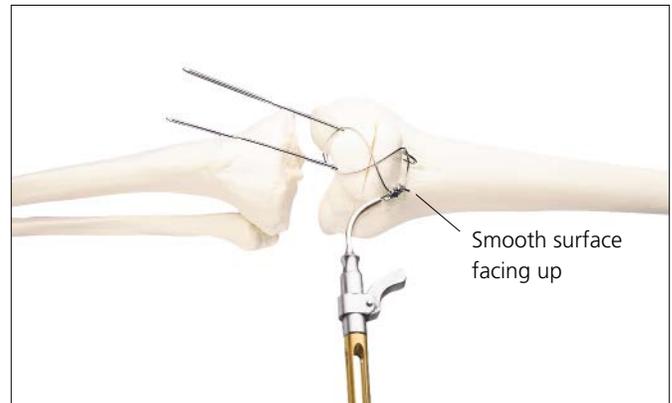
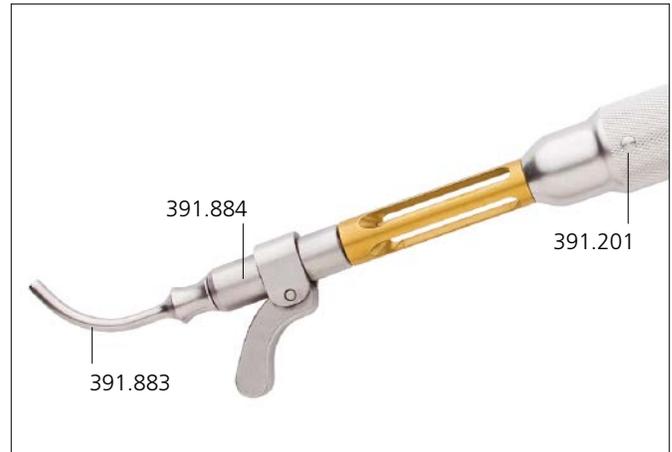
The amount of tension being applied to the cable is indicated by the position of the knob relative to the numbered lines etched on the body of the tensioner.

These lines indicate tension levels from 20 kg to 50 kg.

When the desired tension is reached, the cable is ready for crimping.

**Warning: The tension of the cerclage cable should not exceed 40 kg (for the 1.0 mm cable) and 50 kg (for the 1.7 mm cable). Applying more tension may cause fraying or breakage of the cable.**

**Precaution: Take care not to exceed 50 kg of tension. Applying more tension may cause the cable to cut through soft or osteoporotic bone. It may also cause crushing of bone fragments and loss of reduction.**



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## 5. Crimp cable

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### Instrument

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391.882      Cable Crimper

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Place the jaws of the cable crimper over the cable crimp and squeeze the handles together.

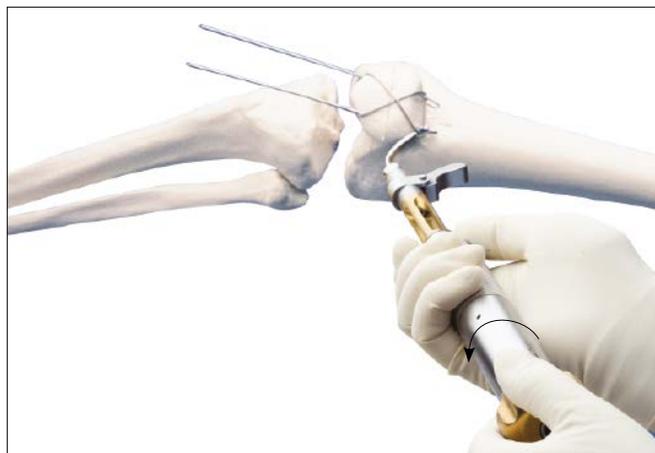
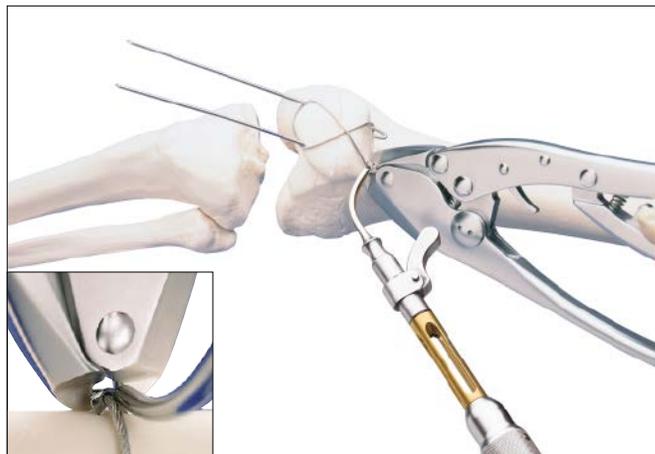
The ratchet mechanism in the crimper precisely controls the amount of crimp deformation, thus preventing under- or over-crimping.

The crimper will automatically release when the cable has been crimped.

**Precaution:** Visually check to ensure that the cable crimp is centered and fully seated in the crimper jaws before crimping the cable. Improper placement may lead to cable slippage or crimp failure.

**Note:** Use the starter handle to begin squeezing the crimper until the outer handle can be easily grasped.

After the cable has been crimped, remove the tensioner from the cable by turning the knob counterclockwise until the cable slides freely through the tensioner.



## 6. Cut cable

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### Instrument

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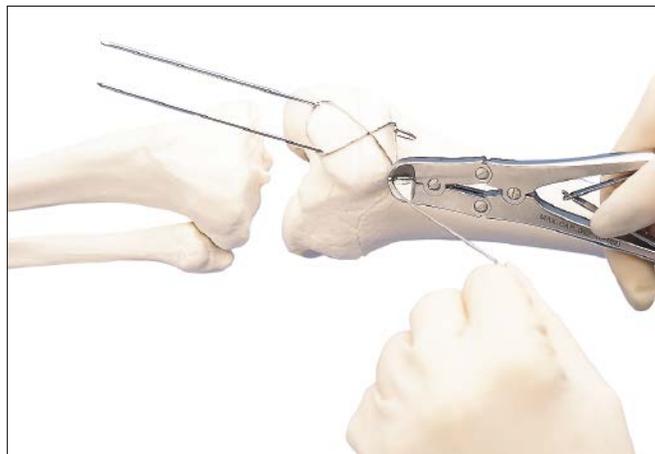
391.905 Cable Cutter, standard

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To cut the cable, pass the free end of the cable through the jaws of the cable cutter and squeeze the handles together.

Cut the cable as close to the cable crimp as possible, taking care not to damage the adjacent cable.

**Note: Place the cable completely in the cutter jaws, but near the tip. Cut in one motion to ensure a clean cut.**



## 7. Cut and position K-wires

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### Instrument

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392.00\* Bending Iron, for Kirschner Wires

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Using the bending iron for Kirschner wires as a punch, tap the ends of the bent Kirschner wires into the bone, making sure the cable passes through the small hook.

Trim the protruding distal ends of the Kirschner wires at about 10 mm from the bone, and bend posteriorly only slightly, so that later extraction is not hampered.

**Precaution: Do not use the cable cutters to cut Kirschner wires; doing so will damage the cutters.**



\*Also available.

# Care and Maintenance

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## Lubrication

Always lubricate collet tips (both sides) and threads with 2 to 3 drops of DePuy Synthes oil (e.g. 519.97) after cleaning.



# Implants

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## Cerclage Positioning Pins, sterile

- 3.5 mm and 4.5 mm, threaded and nonthreaded
- Available in stainless steel and titanium



## Cerclage Buttons, sterile

- T15 StarDrive/2.5 mm hex Recess
- T25 StarDrive/3.5 mm hex Recess
- Cannulated 4.0 mm hex
- Available in stainless steel and titanium



## Crimp Positioning Pins, sterile

- 5.0 mm (stainless steel and titanium)
- 7.3 mm (stainless steel)



## Cables with Crimp, 750 mm, sterile

- 1.0 mm diameter (stainless steel and titanium)
- 1.0 mm diameter needle cable (titanium)
- 1.7 mm diameter (stainless steel)
- 1.7 mm diameter (CoCr cable with titanium crimp)



## Trochanteric Reattachment Devices with CoCr cable, sterile

- Standard
- Long



# Instruments

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391.103 Medium Cable Passer, curved



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391.104 Large Cable Passer, curved



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391.105 Medium Cable Passer



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391.106 Medium Cable Passer, 45° angle



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391.107 Large Cable Passer



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391.108 Large Cable Passer, 45° angle



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391.201 Cable Tensioner



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391.882 Cable Crimper



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391.883 Attachment Bit



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391.884 Provisional Tensioning Device



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391.885 Forceps, for use with Cerclage Buttons and Positioning Pins



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391.905 Cable Cutter, standard



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391.906 Cable Cutter, large



# Orthopaedic Cable System Instrument Set (105.924)

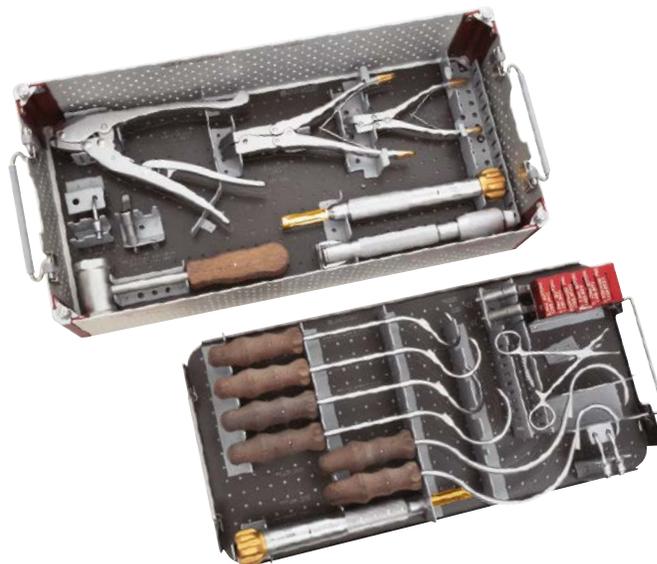
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## Graphic Case

690.013 Orthopaedic Cable System Instrument Set Graphic Case

## Instruments

391.103 Medium Cable Passer, curved  
391.104 Large Cable Passer, curved  
391.105 Medium Cable Passer  
391.106 Medium Cable Passer, 45° angle  
391.107 Large Cable Passer  
391.108 Large Cable Passer, 45° angle  
391.201 Cable Tensioner  
391.882 Cable Crimper  
391.883 Attachment Bit, 4 ea.  
391.884 Provisional Tensioning Device, 4 ea.  
391.885 Forceps, for use with Cerclage Buttons and Positioning Pins  
391.905 Cable Cutter, standard  
391.906 Cable Cutter, large



Note: For additional information, please refer to the package insert or [www.e-ifu.com](http://www.e-ifu.com).

For detailed cleaning and sterilization instructions, please refer to [www.depuyorth.com/hcp/cleaning-sterilization](http://www.depuyorth.com/hcp/cleaning-sterilization) or sterilization instructions, if provided in the instructions for use.

## Also Available

### Kit

|         |   |
|---------|---|
| 199.915 | Care and Maintenance Kit for Cable Tensioner, includes:<br>2.1 mm Cleaning Brush (319.27)<br>2.0 mm Cleaning Stylet (319.36)<br>Autoclavable Oil (519.97) |
|---------|---|

### Instruments

|            |  |
|------------|--|
| 03.221.006 | Cable Cutter with Trigger Handle                             |
| 03.221.008 | Blade for Cable Cutter with Trigger Handle                   |
| 292.16     | 1.6 mm Kirschner Wire, with trocar point, 150 mm, 10/pkg.    |
| 292.20     | 2.0 mm Kirschner Wire, with trocar point, 150 mm, 10/pkg.    |
| 310.19     | 2.0 mm Drill Bit, quick coupling, 100 mm                     |
| 310.25     | 2.5 mm Drill Bit, quick coupling, 110 mm                     |
| 310.31     | 3.2 mm Drill Bit, quick coupling, 145 mm                     |
| 312.20     | 2.0 mm Parallel Drill Guide and Drill Sleeve                 |
| 323.36     | 3.5 mm Universal Drill Guide                                 |
| 323.46     | 4.5 mm Universal Drill Guide                                 |
| 391.82     | Wire-Bending Pliers, 160 mm                                  |
| 391.919    | Impactor   |
| 392.00     | Bending Iron, for 1.25 mm, 1.6 mm and 2.0 mm Kirschner Wires |

### Implants

Cerclage Positioning Pins, sterile

Stainless

| Steel | Titanium |
|-------|----------|
|-------|----------|

|          |          |                 |
|----------|----------|-----------------|
| 298.803S | 498.803S | 4.5 mm threaded |
|----------|----------|-----------------|

|          |          |                      |
|----------|----------|----------------------|
| 298.837S | 498.837S | 3.5 mm (nonthreaded) |
|----------|----------|----------------------|

|          |          |                 |
|----------|----------|-----------------|
| 298.838S | 498.838S | 3.5 mm threaded |
|----------|----------|-----------------|

|          |          |                      |
|----------|----------|----------------------|
| 298.839S | 498.839S | 4.5 mm (nonthreaded) |
|----------|----------|----------------------|

Cerclage Buttons, sterile

Stainless

| Steel | Titanium |
|-------|----------|
|-------|----------|

|             |             |                          |
|-------------|-------------|--------------------------|
| 02.221.002S | 04.221.002S | T15 StarDrive/2.5 mm hex |
|-------------|-------------|--------------------------|

|             |             |                          |
|-------------|-------------|--------------------------|
| 02.221.003S | 04.221.003S | T25 StarDrive/3.5 mm hex |
|-------------|-------------|--------------------------|

|             |             |                       |
|-------------|-------------|-----------------------|
| 02.221.004S | 04.221.004S | Cannulated 4.0 mm hex |
|-------------|-------------|-----------------------|

Crimp Positioning Pins, sterile

Stainless

| Steel | Titanium |
|-------|----------|
|-------|----------|

|             |             |        |
|-------------|-------------|--------|
| 02.221.005S | 04.221.005S | 5.0 mm |
|-------------|-------------|--------|

|             |     |        |
|-------------|-----|--------|
| 02.221.006S | n/a | 7.3 mm |
|-------------|-----|--------|

Cables with Crimp, 750 mm, sterile

Stainless

| Steel | Titanium | Dia. |
|-------|----------|------|
|-------|----------|------|

|             |             |        |
|-------------|-------------|--------|
| 298.800.01S | 498.800.01S | 1.0 mm |
|-------------|-------------|--------|

|     |          |                      |
|-----|----------|----------------------|
| n/a | 498.821S | 1.0 mm (with needle) |
|-----|----------|----------------------|

|             |     |        |
|-------------|-----|--------|
| 298.801.01S | n/a | 1.7 mm |
|-------------|-----|--------|

|             |     |                  |
|-------------|-----|------------------|
| 298.801.10S | n/a | 1.7 mm (10 pack) |
|-------------|-----|------------------|

1.7 mm CoCr Cable with Titanium Crimp, 750 mm, sterile

|             |             |
|-------------|-------------|
| 611.105.01S | Single pack |
|-------------|-------------|

Titanium Trochanteric Reattachment Devices with CoCr cable, sterile

|          |          |
|----------|----------|
| 498.806S | Standard |
|----------|----------|

|          |      |
|----------|------|
| 498.807S | Long |
|----------|------|

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