

ACCORD[◇] Cable System

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Nota Bene: *The technique description herein is made available to the healthcare professional to illustrate the authors' suggested treatment for the uncomplicated procedure. In the final analysis, the preferred treatment is that which addresses the needs of the patient. For more information on the products shown in this surgical technique, including indications for use, contraindications, effects, precautions and warnings, please consult the Instructions for Use (IFU) for the product.*

There are two techniques. One technique involves the use of cables only, and the second technique involves the implantation of a trochanteric grip with cables (grip contains preassembled clamps).

Introduction

The ACCORD[®] Cable System is the result of advanced cable technology in orthopaedics. Many cables are made of seven bundles of seven strands each. However, the ACCORD Cable System contains 19 bundles of seven strands each which gives it up to 20x the fatigue life of previous 7x7 cable design.¹

The ACCORD Cable System offers a strong and flexible cable.¹

The ACCORD Cable System is an efficient system - primarily because it allows a clamped cable to be loosened and retightened.²⁻⁶

The ACCORD Cable System is an extensive system – it includes cobalt chrome and stainless steel cables, titanium trochanteric grips that come in two sizes and four lengths for a total of eight options and even grip trials. The system also includes stainless steel screws and spikes as well as titanium plates for trauma situations.



Implanting Cables Only

Technique 1

This technique can be used, for example, for attaching a femoral strut graft. For this technique, the cable with clamp (71340007) must be used.

Step One

Slide the appropriate Cable Passer under and around the bone. There are three cable passers available: straight, 30° offset and large 30° offset.

Instrumentation:

Cable Passers



Figure 1

Step Two

Slip the non-beaded end of the cable through the pointed end of the Cable Passer (Figure 2). Remove the Cable Passer. The cable should now be around the bone.



Figure 2

Step Three

Run the free end of the cable through the clamp, thus creating a loop (Figure 3).

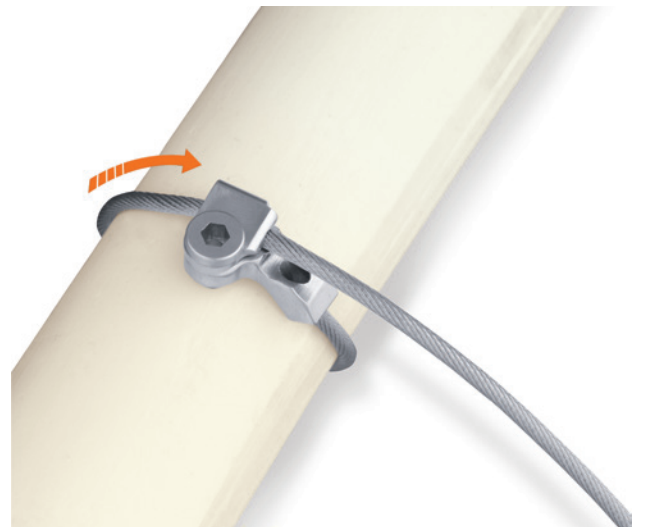


Figure 3

Implanting Cables Only

Step Four

Reset the Tensioner by turning the reset switch clockwise (Figure 5). Confirm that the locking handle of the Tensioner is open by turning it counterclockwise (Figure 6). Pass the free end of the cable through the Tensioner and pull through until the tip of the Tensioner is seated against the clamp and there is no slack (Figure 7).

Note: If a red band is protruding from the locking handle, the Tensioner has not been reset (Figure 8).

Instrumentation:

Tensioner

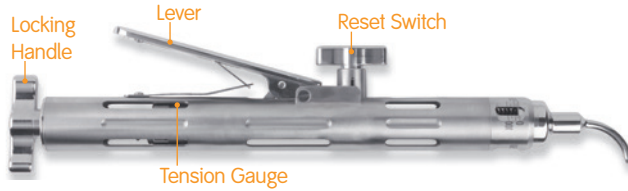


Figure 4



Figure 5

Step Five

Turn the locking handle clockwise (as indicated by the word “lock” on the Tensioner) until well tightened to grip the cable (Figure 9).



Figure 6

Step Six

Apply tension to the cable by pumping the lever on the Tensioner.

Note: If the tension gauge does not advance with each pump, the Tensioner is not gripping the cable sufficiently. Retighten the locking handle and continue pumping until the desired tension is obtained.



Figure 7

The amount of tension placed on the cable should be based on the patient's bone quality and surgical experience of the operative surgeon. However, tension should not continue to be applied if the second red band is visible and protruding from the locking handle (Figure 9).

Note: Due to the design of the ACCORD® Cable Tensioner, surgeons are able to receive tactile feedback to help determine if the appropriate tension is being applied.



Figure 8



Figure 9

Step Seven

Before removing the Tensioner, tighten the clamp screw completely with the 35lb. Torque-Limiting Screwdriver and appropriate screwdriver bit by turning clockwise. (Figure 10)

Note: Tighten the clamp screw until a single click is heard.

Note: Do not use another torque-limiting screwdriver handle or standard screwdriver handle as this may apply an inappropriate amount of torque to the screw head causing breakage.

The clamp screw hex configuration may vary. Therefore, it is recommended to use the ACCORD[®] Dual-Ended Screw Driver Bit (71360046) with standard hex and pilot hex to ensure proper seating of the driver hex end in the clamp screw. (Figure 10)

You may encounter two screw head hex designs in the ACCORD system (Figure 11). Therefore, the instrument set should include one screwdriver bit with each style hex: one with a pilot tip and one without. If the primary screwdriver bit w/pilot tip (71360044) does not fit in the head of the clamp screw, the screw head may not be fully cannulated preventing the pilot tip from fully engaging. If this occurs, then switch it to the screwdriver hex bit (71360040).

To make this procedure faster and easier, you may use the ACCORD[®] Dual-Ended Screw Driver Bit (71360046). This driver has both the primary pilot tip and the hex driver bit. The driver allows you to use either end by removing the bit, turning it 180 degrees, and engaging the opposite end in the Torque Limiting Handle as needed.

Note: Take care not to strip the clamp screw or screwdriver bit. Confirm that the driver bit is fully seated and aligned with the screw axis before tightening to prevent stripping of either the screw or driver bit. If the screwdriver bit is stripped, discard and replace with a new bit. If the screw is stripped proper tensioning may not be achieved.

Instrumentation:

Torque-Limiting Screwdriver



Figure 10

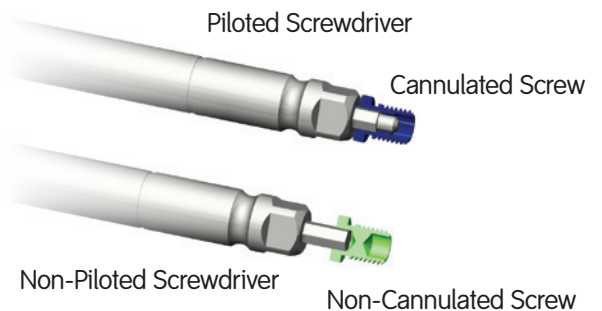


Figure 11

Implanting Cables Only (continued)

Step Eight

Release the cable from the Tensioner by loosening the locking handle (turn counterclockwise). Remove the Tensioner.

Note: The ACCORD[®] Cable System allows you to loosen the clamp with the Torque-Limiting Screwdriver and re-tighten when necessary without the use of any extra instruments.

Flush Cutter



Figure 12

Step Nine

Use the Flush Cutter to cut the excess cable (Figure 12 and 13).

Note: In order for the cut to be flush, the cutting side of the Flush Cutter must be adjacent to the clamp. This side is indicated on the instrument by the words "cut this side."

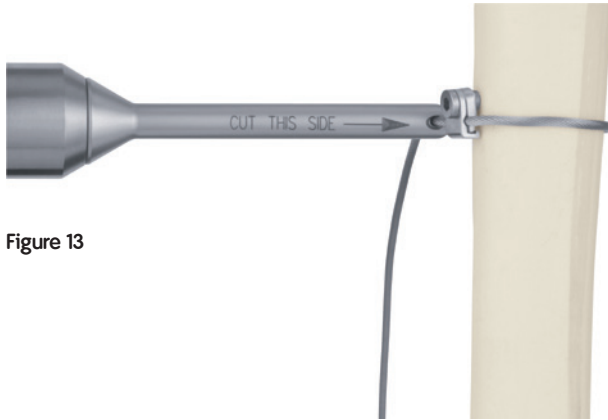


Figure 13

Implanting a Trochanteric Grip with Cables

Technique 2

This technique may be used to reattach the greater trochanter. For this technique clamps are built into the grips and therefore, cables without clamps (71340020) should be used.

Step One

Use the Trochanteric Grip Trials (Figure 14) to determine which size and length grip will best accommodate the patient's femur. There are two trochanter sizes: small and standard, and there are four lengths: 3-, 5-, 8- and 11-cable grips.

These grips range in length from 75 to 255mm for small grips and 85 to 265mm for standard grips.

Step Two

Attach the Positioner (Figure 15) to the Trochanteric Grip or Trial by placing the foot of the Positioner over the threaded hole. Once seated, connect the Positioner by screwing the handle into the hole. Place the hooks of the grip over the trochanter to capture it, and position the trochanter in place on the patient's femur.

Note: The Positioner will attach to the trials and grips (Figure 16). If desired, the handle of the Positioner can be subjected to light mallet blows in order to sink the hooks of the grip into the bone.

Step Three

Pass the non-beaded end of the cable through either one of the pair of holes on the clamp built into the Trochanteric Grip.

Instrumentation:
Trochanteric Grip Trial

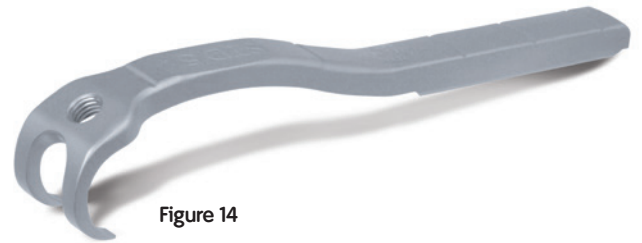


Figure 14

Positioner



Figure 15



Figure 16

Step Four

Use the Cable Passers to run cable under and around the femur (Figure 17).

Note: The cable must be inserted through the pointed end of the Cable Passers.

Step Five

Run the free end of the cable back through the remaining hole for the clamp.

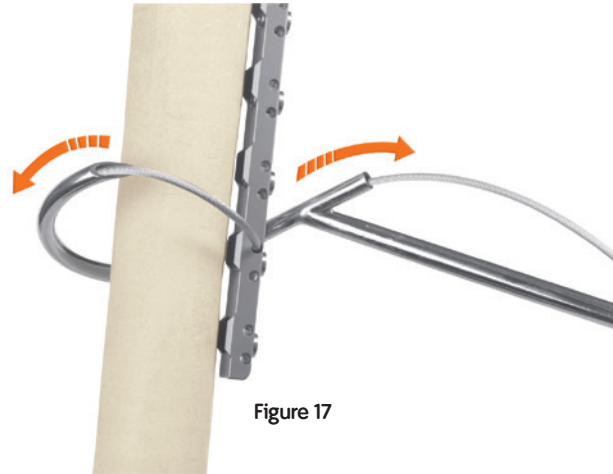


Figure 17

Perform the following steps for tensioning each cable:

Step Six

See Figure 18 for tensioner features. Reset the Tensioner by turning the reset switch clockwise (Figure 19). Confirm that the locking handle of the Tensioner is open and turned counterclockwise (Figure 20). Pass the free end of the cable through the Tensioner and pull through until the Tensioner is seated against the clamp and there is absolutely no slack (Figure 21).

Note: If a red band is protruding from the locking handle, the Tensioner has not been reset. (Figure 9, page 6).

Step Seven

Turn the locking handle clockwise (as indicated by the word “lock” on the Tensioner) until well tightened to grip the cable (Figure 20).

Instrumentation:
Tensioner

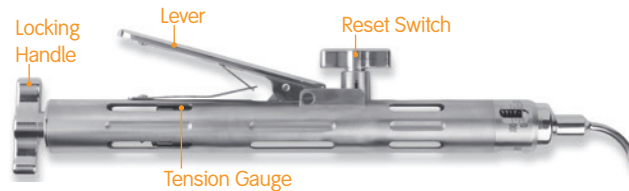


Figure 18

Reset Switch



Figure 19

Locking Handle



Figure 20



Figure 21

Implanting a Trochanteric Grip with Cables

Step Eight

Apply tension to the cable by pumping the lever on the Tensioner.

Note: If the tension gauge does not advance with each pump, the Tensioner is not gripping the cable sufficiently. Retighten the locking handle and continue pumping until the desired tension is obtained.

The amount of tension placed on the cable should be based on the patient's bone quality and surgical experience of the operative surgeon. However, tension should not continue to be applied if the second red band is visible and protruding from the locking handle (Figure 9, page 6).

Step Nine

Before removing the Tensioner, tighten the clamp screw completely with the 35lb Torque-Limiting Screwdriver and appropriate screwdriver bit by turning clockwise. (Figure 22)

Note: Tighten the clamp screw until a single click is heard.

Note: Do not use another torque-limiting screwdriver handle or standard screwdriver handle as this may apply an inappropriate amount of torque to the screw head causing breakage.

The clamp screw hex configuration may vary. Therefore, it is recommended to use the ACCORD® Dual-Ended Screw Driver Bit (71360046) with standard hex and pilot hex to ensure proper seating of the driver hex end in the clamp screw. (Figure 22)

You may encounter two screw head hex designs in the ACCORD system (Figure 23). Therefore, the instrument set should include one screwdriver bit with each style hex: one with a pilot tip and one without. If the primary screwdriver bit w/pilot tip (71360044) does not fit in the head of the clamp screw, the screw head may not be fully cannulated preventing the pilot tip from fully engaging. If this occurs, then switch it to the screwdriver hex bit (71360040).

To make this procedure faster and easier, you may use the dual ended hex screwdriver bit (71360046). This driver has both the primary pilot tip and the hex driver bit. The driver allows you to use either end by removing the bit, turning it 180 degrees, and engaging the opposite end in the Torque Limiting Handle as needed.

Instrumentation:

Torque-Limiting Screwdriver



Figure 22

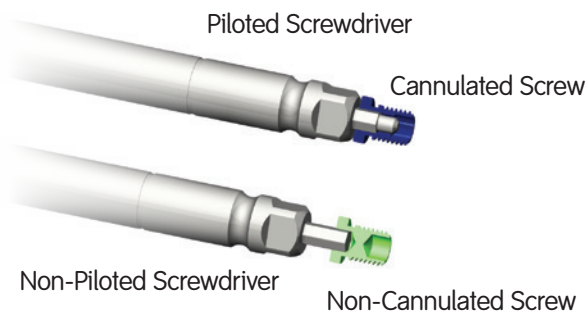


Figure 23

Implanting a Trochanteric Grip with Cables (continued)

Note: Take care not to strip the clamp screw or screwdriver bit. Confirm that the driver bit is fully seated and aligned with the screw axis before tightening to prevent stripping of either the screw or driver bit. If the screwdriver bit is stripped, discard and replace with a new bit. If the screw is stripped proper tensioning may not be achieved.

Step Ten

Release the cable from the Tensioner by loosening the locking handle (turn counterclockwise). Remove the Tensioner.

Step Eleven

Repeat this tensioning process for each cable and clamp on the Grip.

Note: The ACCORD[®] Cable System allows you to loosen the clamp with the Torque-Limiting Screwdriver and retighten when necessary without the use of any extra instruments.

Step Twelve

Use the Flush Cutter to cut the excess cable (Figure 24).

Note: In order for the cut to be flush, the cutting side of the Flush Cutter must be adjacent to the clamp. This side is indicated on the instrument by the words “cut this side.”

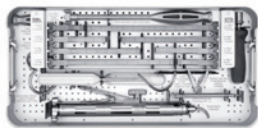


Figure 24

ACCORD[®] Catalog Information

Instruments

ACCORD Instrument Set
Cat. No. 71360005



ACCORD Standard Trochanteric Grip Trial

Cat. No. **Description**
71360033 ACCORD Std 85mm
3-Cable Troch Grip Trial



ACCORD Tensioner
Cat. No. 71360020



71360034 ACCORD Std 125mm
5-Cable Troch Grip Trial

71360035 ACCORD Std 195mm
8-Cable Troch Grip Trial

ACCORD Large 30° Offset Cable Passer
Cat. No. 71360019



71360036 ACCORD Std 265mm
11-Cable Troch Grip Trial

ACCORD Straight Cable Passer
Cat. No. 71360021



ACCORD Torque-Limiting Screwdriver Handle
Cat. No. 71360039



ACCORD 30° Offset Cable Passer
Cat. No. 71360022



ACCORD Screwdriver Bit with pilot tip
Cat. No. 71360044



ACCORD Flush Cutter
Cat. No. 71360024



ACCORD Dual Ended Hex Driver
Cat. No. 71360046



ACCORD Scissor Cutter
Cat. No. 71360025



ACCORD Cable Spike Driver
Cat. No. 71360042



ACCORD Trochanteric Grip Positioner
Cat. No. 71360026



ACCORD Cable System Instrument Tray
Cat. No. 71360041

ACCORD Small Trochanteric Grip Trial

Cat. No. **Description**
71360029 ACCORD Small 75 mm
3-Cable Troch Grip Trial

71360030 ACCORD Small 115 mm
5-Cable Troch Grip Trial

71360031 ACCORD Small 185 mm
8-Cable Troch Grip Trial

71360032 ACCORD Small 255 mm
11-Cable Troch Grip Trial



ACCORD[◇] Catalog Information

Implants

ACCORD Implant Set

Cat. No. 71345000

Includes: all small & standard grips
3 fracture management
plates 12 cables w/clamp 12
cables for grips/plates

ACCORD 2.0mm CoCr Cable for Grips/Plates

Cat. No. 71340020



ACCORD 2.0mm CoCr Cable w/Clamp

Cat. No. 71340007



ACCORD Titanium Plate

Cat. No.	Description
71346150	ACCORD 150mm 3-Cable Titanium Plate
71346200	ACCORD 200mm 5-Cable Titanium Plate
71346250	ACCORD 250mm 7-Cable Titanium Plate
7193-0987	ACCORD 320mm 9-Cable Titanium Plate (Not pictured)



ACCORD Small Trochanteric Grip

Cat. No.	Description
71340003	ACCORD Small 75mm 3-Cable Troch Grip
71340004	ACCORD Small 115mm 5-Cable Troch Grip
71340005	ACCORD Small 185mm 8-Cable Troch Grip
71340006	ACCORD Small 255mm 11-Cable Troch Grip



ACCORD Standard Trochanteric Grip

Cat. No.	Description
71340010	ACCORD Std 85mm 3-Cable Troch Grip
71340011	ACCORD Std 125mm 5-Cable Troch Grip
71340012	ACCORD Std 195mm 8-Cable Troch Grip
71340013	ACCORD Std 265mm 11-Cable Troch Grip



ACCORD[◇] Fracture Management Implants

ACCORD Stainless Steel Implant Set

Cat. No. 71345002

Includes: 4 Stainless Steel cable spikes, 4 Stainless Steel cable screws, 8 2.0mm Stainless Steel cables with clamps

ACCORD Stainless Steel Cable Spike

Cat. No. 71340001



ACCORD Stainless Steel Cable Screw

Cat. No. 71340002



ACCORD 2.0mm Stainless Steel Cable w/Clamp

Cat. No. 71340008



References

1. Smith+Nephew 2002. Fatigue Testing of a Prototype Cable for the Orthopaedic Cable System. Internal Report. OR-02-34A.
2. Smith+Nephew 2003. Static and Fatigue Strength Determination of the Accord Cable System Construct. Internal Report. OR-03-51.
3. Smith+Nephew 2003. Static and Fatigue Strength Determination of the Stainless Steel Accord Cable System Construct. Internal Report. OR-03-121.
4. Haddad F, Barrack R, Ries M, et al. Factors Influencing Cerclage Cable Tension Loss During Surgery. Poster presented at: AAOS Scientific Exhibit Annual Meeting 2004; San Francisco, CA.
5. Vizesi F, Marel E, Salleh r, Walter I, Dickison D, Walsh W. Static Failure Properties of Cable Systems and the Influence of Crimping Position. Poster presented at: 6th Combined Meeting of the Orthopaedic Research Societies 2007.
6. Menard Jr J, Emard M, Canet F, Brailovski V, Petit Y, Laflamme G. Initial tension loss in cerclage cables. J Arthroplasty. 2013;28(9):1509-1512.

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