

SURGICAL TECHNIQUE GUIDE

IJS[®]-ELBOW

elbow stabilization system



 **skeletal dynamics**[®]
UNDERSTANDING THE UPPER EXTREMITY

As described by:

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IJS[®]-ELBOW

elbow stabilization system

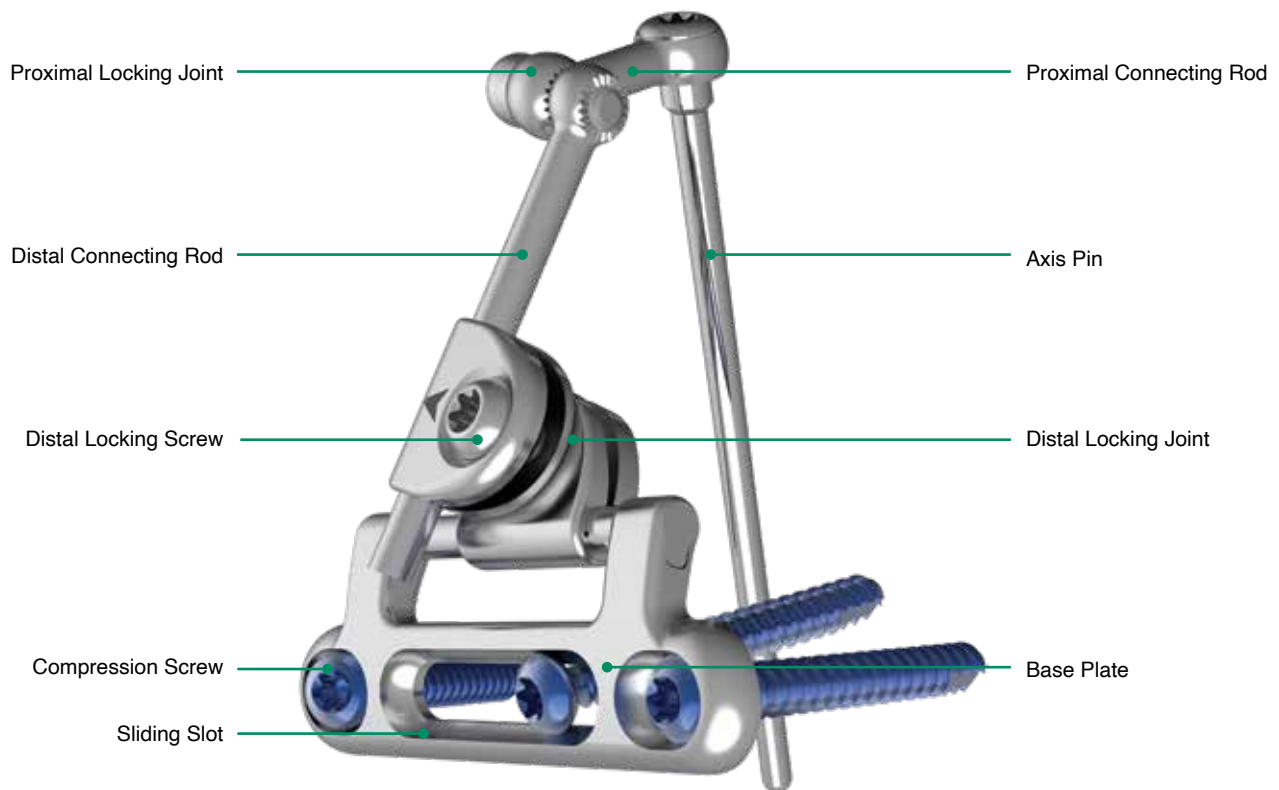
Description

The IJS-E[®] System is designed to address elbow joint instability procedures through a standard open lateral approach and should only be used by surgeons who have experience with the IJS-E[®] System.

Each surgeon must evaluate the appropriateness for the use of the IJS-E[®] System prior to and during these procedures. These guidelines are furnished for information purposes only and are not intended to replace comprehensive training. Prior to use of the IJS-E[®] System, the surgeon should become familiar with all information contained in this technique guide.

Indications for Use

The Internal Joint Stabilizer - Elbow is intended to provide temporary stabilization of the elbow joint after trauma or chronic elbow dislocation.



1

SUPERFICIAL EXPOSURE

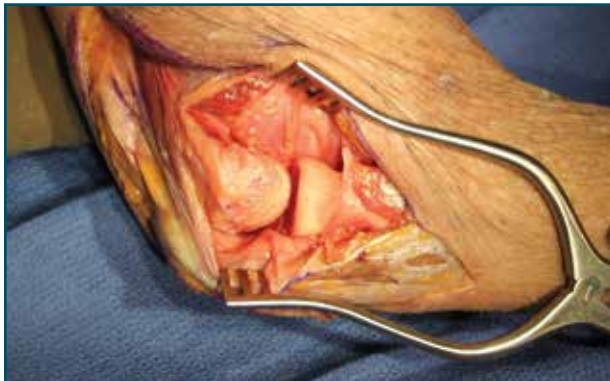


Make an incision midway between the lateral epicondyle and the olecranon.

Note:
Place the tourniquet proximal on the arm to allow for free elbow motion.

2

DEEP EXPOSURE



Perform a lateral approach to the elbow joint through the surgeon's preferred muscle interval.

CENTER OF ROTATION

3



Locate and mark the anatomic center on the lateral capitellum.

Note:

This is identified as the center of a circle that fits the curvature of the capitellum on the lateral view.

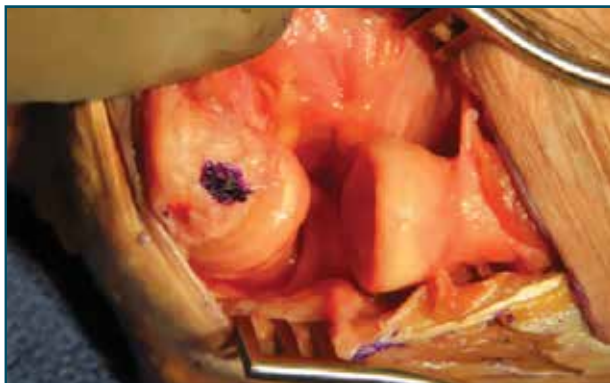
Full visualization of the lateral epicondyle to the capitellum is critical to accurately establish the anatomic center of rotation.



IJS-ELB-ACG: IJS®-E Axis Centering Guide

AXIS GUIDE SIZING

4



Open the joint by applying a varus stress allowing access to insert the largest sized Axis Guide that is appropriate for the patient.

The handle of the Axis Guide should be positioned in-line with the humeral shaft and into the trochlear notch, engaging the medial trochlear expansion.

Note:

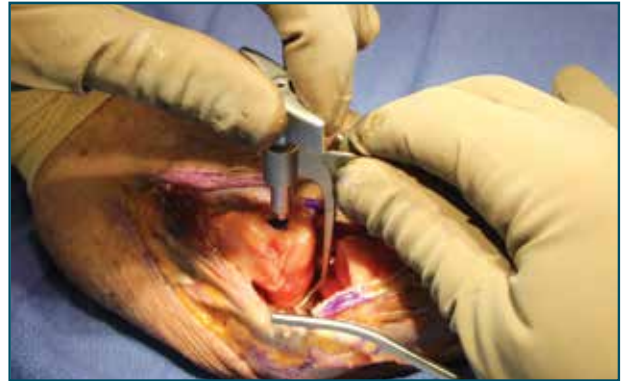
There are three sizes of Axis Guides available.



IJS-EAG-XXX: IJS®-E Axis Guide

5

GUIDE WIRE ATTACHMENT



Insert the K-wire Guide into the Axis Guide so that it is close to the lateral epicondyle without making contact, and then rotate it clockwise to lock it in place.

Caution:

Avoid contacting the lateral epicondyle with the K-wire Guide as it will prevent the Axis Guide from properly engaging the medial trochlear expansion, causing the assembly to be improperly positioned.



IJS-EAG-KWG: IJS®-E K-wire Guide, 1.5mm

6

GUIDE WIRE INSERTION



Advance the Guide-Wire (1.5mm K-wire) through the K-wire Guide and into the humerus, stopping short of the medial cortex.

Caution:

DO NOT violate the medial cortex as it may result in ulnar nerve injury.

Note:

The supplied Guide-Wires (1.5mm K-wire) are specifically designed to provide exact depth readings with the system's Depth Gauge.



KWIR-DES-15127: K-wire, Standard Tip, 1.5mm x 127mm

AXIS GUIDE REMOVAL

7

Remove the entire assembly leaving the Guide Wire (1.5mm K-wire) in place.



FLUOROSCOPIC CONFIRMATION

8

Confirm that the Guide Wire (1.5mm K-wire) has been inserted to the correct depth and that the axis of rotation has been properly established using fluoroscopy.



9

AXIS PIN MEASUREMENT

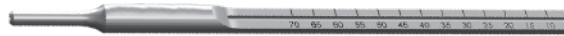


Place the Depth Gauge over the Guide Wire (1.5mm K-wire) to measure the drilling depth for the proper length of Axis Pin.

If between sizes, choose a shorter length.

Note:

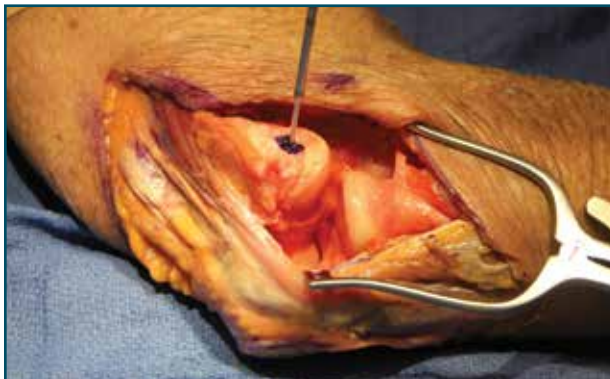
There are nine lengths of Axis Pin available.



IJS-EDG-OKW: DIJS-E Depth Gauge, Over K-wire

10

AXIS PIN DRILLING



Drill over the Guide Wire (1.5mm K-wire) to the measured depth using the 2.7mm cannulated IJS-E® Drill.

Remove the Guide Wire (1.5mm K-wire) after drilling.

Note:

The 2.7mm cannulated IJS-E® Drill has etched depth marks.



IJS-CDC-2770: IJS-E Drill, Cannulated Distal Cutting, 2.7mm x 70mm

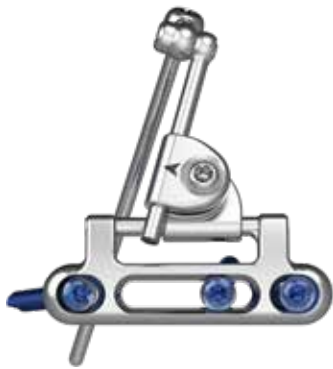
BASE PLATE POSITIONING

11

Position the Base Plate on the proximal aspect of the ulna.

Note:

The use of fluoroscopy will help to position the base plate.



BASE PLATE DRILLING

12



Drill for bicortical fixation through the sliding slot on the Base Plate using the 2.7mm drill bit, aiming towards the coronoid process and away from the radial notch.

Measure using the Depth Gauge for the appropriate length 3.5mm compression screw (Polyaxial Non Locking).

Caution: Avoid drilling into the articular surfaces.

Note: The center-sliding slot of the Base Plate facilitates positioning.

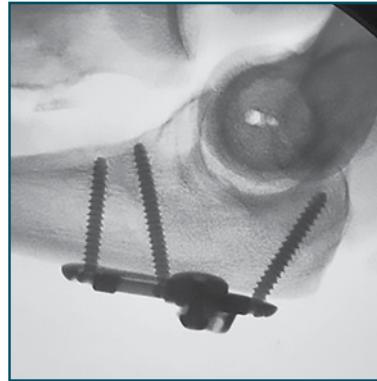


DRLL-SSC-27040: Drill, 2.7mm x 40mm



DPGA-UNV-050: Depth Gauge, Universal, 50mm

13 SCREW INSERTION



Insert the corresponding 3.5mm compression screw (Polyaxial Non-Locking) using the T-10 Driver.

Repeat step 12 and 13 for the remaining two compression screw holes of the Base Plate.

Caution:

Avoid drilling into the articular surfaces.



DRVR-UQC-T10: Driver, Universal QC, T-10

14 CONSTRUCT ALIGNMENT



Correct Placement



Incorrect Placement

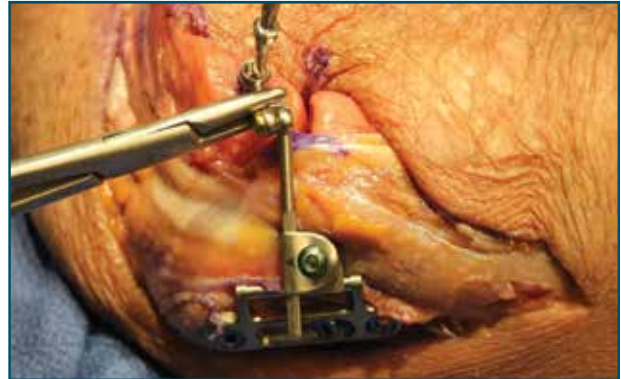
If the head of the Proximal Locking Screw or the arrow of the Distal Locking Joint are NOT pointing proximally:

Loosen the Distal Locking Screw and remove the Distal Connecting Rod to flip the Distal Locking Joint 180° so that its arrow is pointing proximal.

Then reinsert the Distal Connecting Rod back into the Distal Locking Joint with the Proximal Locking Screw also pointing proximal.

INSERTING THE AXIS PIN

15



Adjust the Distal Connecting Rod to allow the selected Axis Pin to be inserted through the eyelet of the Proximal Connecting Rod and into the humerus.

Note:

A needle holder or the PROTEAN® Pliers can be used to hold the Proximal Connecting Rod while inserting the Axis Pin.

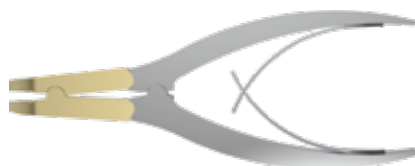


IJS-EAP-25XXX: IJS®-E Axis Pin, X.Xmm x XXmm

LOCKING THE AXIS PIN

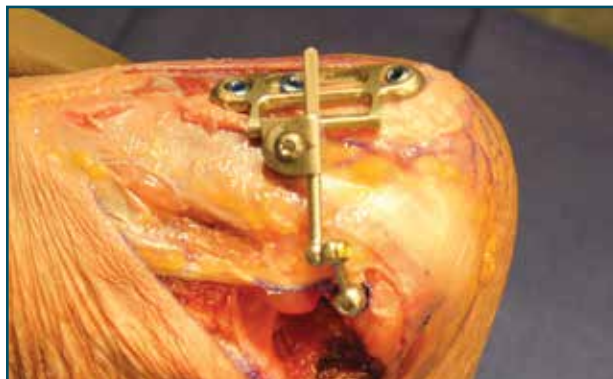
16

Use the PROTEAN® Pliers to stabilize the Proximal Connecting Rod while fully tightening the Axis Pin using the T-10 Driver.



PRT-BND-PLR: PROTEAN® Plate Bending Pliers

17 ELBOW REDUCTION

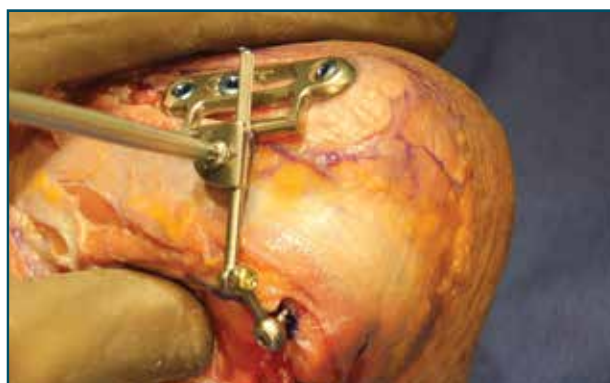
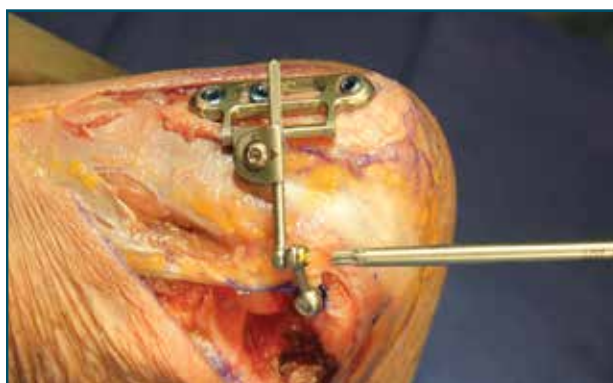


Anatomically reduce the elbow joint.

Note:

Shoulder rotational torque is minimized by placing the patient's hand over their face which also aids in the reduction.

18 LOCKING THE CONSTRUCT



Using the T-10 Driver and the Counter Torque Tool, lock the reduction by first tightening the Proximal Locking Screw and then the Distal Locking Screw.

Warning:

Both the Proximal and Distal Locking Screws must be fully tightened to maintain reduction.



DRVR-UQC-T10: Driver, Universal QC, T-10

FINAL FLUOROSCOPIC CONFIRMATION

19

Confirm that the reduction is maintained through the full ROM using fluoroscopic imaging.



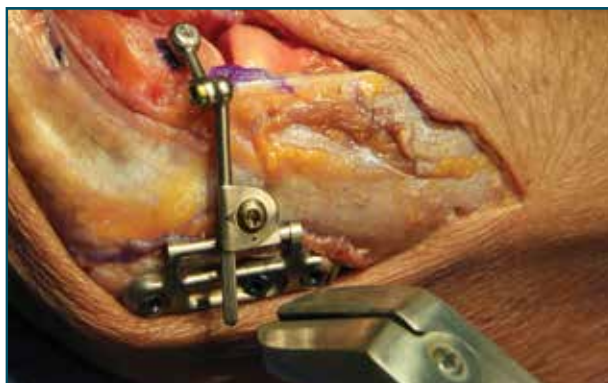
TRIMMING THE CONNECTING ROD

20

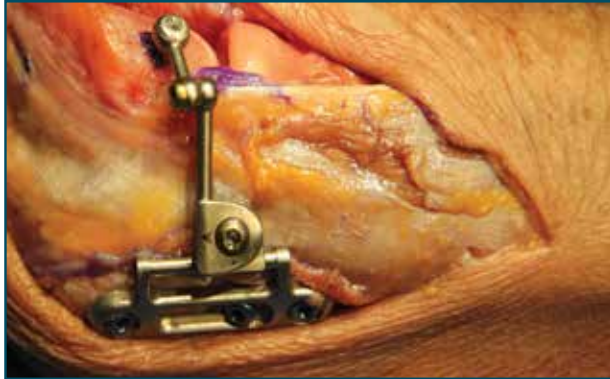
Using a pin cutter, remove any excess length from the Distal Connecting Rod that exits the Distal Locking Joint.

Warning:

The Distal Connecting Rod must be trimmed as short as possible where it exits the Distal Locking Joint to minimize the potential for soft tissue irritation.



21 DEEP CLOSURE



Reattach the origin of the lateral collateral ligament and the origin of the extensor muscle just proximal to the Axis Pin.

22 CLOSURE



Close the incision in the usual fashion.

1 LOCATING THE AXIS PIN



Palpate the lateral epicondyle to locate and mark the head of the Axis Pin.

Note:

Use of fluoroscopic imaging will aid in locating the position for each of the construct screws.

2 AXIS PIN REMOVAL



Make a stab incision over the marked area and remove the Axis Pin using the T-10 Driver.



DRVR-UQC-T10: Driver, Universal QC, T-10

LOCATING THE BASE PLATE

3



Palpate the posterior surface of the ulna to locate and mark the position of the Base Plate.

Note:

Access can be gained through the previous exposure

EXPOSING THE BASE PLATE

4



Make an incision to expose the Base Plate.

5

SCREW REMOVAL



Using the T-10 Driver, remove the three 3.5mm compression screws (Polyaxial Non-Locking).

6

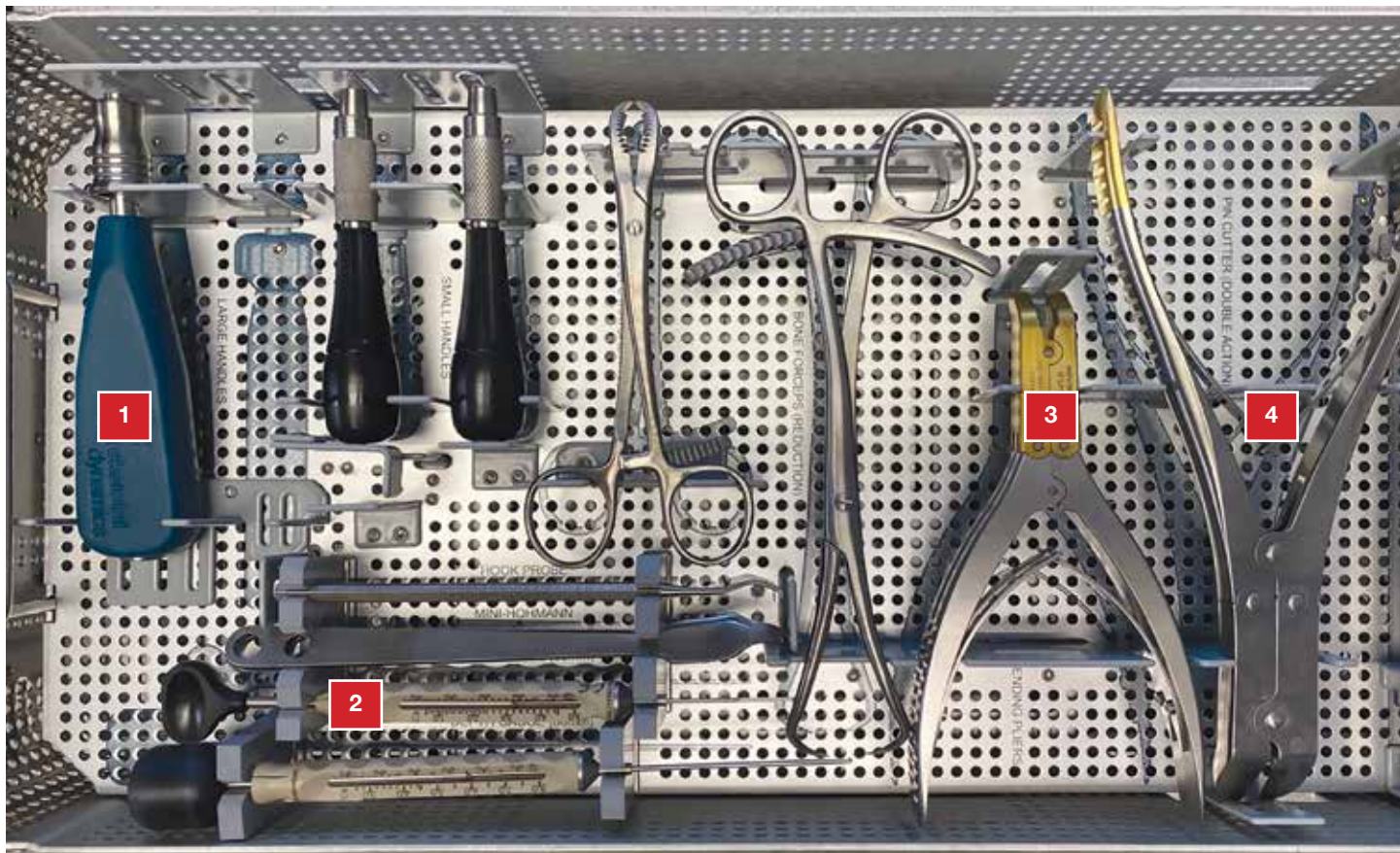
CONSTRUCT REMOVAL



Remove the Base Plate construct.

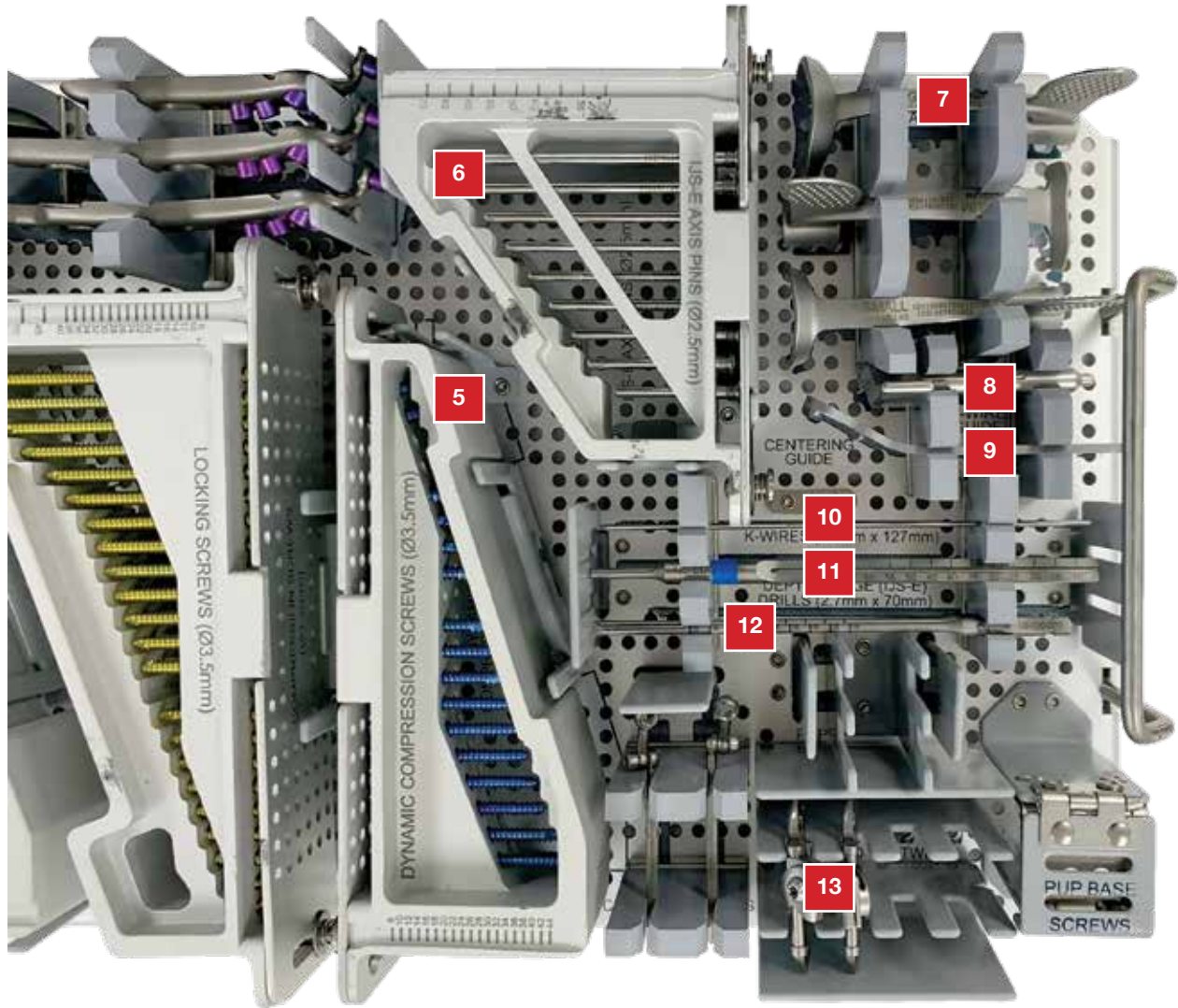
Close both incisions and dress the wound in the usual fashion.

INSTRUMENT TRAY (Standard Configuration)



#	Catalog	Description	#	Catalog	Description
1	HNDL-UQC-FXD	Handle, Quick Connect, Fixed			
2	DPGA-MDS-050	Depth Gauge, Med. Standard, 50mm			
3	PRT-BND-PLR	PROTEAN Bending Pliers			
4	CTP-PI-2233	Cutting Pliers			

INSTRUMENT TRAY (Standard Configuration)



#	Catalog	Description	#	Catalog	Description								
5	PANL-35160-TS	Screw, Cortical Non Locking, 3.5mm x 16mm, Ti	8	IJS-EAG-KWG	IJS-E K-Wire Guide, 1.5mm								
	PANL-35180-TS	Screw, Cortical Non Locking, 3.5mm x 18mm, Ti		9	IJS-ELB-ACG	IJS-E Axis Centering Guide							
	PANL-35200-TS	Screw, Cortical Non Locking, 3.5mm x 20mm, Ti			10	KWIR-DES-15127	K-Wire Standard Tip, 1.5mm x 127mm						
	PANL-35220-TS	Screw, Cortical Non Locking, 3.5mm x 22mm, Ti				11	IJS-EDG-OKW	DIJS-E Depth Gauge, Over K-wire					
	PANL-35240-TS	Screw, Cortical Non Locking, 3.5mm x 24mm, Ti					12	IJS-CDC-2770	IJS-E Drill, Cann Distal Cutting, 2.7mm x 70mm				
	PANL-35260-TS	Screw, Cortical Non Locking, 3.5mm x 26mm, Ti						13	IJS-ELB-BPA	IJS-E Base Plate Assembly			
	PANL-35280-TS	Screw, Cortical Non Locking, 3.5mm x 28mm, Ti							DRLL-SSC-27040	DRLL-SSC-27040	Drill, 2.7mm x 40mm*		
	PANL-35300-TS	Screw, Cortical Non Locking, 3.5mm x 30mm, Ti								DRVR-UQC-T10	DRVR-UQC-T10	Driver, Universal QC, T-10*	
	PANL-35320-TS	Screw, Cortical Non Locking, 3.5mm x 32mm, Ti											
	PANL-35340-TS	Screw, Cortical Non Locking, 3.5mm x 34mm, Ti											
	PANL-35360-TS	Screw, Cortical Non Locking, 3.5mm x 35mm, Ti											
	PANL-35380-TS	Screw, Cortical Non Locking, 3.5mm x 38mm, Ti											
	PANL-35400-TS	Screw, Cortical Non Locking, 3.5mm x 40mm, Ti											
	PANL-35420-TS	Screw, Cortical Non Locking, 3.5mm x 42mm, Ti											
	PANL-35440-TS	Screw, Cortical Non Locking, 3.5mm x 44mm, Ti											
	6	IJS-EAP-25300									IJS-E Axis Pin, 2.5mm x 30mm		
IJS-EAP-25350		IJS-E Axis Pin, 2.5mm x 35mm											
IJS-EAP-25400		IJS-E Axis Pin, 2.5mm x 40mm											
IJS-EAP-25450		IJS-E Axis Pin, 2.5mm x 45mm											
IJS-EAP-25500		IJS-E Axis Pin, 2.5mm x 50mm											
IJS-EAP-25550		IJS-E Axis Pin, 2.5mm x 55mm											
IJS-EAP-25600		IJS-E Axis Pin, 2.5mm x 60mm											
IJS-EAP-25650		IJS-E Axis Pin, 2.5mm x 65mm											
IJS-EAP-25700	IJS-E Axis Pin, 2.5mm x 70mm												
7	IJS-EAG-LAL	IJS-E Axis Trajectory Guide, Large											
	IJS-EAG-LAM	IJS-E Axis Trajectory Guide, Medium											
	IJS-EAG-LAS	IJS-E Axis Trajectory Guide, Small											

* Not pictured



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