SURGICAL TECHNIQUE GUIDE

FREEFIX®

ulnar shortening system



skeletal dynamics®

UNDERSTANDING THE UPPER EXTREMITY

As described by:
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FREEFIX®
ulnar shortening system

Description

The Skeletal Dynamics Ulnar Shortening Plating System consists of the following:

1. Distal Ulnar Shortening Plates
2. Proximal Ulnar Shortening Plates
3. Screws, K-wires and Specialized Instrumentation

Both Distal and Proximal Ulnar Shortening Plates are titanium alloy plates and designed for fracture fixation, osteotomies, and non-unions of the ulna.

Distal Ulnar Shortening Plates

The Distal Ulnar Shortening Plates are available in two lengths, left and right configurations.

For surgical instructions for the Distal Ulna Shortening Plate see page 4.

Proximal Ulnar Shortening Plates

The Proximal Ulnar Shortening Plates are available in two lengths.

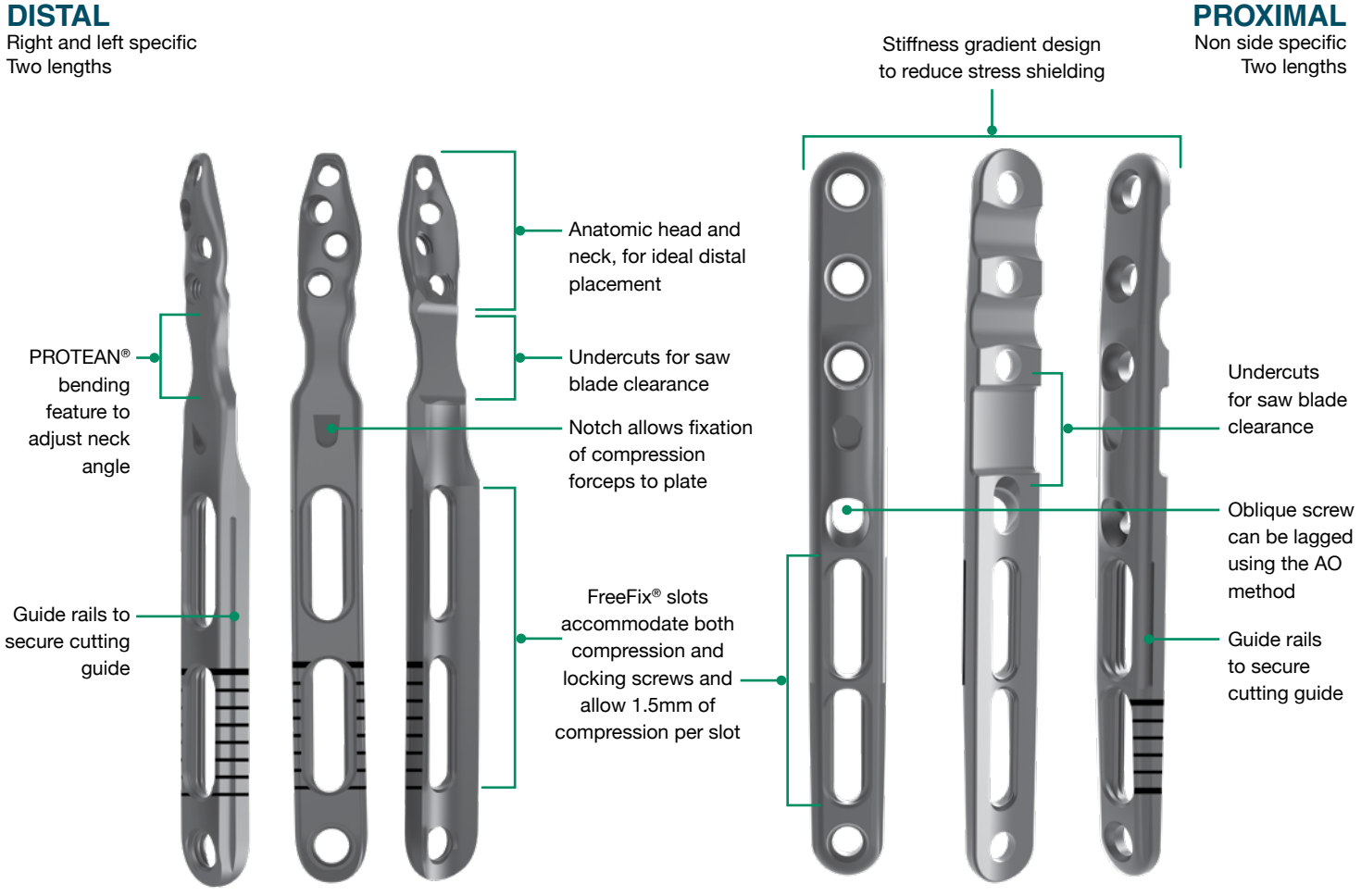
For surgical instructions for the Proximal Ulna Shortening Plate see page 11.

Indications for Use

The Skeletal Dynamics Ulnar Shortening Plating System is indicated for fractures and osteotomies, in particular for the ulna.

DISTAL
Right and left specific
Two lengths

PROXIMAL
Non side specific
Two lengths



1 EXPOSURE



Make an 8cm to 10cm longitudinal incision ulnar distally between the extensor carpi ulnaris (ECU) and flexor carpi ulnaris (FCU) compartment.

Warning:
Retract and protect the tendons and dorsal branch of the ulnar nerve.

2 PLATE POSITIONING







Determine proper distal plate placement using fluoroscopy. Mount the k-wire AIMing guide in the most distal pre-loaded drill guide using the torque limiting driver and handle. Estimate the desired plate position and insert the 1.6mm k-wire. Using fluoroscopy, confirm the k-wire courses just proximal to the distal ulnar articular surface. If the plate is misaligned, remove the distal k-wire and reposition the plate, confirming with fluoroscopy. Bone holding forceps have been provided to assist in fixation.

Note:
Utilize the PROTEAN® Bending Pliers to adjust the inclination of the neck of the plate as needed.

Warning:
Caution should be taken when contouring plates. Bending the plates may weaken or break the plates.



PDG-AIM-015: AIMing Guides, 1.5mm

KWIR-SD-16127: K-Wire, Single Diamond, 1.6mm x 127mm



PRT-BND-PLL: PROTEAN® Plate Bending Pliers, Large

DISTAL FREEFIX® SLOT 3

Place the chosen drill guide in the most proximal position of the distal FreeFix® slot and drill with the 2.7mm drill. Measure the screw length and utilize the T-10 driver to place the selected 3.5mm cortical non-locking screw.





Warning:
At this time, do not use a cortical locking screw in the FreeFix® slot to prevent deformation of the cutting guide rails. If desired, a cortical locking screw may replace the non-locking screw after the final osteotomy has been achieved.

If replacing a cortical non-locking screw with a locking screw in a later step, use the thread-in drill guide.



TPDG-FF-35: Thread-in Drill Guide, FreeFix®, 3.5mm



DRVR-UQC-T10: Driver, Universal Quick Connect, T10



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



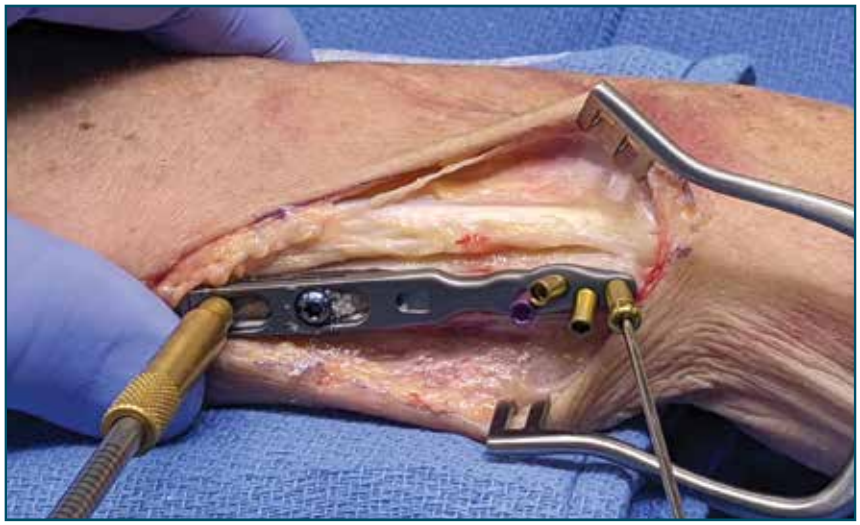
DPGA-FF-050: FreeFix® Depth Gauge



TPDG-FF-USP: Drill Guide, FreeFix®, Ulnar Shortening

PROXIMAL FREEFIX® SLOT 4

Place the chosen drill guide in the most proximal position of the proximal FreeFix® slot and drill with the 2.7mm drill. Measure the screw length and utilize the T-10 driver to place the selected 3.5mm cortical non-locking screw. Ensure the screw is 2mm longer than measured to prevent the screw from stripping during compression (see step 12).



Warning:
At this time, do not use a cortical locking screw in the FreeFix® slot to prevent deformation of the cutting guide rails. If desired, a cortical locking screw may replace the non-locking screw after the final osteotomy has been achieved.

If replacing a cortical non-locking screw with a locking screw in a later step, use the thread-in drill guide.

5 SCREW PLACEMENT





Use the 2.0mm drill bit to drill through the three pre-loaded drill guides on the head of the plate. Measure each screw length using the depth gauge or measurement lines on the drill bit, taking note of the appropriate scale, and utilize the peg driver to insert a 2.7mm non-locking screw or 2.3mm locking screw of selected length in each hole. A thread-in drill guide is available if needed.

Warning:
Prevent excessive screw length as this will cause the screws to violate the distal radioulnar joint (DRUJ) space.



TPDG-THD-DG20: Thread-in Drill Guide, 2.0mm



DRVR-AOS-S20: Driver, Peg, Torque Limiting



DRLL-SSC-20040: Drill, Solid Side Cutting, 2.0mm x 40mm

6 DISTAL SCREW





Remove the k-wire from the head of the plate, remove AIMing guide, then drill using the 2.0mm drill bit. Measure the screw length using the depth gauge, taking note of the appropriate scale, and insert a 2.3mm locking screw or 2.7mm non-locking screw of selected length in the distal hole with the peg driver. Remove all guides.

Warning:
Prevent excessive screw length as this will cause the screws to violate the distal radioulnar joint (DRUJ) space.

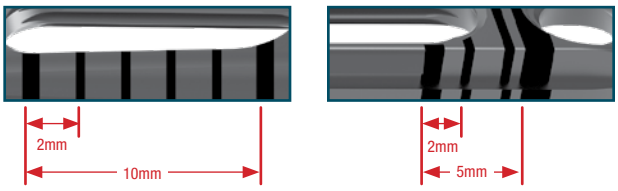
CUTTING GUIDE 7

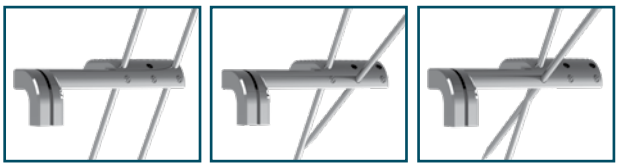
Attach the appropriate distal cutting guide (based on desired osteotomy approach) to the plate using the rails along the sides of the plate. Push the cutting guide until it reaches the end of the rail. It stops just distal to the leading edge of the thickest laser-etched line.

To fix the cutting guide, either hold it in place by pushing it against the end of the rail with a thumb or use two 1.6mm k-wires through the k-wire holes on the side of the cutting guide.

Insert the k-wires in two different columns to avoid k-wire convergence.







DISTAL CUT 8

Select the suggested saw blade by referencing the chart on page 23.

Use an oscillating saw and the selected saw blade to resect the ulna through the guiding slot on the distal cutting guide arm. Once the ulna has been resected all the way through, remove the saw blade and any k-wires from the bone.

Warning:
Protect soft tissues while cutting with the oscillating saw using the Hohmann Retractors provided in the set.

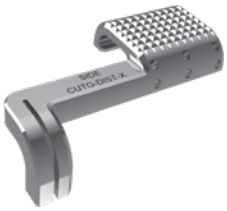




INST-HR-DBL: Instrument, Hohmann Retractor, Double Ended

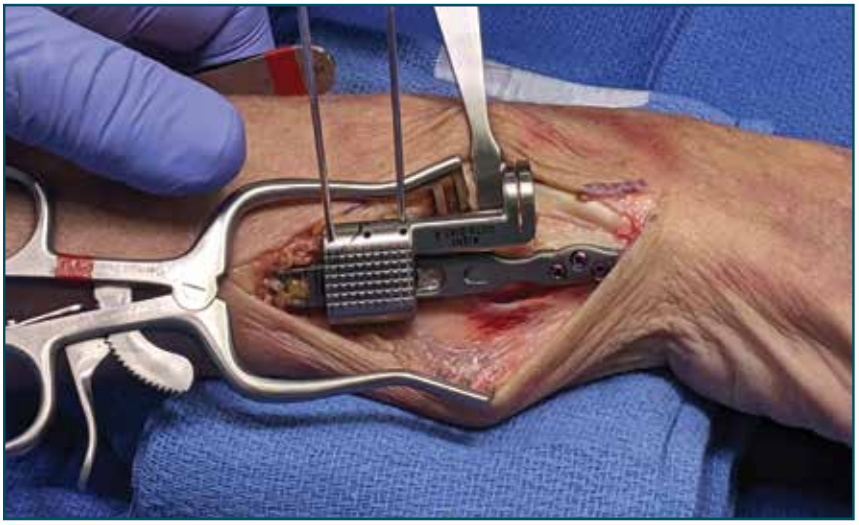


INST-MHR-STD: Instrument, Mini-Hohmann Retractor, Standard (optional)



CUTG-DIST-R/L: Ulnar Shortening, Cutting Guide, Distal

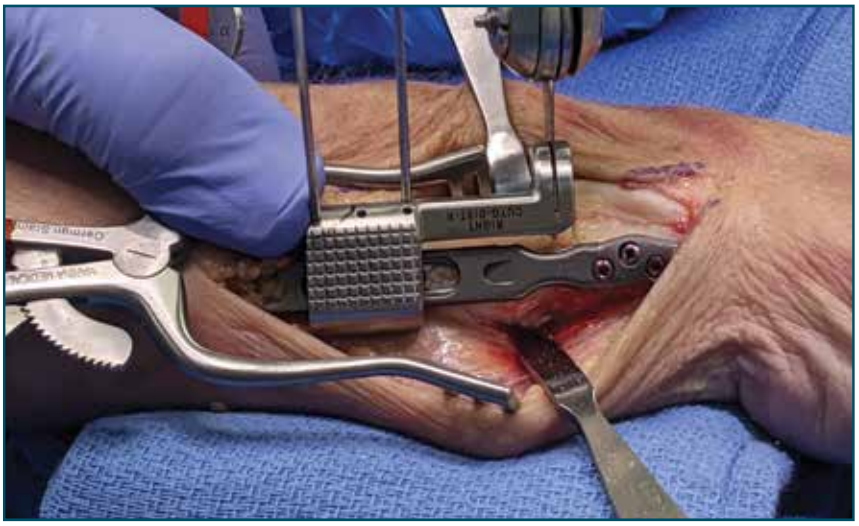
9 ADJUST FOR LENGTH



Adjust the cutting guide proximally until the determined osteotomy length is achieved. Each laser-etched line on the plate corresponds to an additional osteotomy length of 2mm.

To secure the cutting guide, use two 1.6mm k-wires through the k-wire holes on the side of the cutting guide. Note the k-wire placement; see step 7 for details.

10 PROXIMAL CUT



Use an oscillating saw and the saw blade selected in step 8 to resect the ulna through the guiding slot on the distal cutting guide arm. Once the ulna has been resected all the way through, remove the saw and any k-wires from the bone.

Warning:
Protect soft tissues while cutting with the oscillating saw using the Hohmann Retractors provided in the set.

BONE REMOVAL 11

Fully remove the resected bone wafer from the osteotomy site. A Cottle Osteotome has been provided in the set to facilitate removal.

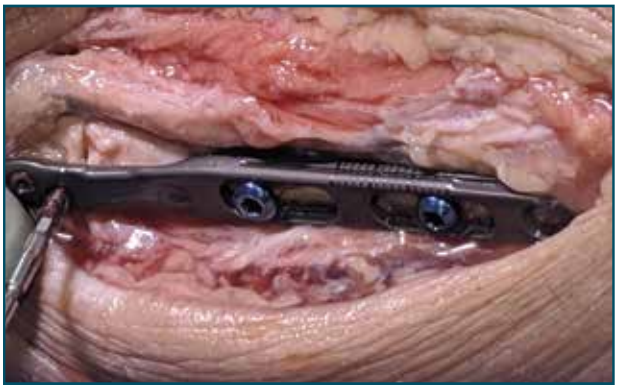




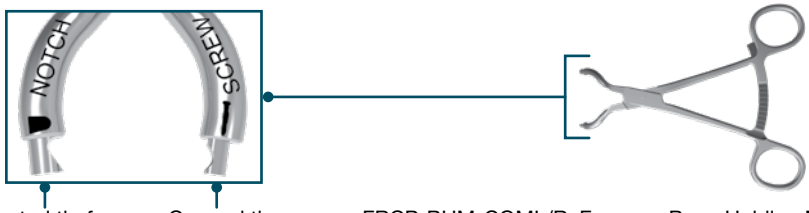
C-OST-20: Cottle Osteotome, 2.0mm

OSTEOTOMY REDUCTION 12





Loosen the cortical non-locking screws by approximately one half of a turn or until there is little friction for the plate to translate upon the bone in the distal and proximal FreeFix® slots. Place the appropriate tip of the Compression Forceps into the recess at the center of the plate and the other tip behind the head of the screw in the proximal slot. Using the Compression Forceps, reduce and compress the osteotomy site until adequate compression is achieved. Then tighten the distal and proximal cortical non-locking screws.



Slanted tip for notch on plate

Cupped tip for screw

FRCP-BHM-COML/R: Forceps, Bone Holding Medium, Compression

13 FINAL CORTICAL SCREW



Use the 2.7mm drill bit (and thread-in drill if selecting a cortical locking screw) to drill for the final 3.5mm cortical screw. Measure the appropriate length using the depth gauge and place the screw into the proximal hole of the plate using the T-10 driver.

Note:
Additional dynamic compression may be achieved across the osteotomy site by either drilling the final screw eccentrically in the hole, or placing a cortical screw (either locking or non-locking) on the proximal edge of either of the FreeFix® slots. Be sure to loosen the screws in the distal and proximal FreeFix® slots prior to achieving dynamic compression.

14 CLOSURE



Check the plate and screw trajectories under fluoroscopy for adequate placement and osteotomy compression. If satisfied, close the site in the usual fashion.

EXPOSURE 1

Make a 10cm to 12cm longitudinal incision along the subcutaneous border of the distal to mid-ulna. Determine proper plate placement using fluoroscopy. Plate should lie proximal to the distal band and distal to the central band of the interosseous ligament. Bone holding forceps have been provided to assist in provisional fixation.

The osteotomy should be placed on the ulna 3/4 of way distal on the forearm. This will preserve the integrity of the central band of the interosseous ligament. The plate can be placed anterior or posterior on the ulna per surgeon's preference.



DISTAL SCREWS 2

Use the 2.7mm drill bit (and thread-in drill guide if selecting a cortical locking screw) to drill through the three distal holes on the plate. Measure each screw length using the appropriate scale of the depth gauge and insert a 3.5mm cortical non-locking or 3.5mm cortical locking screw of selected length in each hole using the T-10 driver.



DRVR-UQC-T10: Driver, Universal Quick Connect, T10



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

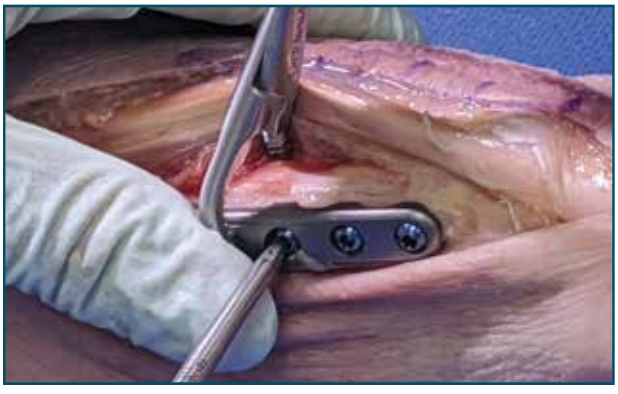


DPGA-UNV-030: Depth Gauge, Universal, 30mm



TPDG-FF-35: Thread-in Drill Guide, FreeFix®, 3.5mm



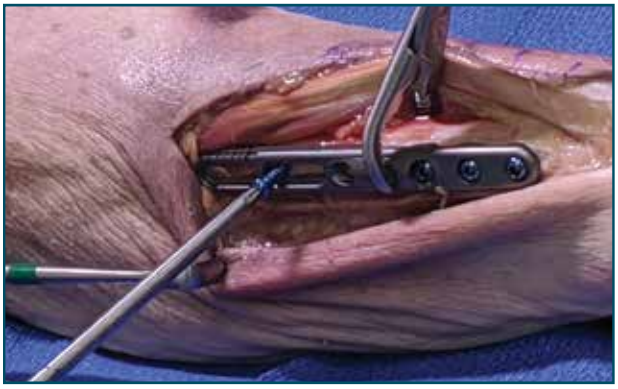


3 DISTAL FREEFIX® SLOT



Place the chosen drill guide in the most proximal position of the distal FreeFix® slot and drill with the 2.7mm drill. Measure the screw length and utilize the T-10 driver to place the selected 3.5mm cortical non-locking screw.

Warning:
At this time do not use a cortical locking screw in the FreeFix® slot to prevent deformation of the cutting guide rails. If desired a cortical locking screw may replace the non-locking screw after the final osteotomy has been achieved.



If replacing a cortical non-locking screw with a locking screw in a later step, use the thread-in drill guide.

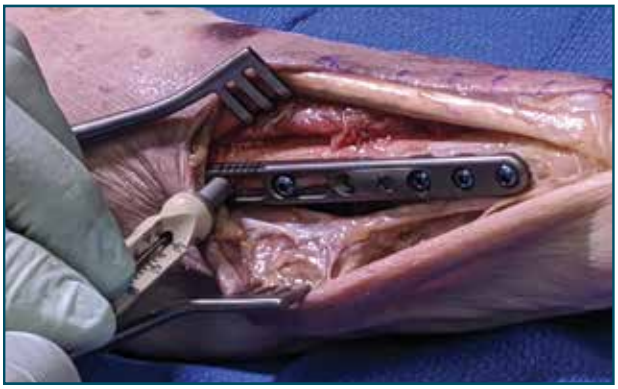


TPDG-FF-USP: Drill Guide, FreeFix®, Ulnar Shortening



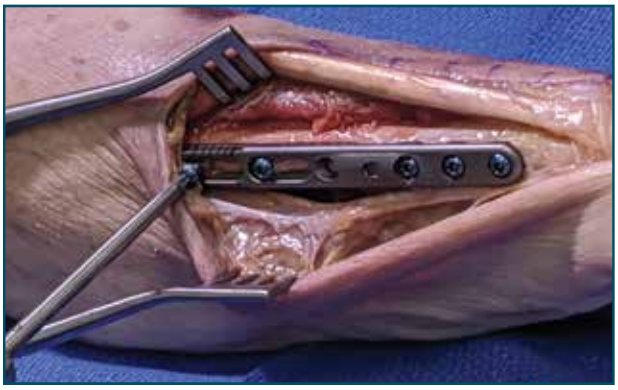
DPGA-FF-050: FreeFix® Depth Gauge

4 PROXIMAL FREEFIX® SLOT



Place the chosen drill guide in the most proximal position of the proximal FreeFix® slot and drill with the 2.7mm drill. Measure the screw length and utilize the T-10 driver to place the selected 3.5mm cortical non-locking screw. Ensure the screw is 2mm longer than measured to prevent the screw from stripping during compression (see step 10).

Warning:
At this time do not use a cortical locking screw in the FreeFix® slot to prevent deformation of the cutting guide rails. If desired a cortical locking screw may replace the non-locking screw after the final osteotomy has been achieved.



If replacing a cortical non-locking screw with a locking screw in a later step, use the thread-in drill guide.

Check the placement of the plate using fluoroscopy. If the plate is misaligned, readjust as necessary.

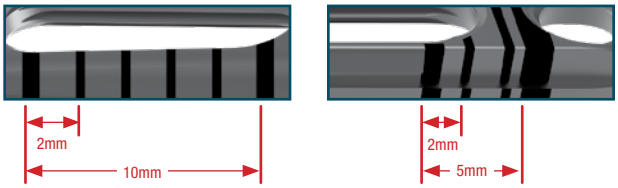
CUTTING GUIDE 5

Attach the appropriate proximal cutting guide to the plate using the rails along the side of the plate. Both transverse and oblique cut options are available in left and right configurations depending on the preferred osteotomy approach. Push the cutting guide until it reaches the end of the rail. It stops just distal to the leading edge of the thickest line.

To secure the cutting guide, either hold it in place by pushing it against the end of the rail with a thumb or use two 1.6mm k-wires through the k-wire holes on the side of the cutting guide.

Insert the k-wires in two different columns to avoid k-wire convergence.







Correct Correct Incorrect

KWIR-SD-16127: K-Wire, Single Diamond, 1.6mm x 127mm

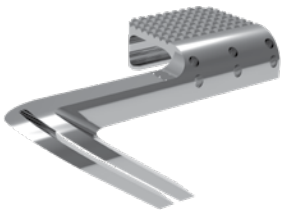
DISTAL CUT 6

Select the suggested saw blade by referencing the chart on page 23.

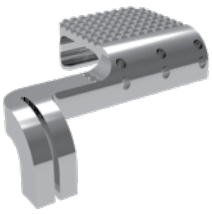
Use an oscillating saw and the selected saw blade to cut the ulna through the guiding slot on the proximal cutting guide arm. Once the ulna has been cut all the way through, remove the saw and any k-wires from the bone.

Warning:
Protect soft tissues while cutting with the oscillating saw using the Hohmann Retractors provided in the set.





CUTG-OPRX-R/L: Ulnar Shortening, Cutting Guide, Oblique, Proximal



CUTG-PRX-R/L: Ulnar Shortening, Cutting Guide, Proximal

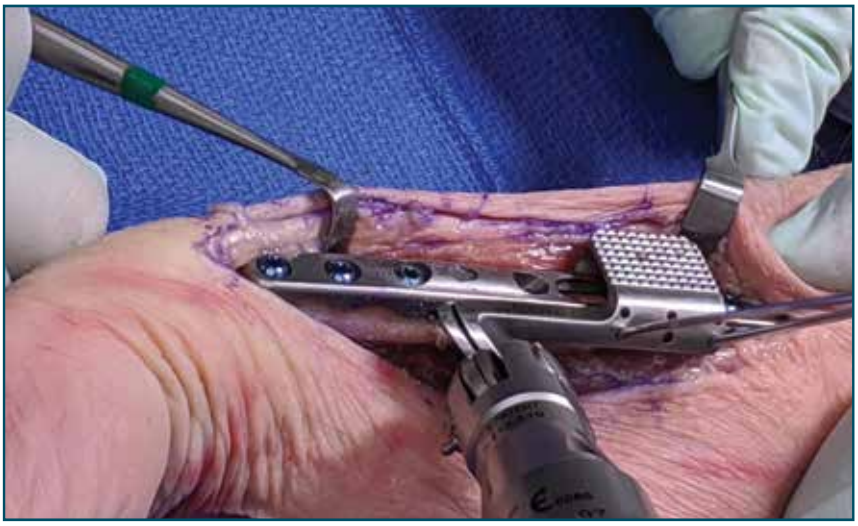
7 ADJUST FOR LENGTH



Adjust the cutting guide proximally until the determined osteotomy length is achieved. Each laser etched line on the plate corresponds to an additional osteotomy length of 2mm.

To secure the cutting guide, use two 1.6mm k-wires through the k-wire holes on the side of the cutting guide. Note the k-wire placement; see step 5 for details.

8 PROXIMAL CUT



Use an oscillating saw and the saw blade selected in step 6 to cut the ulna through the guiding slot on the proximal cutting guide arm. Once the ulna has been cut all the way through, remove the saw and any k-wires from the bone.

Warning:
Protect soft tissues while cutting with the oscillating saw using the Hohmann Retractors provided in the set.



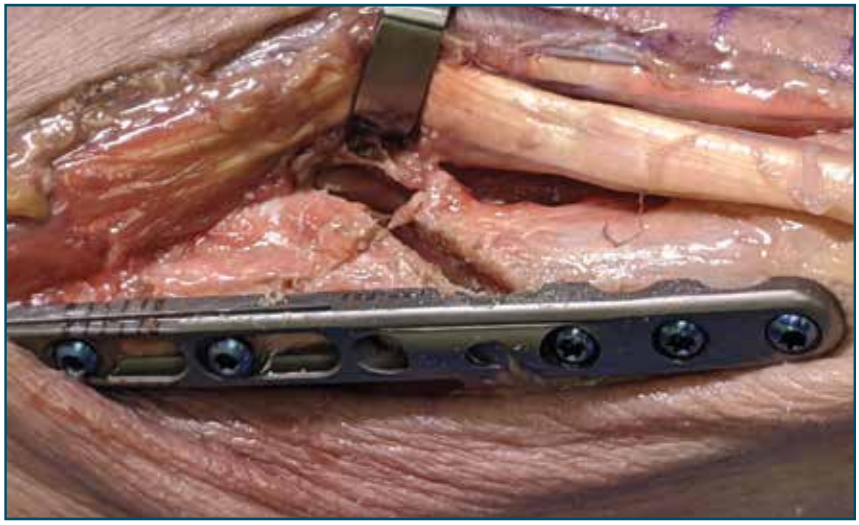
INST-HR-DBL: Instrument, Hohmann Retractor, Double Ended

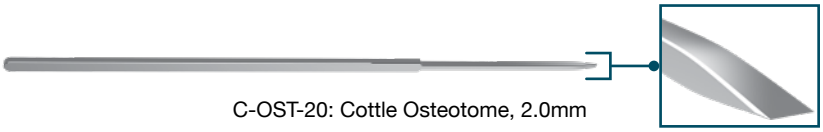


INST-MHR-STD: Instrument, Mini-Hohmann Retractor, Standard (optional)

BONE REMOVAL 9

Fully remove the cut bone wafer from the osteotomy site. A Cottle Osteotome has been provided in the set to facilitate removal.



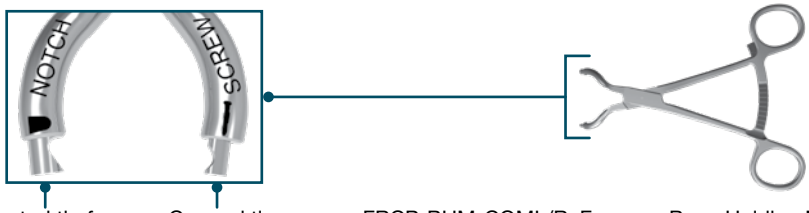


C-OST-20: Cottle Osteotome, 2.0mm

OSTEOTOMY REDUCTION 10

Loosen the cortical non-locking screws by approximately one half of a turn or until there is little friction for the plate to translate upon the bone in the distal and proximal FreeFix® slots. Place the appropriate tip of the Compression Forceps into the recess at the center of the plate and the other tip behind the head of the screw in the proximal slot. Using the Compression Forceps, reduce and compress the osteotomy site until adequate compression is achieved. Then tighten the distal and proximal cortical non-locking screws.





Slanted tip for notch on plate

Cupped tip for screw

FRCP-BHM-COML/R: Forceps, Bone Holding Medium, Compression

11 OBLIQUE SCREW (OPTIONAL)



If an oblique osteotomy cut was chosen, an oblique lag screw may be placed across the osteotomy interface.

Use the 2.7mm drill bit and Oblique Compression Hole Guide to drill a pilot hole perpendicular to the plane of the osteotomy through both bone fragments. The Oblique Compression Hole Guide must be inserted at an angle and levered down to properly fit into the slot.

To ensure the screw will be properly lagged, overdrill the hole in the proximal osteotomy fragment only with the 3.5mm drill bit.

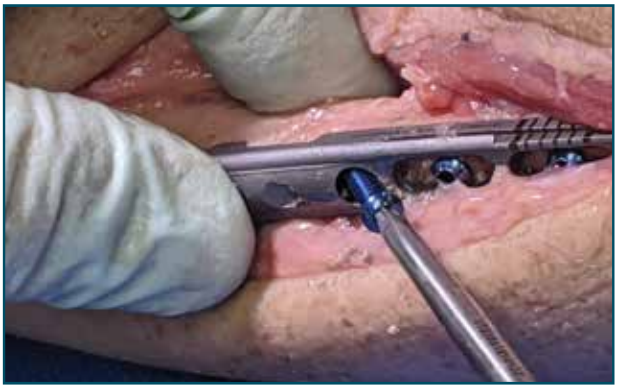


TPDG-CHG: Oblique Compression Hole Guide



DRLL-SSC-35040: Drill, 3.5mm x 40mm

12 OBLIQUE SCREW (OPTIONAL)



Measure the hole using the depth gauge and drive a 3.5mm cortical non-locking screw into the angled oblique hole of the plate. As the screw begins to achieve traction loosen the non-locking screws in the proximal and distal FreeFix® slots to compress along the osteotomy. Once the oblique screw is fully seated, tighten both screws in the proximal and distal FreeFix® slots.

To facilitate maintaining compression, utilize the compression forceps while driving the oblique screw into the bone.

FINAL CORTICAL SCREW 13

Use the 2.7mm drill bit (and thread-in drill guide if selecting a cortical locking screw) to drill through the most proximal hole for the final 3.5mm cortical non-locking screw. Measure the appropriate length using the depth gauge and insert the screw using the T-10 driver.

Note:
Additional dynamic compression may be achieved across the osteotomy site by either drilling the final screw eccentrically in the hole, or placing a cortical screw (either locking or non-locking) on the proximal edge of either of the FreeFix® slots. Be sure to loosen the screws in the distal and proximal FreeFix® slots prior to achieving dynamic compression.





CLOSURE 14

Check the plate and screw trajectories under fluoroscopy for adequate placement and osteotomy compression. If satisfied, close the site in the preferred manner.



1 SECOND HOLE IN DISTAL FREEFIX® SLOT



If the ulna requires more than 1cm of resection, proceed with the technique up to step 12, Osteotomy Reduction for the Distal Plate and to step 10, Osteotomy Reduction for the Proximal Plate.

With the ulna fully compressed after the first osteotomy, use the 2.7mm drill bit with thread-in drill guide to drill an additional hole in the most proximal position of the distal FreeFix® slot. Measure to confirm the appropriate screw length. If the measured length is the same as the previously placed screw, the same screw may be used. Place the screw utilized during the initial osteotomy.

2 SECOND HOLE IN PROXIMAL FREEFIX® SLOT

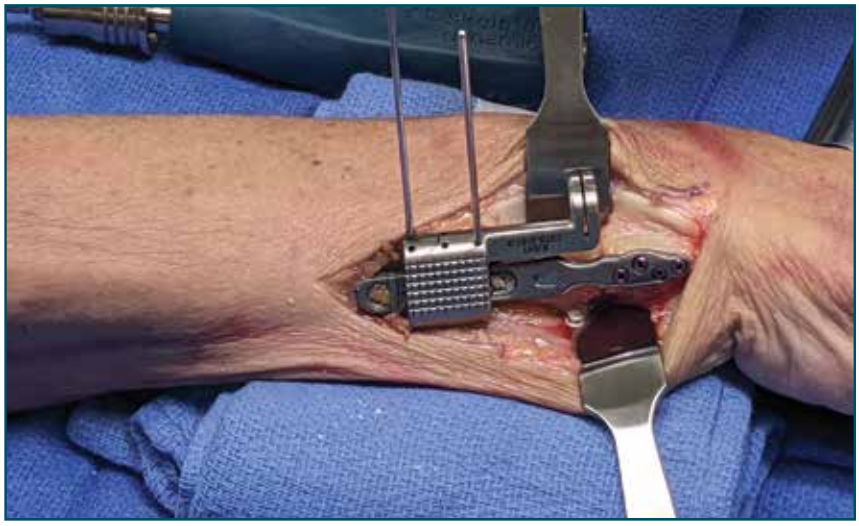


Use the 2.7mm drill bit to drill an additional hole in the most proximal position of the proximal FreeFix® slot. If different screw lengths are needed, remove the screws initially placed in the slots and discard. Ensure the screw is 2mm longer than measured to prevent the screw from stripping during compression.

POSITIONING CUTTING GUIDE 3

Attach the distal cutting guide to the plate using the rails along the sides of the plate. Adjust the cutting guide proximally until the determined osteotomy length is achieved. Each laser-etched line on the plate corresponds to an additional osteotomy length of 2mm.

To secure the cutting guide, use two 1.6mm k-wires through the k-wire holes on the side of the cutting guide.

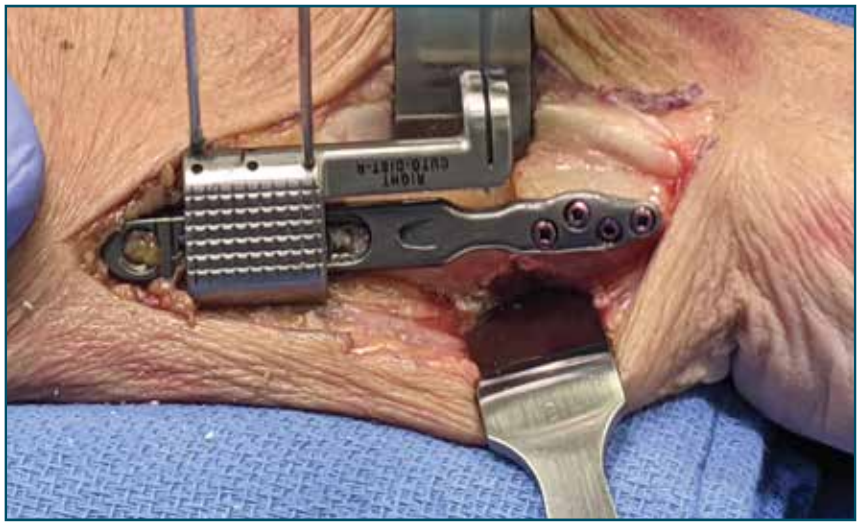


FINAL CUT 4

Use an oscillating saw to resect the ulna through the guiding slot on the distal cutting guide arm. Once the ulna has been resected all the way through, remove the saw and any k-wires from the bone.

Warning:
Protect soft tissues while cutting with the oscillating saw using the Hohmann Retractors provided in the set.

Fully remove the resected bone wafer from the osteotomy site. A Cottle Osteotome has been provided in the set to facilitate removal.



5 SECOND OSTEOTOMY REDUCTION

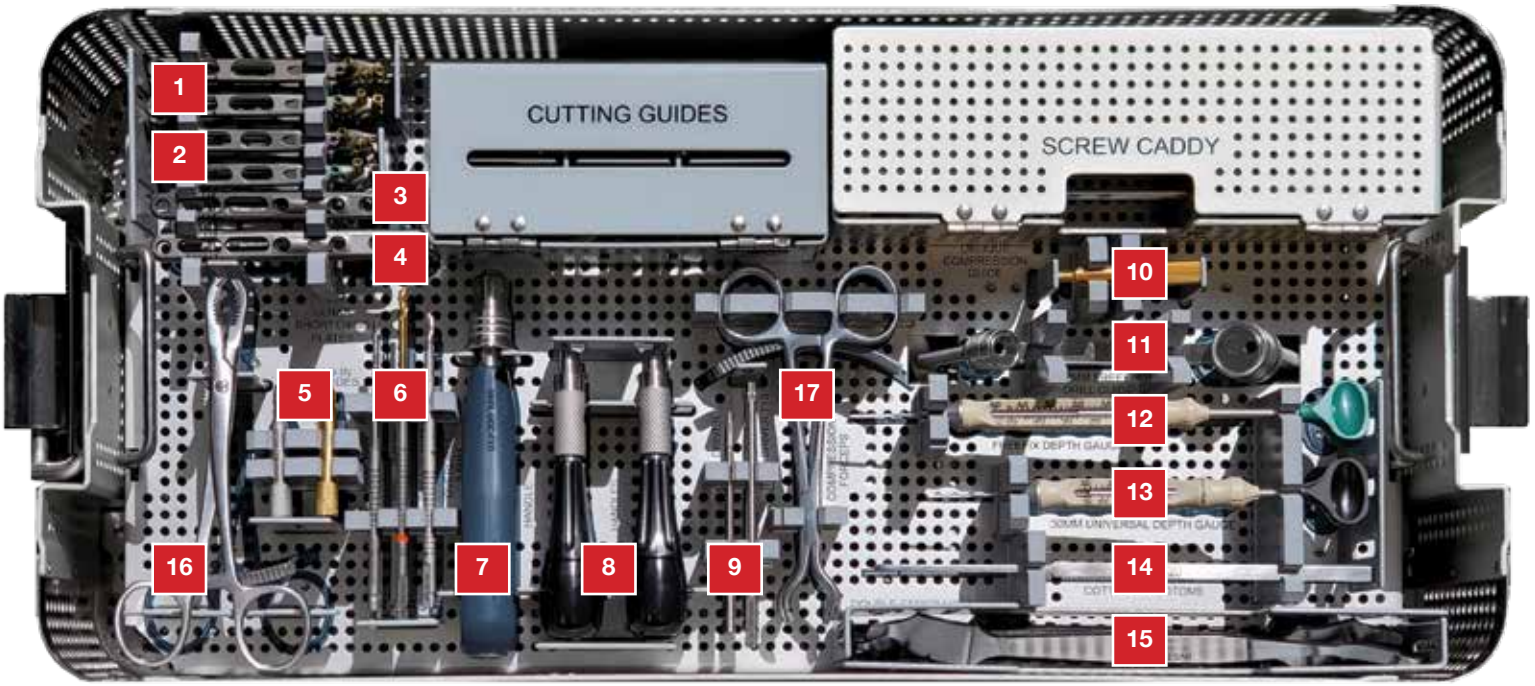


Loosen the cortical non-locking screws by approximately one half of a turn or until there is little friction for the plate to translate upon the bone in the distal and proximal FreeFix® slots.

Place the appropriate tip of the Compression Forceps into the recess at the center of the plate and the other tip behind the head of the screw in the proximal slot. Using the Compression Forceps, reduce and compress the osteotomy site until adequate compression is achieved. Then tighten the distal and proximal cortical non-locking screws.

Continue the technique at step 13, Final Cortical Screw for the Distal Plate and step 11, Oblique Screw for the Proximal Plate.

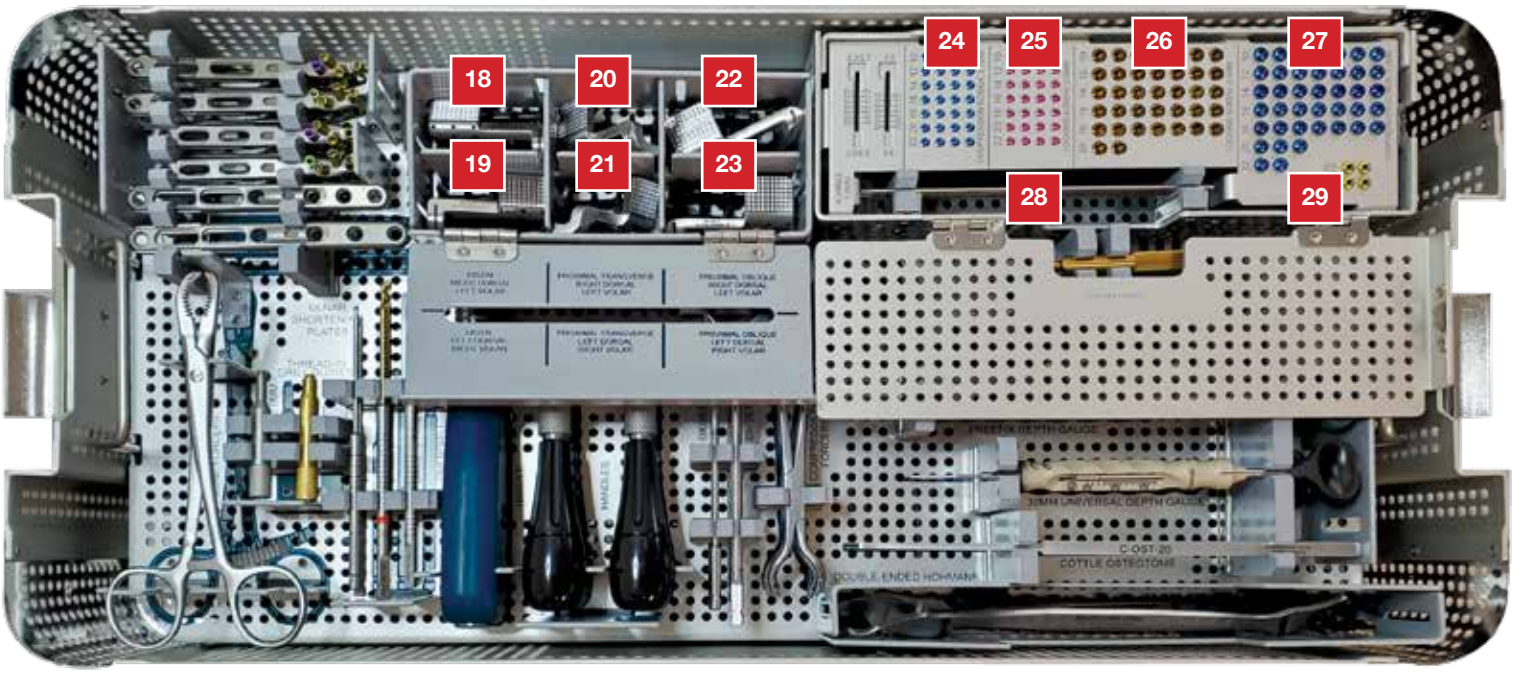
INSTRUMENT TRAY (Standard Configuration)



Loc #	Catalog #	Description
1	USP-DRT	Ulnar Shortening Plate, Distal, Right
	USP-DLT	Ulnar Shortening Plate, Distal, Left
2	USP-DRS	Ulnar Shortening Plate, Distal, Short, Right
	USP-DLS	Ulnar Shortening Plate, Distal, Short, Left
3	USP-PRX	Ulnar Shortening Plate, Proximal
4	USP-PRXL	Ulnar Shortening Plate, Proximal, Long
5	TPDG-THD-DG20	Thread-in Drill Guide, 2.0mm
	TPDG-FF-35	Thread-in Drill Guide, FreeFix®, 3.5mm
6	DRLL-SSC-20040	Drill, Solid Side Cutting, 2.0mm x 40mm
	DRLL-SSC-27040	Drill, 2.7mm x 40mm
	DRLL-SSC-35040	Drill, 3.5mm x 40mm
7	HNDL-UQC-FXD	Handle, Universal Quick Connect, Fixed
8	HNDL-SQC-FXD	Handle, Small QC, Fixed
9	DRVR-AOS-S20	Driver, Peg, Torque Limiting
	DRVR-S20	Driver, Peg
	DRVR-UQC-T10	Driver, Universal Quick Connect, T10
10	TPDG-CHG	Oblique Compression Hole Guide
11	TPDG-FF-USP	Drill Guide, FreeFix®, Ulnar Shortening
12	DPGA-FF-050	FreeFix® Depth Gauge
13	DPGA-UNV-030	Depth Gauge, Universal, 30mm
14	C-OST-20	Cottle Osteotome, 2.0mm
15	INST-MHR-STD	Instrument, Mini-Hohmann Retractor, Standard (optional)
	INST-HR-DBL	Instrument, Hohmann Retractor, Double Ended
16	FRCP-BHM-RTC	Forceps, Bone Holding Medium, Ratcheting
17	FRCP-BHM-COMR	Forceps, Bone Holding Medium, Compression, Right
	FRCP-BHM-COML	Forceps, Bone Holding Medium, Compression, Left
	PRT-BND-PLL	PROTEAN Plate Bending Pliers, Large *

* Not Pictured, stored in area below this layer.

INSTRUMENT TRAY (Standard Configuration)



Loc #	Catalog #	Description
18	CUTG-DIST-R	Ulnar Shortening, Cutting Guide, Distal, Right
19	CUTG-DIST-L	Ulnar Shortening, Cutting Guide, Distal, Left
20	CUTG-PRX-R	Ulnar Shortening, Cutting Guide, Proximal, Right
21	CUTG-PRX-L	Ulnar Shortening, Cutting Guide, Proximal, Left
22	CUTG-OPRX-R	Ulnar Shortening, Cutting Guide, Oblique, Proximal, Right
23	CUTG-OPRX-L	Ulnar Shortening, Cutting Guide, Oblique, Proximal, Left
24	TPNL-27100-TS	Threaded Peg, Non-Locking, 2.7mm x 10mm, Ti
	TPNL-27120-TS	Threaded Peg, Non-Locking, 2.7mm x 12mm, Ti
	TPNL-27140-TS	Threaded Peg, Non-Locking, 2.7mm x 14mm, Ti
	TPNL-27160-TS	Threaded Peg, Non-Locking, 2.7mm x 16mm, Ti
	TPNL-27180-TS	Threaded Peg, Non-Locking, 2.7mm x 18mm, Ti
	TPNL-27200-TS	Threaded Peg, Non-Locking, 2.7mm x 20mm, Ti
	TPNL-27220-TS	Threaded Peg, Non-Locking, 2.7mm x 22mm, Ti
25	TPLS-23100-TS	Threaded Peg, Locking, 2.3mm x 10mm, Ti
	TPLS-23120-TS	Threaded Peg, Locking, 2.3mm x 12mm, Ti
	TPLS-23140-TS	Threaded Peg, Locking, 2.3mm x 14mm, Ti
	TPLS-23160-TS	Threaded Peg, Locking, 2.3mm x 16mm, Ti
	TPLS-23180-TS	Threaded Peg, Locking, 2.3mm x 18mm, Ti
	TPLS-23200-TS	Threaded Peg, Locking, 2.3mm x 20mm, Ti
	TPLS-23220-TS	Threaded Peg, Locking, 2.3mm x 22mm, Ti

Loc #	Catalog #	Description
26	COLS-35100-TS	Screw, Cortical Locking, 3.5mm x 10mm, Ti
	COLS-35120-TS	Screw, Cortical Locking, 3.5mm x 12mm, Ti
	COLS-35140-TS	Screw, Cortical Locking, 3.5mm x 14mm, Ti
	COLS-35160-TS	Screw, Cortical Locking, 3.5mm x 16mm, Ti
	COLS-35180-TS	Screw, Cortical Locking, 3.5mm x 18mm, Ti
	COLS-35200-TS	Screw, Cortical Locking, 3.5mm x 20mm, Ti
27	PANL-35100-TS	Screw, Cortical Non Locking, 3.5mm x 10mm, Ti
	PANL-35120-TS	Screw, Cortical Non Locking, 3.5mm x 12mm, Ti
	PANL-35140-TS	Screw, Cortical Non Locking, 3.5mm x 14mm, Ti
	PANL-35160-TS	Screw, Cortical Non Locking, 3.5mm x 16mm, T
	PANL-35180-TS	Screw, Cortical Non Locking, 3.5mm x 18mm, Ti
	PANL-35200-TS	Screw, Cortical Non Locking, 3.5mm x 20mm, Ti
	PANL-35220-TS	Screw, Cortical Non Locking, 3.5mm x 22mm, Ti
28	KWIR-SD-16127	K-Wire, Single Diamond, 1.6mm x 127mm
29	PDG-AIM-015	AIMing Guides, 1.5mm

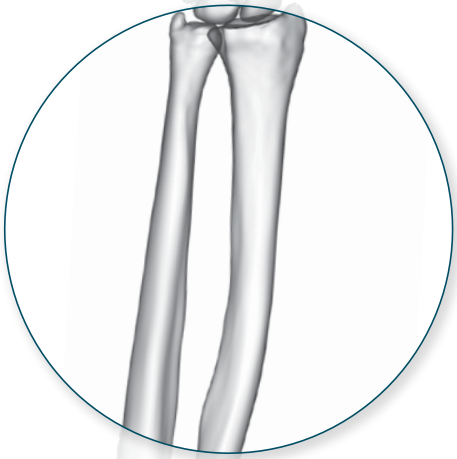
Ulnar Shortening Saw Blade Suggestions (not provided)

Stryker CORE/CORE 2/F1 System/SABO Saw Series	**Conmed Linvatec** MicroFree, MicroPower, MicroPower+	**Conmed Linvatec** Hall 50 Sagittal Saw	**Synthes** Small Battery System/TRS	**Synthes** Electric Pen Drive	**Arthrex** All Systems Small Bone Saw	**SNN** Dyonics Power Small	**MicroAire** Series 5000
2296-3-125 DISTAL	5023-249 (MicroAire ZS-125) DISTAL	5071-133 DISTAL	519.103S DISTAL	03.000.305S DISTAL	AR-300-402S DISTAL	72204242 (MicroAire ZS-125) DISTAL	ZS-125 DISTAL
31 x 9.8 x 0.40mm (MicroAire SP-125A)	31 x 9 x 0.40mm	25.5 x 9.5 x 0.40mm	25 x 10 x 0.60mm	31 x 10 x 0.38mm	25 x 9.4 x 0.6mm	31 x 9 x 0.40mm	31 x 9 x 0.40mm
2296-33-254 PROXIMAL	5023-133 (MicroAire ZS-333) PROXIMAL	5071-134 PROXIMAL	519.105S PROXIMAL	03.000.315S PROXIMAL	AR-300-400S PROXIMAL	72204243 (MicroAire ZS-333) PROXIMAL	ZS-333 PROXIMAL
41.6 x 19 x 0.51mm (MicroAire SP-410R)	41 x 14 x 0.40mm	41 x 9.0 x 0.40mm	50 x 20 x 0.60mm	43 x 20 x 0.60mm	41 x 14 x 0.6mm	41 x 14 x 0.40mm	41 x 14 x 0.40mm

skeletal dynamics®

UNDERSTANDING THE UPPER EXTREMITY







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