



SURGICAL TECHNIQUE GUIDE

PROTEAN[®]

hand plating system



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As described by: **Jorge L. Orbay, M.D.** Miami Hand & Upper Extremity Institute

Description

The Skeletal Dynamics PROTEAN[®] Hand Plating System consists of low-profile, medical-grade titanium alloy plates designed for hand surgery. The System offers a variety of pre-contoured standard and specialty plate configurations, along with variable angle titanium and cobalt chrome screws, K-wires, and specialized surgical instruments.

The system is supplied non-sterile and must be sterilized at the user facility prior to use.

PLATE FAMILY	1.5	2.0	2.5
PLATE CONFIGURATIONS	T-Y	T-Y	T-Y
	STRAIGHT / ROTATION	STRAIGHT / ROTATION	STRAIGHT / ROTATION
	PHALANX	PHALANX	
	LADDER	LADDER	
	WEB	WEB	
	METACARPAL	METACARPAL	METACARPAL
PLATE SCREW DIAMETERS	1.5	2.0	2.5
PLATE SCREW LENGTHS	5 - 16, 1MM INCREMENTS, 18, 20 & 22	6 - 16, 1MM INCREMENTS, 18, 20 & 22	6 - 16, 1MM INCREMENTS, 18, 20 & 22
PLATE SCREW TYPES	VARIABLE ANGLE LOCKING COCR & NON-LOCKING TI	VARIABLE ANGLE LOCKING COCR & NON-LOCKING TI	VARIABLE ANGLE LOCKING COCR & NON-LOCKING TI
1.2mm LAG SCREW*	6 - 14, 1MM INCREMENTS, NON-LOCKING COCR		
PLATE THICKNESSES	1.1	1.4	1.7
K-WIRES	0.9 X 89 AND 1.2 X 89	1.2 X 89	1.2 X 89
AIMing GUIDES		2.0	2.5
DRILLS	1.2	1.6	2.0
DRILL GUIDES	1.2 / 1.6	1.6 / 2.0	2.0 / 2.7
DEPTH GAUGES	MICRO: 1.5 Depth Gauge	MINI: 2.0/2.5 Depth Gauge	MINI: 2.0/2.5 Depth Gauge
DRIVER HANDLES	MINI QC, Fixed	SMALL QC, Fixed	SMALL QC, Fixed
DRIVERS	T4	T6	T6

*1.5, 2.0 and 2.5mm non-locking screws can also be used to lag any small fragments. Refer to the lag screw technique on page 19 for more details.

Indications for Use

The PROTEAN[®] Fragment Plate System is intended for stabilization and fixation in fresh fractures, revision procedures, joint fusion, and reconstructions of small bones of the hand, foot, wrist, ankle, humerus, clavicle, scapula, finger, toe and pelvis, particularly in osteopenic bone with the appropriate configuration of the device. The system is intended for use in adult and pediatric populations (children and adolescents).

01 INITIAL EXPOSURE

With the hand in pronation, make a dorsal incision of the appropriate length centered along the long axis of the injured metacarpal.



02 FRACTURE REDUCTION

Reduce the fracture using bone clamps or k-wires, as necessary. Use fluoroscopy to confirm proper reduction.

03 PLATE SELECTION AND PREPARATION

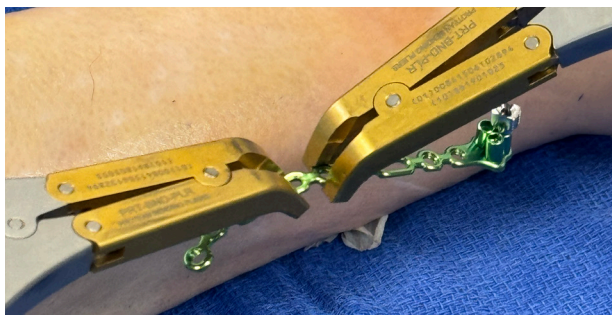
Select the desired 1.5, 2.0 or 2.5 PROTEAN Hand Plate based upon the fracture pattern. There are various plates to address different metacarpal fracture patterns.

Each plate can be adjusted to length and contoured using the provided bending tools. To cut the plate to length, place the bending instruments on either side of the internode corresponding to the appropriate length.

Bend the excess portion of the plate downward in a smooth, continuous motion to a 90° angle.

If the plate does not separate at 90°, return it to approximately 45° and then back to 90°, repeating as necessary until separation occurs.

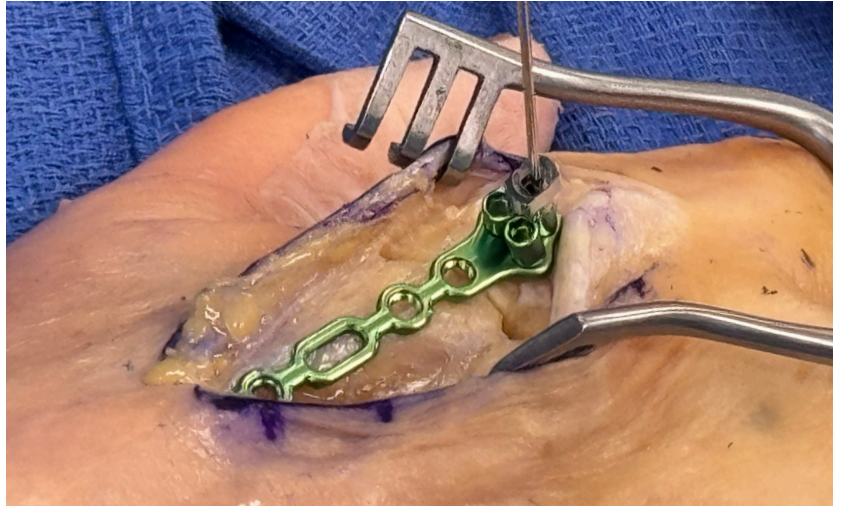
Alternatively, the Hand Plating System Plate Cutting Pliers may be used to cut the plate at the internode.



04 PLATE FIXATION

Position the plate over the fractured metacarpal, drilling through an oblong slot on the plate. For a 2.0 plate and screw use a 1.6mm drill. For a 2.5 plate and screw use a 2.0mm drill. Measure using the MINI: 2.0/2.5 depth gauge and insert a non-locking screw.

Note: The metacarpal plate features PDG's (Pre-Loaded Drill Guides) in the head of the plate. Attach the PROTEAN AIMing guides to any PDG's where provisional fixation is required. Use the provided 1.2mm k-wires to provisionally secure the plate.



05 PLATE CONTOURING

The plate can be contoured in situ using the PROTEAN pliers or thread-in bending irons.

Note: Each plate will have nodes that can be bent in three planes as follows:

Vertical plane: A minimum of 20° without fracture.

Horizontal plane: A minimum of 5° without fracture.

Axial plane: A minimum of 30° without fracture.

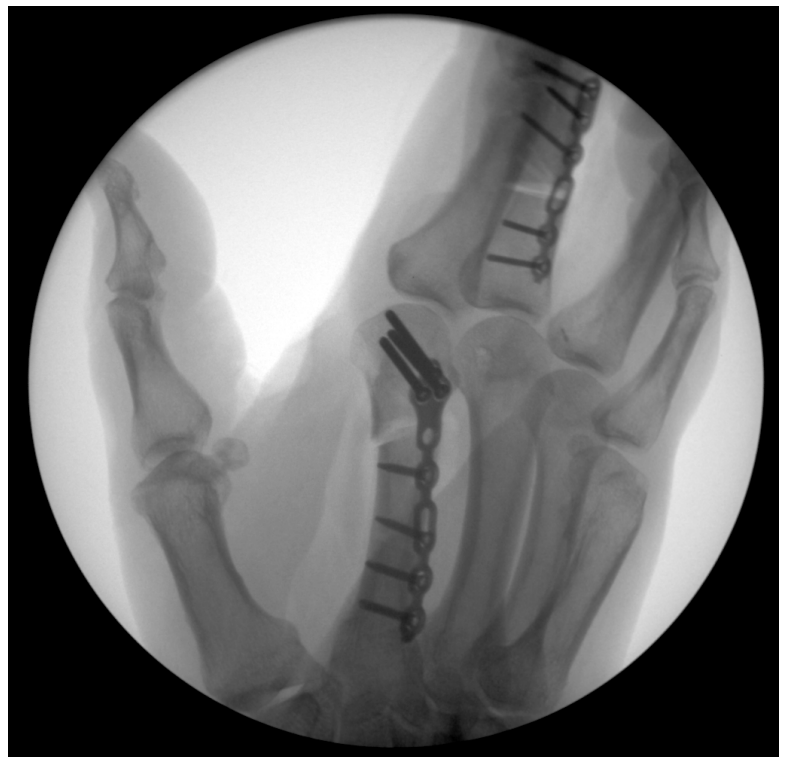
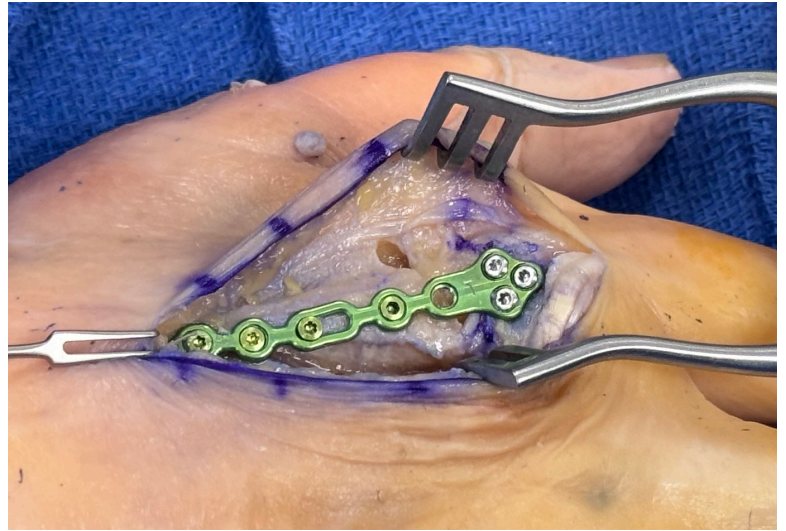


06 INSERT SCREWS

Drill through each screw hole and measure using the mini depth gauge. For a 2.0 plate and screw use a 1.6mm drill. For a 2.5 plate and screw use a 2.0mm drill.

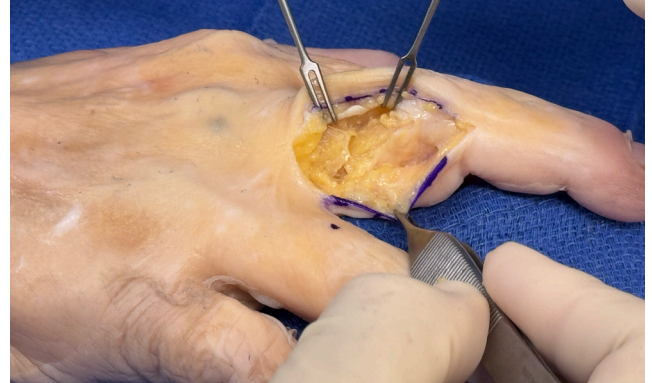
If measuring through the PDG subtract 6mm from your measurement. Use the T6 driver and insert a variable angle locking or non-locking screw. Confirm final reduction via fluoroscopy. Close the surgical site in the surgeon's preferred method.

Note: A lag screw can be used to lag any small fragments. Refer to the lag screw technique on page 19 for more details.



01 INITIAL EXPOSURE

With the hand in pronation, make an incision of the appropriate length centered along the long axis of the injured phalanx.



02 FRACTURE REDUCTION

Reduce the fracture using bone clamps or k-wires, as necessary. Use fluoroscopy to confirm proper reduction.



03 PLATE SELECTION AND PREPARATION

Select the desired 1.5 or 2.0 PROTEAN Hand Plate based upon the fracture pattern. There are various plates to address different phalanx fracture patterns.

Each plate can be adjusted to length and contoured using the provided bending tools. To cut the plate to length, place the bending instruments on either side of the internode corresponding to the appropriate length.

Bend the excess portion of the plate downward in a smooth, continuous motion to a 90° angle.

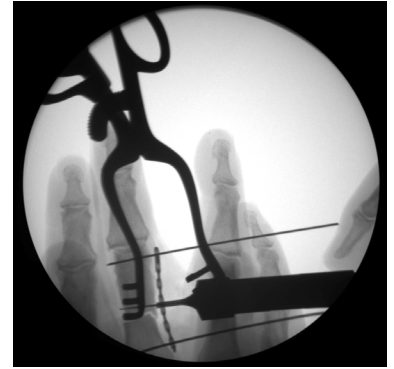
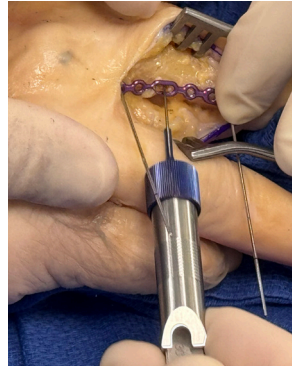
If the plate does not separate at 90°, return it to approximately 45° and then back to 90°, repeating as necessary until separation occurs.

Alternatively, the Hand Plating System Plate Cutting Pliers may be used to cut the plate at the internode.

04 PLATE FIXATION

Position the plate over the fractured phalanx, drilling through an oblong hole on the plate using the 1.2mm drill for a 1.5 plate or a 1.6mm drill for a 2.0 plate. Measure using the micro depth gauge and insert a non-locking screw.

Note: Use the provided 1.2mm k-wires to provisionally secure the plate.



05 PLATE CONTOURING

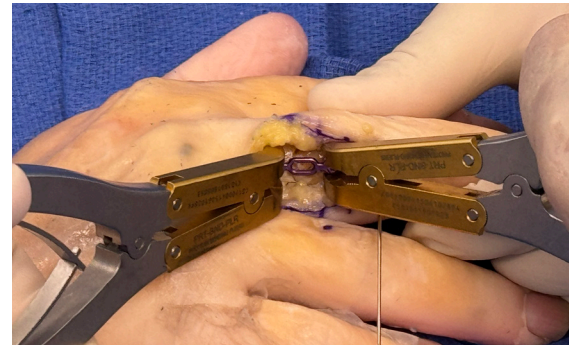
The plate can be contoured in situ using the PROTEAN pliers or thread-in bending irons.

Note: Each plate will have nodes that can be bent in three planes as follows:

Vertical plane: A minimum of 20° without fracture.

Horizontal plane: A minimum of 5° without fracture.

Axial plane: A minimum of 30° without fracture.



06 INSERT SCREWS

Drill through each screw hole and measure using the micro depth gauge. For a 1.5 plate and screw use a 1.2mm drill. For a 2.0 plate and screw use a 1.6mm drill. **If measuring through the PDG subtract 6mm from your measurement.**

For a 1.5 plate and screw use a T4 driver. For a 2.0 plate and screw use a T6 driver. Insert the appropriate variable angle locking or non-locking screw. Confirm final reduction via fluoroscopy. Close the surgical site in the surgeon's preferred method.

Note: A lag screw can be used to lag any small fragments. Refer to the lag screw technique for more details.

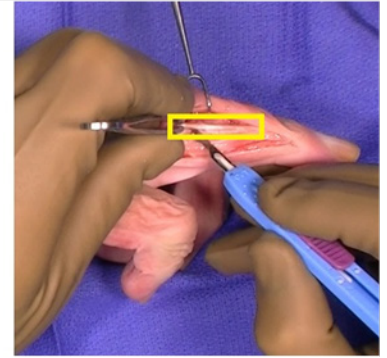
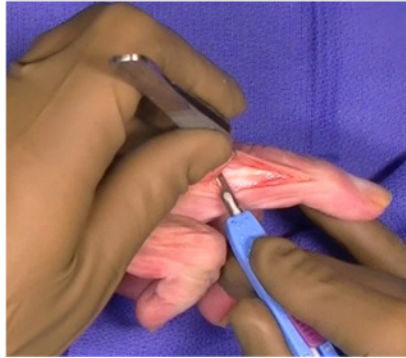


01 INITIAL EXPOSURE

Make an incision of appropriate length on the ulnar aspect along the mid-axis of the injured phalanx.

Expose the Proximal Interphalangeal (PIP) Joint and isolate the extensor tendon (highlighted in yellow box).

If necessary the plate can be placed on the radial aspect of the phalanx.



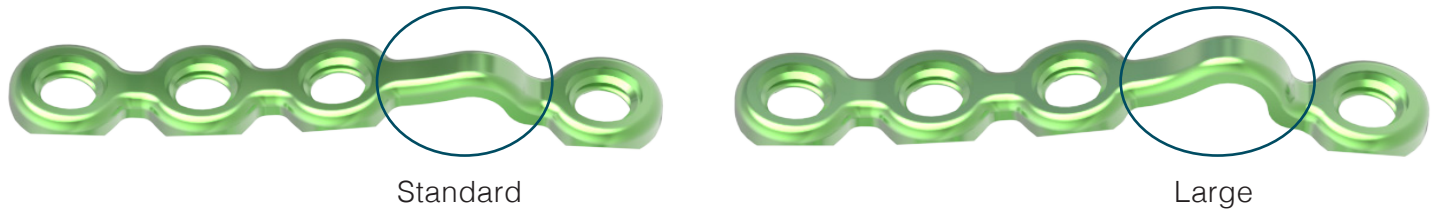
02 FRACTURE REDUCTION

After achieving the desired exposure, irrigate and debride the fracture site. Reduce the fracture and, if necessary, use the 0.9 K-wire provided to achieve provisional fixation. Use fluoroscopy to confirm proper reduction.



03 PLATE SELECTION AND PREPARATION

The Skeletal Dynamics PROTEAN Hand Plating System provides two PS plates to address different digit sizes. Select the desired large or standard PROTEAN Phalanx Stabilization plate based on the fracture pattern and digit size.



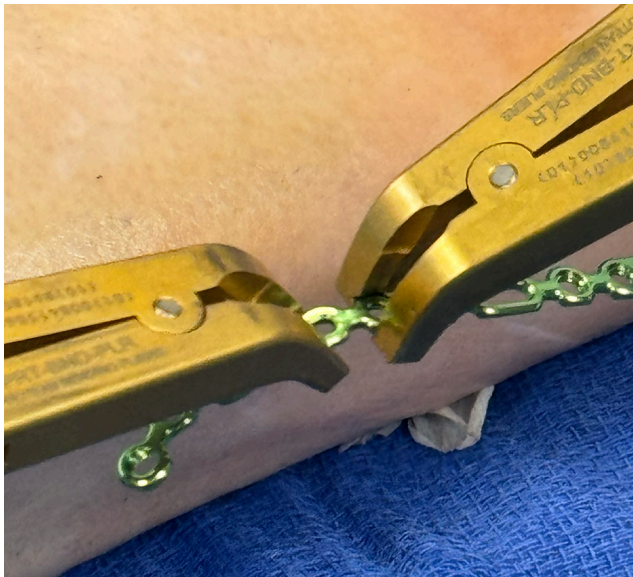
Each plate can be adjusted to length and contoured using the bending instruments provided in the set (i.e., PROTEAN Plate Bending Pliers, or 2.0mm. Thread-in Bending Rods).

To cut the plate to length, place the bending instruments on either side of the internode corresponding to the appropriate length.

Bend the excess portion of the plate downward in a smooth, continuous motion to a 90° angle.

If the plate does not separate at 90°, return it to approximately 45° and then back to 90°, repeating as necessary until separation occurs.

Alternatively, the Hand Plating System Plate Cutting Pliers may be used to cut the plate at the internode.

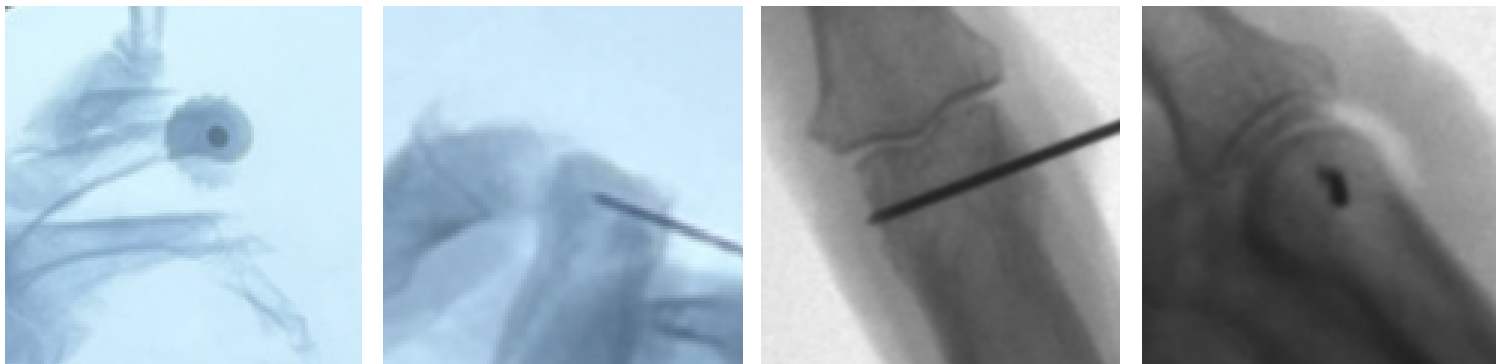


04 TARGET PIP AXIS OF ROTATION, DRILL AND MEASURE

Place a 0.9mm K-wire into the distal aspect of the proximal phalanx along the PIP axis of rotation. Confirm proper alignment fluoroscopically.

Drill bi-cortical over the 0.9mm K-wire with the cannulated 1.8 drill. Remove the drill and K-wire. Measure for a bi-cortical peg using depth gauge.

Note: In the lateral view the K-wire must be concentric to the articular surface of the proximal phalanx head. In the A/P view the K-wire must be perpendicular to the long axis of the proximal phalanx.



05 ASSEMBLE PS PLATE AND PEG

Select the appropriate-length 1.8 mm smooth peg and assemble it to the PS plate.

Note: Do not fully tighten the smooth peg until all screws are placed.



06 PEG INSERTION AND PLATE POSITIONING

Insert the peg of the assembled PS plate into the drilled hole in the proximal phalanx and align the distal screw holes along the shaft of the middle phalanx.

Note: Use the bending instruments if additional contouring is required.



07 SCREW PREPARATION AND PLACEMENT

Using the 1.6 mm drill, drill the most distal PDG, measure the required screw length, and remove the PDG. Insert the appropriate-length locking screw.

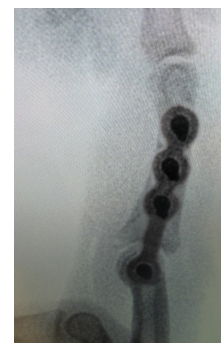
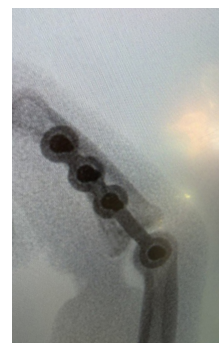
Note: Do not fully tighten any locking screw until all screws are provisionally placed. Repeat this step for the remaining screw holes. After all screws are inserted, fully tighten the screws and then fully tighten the peg.



08 CONFIRM FINAL REDUCTION

Confirm final reduction under fluoroscopy. If an appropriate reduction has been achieved, close the surgical site in the usual manner.

Note: A 1.2 mm lag screw may be used to secure any small fragments not captured by the final plate construct. Refer to the 1.2 mm lag screw technique for additional details.

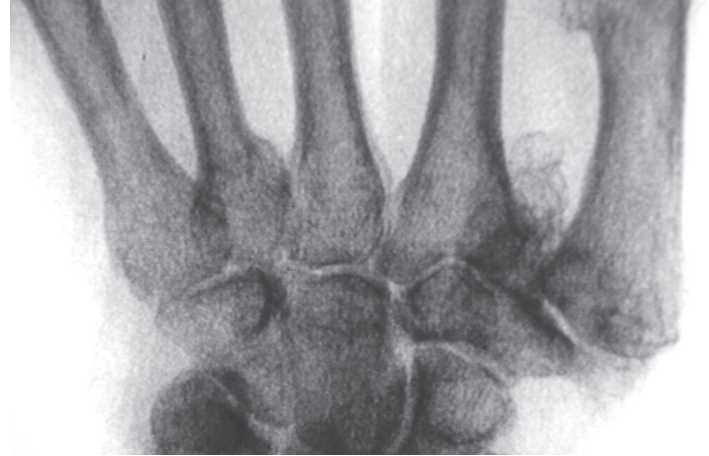


REMOVAL

To remove the Skeletal Dynamics PROTEAN Hand plates, expose the implant, clear any tissue overgrowth on the plate and screws, insert the corresponding screwdriver, and turn it counterclockwise to remove the screws. When all the screws are removed, separate the plate from the bone surface with an elevator and close the wound in the usual manner.

01 EXPOSURE

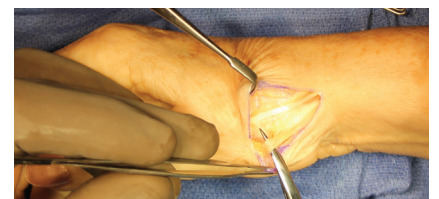
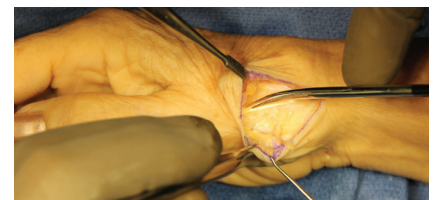
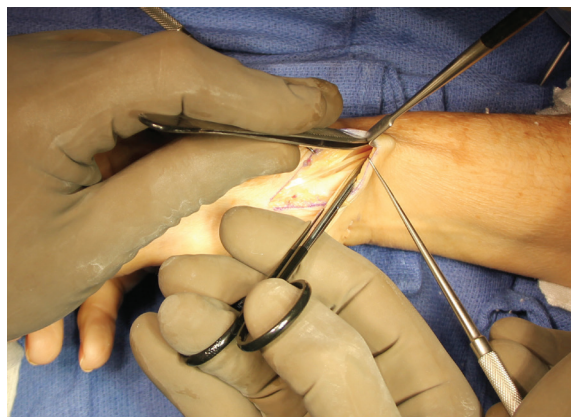
Make a 4cm incision centered over the carpometacarpal (CMC) joint along the course of the extensor pollicis brevis (EPB) tendon.



02 EPB TENDON RELEASE

Dissect to expose and release the EPB tendon proximal up to the 1st compartment and distal, then retract it ulnarly.

Be sure to protect the radial artery, as well as the lateral and dorsal branches of the radial nerve.



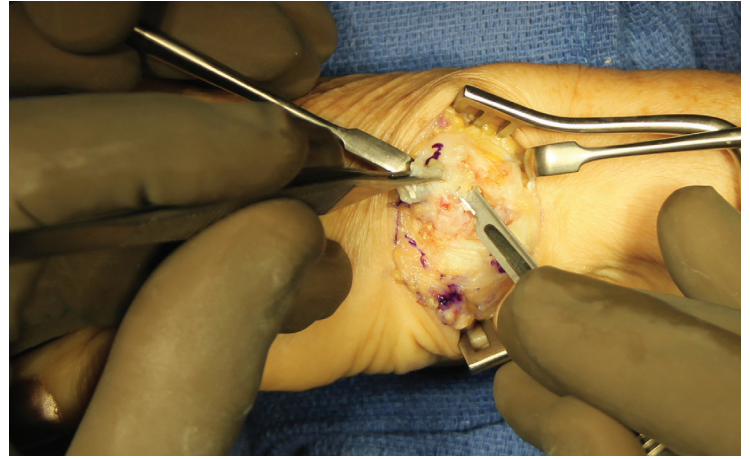
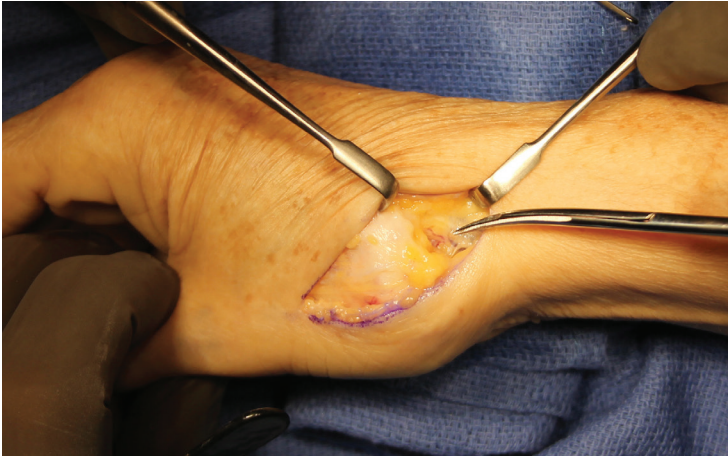
03 CAPSULOTOMY

The blood supply to the trapezium originates from a small branch of the radial artery that courses over the proximal aspect of the trapezium.

To avoid devascularization of the trapezium, limit the proximal release of the capsular flap just to expose the dorsal osteophytes.

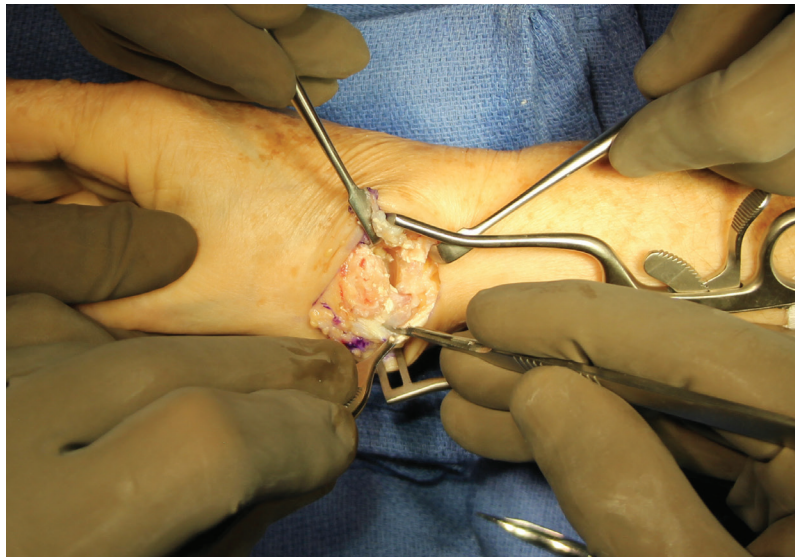
Now mark the flap and elevate it as a proximally based flap and releasing the dorsal ligaments.

Caution: Avoid a longitudinal capsulotomy, as it is more likely to devascularize the trapezium.



04 APL TENDON RELEASE

Partially release the proximal insertion of the abductor pollicis longus (APL) tendon to allow full access to the base of the metacarpal.



05 ACCESSING THE VOLAR CAPSULE

Expose the joint to remove excessive synovium. Resect osteophytes from the metacarpal and the dorsal aspect of the trapezium.



06 POSITION PARALLEL K-WIRES

Using the CMC Osteotomy K-Wire Placement Guide, place the hook portion of the guide into the joint space with the hook tip tangent to the base of the metacarpal.

The guide should be inline with the long axis of the metacarpal. Insert 2 x 1.6mm K-wires into guide and check placement under fluoroscopy. Remove guide when satisfied with parallel K-wire placement.

Note: Minimal effort should be required to remove the guide.



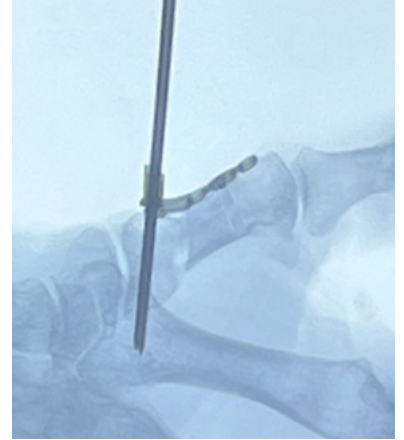
07 CONFIRM K-WIRE PLACEMENT WITH PLATE ALIGNMENT

Slide the plate over the K-wires to confirm proper positioning.

The proximal end should be centered at the base of the metacarpal and distal end should align with the long axis of the shaft.

Verify placement visually and with fluoroscopy.

Once satisfied with the positioning, remove the plate.

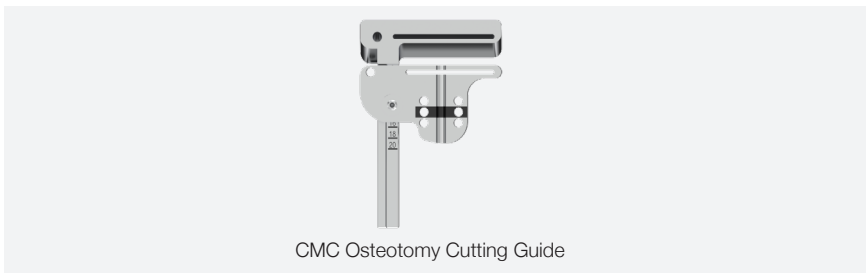


08 CUTTING GUIDE BODY PLACEMENT

Ensure guide arm screws are loose enough for adjustability. If loosening is required, use the T-6 driver.

Place cutting guide body over the K-wires and align the wires with the nominal holes which have a solid laser mark over them.

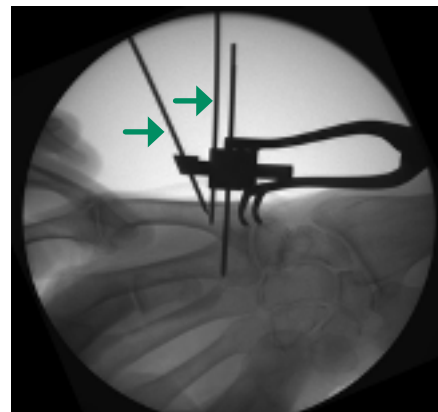
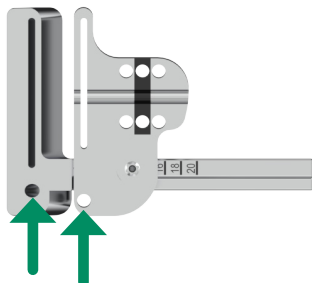
The cutting guide has sets of holes that are 2mm distal and 2mm proximal of the nominal holes if positioning needs to be adjusted.



09 INSERT DISTAL AND ARM REFERENCE K-WIRES

Insert reference K-wires through both holes adjacent to the cutting slots.

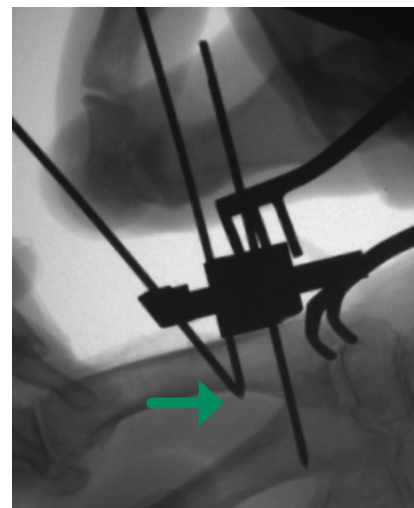
Note: These K-wires are for reference only and should not penetrate the metacarpal.



10 ADJUST GUIDE ARM FOR INTERSECTION AT PALMAR MC

Under fluoroscopy, using a true lateral view, adjust the guide arm until the two reference K-wires intersect at the palmar cortex of the metacarpal.

Note: To confirm a true lateral the parallel K-wires should align.



11 LOCK CUTTING GUIDE ARM IN FINAL POSITION

Once alignment is confirmed, lock the Cutting Guide arm using the T6 driver.

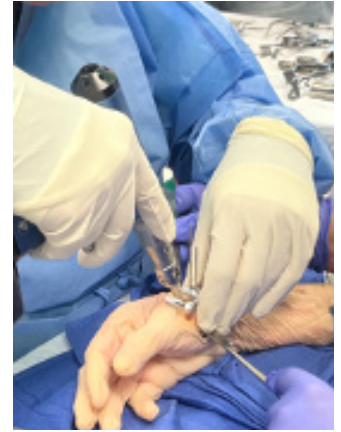
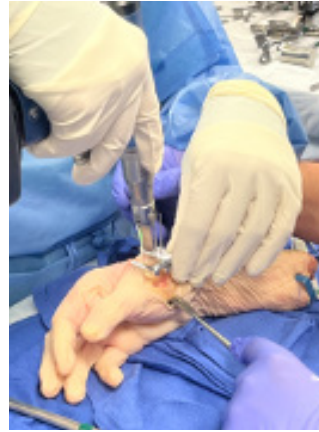
12 REMOVE REFERENCE K-WIRES & PERFORM OSTEOTOMY USING GUIDE SLOTS

Remove the reference K-wires. The initial parallel K-wires remain in place.

Note: Cut the parallel K-wires flush with the top of the guide to allow for better saw access.

Using the slots in the cutting guide—one in the body of the cutting guide, one in the arm of the cutting guide—perform the osteotomy.

Note: Do not remove the parallel K-wires.



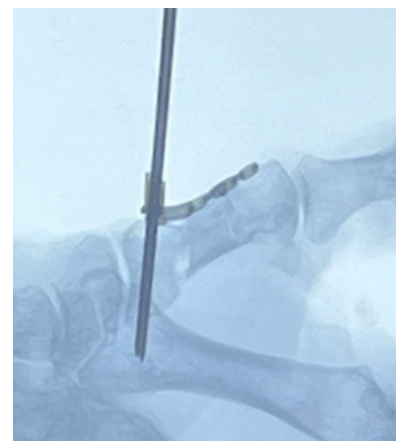
13 REMOVE GUIDE AND BONE WEDGE

Remove the guide and excise the resulting bone wedge.

Note: Ensure bone wedge is fully removed and mating surfaces are planar. Do not remove the parallel K-wires.

14 SLIDE PLATE ONTO PARALLEL K-WIRES AND REDUCE

Advance the plate along the parallel K-wires and reduce the osteotomy.



15 DRILL, MEASURE AND INSERT SCREWS

Drill the distal slot, measure with depth gauge and place appropriate length non locking screw.

Drill the most proximal shaft screw hole, measure with the depth gauge, remove PDG and place appropriate length locking or non locking screw.

Remove the parallel K-wire and PDG from either of the proximal screw holes, measure and place the appropriate length locking screw.

Repeat this step for the other most proximal screw hole.

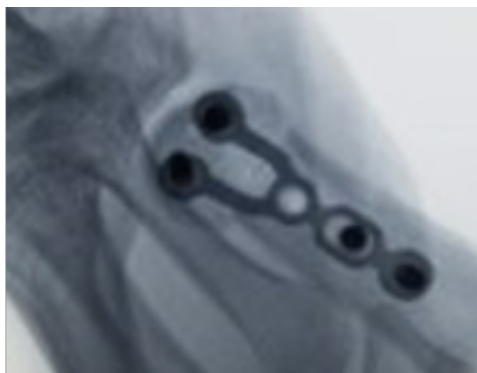
Drill the most distal shaft screw hole, measure, remove PDG and place appropriate length non locking or locking screw.



16 FINAL CONFIRMATION AND WOUND CLOSURE

Confirm proper reduction, screw length and placement using fluoroscopy.

Close the incisions in your normal fashion.



01 REDUCE FRAGMENT

Identify the uncaptured fragment using fluoroscopy. Reduce the fragment under fluoroscopic guidance by placing a 0.9mm k-wire through the fragment and far cortex. Maintain reduction using forceps and remove the 0.9mm k-wire.

02 OVERDRILL NEAR CORTEX

Drill the near cortex using the 1.2mm drill along the same line created by the 0.9mm K-wire.

Note: Drilling under fluoroscopy can be helpful during this step.

03 (OPTIONAL) COUNTERSINK NEAR CORTEX

If it is desired for the screw head to sit below the level of the bone surface, countersink the near cortex surface using the provided countersink in the 1.5mm module.

04 PLACE 1.2MM SCREW

Measure the appropriate screw length using the micro depth gauge. Insert the 1.2mm non-locking screw, using the T4 driver, to capture and reduce the fragment.

05 CONFIRM FRAGMENT REDUCTION

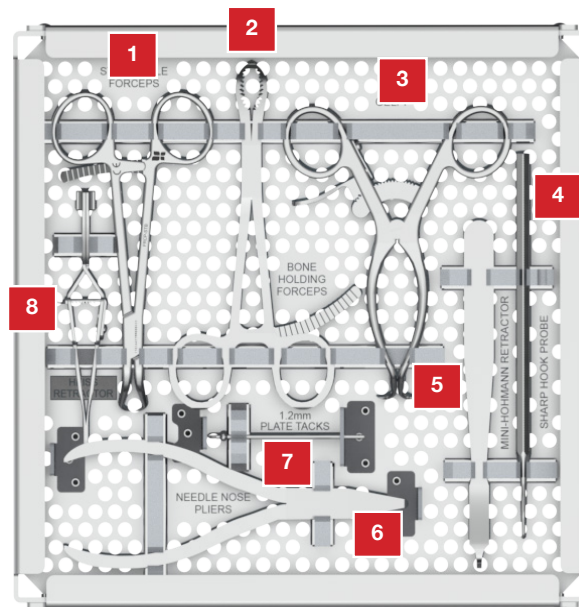
Confirm final reduction of the fragment using fluoroscopy. If fragments require further reduction additional 1.2mm screws can be used.

	1.2mm lag screw	1.5mm lag screw	2.0mm lag screw	2.5mm lag screw
Initial drill (far cortex)	0.9 k-wire	1.2mm drill	1.6mm drill	2.0mm drill
Lag drill (near cortex)	1.2mm drill	1.6mm drill	2.0mm drill	2.7mm drill
Countersink	Hand Plate Countersink DRLL-CSK-HP			

SYSTEM TRAY & MODULES



INSTRUMENT MODULE



Loc #	Catalog #	Description
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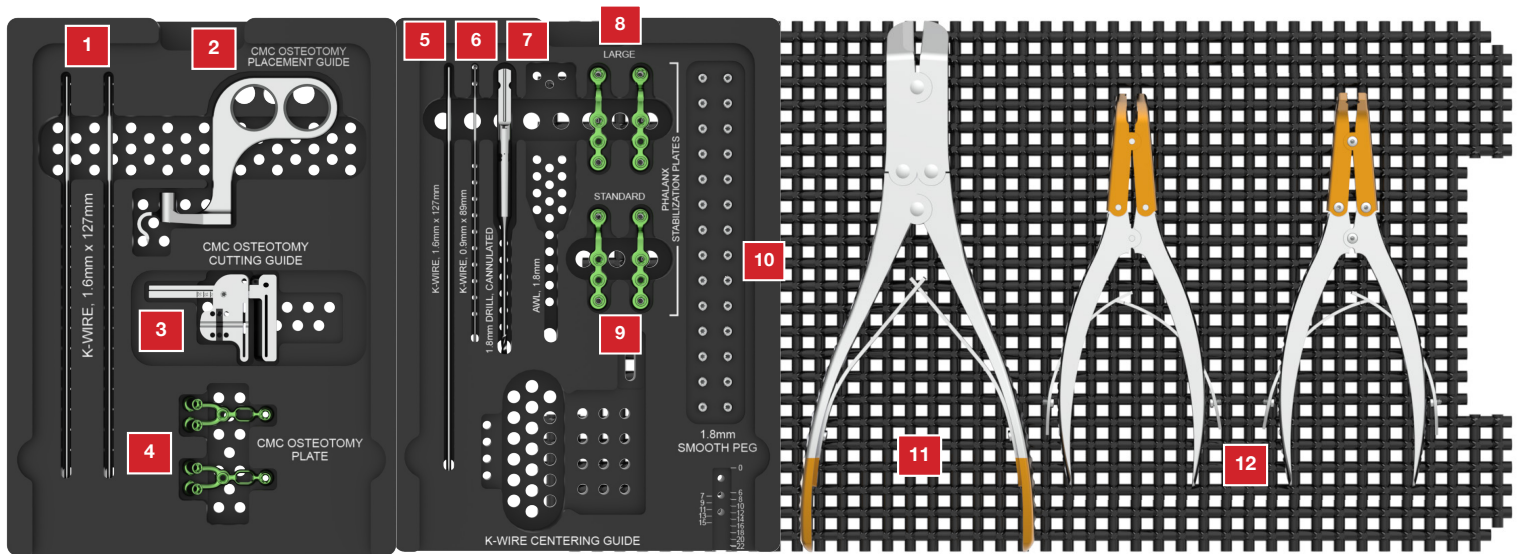
1	FRCP-STB	Stag Beetle Forceps
2	FRCP-BHS-RTC2	Forceps, Bone Holding Small, Ratcheting 2
3	FRCP-GR-SM	Gelpi Retractor, Small
4	INST-SHP-STD	Instrument, Sharp Hook Probe, Standard
5	INST-MHR-SM	Instrument, Mini-Hohmann Retractor, Small
6	INST-NNP	Needle Nose Pliers
7	KWIR-OLV-12064	K-wire, Threaded Tip with Olive Stop 1.2mm x 64mm
8	INST-HR-SM	Heiss Retractor, Small
9	PRT-TOG-15	Thread in Drill Guide, 1.5
10	PRT-TOG-20	Thread in Drill Guide, 2.0
11	PRT-TOG-25	Thread in Drill Guide, 2.5

CMC, PS & CUTTING/BENDING MODULES

PROTEAN Fragment Hand Plating CMC Module

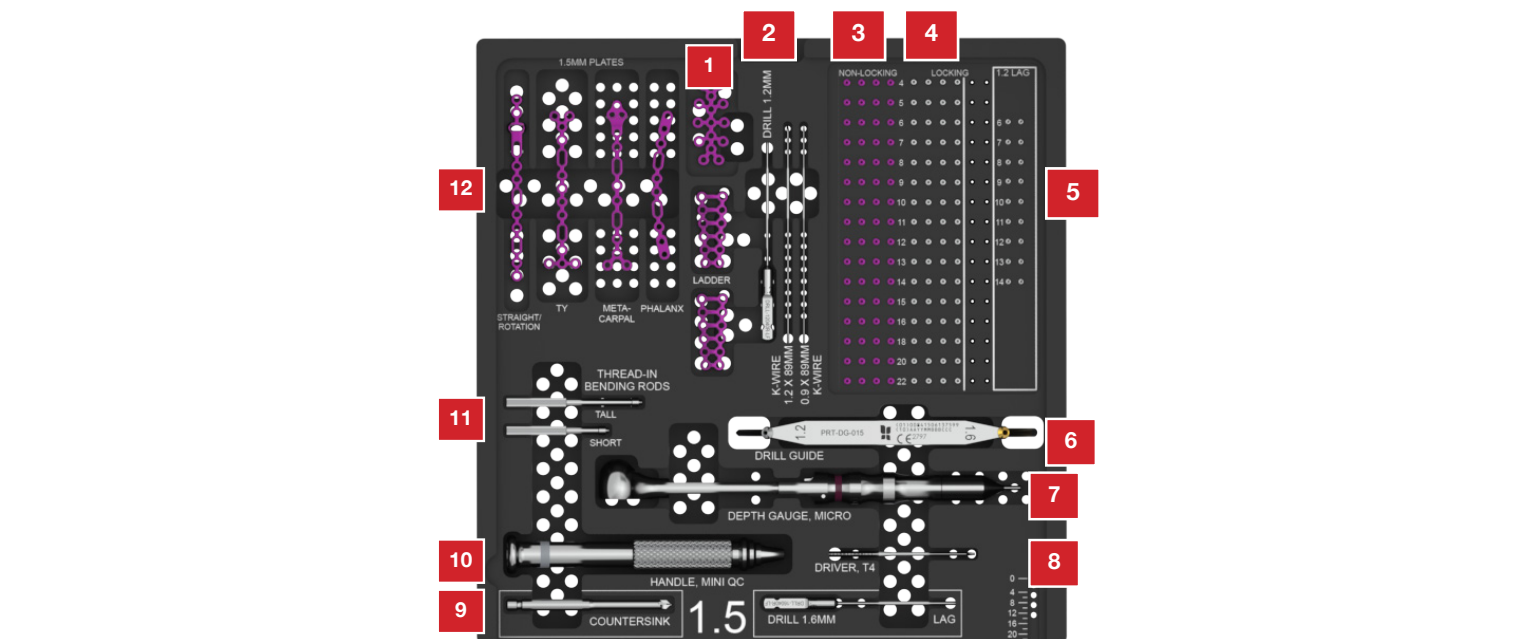
PROTEAN Fragment Hand Plating PS Module

Cutting & Bending Instruments



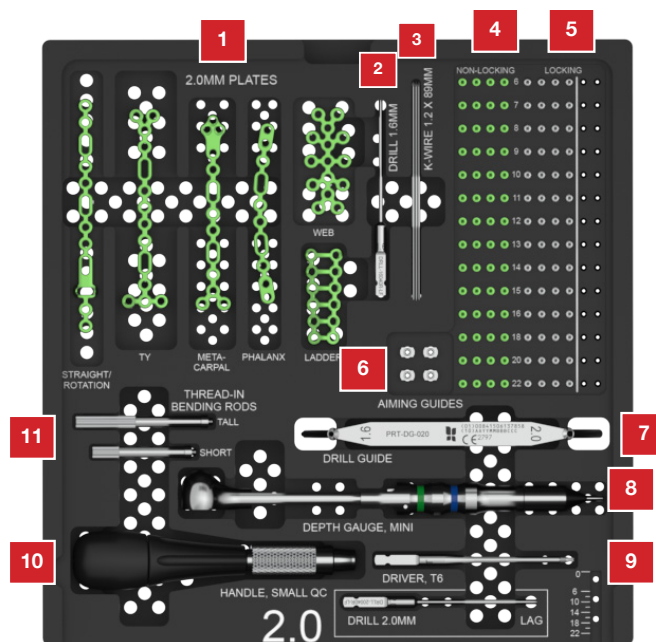
Loc#	Catalog #	Description
	PRT-HP-MODCMC	PROTEAN Fragment Hand Plating CMC Module
1	KWIR-STD-15127	K-Wire, 1.6mm x 127mm
2	PRT-KWGD-CMC	CMC Osteotomy K-Wire Placement Guide
3	PRT-CTG-CMC	CMC Osteotomy Cutting Guide
4	PRT-MFP-CMC	PROTEAN Fragment Plate, CMC
	PRT-HP-MODPS	PROTEAN Fragment Hand Plating PS Module
5	KWIR-STD-15127	K-Wire, 1.6mm x 127mm
6	KWCC-SD-09089	K-Wire, Single Diamond, 0.9mm x 89mm, CoCr
7	DRLL-PS-18	Drill, 1.8mm, Cannulated, Phalanx Stabilization
8	PRT-PSO-020	PROTEAN Fragment Plate, PS, Large, 2.0
9	PRT-PS-020	PROTEAN Fragment Plate, PS, 2.0
10	SPLS-18060-CC	Smooth Peg, Variable Angle Locking, 1.8mm x 6mm, CoCr
	SPLS-18070-CC	Smooth Peg, Variable Angle Locking, 1.8mm x 7mm, CoCr
	SPLS-18080-CC	Smooth Peg, Variable Angle Locking, 1.8mm x 8mm, CoCr
	SPLS-18090-CC	Smooth Peg, Variable Angle Locking, 1.8mm x 9mm, CoCr
	SPLS-18100-CC	Smooth Peg, Variable Angle Locking, 1.8mm x 10mm, CoCr
	SPLS-18110-CC	Smooth Peg, Variable Angle Locking, 1.8mm x 11mm, CoCr
	SPLS-18120-CC	Smooth Peg, Variable Angle Locking, 1.8mm x 12mm, CoCr
	SPLS-18130-CC	Smooth Peg, Variable Angle Locking, 1.8mm x 13mm, CoCr
	SPLS-18140-CC	Smooth Peg, Variable Angle Locking, 1.8mm x 14mm, CoCr
	SPLS-18150-CC	Smooth Peg, Variable Angle Locking, 1.8mm x 15mm, CoCr
	SPLS-18160-CC	Smooth Peg, Variable Angle Locking, 1.8mm x 16mm, CoCr
	SPLS-18180-CC	Smooth Peg, Variable Angle Locking, 1.8mm x 18mm, CoCr
	SPLS-18200-CC	Smooth Peg, Variable Angle Locking, 1.8mm x 20mm, CoCr
	SPLS-18220-CC	Smooth Peg, Variable Angle Locking, 1.8mm x 22mm, CoCr
11	CTP-PI-2233	Cutting Pliers
12	PRT-BND-PLR	PROTEAN Plate Bending Pliers

1.5 MODULE



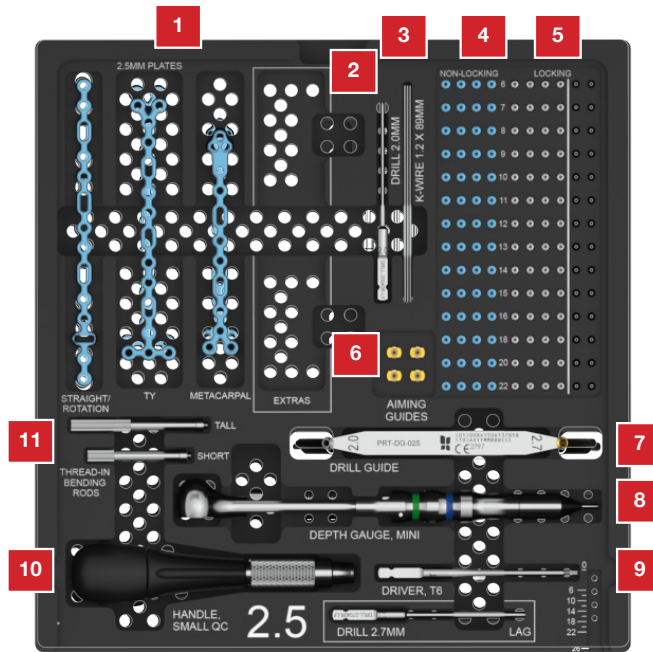
Loc #	Catalog #	Description	Loc #	Catalog #	Description
1	DRLL-12040R-LF	Drill, 1.2mm x 40mm, Long Flute		VAN-12008-CC	Screw, Non-Locking, 1.2mm x 8mm, CoCr
2	KWCC-SD-09089	K-Wire, Single Diamond, 0.9mm x 89mm, CoCr		VAN-12009-CC	Screw, Non-Locking, 1.2mm x 9mm, CoCr
	KWCC-SD-12089	K-Wire, Single Diamond, 1.2mm x 89mm, CoCr		VAN-12010-CC	Screw, Non-Locking, 1.2mm x 10mm, CoCr
3	VAL-15050-CC	Screw, Variable Angle Locking, 1.5mm x 5mm, CoCr		VAN-12011-CC	Screw, Non-Locking, 1.2mm x 11mm, CoCr
	VAL-15060-CC	Screw, Variable Angle Locking, 1.5mm x 6mm, CoCr		VAN-12012-CC	Screw, Non-Locking, 1.2mm x 12mm, CoCr
	VAL-15070-CC	Screw, Variable Angle Locking, 1.5mm x 7mm, CoCr		VAN-12013-CC	Screw, Non-Locking, 1.2mm x 13mm, CoCr
	VAL-15080-CC	Screw, Variable Angle Locking, 1.5mm x 8mm, CoCr		VAN-12014-CC	Screw, Non-Locking, 1.2mm x 14mm, CoCr
	VAL-15090-CC	Screw, Variable Angle Locking, 1.5mm x 9mm, CoCr	6	PRT-DG-015	Drill Guide, 1.5mm
	VAL-15100-CC	Screw, Variable Angle Locking, 1.5mm x 10mm, CoCr			
	VAL-15110-CC	Screw, Variable Angle Locking, 1.5mm x 11mm, CoCr	7	DPGA-PRT-01	Depth Gauge, PROTEAN, Micro
	VAL-15120-CC	Screw, Variable Angle Locking, 1.5mm x 12mm, CoCr			
	VAL-15130-CC	Screw, Variable Angle Locking, 1.5mm x 13mm, CoCr	8	DRVR-MQC-T4	Driver, T4
	VAL-15140-CC	Screw, Variable Angle Locking, 1.5mm x 14mm, CoCr			
	VAL-15150-CC	Screw, Variable Angle Locking, 1.5mm x 15mm, CoCr	9	DRLL-CSK-HP	Countersink, Hand Plates
	VAL-15160-CC	Screw, Variable Angle Locking, 1.5mm x 16mm, CoCr			
	VAL-15180-CC	Screw, Variable Angle Locking, 1.5mm x 18mm, CoCr	10	HNDL-MQC-FXD	Handle, Mini QC, Fixed
	VAL-15200-CC	Screw, Variable Angle Locking, 1.5mm x 20mm, CoCr			
	VAL-15220-CC	Screw, Variable Angle Locking, 1.5mm x 22mm, CoCr	11	PRT-BRS-015	Thread In Bending Rod, 1.5mm, Short
				PRT-BRT-015	Thread In Bending Rod, 1.5mm, Tall
4	VAN-15050-TS	Screw, Non-Locking, 1.5mm x 5mm, Ti			
	VAN-15060-TS	Screw, Non-Locking, 1.5mm x 6mm, Ti	12	PRT-TY-015	PROTEAN Fragment Plate, TY, 1.5
	VAN-15070-TS	Screw, Non-Locking, 1.5mm x 7mm, Ti		PRT-PHX-015	PROTEAN Fragment Plate, Phalanx, 1.5
	VAN-15080-TS	Screw, Non-Locking, 1.5mm x 8mm, Ti		PRT-STR-015	PROTEAN Fragment Plate, Straight/Rotation, 1.5
	VAN-15090-TS	Screw, Non-Locking, 1.5mm x 9mm, Ti		PRT-LDR-015	PROTEAN Fragment Plate, Ladder, 1.5
	VAN-15100-TS	Screw, Non-Locking, 1.5mm x 10mm, Ti		PRT-WEB-015	PROTEAN Fragment Plate, Web, 1.5
	VAN-15110-TS	Screw, Non-Locking, 1.5mm x 11mm, Ti		PRT-MC-015	PROTEAN Fragment Plate, Metacarpal, 1.5
	VAN-15120-TS	Screw, Non-Locking, 1.5mm x 12mm, Ti			
	VAN-15130-TS	Screw, Non-Locking, 1.5mm x 13mm, Ti			
	VAN-15140-TS	Screw, Non-Locking, 1.5mm x 14mm, Ti			
	VAN-15150-TS	Screw, Non-Locking, 1.5mm x 15mm, Ti			
	VAN-15160-TS	Screw, Non-Locking, 1.5mm x 16mm, Ti			
	VAN-15180-TS	Screw, Non-Locking, 1.5mm x 18mm, Ti			
	VAN-15200-TS	Screw, Non-Locking, 1.5mm x 20mm, Ti			
	VAN-15220-TS	Screw, Non-Locking, 1.5mm x 22mm, Ti			
5	VAN-12006-CC	Screw, Non-Locking, 1.2mm x 6mm, CoCr			
	VAN-12007-CC	Screw, Non-Locking, 1.2mm x 7mm, CoCr			

2.0 MODULE



Loc #	Catalog #	Description	Loc #	Catalog #	Description
1	PRT-TY-020	PROTEAN Fragment Plate, TY, 2.0	5	VAN-20060-TS	Screw, Non-Locking, 2.0mm x 6mm, Ti
	PRT-MC-020	PROTEAN Fragment Plate, Metacarpal, 2.0		VAN-20070-TS	Screw, Non-Locking, 2.0mm x 7mm, Ti
	PRT-PHX-020	PROTEAN Fragment Plate, Phalanx, 2.0		VAN-20080-TS	Screw, Non-Locking, 2.0mm x 8mm, Ti
	PRT-STR-020	PROTEAN Fragment Plate, Straight/Rotation, 2.0		VAN-20090-TS	Screw, Non-Locking, 2.0mm x 9mm, Ti
	PRT-LDR-020	PROTEAN Fragment Plate, Ladder, 2.0		VAN-20100-TS	Screw, Non-Locking, 2.0mm x 10mm, Ti
	PRT-WEB-020	PROTEAN Fragment Plate, Web, 2.0		VAN-20110-TS	Screw, Non-Locking, 2.0mm x 11mm, Ti
2	DRLL-16040R-LF	Drill, 1.6mm x 40mm, Long Flute		VAN-20120-TS	Screw, Non-Locking, 2.0mm x 12mm, Ti
3	KWCC-SD-12089	K-Wire, Single Diamond, 1.2mm x 89mm, CoCr		VAN-20130-TS	Screw, Non-Locking, 2.0mm x 13mm, Ti
4	VAL-20060-CC	Screw, Variable Angle Locking, 2.0mm x 6mm, CoCr		VAN-20140-TS	Screw, Non-Locking, 2.0mm x 14mm, Ti
	VAL-20070-CC	Screw, Variable Angle Locking, 2.0mm x 7mm, CoCr		VAN-20150-TS	Screw, Non-Locking, 2.0mm x 15mm, Ti
	VAL-20080-CC	Screw, Variable Angle Locking, 2.0mm x 8mm, CoCr		VAN-20160-TS	Screw, Non-Locking, 2.0mm x 16mm, Ti
	VAL-20090-CC	Screw, Variable Angle Locking, 2.0mm x 9mm, CoCr		VAN-20180-TS	Screw, Non-Locking, 2.0mm x 18mm, Ti
	VAL-20100-CC	Screw, Variable Angle Locking, 2.0mm x 10mm, CoCr		VAN-20200-TS	Screw, Non-Locking, 2.0mm x 20mm, Ti
	VAL-20110-CC	Screw, Variable Angle Locking, 2.0mm x 11mm, CoCr		VAN-20220-TS	Screw, Non-Locking, 2.0mm x 22mm, Ti
	VAL-20120-CC	Screw, Variable Angle Locking, 2.0mm x 12mm, CoCr	6	PRT-AIM-20	PROTEAN AIMing Guide, 2.0
	VAL-20130-CC	Screw, Variable Angle Locking, 2.0mm x 13mm, CoCr	7	PRT-DG-020	Drill Guide, 2.0mm
	VAL-20140-CC	Screw, Variable Angle Locking, 2.0mm x 14mm, CoCr	8	DPGA-PRT-02	Depth Gauge, PROTEAN, Mini
	VAL-20150-CC	Screw, Variable Angle Locking, 2.0mm x 15mm, CoCr	9	DRVR-UQC-T6	Driver, T6
	VAL-20160-CC	Screw, Variable Angle Locking, 2.0mm x 16mm, CoCr	10	HNDL-SQC-FXD	Handle, Small QC, Fixed
	VAL-20180-CC	Screw, Variable Angle Locking, 2.0mm x 18mm, CoCr	11	PRT-BRS-2025	Thread In Bending Rod, 2.0/2.5mm, Short
	VAL-20200-CC	Screw, Variable Angle Locking, 2.0mm x 20mm, CoCr		PRT-BRT-2025	Thread In Bending Rod, 2.0/2.5mm, Tall
	VAL-20220-CC	Screw, Variable Angle Locking, 2.0mm x 22mm, CoCr			

2.5 MODULE



Loc #	Catalog #	Description	Loc #	Catalog #	Description
1	PRT-TY-025 PRT-MC-025 PRT-STR-025	PROTEAN Fragment Plate, TY, 2.5 PROTEAN Fragment Plate, Metacarpal, 2.5 PROTEAN Fragment Plate, Straight/Rotation, 2.5			
2	DRLL-20040R-LF DRLL-27040R-LF	Drill, 2.0mm x 40mm, Long Flute Drill, 2.7mm x 40mm, Long Flute			
3	KWCC-SD-12089	K-Wire, Single Diamond, 1.2mm x 89mm, CoCr			
4	VAL-25060-CC VAL-25070-CC VAL-25080-CC VAL-25090-CC VAL-25100-CC VAL-25110-CC VAL-25120-CC VAL-25130-CC VAL-25140-CC VAL-25150-CC VAL-25160-CC VAL-25180-CC VAL-25200-CC VAL-25220-CC	Screw, Variable Angle Locking, 2.5mm x 6mm, CoCr Screw, Variable Angle Locking, 2.5mm x 7mm, CoCr Screw, Variable Angle Locking, 2.5mm x 8mm, CoCr Screw, Variable Angle Locking, 2.5mm x 9mm, CoCr Screw, Variable Angle Locking, 2.5mm x 10mm, CoCr Screw, Variable Angle Locking, 2.5mm x 11mm, CoCr Screw, Variable Angle Locking, 2.5mm x 12mm, CoCr Screw, Variable Angle Locking, 2.5mm x 13mm, CoCr Screw, Variable Angle Locking, 2.5mm x 14mm, CoCr Screw, Variable Angle Locking, 2.5mm x 15mm, CoCr Screw, Variable Angle Locking, 2.5mm x 16mm, CoCr Screw, Variable Angle Locking, 2.5mm x 18mm, CoCr Screw, Variable Angle Locking, 2.5mm x 20mm, CoCr Screw, Variable Angle Locking, 2.5mm x 22mm, CoCr			
5	VAN-25060-TS VAN-25070-TS VAN-25080-TS VAN-25090-TS VAN-25100-TS VAN-25110-TS VAN-25120-TS VAN-25130-TS VAN-25140-TS	Screw, Non-Locking, 2.5mm x 6mm, Ti Screw, Non-Locking, 2.5mm x 7mm, Ti Screw, Non-Locking, 2.5mm x 8mm, Ti Screw, Non-Locking, 2.5mm x 9mm, Ti Screw, Non-Locking, 2.5mm x 10mm, Ti Screw, Non-Locking, 2.5mm x 11mm, Ti Screw, Non-Locking, 2.5mm x 12mm, Ti Screw, Non-Locking, 2.5mm x 13mm, Ti Screw, Non-Locking, 2.5mm x 14mm, Ti			
				VAN-25150-TS VAN-25160-TS VAN-25180-TS VAN-25200-TS VAN-25220-TS	Screw, Non-Locking, 2.5mm x 15mm, Ti Screw, Non-Locking, 2.5mm x 16mm, Ti Screw, Non-Locking, 2.5mm x 18mm, Ti Screw, Non-Locking, 2.5mm x 20mm, Ti Screw, Non-Locking, 2.5mm x 22mm, Ti
			6	PRT-AIM-25	PROTEAN AIMing Guide, 2.5mm
			7	PRT-DG-025	Drill Guide, 2.5
			8	DPGA-PRT-02	Depth Gauge, PROTEAN, Mini
			9	DRVR-UQC-T6	Driver, T6
			10	HNDL-SQC-FXD	Handle, Small QC, Fixed
			11	PRT-BRS-2025 PRT-BRT-2025	Thread In Bending Rod, 2.0/2.5mm, Short Thread In Bending Rod, 2.0/2.5mm, Tall

Catalog #	Description	Catalog #	Description
PRT-TDG-15	Thread in Drill Guide, 1.5	FAL-20110-TS	Screw, Locking, 2.0mm x 11mm, Ti
PRT-TDG-20	Thread in Drill Guide, 2.0	FAL-20120-TS	Screw, Locking, 2.0mm x 12mm, Ti
PRT-TDG-25	Thread in Drill Guide, 2.5	FAL-20130-TS	Screw, Locking, 2.0mm x 13mm, Ti
FAL-15050-TS	Screw, Locking, 1.5mm x 5mm, Ti	FAL-20140-TS	Screw, Locking, 2.0mm x 14mm, Ti
FAL-15060-TS	Screw, Locking, 1.5mm x 6mm, Ti	FAL-20150-TS	Screw, Locking, 2.0mm x 15mm, Ti
FAL-15070-TS	Screw, Locking, 1.5mm x 7mm, Ti	FAL-20160-TS	Screw, Locking, 2.0mm x 16mm, Ti
FAL-15080-TS	Screw, Locking, 1.5mm x 8mm, Ti	FAL-20180-TS	Screw, Locking, 2.0mm x 18mm, Ti
FAL-15090-TS	Screw, Locking, 1.5mm x 9mm, Ti	FAL-20200-TS	Screw, Locking, 2.0mm x 20mm, Ti
FAL-15100-TS	Screw, Locking, 1.5mm x 10mm, Ti	FAL-20220-TS	Screw, Locking, 2.0mm x 22mm, Ti
FAL-15110-TS	Screw, Locking, 1.5mm x 11mm, Ti	FAL-25070-TS	Screw, Locking, 2.5mm x 7mm, Ti
FAL-15120-TS	Screw, Locking, 1.5mm x 12mm, Ti	FAL-25080-TS	Screw, Locking, 2.5mm x 8mm, Ti
FAL-15130-TS	Screw, Locking, 1.5mm x 13mm, Ti	FAL-25090-TS	Screw, Locking, 2.5mm x 9mm, Ti
FAL-15140-TS	Screw, Locking, 1.5mm x 14mm, Ti	FAL-25100-TS	Screw, Locking, 2.5mm x 10mm, Ti
FAL-15150-TS	Screw, Locking, 1.5mm x 15mm, Ti	FAL-25110-TS	Screw, Locking, 2.5mm x 11mm, Ti
FAL-15160-TS	Screw, Locking, 1.5mm x 16mm, Ti	FAL-25120-TS	Screw, Locking, 2.5mm x 12mm, Ti
FAL-15180-TS	Screw, Locking, 1.5mm x 18mm, Ti	FAL-25130-TS	Screw, Locking, 2.5mm x 13mm, Ti
FAL-15200-TS	Screw, Locking, 1.5mm x 20mm, Ti	FAL-25140-TS	Screw, Locking, 2.5mm x 14mm, Ti
FAL-15220-TS	Screw, Locking, 1.5mm x 22mm, Ti	FAL-25150-TS	Screw, Locking, 2.5mm x 15mm, Ti
FAL-20060-TS	Screw, Locking, 2.0mm x 6mm, Ti	FAL-25160-TS	Screw, Locking, 2.5mm x 16mm, Ti
FAL-20070-TS	Screw, Locking, 2.0mm x 7mm, Ti	FAL-25180-TS	Screw, Locking, 2.5mm x 18mm, Ti
FAL-20080-TS	Screw, Locking, 2.0mm x 8mm, Ti	FAL-25200-TS	Screw, Locking, 2.5mm x 20mm, Ti
FAL-20090-TS	Screw, Locking, 2.0mm x 9mm, Ti	FAL-25220-TS	Screw, Locking, 2.5mm x 22mm, Ti
FAL-20100-TS	Screw, Locking, 2.0mm x 10mm, Ti		



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