RAYHACK® Ulnar Shortening Generation II Low-Profile Locking System Caveats

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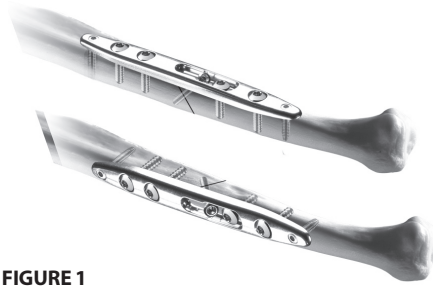


FIGURE 1

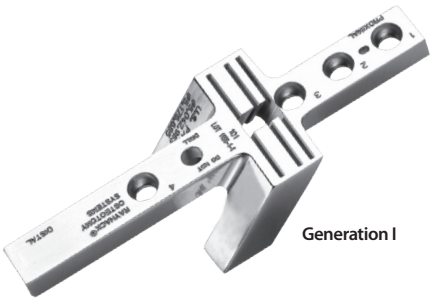


FIGURE 2A

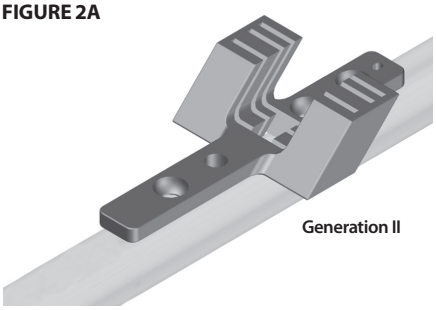
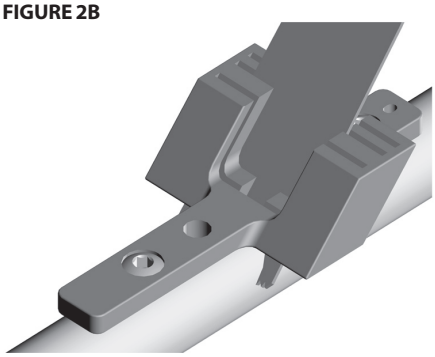


FIGURE 2B



Slots	Ulnar Shortening
1-2	3.5mm
2-3	4.9mm
1-3	7.4mm

FIGURE 3

- The low-profile plate design is intended to decrease the incidence of plate removal and to provide additional surgical approach options. | **FIGURE 1** The new universal upright ulnar saw guide is placed directly on the surface of the ulna, thus minimizing disruption of the interosseous membrane and soft tissues surrounding the ulna on the volar approach.

- **Options Available**
  In addition to the new low-profile plate, the surgeon has the option of using the Generation I non-locking plate.

- **Plate Placement**
  The plate may be placed on the ulnar subcutaneous surface (technically easier) or the volar ulnar surface.

- In the volar ulnar and subcutaneous placement, the ulnar nerve and artery and soft tissues must be carefully protected against potential injury.

- **Titanium Plate**
  The Generation I non-locking plate is available in stainless steel or titanium.

- **Saw Guide**
  The Generation I saw guide is used for ulnar subcutaneous approach only. | **FIGURE 2A**
  The Universal saw guide is used for all approaches. | **FIGURE 2B**

- The **universal ulnar saw guide** has only two holes proximally (#2 and #3) and one hole distally (#4). This will provide adequate fixation on the ulna to ensure two parallel osteotomy cuts. Place the plate on the ulna and mark the second plate hole on the bone surface. Line up hole #2 of the saw guide with this hole.

- The **universal saw guide** functions just like the Kienbock saw guide, in which the saw blade will not be encased in the saw guide slots once the bone is reached by the saw blade. Always make the distal osteotomy cut first followed by the proximal osteotomy cut. Always cool the bone surface during cutting to minimize thermal necrosis. When using the RAYHACK® Generation I saw guide on the ulnar subcutaneous border with the Generation II low-profile locking plate, do not drill hole #1 in the saw guide. This is the future site of the 2.7mm self-tapping locking screw.

- Spacing between the slots is identical in both Generation I and II saw guides. | **FIGURE 3**

WRIGHT.

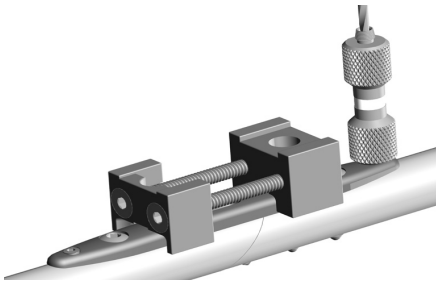


FIGURE 4

- **Osteotomies ranging from 3.5 to 18.1mm** may be performed as in the Generation I ulnar shortening procedure. See the surgical technique for details. All soft tissues must be carefully protected. Malleable "Davis" brain retractors may be placed around the ulna at the site of the osteotomy for added protection.

- Some contouring of the plate to the original volar-ulnar contour must be performed distally with the use of the plate benders.

- If the plate is placed on the ulnar subcutaneous border, it should be gently contoured convex to the surgeon as described in the Ulnar Generation II surgical technique.

- Once the osteotomy is completed, the low-profile locking plate is applied to the ulnar volar surface or ulnar subcutaneous surface.

- The plate is first secured with 3.5mm cortical screw #2. The compression device is applied with screws 4mm longer than screws #3 and #4 and the osteotomy is compressed. The interfragmentary screw is applied and then screw #5 is applied.

- Locking screws are inserted in both ends of the plate. Always use the screw-in double-threaded drill guide that will allow a 2.3mm drill bit to be drilled perpendicular to the plate surface. | **FIGURE 4**

- After measuring the depth, the self-tapping 2.7mm locking screw is gently inserted with the star 8 driver.

  CAUTION: Do not over-tighten the screw. Failure to observe this caveat may result in a broken screwdriver shaft or stripped screw socket. Capture both cortices of the ulna with the locking screws and 3.5 and 2.7mm cortical screws even if it is necessary to use the next longer screw after measuring with the depth gauge.

- Post-operative protection should be provided until healing has occurred.

Prior to use of the system, the surgeon should refer to the product package insert and surgical technique for complete warnings, precautions, indications, contraindications and adverse effects.

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