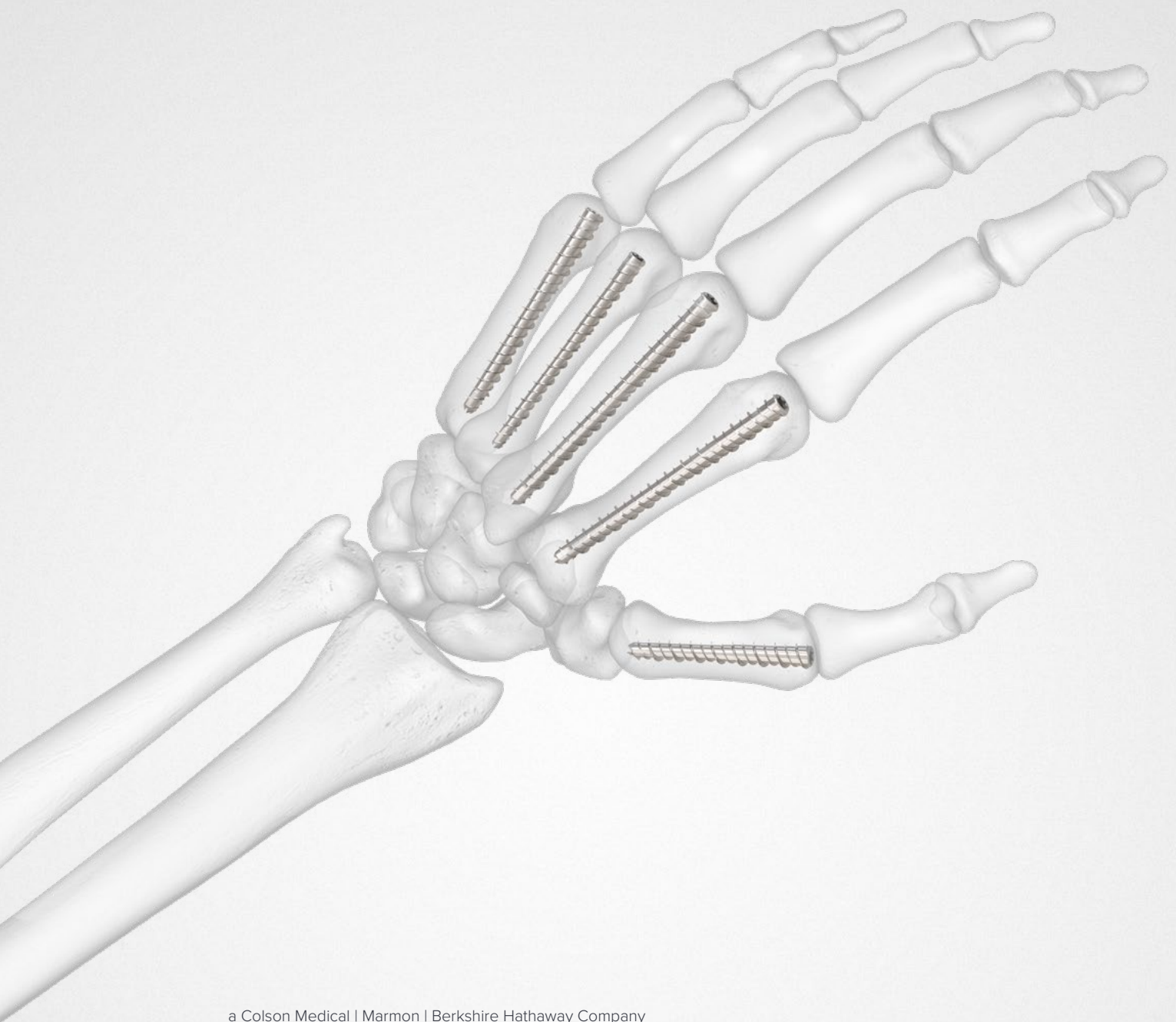


Surgical Technique



Acumed® is a global leader of innovative orthopaedic and medical solutions.



We are dedicated to developing products, service methods, and approaches that improve patient care.



INnate Intramedullary Threaded Nail System

The INnate System introduces an intramedullary threaded nail designed specifically for metacarpal fractures to provide surgeons with a reliable solution through a simple approach. The robust length offering with a differential diameter design is intended to accurately fit the intramedullary canal, create stable fixation, and precise reduction for all types of metacarpal fractures.

Anatomic Reduction

Non compression implant design allows for precise, anatomic reduction for all metacarpal fracture types, including oblique and comminuted fractures.

Stable Fixation

Various lengths appropriately sized, allow optimal stability and bone purchase for all fracture locations.

Minimizes Local Trauma

Cannulated technique with an intramedullary implant designed to minimize soft-tissue, cartilage, and vascular damage upon insertion.

Early, Active Mobilization

Large implant diameter with circumferential intramedullary cortical thread engagement is designed to facilitate early, active mobilization postoperative protocols for accelerated healing and earlier return to work.

Indications for Use

The INnate System is intended for fixation of intra articular and extra articular fractures and non unions of small bones and small bone fragments; arthrodesis of small joints; bunionectomies and osteotomies, including scaphoid and other carpal bones, metacarpals, tarsals, metatarsals, patella, ulnar styloid, capitellum, radial head and radial styloid.

The INnate System is provided sterile. The implant is manufactured from stainless steel and is offered in 3.6 mm (recommended for the 4th metacarpal) and 4.5 mm diameters. The implants are provided with a separate disposable instrument kit specific to the implant diameter.

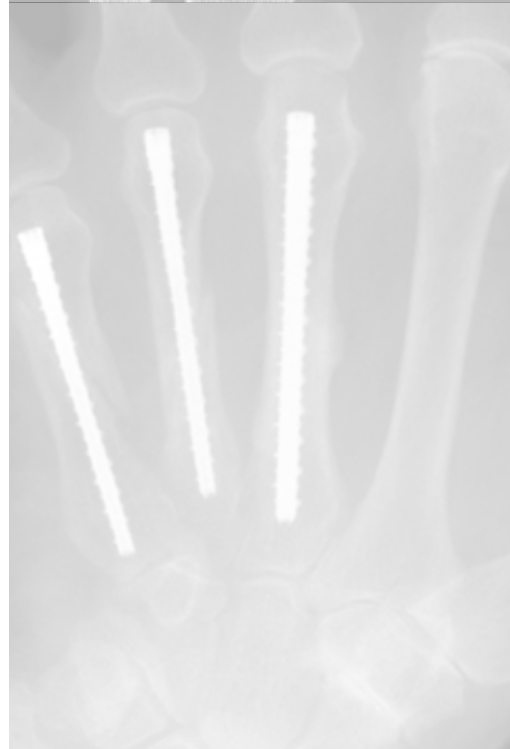


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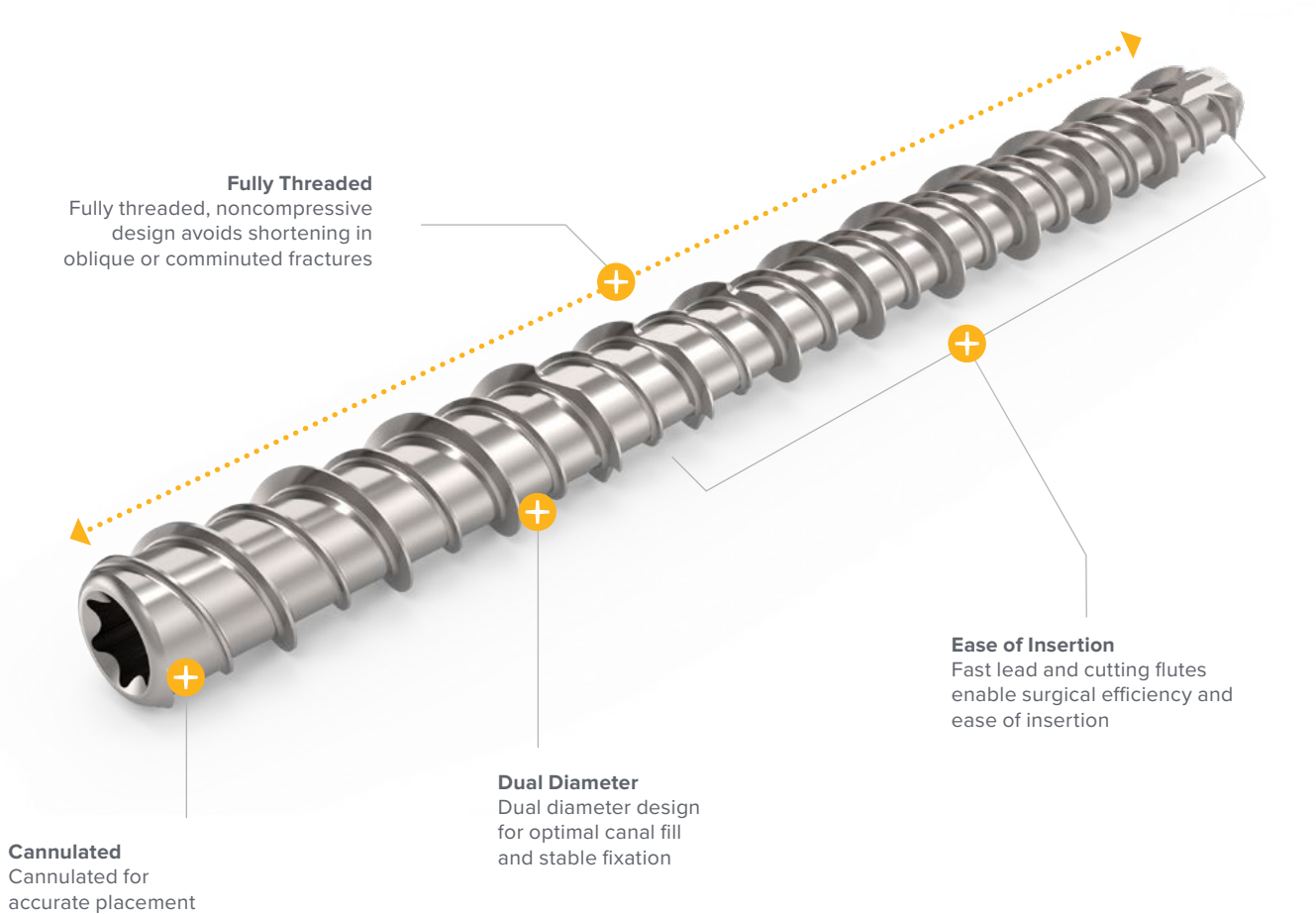
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System Features

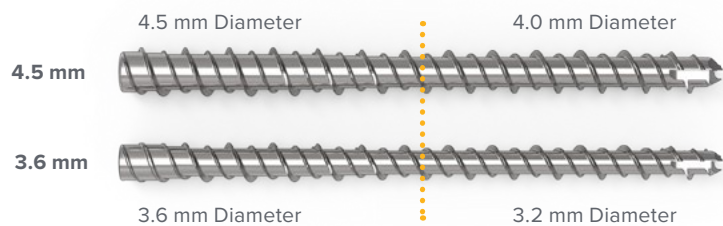
Multiple Lengths

For treatment of various shapes and sizes of small bones

- ▶ **3.6 mm Diameter:** 25 mm, 30 mm, 35 mm, 40 mm, 45 mm, 50 mm, 55 mm Lengths
- ▶ **4.5 mm Diameter:** 35 mm, 40 mm, 45 mm, 50 mm, 55 mm, 65 mm, 75 mm Lengths



T-10 Hexalobe design for high torque resistance



**Smaller diameter leading end design allows passage through isthmus
Larger diameter trailing end helps gain purchase within the IM canal**

INnate Intramedullary Threaded Nail Surgical Technique

Figure 1

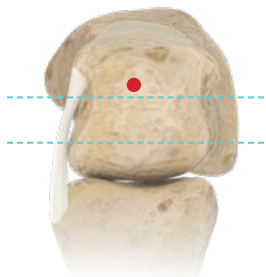


Figure 2



1 Insert Guide Wire

Anatomically reduce the fracture fragments.

Insert guide wire percutaneously in a retrograde fashion until the tip of the guide wire is at the proximal cortex.

Note: The guide wire entry point should be in the dorsal third of the metacarpal head.

Tip: Once the guide wire is in place, make a stab incision at the point of guide wire insertion.

This will facilitate the free movement of the drill.

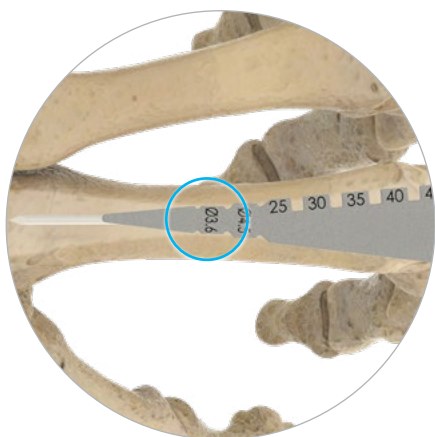
2 Measure and Select Implant Length & Diameter

Figure 3



1. To determine the length of the implant, hold the depth gauge against the dorsum of the hand with the measurement edge aligned with the guide wire.
2. Under fluoroscopy use the marked square notches (e.g. the 9th [last] square notch will be for a length of 75 mm) along the edge of the depth gauge to select the desired implant length (it may be appropriate to subtract up to 5 mm from the depth gauge reading to ensure subflush placement of the implant head).
3. The 4.5 mm diameter INnate nail is commonly used for most metacarpal fractures, while the 3.6 mm diameter INnate implant was purpose built and specifically designed for the narrower isthmus most commonly encountered in the 4th metacarpal. To ensure proper size selection, we recommend measurement with the INnate measurement device enclosed in all instrument kits. To measure, hold the depth gauge against the dorsum of the hand with the edges of the annotated measurement markings aligned with the narrowest part of the intramedullary canal. See example below in Figure 4, where a 3.6 mm diameter implant (highlighted in blue) should be selected over a 4.5 mm diameter implant.

Figure 4



Note: The edge of the INnate depth gauge may be used to measure the length of metacarpal directly for determining implant length.

4. Insert the depth gauge via the stab incision and, under fluoroscopy, confirm the tip of the depth gauge is against the metacarpal head.
5. Measure the exposed length of the guide wire against the markings to select the appropriate implant length, ensuring that the selected length extends well past the fracture site (e.g. the image to the left will be for a length of 75 mm).
6. Since the guide wire has been driven to the proximal cortex of the metacarpal, this measurement indicates the length of the metacarpal and not necessarily the desired length of implant. (Please select implant based on fracture location and note that it may be appropriate to subtract up to 5 mm from the depth gauge reading to account for any tissue between the depth gauge and bone, ensuring subflush placement of the implant head).

Surgical Technique [continued]

Figure 5



3 Drill

Drill by passing the cannulated drill over the guide wire to the desired depth. Depth markings on the drill can be used to monitor drill depth.

Tip: Pre-drill the entire length of intended implantation.

Remove the drill carefully while maintaining the guide wire position. Do not remove the guide wire.

Tip: Prior to drilling, advance the guide wire into the base of the metacarpal to reduce the chances of dislodging the guide wire when the drill is removed.

Figure 6



Cannulated T-10 Driver

Figure 7



Figure 8



4 Insert Implant and Confirm Placement

Insert selected implant over the guide wire.

Advance the implant into the bone to the desired depth. Manually hold reduction as the implant traverses the fracture site and engages the far fragment to prevent gapping at the fracture site.

Tip: Should excessive resistance be encountered, utilize the self-tapping features of the implant by backing out 1/2 turn and advancing. Repeat as necessary to avoid excessive force upon the driver and implant.

Verify placement and proper reduction with radiographic imaging. The head of the implant should be buried below the articular surface.

Remove the driver and guide wire.

Ordering Information

INnate Implants

Sterile Implants, 3.6 mm

INnate Implant, 3.6 x 25 mm	EXINN923625	
INnate Implant, 3.6 x 30 mm	EXINN923630	
INnate Implant, 3.6 x 35 mm	EXINN923635	
INnate Implant, 3.6 x 40 mm	EXINN923640	
INnate Implant, 3.6 x 45 mm	EXINN923645	
INnate Implant, 3.6 x 50 mm	EXINN923650	
INnate Implant, 3.6 x 55 mm	EXINN923655	

Sterile Implants, 4.5 mm

INnate Implant, 4.5 x 35 mm	EXINN924535	
INnate Implant, 4.5 x 40 mm	EXINN924540	
INnate Implant, 4.5 x 45 mm	EXINN924545	
INnate Implant, 4.5 x 50 mm	EXINN924550	
INnate Implant, 4.5 x 55 mm	EXINN924555	
INnate Implant, 4.5 x 65 mm	EXINN924565	
INnate Implant, 4.5 x 75 mm	EXINN924575	

Disposable Instrument Kit

3.6 mm INnate Instrument Kit EXINN913600

- 1 – 0.045" x 6" Single Trocar Guide Wire
- 1 – 0.045" x 6" Double Trocar Guide Wire
- 1 – Depth Gauge
- 1 – Cannulated Reamer, 2.9 mm
- 1 – Cannulated Driver, T-10



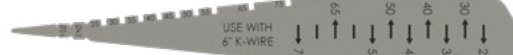
Cannulated Driver, T-10



Cannulated Reamer



Single Trocar Guide Wire, 0.045" x 6"



Depth Gauge

4.5 mm INnate Instrument Kit EXINN914500

- 1 – 0.045" x 6" Single Trocar Guide Wire
- 1 – 0.045" x 6" Double Trocar Guide Wire
- 1 – Depth Gauge
- 1 – Cannulated Reamer, 3.6 mm
- 1 – Cannulated Driver, T-10



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