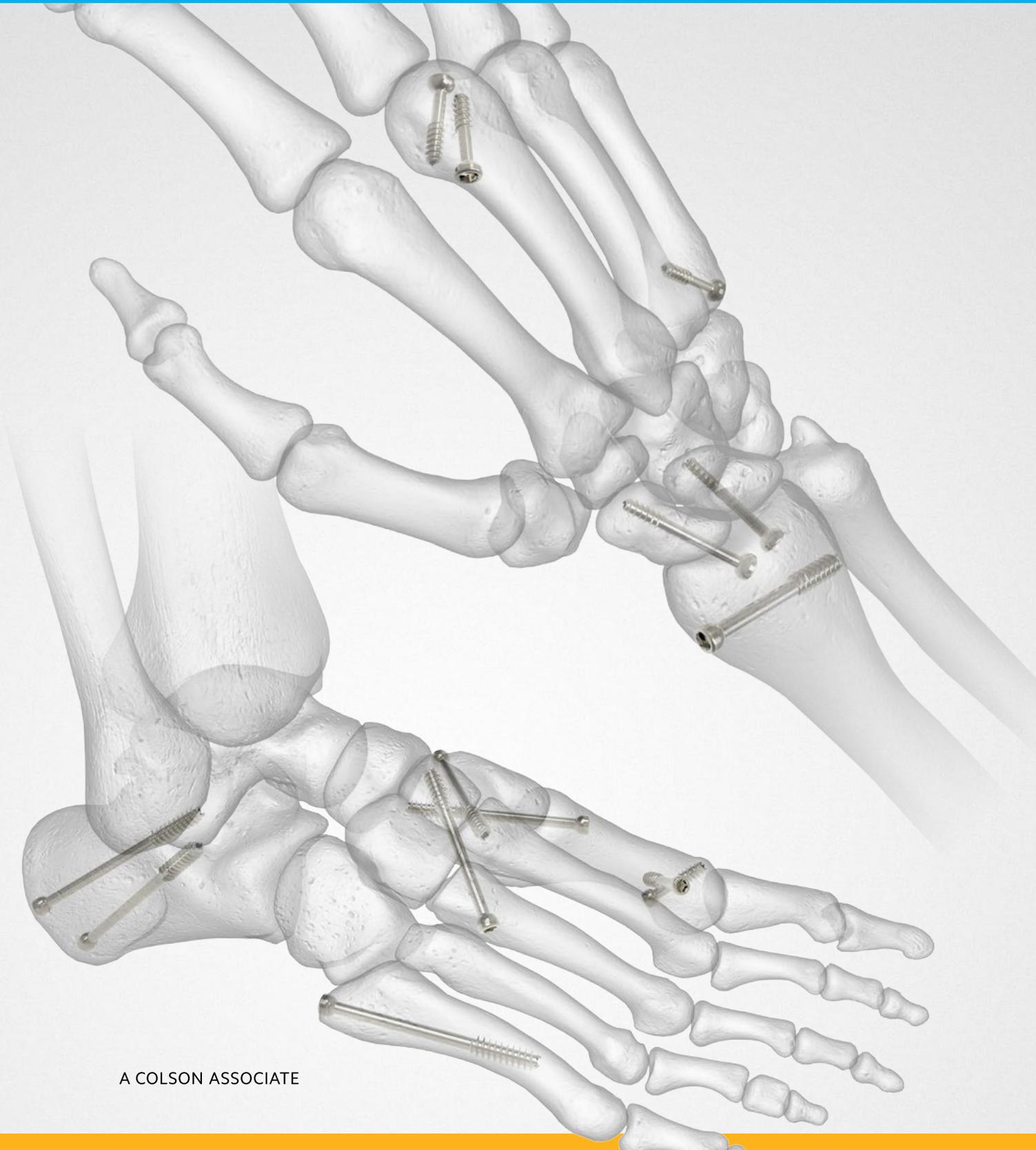


Surgical Technique



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.



Acumed Extremity Screw System

The Acumed Extremity Screw System is designed for fracture and osteotomy fixation of the upper and lower extremities. The screws are available in three diameters (2.7 mm, 3.5 mm, and 4.0 mm), in lengths ranging from 12 mm to 42 mm (in 2 mm increments), to accommodate various indications and patient anatomy. All screws are made of titanium alloy per ASTM F136.

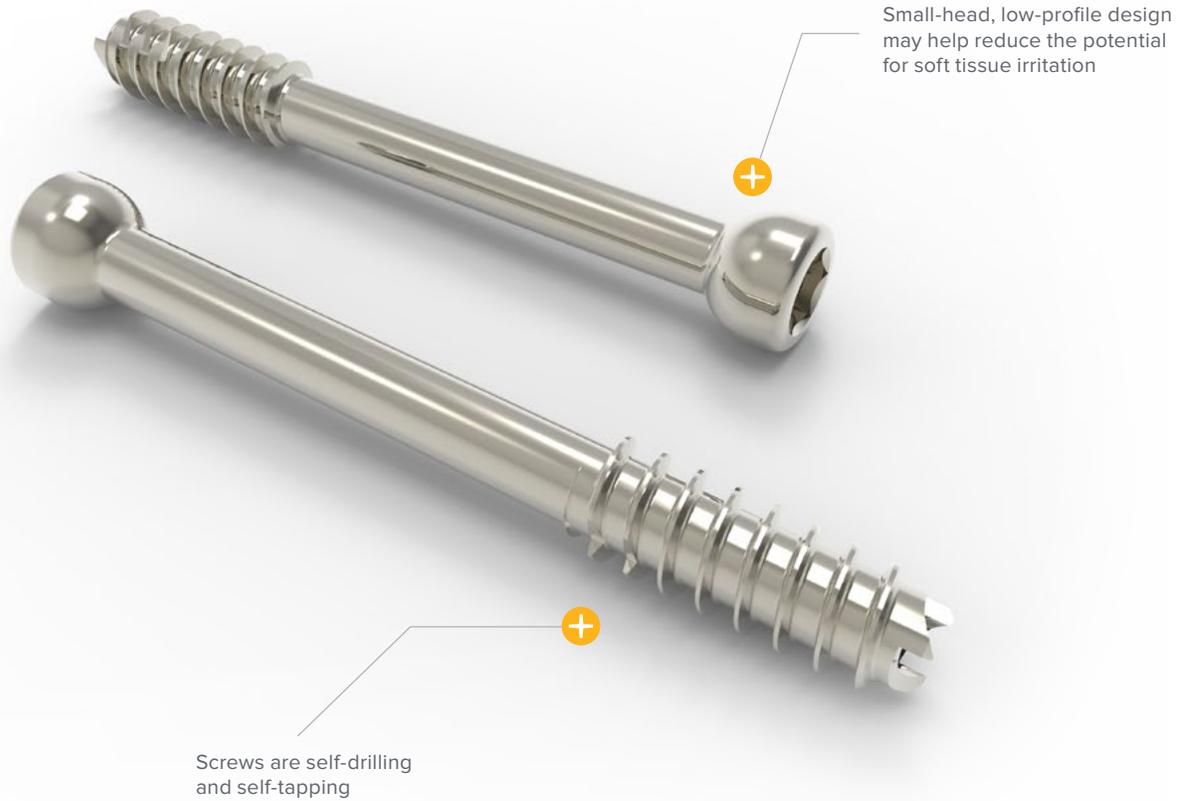
The system is comprised of low-profile, highly polished screws that are self-drilling and self-tapping. Screws are cannulated in order to be used over a guide wire and each screw is partially threaded using a cancellous thread form. Screws may be used to lag one bone fragment to another, where the far bone fragment is captured by the threads of the screw and pulled toward the near cortex fragment on the head side of the screw.

	Definition
Note	Indicates information requiring special attention.

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System Features



Small-head, low-profile design may help reduce the potential for soft tissue irritation

Screws are self-drilling and self-tapping

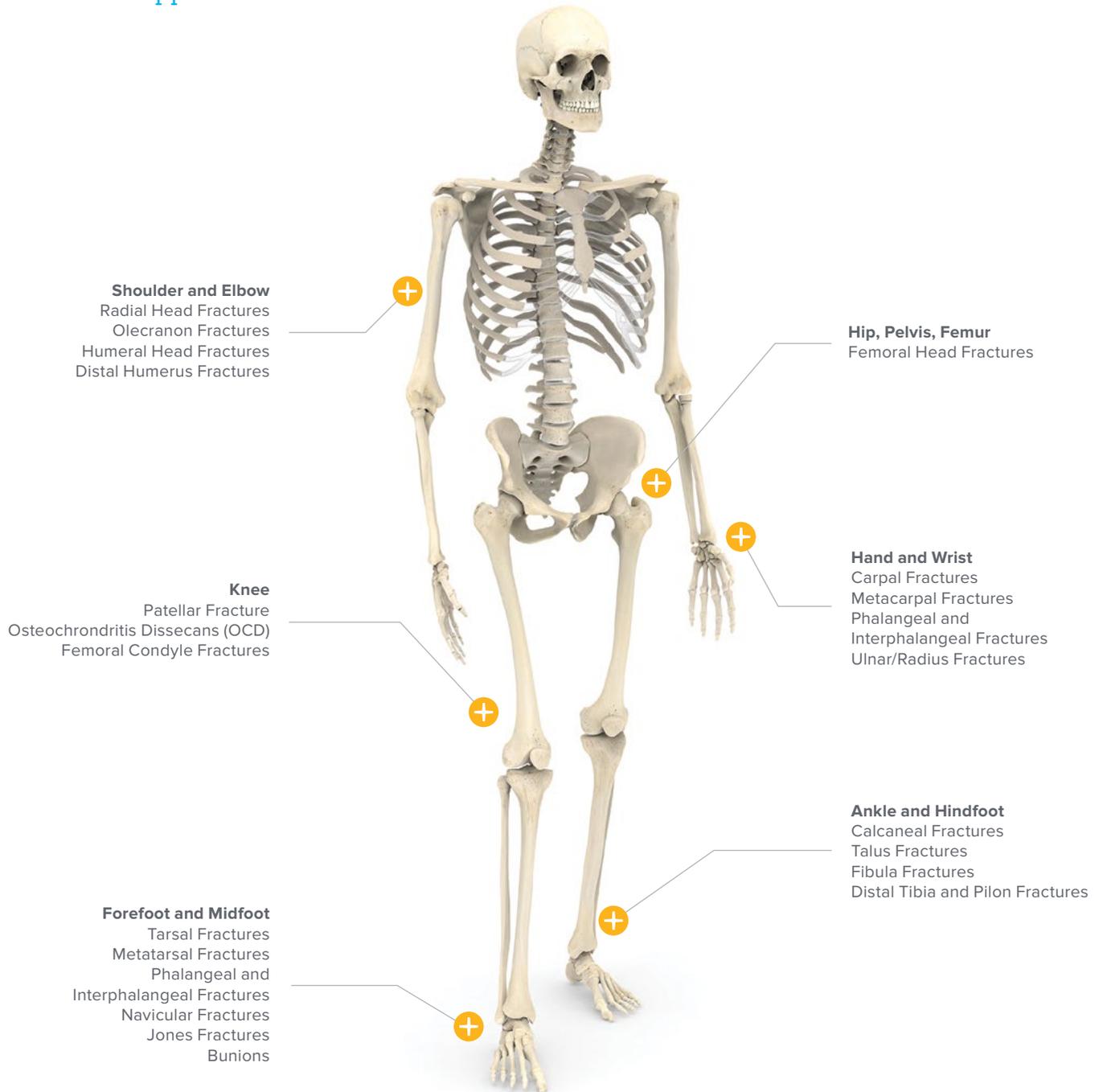
Screw Diameter	Screw Length*	Thread Length
2.7 mm Extremity Screws (27-0XXX)	12–24 mm	7 mm
	14–24 mm	7 mm
3.5 mm Extremity Screws (FA-0XXX)	26–36 mm	10 mm
	38–42 mm	13 mm
	14–24 mm	7 mm
4.0 mm Extremity Screws (FA-4XXX)	26–36 mm	10 mm
	38–42 mm	13 mm

*In 2 mm increments

Indications for Use

The Acumed Extremity Screw System is designed for fracture and osteotomy fixation of the upper and lower extremities. These screws are not intended for usage in the spine and are not for use with any available bone plates or washers.

Potential Applications



Instrument Overview



**2.7 mm Extremity Drill
(Countersink)**
(27-9020)



**3.5 mm Extremity Drill
(Countersink)**
(FA-9020)



**3.5 & 4.0 Extremity Screw
Long Drill**
(80-0453)



.045" x 6" ST Guide Wire
(WS-1106ST)



.059 x 5" ST Guide Wire
(WS-1505ST)



3.5 mm Extremity Screw Sizer
(FA-9010)



**2.5 mm Cannulated
Hex Driver Assembly**
(HD-2516)



3.5 mm Screw Driver Sleeve
(MS-SS35)



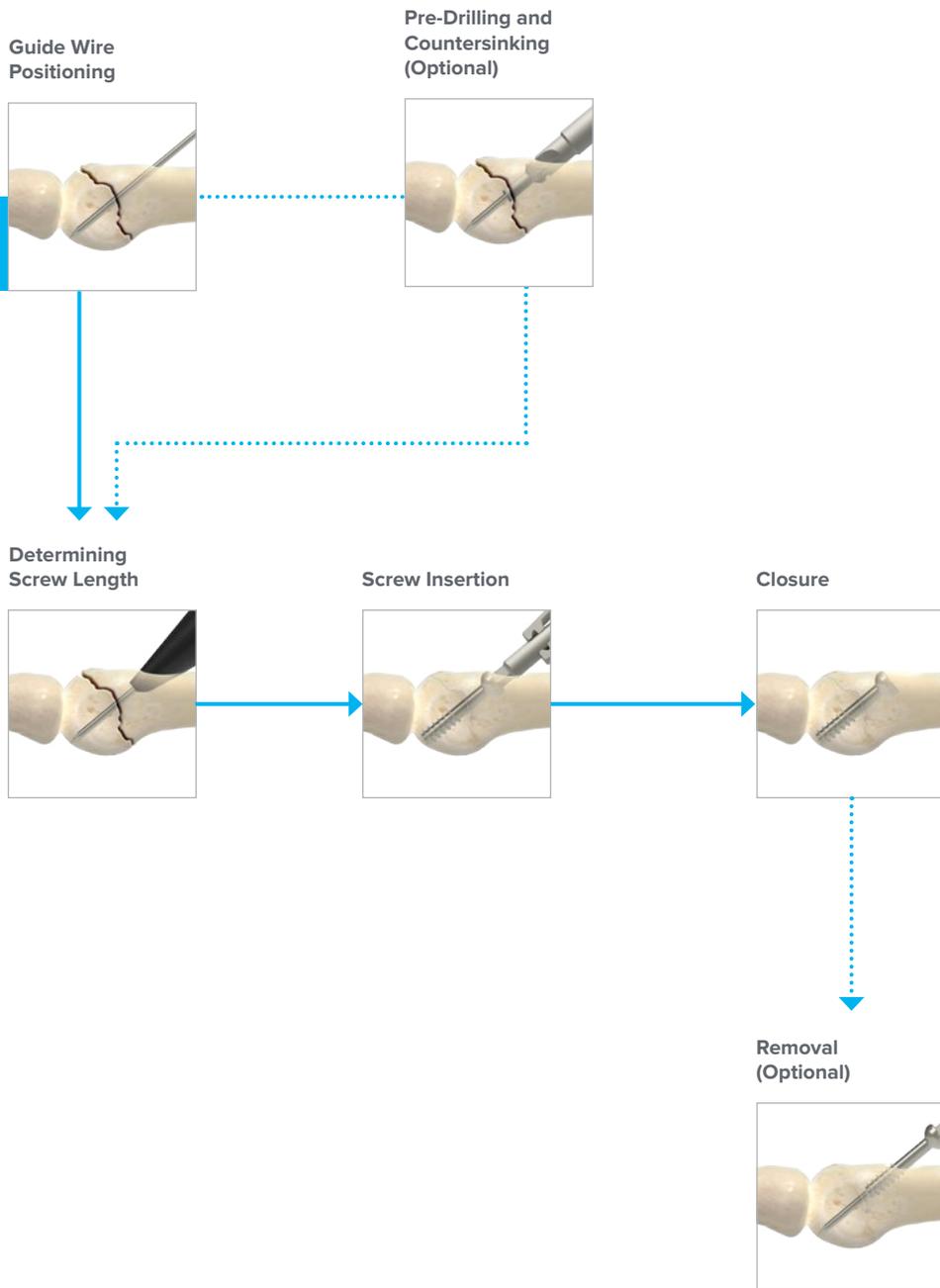
Acutrak® Drill Handle
(AT-0003)



Hex Wrench
(AT-7004)

Surgical Technique Overview

Extremity Screw System Surgical Technique



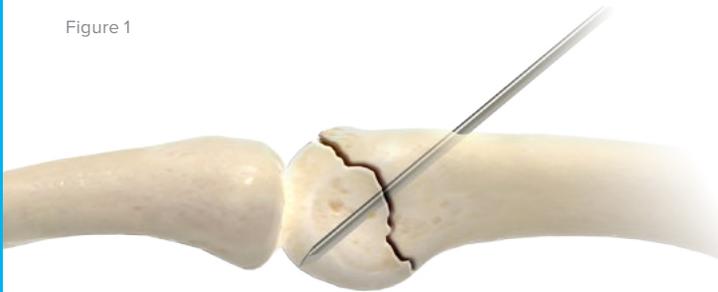
Extremity Screw System Surgical Technique

Edited by Randy Bindra, MD, FRCS

1 Site Preparation

Prepare the fracture or osteotomy site using the surgeon's preferred technique. For a percutaneous approach, make a stab incision at the screw insertion site, then bluntly dissect down to bone.

Figure 1



2 Guide Wire Positioning

Secure the fracture by placing the guide wire (WS-1106ST or WS-1505ST) at the preferred screw placement depth and position. Confirm the guide wire position and depth with fluoroscopy in multiple planes. A second parallel guide wire may be placed for additional stabilization and to resist fragment rotation during screw insertion.

	Guide Wire
2.7 mm Extremity Screws (27-OXXX)	0.045" (1.1 mm) Guide Wire (WS-1106ST)
3.5 mm Extremity Screws (FA-OXXX)	0.059" (1.4 mm) Guide Wire (WS-1505ST)
4.0 mm Extremity Screws (FA-4XXX)	0.059" (1.4 mm) Guide Wire (WS-1505ST)



Extremity Screw System Surgical Technique [continued]

3 Pre-Drilling and Countersinking (Optional)

In dense bone, consider pre-drilling using the 3.5 mm & 4.0 mm Extremity Screw Long Drill (80-0453). This drill is recommended as it may help decrease the effects of varying bone density and distraction upon screw insertion.

Drill the screw track to just past the fracture line by visualizing the depth marks on the drill. When the screw insertion point is located on cortical bone, countersinking the near cortex may help minimize screw prominence and reduce the risk of splitting the cortex. Drill over the guide wire (WS-1106ST or WS-1505ST) to the groove on the countersink and connect the appropriate size countersink (27-9020 or FA 9020) to the Hex Wrench (AT-7004) for use. Do not use the countersink on a power drill.

Figure 2



Figure 3



	Drill	Countersink
2.7 mm Extremity Screws (27-0XXX)	N/A	2.7 mm Countersink (27-9020)
3.5 mm Extremity Screws (FA-0XXX)	3.5 & 4.0 mm Extremity Screw Long Drill (80-0453)	3.5 mm Countersink (FA-9020)
4.0 mm Extremity Screws (FA-4XXX)	3.5 & 4.0 mm Extremity Screw Long Drill (80-0453)	3.5 mm Countersink (FA-9020)



3.5 & 4.0 mm Extremity Screw Long Drill (80-0453)



.059 x 5" ST Guide Wire (WS-1505ST)



.045" x 6" ST Guide Wire (WS-1106ST)



2.7 mm Extremity Drill (Countersink) (27-9020)



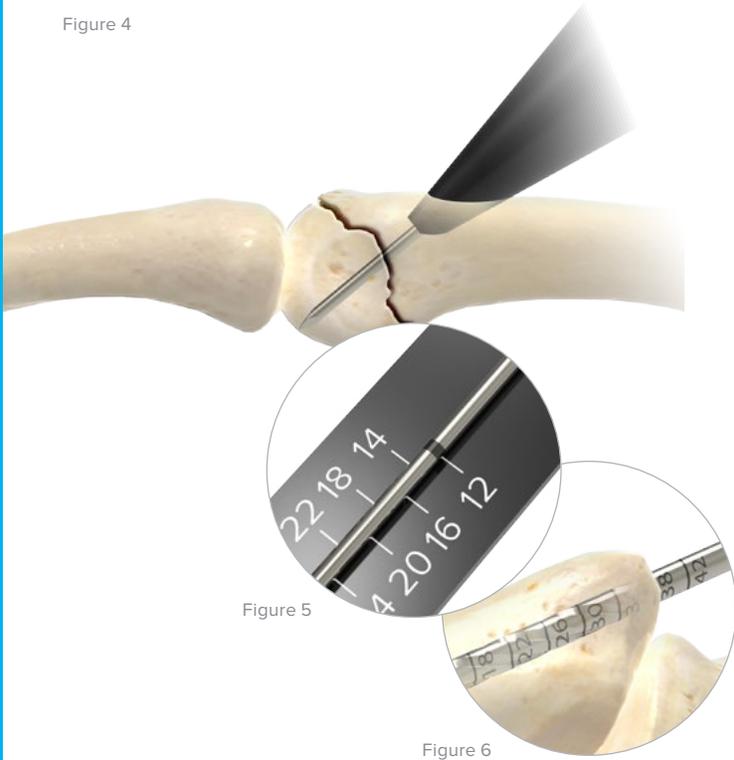
3.5 mm Extremity Drill (Countersink) (FA-9020)



Hex Wrench (AT-7004)

Extremity Screw System Surgical Technique [continued]

Figure 4



4 Determining Screw Length

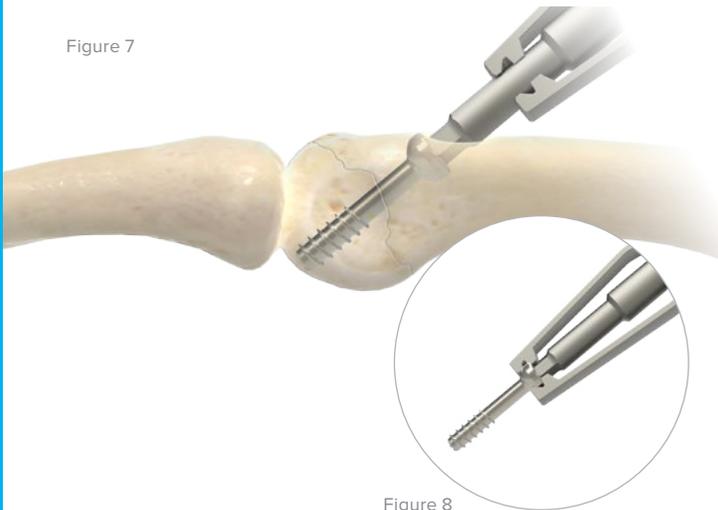
Slide the tapered end of the 3.5 mm Extremity Screw Sizer (FA-9010) over the guide wire and into the countersunk hole, ensuring contact with cortical bone. Read the length directly from the screw sizer by noting the location of the laser mark on the guide wire (WS-1106ST or WS-1505ST) in relation to the numerals and hash marks on the sizer. This measurement must be taken with the supplied guide wire.

Note: Alternatively, screw length can be measured directly off the graduated drill when using the 3.5 mm and 4.0 mm Extremity Screw Long Drill (80-0453) for the 3.5 mm and 4.0 mm extremity screws.

Figure 5

Figure 6

Figure 7



5 Screw Insertion

Insert the appropriate length 2.7 mm, 3.5 mm, or 4.0 mm Extremity Screw (27-0XXX, FA-0XXX, or FA-4XXX) over the corresponding guide wire (WS-1106ST or WS-1505ST) using the 2.5 mm Cannulated Hex Driver Assembly (HD-2516) by hand. Confirm the screw position with fluoroscopy and ensure adequate reduction and stable internal fixation prior to removing the guide wire.

Note: Use the 3.5 mm Screw Driver Sleeve (MS-SS35) over the 2.5 mm Cannulated Hex Driver Assembly to aid in picking up the screw from the screw caddy.

Figure 8



3.5 mm Extremity Screw Sizer (FA-9010)



.045" x 6" ST Guide Wire (WS-1106ST)



.059 x 5" ST Guide Wire (WS-1505ST)



3.5 mm and 4.0 mm Extremity Screw Long Drill (80-0453)



2.5 mm Cannulated Hex Driver Assembly (HD-2516)



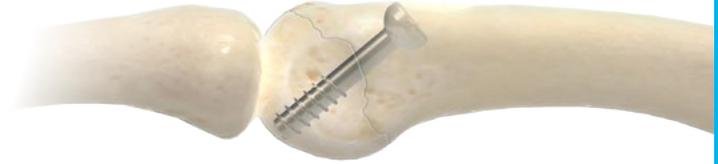
3.5 mm Screw Driver Sleeve (MS-SS35)

Extremity Screw System Surgical Technique [continued]

6 Closure

Closure of the site is based on the surgeon's preferred technique.

Figure 9



7 Screw Removal (Optional)

The extremity screws are designed to be removed from the patient when necessary. After surgically obtaining access to the head of the screw, insert the appropriate size guide wire (WS-1106ST or WS-1505ST) into the screw head by hand to help guide the 2.5 mm Cannulated Hex Driver Assembly (HD-2516). Use the driver to remove the screw by engaging the driver tip within the hex recess in the screw head and turning it counterclockwise.

Note: It may be necessary to clean out bony ingrowth from the head of the screw using the Sharp Hook (PL-CL06) or a guide wire tip prior to engaging the driver tip.

Figure 10



.045" x 6" ST
Guide Wire
(WS-1106ST)



.059" x 5" ST
Guide Wire
(WS-1505ST)



2.5 mm
Cannulated Hex
Driver Assembly
(HD-2516)



Sharp Hook
(PL-CL06)

Ordering Information

Tray Components

1 2.7 mm Cannulated Extremity Screw

2.7 mm x 12.0 mm Cannulated Extremity Screw	27-0120
2.7 mm x 14.0 mm Cannulated Extremity Screw	27-0140
2.7 mm x 16.0 mm Cannulated Extremity Screw	27-0160
2.7 mm x 18.0 mm Cannulated Extremity Screw	27-0180
2.7 mm x 20.0 mm Cannulated Extremity Screw	27-0200
2.7 mm x 22.0 mm Cannulated Extremity Screw	27-0220
2.7 mm x 24.0 mm Cannulated Extremity Screw	27-0240

2 3.5 mm Cannulated Extremity Screw

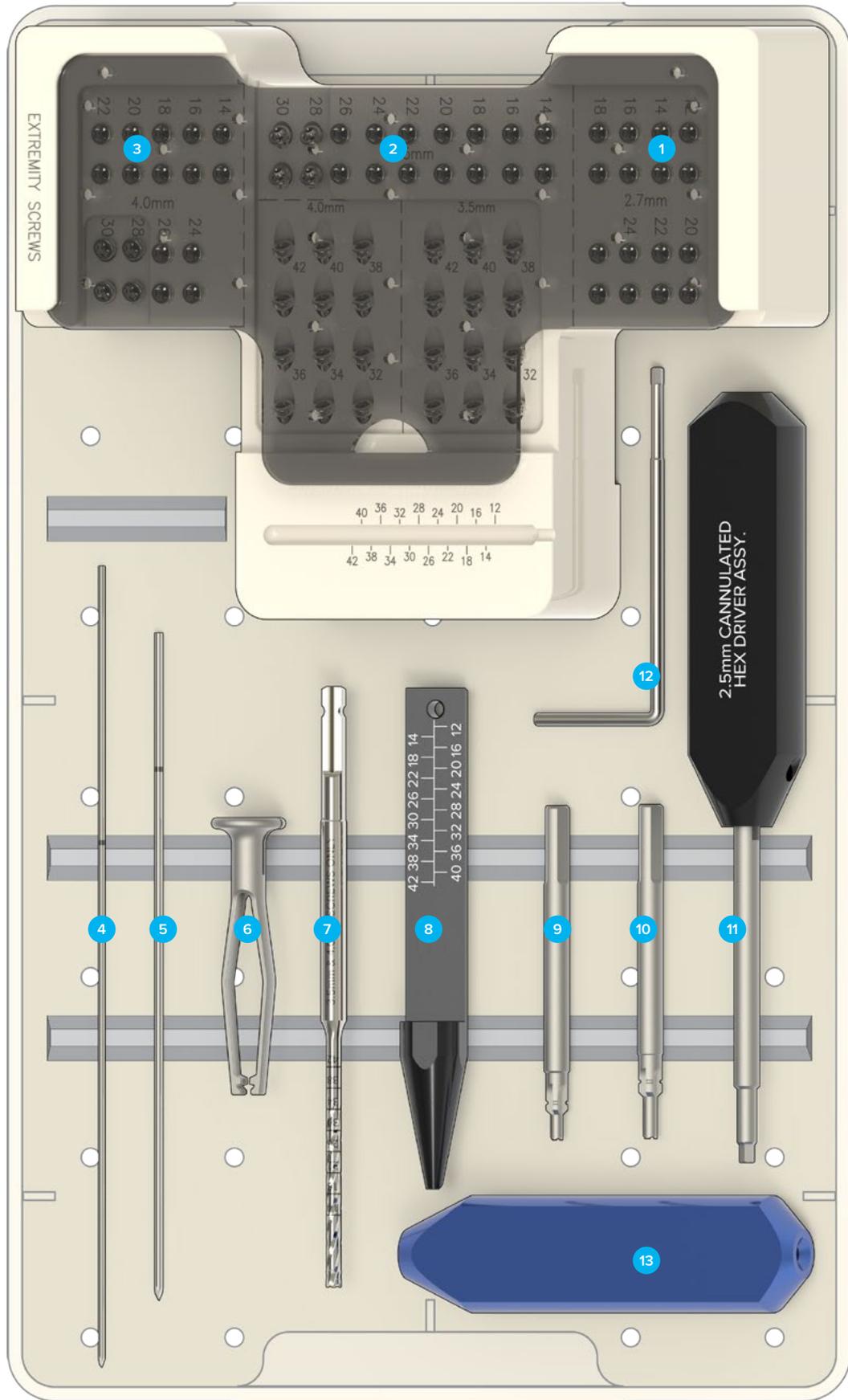
3.5 mm x 14.0 mm Cannulated Extremity Screw	FA-0140
3.5 mm x 16.0 mm Cannulated Extremity Screw	FA-0160
3.5 mm x 18.0 mm Cannulated Extremity Screw	FA-0180
3.5 mm x 20.0 mm Cannulated Extremity Screw	FA-0200
3.5 mm x 22.0 mm Cannulated Extremity Screw	FA-0220
3.5 mm x 24.0 mm Cannulated Extremity Screw	FA-0240
3.5 mm x 26.0 mm Cannulated Extremity Screw	FA-0260
3.5 mm x 28.0 mm Cannulated Extremity Screw	FA-0280
3.5 mm x 30.0 mm Cannulated Extremity Screw	FA-0300
3.5 mm x 32.0 mm Cannulated Extremity Screw	FA-0320
3.5 mm x 34.0 mm Cannulated Extremity Screw	FA-0340
3.5 mm x 36.0 mm Cannulated Extremity Screw	FA-0360
3.5 mm x 38.0 mm Cannulated Extremity Screw	FA-0380
3.5 mm x 40.0 mm Cannulated Extremity Screw	FA-0400
3.5 mm x 42.0 mm Cannulated Extremity Screw	FA-0420

3 4.0 mm Cannulated Extremity Screw

4.0 mm x 14.0 mm Cannulated Extremity Screw	FA-4014
4.0 mm x 16.0 mm Cannulated Extremity Screw	FA-4016
4.0 mm x 18.0 mm Cannulated Extremity Screw	FA-4018
4.0 mm x 20.0 mm Cannulated Extremity Screw	FA-4020
4.0 mm x 22.0 mm Cannulated Extremity Screw	FA-4022
4.0 mm x 24.0 mm Cannulated Extremity Screw	FA-4024
4.0 mm x 26.0 mm Cannulated Extremity Screw	FA-4026
4.0 mm x 28.0 mm Cannulated Extremity Screw	FA-4028
4.0 mm x 30.0 mm Cannulated Extremity Screw	FA-4030
4.0 mm x 32.0 mm Cannulated Extremity Screw	FA-4032
4.0 mm x 34.0 mm Cannulated Extremity Screw	FA-4034
4.0 mm x 36.0 mm Cannulated Extremity Screw	FA-4036
4.0 mm x 38.0 mm Cannulated Extremity Screw	FA-4038
4.0 mm x 40.0 mm Cannulated Extremity Screw	FA-4040
4.0 mm x 42.0 mm Cannulated Extremity Screw	FA-4042

Instruments

4	.045" x 6" ST Guide Wire	WS-1106ST
5	.059 x 5" ST Guide Wire	WS-1505ST
6	3.5 mm Screw Driver Sleeve	MS-SS35
7	4.0 & 3.5 Extremity Screw Long Drill	80-0453
8	3.5 mm Extremity Screw Sizer	FA-9010
9	2.7 mm Extremity Drill (Countersink)	27-9020
10	3.5 mm Extremity Drill (Countersink)	FA-9020
11	2.5 mm Cannulated Hex Driver Assembly	HD-2516
12	Hex Wrench	AT-7004
13	Acutrak® Drill Handle	AT-0003



Ordering Information [continued]

Other Components			
Extremity Screw Organizer	FA-9030	3.5 mm Extremity X-ray Template	FFAS-06
Extremity Screw Tray	FA-9040	4.0 mm Extremity X-ray Template	90-0012
2.7 mm Extremity X-ray Template	FFAS-09		



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