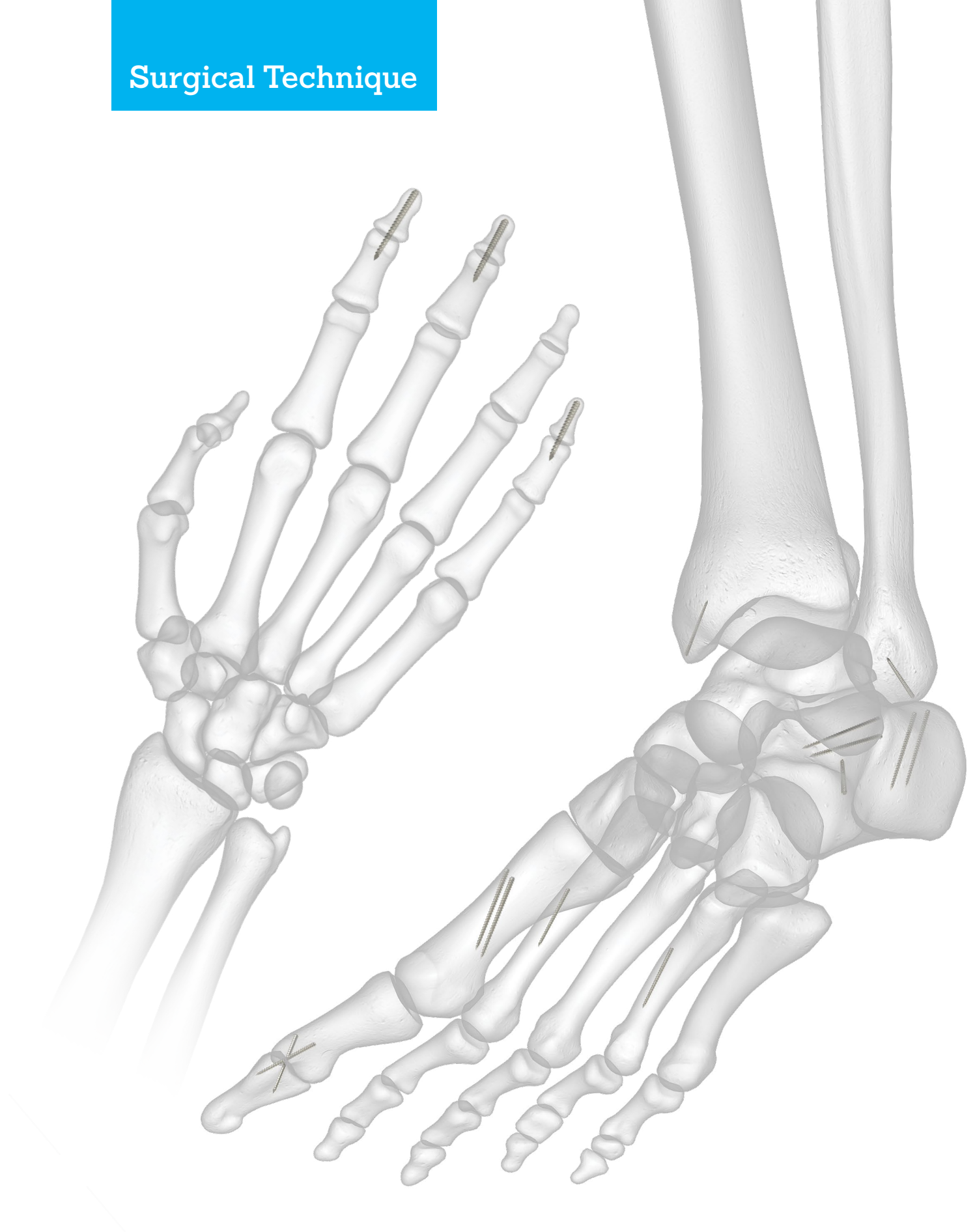


Surgical Technique





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.



AcuTwist Acutrak Compression Screw Design Surgeon
Greg Horton, M.D.

Acumed® AcuTwist® Acutrak® Compression Screw System

The AcuTwist Acutrak Compression Screw is designed to provide compressive fixation for use in fractures, fusions, and osteotomies. Available in a range of lengths (10–30 mm), the screw was designed in conjunction with Greg Horton, M.D. for quick fixation in indications of the upper and lower extremities.

The screw design includes a variable thread pitch, a tapered profile, a break-off groove, and threads along the entire length of the screw. The fully threaded screw length allows for greater resistance to push-out force than partially threaded headed and headless screws.¹

Indications for Use:

The AcuTwist Acutrak Compression Screw is intended as a fixation device for small bones, bone fragments, and osteotomies. It is not intended for interference or soft tissue fixation.

1. Wheeler, D.L., MsLoughlin SW. "Biomechanical assessment of compression screws." *Clinical Orthopaedics and Related Research*. May 1998. 237–245.

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AcuTwist Acutrak Compression Screw System Surgical Technique

GREG HORTON, M.D.

1 SITE PREPARATION

Provisionally reduce the arthrodesis site, osteotomy, or fracture fragment using a bone-holding clamp to avoid potential loss of reduction.

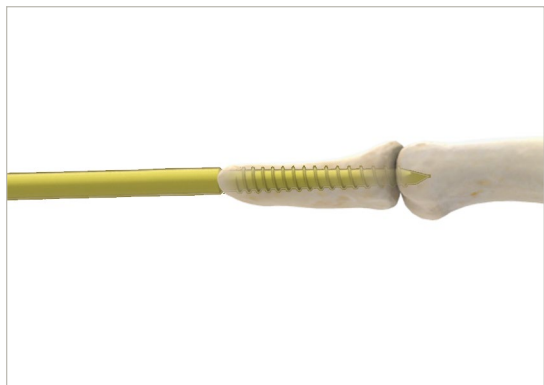


2 PILOT HOLE AND SCREW MEASUREMENT

For accurate screw insertion and to avoid potential loss of reduction, create a pilot hole by advancing a .045" x 6" Single Trocar Guide Wire (WS-1106ST) across the fixation site to the desired depth. Bicortical fixation, if possible, is desirable.

Measurement of the desired length is performed using either the Acutrak Compression Screw Sizer (80-0099) or by utilizing a second guide wire to gauge the inserted distance of the first guide wire. If the tip of the second guide wire is not readily accessible, confirm the proper length under radiography.





3 PILOT HOLE TAP

Remove the inserted guide wire and tap the pilot hole to the desired depth using the 30 mm AcuTwist Acutrak Tap (AI-NG30) advanced across the distal fragment. Confirm placement under radiography.

Use of a tap prior to insertion of the screw is imperative. The 30 mm AcuTwist Acutrak Tap has the same pitch and geometry as the screw.

The maximum threaded distance of 30 mm on the tap correlates to the longest threaded length of the screw.

As with any tapered compression device, over-insertion of the tap may result in failure of the screw to provide compression at the desired length. The tap is advanced with the use of a pin driver. Alternatively, a hand driven option is available. As the tap generates some torque during insertion, it is necessary to keep the proposed fixation site held with a guide wire or bone-holding forceps during insertion and removal. The tap is advanced across the distal fragment and placement is confirmed radiographically.

4 SCREW INSERTION

Remove the tap and select the desired length screw based on the measurement determined in Step 2. The selected AcuTwist Acutrak Compression Screw (AI-00XX-S; see ordering information for specific part numbers) is then inserted up to the break-off point.

After the screw is inserted, radiography should be used to ensure accurate screw placement.

SCREW INSERTION PRECAUTIONS

Care should be taken to minimize the risk of premature break-off of the AcuTwist screw during insertion.

- Tap use is the primary means to avoid premature break-off.
- In dense cortical bone, tap prior to screw insertion. The tap can also be used to create the initial pilot hole instead of the guide wire.
- Avoid excessive bending of the screw or driver during insertion.

If premature break-off does occur:

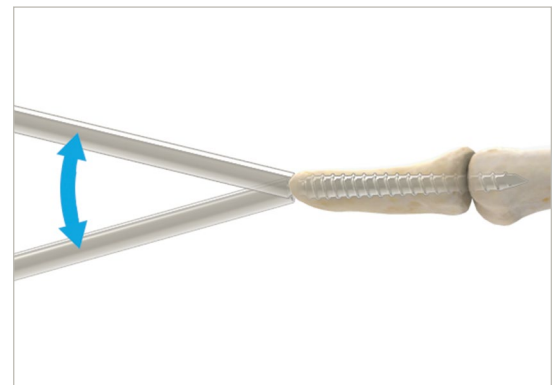
- Assess the screw's holding ability. If the screw is providing satisfactory fixation, the protruding portion can be removed with a wire cutter.
- Screws can be removed with either the AcuTwist Acutrak Compression Screw Extractor (AI-EX20) or with a small needle driver.
- The same insertion site can be used if screw removal has not compromised the bone.
- Use a shorter screw or tap deeper before inserting a new screw through the same insertion site. If the bone at the insertion site has been compromised, then an alternative insertion site will be required.



5 FINAL PLACEMENT

With the screw inserted, continue securing the fixation site either by hand or with bone-holding forceps. Holding the smooth end of the screw, gently bend it back and forth until the screw fatigues at the break-off groove. Alternatively, a cut at the break-off groove can be made using Wire Cutters (MS-46623).

Note: If more than one AcuTwist Acutrak Compression Screw is to be utilized, it is advised to delay the break-off process until two or more of the screws have been inserted.



AcuTwist Acutrak Compression Screw System Removal Technique

GREG HORTON, M.D.



1 COMPRESSION SCREW REMOVAL

The AcuTwist Acutrak Compression Screw Extractor (AI-EX20) is a trephine-style device that cores into the bone, over the screw, in a counterclockwise fashion.

This procedure must be done under power. Apply force so that at least four threads are exposed for the extractor to engage. Continue in reverse and under force until the screw is captured by the extractor and the screw reverses out of the bone.

Ordering Information

AcuTwist® Acutrak® Compression Screw—Sterile

10 mm AcuTwist Acutrak Compression Screw	AI-0010-S
12 mm AcuTwist Acutrak Compression Screw	AI-0012-S
14 mm AcuTwist Acutrak Compression Screw	AI-0014-S
16 mm AcuTwist Acutrak Compression Screw	AI-0016-S
18 mm AcuTwist Acutrak Compression Screw	AI-0018-S
20 mm AcuTwist Acutrak Compression Screw	AI-0020-S
22 mm AcuTwist Acutrak Compression Screw	AI-0022-S
24 mm AcuTwist Acutrak Compression Screw	AI-0024-S
26 mm AcuTwist Acutrak Compression Screw	AI-0026-S
28 mm AcuTwist Acutrak Compression Screw	AI-0028-S
30 mm AcuTwist Acutrak Compression Screw	AI-0030-S

Instrumentation

AI AT Compression Screws Tray Assembly	AI-1520
.045" x 6" Single Trocar Guide Wire	WS-1106ST
30 mm AcuTwist Acutrak Tap	AI-NG30
2.0 mm/2.8 mm Thin Drill Guide	PL-2118
AcuTwist Acutrak Compression Screw Extractor	AI-EX20
Wire Cutter, 7 Angled, Max Cap. 1.6 mm	MS-46623
Ratcheting T-handle A/O & Tri-lobe Quick Release	80-0999
Acumed Acutrak Compression Screw Sizer	80-0099

X-ray Template

AcuTwist Acutrak Compression Screw X-ray Template	90-0005
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For ordering information, please contact your local Acumed sales representative, call 888.627.9957, or visit acumed.net.



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