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® Ratcheting Compression Plating System**

The Acumed Ratcheting Compression Plating System is designed to provide fixation for many fusions and osteotomies in the foot and utilizes a unique, built-in ratcheting hub that allows the surgeon to generate, incrementally increase, and retain mechanical compression.

The Ratcheting Compression Plate integrates a plate span, cannulated and threaded legs, and a ratcheting hub into a stand-alone implant.

**The Ratcheting Compression Plating System is designed to address the following biomechanical challenges in surgeries of the foot and ankle:**

- Joint stabilization
- Compression (initial and retained)
- Cyclic loading
- Ease of application

**Indications for Use:**

The Acumed Ratcheting Compression Plating System is intended to be used for fixation such as: LisFranc arthrodesis, mono or bi-cortical osteotomies in the forefoot, first metatarsophalangeal arthrodesis, Akin osteotomy, midfoot and hindfoot arthrodeses or osteotomies, fixation of osteotomies for hallux valgus treatment (Scarf and Chevron), and arthrodesis of the metatarsocuneiform joint to reposition and stabilize metatarsus primus varus.
# Table of Contents

Introduction ................................................................. 2

Surgical Technique Overview .................................................... 4

System Features ................................................................ 6

Surgical Technique ........................................................................ 8

Ratcheting Compression Plate—Cannulated Surgical Technique ................. 8
Ratcheting Compression Plate—Noncannulated Surgical Technique ............... 14
Ratcheting Compression Plate—Implant Removal ........................................ 19

Ordering Information ............................................................ 20

Notes ................................................................................. 22
Surgical Technique Overview

Joint preparation    Trial selection    Trial assembly    Positioning of the trial    Guide wire insertion    Determine leg length

CANNULATED SURGICAL TECHNIQUE

NONCANNULATED SURGICAL TECHNIQUE

IMPLANT REMOVAL
Acumed® Ratcheting Compression Plating System Surgical Technique

Drilling

Implant insertion

Implant compression
System Features

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<thead>
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<th>PLATE LENGTH</th>
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**IMPLANTS**
Solid Drill (80-1681)

Cannulated Drill (80-1674)

Plate Tacks (PL-PTACK)

Quick Release Handle (MS-1210)

15 mm Drill Guide/Trial Assembly (80-1646)

17 mm Drill Guide/Trial Assembly (80-1652)

20 mm Drill Guide/Trial Assembly (80-1657)

25 mm Drill Guide/Trial Assembly (80-1662)

30 mm Drill Guide/Trial Assembly (80-1667)

Wire Guide Tube (80-1641)

Depth Gauge (80-1680)

Compression Tool (80-1669)

Drill/Wire Guide Assembly 15 mm (80-1642)

Drill/Wire Guide Assembly 17 mm (80-1650)

Drill/Wire Guide Assembly 20 mm (80-1655)

Drill/Wire Guide Assembly 25 mm (80-1660)

Drill/Wire Guide Assembly 30 mm (80-1665)

Tamp (80-1675)

Hub Release Tool (80-1673)

Bridge/Leg Removal Tool (80-1679)

.045” x 6” Single Trocar Guide Wire (WS-1106ST)
1 JOINT PREPARATION
Dissection is carried down to the joint capsule and periosteum, taking care to retract vital structures.
A capsulotomy is performed and the joint is thoroughly exposed.
Cartilage is resected using the technique and instrumentation of choice.
Reciprocal planing or bone grafting is performed until the subchondral bone is well coapted and/or the desired position is obtained.
Compression is applied across the fusion site manually or by use of a bone reduction clamp. A .045” x 6” ST Guide Wire (WS-1106ST) may also be placed for temporary fixation.

2 TRIAL SELECTION
After preparing the joint, select the trial that best fits in the space available. It may be necessary to trial different sizes and different locations to achieve the best fit. Selecting the appropriate trial will determine the final implant sizing. Take care to allow for at least 5 mm of space between each leg location and the joint space.
3 **TRIAL ASSEMBLY**

After selecting the trial, create the Trial Assembly by attaching the following instruments that correspond to the trial size selected in the previous step:

- Quick Release Handle (MS-1210)
- Drill Guide
- Trial Guide

Attach the Quick Release Handle to the appropriate Drill Guide (80-16XX, see reference chart below). The corresponding Trial Guide (80-16XX, see reference chart below) is then attached and the Wire Guide Tubes (80-1641) are threaded onto the Trial Assembly. When the components are properly assembled, the number markings on the drill guide and trial guide should line up with each other.

**TRIAL ASSEMBLY REFERENCE CHART**

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<thead>
<tr>
<th></th>
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4 POSITIONING OF THE TRIAL

The bony surfaces surrounding the joint can be smoothed and flattened in the areas where the implant is to be placed.

After assembling the appropriate pieces, position the trial so that the distal portion of the assembly lies flat in the desired final position of the implant.

**Important:** This is a critical step in avoiding implant prominence. Check multiple positions for the trial to ensure absence of prominence before securing.

If provisional fixation is desired, secure the position of the trial by inserting two Plate Tacks (PL-PTACK) into the holes on the base of the Trial Guide, one on each side of the arthrodesis site.

**Caution:** When positioning the trial, use caution to make sure you do not touch any other implants/hardware when inserting the Ratcheting Compression Plate.

5 GUIDE WIRE INSERTION

Insert one .045” x 6” ST Guide Wire into each Wire Guide Tube to the appropriate depth, corresponding to the leg length of the desired implant (see Figure 4).
6 DETERMINE LEG LENGTH

The depth of each Guide Wire can be determined by removing the Trial Assembly and inserting the cannulated Depth Gauge (80-1680) over each Guide Wire. Depth is measured from a laser mark on the exposed portion of the wire against the graduation marks on the depth gauge (see Figure 5).

7 DRILLING

Insert each Guide Wire an additional 2–5 mm to gain additional purchase.

Remove the Wire Guide Tubes by unthreading them from the Trial Assembly.

If necessary, re-secure the Trial Assembly over the Guide Wires with two Plate Tacks in the original location.

Using the Cannulated Drill (80-1674), drill over the exposed Guide Wire and through the open ends of the Drill Guide (see Figure 6). As an alternative, use the Solid Drill (80-1681) without Guide Wires.

Drill to the appropriate depth corresponding to the leg length of the desired implant.

Drill depth is measured from the lines on the drill where they meet the Drill Guide (see Figure 7).
8 IMPLANT INSERTION

Remove the Trial Assembly from the arthrodesis site, being mindful to leave the Guide Wire in the drilled holes.

If Guide Wires are used to aid in implant insertion, thread the cannulated legs of the chosen implant over the exposed ends of the Guide Wires. Press fit each leg into the drilled holes.
**IMPLANT COMPRESSION**

Using the Cannulated Tamp (80-1675) and a mallet, gently tamp the implant down to the surface of the bone.

**Important:** Avoid over tamping. Do not imbed or bury the implant beneath the surface of the bone.

Remove any temporary joint fixation prior to compression. Guide wires may be left in drill holes for implant insertion.

**Important:** Be sure to insert each Guide Wire through the ends of the Compression Tool (80-1669).

Seat the tips of the Compression Tool all the way down to the bone, gripping the outside edges of the implant. It may be necessary to clear away excess periosteum next to the implant for good mating with the Compression Tool (see figures 9 and 10).

Gently squeeze the handles of the Compression Tool together until an audible “click” is heard, indicating the ratcheting mechanism has engaged. Continue with this process until adequate compression is achieved.

The number of clicks during actuation will vary depending on bone apposition and integrity.

Place cannulated tamp over Guide Wires and gently tamp the implant down to obtain a low-profile finish (see Figure 11).

**Notes:**

- Two or more devices may be seated across the joint.
- This is a single-use implant and once actuated the implant CANNOT be released and reset. If the implant needs to be repositioned, a new implant needs to be used.
- To remove the implant, see Implant Removal Technique on page 19.
Ratcheting Compression Plate—Noncannulated Surgical Technique

1 JOINT PREPARATION

Dissection is carried down to the joint capsule and periosteum, taking care to retract vital structures.

A capsulotomy is performed and the joint is thoroughly exposed. Cartilage is resected using the technique and instrumentation of choice.

Reciprocal planing or bone grafting is performed until the subchondral bone is well coapted and/or the desired position is obtained.

Compression is applied across the fusion site manually or by use of a bone reduction clamp.

2 TRIAL SELECTION

After preparing the joint, select the trial that best fits in the space available. It may be necessary to trial different sizes and different locations to achieve the best fit. Selecting the appropriate trial will determine the final implant sizing. Take care to allow for at least 5 mm of space between each leg location and the joint space.
3 **TRIAL ASSEMBLY**

After selecting the trial, create the Trial Assembly by attaching the following instruments that correspond to the trial size selected in the previous step:

- Quick Release Handle (MS-1210)
- Drill Guide
- Trial Guide

Attach the Quick Release Handle to the appropriate Drill Guide (80-16XX, see reference chart below). The corresponding Trial Guide (80-16XX, see reference chart below) is then attached. When the components are properly assembled, the number markings on the drill guide and trial guide should line up with each other.

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**TRIAL ASSEMBLY REFERENCE CHART**

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<tr>
<th></th>
<th>15 mm</th>
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<td>80-1650</td>
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</table>
4 POSITIONING OF THE TRIAL
The bony surfaces surrounding the joint can be smoothed and flattened in the areas where the implant is to be placed.

After assembling the appropriate pieces, position the trial so that the distal portion of the assembly lies flat in the desired final position of the implant.

Important: This is a critical step in avoiding prominence. Check multiple positions of the trial to ensure absence of prominence before securing.

Caution: When positioning the trial, use caution to make sure you do not touch any other implants/hardware when inserting the Ratcheting Compression Plate.

5 DRILLING
Using the Solid Drill (80-1681), drill through one of the open ends of the drill guide (see Figure 16).

Drill to the appropriate depth corresponding to the leg length of the desired device. Drill depth is measured from the laser markings on the drill where they meet the drill guide (see Figure 17). A scale is available on the tray that corresponds to the depth markings on the drill. This scale is intended to aid the surgeon in ensuring accurate interpretation of the markings on the drill.

With the first drill left in place, a second Solid Drill (80-1681) is inserted through the other open end of the drill guide (see Figure 17).
6 IMPLANT INSERTION
Remove the drills and trial assembly from the arthrodesis site.
Insert the legs of the implant into the drilled holes.

Figure 18
Ratcheting Compression Plate
3701-XXXXX-S
7 IMPLANT COMPRESSION

Using the Tamp (80-1675) and a mallet, gently tamp the implant down to the surface of the bone.

Important: Avoid over tamping. Do not imbed or bury the implant beneath the surface of the bone.

Remove any temporary joint fixation clamps prior to compression.

Seat the tips of the Compression Tool all the way down to the bone, gripping the outside edges of the implant. It may be necessary to clear away excess periosteum next to the implant for good mating with the Compression Tool (see figures 19 and 20).

Gently squeeze the handles of the Compression Tool together until an audible “click” is heard or until in-line leg travel has occurred, indicating the ratcheting mechanism has engaged. Continue with this process until adequate compression is achieved.

The number of clicks during compression will vary depending on bone apposition and integrity.

Gently tamp the implant down to obtain a low-profile finish (see Figure 21).

Notes:

• Two or more devices may be used across the joint in a 90° configuration.

• This is a single-use implant and once actuated, the implant CANNOT be released and reset. If the implant needs to be repositioned, a new implant needs to be used.

• To remove the implant, see Implant Removal Technique on page 19.
Ratcheting Compression Plate—Implant Removal

1

Each Ratcheting Compression Plate is designed to be explantable (removable) from the body. After surgically obtaining access to the top portion of the plate, assemble the Quick Release Handle (MS-1210) and the Hub Release Tool (80-1673). Engage the Hub Release Tool securely onto the surface of the hub. Turn the assembly counter-clockwise until the hub is free from the device (see Figure 23). Remove the hub from the surgery site. Next, remove the washer from the surgery site.

2

After disassembling the hub from the Quick Release Handle, attach the Bridge/Leg Removal Tool (80-1679) to the Quick Release Handle. Next, place the Bridge/Leg Removal Tool under one of the exposed sides of the implant. Turn the assembly counter-clockwise until the leg is free (see Figure 24). Repeat the procedure on the remaining implant components.
## Ordering Information

### Implants

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### Instruments

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