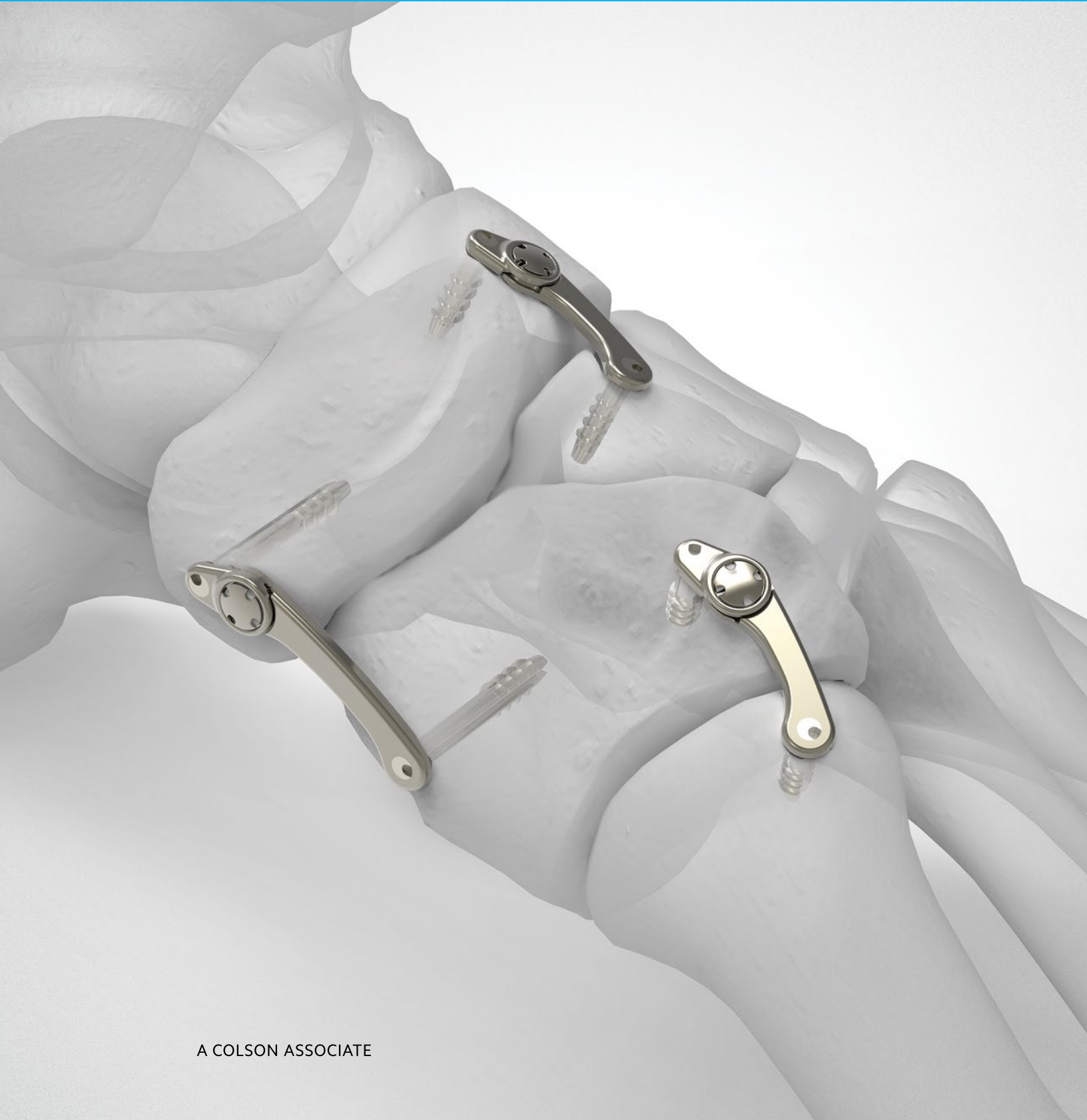


Surgical Technique



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® 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

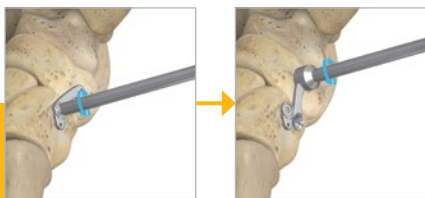
CANNULATED
SURGICAL
TECHNIQUE



NONCANNULATED
SURGICAL
TECHNIQUE



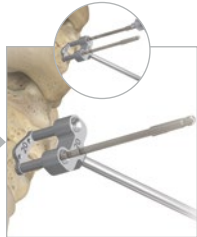
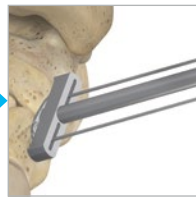
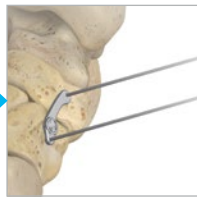
IMPLANT
REMOVAL



Drilling

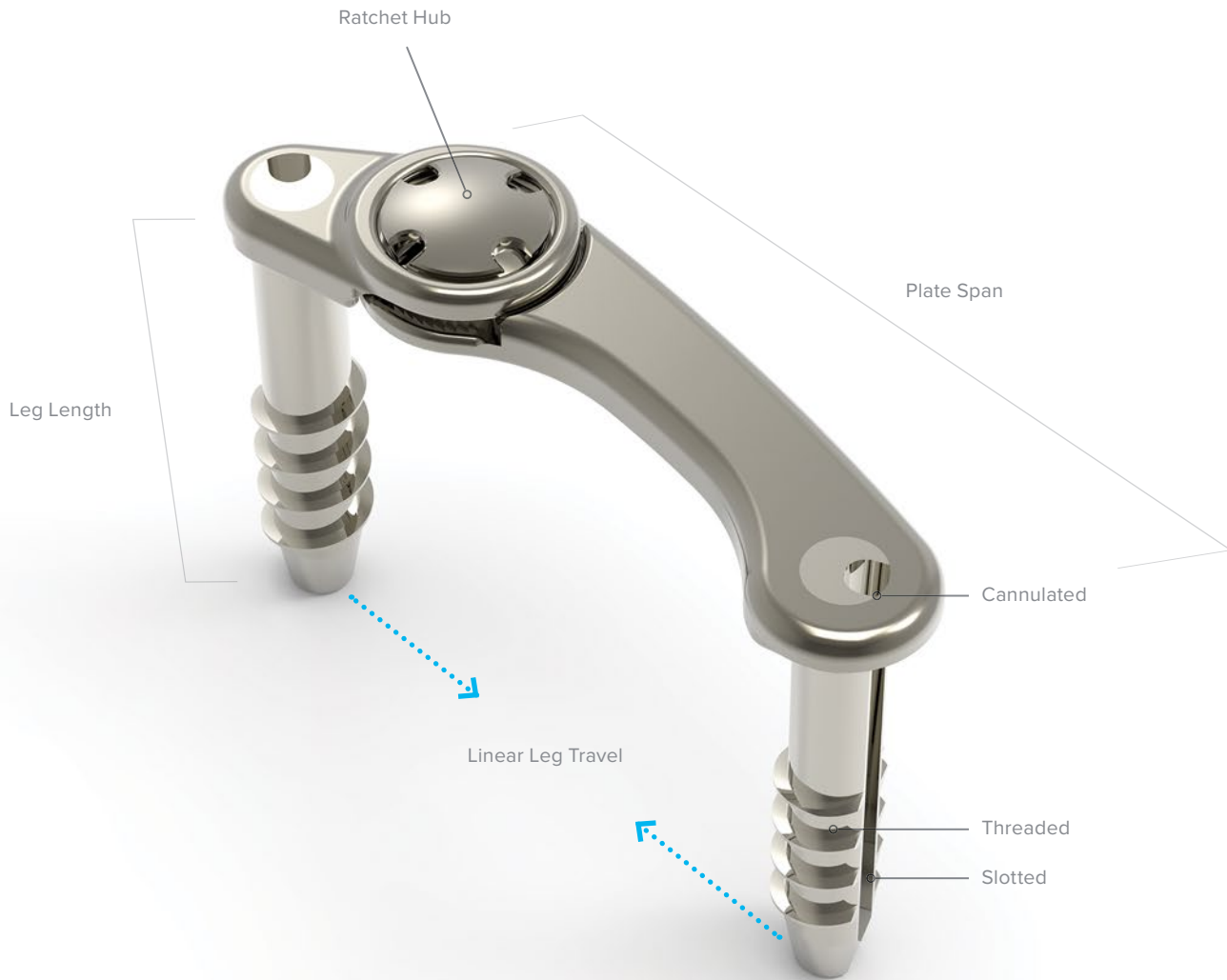
Implant insertion

Implant compression



System Features

IMPLANTS



DESCRIPTION	PLATE LENGTH	LEG LENGTH	PART NUMBER
Ratcheting Compression Plate, 15 x 11 Sterile	15 mm	11 mm	3701-1511N-S
Ratcheting Compression Plate, 17 x 14 Sterile	17 mm	14 mm	3701-1714N-S
Ratcheting Compression Plate, 20 x 17 Sterile	20 mm	17 mm	3701-2017N-S
Ratcheting Compression Plate, 25 x 17 Sterile	25 mm	17 mm	3701-2517N-S
Ratcheting Compression Plate, 25 x 20 Sterile	25 mm	20 mm	3701-2520N-S
Ratcheting Compression Plate, 30 x 25 Sterile	30 mm	25 mm	3701-3025N-S



Quick Release Handle
(MS-1210)



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



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



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



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



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



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



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



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



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



Wire Guide Tube
(80-1641)



Depth Gauge
(80-1680)



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



Compression Tool
(80-1669)



Tamp
(80-1675)



Solid Drill
(80-1681)



Hub Release Tool
(80-1673)



Cannulated Drill
(80-1674)



Bridge/Leg Removal Tool
(80-1679)



Plate Tacks
(PL-PTACK)



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

Ratcheting Compression Plate—Cannulated 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. 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.



Figure 1

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.

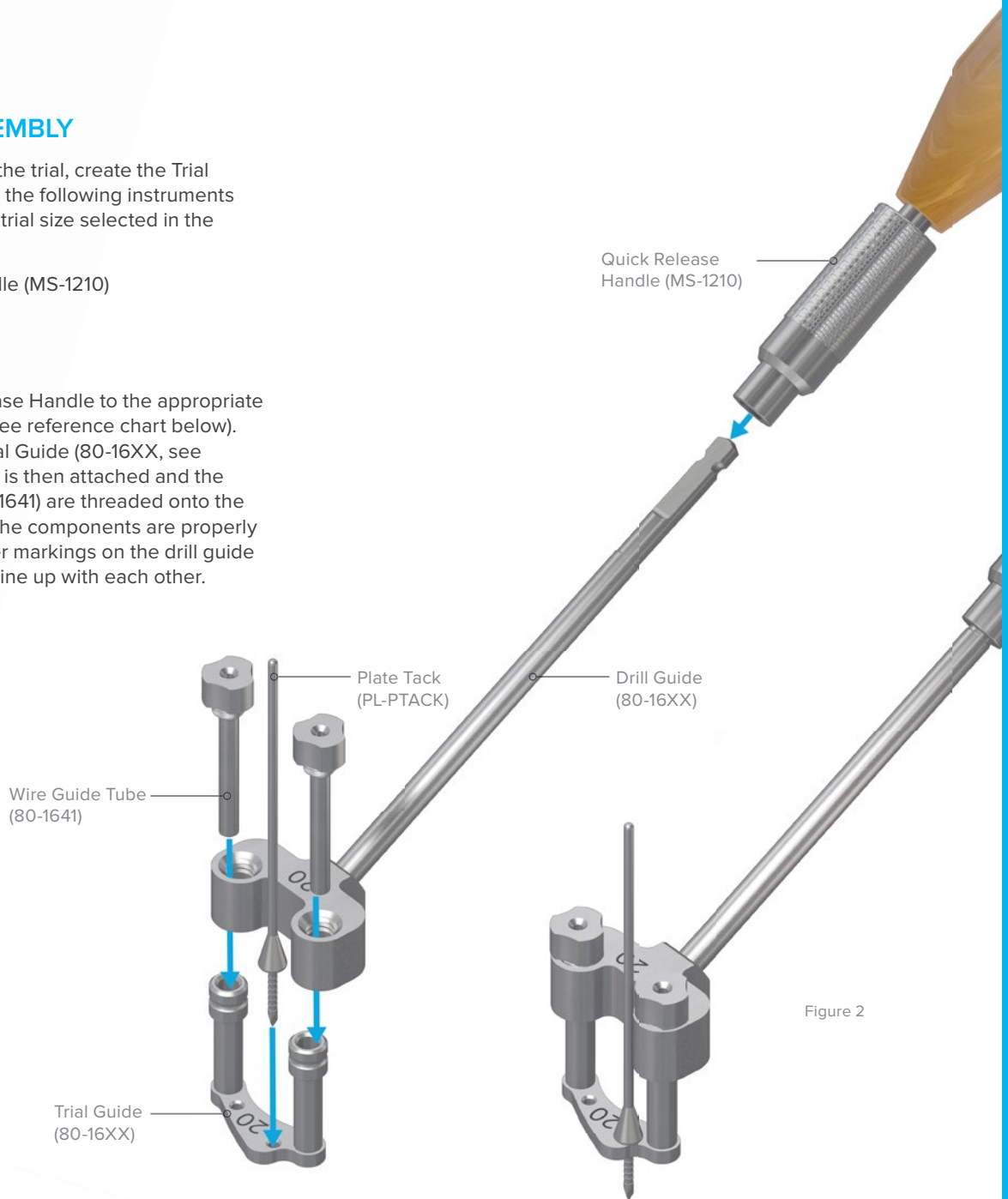


Figure 2

TRIAL ASSEMBLY REFERENCE CHART

	15 mm	17 mm	20 mm	25 mm	30 mm
Trial Guide	80-1646	80-1652	80-1657	80-1662	80-1667
Drill Guide	80-1642	80-1650	80-1655	80-1660	80-1665

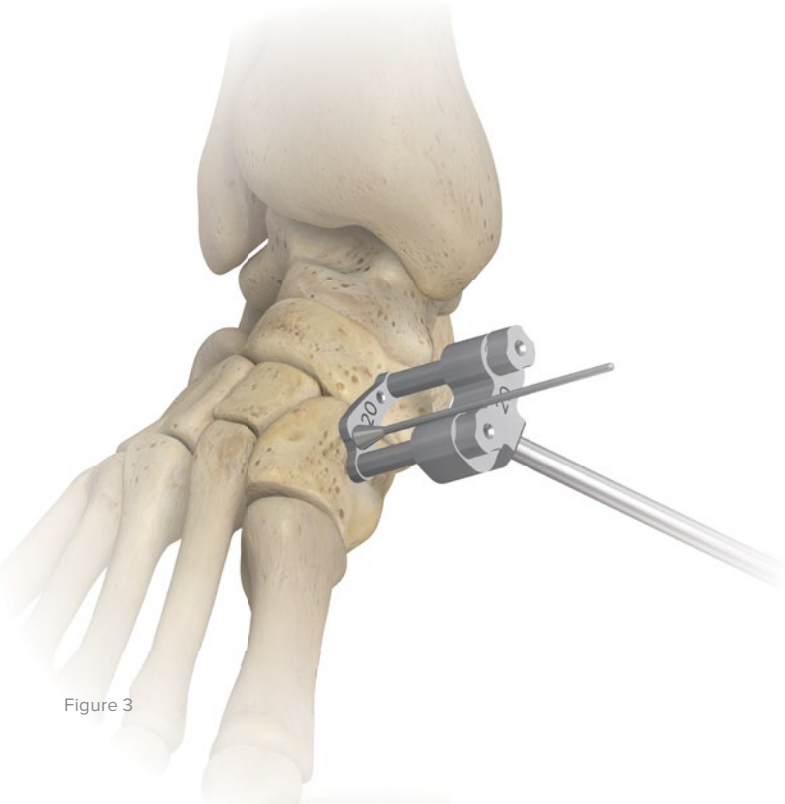


Figure 3

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.

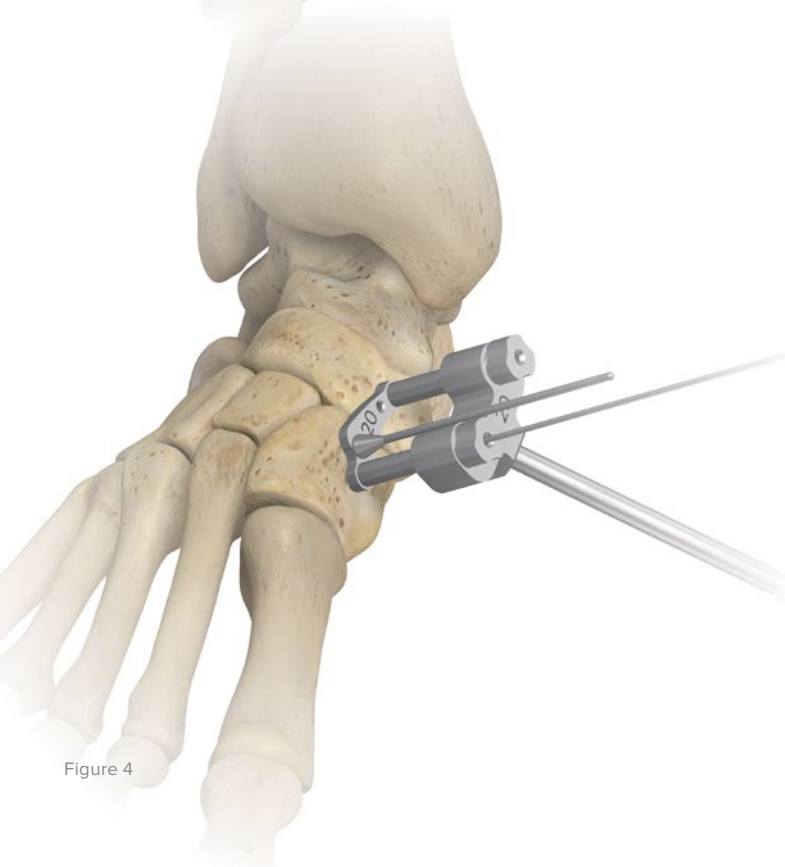


Figure 4

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).



Quick Release Handle (MS-1210)



Plate Tack (PL-PTACK)



Drill Guide (80-16XX)



Wire Guide Tube (80-1641)



Trial Guide (80-16XX)



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

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).

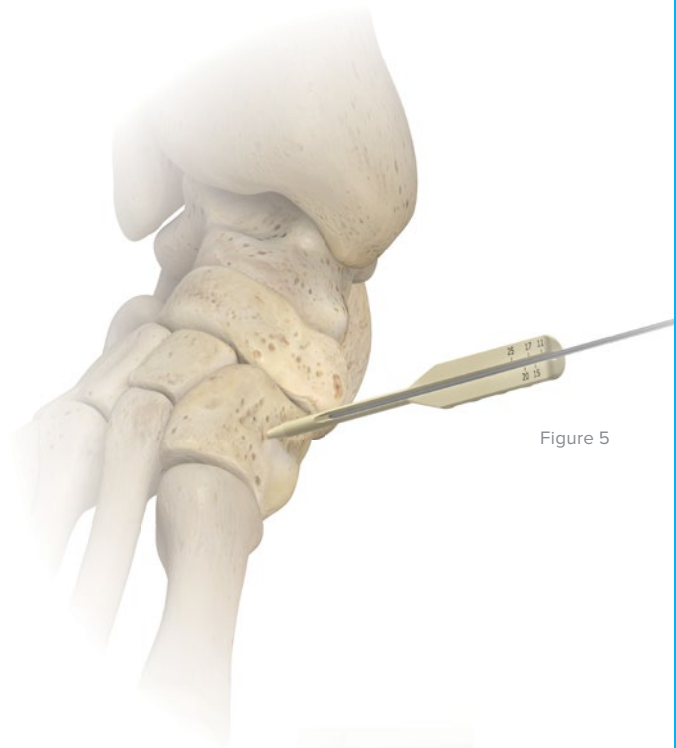


Figure 5

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).

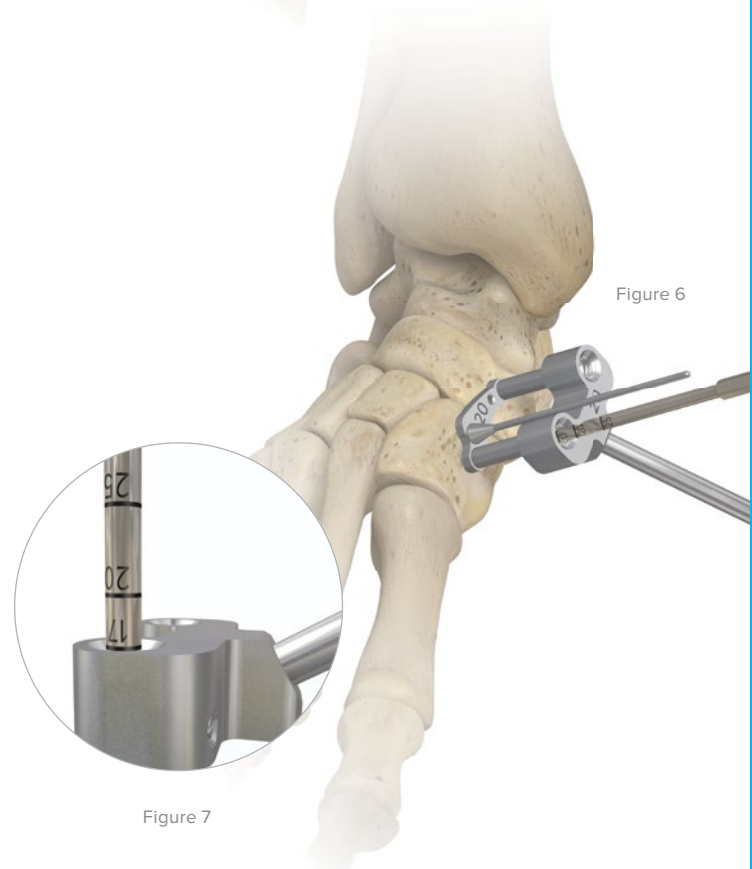


Figure 6

Figure 7



Depth Gauge (80-1680)



Cannulated Drill (80-1674)



Quick Release Handle (MS-1210)



Plate Tack (PL-PTACK)



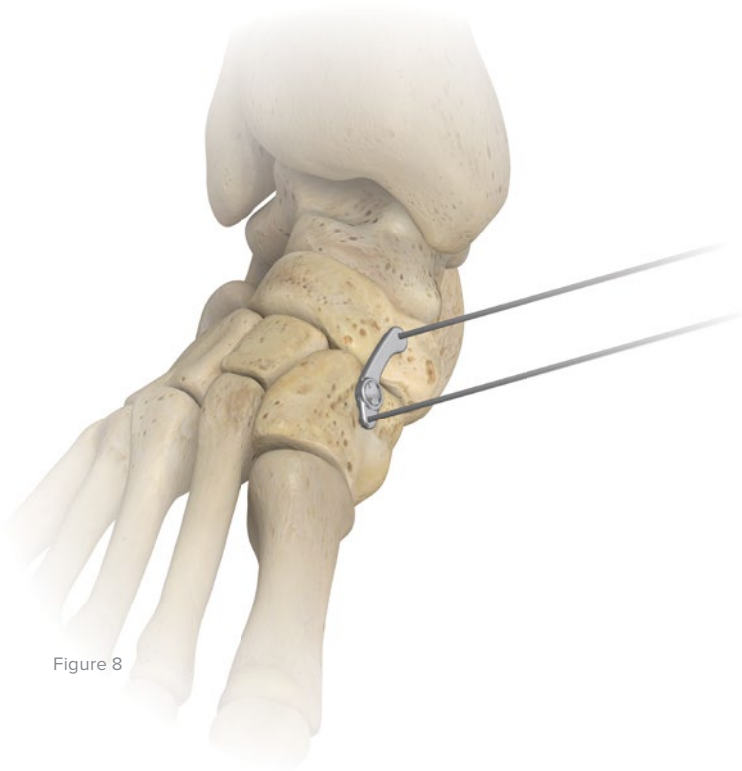
Drill Guide (80-16XX)



Wire Guide Tube (80-1641)



Trial Guide (80-16XX)



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.

Figure 8



Ratcheting
Compression Plate
3701-XXXXX-S



.045" X 6" Single
Trocar Guide Wire
(WS-1106ST)

9 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.

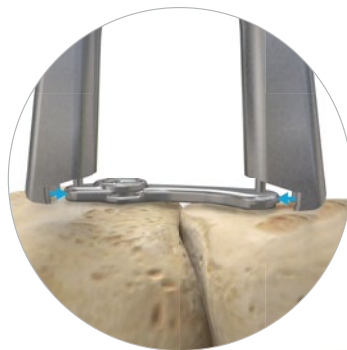


Figure 9



Figure 10

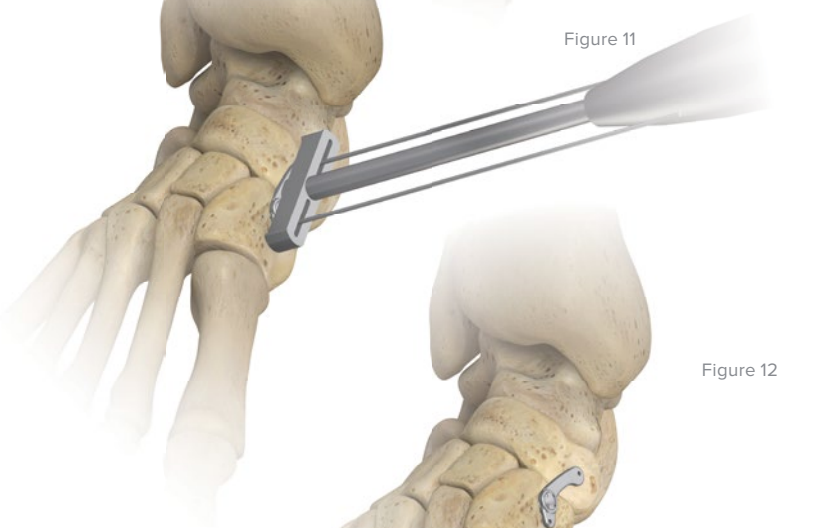


Figure 11



Figure 12



Ratcheting
Compression Plate
3701-XXXXX-S



.045" X 6" Single
Trocar Guide Wire
(WS-1106ST)



Compression
Tool
(80-1669)



Tamp
(80-1675)

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 coated 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.

Figure 13



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.

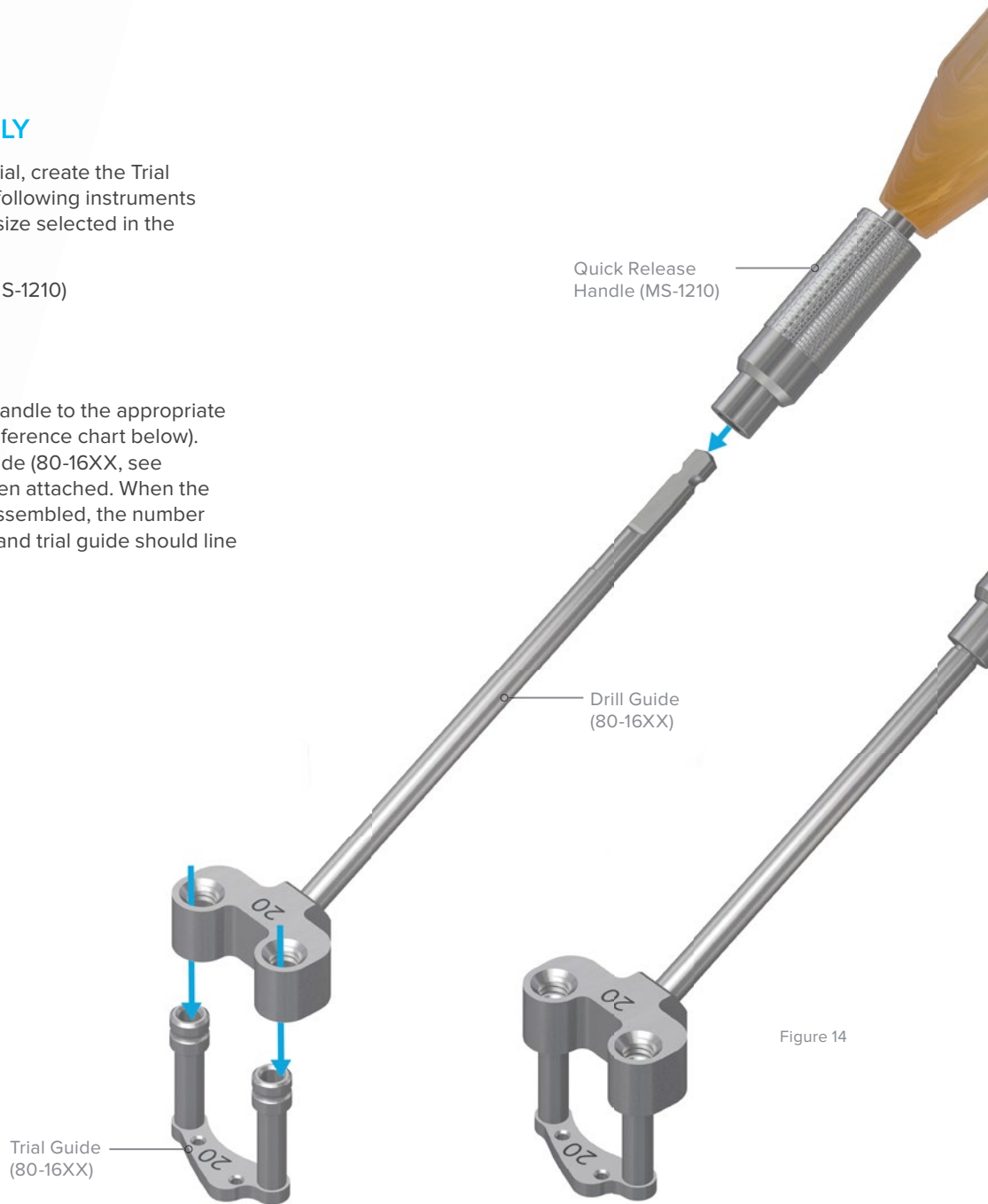


Figure 14

TRIAL ASSEMBLY REFERENCE CHART

	15 mm	17 mm	20 mm	25 mm	30 mm
Trial Guide	80-1646	80-1652	80-1657	80-1662	80-1667
Drill Guide	80-1642	80-1650	80-1655	80-1660	80-1665

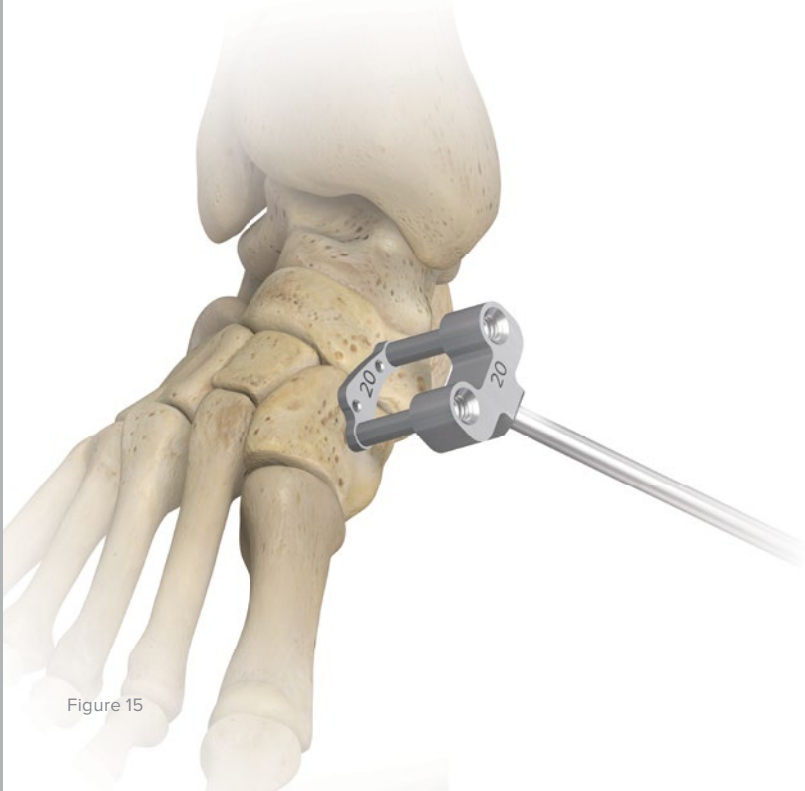


Figure 15

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.

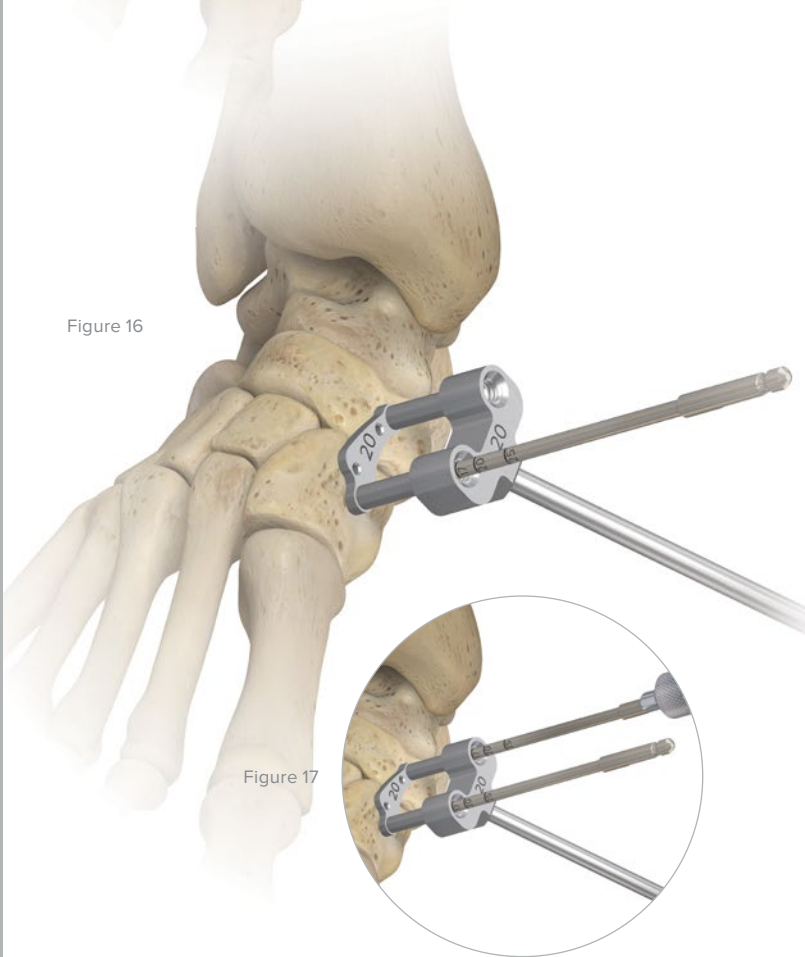


Figure 16

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).

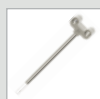
Figure 17



Quick Release Handle (MS-1210)



Solid Drill (80-1681)



Drill Guide (80-16XX)



Wire Guide Tube (80-1641)



Trial Guide (80-16XX)

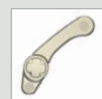
6 IMPLANT INSERTION

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

Figure 19

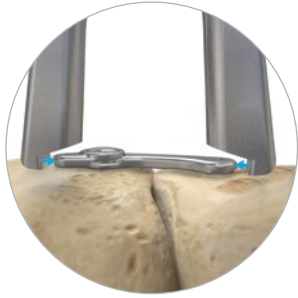


Figure 20



Figure 21

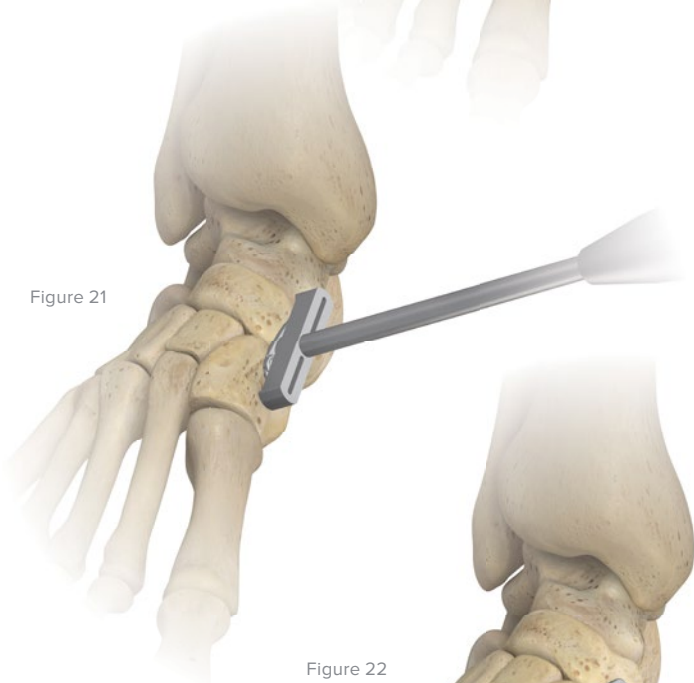
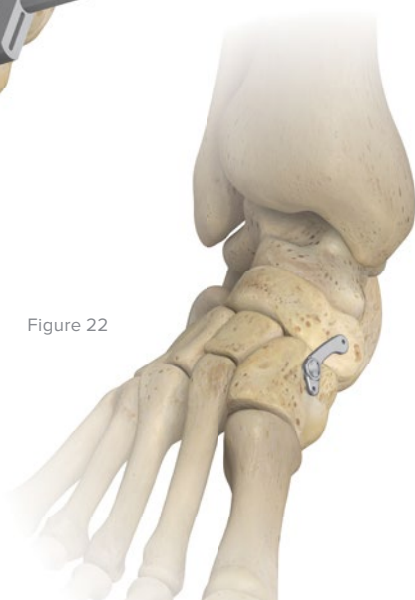


Figure 22



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
3701-XXXXX-S



Compression Tool
(80-1669)



Tamp
(80-1675)

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.

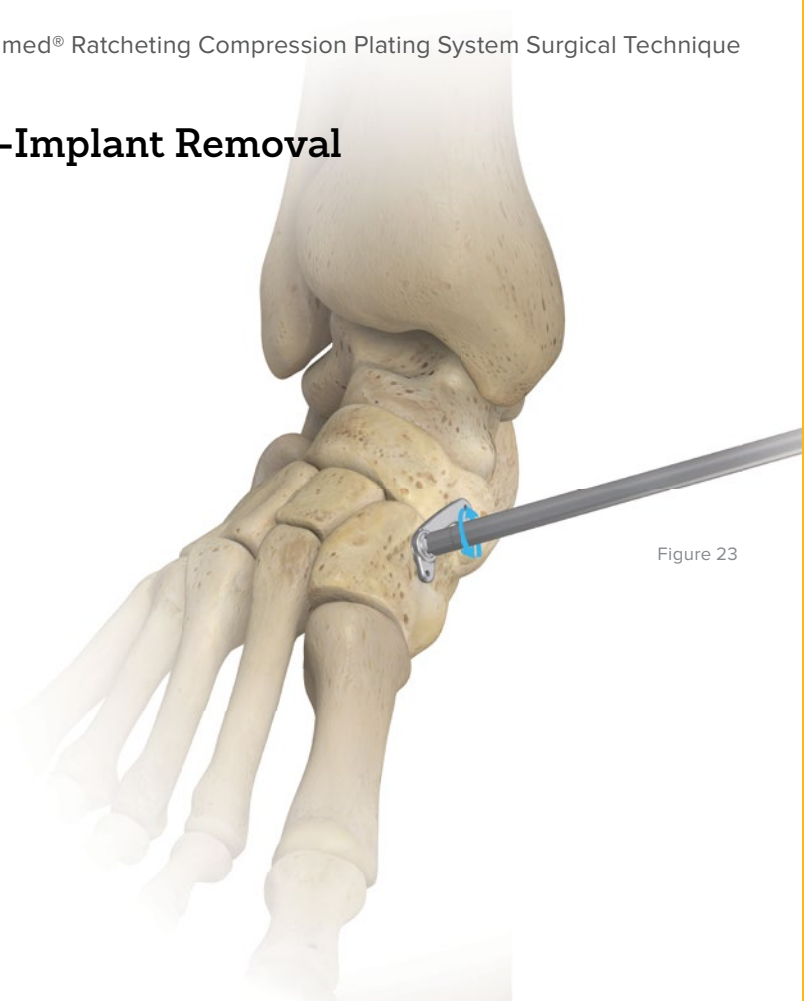


Figure 23

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.

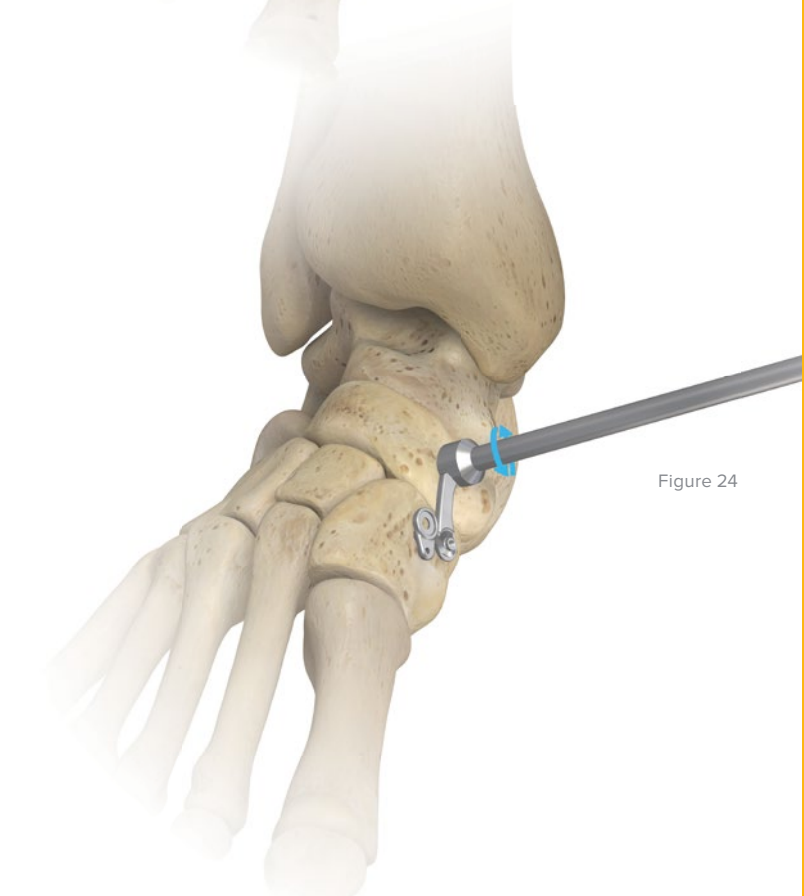


Figure 24



Ratcheting
Compression Plate
3701-XXXXX-S



Hub Release
Tool
(80-1673)



Bridge/Leg
Removal Tool
(80-1679)

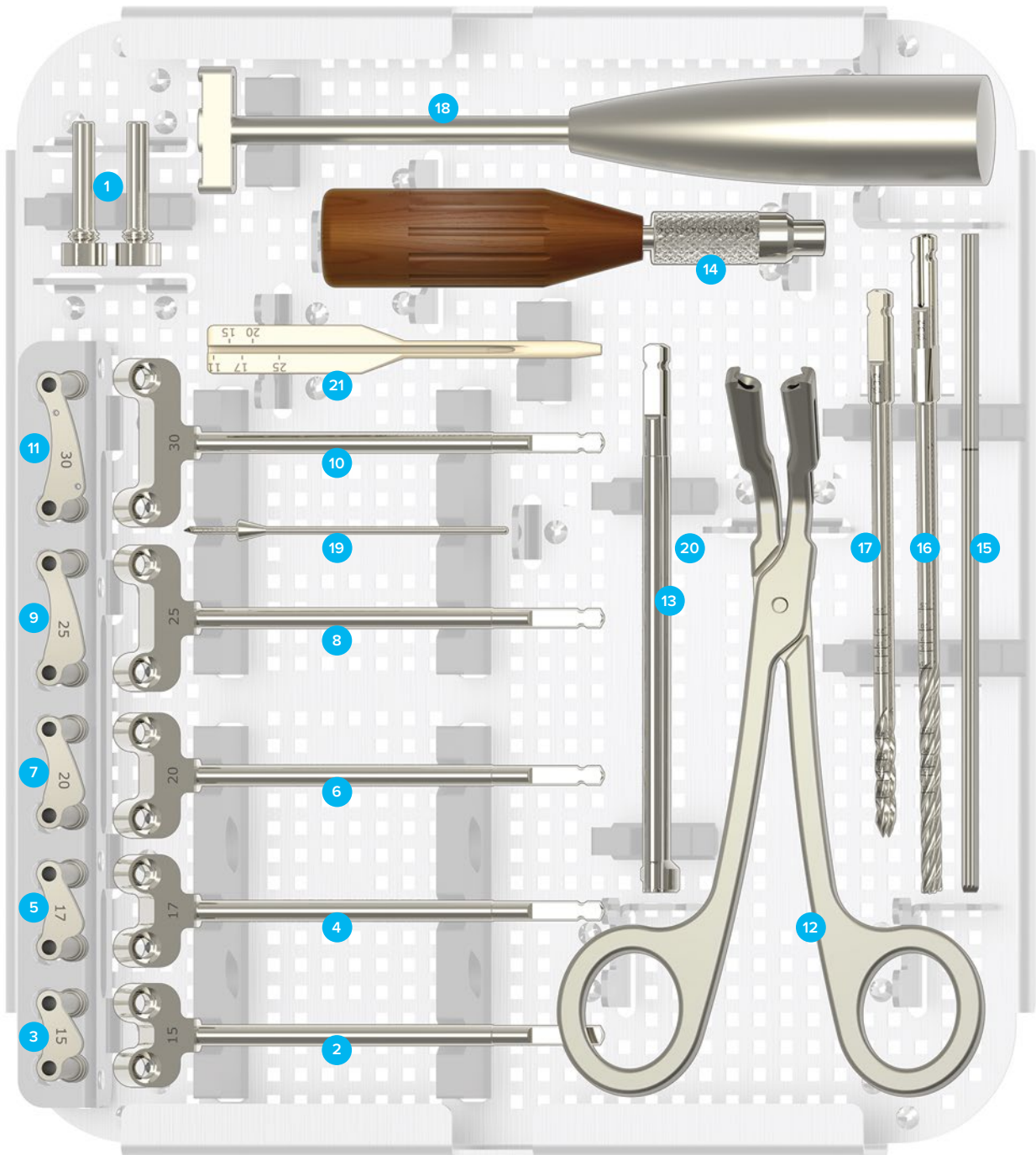
Ordering Information

Implants

Ratcheting Compression Plate, 15 x 11 Sterile	3701-1511N-S
Ratcheting Compression Plate, 17 x 14 Sterile	3701-1714N-S
Ratcheting Compression Plate, 20 x 17 Sterile	3701-2017N-S
Ratcheting Compression Plate, 25 x 17 Sterile	3701-2517N-S
Ratcheting Compression Plate, 25 x 20 Sterile	3701-2520N-S
Ratcheting Compression Plate, 30 x 25 Sterile	3701-3025N-S

Instruments

1	Wire Guide Tube	80-1641
2	Drill/Wire Guide Assembly 15 mm	80-1642
3	Drill Guide/Trial Assembly 15 mm	80-1646
4	Drill/Wire Guide Assembly 17 mm	80-1650
5	Drill Guide/Trial Assembly 17 mm	80-1652
6	Drill/Wire Guide Assembly 20 mm	80-1655
7	Drill/Wire Guide/Trial Assembly 20 mm	80-1657
8	Drill/Wire Guide Assembly 25 mm	80-1660
9	Drill Guide/Trial Assembly 25 mm	80-1662
10	Drill/Wire Guide Assembly 30 mm	80-1665
11	Drill Guide/Trial Assembly 30 mm	80-1667
12	Compression Tool	80-1669
13	Hub Release Tool	80-1673
14	Quick Release Handle	MS-1210
15	.045" X 6" Single Trocar Guide Wire	WS-1106ST
16	Cannulated Drill	80-1674
17	Solid Drill	80-1681
18	Tamp	80-1675
19	Plate Tacks	PL-PTACK
20	Bridge/Leg Removal Tool	80-1679
21	Depth Gauge	80-1680
	Half-Size Single Level Case Base Assembly	80-1682
	Half-Size Instrument Tray	80-1683
	Half-Size Case Lid	80-1685





Acumed Headquarters
5885 NW Cornelius Pass Road
Hillsboro, OR 97124
Office: +1.888.627.9957
Office: +1.503.627.9957
Fax: +1.503.520.9618
acumed.net

These materials contain information about products that may or may not be available in any particular country or may be available under different trademarks in different countries. The products may be approved or cleared by governmental regulatory organizations for sale or use with different indications or restrictions in different countries. Products may not be approved for use in all countries. Nothing contained on these materials should be construed as a promotion or solicitation for any product or for the use of any product in a particular way which is not authorized under the laws and regulations of the country where the reader is located. Specific questions physicians may have about the availability and use of the products described on these materials should be directed to their particular local sales representative. Specific questions patients may have about the use of the products described in these materials or the appropriateness for their own conditions should be directed to their own physician.

FNA10-01-D | Effective: 04/2015 | © 2015 Acumed® LLC