stryker

Invision®
Total Ankle Revision System

Operative technique

Disclaimer

This publication sets forth detailed recommended procedures for using Stryker devices and instruments. It offers guidance that you should heed, but, as with any such technical guide, each surgeon must consider the particular needs of each patient and make appropriate adjustments when and as required.

Important

The patient should be advised that the device cannot and does not replicate a normal healthy bone, that the device can break or become damaged as a result of strenuous activity or trauma and that the device has a finite expected service life.

- Removal or revision of the device may be required sometime in the future.
- Cleaning and sterilization information is provided in the applicable instructions for use.
- Non-sterile devices, including implants and instruments, must be cleaned and sterilized prior to use, in accordance with validated methods.
- Devices that are able to be disassembled should be disassembled prior to point-of-use processing.
- Additionally, devices with movable components that do not facilitate disassembly should be manually articulated during the point-of-use processing step in order to evacuate additional soils.
- Please remember that the compatibility of different product systems has not been tested unless specified otherwise in the product labeling.
- Consult Instructions for Use (www.ifu.stryker.com) for a complete list of potential adverse effects and adverse events, contraindications, warnings and precautions.
- The surgeon must advise patients of surgical risks, and make them aware of adverse effects and alternative treatments.
- An implant whose packaging is open or damaged or whose expiration date has passed must not be used. Every precaution must be taken to ensure sterility when opening the packaging of the implant and during implantation.

Surgeon design team

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Invision

Total Ankle Revision System

Contents

Introduction

The Invision Total Ankle Revision System is the next step in total ankle arthroplasty. This system retains all of the design principals of the Inbone Total Ankle System while introducing design enhancements.

The Invision Total Ankle Revision System utilizes the Inbone tibial stems for proximal fixation into the tibia. A minimum of two and a maximum of eight stems are cleared for use. These implants are provided sterile.

The Invision Total Ankle Revision System offers universal tibial trays; with four sizes (2-5), two lengths (standard and long), and two thicknesses. The tibial trays are manufactured from Titanium (Ti) Alloy and utilize a similar trapezoidal profile as the Inbone tibial trays. On the superior surface a morse taper identical to Inbone is utilized for compatibility with the Inbone tibial stems. The anterior-posterior (AP) lengths of the invision tibial trays have been optimized to match the resected anatomy. The lock detail of the invision tibial trays is identical to Inbone and the proximal surface is coated. These implants are provided sterile.

The standard, revision, and large revision Inbone tibial inserts are available for use with the Invision Total Ankle Revision System. The polyethylene inserts are manufactured from Ultra High Molecular Weight Polyethylene (UHMWPE) and are provided sterile.

The invision talar dome is available in 5 sizes (1-5) and two thicknesses (standard and +3mm) with a symmetric design that allows it to be used in both right and left ankles. It is manufactured from Cobalt-Chrome (CoCr) and possesses the same sulcus articulating geometry as the Inbone talar dome. On the inferior surface a central morse taper hole allows for coupling with the Invision Talar Plate implant. The same size talar dome or one size smaller can be used with the talar plate. In addition, four radial holes surround the morse taper and act as reliefs for the ortholoc 3Di bone screws. The anterior-medial surface includes the morse taper release hole. The invision talar domes are provided sterile.

Asymmetric talar plate implants, sizes 1-5, are included in the Invision Total Ankle System. They are available in a standard and long length, as well as a standard and +3mm thickness. The implant profile was designed to maximize cortical coverage of the talus. Manufactured from Titanium Alloy, the talar plates include a male morse taper surrounded radially by four Ortholoc 3Di locking holes. An additional locking hole is included in the talar neck. The inferior surface is coated. These implants are provided sterile.

The Ortholoc 3Di locking holes can accept 2.7mm locking and non-locking, 3.5mm locking and non-locking, and 4.0mm cancellous non-locking ortholoc 3Di Screws. The screws can be placed on-axis or off-axis for optimal surgical placement. The screws are provided non-sterile.

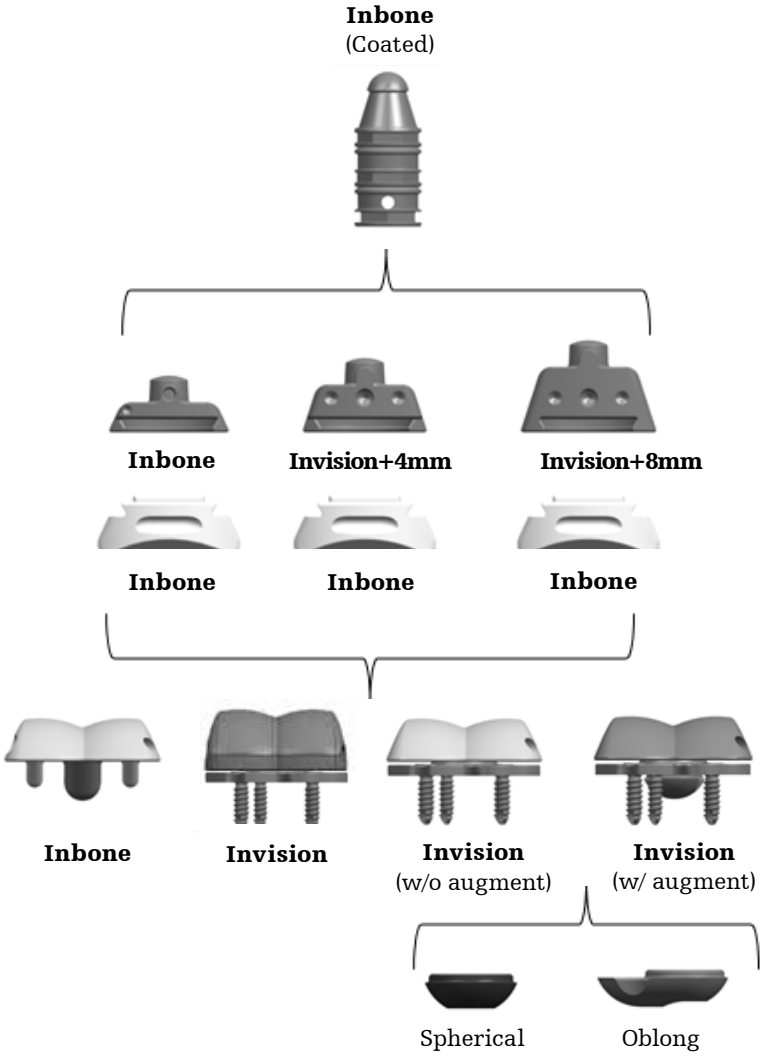
Sterile screw plugs, available in only one size, can be used in the ortholoc 3Di locking hole as a substitute for a screw. These implants are provided both sterile and non-sterile.

The optional invision augments are available in two types (central and oblong), five diameters, and two thicknesses. If bone voids are already present in the talus, an augment can be attached to the talar plate and used to fill the void. The inferior surface is coated. Manufactured from Titanium Alloy, these implants are provided sterile.

Introduction

Implant interchangeability

The Invision Total Ankle Revision System includes an array of options for each patient – coated stems, 6 thicknesses of polys as well as multiple thicknesses and lengths for tibial trays. The Invision Total Ankle Revision System is interchangeable with the Inbone II talar dome and tibial components.



Indications and contraindications

Intended use

The Invision Total Ankle Revision System is intended to give a patient limited mobility by reducing pain, restoring alignment and replacing the flexion and extension movement in the ankle joint.

Indications

The Invision Total Ankle Revision System is indicated for patients with ankle joints damaged by severe rheumatoid, post-traumatic, or degenerative arthritis. The Invision Total Ankle is additionally indicated for patients with a failed previous ankle surgery.

Contraindications

Contraindications include:

1. Osteomyelitis;
2. Insufficient bone stock or bone quality;
3. Infection at the ankle site or infections at distant sites that could migrate to the ankle;
4. Sepsis;
5. Vascular deficiency in the ankle joint;
6. Skeletally immature patients (patient is less than 21 years of age at the time of surgery);
7. Cases where there is inadequate neuromuscular status (e.g., prior paralysis, fusion and/or inadequate abductor strength), poor skin coverage around the joint which would make the procedure unjustifiable;
8. Neuropathic joints;
9. Excessive loads as caused by activity or patient weight;
10. Patient pregnancy;
11. Severely compromised musculature or neuromuscular function.
12. Uncooperative patient or patient with neurologic disorders, incapable of following instructions.

⚠ WARNING

This device is not intended for subtalar joint fusion or subtalar joint impingement. Please carefully evaluate the anatomy of each patient before implantation. High levels of activity may increase the risk of adverse events.

Surgeons should carefully consider the advisability of ankle replacement in patients with metabolic disorders or pharmacological treatments that impair bone formation or with conditions that may impede wound healing (e.g., end stage diabetes or malnutrition).

Prior to use of the system, the surgeon should refer to the product package insert for complete warnings, precautions, indications, contraindications and adverse effects. Package inserts are also available by contacting the manufacturer. Contact information can be found on the back of this operative technique and the package insert is available on the website listed.

Operative technique

Foot holder

Upgrades were made to the current Inbone footholder in order to allow the surgeon to stabilize the ankle joint, and secure the foot without fluoroscopic alignment outside of the footholder. Components may be used for Inbone and invision surgery.

To construct the upgraded foot holder, the following foot holder components need to be replaced with the upgraded foot holder components. All other components for the assembly of the foot holder remain the same.

The traditional foot plate (100096) should be substituted for the upgraded rotation base plate (IB600001). Align the left and right U-bracket to the corresponding surfaces of the rotation base plate and secure with the M6 screws. Laser marking indicators on the instrument components will aid in this assembly.

The traditional calf tray bracket (IB100102) and calf tray (200304) should be substituted for the upgraded joint space stabilizer rack (IB600004), pinion (IB600011), and joint space stabilizer bracket (IB600005). The joint space stabilizer Bracket should be attached to the left and right base of the foot holder. Ensure that proximal labeled surface is oriented correctly. The joint space stabilizer pinion is coupled to the joint space stabilizer bracket with the M6 knob long (IB600009).

Note that the joint space stabilizer pinion needs to be oriented such that the arrow point to the knee. Next, assemble the joint space stabilizer rack. Make certain that the gears of the joint space stabilizer rack are engaged with the gears of the joint space stabilizer pinion.

The traditional achilles support (IB100099) should be substituted for the upgraded achilles support (IB600012) and achilles slides (IB600008). The achilles slides should be assembled onto the achilles support and loosely secured. Final positioning of the achilles slides will be determined at subsequent steps (fig. 1).

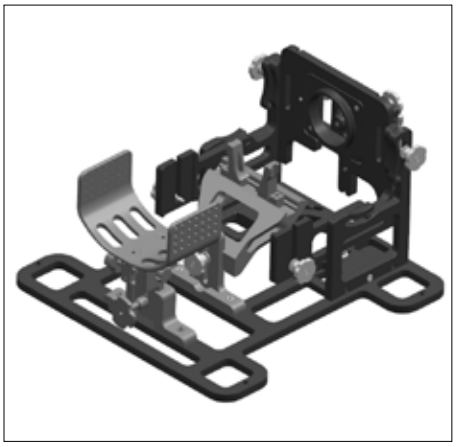


Fig. 1

Foot plate
IB600000

Rotation base plate
IB600001

Joint space stabilizer rack
IB600004

Joint space stabilizer pinion
IB600011

Joint space stabilizer bracket
IB600005

MK6 knob long
IB600009

Achilles support
IB600012

Achilles bracket slide
IB600008

Operative technique

⚠CAUTION

If previous prosthesis is implanted, remove all components before continuing to next steps.

Attach foot to foot plate

Assemble the heel support (IB600002) on to the rotation foot plate (IB600000) and lock into position using the 5mm Hhex key (fig. 2).

Next assemble the heel cups (IB600003/IB600010) onto the rotation foot plate. For a smaller ankle use the top two rails of the rotation foot plate and for a larger ankle use the bottom two rails of the rotation foot plate. Hand tighten the 6mm screws to loosely capture the heel cups. Final positioning will be determined when the foot is positioned onto the rotation foot plate (fig. 3).

Assemble the forefoot blocks (100101) onto the rotation foot plate as shown. Initial positioning of the forefoot blocks is not critical (fig. 4).

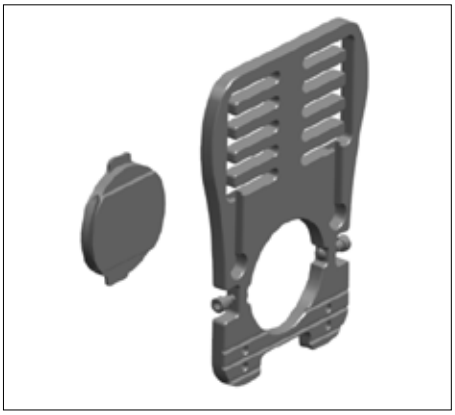


Fig 2

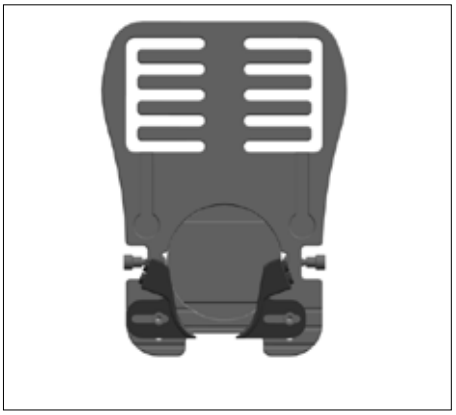


Fig. 3

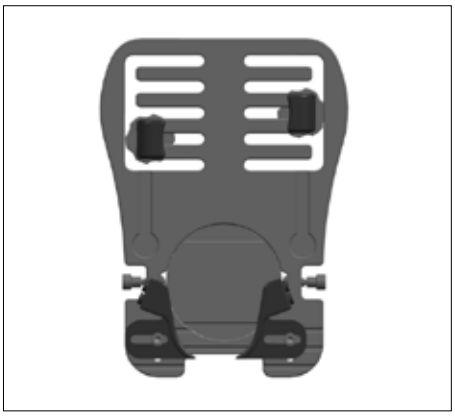


Fig. 4

Heel support IB600002

Heel cups IB600003/ IB600010

Forefoot blocks 100101

Operative technique

Place the foot onto the foot plate construct. Position the foot in the center of the rotation foot plate and such that the heel is directly over the heel support. Adjust heel cups to enclose and support the heel of the foot. Adjust the forefoot blocks to secure the forefoot (fig. 5).

Pin the calcaneus with two 2.4mm Steinmann pins (200072). Using the pin cutter (200427), cut the pins to approximately 1.5″ long (fig. 6).

With the foot secure, remove the heel support and attach the rotation foot plate construct to the foot holder (fig. 7).

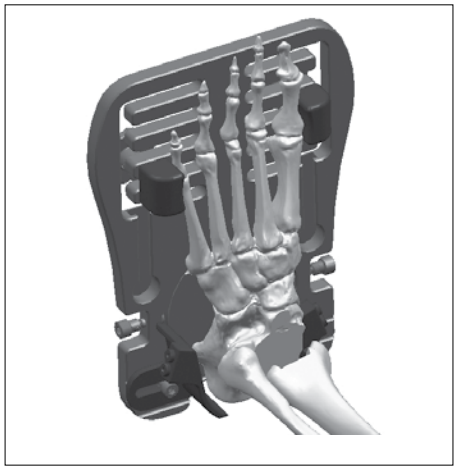


Fig. 5

Fig. 6

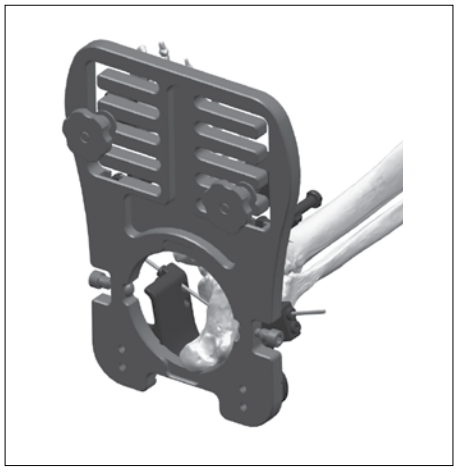


Fig. 7

2.4mm Steinmann pin
200072

Pin cutter
200427

Operative technique

Attach foot plate to foot holder

Align the boss of the rotation base plate to the hole of the rotation foot plate and assemble flush. Using the 5mm hex key (200433) loosely secure the rotation foot plate to the rotation base plate. Final positioning for this internal/external rotation of the foot holder will be established when determining the mortise view of the ankle (fig. 8). Mortise view is -10° in a non-deformed foot.

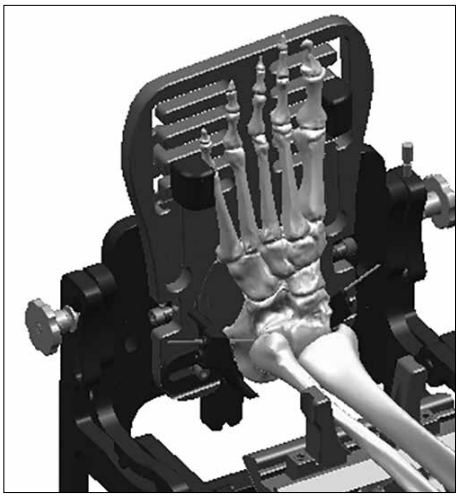


Fig. 8

Position the tibia in the joint space stabilizer. Adjust the joint space stabilizer such that the shaft of the tibia is parallel with the foot holder. Rotate the tibia such that the tibial tubercle is approximately perpendicular to the rotation foot plate. Padding underneath the calf and/or on either side of the tibia may be necessary for proper alignment (fig. 9).

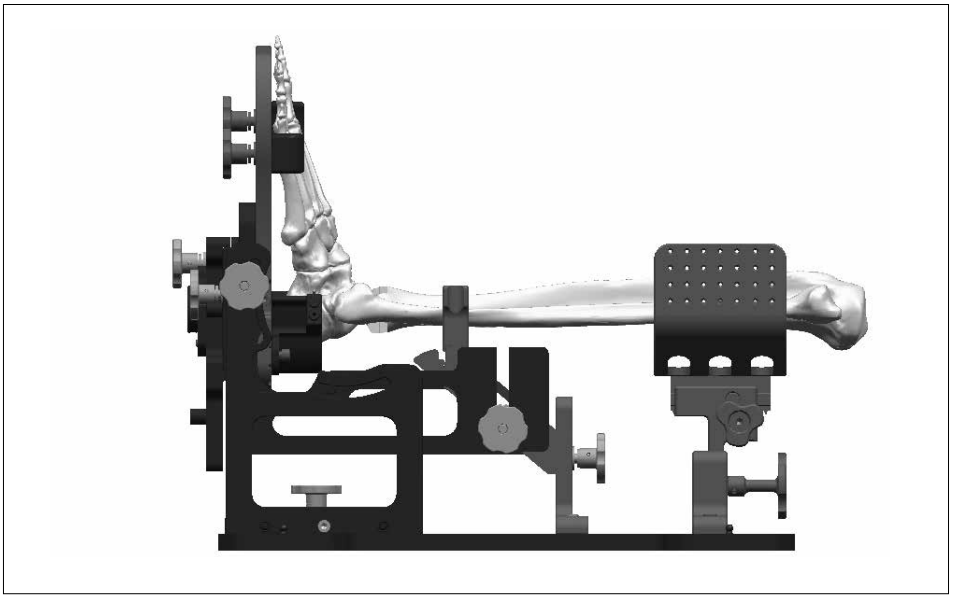


Fig. 9

Operative technique

Secure the tibia with a transverse 2.4mm bayonet tip pin across the joint space stabilizer and through the tibia or by using coban to wrap tibia to stabilizer. The pins may be bent on the medial and lateral surfaces of the joint space stabilizer to prevent backing out during stabilization (fig. 10).

If required use the geared knob of the joint space stabilizer to tension the ligaments and soft tissue of the ankle, use the lockout knob, located on opposite side of geared knob, to hold the position. Be cautious to not over tension the ankle joint (fig. 11).

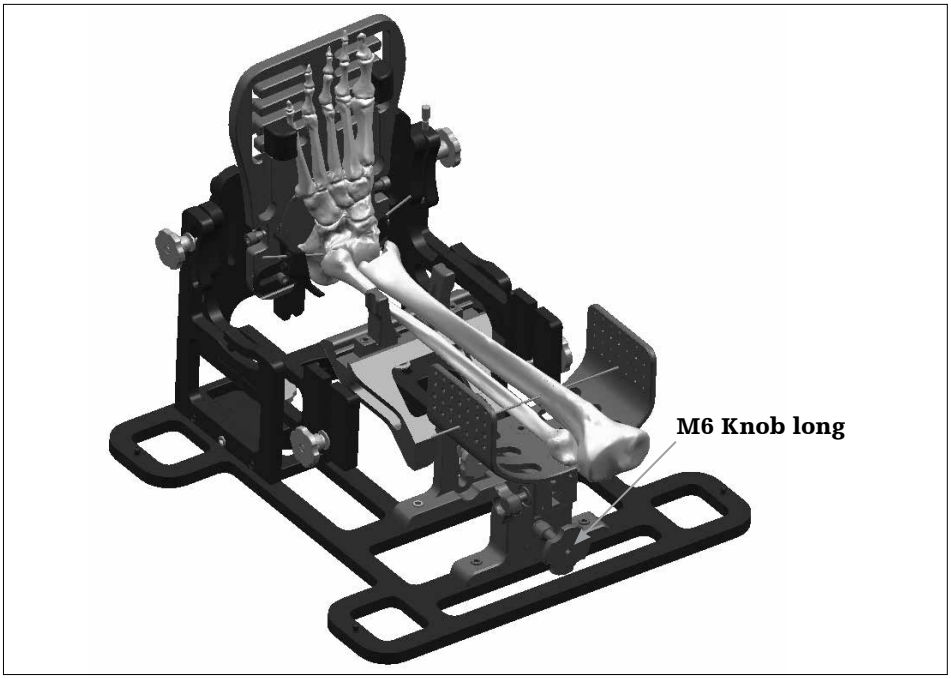


Fig. 10

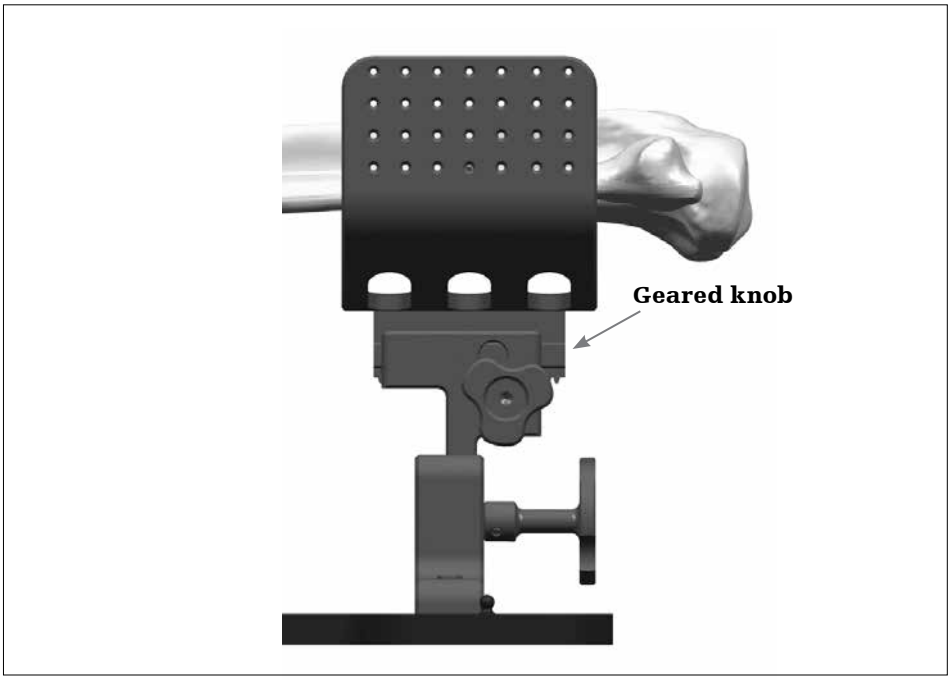


Fig. 11

Operative technique

For distal stability of the tibia, the achilles slides can be adjusted and locked in position on the achilles support using the 5mm hex key (fig. 12).

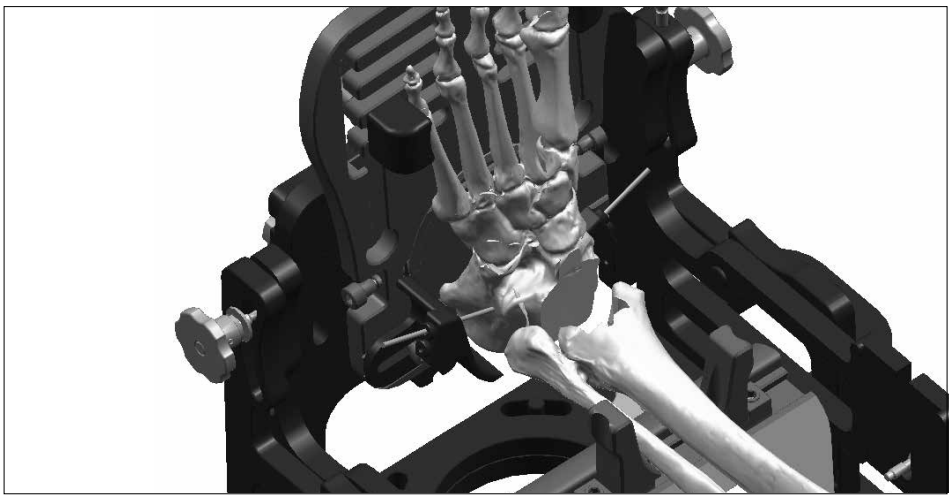


Fig. 12

Foot alignment

Insert the anterior-posterior rods (AP rods 100057) and the medial-lateral rods (ML rods IB100064), and position the C-arm in AP view. Adjust the C-arm angles until the AP rods are correctly aligned. Do not be concerned of the rod placement in the tibia or talus. Subsequent steps will determine final positioning (fig. 13).

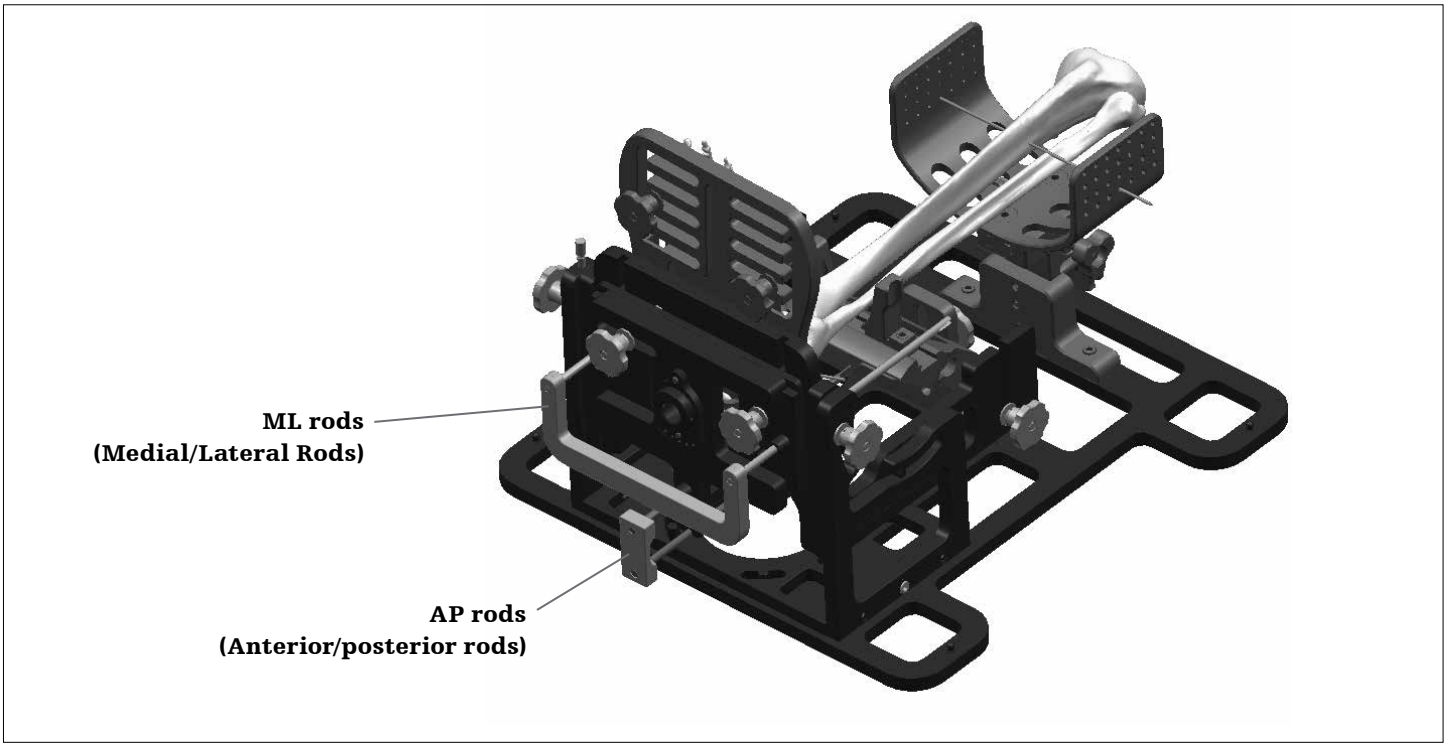
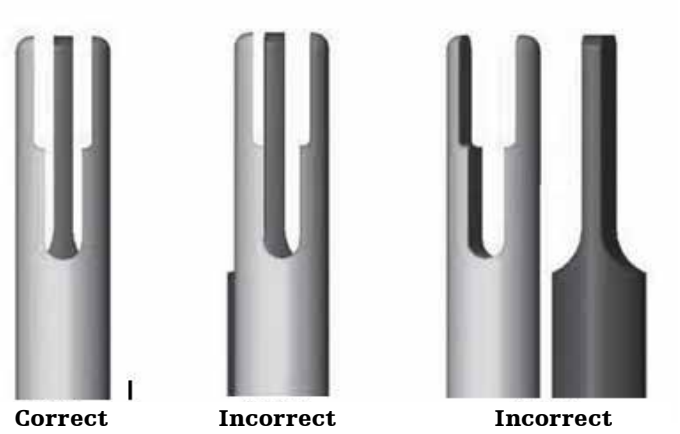
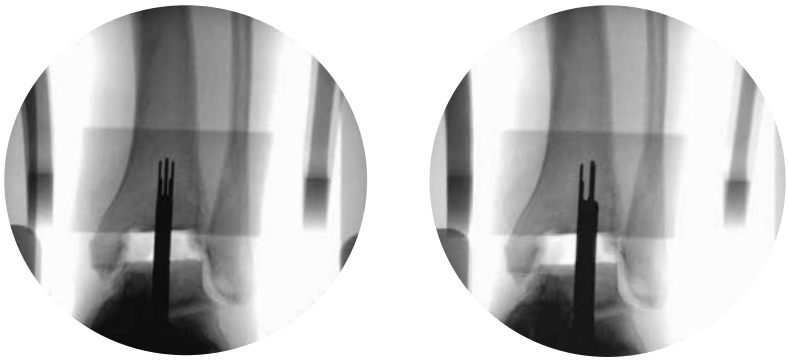


Fig. 13

Operative technique

When correctly aligned, loosen the rotation foot plate and align the ankle into the mortise view by rotating the rotation foot plate. Use ap fluro to confirm the correct view and then lock the rotation foot plate. If the bony landmarks are not available to position the ankle in mortise view, the mortise view should be approximated (fig. 14).





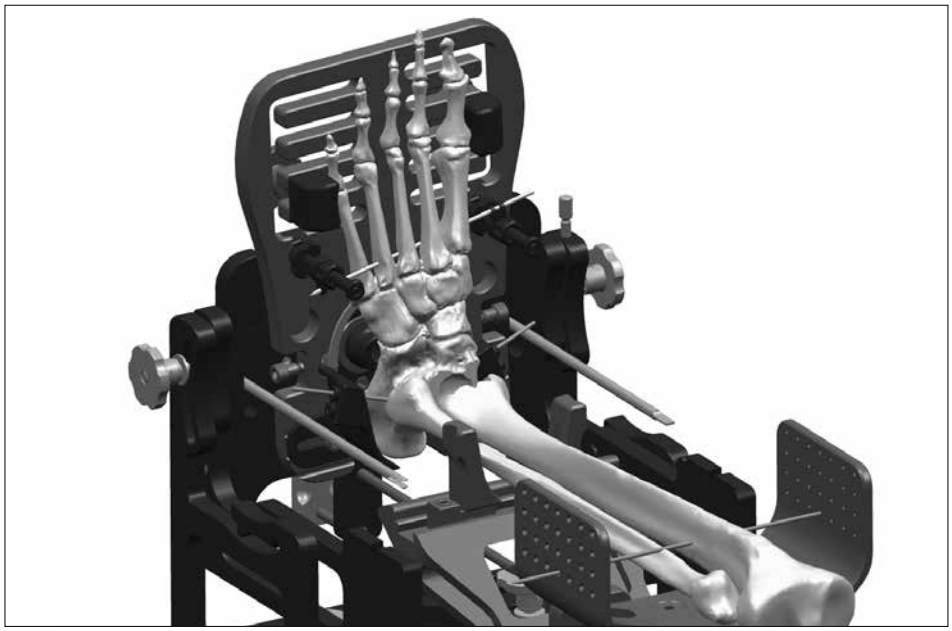


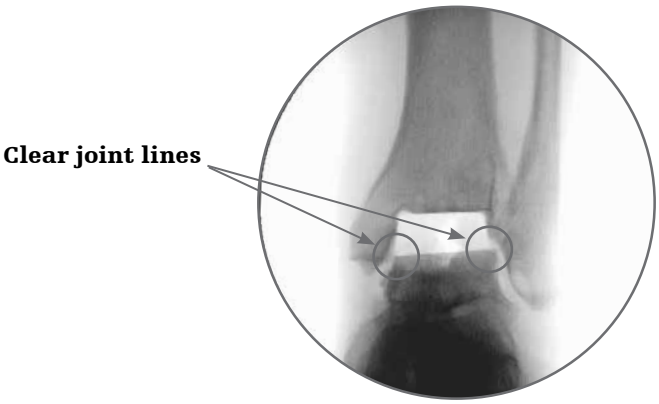
Fig. 14

Operative technique

Loosen the ML knob and center the ap rods on the talus via translation of the ML plate. Verify with fluoro and then tighten the ML knob (fig. 15).

Loosen the u-bracket knobs and rotate u-bracket until the ap rods are parallel with the centerline of the tibia (fig. 16).

Iterations of rotation and translation may be required to reach desired alignment. Verify with fluoro. Tighten the u-bracket knobs.



Good mortise view

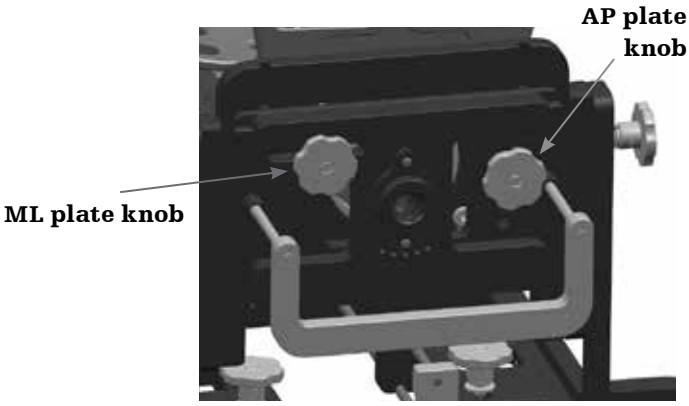


Fig. 15

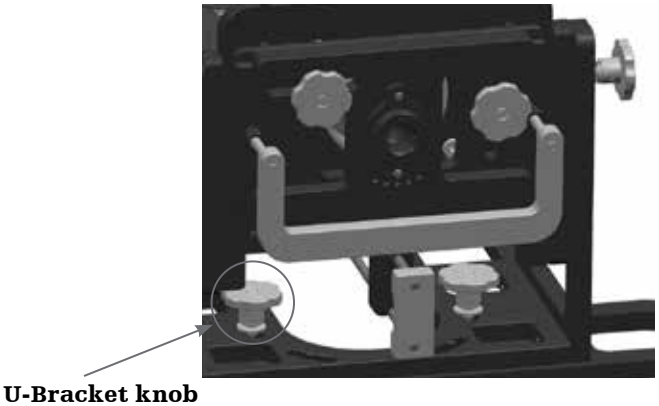


Fig. 16

Operative technique

Rotate the C-arm to a lateral view. Adjust C-arm angles to align the ML guide rods. Check that the joint space is even between the talus and tibia. Re-position the achilles support to adjust the tibia in a proper position, if needed (fig. 17).

Loosen the AP knob and center the ML rods on the talus and tibia. Verify with fluoro. Tighten the AP knob (fig. 18).

Loosen the knobs for plantar and dorsiflexion. Align the ML rods so they are parallel with the centerline of the tibia. Check with fluoro. Iterations of rotation and translation may be required to reach desired alignment. Tighten the plantar/dorsi knobs, also known as flexion knobs. Thread the plantar stop thumb screw (200416) until it contacts the knob (fig. 19).

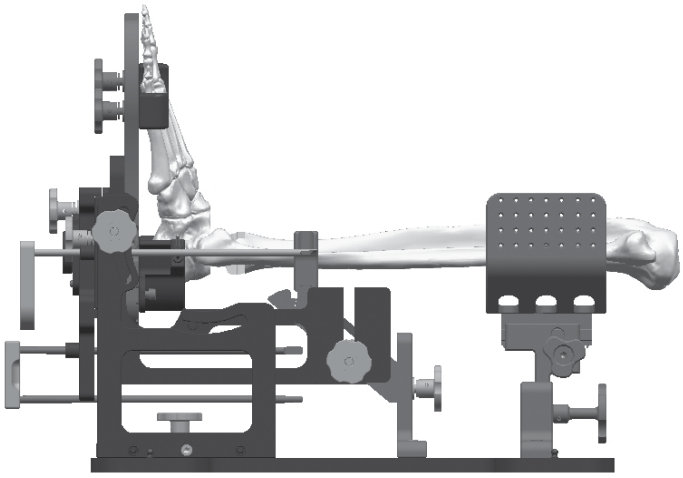


Fig. 17

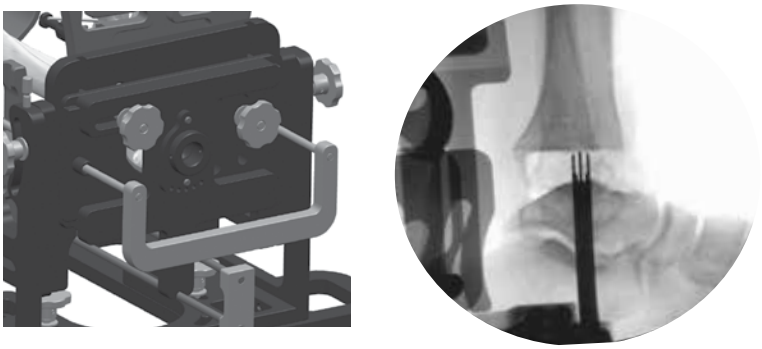


Fig. 18

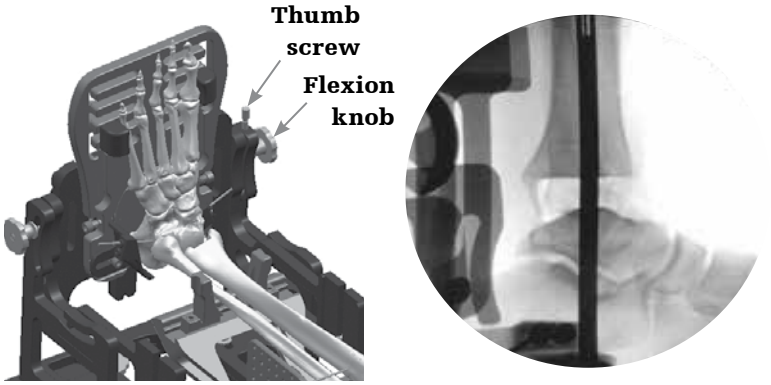


Fig. 19

Plantar stop thumb screw 200416

Operative technique

Rotate C-arm back to the AP view, and align rods. Confirm desired AP alignment. Confirming alignment is very important because adjusting the rotation of the rods moves the foot slightly and may cause misalignment.

NOTICE

The last view should always be the AP view which is more sensitive to misalignment. Stay in AP view to monitor the drilling operation using the fluoro-scan mode.

Drill primary hole

Thread the primary bushing (200401). Insert the collet (200285) into the ML plate, and lightly screw on the cannula nut (20042). With a skin marker, put ink on the tip of the trocar (200099). Insert the trocar into the cannula (200166) and put the tip against the skin to mark the incision point. Remove the primary bushing assembly.

Centering on the previously marked spot, insert a #15 scalpel and make a 1cm vertical incision in the bottom of the heel (fig. 20).

NOTICE

The incision will be medial.

Thread the primary bushing Assembly back into the ML plate. Insert the trocar into the cannula and then insert this assembly into the primary bushing (fig. 21).

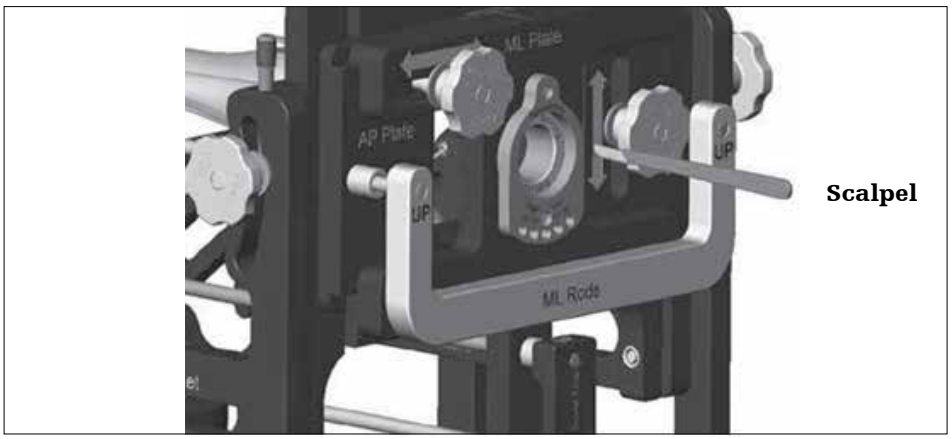


Fig. 20

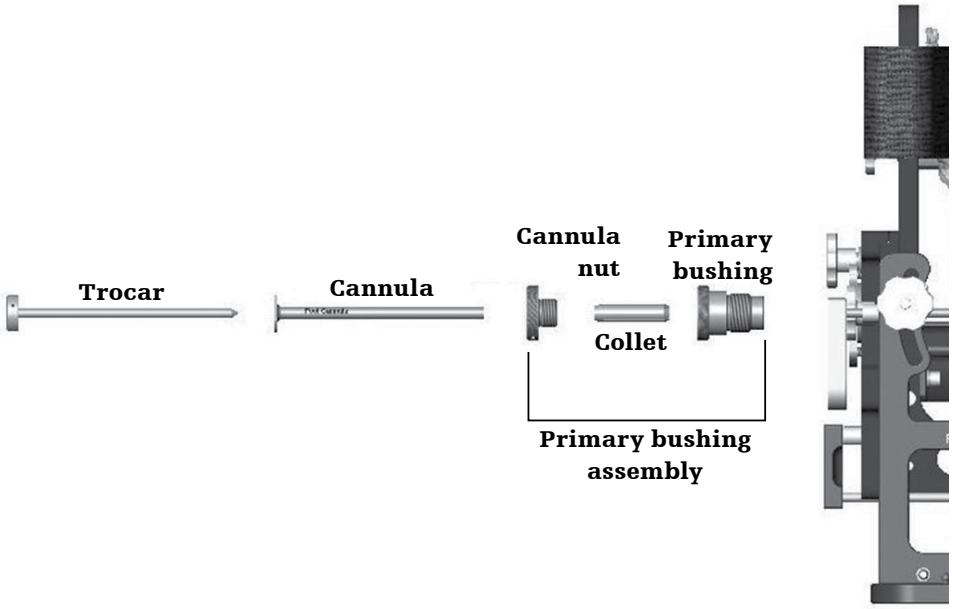


Fig. 21

Primary bushing 200401

Collet 200385

Cannula nut 20042

Trocar 200099

Cannula 200166

Operative technique

Push the trocar and the cannula through the soft tissue in the bottom of the foot, rotating the cannula until the assembly lightly contacts the calcaneus. Excessive force between the cannula and the calcaneus may move the foot laterally due to the steep angle of the bone. If this happens, slide the cannula back a half inch, re-align the AP rods, re-install & tighten cannula, and confirm alignment.

Lock the cannula in place with the cannula nut, remove the trocar and verify AP alignment (fig. 22).

Insert the 6mm drill bit (200134) into the back of the cannula and advance the drill slowly by peck drilling. This method takes small bites out of the bone and minimizes lateral pressure which can cause the drill to flex and miss the center of the talus.

Using fluoro, verify that the drill follows the path of the rods without veering to either side. In rare cases the drill may veer to the medial side due to the steep angle of the calcaneus. In this rare case only, the drill may be corrected by removing the drill, pulling the bottom foot cannula back ½ inch and re-adjusting the ML plate. Re-insert the bottom foot cannula up to the calcaneus, and again peck drill to correct the hole location.

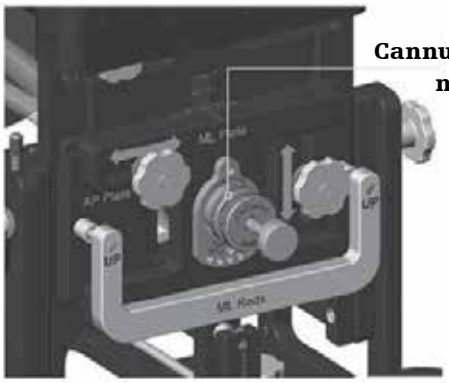


Fig. 22

6mm Drill bit 200134

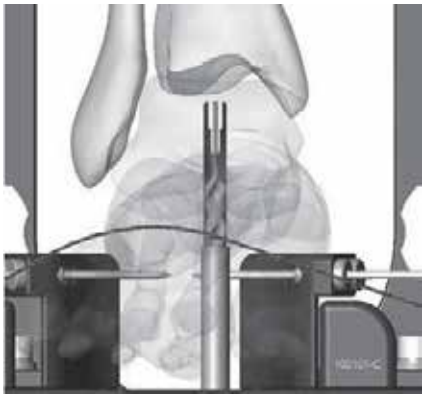
⚠CAUTION

If the drill is off more than 2mm, back out the drill and reposition the rods to correct the alignment. The accuracy of the drilling is critical.

⚠CAUTION

It is important to keep the cannula secure during the duration of the case to protect the soft-tissue and plantar nerve.

Once past the cortical bone of the tibia, drill in the intramedullary canal about 5 to 7cm. Leave the drill and cannula in place (fig. 23).



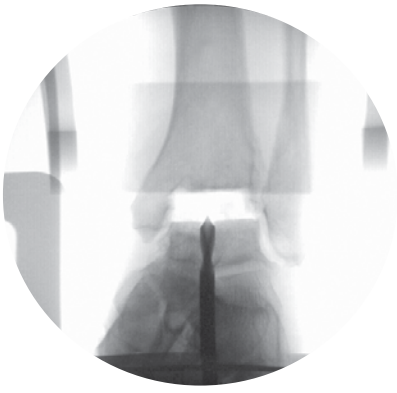


Fig. 23

Operative technique

Joint space cuts

Install the pre-assembled anterior fixture guide (FA069-109) with the appropriate size saw guide (60002000 - 60005000) onto the foot holder, and position the saw guide as close to the ankle as possible. Tighten the knobs.

Check AP rod alignment (pull the drill back to view the AP rods). Once aligned, remove the AP rods (fig. 24).

Using fluoroscopy, center the upper and lower alignment features on the saw guide to ensure it is perpendicular to the drill perpendicular (A & B in fig. 24). For primary ankle replacement, select a saw guide that does not cut the fibula. This will preserve much of the medial malleolus. For patients with a previously failed total ankle, select the saw guide that minimizes bone resection and maintains adequate bone stock for implant interface. The goal is to save an ap view of correct saw guide size and positioning for later reference of gutter pin placement. Tighten all knobs.

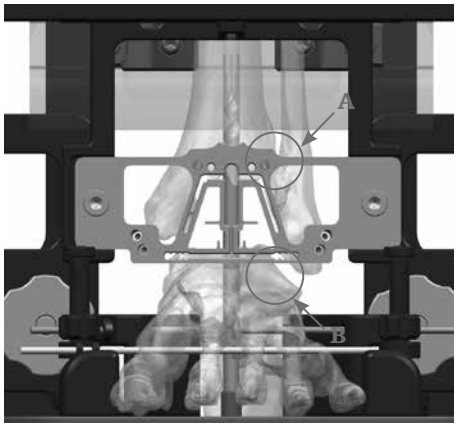


Fig. 24

Anterior fixture guide
FA069-109

Saw guide
60002000 - 60005000

Operative technique

Insert a saw blade into the proximal slot of the tibia and distal slot of the talus. Examine resection level on the lateral view. Reposition the invision saw guide to cut the proper amount of tibia and talus. If the saw guide can not be repositioned to cut the appropriate about of tibia and talus, independent tibial and talar cuts may have to be performed. For independent cuts, the tibial resection is performed, the resection guide is repositioned, and then the talar resection is performed (fig. 25).

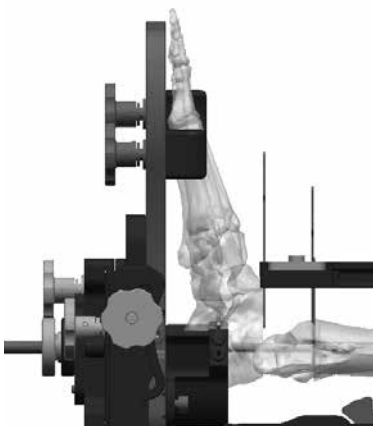
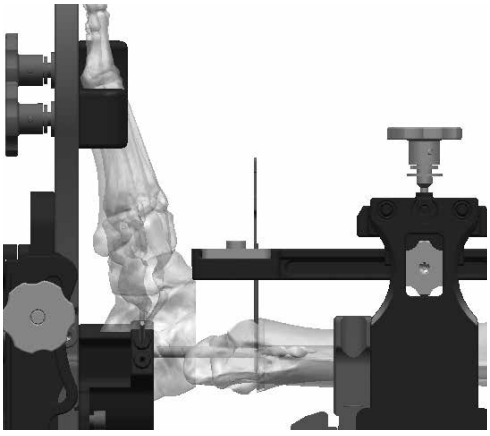


Fig. 25

On the lateral view, adjust the saw guide such that the saw blade is at the appropriate tibial resection level. Next insert 2.4mm Steinman pins in the saw guide at the level of the tibial resection. These pins will provide stability to the ankle and prevent over resection. Cut these pins close to the saw guide for proper excursion of the saw. For additional stability on-axis and/or converging pins may be placed superior to the tibial resection. For converging pins, cut 1.5″ above the saw guide to aid in removal. Revert back to the ap view and ensure proper alignment prior to performing the subsequent steps (fig. 26).



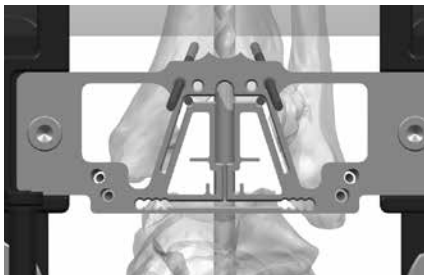


Fig. 26

If the invision saw guide seems too large, you may interchange with an Inbone saw guide (200216002-200216006) to compare resection levels. If Inbone is ideal, you may still use the footholder but refer to Inbone ii operative technique to proceed.

Saw guide
200216002-200216006

Operative technique

Install the anti-rotation notch Insert (200290002-200290006) into the saw guide. Using the appropriate sized anti-rotation drill (200178002-200178006) drill the tibia for the anti-rotation notch. Be sure to drill bi-cortical. (fig. 27).

Select the appropriate system and sized saw blade (200138101S-200138108S). Two saw blade widths are available. Although wider blades tend to provide more control and cutting accuracy, the narrow blade will be required for the smaller cuts with a size 2, & 3. Make resection through the tibia and medial/lateral slots of the resection guide. The saw blades must remain parallel to the saw guide during all cuts (fig. 28).

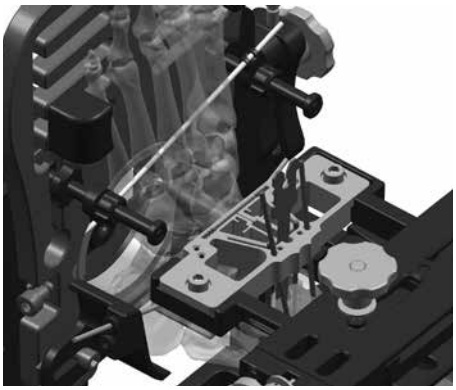


Fig. 28

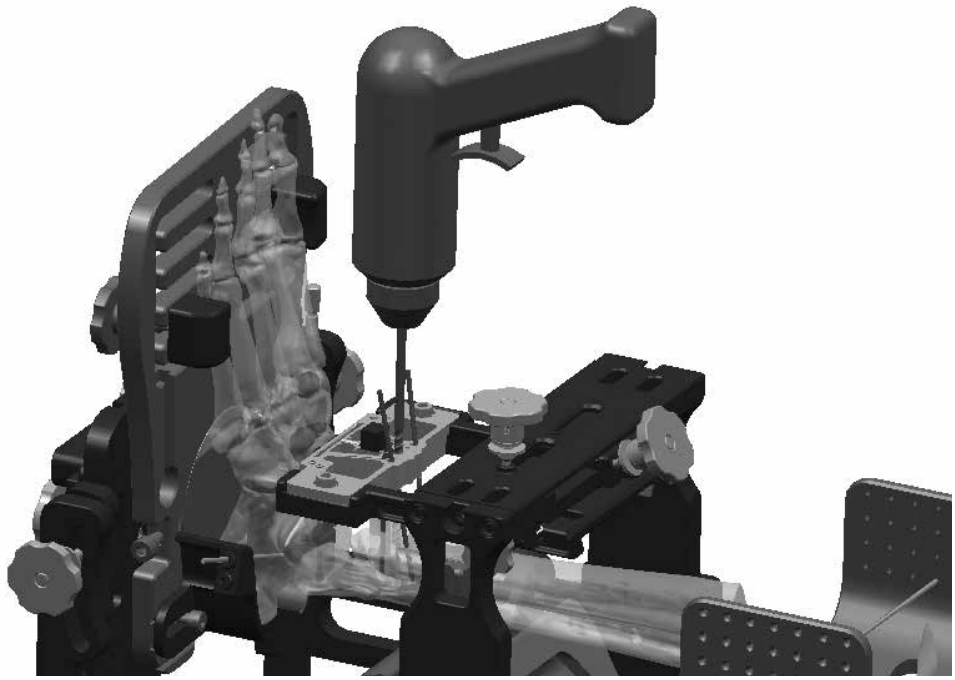


Fig. 27

Anti-rotation notch insert
200290002-200290006

Anti-rotation drill
200178002-200178006

Saw blade
200138101S-200138108S

Operative technique

Remove the Steinmann pins for the tibia and insert a saw blade into the distal talus slot of the saw guide. On the lateral view, adjust the saw guide such that the saw is at the appropriate talar resection level. Insert steinman pins to prevent over-resection of the talus and, if necessary, insert converging pins into the talar body for added stability during cutting. Note that on-axis pins should be cut close to the saw guide, whereas converging pins should have approximately 1.5″ of protruding pin. Revert back to the ap view and confirm alignment prior to cutting (fig. 29 And fig. 30).

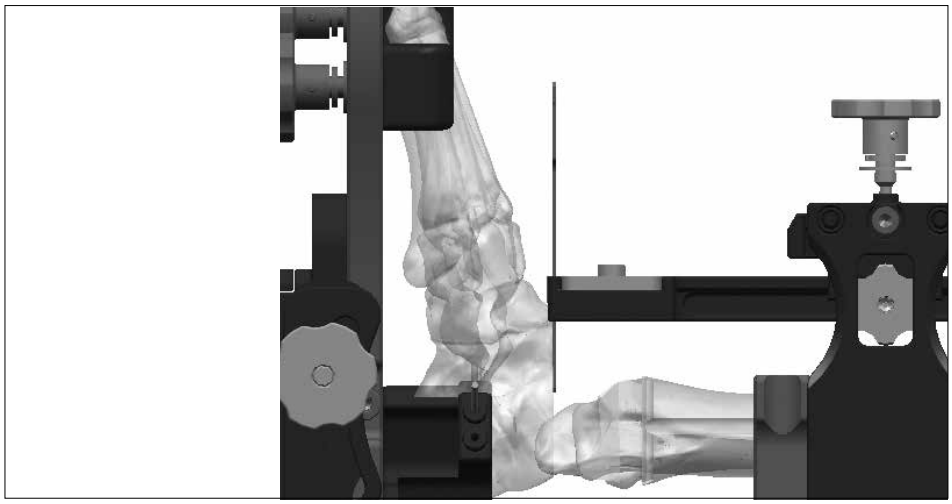


Fig. 29

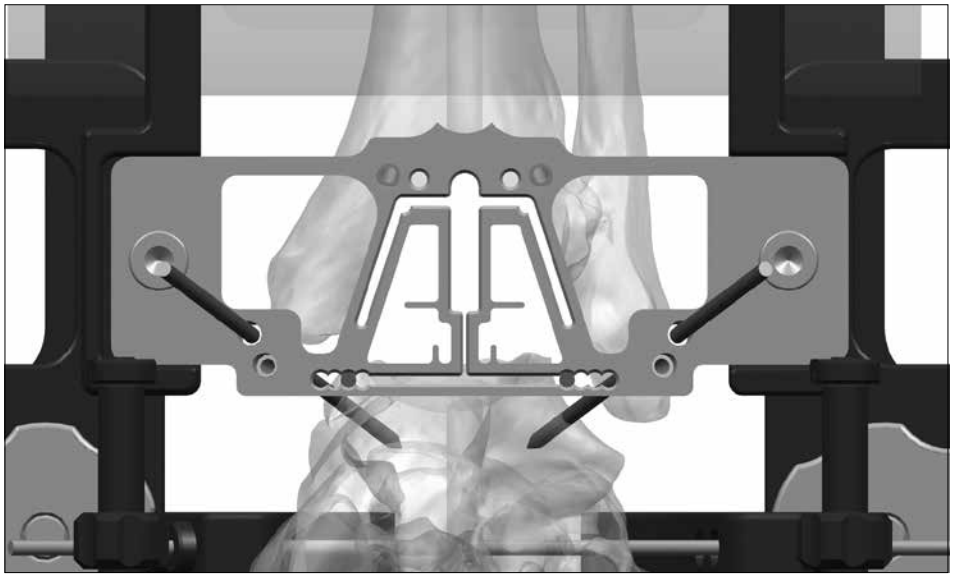


Fig. 30

Operative technique

Remove the converging Steinmann pins from the talus and then remove the anterior fixture and saw guide.

To facilitate removal of the remaining posterior tibia, an osteotone (IB200070) and a mallet can be used to finish off bone cuts in the proximal corners of the resected tibia.

The bone removal screw (IB20005) and ratcheting handle (44180025) may also be utilized to help remove bone.

Insert the 90° posterior capsule release tool (IB200050) into the joint space and use to free up the posterior capsule soft tissues attachments to the resected tibia (fig. 36).

If necessary, use the appropriate size drill bit to provide additional definition of anti-rotation notch. Take care not to widen the notch. A reciprocating saw or bone rasp may be used to remove excess bone, taking care to follow the previously made cut line. Remove loose bone pieces and irrigate the joint space (fig. 31).

⚠CAUTION

Failure to adequately clean the proximal corners of the tibial resection can lead to improper seating of the invision tibial tray.

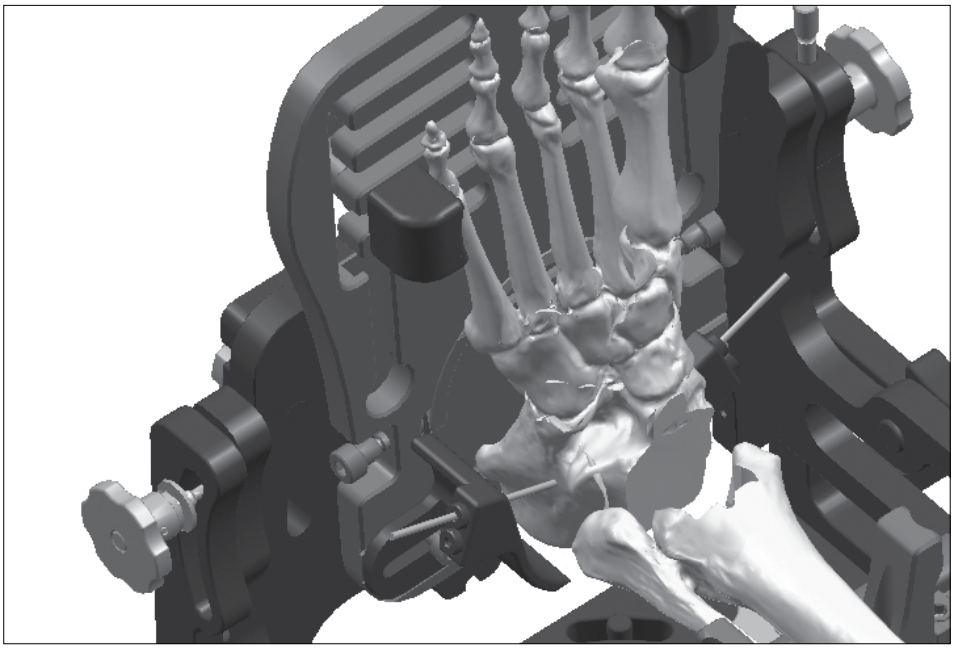


Fig. 31

Bone removal screw
IB20005

Ratcheting handle
44180025

90° Posterior capsule release tool
IB200050

Osteotone
IB20070

Operative technique

Ream the tibia

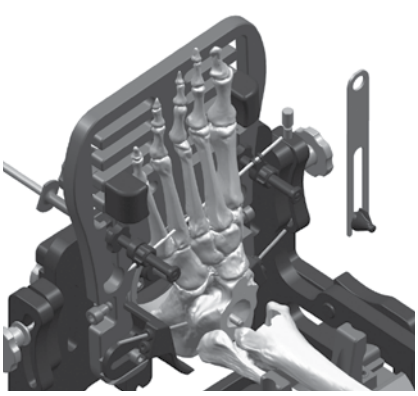
Withdraw the 6mm drill and immediately replace with the reamer drive rod (200089) with a Jacobs chuck attached.

Select the reamer tip (200046001-200046004) diameter based on the size of the desired Tibial Stem. Use the same size reamer as the desired tibial top and mid stem implants. It is recommended to ream for a 2mm press fit on the tibial base stem if possible. For instance, if the tibial stem base is 16mm, the reamer size will be 14mm. Using the tibial stem clip (200381001-200381004), insert the tibial stem reamer tip. Manually thread the reamer driver to avoid cross threading (fig. 32). For extremely hard bone use the Inbone end-cutting reamers (22001200-22001800).

⚠CAUTION

Do not use a powered drill to attach the reamer tip. There is a high risk of cross-threading the reamer using a power driver.

Ream the tibial intermedullary (IM) canal to the depth of the tibial stem construct determined by the number of stem pieces previously templated. Refer to appendix C for tibial stem height details and recommended reaming depths. Note that the reamer drive rod is marked with a depth indicator that can be viewed through the anterior window (fig. 33).



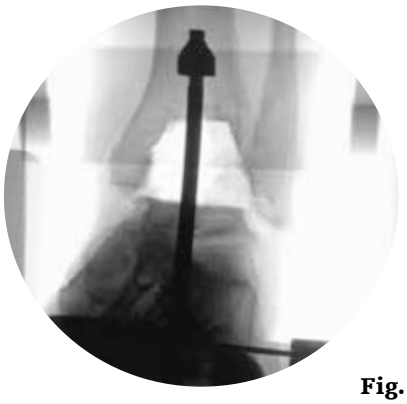
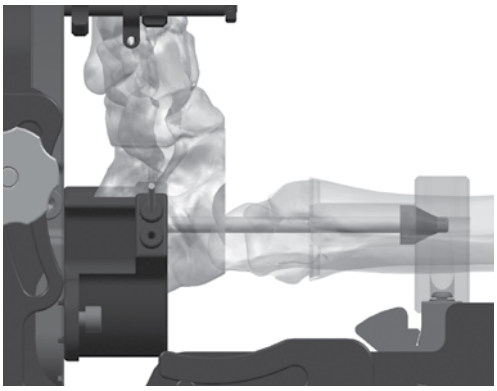


Fig. 32



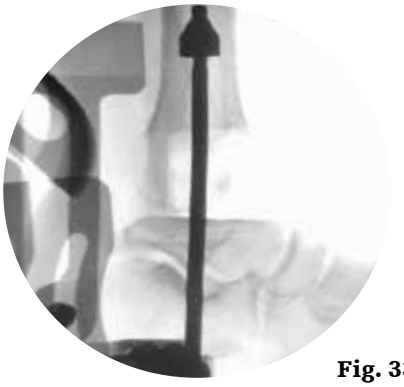


Fig. 33

Tibial reamer driver rod
200089-200395 (T-Handle)

Reamer tip
200046001-200046004

Tibial stem clip
200381001-200381004

End-cutting reamers
22001200-22001800

Operative technique

Pull the reamer back into the joint space.

⚠CAUTION

Do not reverse the drill rotation while the reamer tip is still in the tibia, as it will become unthreaded and remain in the tibia.

Using the appropriate sized tibial stem wrench (200380001-200380004) unthread the reamer tip from the drive rod and remove from the joint space. Repeat the reaming steps for all sizes of reamers required/desired.

⚠CAUTION

It is strongly recommended that the surgeon use irrigation to clean the joint space between reamer sizes.

Leave the reamer drive rod in the foot with tip slightly distal to the surface of the talar resection (fig. 34).

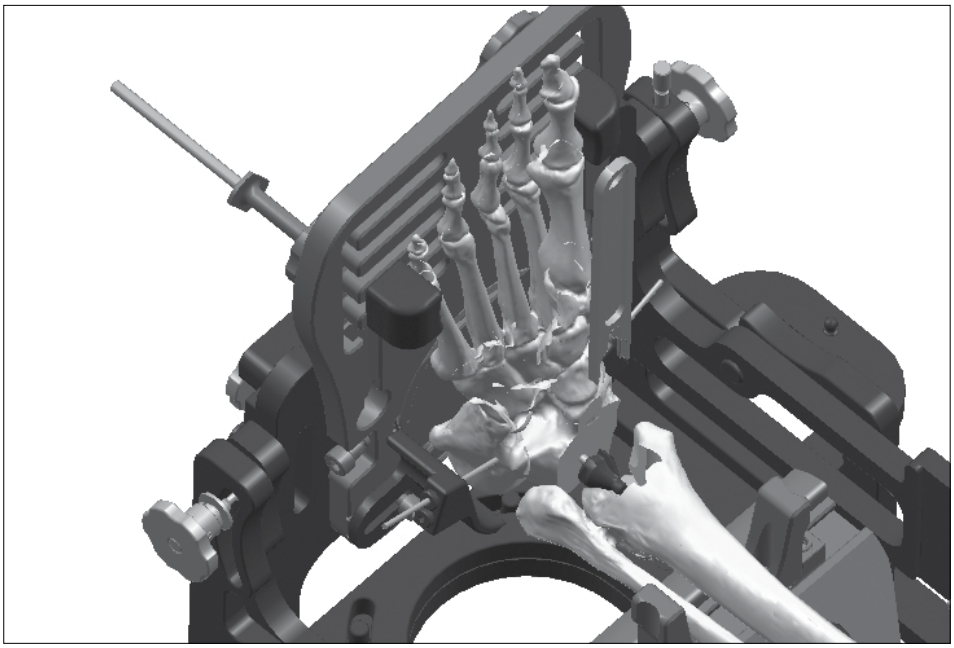


Fig. 34

Tibial stem wrench 200380001-200380004

Operative technique

Tibial trialing

Select the appropriate size tibial tray trial (60022400-800). Insert trial into the resected joint space using the M4 Inbone holding tool (200364003). Use the strike rod (200085) to fully seat the Ttibial tray trial (IB6000020-60). Utilizing lateral fluoroscopic imaging, evaluate the anterior and posterior coverage of the tibial cortex. Determine if a standard or long tibial tray is appropriate and opt for overhang both anteriorly and posteriorly if the anatomy is between sizes. Note to check with both the +4mm and +8mm Invision tibial tray trials (60022400-800) for a given size since the tibial lengths vary (fig. 35a and fig. 35b).

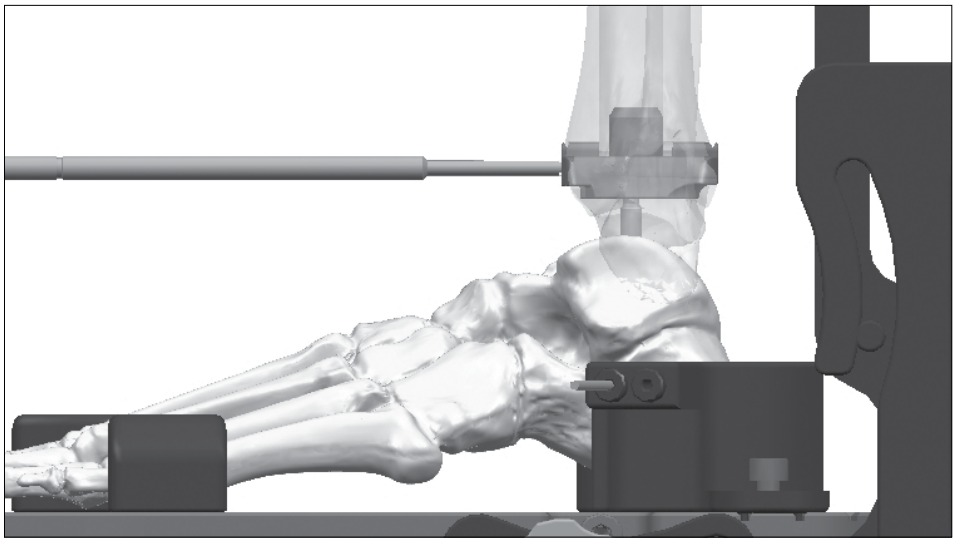


Fig. 35a

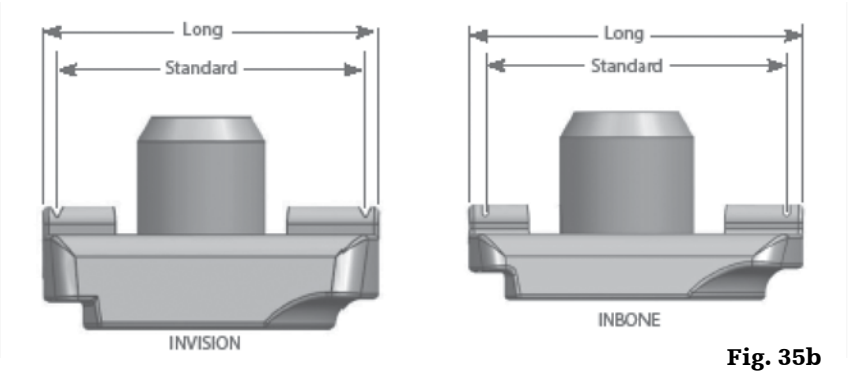
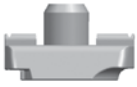


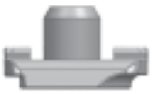
Fig. 35b



Invision tibial tray trial
60022400, 60022800,
60023400, 60023800,
60024400, 60024800,
60025400, 60025800

Inbone holding tool
M4 - 200364003
M3 - 200364002

Strike rod
200085



Inbone tibial tray trial
IB6000020-60

Operative technique

The tibial tray trial is also used to check the tibial cut surfaces and ensure that no bone fragment will impede proper positioning and seat of the tibial tray implant. Remove excess bone as necessary and irrigate.

To assess if sufficient amount of bone has been removed for the implant construct, the resected bone must be trialed with the tibial tray trial, polyethylene insert trial (IB202206-6516), and talar dome trial (IB220801- 805), talar plate trial (60001010-60001150), and optional talar plate spacer (60003001). The same size talar dome trial as the tibial tray trial may be used, or one size smaller. Use the poly insert holding tool (IB200110) to insert into tibial tray trial. If dome is downsized from the tibial tray, the plus size must be used (fig. 36 and fig. 37).

Do not be concerned with the positioning of the trials components at this time. Only the construct height is being assessed. Final position and component selection will be completed in subsequent steps.

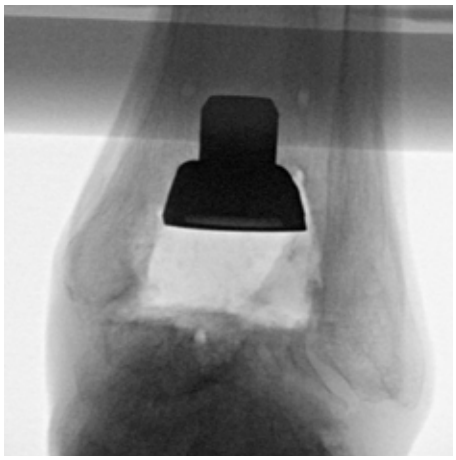


Fig. 36

Fig. 37

Poly insert trial
IB202206-6516

Talar dome trial
IB220801-805

Talar plate trial
60001010-1050 left,
60001110-1150 right

Poly insert trial holding tool
IB200110

Talar plate spacer
60003001

Operative technique

Using the poly insert Trial holding tool (IB200110) install the appropriate size poly insert trial into the tibial tray trial. The locking tab of the poly insert trial should engage the tibial tray trial.

To attach the holding tool to the corresponding trial component, insert the tip of the tool into the keyed slot and turn 90° counter-clockwise to lock the connection (fig. 38).

To remove the holding tool turn the handle 90° Clockwise and remove.

Poly insert trial

Fig. 38

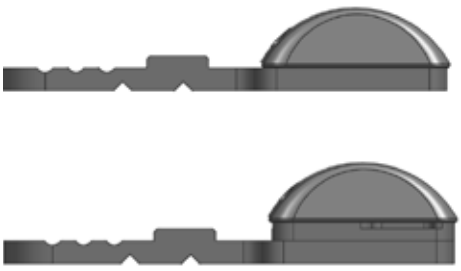
⚠CAUTION

If the trials do not fit, then it is recommended that the anterior fixture guide is replaced onto the footholder and the appropriately sized saw guide is used to make the necessary corrections for needed bone resection. Trialing should be repeated to ensure proper resection.

Once appropriate sizing is found, the foot can be removed from the foot holder. It is optional whether the patient's foot is removed from the footplate, as the footplate can be used for additional stability outside of the footholder.

Trial reduction

The talar plate implant size may be equivalent to the tibial tray implant size, one size larger than the tibial tray, or one size smaller. For example, a size 3 tibial tray may utilize a size 2, 3, or size 4 talar plate. The talar dome implant could be equivalent to the size of the tibial tray or one size smaller. Talar plates come in two lengths, standard and long, represented by two anterior notches (represented on page 28 (fig. 39a and fig. 39b).



Long plates may be necessary dependent on the patient's anatomy to ensure cortical coverage of the entire talus. If additional thickness is required to rebuild the anatomical joint line, utilize the 3mm trial talar plate spacer (60003001) to assess height of required talar plate. The spacer will represent the plus 3mm talar dome implants or the plus 3mm talar plate implants.

Trial holding tool IB200110

Operative technique

While the final polyethylene thickness does not have to be definitively chosen during the trial phase, it is important to have what is perceived to be the appropriate size poly insert trial to accurately determine the placement of the talar component. The poly insert trial used for the reduction should fit appropriately to determine the center of rotation of the talar component; therefore, trialing multiple sizes may be necessary (figs. 39a, 39b, and 39c). Note that after insertion of the talar plate and talar dome implants, the height of the poly can be reassessed. In order to determine proper polyethylene height the following factors should be considered:

- Smooth range of motion of the ankle without anterior or posterior impingement.
- Ligaments are tensioned both medially and laterally without over-tensioning. Over-tensioning is noted when the trial talar component tilts following trial poly insertion. Alternatively, with range of motion, the talar component becomes incongruent with the trial poly, which can identify too much tension on the ankle replacement.
- Stress the ankle joint into varus and valgus. The trial components should not tilt.
- The trial poly should engage the sulcus in the talar dome trial without allowing medial/lateral translation.

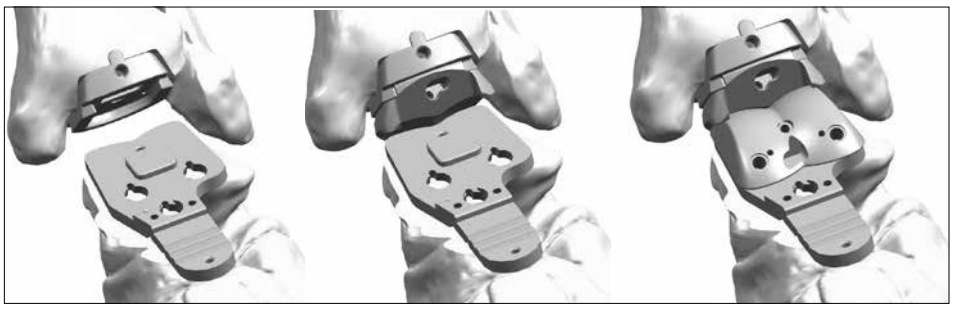


Fig. 39a **Fig. 39b** **Fig. 39c**

Under lateral plane fluoroscopy ensure the posterior portion of the talar plate and talar dome trial components are resting on the posterior portion of the patient's residual talus (establish congruence).

Use the anterior notch on the talar plate trial to asses talar neck coverage. Use the anterior hole to assess the anterior screw position (fig. 40).

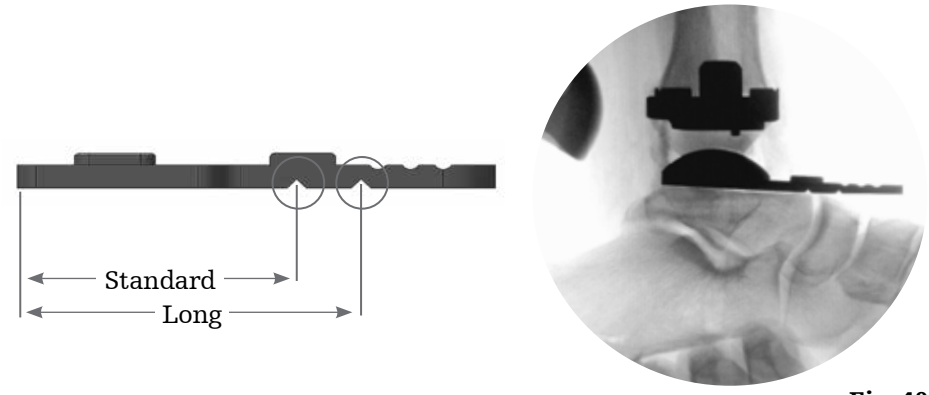


Fig. 40

Operative technique

To accurately perform the range of motion, place some axial compression of the components to maintain position, and flex and extend the ankle. The surgeon will observe the talar component rotating into the anatomic position for this particular patient. Note that the surgeon must not only be cognizant of the talar position in the lateral plane, but must simultaneously maintain medial/lateral coverage as evidenced by the previous a/p plane fluoroscopic views.

Once talar dome trial and talar plate trial have settled into optimum anatomical position, install two 2.4mm Steinmann pins through the talar plate trial into the calcaneus for additional stability and to temporarily hold it in place (fig. 41).

⚠CAUTION

Place pins by hand and ensure that pins do not cold weld while driving in via power.

NOTICE

With the talar component pinned in position, the surgeon should once again place the ankle through a range of motion to ensure tibio-talar articular congruence. Also, confirm through lateral fluoroscopy that the prosthesis did not shift anteriorly.

Cut the pins approximately 1.5″ long and remove all trials from the joint space.

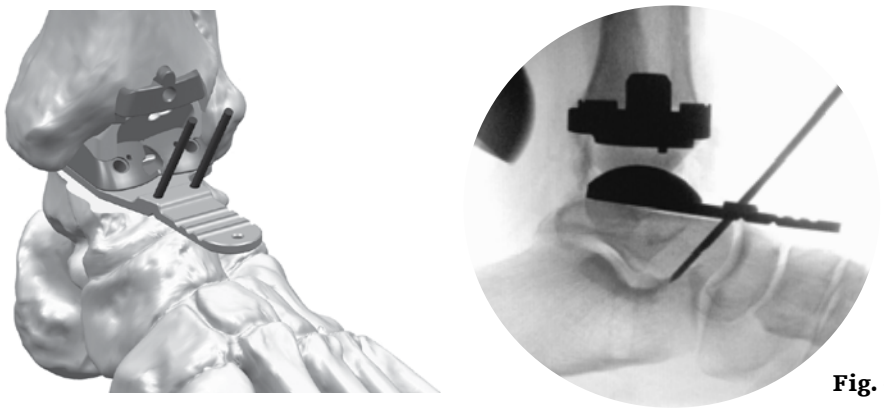


Fig. 41

Talar plate augments

If pre-existing talar bone defects exist, optional invision augments can be used to fill the voids.

Utilizing augment sizer (61001500-61003512), slide the augment sizer between the Steinmann pins and assess the correct diameter of the needed augment (fig. 42).

With a marking pen or bovie, trace around the appropriate augment size to mark where existing bone void reshaping is needed. To preserve talar bone utilize the trial that requires the least reshaping for bone preparation. Sizer shoulder must reference pins (A & B in fig. 42) as augments are attached to one location on bottom of talar plate.

Using a burr or similar instrument prepare talus for augment (fig. 43).

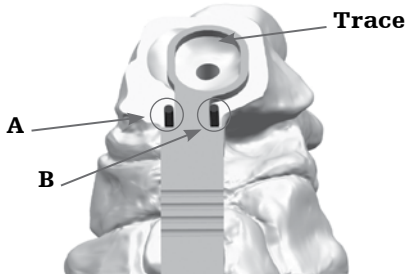


Fig. 42

Fig. 43

Augment sizer
61001500-61003512

Operative technique

Use the augment trials (60150600-60351200) attached to the augment trial handle (60611661) to ensure bone has been reshaped to accept the augment (fig. 44).

Fluoroscopy may be used to ensure that Augment trial is completely flush. The ring above trial shows how the talar plate will sit on bone above augment. If not flush more shaping may be required (fig. 45).

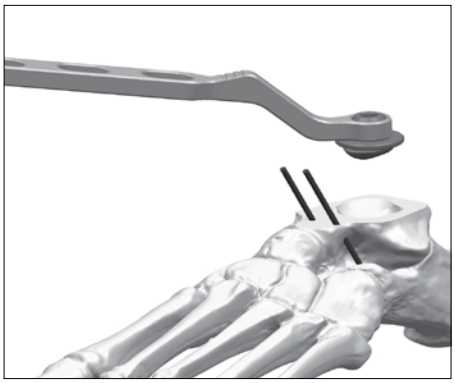


Fig. 44

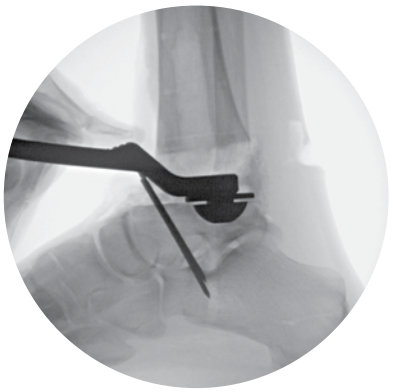


Fig. 45

NOTICE

It is important to preserve as much talar bone stock as possible. Voids may also be filled using cement or grafting.

Install tibia stems

In most cases the top tibial stem and first mid stem piece can be pre- assembled and then placed into the joint space. Using the X-drive (200071) and the appropriate sized tibial stem Wrench firmly tighten these two components together on the back table. Orienting the wrench in the distal direction as labeled, slide the wrench onto the mid stem piece with a finger or thumb holding it in place. Introduce the components into the joint space placing the top stem piece into the intramedullary canal of the tibia (fig. 46).

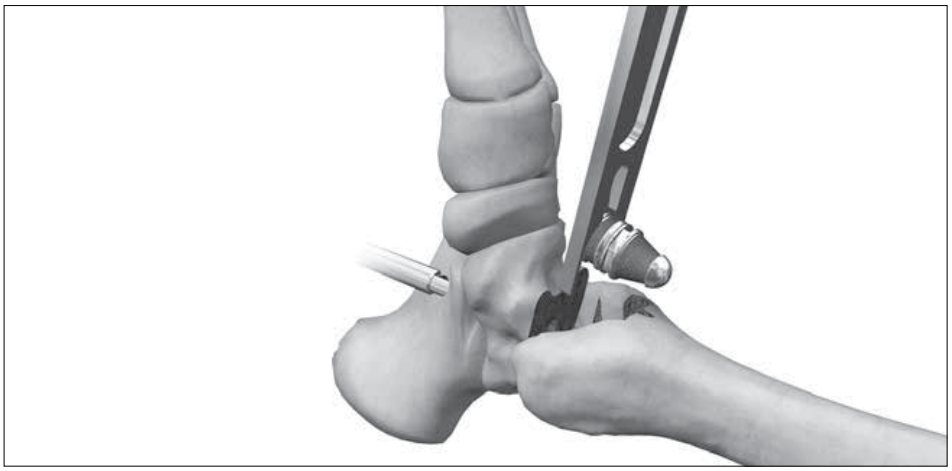


Fig. 46

Augment trial
60150600-61351200

Trial handle
60611661

X-drive
200071

Operative technique

Insert the X-drive through the cannula and up through the talus (fig. 47).

An assistant should hold the wrench while the surgeon installs the next mid stem piece. Insert the next mid stem piece onto the appropriate sized clip, introduce into the joint space and align with the mid stem piece (fig. 48). An assistant may hold on to the wrench and distract the joint to aid insertion of the next piece.

Engage the X-drive and thread the stems firmly together. Move the wrench to the distal stem piece before pushing the stem up into the tibia.

⚠ CAUTION

Always leave the wrench on the distal Stem piece, or the stem construct may be inadvertently pushed up into the tibia. If the stem pieces are inadvertently pushed into the tibia, please see appendix B for stem retrieval instructions.

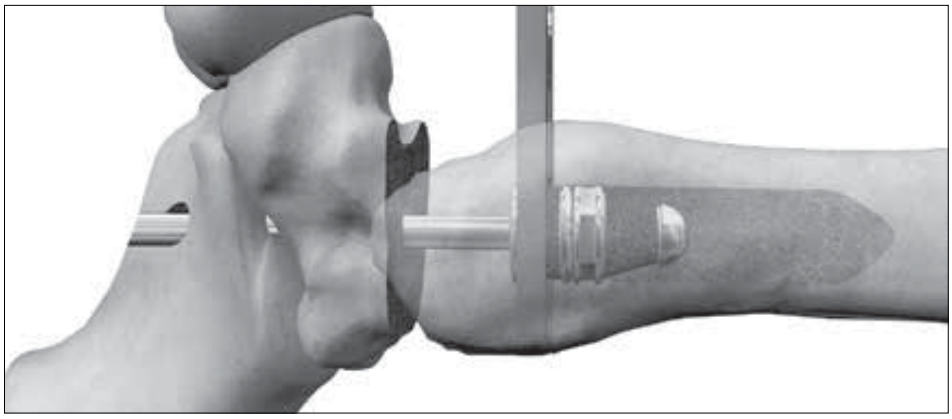


Fig. 47

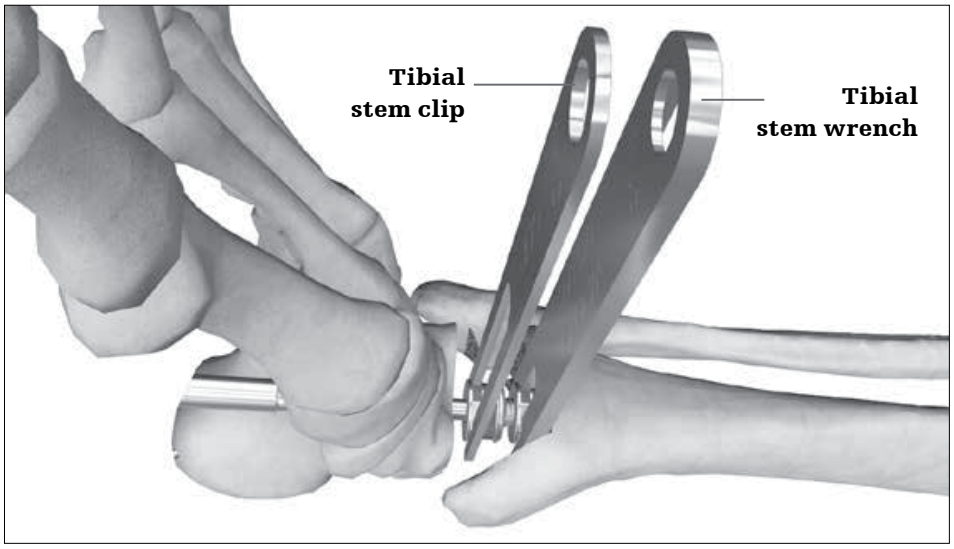


Fig. 48

Operative technique

Select the appropriate base stem piece and introduce with a clip. Tightly thread the base stem using the X-drive. Remove the clip and insert a wrench on the base stem (fig. 49).

With the base stem tight, remove the wrench and rotate the stem construct so the morse taper release hole is pointing anteriorly and is in line with the anti-rotation notch. The base stem release hole is used to detach the tibial base stem from the tibial tray in the event of revision. Place the wrench back on the base stem.

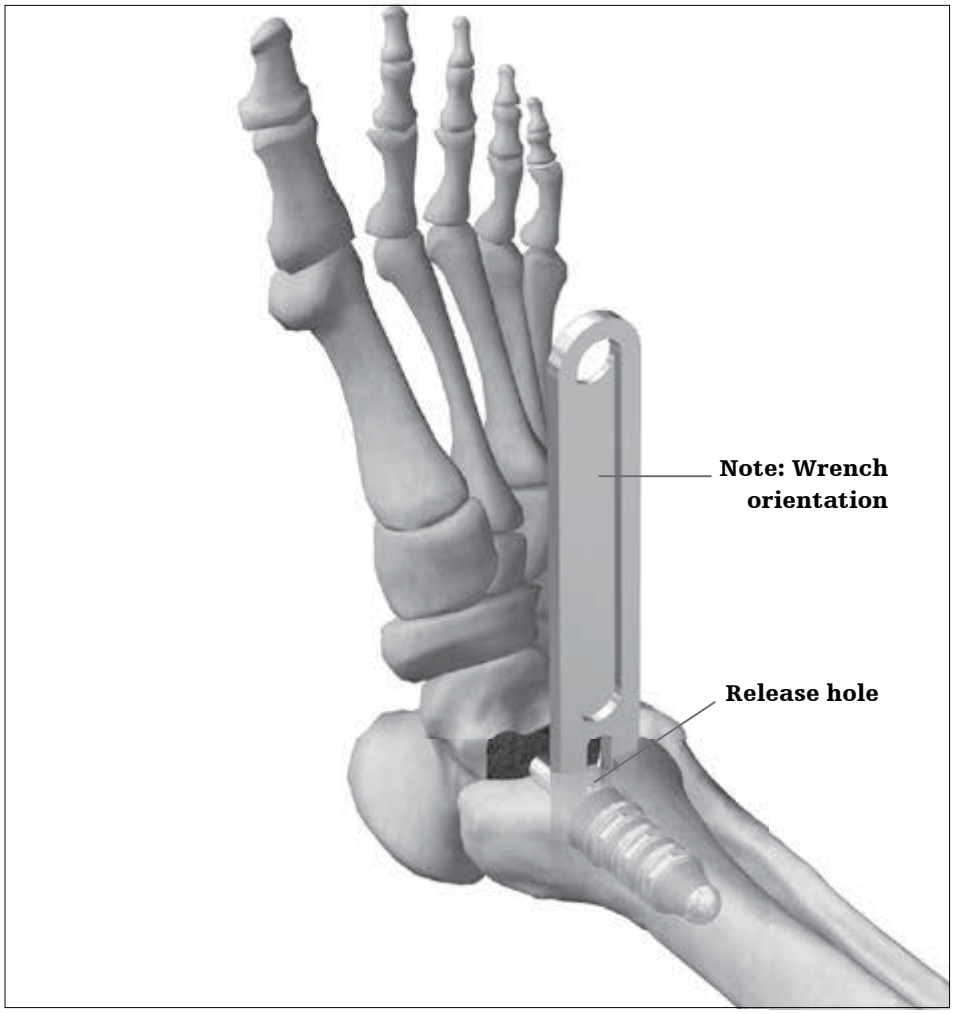


Fig. 49

Install tibia tray

Irrigate the morse taper surface of the base stem to clean it.

⚠CAUTION

Contamination on the morse taper surfaces can prevent proper seating.

Remove the X-drive and replace with the strike rod. Hold the tibial stem base with the wrench and introduce the tibial tray using the holding tool (200364003). Insert the morse taper into the stem base. Push the strike rod into the small detent on the bottom surface of the tibial tray.

Operative technique

⚠CAUTION

If using the Inbone tibial tray implant, remove the holding tool before striking the strike rod. Otherwise it can be locked in place. The holding tool does not need to be removed if using the invision tibial tray.

Holding The Tibial Stem Base Firmly, Strike The End Of The Strike Rod Several Times With A Mallet To Seat The Morse Taper.

⚠CAUTION

The tibial tray will not seat if the wrench is in the wrong orientation. Wrench is marked “distal” for correct orientation.

Remove the wrench, rethread the holding tool to the tibial tray, and test the morse taper connection by trying to rotate the tibial tray against the stem. If properly engaged, both the stem and tibial tray should move as one unit.

Seat the assembly firmly into the tibia using a mallet and the strike rod. Remove the strike rod and visually check the anterior alignment. Check a lateral fluoroscopic image for proper posterior seating (fig. 50).

Should the tibial tray need to be removed for any reason from the base stem, refer to appendix B for removal.

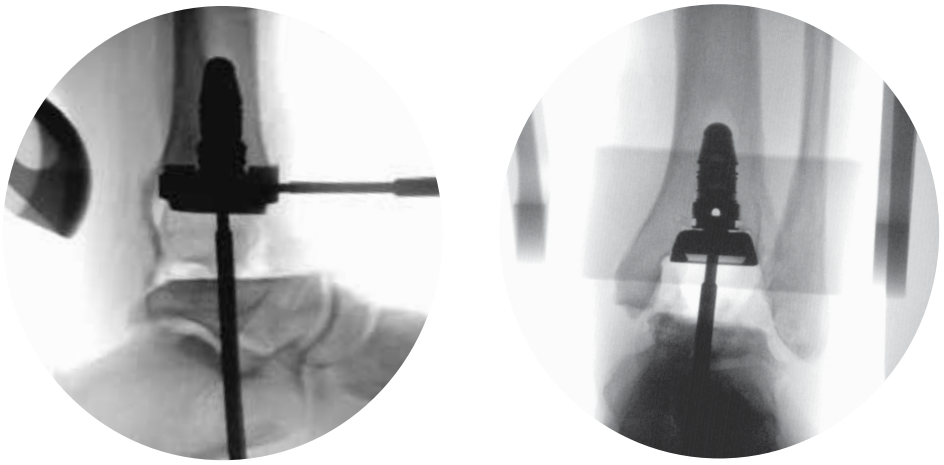


Fig. 50

Operative technique

Install talar augment

If an augment is being used, attach the appropriately sized augment (60001506 – 61003512) to the talar plate on the back table prior to implantation using the augment insertion tool (60610001) (fig. 51a). Ensure that augment is in the proper orientation for screw hole clearance using the augment insertion and alignment tool (61006000) (fig. 51b).

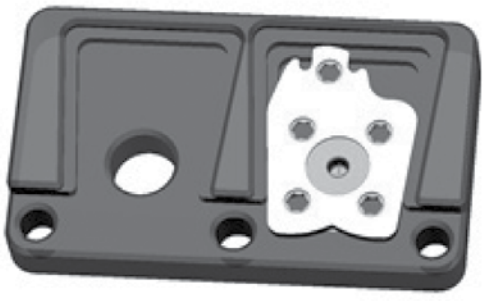


Fig. 51a

Fig. 51b

CAUTION

If choosing to cement, apply cement to the bottom of the talar plate. If using augments, cement may be applied to bottom of talar plate and augment after the augment is screwed into place.

Talus implantation

Thread the 2.5mm drill guide (60006101) into the anterior hole of the talar plate implant. Using the 2.5mm drill guide as a handle, introduce the talar plate implant into the talus. Using the notches on the anterior portion of the talar plate implant, (A and B in fig. 53) reference the two 2.4mm Steinmann pins for proper positioning and orientation of the implant. 1.4mm temporary fixation pins (58820024) can be placed in the screw holes to achieve provisional implant fixation (fig. 52 and fig. 53).

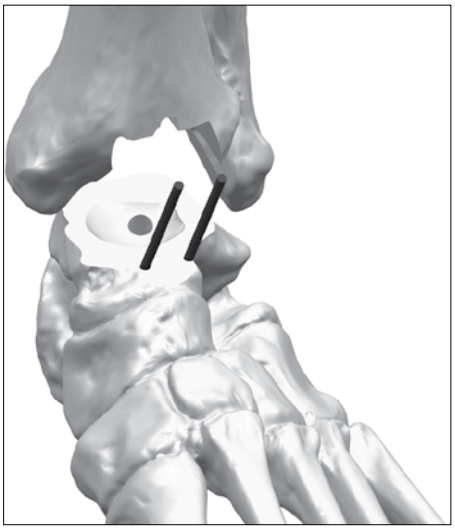


Fig. 52

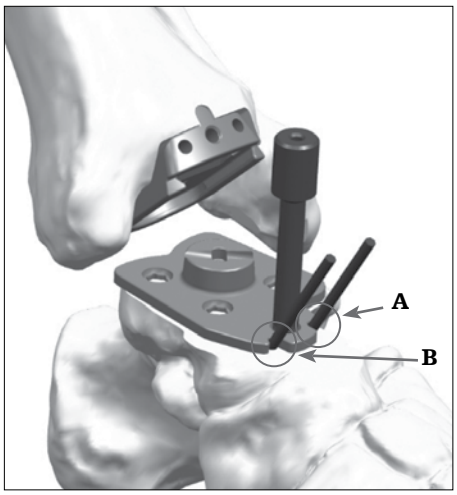


Fig. 53

Augment
60001506-61003512

Augment insertion tool
60610001

Alignment tool
61006000

Hex driver
E5001005

Drill guide
60006101

1.4mm Temporary fixation pins
58820024

Operative technique

The talar plate implant is designed to accept 2.7mm locking and non-locking, 3.5mm locking and non-locking, and 4.0mm cancellous non-locking Ortholoc 3Di screws. Screws can be placed on-axis or up to 15 degrees off-axis in any direction.

When using a locking screw on-axis, thread the 2.5mm drill guide (60006101) into the locking hole of the talar plate implant. Prepare the bone by using the 2.5mm drill (49510052). Drill to the appropriate depth, taking precaution not to breach the distal cortical wall of the talus (fig. 54).

For off-axis locking, use the polyaxial drill guide (60006100) and place it into the locking hole. Ensure that the guide mates properly with the 3Di locking feature. Use the 2.5mm drill to prepare the talus to the appropriate depth.

The screw length can be determined using the depth gauge (5362000160). Insert the depth gauge into the screw hole and extend the probe until it bottoms out in the drilled hole. Reference the depth gage making on the instrument to select the appropriate size screw length (fig. 55).

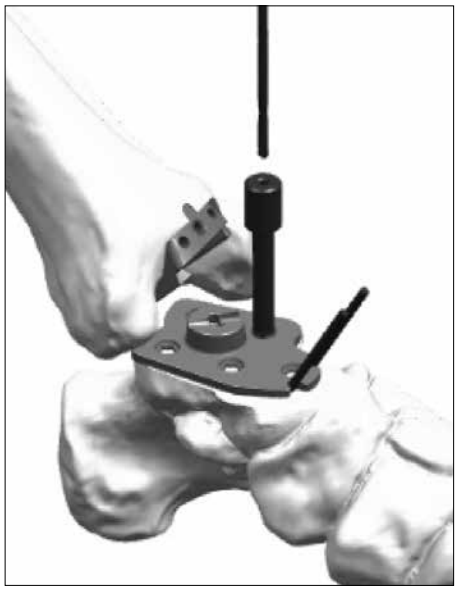


Fig. 54

Fig. 55

2.5mm Drill guide
60006101

2.5mm Drill
49510052

Depth gauge
5362000160

Polyaxial drill guide
60006100

Operative technique

Use the T15 straight driver (58861T15) to insert a minimum of three screws in the talar plate implant. A screw gripper (58870004) is provided to aid in the installation. After all of the screws have been inserted the 2.4mm Steinmann pins can be removed from the talus (fig. 56).

If screws are not placed in each available screw hole, screw plugs (60610000-606100005) may be used.

⚠CAUTION

Screws are not intended to cross any joint line or be utilized for fusion purposes.

Place the foot in plantar flexion and insert the tray insert (200419002-200419006) into the tibial tray to protect the talar dome surface during installation. Select the appropriate size and thickness talar dome and introduce it into joint space. Ensure that the talar dome is oriented correctly with the arrow on the medial surface facing anterior and position it over the morse taper of the talar plate implant (fig. 57).

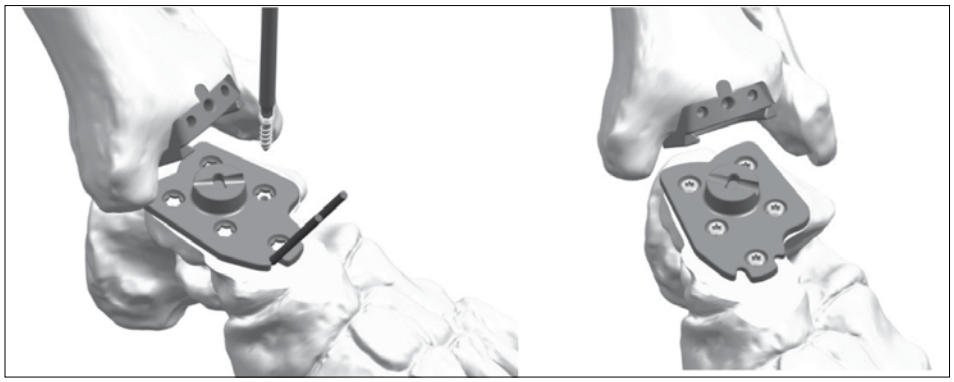


Fig. 56

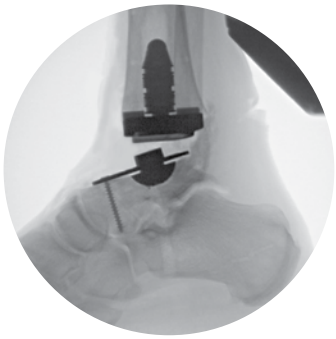


Fig. 57

T15 straight driver
58861T15

Screw gripper
58870004

Tray insert
200419002-200419006

Operative technique

Align the dome strike tool (IB200030/31) on the talar dome and with a mallet, hit the top of the strike tool 2-3 times to fully seat the talar dome. Utilize a lateral fluoroscopic image to ensure that the talar plate trial is fully seated and that the talar dome is engaged.

NOTICE

On a perfect lateral fluroscopic image, a slight gap should be visible, between the talar dome and talar plate implant.

Select the appropriate size poly inserter rail (60006002-5) and attach it to the poly inserter (60006018). The poly inserter rail should snap into position on the ball plungers of the poly inserter. Ensure that the numbers are aligned and the arrows are oriented in the same direction between the two components (fig. 58).

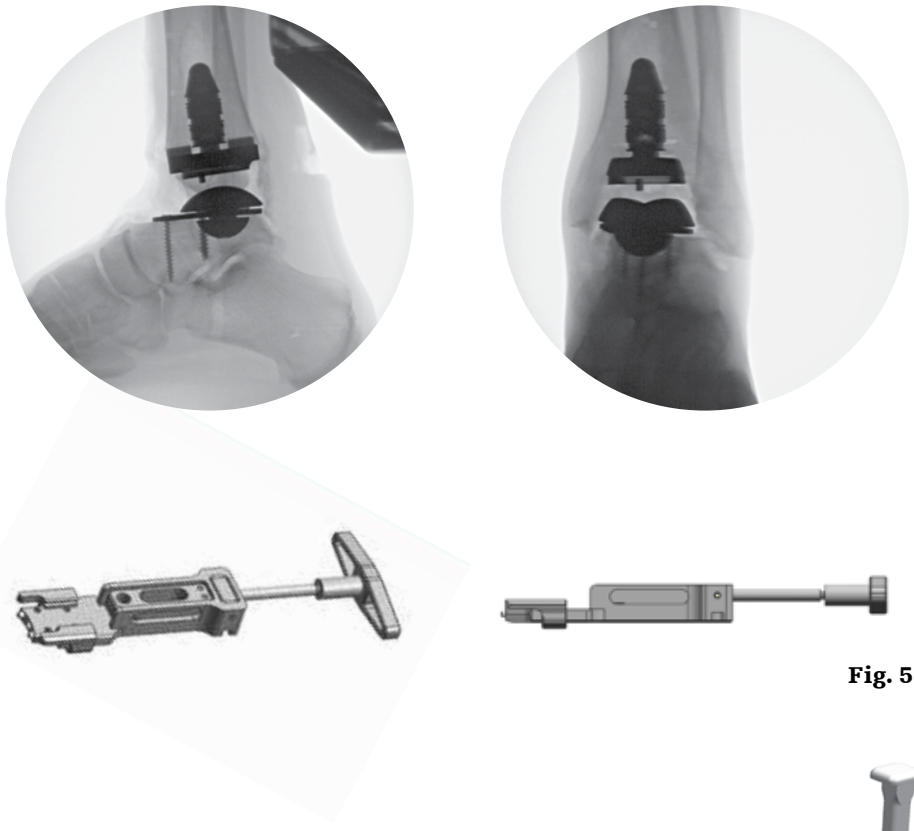


Fig. 58

Dome strike
(Pre-assembled with dome strike tip)
IB200030 / IB200031

Operative technique

Select the appropriate size polyethylene insert and slide it into the dovetail poly inserter rails (60006002-5). The anterior surface of the polyethylene insert should face the geared plunger.

Thread the attachment rod (60006021) into the anterior face of the tibial tray. Slide the poly insertion tool with poly insert assembled over the attachment rod and align flush with the anterior surface of the tibial tray. Thread the attachment nut (200329201) on the the attachment rod to lock the poly insertion tool (60006018) to the tibial tray.

Turn the threaded handle of the poly inserter to drive the polyethylene insert into the tibial tray (fig. 59).

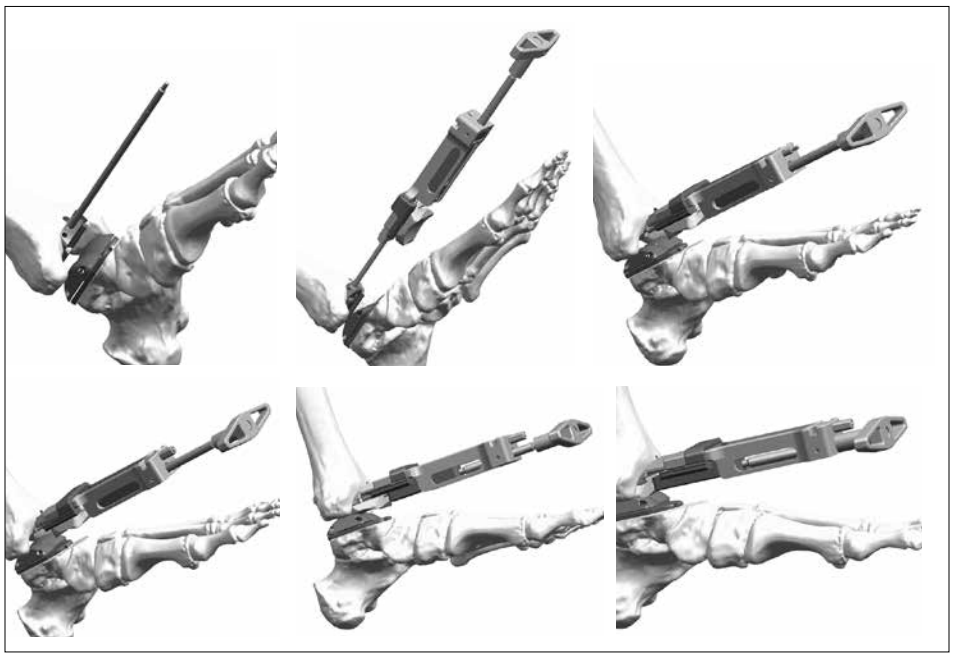


Fig. 59

Poly insertion

Continue to insert the polyethylene implant until the locking tab engages the tibial tray. Visually check to ensure polyethylene seating. If required, select the poly impact tool (200286) and give the polyethylene a final tap to seat the insert (fig. 60).

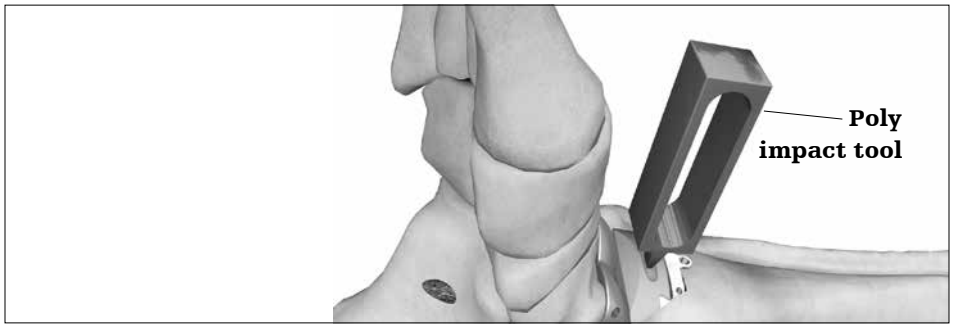


Fig. 60

Poly inserter rail
60006002-5

Attachment rod
60006021

Attachment nut
200329201

Poly insertion tool
60006018

Poly impactor tool
200286

Operative technique

Take a final AP & lateral fluoro images (fig. 61).

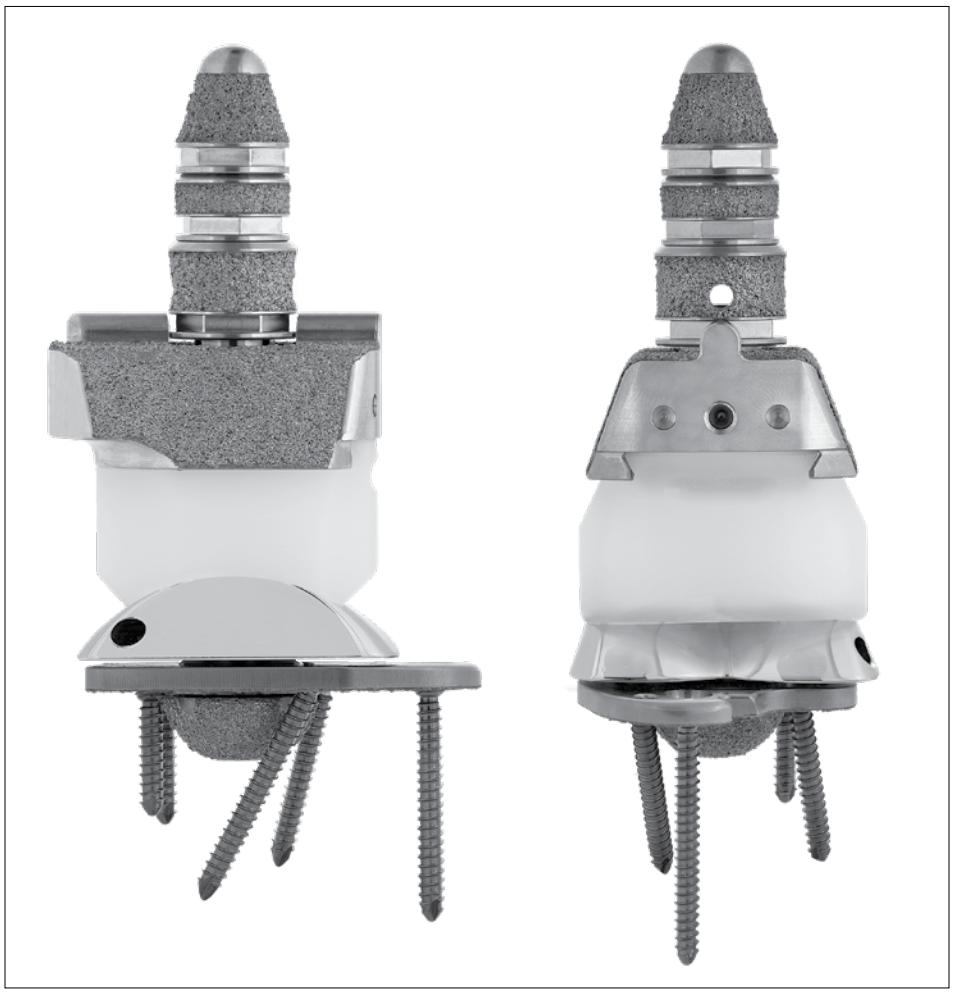
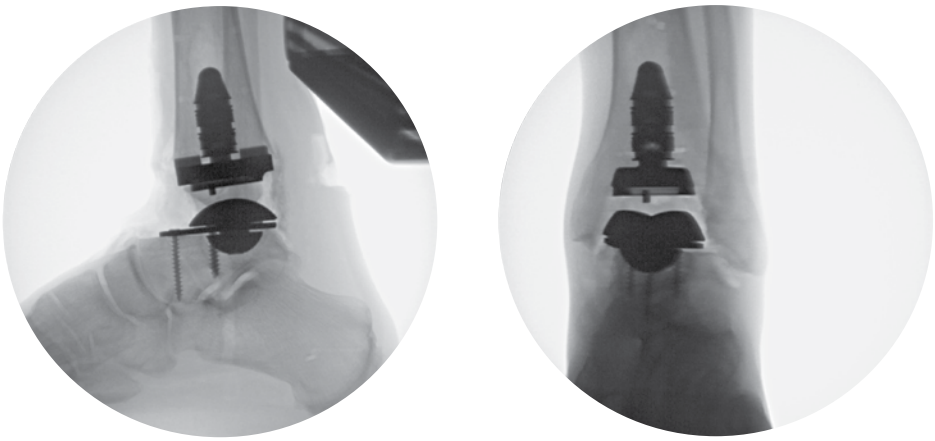


Fig. 61



Explant information

Insert replacement

To remove the poly insert, first install two large diameter threaded Steinmann pins into the anterior face of the implant. With a pair of pliers pull distally on the Steinmann pins in attempt to unlock the insert from the tibial tray. A narrow osteotome may be inserted into the anterior region of the insert to facilitate removal. A hemostat may be used to remove the insert once it is no longer locked to the tibial base. Care must be taken not to scratch or mar any component that is not intended to be removed.

Tibia and talar components

To remove the components, small osteotomes, power saws, or other surgical instruments may be used to disrupt the bone-cement interface. Care must be exhibited to save remaining bone stock as well as to prevent fracture. Once the components have been removed, rongeurs or small osteotomes as well as other surgical instruments may be used to remove the remaining cement.

If the removal of the implant is required due to revision or failure of the device, the surgeon should contact the manufacturer using the contact information located on the back cover of this operative technique to receive instructions for returning the explanted device to the manufacturer for investigation.

Postoperative management

Postoperative care is the responsibility of the medical professional.

Morse taper release

Thread morse taper release pin (200356003) into morse taper release handle (200355).

Insert tip of the morse taper release pin into the morse taper release hole of the implant.

Angled surface of the release pin should face distally.

Holding the implant firmly, strike the end of the morse taper release handle with a mallet until the morse taper becomes unseated (fig. 62).

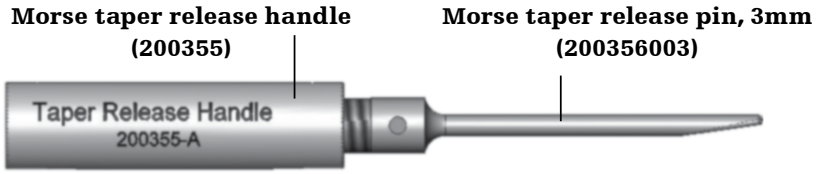
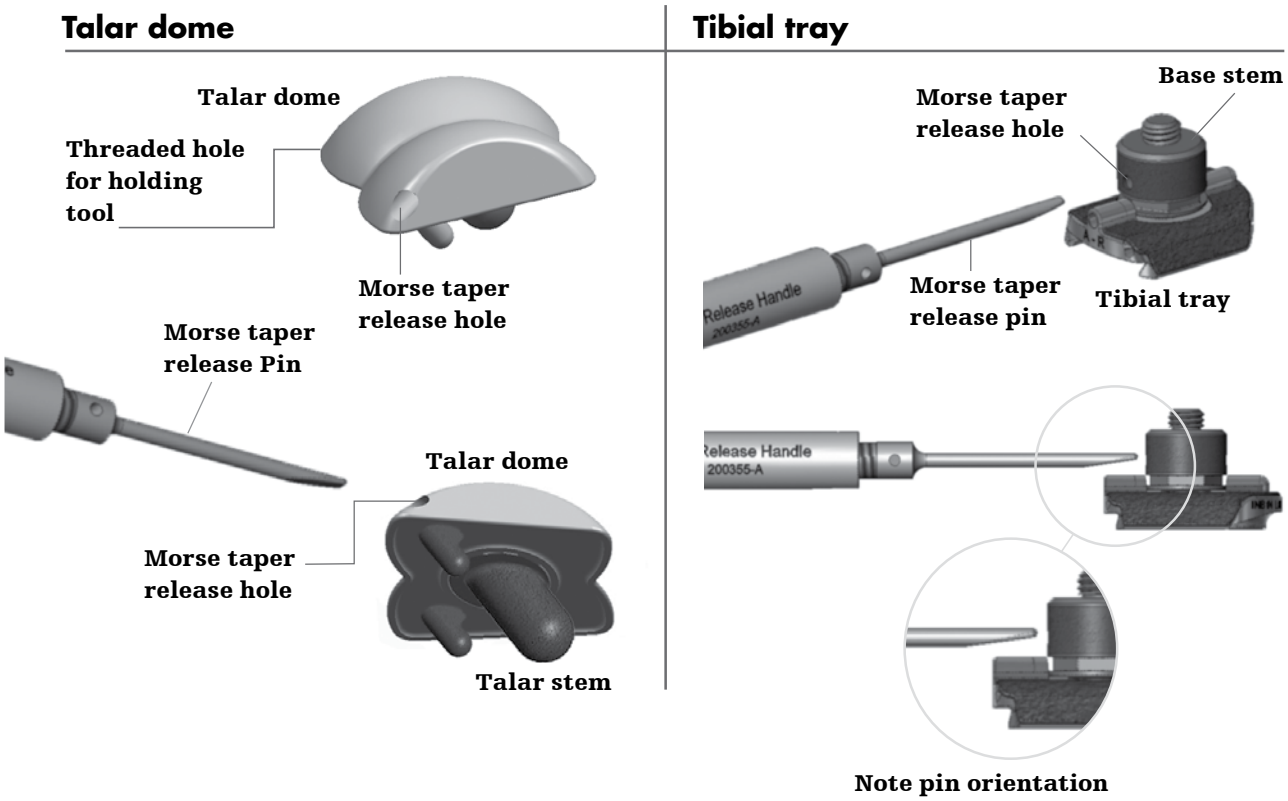


Fig. 62

CAUTION

Release pin must be inserted into the talar dome from anterior to posterior to disengage taper. Failure to do so could result in pin becoming permanently jammed.



Stem retrieval

Retrieving a base stem piece from the tibia

Insert the T-handle reamer (200395) through the bottom of the foot and thread the base stem extraction tool (200428) in the open joint space (fig. 63). A size 14 clip (200381001-200381004) is used to introduce the base stem extraction tool. Once it is threaded onto the reamer replace the Clip with a size 14 wrench (200380001-200380004) to tighten (fig. 64).

Remove the wrench and push the extraction tool up in the tibia until contact is made with the base stem piece. Continue to turn the T-handle clockwise to engage the threads of the base stem piece (fig. 65). Once threads are engaged, pull out the stem construct until the base stem is visible in the joint space (fig. 66).

Place the appropriate size wrench on the base stem and turn the T-handle counter-clockwise to disengage the extraction tool from the base stem. Leaving the wrench on the base stem push the stem construct back into the tibia (fig. 67). Use the size 14 wrench to remove the extraction tool from the T-handle reamer (fig. 68).

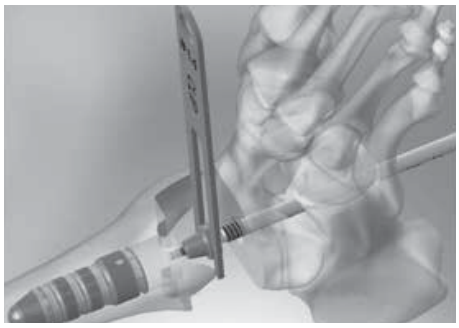


Fig. 63

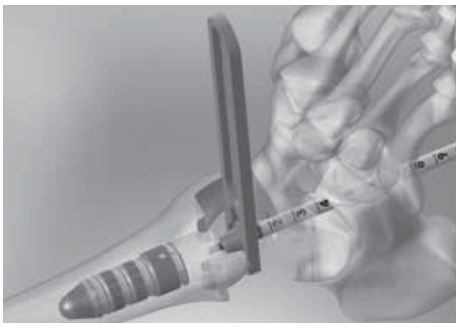


Fig. 64

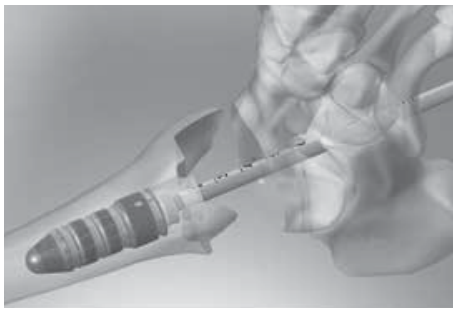


Fig. 65

Fig. 66

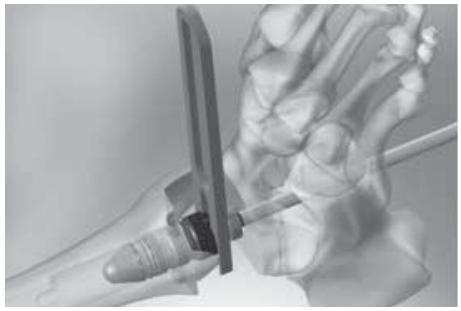


Fig. 67

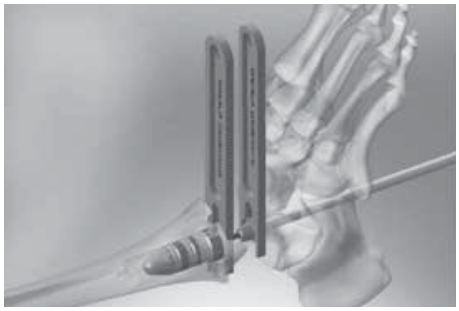


Fig. 68

Tibial T-handle reamer drive rod
200395

Tibial stem clip #14
200381001 - 200381004

Base stem extraction tool
200428

Tibial stem wrench #14
200380001 - 200380004

Stem retrieval

Retrieving a mid or top stem piece from the tibia

Follow the exact steps detailed on previous page for removing the base stem piece, substituting the mid/top stem extraction tool (200102) for the base stem extraction tool (200428) (figs. 69-74).

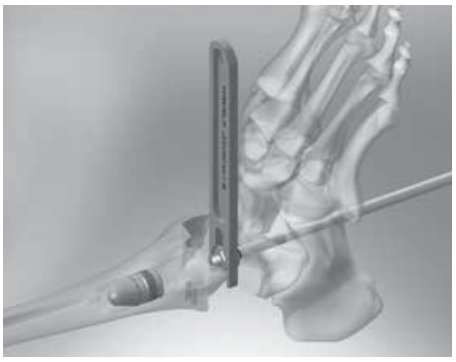


Fig. 69

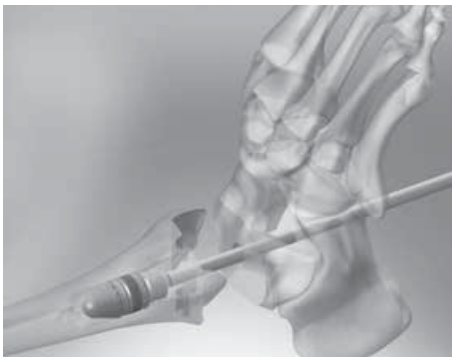


Fig. 70

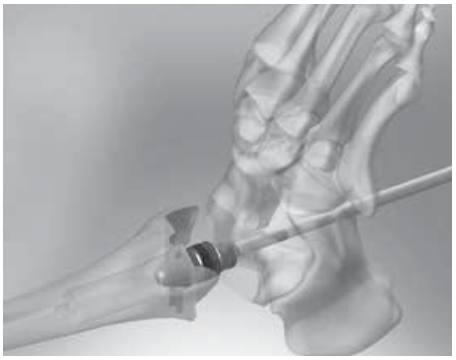


Fig. 71

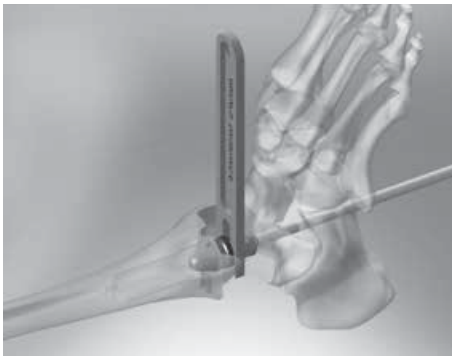


Fig. 72

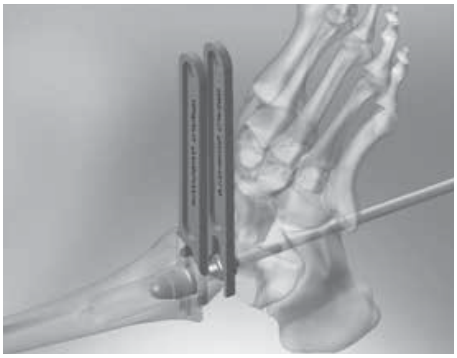


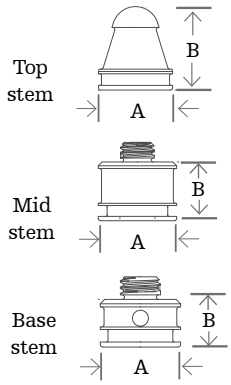
Fig. 73

Fig. 74

Mid/top stem extraction tool 200102

Base stem extraction tool 200428

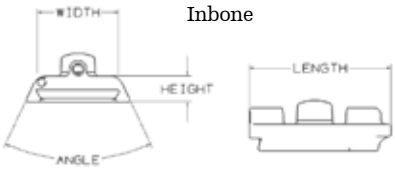
Implant specifications



Stems

	Size 12mm		Size 14mm		Size 16mm		Size 18mm	
Implant	**A**	**B**	**A**	**B**	**A**	**B**	**A**	**B**
Top Stem	12	18	14	18	16	18	N/A	N/A
Mid Stem	12	9.5	14	9.5	16	9.5	18	13.5
Base Stem	N/A	N/A	N/A	N/A	16	9.5	18	13.5

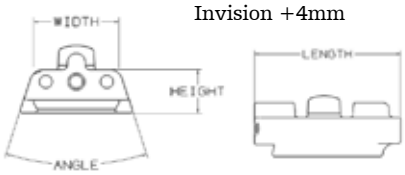
Tibial trays



Inbone

Size	Implant	Type	Height	Width	Angle	Length
Size 2	Inbone	Standard	7	21	50	32
		Long				36
	Invision +4mm	Standard	11		33	33
		Long				36
	Invision +8mm	Standard	15			30
		Long				33

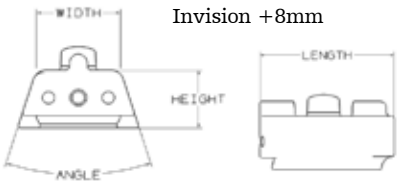
Size	Implant	Type	Height	Width	Angle	Length
Size 4	Inbone	Standard	8	24.5	50	39
		Long				42
	Invision +4mm	Standard	12		39	40
		Long				43
	Invision +8mm	Standard	16			37
		Long				40



Invision +4mm

Size	Implant	Type	Height	Width	Angle	Length
Size 3	Inbone	Standard	7.5	23	50	36
		Long				39
	Invision +4mm	Standard	11.5		36	37
		Long				40
	Invision +8mm	Standard	15.5			34
		Long				37

Size	Implant	Type	Height	Width	Angle	Length
Size 5	Inbone	Standard	9	26	50	42
		Long				46
	Invision +4mm	Standard	13		41	43.5
		Long				46.5
	Invision +8mm	Standard	17			40.5
		Long				43.5



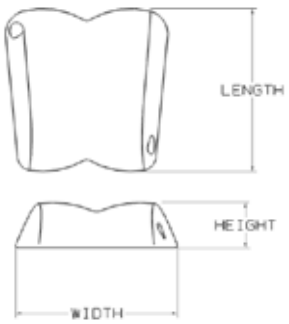
Invision +8mm

Size	Implant	Type	Height	Width	Angle	Length
Size 6	Inbone	Standard	9.5	29	50	46

All dimensions are shown in millimeters and have been approximated to the nearest half millimeter.

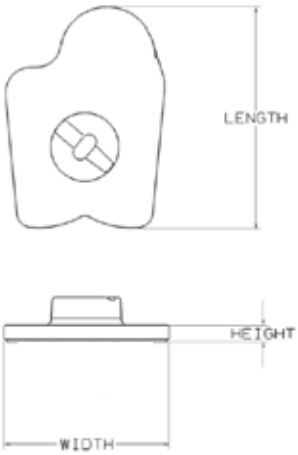
Implant specifications

Invision



Talar domes

Implant	Type	Width	Length	Height
Size 1	Standard	30	31.5	10
	Thick			13
Size 2	Standard	33	34	10
	Thick			13
Size 3	Standard	36	36	10
	Thick			13
Size 4	Standard	39	39	11
	Thick			14
Size 5	Standard	42	42	12
	Thick			15



Talar plates

Size	Thickness	Type	Width	Length	Height
Size 1	Standard	Standard	30	43.5	3mm
		Long		53.5	

Size	Thickness	Type	Width	Length	Height
Size 2	Standard	Standard	32	46.5	3mm
		Long		56.5	

Size	Thickness	Type	Width	Length	Height
Size 3	Standard	Standard	35	48.5	3mm
		Long		58.5	

Size	Thickness	Type	Width	Length	Height
Size 4	Standard	Standard	38.5	52	3mm
		Long		62	

Size	Thickness	Type	Width	Length	Height
Size 5	Standard	Standard	41.5	55	3mm
		Long		65	

Implant compatibility

Invision or Inbone tibia with invision talus

Top stem	Mid stem	Base stem	Tibial tray	Poly insert	Dome	Talar plate
12mm 14mm 16mm	12mm 14mm 16mm	16mm	2	1+	1	1
				2	2	2
						3
12mm 14mm 16mm	12mm 14mm 16mm	16mm	3	2+	2	2
				3	3	3
						4
12mm 14mm 16mm	12mm 14mm 16mm 18mm	18mm	4	3+	3	3
				4	4	4
						5
12mm 14mm 16mm	12mm 14mm 16mm 18mm	18mm	5	4+	4	4
				5	5	5

Invision tibia with Inbone talus

Top stem	Mid stem	Base stem	Tibial tray	Poly insert	Dome	Talar plate
12mm 14mm 16mm	12mm 14mm 16mm	16mm	2	1+	1	10mm 14mm
				2	2	
12mm 14mm 16mm	12mm 14mm 16mm	16mm	3	2+	2	10mm 14mm
				3	3	
12mm 14mm 16mm	12mm 14mm 16mm 18mm	18mm	4	3+	3	10mm 14mm
				4	4	
12mm 14mm 16mm	12mm 14mm 16mm 18mm	18mm	5	4+	4	10mm 14mm
				5	5	

System components

Inbone tibial stems plasma coated

Ref #	Description
200011901	Top stem, 14mm
200011902	Top stem, 16mm
200011904	Top stem, 12mm
200010901	Mid stem, 14mm
200010902	Mid stem, 16mm
200010903	Mid stem, 18mm
200010904	Mid stem, 12mm
200009901	Base stem, 16mm
200009902	Base stem, 18mm

Inbone standard tibial trays

Ref #	Description
200252902	Size 2, left
200252903	Size 3, left
200252904	Size 4, left
200252905	Size 5, left
200252906	Size 6, left
200222902	Size 2, right
200222903	Size 3, right
200222904	Size 4, right
200222905	Size 5, right
200222906	Size 6, right

Inbone long tibial trays

Ref #	Description
220252902	Size 2, left
220252903	Size 3, left
220252904	Size 4, left
220252905	Size 5, left
220222902	Size 2, right
220222903	Size 3, right
220222904	Size 4, right
220222905	Size 4, right

Invision size 2 tibial tray

Ref #	Description
60002401	+4mm, standard
60002402	+4mm, long
60002801	+8mm, standard
60002802	+8mm, long

Invision size 3 tibial tray

Ref #	Description
60003401	+4mm, standard
60003402	+4mm, long
60003801	+8mm, standard
60003802	+8mm, long

Invision size 4 tibial tray

Ref #	Description
60004401	+4mm, standard
60004402	+4mm, long
60004801	+8mm, standard
60004802	+8mm, long

Invision size 5 tibial tray

Ref #	Description
60005401	+4mm, standard
60005402	+4mm, long
60005801	+8mm, standard
60005802	+8mm, long

Contact Stryker if material content information is required.

System components

Inbone size 1+ poly inserts

Ref #	Description
220222106E	Size 1+, 6mm
220222108E	Size 1+, 8mm
220222110E	Size 1+, 10mm
220222112E	Size 1+, 12mm
220222114E	Size 1+, 14mm
220222116E	Size 1+, 16mm

Inbone size 2 poly inserts

Ref #	Description
220222206E	Size 2, 6mm
220222208E	Size 2, 8mm
220222210E	Size 2, 10mm
220222212E	Size 2, 12mm
220222214E	Size 2, 14mm
220222216E	Size 2, 16mm

Inbone size 2+ poly inserts

Ref #	Description
220223208E	Size 2+, 8mm
220223210E	Size 2+, 10mm
220223212E	Size 2+, 12mm
220223214E	Size 2+, 14mm
220223216E	Size 2+, 16mm
220223218E	Size 2+, 18mm

Inbone size 3 poly inserts

Ref #	Description
220223308E	Size 3, 8mm
220223310E	Size 3, 10mm
220223312E	Size 3, 12mm
220223314E	Size 3, 14mm
220223316E	Size 3, 16mm
220223318E	Size 3, 18mm

Inbone size 3+ poly inserts

Ref #	Description
220224310E	Size 3+, 10mm
220224312E	Size 3+, 12mm
220224314E	Size 3+, 14mm
220224316E	Size 3+, 16mm
2202243168E	Size 3+, 18mm
220224320E	Size 3+, 20mm

Inbone size 4 poly inserts

Ref #	Description
220224409E	Size 4, 9mm
220224411E	Size 4, 11mm
220224413E	Size 4, 13mm
220224415E	Size 4, 15mm
220224417E	Size 4, 17mm
220224419E	Size 4, 19mm

Inbone size 4+ poly inserts

Ref #	Description
220225410E	Size 4+, 10mm
220225412E	Size 4+, 12mm
220225414E	Size 4+, 14mm
220225416E	Size 4+, 16mm
220225418E	Size 4+, 18mm
220225420E	Size 4+, 20mm

Inbone size 5 poly inserts

Ref #	Description
220225509E	Size 5, 9mm
220225511E	Size 5, 11mm
220225513E	Size 5, 13mm
220225515E	Size 5, 15mm
220225517E	Size 5, 17mm
220225519E	Size 5, 19mm

Inbone size 5+ poly inserts

Ref #	Description
220226510E	Size 5+, 10mm
220226512E	Size 5+, 12mm
220226514E	Size 5+, 14mm
220226516E	Size 5+, 16mm
220226518E	Size 5+, 18mm
220226520E	Size 5+, 20mm

System components

Inbone talar domes

Ref #	Description
220220901	Size 1
220220902	Size 2
220220903	Size 3
220220904	Size 4
220220905	Size 5

Invision talar domes

Ref #	Description
60012001	Standard talar domes sz 1
60012002	Standard talar domes sz 2
60012003	Standard talar domes sz 3
60012004	Standard talar domes sz 4
60012005	Standard talar domes sz 5

Ref #	Description
60022001	Thick talar domes sz 1
60022002	Thick talar domes sz 2
60022003	Thick talar domes sz 3
60022004	Thick talar domes sz 4
60022005	Thick talar domes sz 5

Inbone talar stems

Ref #	Description
200347901	10mm Long
200347902	14mm Long

System components

Invision size 1 talar plates

Ref #	Description
6000201l	Left, 3mm, standard
6000211l	Left, 3mm, long
6000201r	Right, 3mm, standard
6000211r	Right, 3mm, long

Invision size 2 talar plates

Ref #	Description
6000202l	Left, 3mm, standard
6000212l	Left, 3mm, long
6000202r	Right, 3mm, standard
6000212r	Right, 3mm, long

Invision size 3 talar plates

Ref #	Description
6000203l	Left, 3mm, standard
6000213l	Left, 3mm, long
6000203r	Right, 3mm, standard
6000213r	Right, 3mm, long

Invision size 4 talar plates

Ref #	Description
6000205l	Left, 3mm, standard
6000214l	Left, 3mm, long
6000204r	Right, 3mm, standard
6000214r	Right, 3mm, long

Invision size 5 talar plates

Ref #	Description
6000205l	Left, 3mm, standard
6000215l	Left, 3mm, long
6000205r	Right, 3mm, standard
6000215r	Right, 3mm, long

System components

Invision central talar augments

Ref #	Description
60001506	15mm diameter, 6mm depth
60001510	15mm diameter, 10mm depth
60002006	20mm diameter, 6mm depth
60002010	20mm diameter, 10mm depth

Invision oblong talar augments

Ref #	Description
61001506	15mm diameter, 6mm depth
61001510	15mm diameter, 10mm depth
61002006	20mm diameter, 6mm depth
61002010	20mm diameter, 10mm depth

System components

Ortholoc 3.5mm non-locking screws (sterile)

Ref #	Description
58S13512	x 12mm
58S13514	x 14mm
58S13516	x 16mm
58S13518	x 18mm
58S13520	x 20mm
58S13522	x 22mm
58S13524	x 24mm
58S13526	x 26mm
58S13528	x 28mm
58S13530	x 30mm

Ortholoc 3.5mm locking screws (non-sterile)

Ref #	Description
58803510	x 10mm
58803512	x 12mm
58803514	x 14mm
58803516	x 16mm
58803518	x 18mm
58803520	x 20mm
58803522	x 22mm
58803524	x 24mm
58803526	x 26mm
58803528	x 28mm
58803530	x 30mm

Ortholoc 3.5mm non- locking screws (non-sterile)

Ref #	Description
58813510	x 10mm
58813512	x 12mm
58813514	x 14mm
58813516	x 16mm
58813518	x 18mm
58813520	x 20mm
58813522	x 22mm
58813524	x 24mm
58813526	x 26mm
58813528	x 28mm
58813530	x 30mm

Ortholoc 4.0mm non- locking screws (non-sterile)

Ref #	Description
58934012	x 12mm
58934014	x 14mm
58934016	x 16mm
58934018	x 18mm
58934020	x 20mm
58934022	x 22mm
58934024	x 24mm
58934026	x 26mm
58934028	x 28mm
58934030	x 30mm

Invision screw plug (sterile)

Ref #	Description
60610000s	Sterile screw plug

Notes

Notes

Notes

This document is intended solely for the use of healthcare professionals. A surgeon must always rely on his or her own professional clinical judgment when deciding whether to use a particular product when treating a particular patient. Stryker does not dispense medical advice and recommends that surgeons be trained in the use of any particular product before using it in surgery.

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This document is applicable to Europe.

The products listed above are CE marked.

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