Smith+Nephew

SALTO TALARIS◊

Total Ankle Prosthesis

Revision Ankle Replacement
Surgical Technique

Table of Contents

Nota Bene
The following technique is for informational and educational purposes only. It is not intended to serve as medical advice. It is the responsibility of treating physicians to determine and utilize the appropriate products and techniques according to their own clinical judgment for each of their patients. For more information on the product, including its indications for use, contraindications, and product safety information, please refer to the product's label and the Instructions for Use packaged with the product.

Instrumentation concept

The instrumentation is designed to achieve accurate and reproducible tibiotalar alignment while adapting to various anatomical conditions, depending on the lesions encountered in the ankle or a particular morphotype.

1) Patient Positioning

The patient is placed in a supine position with a bump under ipsilateral hip to reduce external rotation of the extremity.

The heel is placed near the end of the table. A bump under the calf should be used throughout the surgery to keep the heel off the table.

2) Removal of Current Implant

The failed implant must be removed with care so as to avoid fracture of the medial or lateral malleolus and to achieve minimal bone loss.

3) Tibial and Talar Preparation

Utilizing a free-hand technique or the supplied tibial and talar cut guide, minimal bone should be removed to allow for parallel tibial and talar flat cuts. These cuts should be parallel to the weight-bearing surface and remove as little bone as possible to achieve a flat cut of good bone.

4) Final Adjustments in the Tibial Implant Position

Both tibial and talar trials can be inserted together. Lateral fluoroscopy should be utilized to verify correct position in the sagittal plane. Once correct poly size is chosen, the tibial or talar component can be secured and the ankle can then be ranged to locate the corresponding implant based on the patient's own biomechanics.

5) Final Preparation

With both trials in place and fixed, the tibial component can be prepped, removed, and the preparation for the talar component can be finalized.

The design of the SALTO TALARIS Prosthesis ensures proper positioning of the tibial implant in relation to the talar implant.

Preoperative planning

The preoperative planning for the SALTO TALARIS◊ prosthesis is carried out using three standard weight-bearing radiological views:

- Anterior view;
- Anterior view with 30° internal rotation to expose the tibial-fibular joint space.
- Straight lateral.

Examination of the healthy side should be used for comparison.

Complementary imaging may be requested to:

- Confirm or reject the indication (CT scan examination for talar necrosis, a relative contraindication for prosthetic replacement);
- Discuss the need for an associated procedure (CT scan of the subtalar joint);
- Modify the technical details (assess the anterior deviation of the knee with panoramic X-ray).

Special consideration should be given to two types of pre-existing conditions.

- Malunions responsible for malalignment of the tibia or imbalance of the malleoli, which may require an initial correction.
- Major ligamentous instabilities demonstrated by an examination under stress will require specific intervention (release of the retracted side or possible need for an associated ligamentoplasty on the lengthened side).
- Previous ankle implant removal and subsequent bone loss

1) Key planning elements determined from the anterior view:

- Choice of an implant size that does not impinge with the lateral malleolus;
- Determination of the ideal joint line level accommodating for articular wear.

Comparative images are often necessary to assess the prosthetic joint line, which should be located at the theoretical anatomic joint line. The thickness of the tibial resection depends on this determination.

2) Key planning elements determined from the lateral view:

- Confirmation of the implant size selected from the anterior view;
- Evaluation of the anterior osteophytic margin and assessment of the proposed bone resection required to expose the roof of the pilon;
- Evaluation of talar dome morphology, particularly its degree of convexity;
- Evaluation of talar positioning, which can be centered or retroplaced beneath the pilon. The relative positioning of the tibial and talar components should take into account a possible off-centered location with the understanding that the prosthesis adapts to this position and does not correct it.

3) In revision cases, the total void to be filled should be estimated before the case. The limiting factor being total polyethylene (PE) insert and tibial baseplate making up a maximum of 21mm and talar height of 9.7mm – 11.9mm, leaving a total void-filling capacity of 30.7mm - 32.9mm.

General rules

- The tibial component size is always the same or one size bigger than the talar component size
- The polyethylene insert matches the talar component size except for the size 0 talar component, which has to be associated with the PE insert size 0 if the tibia is a size 1 and with a PE insert size 00 if the tibia is a size 0

Additional information

- The tibial implant comes in 8 symmetrical sizes (4 standard and 4 extended) that can all be implanted on either the right or the left ankle
- The PE insert is clipped onto the tibial base to form a single-block component. The inserts come in 9 thicknesses, from 8 to 21mm (includes thickness of the metallic tibial base + thickness of PE). Unlike the tibial implant, the PE inserts are specific for each side, right and left.
- The talar component comes in 4 side-specific sizes
- When the patient's anatomy requires using a size 0 tibial implant, a size 00 insert must be associated with it (available for each side, right and left), whose width and clipping system are compatible with the size 0 tibial implant, and whose curvature corresponds to that of the size 0 talar implant
- However, when the patient's anatomy presents a tibia requiring size 1, but requires use of a size 0 talar component, the intermediary insert must be size 0, whose width and clipping system are compatible with the size 1 tibial implant, and whose curvature corresponds to those of the size 0 talar implant

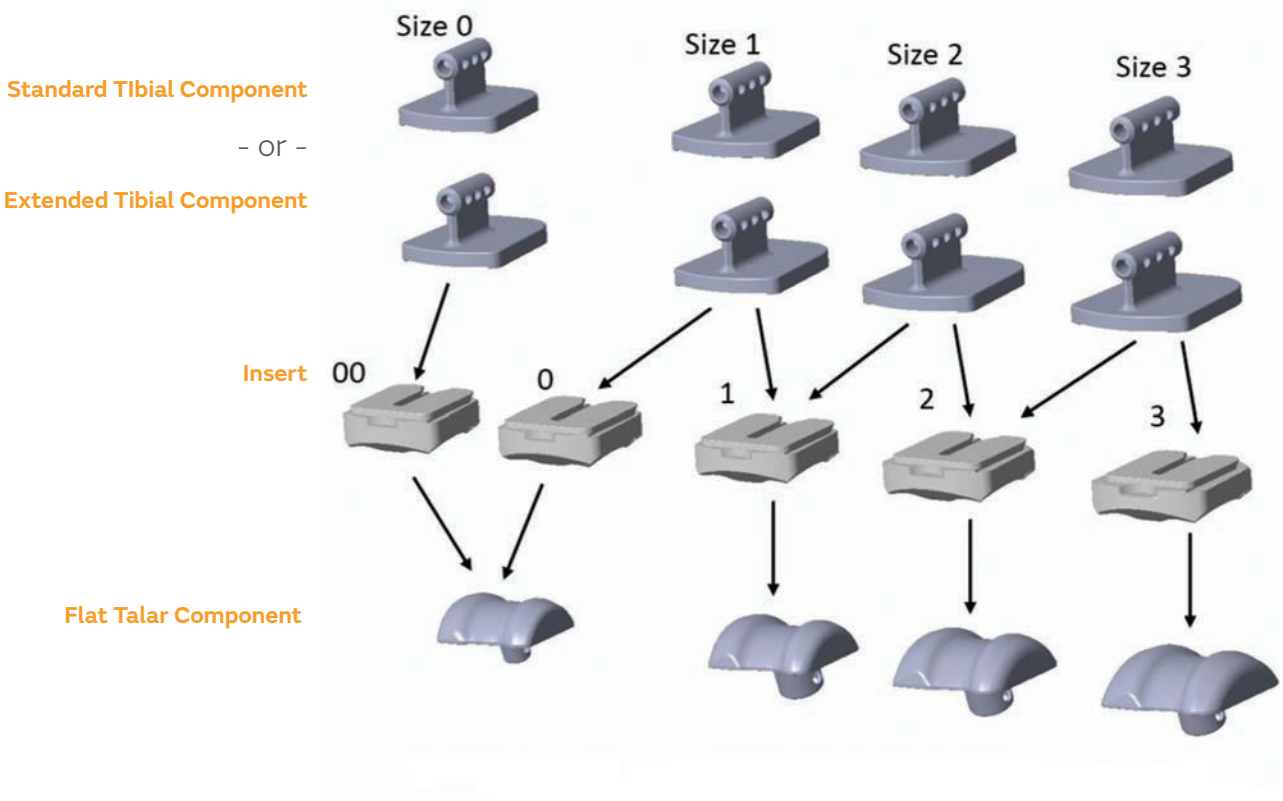


Figure 1

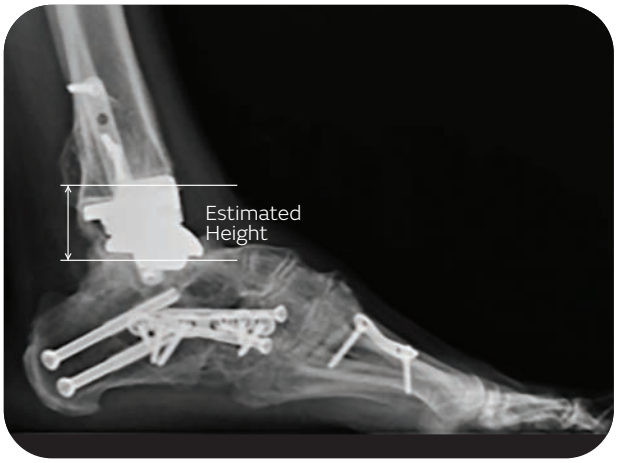


Figure 2

Surgical technique - revision

Revision Ankle Arthroplasty faces a multitude of challenges including loss of bone stock, soft tissue imbalance, and increased rates of infection. In order to maximize the opportunities for a successful revision care should be taken in pre-op planning including imaging through CT scan to assist in determining if there is suitable bone stock to support a revision total ankle arthroplasty.

In revision cases, the total void to be filled should be estimated before the case. The limiting factor being total PE insert and tibial baseplate of a maximum of 21mm **(Figure 1)** and talar height of 9.7mm – 11.9mm **(Figure 2)** leaves a total void-filling capacity of 30.7mm - 32.9mm.

Talar Component Height

Size	Height
Size 0	9.7mm
Size 1	10.5mm
Size 2	11.4mm
Size 3	11.9mm

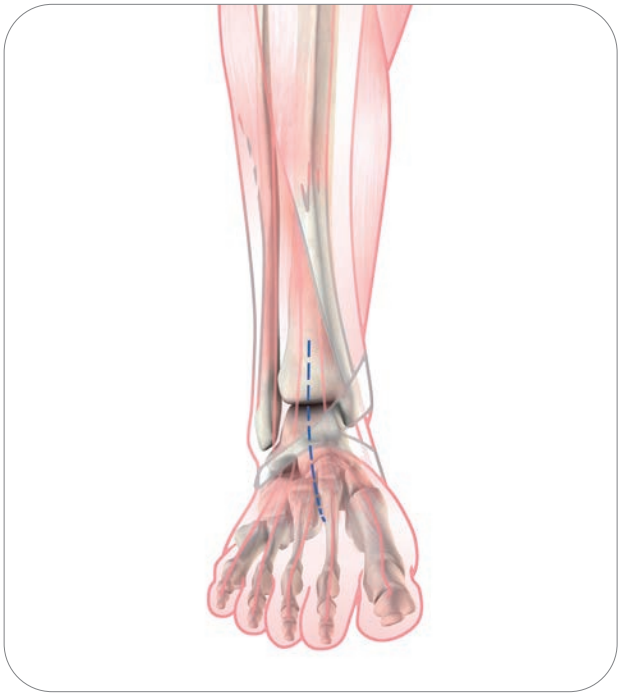


Figure 3: Anterior approach

Figure 4

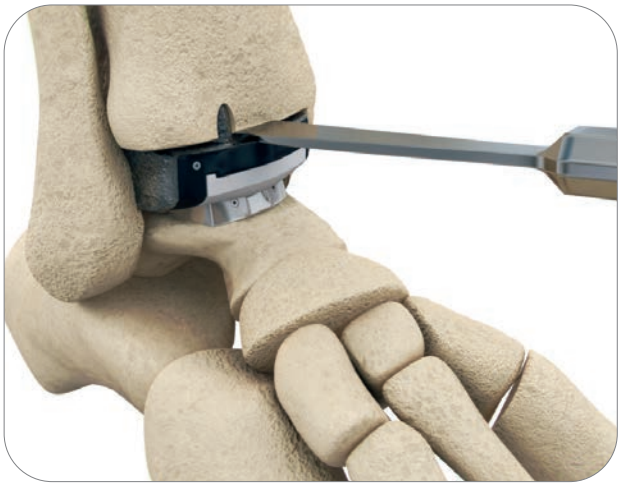


Figure 5

Step 1 ▪ Surgical Approach

1-1 The ankle is opened with an extensile longitudinal anterior incision lateral to the anterior tibialis. This allows for an anterior release and broad arthrolysis with resection of all the osteophytes **(Figure 3)**.

Step 2 ▪ Removal of Current Prosthesis

2-1 Care should be taken to preserve as much bone stock as possible when removing a prosthesis. The use of osteotomes, reciprocating saws, micro-oscillating saws can all be used to remove the implant from the joint. Care should be taken to protect the medial and lateral malleoli during removal **(Figure 4, 5)**.

Step 3 ▪ Preparing Bone Surfaces

3-1 With the removal of the tibial and talar implants, the implant surfaces can be prepared free hand to get two flat parallel surfaces. The Tibial Alignment Guide can be used for both the tibial and talar cuts.

Figure 6

Figure 7

Figure 8

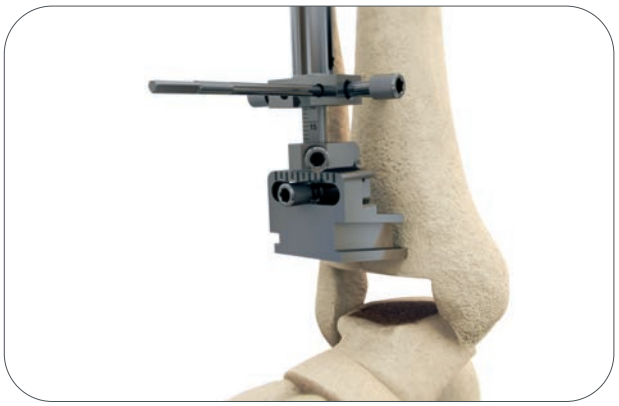


Figure 9

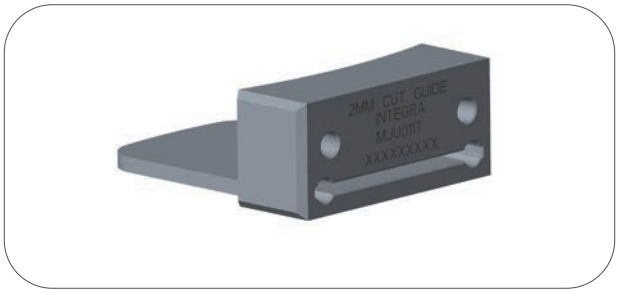


Figure 10

Step 4 ▪ Positioning of the Tibial Alignment Guide

4-1 As an option, the 2mm cut guide may be used if the process of removing the prior implant has left the tibial resection relatively flat and at the desired angle.

If 2mm of bone is needed to be resected, use Step 4-1a; otherwise follow this step.

The guide should be aligned parallel to the tibia's mechanical axis; this is a determining factor in all the resections performed during the procedure.

First check that all of the guide's set screws are unscrewed.

Drill a 110mm drill tip pin at the anterior tibial tubercle in the neutral hole of the guide parallel to the tibial crest **(Figure 6)**.

Align the pin guide to position 15mm and place at the location of the tibia of the desired resection. In order to minimize bone loss, a minimal resection is desired to maintain tibial bone stock. The distal flange of the tibial alignment guide should rest on the anterior cortex of the tibia at the desired level of bone resection **(Figure 7)**. Lateral fluoroscopy can assist in determining the desired level of resection **(Figure 8)**.

Once the level of tibial resection is determined, tighten the extension screw located in the middle, then insert a second 110mm drill tip pin through the guide's medial hole, positioning the guide's axis in the center of the inferior metaphysis **(Figure 9)**.

4-1a Place the 2mm cut guide **(Figure 10)** in the joint space with the platform placed firmly against the resected tibial resection. The joint distractor (MJU928T or MJU929T) should be used to keep the platform flush to the tibial resection.

Pin the 2mm cut guide to the distal tibia going through the 2 proximal holes using the 3mm self-drilling pins (LJV527T).

Insert two 75mm pins (LJV526T) into the distal medial and lateral holes of the guide to protect against saw excursion. Take a lateral fluoroscopic image to ensure the platform is flush to the tibial resection. Perform the additional tibial resection extended carefully to the posterior cortex.

A 1.27mm thick saw blade is recommended. Repeat this process as needed until the minimum amount of bone has been resected.

Remove the 2mm cut guide and pins after the desired bone is resected. Place the tibial alignment guide appropriately and continue to Step 5.

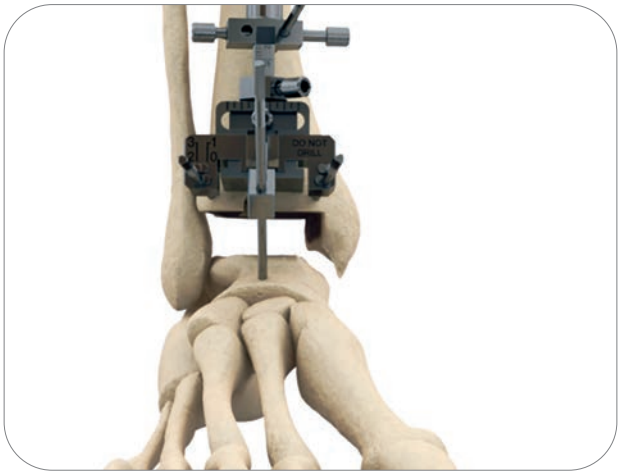


Figure 11

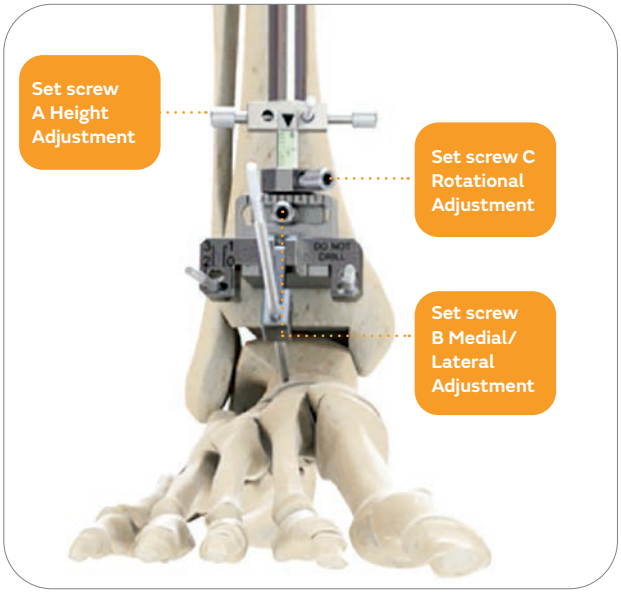


Figure 12

Items Used:

Tibial Alignment Guide: MJU333T

Tibial Alignment Jig: MJU334T

Pins, 110mm: LJV527T

Pins, 75mm: LJV526T

Step 5 ▪ Adjusting the Alignment Guide

5-1 Frontal plane: The axis of the tibial resection guide should be made parallel to the tibia's mechanical axis by choosing the proper hole of the proximal pin guide.

Sagittal plane: With both flanges in contact with the tibia, the resection guide is adjusted parallel to the anterior tibial crest.

At this stage, a genu varum or a genu valgum deformation can be corrected by moving the proximal guide medially or laterally over the pin. This makes it possible to implant the prosthesis strictly perpendicular to the tibial axis. This will compensate for an axis defect, to give greater importance to the horizontal orientation of the tibiotalar joint line. The timing and degree of this compensation should be discussed for each case (possibility of secondary knee surgery, subtalar joint stiffening in a position that compensates the axis).

Once the guide is positioned in the frontal and sagittal planes, the set-up is finalized by tightening the set screw of the superior guide and the medial set screw tightening on the distal 110mm pin.

Rotational and mediolateral positioning:

The tibial alignment jig, used for mediolateral and rotational adjustment of the implant, is attached to the tibial alignment guide.

Caution: Since this guide is not a cutting guide, do not drill through the holes. The pins inserted in the holes are used only to verify that the tibial plate is properly positioned. They are inserted in the holes but not drilled.

Adjustments are made as follows.

- Hold the ankle in a neutral position **(Figure 11)**
- Rotational adjustment: Insert a 110mm pin into the guide's adjustable arm; the pin in the adjustable arm should also be in line between the 2nd and 3rd metatarsal **(Figure 11)**.
- Once the rotational position has been adjusted, the guide's rotational adjustment set screw (screw C) is tightened.
- Mediolateral adjustment: The tibial implant size planned preoperatively is confirmed through a series of lateral and medial holes on the guide. The different implant sizes available (0, 1, 2, and 3) are on the guide; hence the size is confirmed by inserting two 75mm pins in the medial and lateral holes and by positioning them at the medial and lateral joint spaces **(Figure 12)**. Once the mediolateral position has been adjusted, the guide's mediolateral adjustment set screw (screw B) is firmly tightened with a screwdriver. Next, remove the pins and tibial jig.

*** Remember, this does not commit you to the selected size.**

Figure 13

Figure 14

Step 6 ▪ Placing the Cutting Guide

Depending on the size chosen at the preoperative planning stage and in accordance with the size determined from the tibial alignment jig, tibial resection guide No. 0, 1, 2 or 3 is chosen. This unit is attached to the alignment guide by tightening the set screw **(Figure 13)**.

Precautions before use: Once all the adjustments have been made and before using the oscillating saw, make sure that the guide is sitting on the anterior tibia and all the set screws have been firmly tightened with the screwdriver provided in the instrumentation. An AP fluoroscopy image may be utilized to ensure proper alignment of the cut guide. A lateral fluoroscopy image can also confirm the level of resection of the tibia **(Figure 14)**.

Items Used:

Tibial Alignment Guide: MJU333T

Vertical Hole Tibial Cut Guide:

Size 0: MJU370T

Size 1: MJU371T

Size 2: MJU372T

Size 3: MJU373T

Vertical Slot Tibial Cut

Guide Sizes 0 - 3:

Size 0: MJU645T

Size 1: MJU646T

Size 2: MJU647T

Size 3: MJU648T

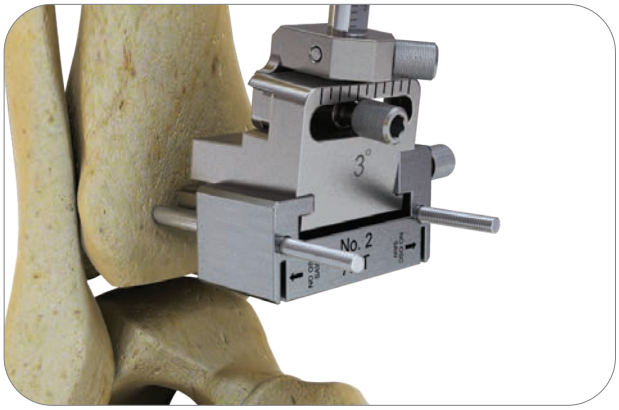


Figure 15

Figure 15a

Step 7 ▪ Preparation for Tibial Bone Cut

Note: If using the vertical slot tibial resection guide, follow Step 7-1. If using the vertical hole tibial resection guide, follow Step 7-2.

Note: If necessary, a pin pusher tool is available and can be used to further advance the pins through the guide after drilling.

7-1 Vertical slot resection guide: In the cut guide, drill in the two proximal holes with two 75mm drill-tip pins. These pins protect the sweep of the oscillating saw blade during the horizontal cut as well as the proximal migration of the reciprocating saw blade during the vertical cuts. **(Figure 15)**.

7-2 Vertical hole resection guide: In the cut guide, drill the two proximal holes with two 75mm drill-tip pins. These pins protect the sweep of the oscillating saw blade during the horizontal cut. Using the drill, 110mm drill-tip pin, or reamer, drill the remaining 4 holes in the tibial cut block. Care should be taken to ensure that all holes are drilled bicortically. **(Figure 15a)**.

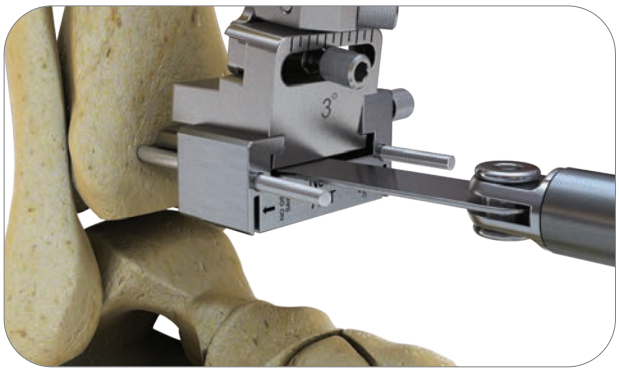


Figure 16

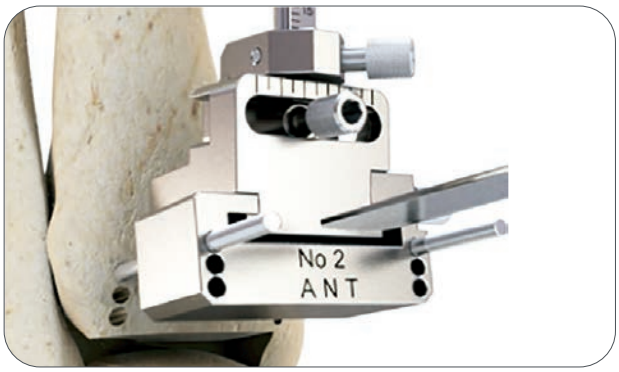


Figure 16a

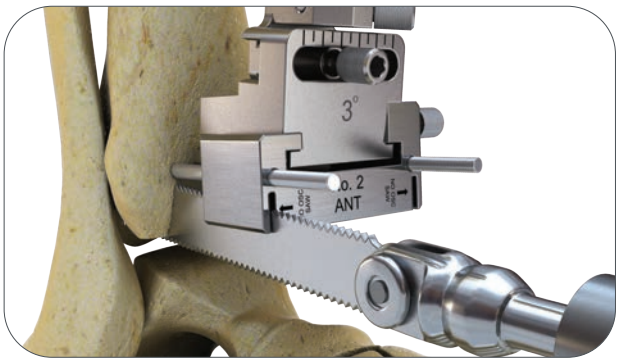


Figure 17

Figure 17a

Step 8 ▪ Tibial Cut

Note: If using the vertical slot tibial resection guide, skip step 8-3. If using the vertical hole tibial resection guide, skip step 8-2.

8-1 The horizontal tibial resection is performed with an oscillating saw blade **(Figure 16, 16a)**, extending carefully to the back, as far as the posterior cortex.

8-2 For the vertical slot resection guide, the vertical resection is performed through the slots on the medial and lateral aspects of the guide with the provided end cutting reciprocating saw. Care needs to be taken to avoid unwanted contact to the talus when using the one-sided or two-sided reciprocating saw. If using the one-sided reciprocating saw, point the teeth distally. The cut should extend up to the pins that are seated in the guide. **(Figure 17)**.

Once the cuts have been made, remove the tibial resection guide and resect the anterior half of the distal bone, which is easily accessible. The remaining posterior resection is easily completed after the talar resection.

8-3 For the vertical pin hole resection guide, the vertical drill holes are connected with the provided osteotome. Once the cuts have been made, remove the tibial resection guide and resect the anterior half of the distal bone, which is easily accessible. The remaining posterior resection is easily completed after the talar resection. At this stage, the goal is to be able to straighten the foot at a right angle below the tibia. **(Figure 17a)**.

8-4 Care should be taken to avoid over penetration of either oscillating or reciprocating saw blade beyond the posterior cortical bone. Be sure to use only the oscillating saw for the horizontal cut and only the reciprocating saw for the vertical cuts.

Caution: Point the saw blade's teeth distally to prevent wear of the cut guide.

Items Used:

Reamer: LJU097T

Pins, 75mm: LJV526T

Pins, 110mm: LJV527T

Saw Blade, Wide, Stryker 7: SAW5945T/SAW6945T

Saw Blade, Wide, Hall Versipower: SAW5947T/ SAW6947T

Saw Blade, Wide, Hall Powerpro: SAW5949T/ SAW6949T

Recip. Saw Blade, 75mm x 12mm: SAW5950T/ SAW6950T

Pin Puller: MJU359T

Reciprocating Saw Blade, 75mm x 8mm: SAW6951T

3mm Drill Bit: DWD060T/ LJV528T

Vertical Hole Tibial Cut Guide: MJU370T-373T

Vertical Slot Tibial Cut Guide: MJU645T-648T

Figure 18

Step 9 ▪ Preparing the Posterior Talar Cut and Inserting the Talar Guide Pin

9-1 The talar cutting guide is attached to the tibial alignment guide and positioned as close to the talus as possible. Dorsal excision of the talar head with general instrumentation may be necessary prior to attaching the talar cutting guide to achieve proper resection. The set screw is tightened **(Figure 18)**. The proximal end of the tibial alignment guide should be elevated to reduce the cut block to 0mm. This will allow for a level cut with the foot in neutral position. With the foot in neutral, the level of resection can be adjusted based on the desired amount of talus to be removed utilizing the height adjustment of the tibial alignment guide. The resection should be at the level of the anterior border of the talar articular surface. Placing a free saw blade through the guide will help to target the resection level. Use a lateral fluoroscopic view to visualize the resection level.

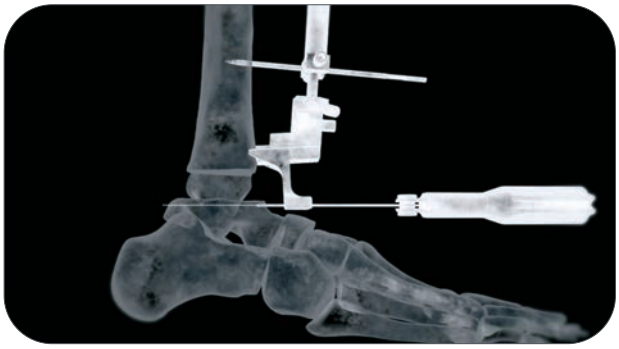


Figure 19

Figure 20

Step 10 ▪ Talar Cut

10-1 A check with lateral fluoroscopy should be done to ensure that the desired amount of resection is taken from the talus **(Figure 19)**.

With the desired resection level determined and the foot in neutral position with the tibial alignment guide elevated proximally to remove the posterior slope of the tibial cut block, the talar cutting guide is pinned to the talus for stabilization, utilizing two 75mm or 110mm pins **(Figure 20)**. Make sure that the foot is not in varus or valgus before setting the pins.

The resection is completed through the talar cutting guide utilizing the narrow oscillating saw blade. To protect the malleoli from the sweep of the saw blade, a set of ribbon retractors are provided in the instrumentation. Remove the flat cut talar cut guide, pins, and the tibial alignment guide.

Items Used:

Drill Bit, 7.9mm: MJU353T

Pin, 3mm x 110mm: LJV527T

Talar Cut Guide, Flat Cut: MJU910T

Saw Blades Listed on Pg. 25

Pin, 75mm: LJV526T

Figure 21

Figure 22

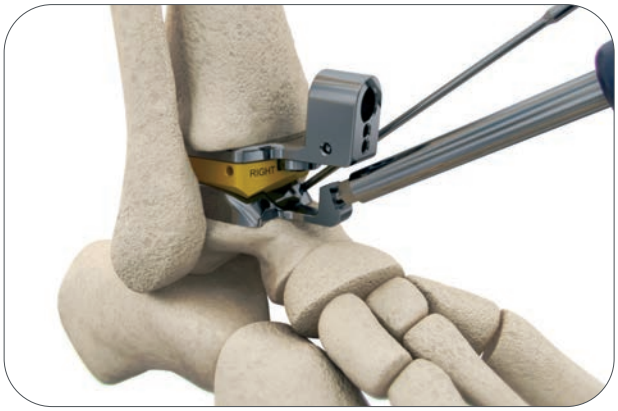


Figure 23

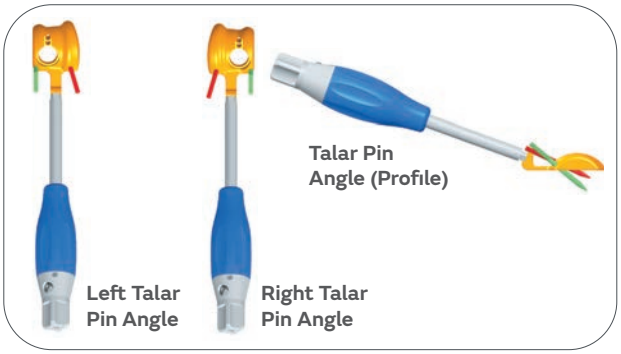


Figure 24

Step 11 ▪ Trialing and Tibial/Talar Prep

11-1 With the resection of both the talus and tibia complete trialing can begin. Insert both the talar trial and tibial trial, using either standard or extended tibial trays, with trial poly insert at the same time **(Figure 21)**.

The plastic trial insert is selected depending on:

- Size and side, which must be identical to the size of the talar implant. A color code is used to simplify this step.
- Thickness: they vary from 8mm to 21mm and correspond to the accumulated thicknesses of the metallic base and the PE.

Utilize the handle attached the talar trial to control rotation and medial/ lateral positioning. For sagittal plane reference, utilize a lateral fluoroscopy view to ensure that the talar component is centered under the long axis of the tibia **(Figure 22)**.

Once desired position is achieved utilize two 45mm pins to stabilize the talar trial **(Figure 23)**.

Note: The Talar Pin angles are below **(Figure 24)**.

Items Used:

Talar Trial, Flat Cut, Size 1, Left: MJU951T

Talar Trial, Flat Cut, Size 2, Left: MJU952T

Talar Trial, Flat Cut, Size 3, Left: MJU953T

Talar Trial, Flat Cut, Size 1, Right: MJU941T

Talar Trial, Flat Cut, Size 2, Right: MJU942T

Talar Trial, Flat Cut, Size 3, Right: MJU943T

Tibial Trials, Size 1: MJU384T

Tibial Trials, Size 2: MJU385T

Tibial Trials, Size 3: MJU386T

Extended PE Inserts see page 27 for a complete list

Drill Bit, 3mm LJV528T or DWD060T

Pin, 45mm, LJV525T

Tibial Trials, Size 0: MJU380T

Extended Tibial Trials, Size 0: MJV500T

Extended Tibial Trials, Size 1: MJV501T

Extended Tibial Trials, Size 2: MJV502T

Extended Tibial Trials, Size 3: MJV503T

Talar Trial, Flat Cut, Size 0, Left: MJV950T

Talar Trial, Flat Cut, Size 0, Right: MJV940T

Figure 25

Figure 26

Step 12 ▪ Drilling of Tibial Plug

12-1 Once the talar trial is secured the ankle can be flexed to ensure that the tibial component position is optimized for the patient's own biomechanics. At this stage, one must check that the engraved line on the superior surface of the tibial trial (the side in contact with the tibial cut) is aligned with the anterior cortex of the tibia.

If this line simulating the final anterior extremity of the tibial implant is too far anterior, the alignment must be corrected when drilling the tibial plug. On the other hand, if the line is located posterior to the anterior cortex of the tibia, the final tibial implant should be positioned in the same way.

At this point, it is essential to verify that the trial tibial implant base is perfectly placed on the resected tibia.

A lateral fluoroscopy image is taken to confirm that the tibial plate is flush with the distal tibia prior to drilling.

Prior to drilling, remove the handle from the talar trial. Prepare the tibial keel by drilling a 75mm pin into the distal hole to hold the tibial base. Next, drill the proximal 3.0mm hole and leave empty **(Figure 25)**. For the larger proximal hole use the 7.9mm drill bit and drill to its stop **(Figure 26)**.

Drilling through the tibial base guide gives a 4° angle from the tibial base plate, aiming for a press-fit of the final implant between the keel and the distal cut during impaction.

Consideration must be given to possible adjunct soft-tissue balancing procedure at this stage (ie, Achilles tendon lengthening, ligament release and repair)

Items Used:

Drill Bit, 3mm LJV528T or DWD060T

Pin, 75mm: LJV526T

Drill Bit, 7.9mm: MJU353T

Tibial Trials, Size 0: MJU380T

Tibial Trials, SIze 1: MJU384T

Tibial Trials, Size 2: MJU385T

Tibial Trials, Size 3: MJU386T

Extended Tibial Trials, Size 0: MJV500T

Extended Tibial Trials, Size 1: MJV501T

Extended Tibial Trials, Size 2: MJV502T

Extended Tibial Trials, Size 3: MJV503T

Extended PE Insert Trials Listed on Pg. 27

Figure 27

Figure 28

Figure 29

Figure 30

Step 13 ▪ Final Preparation

13-1 It may be necessary to complete the tibial keel preparation as in Step 14 before reaming and drilling the talar trial as the tibial window allows for easier access to the posterior talar drill holes.

After removing the tibial trial, the talar preparation can be finished **(Figure 27)**. The Bell Shaped Reamer (MJU922T) is utilized to drill the bell hole through the talar trial **(Figure 28)**.

Note: For size 0 talar preparation, the size 0 drill bushing (MJU662T) needs to be used along with the size 0 talar drill (MJU362T).

Next, the drill for the talar flange is used to drill the posterior flange holes through the talar trial **(Figure 29)**. Then the trial may be removed and the holes of the talar flange connected with the tibial keel osteotome to the approximate depth of the drill holes. (MJU387T) **(Figure 30)**.

Items Used:

Bell Saw Reamer: MJU922T

Drill, Talar Flange, Flat Cut: MJU925T

Osteotome, Tibial Keel: MJU387T

Drill Bit, Size 0, Talar Stem: MJU362T

Drill Guide, Size 0 : MJU662T

Figure 31

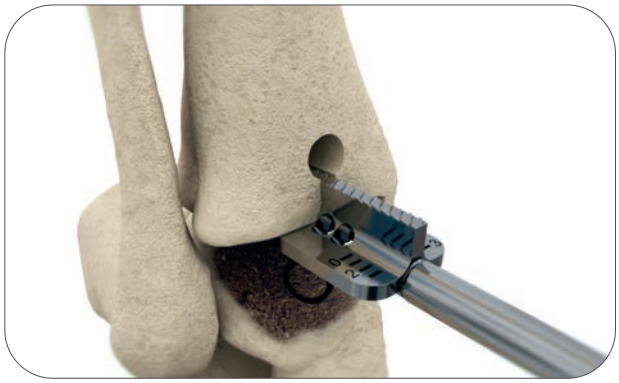


Figure 32

Step 14 ▪ Finishing Touches on the Tibial Keel

Note: When using the graduated osteotome or rasp, the depth markings are accurate for either standard or XL tibial trays.

14-1 The tibial holes are rejoined using a small osteotome; then the thickness and depth of the engraved line are checked with the graduated osteotome or small osteotome/currette **(Figure 31)**.

The distal part of the anterior groove of the tibia is beveled using the rasp, so that the tibial implant lies flush on the resection.

With the different tibial implant sizes (0, 1, 2 and 3) marked on the upper surface of the rasp, the trimming done in this manner perfectly matches the length of the implant selected **(Figure 32)**.

Items Used:

Osteotome, Thin: MJU357T

Osteotome, Tibial Keel: MJU387T

Rasp, Tibial Flange: MJU350T

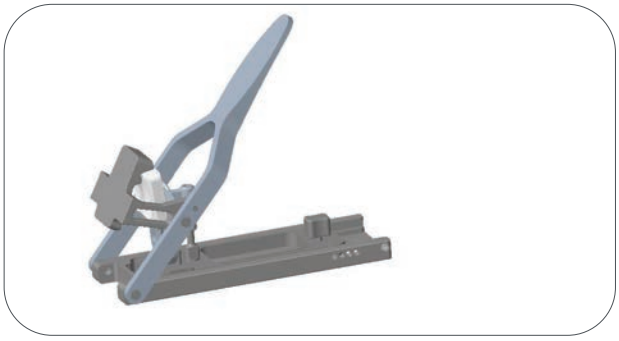


Figure 33

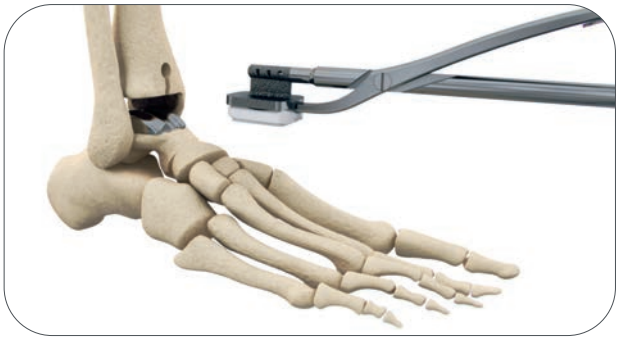


Figure 34

Figure 35

Figure 36

Step 15 ▪ Assembly of the Insert on the Tibial Implant and Placing Final

Note: The SALTO TALARIS is indicated for cemented use only. Cement must be applied to the bone contact surfaces of the tibial and talar component.

15-1 The talar implant is placed first, then impacted with the talar component impactor.

The size and side selected during the implant trials must be retained.

15-2 The polyethylene insert is assembled to the tibial implant with the tibial press.

The tibial implant is mounted onto the press. Adjust the metal bar on the base of the press to the appropriate poly thickness. The PE insert is positioned on the implant and manually pushed to engage approximately 1/3 of the depth. Close the press arm over the assembly and continue to press down until the PE is fully engaged. The tibial assembly must be visually checked by the operator. Generally, an audible “click” is heard **(Figure 33)**.

15-3 Using the tibial impactor, grasp the implant assembly between the metallic plug and the central anterior zone of the tibial tray **(Figure 34)**.

The tibial component is impacted until the position of the tibial trial is reproduced **(Figure 35, Figure 36)**. During tibial implant impaction, maintain good contact between the superior side of the implant and the tibial resection to prevent any risk of a posterior gap between the tibial cut and the implant.

Flexion/Extension movements are applied to check the ankle kinematics. Apply bone graft to the tibial window.

Items Used:

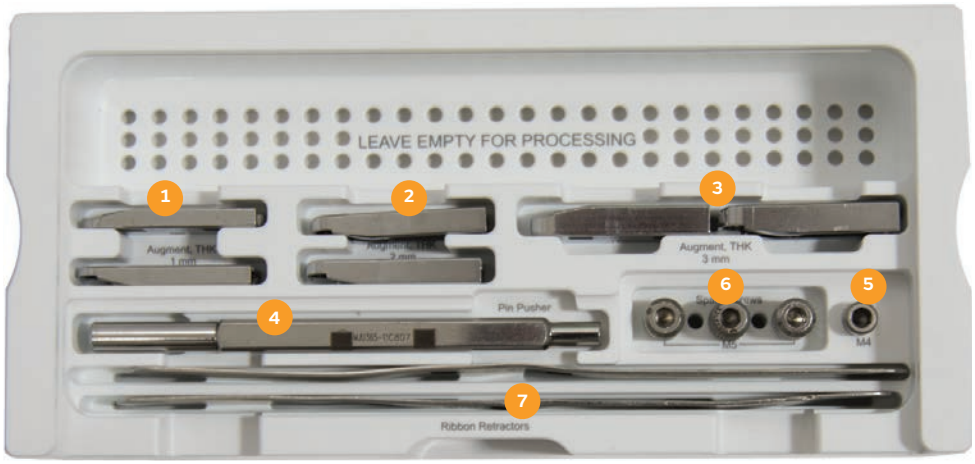
Talar Component Impactor: MJU351T

Insert Assembly Bench Press: MJV549T

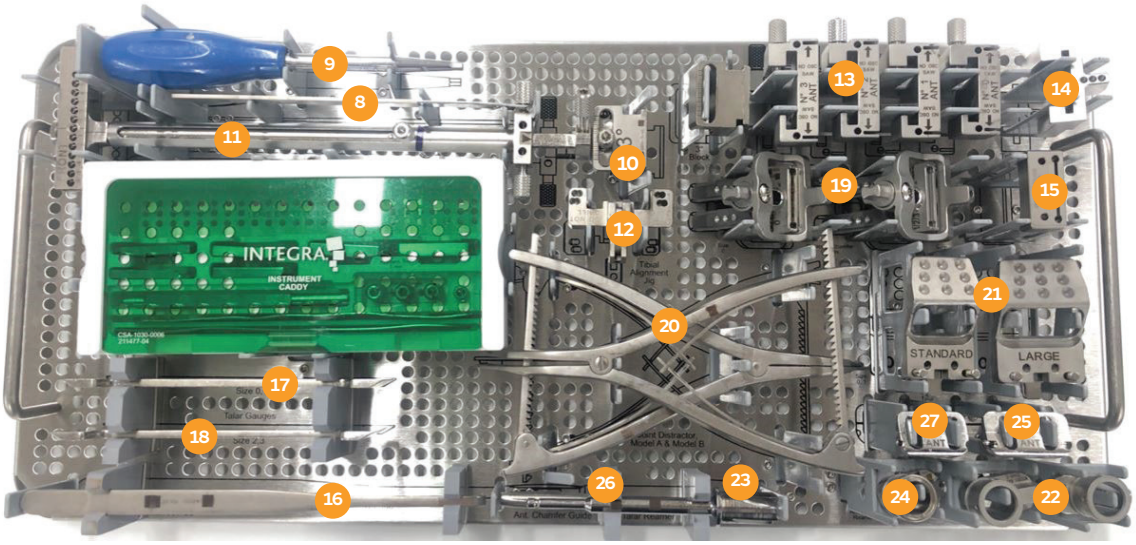
Tibial Impactor: MJU361T

Instrumentation

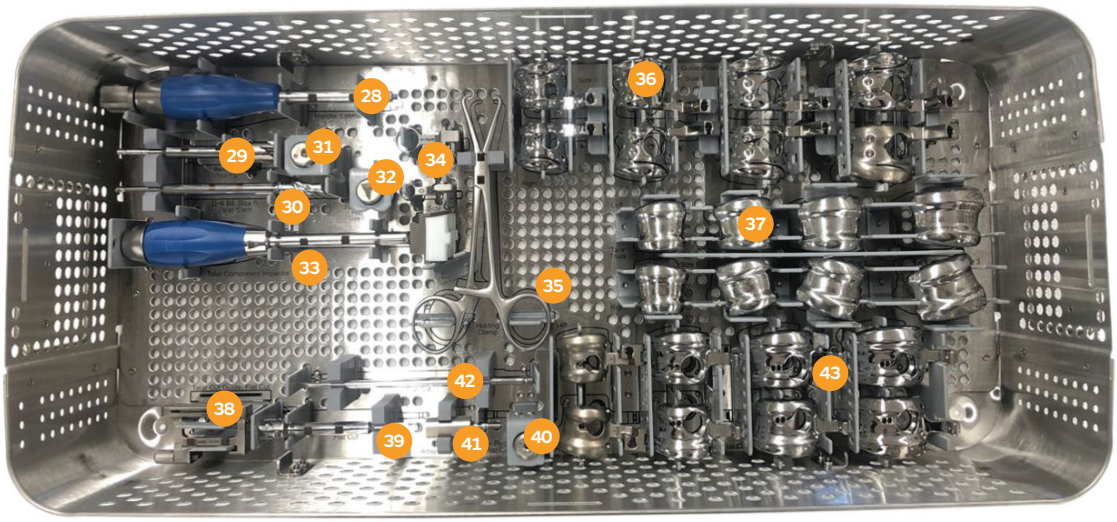
Reference: SALTOPRIMEBOX1



Caddy



Top tray contents



Bottom tray contents

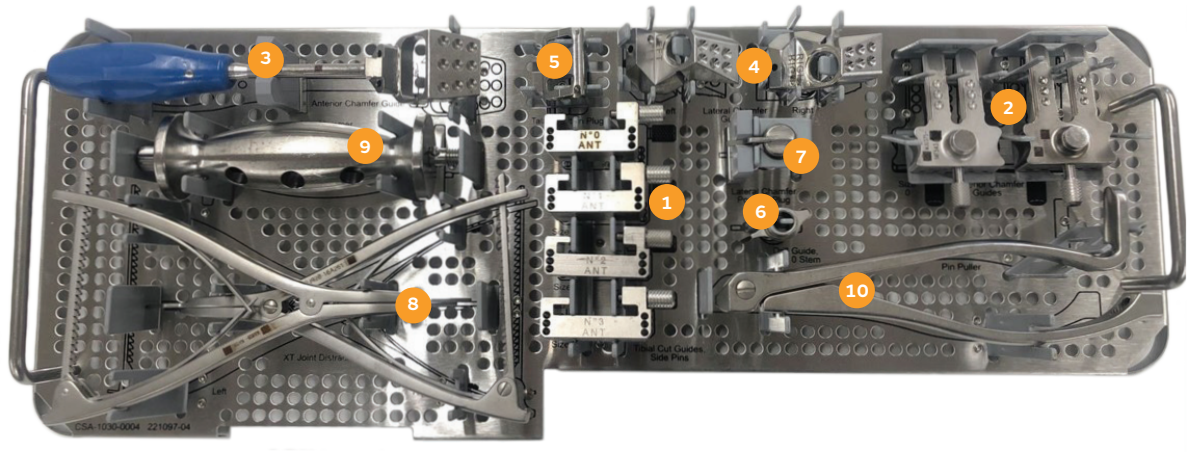
SALTOPRIMEBOX1: Top tray contents

Item	Reference	Instrument	Qty
6 (caddy)	MJU073T	Screw M5	3
5 (caddy)	MJU291T	Screw M4	1
7 (caddy)	MJU086T	SALTO TALARIS°, Ribbon Retractors	2
4 (caddy)	MJU365T	Pin Pusher	1
1 (caddy)	MJU381T	Augment, Thickness 1mm	2
2 (caddy)	MJU382T	Augment, Thickness 2mm	2
3 (caddy)	MJU383T	Augment, Thickness 3mm	2
-	CSA-1030-0005	SALTO TALARIS, Caddy	1
-	CSA-1030-0006	SALTO TALARIS Caddy Lid	1
8	MJU357T	SALTO TALARIS, Osteotome, Thin	1
9	MLN113T	Hex 3,5 screwdriver	1
10	MJU668T	SALTO TALARIS, 3 Degree Block, Tibial Alignment	1
11	MJU333T	Tibial Alignment Guide	1
12	MJU334T	Tibial Alignment Jig	1
13	MJU645T	SALTO TALARIS, Tibial cut guide, Size 0	1
13	MJU646T	SALTO TALARIS, Tibial cut guide, Size 1	1
13	MJU647T	SALTO TALARIS, Tibial cut guide, Size 2	1
13	MJU648T	SALTO TALARIS, Tibial cut guide, Size 3	1
14	MJU335T	Talar Pin Setting Guide	1
15	MJU011T	SALTO TALARIS, 2mm Cut Guide	1
16	MJU085T	Curette	1
17	MJU331T	SALTO TALARIS, Talar Gauge, Size 0/1	1
18	MJU364T	SALTO TALARIS, Talar gauge, Size 2/3	1
19	MJU641T	SALTO TALARIS, Posterior Chamfer Guide, Size 0	1
19	MJU642T	SALTO TALARIS, Posterior Chamfer Guide, Size 1,2,3	1
20	MJU345T	SALTO TALARIS, Joint distractor, Model A	1
20	MJU346T	SALTO TALARIS, Joint distractor, Model B	1
21	MJU643T	SALTO TALARIS, Anterior Chamfer Guide, Size 0,1	1
27	MJU644T	SALTO TALARIS, Talar Position Plug, Size 0,1	1
21	MJU665T	SALTO TALARIS, Anterior Chamfer Guide, Size 2,3	1
25	MJU666T	SALTO TALARIS, Talar Position Plug, Size 2,3	1
23	MJU338T	SALTO TALARIS, Talar Reamer	1
26	MJU366T	Removable Handle	1
24	MJU339T	Anterior chamfer reaming guide	1
22	MJU667T	SALTO TALARIS, Ant Chamfer Bush, wide, step 1	1
22	MJU669T	SALTO TALARIS, Ant Chamfer Bush, wide, step 2	1
-	CSA-1030-0003	SALTO TALARIS, Primary Instrument Tray 1	1

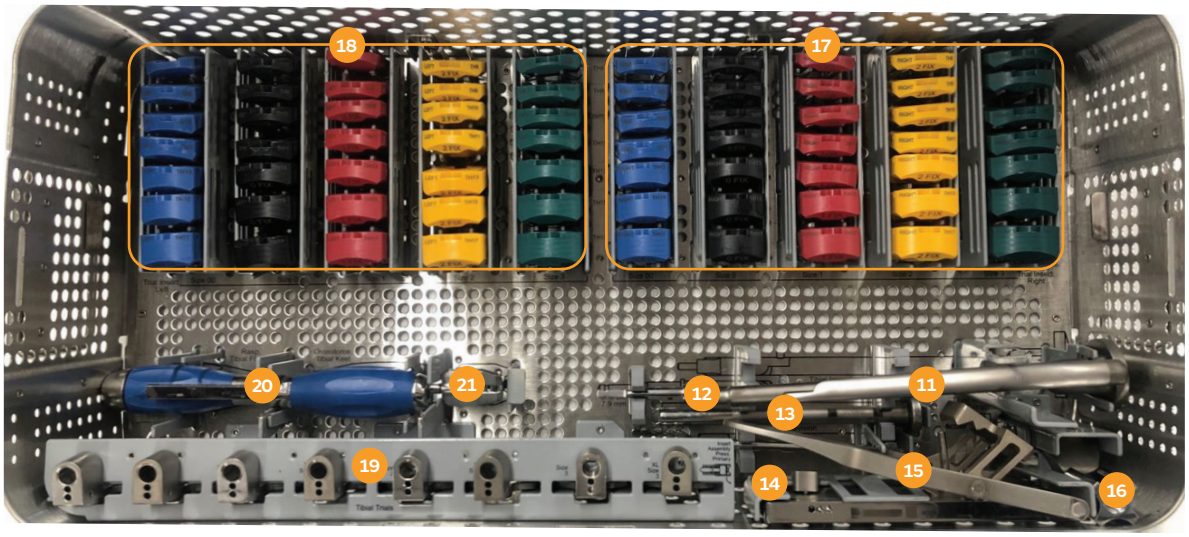
SALTOPRIMEBOX1: Bottom tray contents

Item	Reference	Instrument	Qty
28	MJU342T	Removable (Lateral Chamfer) Handle	1
29	MJU344T	SALTO TALARIS, Bell SawReamer	1
30	MJU362T	SALTO TALARIS, Dill Bit, Size 0, Talar Stem	1
31	MJU012T	SALTO TALARIS, Fixation Plug, Lateral Chamfer	1
32	MJV555T	SALTO TALARIS, Fixation Plug, Size 0	1
33	MJU351T	Talar component impactor	1
34	MJU649T	SALTO TALARIS, Drill Guide, Bell Saw, Size 1,2,3	1
34	MJU662T	SALTO TALARIS, Drill Guide, Bell Saw, Size 0	1
35	MJU048T	SALTO TALARIS, Holding Clamp	1
36	MJU660T	SALTO TALARIS, Talar Guide/Trial, Size 0, Right	1
36	MJU661T	SALTO TALARIS, Talar Guide/Trial, Size 0, Left	1
36	MJU652T	SALTO TALARIS, Talar Guide/Trial, Size 1, Right	1
36	MJU653T	SALTO TALARIS, Talar Guide/Trial, Size 1, Left	1
36	MJU654T	SALTO TALARIS, Talar Guide/Trial, Size 2, Right	1
36	MJU655T	SALTO TALARIS, Talar Guide/Trial, Size 2, Left	1
36	MJU656T	SALTO TALARIS, Talar Guide/Trial, Size 3, Right	1
36	MJU657T	SALTO TALARIS, Talar Guide/Trial, Size 3, Left	1
37	MJU100T	SALTO TALARIS, Talar Trial Implant Sz 0 Right	1
37	MJU101T	SALTO TALARIS, Talar Trial Implant Sz 1 Right	1
37	MJU102T	SALTO TALARIS, Talar Trial Implant Sz 2 Right	1
37	MJU103T	SALTO TALARIS, Talar Trial Implant Sz 3 Right	1
37	MJU110T	SALTO TALARIS, Talar Trial Implant Sz 0 Left	1
37	MJU111T	SALTO TALARIS, Talar Trial Implant Sz 1 Left	1
37	MJU112T	SALTO TALARIS, Talar Trial Implant Sz 2 Left	1
37	MJU113T	SALTO TALARIS, Talar Trial Implant Sz 3 Left	1
38	MJU910T	SALTO TALARIS, Talar Cut Guide, Flat Cut	1
39	MJU922T	SALTO TALARIS, Bell Saw Reamer, Flat Cut	1
40	MJU924T	SALTO TALARIS, Talar Plug, Flat Cut	1
41	MJU930T	SALTO TALARIS, Extraction adaptor, Flat Cut	1
42	MJU925T	SALTO TALARIS, Drill, Talar Flange, Flat Cut	1
43	MJV940T	SALTO TALARIS, Talar Trial, Flat Cut, Size 0, Rt	1
43	MJU941T	SALTO TALARIS, Talar Trial, Flat Cut, Size 1, Rt	1
43	MJU942T	SALTO TALARIS, Talar Trial, Flat Cut, Size 2, Rt	1
43	MJU943T	SALTO TALARIS, Talar Trial, Flat Cut, Size 3, Rt	1
43	MJV950T	SALTO TALARIS, Talar Trial, Flat Cut, Size 0, Left	1
43	MJU951T	SALTO TALARIS, Talar Trial, Flat Cut, Size 1, Left	1
43	MJU952T	SALTO TALARIS, Talar Trial, Flat Cut, Size 2, Left	1
43	MJU953T	SALTO TALARIS, Talar Trial, Flat Cut, Size 3, Left	1
-	CSA-1030-0001	SALTO TALARIS, Primary Instrument Case 1	1

Instrumentation Case Reference: SALTOPRIMEBOX2



Top tray contents



Bottom tray contents

SALTOPRIMEBOX2: Top tray contents

Item	Reference	Instrument	Qty
1	MJU370T	Tibial resection guide Size 0	1
1	MJU371T	Tibial resection guide Size 1	1
1	MJU372T	Tibial resection guide Size 2	1
1	MJU373T	Tibial resection guide Size 3	1
2	MJU375T	Posterior Talar Resection Guide, Sz 0	1
2	MJU376T	Posterior Talar Resection Guide, Sz 1/2/3	1
3	MJU336T	Anterior Talar Chamfer Guide	1
4	MJU340T	Left Lateral Chamfer Guide	1
4	MJU341T	Right Lateral Chamfer Guide	1

Item	Reference	Instrument	Qty
5	MJU337T	Salto Talaris, Talar position plug	1
6	MJU378T	Size 0 Drilling Guide	1
7	MJU343T	SALTO TALARIS, Lateral Chamfer Position Plug	1
8	MJU928T	Smith+Nephew XT, Joint Distractor, Right	1
8	MJU929T	Smith+Nephew XT, Joint Distractor, Left	1
9	MJU358T	Slap Hammer	1
10	MJU359T	SALTO TALARIS, Pin Puller	1
-	CSA-1030-0004	SALTO TALARIS, Primary Instrument Tray 2	1

SALTOPRIMEBOX2: Bottom tray contents

Item	Reference	Instrument	Qty
17	MJU545T	SALTO TALARIS°, Trial Insert, Size 00, Right, TH8	1
17	MJU546T	SALTO TALARIS, Trial Insert, Size 00, Right, TH9	1
17	MJU547T	SALTO TALARIS, Trial Insert, Size 00, Right, TH10	1
17	MJU548T	SALTO TALARIS, Trial Insert, Size 00, Right, TH11	1
17	MJV412T	SALTO TALARIS, Trial Insert, Size 00, Right, TH13	1
17	MJV413T	SALTO TALARIS, Trial Insert, Size 00, Right, TH15	1
17	MJV414T	SALTO TALARIS, Trial Insert, Size 00, Right, TH17	1
18	MJU555T	SALTO TALARIS, Trial Insert, Size 00, Left, TH8	1
18	MJU556T	SALTO TALARIS, Trial Insert, Size 00, Left, TH9	1
18	MJU557T	SALTO TALARIS, Trial Insert, Size 00, Left, TH10	1
18	MJU558T	SALTO TALARIS, Trial Insert, Size 00, Left, TH11	1
18	MJV422T	SALTO TALARIS, Trial Insert, Size 00, Left, TH13	1
18	MJV423T	SALTO TALARIS, Trial Insert, Size 00, Left, TH15	1
18	MJV424T	SALTO TALARIS, Trial Insert, Size 00, Left, TH17	1
17	MJU565T	SALTO TALARIS, Trial Insert, Size 0, Right, TH8	1
17	MJU566T	SALTO TALARIS, Trial Insert, Size 0, Right, TH9	1
17	MJU567T	SALTO TALARIS, Trial Insert, Size 0, Right, TH10	1
17	MJU568T	SALTO TALARIS, Trial Insert, Size 0, Right, TH11	1
17	MJV219T	SALTO TALARIS, Trial Insert, Size 0, Right, TH13	1
17	MJV220T	SALTO TALARIS, Trial Insert, Size 0, Right, TH15	1
17	MJV221T	SALTO TALARIS, Trial Insert, Size 0, Right, TH17	1
18	MJU575T	SALTO TALARIS, Trial Insert, Size 0, Left, TH8	1
18	MJU576T	SALTO TALARIS, Trial Insert, Size 0, Left, TH9	1
18	MJU577T	SALTO TALARIS, Trial Insert, Size 0, Left, TH10	1
18	MJU578T	SALTO TALARIS, Trial Insert, Size 0, Left, TH11	1
18	MJV229T	SALTO TALARIS, Trial Insert, Size 0, Left, TH13	1
18	MJV230T	SALTO TALARIS, Trial Insert, Size 0, Left, TH15	1
18	MJV231T	SALTO TALARIS, Trial Insert, Size 0, Left, TH17	1
17	MJU585T	SALTO TALARIS, Trial Insert, Size 1, Right, TH8	1
17	MJU586T	SALTO TALARIS, Trial Insert, Size 1, Right, TH9	1
17	MJU587T	SALTO TALARIS, Trial Insert, Size 1, Right, TH10	1
17	MJU588T	SALTO TALARIS, Trial Insert, Size 1, Right, TH11	1
17	MJU589T	SALTO TALARIS, Trial Insert, Size 1, Right, TH13	1
17	MJU590T	SALTO TALARIS, Trial Insert, Size 1, Right, TH15	1
17	MJU591T	SALTO TALARIS, Trial Insert, Size 1, Right, TH17	1
18	MJU595T	SALTO TALARIS, Trial Insert, Size 1, Left, TH8	1
18	MJU596T	SALTO TALARIS, Trial Insert, Size 1, Left, TH9	1
18	MJU597T	SALTO TALARIS, Trial Insert, Size 1, Left, TH10	1
18	MJU598T	SALTO TALARIS, Trial Insert, Size 1, Left, TH11	1
18	MJU599T	SALTO TALARIS, Trial Insert, Size 1, Left, TH13	1
18	MJU600T	SALTO TALARIS, Trial Insert, Size 1, Left, TH15	1
18	MJU601T	SALTO TALARIS, Trial Insert, Size 1, Left, TH17	1
17	MJU605T	SALTO TALARIS, Trial Insert, Size 2, Right, TH8	1
17	MJU606T	SALTO TALARIS, Trial Insert, Size 2, Right, TH9	1
17	MJU607T	SALTO TALARIS, Trial Insert, Size 2, Right, TH10	1
17	MJU608T	SALTO TALARIS, Trial Insert, Size 2, Right, TH11	1
17	MJU609T	SALTO TALARIS, Trial Insert, Size 2, Right, TH13	1
17	MJU610T	SALTO TALARIS, Trial Insert, Size 2, Right, TH15	1
17	MJU611T	SALTO TALARIS, Trial Insert, Size 2, Right, TH17	1
18	MJU615T	SALTO TALARIS, Trial Insert, Size 2, Left, TH8	1
18	MJU616T	SALTO TALARIS, Trial Insert, Size 2, Left, TH9	1
18	MJU617T	SALTO TALARIS, Trial Insert, Size 2, Left, TH10	1
18	MJU618T	SALTO TALARIS, Trial Insert, Size 2, Left, TH11	1
18	MJU619T	SALTO TALARIS, Trial Insert, Size 2, Left, TH13	1
18	MJU620T	SALTO TALARIS, Trial Insert, Size 2, Left, TH15	1
18	MJU621T	SALTO TALARIS, Trial Insert, Size 2, Left, TH17	1
17	MJU625T	SALTO TALARIS, Trial Insert, Size 3, Right, TH8	1
17	MJU626T	SALTO TALARIS, Trial Insert, Size 3, Right, TH9	1
17	MJU627T	SALTO TALARIS, Trial Insert, Size 3, Right, TH10	1
17	MJU628T	SALTO TALARIS, Trial Insert, Size 3, Right, TH11	1
17	MJU629T	SALTO TALARIS, Trial Insert, Size 3, Right, TH13	1
17	MJU630T	SALTO TALARIS, Trial Insert, Size 3, Right, TH15	1
17	MJU631T	SALTO TALARIS, Trial Insert, Size 3, Right, TH17	1
18	MJU635T	SALTO TALARIS, Trial Insert, Size 3, Left, TH8	1
18	MJU636T	SALTO TALARIS, Trial Insert, Size 3, Left, TH9	1
18	MJU637T	SALTO TALARIS, Trial Insert, Size 3, Left, TH10	1
18	MJU638T	SALTO TALARIS, Trial Insert, Size 3, Left, TH11	1
18	MJU639T	SALTO TALARIS, Trial Insert, Size 3, Left, TH13	1
18	MJU740T	SALTO TALARIS, Trial Insert, Size 3, Left, TH15	1
18	MJU741T	SALTO TALARIS, Trial Insert, Size 3, Left, TH17	1
19	MJU380T	SALTO TALARIS, Tibial Trial, Size 0	1
19	MJU384T	SALTO TALARIS, Tibial Trial, Size 1	1
19	MJU385T	SALTO TALARIS, Tibial Trial, Size 2	1
19	MJU386T	SALTO TALARIS, Tibial Trial, Size 3	1
19	MJV500T	SALTO TALARIS, Tibial Trial, XL, Size 0	1
19	MJV501T	SALTO TALARIS, Tibial Trial, XL, Size 1	1
19	MJV502T	SALTO TALARIS, Tibial Trial, XL, Size 2	1
19	MJV503T	SALTO TALARIS, Tibial Trial, XL, Size 3	1
20	MJU387T	Tibial Keel Graduated Osteotome	1
21	MJU350T	Rasp	1
12	MJU353T	SALTO TALARIS, Drill Bit, 7.9mm	1
13	MJU356T	Tibial Plug Revision Osteotome	1
14	MJV545T	SALTO TALARIS, Insert Extractor	1
11	MJU361T	SALTO TALARIS, Tibial impactor	1
15	MJV549T	Insert Assembly Bench Press	1
16	MJV556T	Tibial implant extractor	1
-	CSA-1030-0002	SALTO TALARIS, Primary Instrument Case 2	1

Implants

Tibial Components: CoCr

Reference	Size
LJU220T	Size 0
LJU221T	Size 1
LJU222T	Size 2
LJU223T	Size 3

Extended Tibial Components: CoCr

Reference	Size
LJU990T	Size 0
LJU991T	Size 1
LJU992T	Size 2
LJU993T	Size 3

Flat Cut Talar Components: CoCr

Reference - Left	Reference - Right	Size
LJU820T	LJU810T	Size 0
LJU821T	LJU811T	Size 1
LJU822T	LJU812T	Size 2
LJU823T	LJU813T	Size 3

Note
Size 19 and 21mm insert thicknesses must be ordered separately.

Size 00 Fixed Inserts

Insert	Reference
Insert, Size 00, Right, TH8	LJU408T
Insert, Size 00, Right, TH9	LJU409T
Insert, Size 00, Right, TH10	LJU410T
Insert, Size 00, Right, TH11	LJU411T
Insert, Size 00, Right, TH13	LJU412T
Insert, Size 00, Right, TH15	LJU413T
Insert, Size 00, Right, TH17	LJU414T
Insert, Size 00, Right, TH19	LJU415T
Insert, Size 00, Right, TH21	LJU416T
Insert, Size 00, Left, TH8	LJU418T
Insert, Size 00, Left, TH9	LJU419T
Insert, Size 00, Left, TH10	LJU420T
Insert, Size 00, Left, TH11	LJU421T
Insert, Size 00, Left, TH13	LJU422T
Insert, Size 00, Left, TH15	LJU423T
Insert, Size 00, Left, TH17	LJU424T
Insert, Size 00, Left, TH19	LJU425T
Insert, Size 00, Left, TH21	LJU426T

Size 0 Fixed Inserts

Insert	Reference
Insert, Size 0, Left, TH8	LJU225T
Insert, Size 0, Left, TH9	LJU226T
Insert, Size 0, Left, TH10	LJU227T
Insert, Size 0, Left, TH11	LJU228T
Insert, Size 0, Left, TH13	LJU229T
Insert, Size 0, Left, TH15	LJU230T
Insert, Size 0, Left, TH17	LJU231T
Insert, Size 0, Left, TH19	LJU232T
Insert, Size 0, Left, TH21	LJU233T
Insert, Size 0, Right, TH8	LJU215T
Insert, Size 0, Right, TH9	LJU216T
Insert, Size 0, Right, TH10	LJU217T
Insert, Size 0, Right, TH11	LJU218T
Insert, Size 0, Right, TH13	LJV219T
Insert, Size 0, Right, TH15	LJV220T
Insert, Size 0, Right, TH17	LJV221T
Insert, Size 0, Right, TH19	LJV222T
Insert, Size 0, Right, TH21	LJV223T

Size 1 Fixed Inserts

Insert	Reference
Insert, Size 1, Right, TH8	LJU235T
Insert, Size 1, Right, TH9	LJU236T
Insert, Size 1, Right, TH10	LJU237T
Insert, Size 1, Right, TH11	LJU238T
Insert, Size 1, Right, TH13	LJU239T
Insert, Size 1, Right, TH15	LJU240T
Insert, Size 1, Right, TH17	LJU241T
Insert, Size 1, Right, TH19	LJU242T
Insert, Size 1, Right, TH21	LJU243T
Insert, Size 1, Left, TH8	LJU245T
Insert, Size 1, Left, TH9	LJU246T
Insert, Size 1, Left, TH10	LJU247T
Insert, Size 1, Left, TH11	LJU248T
Insert, Size 1, Left, TH13	LJU249T
Insert, Size 1, Left, TH15	LJU250T
Insert, Size 1, Left, TH17	LJU251T
Insert, Size 1, Left, TH19	LJU252T
Insert, Size 1, Left, TH21	LJU253T

Size 2 Fixed Inserts

Insert	Reference
Insert, Size 2, Right, TH8	LJU255T
Insert, Size 2, Right, TH9	LJU256T
Insert, Size 2, Right, TH10	LJU257T
Insert, Size 2, Right, TH11	LJU258T
Insert, Size 2, Right, TH13	LJU259T
Insert, Size 2, Right, TH15	LJU260T
Insert, Size 2, Right, TH17	LJU261T
Insert, Size 2, Right, TH19	LJU262T
Insert, Size 2, Right, TH21	LJU263T
Insert, Size 2, Left, TH8	LJU265T
Insert, Size 2, Left, TH9	LJU266T
Insert, Size 2, Left, TH10	LJU267T
Insert, Size 2, Left, TH11	LJU268T
Insert, Size 2, Left, TH13	LJU269T
Insert, Size 2, Left, TH15	LJU270T
Insert, Size 2, Left, TH17	LJU271T
Insert, Size 2, Left, TH19	LJU272T
Insert, Size 2, Left, TH21	LJU273T

Size 3 Fixed Inserts

Insert	Reference
Insert, Size 3, Right, TH8	LJU275T
Insert, Size 3, Right, TH9	LJU276T
Insert, Size 3, Right, TH10	LJU277T
Insert, Size 3, Right, TH11	LJU278T
Insert, Size 3, Right, TH13	LJU279T
Insert, Size 3, Right, TH15	LJU280T
Insert, Size 3, Right, TH17	LJU281T
Insert, Size 3, Right, TH19	LJU282T
Insert, Size 3, Right, TH21	LJU283T
Insert, Size 3, Left, TH8	LJU285T
Insert, Size 3, Left, TH9	LJU286T
Insert, Size 3, Left, TH10	LJU287T
Insert, Size 3, Left, TH11	LJU288T
Insert, Size 3, Left, TH13	LJU289T
Insert, Size 3, Left, TH15	LJU290T
Insert, Size 3, Left, TH17	LJU291T
nsert, Size 3, Left, TH19	LJU292T
Insert, Size 3, Left, TH21	LJU293T

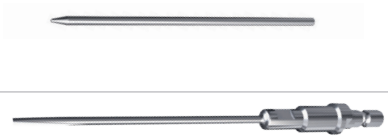
Disposables – sterile single use only

Saw Blades

S+N Number	SAW5944T/ SAW6944T	SAW5945T/ SAW6945T	SAW5946T/ SAW6946T	SAW5947T/ SAW6947T	SAW5948T/ SAW6948T	SAW5949T/ SAW6949T	SAW5950T/ SAW6950T	SAW6951T
Depth	70.0mm	85.0mm	80.0mm	90.0mm	75.0mm	90.0mm	70.0mm	70.0mm
Width	13.0mm	21.0mm	13.0mm	21.0mm	13.0mm	21.0mm	12.5mm	12.5mm
Mtl Thk	1.24mm	1.24mm	1.24mm	1.24mm	1.24mm	1.24mm		
Cut Thk	1.27mm	1.27mm	1.27mm	1.27mm	1.27mm	1.27mm	0.94mm	0.94mm
Hub	Stryker System 7	Stryker System 7	Hall Versipower	Hall Versipower	Hall Power Pro	Hall Power Pro	Brasseler	Brasseler

Pin Pack: LJV529T Includes:

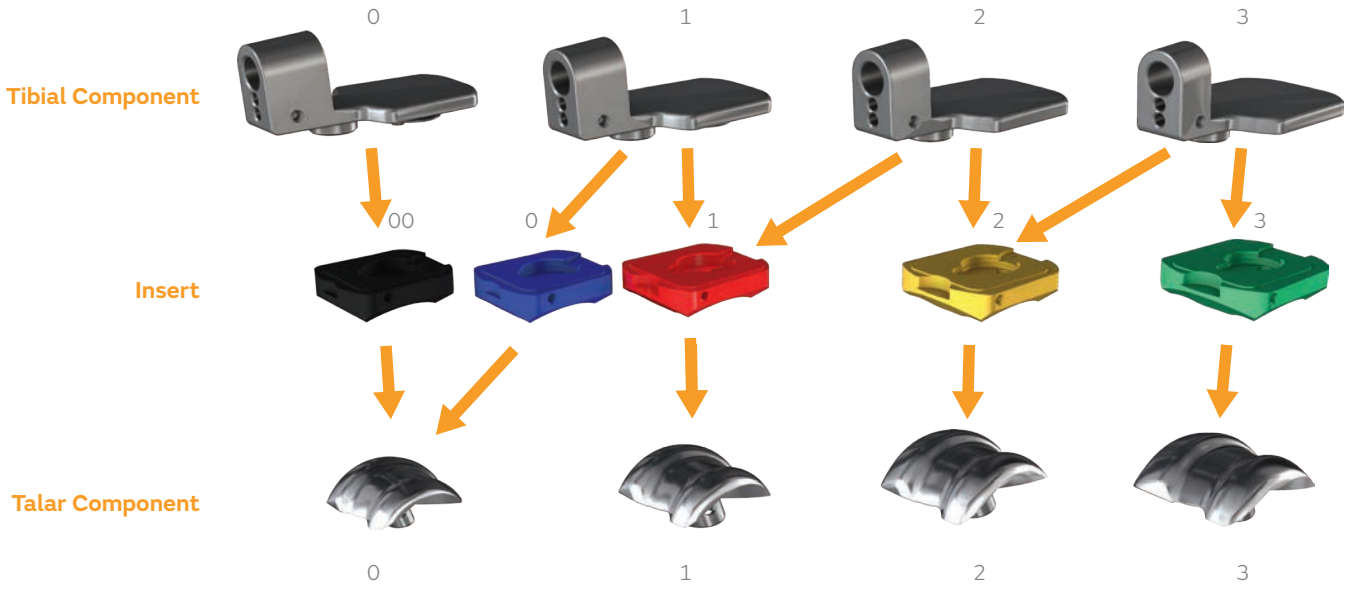
Description	Reference
3 x 110mm Self-drilling Pins	LJV527T
5 x 75mm Self-drilling Pins	LJV526T
3 x 45mm Self-drilling Pins	LJV525T
Reamer	LJU097T



Drill Bit

Description	Reference
LJV528T	3mm Diameter x 135mm Length
DWD060T	3mm Diameter x 220mm Length

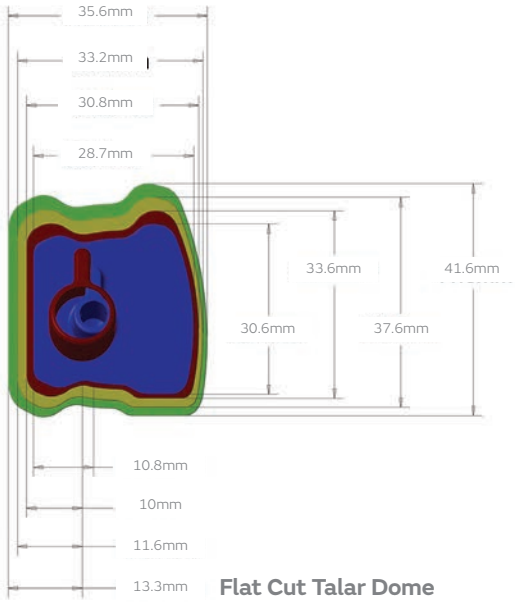
Compatibility table



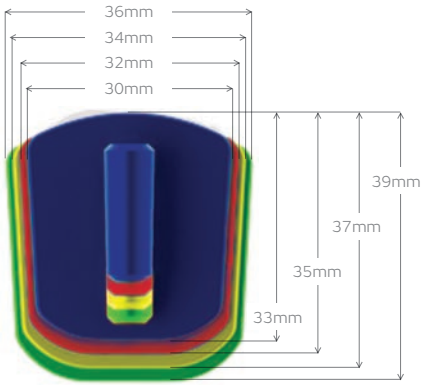
*Flat cut trial not pictured - sizing compatibility is the same.

Component comparison chart

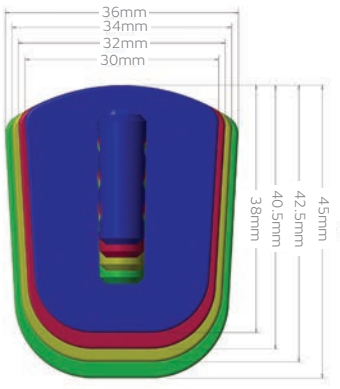
Size 0 Size 1 Size 2 Size 3



Flat Cut Talar Dome



Standard Tibial Trays



Extended Tibial Trays

Surgical Technique
Smith+Nephew does not provide medical advice and does not recommend this or any other surgical technique for use on a specific patient. The surgeon who performs any implant procedure is responsible for determining and using the appropriate techniques for implanting the device in each patient.

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Smith & Nephew, Inc.
1450 Brooks Road
Memphis, Tennessee 38116
USA

www.smith-nephew.com
T: 1-901-396-2121
Orders and Inquiries:
1-800-238-7538

31767 V2 LC-04-1030-0012 REVG 12/22

Manufacturer:
Ascension Orthopedics, Inc.
11101 Metric Blvd
Austin, TX 78758 | USA

References
1. Cracchiolo A, DeOrio JK. Design features of current total ankle replacements: Implants and instrumentation. J Am Acad Orthop Surg. 2008;16(9):530-40