

PROstep™

Calcaneal Osteotomy

Operative technique



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Introduction

The PROstep MIS calcaneal osteotomy is similar to the open technique, but performed through a minimally invasive incision, using a cutting burr with a diameter of 3mm and a working length of 20mm (57SC320L).

This could be in the case of a patient suffering with a flatfoot deformity or a posterior tibial tendon dysfunction (PTTD).

This procedure will require fixation of the osteotomy. The decision of the appropriate implant is the responsibility of the healthcare provider.



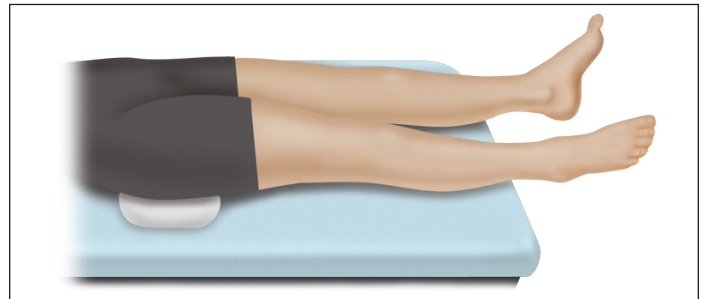
57SC320L
3mm x 20mm cutting burr, long

Patient positioning and setup

NOTICE

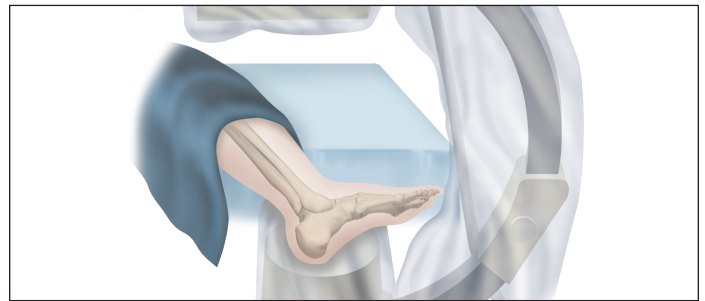
Patient positioning based on right-handed health care professional.

The patient's feet should be positioned off the end of the table, enabling ease of access for the x-ray, thereby ensuring consistent x-rays throughout the procedure.



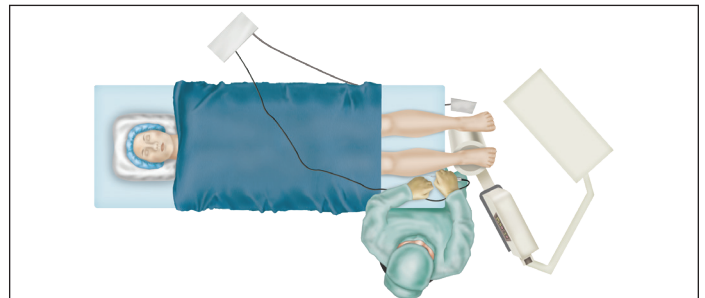
Patient positioning and setup **Figure 1**

The x-ray itself should come in from the patient's right and should be rotated to a slight oblique angle.



Patient positioning and setup **Figure 2**

The PROstep Power Box can then be positioned to the patient's left.



Patient positioning and setup **Figure 3**

This setup enables free movement around the patient's feet, to either stand at the side or the end of the table as the operation demands. The position of the equipment is independent of whether the operative side is left or right.

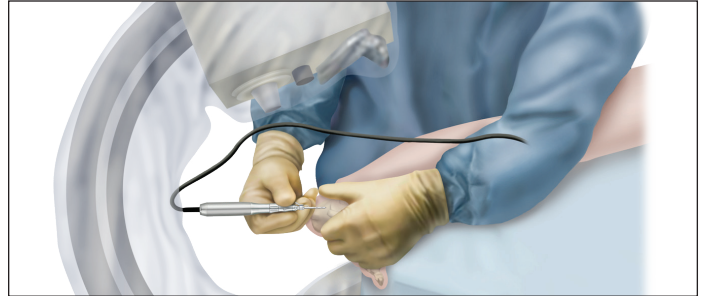


Patient positioning and setup **Figure 4**

Operative technique

Surgical approach

The patient is positioned supine with a sandbag under the hip of the side to be operated. The recommended surgeon position and x-ray position are as shown. The x-ray is positioned under the foot so that the surgeon can easily obtain a lateral view of the calcaneum when required without moving the foot.



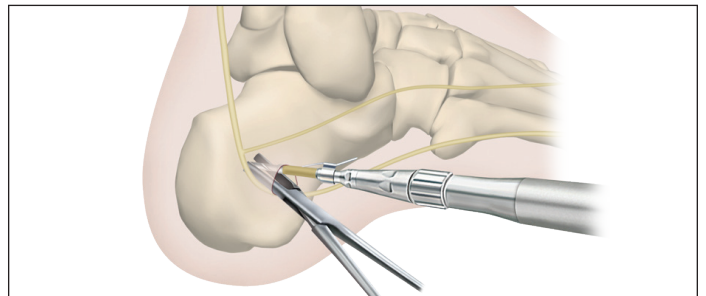
Patient positioning and setup **Figure 5**

The plane of the desired osteotomy is marked on the skin on the lateral surface of the heel with a surgical marker pen and straight metal instrument under x-ray guidance. The osteotomy path should be well away from the posterior facet of the subtalar joint.



Mark intended osteotomy on the skin and use as a guide **Figure 6**

The portal is then positioned at the center of the path of the desired osteotomy (osteotomy apex if planning a chevron). Only the skin is cut, producing a portal approximately 6mm-8mm in diameter. The surgeon must remember the proximity of the sural nerve and, due to anatomical variability, must assume this to be at risk. A hemostat can be used to create a clear path to the bone.



Initial burr insertion point **Figure 7**

Calcaneal osteotomy

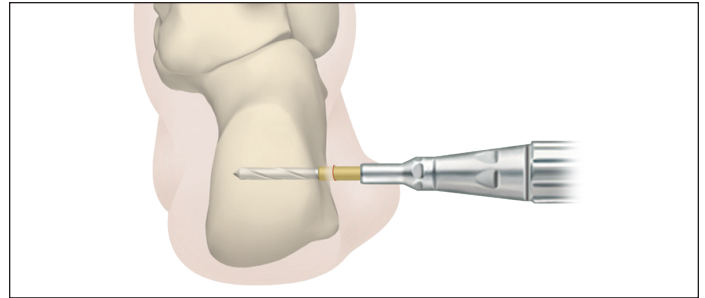
The burr is introduced into the calcaneum through the portal. The surgeon should ensure that the full length of the burr's cutting surface is inserted into the bone immediately to minimize the possibility of cutting soft tissue during the procedure.



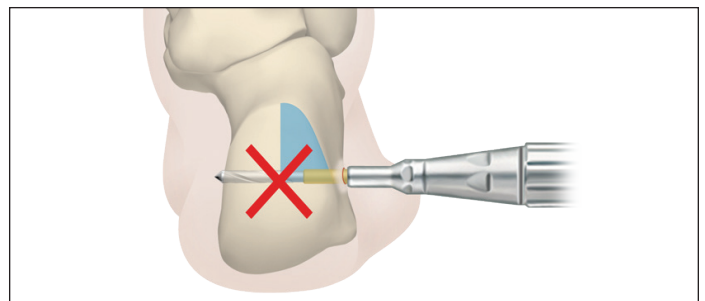
The burr is not long enough to cut both cortices of the calcaneum in one sweep, and this should not be attempted.

Instead, the surgeon should cut the near cortex first and then the far (medial) cortex.

The skin mark acts as a useful guide to the surgeon during creation of the osteotomy, and the handle of the burr is maintained in the same plane as the skin mark. However, the surgeon should regularly check the position of the burr and the path of the osteotomy, using the x-ray, and adjust the path of the burr if required.



Incorrect osteotomy **Figure 8**



Osteotomy **Figure 9**

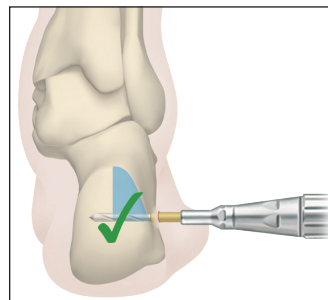


Figure 10
Correct osteotomy in quadrants

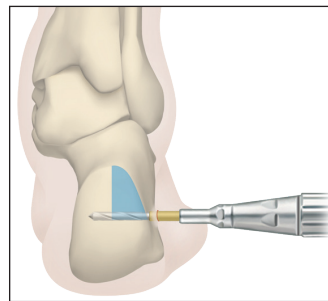


Figure 11
Osteotomy – near dorsal cortex

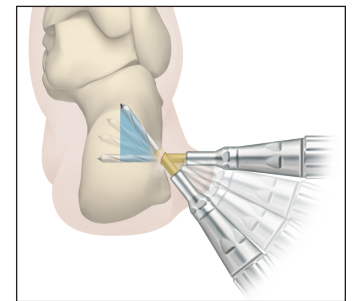


Figure 12
Osteotomy – near dorsal cortex

Once the near dorsal cortex has been cut, the surgeon can complete the osteotomy by cutting the far dorsal cortex.

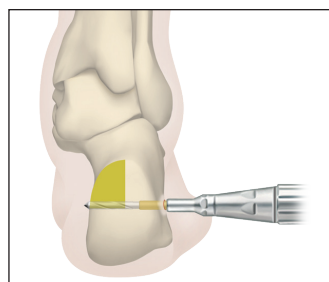


Figure 13

Osteotomy – far dorsal cortex

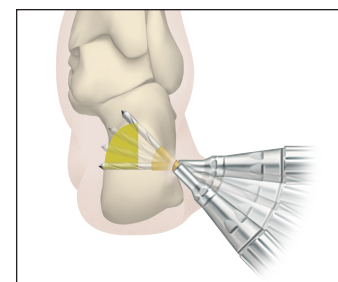


Figure 14

Osteotomy – far dorsal cortex

This is achieved by following the path already created when cutting the near cortex. Care should be taken not to over insert the burr through the far (medial) cortex during this procedure, as this may place the neurovascular bundle at risk of injury. Over insertion is avoided by employing a prodding action to cut the far (medial) cortex. Tactile feedback from the burr handpiece can help the surgeon determine when the burr is through the cortex to be cut. The plantar limbs can be cut in a similar fashion.

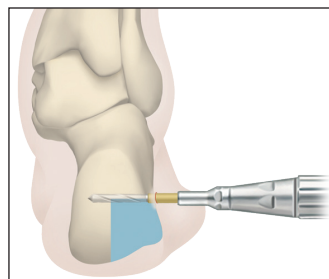


Figure 15

Osteotomy – near plantar cortex

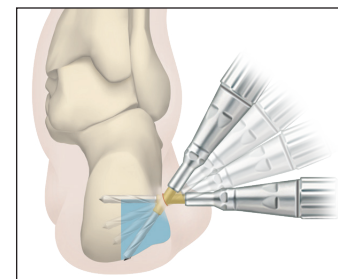


Figure 16

Osteotomy – near plantar cortex

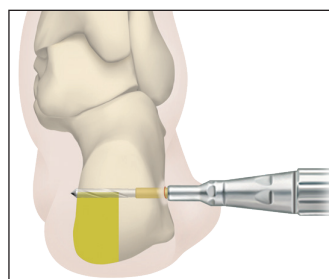


Figure 17

Osteotomy – far plantar cortex

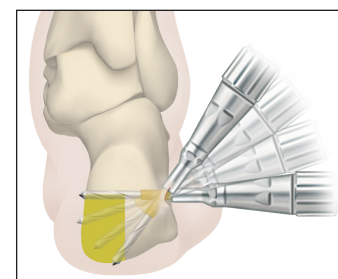


Figure 18

Osteotomy – far plantar cortex

The osteotomy becomes mobile once completed and can then be easily displaced as desired.

The straight periosteal elevator (57S1MI07) is introduced through the portal to lever the osteotomy and assist with desired displacement and control of the osteotomy.

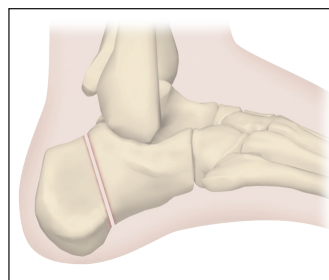


Figure 19

Displacement

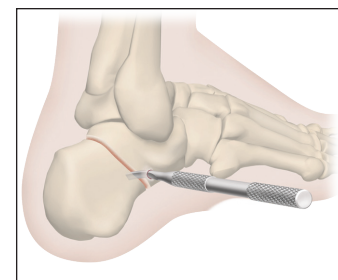


Figure 20

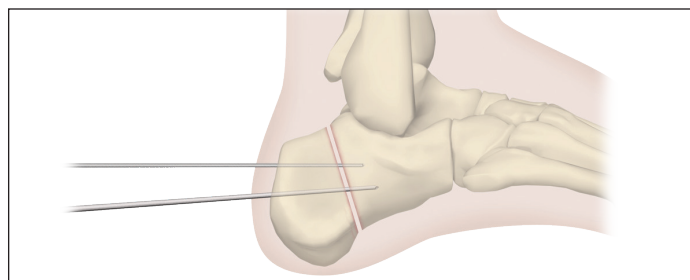
Displacement

Screw fixation can be undertaken as per surgeon preference.



57S1MI07

Straight periosteal elevator (part of set)



K-wire placement and screw fixation **Figure 21**

Ordering information

Part number	Description
57SC320L	3mm x 20mm cutting burr, long
57S1M107	MIS sterile instrument pack Blade handle Curved elevator Straight elevator Double-ended rasp Blade

Foot & Ankle

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AP-006539C, 07-2022

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Manufacturer:
Wright Medical
Technology Inc.
1023 Cherry Road
Memphis, TN 38117
800 238 7117
901 867 9971
stryker.com

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