

CASTING

Casting Introduction

Quality cast = Quality AFO

Taking a quality impression is fundamental to obtaining the best outcomes for your patients. With the introduction of the DRAFO we have developed a casting technique which simplifies the process. Utilization of this process will yield a higher quality of impression and your patients, (especially children) will tolerate the process much better.



Pre-Cast Assessment

- Step 1. Evaluate the patient's sagittal (to locate First catch / R1) and coronal plane range of motion (flexibility of hindfoot / fore-foot to achieve vertical heel) and alignment at the hip knee and ankle. We strongly recommend that you document your findings for use in evaluating your cast.
- Step 2. Observe the patient in the position that they will be using the device: standing, walking, etc..
- Step 3. Determine the optimal alignment of the finished DRAFO, document it on the orthometry form, and utilize this position during the casting procedure. Again during casting focus on sagittal and coronal alignment, a vertical heel provides the optimum results.

ASSESSMENT

Physical Assessment

Determining Functional ROM Calcaneal Alignment

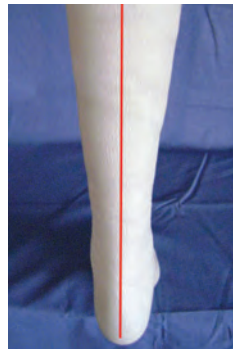


Determine First Catch / R1

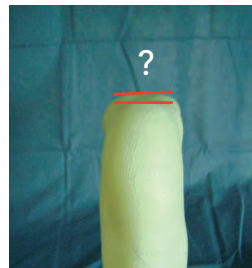


Determine Forefoot alignment to attain vertical heel.

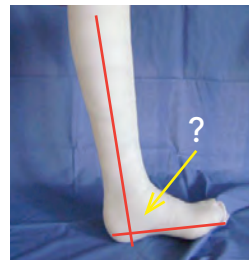
The goal is to establish a congruent structure and stability within the foot.



This forms the stable foundation on which everything else is built. Without this, everything above must work harder to stabilize the foundation.



Forefoot Alignment: Corrected to control biomechanical needs



A-P Alignment Patients Functional end range.

DESIGN CHARACTERISTICS

Strapping

White is standard, with Dacron backing. See the DRAFO Selection Guide for available transfers and strap colors.



Forefoot, instep, and calf are standard. Maximum control is optional per request.



Footplate Design

Morton's Extension – stabilizes pronating foot, medial forefoot post (insufficient incline)

PF 1st Ray Extension – indicated for a rigid first ray, supination control (insufficient incline)

Proximal to mets trim – midfoot control is required only (insufficient incline)

Sulcus trim: terminal stance point rocker (insufficient incline or excessive incline)

Full foot trim – COM control rigid lever arm needed to end of toes (excessive incline)



Morton's Extension



PF 1st Ray Extension



Posterior Cut-out

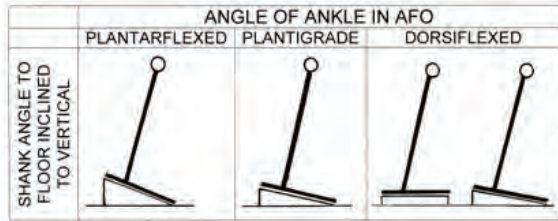


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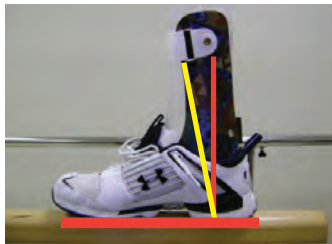
The DRAFO is designed to function during stance phase of gait by manipulating the ground reaction forces through the three rockers of gait. Understanding how the foot can control the proximal segments is key since the foot is the foundation for stability.

The goal is to align the lower extremity so that the knee is directly centered over the center of the foot. This position is the most stable alignment for both normal and pathological gait.

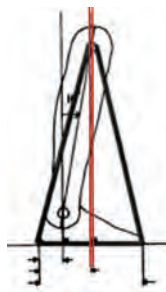
Typically most alignment adjustments can be made with heel lifts slipped into the heel of the shoe. If 1st catch alignment is substantial, additional lift may need to be added to the shoe. See Diagram below:



Important Note: 90° lengthens the foot. Too much tibial angle shortens the foot.



With the heel lift in place, the orthosis in the shoe, the shank angle needs to be at least at 90° to the floor, ideally though 7-10" of inclination is best. 90° is actually a very unstable alignment and very few instances indicate this alignment.



SVA 10-12" is optimum.*

* For patients exhibiting **insufficient** incline: 7-10".
For patients exhibiting **excessive** incline: 10-15".

Gait Assessment

With the patient walking,

- Start with looking at the foot contact—look for heel to toe
- Then look at tibial motion—look for smooth migration. A catch means that you need to increase the lift
- Finally, look at the femur—look for the femur to go into some degree of extension at terminal stance. Typically, you will see a vaulting motion when the femur gets to 180° if the lift is not inclined enough.



For more information contact
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