Balance Forefoot to Rearfoot

Balance forefoot to rearfoot in an everted-forefoot foot impression

**FUNCTION:**
- Slightly increases lateral arch height

**CLINICAL INDICATION:**
- Unbalanced clinical foot impressions with forefoot valgus

The process of balancing a patient's forefoot to rearfoot begins with drawing a line that bisects the posterior distal Achilles tendon insertion along its sagittal plane on the positive foot model. The foot model is then placed on a level surface with the calcaneus, 1st and 5th metatarsal heads plantigrade. The angle of the bisecting Achilles tendon insertion line is observed. If the bisecting Achilles tendon line is inverted away from 90° vertical, the 5th metatarsal is elevated within the foot model, sometimes referred to as a forefoot valgus. Balancing is achieved by adding artificial material beneath the 5th metatarsal effectively lowering the 5th metatarsal head thus stabilizing and balancing the forefoot, maintaining a vertical Achilles bisection line while the three points of the plantar calcaneus, 1st metatarsal and 5th metatarsal are plantigrade. Artificial material (plaster or digital contour) is smoothed in a tapered fashion from the 5th metatarsal head to proximal base of the metatarsals. If Perpendicular is selected by the clinician, the rearfoot (vertical Achilles bisection) will be leveled to perpendicular, and propping and balancing of the forefoot will effectively decrease medial arch height and reduce medial orthotic reaction forces and increase lateral orthotic reaction forces. At the practitioner's discretion, this technique can be used to alter the contour of a patient's arch support intrinsically by balancing forefoot to rearfoot at: 2°, 4°, 6° or 8° valgus Achilles tendon insertion bisection line, thus further lowering medial arch or artificially plantar flexing the 5th metatarsal head with artificial material. This effectively decreases medial arch height and slightly increases the lateral arch height of the foot model and the congruent orthotic frame.

The pink colored metatarsals depicts the position of the everted metatarsals in an impression or foot model before a forefoot to rearfoot balancing is achieved.

**Notes:** All illustrations and diagrams are of right foot
Colors on illustrations are for visual purposes and will vary on final product
ORF = Orthotic Reaction Force