

# Bench Alignment Instructions

The PerfectStride (PS) comes factory benched aligned to accommodate a 3/8" heel height.

## Tools needed to check and/or change alignment

1. Small level (heel height adjustment)
2. 8mm allen w/ 3/8" ratchet (heel height adj.)
3. 17mm boxed end wrench or socket (nut on foot keel bolt)
4. Loctite 242 thread loc (all bolts)
5. 4mm allen (transverse plane adj, pyramid adj. screws)
6. Torque wrench (ft/lb increments)

## Determining proper heel height during bench alignment

- Place the PerfectStride II inside the patients shoe prior to attaching the PerfectStride II to the patient's socket.
- Place the shoe and PerfectStride II on a flat, level surface. Lay a level across the proximal surface of the female pyramid adapter facing anterior/posterior to check to see if the calf shank is in proper alignment. The level should indicate that the proximal surface of the pyramid is level.
- If a level reading is not indicated, an adjustment will be necessary in order to ensure the proper starting alignment for attachment to the patient's socket.



## Changing Heel Height Adjustment

- It is recommended that a padded vice be used to secure foot when loosening the heel height adjustment bolt.
- Loosen the heel height adjustment bolt by using a ratchet with an 8mm allen attachment



## Rotation of Calf Shank to Change Heel Height

Once the heel height bolt is loose move the proximal end of the calf shank anterior or posterior until the proximal end of the calf shank is level

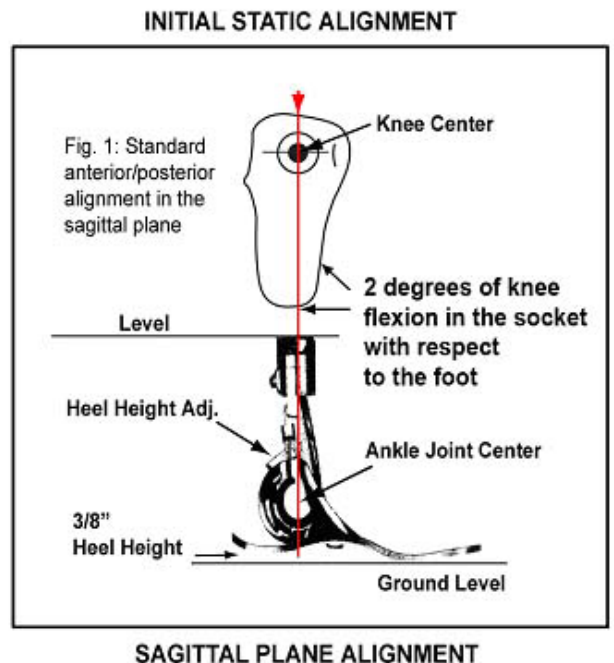


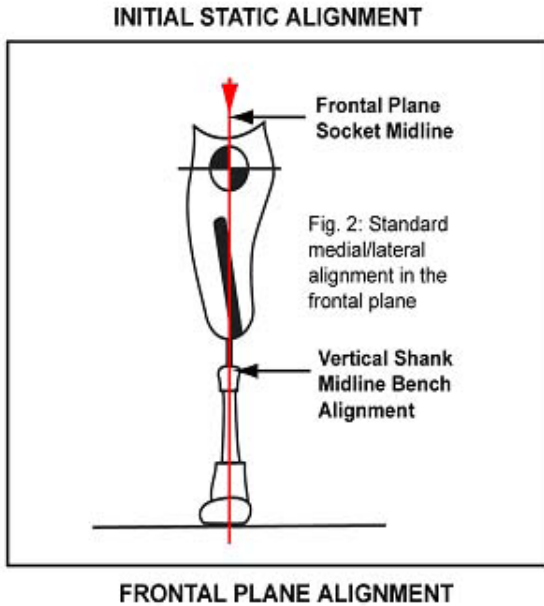
- Once the calf shank is level, re-tighten the heel height adjustment bolt with a torque wrench. To prevent slippage, the bolt must be tightened to a torque setting of 55 ft./lbs. Please use the torque wrench supplied to your facility. **Not following the torque settings will void product warranty.**
- It is absolutely necessary that Loctite 242 thread locking compound be used on all bolts and fasteners that are loosened and then re-tightened for alignment adjustment.
- Once the correct heel height has been achieved and the heel height adjustment bolt has been securely tightened, you are ready to attach the PerfectStride II to your patient's socket.

## Initial Static Alignment Installation

(Sagittal plane alignment of socket and PerfectStride II Foot)

- Bisect the lateral side of the socket and make a reference mark. Use a plumb line to determine that the bisect mark on the socket is correctly positioned over the PerfectStride. This line should directly align with the ankle joint center. The ankle joint center is located approximately in the middle of the coiled ankle area of the calf shank.
- If the patient does not have a knee flexion contracture, the socket should be in approximately 2 to 3° of initial flexion. Less socket flexion is usually better with the PerfectStride foot system.





## Frontal Plane Alignment

- The center line of the shank above the ankle area should be determined. A plum line should be used to indicate that the center line of the shank is vertical.
- The center of the shank should be aligned to the frontal plane center line of the socket.

## Dynamic Alignment Suggestions

- To encourage loading response ankle joint plantarflexion, slide the socket posterior to the foot. This will make the ankle joint more unstable and promote ankle plantar flexion.
- If knee flexion contracture does not exist with the patient initial socket flexion should be 2-3° with the PerfectStride. Minimal initial socket flexion is tolerated by the amputee because in loading response the PerfectStride ankle and shank plantar flexes. This shank flexibility reduces anterior distal residuum - to - socket shear forces creating a more comfortable socket.
- Plantarflexion and/or dorsiflexion adjustment can be accomplished by loosening the heel height adjustment bolt, rotating the ankle to the desired position then retighten and torque heel height bolt to 55 ft/lbs. Keep in mind that a level proximal pyramid surface is the goal. Plantarflexion (dropping the toe), dorsiflexion (raising the toe), allows the prosthetist the option of increasing or decreasing the toe/heel forces. This is determined usually by the activity level of the patient and the patient's preference.
- The PerfectStride comes bench aligned with the foot keel attachment bolt aligned in the middle of the ankle slot, or neutral position.
- The heel and toe lever relationship can be adjusted at the foot keel ankle fastener. To access the bolt, the footshell and spectra sock must be removed from the PS. The foot bolt must be loosened using a 8mm allen and a 17mm boxed end wrench or socket. The adjustment is made by sliding the foot keel anterior or posterior in relationship to the ankle coupler. Once the adjustment has been made the bolt should have Loctite reapplied and the nut should be retorqued to 35 ft/lbs.
- In dynamic alignment if the foot keel has been moved forward or backward on the ankle coupler, the ankle coupler to calf shank will need to be adjusted to neutral bench alignment position (i.e. level proximal end)
- To change the PerfectStride II toe-in and toe-out, loosen the Transverse Plane Rotation Adjustment (female pyramid clamp adapter). Rotate the foot to desired position, then retighten.

**Spectra Sock**



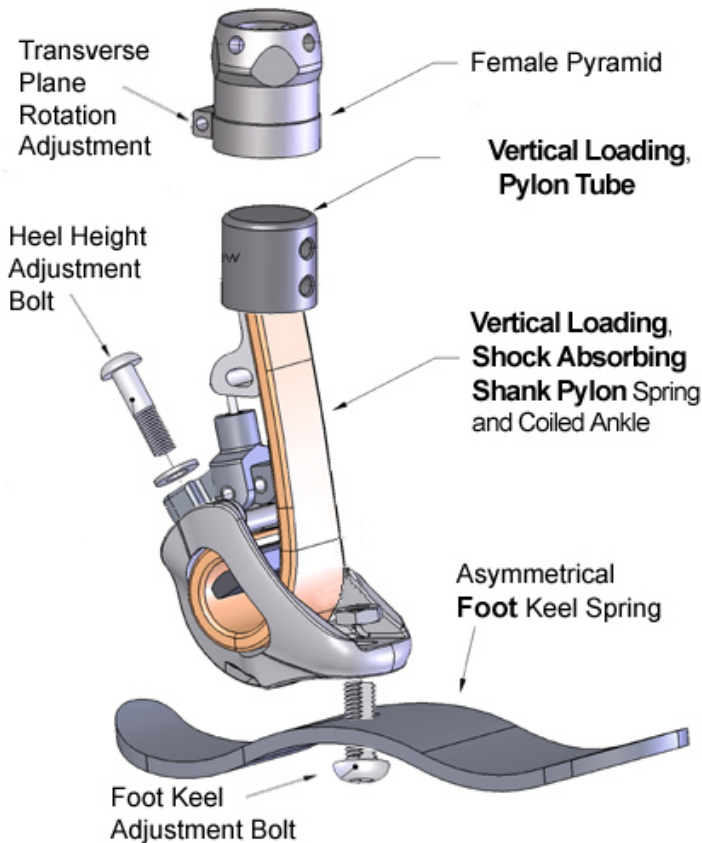
**Footshell Donning**



Ensure that the posterior foot keel clips under the foot shell inner ledge by pressing down firmly on the heel of the foot while pulling the shoe horn up over posterior end of foot keel.

**Shoe Horn (not provided) Application**





## Do's

- **Torque Heel Height Adj. Bolt to 55 ft./lbs.**
- **Torque foot keel attachment bolt to 35 ft./lbs.**
- **Use Loctite 242 on all bolts prior to tightening**
- **Align knee center over ankle center**
- **Ensure proximal surface of female pyramid is level**
- **Frontal plane socket midline should align with PerfectStride II shank midline.**
- **Call Tech Support if needed.**

## Don't

- **Tamper with or remove vertical loading pylon tube**
- **Don't modify PerfectStride II parts (voids warranty)**

## Important Alignment Information

- The PerfectStride II comes bench aligned for a 3/8" heel height.
- Before attaching the patients socket to the PerfectStride II, the heel height must be checked to ensure that it matches the heel height of the patient's shoe. If it does not, the heel height must be adjusted for achieving optimal performance of the PerfectStride II.
- Sagittal plane knee center should be bench aligned over the ankle joint center.
- If the patient does not have a knee flexion contracture, initial socket flexion should be set at 2 – 3°.
- Frontal plane socket midline should align with the vertical centerline of the shank. Shank must be vertical.
- If heel lever or toe lever adjustment is done at the foot keel attachment, the heel height adjustment will have to be checked to ensure a level proximal female pyramid.

## PerfectStride Foot Change on Existing Transtibial Socket

- Traditional socket A-P 3/4 to 1-1/2" anterior placement to foot bolt, does not achieve proper PerfectStride alignment
- To do your patient a service, existing sockets should be aligned with an A-P, M-L slide component
- This alignment procedure and any socket re-lamination procedures can be separately billed for, as a labor component
- BioQuest has experienced great patient satisfaction when this additional alignment protocol is followed.