

# Defender™ Instructions for Use

Product Number: FS3

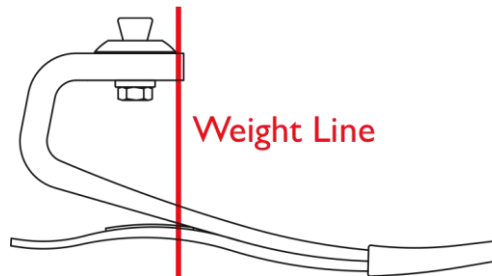
## Assembly

The Defender™ foot module is pre-assembled consisting of a graphite component (keel), Spectra™ sock, and foot shell. Foam *stiffening bumpers* for increasing heel stiffness are provided. After dynamic alignment, torque pyramid adjustment screws to the manufacturer's specifications. Secure pyramid adjustment screws with a thread locking adhesive (i.e., Loctite 242).

## Bench Alignment

Prior to donning the prosthesis:

- Plantarflex/Dorsiflexion foot to match the shoe heel height.
- Adduct/Abduct socket to provide appropriate frontal plane angle.
- Flex/Extend socket to provide appropriate sagittal plane angle.
- Move the socket linearly to ensure the weight line falls along the anterior edge of the pylon (see illustration).



## Dynamic Alignment

During *loading response*, the heel lever stores energy and releases it during *midstance*. This action provides momentum for the keel to store energy and release it during *terminal stance*. To optimize the heel to toe rollover motion, adjust the following variables:

- Anterior/posterior foot placement
- Dorsiflexion/plantarflexion
- Heel stiffness

## Troubleshooting

Heel too soft

### Symptoms

- Foot flat occurs too rapidly
- Toe feels excessively stiff
- Knee hyperextension

### Solutions

- Shift socket anteriorly in relation to the foot
- Attach foam *stiffening bumpers*

Heel too hard

### Symptoms

- Rapid knee flexion, instability
- Heel to toe progression too rapid
- Lack of energy return sensation

### Solutions

- Shift socket posteriorly in relation to the foot
- Verify appropriate foot module category

Foot module too stiff

### Symptoms

- Flat spot in rollover motion at slow cadences

### Solutions

- Consider a lower category foot module

Foot module too soft

### Symptoms

- Clicking noise at *initial contact*
- Excessive toe deflection with high impact activity

### Solutions

- Consider a higher category foot module

**Stiffening Bumpers** Foam *stiffening bumpers* are included to adjust the heel stiffness during *loading response*. The bumpers may be temporarily attached with tape between the *heel lever* and *keel*. If the bumpers provide excessive heel stiffness, exclude or trim as appropriate. For permanent placement, adhere bumpers using Barge or similar contact cement.

**Spectra™ Sock** A Spectra™ sock is provided to protect the foot shell and minimize noise. Spectra™ socks must be replaced at intervals appropriate to the user's activity level. Failure to inspect and replace the Spectra™ socks may prematurely wear the foot module, and will void the warranty.

**Foot Shell** When removing or installing the foot shell, use the Foot Shell Removal Tool (ACC-00-10200-00) to prevent damage to the foot module.

**Defender™ System** Minimum clearance: 94mm-118mm  
 Maximum user weight: 45 kg (100 lbs)  
 Available sizes: 16cm-21cm  
 Heel height: 3/8"  
 Warranty: Graphite components/pyramid connector (18 months)  
 Foot shell (12 months)

**Maintenance** The foot module requires periodic maintenance.

- Inspect the foot module every six months. If the user is more active, more frequent inspection may necessary. Service as necessary. Replace Spectra™ sock and/or foot shell if worn to prevent damage to the graphite components.
- The foot module may be cleaned and/or disinfected with soap and warm water. If the foot is exposed to water, remove the foot shell to clean and disinfect its interior.

**Warnings** Failure to adhere to the guidelines of the *Instructions for Use* will void the warranty.

- Never use the foot module without a *foot shell*. Failure to comply may cause premature wear, loss of function, and/or product failure.
- Always use the foot module with a sock and shoe. Failure to comply may cause premature wear, loss of function, and/or product failure.
- Do not allow aggregates such as sand to remain in the *foot shell*. Upon exposure to aggregates, immediately disassemble foot module and rinse with water. The abrasive properties of aggregates will quickly wear the graphite components of the foot module.
- Freedom Innovations foot modules are manufactured to fit industry standard pyramids and receivers. It is the prosthetist's responsibility to select and/or fabricate properly fitting attachment components.
- Never attempt to loosen the bolt affixing the pyramid connector.
- Discontinue use and consult your prosthetist if any part of the prosthesis starts to make noise.
- Inform your prosthetist if you lose or gain a significant amount of weight.
- Freedom Innovations foot products are manufactured and tested for a particular weight and activity impact level. Use by another user for whom it was not originally manufactured may cause injury and shall void any written or implied warranty.



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