

# Renegade™ AT Instructions for Use

Product Number: R11 (Renegade AT) & R16 (Renegade AT LP)

## Assembly

The Renegade™ AT foot module will be inserted into the provided Spectra™ sock and fitted into the foot shell at the factory. The provided Spectra™ sock should always be used to cover the Toe Lever and Z-Shock before fitting them into the foot shell.

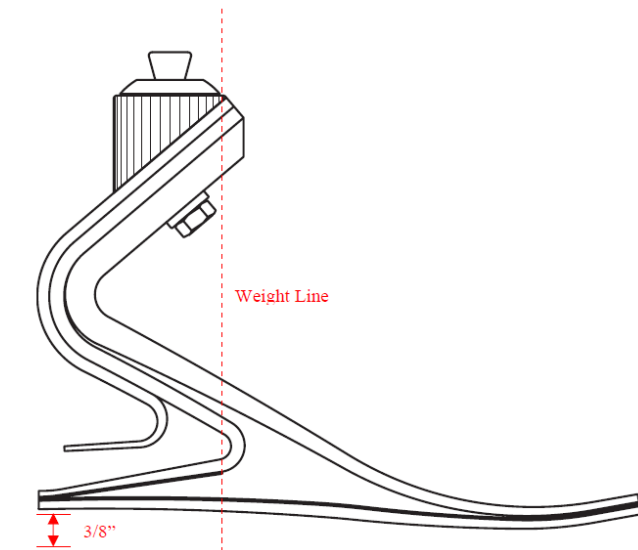
## Bench Alignment

Sagittal Plane:

- Introduce the appropriate socket flexion and heel height, according to the amputee's requirements.
- Position the weight line, taken from the center of the socket at the patellar tendon level, so that it falls along the anterior edge of the pylon.

Coronal Plane:

- Introduce the appropriate socket adduction/abduction, according to the amputee's requirements.
- Position the weight line, taken from the center of the socket at the patellar tendon level, so that it falls through the midline of the foot module in a neutral M-L position.



## Static Alignment

Follow the following steps:

- Fit the anatomical foot cover onto the foot module and place into shoe. Use heel wedges to ensure that the weight line falls along the anterior edge of the pylon.
- Establish the correct height of the prosthesis by having the amputee stand with feet approximately 4" apart, and equal weight bilaterally.
- Check socket flexion, load line position and toe-out. Correct as necessary.

## Dynamic Alignment

Gait:

- The function of the foot may be optimized by modifying the alignment of the socket relative to the foot. The Sole Plate and Z-Shock store energy at heel strike and progressively release it at midstance. Careful attention to alignment will ensure optimal energy return, and improve control of the prosthesis.
- As the amputee walks, check for smoothness of gait and even ground contact

- Optimize the alignment by progressively moving the weight line anteriorly over the foot to increase heel stiffness and observing the heel to toe function.
- The heel is too hard, if the amputee’s gait exhibits rapid heel to toe movement and they have difficulty in controlling the prosthesis. The toe may feel sluggish with minimal energy return and the knee may buckle. Shift the socket posteriorly, to alleviate this problem.
- Use Loctite T 242 (not provided), and torque pyramid adjustment screws to the manufacturer’s recommendations. All screws should be re-torqued after dynamic alignment of the prosthesis.

**Troubleshooting**

Heel too soft	<p><i>Symptoms</i></p> <ul style="list-style-type: none"> <li>• Foot flat occurs too rapidly</li> <li>• Toe feels excessively stiff</li> <li>• Knee hyperextension</li> </ul> <p><i>Solutions</i></p> <ul style="list-style-type: none"> <li>• Shift socket anteriorly in relation to the foot</li> <li>• Attach foam <i>stiffening bumpers</i></li> </ul>
Heel too hard	<p><i>Symptoms</i></p> <ul style="list-style-type: none"> <li>• Rapid knee flexion, instability</li> <li>• Heel to toe progression to rapid</li> <li>• Lack of energy return sensation</li> </ul> <p><i>Solutions</i></p> <ul style="list-style-type: none"> <li>• Shift socket posteriorly in relation to the foot</li> <li>• Verify appropriate foot module category</li> </ul>
Foot module too stiff	<p><i>Symptoms</i></p> <ul style="list-style-type: none"> <li>• Flat spot in rollover motion at slow cadences</li> </ul> <p><i>Solutions</i></p> <ul style="list-style-type: none"> <li>• Consider a lower category foot module</li> </ul>
Foot module too soft	<p><i>Symptoms</i></p> <ul style="list-style-type: none"> <li>• Clicking noise at <i>initial contact</i></li> <li>• Excessive toe deflection with high impact activity</li> </ul> <p><i>Solutions</i></p> <ul style="list-style-type: none"> <li>• Consider a higher category foot module</li> </ul>

**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 overload. If the bumpers provide excessive heel stiffness, exclude or trim as appropriate. For permanent placement, adhere bumpers using Barge or similar contact cement.

**Spectra™ Socks**

Spectra™ socks are provided to minimize noise and protect the footshell/graphite components. The Spectra™ sock should be placed over the keel and the sole plate before donning the footshell. 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.

## Renegade™ AT

Minimum clearance:	120mm-188mm
Maximum user weight:	166 kg (365 lbs)
Available sizes:	22cm-31cm
Warranty:	Graphite components/pyramid connector (36 months) Foot shell (6 months)

## Maintenance

The foot module requires periodic maintenance.

- Inspect the foot module every six months. If the user is more active, more frequent inspection maybe 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.
- 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.

## 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*.
- Never assemble the Renegade™ AT foot module with the Sole Plate inside the Spectra Sock. This will lead to premature failure of the foot module, and will *void the warranty*.
- Never use the Renegade™ AT foot module without the Sole Plate. The design of the Renegade™ Foot is unique; it incorporates a floating Sole Plate which acts as a heel. Removing the Sole Plate will adversely affect the performance of the foot module, and will *void the warranty*.  
If the Sole Plate is removed, the angular design of the Renegade™ Foot Module and the distal contact of the Toe Lever, and the Z-Shock create a void in the mid-foot, which may cause the amputee to fall when ascending or descending stairs, if the amputee does not have the strength in his or her knee extensors to manage this longer lever arm.
- 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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