WARRANTY

The warranty for the Alpha Lamination Lock is one year from the date of invoice. Use of the Lamination Lock for amputees whose adjusted body weight is more than 350 lbs/159 kg (300 lbs/136 kg for Level 4*) or who engage in extremely high and abusive activities is against WillowWood's recommendations and will void the one-year warranty. Adjusted body weight is defined as the weight of the amputee plus any loads carried by the amputee. "Extremely high and abusive activities" are defined as activities such as skydiving, karate, and judo; activities that could result in injury to an individual's natural limb; and activities that expose the prosthesis to corrosives such as salt water.

*Level 4: Has the ability or potential for prosthetic ambulation that exceeds basic ambulation skills, exhibiting high impact, stress, or energy levels. Typical of the prosthetic demands of the child, active adult, or athlete.

WARRANTY DISCLAIMER

WillowWood warrants that each product manufactured will, at the time of delivery, be of workmanlike quality and substantially free of defects. WILLOWWOOD MAKES NO OTHER WARRANTY, IMPLIED, OR EXPRESSED, AND MAKES NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. This warranty shall terminate immediately upon an action to combine our products with other materials or in any manner to change the nature of our products. The sole remedy is replacement of the products or credit for the products. WillowWood's liability shall not exceed the purchase price of the product. WillowWood shall not be liable for any indirect, incidental, or consequential damage.

WILLOWWOOD RETENTION OF RIGHTS

WillowWood retains all intellectual property rights reflected or incorporated in its physical products, regardless of the transfer of the physical products to another party or parties.

WillowWood® ALPHA®

Alpha Lamination Lock Instructions

WHAT'S IN THE BOX

- 1 Lock Body Assembly:
  - 1 4-Hole Distal Plate
  - 1 Lamination Plug
  - 1 Fabricating Post
  - 1 Lamination Plate
  - 4 M6 x 8 Socket Head Capscrews
  - 1 Center Bolt (M8 x 40)
- 1 Clutch Mechanism
- 1 Hardware Kit:
  - 1 AIS Lock Pin, 10 mm x 38 mm
  - 4 Finishing Nails
  - 1 Pin Housing
  - 4 M6 x 16 Flat Head Capscrews
  - 1 Lock Key
- 1 Titanium 4-Hole Pyramid (700-AL601 only)

Instructions

WillowWood®

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Keizersgracht 62/64
1015 CS Amsterdam
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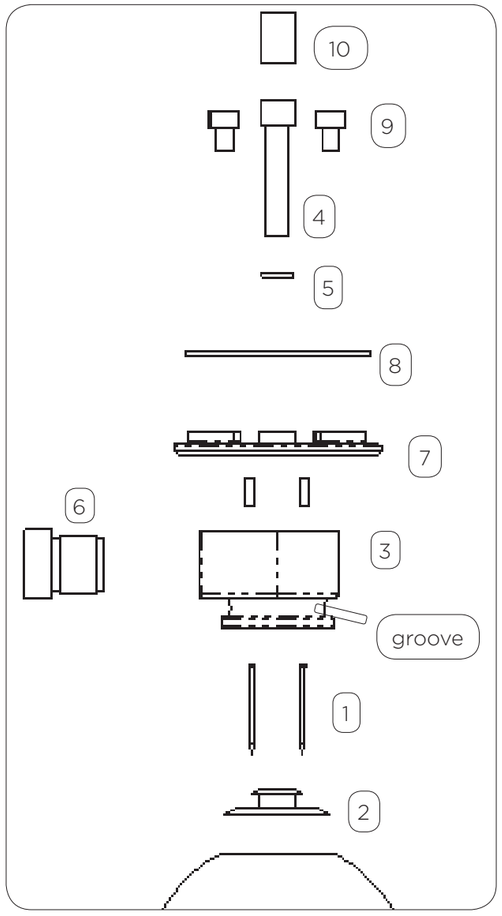
PN-1491-K 21 MAY 2015

NOTE: This lock was designed for use in laminated sockets. If it is used temporarily in a test socket, the socket should be reinforced adequately.

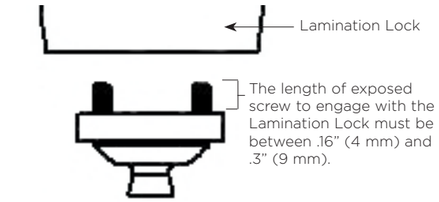


ONE-STEP LAMINATION PROCESS

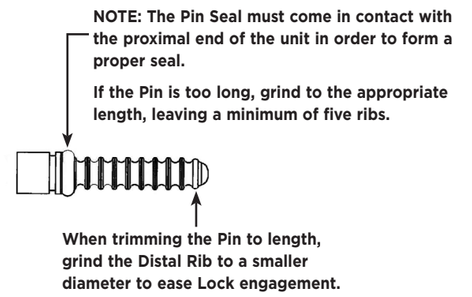
1. Shave 1/4" (6 mm) from the distal end of the positive model to ensure a flat surface.
2. Using the four Finishing Nails (1) included with the kit, attach the Fabricating Post (2) to the distal end of the model.
3. Pull a nylon hose that is at least twice as long as the model over the Fabricating Post and the model. Tie the nylon hose off at the groove on the Fabricating Post. Pull the rest of the hose over the model.
4. Place the 4-Hole Attachment Plate (7) and the Lock Body (3) onto the Fabricating Post (2). Orient the 4-Hole Attachment Plate (7) and the Lock Body (3) as desired.
5. Be sure that the O-Ring (5) is in place on the Center Bolt (4), then insert the Center Bolt (4) through the center hole in the 4-Hole Attachment Plate (7) and the Lock Body (3). Tighten the Center Bolt (4) with an Allen wrench.
6. Apply a PVA bag over the Lock Body (3) and the model. Tape off the PVA bag in the groove that is closest to the model. Cut through the tape and PVA bag along the midline of the tape to achieve a smooth edge. Remove the excess. Then re-tape over the cut to prevent any resin from flowing behind the PVA bag. Smooth out any wrinkles in the PVA bag as much as possible.
7. Insert the Lamination Plug (6) into the Lock Body (3) and tighten.
8. Pull a stockinette onto the model, and tie it off in the groove in the Lock Body (3) and also between the Lock Body (3) and the 4-Hole Attachment Plate (7). Pull the rest of the stockinette back onto the model.
9. Fold the carbon tape lengthwise into thirds so that it will fit completely within the channels on the 4-Hole Attachment Plate(7). Place one strip of tape into each of the channels on the 4-Hole Attachment Plate (7) and down onto the model. Keep in mind that this is the reinforcement that holds the 4-Hole Attachment Plate (7) in place.
10. Remove the Center Bolt (4) with the O-Ring (5) from the 4-Hole Attachment Plate (7) Place the Lamination Plate (8) over the carbon tape on the 4-Hole Attachment Plate (7), and replace the Center Bolt (4) with O-Ring (5). Do not allow the carbon tape to come up above the sides of the grooves and onto the four posts on the 4-Hole Attachment Plate (7).

    Note: If the carbon tape is pinched between four posts on the 4-Hole Attachment Plate and the Lamination Plate, two problems could develop:

    1) gaps between the two surfaces may allow resin to enter the threaded holes in the 4-Hole Attachment Plate,
    and/or
    2) the attachment surface may not be level.
11. Apply lubricant to the four M6 Cap Screws (9), and install the screws through the Lamination Plate (8) into the 4-Hole Attachment Plate (7).
12. Apply a second lay-up, and tie the lay-up off in the groove created by the installation of the Lamination Plate. Pull the rest of the lay-up back onto the model.
13. Insert putty into the head of the Center Bolt (4) and the heads of the four M6 Cap Screws (9) to prevent resin from entering these areas.
14. Proceed with the lamination, using standard techniques.
15. After lamination is cured, sand away the material covering the Lamination Plug (6). Remove the Lamination plug (6), the four Cap Screws (9), the Center Bolt (4), and the Lamination Plate (8).
16. Remove the model from the socket using standard techniques. Cut and finish the socket trim lines as needed to achieve a comfortable fit.
17. Install the Clutch Mechanism, apply Loctite 242 (or equivalent), and torque the Clutch Mechanism to 12 ft-lbs (16 Nm).
18. Attach the WillowWood 4-hole adapter of choice onto the Lamination Lock using four M6 screws. Check to make sure that the length of exposed screw to engage with the Lamination Lock is between .16" (4mm) and .3" (8mm). Apply Loctite 242 (or equivalent) and torque the screws to 9 ft-lbs or 12Nm.



19. Apply removable Loc-Tite to threads on the Locking Pin and tighten the pin into the Alpha Locking Liner until the base of the pin meets the umbrella.



TWO-STEP LAMINATION PROCESS

The Alpha Lamination Lock can also be used in a two-step lamination process, which allows an offset or angled placement of the 4-Hole Attachment Plate (7).

1. Shave 1/2" (13 mm) from the distal end of the positive model to ensure a flat surface.
2. Using the four Finishing Nails (1) included with the kit, attach the Fabricating Post (2) to the distal end of the model.
3. Pull a nylon hose that is at least twice as long as the model over the Fabricating Post and the model. Tie the nylon hose off at the groove on the Fabricating Post. Pull the rest of the hose over the model.
4. Place the Lock Body (3) onto the Fabricating Post (2). Orient the Lock Body (3) as desired.
5. Be sure that the O-Ring (5) is in place on the Center Bolt (4), then insert the Center Bolt (4) through the Lock Body (3). Tighten the Center Bolt (4) with an Allen wrench.
6. Apply a PVA bag over the Lock Body (3) and the model. Tape off the PVA bag in the groove that is closest to the model. Cut through the tape and PVA bag along the midline of the tape to achieve a smooth edge. Remove the excess. Then re-tape over the cut to prevent any resin from flowing behind the PVA bag. Smooth out any wrinkles in the PVA bag as much as possible.
7. Insert the Lamination Plug (6) into the Lock Body (3) and tighten.
8. Pull a stockinette onto the model, and tie it off in the groove in the Lock Body (3) and above the head of the Center Bolt (4). Pull the rest of the stockinette back onto the model.
9. Proceed with the lamination, using standard techniques.
10. After the lamination has cured, remove the Center Bolt (4). Push the Pin Housing (10) into the hole in the lamination created by the Center Bolt head.
11 Rough up the proximal surface of the 4-Hole Attachment Plate (7).
12. Secure the socket and the 4-Hole Attachment Plate (7) in a transfer fixture. Apply foam from the distal end of the socket to the surface of the 4-Hole Attachment Plate (7).
13. Cut a groove in the foam adjacent to the 4-Hole Attachment Plate (7) to allow resin to enter and form a seat for the 4-Hole Attachment Plate to rest on.
14. Fold the carbon tape lengthwise into thirds so that it will fit completely within the channels on the 4-Hole Attachment Plate(7). Place one strip of tape into each of the channels on the 4-Hole Attachment Plate (7) and down onto the model. Keep in mind that this is the reinforcement that holds the 4-Hole Attachment Plate (7) in place.
15. Place the Lamination Plate (8) over the carbon tape on the 4-Hole Attachment Plate (7). Do not allow the carbon tape to come up above the sides of the grooves and onto the four posts on the 4-Hole Attachment Plate (7).

    Note: If the carbon tape is pinched between four posts on the 4-Hole Attachment Plate and the Lamination Plate, two problems could develop:

    1) gaps between the two surfaces may allow resin to enter the threaded holes in the 4-Hole Attachment Plate,
    and/or
    2) the attachment surface may not be level.
16. Apply lubricant to the four M6 Cap Screws (9), and install the screws through the Lamination Plate (8) into the 4-Hole Attachment Plate (7).
17. Apply a second lay-up and tie off the lay-up in the groove created by the installation of the Lamination Plate. Pull the rest of the lay-up back onto the model.
18. Insert putty into the heads of the four M6 Cap Screws (9) to prevent resin from entering these areas.
19. Proceed with Steps 14-18 of the One-Step Lamination process.

EXPOSURE TO LIQUIDS

Though this WillowWood component is resistant to fresh water splashes, light sprays, and sanitizing with damp cloths, it is not rated for prolonged exposure to moisture or liquids such as partial or total immersion in water (as in swimming, bathing, and showering). This product is also not rated for any exposure to pressure sprays, salt water, chlorinated water, soap, or any liquid with chemical content.