Below Knee Prosthesis

Liner with Pin Lock

General Description:

There are many types of below knee prostheses. The type that an amputee is fit with depends on the shape of the residual limb, activity level, prognosis, and individual preference. A locking liner can be used with patella tendon bearing (PTB), total surface bearing, or hydrostatic socket designs. Total surface bearing is a general loading of the entire residual limb and hydrostatic designs elongate the tissue to eliminate movement within the socket.

With locking liner suspension, the user rolls a silicone liner onto the residual. Traditionally the liners were made of silicone. Currently, there are liners made of silicone, gel, and hybrid materials. The liner has a pin on the end that locks into the bottom of the prosthetic socket. A prosthetic sock must be worn over the liner in order to allow for volume fluctuation. Locking liner suspension is best fit with cylindrical shaped residual limbs.

Application:

1) Turn the liner inside out. Make sure the liner is clean and dry and has no dirt on it that will irritate the skin.
2) Make sure a good portion of the bottom end of the liner is exposed and place it against the limb (See figure 1). With light pressure, roll it up and over the limb. Make sure no air pockets exist between the liner and the skin.
3) Roll the liner up the limb (See figure 2). Do not pull or tug. Be careful not to tear it with fingernails or jewelry.
4) Pay close attention to the placement of the pin. In most cases, it should be in line with the limb. Be careful not to pierce the liner with the pin.
5) Add the appropriate thickness of prosthetic sock over the liner (See figure 3).
6) Push the residual limb into the prosthetic socket (See figure 4). The pin will insert into the lock and click down as the limb goes into the socket. It should take some effort to put on the prosthesis. If it clicks down easily, a thicker prosthetic sock may be needed.

Figure 1

Figure 2

Figure 3

Figure 4

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Removal:

1) Push the release pin on the side of the prosthesis and hold down while pulling the limb up and out of the prosthesis (See figure 5).
2) Remove the prosthetic sock and the liner. The liner can be removed by rolling it slowly down the limb (See figure 6).

![Figure 5](image1.png)  ![Figure 6](image2.png)

Care and Maintenance:

**The inside of the gel liner must be hand washed daily with mild soap such as Soft Soap® Brand (no perfumes, lotions, or deodorants) and water.** Blot dry with a towel. All liners may be washed by hand and some styles are machine washable. Fabric softeners and bleach, or other products or cleaning solutions may damage the liner and should not be used. In all cases, it is important to rinse thoroughly with water and wipe both sides dry with a lint-free cloth. Return the liner to its normal position with the pin facing out as soon as possible after cleaning. Store the liner right side out away from direct heat. Clean socks should be worn daily. The socket can be wiped out with mild soap and water as needed.

It is important that the liner never be exposed to glass, carbon fibers, chemicals or other foreign product because such materials can become embedded in the liner and cause irritation to the skin. Washing the liner may not take care of the problem. Liners damaged in this way should be shown to your prosthetist to correct the problem.
Tips and Problem Solving:

If the locking mechanism is sticking, spray the lock with WD-40 or similar lubricant. The limb should be cleaned daily, using a mild soap. Be sure to rinse all soap residues off skin before donning liner. Do not use any deodorants or perfumes on the residual limb.

For further troubleshooting, see BK Troubleshooting.