

## Below Knee Prosthesis

### Vacuum Assisted Socket System (ELEVATED VACUUM SUSPENSION)

#### General Description:

The elevated vacuum suspension system is a relatively new socket and suspension method. The goals of the elevated vacuum suspension system are to control volume fluctuation of the residual limb, reduce forces to the limb, and to improve both suspension and proprioception without restricting vascular flow.

With the elevated vacuum suspension system, a polyurethane liner is directly against the skin and a suspension sleeve is used to create a seal between the prosthesis and the residual limb.



## Application:

- 1) First, rub a small amount of lubricant, such as A&D Ointment or lotion, onto the residual limb (See Figure 1). Discuss with your prosthetist the best lubricant for your needs.
- 2) Roll the polyurethane liner onto the residual limb. Be sure to work any air bubbles up and out of the liner (See Figures 2, 3, and 4).
- 3) Pull a nylon sock up the liner (See Figure 5). The nylon sock must end below the edge of the liner – do not pull above the liner.
- 4) Gel spots (See Figure 6) or socks may need to be added to obtain a correct fit in the socket. Your prosthetist will work with you to achieve the correct fit.
- 5) Insert the residual limb into the socket (See Figure 7).
- 6) Fold the nylon sock over the top edge of the socket. Or, if provided, pull the “mini” sleeve over the edge of the prosthesis (See Figure 8).
- 7) Pull the suspension sleeve up onto the thigh (See Figure 9). Make sure the suspension sleeve is 2-3 inches above the edge of the insert onto the skin of the thigh.
- 8) Activate elevated vacuum system per manufacturer instructions.



Figure 1



Figure 2



Figure 3



Figure 4



Figure 5



Figure 6



Figure 7



Figure 8



Figure 9

## Removal:

- 1) Unroll the suspension sleeve down the thigh and onto the socket.
- 2) Lift residual limb out of the socket.
- 3) Remove the nylon and roll the insert off of the limb.



## **Care and Maintenance:**

Your prosthetist will discuss proper cleaning and care for your specific vacuum system (Harmony, Ohio Willow Wood and Ottobock) with you.

Check the liner and suspension sleeve for signs of damage and clean daily. Use a mild or non-allergenic soap and warm water. Do not use bleach or perfumed soaps. Towel dry and let air dry overnight.

Inspect and clean the system once a week. Check that the clamps and tubes are all securely attached to the pump and that there are no visible cracks or holes.

## **Tips and Problem Solving:**

The limb should be cleaned daily, using a mild soap. Be sure to rinse all soap residues off the skin before donning the liner. Do not use any deodorants or perfumes on the residual limb.

If the prosthesis feels heavy or you hear air exiting on every step, there may be a leak in the system. In this event or if you have any additional concerns, immediately contact your prosthetist at (513) 843-5126.