

Below Elbow Prosthesis

Myoelectric



Figure 1



Figure 2

General Description:

A myoelectric prosthesis uses muscles of the affected arm to control the opening and closing of the terminal device (hand or hook). Electrodes (See figure 1) are fit within the prosthesis. Rechargeable batteries are used to supply the power to operate the motor of the hand. By contracting the muscles of the arm that formerly controlled the movement of an anatomical hand, electrical outputs are sent to a motor that open and close an artificial hand. Electrical outputs can be used to control the speed that the hand opens and closes and can also rotate the wrist with the addition of a wrist rotator.

In order to use a myoelectric prosthesis, at least one muscle of the arm must be able to generate enough charge to be able to send a signal from the electrode to the motor. If there is not a strong enough muscle, myoelectrics could still be utilized, if desired, through the use of switches.

Touch pads (See figure 2) are also another electrical option. Touch pads differ from electrodes in that they are activated by touch as opposed to electrical impulses from muscle activation. Touch pads require a portion of the remaining arm or hand to be capable of generating enough force to activate the pad. This system is advantageous with congenital deformities where a remaining appendage may be available to activate the touch pad. The main advantage of this system is that the person feels they have more control of what they are doing as they operate the hand.

Visit us at: www.scheckandsiress.com

Call us at: 1-866-SCHECK1

Commitment • Quality • Care

Myoelectric prostheses are usually self-suspending, meaning that a harness is not necessary to hold the prosthesis on the residual limb. The prosthesis is held on by cupping above the bones of the elbow.

Myoelectric arms are functional as well as cosmetically appealing. The disadvantages are that they are heavier, more expensive, and less functional than the traditional hook. They also require more maintenance.

Application:

A myoelectric cannot be worn with a sock. The skin of the arm must be directly against the electrodes. To put on the prosthesis, the residual limb is just slid inside of the socket. Baby powder may be used to assist in putting on the prosthesis. If the hand does not function properly, water may need to be applied to the residual limb at the site of the electrodes. This aids in transmitting the electrical impulses from the arm to the electrode.

Removal:

Remove the prosthesis in the opposite manner in which it was applied.

Care and Maintenance:

Do not submerge the prosthesis in water!!! The socket can be wiped out with mild soap and water as needed.

The cosmetic glove can be cleaned with soap and water or rubbing alcohol.

The cosmetic glove is easily stained by inks, newspapers, and blue jeans. To lengthen the lifespan of the glove, care should be taken when handling these items.

Tips and Problem Solving:

The battery should be put in the charger nightly.

If the prosthesis is submerged in water, contact your prosthetist immediately.

If you have any questions or problems, please contact your prosthetist.

Body Powered

Visit us at: www.scheckandsiress.com

Call us at: 1-866-SCHECK1

Commitment • Quality • Care



Figure 1



Figure 2

General Description:

A body-powered prosthesis uses a harness, which is worn around the opposite arm and across the back. A cable is attached to the harness and also to the terminal device (hook or hand). By using the muscles of the shoulders and arms, the harness pulls on the cable and then either opens or closes the terminal device (depending on the type of terminal device). By relaxing the muscles, the terminal device then performs the opposite operation. Hook terminal devices use rubber bands to provide resistance. The more rubber bands, the more difficult it is to open, but also the greater the pinch force is obtained.

The prosthesis may be suspended on the arm by using a triceps cuff and additional harnessing as in Figure 1 or may be self-suspending and hold on by gripping above the contours of the bones of the elbow as in Figure 2.

Visit us at: www.scheckandsiress.com

Call us at: 1-866-SCHECK1

Commitment • Quality • Care

Application:

1. Apply a cotton sock on the residual limb (See figure 3).
2. Push the residual limb into the prosthesis (See figure 4).
3. Apply the harness around the opposite arm as you would put on a shirt (See figures 5 and 6). OR, put the sound side arm through the loop in front of the body and then lift the harness over the head to the back.



Figure 3



Figure 4



Figure 5



Figure 6

Visit us at: www.scheckandsiress.com

Call us at: 1-866-SCHECK1

Commitment • Quality • Care

Removal:

Remove the prosthesis in the opposite manner in which it was applied.

Care and Maintenance:

Clean socks should be worn daily. Clean the socks according to the manufacturer's instructions. The socket can be wiped out with mild soap and water as needed.

The harness can be hand washed in cold water with mild detergent and line dried.

The cosmetic glove can be cleaned with soap and water or rubbing alcohol.

The cosmetic glove is easily stained by inks, newspapers, and blue jeans. To lengthen the lifespan of the glove, care should be taken when handling these items.

Tips and Problem Solving:

The harness can be worn over a t-shirt or undershirt. This minimizes the friction between the harness and the skin and also helps to keep the harness clean.

If the terminal device is difficult to open, remove a rubber band or tighten the harness where it is attached to the cable.

If the terminal device is too easy to open, add a rubber band or loosen the harness where it is attached to the cable.

If you have any further questions or problems, please contact your prosthetist.

Cosmetic Prosthesis



General Description:

The primary purpose of a cosmetic prosthesis is to replace a missing body part. Cosmetic prostheses are generally thought of only as aesthetic. However, a cosmetic prosthesis can be

Visit us at: www.scheckandsiress.com

Call us at: 1-866-SCHECK1

Commitment • Quality • Care



assistive to the sound side arm. It can be used for holding and balancing items, pushing open doors, moving chairs, etc.

Application:

1. Apply a cotton sock on the residual limb.
2. Push the residual limb into the prosthesis.

Removal:

Remove the prosthesis in the opposite manner in which it was applied.

Care and Maintenance:

Clean socks should be worn daily. Clean the socks according to the manufacturer's instructions.

The socket can be wiped out with mild soap and water as needed.

The cosmetic glove can be cleaned with soap and water or rubbing alcohol.

The cosmetic glove is easily stained by inks, newspapers, and blue jeans. To lengthen the lifespan of the glove, care should be taken when handling these items.

If you have any questions or problems, please contact your prosthetist.

Visit us at: www.scheckandsiress.com

Call us at: 1-866-SCHECK1

Commitment • Quality • Care