

## **Floor (Ground) Reaction AFO**

### **General Description**

An AFO is a device that supports the ankle and foot area of the body and extends from below the knee down to and including the foot. This device is used to control instabilities in the lower limb by maintaining proper alignment and controlling motion. A floor (ground) reaction AFO (FRAFO or GRAFO) is a custom fabricated, molded plastic device.

There are several designs of FRAFO's:

1. One piece: encloses the back of the lower calf, the shin, and bottom of the foot (See figures 1-3)
2. Two piece: same as the one piece but has a removable anterior (front) panel
3. Rear-opening: encloses the front of the leg and top of the foot. May be articulated.

A floor reaction AFO is generally used with patients affected by neurological conditions such as spina bifida, cerebral palsy, brain injury, spinal cord injury, and post-polio paralysis. In these cases, the floor reaction AFO functions to maintain the affected joints in proper alignment, to accentuate knee extension at midstance, and compensate for weak or absent gastroc-soleus (calf) muscles. A floor reaction AFO places the extension force closer to the knee than other AFO's and uses a rigid anterior shell with padding.



Figure 1



Figure 2



Figure 3

## Application

1. Apply long cotton sock or stockinette to leg
2. If the floor reaction AFO has a detachable anterior panel, loosen the straps on the side of the panel
3. To slide the foot and leg into the FRAFO, plantarflex the ankle (point the toes down) through the top of the orthosis (see figure 4).
4. Make sure the heel is fully seated. The heel needs to be all the way back and in contact with the bottom of the footplate (see figure 5).
5. Check to ensure the heel is all the way back by looking along the sides and back where the plastic is separated above the heel (see figure 6).
6. If applicable, apply the anterior panel and tighten straps snugly. The Orthotist may mark the straps to assist you in keeping consistent pressure between applications.



Figure 4



Figure 5



Figure 6

7. Secure the Velcro of the wrap around strap just above the ankle (see figure 7).
8. The shoelaces need to be opened wide, then slide the foot with the FRAFO into the shoe (see figure 8).
9. Special shoes are not needed to wear over the orthosis, but a larger shoe size may be indicated. If necessary, remove the insole of the shoe to accommodate the FRAFO. Shoes with wide toe boxed and Velcro are generally easier to put on over the orthosis. Tighten shoelaces/Velcro securely.



Figure 7



Figure 8



Figure 9

### **Wearing Schedule:**

The first day you receive the orthosis, begin by wearing for only 1 hour. After 1 hour, remove the FRAFO and check your skin for red marks. Some small red marks may be noticed on the skin that should disappear within 20 to 30 minutes. Slight redness is common over the shin, the instep, and under the ball of the foot. If the red marks do not go away in 20 to 30 minutes or if you notice any scratching, bruising, or blistering **do not**

**put the FRAFO back on.** Call immediately to schedule an appointment with your orthotist.

If the skin is okay, wait at least 1 hour and then put the FRAFO back on for 1 hour at a time for the rest of the first day. Check the skin after each hour.

On day two, put the FRAFO on for 2 hours. After 2 hours, remove the orthosis and check the skin. If the skin is okay, put the orthosis back on for 2 hours at a time for the rest of the day. Check the skin after every 2 hours.

If your skin is okay, gradually increase wearing time by 1 hour each day, checking skin after each wearing time.

### **Cleaning and Maintenance:**

To clean the FRAFO, spray the inside with rubbing alcohol and wipe dry to remove body oils and residue. It may also be cleaned by wiping it out with a damp towel and anti-bacterial soap or anti-bacterial moist towelettes.

Wash the cotton stockinette in cold water and air dry or machine dry on low.

Do not immerse the FRAFO in water as this may harm the pads, straps, and fasteners.

Try to keep the Velcro straps free of hair and lint. If the straps wear out and need to be replaced, please contact your orthotist.

### **Tips and Problem Solving:**

When putting on any AFO, it is very important to make sure the heel is properly seated inside the orthosis.

Be cautious about using the FRAFO in different shoes. Changing heel height of the shoe can affect the function and stability.

If you notice red marks, bruises, or blisters on your skin, discontinue use and call your orthotist to schedule an appointment.

If there are any problems or concerns, please consult your orthotist.