

Academy Tech Tips

C-Brace Test Orthosis Alignment Using the LASAR Posture



Proper alignment of the axis of rotation of the C-Brace Orthotronic Mobility System is critical for the proper functioning of the brace. Proper alignment allows the brace to both provide stability to the user's knee during stance phase, while also allowing for easy swing phase initiation.

The LASAR Posture tool is a great way to get the best possible alignment with the Test Orthosis, and we'll walk you through the steps for determining alignment with these tools.

Place the user on the LASAR Posture perpendicular to the laser line with the involved side toward the laser. Have one foot on the pressure plate and the other foot on the height compensation plate.

The axis of rotation of the orthotic knee joint should lie over the compromised axis of rotation of the anatomic knee joint. The anatomic knee joint axis of rotation should lie from 0 – 15mm behind the laser line. The laser line is the vertical component of the ground reaction force.

To move the knee joint axis relative to the vertical component of the ground reaction force, use the pin stops in the double action ankle joints.

- To move the knee toward the laser line, dorsiflex the ankle joint.
- To move it away from the laser line plantarflex the joint.

Once the desired position of the knee joint axis is achieved, lock the anterior and posterior pins in position by tightening the anterior/posterior pin channel screws on both the medial and lateral ankle joint. This will keep the screws from loosening during shipping and maintain your desired alignment.

Determine amount of desired stability.

When to use less knee stability (knee axis closer to laser line):

- When the knee is stable going into knee extension:
 - High muscle strength of substitute knee extensors (gluteus maximus, soleus)
 - Tendency to knee hyperextension (controlled/reduced genu recurvatum)

When to use more knee stability (knee axis farther from laser line):

- When the knee exhibits flexion moment:
 - Weak substitute muscles (gluteus maximus, soleus)
 - Knee flexion contractures

TIP: How do I find the best alignment from a range of 0 – 15mm?

As you are setting the ankle joint pins (plantarflexing or dorsiflexing ankle), observe the straps on the Test Orthosis. If a knee flexion moment is present, the straps will dig into the tissue, making the knee flexion moment is observable. When aligned properly, no knee flexion moment will be present, and the straps will be less tight across the user's tissue.