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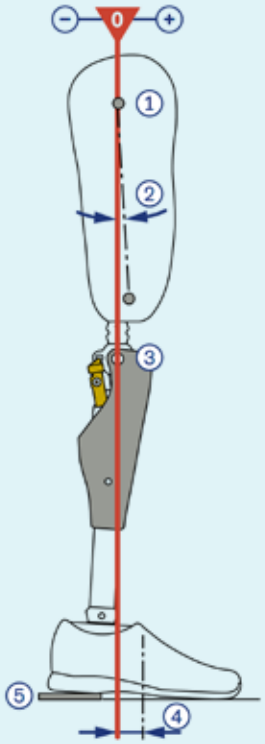
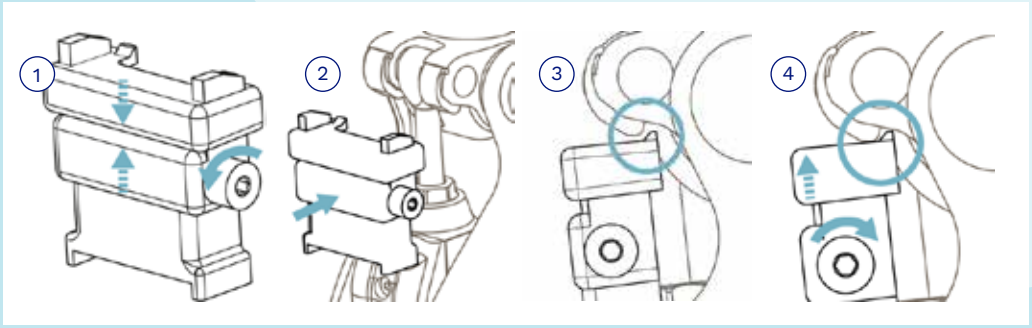
C-Leg 4
Bench Alignment Guide.



Preparation:

- Locate the middle of the prosthetic foot from heel to toe without the shoe applied.
- Place a reference mark 30 mm posterior to the middle of the foot. This is the (30mm) amount specified on the “plumb line” bench alignment tab in C-Soft Plus.
- Transfer this mark to the top of the foot shell on the lateral side.
- Apply a shoe to the prosthetic foot and make the top of the foot level in the shoe.
- Apply the 4H105 Ottobock knee extender to the back of the knee. It will wedge between the flexion stops and the top of the hydraulic unit.

Using the Knee Extender:



Step #1: Turn the screw of the knee-extender counter-clockwise to the minimum (shortest) height. Extend the knee joint.

Step #2: Check to ensure both flexion stops are mounted (they will be pre-mounted on a new knee).

Step #3: Place the knee extender against the hydraulics unit. The proximal part of the unit will wedge itself under the flexion stops and the distal part of the knee extender will rest on the top of the hydraulic unit.

Step #4: Turn the screw clockwise until slight resistance is felt from the dial. Then, use a 4mm wrench to turn the dial an additional 10 complete turns. This will force the knee ball into full extension and minimize the potential for the knee to bend. A red box at the bottom of the C-Soft Plus (Plumb Line/Laser Line) Alignment Tab will turn green once the appropriate extension tension has been applied to the knee ball by the knee extender.

NOTE: Remove the knee extender BEFORE the user dons the prosthesis.

Alignment Tab in C-Soft Plus:

Choose Plumb Line/Laser Line on the Alignment Recommendation Tab in C-Soft Plus as shown below.

Step #1: Identify the AP bisector of the prosthetic socket.

Step #2: Perform a Thomas Test and set the socket in the measured degrees of hip flexion contracture. C-Soft plus will add 4 degrees to any contracture measured/input in the patient data. This will ensure an adequate step length can be achieved on the contralateral side during walking.

Step #3: Ensure a plumb line dropped from the proximal AP bisector of the socket falls either through knee center or up to a maximum of 5mm posterior to knee center (0-5mm posterior insures increased knee flexion in loading response).

Step #4: Find the middle of the prosthetic foot without the shoe donned and mark a point 30mm posterior to the foot middle. Transfer this mark to the lateral proximal part of the foot shell. Then donn the shoe.

Step #5: Add a 5mm wedge under the heel of the shoe (outside the shoe). This pre-plantarflexes the foot and acts as a safety factor for encouraging knee extension the first time the user stands on the prosthesis.

For review: A Laser/plumb line should fall through the A-P bisection of the socket proximally, up to 5mm posterior of the knee center, and through the reference mark on the top of the foot laterally.

Successful alignment with the knee extender will result in the GREEN pop-up message as seen below:

Hyperextension of the knee joint with the knee extender is set correctly for the alignment

Failure to use a knee extender can cause the following issues:

- The knee may not release stance at the appropriate stance phase timing, and this will cause a delay in swing phase knee flexion.
- The user's hip flexion contracture will not be FULLY accommodated (you will lose ~2-3 degrees of the flexion you worked hard to build in), and the knee will continue to move into extension through a greater range than necessary during late stance phase (requiring more effort by the user).
- The socket may end up too far posterior in relation to the knee and foot, causing excessive knee flexion in loading, a longer anterior lever arm below the knee in late stance, and increased effort for the user to initiate swing phase knee flexion.
- The user will experience increased lordosis in static standing if they can shift their center of mass in front of the knee and apply weight through the toe.
- The user will experience increased knee flexion during static standing if they cannot accommodate for the socket being positioned too far posterior.

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US: P 800 328 4058 | F 800 962 2549
CA: P 800 665 3327 | F 800 463 3659