Quick Guide #2 C-Leg® Adjustment Overview

Connect the Interface Cable to the C-Leg and to the PC before starting C-Soft software.

⚠ **Attention: ONLY make adjustments when the patient is standing still or sitting!**

A: Sensor Calibration

1. *Zero Setting* (Sensor Calibration)

Amputee stands with knee extended and prosthesis off the ground. Click on “Zero-Setting”. Green check marks will appear over both the Knee and Toe and Heel Load areas.

B: Stance Phase Adjustments

2. *Static Maximum Toe Load* (Preliminary Adjustment)

Enter the length of the prosthetic foot (in cm) and the patient weight in the appropriate boxes. An estimated Maximum Toe Load will be generated. Click "Accept value".

3. *Static Stance Flexion Damping* (Preliminary Adjustment)

Have the amputee sit down slowly. The amputee should feel the stabilizing effect of the C-LEG stance resistance. Adjust so that the amputee can sit comfortably. Make sure that the amputee “loads” the prosthesis while sitting.

4. Dynamic *Maximum Toe Load* (Dynamic Fine Adjustment)

Automatic Adjustment:
Have the amputee begin walking and the computer looks for ten consistent steps. When the computer has counted down to zero, a Maximum Toe Load value will be generated.

Manual Adjustment:
If the patient has an inconsistent gait pattern the manual adjustment may be used. Have the amputee walk and examine the boxes under toe load. Adjusting the Maximum Toe Load parameter up or down changes the position of the black line in the toe load area. When properly adjusted the blue toe load boxes should just come up to meet the black line not going above or below the line for most steps.

The Maximum Toe Load should be checked walking at the amputees average gait speed before completing the fitting session after alignment is complete.

Adjusting plantar and dorsiflexion will affect this setting!

C: Swing Phase Adjustments (Dynamic Fine Adjustment)

5. Swing Phase Control (heel rise control)

With the amputee walking in the parallel bars, check swing phase movements of shin and make necessary adjustments (see 5.1 to 5.3). Recheck outside the parallel bars when the patient is ready. To optimize these parameters, unplug the Interface Cable (if applicable) so amputee can move around freely.

5.1 Dynamic Factor

Start at two. This parameter is used to adjust the dynamic swing flexion damping of the C-Leg. Increase Dynamic Factor to lower heel rise if it is excessive. Lower Dynamic Factor to increase heel rise if it is too little. It is important to have the patient walk at all gait speeds (especially at a fast pace). This adjustment continuously readjusts the flexion resistance as the amputee changes walking speeds.

5.2 Knee Angle Threshold

Start at 40. Adjust the knee angle threshold to determine when Dynamic Factor resistance should activate. This should be lowered if damping feels too

Otto Bock®
QUALITY FOR LIFE

abrupt to the amputee. It should be raised or lowered if just a small increase or decrease in heel rise is necessary. Typical range is **35-45.**

5.3 Initial Swing Flexion Damping (this setting only appears on the "Advanced Settings"screen)

Start at 20. This setting resists all knee flexion at a constant rate. Leave this adjusted to a low level (minimum) for energy efficiency.

6 Swing Extension Damping (terminal impact control)

Start at 70. Adjust to dampen terminal impact during swing phase. Watch for equal stride length and equal timing. Usual adjustment range is **60-75**.

D: Stance Phase Adjustments (Dynamic Fine Adjustment)

7. Stance Flexion Damping

Fine-tune the Stance Flexion Damping for smooth, secure resistance while descending stairs and ramps. When this is set properly for these activities, the resistance should be adequate for stumble recovery.

8. Stance Extension Damping

Start at 120. This adjustment is necessary for those amputees who walk with stance phase knee flexion. If they do not exhibit stance phase knee flexion during the gait cycle, this adjustment will not change their gait pattern and can be left at 120. If they do exhibit stance phase knee flexion during the gait cycle, this adjustment will be set to either 115 or 120 for most amputees. Stance Extension Damping will smooth the transition from a flexed knee at the end of loading response to a fully extended knee during terminal stance. After observing the amputees gait pattern changes can be made to this adjustment to ensure smooth extension of the knee at terminal stance.

9. 2nd Mode Adjustments

1. *Basic Flexion Damping* (Starting Position of the valve)

This adjustment sets the valve position when fully extended. At **20** the valve is wide open. At **120** the valve is fully shut.

2. *Increased Damping with Knee Angle* (Rate at which the valve Closes)

This adjustment tells the microprocessor how fast the valve should close based on the knee angle. At **zero** the valve does not change position from the starting position (*Basic Flexion Damping* value) as the knee is flexed. At one the valve closes very slowly as the knee is flexed. At **50** the valve closes very fast as the knee is flexed.

These two adjustments should be adjusted together to allow a certain degree of knee flexion until the knee locks in that position. If the amputee wishes to have minimal resistance (free swing) in 2nd mode, for example when riding a bicycle, set both values to a minimum (20 and 0). If the patient has this configuration for 2nd Mode, remind them to switch back to 1st Mode immediately after bike riding or to actively use the hip extensors when walking in 2nd Mode. If the amputee wishes the knee to be locked in full extension for 2nd Mode, set *Basic Flexion Damping* at maximum (120).

Document All Adjustment Values

10. Dataoverview

The Dataoverview allows settings to be saved to the computer or printed. The settings can also be moved over from the computer to a C-Leg. The “Amputee Fitting Protocol” in the C-Leg manual can be used to document more information (length of pylon, etc.).

This Abridged Version is meant as a quick overview. Please read the Instruction Manual completely to fully understand all C-LEG functions and adjustments.

Further information on training a patient to utilize the C-Leg can be found on Quick Guide #3 C-Leg Patient Training Overview