

# Custom Measuring System



Life Without Limitations®

## IMPORTANT HELPFUL HINTS TO OBTAIN BEST FIT:

- Be precise when reading and recording all measurements. Double-check your numbers as you proceed and be careful not to transpose numbers when recording. Record all measurements to the nearest tenth such as 12.6.
- Patient should have shoes removed for measurement procedure.
- The medial side of the knee should be snug against the medial pad first before the lateral pad is moved in to adjust the width of the brace.
- Patient should remain still with foot dorsiflexed throughout the measurement and recording process.

Note: This system will not be accurate if the patient has excessive flexion contracture. The leg must be able to extend enough so that the back of the knee rests on the block. No space between the block and the leg should be present. Do not put any type of padding on the device between the block and the back of the leg. If enough extension cannot be achieved, measurements of the uninvolved leg are necessary for order processing; a cast mold can be used in place of measurements.

## INSTRUCTIONS FOR USE:

- 1) Begin by assembling the measurement tool as shown. The foot stand should be inserted so that the tool stands flat without rocking. Horizontal "Tibial Measurement" should slide smoothly on the vertical "A-P Measurement" bar.
- 2) With patient weight bearing, mark the following landmarks on the leg:
  - a. Medial joint space
  - b. Draw a line down the tibial crest of the lower leg. Begin this line just below the tibial tuberosity and continue it down the leg approximately eight inches.
  - c. Take a caliper measurement at the joint space. Enter measurement on data form on line #23. Caliper measurement should be taken snug against patient's skin.
- 3) Loosen the three black knobs located on the medial and lateral uprights. This will enable the lateral upright to move freely on the track and both condylar pads to slide up and down within their slots.
- 4) With shoes removed, have the patient in a sitting position with the knee between the two condyle pads and the back of the knee resting on the long horizontal block. The leg must be able to extend enough so that there is no space between the back of the knee and the horizontal block. Place the foot of the leg to be measured at the proper labeled end of the board.
- 5) Place leg in the fitting device so that the medial side of the knee is flush against the stationary condylar pad so that the medial joint space is centered approximately between the slot and the distal end of the medial upright. This position may vary slightly from patient to patient. The pad should comfortably cup the femoral condyle. The exact location of the pad should be determined by the technician.
- 6) Close the distance between the two condylar pads by sliding the lateral condylar pad toward the knee. Adjust the lateral pad so that it sits midline on the leg. Back away from the patient to check the depth of the pad by looking at the placement at leg level. Secure position of the lateral pad by tightening the knob, making sure indicator reads the same number on both the distal and proximal sides of the upright.
- 7) Adjust the medial condylar pad to the same reading as on the lateral pad and secure. Again, make sure numbers read the same on each end of the block.
- 8) Finalize the ML width by sliding the lateral pad tightly to the knee. Tighten to patient's individual comfort level. It is good to get patient feedback on the feel of the ML width, as this will be the actual width of the patient's knee brace.

**Note: The zero line on the board does not have to be parallel to the leg. The board can be twisted beneath the leg to achieve even pressure distribution against the condyle pads. Once the proper placement is achieved, continue to plot medial and lateral measurements. No AP measurements are necessary from medial side of the leg.**

SEE REVERSE SIDE FOR FUTURE INSTRUCTIONS

**Please note that while completing this step it is important that the medial side of the knee is snug against the medial pad first and that the knee is not rotated.**

- 9) Read the number on the board at the inside of the lateral upright and record this number on the measurement form in "1-Hinge Width". Caliper measurement should be 1.6 – 2.0 cm less than hinge width.
- 10) Read the number at the indicator mark on the top edge of the lateral upright. Record this number on the measurement form in "2-Hinge Depth".
- 11) At this point, have the patient dorsiflex their foot and remain still throughout the measurement recording process.
- 12) Begin reading measurement points at the upper lateral thigh.
- 13) Place the tool on the top measurement line, referred to as Level A on the measurement form. Bring the tool towards the thigh until the point at which it just touches the skin. Do not press the tool into the skin. Read the number on the board where the tool and board intersect. Record measurement on line no.3 (contour) of the measurement form.

**Note: If excessive adipose tissue (fleshy) is present, some compression is advised (approximately 5mm-10mm depending on the leg.)**

- 14) To obtain the A-P measurement, slide the horizontal bar of the tool down until it just touches the anterior portion of the thigh. Again, be sure not to press the tool into the skin. Read the number on the vertical portion of the tool at the point of intersection with the horizontal bar. Record measurement on line no.4 (AP) of the measurement form.
- 15) Continue down the leg to the next measurement level, referred to as level B on the measurement form. Repeat the above procedure to obtain the contour and A-P measurements for the lower quadriceps level. Record these numbers in 5 & 6 on the measurement form.
- 16) Next, take the lateral contour and A-P measurement for the upper tibia (Level C). One additional measurement is required at this position – this will be the tibial measurement. After you have adjusted the tool for the contour and A-P measurements, read the number on the horizontal bar at the point of intersection with the line on the tibial crest. Record all 3 measurements in the appropriate spaces on the measurement form (numbers 7-9).
- 17) Continuing down the leg, place the tool on the bold black line without numbers. This is level D; the mid-tibial value is acquired by taking only the tibial measurement at this level. Adjust the tool as you have for the contour and AP measurements but read only the number on the horizontal bar at the point where it intersects the line you have made on the tibia and record it in #10 on the measurement form.
- 18) Take the lateral contour, AP, and tibial measurements at the lower tibia level; Level E. Record these measurements in the appropriate place on the measurement form (numbers 11-13).
- 19) Move the tool to the medial side of the leg. The medial contour measurement is taken by placing the tool on the line at each level and reading the number on the board at the point of intersection with the tool. Take this medial contour measurement at levels A, B, C, & E and record these measurements in lines 14 through 17 on the measurement form. Please note that with larger legs this measurement may lie on the negative side of the vertical line. Please read numbers carefully and record negative values if necessary, such as -0.3 or -1.4.
- 20) The patient may now relax from the contracted position. With a soft measurement tape take circumferences in centimeters at each of the four main measurement levels (A, B, C, & E) as well as the distal border of patella (this is taken just distal to the end of the condylar pads, from the back of the knee and across the patellar tendon). Record the centimeter measurements in 18-22 on the measurement form.
- 21) Any special conditions should be noted on the measurement form, such as varus or valgus, atrophy or edema, rounded tibial member (RTM), prominent vastus medialis, prominent tibialis anterior, prominent vastus medialis or any other unusual prominence (i.e. Fib head, Osgood Schlautter).
- 22) Submit completed form to Ossur via e-mail or fax.

**Note: Errors in reading the numbers could lead to a rejected measurement or an inaccurate fit. To prevent these errors from occurring, please double check your readings as you proceed through the measurement process.**