

Casting Instructions for Townsend Custom Braces

For the best patient outcomes, please follow these casting instructions. Each cast is individually filled, and the positive model of the patient's leg is hand modified. Any variation to this casting protocol may compromise the fit and/or function of your patient's brace.

1. **Cast in a seated position, non-weight bearing with the patient's leg in full extension (if possible, with no more than 10-15 degrees of flexion) and dorsiflex the foot. Make sure the quadricep muscle group is relaxed.** This provides normal bony alignment and prevents rotational misalignment of the knee. This protocol tightens the gastrocnemius muscle group for improved cast definition, defines the pretibial group for stance phase control, and prevents pretibial muscle group fatigue. Relaxing the quadricep muscles prevents anterior tibial translation with ACL deficient patients.

2. **Apply stockinette and measure 10 inches above and below knee center. Mark the stockinette to ensure you roll the cast to this length.** (If it is not possible to get 9-10 inches above knee center, the CAST must exceed the length of the shells you are ordering). DO NOT USE WEB ROLL OR ANY TYPE OF PADDING INSIDE THE CAST.

3. **Place a cutting strip or tubing down the posterior aspect of the leg, under the stockinette.** This prevents distortion of the cast mold within the brace trim lines when you cut and remove the cast from the patient's leg.

4. **Mark all landmarks with indelible pencil (see illustration below).** Mark other significant features, or bone/screw protrusions that need to be considered during the fabrication process.

5. **Cast length should be at least 18 inches for ACL braces, and 20 inches for OA braces (9-10" above & below knee center).** Casts that are too short compromise our ability to achieve an optimum fit. Because of the total shell-to-skin contact of our braces, any cast that we have to lengthen creates the potential for unnecessary problems related to fit and control.

6. **Plaster cast helps ensure the best outcome.** We recommend the use of elastic plaster for the first wrap as it captures the contour of the limb. An additional three layers of standard rigid plaster should follow to ensure adequate strength. If you use synthetic casting material, the cast should be wrapped at least two layers thick.

7. **(FOR OA CASTS, SEE INSTRUCTIONS IN BOX, ABOVE RIGHT). PLEASE DO NOT APPLY CORRECTION TO THE PATIENT'S LEG DURING CASTING.**

If you apply any correction, PLEASE NOTE THIS IN THE SPECIAL INSTRUCTIONS ON THE CUSTOM OA ORDER FORM.

8. **Lightly compress the M-L dimensions of the patient's leg.** This prevents excessive clearance between the leg and hinge.

9. **Cut cast down posterior aspect of the leg.** Cut the cast off along the tubing/cutting strip on the posterior aspect of the leg. Anterior, medial or lateral cutting of the cast will interfere with the brace trim lines and could compromise the fit of the brace.

10. **Write the patient's name and your office phone number on the cast.** In the event the order form gets separated from the cast, we will be able to contact you for instructions.

11. **On the custom order form, please note any observations you have about abnormal characteristics of the patient's leg and/or lower body alignment.** This information is helpful to our staff orthotists.

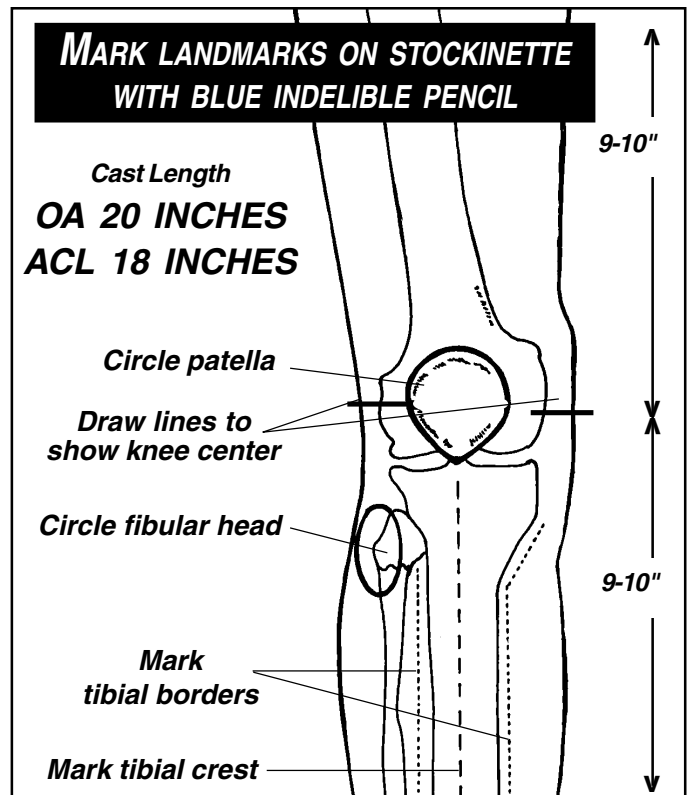
12. **Please let the cast dry adequately to avoid distortion during shipping.** If the cast is not completely dry when you box for shipping, we recommend that you fill the cast with newspaper.

OA BRACES

**TAKE CAST
NON-WEIGHT
BEARING, AND
PLEASE DO
NOT APPLY
CORRECTION
TO THE LEG!**



Our protocol calls for a non-weight bearing cast. If the cast is taken in this position, the alignment is generally normal, and the affected compartment is open. If you cast the patient weight-bearing, the compartment may narrow or close. Working from a non-weight bearing cast, with the compartment open, we create the brace to maintain this position when the patient is weight-bearing. We compensate for soft tissue and create a base level of correction during cast modification and hinge alignment. Because our OA braces are adjustable, you can easily increase correction as necessary when fitting the brace.



Casting Instructions for Townsend Design KAFO

For optimum patient outcomes, please follow these casting instructions.

Each cast is individually filled, and the positive model is hand modified by a Townsend Design orthotist. Accordingly, any variation to this casting protocol may compromise the fit and/or effectiveness of your patient's orthosis.

- 1. Apply stockinette from the groin to the foot.** The cast length must exceed the length of the thigh shell you are ordering. If we need to extend the length of the cast, the fit of the brace may be compromised, depending on our accuracy extrapolating the proximal thigh shape. Be sure the stockinette is wide enough for the thigh to avoid a "sausaging" of the leg. If need be, use a separate piece of larger stockinette for the thigh only.
- 2. Place a piece of latex tubing under the stockinette.** Insert a cutting tube beneath the stockinette. This should follow a line down the anterolateral aspect of the leg, beginning at the proximal thigh and extending onto the dorsum of the foot. Be certain the tube does not go directly over the tibial crest or the fibular head.
- 3. Outline bony landmarks.** On the stockinette, use an indelible blue pencil to outline any applicable bony prominences. These may include the tibial crest, fibular head, knee center, patella, ankle, met heads, etc.
- 4. Take a weight bearing cast and apply posting.** The foot and ankle complex, at least, must be casted under weight bearing conditions so that the foot spreads adequately, and the subtalar joint assumes its proper weight bearing attitude. If a heel or forefoot post is desired, the leg must be casted with the appropriate post attached to the cast. This procedure will ensure that the orthosis is made with the correct subtalar angulation and proper foot width.
- 5. Use SYNTHETIC CASTING MATERIAL ONLY.** The cast should be wrapped at least three layers thick. Two to three rolls of 5 inch wide synthetic casting tape should be sufficient for most legs.
- 6. Mark the cast for removal.** Mark along the length of the surgical tube, and make hash marks at two inch intervals along the tube. This will enable us to match the cut edges when sealing the cast.
- 7. Cut the cast along the tube.** Using a cast cutter, cut the cast along the cutting tube. Using bandage scissors, cut the stockinette along this same line.
- 8. Remove the cast.** Spread the cast and remove it from the patient's limb. Try not to distort the cast too much. Remove the stockinette from inside the cast, and tape or staple the cast closed.
- 9. Write the patient's name and your office phone number on the cast.** Be certain to include this basic information on the cast itself. This way, if the order form gets separated from the cast, or lost entirely, we will be able to contact you for fabrication instructions.
- 10. Complete the KAFO order form.** In addition to providing all measurements and information requested on the order form, please note any observations you have about abnormal characteristics of the patient's leg and/or lower body alignment. This information will help our staff orthotists customize the fabrication process to ensure the brace fits and functions properly.

Casting Protocol for AFO Braces

Follow the same basic instructions as indicated above. Make sure the weight-bearing cast exceeds the requested length of the brace, and that any required posting is accomplished at the time of casting. Use SYNTHETIC CASTING MATERIAL ONLY.