

Mallet Finger Orthotic Fabrication Using Manosplint® Thermoplastic
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Fabricating an orthosis to address a mallet finger injury can be very challenging – even though this is the smallest orthosis we are called upon to make! There are a few factors that make this diagnosis a challenge – most importantly the orthosis is required to be worn 24/7 for 6-8 weeks. What we create needs to be comfortable, low profile and free from any pressure areas. Ideally choosing a design that covers the most surface area is going to provide the patient with the most comfortable fit since the pressure distribution is maximized. Therefore, a circumferential DIP immobilization orthosis (FO; L3933) is the best choice. The orthosis needs to be adjusted easily to address any edema or pressure areas. Material selection is key: thin, perforated and easy to apply: Manosplint® Ohio 1/16" 11% perforation is the perfect material to meet this challenge – applied around the digit circumferentially using a 'pinch and trim' technique.

- 1) Heat the material fully and dry off completely (this is key to get material to temporarily seal together), wrap material around the digit – applying just distal to the PIP joint and pinch together to create a seam on one side. Be sure to plan enough material to provide a long area of pressure relief dorsally, ending proximally at the PIP joint.
- 2) While material is still warm, carefully use scissors to trim thermoplastic close to digit while gently tugging material away from the patient's skin – this causes the edges to seal – this must be done when material is warm to create the optimal fit. The elastic nature of this material will allow it to shrink back to create the required intimate fit. (Practice this technique on yourself so you get comfortable with the process!)
- 3) Position the DIP in desired degree of hyperextension being careful not to apply excess pressure over the dorsal DIP joint.
- 4) Once material has cooled completely, remove orthosis from the patient and cut out volar portion to allow for unimpeded PIP flexion – keep dorsal segment long. Heat edges slightly to smooth.



The seam can be made permanent by removing material coating using a solvent or scraping with sandpaper/emery board and utilizing a heat gun to briefly heat the region followed by manually pressing the edges together. If there are edema concerns, the seam can remain opened to allow patient to vary the pressure of application. The patient should be issued either elasticized wrap (Coban, Coflex) or adhesive tape (Hypafix, therapeutic tape) to be worn at all times to prevent the orthosis from falling off. The patient can be educated on wearing this in the shower, carefully doffing to dry finger/check skin and donning appropriately using tape or wrap. Patient education is the key to a successful intervention with this challenging diagnosis – especially regarding skin precautions and necessity of full-time orthosis use.