**Original Contribution**

# The Cast Stand with a Twist

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Immobilizing lower extremity injuries with fiberglass tape (FT) with the ankle in a fixed and functional ambulation position of 90˚ can often be difficult. Using a cast stand can assist the Orthopaedic Technician (OT) to maintain position of the talo-tibia joint at 90˚. Application of a lower extremity cast (LEC) can be applied tabletop with the leg down or supine position. Maintaining the foot position, molding, and laminating the FT can be overwhelming even for the novice OT when critical molding and position of 90 degrees is indicated by the physician. The use of a cast stand can assist in maintaining the foot and ankle position and allow the OT to mold and laminate the cast with more precision and technique.

When a LEC is not in a 90 degree position, it is uncomfortable and painful for the patient to properly ambulate. When the foot is plantar flexed, the knee can hyperextend, which can cause knee pain and cause discomfort when ambulating as well as cause breakdown of the FT around the metatarsal heads. Also, the proximal anterior portion of the cast can drive into the tibia causing unwanted pressure on the tibial crest. The use of a cast stand for the application of a LEC can also prevent unwanted anterior ridges around the ankle joint. Ridges are formed when the foot is in a plantar flexed position then suddenly dorsal flexed into the 90 degree position if not smoothed out. Formation of ridges from FT can cause unequal pressure within the cast and possibly form pressure sores on the anterior portion of the ankle area in the compromised patient.

There are various types of cast stands ranging from $75.00 to $500.00. Example 1 is the traditional cast stand that is a one dimensional device and serves its purpose. The Turnstile Casting Stand (TCS) (Ex.2) from Innovative Medical Products (IMP) offers a multi dimensional approach to the cast stand. Throughout my years of cast applications, I have come to appreciate the ease in which the TCS allows me to apply a LEC. The features of the TCS allow me to complete the cast from start to finish. The keel on the primary foot plate helps prevent a tight application around the metatarsal heads assuring a comfortable fit of the distal portion of the cast. Apply stockinette then insert primary foot plate between the stockinette and the plantar portion of the foot, roll cast padding and primary roll of FT in normal application protocol (Ex.3A-B). When the LEC is ready to be removed from the primary foot plate, rotate the TSC to the secondary foot plate with the built in arch mold and position the cast on the secondary foot plate (Ex.4A-B). Once on the secondary foot plate, the LEC can be molded and laminated (Ex.5). The plantar arch mold can be rotated easily for right and left LEC applications. Once the cast is set, the OT can complete the cast as needed in the 90 degree position (Ex.6).

Poor application of the LEC can be uncomfortable as well as a potential problem to the patient and extreme caution must always be given when applying a circumferential cast. Position and function of the cast can be the factor for proper healing of the fracture as well as patient comfort for ambulation. For OTs new to the field, a cast stand can save time, materials and assure the proper position of the LEC when indicated. With spiraling healthcare prices and the cost of casting materials, application of a cast increases everyday with little reimbursement to the provider. Using the TCS gives the OT more control when applying a LEC, helps prevent recasting due to poor initial application, and offers OTs a device to make a LEC correctly on the first application.

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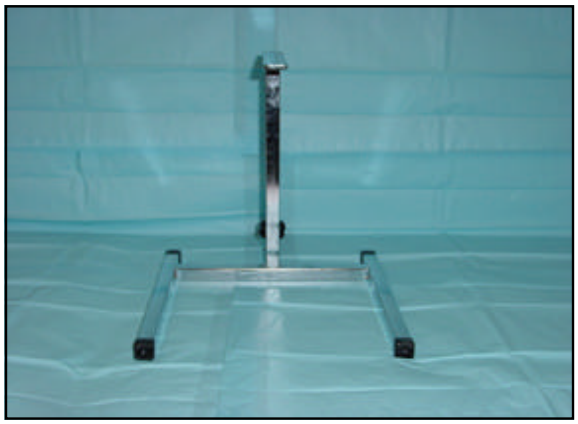

**Example 1**

**Example 2**

**Example 3A**

**Example 3B**

**Example 4A**

**Example 4B**

**Example 5**


**Example 6**

***ABOUT THE AUTHOR***

***Jack Hart, OTC, is Vice President of the National Association of Orthopaedic Technologists (NAOT) and President of the Association of Orthopaedic Technologists California (AOTC). Jack is a dedicated member of the orthopaedic community. He is an accomplished author, whose orthopaedic articles have been published in the Foot and Ankle International Journal, Postgraduate Medicine Journal, and the Journal of the NAOT. Hart regularly contributes to the association newsletter NAOT News and is the editor of the AOTC newsletter as well. Jack resides in Huntington Beach, CA with his family and would like to thank his longtime employer, Michael B. Strauss, M.D., FACS, AAOS for his education, support, and guidance.***

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