

This description can be imported into the patient medical record and used for documenting medical necessity and supporting the selection of appropriate billing codes.

The Richie Brace® is a custom fabricated ankle-foot orthosis. This ankle-foot orthosis is designed to control inversion, eversion, dorsiflexion, plantarflexion, and horizontal rotation motions of the ankle foot complex. The primary construction of this ankle foot orthosis utilizes a rigid plastic foot plate connected with hinge joint mechanisms to two rigid plastic limb uprights. The structural components of this ankle foot orthosis contacts the calf, lower leg, and foot to provide control. The foot plate of the orthosis extends to the metatarsal heads and the limb support segments terminate well above the axis of the ankle joint. The two limb supports of the ankle-foot orthosis are fastened with adjustable straps around the lower leg, above the axis of the ankle joint. This ankle-foot orthosis is constructed of thermoplastic polypropylene or composite type materials based upon prescriber prescription.

The fabrication process for the Richie Brace® includes the following steps:

1. A negative cast is created from the individual patient's anatomy which includes the foot, the ankle and the distal portion of the lower extremity using either Plaster of Paris or fiberglass material.
Alternatively, a digital model of the same individual patient anatomy can be obtained with an optical 3-D scanner.
2. A positive digital model of the individual patient's anatomy is created by scanning the negative cast or by using the 3-D scanner image taken by the provider physician. Using specialized computer aided design software, the positive digital model is rectified or modified to provide the proper fit and support of the ankle-foot orthosis. A solid positive model for the individual patient is then carved with a router or milling machine based upon the rectified digital patient model using CAD-CAM technology.
3. The primary structure of the ankle-foot orthosis is then thermal molded over the solid positive patient model. The material used to thermal form the primary structure of the ankle foot-orthosis is either rigid thermoplastic polymer or rigid composite material based upon the prescriber's prescription.
4. The rigid molded structure of the ankle-foot orthosis is then trimmed, beveled on a grinder and polished.
5. Soft interface padding and top cover material is then glued to the rigid molded structure and subsequently trimmed and beveled.
6. Strap closures are then applied to the lower limb upright segments of the custom ankle-foot orthosis.
7. Additional forefoot and rearfoot posting, padding, relief accommodations and cut-outs are then applied according to the prescriber's criteria.