The Hoffman apparatus and other external transfraction devices can be used for fixation of difficult fractures in which treatment has been rendered difficult from the beginning by adverse circumstances. The multiple pins or bone screws are compressed by tightening the clamps on the connecting rods, thus creating a double frame fixation around the fracture site. This apparatus maintains good reduction, fixation, and compression of the fracture and allows free movement of adjacent joints. Since this device is commonly used with severe, comminuted fractures of the lower leg, there is frequently extensive soft tissue damage to the leg as well. Nerve or muscle damage may result in the patient’s inability to actively dorsiflex the foot and may hinder early mobilization and ambulation efforts. This splint was designed to attach directly onto the rigid frame and provide passive dorsiflexion positioning of the foot. At the same time, it allows the patient to actively plantar flex for range of motion exercise and maintenance of muscle tone.

The splint is comprised of a strip of thin-grade Theraband attached to an Orthoplast footpiece. The footpiece should measure approximately two-thirds the length of the distal aspect of the foot with the width extended approximately one half inch (1.3 cm) wider than the foot on both sides. A foam padding in the footpiece is suggested for comfort. The length of the Theraband is determined by the amount of tension needed to bring the foot into a neutral position, yet loose enough to allow active plantar flexion of the foot. A length from 18 to 25 inches (45 cm to 62.5 cm) is usually sufficient for an adult leg. The pull should be placed below the metatarsal heads. The Theraband is attached to the footpiece through a loop of Orthoplast bonded to the footpiece and should move freely through this loop to allow for adjustments to prevent pull into inversion or evasion. The Theraband is tied to a large D-ring on both ends; and the splint attaches directly onto the pin fixation apparatus by the D-rings with no discomfort to the patient. The patient then has the ability to actively use the plantar flexor muscles, yet he or she is returned passively to neutral dorsiflexion. The splint also assists the patient in ambulation by keeping the foot from touching the ground during nonweight-bearing crutch walking.

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