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TREFOIL ALIGNMENT ADAPTOR FOR THE VACUUM-FORMED BELOW-KNEE SOCKET

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Vacuum-forming techniques have been employed widely in orthotics during the past five years or so, and recently have been applied successfully to the fabrication of ultralight prostheses that consist essentially of an all-polypropylene composition (1).

Since May of 1976, a method of fabrication has been employed at the VAPC which permits inclusion of an alignment device in a below-knee prosthesis that uses a vacuum-

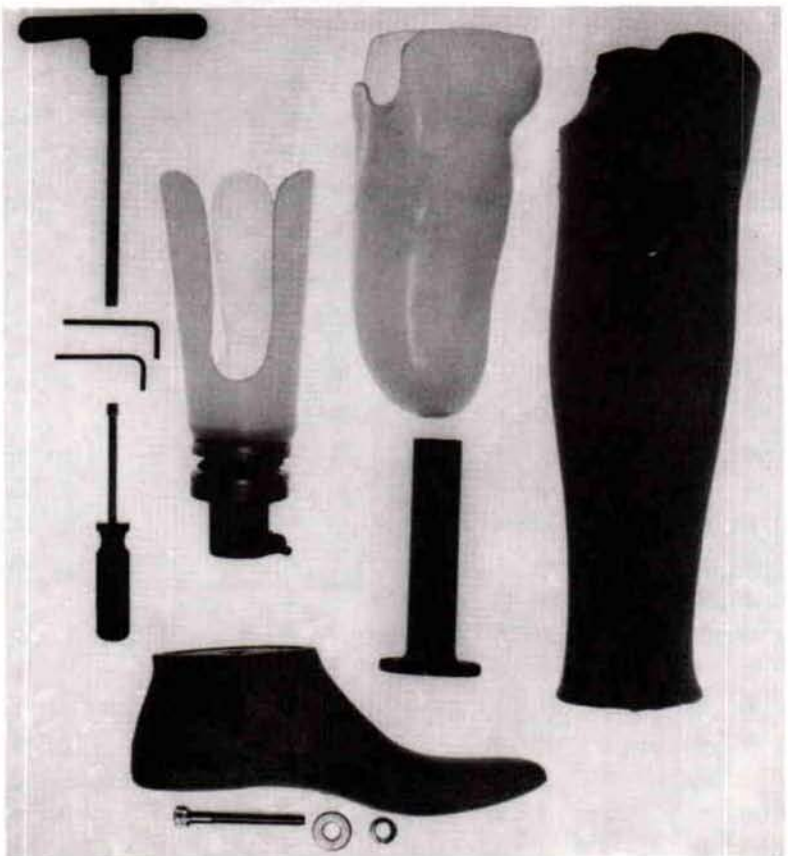

Fig. 1. Components of an adjustable, modular below-knee prosthesis using a polypropylene socket.

formed socket. The essential element in this technique is a trefoil (tulip-shaped) polypropylene adaptor used with a VAPC adjustable shank. The components are illustrated in Figure 1. Up to this time the method described below has been successfully employed for seven patients.

Fabrication Technique

1. A polypropylene socket is vacuum formed over a modified cast. Three-eights of an inch thick polypropylene is used for below-knee stumps up to five inches in length; one-half inch thickness is used for longer stumps.

2. The proper size (small, medium, or large) of a prefabricated trefoil (tulip) polypropylene adaptor is selected.

3. After the trim lines on the socket are identified and the socket is trimmed, it is held in a position of static alignment in the adaptor with tape. Major adjustments can be made in the adaptor and the adjustable shank can be used for minor corrections. When the alignment desired is achieved the socket is welded to the adaptor, the alignment device being retained in the prosthesis. The entire prosthesis is then formed, shaped, provided with a cosmetic cover, and delivered. If subsequent alignment changes should be necessary they can be made readily after removal of the cosmetic cover for access to the alignment device.

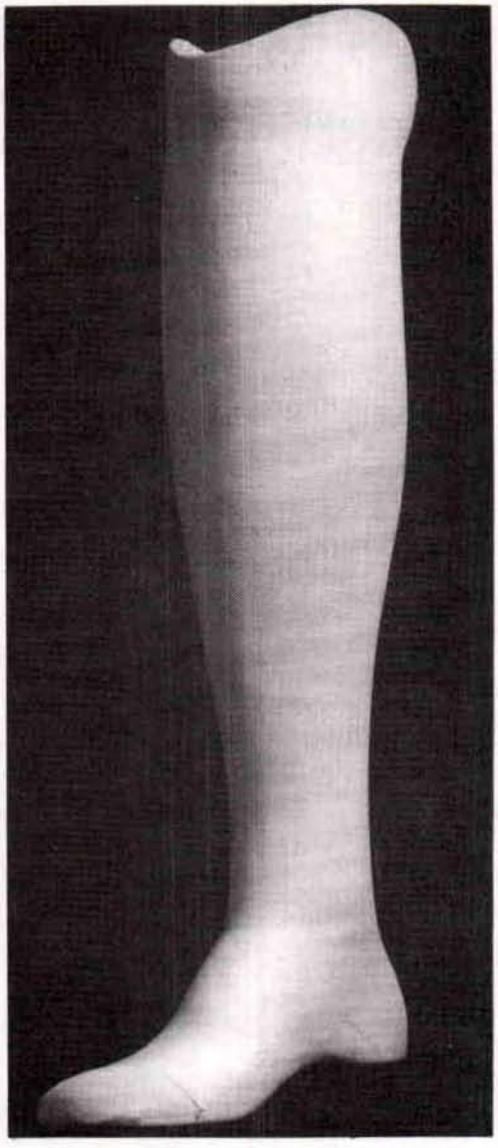

Fig. 2. The finished prosthesis.

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Reference

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Footnotes

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