Technical Manual

# Air Lite® Monolithic Prosthesis

USTOM
ARBON
OMPOSITE
REATIONS

FORESEE Orthopedic Products Division ®

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This technical manual is designed to be used as a guideline. The fabrication process for the **Airlite Monolithic Prosthesis** is intended to be quick and easy. You may find that the first few Airlite prostheses you fabricate may be challenging, but hang in there and each step will only get easier and easier.

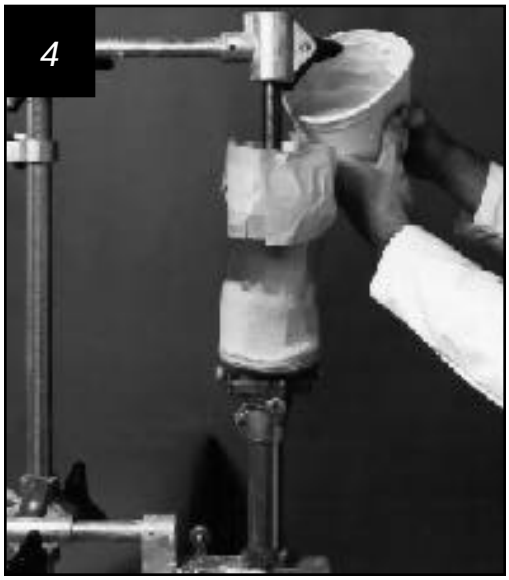
Your clients will benefit from this lightweight, durable and strong endoskeletal prosthesis. If you have any questions regarding the fabrication process, please contact our customer service at **1-800-462-4733** or (209) 845-2930 (7:00-5:00 PST) and they will be happy to assist you.


**1.** Arrive at a comfortable check socket for the patient using traditional fitting techniques.


**2.** Fabricate a liner and socket and attach to alignment unit.

Note: This socket is made from check socket material and will not become part of the finished prosthesis.


**3.** Walk patient making any necessary adjustments for fit and alignment.




**4.** Place aligned prosthesis into vertical fabrication jig. Remove liner fom socket and begin to pour plaster into socket to lock alignment into place.

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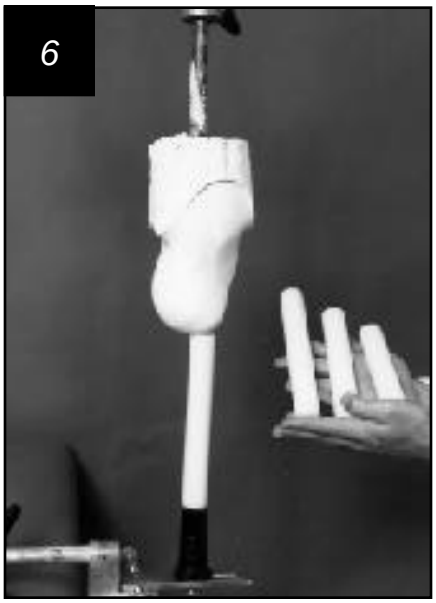
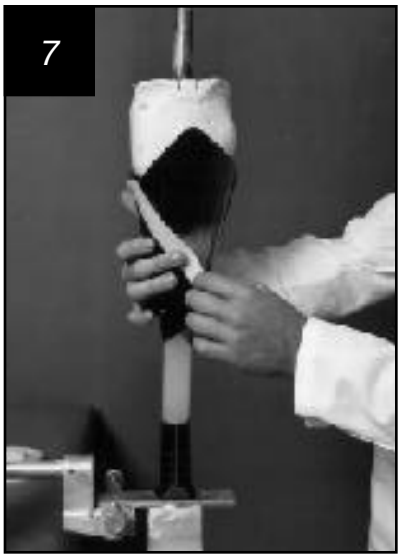
**5.** When plaster has hardened remove the prosthesis from the fabrication jig and cut the socket off of the cast and place back into the fabrication jig.




**6.** Place an Airlite ankle block on the foot plate of the fabrication jig. Now select the proper length tooling to span the gap between the ankle block and the bottom of the cast. If you find that the tooling is slipping from the bottom of the cast, place a small piece of hooked velcro at the end of the tooling to allow for more stability while blending the plaster into the cast.




**7.** Wrap X-ray paper around the tooling and the cast in a funnel shape. Make sure it is tight around the bottom of the tooling. Secure with tape.


**8.** Pour plaster into the X-ray paper and allow it to harden.


**9.** Remove X-ray paper and blend the plaster into the cast and tooling.


**10.** Remove from fabrication jig and set-up on lamination fixture. Place a foam pad over the bottom of the ankle block to prevent resin from seeping into the ankle block. Pull a PVA bag over the part so the end of the bag is on the pylon about one inch above where the plaster starts on the tooling. Next, place a piece of electrical tape at the junction of the tooling rod and PVA bag and another at the junction of the ankle block and tooling rod to prevent the ankle block from rotating. If you desire - mark the rotational position of the ankle block with a grease pen and remove the ankle block to facilitate pulling your inner PVA bag. Stretch PVA bag to conform to tooling in cast and a heat gun can be used to shrink bag and prevent wrinkling. Then place bag under 25 inches of vacuum.


**11.** Wrap the Dacron felt around the cast so that it covers 3/4 of the cast. Additional pieces of Dacron can be placed over the boney prominents to allow room to grind if needed.


**12.** Place a piece of the Foresee braided carbon sleeve over the entire length of the part and stretch it to conform around the cast and pylon. Tie the braided carbon sleeve off above the ankle block and pull the sleeve tightly to make sure it conforms tightly to cast and tooling. If necessary, make two short anterior and posterior cuts on the bottom of the braided carbon sleeve to allow it to slip completely over the cast.


**13.** Pull some Nyglass over the part until the Nyglass is 2 inches over the 2 inch braided carbon sleeve. Next, tie some thread around the Nyglass midway up the taper between the cast and tooling. The Nyglass is then folded back on itself forming two layers over the socket.


**14.** Pull a length of two inch braided carbon sleeve over the pylon portion of the prosthesis. Pull another layer of the Foresee braided carbon sleeve over the part.

Note: For a lighter prosthesis for patients under 150 lbs. with a low activity level bring the second layer of carbon fiber sleeve half way up the cast and trim as opposed to covering the whole cast. Now add a layer of carbon fiber cloth around the proximal portion of the cast.


**15.** Pull a length of finish nylon stockinette over the entire length of the part to include the socket, tooling, and ankle block. A second layer is pulled over the part and then tied back on itself in the same manner as the Nyglass. We now have three layers of stockinette over the socket and one layer over the tooling and ankle block.


**16.** A second PVA bag is pulled over the entire part. Care must be taken to make sure that the bag is tight around the tooling. This can be accomplished by first pulling the bag as far down the cast as possible and then stretching the bag in a longitudinal direction. A heat gun can then be used to shrink the bag to conform tightly around the tooling. It is very important that all wrinkles are completely removed from the part before laminating.


**17.** If there is not enough PVA bag left to form a sufficient reservoir for your resin, a 3 inch long piece of plastic pipe can be placed in the end of the PVA bag and securely taped. Another length of PVA bag can be secured on the other end of the pipe and serve as the reservoir for your resin. Resin is then introduced into the PVA bag and strung throughout the entire length of the part to ensure complete saturation.


**18.** When the resin has cured the socket is trimmed out and the plaster is broken out of it. The excess material is ground at the bottom of the ankle block to expose the foam pad which is removed. The lamination can then be trimmed away from the ankle block so it is flush with the bottom surface. Note: Be very careful not to grind on the bottom of the Airlite ankle block.


**19.** A small diameter rod can then be inserted through the foot bolt hole and used to drive the tooling out of the top of the prosthesis.


**20.** A plastazote or other foam cover can now be pulled over the prosthesis and shaped down to the proper circumferences. The foot is now attached and shaped properly. The final step is to add the suspension system and the prosthesis is ready to be delivered.

## NOTES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