

ARTech Laboratory

Recommended Ear Casting Procedure

When casting for an ear prosthesis, make sure that the patient is relaxed and understands the procedure in advance. Use the following procedure for the affected and the sound side impressions. Be sure to take photographs before casting.

Instructions are on the color chart background.

1. With the patient sitting upright, take close-up photos of both sides from a direct side view. For orientation purposes, make sure that the camera is level. Take front view photos of the left and right sides independently. Also, take back view photos of the left and right sides. Take more photos at various angles and distances with the photo background held adjacent to the ear.
2. Have the patient lie on either side, on an inclining table at about 45 degrees, with the head on a pillow which makes him/her comfortable.
3. Use hair pins to hold back any long hair as far away from the ears as possible. If there is much hair around the ear and/or a beard, also use thin plastic sheeting (like Saran Wrap) over the area. Spread a thin coat of Vaseline on the facial tissue around the ear. It is not necessary to put Vaseline on the ear unless there are areas with injured or dry tissue. Cut a hole in the sheet of plastic a little larger than the base of the ear and slip it over the ear, covering the hair and/or beard. Smooth out any wrinkles over the skin. The plastic should stick to the Vaseline and allow you to remove most wrinkles. It is important to have a good impression of a 3" to 4" diameter area around the ear for correct orientation.
4. Using scissors, cut about 1/4 section off a standard collapsible foam ear plug. Roll that section of the plug between your fingers to collapse it as much as possible and use tweezers to place into the ear canal. Be sure that the plug is well below the opening of the ear canal after it expands, but still visible for easy removal. A small cotton ball soaked with Vaseline is an adequate substitute for the ear plug.
5. Place old towels or large paper towels, etc. around the patient's shoulders, clothing or anything else you want to keep clean. Sometimes this is a messy job!

6. Take a 36" section of 4" extra-fast setting plaster casting bandage and double it longitudinally, making a doubled 2' wide section. While still dry, form an overlapping ring about 5' in diameter, which is now about 4-6 layers thick. Usually, one person can handle this procedure, but it may help to have an extra hand. Using your hands to hold it separated, dip the ring in cool or warm water depending on your setting time preference. Squeeze out the excess water and immediately place the ring around the patient's ear centering the ear in the ring. Using your fingers, hold up the sides of the ring so that the walls are as high as possible on the low side and somewhat pressed down on the high side so the top of the ring is more level. Make sure that the bottom of the ring conforms to the contours of the face or head as closely as possible. This keeps the alginate from running out. Allow the plaster bandage to fully cure in this shape and position. If the ring is still not level at the top, you may add a little extra plaster on the low side to raise it. You may use indelible pencil for alignment marks if you wish, in the event that you need to temporarily remove the ring before pouring the alginate.

7. It is advisable to use an alginate that sets in two minutes or less. Mix the alginate in a medium to thick consistency. It should be thick enough to pour slowly. (Don't take too much time mixing. A few lumps are OK.) Make sure the ring is in the proper position, then pour the alginate on the bottom side, allowing it to run over the skin surface to the top. As it comes up to the helix and lobe areas, fold them back for a moment to allow the alginate to fill the area behind them. Also, manipulate the antihelix and tragus areas to remove trapped air. Continue to slowly pour until the alginate completely fills the ring.

8. When you think the alginate is set, give it another minute, then begin slowly raising the bottom side first. As soon as possible, look under the impression to see that the lobe is not too extended. Take your time. It may take a couple of minutes. Tell the patient to let you know if the removal is causing any discomfort.

9. After removing the impression, immediately fill it with dental stone or a similar hard plaster with a minimum 9,000 psi compression resistance. The stone should be mixed medium to thick so that it is barely pour-able. Although optional, it is helpful to set up the impression on a base of fast set plaster to make it level and provide a rigid backing for the alginate. It is also helpful to apply Vaseline or

other separator to the exposed plaster bandage to prevent the stone from bonding to it.

10. When pouring, first rinse the impression with water and thoroughly shake it out. While gently tapping the base on the work surface, spatulate small amounts of stone into one area only and allow it to run into the other areas of the impression. Continue to spatulate into one area until the stone covers the whole surface of the impression including the facial area. Build up the facial area until you have a base about ½" to ¾" thick. This may be easier if you first build up the ring with more plaster bandage or clay.

11. Allow the stone to completely harden, then immediately remove it by first cutting away the plaster bandage with your normal instrument. Use a dull knife to gently cut away the alginate to expose the stone models. Be very careful when you get close to the model. If you have a few bumps or air bubbles, just leave them. It's normal.

12. Please mark true/absolute North, 0 degree axis on the impressions of both the sound and affected models.

13. Carefully pack the models for shipment. Do not seal them in a plastic bag. The stone must continue to dry.