Retubing Guidelines

Retubing a custom-fit earpiece can sometimes present more challenges than expected. By using the tools and techniques described in this section, removing old tubing and installing new tubing can be made a little easier. Always keep notes on fittings earpiece styles acoustic modifications, venting, tubing size, tubing angles, and earpiece materials used in the patients records. These files will be beneficial when a they return to have their earpieces retubedyou will be able to remove old tubing and install new tubing on your patients' earpieces.

Removing Old Tubes

There are two quick and easy ways to remove old tubing from earpieces.

If you have a microwave available in your office, bring a small glass container filled with water to a rolling boil. While the water is still actively boiling, drop the earpiece you wish to re-tube into the container. Once the water is cool enough to take the earpiece out, remove it from the still warm water and use a small pair of needle nose pliers to remove the old tube. A sharp tug should be all that is required to pull the tubing free from the earpiece. (Fig. 1)

The second way to remove tubing from an earpiece is to use a Westone hand reamer (Westone part #30451). Cut the tubing flush with the outside surface of the earpiece, insert the hand reamer and rotate in a clockwise direction. The drilling action will remove the old tubing from inside the sound bore. After you have removed the old earpiece tubing with either method, inspect the sound bore for any remaining debris. Any debris left in the sound bore can have an effect on the high-frequency response or completely block sound transmission. (Fig. 2)

Fig. 1

Fig. 2

***Please Note:** Never use powered drill bits or cutting burrs when trying to remove old tubing from an earpiece. Use of powered tools can quickly alter the inside diameter of the sound bore and render the earpiece unusable.*

Tube-Through

Use a small amount of the appropriate cement on a pipe cleaner to clean the sound bore along the entire length (thin cement for acrylic earpieces, vinyl cement for vinyl earpieces).

From the canal tip, insert a tube puller into the earpiece (monofilament for acrylic earpieces, wire for soft earpiece materials). Place the quilled end of the tube through the loop of the tube puller and pull through the earpiece. (Fig. 1)

When the tube is all the way through, adjust the tube by hand until you have it at the proper angle. (Fig. 2)

When the tube is all the way through, adjust the tube by hand until you have it at the proper angle. Pull the tubing away from one side of the sound bore and apply a small amount of cement. Capillary action will cause the cement to flow around the entire tube. (Fig. 3)

When the glue is dry, cut the tube flush with the end of the canal. You are now ready to refit the instrument. (Fig. 4)

Fig. 1

Fig. 2

Fig. 3

Fig. 4

Keeping Tubing High and Dry

In areas of high humidity, water droplets can form inside the tubing in BTE fittings. When enough of these droplets form, they may bridge the tubing walls and effectively occlude the sound channel. To your client, it might sound like the instrument is cutting out Venting the earpiece (if possible) and using a Dry-Tube will help eliminate the problem.

Half-Tubing

After cleaning the sound bore, hold the new tube against the earpiece canal and gauge approximately where you want the tube to end in the sound bore. Clip the tubing straight across. Note: It is very important that the tubing be cut at 90 degrees to the tube sidewall. (Fig. 1)

Fig. 1

Pour a small amount of tubing cement (thin cement for acrylic earpieces, vinyl cement for vinyl earpieces) into a small cup or bowl.

Note: The following steps must be performed quickly. Familiarize yourself with all of the steps before you begin:

Fig. 2

Dip the end of the tube into the cement. Tap the tube against the sides of your cement container until only a small amount of cement remains in the tube end. (Fig. 2)

Place the tube over the sound bore. Pinch the tube and quickly insert it into the sound bore. Pinching the tube causes the cement inside the tube to coat the wall of the sound bore, acting as a lubricant during tube insertion and then securing the tube when it dries. (Fig. 3)

Fig. 3

Make sure the tube is at the proper angle and allowed to dry. The earpiece is now ready to be refitted to the hearing instrument.

Tube-Locks & TRS Tubes

Cut the old tube flush with the outside of the earpiece. Insert a tube-lock tool into the base of the earpiece and push the remaining tube and tube-lock or TRS tube out of the earpiece through the canal tip. Make sure the sound bore is free of obstructions. (Fig. 1)

Fig. 1

Insert a wire tube puller into the sound bore from the canal end. (Fig. 2)

Thread the quilled end of the tube-lock or TRS tube through the tube puller and then pull the tube into the earpiece. (Fig. 3)

Fig. 2

Pull the quilled end of the tube and gently work the tube-lock or TRS sleeve into place in the earpiece. (Fig. 4)

Continue manipulating the earpiece and tube until the tube-lock or TRS is approximately 3 mm below the outside surface of the earpiece. Once the tube is in the proper position, trim the excess tube from the canal end and refit the instrument. (Fig. 5)

Fig. 3

Fig. 4

Fig. 5

Retubing Guidelines

Retubing an earpiece fit with a Slim-Tube requires modifications to the tubing provided by the hearing instrument manufacturer. Please refer to Slim-Tube Modification Chart.

Removing Slim-Tubes

Remove the old tube by pulling it free of the earpiece with a firm tug. Keep this tube handy as a reference when preparing the new tube for the earpiece. (Fig. 1)

Fig. 1

The first step is to remove most of the "retention tail" from the tubing. All three styles of Slim-Tubes require that about 1 to 2 mm of the "retention tail" be left on the tubing. The small stub that remains from trimming the "retention tail" is used to create friction inside the sound bore of the earpiece and help hold the tube in place. You must also remove the retention threads from the end of the slim tube. Refer to the old tube or the Slim–Tube Modification Chart as a guide for these modifications. (Fig. 2)

Fig. 2

Re-Tubing Slim-Tubes

Next, insert the modified Slim Tube into the earpiece to verify that the tube fitting is as close as possible to its final position. Reposition if needed. (Fig. 1)

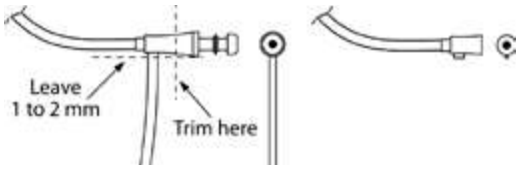
Fig. 1

Once the tube is in position, fit the earpiece and hearing instrument to your patient and visually check to see if any final adjustments need to be made.

Slim-Tube Modification Chart

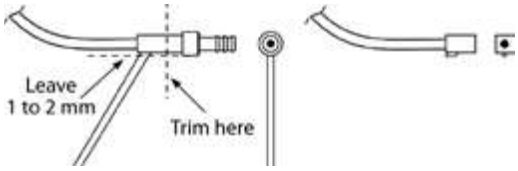
Slim-Tube/Standard	Slim-Tube/Modified

Slim-Tube Style "A"



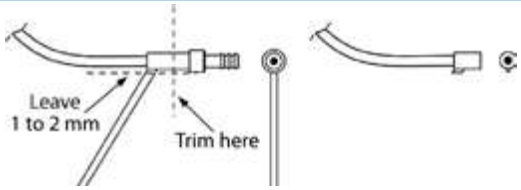
Slim-Tube Style "B"

Slim-Tube Style "C"



Slim-Tube Style Phonak CROS

Slim-Tube Oticon miniFIT Corda 2*



Slim-Tube Style "Oticon Corda miniFIT*

Oticon Corda miniFIT does not require modification.

***Please Note:** Adjust sound bore diameter to fit.*