

## Article

July 2006

### Closing a Hearing Aid

Have you ever seen a hearing aid fall apart? When I worked as a hearing aid tech we used to get aids in occasionally that had come apart at the seam, and all they needed was to be put back together again, or closed. Of course thousands of instruments are opened every day that need repair and they all need to be closed, so we are going to discuss how to effectively close a hearing aid.

Now, we are talking about how to close a hearing aid where no major parts have been replaced, such as the receiver. That's a whole different class, which we will discuss in an upcoming issue. Also, we are going to close these hearing aids using UV curable adhesive and patching material, which in my opinion is the most effective method.

So, lets assume you have a hearing aid in your hand that is in two pieces. All you need to do is slap it back together with some glue, right? Not exactly. While the unit is apart, it is a great time to evaluate all functions to make sure it is working properly. That way if it needs repair you already have the hood open.

So now you've evaluated the unit, everything has been repaired and it's time to put the unit together. Before you go any further, put the two pieces together and hold between your thumb and index finger. How does the seam look where the two pieces come together? Inspect the unit all the way around and make sure there are no wires or components in the seam. Sometimes when a unit is opened, a piece of shell will break off and cause a gap when the unit is closed. Don't worry about any gaps, we'll take care of them later.

Now you're ready to close the instrument. Install a battery in the unit and turn it on. Listen to the unit with a stethoscope designed for hearing aid evaluation. This is your last chance to catch any problems before closing. If the instrument has a volume control, turn it up to full volume and listen for any feedback. Feedback is the physical relationship between the mic and receiver, so if you hear whistling try repositioning the shell. Its usually OK if the shell ends up overlapping the faceplate just a little to get rid of feedback. We can make up for that later during buffing. As a last resort, try carefully moving the receiver a little with tweezers. If you can't get rid of the feedback, re-tubing the receiver may be necessary, which we'll discuss in a later issue. One more note on feedback. Many modern hearing aid circuits amplify more in quiet environments, which makes the instrument more prone to feedback in quiet areas. You should listen to the unit in a quiet setting before closing to make sure feedback is not a problem for your customer later.

Now we're ready for UV adhesive, such as Fotofix. Hold the hearing aid loosely between your thumb and index finger and apply UV adhesive to the seam using the supplied brush. If you do this correctly, the adhesive will run into the seam around the full circumference of the hearing aid. When you're satisfied adhesive has migrated around the entire seam, squeeze the hearing aid together and introduce the unit to an UV light source. Time taken for this step will vary depending on the type of light source you use. Generally, spot cure guns like the SpotCure-H are very fast, just a few seconds. Florescent units such as the Dual-Lite, take a little longer, but can be more convenient because you can leave them unattended. Generally in less than a minute it is safe to say the seam is cured.

At this point the seam may look a little rough so it may need to be buffed which will smooth out the roughness and make the unit nice and shiny. We'll talk more about buffing in a later issue. If there are gaps in the seam, now is the time to take care of those. Simply apply some shell or patch material, such as Fotoplast S/IO, to fill the gap and present to the UV light source. You should use the same color material as the shell, especially if the gap is large. Generally, patch or shell material will take a little longer to cure than adhesive because it is a thicker material. Also, UV shell material will leave a sticky residue when cured which can be wiped off with some alcohol. Once you are satisfied the seam has cured and has no gaps, the unit can be buffed and you're done.

Next time we'll take a closer look at buffing the hearing aid.

**About the Author**

Chris Perkins is the owner of Lightning Enterprises, and facilitates the Lightning Enterprises newsletter. He has worked in the hearing aid industry since 1991 in hearing aid manufacturing and product development, as well as equipment and process consulting.