UFI Baercom Lead Repair Information

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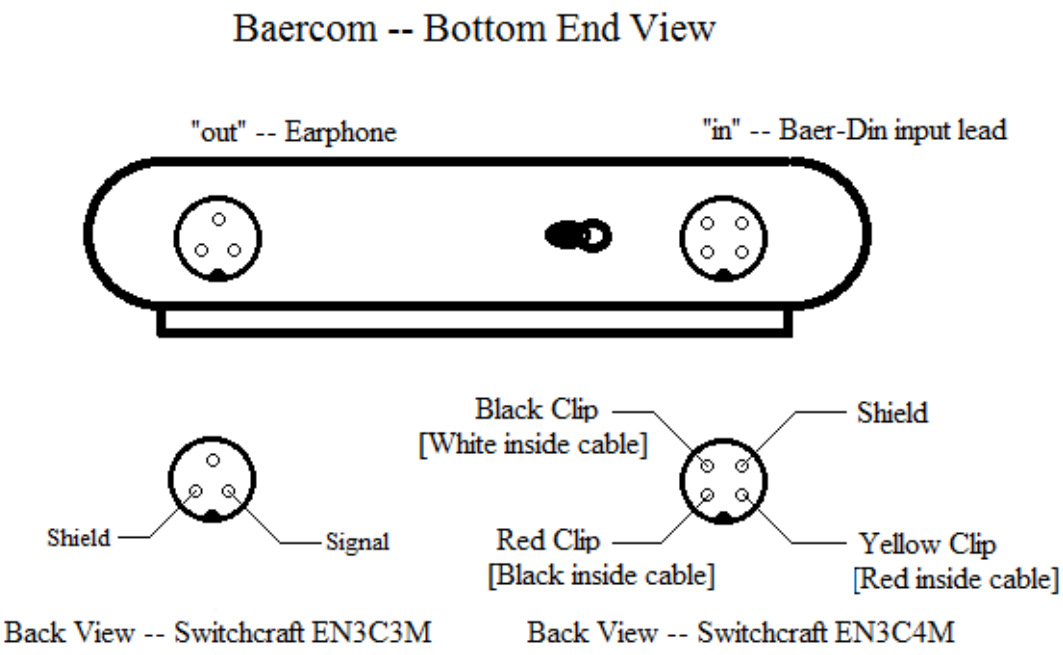
DO NOT leave the Baer-Din (Gray input lead) and Earphone connected to the Baercom between uses!!! This will put way too much strain on the cable to connector interface and can result in noise issues and premature lead failure!

We recommend carefully reading this through before attempting the repair.

Overview

With a growing number of international customers, we realize that returning the Baercom leads, especially the Baer-Din, to our USA office for repair may not result in the most timely repair time-frame, especially since test windows for puppies won't wait on the repair process. In our experience, where the lead wires go into the black plug -- this area is subject to the most stress, and so will be the most prone to physically induced failure. For years, we have been back-filling this joint with industrial epoxy for this reason. Still, the plugs we use should be readily available to most international locations, and the actual re-wiring can be easily performed with some care, a soldering device, and a minimum of hand-tools. A local tech shop should be able to easily handle this repair.

The plugs used are from the Switchcraft EN3 family. A 4 pin Male plug (EN3C4M) is used for the Baer-Din. (A 3 pin Male plug , EN3C3M is used for the Earphone.) The directions that follow focus on the Baer-Din, but the Earphone is similar. With a new 4 pin connector in hand, the repair process should go something like this. First, cut the existing EN3 connector off, about 3" from the black connector body. You then need to strip the exposed lead end (of the long cable). First, strip the outer insulation approximately 1/2" back. (A razor blade usually works best for this.) Leave the shield intact however. Next, twist the fine shield wires together, since it will become one of the connections you need to make. On the three remaining (inner) leads, strip them back maybe 1/8" and tin with solder. Next, carefully slide the two strain relief components over the cable end, making sure they are oriented in the correct direction! Now you are ready to solder these 4 leads to the EN3 connector, which is the most crucial step. The wires need to go to the correct pin! Note the picture below.



Use the wiring information in the above picture to connect (solder) the 3 colored wires and shield to the proper pin of the connector. Note especially the location of the alignment notch (down)! The lower right diagram shows the EN3C4M connector for the Baer-Din from the back, the way you will see it as you solder the wires on. Note that two colors are shown for each pin, which is admitedly confusing. The top colors are the 3 electrode reference colors used by the Baercom, Yellow, Red and Black. This allows you to check from the alligator clips or needles, through to the correct pin on the connector if you want. However, for soldering the cable wires on, use the colors in square brackets, since these colors match the colors of the three lead wires inside the gray cable, Red, Black and White. And no, they are not the same as the clip colors! Said another way, you should use the colors in square brackets to actually connect (solder) the 3 wires inside the gray cable to the back of the EN3 connector. You can then test "end to end" using the colors above them (no brackets). Don't forget to solder the twisted shield lead as well! (Note that leads earlier than 2013 used a different cable, so you will need to check how your Baer-Din is wired and match that.)

Once these 4 solder connections are made, you can actually use the Baer-Din like this, i.e. without adding the strain relief. If you are in a hurry, this will work fine. However, adding the strain relief will work to prevent pulling the wires and ripping the wire conductors off of the pins of the connector. Adding the strain relief might prove the hardest part of the whole process! The strain relief piece with the two tabs sticking out should slide into slots in the back of the EN3 connector body, and lock into place. Pliers should then be used to carefully compress the two tabs towards the gray cable to help lock the gray cable so it doesn't move or rotate. Once this step is done, you can do what we do, and add epoxy to the back of the cable clamp, between the gray cable and the black clamp material. The last piece is the cover, which should slide easily over the exposed end of the back of the EN3 connector. You should wait until the epoxy has set up before doing this however, Again, adding the strain relief is optional as far as actually using the Baer-Din is concerned, but your hard work and careful soldering will last longer with the strain relief and cover in place.

You can always order a new Baer-Din (as of this writing, $403 plus shipping to your location via UPS) to quickly get back up and running. You can also send back your Baer-Din to our office for repair, and we will do for you what we described above, then carefully test it. It wouldn't hurt to have a spare of this crucial component!

Questions or comments? mail@ufiservingscience.com