

## Small Electrode Attachment Pins

**Pins used for connecting electrodes to Neuralynx Electrode Interface Boards.**

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# 1 Document Overview

This document will describe the use and versatility of the Small Electrode Attachment Pins along with installation instructions.

## 2 Small Electrode Attachment Pins Overview

The Small Electrode Attachment Pins are used to connect electrode wires to Electrode Interface Board (EIB) holes. These pins have proven to provide a more reliable connection than that made by Cactus Needles when the electrode insulation is not removed from the top of the electrode wire. (Connection tests showed 100% versus 65%).

The Small Electrode Attachment Pins provide a convenient and reliable method of attaching electrode wires to the EIBs. These pins are gold plated and tapered from .008” (tip) to .016 “ (below the head). The small pins are designed to fit the .012” diameter holes in EIBs.

## 3 Glossary

**EIB** – An Electrode Interface Board (EIB) is the interface between experiment electrodes in a microdrive and the appropriate headstage.

**Small Electrode Attachment Pin** – Gold plated pin which provides a conductive connection between the EIB and an electrode.

### 3.1 Required Tools

The tools used to install the Small Electrode Attachment Pins are shown in Figure 4-1.



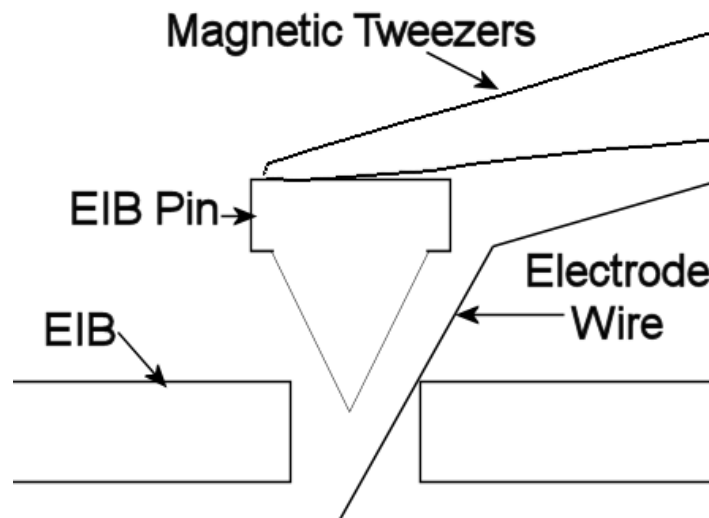
**Figure 3-1 Tools Needed**

The magnetic tweezers are used to place the pins in the EIB electrode holes and the pliers are used to force the pins to cinch into the EIB electrode holes.

### 3.2 Installation Procedure

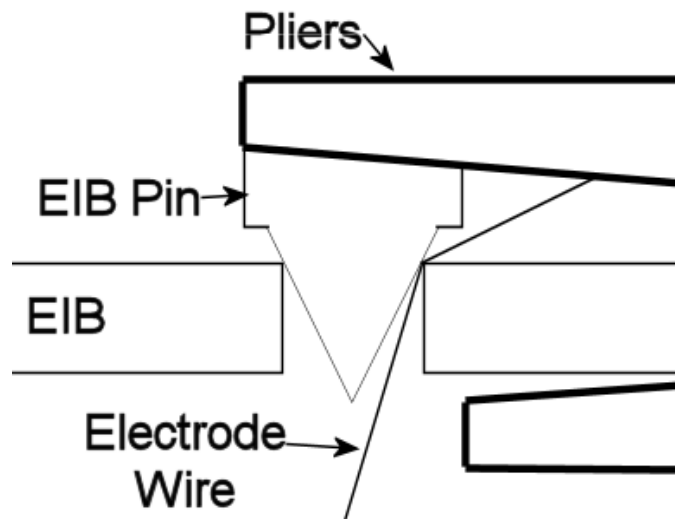
To install the Small Electrode Attachment Pins follow the procedure stated below.

1. Insert the Electrode Wire through the EIB electrode hole from the bottom of the EIB.
2. Pick up a Small Electrode Attachment Pin with the magnetic tweezers. You do not have to clasp the pin with the tweezers. Simply touch the pin with the tweezers and the pin should point straight down.
3. Using the magnetic tweezers place a pin in the EIB electrode hole as shown in Figure 4-2.



**Figure 3-2 Placing Pin into the EIB hole**

4. Lightly tap the pin into the hole with the tip of the magnetic tweezers.
5. Cinch the pin into the EIB Hole with the pliers as shown in Figure 4-3.



**Figure 3-3 Cinch Pin into the EIB hole**

This process secures the Small Electrode Attachment Pins into the EIB electrode holes. Please note that the pins may still be removed by pushing up from the bottom (tip) of the pin. Although under normal circumstances the pin is sufficiently retained with the above procedure, depending on the specific animal and/or experiment environment, users may permanently attach the pins to the EIB electrode wire holes. This is a simple process as described below in the “Optional Soldering Process” section.

To test the force required to remove a Small Electrode Attachment Pin, apply upward force on the tip of the pin with magnetic tweezers, hemostats, or pliers (invert and use the longer jaw to push the pin out from the bottom of the EIB). If there is a chance that the animal will knock a pin loose then the soldering process below should be used to permanently attach the pin.

### **3.3 Soldering Procedure**

To permanently secure the Small Electrode Attachment Pin to the EIB hole follow the same procedures stated in section 4.2. Once Step 5 has been completed touch a 400C (750°F) soldering iron to the top (head) of the pin for 5 seconds. The heat will cause the solder plating on the inside of the EIB electrode hole to melt and form a solder bond with the gold plating on the pin.

## **4 Additional Information**

If Small Electrode Attachment Pins and EIBs are not attached together with the soldering process spoken of in Section 3.3 they may be reused. This process does strain the EIB board and can cause it to fail if done more than twice.

Do not try to reuse Small Electrode Attachment Pins or EIB if the pins have been soldered in place.