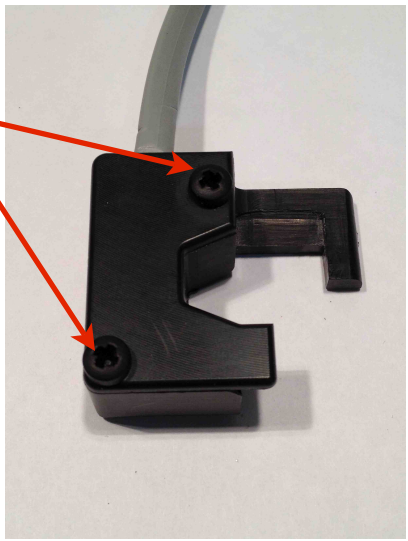
Replacing the Glass Micropipette on the GIX Microplotter Dispenser Cartridge

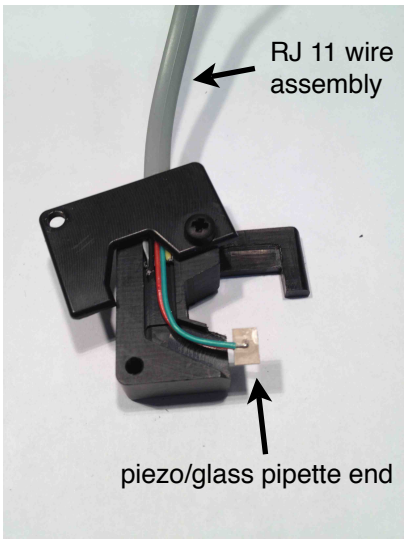
Tip: the process of scribing and breaking the wide end of the glass micropipette is made easy by using a scoring wafer such as the the Restek ceramic scoring wafer http://www.restek.com/catalog/view/61/20116 .

The glass micropipette on the dispenser can be replaced by the user. Open the dispenser cartridge assembly by loosening the two black plastic screws on the front of the dispenser assembly. You can now remove the dispenser cover.



You can remove the old glass micropipette by removing the RJ 11 wire assembly and dipping the piezo/glass pipette end of the RJ 11 wire in acetone until the glue holding the micropipette is dissolved. You can attach a new glass micropipette using a cyanoacrylate glue (we prefer the thin Duro brand). Use a thin, quick-drying glue and not the gel formulation in order to have the best transmission of ultrasonic vibrations to the glass.

Before you affix the glass micropipette you may find it helpful to shorten it from the wide end to get rid of some excess length.



Position the glass micropipette such that the tapered end (tip) does not extend more than 7 to 8 mm below the “bottom” of the piezo element. If you can position the top of the tapered cone about 1 to 3 mm below the bottom edge of the piezo element that should work well. Once the new micropipette is attached, and the glue has dried, scribe the wide end of the glass just above the top of the piezo element such that not more than 1 mm protrudes above the top.

There are several critical parts in the replacement process:

1) ensure when you glue the new capillary on, that it is aligned correctly with the long edge of the piezo element.
2) make sure you don't get glue on either face of the piezo.
3) be careful when scribing and breaking the wide end of the glass to prevent shards from entering the remaining capillary.
4) during this entire process, be very careful with the micropipettes. Even the slightest contact with their tip can shatter the glass.

If you are able to obtain a good calibration scan from the new assembly and it can perform the "find surface routine" then it is functioning correctly.