

VARIABILITY

Please gather the answers to the following 10 questions, and then contact Sutter Instrument Technical Support to provide these details. We usually need the answers to all the questions below to be able to assist you.

We find that problems with variability or burning out filaments are most often a result of poor parameter settings and/or bad alignment of the filament to the glass and air-jet. As a result, most problems can be resolved by improving the filament alignment and/or by adjusting the parameter settings. If the problem can not be resolved after going through the following check list and troubleshooting with Sutter Technical Support, and your puller is over 10 years old, it is a good idea to consider returning your puller to Sutter to have your P-87 or P-97 Micropipette Puller refurbished.

Please provide answers to the following questions:

- 1) **Trough or Box?** Which filament is installed in your puller? Please refer to pages 9-12 of the **Sutter Pipette Cookbook** http://www.sutter.com/contact/faqs/pipette_cookbook.pdf to see images of the box and trough filaments.
- 2) **Filament Width?** What is the width of the filament? Remove the Humidity Control Chamber to measure the filament in millimeters - use a ruler or a few pieces of glass as a reference.
- 3) **Ramp Test Value?** What is your ramp test value? Expected values and type are listed below:
240-300 = 3mm trough (over 300 indicates a poor shape)
300-360 = 3mm trough for a P-87 or a poorly shaped 3mm trough on a P-97
400-525 = 2.5mm box filament or a 4.5mm wide trough
525-650 = 3mm box filament
700-800 = 3mm box on a P-87 or a 4.5mm box on a P-97
800-900 = 4.5mm wide box on a P-87 or P-97
- 4) **OD & ID of Glass?** What is the Outer and Inner Dimension of the glass you are using?
This is very important!
- 5) **Who's Glass?** From what company is your glass purchased?
- 6) **Glass Composition?** Are you using **Borosilicate, Aluminosilicate, Leaded, or Quartz Glass?**
- 7) **Application?** What sort of experiment are you doing; patch, pronuclear inj., intracellular recording?
- 8) **Taper Length?** What do you think the ideal taper length should be in millimeters?
- 9) **Tip Size and/or Resistance?** What do you think the best tip size (μ) or resistance ($M\Omega$) should be?
- 10) **Serial # of Puller?** What is the **age or serial number of your puller?**

* If we cannot uncover the problem, you have the option to return the puller to Sutter to be Refurbished, with which all repairs are included. Please contact Sutter Instrument for a Quote.