

BURNING OUT FILAMENTS

A. If you have a **TROUGH** filament that is **BURNING OUT**, it is most likely that:

- 1) The trough filament is **poorly shaped** – open too wide at top, **ramp value is >300**
- 2) The **position of the glass** is incorrect – it is sitting too high in the filament
- 3) The **heat setting is too high** – heat is set >15 units over the ramp test value.
- 4) The **heat setting on line 2, 3, or 4 are too high** (which are not always visible)

B. If you have a **BOX** filament that is **BURNING OUT**, it is most likely that:

- 1) The **Heat** setting is **>35 units over the ramp test value**.
 - a. If the heat is 15 units over the ramp value, this is usually too high to be stable!
 - b. If the heat is 25 to 50 units over the ramp value, it is more likely to burn the filament.
- 2) You **“borrowed” the parameter settings**, and have not run a ramp test to establish a good and safe heat setting?
- 3) You are **trying to get a smaller tip** and have **increased the heat** far beyond the ramp test value.
- 4) The **heat settings on line 2, 3, or 4 are too high** (which are not always displayed).

For Either a Box or a Trough filament, do the following:

- 1) Please look at **Pages 9-12** in the **Sutter Pipette Cookbook** to confirm you have the filament you think you have. Make sure that the filament is shaped properly (if it is a trough) and installed properly (if it is a box or trough).

2) **Run a new Ramp Test**

- 3) **Compare this ramp test value with the “expected ramp test values” listed below** to make sure your Ramp Value seems correct for the type of filament you have.

Expected ramp test values for various filament sizes and shapes.

240-300 = 3mm trough

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 or over = 3mm box on a P-87 or a 4.5mm box on a P-97

800 or over = 4.5mm wide box on a P-97

- 4) Also compare this new ramp value with your present heat settings on all Program Lines. Make sure that none of the heat settings are too high (>15 units over the ramp test value). If your heat values are >15 units of the new ramp test value....go to Step 5.
- 5) **Install the new Ramp Test value or Ramp + 5 for your heat setting** (on all lines!)
- 6) Refer to the **Sutter Pipette Cookbook** to find a program that matches your glass & filament combination and your application. If the Table of Contents does not provide a Chapter for your application, please refer to the General Lookup Tables in the Index. Page 67 provides a description of the five program “Types” listed on each table. Choose a “Type A, B, C, D, or E” program and then find the table that is appropriate for your filament and glass combination. Install this program!
- 7) If you are still running into problems or need help adjusting the parameter settings, please do not hesitate to contact Sutter Technical Support at info@sutter.com or call 415-883-0128.