



Creating a Pipette with a Short Taper and a 25 μ to 35 μ Tip



Creating a pipette with a tip greater than 5 μ is difficult due to the cohesive factors of glass. As a result, many people will pull out their glass creating a long taper, and then use a microforge, diamond knife or ceramic tile to score the glass and break it in the desired location to create a large tip. In this fashion, you can create a 5mm to 10mm long taper and a 5 μ to 200 μ tip. A microforge works best to make tips between 5 μ - 15 μ , and a diamond knife or ceramic tile will work best to create tips between 20 μ to 200 μ . To make pipettes with a long taper (over 5 mm) and large tip, do not use the following approach and please refer to the technical file titled “20 μ to 200 μ tips & The Ceramic Tile”.

The following instructions will describe how to make a pipette on your puller with a short taper (3-4mm & cone shaped) and a 25 μ to 35 μ tip. Again, glass does not easily separate at such a large tip size, so you will see about a 75% yield in usable pipettes.

Puller = P-97 Glass = B150-86-10 Filament = FB330B, 3mm Box

Suggested Program Settings:

Line 1) Heat = Ramp Pull = 0 Vel = 8 to 15 Time = 250 Pressure = 500

GOAL = 8 to 9 loops (cycles)

This one line program will loop multiple times. The ideal number of loops to achieve a 25 μ tip is usually between 8 and 9 loops. To control the number of times the puller loops, increase or decrease the velocity setting in 1 to 2 unit increments to find the appropriate velocity setting. A decrease in the velocity setting will cause the puller to loop more times and result in larger tips. An increase in the velocity setting will cause the puller to loop fewer times and result in smaller tips.

As the jaws heat up, the tip might get smaller or you might see more variability. To reduce this variability, remove the humidity control chamber before pulling your pipettes. You might also consider taking a five minute break after pulling a set of ten pipettes or use compressed air to cool down the brass jaws. Remember, this type of program will give you about a 75% yield, so some variability is expected.

For additional assistance, please call Sutter Instrument Technical Support (415) 883-0128.

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