SUTTER INSTRUMENT®

TECH NOTES

Which P-2000 Model do I Need?

The P-2000 micropipette puller is available in two configurations depending on the starting outer diameter of the material to be drawn. These two configurations are not readily interconvertible by the user, so one should consider their needs carefully before deciding which instrument to purchase. The purpose of this tech note is to clarify the uses of each model to help customers choose the model which best suits their needs.

The P-2000/G is designed to clamp and work materials ≥ 0.6 mm in outer diameter. The optical design is best suited to working with capillaries with outer diameters of 1.2 mm or less. The instrument can be used with larger diameter capillaries (up to 1.5 mm quartz and 1.8 mm conventional glasses), but the performance is better with glass of outer diameter 1.2 mm or less. The P-2000/G cannot clamp glass with an OD < 0.6 mm, so cannot be used to work smaller materials.

The P-2000/F is designed to clamp and work materials ≤ 0.6 mm in outer diameter. Small diameter glass (outer diameter in the range of 0.125mm to 0.6mm) requires the special puller bars of the P-2000/F, as well as an optical alignment optimized for the smaller diameter material. As with larger diameter glass, a wide range of tip sizes and taper geometries can be produced with the P-2000/F and small diameter glass. The P-2000/F is commonly used to taper optical fibers and to fabricate nano electrospray ionization emitters from fused silica capillary tubing. The puller bars of the P-2000/F are able to clamp larger diameter glass. However, the optical alignment of the P-2000/F is not optimized for use with large glass, so a single instrument cannot be used simultaneously for large and small diameter materials. With non-trivial adjustments to the optical path, a P-2000/F can be used for materials with OD ≥ 0.6 mm, but it cannot then be easily reconfigured to work smaller materials.

Sutter Instruments offers a conversion service in case an investigator already has a P-2000 and would like to change from a /G to a /F or vice versa. The unit must be returned to the factory for this service which usually takes 2-3 weeks plus shipping time. As of the writing of this tech note (March 2022) the cost of this service is $600.00 + shipping for a /F => /G conversion and $1600.00 + shipping for a /G => /F conversion. Additional charges may apply if other maintenance is necessary to ensure functionality of the puller.

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