

FIL18/19 UHV Bayard-Alpert Replacement Filaments

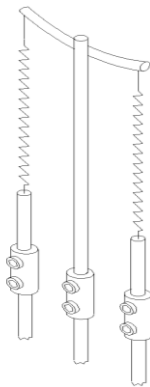
Replacement Filament Installation Instructions

USER MANUAL

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1. Gauge Filament Replacement

The filament assemblies are fixed to the gauge assembly by barrel connectors and Allen-headed set screws. An Allen key is provided with each replacement filament assembly. A pair of long-nosed pliers, side cutters, cleanroom gloves, cotton buds and some isopropyl alcohol are required.



Clean the jaws of the cutters and pliers with alcohol. Swab some alcohol onto the set screws to lubricate them. Support the feedthrough wire with the long-nosed pliers close to the barrel connector and loosen the screw holding the filament support. This is the screw furthest away from the feedthrough flange. Loosen the screws on all three supports and remove the old filament assembly. Cut away the temporary wire support from the new assembly. Fit the centre support of the new assembly into the barrel connector and tighten the screws. Hold each of the filament terminations in turn with the pliers and extend them down to the outer barrel connectors. If required shorten the terminations to ensure the filaments are under tension. Fix them in place with the set screws. Ensure that the centre support of the filament assembly is parallel to the gauge axis and approximately 3 mm from the side of the grid.

New gauge filaments must be operated carefully to achieve good results and long life. The filaments are under tension when new: run both filaments for a few seconds in emission to reduce and equalise the tension. Operate at low emission current in order to outgas them fully before increasing the emission current. Do not subject the gauge to electron-bombardment degas until it has run at the highest emission current available and the resultant pressure burst has fully subsided.

Ensure that the front face of the AIGLx ion gauge connector is kept clean, since effective insulation resistances of the order of 10^{16} ohms are required. Isopropyl alcohol or CFC on a clean lint-free swab may be used to remove fingerprints or dirt. These solvents do not affect the PEEK housing of the connector.