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25-120A Filament Housing Cleaning Procedure

The filament housing contains two micrometers that are used to position the filament for maximum beam current. The filament is mounted in a ceramic that is attached to a bellows, which is supported by an aluminum ring that slides against a plate. The ring and the plate are lubricated and when the lubrication dries out from baking, the ring becomes scored and the filament housing “sticks”. The following procedure explains how to disassemble the filament housing and repair this problem.

1. Vent the system. This removes all tension from the filament bellows.
2. Remove the two filament micrometers.
3. Remove the two spring housings.
CAUTION! The springs are very strong. Remove the top and bottom screws first and then “walk” out the spring with the two side screws.
4. Remove the top screws from the filament housing.
5. Remove the top of the filament housing.
6. Remove the micrometer levers. Note the positions for re-assembly.
7. Remove the screws that connect the aluminum ring to the ceramic.
8. Remove the lower filament housing Bristol screws.
9. Carefully lift up the lower filament housing.
10. Sand down the surfaces of the aluminum ring and plate.
11. Lubricate the aluminum ring and plate with C5A (copper based anti-seize lubricant).
12. Reassemble in reverse order.

