

RGA Operation with Filament Off

There are some situations where it is desirable to operate with the filament turned off, to detect ions which are created by some other means in a vacuum system. There is a very simple modification which can be made to do this. Please note that, while the filament will be off when this modification is made, the focus plate, anode grid and repeller grid voltages will still be on. To make this modification, proceed as follows:

- 1) Remove the top cover of the ECU (Electronic Control Unit).
- 2) In the schematics included in the manual, locate the schematic QMSE_B2. In the upper left corner of the schematic locate the EMIT SET point. On the top circuit board this point can be found at pin 10 of JP400.
- 3) Locate JP400. You can find pin 10 by counting from the end of the jumper which has one corner cut at an angle. Starting from this corner, the pins along the same side are numbered 1, 3, 5, etc. On the adjacent side, also starting from the end with the angled corner, the pins are 2, 4, 6, 8, 10, etc.
- 4) Cut the jumper wire at location 10 with a pair of fine wire cutters. This disconnects the filament supply.
- 5) After the jumper has been cut, the outside wire can be bent down slightly. To this outside wire attach the center connector of a SPDT switch. Use a suitable length of wire to each switch lead so you can mount the switch at some convenient location on the wall of the housing.
- 6) Attach one of the two throw positions of the switch to the other end of the cut jumper.
- 7) Locate pin 20 of the jumper. This is ground. Attach the other throw position of the switch to this jumper.
- 8) Locate a place on the housing wall between the two covers, drill some holes and mount your switch so it is easily accessed on the outside of the housing.
- 9) When you want to operate the RGA with the filament on, put the switch position to the side which connects the two jumper 10 leads together. When you want to operate the RGA with the filament turned off, put the switch to the ground position.
- 10) When operating the RGA through the RGA software, turn the filament on in either case. This will turn on the other necessary bias voltages, whether the filament is on or not.