

Installation Instructions

Electron Multiplier Model 14617 for use in Agilent Technologies (HP) 5973 GC-MS System

REMOVAL OF ORIGINAL MULTIPLIER & MOUNTING (K&M BRAND)

1. Follow normal procedures to release chamber vacuum (refer Agilent Technologies (HP) manual)
2. Remove cover from mass analyzer section of the mass spectrometer.
3. Disconnect all external cables leading to the hinged door of the vacuum chamber. The mass analyzer is mounted directly on the inside of the chamber door.
4. Open the chamber door and remove it from the chamber by lifting the door vertically out of its hinge assembly. NOTE It will be necessary to first remove a circlip from the bottom hinge pin of the door (if it has not been previously removed). The lower hinge pin passes through a brass bush as part of the door's support. It is important that this bush is left in position to ensure that proper alignment of the door is maintained when it is refit on the chamber.
5. Place door assembly on a clean bench with the internal assembly facing upward. It is good practice to cover the bench with new aluminium foil to provide a clean work area.
6. The originally installed multiplier has 4 electrical connections and is attached with 2 mounting screws. (See figure 1). While wearing clean gloves, carefully disconnect each of the electrical connections by hand. They each use push-on connectors and must be disconnected at the chamber door end of the leads.

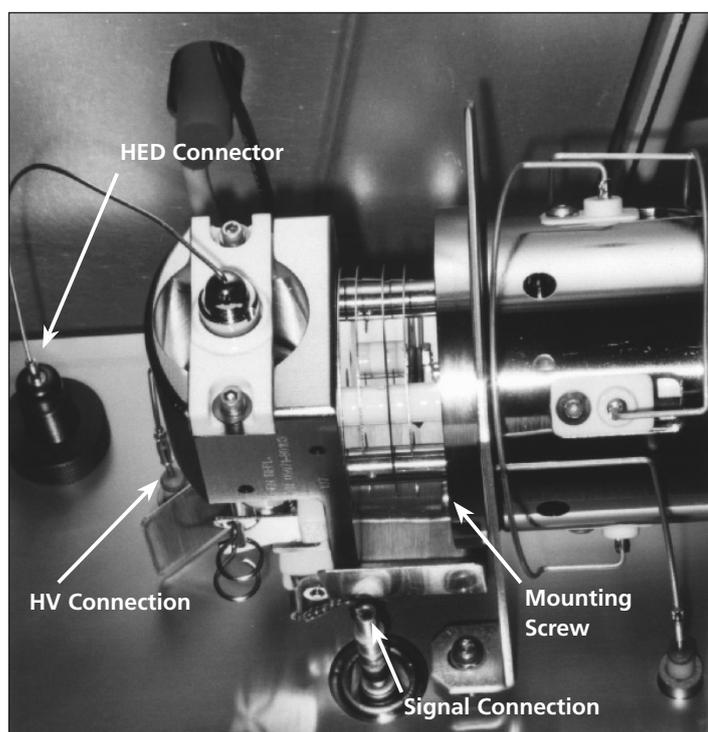


Figure 1: Disconnecting the originally installed multiplier.

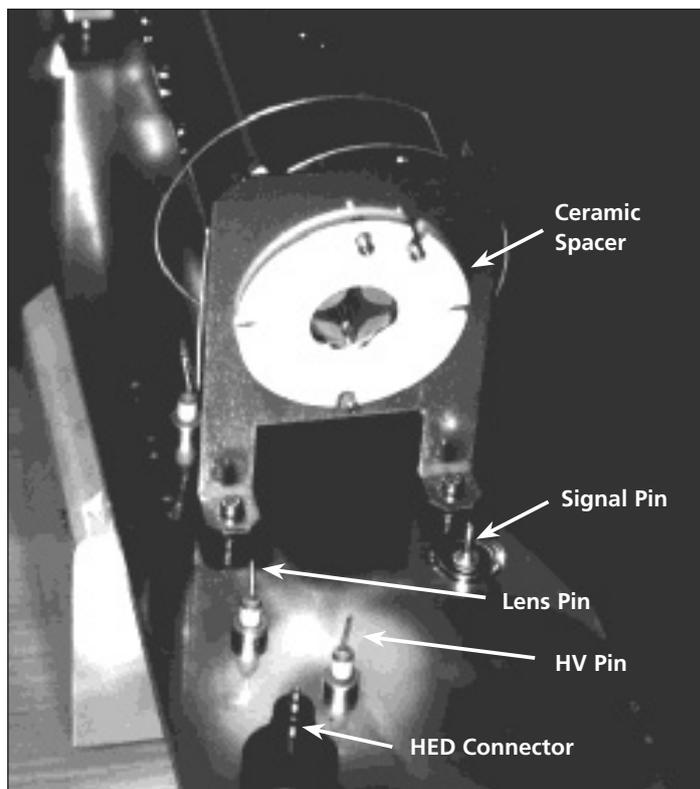


Figure 2: Chamber door with mass analyzer showing ceramic spacer and pin connections. Note: the multiplier has been removed

7. Remove the 2 mounting screws using a hex driver or allen key that has been cleaned in a suitable solvent (AR grade methanol would be suitable). A ceramic spacer plate is positioned behind the multiplier and also held in place with the mounting screws (See figure 2). Care must be taken to ensure that this fragile ceramic plate is not dropped while removing the multiplier mounting. Leave the ceramic plate in its original position as the multiplier mounting is removed.
8. The multiplier mounting assembly should be easily removed at this point. Remove the multiplier assembly from the mass analyzer and wrap it in new aluminium foil to keep it clean.

INSTALLATION OF THE ETP MODEL 14617 ELECTRON MULTIPLIER

9. Insert the ETP 14617 multiplier in the same position as used by the old multiplier assembly with the ceramic spacer positioned between the multiplier and mounting surface as before (See figure 3).
10. Alignment pins on the mass analyzer will ensure that the multiplier assembly is oriented correctly. Screw in the 2 ETP supplied mounting screws using the ETP supplied 2.5 mm hex ball driver that has been cleaned in a suitable solvent. Clean gloves should be worn while handling any components that are used within the mass analyzer chamber, such as the multiplier and mounting screws.

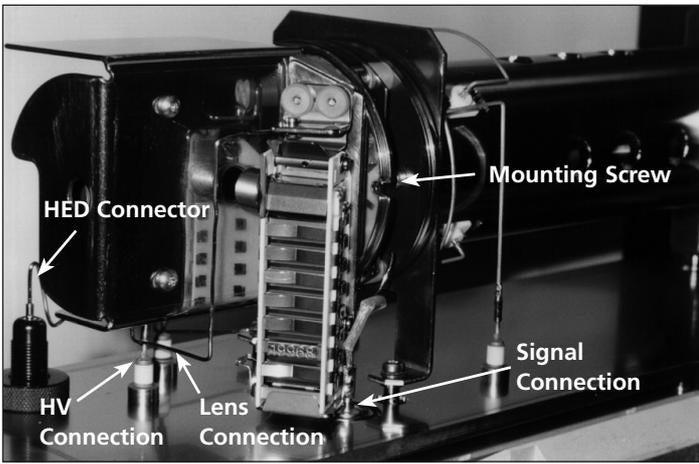
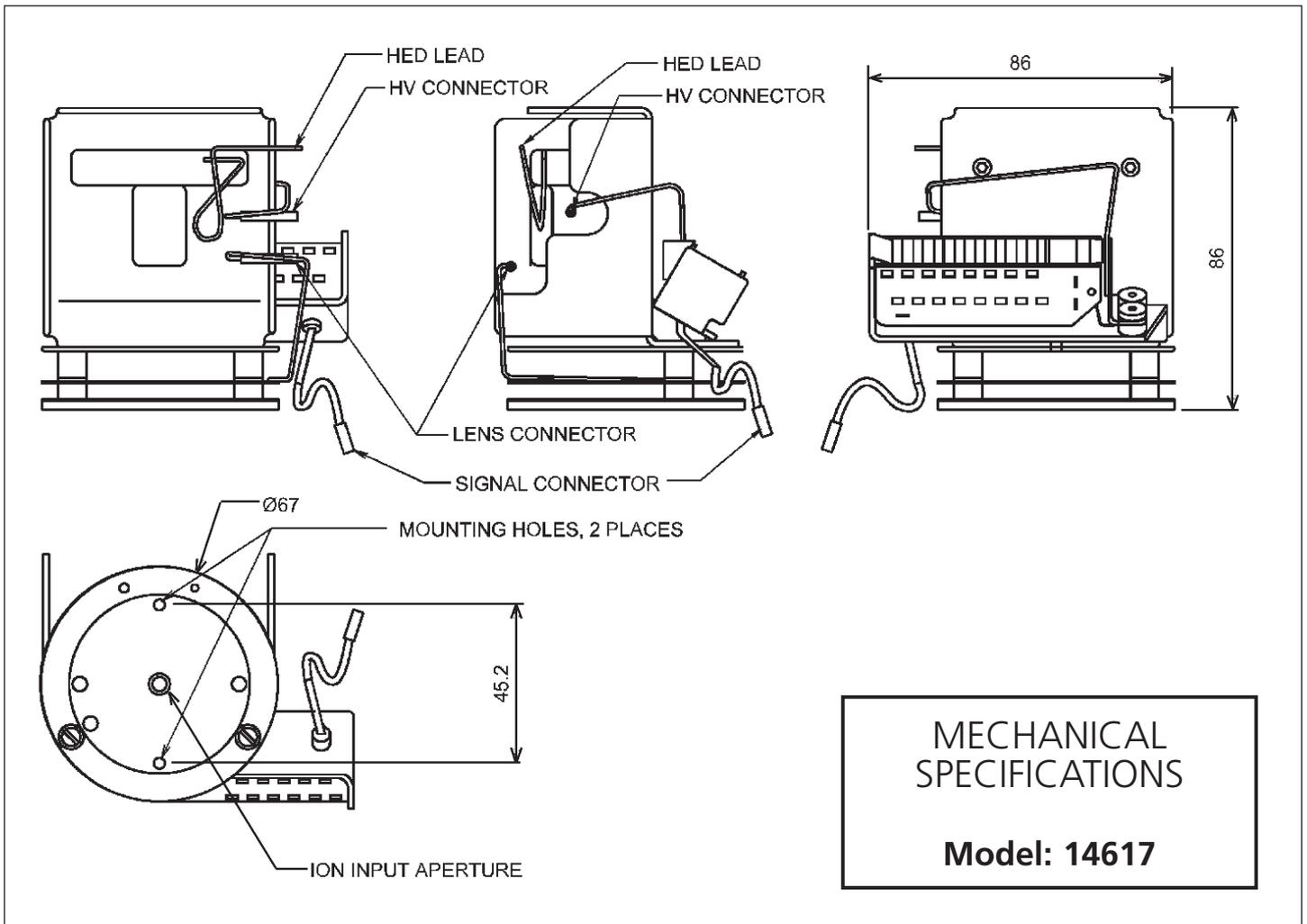


Figure 3: Completed installation of ETP model 14617 electron multiplier

11. Carefully connect the 4 electrical leads from the ETP multiplier mounting assembly to the chamber door by hand. All leads use push-on connectors. 3 of the leads are made from stiff wire and will be positioned in close proximity to their appropriate connection points in the chamber door. The other lead (signal lead) is a braid lead (see figure3). The mechanical specification drawing (included) also identifies the electrical leads to verify correct connection.
12. Replace the mass analyzer door assembly onto the chamber and close the door. Reconnect the cables to the outside of the chamber door.
13. Follow HP procedures to turn on the system.



ETP electron multipliers

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