

## **FS-105-X Ion Pump High Voltage Connector Assembly/Connection Instructions**

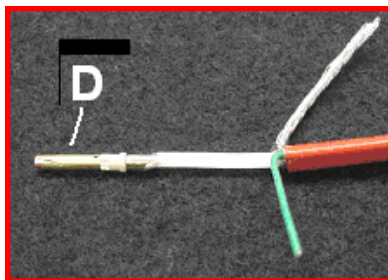
### **Introduction:**

This FS-105-X High Voltage Ion Pump connector is compatible with Duniway Stockroom Corp. High Voltage Feedthrough Part Number HVFT-5125 and Varian Vacuum Part Number 959-5125 High Voltage Feedthrough.

It is designed to be assembled onto High Voltage Coaxial Cable, radiation resistant, rated at 20 KVDC and having an outer diameter of 0.2 inches.

### **Assembly Instructions:**

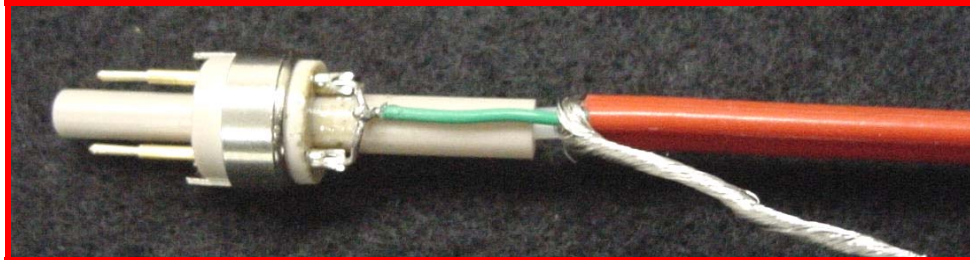
1. The FS-105-X kit consists of 8 parts, as listed and pictured below:
  - A. Nut
  - B. PEEK Split-Cylinder Bushing
  - C. Collet
  - D. High Voltage Pin
  - E. Ring Spacer
  - F. Half-Spacer
  - G. PEEK Insulator/Pin Assembly (modified)
  - H. Body
2. Prepare the cable as follows
3. Remove 1-1/16 inches of the outer insulating cover of the coax.
4. Comb back the shield braid and fold back the green auxiliary Ground wire.
5. Remove 1/16 inch of the inner insulation, exposing the high voltage conductor.
6. Solder the inner conductor of the high voltage coax to part d. See Figure 1.



**Figure 1: HV Coax Cable Preparation**

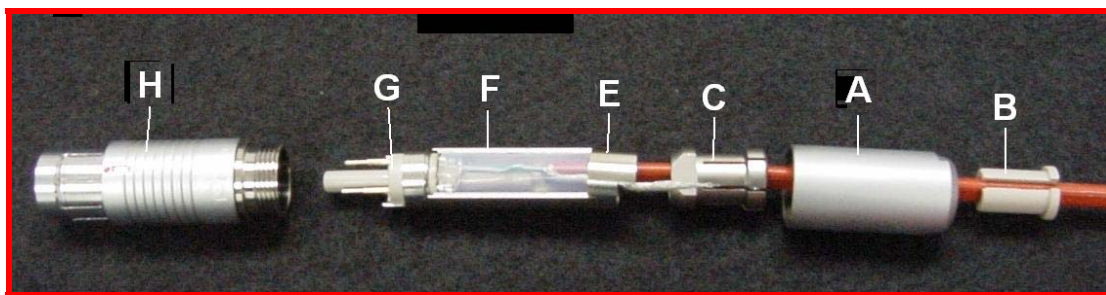
7. Solder a shunt between the two low voltage contacts of part g.

8. Solder the ground fault wire to one of the low voltage contacts. See Figure 2
9. Insert the high voltage pin (soldered to the cable) into part g, making sure it is properly seated.



**Figure 2: Part g, with coax and low voltage conductors installed.**

10. Place insulating, bakeable shrink tubing, provided, around ground-sense contacts and any bare wire attached to them. (See Figure 3, below to see the applied shrink wrap tubing.)
11. Take parts e, f and g; fit them together with the keys properly located.
12. Place a *small* amount of adhesive material, such as epoxy or nail polish at the joints between the three pieces to hold them in place during assembly.
13. Assemble all parts as shown below in Figure 3
14. Insert the sub-assembly of parts e, f and g into part h, being sure that the keys on parts e and f are properly engaged with part g.



**Figure 3: Ready for Final Assembly**

15. Move the collet (part b) into place with the shielding braid between the key on part e and the flat on the tapered end of the collet.
16. Carefully engage the threads of the body and the nut; then tighten the nut

17. On the ion pump controller end of the cable, install the high voltage connector on the coax cable and the appropriate termination on the green Ground-Sense wire.
18. Use an electrical continuity meter to verify continuity of:
  - A. The high voltage conductor, pin-to-pin on both ends of the cable.
  - B. The Ground-Sense line, from pin-to-pin on both ends of the cable.
  - C. The outer body of the ion pump connector and the outer body of the controller connector.



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