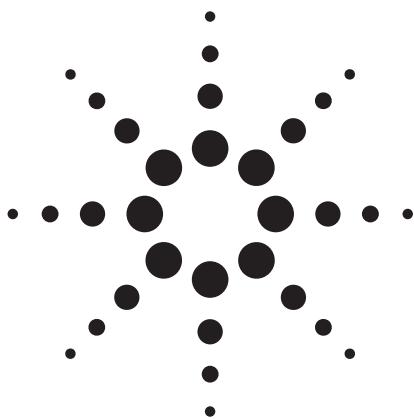




Installing the FID Adapter for the Dual Plasma Burner

Accessory: G6600-60600, G6600-60604
G6600-60605, G6600-60623
G6600-60624

Purpose

To install the FID adapter for use with the Dual Plasma Burner.

Scope

This procedure describes how to install FID adapters for use with the Agilent Dual Plasma Burner and Agilent, Varian, or Thermo gas chromatograph (GC) instruments. The FID adapter attaches to the base of the Dual Plasma Burner with a 1/4" Swagelok nut and ferrule connection; the adapter itself is specific to the GC with which it is used.

Safety

Make sure all devices are powered off while performing the installation.

Materials

- FID adapter kit
- The Dual Plasma Burner

Procedure

1. Make sure all devices are powered off (Controller, FID, pump, and GC).
2. Attach the FID adapter to the Dual Plasma Burner as indicated in the figures. If using an Agilent 6850 or 6890 GC, refer to Figures 1 and 2. If using a Varian CP3800, 3500, or 3600 GC, refer to Figures 3 and 4. If using a Thermo Trace, refer to Figures 5 and 6.
3. Set up the FID with normal flow rates (about 30 mL/min H₂; 350-400 mL/min).
4. Attach the burner with the FID adapter onto the GC's FID.



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Note

Agilent GCs use a knurled nut to secure the FID adapter in place. Varian GCs use screw fasteners to secure the FID adapter in place.

5. **FID Flame Ignition:** Igniting the FID may be more difficult than usual because the restrictor is located near the ignitor. It may be necessary to momentarily increase hydrogen flow rate and/or lower air flow rate in order to ignite the flame easily. Alternatively, use of a butane lighter, with a long handle, or external glow plug have been found to facilitate flame ignition.
6. **Column Bleed:** Although this adapter/burner combination should be able to withstand higher column bleeds than usual, silicon dioxide particles originating from column bleed can still plug the restrictor and cause loss in sensitivity. If this occurs, pressure on the 355 SCD Controller will drop, e.g., from 400 Torr to 250 Torr. If this happens, it will be necessary to change the restrictor or unplug it with a fine cleaning wire, such as those used for cleaning syringe needles. Therefore, it is still desirable to minimize column bleed by using low bleed columns, using final column temperatures as low as possible for a given analysis, and making sure that carrier gas is free of water and oxygen and other foreign materials that promote column degradation and bleed.
7. **SCD Sensitivity:** Approximately 10% of the FID exhaust gases are drawn into the Model 355 burner through the restrictor. Therefore, one should expect around 10% of the signal that one would obtain if all of the column effluent went to the detector. Potential difficulties: High levels of water can affect the performance of the SCD. Apparently, water can condense or chemisorb in the restrictor and react with SO₂ in the FID exhaust to form sulfurous acid. Since the acid is non-volatile no response will be seen from the sulfur compound. It is important to prevent water from condensing or chemisorbing on the restrictor. This is accomplished by operating the base temperature of the FID adapter at approximately 150 °C.

Caution

The outer temperature of the Burner and FID are hot and may cause burns if touched.

8. **Changing the FID Adapter Restrictor:** To change the FID adapter restrictor, follow this procedure. Remove the FID adapter from the GC. Use a 1/4" nut driver with a hollow shaft to loosen the nut on the inside of the FID adapter. Remove the restrictor, using pliers if necessary. Install the new restrictor with nut and ferrule in the reverse order.

Note

It is necessary to remove the Agilent FID igniter from the FID adapter if it impedes access to the 1/4" nut.

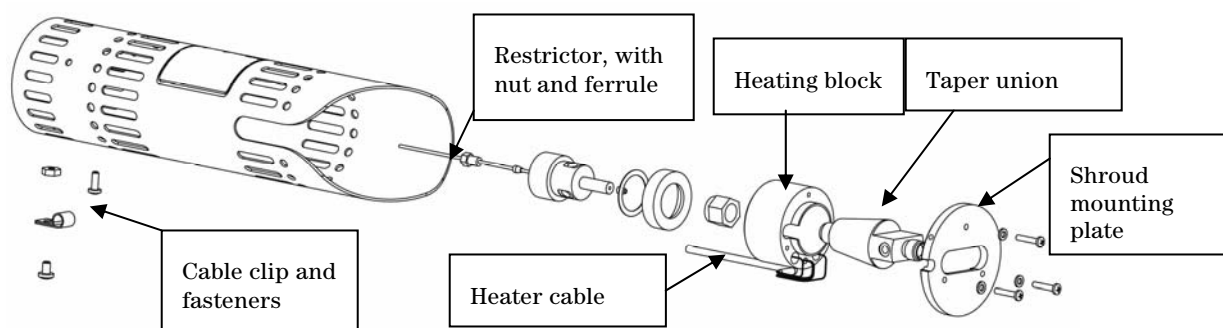


Figure 1 FID Adapter Assembly Order for Agilent 6850 And 6890 GCs

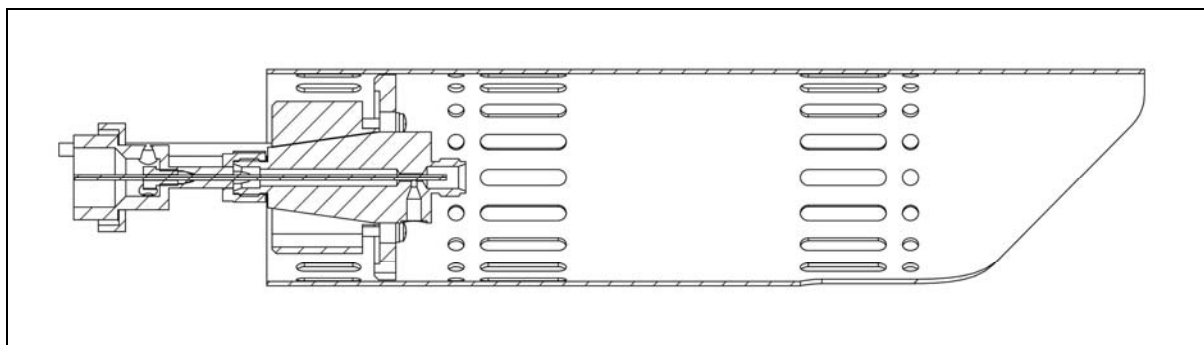


Figure 2 Cross-Section of Dual Plasma Burner Shroud with FID Adapter Assembly Order for Agilent 6850 and 6890 GCs

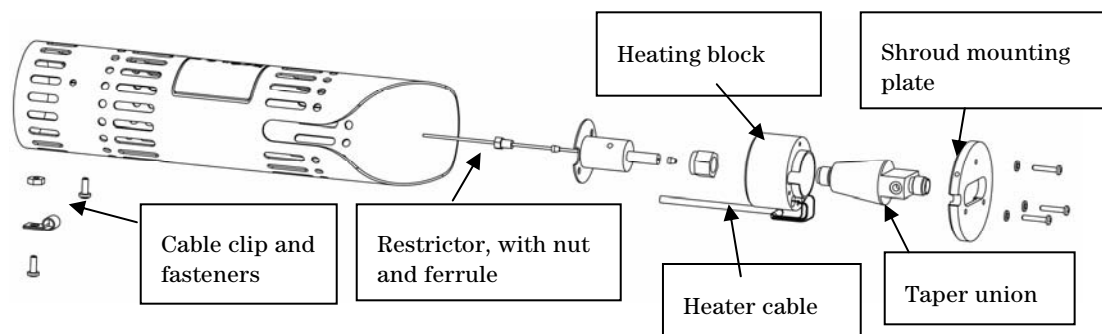


Figure 3 FID Adapter Assembly Order for Varian CP3800, 3500, or 3600 GCs

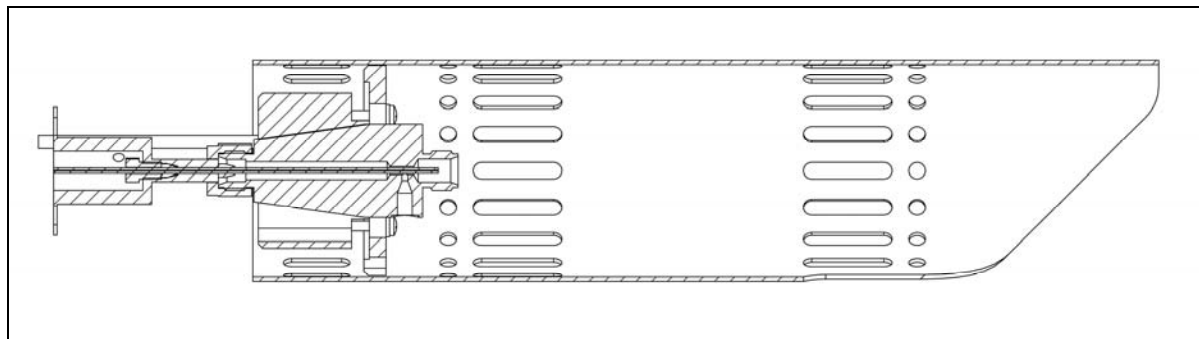


Figure 4 Cross-Section of Dual Plasma Burner Shroud with FID Adapter Assembly Order for Varian CP3800, 3500, or 3600 GCs

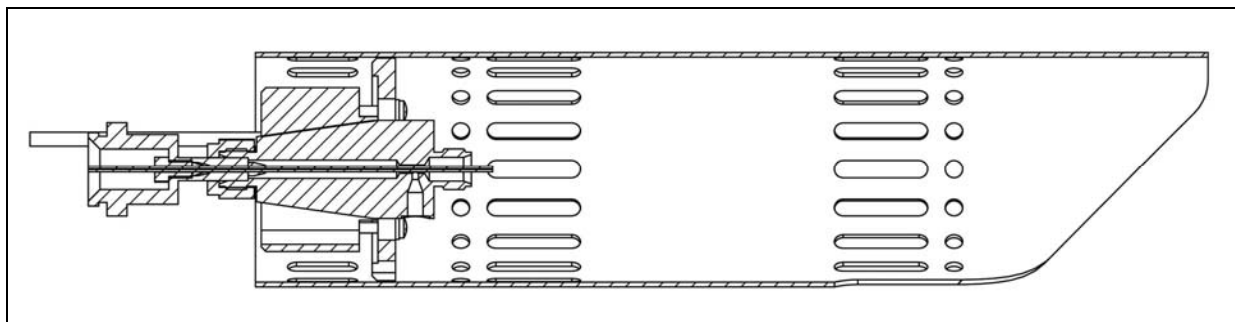


Figure 5 Cross-Section of Dual Plasma Burner Shroud with FID Adapter Assembly Order for Thermo Trace GC

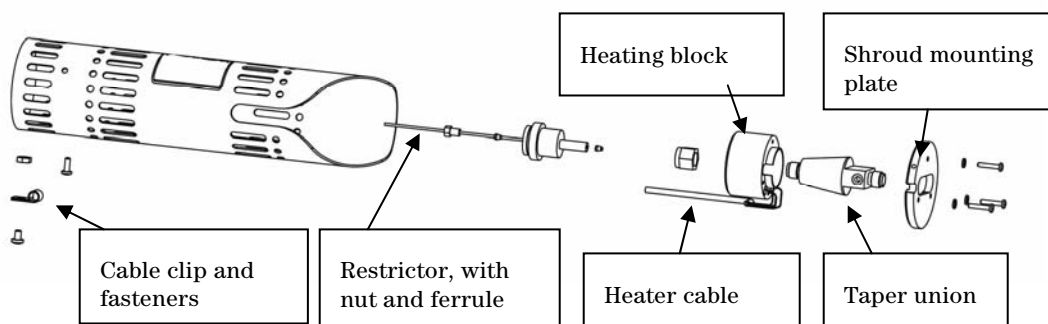


Figure 6 FID Adapter Assembly Order for Thermo Trace GC

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2850 Centerville Road
Wilmington, DE 19808-1610
Printed in the USA Feb 2007



G6600-90024