Quartz Tube Replacement for the Agilent Dual Plasma Burner with the 255 NCD

Accessory G6600-60038

Purpose

To replace the quartz combustion tubes used in the Agilent Dual Plasma Burner with the 255 NCD.

Scope

The Dual Plasma Burner for use with the Agilent 255 SCD has one quartz combustion tube that requires replacement. Generally the tubes should be replaced only if sensitivity decreases. The “Troubleshooting” chapter of the *Operation and Maintenance Manual* provides additional information to assist in determining whether tube replacement may be necessary.

Safety

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

Materials

- Dual Plasma Burner accessory kit
- Open-end wrenches: 9/16", 7/16", 5/16", 5/8", and 3/8"

Procedure

1. Turn off power to the GC and the Controller and let the system cool down under vacuum.
2. Turn off power to the vacuum pump.
3. Lift the Burner out of the shroud. It is recommended to remove the coil, noting the position of the ferrule. In some instances, if the coil can be uncoiled, it may be convenient to leave it attached to the Burner.
4. Disconnect the hydrogen and oxidant lines.
5. Disconnect the power connector that leads to the GC, if necessary.

6. Tilt the Burner at an angle, so that when loosening the union fitting the upper ceramic tube does not slide down into the large ceramic tube.

7. Loosen and disconnect the union fitting, and pull the splitter fitting and upper ceramic tube out of the Burner.

8. Slide the large quartz tube out of the Burner and remove it from the quartz heater assembly.

9. Insert the new quartz tube into the quartz heater assembly. Position a 1/4" ferrule (flat end butted up against the top of the swivel nut) onto the quartz combustion tube. With the ferrule positioned against the swivel nut, approximately 0.5 cm of the quartz tube should extend outside the nut.

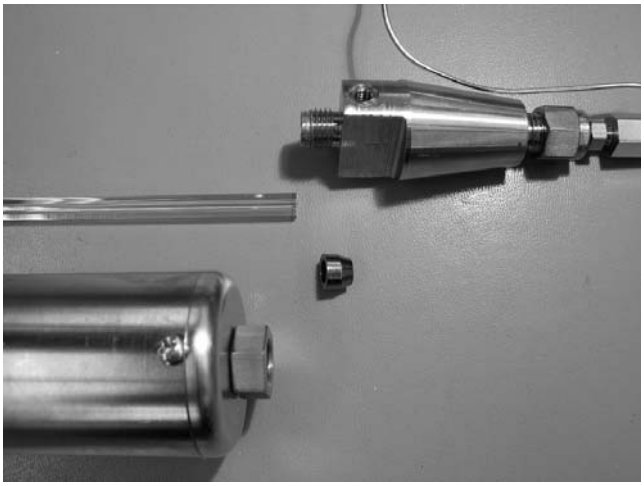

Figure 1 Proper Ferrule Orientation to the Large Quartz Tube

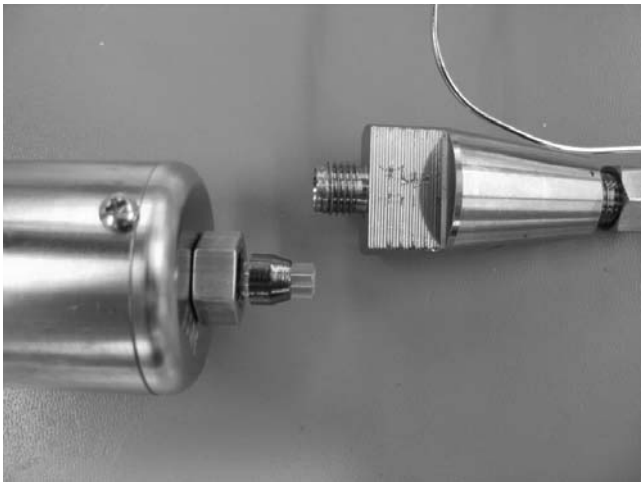

Figure 2 Large Quartz Tube Properly Inserted into the Quartz Heater Assembly

10. Insert the lower burner tube into the center of the quartz tube and finger tighten the heater swivel nut onto the tapered union fitting, then tighten an additional 1/4 turn making sure not to break the quartz tube.

11. To begin the final tightening, use a 7/16" wrench and 5/16" wrench to tighten the 1/4" Burner adapter one-quarter turn past finger-tight.

12. Using a 5/8" wrench on the heater swivel nut and a 1/2" wrench on one of the flats of the tapered union fitting, tighten the heater swivel nut one-quarter turn past finger-tight. Using a 5/16" wrench on the 1/4" Burner adapter, rotate this fitting so that the brazed H_2 line is aligned 180° (opposite) from the oxidizer Inlet port.

13. Making sure that the Burner inlet fitting does not loosen, use a 1/2" wrench on a flat of the tapered union fitting and 9/16" wrench on the 1/4" Swagelok nut of the Burner adapter to tighten the tapered union fitting one-quarter turn past finger-tight.

14. Rotate the quartz heater assembly so that the thermocouple and heater leads are in the same plane and pointed in the same direction as the peg on the Burner inlet fitting. Turn the splitter fitting so that H_2 inlet port is also aligned with the peg on the Burner inlet fitting.

Figure 3 NCD Tube Replacement Detail

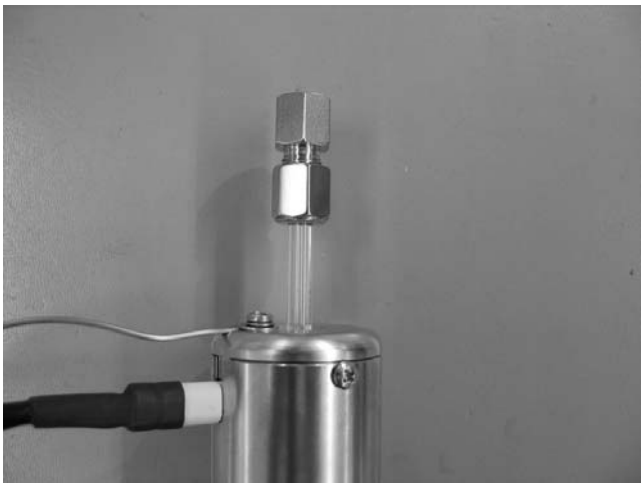

Figure 4 NCD Tube Replacement Detail

15. Make sure that no connections have loosened or moved out of alignment, if so, reposition or retighten the fittings as needed.

16. Replace the Burner in the shroud.

17. Follow the standard system start-up procedure, including column placement.

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