Ceramic Probe Replacement Instructions

Accessory G6600-60034

Purpose

The Brass Burner has two ceramic combustion tubes which require periodic replacement: an inner and an outer tube.

Scope

This procedure applies to ceramic tube replacement in the Agilent Instruments ABI 00003 Brass Burner.

Tools

- 2 - 1/16” Open End Wrenches
- 2 - 3/8” Open End Wrenches
- 2 - 7/16” Open End Wrenches

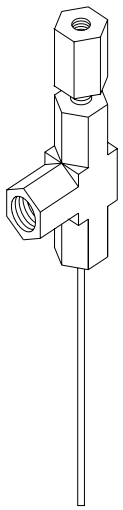
Procedure

1. Turn off the Interface Controller and let the system cool down *under vacuum*.

Note

The Burner is extremely hot when running. Do not touch the burner until it has cooled down.

2. Turn off the vacuum pump.
3. Remove the hydrogen line by disconnecting the Hydrogen Inlet Fitting at the top of the Burner. Use a second wrench to hold the Adapter Tee to avoid excess torque on the ceramic tubes.
4. Disconnect the black PFA transfer line from the Tee of the Burner Interface.
5. Unscrew the Tee fitting and carefully pull the inner Tube/Tee assembly from the Burner. *If the existing Tube is broken then all fragments must be removed from the burner.*

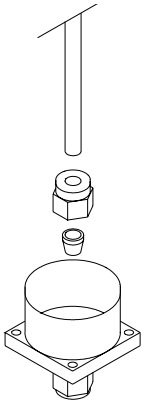


6. Remove the ferrule attached to the top of the 1/8” ceramic tube.
7. Disconnect the Heater Cable from the heating element leads.

Note

The heating element leads are very fragile. Do not bend them excessively or they will be damaged.

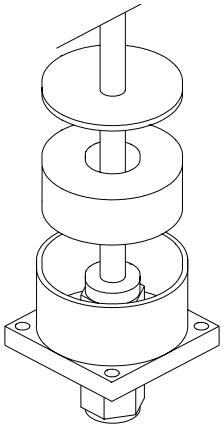
8. Disconnect the thermocouple leads from the Interface Controller.
9. Remove the four *horizontal* socket head cap screws holding the Burner Case.
10. Carefully lift the Burner Case up off of the base and set it aside.
11. Remove the white insulating disk and the fiber insulating toroid from the Burner base.
12. Remove the 1/8” ceramic tube by loosening the nut in the Burner base. Discard the used ceramic tube and ferrule. Remove any debris from the inside of the connection.



Note

Screw extractors may be useful in removing old ferrules from Burner fittings.

13. Insert the new 1/8” ceramic tube into the fitting with a new Vespel ferrule. Slide the nut over the tube and tighten it until finger tight. *Lift the ceramic tube up 1 to 2 mm so that it will not be crushed by the compression fitting.* Tighten the nut snugly with the 7/16” wrench. This connection must be fairly tight to ensure that the nut does not loosen under heat stress, but excessive tightening can crack the ceramic tube.



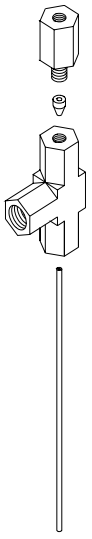
14. Reinstall the fiber insulating toroid and the white insulating disk. Carefully slide the Burner Cover over the large ceramic tube. It is often useful to sight down the upper fitting to ensure that the ceramic tube is properly aligned and will not break.

Note

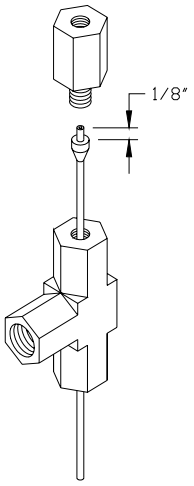
Failure to install the insulating disk may lead to leaks in the Burner.

15. Reinstall the four screws at the base of the Burner.

16. Unscrew the Hydrogen Inlet fitting from the Tee, and remove the 1/16" tube and ferrule.



17. Install a new 1/16" Vespel ferrule at the top of the Tee. Slide in a new inner ceramic tube until approximately 1/8" (2 mm) extends out of the top of the ferrule Retighten the Hydrogen Inlet fitting snugly. Do not overtighten the fitting.



18. Replace the Tube and Tee assembly into the Burner, tightening finger tight.

19. Check the flow of air and hydrogen following the Detector manual instructions.

20. Reconnect the Heater Cable, Thermocouple, and all the tubing. Pressure test the system following the instructions in the Detector manual. The pressure may change slightly due to variation in tube dimensions.

21. Turn on the Interface Controller and allow the Burner temperature to stabilize. Gently tighten all the fittings once the Burner temperature is stable.

Agilent Technologies, Inc.
2850 Centerville Road
Wilmington, DE 19808-1610
Printed in the USA Feb 2007

G6600-90018