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Gravity Probe B Relativity Mission





## **P0001 Rev - PROCEDURE FOR CLEANING GYROSCOPE HOUSING**

### **Purpose:**

This procedure is intended for the cleaning of quartz housings before assembly.

### **Process Conditions:**

- Authorized personnel only to clean gyroscope.
- Cleaning to be performed in the class 100 cleanroom at the gyro wet bench and clean bench facilities.

### **Equipment:**

SS wet bench  
Dump rinser  
Water pik  
N2 gun  
Teflon housing fixtures  
Polypropylene tray  
Vacuum oven  
Titanium tweezers  
Ceramic tweezers  
Small titanium screwdriver  
Glass storage containers

### **Materials:**

Hot DI water (140 - 160 °C)  
Micro detergent  
Z-foam  
Swabs  
Brush

### **Preparation:**

1. Wipe wet bench with Miracle Wipe 4000, dampened with alcohol.
2. Flush water pik with warm DI water.

**Procedure:**

1. Fill polypropylene tray with 60°C DI water, add one (1) cap of micro -detergent and place Z-Foam on the bottom of the tray.
2. Place housing in the tray. Use brush and swabs to gently clean holes in the housing. Clean inside cavity, electrodes, support lands, spin-up channel; with swabs soaked in Micro detergent solution. Use Z-Foam to gently scrub outside of housing.
3. Rinse housing with hot DI water.
4. Fill water pik reservoir with 60°C DI water and add two (2) caps of Micro detergent.
5. Hold housing in hand and turn water pik on. Clean housing inside and outside and all channels with jet of water. When reservoir is empty turn water pik off.
6. Spray housing with hot DI water.
7. Place housing in teflon holder and take it to dump rinser. Rinse for four cycles.
8. Remove housing from dump rinser and place in the glass container.
9. Take the container with housing to vacuum oven. Leave it at 80°C for one (3) hours.
10. Remove container with housing from the oven and blow all passages in the housing with N<sub>2</sub>.
11. Install hardware (pins, washers, nuts, connectors) and tighten nuts and connectors securely.
12. Fill water pik reservoir with 60°C DI water and add two (2) caps of Micro detergent.
13. Hold housing in hand and turn water pik on. Clean housing inside and outside, all channels and holes, and newly installed hardware with jet of water. When reservoir is empty turn water pik off.
14. Spray housing with hot DI water.
15. Place housing in teflon holder and take it to dump rinser. Rinse for four cycles.
16. Remove housing from dump rinser. Turn housing upside down or so that cavity in housing is on bottom and insert housing to teflon holder. Take holder with housing to sink.
17. Hold holder with housing in one hand while spraying housing from all directions with hot DI water. Spray for about 30 seconds.
18. Transfer holder with housing to glass container and place the container to vacuum oven set at ~ 80°C. Leave it in the oven about one (3) hours.

**19.** Housing is ready to be assembled.