

SQUID Capacitor Kit, Squid

Document Revision Record

| Rev | Date | ECO# | Pages Affected | Description |
|-----|--------|------|----------------|---------------|
| - | 2/5/98 | NA | NA | New procedure |

Authorized Personnel

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Authorized to Redline Procedure

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Note: This assembly is not ESD sensitive.

Material & Supplies

1. Body, Filter # 25350-101 (quant:1 ea)
2. Washer, Insulating # 25351-101 (quant:1 ea)
3. Contact Block # 25355-101 (quant:2 ea)
4. Wedge, Contact # 25356-101 (quant:1 ea)
5. Capacitor Ring # 25376-101 (quant:1 ea)
6. Screw 0-80 x .135 # 25053-103 (quant:4 ea)
7. Screw 2-56 x .130 # 25054-101 (quant:2 ea)
8. Victor Torch Type-17 (hydrogen)
9. Torch Tip # 1
10. Copper Plate, 2" long and 3" wide.
11. Fire Brick Block
12. Eutector flux #157
13. Silvaloy-15, Rod 3 1/2" long.
14. Drill bit # 0-80
15. Alcohol #2-propynol
16. Chemoloy High purity Alloy Solder # 60/40
17. Durx cleanroom wipe # 670
18. Ultrasonic Branson B-220H
19. Tungsten plate
20. Aluminum 30 mil spacer
21. Corning hot plate, model PC-300
22. Indalloy Solder #281, low temperature 138C°
23. Fluke 77 multimeter S/N 66970626
24. HP 4277A LCZ Meter S/N 2830I02934
25. Ultrajet 2000 airjet # ES1270
26. Non-magnetic tweezers #OOC
27. Q-tips, Texwipe small form swap #TX751B

Procedure

1. Preparation

Check parts. Clean filter body (#25350-101) ultrasonically in alcohol for 15 minutes. Use an airjet to dry the inside of the screw holes and use cleanroom wipes to dry the rest of the Body Filter.

2. Coat filter body (#25350-101) with solder

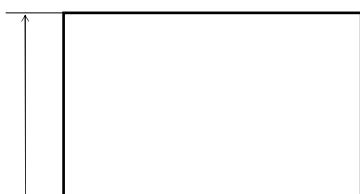
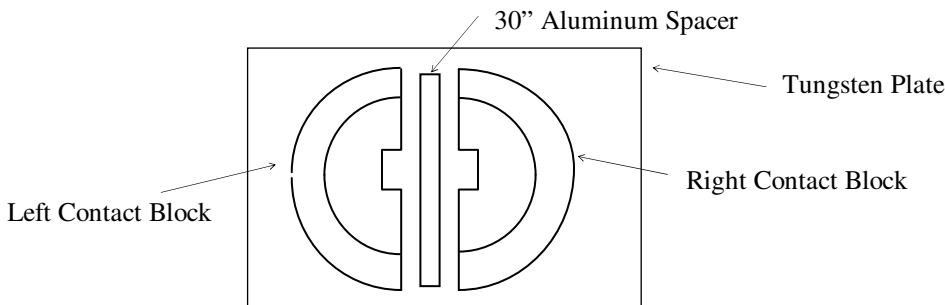
- 2.1 Take the filter body to the Tube Shop to do the solder coating.
- 2.2 Lay the copper plate on top of two fire brick for the solder coating.
- 2.3 Put several drops of Eutector flux 157 on the top of the plate. Heat the plate up with the torch.
- 2.4 Use the Victor type-17 torch with #1size tip to heat the body filter.
- 2.5 Melt a small amount of Chemoloy 60/40 solder on the plate. Lay the filter body on the plate. Turn the filter body around on all 4 sides. Make sure it gets coated well all the way around. The thickness of the coated solder should be .002±.0005".
- 2.6 Tin the inside of the block where the round hole is. Do not to fill the screw holes with solder. Get the solder as smooth as possible all the way around. Use the Silvaloy-15 rod to spread the solder inside the filter body.
- 2.7 Use a non-magnetic drill and a drill bit to re-thread the holes if the thread holes are covered with solder.
- 2.8 Clean the filter body ultrasonically in alcohol for 10 minutes.

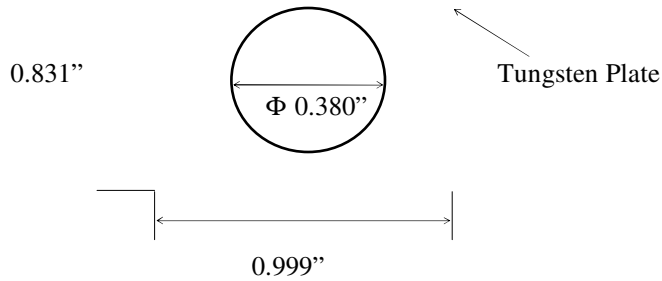
3. Coat the capacitor ring (#25376-101) with solder.

- 3.1 Use #60/40 solder to tin the capacitor ring in the inside. Do not use flux on the capacitor ring.
- 3.2 Use #60/40 solder to tin the outside of the contact blocks (#25355-101). Apply Eutector 157 flux as needed.
- 3.3 Clean the capacitor ring with alcohol and cleanroom wipe and swabs.
- 3.4 Clean the contact blocks with ultrasonic in alcohol for 10 minutes.

4. Assembly contact blocks with the capacitor ring

- 4.1 Use the tungsten plate to hold the contact block together. Put the Aluminum 30 mil spacer between the contact blocks. See below.





4.2 Put the capacitor ring over the small end of the contact blocks (Per drawing #25375-101). Set the contact blocks on top of the hot plate. Heat the hot plate to 325°C (Setting #4).

4.3 Use #60/40 to solder the capacitor ring to the contact blocks. Do not use flux. Turn the hot plate off as soon as you see the solder start to melt. When the solder is hardened and the capacitor ring stays in place, remove it from the hot plate using a pair of tweezers.

4.4 Let the assembly cool down. Rinse with alcohol.

5. Assembly the contact blocks into the filter body.

5.1 Put the insulating washer (#25351-101) inside the filter body. Insert the contact block assembly. Make sure they are seated in place (keyed). Set the filter block on top of the hot plate. Turn the heat on to 220°C (Setting #2). Apply Indalloy solder #281 to solder the outside of the capacitor ring to the inside of the filter body. When the solder starts to melt, turn the hot plate off and let the solder flow freely all the way around the ring. Remove the filter block from the hot plate using a pair of tweezers when the solder is hardened.

5.2 Let the assembly cool down and rinse it with alcohol.

5.3 Check resistance using the Fluke 77 hand meter from the filter blocks to capacitor contact block. It should read open.

5.4 Use the HP 4277A LCZ Meter to measure the capacitance for both halves of the ring. Record the readings on the traveler. It should be 10nf \pm 20%.