

OPAL SERVICE GUIDE

AMPLIFIER REPLACEMENT:

1) REMOVING THE AMPLIFIER MODULE:

- a) Carefully lay the Opal flat on its front surface (woofer facing down). Use soft padding to avoid scratching the unit.
- b) Undo the five M6 hex screws from the rear of the unit.



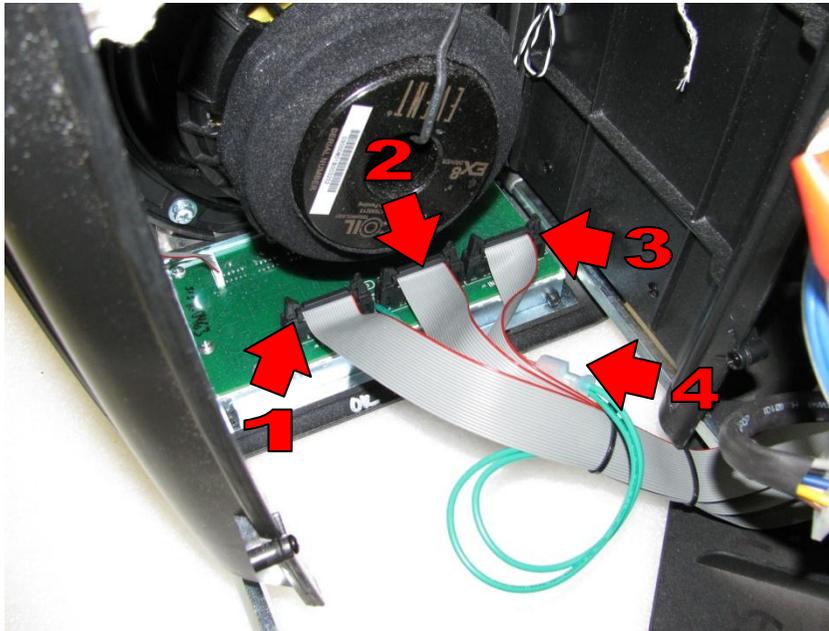
c) Stand the Opal up, and carefully pull apart the front and back, opening the unit as a 'book'. The amp module is fitted in the back half of the unit.



d) Remove the 'pillow' damping material.



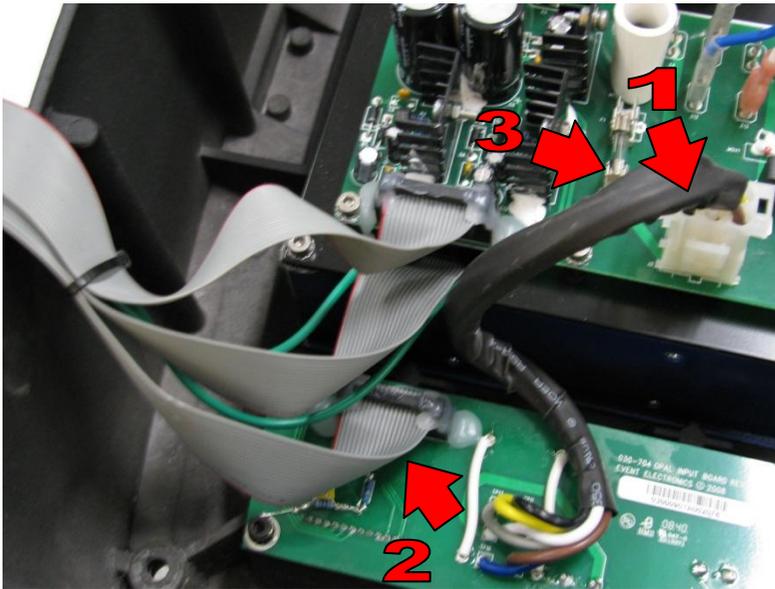
e) Locate the Contour Board at the bottom of the unit. Disconnect all of the ribbon cables and ground cable from the Contour Board.



- 1 - RIBBON CABLE FROM POWER BOARD
- 2 - RIBBON CABLE FROM AMPLIFIER
- 3 - RIBBON CABLE FROM INPUT BOARD
- 4 - GROUNDING WIRE

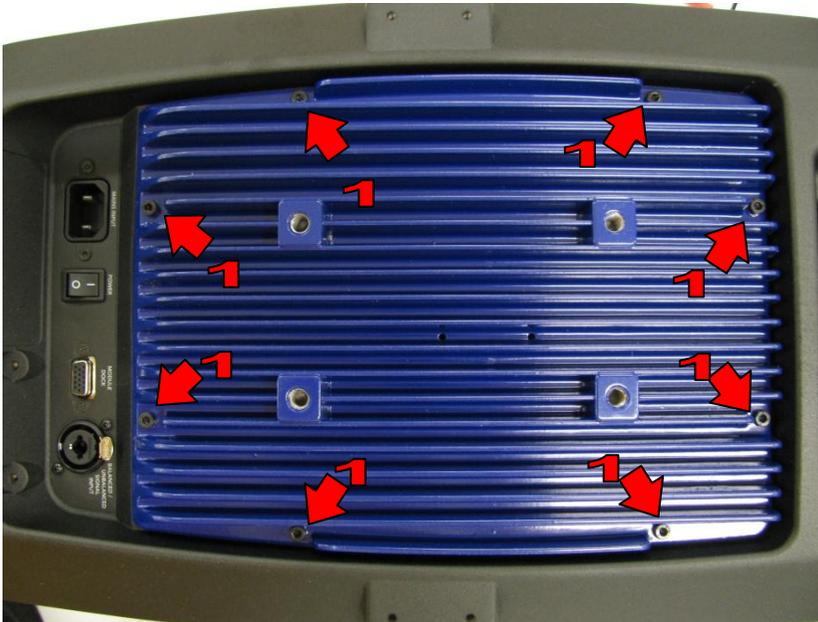
f) Disconnect the Woofer and Tweeter. At this point the front and rear halves of the Opal will be separated.

- g) Inside the rear half of the Opal, disconnect the main wire harness (#1) going from the Input Board to the Power Board. Disconnect ribbon cable (#2). This cable will be held in place with hot glue so may need the glue removing prior to disconnecting the cable. Finally, cut off the two cable ties holding the ribbon cables together. The amplifier will now be ready to be unscrewed and removed.



- 1 - MAIN WIRE HARNESS
- 2 - INPUT BOARD RIBBON CABLE
- 3 - MAIN FUSE

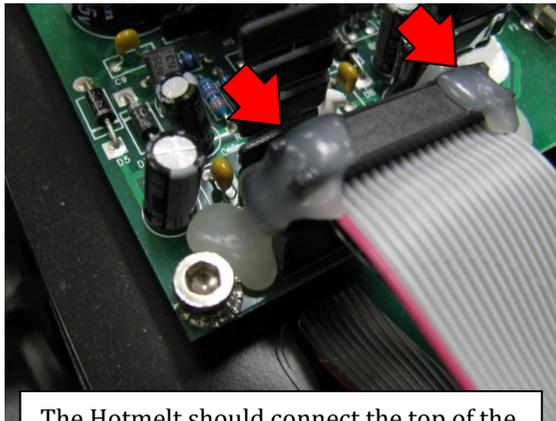
- h) Turn over the rear half of the Opal, so that the inside faces the table. Undo the 8x M4 hex screws (#1). Grip the blue heatsink and gently lift out the amplifier unit.



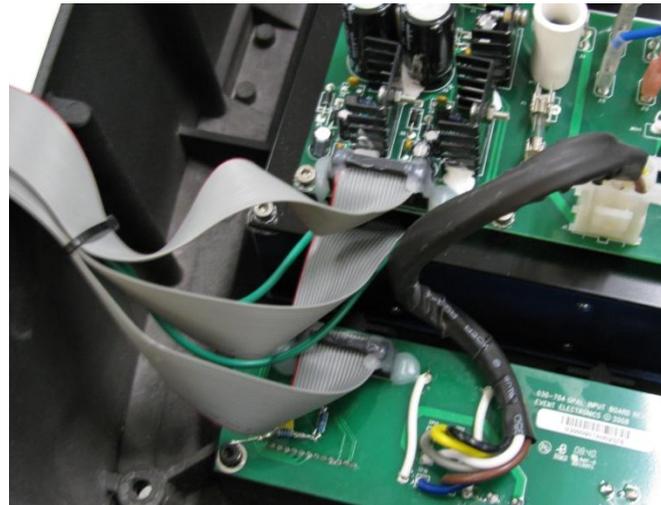
TIP: FOR EASIER REMOVAL OF THE AMPLIFIER, YOU MAY WISH TO CREATE HANDLES TO LIFT THE AMPLIFIER OUT WITH. USE A KNOB WITH M8 SCREW FITTED INTO THE MOUNTING POINTS ON THE BACK OF THE HEATSINK. USE TWO KNOBS DIAGONALLY FOR EASY REMOVAL/REPLACEMENT.

2) RE-ASSEMBLING OF THE AMPLIFIER

- a) Check there is a gasket fitted on either the heatsink or mating surface of the cabinet. If there is no gasket a replacement one can be used/ordered.
- b) Place the amplifier into its position. The transformer is deeper than the rear cabinet so the amplifier will naturally sit higher than the mating surface of the rear cabinet. You will need to lift the rear cabinet and pad underneath the cabinet handle so that it is lifted up by approximately 30mm. The amplifier and mating surface of the cabinet should now fit together correctly.
- c) Before placing the 8x M4 hex screws back, dip them in Loctite 262. Tightening of the M4 screws is very important as the gasket of the amplifier must get compressed to avoid any air leakage. Tighten the screws diagonally (tighten one screw, then tighten the screw directly opposite, move around the amplifier tightening each screw and then the screw directly opposite). After you have tightened all of the screws, go back to the first screw and repeat the tightening process again.
- d) Turn over the rear of the Opal, so you are facing the amplifier. Connect the Main Wire Harness to its position on the Power Board. Connect the ribbon cable to the Input Board and if you need to, connect the ribbon cable on the Power Board. The cables must be installed in the correct orientation (see picture bellow). When correctly fitted, the red wire of all the ribbon cables will be on the left hand side. The cables must now be locked in place using hotmelt to secure the cable connector to the header on the PCB.



The Hotmelt should connect the top of the connector to the PCB on both sides of the connector.



- e) If you had to cut off the cable ties, tie the ribbon cables back together. As you can see from the picture above, the ribbon cable from the Power Board is the upper most cable, the ribbon cable from the amplifier is in the middle, and ribbon cable from the Input Board is at the bottom. The grounding wire is also tied in with the ribbon cables.
 - f) Take the front and rear of the Opal and stand them upright, placing them close together (front on your left and rear on your right).
 - g) Connect the Woofer And Tweeter back up. The driver wires are hooked over the top rear M6 long standoff, then they continue to the Tweeter and Woofer. The Tweeter has two terminals, with different sizes, so it is easy to connect up the correct cable. The Woofer is slightly more complicated and requires the correct matching of cables: The **RED** wire from the amplifier gets connected to the **BROWN** wire on the Woofer, while the **BLACK** wire from the amplifier gets connected to the **RED** wire on the Woofer.
 - h) Connect the ribbon cables and the ground wire to the Contour Board (refer to picture of Chapter 1e for correct connection).
 - i) Refit the damping 'pillow' making sure the pillow is not allowed to foul the main driver. The correct position of the pillow is just behind the tweeter and the pillow should be folded to fit in the correct position (refer to picture of Chapter 1d for correct placement).
 - j) If not already removed, remove the main O-ring (which seals the Front to Rear cabinet).
 - k) Close the Opal front and rear cabinet, and carefully lay the speaker down so the Opal rests on its front surface. Fit the main sealing o-ring into position. To do so place the O-ring over the front/rear joint and lift the rear part of the cabinet. The O-ring will snap into the groove. Check that the O-ring is not pinched and that it hasn't fallen into the cabinet. If unsure check against a working unit.
- TIP: Don't roll the O-ring while placing it onto the joint or it will fall into the cabinet. It is better to stretch the O-ring and place it directly over the joint. Lift the rear cabinet using the handle just enough, so the O-ring will snap into its correct position inside of the groove. Repeat this for the other part by lifting the bottom part of the rear cabinet.*
- l) If you are using the original M6 screws, you must use new M6 O-rings for the screws, this is important as it will ensure that the seal of the screw is airtight. Apply thread locker Loctite 262 to the screws before fitting them. Tighten the screw under the handle first, then opposite screws, working in a clockwise fashion (following the same process as for the amplifier tightening).



m) Follow stand alone document for "SETTING THE WOOFER AND TWEETER LEVELS"