

Board – Chassis Integration Part 2

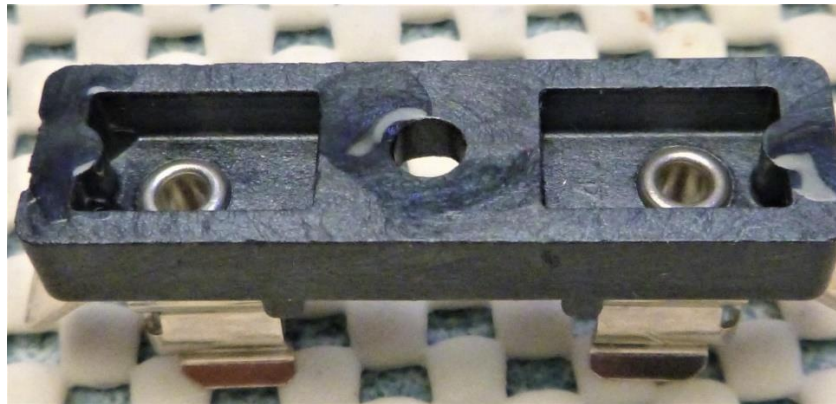
Wall of Sound.ca DIY all tube phono preamp project

Tools and supplies required:

Same as Part 1

If you have the version with the internal fuse perform the following steps:

Apply a bit of nail polish to the bottom of the fuse holder, see below.



Insert a 4-40 x 3/8" (or M3 x 10) screw up through the bottom plate.

Assemble the fuse holder over the screw. See below.

Put a washer over the screw, thread on a nut and tighten.

Apply a drop of nail polish to the nut and screw to lock in place.



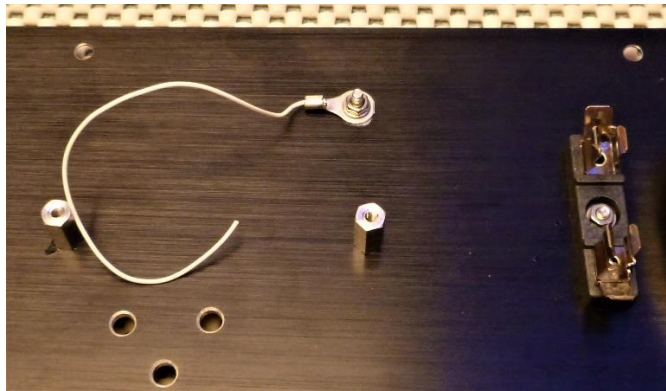
Prepare the grounding wires as follows:

Cut a piece of wire 20" (51cm) long, strip one end and solder to the single part no. 534-7313 (size 8) lug. Set aside for later.

The following grounding wires will be soldered to part no. 534-7311 (size 4) lugs. Note, the lugs I'm using are slightly different than the one in the parts list but the function is the same.

Cut a piece of wire 5½" (140mm) long, strip one end and solder to part no. 534-7311 lug.

Attach the lug to the bottom plate with a 4-40 x 3/8" (or M3 x 10) screw, washer and nut. Put a drop nail polish on the nut and screw.



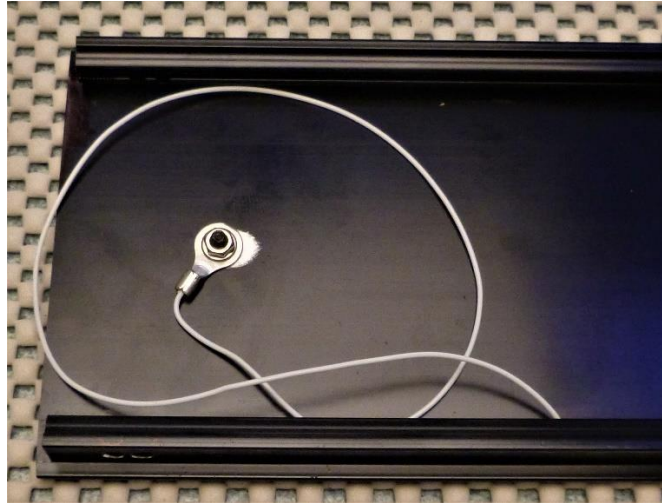
Cut a piece of wire 6¼" (160mm) long, strip one end and solder to part no. 534-7311 lug.

Attach the lug to what will be the left-side plate with a 4-40 x 3/8" (or M3 x 10) screw, washer and nut. Put a drop nail polish on the nut and screw.



Cut a piece of wire 14" (36cm) long, strip one end and solder to part no. 534-7311 lug.

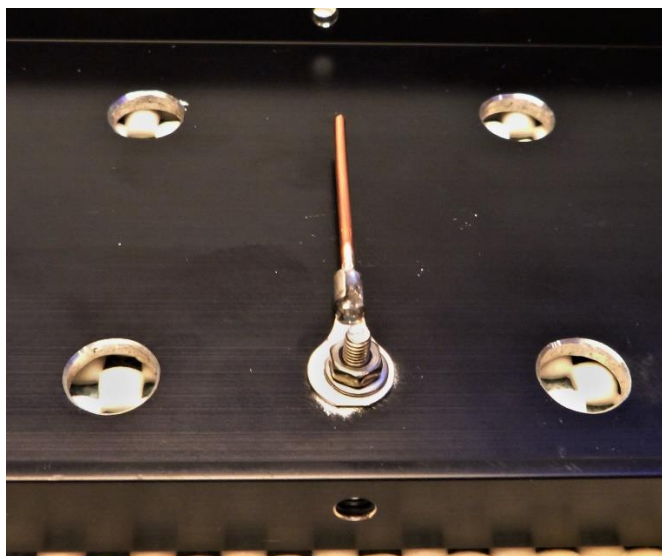
Attach the lug to what will be the right-side plate with a 4-40 x 3/8" (or M3 x 10) screw, washer and nut. Put a drop nail polish on the nut and screw.



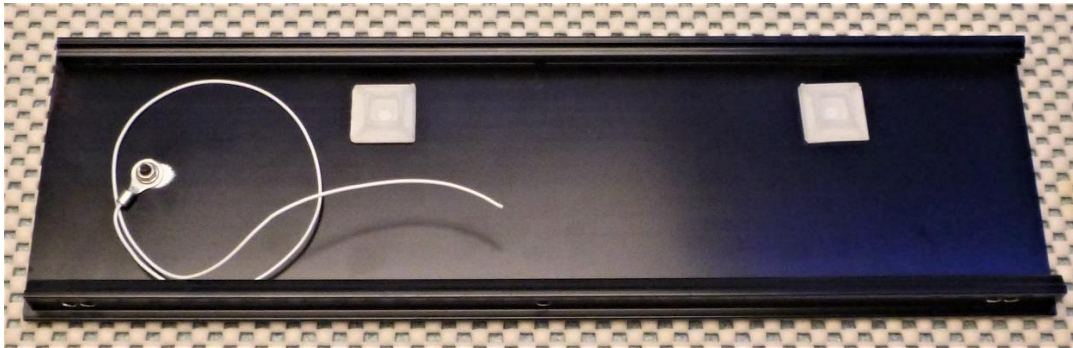
Cut a piece of wire 10" (25cm) long, strip one end and solder to part no. 534-7311 lug. Set this aside it will be connected to the top later.

Cut a piece of solid copper wire 1 1/4" (30mm) and solder to a part no. 534-7311 lug.

Attach the lug to the rear plate with a 4-40 x 3/8" (or M3 x 10) screw, washer and nut. Put a drop nail polish on the nut and screw.



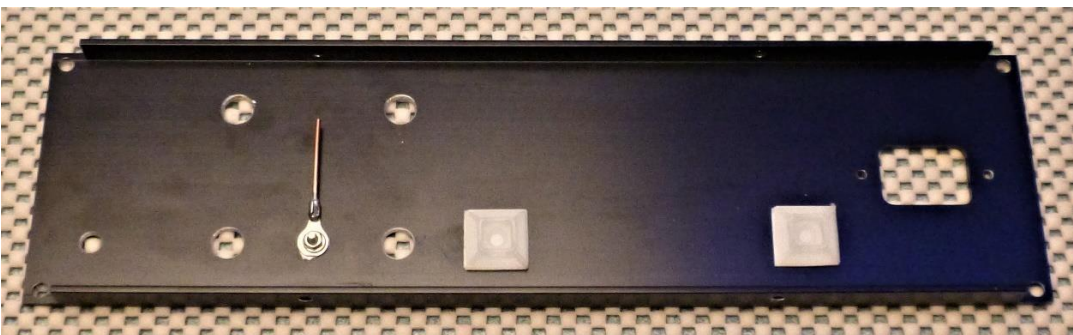
Wipe the inside of the right-side panel (the one with the long ground wire). Assemble two of the cable tie mounts near the top edge in the positions shown below.



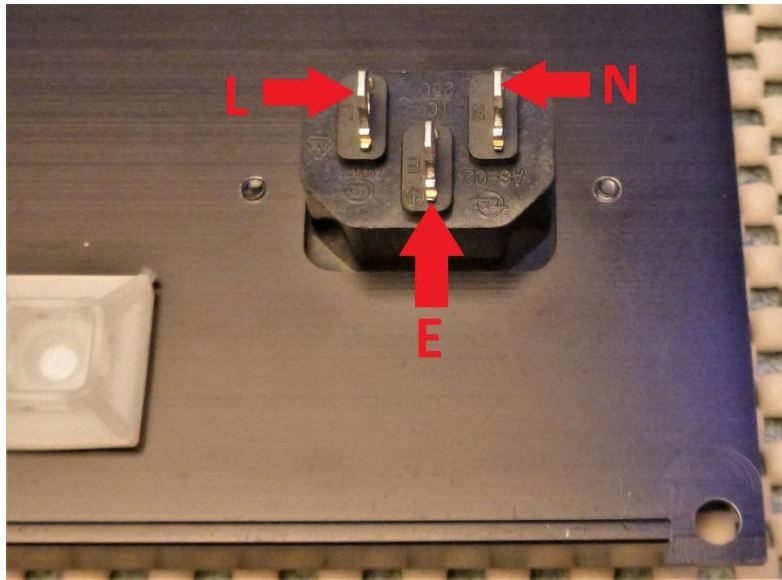
Wipe the inside of the left-side panel (the one with the short ground wire). Assemble two of the cable tie mounts near the top edge in the positions shown below.



Wipe the inside of the rear panel. Assemble two of the cable tie mounts near the bottom edge in the positions shown below.

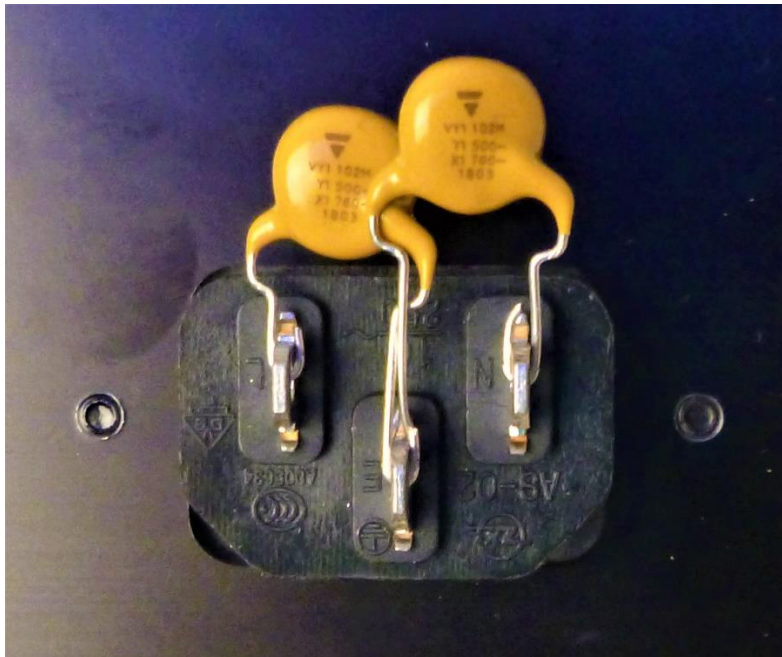


Assemble the AC inlet to the rear panel with the ground terminal (marked E) closest to the bottom edge as shown below. Put a drop of nail polish on two screws and secure the inlet to the panel.



The capacitors (part no. 72-VY1102M35Y5UG63V0) connected to the AC inlet in the next operation are not strictly necessary. But I think they help provide a bit of AC-line noise filtering.

Form the capacitor leads and assemble them to the AC inlet as shown below. Don't solder them yet.



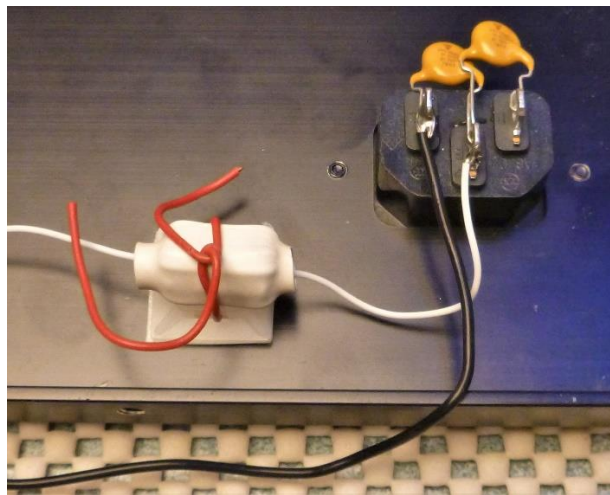
Another optional, though I think useful, noise filter we'll make with part no. 623-2643375002, the larger of the ferrite beads ordered.

Using hook up wire loop it through the ferrite as many times as it will physically fit, see below.



Cover with a piece of heat shrink tubing.

Place the filter assembly on the cable mount as shown below. Temporarily secure it to the cable-tie mount with a twist tie or piece of wire.



Connect one end of the filter to the ground (marked E on the AC inlet) and solder it and the caps to the E pin only. Be careful not to apply too much heat to the AC inlet as the plastic housing will melt and distort.

Cut a piece of wire about 8" (200mm) long, strip one end and solder it to the line (L) terminal of the AC inlet as shown above.

Another filter I like to make is in the line going to from the AC inlet to the power switch.

A twisted pair of hookup wire may be used or shielded if desired. In the case of shielded, strip back about 10" (250mm) of the outer jacket as shown below.

Cut back the shield all but about ¼" (6mm).

Cut a piece of wire about 11" (280mm) long and strip about 1¼" (30mm) of insulation from one end. In the example shown the insulating material is Teflon so it won't be bothered when soldering. If the insulation is something that can't stand the heat of soldering unbraid a bit of the shield, twist the wires together and solder to that.

Wrap the stripped wire around the shield and solder as shown.



Cover the soldered connection with heat shrink tubing.

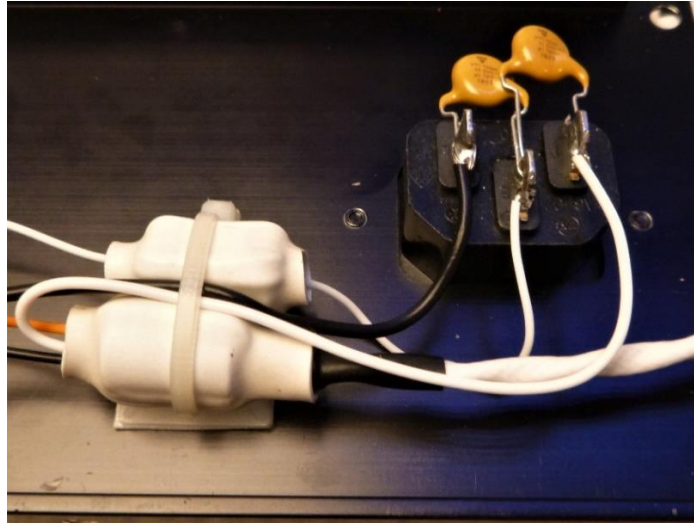
Loop the two that are protruding from the shield, black and white in the example shown here, as many times as physically possible through the other large ferrite that was ordered. See below. Cover with heat shrink tubing.



Measure back from the ferrite 19" (48cm) and cut the cable or twisted pair.

Remove the piece of wire or twist tie from the cable tie mount near the AC inlet. Put a small zip tie through the mount, place both ferrite assemblies and the wire from the inlet line (L) terminal side by side and tighten the tie, see below.

Connect the white lead from the power switch cable to the AC inlet neutral (N) terminal and solder.

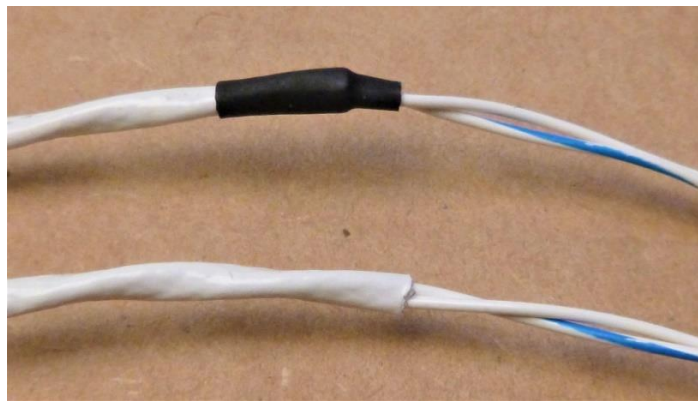


Prepare two of the following cables that will go from the input jacks to the amp board.

Twisted pair wires may be used but shielded cable with **two** conductors inside a shield is recommended.

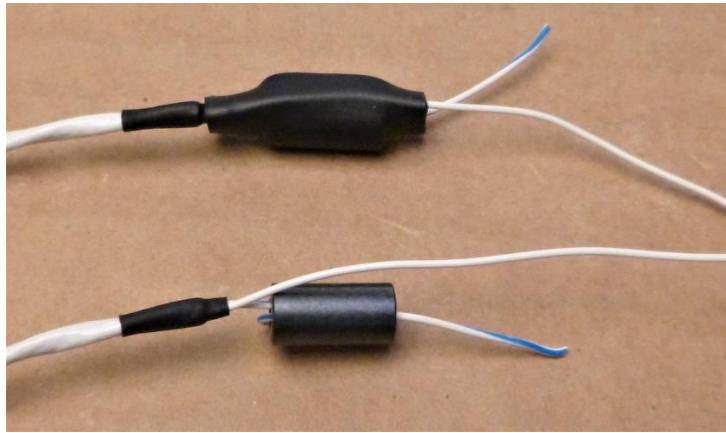
Strip 3" (75mm) of outer sheath and shield on each piece of cable.

Put a small piece heat shrink around the end at the cut end of the sheath, see below.

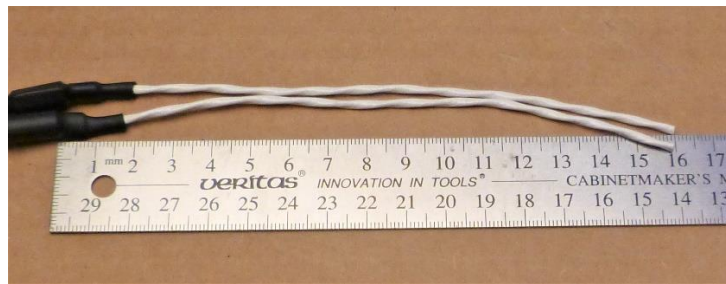


I've shown one with heat shrink tubing above and one without for visual purposes. You will of course cover both with heat shrink in this and subsequent cable assemblies.

Put one of the wires through the small ferrite ordered. Loop around and back through, see below. Put a piece of heat shrink over the ferrite



Cut the cable 6¼" (160mm) from the end of the ferrite.



Strip 1¼" (30mm) of the cable sheath from the ends.

Cut the shield back leaving 3/16" (5mm) from the end of the sheath, see below.



Strip about 1" (25mm) of insulation off of two 3" long pieces of wire.

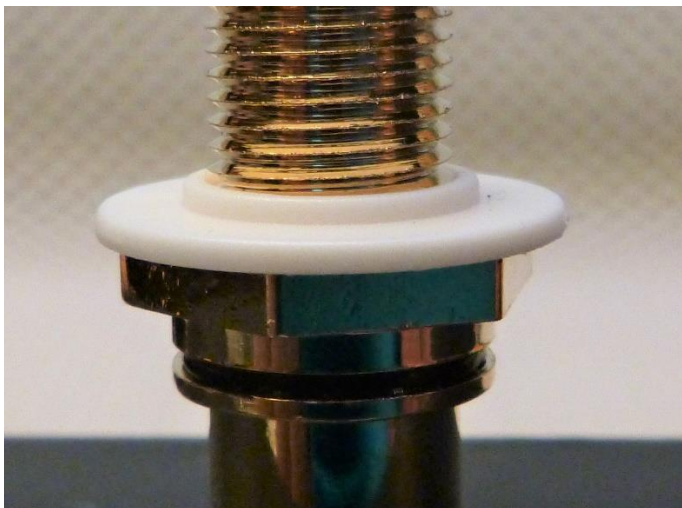
Twist around the shield and solder. In this instance Teflon insulation is used on the wires. On non-heat resistant insulation un-braid a bit of the shield, twist together and solder to that. Put a piece of heat shrink tubing over the soldered connection.



Bend the grounding lugs of the RCA jacks as shown below.



Assemble the shoulder washers to the RCA jacks as shown below.

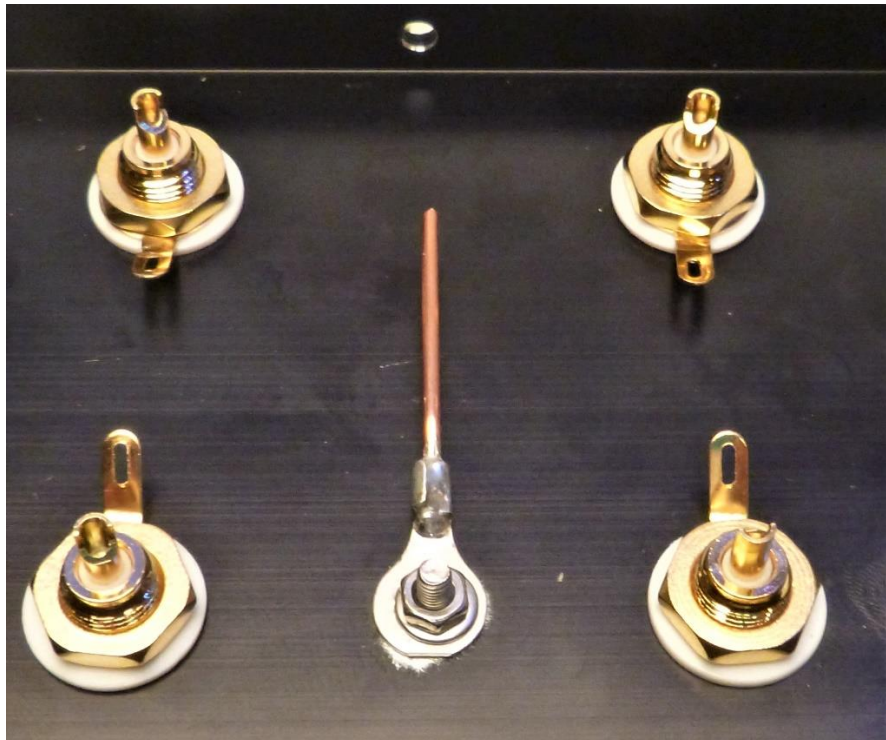


Note: The insulator inside the RCA jacks is Teflon but the insulating washers between the jacks and the chassis is not. The RCA jack nut will only be tightened lightly. After soldering is complete on the ground lug the nut will be tightened fully.

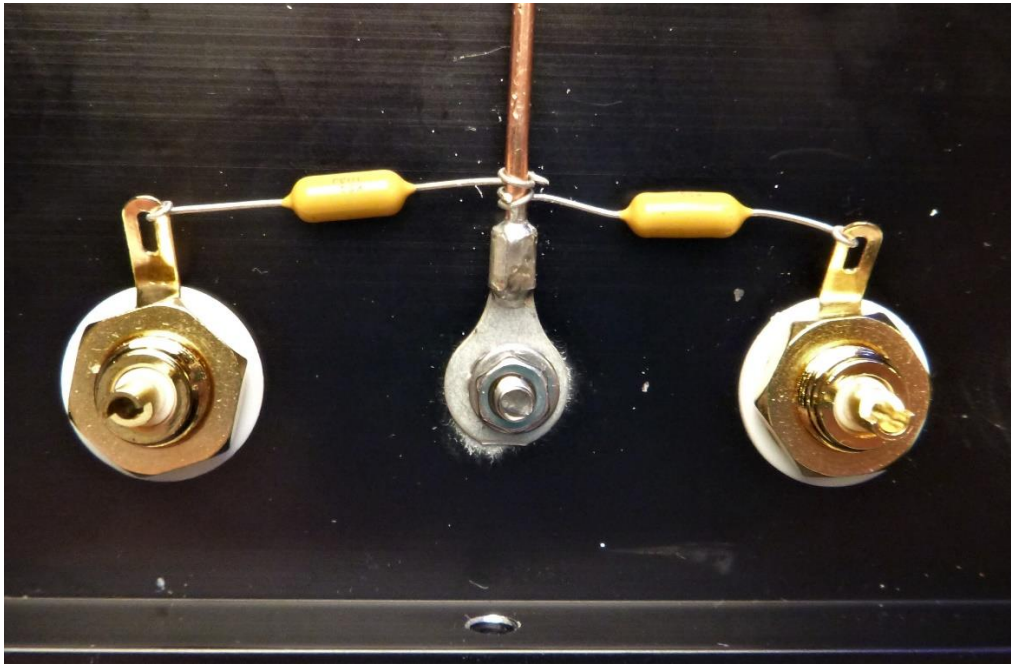
Assemble the RCA jacks to the rear panel with the red on the left and the black on the right as shown below.



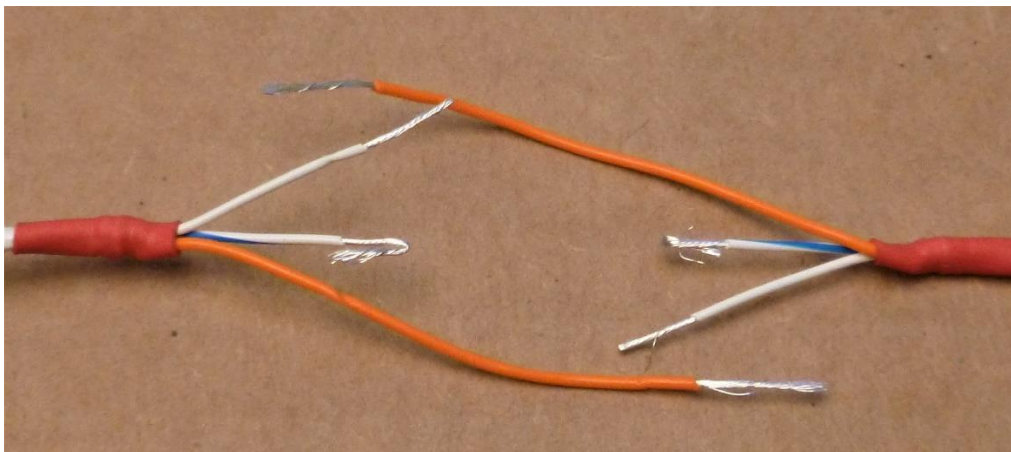
Orient the ground lugs as shown below.



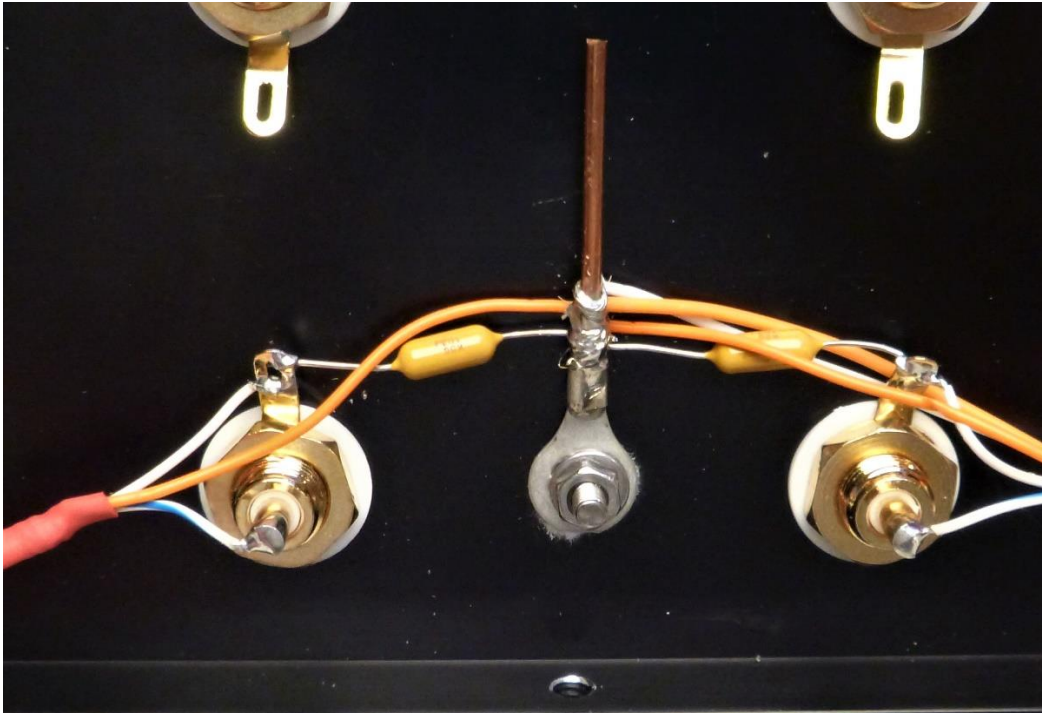
Assemble two caps part no. 80-C440C103J5G-TR as shown below, don't solder yet.



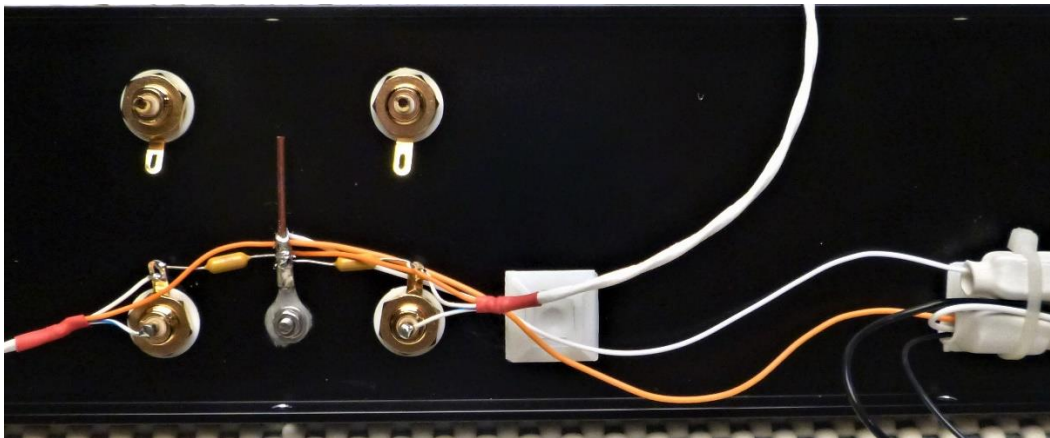
Prep the two previously made cables as shown below. The shortest lead is the "hot" wire that goes through the centre of the ferrite on the other end.



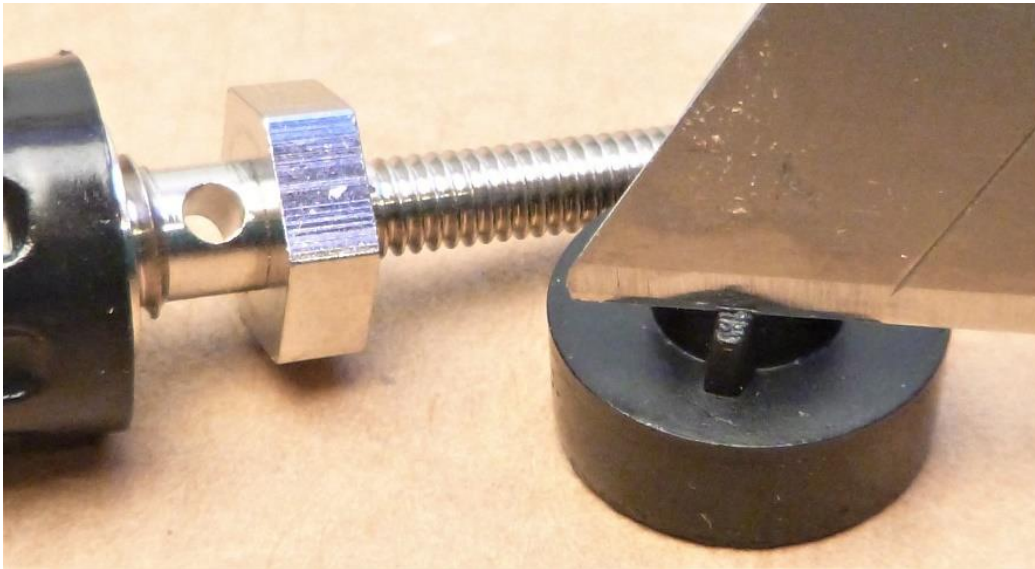
Solder the "hot" wires to the centre lead of the RCA jacks and the other leads (not the wire connected to the shield, orange in this case) to RCA ground lugs. Solder the shield lead and the caps to the copper grounding bar. See below. Tighten the nuts on the lower jacks.



Connect the leads from the AC inlet ground, the one passing through the ferrite filter and the switch power cable to the copper grounding bar and solder. See below.



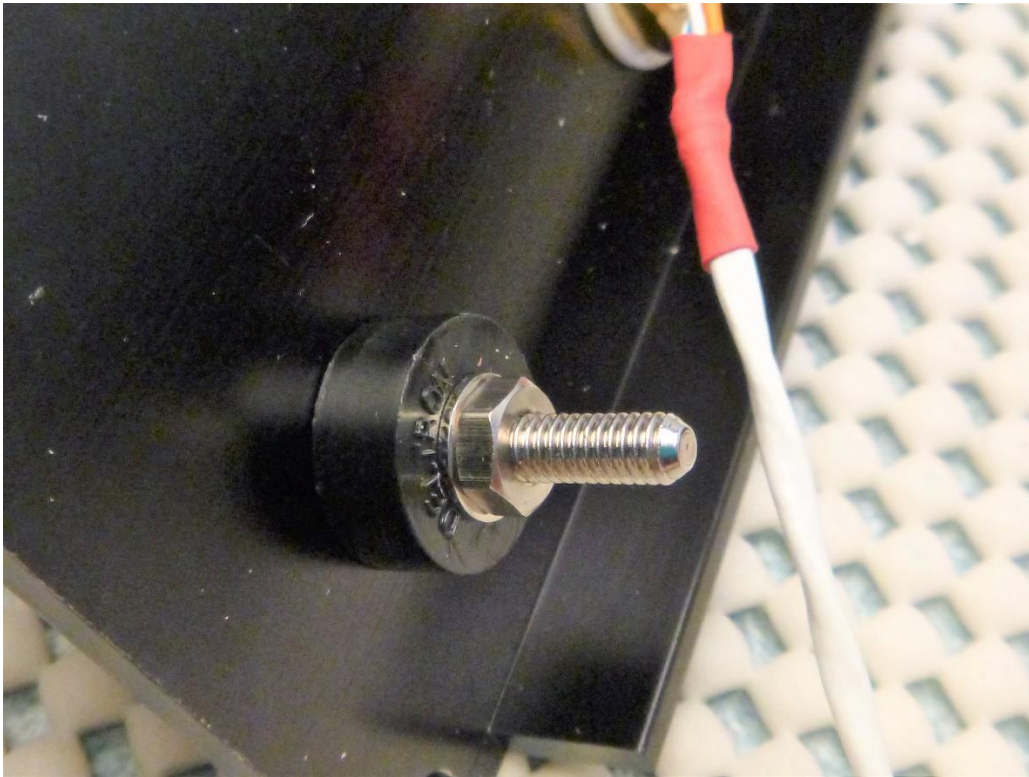
Disassemble the grounding post as shown below. Trim the "tang" off of the insulating shoulder washer with a sharp knife.



Reassemble the washer to the post and assemble the post to the rear panel, see below.



Put the remaining plastic washer, the metal flat washer and a nut on the shaft and tighten. The solder lug and second nut will be added later.



Set the rear panel aside.

Continue with Part 3 of the Board Chassis Integration.