

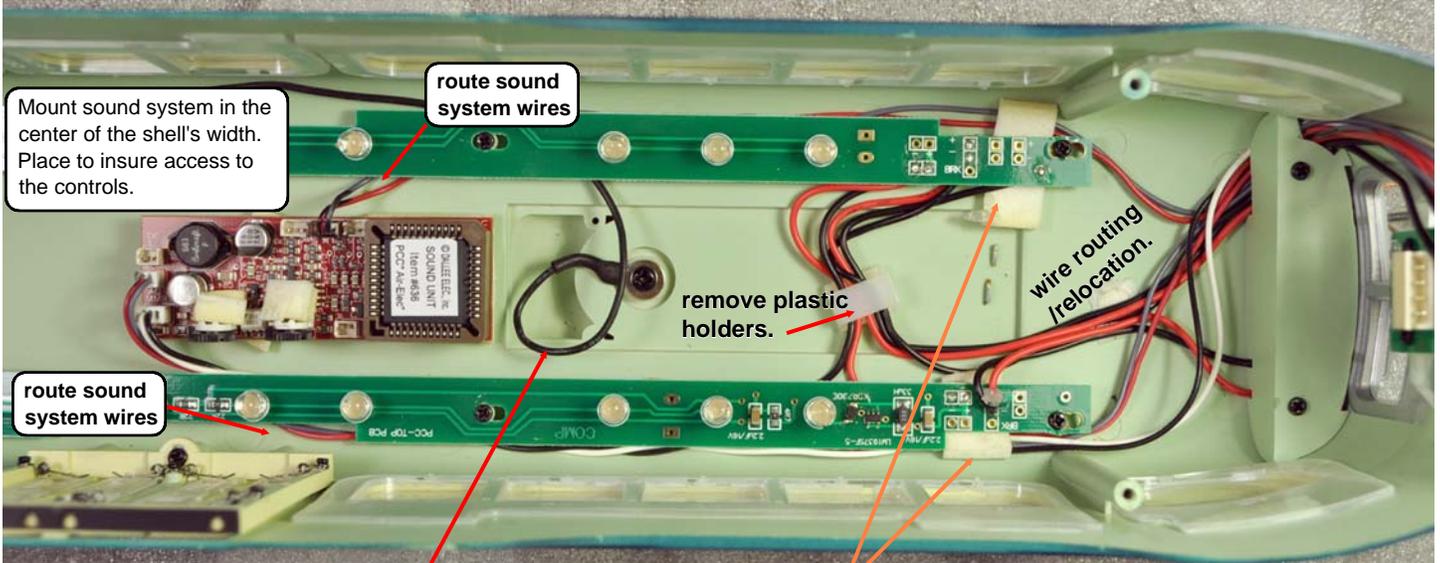
# DCv3 Sound installation for an Aristo PCC

This installation is with the Revolution. To do the standard DC track power installation requires additional wires leading to the backup battery and locating the sound on/off switch. These would be placed on the chassis of the PCC car but the battery could be hidden in the roof line as the sound card is.

First step is to remove the shell. The wires in the shell have to be relocated as shown. This is required to give clearances for the sound unit cover and to seal the speaker into the roof. The pole wire is strewn all about the roof. It needs to be moved and placed better to mount the sound unit.

The sound unit is located near the center doors so they can be opened to adjust the controls. It should be mounted a bit forward of what is shown.

Wires are routed in the same area as the end where the other wires are routed. We used the 18" 3pin connector's with mating ends for the wiring. This way the wires can be disconnected when removing the shell. They were placed in opposites directions to make misplugging impossible.

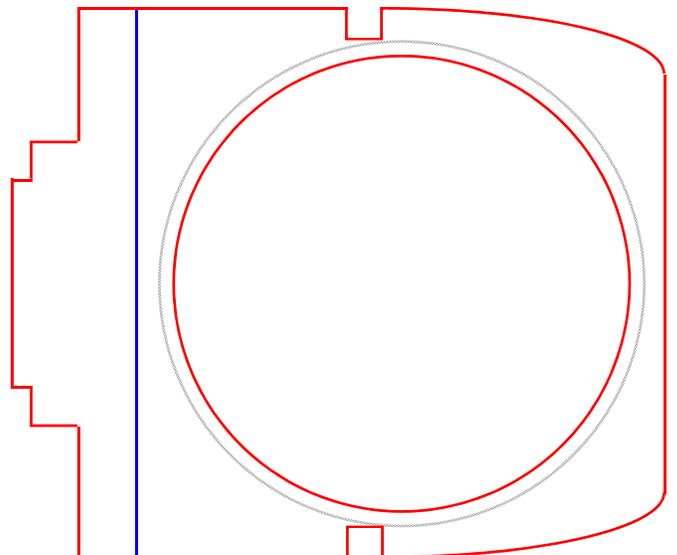


Pole pickup wire needs to be rerouted onto the side of the lights and a relief for movement, as show, needs to be done.

use foam tape, item #388, or other item to seal off air passage since this area contains the speaker.



Speaker template: Glue this template to stiff, thick, card stock. Then cut it out on the red lines. The blue line is used to bend as shown in the picture. All wires should be made to pass underneath this speaker template with speaker as well as along the backside passage. The plastic sprues used to hold the shell on, have to be cut slightly to allow the speaker edge to not have pressure on it. A dremel with a cutoff disc works well for making this small clearance cut. After the mounting location has been properly prepared, glue the speaker to the template. The gray circle indicates where the edge of the speaker will be when glued to this support / template piece. This makes the speaker "baffle", while short in depth, it works extremely well. The speaker will be glued to the top side of this template.





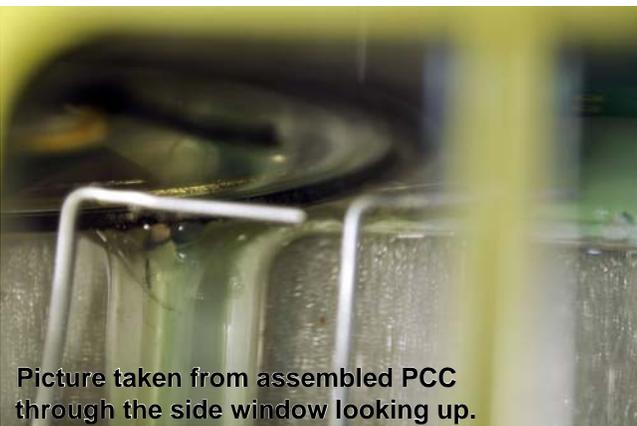
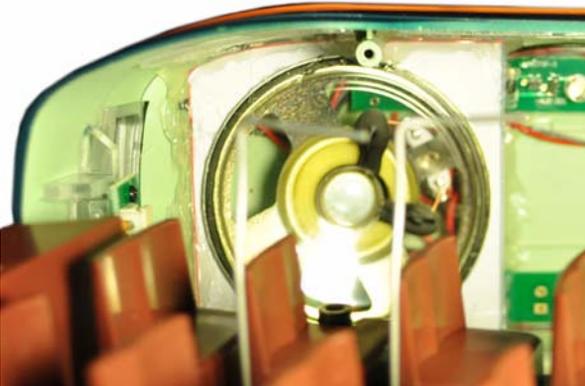
Before gluing the speaker to the template, properly solder wires to the back of the speaker as shown. These wires then need to be routed beneath the template's folded edge along the lighting strip to plug into the sound unit.



After gluing the speaker to the baffle piece, then locate it properly inside the shell. The wires are also tacked in place before to make sure they stay in place. For this we used hot melt. If you don't feel you can operate a hot glue gun very well, then use "Quick Grip" which is found in the craft shops. Quick Grip is nice since it never hardens fully and does set rather rapidly. We use it for a lot of projects.

Unfortunately, a picture with the speaker installed and sealed, was not taken. Two different pictures showing other items were, so they

are shown here. The entire edge of the speaker baffle needs to be glued to prevent air from seeping out from the backside of the speaker. This includes the front edge of the speaker and around all of the edges towards the top side of the shell and lighting strip. This is why the double sided tape was used underneath the lighting strip. Making an air tight enclosure is the goal. You can see the hot melt (or glue) sealing the entire edge of the speaker as well as the edge of the baffle cutout. Notice the red/gray wires leading out of the top of the picture. They are the speaker wires that go to the sound card. They were also glued in place. To prevent damage to the speaker, the poles need to either be bent (as shown below) or cut.

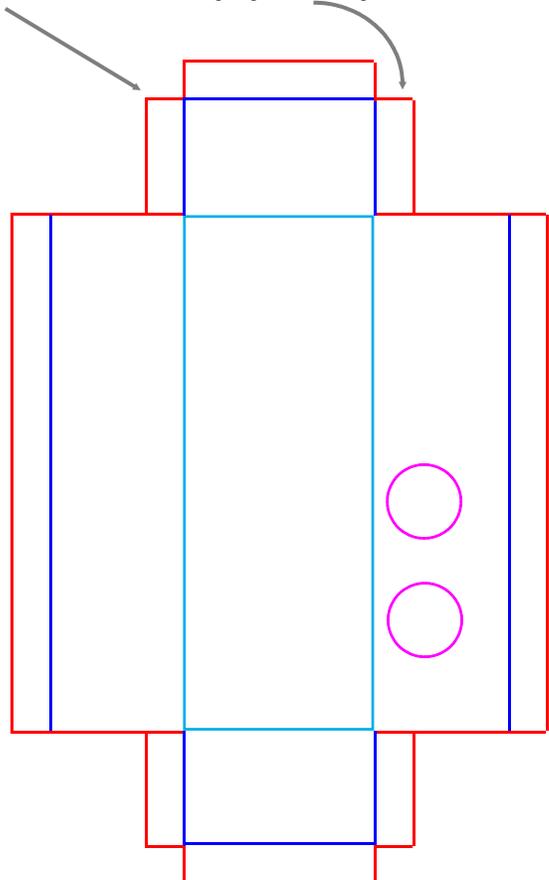


Picture taken from assembled PCC through the side window looking up.

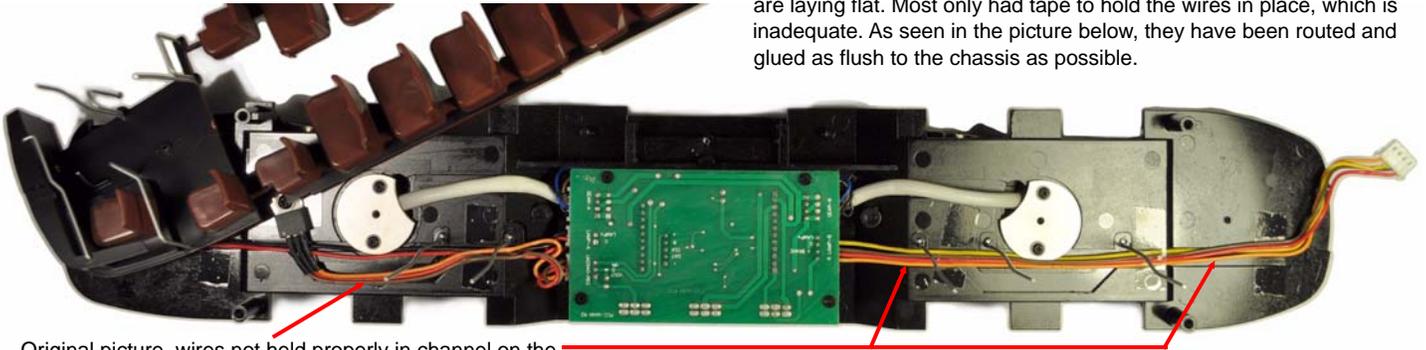
Next is to make the cover for the sound card. This makes it hide well inside the roof of the PCC. Again, this template needs to be glued to a card stock / thick paper. Cut it on the red lines. The dark blue lines are the bend lines. In this case, the printed lines are the inside of the box so that it can be fabricated without seeing the template. As seen in the picture below, there also needs to be a notch cut for the wires to clear. The one corner also has to be notched open to pass the speaker wires. The opposite center cut contains the rest of the wires. At this point, make the cover but don't apply it until later, after everything has been tested. The potentiometers also have double sided tape, item 388, stacked behind them to prevent them from pushing over if pressure is put to them when adjusting since you won't easily be able to access them to bend them back after the PCC is reassembled.



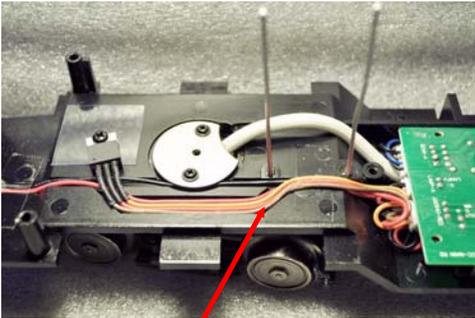
end side tabs bend in and get glued to long sides to form the cover.



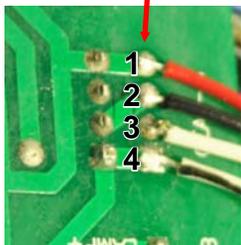
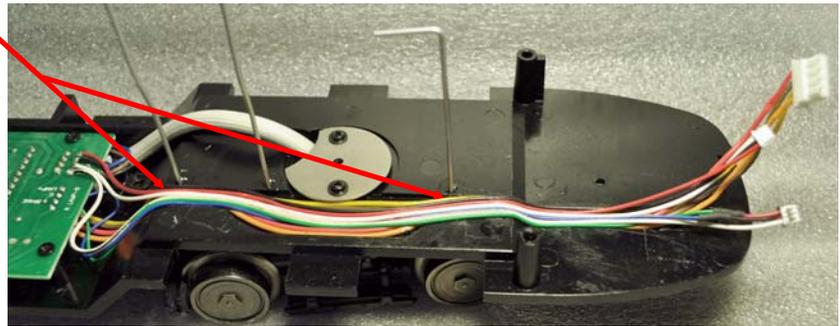
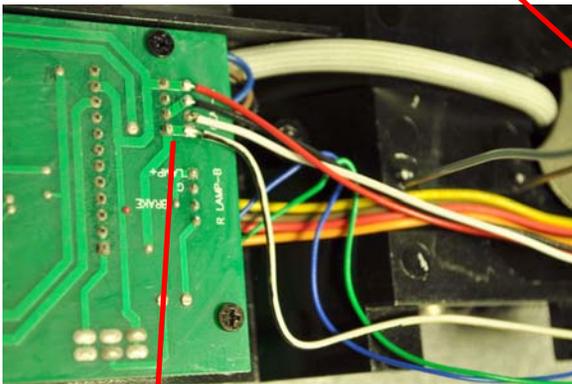
The floor wiring should be examined to make sure the existing wires are laying flat. Most only had tape to hold the wires in place, which is inadequate. As seen in the picture below, they have been routed and glued as flush to the chassis as possible.



Original picture, wires not held properly in channel on the left or right side. Rearrange and glue in place. This will help keep the seats flat to the base.



Wires properly placed and held by instant gel glue. Note how flat they lay compared to before!



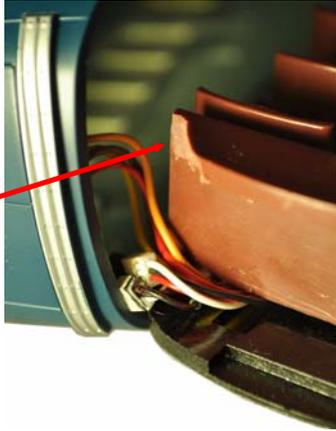
- 1 - J1 track power (red)
- 2 - J3 Motor (black)
- 3 - J3 Motor (white)
- 4 - J1 track power (gray)

Connections from the mother board to the sound board are shown to the left and above. The mother board has existing pcb pads that allow for easy soldering of the wires to them. An identification table is also shown. As stated previously, two 3 pin wiring harnesses were used to connect to the sound card and the required connections to the mother board. Since this example used an Aristo Revolution receiver, only two functions were wired to the sound cards J4 inputs. While the other two can be wired, it's usually operating doors or not is not varied in a unit but the ability to change from sectional to welded rail remotely might be desirable. To do that more wires would have to be connected. Since a lot of wires already pass to the top on this side, you might want to pass them on the other side.

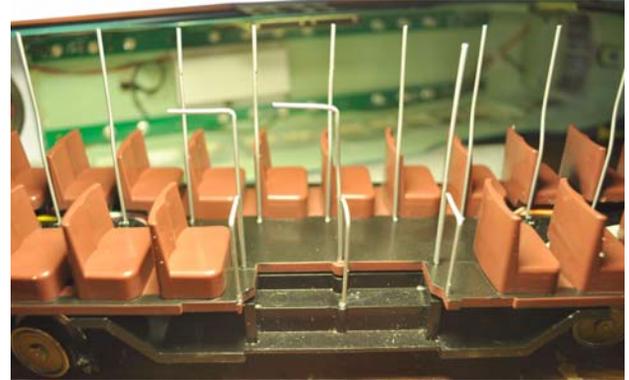
As stated previously, only two functions were needed from the Revolution receiver. To prevent wire clutter from happening, the locking tabs were slid to the side which allows for the wires, with their crimped ends, to be removed. If this is done properly, you can put them back into the housing when needed. The picture to the right shows how little wire clutter exists when doing this.



This shows the top shell plugged into the added wire connectors from the bottom chassis.

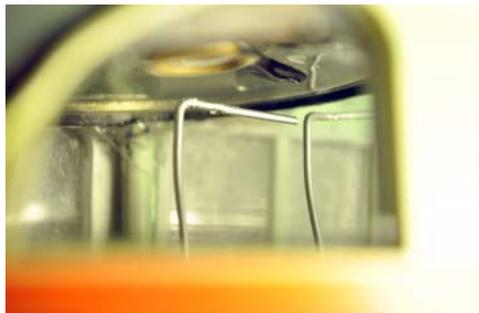


Cut off some of the seat end plastic to obtain better wire clearance when assembling.



At this point the sound unit can be tested. When all works, glue the cover in place. To insure clearance of the poles for the sound unit, they were bent. After final installation, it was found that this step was unnecessary since the sound unit fit nicely between the poles and they caused no problem. So make sure that the sound unit is installed in the center of the top shell!

Some finished pictures taken looking up to see the sound card and speaker. When looking normally at the PCC car the items cannot be seen!



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