2010 Prius Rear Door Speaker Upgrade

Date: Wednesday, November 09, 2011

Disclaimer

Use this document and its contents at your own risk.

Forward

Big thanks to PC user TJ Minski for forging ahead on this modification. His instructions are followed pretty much verbatim with a few modifications.

The reasons I wanted to do this modification

- Low volume and lack of high frequency sound in the rear seats.
- Rattles from the speakers in the rear seats.

Purchased Polk Audio DB651S (S for slim) on Amazon for about $58.00.

Tools

- Pop-rivet tool and 3/16” rivets.
- Drill and bits
- Rotary tool and cutoff wheels
- Razor blade
- Soldering iron and solder.
- Wire clippers and screw drivers.

Rear door panel removal

1. Remove two screws, one in the door armrest and one behind the door latch.

2. Grasp the panel at the opening at the bottom of the panel and yank firmly outward.

3. Release the two cables for the door latch and the wiring harness.

Speaker removal

1. Using a 3/16 drill bit, drill the center of the four pop-rivets. This should release them. I used a screwdriver and pliers to remove the head of the rivets.
2. Disconnect the wiring harness to the speaker.

OEM speaker/adapter modifications

1. Remove the foam insulation on the surface of the speaker/adapter with a sharp razor blade and set aside. Try to remove as much adhesive with the foam as possible.

2. With the razor blade remove the paper cone of the speaker from the edges.
3. With a rotary tool, remove the speaker cage at the adapter sides.
4. Clip the wires at the cone to leave as much wire as possible attached to the adapter. You can also remove the existing wire and use regular insulated speaker wire instead.

Speaker to adapter

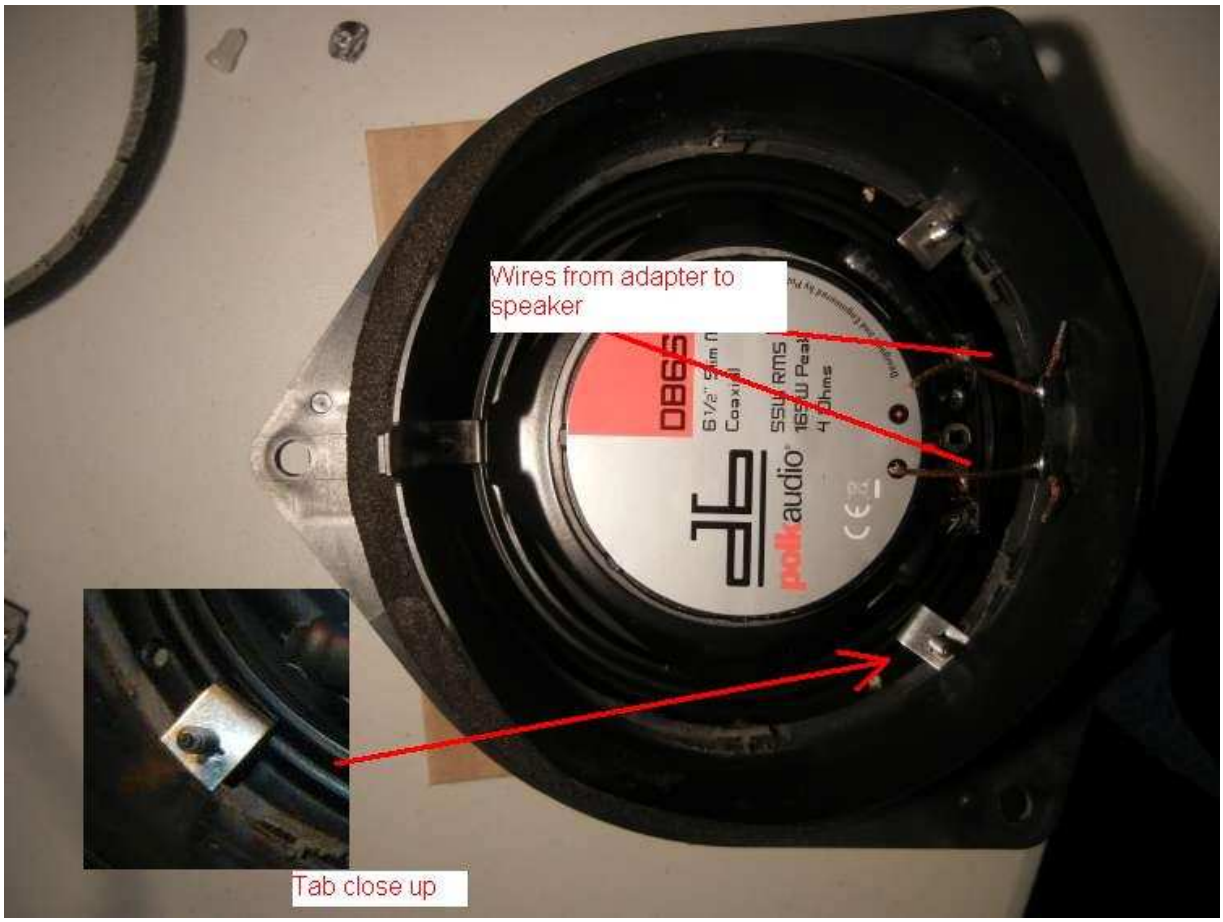
1. TJ Minski chose to remove a portion of the adapter (including the lip) so that the overall height including the new speaker was about the same as the OEM speaker. I chose to just add the speakers to the top of the adapter which added about ¼" to the height. This did have the side effect of keeping one of the door panel clips from not fastening. Other than that, I found no other consequences and that seemed to be minor.
2. I used the screws and clips included with the Polks to attach the new speaker. There are probably numerous ways to fasten the speakers to the adapter but this method securely fastens it to the adapter. Glue or silicone is another possibility.

a. Add three or four screws in the face of the speaker and center the speaker in the adapter. Line up the speaker wiring tabs to the wiring tabs on the adapter (see picture below). Mark the places where the screws touch the adapter and use the rotary tool to remove (grind down) the inner lip (where the original speaker cone attached) on the adapter walls in these areas. This allows the screws to move freely without being obstructed.
b. With the rotary tool, cut slots in the side of the adapter just above the inner lip for the clips to slide into.
c. Add the tabs to the screws and push into slots while tightening. Make sure the speaker is centered in the adapter.

Wiring

1. Solder the wires from the adapter to the speakers. They should directly connect straight across to match the polarity (+/-). See also the attached wiring diagram at the end of the document.
2. For completeness, I will list the color/polarity:
   Rear Left + (Black)
   Rear Left – (Yellow)

Rear Right + (Red)
Rear Right – (White)



Reinstall

At this point I would verify the speakers are working by operating the head-unit. Make sure sound is coming from both speakers.

1. Reattach the foam to the top of the speaker. You may need to add some additional adhesive.

2. Place the speaker in the door hole. Make sure the speaker is centered by putting something to fill the three holes. I used the plastic inserts that came out when I removed the original rivets.
3. Using your pop-rivet gun, insert a rivet into the holes one at a time and apply.

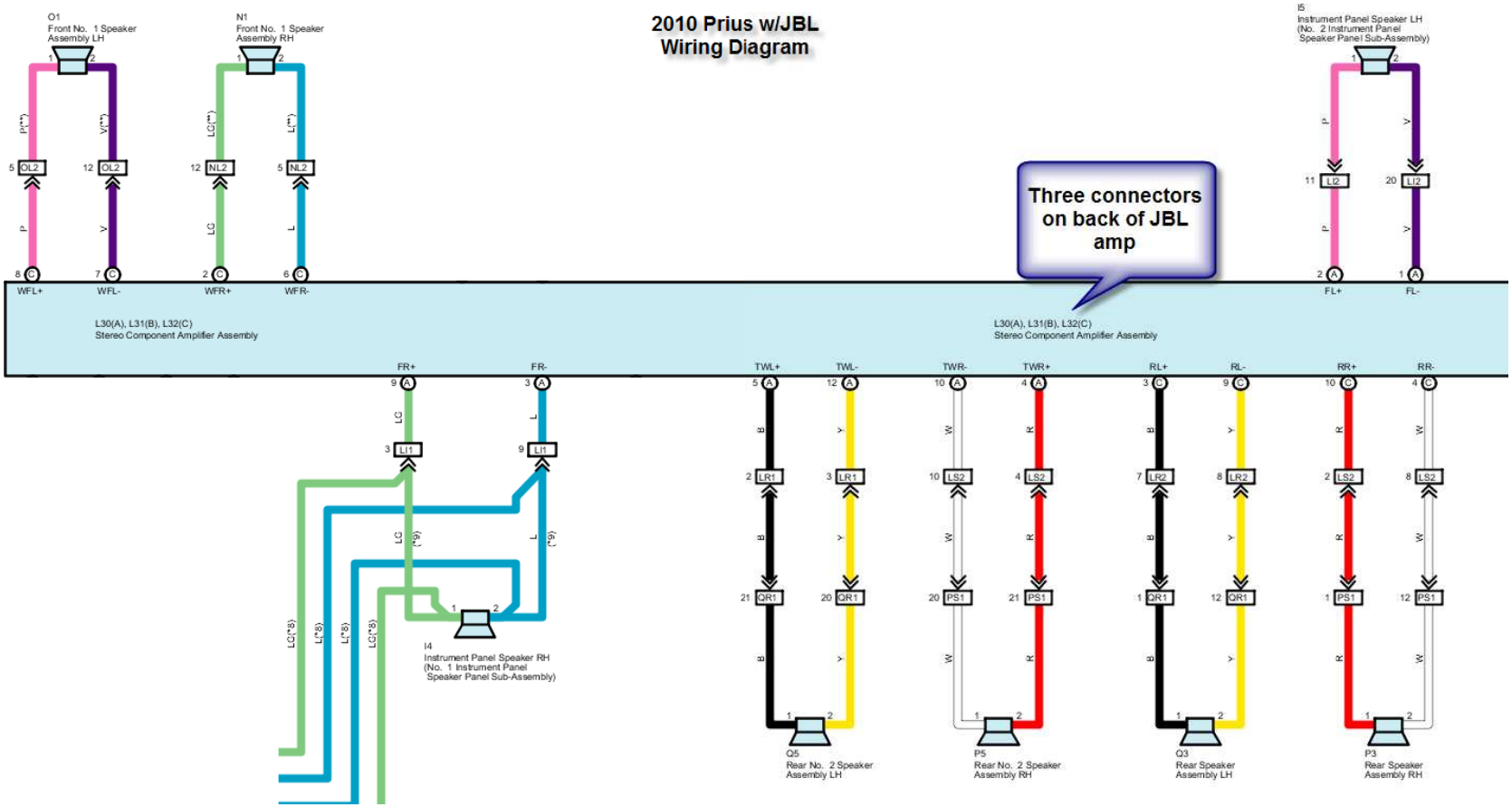
4. I added noise deadening material around the speaker. This helped quite a bit in eliminating rattles I had in the rear doors and made the doors feel/sound more solid when closing.

5. Reattach the speaker wire.

6. Replace the door panel attaching the two cables first. Green cable below the white cable.
7. Reattach the window switch wiring harness.
8. Place the top of the panel into the slot at the window and slide gently down.

9. Push the panel clips into their respective holes. Note the clip nearest the speaker will likely not insert but the panel will hold securely.
10. Replace the two screws and the items that hide them.

Congratulations, you are done.


2010 Prius w/JBL
Wiring Diagram
O1
Front No. 1 Speaker
Assembly LH
N1
Front No. 1 Speaker
Assembly RH
I5
Instrument Panel Speaker LH
(No. 2 Instrument Panel
Speaker Panel Sub-Assembly)
Three connectors
on back of JBL
amp
WFL+
WFL-
WFR+
WFR-
FL+
FL-
L30(A), L31(B), L32(C)
Stereo Component Amplifier Assembly
L30(A), L31(B), L32(C)
Stereo Component Amplifier Assembly
FR+
FR-
TWL+
TWL-
TWR-
TWR+
RL+
RL-
RR+
RR-
I4
Instrument Panel Speaker RH
(No. 1 Instrument Panel
Speaker Panel Sub-Assembly)
Q5
Rear No. 2 Speaker
Assembly LH
P5
Rear No. 2 Speaker
Assembly RH
Q3
Rear Speaker
Assembly LH
P3
Rear Speaker
Assembly RH