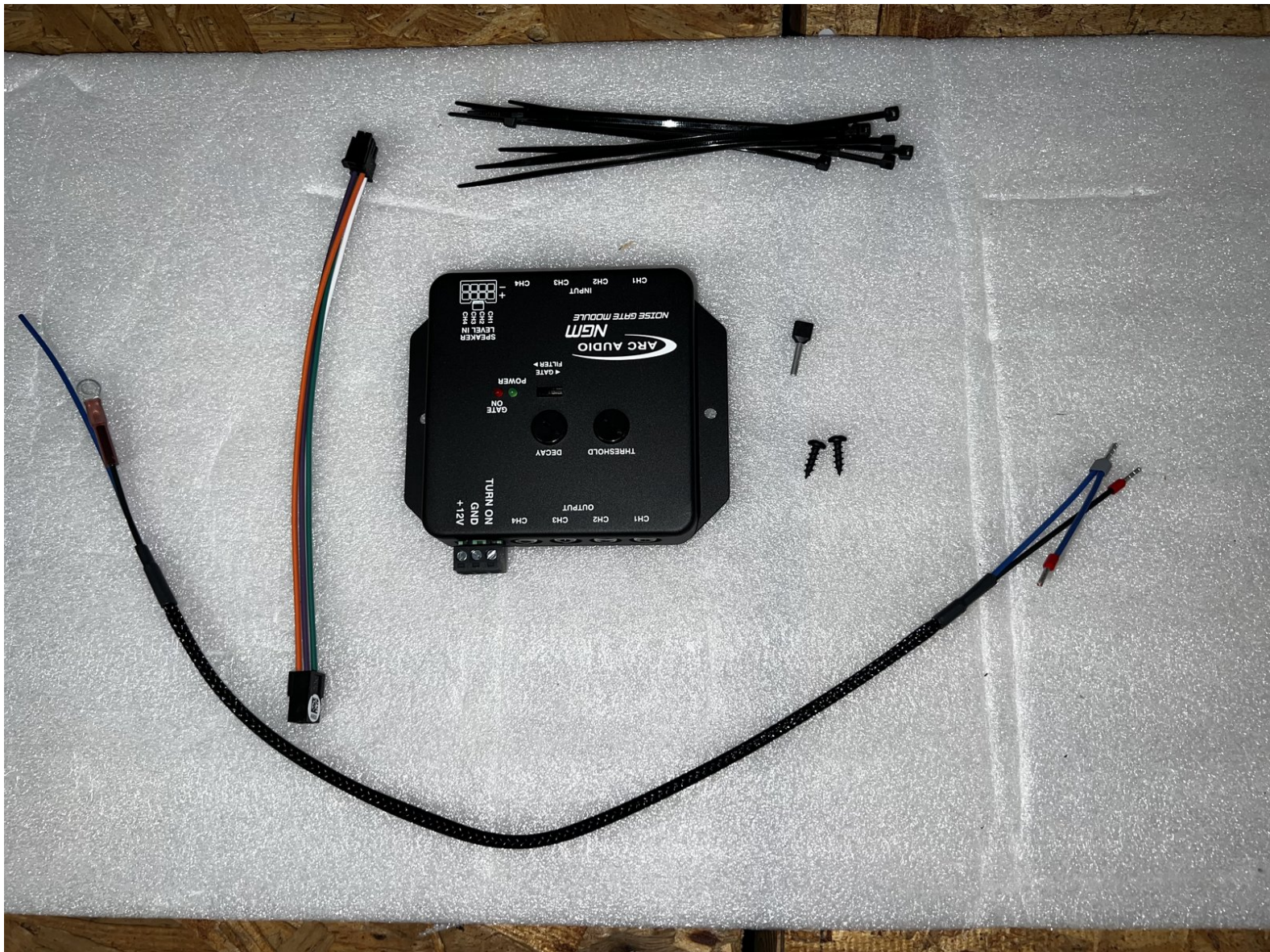




Beatbox Noise Gate Module Update

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Written By: John Kronuch



INTRODUCTION

In this guide we will showing the update procedure for the RoamRig Beatbox using a noise gate module to help reduce the amount of background noise that is experienced in certain vans when no audio is playing.

NOTE: You only need to remove the passenger seat for this update!

TOOLS:

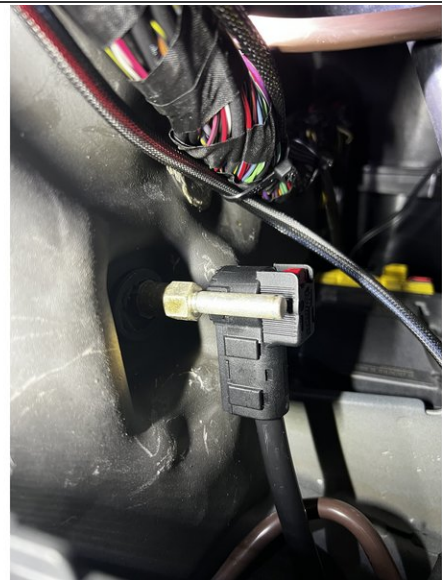
- [E12 External Torx Socket](#) (1)
 - [Socket Wrench 3/8" Drive](#) (1)
 - [Wire Cutters](#) (1)
 - [#2 Phillips Bit for Drill or Impact Driver](#) (1)
 - [Drill/Impact Driver](#) (1)
 - [Stubby #2 Phillips Screw Driver](#) (1)
 - [Ratcheting Bit Holder](#) (1)
 - [Wire Strippers](#) (1)
 - [Precision Flat Blade Screw Driver](#) (1)
 - [Flush Cut Pliers](#) (1)
 - [3/8" Open End Wrench](#) (1)
 - [Prop for Sub Box](#) (1)
 - [3/8" Drive Extension - 3"](#) (1)
 - [Torque Wrench 3/8" Drive](#) (1)
-

Step 1 — VS30 Battery Disconnect

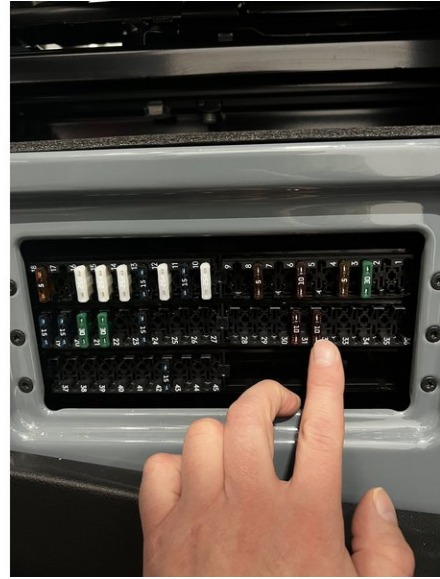


- Remove battery ground disconnect access cover to expose battery ground disconnect

Step 2

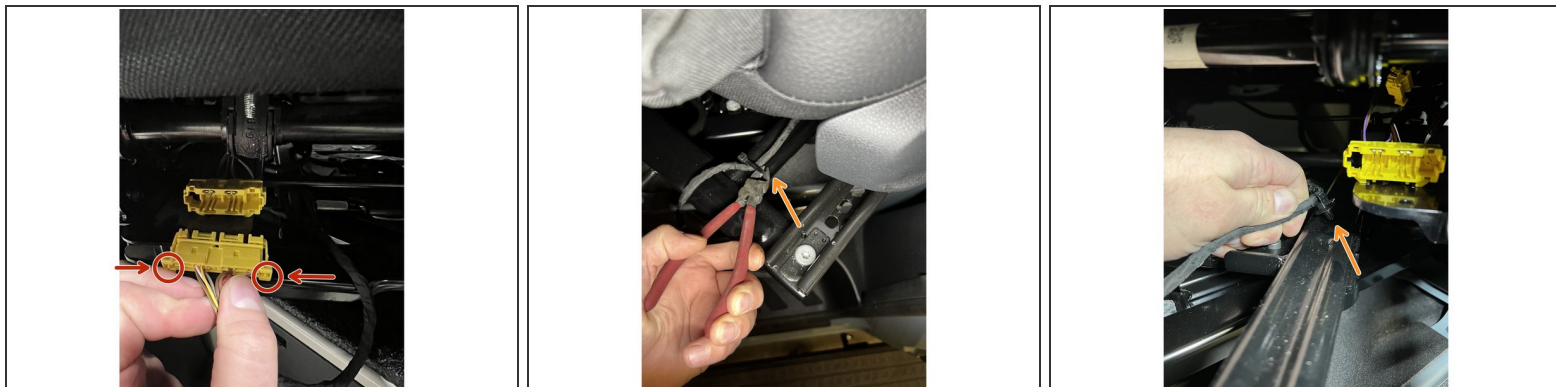


- Depress the red tab on the battery ground disconnect, and pull to remove from ground stud

Step 3

- Remove the fuse panel cover from the driver side seat base to expose fuse panel
- Locate and remove fuse #32

Step 4 — Seat Wire Harness Disconnection



- Disconnect the yellow plug for the seat wire harness by depressing the tabs on each side, and pulling connector out.
- ⓘ Tabs are depressed inwards, towards the center of the plug.
- Remove seat wire harness from seat rails by unclipping securement clips along the seat rails.
- ⚠ If equipped with power seats, you will need to adjust the seats to allow them to swivel PRIOR to disconnecting the battery.

Step 5 — Disconnecting Power Seat Harness



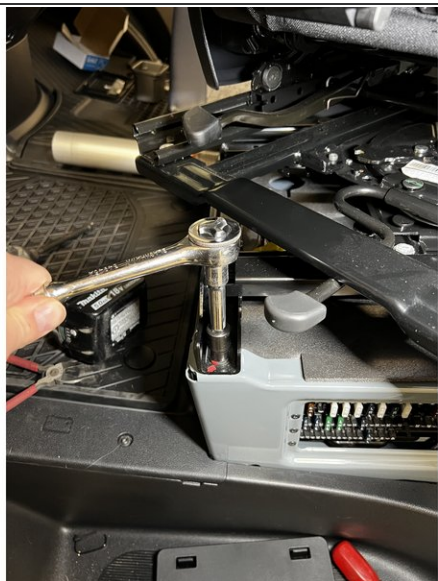
- ⓘ If your van does not have power seats, skip to the next step.
- Located the harness for power seats on the module under the seat.
- To disconnect the plug, depress the locking tab, and move the locking lever to the right to release the plug from the module.

Step 6 — Seat Wire Harness Removal



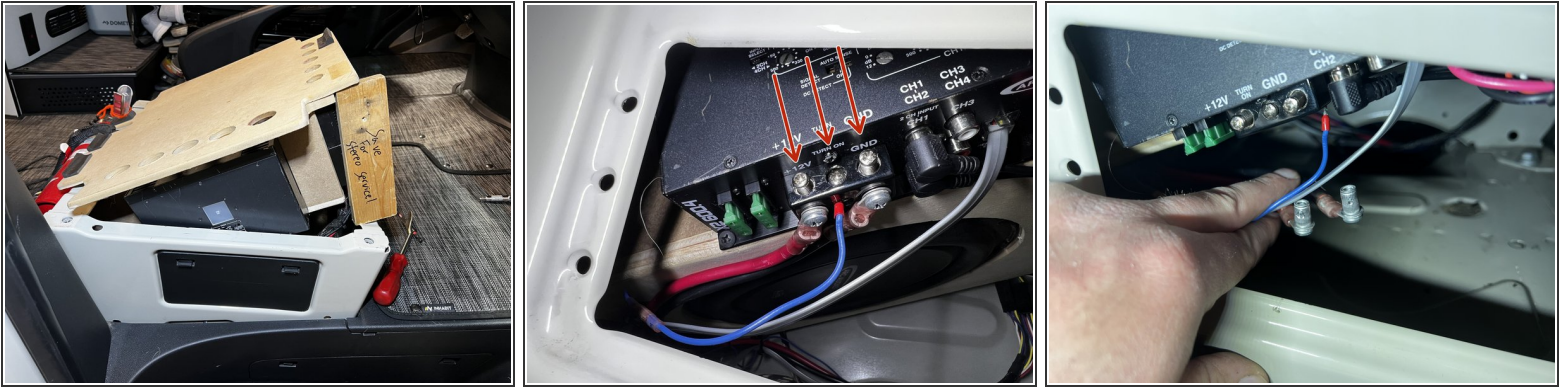
- Route seat wire harness and the power seat harness (if equipped) through the opening in the seat swivel.

Step 7 — Seat Removal



- Using the E12 Torx socket and socket wrench, begin removing the 4 seat bolts that secure the seat to the seat base.
- ⓘ It will be necessary to rotate the seat to access all the seat bolts.
- Once the 4 seat bolts have been removed, the seat can be lifted out of the vehicle.
- ⓘ Adjust the seat back to the upright most position to make the seat easier to remove from the van.
- ⚠ Take care to not scratch the door panel or the B pillar on the van when removing the seat. Masking tape can be used on the seat base to help prevent damage.

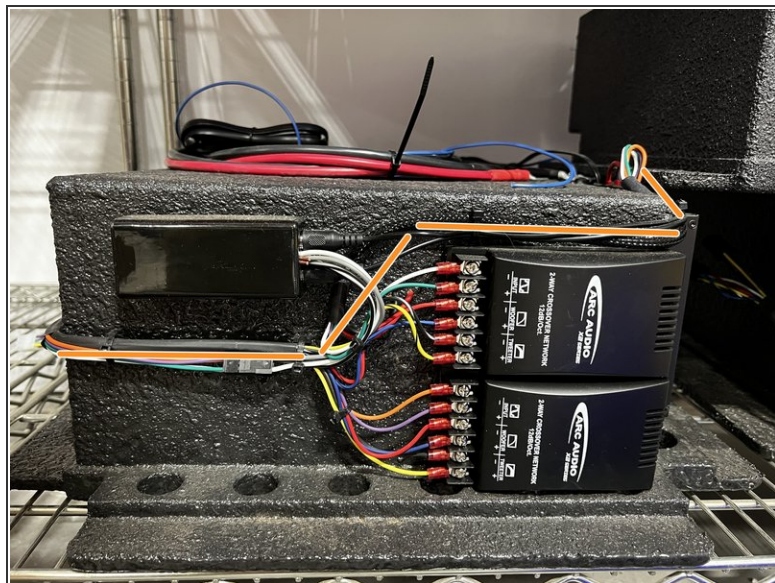
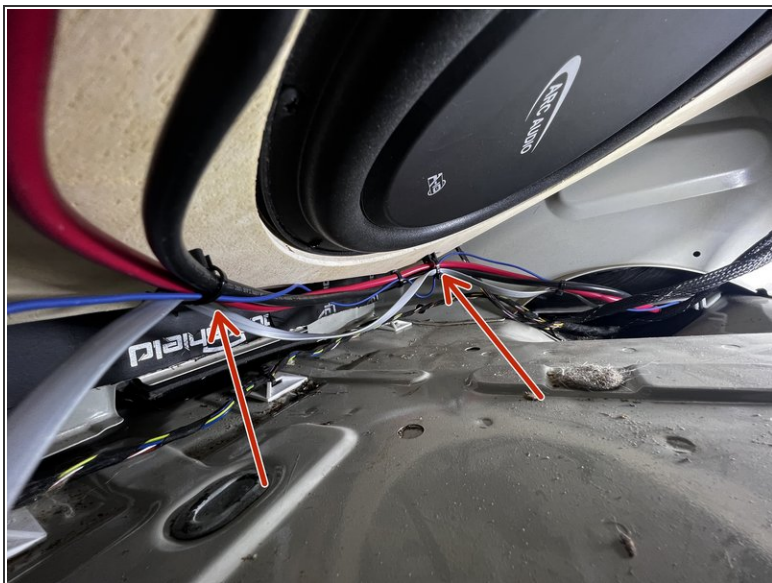
Step 8 — BeatBox Removal - Power and Ground Wire Disconnection



- Use a prop (piece of scrap wood being used in the attached image) to lift and hold the front of the sub box up to gain access to wiring connections on the amplifier. Remove the access panel on the side of the seat base to gain access to the amplifier.
- Use a #2 Phillips screwdriver to loosen the set screws on the amp for the 12v power (red wire), remote signal (small gauge blue wire), and negative (black wire). The set screws do not need to be fully removed, just loosened so the wires can be removed from their respective locations.
- Once the set screws are loosened, pull the wires out from the amp.
- ⓘ This is a prototype box that is unfinished. Some of the wire routing may be SLIGHTLY different/not as cleanly routed in end user finished boxes. The overall procedure is the same.

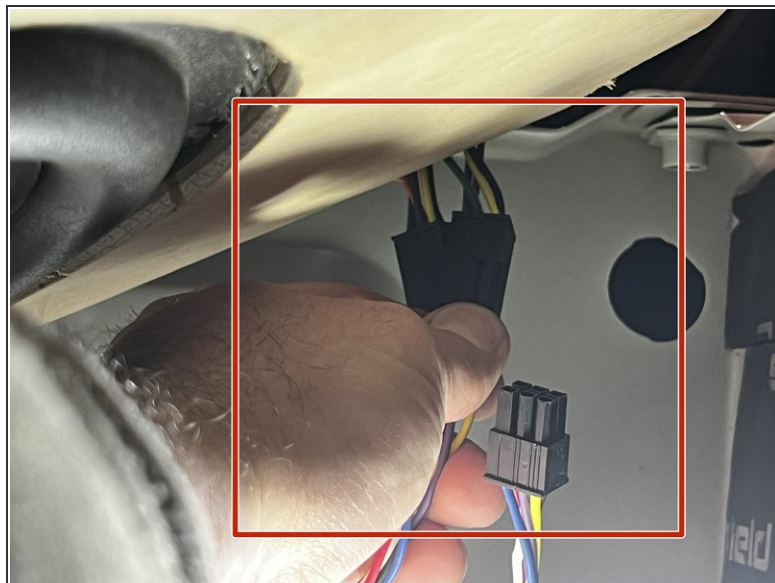
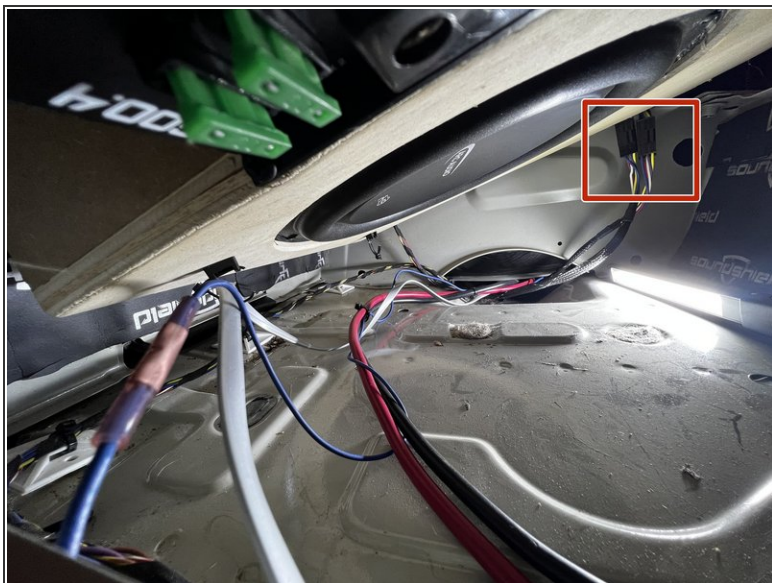
Step 9 — BeatBox Removal - RJ12 Cable - Bass Knob Control Cable Removal

- Unplug the RJ12 cable for the bass control knob from the amplifier. Depress the locking tab, and pull the wire down and out to remove.

Step 10 — BeatBox Removal - RJ12 Cable - Bass Knob Control Cable Removal

- ① There are two wire routing methods for the RJ12 cable. On the 10" BeatBox models, the RJ12 wire is run with the power/ground/remote wires. On the early 8" BeatBox models, the RJ12 wire is routed with the crossover harness.
- If the RJ12 cable is routed with the power wires as shown, cut the zip ties securing the wiring to the sub box. There are two (2) zip tie mounts securing the wires, so only those need to be cut. Do not cut the zip ties bundling the wires together, ONLY the ones securing the wiring to the mounts.
- If you have an early 8" BeatBox, the RJ12 cable will be routed from the amplifier following the harness to the crossovers and the crossover connection plugs. (highlighted in orange). You will need to cut all the zip ties securing the RJ12 to the main harness and crossover harness in order to free the RJ12 cable.
- ① The second image is with the sub box oriented upside down on a bench for illustration purposes.

Step 11 — BeatBox Removal - Crossover Harness Disconnection



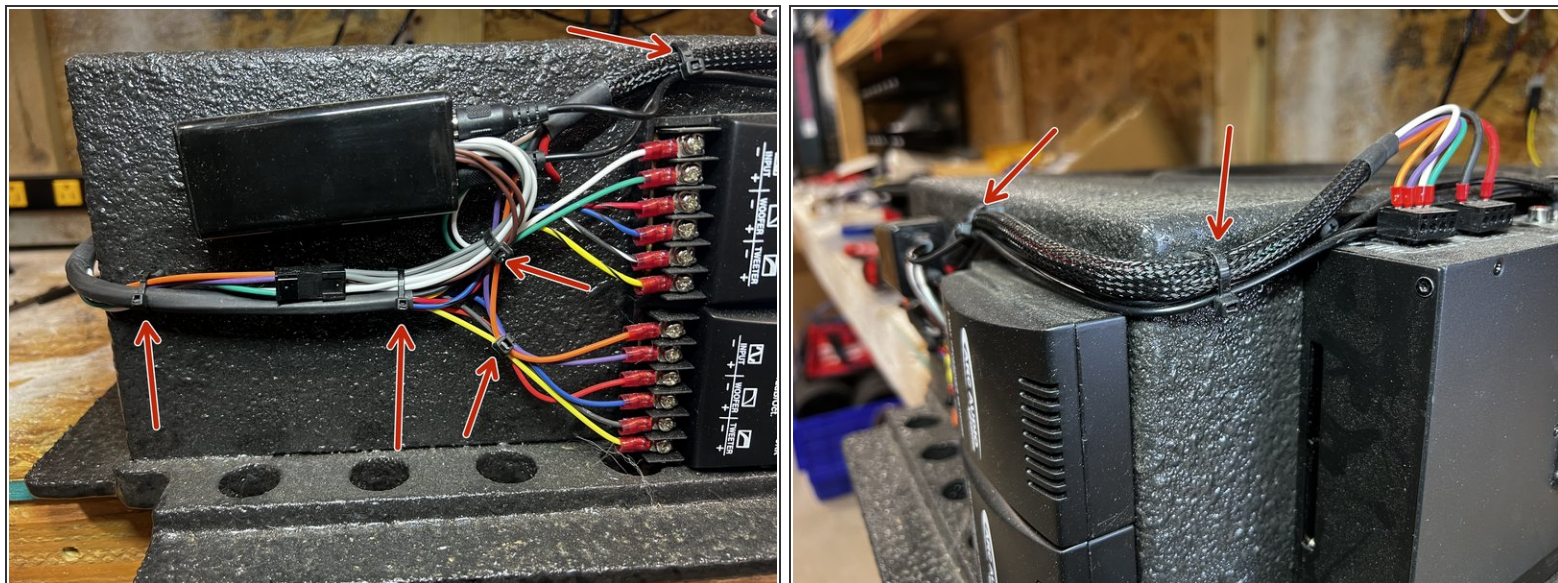
- Disconnect the two plugs from the crossover harness that connect to the door speaker harness'. Depress the locking tab, and pull apart to disconnect. You can reach in from the access panel as shown to reach the plugs.

Step 12 — BeatBox Removal



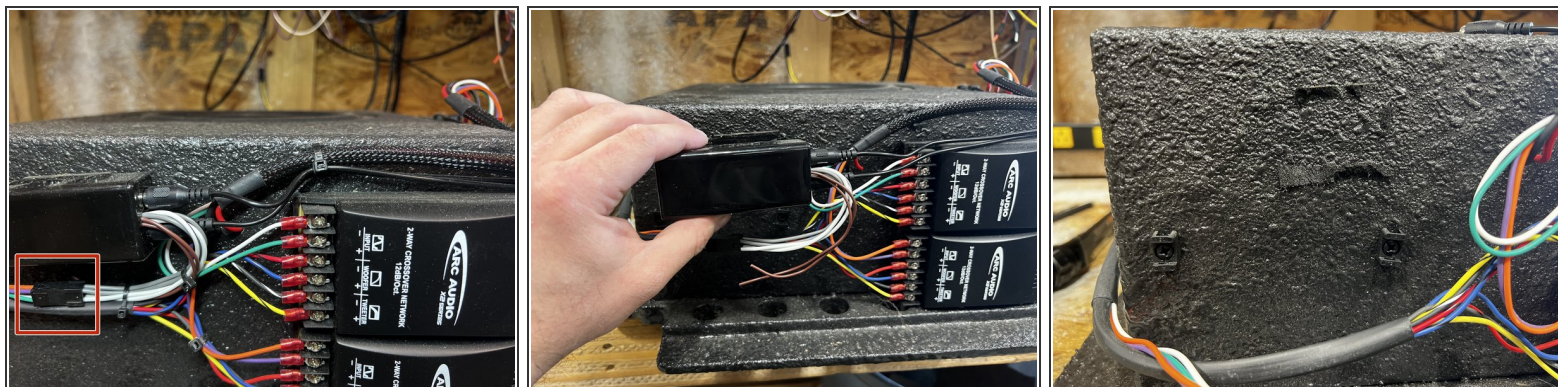
- With all the wiring connections disconnected, the sub box may now be lifted and removed from the seat base and set on a bench to finish the update.

Step 13 — BeatBox Disassembly



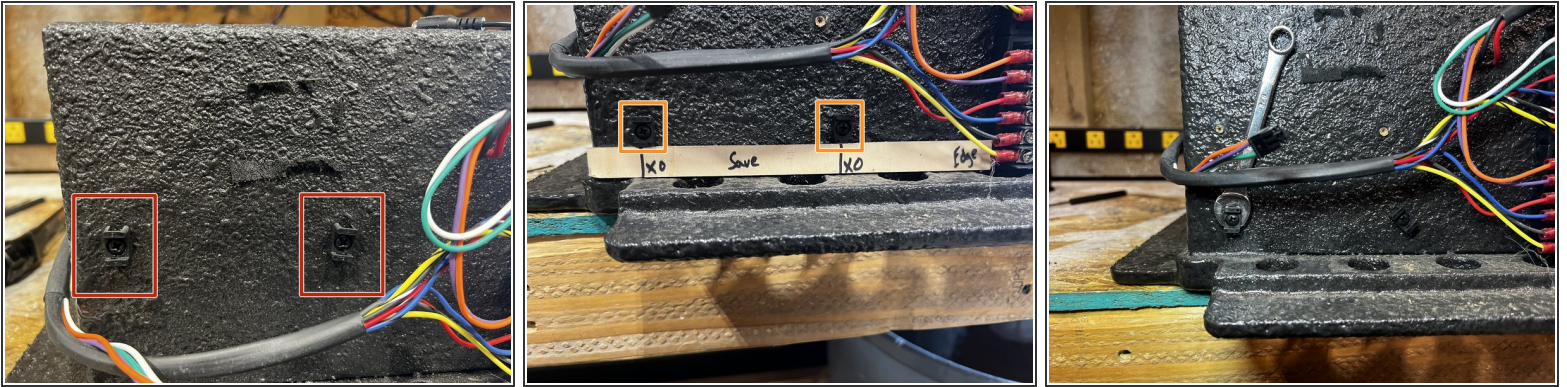
- ① A finished production box is shown in the following steps to ensure accuracy in images.
- With the sub box on a suitable work surface, begin cutting the zip ties that secure the wiring to the box.

Step 14 — BeatBox Disassembly - Line Out Converter Removal



- Disconnect the plug for the line out converter by depressing the locking tab, and pulling the connector apart.
- Pull the line out converter off the sub box and discard as it will not be reused.
- Clean any of the adhesive foam residue as best you can off the sub box.

Step 15 — Zip Tie Mount Relocation



- Using a #2 Phillips bit and drill/impact gun remove the zip tie mounts from the sub box.
- Secure the zip tie mounts previously removed approx 3/4" to 1" above the the lip on the box as shown. Location of these is not super critical, but if mounted too low it is very difficult to get a zip tie into the mount.
- Once the mounts are secured, use the 3/8" open end wrench to turn the mounts straight.

Step 16 — Noise Gate Module Installation



- Locate the power plug on the NGM (Noise Gate Module). Using a precision flat blade screwdriver, loosen the flat head screws on the power plug to open the receptacles.
- ⓘ The screws in the power plug are captured, so they can not be removed all the way.

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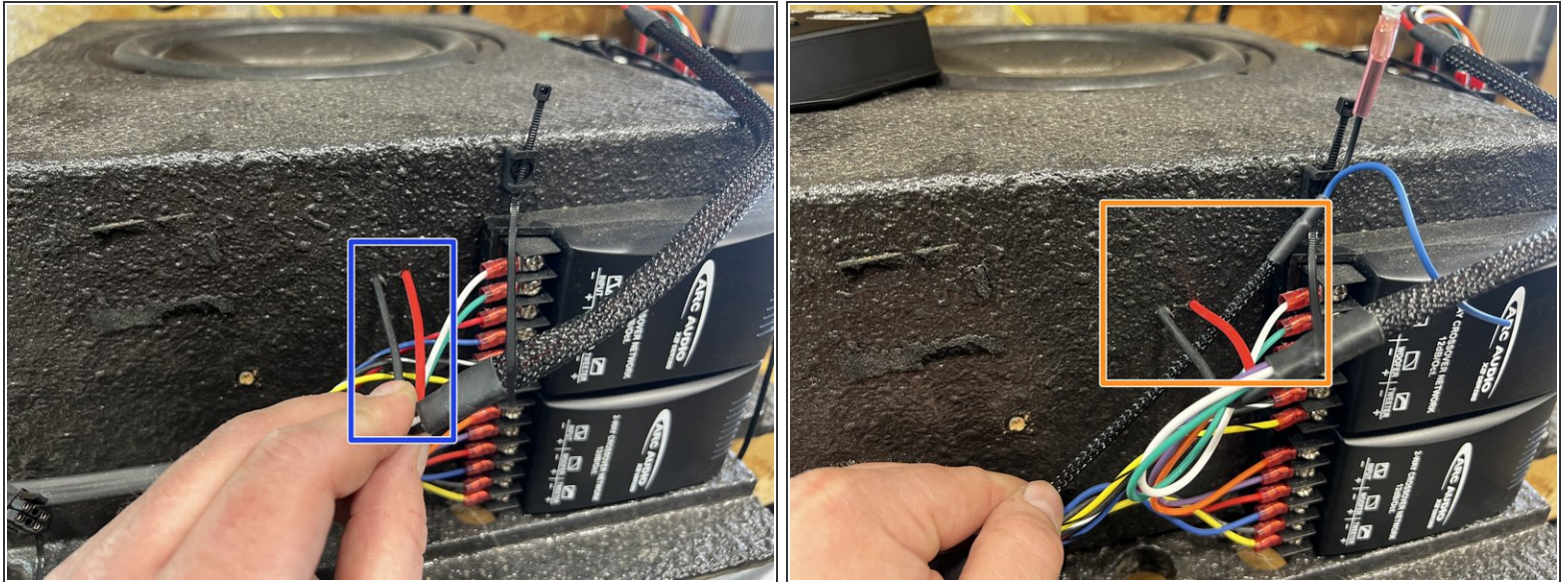
Step 17 — Noise Gate Module Installation - Harness Connection



- Locate the update harness that was supplied with the noise gate module.
- Insert the ferrules into the plug on the noise gate module. The black wire goes into the middle location. The two blue wire ferrule can go into either one of the remaining slots.
- Loop the remaining blue wire into the remaining open slot.
- Tighten the set screws using a flat blade screwdriver until they are snug. Give the harness a slight tug to ensure the wires do not pull out.

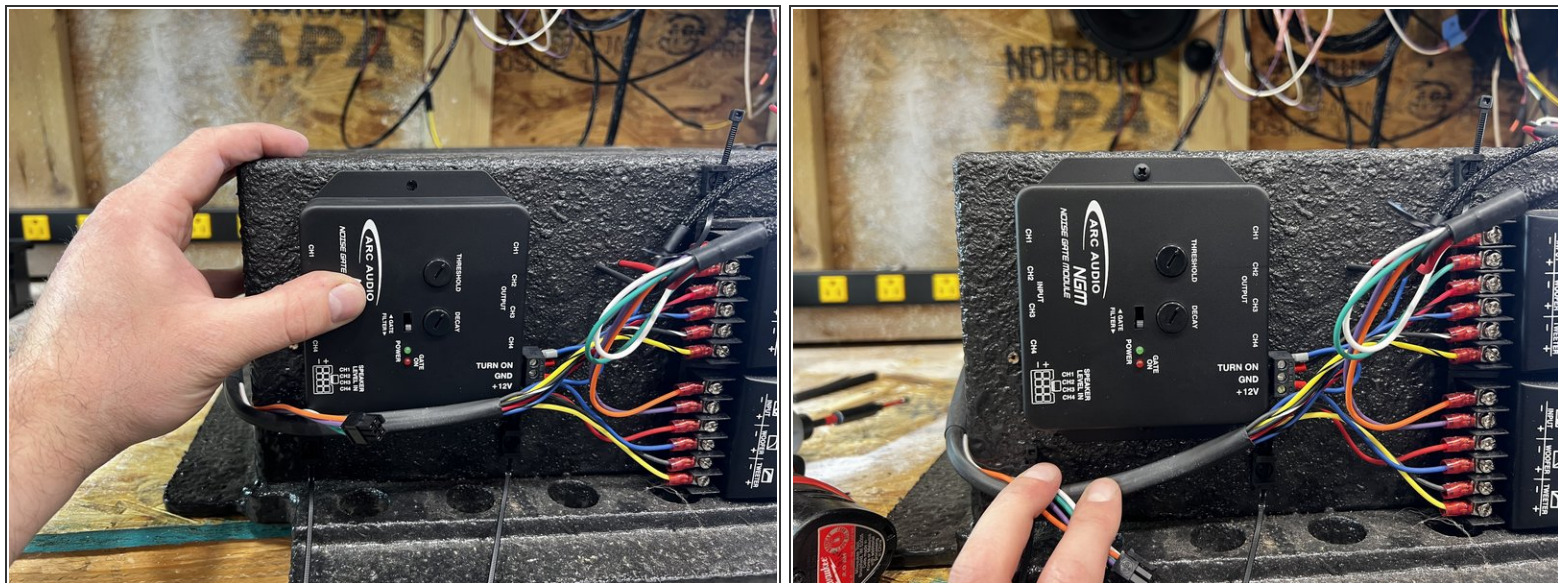
⚠ Ensure the black wire is in the middle position marked GND

Step 18 — Noise Gate Module Installation



- Pull the red and black wires that go into the sub box out approx. 2 inches as shown.
- Route the end of the NGM harness beneath the red and black wires as shown.

Step 19 — Noise Gate Module Installation - Securing the NGM



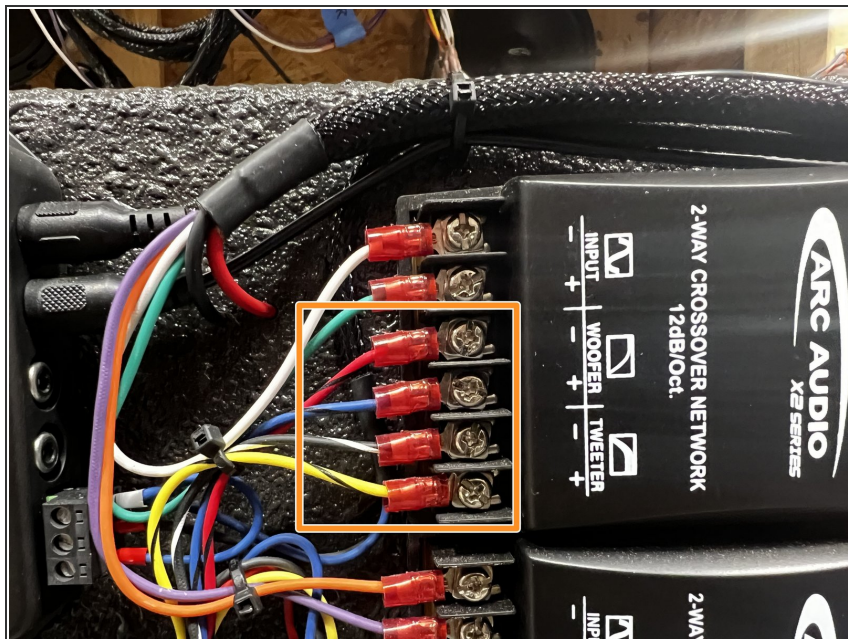
- Place the NGM approximately as shown. Ensure the RCA cables can reach the NGM. You can slide the NGM towards the crossovers (to the right in the image) to ensure the RCA cables will reach.
- Once the final position has been verified, secure the NGM to the sub box using the #6 screws provided. Use a #2 Phillips bit with a drill/impact driver.

Step 20 — Noise Gate Module Installation - Harness Routing



- ① Now is a good time to label the RCA cables to reflect their position on the amplifier. Label each end (NGM side) of the RCA's CH1 or CH2 based on their respective positions on the amplifier.
- Route the harness for the NGM towards the amplifier, following the RCA cables and the main harness for the amp.
- Line up the eyelet on the black wire over the GND position for the amp. Ensure the eyelet has enough slack to reach the position, and not be pulled tight against the RCA cable.
- Once the NGM harness is routed, secure the NGM harness, RCA cables, and the amp harness using a provided zip tie onto the zip tie mount next to the amp.
- ① We have found it best to have the order of the wires on the zip tie mount as follows: NGM harness, then the RCA cables, then the amp harness last. This is the order that is shown in the 3rd picture.

Step 21 — Noise Gate Module Installation - RCA Connections



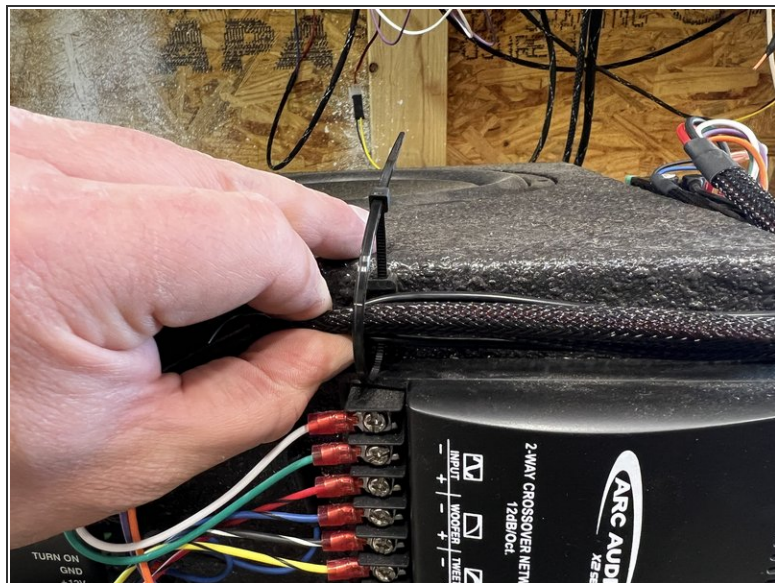
- Take note of the wire colors on the crossovers, particularly the red, blue, black, and yellow wires with the BLACK STRIPE
- Depending on which crossover the striped wires are located, will dictate the location of the RCA cables to ensure the Right/Left balance functions correctly.
- In the referenced image, the striped wires are on the top crossover. (with the subwoofer facing up on the bench)

Step 22 — Noise Gate Module Installation - RCA Connections



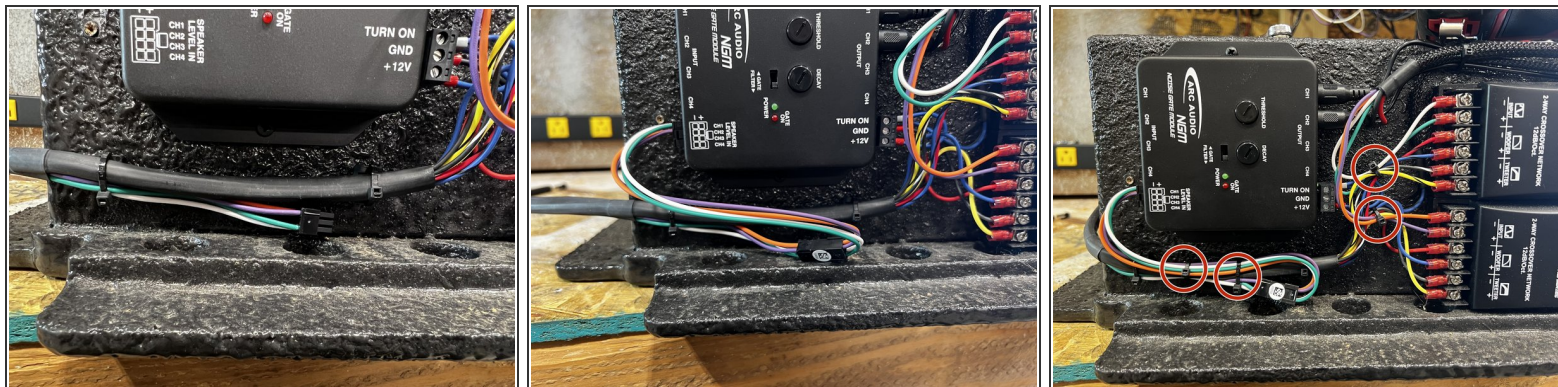
- If the BLACK STRIPED red, blue, black, and yellow wires are on the upper crossover (upper with the subwoofer facing up) connect RCA from channel 1 on the amp to channel 1 on the NGM. Channel 2 from the amp will go to channel 2 on the NGM
- If the BLACK STRIPED red, blue, black, and yellow wires are on the lower crossover (lower with the subwoofer facing up) connect RCA from channel 1 on the amp to channel 2 on the NGM. Channel 2 from the amp will go to channel 1 on the NGM.

Step 23 — Noise Gate Module Installation - Harness Routing



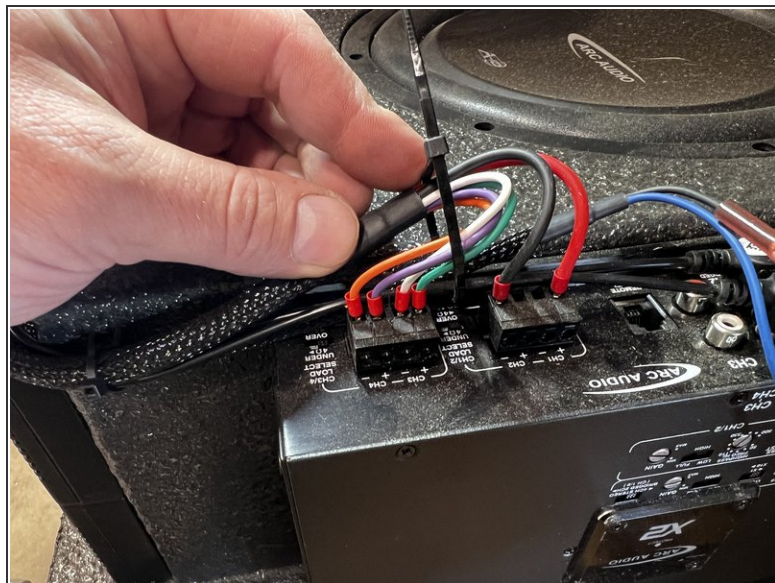
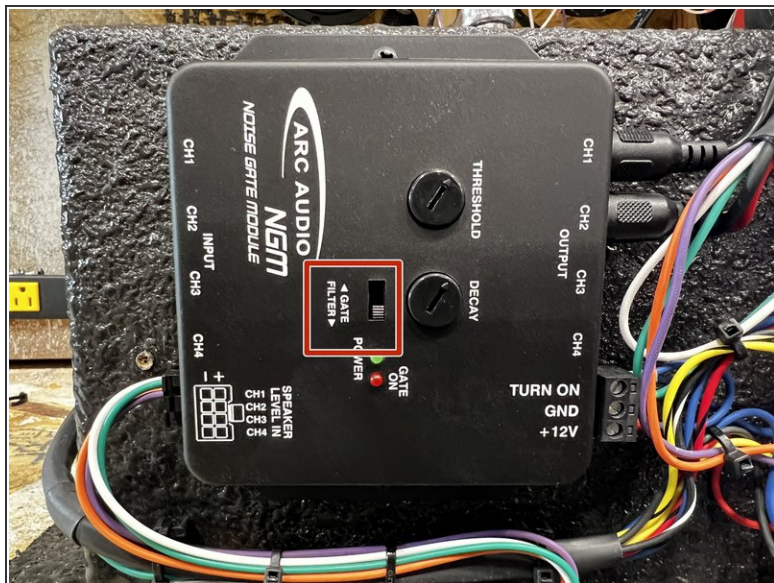
- With the RCA cables connected, route and secure the NGM harness, the RCA cables, and the amp harness to the zip tie mount using the provided zip tie.
 - Any slack from the NGM harness and the RCA cables can be tucked towards the NGM.
- ⚠ Ensure there is enough slack in the RCA cables on the amp side so they are not pulled tight. We want the wires to be neat and snug, but they do not need to be pulled tight.

Step 24 — Noise Gate Module Installation - Harness Routing



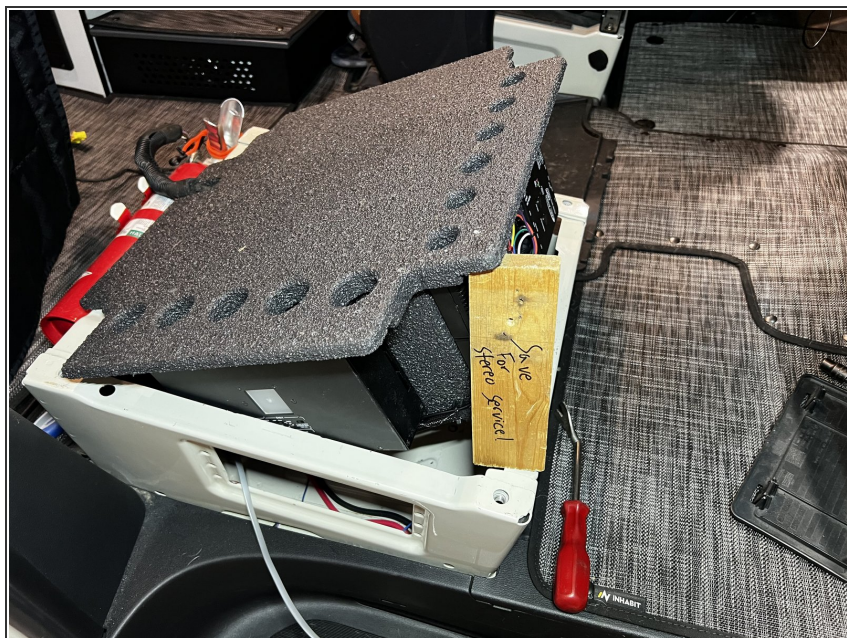
- Secure the crossover harness to the 2 zip ties mounts that were moved lower previously using the provided zip ties.
- Locate the update harness for the NGM to connect to the crossover harness. Connect the 8 pin side to the NGM, and the 6 pin side to the crossover harness as shown.
- Clean up and secure all the wiring as shown using the provided zip ties. Make sure all the zip tie tails are cut flush.

Step 25 — Noise Gate Module Installation



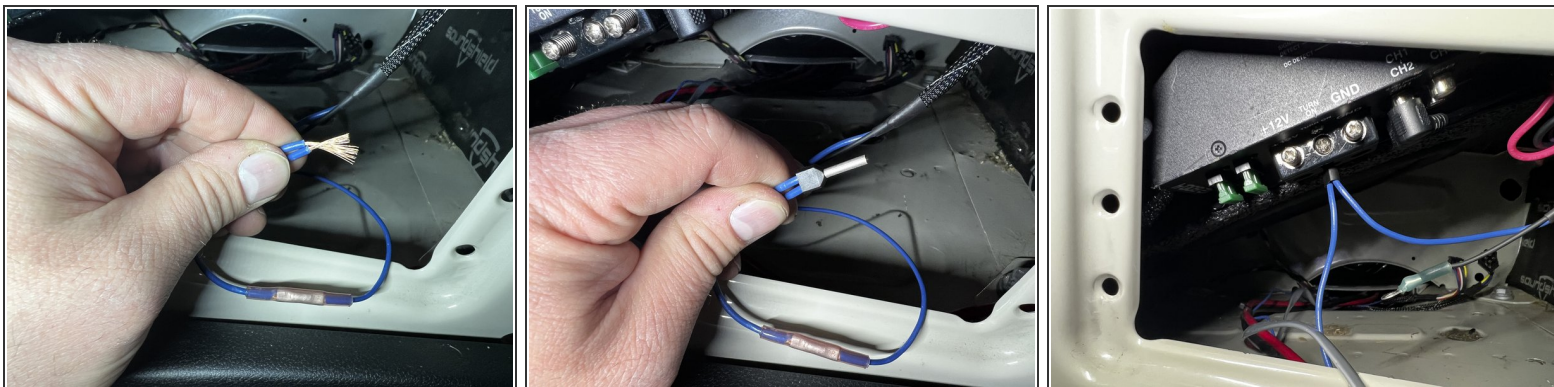
- Ensure the switch on the NGM is in the FILTER position as shown.
- For the excess wire on the amp harness you can compress it down as shown and use a zip tie to secure all the wires together.

Step 26 — BeatBox Reinstallation



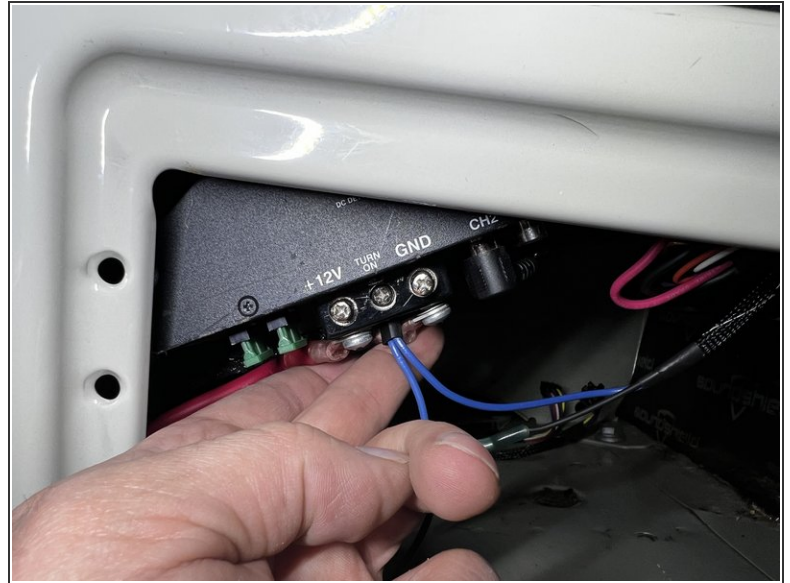
- Place the beatbox back into the seat base as shown, using a piece of wood to prop the front of the box up.

Step 27 — Remote Wire Connection



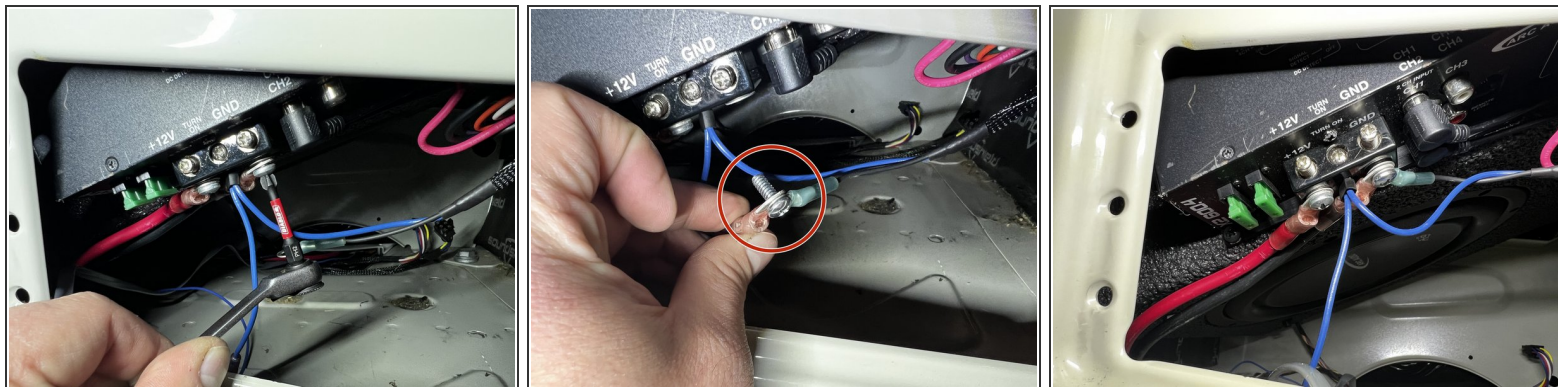
- Locate the remote wire (typically blue or purple) and the blue wire on the NGM harness. Strip approx. 3/8"-1/2" of insulation off each wire as shown.
- Twist the two wires together, and insert the wires into the 2 into 1 ferrule.
- If you do not have a ferrule crimping tool, you can place the ferrule into the remote opening on the amp, and use a #2 Phillips screwdriver to clamp down onto the ferrule, and crimp the ferrule closed. Make sure you keep pressure on the wires so they do not pull out when you are tightening the screw.

Step 28 — Amp Power and Ground Wire Connections



- Reinstall the positive (red) wire into the amplifier. Secure the set screw using a #2 Phillips screwdriver.
 - Place the negative (black) wire into the amplifier. Secure the set screw using a #2 Phillips screwdriver.
- ⚠ Ensure the set screws are tight, and the wires can not fall out of the amp and cause a short.

Step 29 — Noise Gate Module Ground Wire Installation



- Using either a stubby #2 Phillips screwdriver, or the ratcheting bit holder, remove the screw securing the negative wire from the riv nut as shown.
- Take the screw, and place the eyelet for the NGM ground wire over the screw, and then place the amplifier ground wire eyelet onto the screw as shown in image 2.
- Reinstall the screw into the riv nut on the amplifier, and securely tighten the screw using a #2 Phillips bit.

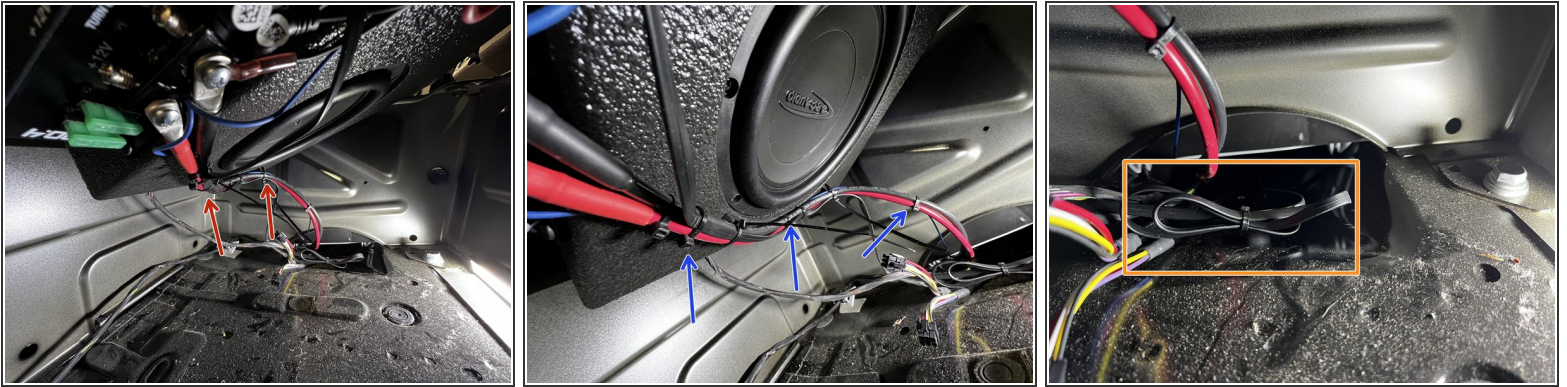
⚠ Ensure all the screws are tight for the amplifier power connections!

Step 30 — RJ12 Cable Reconnection



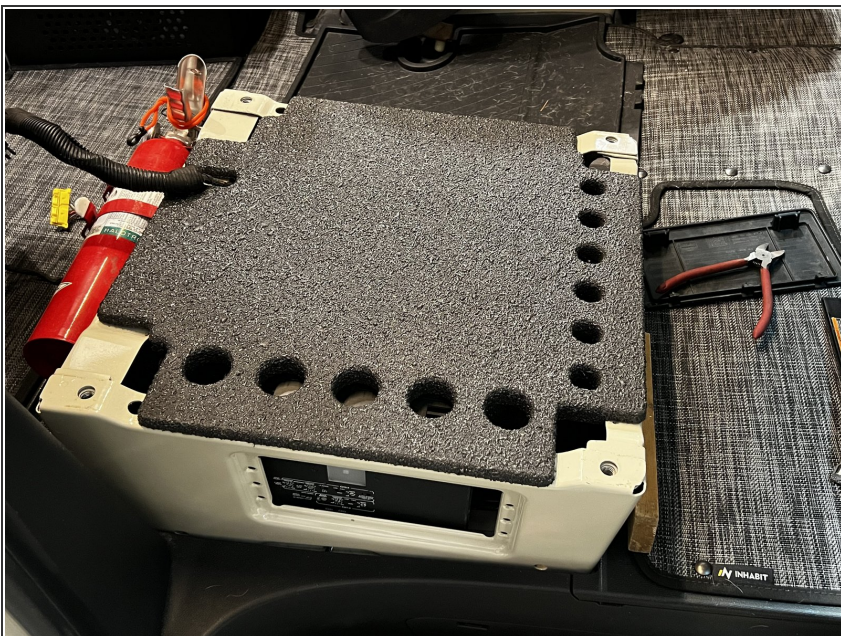
- Reconnect the RJ12 wire into the amplifier.
- The RJ12 wire will be routed with the power and ground wires.

Step 31 — Amp Power and Ground Wire Securement



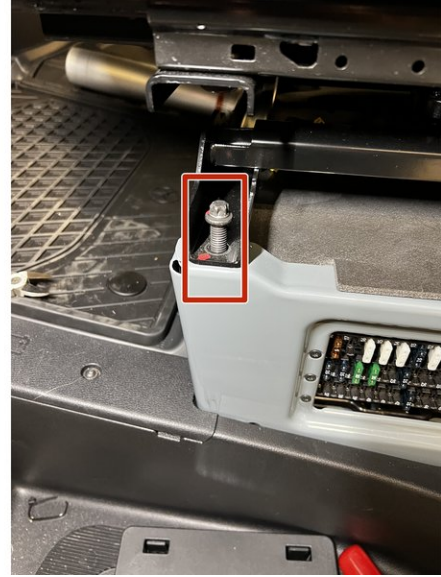
- Using the provided zip ties secure the amp power and ground wires, the remote wire, and the RJ12 cable to the sub box. Cut the zip tie tails flush.
- Using the provided zip ties, bundle and secure the amp power and ground wires, remote wire, and RJ12 cable neatly.
- If your RJ12 cable was previously routed with the crossover harness, you may have some excess wire. Bundle the excess wire up and secure using a zip tie near the opening on the side of the seat base towards the drivers side.

Step 32 — BeatBox Reinstallation



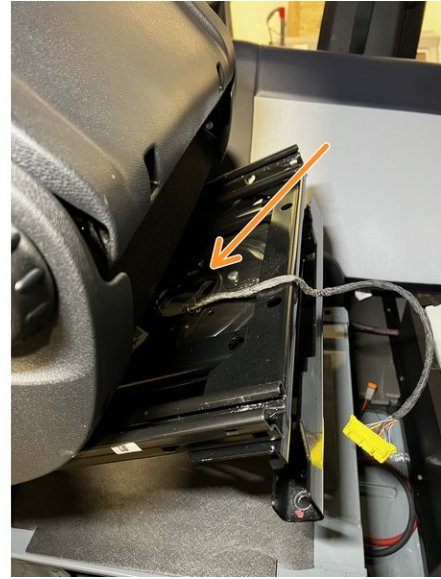
- With all the wiring secured and connected, remove the prop and lower the BeatBox into position in the seat base.
- ⚠ Ensure the seat wiring harness is not being crimped or crushed by the box.

Step 33 — Installing Seats Back Into Van



- Lift the seat into the van, and place on the seat base.
- ⓘ Take care not to scratch the seat base when placing seat into van. Masking tape can be used on the seat base to help avoid damage.
- Start the front 2 seat bolts into the base by hand, only a few turns.

Step 34 — Installing Seat Bolts and Seat Wire Harness



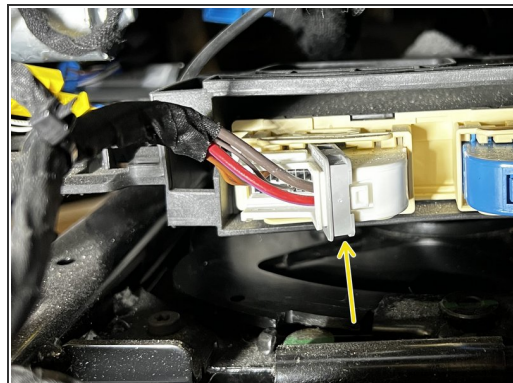
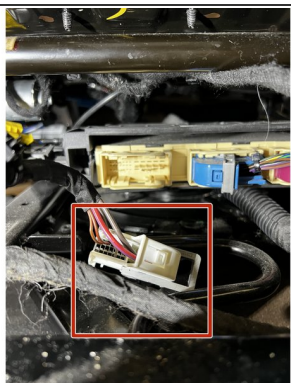
- With the front 2 bolts started, tilt the seat forward.
 - Feed the seat wiring harness through the center hole up through the seat swivel.
 - Lower the seat back onto the base, and start the rear 2 seat bolts by hand.
- ⚠ Take care to start the seat bolts by hand to avoid cross threading the bolt into the nut on the seat base.

Step 35 — Final Torque of Seat Bolts



- With all the seat bolts started, tighten all the bolts and torque to 29 ft/lbs.
- ⓘ Seat will need to be swiveled to access all the seat bolts.

Step 36 — Seat Wiring Harness - Power Seats



- ⓘ If your van does not have power seats, skip to step 5
- Route the power seat harness to the control module under the seat, along with the seat wire harness.
- Insert the plug into the module. As the plug is inserted, the locking lever will start to close.
- Once the plug is fully seated, the lever can be moved into the locked position.

Step 37 — Seat Wire Harness Routing



- Route seat wire harness along seat rails, securing to the seat rail.
 - Connect the plug from the seat wire harness into the connector on the seat.
 - Secure the excess wire to the seat rail using a zip tie and trim zip tie tail.
- ⚠ Ensure there is enough slack in the wire harness to allow the seat to slide forward and backwards, as well as rotate.

Step 38 — VS30 Battery Reconnection



- Place the battery disconnect terminal back onto the ground stud.
- Push the battery disconnect terminal onto the stud until it clicks. Give the terminal a tug to ensure it is fully seated.
- Reinstall fuse #32
- Reinstall the battery disconnect access cover.

