



## Stage One Speaker Upgrade Installation Instructions for BMW 3 Series Sedan '99-'05 (E46)



### Want an easier install? Watch our videos first!

This is a supplement for the installation videos that you will find on our website ([www.bavsound.com](http://www.bavsound.com)). Head to "Help > Installation Info."

There are details we go over in the installation videos that cannot possibly be covered as effectively through the written word. This guide is meant to help you in the garage. We still suggest taking your computer/tablet/phone to the car with you and streaming the videos to make sure everything goes off without a hitch. Now, let's get started!

### What you'll need to complete the installation:

- **BAVSOUND Tool Kit** (or some variety thereof - the video highlights the tools needed for this particular installation) - <http://www.bavsound.com/product/414/361/BAVSOUND-Interior-Disassembly-Tool-Kit/>
- Optional: **Heat gun or hair dryer** (to dry your hair - only kidding - to heat up sound deadening for better pliability).
- **Tunes in the garage** (your choice)

## Before you Begin

- **Please review and familiarize yourself completely with these instructions before starting work on your vehicle!**
- **Install all your speakers before you audition the Stage One.** Installing one speaker and then listening to the system to “see if it sounds better” is like putting one high performance shock on your car and taking it for a test drive. Feel free to test to make sure the connections were properly made after installing each speaker, but beyond that, keep the process moving along and audition it once all speakers have been installed.
- **Ensure that your bass and treble settings are set to their default middle positions before installing your new speaker upgrade.** Once you’ve installed your Stage One, you can reset the bass and treble settings to taste. Keep in mind that we generally recommend keeping them both very close to center as large adjustments introduce distortion into the audio signal and will lower performance of your system.
- **Perform the installation one door at a time.** Since there are many small parts that you’ll remove when completing the project, limiting the work you’re doing to one door will prevent you from confusing which parts go with what door.
- **Installation is essentially the reverse of the removal process outlined below.**
- **Variations occasionally occur,** so if anything seems out of line with what is contained in the pages that follow, don’t hesitate to contact us.

Ready? Let’s get started!

# Part 1: Front Doors

## Front Door Panel Removal:

**1.** Start by rolling down the windows on all of the doors. This will decrease the chance of scratching the glass or tint on the window.

**2.** Starting with the passenger front door, locate the large wood grain (or aluminum, depending on the trim level of your BMW) panel that runs along the top portion of the door panel.



**3.** Carefully, place your fingers under the outer side of the panel farthest away from the handle and carefully pry outward towards you. Run your fingers along the back edge of the panel as you make your way to the front edge of the panel.



**4.** Be careful as the wood trim panel in effect hooks into the door handle area with three little inserts.

**5.** As you are pulling the panel outward, and as you get towards the handle, carefully pull the panel out of the handle.



**6.** This will reveal two Torx T20 screws. Remove these. Put them aside in a place where you will not lose them.

**7.** You will also need to pop out the side mirror control switch in the driver's door. Remove it using a small flat head screwdriver, lifting upward from the rear of the switch, and unplug. This may also be done when the door panel is off by using your finger to push it out from the inside.

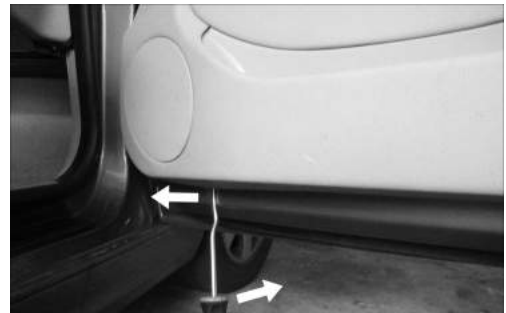


**8.** Locate the small trapezoidal shape at the top of the door handle. It will match your interior color, so it may be black, tan or grey. Carefully insert the head of the small flat head screwdriver underneath the insert and carefully pry upward.

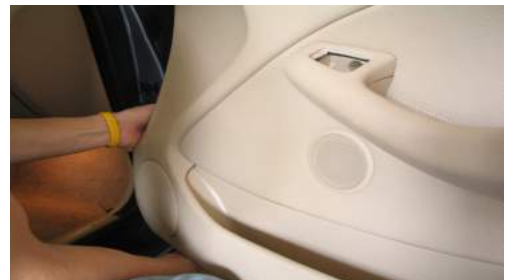
**9.** Only two more screws are left, and they are located behind the two plastic inserts on the underside of the armrest. Remove the covers, then remove the two bolts and you are now ready to begin removing the actual door panel.



**10.** Carefully insert your panel removal tool on the front side bottom edge as shown. Pry steadily outward until you hear the clip(s) release themselves.



**11.** Now, using your hands, as this will decrease the chances of anything becoming scratched; continue pulling outward around the outer edges of the door. Leave the top part attached, as we will remove this section lastly.



**12.** Carefully pull outward and upward from the rear of the door along the top edge while working your hand up alongside the front edge, carefully releasing each clip. The top edge of the panel can be pulled outward once the sides and bottom of the panel are released.



**13.** Take note of the lock mechanism because the door can be released now, but you'll first need to free the lock assembly. You have to unhook the door handle itself. Simply lift the white clip away from the door panel, and pull it out of the mechanism.



**14.** Disconnect all plugs and harnesses and set the door panel aside.

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## Front Tweeter Removal / Reinstallation:

**1.** Locate the two small clips on the inside of the door itself that secure the lower portion of the black plastic housing around the tweeter and door panel. They are on either side of the main wiring harness as it enters the door. Remove these with your panel removal tool or fingers.



**2.** Carefully pull outward and in towards the center of the door, and the panel will slowly come towards you, revealing the tweeter.



**NOTE:** DO NOT remove the entire door sill trim. It will take you all day to get it back on. Just work with the tweeter side of the panel, being careful not to over-flex the trim.



**3.** You will see that the tweeters are mounted using two Torx T30 bolts. These also secure the side view mirror. **DO NOT remove the bottom T30 bolt.** Instead, simply loosen (but don't remove) it.

**4.** Remove the top bolt, and slide the tweeter housing upward, then reinstall the top bolt to prevent your side mirror from falling off until you reattach the tweeter.

**5.** Peel back the foam insulation on the door panel to reveal the tweeter plug juncture and unplug the tweeter.

**6.** To install your new tweeters, simply bolt them to the top Torx Bolt and angle the tweeter so that it is approximately the same as the factory tweeter.

**7.** If equipped, place the factory foam piece back around the tweeter and reinstall the outer grille cover. Easy!



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## Front Midrange Driver Removal / Installation:

(Located in the center portion of the door panel)

**1.** To remove the factory midrange, you'll first need to free the speaker assembly from the door panel itself. Unscrew the plastic ring from the rear of the assembly by turning it counter clockwise.



**2.** Push the front portion of the assembly through the door panel, being careful not to damage the thin plastic ring around the outer perimeter.

**NOTE:** The plastic surrounding the outer edge mentioned above is notoriously brittle. Try your best not to handle the speaker assembly by this outer edge. Now may also be the time to repair the ring(s) if any cracking has previously occurred.

**3.** There are two pairs of opposing tabs located closer to the front of the assembly. Pry these tabs outward, and the speaker will be free at this point.



**4.** Push the tabs that secured the speaker on the front of the assembly back into place, and drop the new midrange directly into the assembly with the speaker facing outward (through the grille).

**5.** Using the included adhesive, apply a drop of glue the size of your thumbnail at approximately 3, 6, 9, and 12 o'clock.



**NOTE:** Some kits may include a small "U" shaped metal bracket for installation instead, in which case no adhesive is required. Simply install with this clip.



6. Place the front portion the assembly back through the door panel, and screw the ring back into place, securing the assembly. Make sure to line up the HK logo if your car is so equipped.



### Front Midbass Installation:

1. Remove the larger speaker in the lower panel. It's attached using three Phillips head screws. Remove these and place them aside.



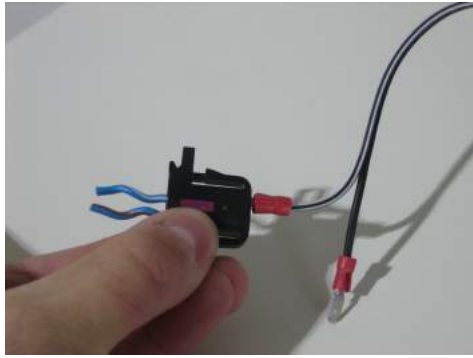
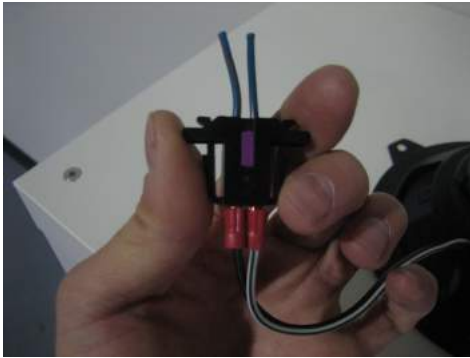
**IMPORTANT!** Remove the rubber gasket surrounding the magnet on your new speakers to ensure a proper fitment of the door panel upon reinstallation. The fit will be **very tight**. This is normal.

2. Install your new speakers in the factory location, reusing the factory screws. If your factory speaker had the above foam gasket around it, reuse it on the new speaker as well.



## Wiring and Door Panel Reinstallation:

1. In order to make the wiring connections on the new midbass drivers, we're going to use the existing factory plugs. We're just going to slide the terminals on the end of the wiring attached to your new speaker into the factory plugs that you removed from the factory speakers.



2. Connect the midbass drivers as follows:

Driver Door:

Factory Connector		BAVSOUND Speaker Leads
Blue w/White Stripe (+)	Connects to	Red
Blue w/Brown Stripe (-)		Black

Passenger Door:

Factory Connector		BAVSOUND Speaker Leads
Blue w/Red Stripe (+)	Connects to	Red
Blue w/Brown Stripe (-)		Black

3. Reconnect the tweeters, midranges, and all other connections to the original connectors.
4. Reinstall the door panel (reverse of removal) and repeat with the other side.

## Part 2: Rear Speakers

### Rear Door Panel/Speaker Installation:

- 1.** Rear door panel removal is just like the front door.
- 2.** Remove the rear wood trim just like on the front door, and then you'll find five attachment points for the rear door, exactly like the front doors which you'll remove.
- 3.** Repeat the remainder of the removal process from the front doors to free the door panels.
- 4.** Once the door panel is free, remove the speaker from the panel by unscrewing the ring on the back of the door panel.
- 5.** Pry the old speaker out from the front part of the housing using a pick or small screwdriver.



**6.** Complete the removal using your hands to pull the speaker from its housing.



**7.** Drop the new midrange into the ring and place a few dabs of the included adhesive around the speaker securing it to the ring. Let the adhesive cure for at least an hour before reinstalling.

**NOTE:** Some Stage One kits may include a metal clip which may be used instead of adhesive.



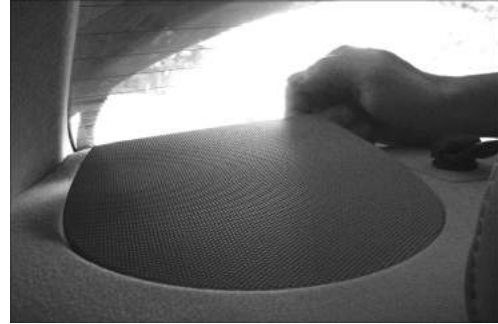
**8.** Place the front housing back through the door panel, and screw the rear portion of the assembly back down to ensure that the speaker is secure.

**9.** Once completed, simply plug the midrange back in along with the rear window switches, and reattach the door panel.

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## Rear Deck Midbass Installation:

1. Carefully pry upward on the rear of the speaker grilles. With your fingers, follow the outside edges and continue pulling upward.



2. This will reveal the rear speaker and the (3) 8mm bolts that secure it in place. Remove these three bolts using an 8mm socket wrench. Remove the speaker carefully, being sure to unplug the speaker wire.



**IMPORTANT!** It may be necessary to remove the rubber rings from around the magnets as you did on the front door panels in order for the midbass to drop into the rear deck housing.

3. Bolt the new speakers in using the factory hardware, reusing the foam backing if present. The wiring will be performed in the same way as well.

4. Simply slide the terminals attached to the new speaker into the existing factory plugs as outlined below.

Driver's Side:

Factory Connector		BAVSOUND Speaker Leads
Yellow (+)	Connects to	Red
Brown (-)		Black

Passenger's Side:

Factory Connector		BAVSOUND Speaker Leads
Yellow (+)	Connects to	Red
Brown (-)		Black

# YEAH C'MON!

**You've now completed your BAVSOUND Stage One Speaker Upgrade!**

Head up front, put on your favorite album, and go for a drive.

And most importantly, enjoy your new BAVSOUND system!

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**Love your new Stage One?** Let us know!

Tweet us [@bavsound](https://twitter.com/bavsound) with hashtag #StageOne or #bavsound and tell us what you think!

# Troubleshooting

If you're experiencing an issue with your new speakers, please carefully read through this guide, as it covers almost any issue that you are likely to encounter. (If the guide doesn't resolve these issues for you, please feel free to contact us - [www.bavsound.com](http://www.bavsound.com)).

## ISSUE #1: No Sound from Speaker

One of three things is most likely happening, and they are listed in order of most common occurrence along with how to correct them:

### **Possible Cause 1: The wiring on the plug-n-play connector is misaligned.**

**Step 1.** Check for alignment of wires from their factory plug through the BAVSOUND connector. Do they line up (see below)?

**Step 2a.** If the connections line up, go ahead and plug the factory speaker back in to confirm operation. If the factory speaker works, and the wires in the plug are aligned, the speaker is defective. We need to get you a new speaker!

**Step 2b.** If the connections don't line up, you'll need to move them so polarity is correct and the positions are correct. On our wires, the Red Stripe is positive, while the solid black is negative, while on the BMW side of the plug that following holds true:

- Black Stripes, Red Stripes, White Stripes, Purple Stripes are Positive.
- Solid wires are negative, as are wires with Brown Stripes or Grey Stripes.

### **Possible Cause 2: The speaker connections are being shorted out.**

Check to make sure that no speaker terminal is touching metal. This can cause the speaker to not function, as it is effectively grounded (shorted) out (most common in midbass speakers).

If you find that this was the case, place electrical tape over the terminals to prevent future mishaps. If the entire system has no sound after the installation of



new speakers, we almost know for sure that there is a speaker whose terminals are grounded out. Let's check by disconnecting each speaker until the music comes back on and we've isolated the problem speaker.

### **Possible Cause 3: The amplifier may be broken.**

If there was a speaker or location in your system which didn't play before installing the Stage One, this is probably the issue.

If this was the case, and you were trying to fix the problem by purchasing new speakers, we may need to look at the factory amplifier, as it is most likely the culprit.

Is the entire side (left front, right rear, right front, left rear) not working, or is it a particular speaker that was not working? Most likely it was a single speaker.

If an entire side is not working, make sure, especially on the tweeters that you just installed, that neither the positive or negative terminals are touching metal. This can contribute to an entire side (channel) not working properly.

## **ISSUE #2: Distorted Sound coming from new Speaker**

1. **Where are the bass/treble settings on the radio/EQ?** Flatten out the settings to ensure no pre-amp distortion is the cause of the problem. If you're using the radio to test the speakers, go ahead and use a CD or directly connected iPod instead.
2. **Are speaker terminals touching ground (metal)?** Where is the distortion coming from? A single speaker, an entire side (channel), or the entire system? Its best at this point to go back and disconnect each speaker until the distortion goes away. The most likely culprits are the front tweeters.
3. **Was the factory speaker distorted as well?** If a single speaker was distorting, the most likely culprit is the amplifier. We may need to explore replacing/repairing your factory amplifier.

## ISSUE #3: Lack of Bass Response

A common occurrence when a mid bass speaker is wired “out of phase”. This means that the positive (+) and negative (-) are backwards on the plug and play connections.

Here we’ll want to check alignment of the connectors as they come together between the speaker and the factory plugs. The lack of bass response generally is due to one speaker being out of phase and the other speaker(s) being in phase.

The easy fix is checking these connections to make sure that positives go to positive and negatives go to negatives. Basically, double check your wiring on each speaker. If one speaker is out of phase, the bass response of the entire vehicle can be compromised.

## ISSUE #4: Too Much Treble, Harshness, or Brightness

Where are the bass/treble settings on the radio/EQ? Go ahead and flatten out the settings to ensure no pre-amp distortion is the cause of the problem. If you’re using the radio to test the speakers, try using a CD or directly connected iPhone or iPod instead.

## ISSUE #5: Missing Product(s)

If you feel that a product or accessory is missing, let’s check a few things before we send out replacements. It’ll save everyone a lot of time!

1. **Please check to make sure that nothing has gone unnoticed in the packaging.** If you’re calling from your office and don’t have access to the package, please bring the package to the office the next day so that we can go over with you exactly what was supposed to be in the packages that we shipped out to you. Sometimes our shipping department uses filler boxes in packages to ensure that your products aren’t damaged in shipping, and often times those boxes are mistaken for missing products.
2. **If indeed a product is missing, firstly please accept our apologies.** We try our best to ensure that all orders are filled as they should be, but we’re only human. Please contact us ([www.bavsound.com](http://www.bavsound.com)) and we’ll get it resolved for you shortly!