

Stage 1 Audio Upgrade (BMW Speakers) Installation Instructions for BMW 7 Series '95-'01 (E38)

Tools Required:

(All the below are readily available at your local auto parts store)

- Small Phillips Head Screwdriver
- Panel Removal Tool
- Torx T20 screwdriver
- Small, Straight Pick Tool
- Small, Flat Head Screwdriver
- Hot Glue Gun w/Glue Sticks

Before you Begin

- **Please review and familiarize yourself completely with these instructions before starting work on your vehicle!**
- **Insure 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 1, 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.

The Process

As each customer's installation is unique, it is important to remember that installation is essentially the reverse of the removal process outlined below, though you will need a certain level of personal ingenuity and certain tools outlined above. 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.

If you experience any issues with your installation, please consult the troubleshooting guide located at the rear of this installation packet.

-We are not replacing the midrange speaker in the car (larger of the two speakers mounted in the upper door panel.)

It is actually an excellent speaker, and we were unable to improve upon its sound quality in our testing procedures.

-Keep in mind that on your new speakers that the positive terminal is on the right hand side as you look down onto the speaker with the magnet facing upward.

If your speakers do have the screw down terminals, we will need to cut off the factory spade terminals and strip back ¼" of the wiring insulation so that the exposed copper wiring can slide down into the screw down terminals to ensure a snug connection.



The Process:

As with most automotive door panels, the 7-Series panels are held in place by round plastic plugs that snap into holes in the steel doorframe. There are also a series of spring steel clips along the top of the door. Finally, there are two (only one in the driver's door) plastic clips that snap onto metal spring steel plugs behind the interior handle used to close the door. These provide extra support for the panel. When the panel is removed, these plastic clips typically remain on the metal plug that is attached to the door panel.



Front Doors

Locate and remove the black plastic screw cover immediately behind the interior chrome door handle. Use a medium sized precision flat-head screwdriver. Just push in and tilt up slightly while pulling.



Remove the Philips head screw. This may also be a Torx T20. It depends on what BMW had lying around that day. Now, CAREFULLY pry out the window controls using a small, flat head screwdriver.



1. We now need to remove the light on the underside of the door panel. Using your panel removal tool, pop the light out by prying on the inner and outer edges of the light. It will just pop out, at which point you'll simply unplug the light. This can be a bit trying, but once you figure out the first one, the other doors will be a breeze.
2. We'll now want to free the outer edges of the door panel. Unsnap the perimeter edges by carefully prying outward with your panel removal tool. We recommend starting on the front lower edge closest to the kick panel area. You will quickly see the way in which the panel attached, and once the first side is free, the rest will come off quite easily.



Rear Door Panel shown for reference

3. With all the perimeter clips free, we're ready to remove the panel. Firmly grasp the door panel at the top and pull the black leather top section toward the interior of the car. 5 metal clips along the top edge secure this top portion.
4. With or without the top fully disengaged from the clips, grasp the entire panel firmly at the bottom and at the door pull handle. Pull straight up and a little toward you, twisting the panel slightly counter-clockwise. The clips behind the door pull handle will disengage once the door has been

lifted about 1.5" as the panel is lifted and rotated. You will also clear the door lock itself as you lift the panel.

5. Before you remove the panel completely, you will need to feed the chrome door handle through it's opening in the panel.
 6. You'll now need to unplug the various wiring harnesses that are attached to the panel. On the driver's window switch, two of the plugs are removed by pressing the release tab on top and sliding the plastic lever downward, freeing the plug. The other plug is removed by sliding the locktab away from the plug body and lifting upward, freeing the plug.
- The passenger side window switch is slightly easier to remove, but still use extreme caution when prying it out.



Rear door shown for reference, however passenger front door is identical.

- As we mentioned, the above can be done in one of two ways. The second way is by simply removing the entire panel and popping the switches upward using your fingers once the panel is removed. This will reduce the likelihood of cracking the edges of the switches. Your call, but we recommend the second way. Some of us like to have options. 😊
7. The ashtray plugs simply lift upward to become free. When reinstalling the panel, the plugs can only be oriented one way, so you can't goof it up too badly. The speakers (midrange and tweeter) can also simply be unplugged by pulling their corresponding harnesses apart.

Midbass (5.25" Driver) Removal and Installation:

It doesn't get much easier than this.

1. Remove the four (4) Torx T10 screws from the speaker, and unplug the driver. These may also be Philips head screws, again depending on what BMW had lying around the plant.

-You may encounter two sets of wires in the speaker enclosure. While it's rare, we just wanted to make you aware of it. The longer of the two sets was for the factory phone to communicate with the speaker. Simply tape off the leads individually, and use the shorter set of wires to attach to your new speakers like so:

1. Cut off the factory terminals and crimp on the attached speaker terminals to the wires in the enclosure.
 - The Green/Black wire is Positive (+)
 - The solid Green wire is Negative (-)

-On your new speakers, the larger terminal is positive (+) and the smaller terminal is negative (-). Plug the terminals onto the speaker, and simply attach the speaker back into its enclosure using the new screw/washer combination. Make sure that the terminals are tight on the speaker. You may need to crimp them down on the speaker itself to ensure a snug fit. Don't forget to reinstall the foam gasket between the enclosure and the speaker. This will ensure an airtight seal, and allow the speaker to perform to the maximum of its capabilities.



Tweeter Removal/Installation

The tweeter installation is slightly more involved than the midbass install, but once you've done the first door, it only gets easier.

1. You'll begin by removing the OEM tweeter from it's location by prying outward and upward using a small flat head screwdriver or straight pick.



Front Door

Once removed, simply place the new tweeter in the same location and secure it using a bead of hot glue around the outer perimeter.

As for the tweeter wiring, the colors are the same as the midbass drivers:

- Green/Black stripe is positive (+)
- Solid Green is negative (-)

On the new tweeters, the positive wire (+) will either be red or have a red stripe on it. The negative wire (-) will either be black or solid without any stripes.

Front Door Panel Reinstallation Tips

Well, the hard part is over. You've done what you set out to do. Now, you've got to get it all back together. Make sure that you've plugged all of the associated plugs back into their respective locations, and that there

aren't any wires hanging in front of the speaker. With the door panel in hand, we recommend proceeding as follows:

1. Orient the door panel down over the vertical lock mechanism.
2. Toward the center of each door, you'll see a brass looking tab that will undoubtedly have a black plastic clip attached around it. This clip was attached to the door panel to the metal assembly bolted to each panel. Remove this by compressing the brass tab and sliding the black clip toward you. Reattach this clip to the door panel's metal assembly. This will ensure a snug fit when you reattach the door.
3. Don't forget to plug in the midrange and tweeter. It's easy to overlook it. Trust us, we know. ☺
4. When you reattach the door, start at the top. Don't forget to pop the door handle back through the panel before you get too far.
5. Make sure that each plastic clip on the panel lines up with its corresponding hole on the door itself. You don't want to break those little guys if you can help it.
6. Give the door a solid once over using your hands. By this we mean pushing firmly around the outer edges with your hands, ensuring that everything is back together as it should be.

Rear Doors

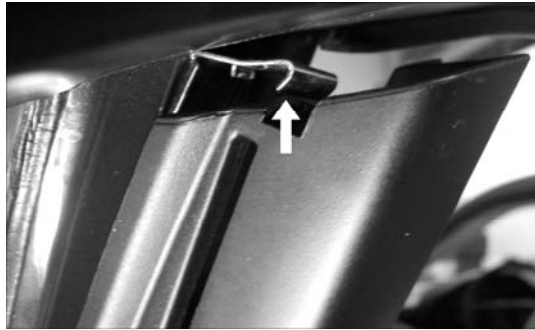
Let's take a quick look at the rear door panels before we proceed.



The rear doors are removed in the same way as the front doors, with one exception. There may be sunshades on your rear doors, which will need to be removed first.

If it does, you'll proceed as follows:

1. Make sure your rear windows are rolled down. You'll need to locate the small pinhole at the top of the sunshade that covers the smaller window in the door. It's on the inside toward the front of the car.
2. Using a small straight pick, you'll feel around in the hole for a metal clip. This needs to be lifted upward. This part can take some time, but you'll quickly realize the methodology necessary to get this thing off.
3. Once you've lifted the metal clip upward, the sunshade will just fall toward you and you'll simply lift it slightly upward to remove it.



Metal Clip underneath rear sunshade

The larger sunshades that run vertically do not need to be removed.

As for the tweeter installation, it's much like the front as well. Here's how to proceed:

1. Pry out the tweeter again using a pick or small screwdriver.



2. Place the new tweeter over the location where the factory tweeter was located and run a bead of hot glue around the outer perimeter.



Again, wiring is the same as the front tweeters.

- Green/Black Stripe is Positive (+)
- Solid Green is Negative (-)

Remember on your new tweeters, any wire with red on it is the positive wire, be it a red stripe on the wire or if the wire is solid red.

Rear Door Panel Reinstallation Tips:

1. This may seem obvious, but don't forget to plug the tweeter back in. It's easy to do.
2. You'll want to have the vertical sunshade fixed in its up position when putting the panel back on. It will just make it easier for you. Believe us.
3. Be very careful to line up the perimeter snaps around the outer edges of the door panel before firmly pressing the panel back into place. These clips can break fairly easily.
4. See the rest of the tips above in the front door section. It's the same already! ☺
5. When reattaching the horizontal sunshade, attach the bottom section first by inserting the lower edge down into its housing, and then snapping the top section into place.

Stage 1 Speaker Upgrade Troubleshooting Guide:

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 issue cannot be resolved, please call us at (404) 963.8857 for further support.

Here are the most common issues we've experienced:

- **No sound from speaker (s)**
- **Distorted sound from speaker (s)**
- **Lack of Bass response**
- **Too much Treble (harshness, brightness, etc.)**
- **Physically defective speaker (broken or damaged during shipping, no sound)**
- **Missing product**

Let's address each bullet point:

- **No Sound from Speaker:**
One of three things is most likely happening, and they are listed in order of most common occurrence:
 1. Wiring on plug-n-play connector is misaligned.
Here we want to check for alignment of wires from their factory plug through the BSW connector.
Do they line up? If so, was the factory speaker working prior to replacing the speaker? 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!

If not, let us guide you to the proper connections. Remember, 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.
2. 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. This is very common, especially in IQ tweeter installations and in E46 vehicles with front and rear mid bass installations.

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 the most likely culprits, (IQ tweeters, E46 mid bass drivers) by disconnecting each speaker until the music comes back on and we've isolated the problem speaker.

3. The Factory Speaker did not work either. 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.

- **Distorted Sound coming from new Speaker**

Again, a few things come to mind:

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. Speaker terminals may be 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 IQ tweeters and E46 front and rear mid bass connections.
3. The factory speaker was 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.

- **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.

- **Too Much Treble, Harshness, or Brightness:**

There are a couple of things here we'll need to consider:

1. 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 iPod instead.
2. What type of factory audio system did the car have in it from the factory? Was it a Harmon Kardon or a DSP equipped car? We then need to assess whether or not you were sent the right speakers.

-If the car is a Harmon Kardon 3 Series, and you are experiencing brightness, we most likely left the capacitors out of the tweeter wiring. We need to send you the corresponding capacitors for a 3 Series with Harmon Kardon.

-If the car is a non Harmon Kardon equipped 3 Series, the most likely culprit is that we forgot to install the 8 ohm resistors inline with the midranges and tweeters. Do you recall seeing a black heat shrink wrapped piece (2" long) inline with the tweeters and midranges? If you don't, you were most likely sent the wrong speakers, and we need to get the appropriate resistors to you.

-If the car is DSP equipped, the most likely culprit is that we forgot to install the 8 ohm resistors inline with the midranges and tweeters. Do you recall seeing a black heat shrink wrapped piece (2" long) inline with the tweeters and midranges? If you don't, you were most likely sent the wrong speakers, and we need to get the appropriate resistors to you.

- **A speaker is physically defective, as in defective from shipping or directly from the manufacturer.**

There is only one solution here:

1. We will be happy to get a replacement speaker out to you. We'll need to bill you for the replacement speaker, and once the defective speaker arrives back to us, we will gladly issue a refund. Once you get the new speaker, please keep us posted on the results, as want to make sure that everything is sounding as it should.

- **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



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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 notify us immediately of the missing product, and we will the appropriate pieces out to you that same business day, provided FedEx hasn't already come for the day. We want you to get your new equipment installed as quickly as possible, so we'll make sure you have it in an expedited fashion once we've been made aware of the problem.

