

Instructions for Amplifier Installation and Tuning in the Z3/M Roadster BMW

Tools Required:

- Panel Removal Tool
- Flat Head screwdriver
- 8mm socket wrench
- 10mm socket wrench
- Crimping Tool
- Drill

Accessing Original Amplifier / Mounting New Amplifier

- 1) **Locate your factory amplifier.** It resides behind the carpeted panel on the passenger's side of the trunk. It's typically black in color, but can be silver as well. To remove the carpeted panel, remove the trunk floor mat first, tail light covers, and pins securing the cover. Then pull the panel towards the center of the trunk.



- 2) **Decide exactly where you want to mount your new amplifier.** From there, you'll decide on appropriate paths to run your wiring. In the Z3 / M Roadster, we typically mount amplifiers on the far wall of the trunk for size and easy access reasons. Regardless of your choice, don't do anything permanently until you have figured out where you're going to run the wiring. You can also Velcro the amplifier to the floor of the car at any place in the trunk. For reference, here's where we usually mount the new amplifier: (Next page)



BAVARIAN SOUNDWERKS



Power/Ground/Remote Turn-On Connections for the new Amplifier:

*Before you make any connections, we recommend disconnecting the negative battery terminal from the battery. This will eliminate any chance electrical damage to the vehicle.

-All of the below wiring is included in your amplifier installation kit.

Power Wire (Red Wire) – Connects to B+ terminal on Amplifier

- You'll want to run the large red wire to the positive terminal of the battery. Loosen and remove the 10mm nut on top of the terminal that secures the actual terminal to the battery. Put the amplifier power wire ring over the bolt, and tighten the nut back down with the terminal on the battery. This is the primary power supply for your new amplifier.



This wire will be connected to the B+ terminal on the amplifier. Do **NOT** put the fuse into the fuseholder until you have connected the other end of the wire to the amplifier. Once you've made this connection at the new amplifier, it is safe to install the included fuse into the fuseholder.

Ground Wire (Black Wire) – Connects to GND terminal on Amplifier

- The large black wire goes to a chassis ground. This essentially means metal. Ideally, the ground needs to be on the battery side of the vehicle, securely mounted to the chassis on a paint-free surface. It is ideal to use a pre-existing bolt that is connected directly to the chassis, such as the amplifier mounting bolts seen below.



Once connected, this wire will connect on the new amplifier at the GND, or ground terminal.

Remote Turn-On Wire (Blue Wire) – Connects to REM terminal on new amplifier

- Now, for the remote turn on wire, locate the small gauge white wire going into the factory amplifier. It's located in the larger harness that plugs into the top of the factory amplifier. See photos on next page for instructions on tapping into a wire. See next page for visual representation of connection.

NOTE: Keep in mind we're essentially making a "T" into the factory wire. The factory wire must not be interrupted, rather just tapped into. This applies to the audio inputs below as well. The factory wire (s) must continue into the factory amplifier.

Audio Input (Getting the music to the amplifier)

This part of the installation is the most time consuming. By time consuming we mean 10 minutes. Use the supplied blue butt connectors to make the connections.

1. Carefully observe the factory amplifier. You will see a large bundle of wires going into the amplifier. The harness contains several wires, but don't be overwhelmed. We will be using only five of them, and they are easy to locate. The wires will be twisted together, and each twisted pair represents a speaker or input.
2. Locate the RCA Cables included in your amplifier wiring kit. Notice the two sets of twisted pairs at one end of the cables. These wires will be spliced into your factory wiring as shown on the following pages.

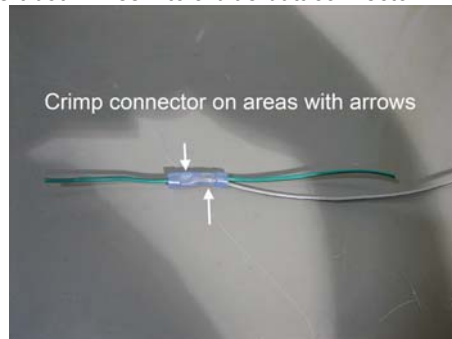
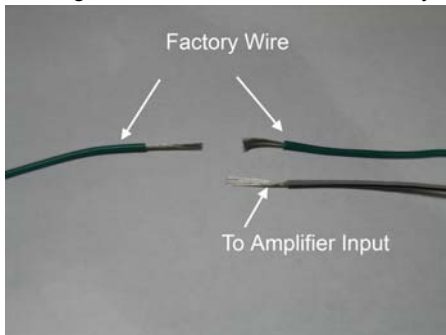
At the factory amplifier you will need to separate the following two pairs of twisted wires:

- Left Front Channel:** Blue w/ Black Stripe (+) and Yellow w/ Brown Stripe (-)
- Right Front Channel:** Blue w/ Purple Stripe (+) and Blue w/ Grey Stripe (-)

PLEASE NOTE: When making these connections, please keep in mind that the wires at the original BMW harness are twisted in pairs. These pairs **MUST** remain together when making your connections since there may be multiple instances of the same wire color and there would be no way to identify which wire is appropriate for which connection if the wires are separated.

Connection	Wire Color at Harness	Connects to:	Wire Color on End of RCA Cables
Left +	Blue w/ Black Stripe <i>paired to</i>		Red (+)
Left -	Yellow w/ Brown Stripe		Grey (-)
Right +	Blue w/ Purple Stripe <i>paired to</i>		Black (+)
Right -	Blue w/ Grey Stripe		Grey(-)

3. You will need to strip back approximately ¼" of the insulation from the ends of the wires, exposing the copper wiring.
4. Cut the factory wires in half about 3" off of the amplifier. Twist the wires from the input harness together with one side of the factory and insert both wires into a blue butt connector.



You'll crimp down the connection using a crimp tool. Insert the remaining side of the factory wire into the other side of the butt connector and repeat the crimping process as shown:

Once your connections are complete, secure the LOC and plug the included RCA Cables into the LOC. Route the RCA Cables over to the mounting location of the amplifier, and plug them into the RCA input section of the amplifier.

Speaker Wiring Connections:



We now need to get the music from the new amplifier to the subwoofer located inside of the vehicle. Since all Z3's have some sort of factory subwoofers, you will be able to reuse the OEM wiring. Simply match the colors of the wires at the subwoofer plug to the wires at the factory amplifier.

What that means is this:

Notice that there are four wires going into the factory subwoofer enclosure. In order to deliver all of the new amplifier's power effectively, we are going to make the four wires into two wires, creating a larger diameter wire.

Pick any of the two wires and make them the positive (+) wires. Use the remaining two wires as the negative (-) wires.

Cut the plug off at the factory subwoofer, and then strip back the insulation and twist the copper from each wire together, forming one larger wire.

Find these same wires in the trunk at the factory amplifier, and combine them in the same combination as you did at the subwoofer enclosure. Be sure and cut these wires as they come off of the factory amplifier (about 6" or so) and tape off the leads coming from the amplifier to prevent accidental shorts.

Connect the included speaker wire to these wires in the trunk as they head up to the front of the car, and route the wire to the mounting location of the new amplifier.

Testing the Actual Installation Prior to Tuning

First things first, after physically completing the installation, make sure your amplifier is powered up properly. It needs to turn off and on with the key. The power light should turn off when you take the key out of the ignition. Test this out a couple of times to make sure. If it does not, and you are having trouble figuring out why, give us a call or drop us a line. Trust us, it won't be anything major. Go back over the above connections, and you'll undoubtedly find a small, silly mistake.

Now, go to the front of the car, and turn on the stereo. Put in your favorite CD (not a burned CD, but one that was professionally mastered and recorded), and tune in to your favorite track. We recommend using a very dynamic type of music, with many types of musical variations within the CD. Make sure that your bass settings on your radio are set in the middle or slightly lower. This will decrease distortion and increase the overall sound quality in the vehicle.

Amplifier Tuning

Make sure all bass and treble settings on your radio or EQ are flat, or in the middle.

1. Preliminarily set the gains, crossovers, and crossover frequencies as follows:
2. **Gains:** $\frac{1}{4}$ of a turn, or roughly 9 o'clock.

Crossover Frequency: Start around 100 hertz.

Bass EQ: Start around 3 db of boost.

Gain Adjustments:

-Begin turning up the volume until you hear the music at a reasonable level and increase the volume slightly up to the point that you begin to hear distortion coming from your interior speakers. Now, back down the volume until the distortion disappears and stop there. Head back to the trunk and slowly begin adjusting the



gain(s) of the amplifier until you are content with the amount of bass being produced by the subwoofer without any audible distortion of the woofer. Make sure that this blends in with the rest of the music, and you're on your way to a rich, full sound.

When adjusting the amplifier gains, do everything in very small increments.

We recommend 1/8th turn adjustments of the gain to find that sweet spot where there is no distortion and plenty of volume.

Everyone listens to music differently, so the tuning process may take some of us days, while others can do it in a matter of minutes, whether they're a beginner or not.

The tuning is the most important aspect of the installation. Don't rush any aspect of the tuning. You may ride around a few days and find that you need to make some adjustments. Don't worry, this is perfectly normal.

Crossover Adjustments:

This can be tricky, but if you keep your ears open, it shouldn't take long at all.

Here are some tricks to finding that sweet spot.

Keep your ears open!

-You can also readjust the bass on the radio down a notch or two to compensate for the distortion, but again, **keep your ears open.**

Keep a fine ear out for any distortion, and once you've found that sweet spot where the volume and the fullness that you desire is ideal, you shouldn't ever need to adjust the amplifier again.

Make any installation notes here: