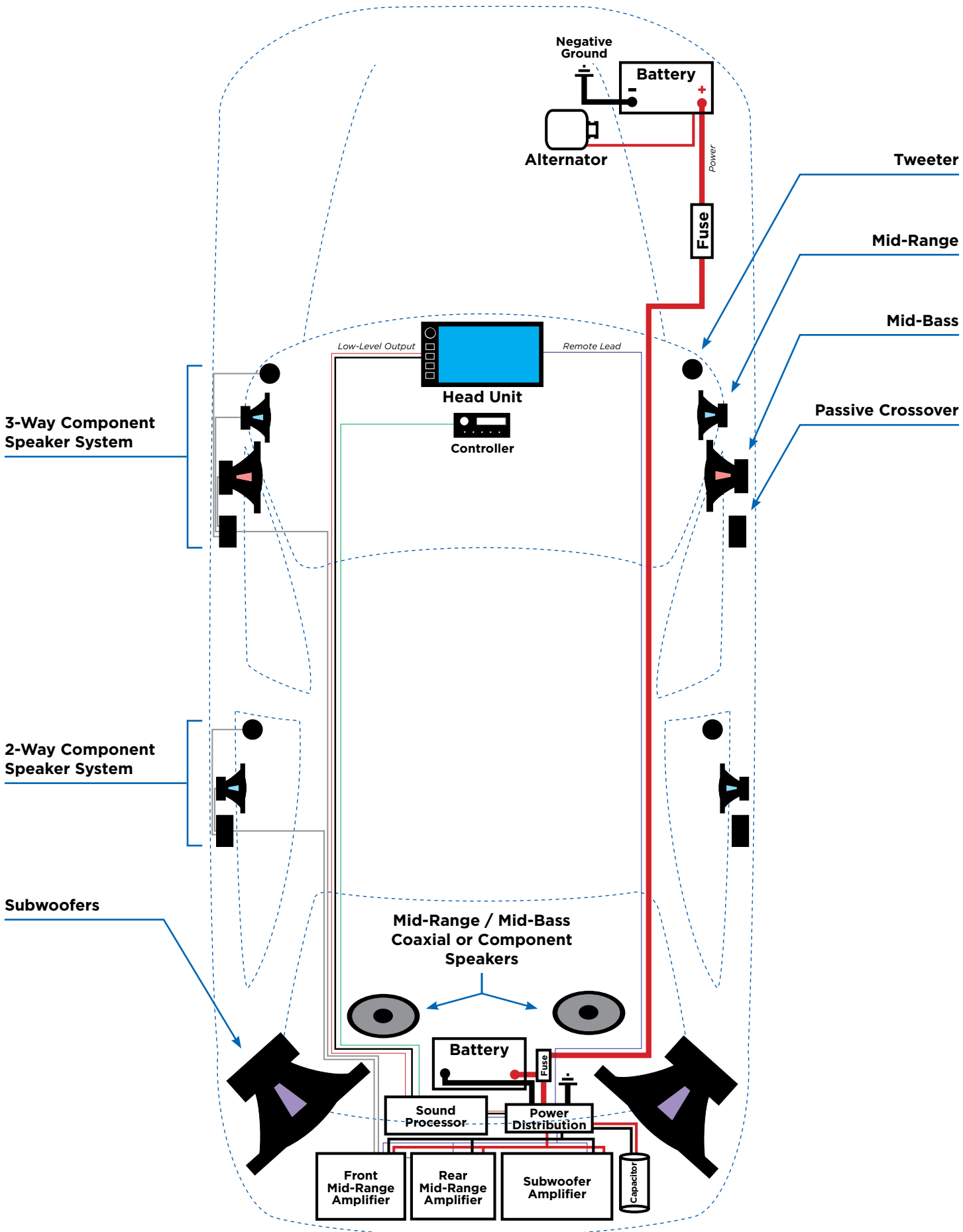


The Ultimate Visual Guide to the Ultimate Car Audio System

And Explanations of Key Components





Tweeter

A tweeter is a small driver or speaker that produces the highest range of frequencies. To make higher frequency waves, the diaphragm has to vibrate at many thousands of cycles per second. Tweeters are much smaller than woofers or mid-range speakers since it is difficult for a large driver to vibrate fast enough to create high frequencies.¹

While poor installation can easily cause problems for your tweeters, one of the most common problems is actually not with the tweeter itself, but with the crossover. A professional installer will make sure that your tweeter crossovers are set up properly to produce the highest quality sound possible.

Subwoofer

A subwoofer is a dedicated low-frequency speaker in a tuned enclosure that provides the deep, rich bass that is missing from most main speakers. Subwoofers are specialized and don't reproduce midrange or high frequencies. They are designed to reproduce the deepest notes in the musical spectrum and are the largest speakers in your custom audio system.²

Common subwoofer problems include poor enclosure design, distortion, power loss and getting hit by objects rolling around in your trunk. Having your system professionally installed will ensure that your low bass frequencies will thump hard and loud while staying tight and clean without exceeding the limits of your vehicle's electrical system.

Mid-Range

As the name suggests, mid-range drivers produce frequencies in the middle of the spectrum (250–2,000Hz). This range is widely considered the most important of your audio system, as the human ear is most sensitive to sounds that live in the mid-range (The human voice, many sounds in nature, and notes in the middle of the piano all fall in the mid-range).

If you experience peaks or dips from your mid-range drivers, it will adversely affect your overall sound. If your mid-range produces unnatural coloration or distortion or if some vocal, guitar or piano notes are very loud while others can barely be heard, it may be time to have a professional look at your system.

1 "What is a speaker tweeter?" *HowStuffWorks*, <http://electronics.howstuffworks.com/speaker-tweeter.htm>; Accessed 12.9.14

2 "What is a Subwoofer, and Why do I Need One?" *Velodyne*, <http://velodyne.com/tech/what-is-a-subwoofer-why-do>; Accessed 12.9.14

Mid-Bass

Mid-bass drivers help improve quality of the frequencies that sometimes get lost between the subwoofer and mid-range drivers (75–250Hz, bass strings and higher bass notes, cello, tom-toms)

For many car audio enthusiasts, this range can be the trickiest to perfect. Sloppy installation and cheap equipment can result in phase cancellation and unwanted distortion from mid-bass drivers. Professional installers understand the intricate nature of the mid-bass range and can save you a lot of headache in trying to identify performance issues.

Crossover (x-over)

A crossover is a device that creates multiple output signals from a single input signal to properly separate low, mid and high frequencies. Such a device is crucial in a 2 or 3-way system as it splits the signals at a selected frequency and sends them to the appropriate speakers. Crossovers can either be active (powered unit with selectable crossover points) or passive (in-line device with a single crossover point set by the manufacturer).

Guidance from a professional can ensure that you choose the right type of crossover to match your goals, and having it professionally installed will keep all of your speakers working seamlessly in harmony for perfect balanced sound.

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