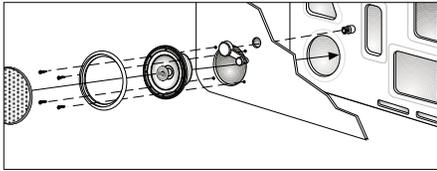


## SPEAKER INSTALLATION GUIDE

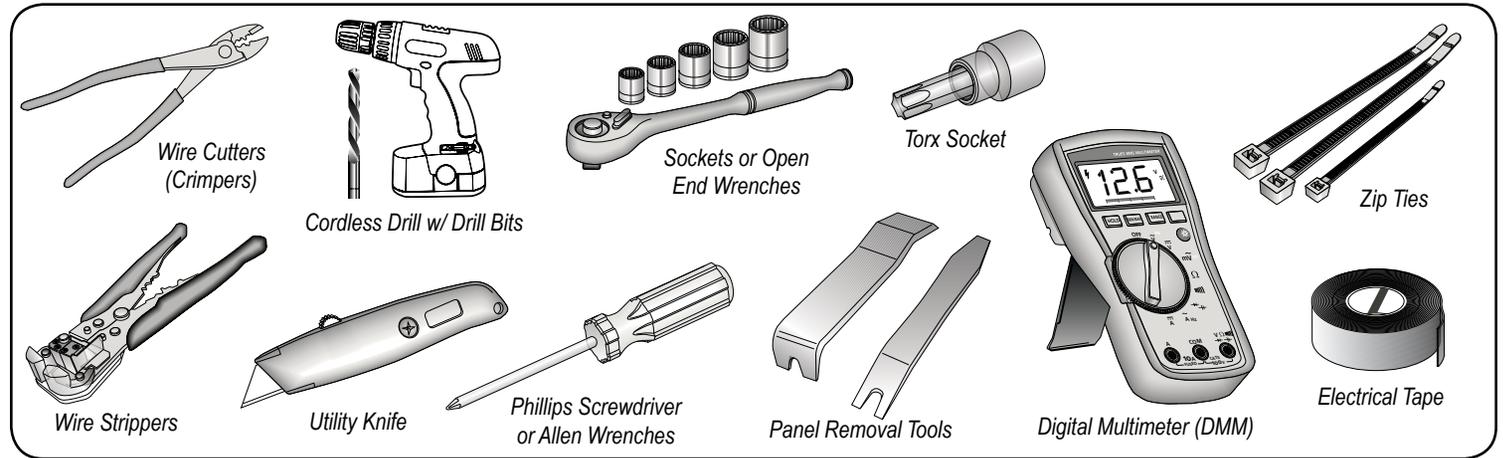
Difficulty Level: Moderate to Difficult

Average Installation Time: 1-3 Hours



**In This Guide:** Installing car speakers often requires removal of door, dash or rear window shelf interior panels to access the speaker mounting points. Component speakers require the additional steps of installing a separate tweeter and passive crossover network. Follow these easy installation steps to ensure proper installation of your speakers.

### Tools and Supplies Needed:

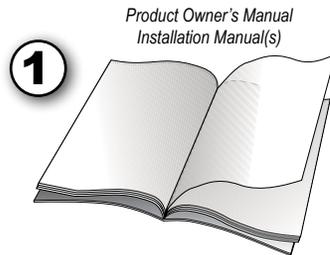


### Important

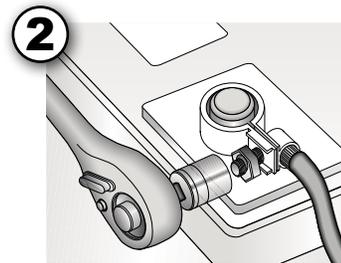
This content has not been verified by Amazon for accuracy, completeness, or otherwise. Consult your vehicle's owner's manual and the product's manual before attempting an installation. Contact the product's manufacturer or consult a Mobile Electronics Certified Professional installer if you are uncertain about how to properly install your product. Amazon attempts to be as accurate as possible; however, because of the number of vehicles and products available to consumers, it is not possible to provide detailed installation steps that apply universally to all vehicles and products. Amazon does not warrant that product descriptions or other content of this site is accurate, complete, reliable, current, or error-free. Further, Amazon disclaims any warranties, express or implied, as further set forth in the 'Conditions of Use' for Amazon.com.



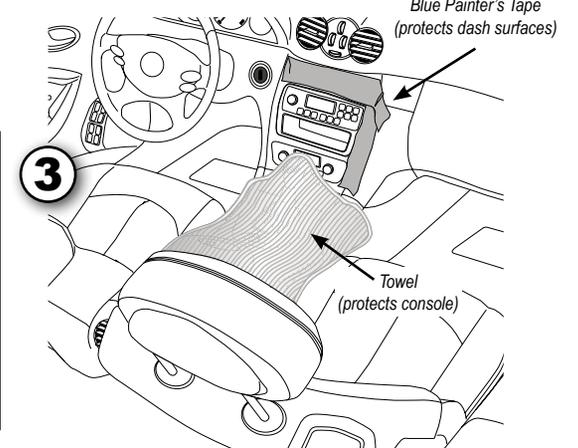
### Before You Begin



Read all instructions carefully



Disconnect the negative battery cable



Protect interior surfaces

**Note:** Accessories, such as oval-to-round speaker mounting adapters and speaker wire, may be required to complete the installation and are available for purchase on Amazon.com

# Upgrading Speakers

## Coaxial or Component Speakers

Coaxial speakers combine a cone speaker for midrange frequencies with a tweeter for high frequencies in a single speaker chassis. Many coaxial speakers use high quality materials and fit directly into factory locations, simplifying installation and delivering upgraded sound quality.

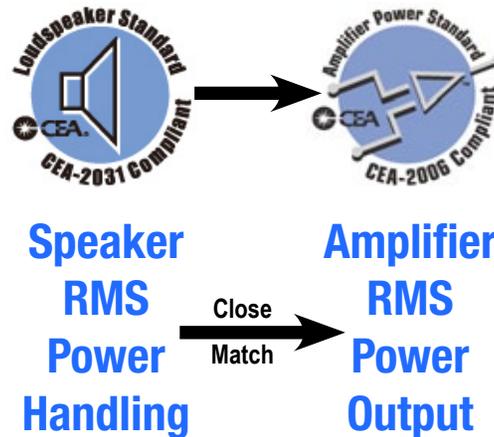
Component speakers have separate midrange and tweeter drivers providing the flexibility to mount tweeters at the listener's ear level. Components also have a passive crossover network that routes appropriate frequencies to the midrange and tweeter respectively, which improves power handling of the speakers and optimizes sound production. Consider component speakers when you are in pursuit of the highest caliber music experience.



Component Speakers in a Kick Panel Location

## Match RMS Power Ratings

RMS power ratings represent a realistic expectation of a product's performance. To ensure quality sound production, match the amplifier's RMS power output with the speaker's RMS power handling. Overpowering speakers can overheat the speaker's voice coils causing premature failure. Under powering speakers may cause sound distortion. As an example, if the speakers are rated at 50 watts RMS, choose an amplifier that provides between 40 to 60 watts RMS to each speaker. A little more power (up to +25%) over the speaker's RMS power handling is okay, as it adds 'headroom,' or reserve power, to the audio system when the music gets complex and/or loud.



Closely match CEA-2031 Speaker Power Handling Wattage with CEA-2006 Amplifier Output Power Wattage. If CEA ratings are not available, always look for the 'RMS' ratings to guide product matching.

## Sound Deadening Treatment

Consider installing sound damping and vibration control materials in the doors, trunk, rear shelf and floor of the car. These adhesive sheet materials install easily on metal and plastic to reduce the road noise and vibration from interior panels to create a quieter, more enjoyable listening environment. By adding mass (weight) to the panel, any vibrations are suppressed, transferring energy from the speakers into great sound rather than annoying buzzing, vibrating and rattling of interior panels.



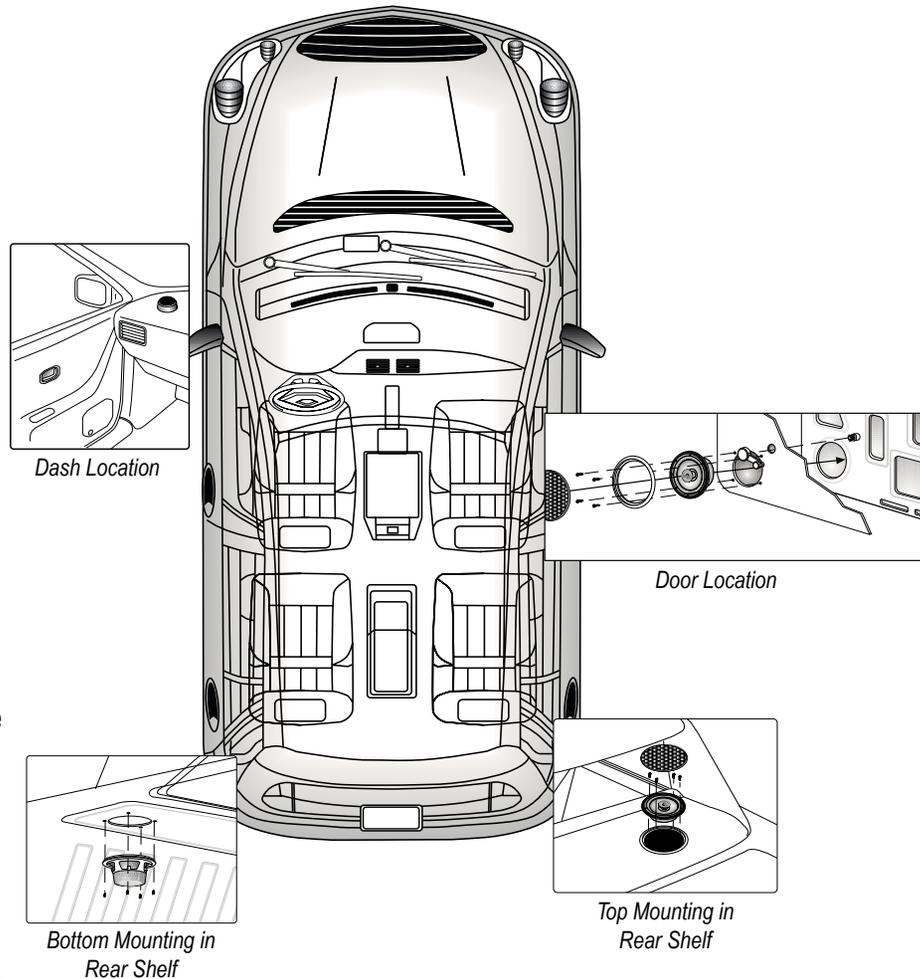
Sound Deadening Reduces Vibrations and Rattles from Sheet Metal and Plastic Panels

## Speaker Locations

If you are unsure of the factory speaker sizes and locations in your vehicle, visit **Scosche** or **Metra** to get fitment information.

### Dash Locations

Speakers located in the dash may require removal of the protective speaker grilles to access the speaker. This may be as easy as direct removal of the grille, but may require additional dash top panel disassembly. Short screwdrivers or socket wrenches are usually required to remove the speaker given the limited space between the dash and windshield. To avoid cracking or scratching the glass, place a towel on the inside of the windshield in the areas near the speakers.



Typical Car Speaker Locations

### Rear Shelf Locations

Speakers located in the rear shelf (also called 'package tray') may require rear seat removal to access the speaker mounting points. There are two styles of rear shelf speaker mounting; top mount and bottom mount. Top mounting is done from the inside of the car and requires removal of the protective speaker grill or the whole rear shelf panel. Bottom mounting is done from inside the trunk and may only require releasing a bracket holding the speaker up against the shelf. New speakers may require additional mounting hardware and new brackets if their depth exceeds that of the factory speakers. With the rear shelf panels removed, this is an excellent opportunity to install sound deadening materials.

### Door Locations

Speakers located in doors typically require removal of door panel(s), unless the protective speaker grill is independently removable and provides direct speaker access. If door panel must be removed, use non-scratching plastic panel removal tools to carefully pry the outer edges of the panel and gently release the pressure fit clips. Most door panels have screws placed around door pulls, window cranks or armrests. Remove these screws, and then disconnect any electrical wiring plugs behind the panel before removing the panel. With the panel removed, this is an excellent opportunity to install sound deadening materials.

### Other Locations

There may be additional speakers behind side panels in trucks and SUVs, in rear strut tower panels in hatchbacks, or in the floor (under seats) in luxury cars. It may be necessary to remove seats and large interior panels to access the speaker mounting points. Use care and take your time when disassembling any of these speaker locations.



#### When to Consider a Professional:

Before attempting speaker installation, assess your comfort level with the required disassembly of your vehicle. Consider a professional installer if you are not comfortable disassembling vehicle interior panels.

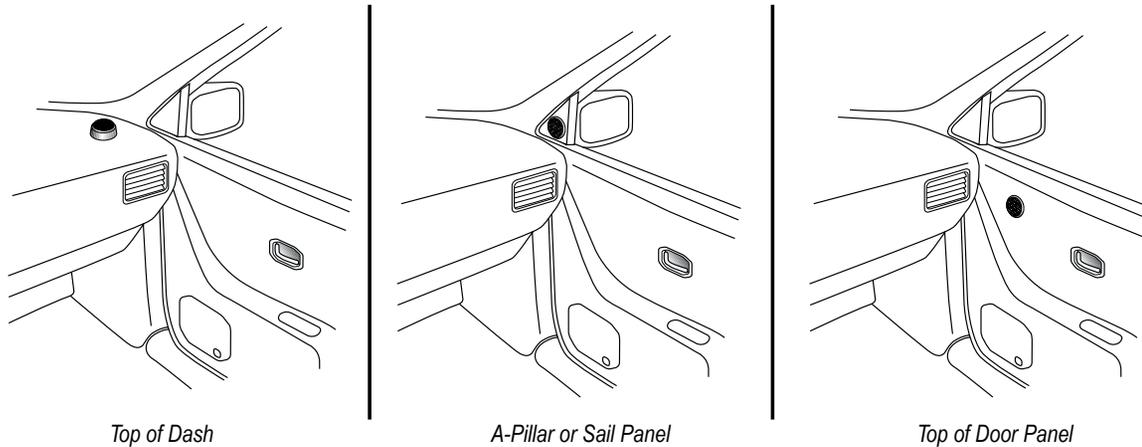
## Component Speaker Considerations

In addition to the midrange driver, component speakers have tweeters and passive crossovers that need be installed. These may be new components to your audio system without a factory location, so the installation location choice is important. Review the speaker manufacturer's installation instructions for specific details.

### Tweeter Locations

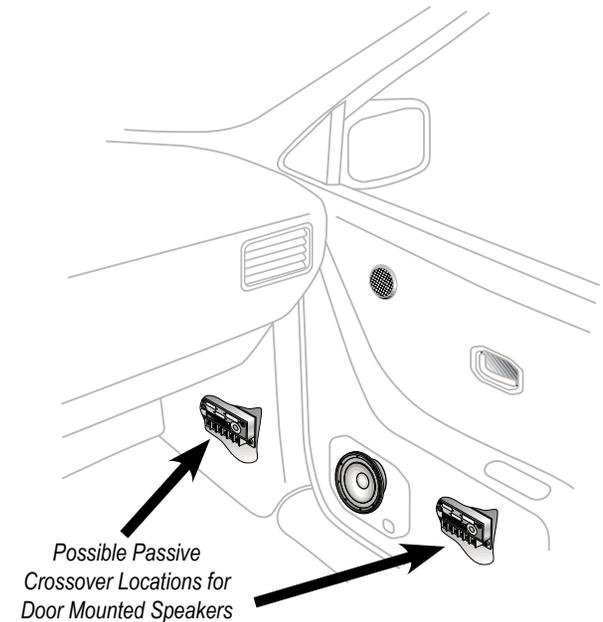
Tweeters should be installed higher up in the vehicle to 'lift' the sound off the floor. Recommended tweeter locations include the top triangle area at the front edge of the door panel (near the side view mirror), the 'A-pillar' windshield trim, or the upper front area of a door panel forward of door pull hardware. Many component sets offer more than one mounting hardware option including surface mount, flush mount, or mounting brackets for installation behind an existing speaker grill. Review the speaker manufacturer's installation instructions to choose the appropriate hardware for the tweeter installation.

*Typical Tweeter Locations*



### Passive Crossover Locations

The passive crossover is a critical part of the component speaker system. Avoid installing it near high current power wiring where radiated noise can enter the crossover components. Also, avoid wet or moist locations, such as inside a vehicle door cavity with window and locking mechanisms. Recommended locations include under seats, in the trunk, or (for door mounted component speakers) on the inner door skin outside of the moisture barrier plastic between the door panel and inner door skin metal or in the kick panel area. Additional speaker wiring may be needed to connect the amplifier and speakers to the passive crossover. Verify if extra speaker wiring is included with the component speaker set.



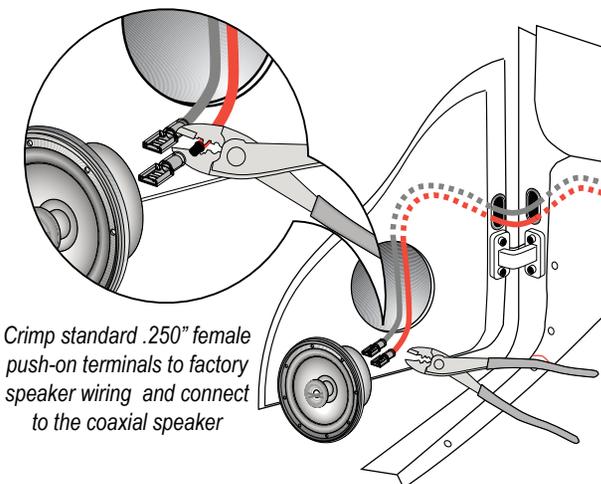
## Using Factory Speaker Wiring

To find factory speaker wire color information for your vehicle visit DIY wiring resources like [www.eAutoRepair.com](http://www.eAutoRepair.com) or [www.AllDataDIY.com](http://www.AllDataDIY.com). Review the manufacturer's installation instructions for the component speakers for specific details of wiring connections on the speaker.

### Coaxial Speakers

If you are replacing factory speakers with coaxial speakers, use existing factory wiring.

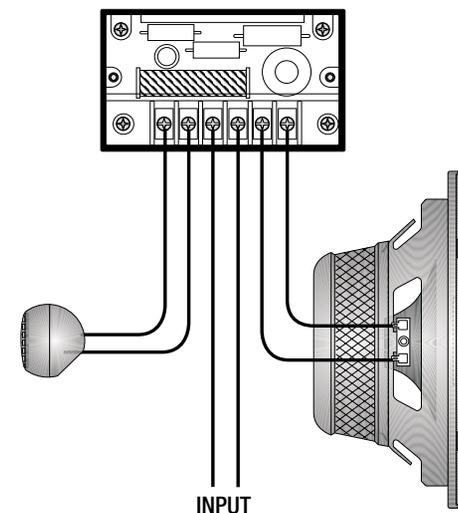
- 1) After removing the factory speaker, cut the factory speaker plug, leaving 2-3 inches of extra wire for the connector. This is recommended in case you ever want to reinstall the factory speaker.
- 2) Crimp a female .250" push-on terminal to each speaker wire by inserting the bare wire into the terminal, positing the terminal in the appropriate gauge setting in the crimper jaws and squeezing the crimper on the terminal to secure the wire.
- 3) Gently pull each wire to ensure a good crimp connection. The wire should not pull out of the crimp terminal.
- 4) Connect the positive (+) factory speaker wire to the positive (+) terminal of the speaker.
- 5) Connect the negative (-) factory speaker wire to the negative (-) terminal of the speaker.
- 6) Repeat steps 1-5 on the remaining speakers to install in factory locations.



### Component Speakers

If you are installing component speakers into a factory location, use existing factory wiring for the input to the passive crossover. The midrange and tweeter outputs of the passive crossover will use new speaker wire. Note: you may need to purchase additional speaker wire separately.

- 1) After removing the factory speaker, cut the factory speaker plug, leaving a 2-3 inches of extra wire for the connector. This is recommended in case you ever want to reinstall the factory speaker.
- 2) Connect the positive (+) factory speaker wire to the positive (+) 'input' terminal of the passive crossover.
- 3) Connect the negative (-) factory speaker wire to the negative (-) 'input' terminal of the passive crossover.
- 4) Speakers lacking spring-loaded binding post terminals may require crimping female .250" push-on terminals to connect the speaker wiring.
- 5) Connect the positive (+) 'midrange output' of the passive crossover to the positive (+) terminal of the midrange speaker.
- 6) Connect the negative (-) 'midrange output' of the passive crossover to the negative (-) terminal of the midrange speaker.
- 7) Connect the positive (+) 'tweeter output' of the passive crossover to the positive (+) terminal of the tweeter. If there are multiple level settings (0dB, -3dB, etc.) choose the 0dB terminal connection.
- 8) Connect the negative (-) 'tweeter output' of the passive crossover to the negative (-) terminal of the tweeter.
- 9) Secure the wires with zip ties and the passive crossover with the included mounting hardware.



*Passive Crossover Connection Example*

## Using New Speaker Wiring

If you are using new wiring, connect the new speaker wire to the positive (+) and negative (-) speaker output of the receiver or amplifier, then connect it to the corresponding positive (+) and negative (-) terminals on the speaker and (if applicable) passive crossover following the manufacturer's installation instructions. Secure all new wires to factory wiring harnesses using zip ties.

## Test and Reassemble

### Test the Speakers

Test the new speakers by turning on the audio system and playing dynamic music. You should notice a definitive sound quality improvement over the factory speakers. To verify that both left and right speakers are working properly, use the receiver's audio controls to change the speaker balance to left only, then center, then to right only. If low frequencies seem more evident when balanced only on the left or right channel, the polarity may be incorrect. If a speaker is connected incorrectly, meaning a positive (+) wire is connected to a negative (-) terminal, it will create cancellation with other speakers, causing a deficient low frequency effect when the balance is in the center position. To fix this, ensure that you connected the positive (+) and negative (-) wires to the corresponding speaker terminal.

### Reassemble the Vehicle

Once you have tested and verified the performance of the new speakers, reassemble interior panels in the reverse order of removal. Pay careful attention to panel clips and pressure fit hardware to ensure all clips are securing the panel from unnecessary vibrations. Verify all wiring is securely tied down with zip ties and routed away from moving parts or heat sources.