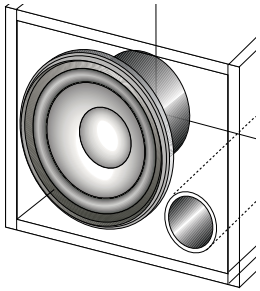


Subwoofer Installation Guide

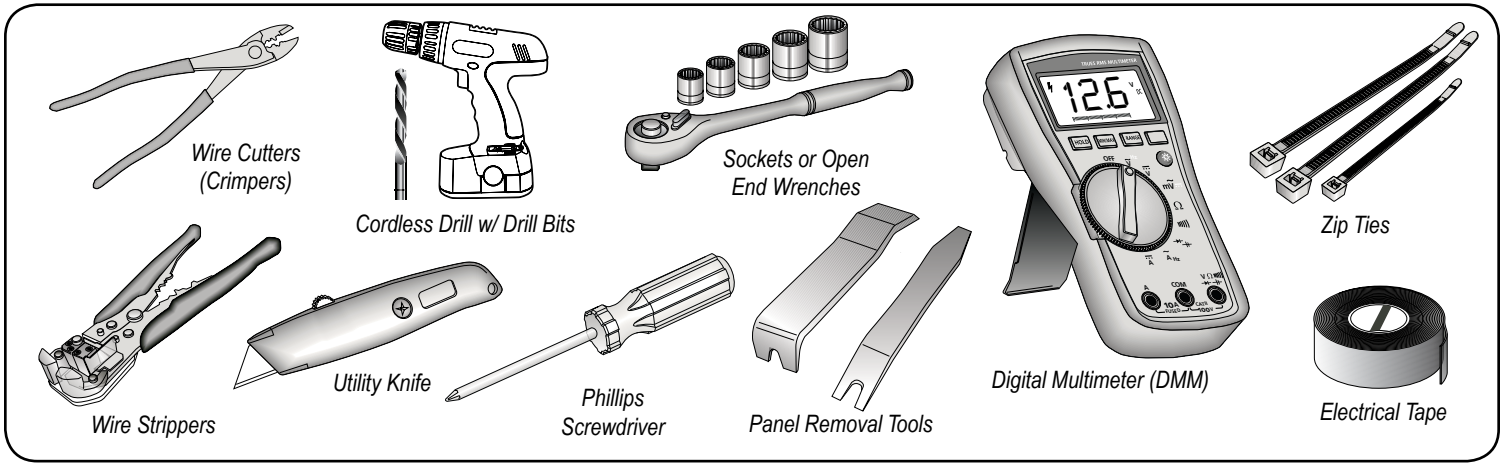
Difficulty Level: Moderate **Average Installation Time: 2-3 Hours**

In This Guide: Subwoofer installation requires you to disassemble parts of the trunk or cargo area, mount the subwoofer driver (aka, subwoofer speaker) into a subwoofer enclosure (if it did not come installed in an enclosure), and wire and secure the subwoofer enclosure. Follow these steps to add great bass to your vehicle.

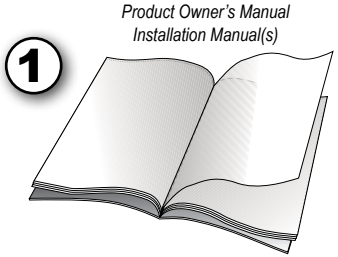
Important

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.

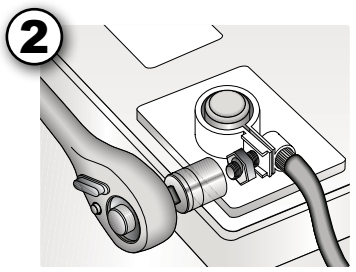
Tools and Supplies Needed:



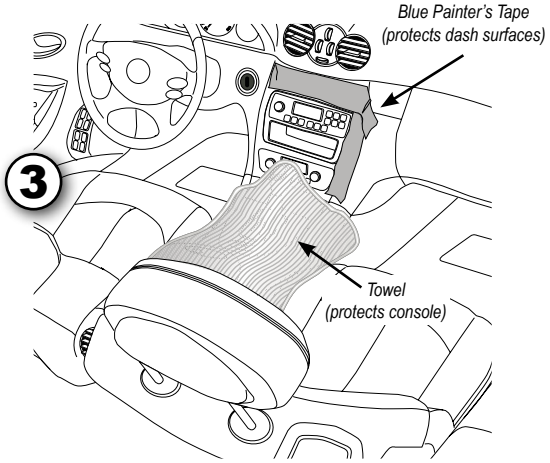
Before You Begin



Read all instructions carefully



Disconnect the negative battery cable



Protect interior surfaces

Note: Additional accessories, such as speaker wire or mounting hardware, may be required and are available for purchase on Amazon.com.

Choosing a Subwoofer

Size

In most vehicles, an 8” to 12” diameter subwoofer is likely to fit and provide excellent output when placed in a correctly sized enclosure. Be sure to review the subwoofer’s recommended enclosure volume before selecting or constructing a subwoofer enclosure. If vehicle space is limited, it is better to go with a smaller diameter subwoofer with a properly-sized enclosure, rather than squeezing a larger diameter subwoofer into an under-sized enclosure. If space limitations are not a problem, larger 12” or 15” subwoofers (even multiple subwoofers) are possible.

RMS Power Handling

Use RMS power ratings to select an amplifier to power your subwoofer. Match the amplifier’s per channel RMS power with the subwoofer’s RMS power handling. ‘Peak’ or ‘max’ power ratings on either the amplifier or subwoofer can be misleading since each manufacturer defines Peak ratings differently. RMS power handling is a good indication of continuous reliability of both the subwoofer and amplifier when used in the correct enclosure. Review the **Matching Subwoofers and Amplifiers** Buyer’s Guide to learn more about selecting the appropriate amplifier for one or more subwoofers.

Voice Coils

The decision to purchase a single voice coil (SVC) or dual voice coil (DVC) subwoofer, and its nominal impedance (Ohms), depends on the ‘load’ of the subwoofer(s) connected to the amplifier. A general rule of thumb is to choose voice coil configurations that load amplifiers at 4 ohms (2 ohms on amplifiers that can support it). This allows the amplifier to power the subwoofer(s) continuously with no overheating or overloading problems. A single subwoofer with a single voice coil is straightforward (for example – 4 ohms). Multiple SVC and one or more DVC subwoofers can be wired in series, parallel or series-parallel combinations. Each wiring design allows for a different configuration of subwoofer(s) to amplifier(s) and is necessary because not all subwoofer voice coils are the same nominal impedance. See the series and parallel connections section in this manual for tips on DVC and multiple subwoofer connections to an amplifier. Review the **How to Choose Subwoofers** Buyer’s Guide to learn more about voice coils and nominal impedance.

Loaded Enclosures or Powered Subwoofers

Pre-manufactured enclosures

Choose a pre-manufactured, empty enclosure, if you do not want to construct your own.

Take the guesswork out!

There are many pre-loaded subwoofer enclosures that match the enclosure and subwoofer and are ready to accept an amplifier.

Include the amplifier too!

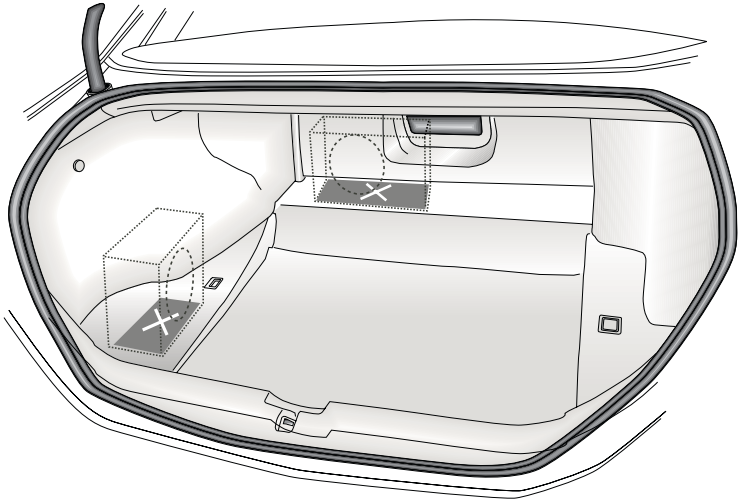
Powered subwoofer solutions include an onboard amplifier so there are even fewer concerns of matching power with the subwoofer. Just connect per install instructions, mount, and enjoy!

Pre-manufactured subwoofer enclosures are a cost effective alternative to building your own enclosure.

Pre-loaded enclosures come with one or more subwoofers already wired and installed in an ideally sized enclosure. All that’s needed is to connect an amplifier and these are ready to rock!

Powered subwoofers contain a built-in amplifier perfectly matched to the subwoofer’s wattage requirements. Simply connect power, chassis ground and signal inputs and it’s ready to go.

Where To Place The Subwoofer

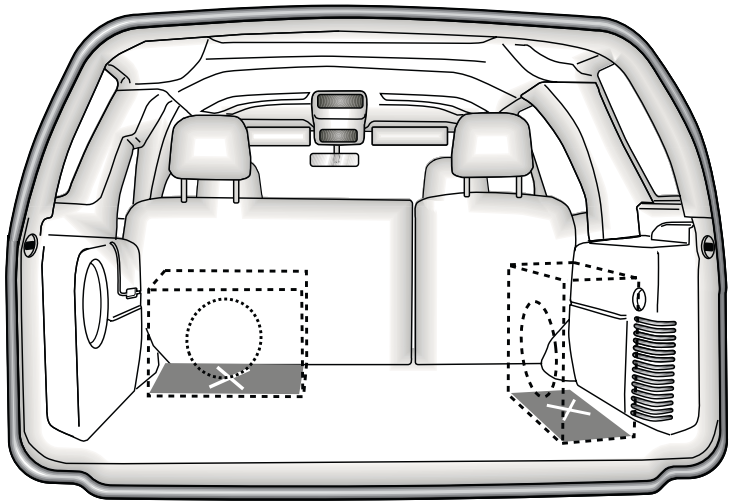


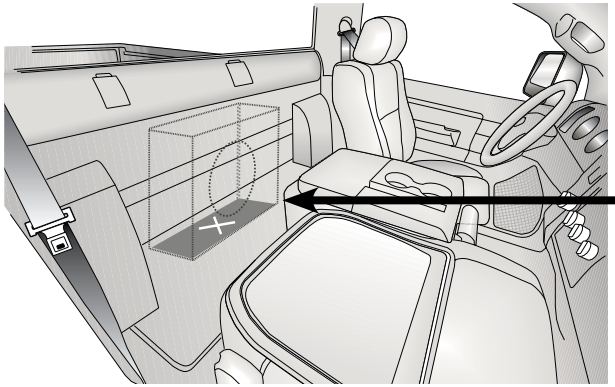
Trunk or Hatchback Vehicles

In most coupes and sedans with a trunk, as well as in hatchback vehicles, the subwoofer will be placed in the rear cargo area, where there is a flat surface and space to accommodate the subwoofer enclosure. In certain vehicles, you may find the subwoofer output is deeper and louder if the subwoofer faces the trunk/hatch instead of the rear seat. This allows the subwoofer to load off of the trunk's edges and extend the bass notes into the cabin with fewer obstacles.

Sport Utility Vehicles (SUVs) or Vans

In most SUVs or other large passenger vehicles, the rear cargo area is the best location for the subwoofer, unless it is a specialty subwoofer that is created with a specific placement in mind, such as the center console, under a seat, or behind a rear side panel. If you carry cargo or passengers, be sure to install a grill or other protection over the subwoofer cone to avoid damaging it.





Trucks

Single cab trucks usually only ave enough space to mount a subwoofer behind the seat area. It is important to ensure that enough space/depth is available for the subwoofer enclosure (and subwoofer driver itself) when the seats are in their normal position. In this situation, consider installing a 'thin' or 'shallow' mount subwoofer as they require limited installation depth. Extra or Crew Cab trucks with rear seats may have room underneath the rear seats for subwoofers depending on the arrangement and function of the rear seats.

Quick Reference Chart

Use this quick reference chart when wiring multiple voice coils and/or multiple subwoofers. The number of voice coils could be either in a DVC subwoofer or in separate, single voice coil (SVC) subwoofers.

1 SVC subwoofer = 1 Voice Coil
1 DVC subwoofer = 2 Voice Coils

2 SVC subwoofers = 2 Voice Coils
2 DVC subwoofers = 4 Voice Coils

3 SVC subwoofers = 3 Voice Coils
3 DVC subwoofers = 6 Voice Coils

4 SVC subwoofers = 4 Voice Coils
4 DVC subwoofers = 8 Voice Coils

Series-Parallel

Series-parallel combinations require an even number of voice coils (4 or more). That could be two DVC subwoofers or four SVC subwoofers, or any combination of multiples of voice coils so long it is an even number.

Other Resources

Many subwoofer manufacturers' websites also provide wiring information for multiple subwoofers and voice coils.

Review the **How to Choose Subwoofers** Buyer's Guide to learn more about voice coils and nominal impedance.

Results in WHITE	Results in GRAY
Compatible Wiring Configuration IF the Amplifier Supports it	This Wiring Configuration is NOT Recommended

2 Voice Coils = 2 SVC or 1 DVC Subwoofer

Voice Coil (Ohms)	Wired in Series (Ohm Load)	Wired in Parallel (Ohm Load)	Series-Parallel (Ohm Load)
1 Ω	**2** Ω	0.5 Ω	N/A
2 Ω	**4** Ω	**1** Ω	N/A
3 Ω	**6** Ω	**1.5** Ω	N/A
4 Ω	**8** Ω	**2** Ω	N/A
6 Ω	12 Ω	**3** Ω	N/A
8 Ω	16 Ω	**4** Ω	N/A
12 Ω	24 Ω	**6** Ω	N/A

4 Voice Coils = 4 SVC or 2 DVC Subwoofers

Voice Coil (Ohms)	Wired in Series (Ohm Load)	Wired in Parallel (Ohm Load)	Series-Parallel (Ohm Load)
1 Ω	**4** Ω	0.25 Ω	**1** Ω
2 Ω	**8** Ω	0.5 Ω	**2** Ω
3 Ω	12 Ω	0.75 Ω	**3** Ω
4 Ω	16 Ω	**1** Ω	**4** Ω
6 Ω	24 Ω	**1.5** Ω	**6** Ω
8 Ω	32 Ω	**2** Ω	**8** Ω
12 Ω	48 Ω	**3** Ω	12 Ω

3 Voice Coils = 3 SVC Subwoofers

Voice Coil (Ohms)	Wired in Series (Ohm Load)	Wired in Parallel (Ohm Load)	Series-Parallel (Ohm Load)
1 Ω	**3** Ω	0.33 Ω	N/A
2 Ω	**6** Ω	0.66 Ω	N/A
3 Ω	9 Ω	0.99 Ω	N/A
4 Ω	12 Ω	**1.33** Ω	N/A
6 Ω	18 Ω	**2** Ω	N/A
8 Ω	24 Ω	**2.66** Ω	N/A
12 Ω	36 Ω	**4** Ω	N/A

6 Voice Coils = 6 SVC or 3 DVC Subwoofers

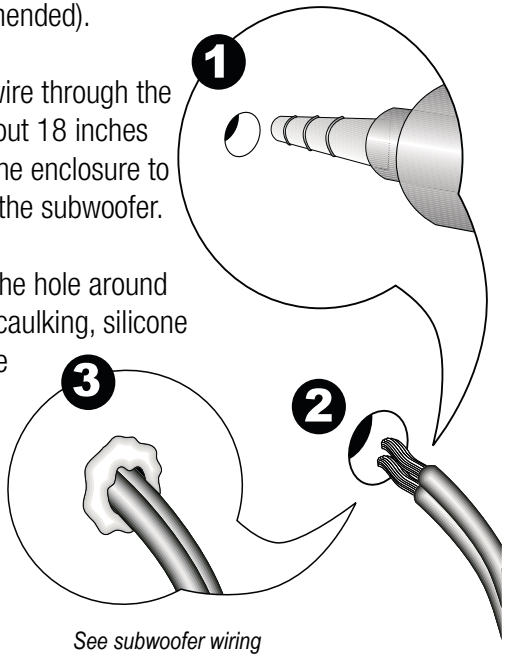
Voice Coil (Ohms)	Wired in Series (Ohm Load)	Wired in Parallel (Ohm Load)	Series-Parallel (Ohm Load)
1 Ω	**6** Ω	0.16 Ω	0.66 Ω
2 Ω	12 Ω	0.33 Ω	**1.33** Ω
3 Ω	18 Ω	0.5 Ω	**2** Ω
4 Ω	24 Ω	0.66 Ω	**2.66** Ω
6 Ω	36 Ω	**1** Ω	**4** Ω
8 Ω	48 Ω	**1.33** Ω	**5.33** Ω
12 Ω	72 Ω	**2** Ω	**8** Ω

Prepare Enclosure for Subwoofer Driver

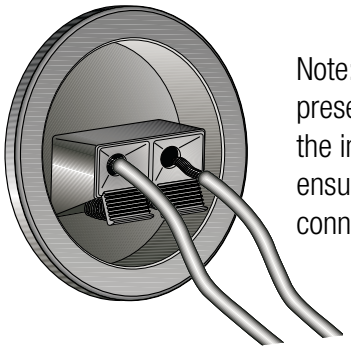
Step 1 - Drill a hole in the enclosure for speaker wire. Use a drill bit large enough to accommodate the wire (3/8” to 1/2” is recommended).

Step 2 - Run wire through the hole. Leave about 18 inches of wire inside the enclosure to easily connect the subwoofer.

Step 3 - Seal the hole around the wires with caulking, silicone or hot melt glue to ensure the enclosure will be air tight.

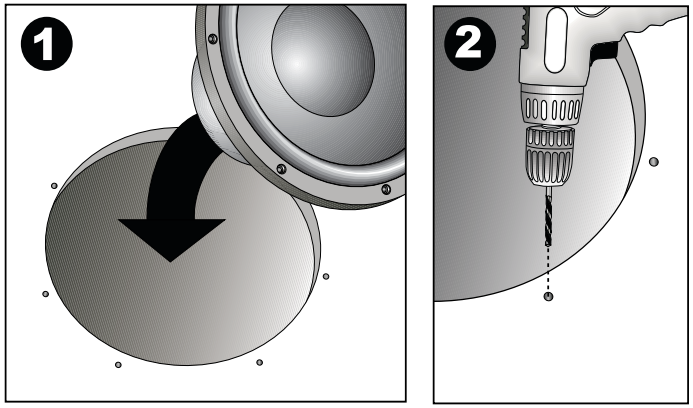


See subwoofer wiring configurations for DVC and multiple woofers on the next page.



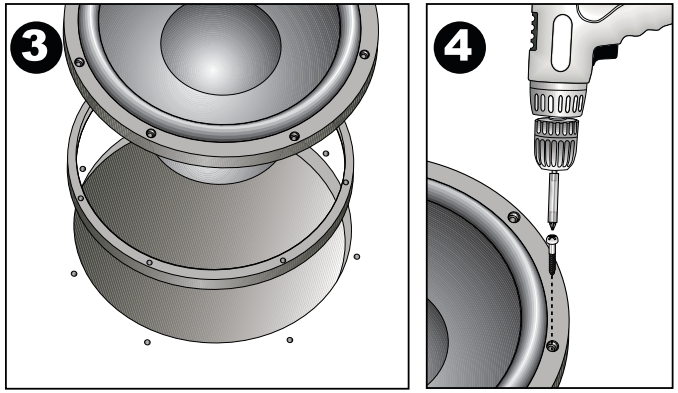
Note: If a terminal cup is already present, connect the wires to the inside of the enclosure, but ensure the wire is long enough to connect to the subwoofer.

Install Subwoofer Driver into Enclosure



Step 1 - Place subwoofer in hole and mark mounting holes.

Step 2 - Drill holes to mount the woofer using 7/64” drill bit.

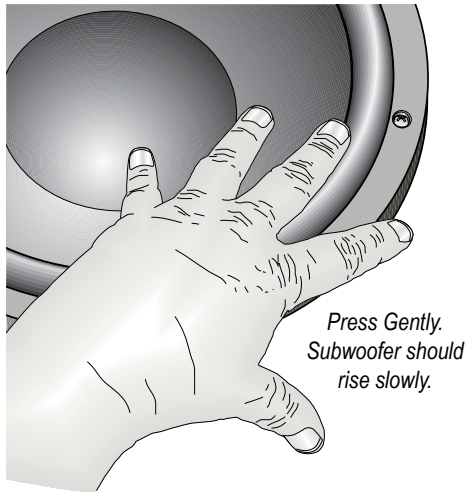


Step 3 - Place gasket (if supplied) or foam tape. Connect wire to subwoofer observing correct polarity so that the positive (+) speaker wire connects to the positive (+) speaker terminal. Put subwoofer in the mounting hole of the enclosure.

Step 4 - Line up drilled holes and carefully mount the subwoofer with screw gun or manual screwdriver using the supplied hardware or #8 pan head screws at least 3/4” long.

Check for a Good Seal

Gently press the subwoofer cone and feel the edges for the presence of any leaks.



In a sealed enclosure, the cone should move back slowly when pressed in if the subwoofer is well sealed.

Caution:

It is vital that the subwoofer driver is correctly screwed to the enclosure with no leaks around the outside mounting edge. Use the supplied gasket material or foam tape, which can be purchased on Amazon.com. Avoid using silicone or other sealants for the seal as it will make the subwoofer driver difficult to remove without damaging it or the enclosure after the sealant dries.

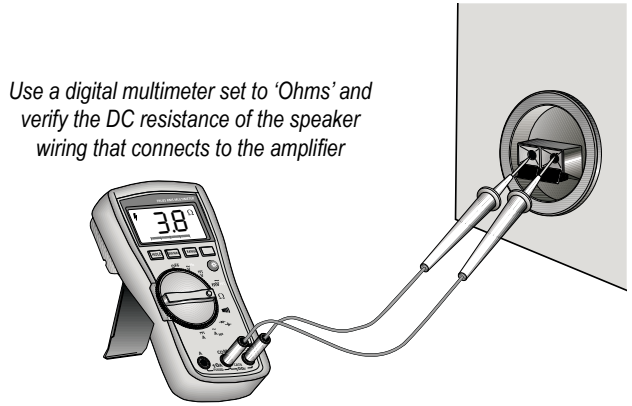
Check Your Progress

At this point the subwoofer is mounted into the enclosure and wired with a terminal cup or with the wire extending through a sealed hole in the enclosure. This wire is what connects to the amplifier output.

Before connecting to the amplifier, verify the DC resistance with a digital multimeter (set to 'Ohms') to ensure it is providing the correct nominal impedance load to the amplifier. If you intend to have a 4 ohm nominal impedance load, the DC resistance measurement will be somewhere between 3 to 5 ohms.

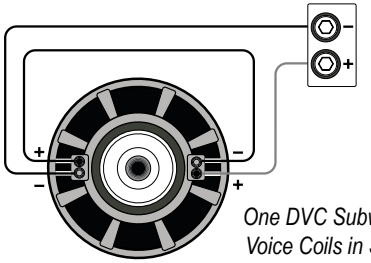
If the subwoofer is dual voice coil (DVC) or if there are multiple subwoofers wired together, this test is an important step to validate that the voice coils are wired correctly - whether in series, parallel or a combination of those methods.

To review specific details about installing power, ground and remote turn-on wires for powered subwoofers, review the Amplifier Installation Manual in the Amazon Car Electronics Resource Center. Read and follow the powered subwoofer's installation manual for specific details.

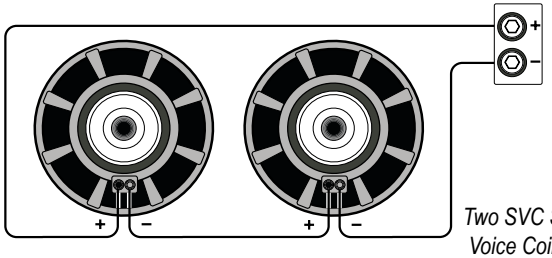


Use a digital multimeter set to 'Ohms' and verify the DC resistance of the speaker wiring that connects to the amplifier

Series Wiring Configuration

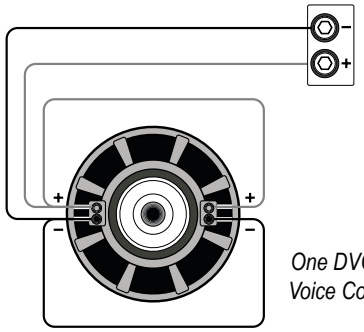


One DVC Subwoofer Voice Coils in Series

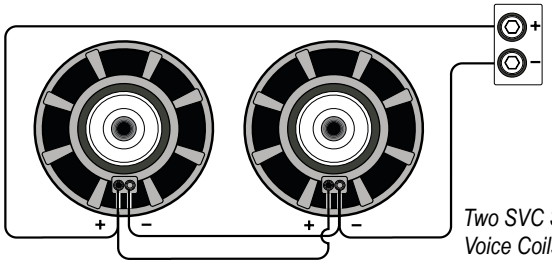


Two SVC Subwoofers Voice Coils in Series

Parallel Wiring Configuration

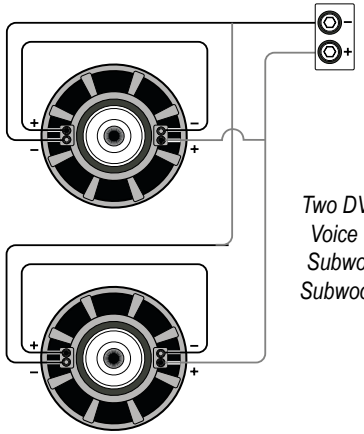


One DVC Subwoofer Voice Coils in Parallel

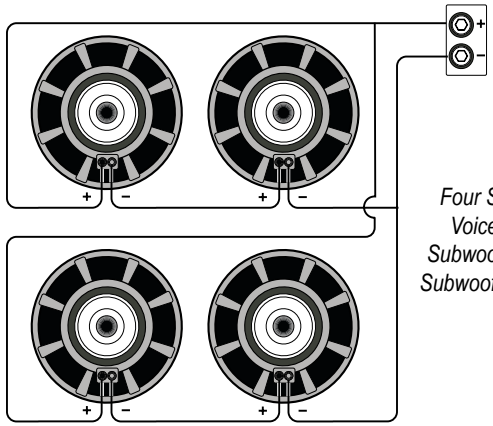


Two SVC Subwoofers Voice Coils in Parallel

Series-Parallel Wiring Configuration



Two DVC Subwoofers Voice Coils on Each Subwoofer in Series, Subwoofers in Parallel



Four SVC Subwoofers Voice Coils on Each Subwoofer Pair in Series, Subwoofer Pairs in Parallel

Finishing The Installation

If the installation is for a powered subwoofer or includes an amplifier to power the enclosed subwoofer, ensure the amplifier has power and signal wiring connected per its installation instructions and that it is ready to connect to and power the subwoofer.

For enclosed subwoofers with an external amplifier, ensure the speaker wires are correctly connected (observing polarity) to the amplifier's + and - output terminals. Powered subwoofers already have this connection completed internally.

If connecting the amplifier in a 'bridged' mode, be sure to configure the nominal impedance load to be compatible with that bridged output power configuration. Sometimes a bridgeable amplifier may say '2 ohm stable', but this is intended for stereo mode, not bridged. Bridged mode may only recommend a 4 ohm load. Be sure to verify bridged output nominal impedance loads connected to the amplifier with the manufacturer's recommended configuration. Read and follow the subwoofer's installation manual for specific details.

Caution:
Be sure to observe the correct configuration of the amplifier's speaker output terminals and whether or not the amplifier is running in left/right stereo mode or 'bridged' mode.

Once the subwoofer is installed, turn on the audio system and test it. Play music with bass content to confirm the subwoofer is working as intended. Close the trunk or hatch (if applicable) and listen for the bass to sound deeper and more robust. If it is not, reposition the enclosure to better optimize the bass in the driver's seat. Another option is to invert the polarity by reversing the + and - leads of the speaker wiring. Some receivers may have a polarity inverting feature in the subwoofer output menu (sometimes called 'phase', either 0 or 180º)

When final placement is determined, mount the enclosure to the floor or sides so that it does not move around. A loose and heavy subwoofer enclosure is a liability in an accident or when stopping suddenly. When mounting, be careful to observe what surface is being drilled, and to check for other components and possible hazards, like fuel tanks or wiring harnesses.