Car speaker wiring diagram

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This article explains how to identify car speaker wire colors when installing a car stereo. The easiest way to wire in an aftermarket car stereo is to look at car stereo wiring diagrams for the specific vehicle and head unit, but it's actually possible to get the job done without any labels, adapters, or diagrams. Although there are exceptions to every rule, most aftermarket car stereos use a standardized coloring scheme for the power, ground, antenna , and speaker wires. If you have the pigtail that came with your aftermarket head unit, and it uses the standard colors, then the wires will have the following purposes and colors:. If you find yourself with a used car stereo that you want to install, and you have the pigtail that came with the head unit, then it's usually just a process of checking the list above to see what each wire in the pigtail needs to connect to. The reason that car stereo wiring harness adapters are so useful is that while aftermarket car stereos have all the same inputs and outputs as the factory stereos that they're designed to replace, those inputs and outputs aren't all in the same places. If you can get your hands on the right car stereo wiring adapter, it vastly simplifies the installation process. One end of the adapter plugs into the car stereo , the other end plugs into the wiring harness that originally connected to the factory stereo, and that's all there is to it. The problem is that while harness adapters are fairly inexpensive, and they're available for a wide variety of car and head unit combinations, there really isn't any wiggle room in terms of compatibility. For a head unit wiring harness to work, it needs to be specifically designed for both your vehicle and your new head unit. If you can't figure out the specific model of a used head unit, then you're better off identifying the purpose of each wire and just manually connecting everything the right way. In that same vein, there is also a chance that there just isn't an adapter available for any given combination of vehicle and head unit. While it is technically possible to install a head unit without a wiring harness , it is a whole lot more complicated than the sort of basic head unit installation process that most do-it-yourselfers are comfortable with. Jeremy Laukkonen. Jeremy Laukkonen is tech writer and the creator of a popular blog and video game startup. He also ghostwrites articles for numerous major trade publications. Facebook Twitter LinkedIn. Updated on January 29, Christine Baker. Lifewire Tech Review Board Member. Christine Baker is a marketing consultant with experience working for a variety of clients. Her expertise includes social media, web development, and graphic design. Article reviewed on Mar 25, Tweet Share Email. The right-front speaker wires are gray, left-front speakers are white, right-rear speakers are purple, and left-rear speakers are green. Ground wires are black, antenna wires are blue, and amplifier wires are blue with a white stripe. Was this page helpful? Thanks for letting us know! Email Address Sign up There was an error. Please try again. You're in! Thanks for signing up. There was an error. Tell us why! More from Lifewire. To create this article, 16 people, some anonymous, worked to edit and improve it over time. This article has been viewed , times. Learn more The stock speaker systems that come in many new cars are, to put it simply, are often lousy. Luckily, not only are after-market speakers a relatively cost-effective way to boost your car's audio capabilities, but also are generally easy to install though the sheer number of speakers available means that some will be more difficult to work with than others. See Step 1 below to start learning how to install a new set of trunk-rattling speakers in your car! Unfasten any screws securing the speakers in place and disconnect the wires. If they work fine, screw the speaker into place and replace the panels or grills. For more tips, including how to install a subwoofer in your car, read on! Did this summary help you? Yes No. We've been helping billions of people around the world continue to learn, adapt, grow, and thrive for over a decade. Every dollar contributed enables us to keep providing high-quality how-to help to people like you. Please consider supporting our work with a contribution to wikiHow. Log in Social login does not work in incognito and private browsers. Please log in with your username or email to continue. No account yet? Create an account. Edit this Article. We use cookies to make wikiHow great. By using our site, you agree to our cookie policy. Cookie Settings. Learn why people trust wikiHow. Download Article Explore this Article parts. Tips and Warnings. Related Articles. Article Summary. Author Info Last Updated: September 5, Part 1 of Selecting New Speakers. Look at the stereo system you are installing your new speakers on. Some systems are simple stereo audio systems that have limited wattage and two or four channels, so watt speakers, or adding 8 or more just won't make sense. Trying to push too many speakers can, in fact, cause the quality of the audio to be diminished, or even damage the stereo. Check the dimensions of the existing speakers so minimum modifications will be needed to fit the new ones in. Speakers come in different shapes and sizes, so a planning to mount a replacement speaker, knowing if the original was a 6X9 inch oval rather than a 4 inch Consider quality. Speakers with composite or fabric cones are usually noticeably better than those with paper, and ceramic permanent magnet speakers will out-perform wound electromagnetic speakers at the same power level. Select speakers with trim packages you like. You may find many different styles and colors of trim and covers in a similar price range, so it

makes sense to pick the ones that look good, not just sound good. Look at the electronic characteristics of your speakers. Some have inline resistors to prevent static and crosstalk, some allow wiring in a series circuit configuration to allow you to add woofers and tweeters where you need them, and some can only be wired terminally to maintain the correct system impedance. Consider the power requirements of your new speakers as it will affect the wiring. High wattage speakers may not be able to perform with the factory wiring, and changing these to a larger size may mean considerable work, since factory wiring is concealed in hard to reach places. Gather your tools. As noted in the intro, there are thousands of possibilities available when it comes to after-market speakers. Because of this, any single list of tools is likely to be insufficient for installing some speakers and redundant for others. The tools you'll need to install your new speaker system will probably include most of the following, but are not necessarily limited to these: [1] X Research source A variety of screwdrivers flathead, phillips head, etc. Ensure that the speakers you've chosen fit your car. Many after-market speakers will fit into the spaces for the stock speakers, while others will require minor modifications, like the installation of a mounting bracket, the drilling of new screw holes, etc. Be sure to take this into account when you buy your new speakers - the installation processes for differently-sized or shaped speakers can vary in difficultly. Note that many speaker retailers offer online tools for determining which of their products best "fit" your car. Prevent electrical damage by disconnecting your car's battery. As with nearly all types of electrical work, it's important to protect yourself and the electrical system before beginning. Disconnecting the battery's negative terminal prevents the risk of injury from electric shock or damage to the car's electronics through short circuiting, so be sure to do so before tampering with any of the car's internal electronics. Defer to any instructions provided with your new speakers. Since there's so many different types of speakers available, it's nearly impossible to write a how-to guide that will perfectly cover all of them. The instructions below are highly generalized and may not apply to every single set of speakers on the market. Whenever necessary, defer to the instructions included with your speakers, as these will be specifically suited to your unique product. Part 2 of Take any panels or speaker grilles off. Nearly all speakers in the interior of a car will be covered with some sort of protective paneling or grill. Before the speaker can be modified or replaced, this barrier must be removed. Pry the grill off with a suitable tool, like a flat head screwdriver, removing any bolts or screws that are holding it in place if necessary. The work you'll have to do to access your car's factory speakers will vary from car to car. In worst case scenarios, for example, you may need to remove seats, crawl into the trunk to access important bolts or wires, or even remove entire door panels to gain access to the speakers. Remove the factory speaker. Note that the speaker is usually, but not always, attached to a wiring harness, so take care not to rip it out when removing it. If you think you'll need to re-install the factory speakers in the future for instance, if you sell the car , don't forget to save any screws that you remove! Connect the new speaker to the car's electrical system. Usually, connecting your new speaker is a fairly simple matter of plugging your speaker's wiring harness into the car's wiring harness. However, if your car doesn't have this simple type of connection, you may need to connect your speaker with a soldered or crimped connection. Make sure you match the polarity of the car and speaker's connections. Test the speaker. Now that you've connected your speaker, it's important to test the connection so that you don't have to waste time later to fix a problem. Re-connect the battery's negative terminal and turn on the car's radio or stereo. Listen for sound coming out of your new speaker or look for visible vibrations at high volumes. If your speaker won't work, this means that there is a problem with its electrical connection. Secure the new speaker. Once you're confident that your speaker works properly, secure it in its seat in the door or dash. If you're lucky, your new speaker will fit in the factory speaker's housing. Refer to the instructions included with your speaker. Install and test any subwoofers. Subwoofers are responsible for the ultra-low, "booming" bass sound that some car owners idolize. If your car came with factory subwoofers, installing new woofers can be as easy as seating them in the existing housing and connecting them to the car's wiring harness. If your car didn't come with factory subwoofers, however, or you'd like to install additional ones, your task may be much harder. You may need expand your stock woofer's existing mounting holes or make significant modifications to the car to house large woofers. For instance, many people who want to add multiple woofers to their car custom-install a panel in the trunk to house the woofers. Subwoofers often have fairly large power demands and complicated wiring schemes. You may want to buy and install a separate amplifier wiring kit to simplify the process of wiring your subwoofers. If not, you may need to connect the woofer directly to the battery and the car's stereo and ground the woofer manually. Install and test any tweeters. As with woofers, tweeters, which produce high-pitch frequencies, can be easy or difficult to install based on the factory components of your car. If your car came with tweeters, you may only need to install the new

ones in the existing housing and connect them to the existing wiring harness. If, however, there are no spaces to install the tweeters, you may need to make your own or expand existing ones, use a mounting bracket, etc. Luckily, tweeters are much smaller than woofers, so the adjustments you'll need to make will be minor in comparison. As with woofers, if your car didn't already have any tweeters, you may need connect the tweeter directly to the battery and stereo and ground the tweeter to the car's body. Replace all panels and speaker grilles. When all the components of your new speaker system have been installed, tested, and securely mounted in the car, you may replace any speaker grills or panels that you had to remove to install the speakers. Make sure you've kept any screws that you had to remove to take the grill or panel off so that you're able to re-secure them properly. Congratulations - your new speaker system is ready to use! Maybe the ground is not properly setup, thus making noise in the form of static sounds. Not Helpful 2 Helpful 8. Red to red, black to brown, and there should be another red that you have to cut off because it's used for testing when the speaker is manufactured. Not Helpful 6 Helpful 2. Run an amplifier to your stereo. Take the speaker wires from your amp to your woofer. Not Helpful 0 Helpful 0. Unanswered Questions. Why does may speaker not work while my car stereo is working? How do I replace the right front speaker on my Buick Park Avenue? Include your email address to get a message when this question is answered. If you find yourself in the situation above, you can do a couple of things. Replacing your radio with an aftermarket one would give those aftermarket speakers more power. Also, if you want to keep your factory radio's appearance, or perhaps, a feature like steering-wheel mounted controls, you can amplify your factory stereo. Helpful 0 Not Helpful 0. If you still have your factory OEM radio installed, installing aftermarket speakers may not improve sound quality for you. You may find that your radio lacks the deep bass like it used to have with the original speakers. This is because factory original speakers are generally constructed with paper cones, which require less power to deliver bass. Submit a Tip All tip submissions are carefully reviewed before being published. Tighten everything securely, as serious vibrations are produced by speakers, especially at high sound levels. Helpful 9 Not Helpful 8. Make sure the new speakers are compatible with your car's stereo system. Most are rated at a specific wattage and impedance, for instance, 25w and 8 ohms. Helpful 6 Not Helpful Related wikiHows How to. How to. Co-authors: Updated: September 5, Categories: Car Speakers. Deutsch: Autolautsprecher einbauen. Thanks to all authors for creating a page that has been read , times. Is this article up to date? Cookies make wikiHow better. 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The recommended speaker impedance ratings are usually listed above the speaker wire posts. A home stereo, for example, may often list ohms as being ok for use. Also, attempting to wire two 8 ohm speakers in parallel to an 8 ohm stereo would have the same effect. Two 8 ohm speakers in parallel is equal to 4 ohms total that the amp will see. They ended up with a burned-out amplifier. An amplifier can only handle so much heat and stress before it fails, so be sure to observe these rules. Be sure you wire speakers to meet the minimum Ohm rating you need. Speakers are different than other devices in that they work using alternating current AC instead of direct current DC. This is good news! As I mentioned, speakers work by moving a cone back and forth in order to produce sound. The result is a strange and poor sounding stereo. When speakers are wired the opposite of each other sound waves cancel out. When wired the same, sound waves add together for more sound. Speakers that are wired differently sound poor because much of the sound is canceled out. So the most important thing here to remember is to wire speakers consistently the same way as each other. The job of a crossover also called a passive crossover , because it use basic capacitors and inductors rather than electronics is to restrict the music production each speaker tries to produce. Unlike standard separate speakers, 2-way and 3-way speakers that have a crossover can only be used in parallel and not in series. This is because unlike separate speakers with no crossovers, in this case, many sounds will be filtered out. What this means is that little to no sound would be produced if another 2-way speaker is connected in series. In some cases, more speakers can be added to increase the amount of volume you can get or to place speakers in more rooms, more locations in your vehicle, and so on. You also

may have wondered what would happen if you bought an amplifier with twice the power of your present one. It increases a few decibels dB for each speaker added. This is because of how the human ear works and the physics of sound, along with how speakers work and how much volume they can produce for a given amount of power. Generally speaking, the human ear will hear a very small amount of volume increase for each doubling of acoustic power: about 3 decibels dB. For most people, the small amount of volume increase you notice when turning up a volume knob 1 notch is somewhere around 3dB. It increases it a very small amount as far as your ears are concerned. Most people need an amplifier that can produce enough volume to fill a room or vehicle and turn up the volume from time to time. I like to use 50W or higher per channel as a good rule of thumb when buying an amplifier. Have questions, comments, or suggestions? Be sure to leave a comment below or send me a message. Confused about tweeters? Thanks for any input. I think the best thing to do would be to pull out the crossover s from the cabinet and check at each point in the crossover for sound with a test speaker or for a signal if you have access to an oscilloscope. If a capacitor is bad that could be the issue, but it could be something else. Hi, this is a very well written article explain the speaker connections. I have searched the internet and I think this is the best place to explain the situation I am facing. Firstly, Is my speakers matching my amp or do I run the risk of blowing it up again. And secondly how should I rewire it in series or parallel.?. Hi Leo. I cover a similar example here System 3 in the diagram. Wiring 2 or 3-way speakers in series causes issues with the sound. As you said in your other article, I was not able to locate the resistor in any local shops in my area. Is there an alternate option? And if connected in a series without the resistor it is 24 Ohm, but if I run it in 2 series Tweeter and Mid and 1 low in parallel the Ohm Load is 5. If the ohms is higher that the amplifier is that ok? Or again do I again run the risk of blowing up the amplifier? They need to be in parallel else the sound will be affected due to the crossovers. Regarding buying resistors you can usually find them online at Parts Express, Amazon, or eBay. Also at some other electronics retailers depending on what country you live in. I find these articles extremely helpful as I am learning to set up my home audio systems and have recently tinkered with creating bluetooth speakers from components fitted into glass bottles. I knew very little about this previously so forgive my ignorance here. I have a bluetooth module with inputs of Left Right and Ground. I have two 4 ohm speakers which I have soldered as you highlighted and I got everything to work but I am unsure if I have attached the speaker wires correctly. I attached the positive from the left to the L on the module, the Negative from the right speaker to the R on the module and the 2 other wires to the Ground. I soldered all in place after testing and hearing sound from both speakers but I am wondering should I have done it differently as I will try to do another one shortly. Any advice would be very appreciated. Hi Marty :- I could use some assistance. I have a brand new EQ from years ago if you can manage that on. I have a Pyle 2 X max power amp if needed. Please tell me how to set this up. Please help so I can get back to my tunes!! Thank you so much in advance. Any questions for me, ask away Hi Lucille. Just 2 quick things first: The RX-V a 5. Also, there are only 2 front speaker channel outputs, not 4. There are usually some options in most receivers to do that. Marty, came across the article trying to wire two bookshelf speakers in series. In short, I have an existing amplifier that wants 8ohm speakers. The speakers in my system are all connected through a 6 set speaker selector. Most of the time I only run 3 at a time. My issue is the bookshelf speakers I bought are 4ohm, mistake on my part. If I wire them in series, they will not longer be left and right, will this cause a different sound than if they were wired normally in parallel to separate L and R channels? Alternatively, you could consider getting an inexpensive amp with decent power that can drive 4 ohm speakers and use that instead. I have an article here on how to do that. How can i connect 2woovers to one plug head, one woover has 4wires 2pairs and the other has 2wires 1pair from the woover, how can i connect them to the same plug of 4 wires, both having impedance of 4 ohms each. Hi Marty, Thanks for the well written article. The speakers are Zu Omen Defs, Paradigm V12 subwoofer and the integrated is a Moon i so which would have the best sound, high-level or low? Thanks for your time. Hi Aaron. Hi, thanks for the simple explanation and diagrams. Two questions regarding parallel wiring: 1. When connecting two pairs of speakers to each channel of a stereo amplifier can the individual speaker connections be made at the amp speaker terminals as opposed to spliced in line as shown in the diagram? The speakers are Paradigm Monitor 7 ver. The connections are bi-wired. The other speakers are Large Advents, 2-ways, 8 ohm, sensitivity 1w 88 dB. The terminals are marked 8 ohm and O. I planned to have one Paradigm and one Advent per channel. Is the 8 ohm terminal positive or negative? Thank you in advance of your response. Yes, you can do that if you like. It usually happens for bass frequencies when that does occur. Overheating or permanent damage can result. Your comments are welcome! Thanks for any input Reply. Any help would be greatly appreciated. Hi Marty, thankyou for the quick reply, As you said in your other article, I was not able to locate the

resistor in any local shops in my area. Hi Marty, I find these articles extremely helpful as I am learning to set up my home audio systems and have recently tinkered with creating bluetooth speakers from components fitted into glass bottles. Any questions for me, ask away :- Reply. How can i connect 2woovers to one plug head, one woover has 4wires 2pairs and the other has 2wires 1pair from the woover, how can i connect them to the same plug of 4 wires, both having impedance of 4 ohms each Reply. Hi there Will. A DVC speaker has two voice coils, each with its own set of terminals. Note : Many of the wiring options shown in this application may not be compatible with your amplifier because of low impedance loads. Please check your amplifier owner's manual to determine the best wiring option and verify the overall impedance load is compatible with your amplifier before making any connections. Close Menu. Car Security. Ohm's Law Calculators. Relay Diagrams. Subwoofer Wiring. Vehicle Wiring. Recent Topics. Site Search. Site Menu. Advanced Search. Select quantity and impedance. Speaker Qty. Select Qty. Search the12volt. Follow the12volt. Any user assumes the entire risk as to the accuracy and use of this information. Please verify all wire colors and diagrams before applying any information. Subwoofer Wiring Wizard. Additional combinations and values may be calculated with our Parallel and Series Calculators. If you do not find the information you're looking for, please post your request at the12volt's Install Bay - Mobile Electronics Forums. We will NOT respond to any requests by e-mail. Buying and wiring your own car stereo speaker can be one of the best cost-effective tasks that you can do for your car. Aftermarket speakers are relatively inexpensive, and the work done to install them is not as hard as you might think. Wiring of stereo speakers varies from car to car. The type of wiring depends on mounting depth and height and speaker location too. Some installations might be plain sailing where only a screwdriver might be necessary. However some installations might not be that simple, especially in the case of component speakers. Factory speakers are generally the weakest part of a sound system. Many people replace the head unit but never re-install new speakers, because they do not know how. This would lead to little improvement in sound quality. An important precaution when wiring car stereo speakers is to never work on the electrical system of your car if the ground wire is still attached to your battery. Failure to abide to this precaution can result in electric shock! Furthermore you could also damage the speakers. Obviously, to install your new speakers you need to remove the old ones. To do this you must first remove the panels as well as the grills which cover your old speakers. Then remove and disconnect their wiring. Be careful and attentive when dealing with the old wiring as it might come in handy later when installing the new speakers. If you are opting to replace the speaker and reinstall a new one in the same location, you can use the old wiring. However if you have decided to put the new speakers in a new location you will have to put in some new wiring. New wiring should ideally be left to professionals as it is quite a strenuous task to hide wiring behind the trim panels of the car. Also new wiring must be established and properly grounded in such a manner so as to prevent short circuits, engine noises and vibrations. Therefore for safety reasons it is best to leave this part of this task to professionals. Standard factory-made wiring is nearly always color coded. You have two options when dealing with factory wiring. Either buy a harness to convert the factory plug to fit properly to your new speakers or remove the factory plug by cutting it out and attach the terminal ends of the wires directly to the speaker. When cutting wires keep in mind that stripper wires might be needed to expose fresh pieces of copper wire that are needed to work with. As you might have already observed there are two colors of wires emerging from the standard factory speaker. The black wire is usually the negative wire and should be attached to the negative terminal on the speaker. The solid or white striped wire is the positivel and should be attached on the positive terminal on the speaker. Do not reverse the polarity of the speakers as opposing speakers will technically cancel each other out. Once you have installed the speakers, make sure they are surrounded by padded material, otherwise vibrations of the speakers would result in sub-optimal sound. Wiring your car stereo speakers from an existing factory speaker route can be quite easy, but as mentioned previously, new wiring should always be left to professionals. We welcome your comments and suggestions. All information is provided "AS IS. All rights reserved. You may freely link to this site, and use it for non-commercial use subject to our

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get good quality sound on my patio. To start, I don't know much about stereos, speakers etc. Read More. Connect 4 speakers to a 2 speaker Stereo. Fixing an automotive stereo. If you have experience with circuit boards, audio, or car stereos, I could Hi, Wiring my den for surround sound before we hang the sheetrock. The T Adding an extra speaker to shelf stereo. I would like Jeep Patriot car stereo pinout connector. I need to change the car stereo, but a need to know the pinout of the stere Popular Articles. How to Install a Car Stereo Speaker. By Lori Boyd. Troubleshooting a Car Stereo Speaker. By Tim Bossie. By Sarah Coghlan.