



Head Unit Installation Guide





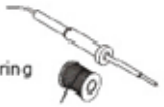



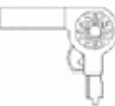
Topics Covered

- Required tools
- Removing the factory stereo
- Unplugging the factory stereo
- Prepping the new stereo
- Crimping and Soldering
- Installing the new stereo
- Dealing with "Premium" factory systems
- Commonly asked car head unit questions and answers

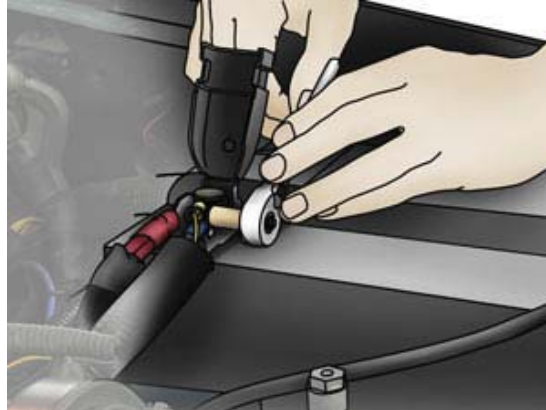


This installation guide walks you through the process of installing a new car stereo. Read over these guidelines before beginning the installation in order to give yourself an idea of what to expect.

Tools Needed (depending upon vehicle):

 Din Tools	 Phillips Screwdriver	 Flat Blade Screwdriver
 Panel Tool / Retaining clip remover	 Soldering Iron	 Wire Cutters
 Wire Stripper	 Electrical Tape	 Heat Gun

When installing a new stereo in your car, your first step will be to remove the old stereo. Pay close attention to the steps involved, for the process for installing your new stereo will be the same, but in reverse.



Disconnect your battery before *any* installation job.

Removing the factory stereo

Before you begin, start by setting the parking brake and removing the negative cable from the car battery to prevent accidentally short circuiting something.

Your factory stereo will be mounted in one of two ways:

- Secured in a metal mounting sleeve by spring clips
- Bolted to the dash with brackets

Spring clip mounting

If the stereo is held in by spring clips, you'll need a pair of DIN tools. Insert the DIN tools into the holes on either side of the unit until a click is heard.

The tools serve to release the spring clips and also hook onto the sides of the stereo so that you can pull it out easily.

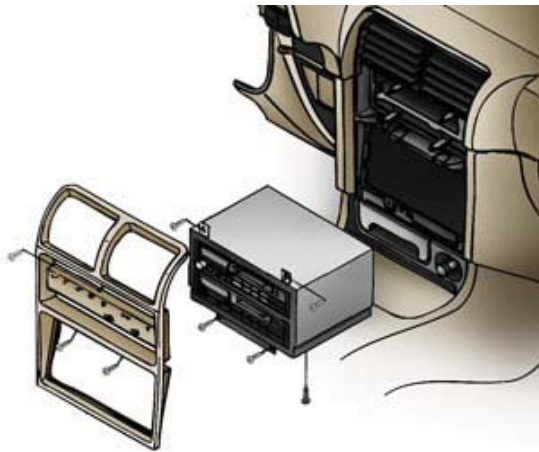


DIN tools are used to remove the factory stereo from a 2000 Ford Expedition.

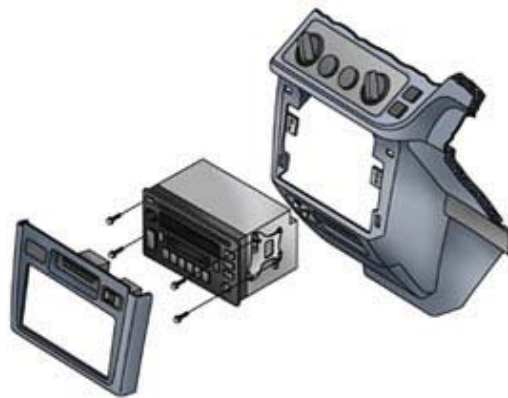
Spread the tools apart slightly then pull the stereo out of the dash.

Bolted in place

Sometimes, accessing the stereo requires the removal of one or more trim panels from the dash. You may have to (carefully) pry the plastic trim away from the dash (which is often secured by hidden pressure clips), or locate and remove bolts to disassemble other pieces of panel. Once you have gained access to the factory stereo, removal should be obvious. The stereo will almost always be secured by four screws, sometimes bolted directly to the front of the dash, other times secured to side brackets. Remove the screws and pull the stereo from the dash.



Four philips screws secure the factory stereo in a 1992-94 Geo Metro.



Four bolts and a pair of side brackets attach the stereo to the dash in a 1998 Toyota Sienna.

American cars built before the early 1980s often came with a "shaft-style" stereo, which secured to the dash via nuts and washers to the right and left knobs. A shaft-style stereo must be installed from behind the dash. Getting it into position is the tricky part, since your vehicle's wiring, heater controls, and ductwork may be in the way.

Unplugging the factory stereo

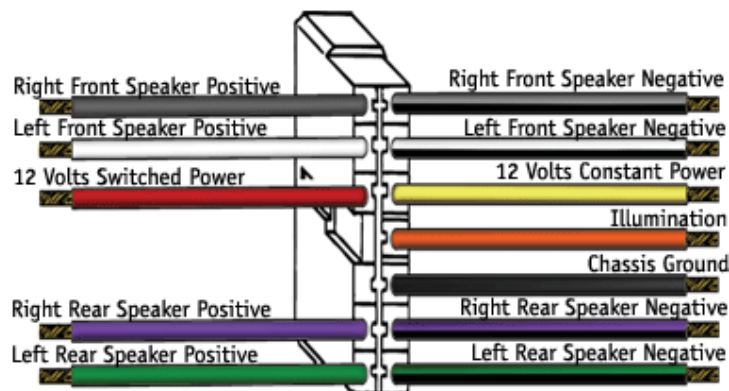
If your vehicle has (or once had) a factory stereo, or if it was pre-wired with a "stereo prep" package, there should be at least one plastic wiring harness behind the stereo opening. This plug(s) connects the stereo to your vehicle's electrical system, and also makes the speaker connections. You will need to unplug the factory stereo from the wiring harnesses, and unplug the antenna to complete the removal process.



Factory wiring looms (harnesses).

Prepping the new stereo

By obtaining a custom wiring harness for your vehicle, you can use it to connect your new stereo to your vehicle's factory wiring harnesses. This will ensure that everything works seamlessly, just like the factory stereo did.



A custom wiring harness makes installing a new stereo much easier.



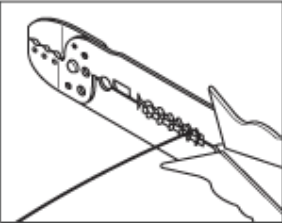
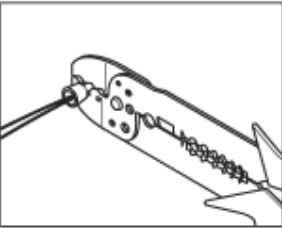




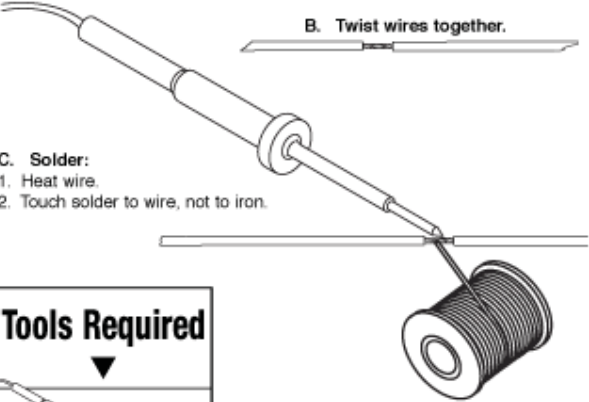




If a harness is not available for your vehicle or if the factory stereo plug was cut off, you'll need to identify each of the stereo wires and connect them to the corresponding wires of your new stereo.

Crimping and Soldering

Decide whether you want to crimp or solder the wires together. Crimping is faster and easier.

If you crimp the wires together, be sure to use the correct size crimp connector — typical in-dash stereo wires are 18-gauge, but a few use heavier gauge power and ground wires. There are several types of crimp connectors, including bullet connectors, butt connectors, or crimp caps (pictured below).

Soldering creates a permanent, professional connection that ensures maximum current transfer. We strongly recommend that you use heat-shrink tubing and a heat gun to insulate the soldered connection.

CRIMP METHOD	SOLDER METHOD
<p>A. Strip wires back 1/2".</p>   <p>B. Twist wires together and insert in crimp cap.</p>  <p>C. Squeeze middle of cap for tight connection.</p>  <p>Tools Required</p>  <p>Crimp Tool/ Wire Stripper</p>  <p>Crimp Caps</p>	<p>A. Strip wires back 1/2".</p>  <p>B. Twist wires together.</p>  <p>C. Solder:</p> <ol style="list-style-type: none">1. Heat wire.2. Touch solder to wire, not to iron.  <p>D. Tape</p>  <p>Tools Required</p>  <p>Soldering Iron</p>  <p>Solder (Rosin Core Suggested)</p>  <p>Electrical Tape</p>

Power

Usually, it is best to make all of the new stereo's wiring connections via the wiring harness, but if you have to make a direct power connection, you'll need to know the difference between "switched" and "constant" power.

A **switched power** source is only on when the ignition is keyed — connect your new stereo's main (switched) power lead to a switched power source, so that the stereo will turn off when you turn off the car, and not drain your vehicle's battery.

A **constant power** source is always on — connect your new stereo's memory lead to a constant power source, so that you don't lose your stereo preset, sound shaping, and clock settings every time you turn off the vehicle.

A rare few high-powered stereos require you to make a direct constant power connection at the positive terminal of your vehicle's battery. This requires a heavier gauge power wire, an in-line fuse (usually included), and a ring terminal to connect the power wire to the battery clamp. You will have to route the power wire through the vehicle firewall and into the engine compartment in order to make the connection at the battery.

Ground

A good ground connection is vital for proper stereo performance. If you are not using a custom wiring harness, look for a bolt, screw, or wire that contacts the *bare metal* of your vehicle's chassis. Loosen the bolt, slip the ground wire underneath (this is almost always a black wire), then tighten the bolt. If your ground wire doesn't contact bare metal, your stereo won't operate. A loose or weak ground connection can result in signal noise interfering with your music.

In-dash video wiring

If your new stereo has a video monitor built in, you will also need to connect a wire to your emergency brake circuit's ground wire. This wire acts as a switch to turn on the video monitor when the parking brake is engaged. Follow the instructions included with your in-dash monitor to locate the emergency brake ground wire.

Installing the new stereo

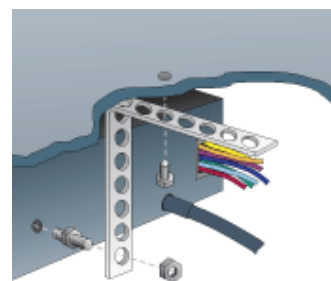
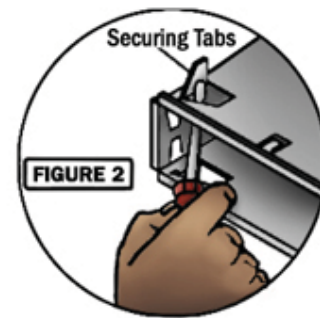
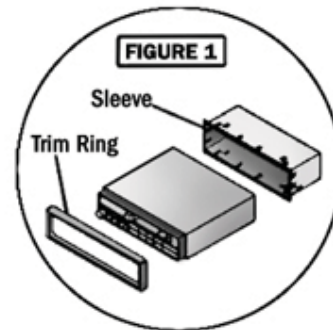
If the original stereo was bolted into the dash, you might need to remove the mounting brackets from the sides of it and attach them to the sides of your new stereo. More likely, you will need a mounting kit (which may include a trim ring, a dash insert, brackets, a faceplate, and/or a metal mounting sleeve) to install the stereo (Figure 1).

If a mounting kit is required, install it first. Then slide the new stereo's metal mounting sleeve (if included) into the kit. Secure the metal sleeve by using a screwdriver to bend the sleeve's metal tabs into place (Figure 2).

Once the dash opening is ready for the new stereo, hold the stereo near the opening. Connect the stereo wiring adapter to the vehicle's wiring harness and plug in the antenna cable.

Slide the stereo into the dash opening, but don't fasten it down just yet. First, test the stereo to make sure everything is working properly. It's easier to fix a problem while everything is still exposed. Turn on the power and try each source (AM, FM, and CD). Then adjust the balance and fader settings to check that each speaker is working. Once you're sure the stereo is wired and working properly, finish securing it in the dash and reinstall any pieces of dash trim panel that you removed.

You might need to use a back-strap to support the rear of your new stereo.



You might need to use a back-strap to support the rear of your new stereo.

Dealing with "Premium" factory systems

If your vehicle has a Premium sound system or an integrated stereo/climate control panel, you will probably need a special "OEM integration" dash kit in order to install a new stereo. By obtaining the appropriate dash kit it will allow you to use a new stereo with your existing speaker system.

Evaluation

By now you should have some idea of what is involved in replacing your factory stereo with a new, better, aftermarket stereo.



This adapter allows you to install an aftermarket stereo in a 2003-up Honda Accord's dash panel, while maintaining all heating, ventilation, and air conditioning controls.

Commonly Asked Car Head Unit Questions & Answers

Questions Answered

- **How much power do I need to get optimum performance from my car's sound system?**
- **My car has an oversized factory radio. Why can't I replace it with an oversized aftermarket receiver?**
- **What's the best way to connect a wiring loom/harness to my new CD receiver's harness?**
- **I know a CD receiver will play commercial audio CDs, but will a new CD receiver play CD-R and CD-RW discs?**
- **Will a CD receiver play MP3 files burned onto a CD-R or CD-RW?**
- **What's the difference between CD-Rs and CD-RWs?**
- **Can my factory speakers handle a high-powered CD receiver?**
- **How much power does my factory system have?**

Q: How much power do I need to get optimum performance from my car's sound system?

A: Since every car stereo is different, there's no magic "wattage formula." As long as you stay within the recommended power range of your speakers, increasing power will always add richness and depth to your music. Compare a spinet piano to a concert grand. The small piano is good enough to play music clearly, but move up to a grand and you'll gain better tone, greater harmonic detail, and more volume. The larger instrument is simply more powerful.

Here are a couple things to consider, though:

- How efficient are your speakers? Your speakers themselves have a direct influence on the overall "power" of your system. If you're planning on powering your speakers with your in-dash receiver, efficient speakers (sensitivity of 90 dB or higher) will give you more bang for the buck. Installing high-performance component speakers? An outboard amp will generate maximum performance.

- Are you adding a subwoofer? Subs need substantial amounts of power to reproduce the lowest tones, so it's essential to use an outboard amplifier with them. You should count on using more power for bass than you use to power all your full-range speakers. If your receiver puts out 20 watts RMS x 4 channels (80 watts total), send at least 80 watts to your sub. Using a 50 watt x 4 amp to drive your components? Dedicate at least 200 watts for bass.
- How good is your wiring? Your system's chain of components is only as strong as its weakest link, so don't cheat your amps and speakers with substandard power cable and speaker wire.

Before you buy, consider your car. If you drive a quiet car with the windows up, you'll need much less power than someone who offroads in a Wrangler. Speaker location, extraneous road/car noise, noise damping material, and personal taste are factors that may affect how much power you'll need in your ride.

Q: My car has an oversized factory radio. Why can't I replace it with an oversized aftermarket receiver?

A: "Oversized" receivers come in two different sizes:

- the 3" tall (or DIN-and-a-half) slot found in many GM/Chrysler vehicles
- the 4" tall (or Double-DIN) opening in some Japanese vehicles.

If the dimensions of your car's dash opening differ by even a fraction of an inch from these standard oversized openings, you won't be able to install one of these oversized aftermarket radios without modifying your dash.

Many Fords, for instance, appear to have Double-DIN openings — in reality, the opening is a little too small. In some vehicles, the bracket system that holds the factory radio in place won't work with an oversized aftermarket receiver. In either case, we recommend installing a standard DIN-sized radio with a mounting kit.

Q: What's the best way to connect a wiring loom/harness to my new CD receiver's harness?

A: The most important factor here is getting a tight connection that won't come loose over time. Simply twisting the wires together and taping them with electrician's tape won't give you a strong connection. We recommend either soldering or crimping wires together. Neither of these methods is very difficult, and both will ensure a strong bond between the wires and a clean signal path to your speakers.

Q: I know a CD receiver will play commercial audio CDs, but will a new CD receiver play CD-R and CD-RW discs?

A: That depends on the receiver you buy. The almost all current CD receivers will play finalized audio CD-Rs and CD-RWs. But because music is burned to recordable CDs (CD-Rs) and rewritable CDs (CD-RWs) in different ways, occasionally some players have trouble reading CD-RWs (CD-RWs are less reflective than CD-Rs, so it is more difficult for a laser to read them). You should be sure to check the specs of a specific CD receiver before assuming that your CD-RWs will play.

Q: Will a CD receiver play MP3 files burned onto a CD-R or CD-RW?

A: MP3 files are compressed digital data, so your CD receiver must have a MP3 decoder to play MP3 files. Again, most CD receivers are MP3-compatible, but be sure to check the product specs before you buy.

Q: What's the difference between CD-Rs and CD-RWs?

A: Although the "R" in CD-R stands for "recordable," this is a "write-once" technology. That means anything you record on a CD-R is permanent. So if you make a mistake while recording a CD-R — if you change your mind about song order, for example — you can't erase or re-record the disc.

The CD-RW designation indicates a "rewritable disc" — you can erase and re-record on the same disc over and over. CD-RW blanks cost a lot more than CD-R blanks — they actually use a different technology and disc material. Therefore, a CD receiver that plays CD-Rs will not necessarily play CD-RWs too, though most receivers will do both. Be sure to check the stereo's specs.

Q: Can my factory speakers handle a high-powered CD receiver?

A: Your factory speakers should have no problem at all handling the output from one of our high-powered in-dash CD receivers, but there are limits to their performance. Turn up your new radio with the car sitting still, make a note of the volume level at which your factory speakers start to distort, and avoid cranking the radio up past that point.

Speaker performance is critical to listening enjoyment, so we recommend adding quality, aftermarket speakers as soon as you can, so that you can really take full advantage of the big, rich sound your new receiver has to offer.

Q: How much power does my factory system have?

A: While we don't have exact power ratings for the systems in specific vehicles, we can tell you that factory systems have traditionally been lower power units of about 3 to 5 watts RMS (continuous) power. In recent years, however, we have seen some higher-powered factory stereos.

Bear in mind that, for example, the 100-watt factory system described by your car dealer probably consists of 4 channels of 25 watts peak power. This translates to roughly 10 watts RMS (continuous) watts x 4 — substantial power, but a far cry from the power ratings of most current aftermarket CD receivers.

Even if your factory system seems relatively powerful, there are still benefits to going with an aftermarket CD receiver. These advantages typically include better overall specs, improved FM reception, more extensive tone control, easier (and less expensive) integration with other equipment such as disc changers and amplifiers, and the enhanced reliability you can expect from a recognized audio brand name.