

Volvo Tutorial for Installing Stereo into Volvo Car with Amplifier

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Tutorial for Installing Stereo into Volvo 940 (wiring guides included) [Kevin Sullivan] So you've decided to replace your stock radio with a new CD deck!

I'm writing this after my experience with my '94 940 Wagon, it may be transferable to the 700 and 800 models as well. Hopefully it can save some people some trouble or be a good reference for someone having the same issues I had. I've installed a lot of decks myself, mostly into VWs, and by far this one gave me the most trouble. If you have feedback or I've helped you out or I need to make a correction, PLEASE LET ME KNOW.

Before starting you need to know is that this is a different setup from most cars I've dealt with; in this case the radio sends the signal to A SEPARATE AMPLIFIER which powers the speakers. The amplifier is located by the steering column behind the knee plate. It's about 2"x6" and black and silver. There is a good chance that you are now in the same position I was in and pulled the stock radio, took a look at the wires and said "WTF?" and ran a search on Brickboard to see what was up, if that is the case skip down a couple paragraphs.

Buying a Stereo:

This section could be huge but I'm going to keep it to the basics and gear it towards midrange spending, obviously like everything else you get what you pay for, but this will help you put together a decent basic system that will get you by for the day to day.

Brands – Avoid Rampage, Die Hard, Optimus, or any of the off brands that you find at your large FLAPs or places like Wal Mart, Target, Radio Shack, etc. Go to your local electronics or Car Audio store and pick up something like a Pioneer, Alpine, Kenwood, or Sony or Dual. I've had trouble in the past with JVC and Panasonic Decks so I don't really recommend them, but to each his own. I like Blaupunkt because they're made by Bosch and it seems fitting for VWs and Volvos considering most of their electrical system is Bosch made already. Their decks are good but the speakers of theirs I've heard aren't great.

Wattage – Is important and should be the first thing you check when looking at any deck. 100 watts may sound like a lot but you'd be surprised. If someone says a deck is 200 watts and it has 4 channels (most do) then each speaker channel gets 50 watts. If it says 4x50, then again it's 4 channels, 50 watts per speaker, so it's a 200 watt deck. Around 180-200 watts or 4x45-4x50 will get you by.

Speakers – Are also important. The speaker is the last thing between you and your music. A nice \$300 stereo through blown stock speakers will sound like crap, though my 940 had better stock speakers than I've seen in a lot of cars. For reference the rear speakers are 5 inches, you can fit 6 inch speakers in the front

but you won't be able to fit the stock speaker grills over them, so make sure you get some that come with decent covers that will stand up to some abuse. It's up to you if you want to replace the tweeters in the dash. I checked mine and they seemed OK so I left them in.

Sub woofer - If you want some more low end and are looking at getting a sub woofer as well, a 300-400 watt amp will get you by, again it depends on how much you're willing to spend. If you listen to rock/metal you'll probably want 10"s, if you listen to hip hop and techno and want to bump go with 12"s. 15s are overkill and just take up valuable trunk space. If you're going to spend the extra cash on a sub, do everyone a favor and spend the couple bucks on some rubber washers to remount your license plate. Don't be like that rice rocket douchebag in the Civic bumping Eminem with the annoying trunk rattle.

Now that you have that all figured out, let's get to installation. I've put together a list so that you don't have to keep running to the store or your toolbox.

You will need the following items and tools:

*Dash Mounting Plate – Don't waste your time trying to modify the faceplate from the stock radio with a dremel, it won't look right and you'll just end up destroying the stock radio. You want to keep it in good condition in case you decide to reinstall it if and when you sell your car. I tried to get one at Best Buy and Circuit City they told me that all their Volvo stuff was special order only. Car Toys had one in stock for about \$20, so check your local Car Audio specialist first.

Connectors - See the note [below](#).

*Wire Strippers – If you don't already own some or the ones you have are cheapies splurge on the good ones (\$15 or so) and you won't be sorry. If possible get the ones with the stripper part towards the end and not on the handle, this makes it easier when stripping in tight spaces. Separate pairs of crimpers and cutters are handy as well and will make things a little easier.

*Butt Splice Connectors – (Yes, I said butt.) Available at your local big name auto parts store (Schucks, Autozone, etc.) or Radio Shack. They look like little 1" lengths of straws, you want the red ones. Get the big pack. See the note on crimp connections [below](#).

*Speaker Wire – About 20 feet of 18 gauge or so, available at you FLAP or Radio Shack.

*Voltmeter or Test Light - I prefer the test light because the alligator clip frees up your hands. \$3-5 at your FLAP or Radio Shack

*Flathead Screwdrivers – You'll need 3; a fat tip one, a longer one with thin, medium width tip, and a small one, not quite jewelry/eyeglass repair size but pretty close.

*Star-tipped screwdriver from the Volvo tool kit in the passenger side panel of your trunk, I believe the official name for the type of screw is Torx.

*Vice Grips

- *2 extra 25 Amp fuses
- *Handful of medium sized Zip Ties
- *Utility knife, box cutter, or razor blade
- *Roll of black electrical tape
- *Roll of masking or duct tape
- *Sharpie Marker
- *Two cups - one for holding screws, one for little wire bits and trash.
- *Wire Coat Hanger
- *Flathead Screwdrivers – You'll need 3; a fat tip one, a longer one with thin, medium width tip, and a small one, not quite jewelry/eyeglass repair size but pretty close.
- *A CD – I use NIN's Downward Spiral because I've heard it a billion times and it has a broad range of sound that makes it perfect for testing and setting up a new deck. Mr. Bungle's California is my second choice.
- *2 Cans of your favorite energy drink
- *A good friend to keep you company and give you an extra hand when you need it.

Now that you've assembled your supplies you're ready to get started.

Important Safety Message: Before doing any electrical work **disconnect the battery**.

1. Get the long flathead screwdriver. Mid height on either side of the radio there are tabs holding it in. Gently push the screwdriver into the cracks to push the tabs in and pry out the radio. Unplug the harness and antenna. Write the security code for the stock radio on a piece of the masking or duct tape and put it somewhere on the radio in case of future reinstallation.
2. Use the larger star tipped (Torx) screwdriver from your Volvo toolkit to remove the knee plate. If you have some trouble with the screws tighten the vice grips onto the shaft of the screwdriver (not the handle) and use them to give you some more leverage. Use the fat tipped flathead for the two plastic fasteners towards the bottom of the knee plate. Not remove the two screws holding the metal plate on and gently remove the other panel down by the pedals. Make sure you put the screws into the cup and that you keep it somewhere that it won't be accidentally knocked over.
3. Locate the amplifier, it is the black and silver box to the left of the steering column, you shouldn't have any trouble finding it. Disconnect the wiring harness.
4. Gets your smallest flathead screwdriver for the white wire connectors on the

amplifier wiring harness. You want to unscrew the side farthest from the harness. If you're in a pinch and don't have a screwdriver small enough just snip them with your wire cutter and strip them.

DO NOT CUT THE FOLLOWING WIRES: Pink/Black and Black. Just leave them on the harness and leave the harness unplugged.

5. Cut 4 lengths of speaker wire, just over 3.5 feet or a meter long. Split one end of each about 3 inches, then strip the two wires crimp on butt connectors. Cut an inch or so of masking or duct tape and fold it in half over the wire like a tag towards the other end. There should be a copper wire and a silver wire, or one wire will have a stripe, depending on the brand of speaker wire. Silver wire is positive, copper wire is negative, or stripe wire is negative.

6. Look at the wires that you just disconnected from the amp wiring harness, locate the Blue/Yellow and the White wires. Grab one of the lengths of speaker wire that you cut and butt splice the positive wire to the Blue/Yellow wire, then do the same with the negative wire and white wire. Take your sharpie and mark the tag that you made on the other end LF for Left Front. Repeat with the other wires using the following guide. After you've completed this give each splice a small tug to make sure they're securely connected.

Amplifier Wiring Harness:

LF+ - Blue/Yellow

LF- - White

RF+ - Grey/White

RF- - Grey

LR+ - Yellow/Brown

LR- - Yellow/Grey

RR+ - Green/ Brown

RR- - Green

The following are the wires that you didn't cut and should still be connected to the amp wiring harness:

(Listed twice because there are two of each)

Ground - Blk

Ground - Blk

+batt - Pink/Blk (constant power from fuse 26)

+batt - Pink/Blk (constant power from fuse 26)

7. Get your roll of black electrical tape. Group your four lengths of speaker wire together and wrap the tape in a band around them every 4 inches or so to bundle it tightly making a snake. Leave the last foot unbundled except for one last band at the tip which will make it easier to feed it through to the stereo. Do what you can with the electrical tape to clean up wires on the harness and move them out of the way.

8. Find a path to run the snake through, try to keep it away from the gauges and any moving parts like the steering column. If you have trouble feeding it through

some places, straighten out a wire hanger and put a small hook or loop on one end to use it to push or pull the snake through, you may have to tape it. Be careful to not accidentally disconnect any wires or harnesses in the process. Secure it where you can with the zip ties.

9. Locate the wiring harness for the stock radio. Cut and strip the following wires leaving about an inch on the harness:

LF+ - Dash speaker Brown/White
 LF- - Dash speaker Brown
 RF+ - Dash speaker Grey/Red
 RF- - Dash speaker Grey
 Batt+ - Pink/Black (constant power from fuse 26)
 Power On - Orange (Fuse 14)
 Ground - Black (both of them)

If you have already removed the stock radio wiring harness make sure you butt splice the Yellow/White wires to each other, otherwise your headlights won't work. Ask me how I know.

Here is a wire harness guide for the stock radio:

Left Dash Speaker + - Brown/White
 Left Dash Speaker - - Brown
 Right Dash Speaker + - Grey/Red
 Right Dash Speaker - - Grey
 Dimmer - Yellow White (Splice to other Yellow/White)
 Rho + - White
 Rho - Blue
 Batt+ - Pink/Black (constant power from fuse 26)
 Power On - Orange (Fuse 14)
 Ground - Black
 Power Antenna - Green Grey

10. Butt Splice the following wires from the stock radio wiring harness to the new wiring harness:

Pink/Black to Yellow
 Orange to Red

Twist both black wires from the old wiring harness and put them in one end of a butt splice and the black wire from the new wiring into the other. We'll call this a Y splice.

11. At this point reconnect the battery. Connect the new deck to the wiring harness. Start the car and see if the deck powers on, you may have hit the power button on the new deck. If it doesn't turn on first check fuses 26 and 14 and the fuse on the deck itself. If none of the fuses are blown double check your butt splices and wiring. If the deck turns on take a quick break, go to the bathroom, smoke a cigarette, drink an energy drink, whatever you need to do.

12. Disconnect the wiring harness from the deck. Now you're going to connect the speakers. Decide if you want to use the dash tweeters or not. If you decide you

want to use the dash tweeters you're going to want to run them parallel to the front speakers. If not skip on to 13. To do this cut two lengths of speaker wire about 6 inches long.

Connect them to the following wires using the same method as the wires from the amp:

Left Dash Speaker + - Brown/White

Left Dash Speaker - - Brown

Right Dash Speaker + - Grey/Red

Right Dash Speaker - - Grey

We're going to Y-Splice them to the front speaker wires from the snake. Left to left, right to right, positive to positive, and negative to negative. Under normal circumstances if running more than one speaker on a channel you'd want to run the speakers in a series, however in this case it would affect the sound of the front speakers. Also, running more than one speaker per channel on the deck is a no-no according to most manufacturers, but the draw from the tweeters is so small that it's really not much to worry about.

13. Using the labels you made on the snake, match and butt splice the following wires to the new wiring harness:

RR+ - Violet

RR- - Violet/Black

RF+ - Gray

RF- - Gray/Black

LF+ - White

LF- - White/Black

LR+ - Green

LR- - Green/Black

Double check your connections and tug on your splices to make sure they're secure. Connect the wiring harness to the deck and put in your CD. Check each speaker, if a speaker is silent recheck your wiring and check again to make sure each splice is secure.

14. If you're doing a sub woofer, run the RCA Cables, Power On and Battery cables. Be sure to run the Power On and Battery cable as far away from the RCA cable as possible, otherwise you'll get a bunch of unwanted interference. Spending the extra money on shielded RCA cables is worth it. Connect the power on cable to the blue wire on the new wiring harness. If you have a power antenna you're going to want to Y-Splice it with the Power on Cable or splice it to the white wire from the old wiring harness.

15. Using zip ties and electrical tape, bundle and organize the wires leading to the new wiring harness to clean it up, the last thing you want is a birds nest of wires.

16. Remove the necessary pieces from the new dash plate. Install it making sure that it is right side up and that the tabs are in place. Pull through the new wiring harness, antenna cable and any other cables to be connected to the deck. Push the

metal sleeve that should have come with your deck into the face plate making sure to feed the wires and harnesses through it. Connect them to the deck then push it into place.

17. Put the knee plate and anything else you took apart back together and clean up any little bits of wire or trash that escaped.

18. Pop in your favorite CD and pat yourself on the back, you're done.

Selected Tips and Notes. [Mike] I find that buying a connector that plugs into the stock harness (like these: <http://www.scosche.com/scosche.caraudio>) is completely worth it. One, you don't cut up the original harness, which can be a pain to restore. Two, you can do all the connections in the comfort of your house and then just plug the radio in. And it probably won't kill your headlights. [John Sargent] I never solder electrical connections. Proper crimp connections carry power much better. I never have have crimped connections pull out or corrode, and I've made many thousands, probably many tens of thousands in over thirty years. [Editor] If you crimp, use a quality crimper and not the cheapie Habba Flate versions. [GB](#) makes a crimping line; [Sears](#) has some good tools. Size the crimper to the crimp.

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