

Volunteer Audio Installation Tips



GROUND PROBLEMS



Congratulations! Your new receiver is wired up and installed in the dash. The lights come on and you have music but also some unpleasant noise. Chances are you have a problem with a poor ground.

Every electrical signal that goes out needs a return path. Ground provides this path.

Common problems caused by a poor ground connection

- Hum
- Whine that seems to tie in with the engine RPM
- Speakers that come and go intermittently
- Steering wheel, or handlebar, controls that act erratically and will not hold a setting

Your audio components should be on the same ground point. When at all possible we recommend attaching your audio equipment harness's ground wires (black wires) only through the factory harness. If for some reason a chassis ground is needed, make sure it is a true ground point as a metal item under the dash may actually be attached to something plastic.

Dealing with a poor ground issue

- ✓ Check that your chassis ground points are secure and attached to clean metal.
- ✓ Try to trace your ground point and make sure it does not transition to plastic. We recommend using a known factory ground point when accessible.
- ✓ Wiggle the ground wires (especially near the terminals) while the stereo is on. The wire may be frayed and broken resulting in intermittent connections.
- ✓ Make sure your audio components are attached to a single ground.
- ✓ Is your ground wire near an electrical device such as a heater fan? This can induce noise. Relocating the ground wire may solve the problem.

Specific issues with Toyota

Some Toyota vehicles that have the JBL system use more than one ground path. If, for example, you locate your new amp in the trunk, and inadvertently attach it to a ground path that is different than the head unit, you have just created a "ground loop." This introduces unwanted current flow in the system that will cause noise. You may need to run a dedicated ground wire and/or add a noise filter.

Miscellaneous

You may need a wiring diagram for your vehicle if the problem ground point(s) cannot be located quickly at obvious locations.

A ground point in a wiring diagram is marked with this symbol, \perp . Ground is also referred to as *common* in electronic circuits. If you see $+$ and $-$ (positive and negative) the negative side is the common path, or ground. Don't let the two terms confuse you. In the E.I.A. standard wire color code, black represents the ground wire.

MOTORCYCLES: See the Installation Resources section for specific motorcycle ground issues.

