The big three upgrade and why it's important.

The big three upgrade:

It is suggested that if you install a car audio system of 1000 watts or greater you will need to upgrade the stock wiring in the charging system. This the most overlooked necessities of car audio. The stock wiring is only adequate for the electronics the vehicle came with from the factory. Any extra demand will require upgrading the wire and possibly the alternator. We are just going to address the wire upgrades here.

There are three key areas that need to be improved to make sure you get the maximum from your stock alternator and battery. It is not necessary to remove the factory wires. Having more wire is better for getting the most power. You should leave the stock wires in place and add the upgrade wires. It should also be noted that bigger wire is always better. Your wire upgrade should be a minimum of 4 gauge but 2 gauge or 1/0 is always better.

1. Start by upgrading the charging wire that comes from the back of the alternator and goes to the battery. Sometimes the wire will feed the fuse block or distribution block in the vehicle. This will be the largest wire coming from the back of the alternator. It is usually 8, 6, or sometimes in larger charging systems can be 4 gauge. Make all wires are protected so they will not rub or short to ground. It will also a good idea to protect it with a fuse with a rating that is just above the alternator's maximum output.
2. The next wire that need to be upgraded is the ground wire from the battery to the body of the vehicle. The ground wires are especially important. You will add a large wire from the battery negative post to the body of the vehicle. Most stock electronics in the vehicle are grounded to the body of the vehicle. This will ensure they get to maximum voltage and current to operate properly. Be sure to remove paint around the contact area for maximum contact for best results. It is also suggested to bolt the wire to the ground point because screws can loosen giving you poor conductivity.
3. The last wire that will need improvement is the ground wire from the battery to the engine block. The alternator is grounded to the engine block by its mounting points so the engine block itself becomes an electrical ground distribution block. You just need to find a suitable bolt to secure your additional ground wire. You can add a wire from the chassis of the car to the engine block. If you do the above steps, this is not necessary but may offer better current flow.

Upgrading these three main wires will ensure that you will get the maximum performance your alternator is able to deliver. They all make up the charging circuit and will require upgrading when you put more demand on the charging system with aftermarket electronic accessories.

Example:

In this example, all the wire is blue 1/0. The color does not matter as long as it is easily identifiable as to which is + and -. You will also see the optional fuse holder on the charging wire. This is to protect the wire in case it is shorted between the battery and alternator. The fuse should be rated higher than the maximum output of the alternator and be placed as close to the battery as possible. It is always a good idea to fuse a power wire close to the power source. This will prevent a fire if the wire shorts out between the battery and the device.

The wire on the upper left is the ground from the body to the engine block. The center wire that runs close to the radiator is the charging wire and the wire. The wire on the far right is the ground from the battery to the body of the vehicle. If you look closely you will see how the paint was removed and the wire is bolted to the strut tower for better contact. The black jacketed wire coming off the left post (+) is the power wire that runs back the audio system. It should (and is) fuse protected close the battery.