

DELCO 3-WIRE ALTERNATOR INSTALLATION 12-VOLT NEGATIVE GROUND SYSTEM INSTRUCTIONS



Step #1 Disconnect the battery! Always do this step!

Step #2 Locate the voltage regulator, usually on the firewall. Remove the ARM and FLD wires and tape them back with electrical tape in case you or the next guy want to re-install a generator. These wires connect to the generator and you don't need them.

Step #3 Remove the 2 wires from the generator, these 2 leads go to the old voltage regulator. Tape these back as you will not need these either.

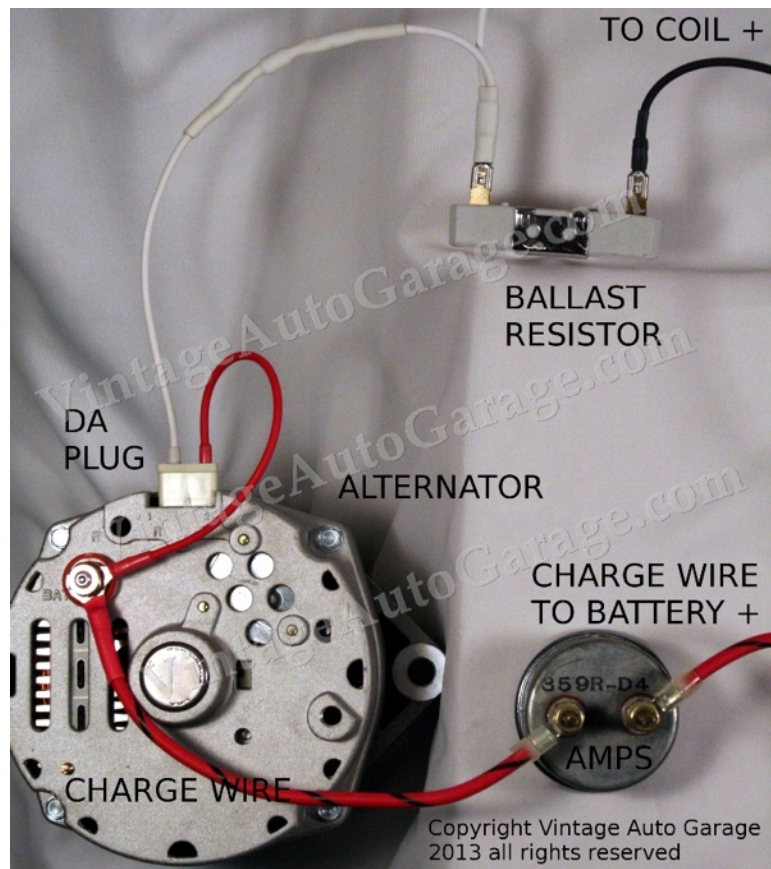
Step #4 Remove the old generator and bracket and install the new bracket provided along with the new alternator using the hardware included in the kit. **Note: The alternator has a built in regulator and does not require any external voltage regulation.**

Step #5 Reinstall the belt and tighten so that there is about 1" to 1-1/2" belt deflection. There is no need to over tighten your belt or you will put extra stress on the water pump and alternator bearings.

Note: buy a longer or shorter belt may be required as the alternator set up may be different.

Step #6 (Figure 1) Snap in the DA plug and connect the red wire to the output side of the alternator 10/32 stud, take the long wire and connect to the + side of the coil. If you are using a coil with external ballast resistor connect this wire to the battery side or key switch side of the resistor or directly to the key switch itself (switched side). This wiring

configuration will excite the alternator to start charging when the engine is running at



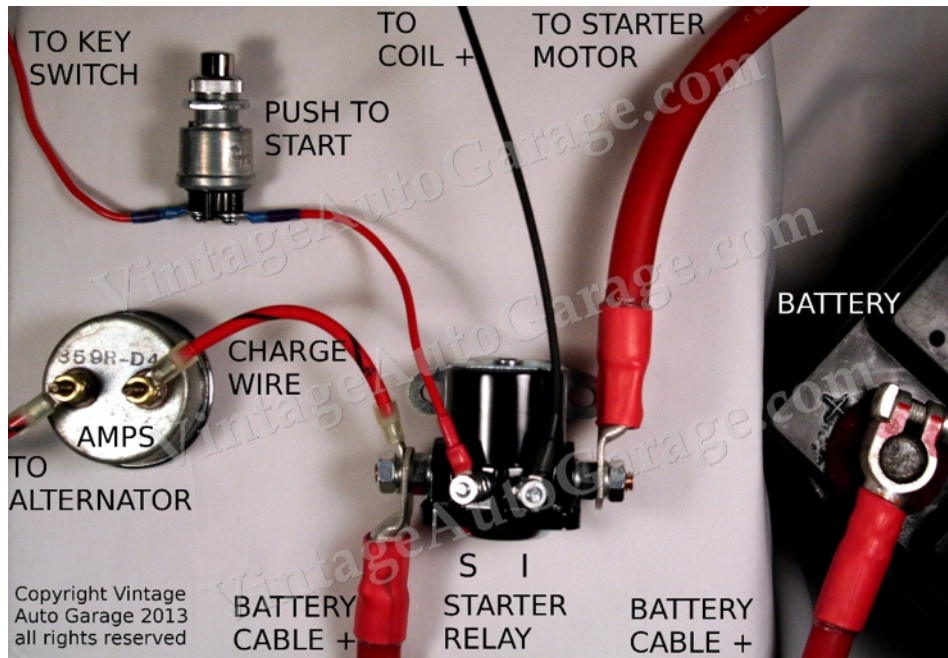
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Figure 1: DA Plug connects to the coil + terminal through the ballast resistor if there is one. Charge wire connects from the alternator to the battery through the

low RPM's. There is a diode in the coil wire that prevents battery drain when the engine is off and also allows you to turn off the engine which can be a problem on some older vehicles with on and off ignition switches.

Step #7 (Figure 1) Take the long red 10 gauge wire and connect to the back of the alternator 10/32 stud. This is the same place the red wire from the DA plug connects. Take the other end of the long red wire and connect directly to one terminal of the ammeter, cut to size, and install small ring connector. Take the remaining length of



red 10 gauge wire install ring connectors and attach one side to the opposite side of the ammeter, and the other end to the + side of the battery (Figure 2), or anywhere that leads direct to the + side of the battery like the start relay, start solenoid, or starter.

Note: the alternator charge wire routes direct to the battery

and not through any switch connection, the alternator will not operate correctly if not connected direct to battery or directly through the ammeter.

Note: the wiring that comes with our kits should be used as it is sized to handle the amperage.

Step #8 Reconnect the battery and make sure it is fully charged using a battery charger. You want to have a fully charged battery when doing the next steps. **Note: an alternator will not charge a dead battery because alternators take current to excite the field coil to make everything work.**

Step #9 Make sure the battery is connected negative to ground and the positive to the starter or starter solenoid (Figure 2). This is important as the alternator is designed for negative ground and the alternator regulator may be damaged if it is wired as positive ground.

Step #10 Start engine and test alternator. While engine is at idle, take a screwdriver or pocket knife and place on the back of the alternator bearing surface, (the round area in the middle of the back of alternator). Your alternator is working when you can feel a

magnetic pull on the knife or screwdriver. You can also check the amp / volt meter by turning on the headlights and watching for movement.

If you do not have magnetic pull on the back of alternator, you may have a loose connection. Always check your grounds. The alternator is internally regulated and self-exciting, which means it will turn on and off when sensing the rotation of the rotor. The regulator is pre-set at 14.5 volts, on a 12 volt alternator and 8 volts on a 6 volt alternator and will maintain the battery and accessories on the vehicle. Because all meters are calibrated differently you may see a +/- 0.2v difference. **Note: The DA plug and wire you installed and connected to the + side of coil will tell the alternator to turn on early and will keep your battery charged at idle speeds.**

Special note regarding ignition coils: When installing your coil in a negative grounded system the positive (+) should go to the key or ignition switch and the negative (-) goes to the distributor. This is important as the coil will not put out full voltage or spark if wired backward. This is very important when converting from positive grounds to negative grounded vehicles.

CAUTION: Working around rotating belts and pulleys can be very dangerous and can catch hair, clothing, and fingers.

Working around electrical systems can be dangerous even though the battery voltage is low, the current is high and you can get injured. The voltage from an ignition coil is over 20,000 volts! Always! Always disconnect your battery when doing any repairs to the electrical system.

Be safe and enjoy your new electrical system.

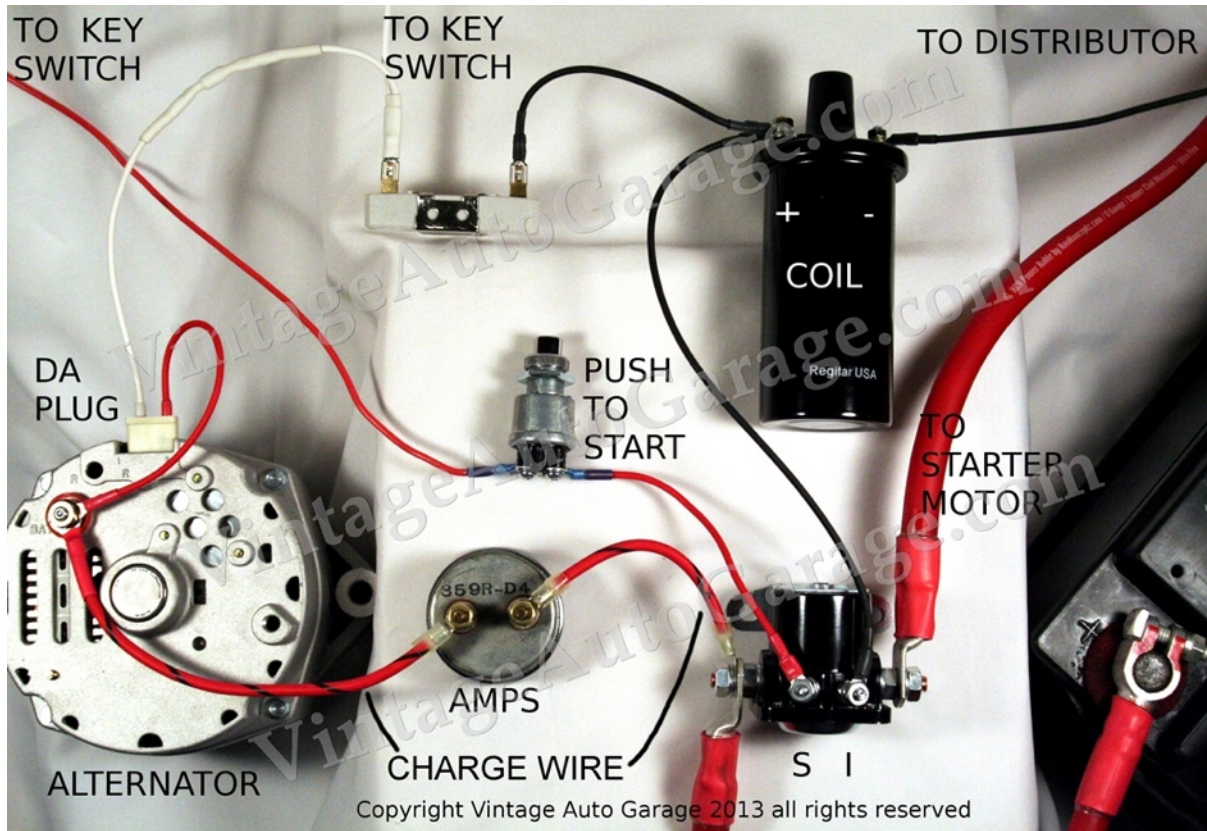
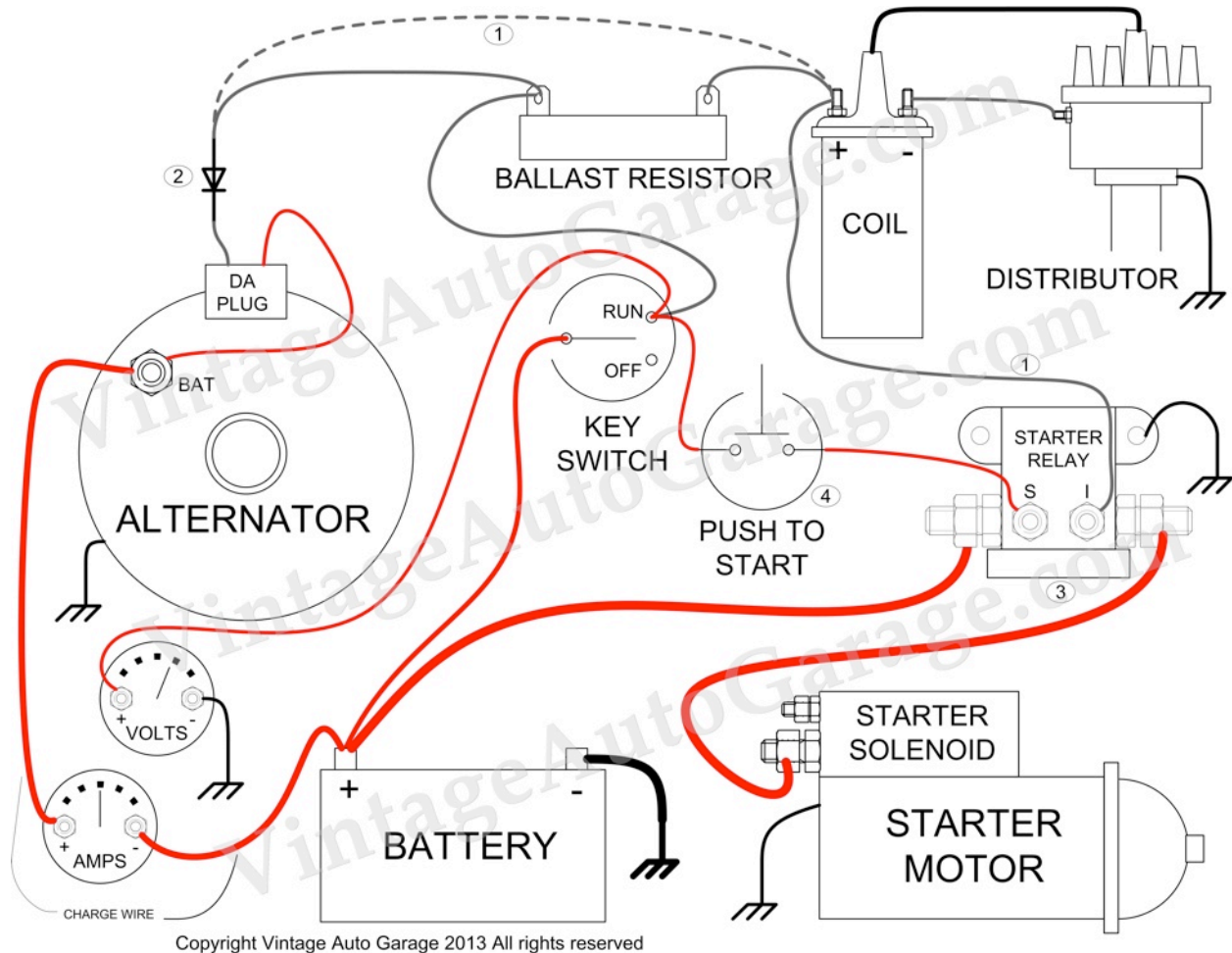


Figure 3: Typical connection between alternator, amp meter, battery, starter relay, start switch, coil and ballast resistor

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Notes:

1. Where a ballast resistor is not used, connect the DA Plug long wire to the Coil + terminal as indicated by the dashed line. Omit wire between Starter Relay terminal I and Coil + terminal.
2. Diode is built into the DA plug long wire.
3. Starter relay shown wired for Direct Drive Starter Motor.
4. If your vehicle has a foot pedal starter system without start button, starter relay and solenoid, follow all the same instructions, even though these components will not be in your start system. All alternator connections and instructions will remain the same as shown.