

Thank you for your purchase! Before you get started please read over these instructions.

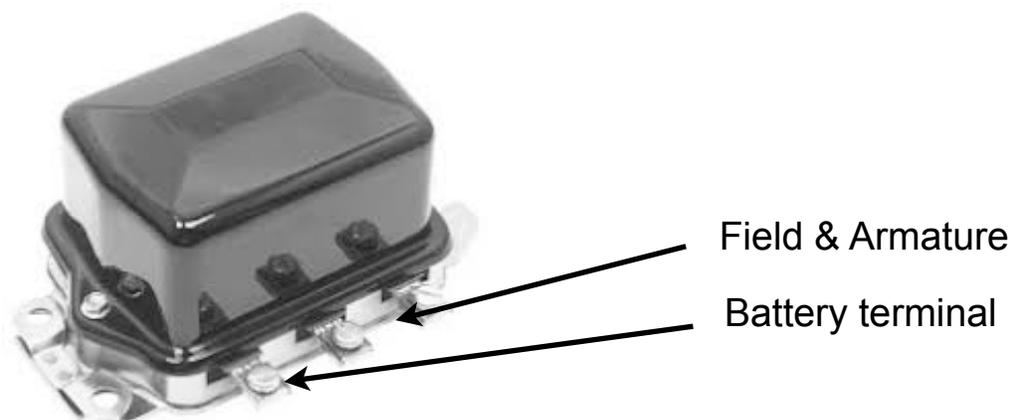
First a few safety steps:

Always disconnect the battery when working on your vehicle electrical system.

Working around rotating fans, pulley's and belts can be very hazardous, keep hands, fingers and loose clothing away when engine is running.

Ok, lets get going installing your parts.

Step 1: Locate the voltage regulator usually on the firewall, remove the GEN and FLD wires that go to the generator. We recommend leaving the regulator in place, will be easier than removing and will keep the electrical system in tact. Regulator will be inoperative once generator wires are remove, The alternator has it's own built in regulator.



Step 2: Remove the old generator, in some cases you are removing the existing generator mount, in other applications you will be using the existing mount.

Step 4: Install the new bracket with the hardware provided and mount the alternator to the bracket. The alternator case needs to be grounded all the way back to the neg side of the battery, make sure the alternator hardware

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connections are free from grease and dirt to ensure alternator is properly grounded. If not properly grounded the alternator will not charge properly. If needed install a separate ground wire from the alternator to the engine.

Step 5: Reinstall the belt and tighten there should be some belt slack about 1/2", No need to over tighten the belt or you will put extra stress on the water pump and alternator bearings.

You may need to buy a new longer or shorter belt as the alternator set up maybe different on some engines.

Step 6: The alternator requires several electrical connections. One connection directly to the + side of the battery, the case of the alternator needs to be grounded and the third connection to 12 volt switched power to excite the alternator. (except for Powergen alternators)

Connect the output of the alternator using the 10 AWG charge wire directly to the + side of the battery, or starter or start solenoid, anywhere the alternator has a good solid connection to the + side of the 12 volt battery. Or you can connect to the Batt. terminal on the old voltage regulator, provided that connection has good connection to the battery.

If you want to keep your ammeter working in the dash, route the 10 AWG wired from the output of the alternator through the firewall, connect to one side of the meter, then out the other side over to the + side of the battery. If connecting to the old voltage regulator Batt connection should keep the ammeter working as before.

Ammeters read current going to and from the battery, these meters are not voltage sensitive and do not need reducers. Some ammeters have two terminal connections and others have a small metal loop on the back that you feed the 10AWG wire through. This type of meter is known as an induction meter and reads current going through the wire. If you are going from positive to negative ground, you may need to feed the wire thru the opposite way to get the meter to read correctly. Ammeters read current flow going to and from the battery.

We recommend installing an inline fuse on the alternator output wire, this will protect the electrical system in case of a short. The fuse should be 25% larger than the rated output of the alternator.

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63 amp alternator: 80 amp fuse

90 and 100 amp alternator: 125 amp fuse

170 amp alternator: 200 amp fuse



Step 7: On the back of the alternator there is a place to install a plug, this plug is where the excite wire goes. Depending on the type of alternator the CS130 use plug part number DSC130 and only has one long white wire. The 10Si alternator use part number P10si, this plug has a long white wire and a short red wire. See images of both plugs below.

Both the CS and 10Si alternators have the white wire and connected to switched 12 volt power, meaning when you turn the ignition switch on, the white wire receives 12 volts into the alternator and allows it to charge at all speeds.

Take the connector and snap into the alternator socket, you can then fish the white wire through the firewall and connect to the ignition switch (same terminal where the coil is connected), or you can connect to the + side of the coil as this is the same connection electrically. If you are install electronic ignition, recommend connecting the white wire directly to the key switch itself. Sometime connecting to the + side of the coil can cause voltage drop to the ignitor.

The P10si plug has a the long white wire and a short red wire, the red wire is connected to the output of the alternator, same location as the 10awg output wire. This red wire is the sense wire. The CS130 alternator and DSC130 plug does not require this red sense wire. This wire configuration is commonly know as 2 wire connection.

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DSC130 plug



P10Si plug



CS130 alternator / DSC130 plug

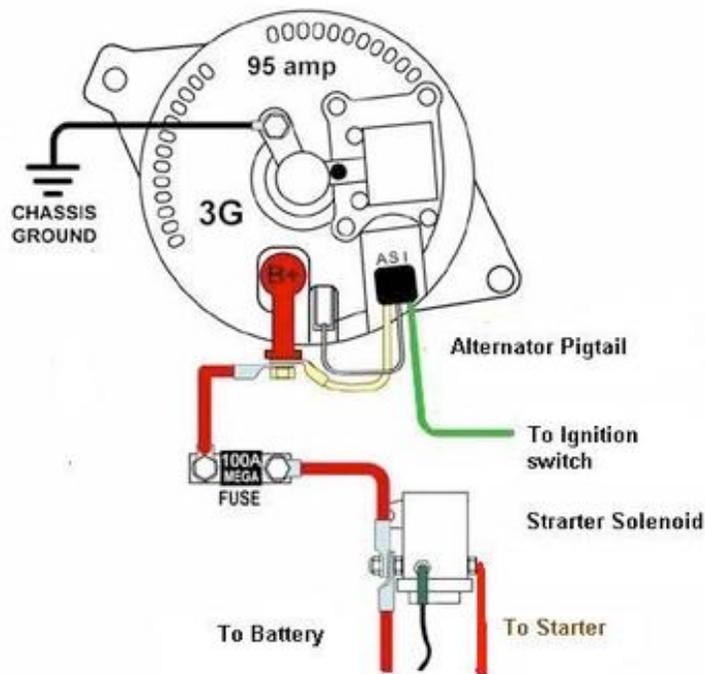
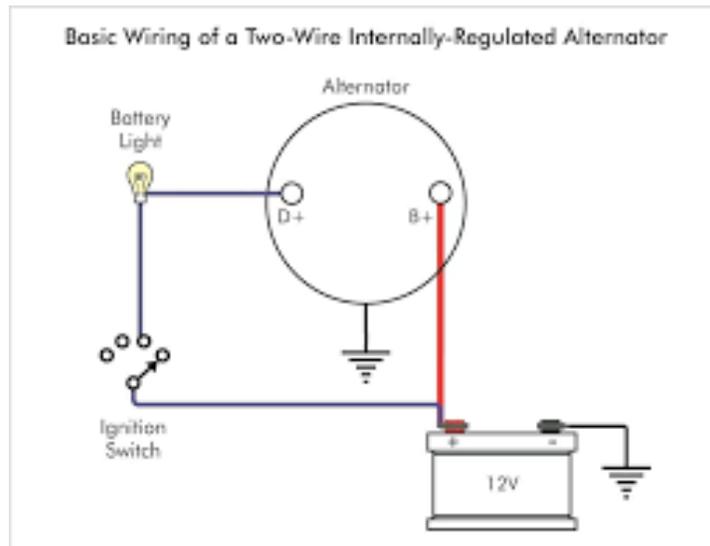
10Si alternator / P10si plug

The white wire has a shrink rapped lump, this is a diode that only allows 12 volts to go into the alternator and not feed back into the electrical system when alternator is not turning. Without this diode the battery may drain overnight.

If you have a generator light in the dash that illuminates when the generator is not charging or engine is off this can be enabled by connecting the white wire to one side of the dash light, the other side of the light is connected to the ignition switch (switched power). When the alternator starts to charge the light will turn off.

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Dash light wire diagram



Ford 3G style alternator typically for Ford Thunderbirds. Follow the same procedure (see below wire diagram how to install the charge wire plug).

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Installing Power Master Power Gen alternators have their own set of instructions. These are typically 1 wire connections, some models have the generator light terminal.

Step 8: Skip this step if vehicle is already negative ground.

Changing your vehicles polarity from positive to negative grounds.

If you have a positive ground vehicle meaning the positive pole of the battery goes to the chassis or ground, you will need to change to negative ground when installing a negative ground alternator and all solid state devices require negative ground connections.

This is done by changing the battery connections the negative side of the battery now goes to the chassis and the positive to the starter or

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start solenoid. When changing polarity everything in the vehicle will work the same as it did before and the starter and other motors will continue to turn the correct direction.

Keep in mind when changing polarity the gauge connections will need to be reversed or the gauges will try and read backwards.

Step 9: Install the remaining parts to complete the conversion, each part will have it's own set of instructions.

When installing the ignition coil make sure the + side goes to the ignition switch and the negative to the distributor. The coils we provide in our kits are internally ballast coils, meaning there is no need for external ballast resistors.

Step 10: The light bulbs will all need to be changed to 12 volt bulbs, these are generally not found in our kits and can be sourced at the local parts store.

Step 11: When installing voltage reducers for the heater, defroster, radios and wiper motors, keep in mind these resistors will get warm to hot. Mount these reducers in a well ventilated area away from anything flammable. Mount these resistors to aluminum for best heat dissipation and if possible inside the air duct for best airflow and cooling. If installing our radio reducer, already comes with it's own heatsink, still needs to be mounted where there is good airflow.

Step 12: Once all parts have been installed and connections are tightened, connect the battery cables. Negative to the frame and positive to the starter or start solenoid.

Step 13: If your vehicle is equipped with a Borg Warner electrically operated overdrive and converting from 6 to 12 volts, will need to change the solenoid and relay as the 6 volt components will not last long on 12 volts. Can also install Vintage Auto Garage solenoid reducer with relay that will allow the use of 6 volt solenoids and on 12 volts. See Part number VRODS1

Step 14: Before starting the engine check that your battery is fully charged with an external battery charger. A low voltage battery will

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cause problems with the alternator, starter and start solenoids. Use this chart to check your battery. Recommend using a digital volt meter when possible.

Fully charged battery	12.6 volts
75%	12.4 volts
50%	12.2 volts
25%	12.0 volts
Discharged	11.6 volts

Step 15: Starting engine and testing

Start the engine and increase the RPM one time, now measure the output of the alternator with a digital volt meter, should measure 14.1-14.6 volts. This is the correct voltage to keep the battery charged to 12.6 volts. A quick way to check if the alternator is working, take a pocket

knife or screw driver and place on the back of the rear alternator bearing, should feel slight magnetic pull shows alternator is working.

Trouble shooting:

1 Question: The alternator output voltage is the same as the battery voltage when engine in running: This means the alternator is not charging.

Answer: This can be caused by a bad ground from the alternator case to the negative side of the battery, or the output of the alternator is not connected securely to the + side of the battery or the excite wire is not connected to switched 12 volts. Alternator output voltage should read 14.1 to 14.6 volts.

Warning do not attempt to charge a dead or low battery with the alternator, this will damage the alternator regulator and rectifiers.

2 Question: Gas gauge is not reading correctly:

Answer: The most common cause of fuel gauge trouble is a poor ground especially at the tank sender. Make sure all wiring connections are tight, and free of dirt and corrosion. A poor ground or loose connection to a fuel gauge system is just like loose or dirty battery cables to your starting system.

3 Question: Going from positive to negative ground and the gauges are ready backwards.

Answer: the wires on the back of the gauges need to be reversed.

4 Question: Installed voltage reducer for the heater and it gets very hot or the end exploded due to excess heat.

Answer: The resistors must be mounted on metal / aluminum is best to dissipate the heat. Some motors will draw more current if they are dirty, clean the motor commutator and look for worn brushes. This is generally the case for these reducers to get hot or fail. Remember to reducer voltage the byproduct is heat.