Tech Bulletin: A Guide to Generator-to-Alternator Conversions
Converting your classic car from an old-style generator to a modern alternator is one of the best reliability upgrades you can make. Here are some key observations and steps to ensure your charging system works correctly and safely after the conversion.

- **Internal Regulator:** Nearly all modern alternators sold today (like the popular Delco 10SI style or the Powergen have a built-in voltage regulator. This simplifies wiring immensely, as you will no longer need your old external regulator..
- **Alternator Output Wire:**
  - The heavy-gauge 10AWG wire connects from the main output post on the back of the alternator directly to a 12-volt or 6-volt battery source.
  - Good connection points include the positive battery terminal itself or the large post on the starter solenoid that connects to the battery.
  - **Safety First:** Because this wire is always "hot," it is crucial to install a fuse (such one of our fuse kits) in this line. Connecting the alternator output directly to the battery without a fuse is unsafe and creates a fire risk in the event of a short circuit in the wire or alternator.
- **Alternator Ground:**
  - An alternator requires an excellent ground to the engine block to complete the circuit. The mounting bracket alone may not provide a sufficient ground due to paint or corrosion.
  - It is highly recommended to run a dedicated ground wire from one of the alternator's mounting bolts directly to a clean, bare-metal spot on the engine block.
- **Excite / Ignition Wire (For Delco 10SI Style):**
  - The P10Si plug wire will aid in "exciting" the alternator, helping it begin charging at lower RPMs and stay "on."
  - It plugs into the rear of the alternator (often the #1 terminal) and the other end must connect to a **switched ignition source**. A common connection point is the "IGN" terminal on the ignition switch, the same circuit that powers the ignition coil. There is also a short red wire that connects to the alternator output.
  - ***Pro Tip: This wire should contain a diode (one way electric check valve) to prevent the engine continuing to run when ign is switched off.***
- **Testing Your New System**
  - **Step 1: Static Test (Engine Off)**
    - Before starting , ensure the battery is fully charged (approx. 12.6 volts). Trying to charge a low battery with an alternator will damage the internal regulator.
    - Set your voltmeter to DC volts. Place the red probe on the alternator's main output post and the black probe on the alternator's case (ground).
    - The meter should read the exact battery voltage. This test confirms the integrity of your main power and ground connections.
  - **Step 2: Dynamic Test (Engine Running)**

- Start the engine. You may need to briefly bring the RPMs up to 1,000-1,200 to get the alternator to "kick on" and start charging.
- Measure the voltage from the alternator's output post to ground again. The reading should now be in the charging range, typically **13.8 to 14.5 volts** (for a 12V system).

Quick Field Test (No Voltmeter)

- If you are stuck without tools and need to know if your alternator is working, you can perform this classic trick.
- **Use extreme caution around moving belts, pulleys, and the fan.**
- With the engine running, hold the metal blade of a pocketknife or screwdriver near the rear bearing of the alternator, you will feel a slight magnetic pull when the alternator is charging.

If you need any more help or finding the right alternator for your engine, send me a note, i try to answer all questions as quickly as possible.
Contact me here

Happy Cruising,
Regis

vintageautogarage.com
800-516-4461