



**ALTERNATOR**  
**P/N 197-302, 197-303, & 197-304**

**DANGER!** Eye protection must be worn when working on batteries.

**WARNING!** With the engine off and before replacing ANY electrical components, remove the negative battery cable with a socket wrench.

**WARNING!** Remove any jewelry before working on ANY electrical system.

**NOTE:** Always use a quality voltmeter to avoid short circuits.

**ALTERNATOR INSTALLATION:**

**HELPFUL HINT:** The rear alternator housing can be rotated relative to the front housings. If desired, this will let the charge wire and harness plug to be rotated out of sight or away from interferences. Contact the alternator manufacturer or an alternator shop for “re-clocking” procedures.

**IF INSTALLING AN AFTERMARKET PULLEY:**

**NOTE:** First inspect the pulley to be installed for proper clearance between the back of the pulley and the front of the alternator housing. This clearance should be at least .0015”. Also, make sure that there is plenty of threaded shaft protruding through the pulley for full thread engagement with pulley nut. Full thread engagement on the nut is required to prevent damage to the alternator shaft.

**WARNING!** Use protective gloves and eyewear for installing an aftermarket pulley.

1. Remove the alternator pulley, rotating pulley nut in a counter-clockwise direction. An impact wrench is recommended for the process.
2. Install the new pulley and nut.
3. Torque the pulley nut to 70 ft./lbs. Do not overtighten.

**IMPORTANT!** Before starting your installation, check the condition of your battery. The battery must be in good condition and fully charged before replacing the alternator.

**NOTE:** This is a one wire alternator. Only the charge wire to the battery and a sufficient ground path back to the battery are required for operation.

**Important note if painting engine and/or brackets:** The alternator grounds through the brackets, engine block, and ground strap. If painting or coating any of these, the mating surfaces must all be bare metal allowing a ground path from the alternator mounting feet to the engine block and ultimately the negative terminal on the battery. For optimal ground, add a 4-gauge wire from the alternator foot directly to the negative battery post.

1. Disconnect the negative (-) battery cable.
2. Identify and tag all leads when removing the old alternator. Safely terminate or remove these wires as they will not be used with this alternator.
3. Install the alternator.
4. Torque all fasteners as specified in bracket/engine instructions.
5. Install new charge wire to battery.

Change Wire Size				
Gauge	8 GA.	6 or 4 GA.	4 GA.	2 GA.
Charge Path Length	0-4 FT.	4-7 FT.	7-13 FT.	13-19 FT.

## SYSTEM CHECK:

1. Apply some load to the charging system, such as high beams and A/C. Rev the engine to 1500 RPM. Use a voltmeter to measure the DC voltage from a metal point on the alternator case to the negative (-) battery cable. If your reading is higher than 0.10VDC, this indicates you have a poor ground connection. Check the ground path, paint or powder coating on the brackets, engine ground strap, and ground cable from the frame to the battery (**Figure 1**).
2. With the engine running at 1500 RPM and the battery fully charged, measure the voltage at the battery (+) and ground (-). Your voltage should be 13.8 – 14.5VDC. If your reading is above this, it could mean a defective alternator. If your reading is below 12.7VDC, then the alternator is not functioning or supplying the amperage needs of the vehicle at engine speed.
3. With a voltmeter, measure the voltage drop between battery (+) and alternator output post (**Figure 2**). Your voltage should be less than 0.40VDC. If it is higher, it may be poor connections between the alternator and battery. It could also be undersized battery cables, loose or improperly crimped terminals, or corroded connections.

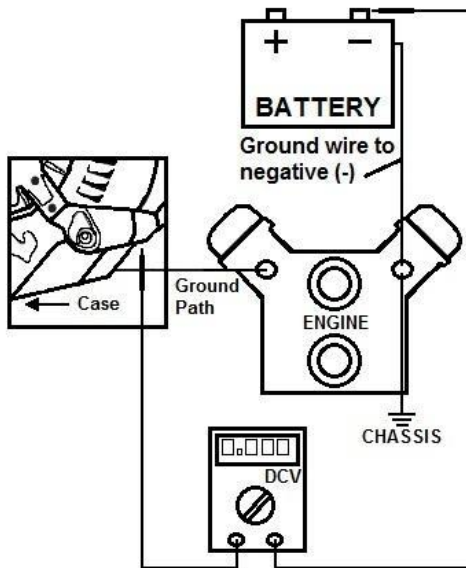


Figure 1

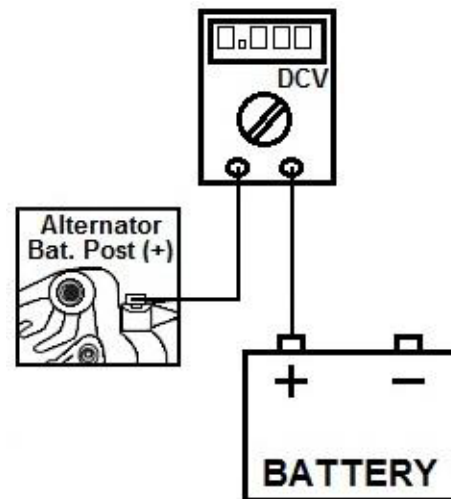


Figure 2

## TROUBLESHOOTING: PROBLEM

Voltage low when cruising or idling

## EXPLANATION

This can be caused by aftermarket pulleys that allow the alternator to run at a lower RPM or the alt is too small and can't supply enough amperage at a low RPM. Alternators are designed to have a power curve that increases with RPM, low RPM low output high RPM high output. This alternator should be spinning at 2000 RPM minimum shaft speed when at engine idle RPM for good low RPM charging. Calculate your pulley ratio to be sure the alternator is being spun at the correct RPM when the engine is at idle RPM.

Voltage tests good at alternator, but low at battery & fuse box

This can be caused from a bad electrical connection between the alt and the test point or a wire that is too small. Check power and ground connections to be sure they are free of anything that would cause interference in the connection (rust/paint/loose connection) and verify that the wires used are large enough for the application.

**Holley® Performance Products**

**1-270-781-9741**

**1-866-464-6553**

[www.holley.com](http://www.holley.com)

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