

# INSTALLATION INSTRUCTIONS

## Racing Alternator

**Notice:** This unit has been built for racing applications. Therefore certain precautions and installation procedures should be followed closely. If you are installing the alternator w/pulley end toward the driver (i.e., supercharger application) be sure to use an alternator designed for CCW cooling.

### PRE-INSTALLATION CHECKS

1. Always use a new or a known fully charged racing battery (12.7-13.0 volts DC). 80-90% of all alternator failures are due to weak or defective batteries.
2. This racing alternator has a black thermal coating which has insulating properties electrically. Care should be taken to insure a good ground at the "foot" of the alternator and "adjusting ear" to the engine block. (See Figure 1).
3. Make sure battery ground (-) is disconnected to prevent sparks or arcing during installation.
4. Carefully check all electrical connections at alternator and battery. Check ground cables and connections. Look for broken or frayed wires and use dielectric grease when making final battery and alternator connections. This keeps oxides from forming and aids electrical contact.

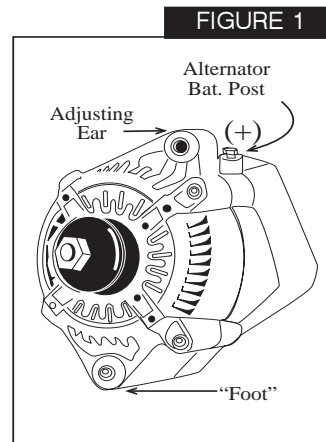


FIGURE 1

Use only welding type cable (i.e., multi-strand, highly flexible wire) and heavy duty crimps and adhesive sealing heat shrink tubing (See Figure 2).

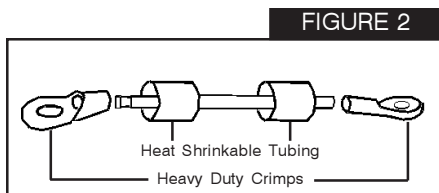


FIGURE 2

5. Use care in handling the alternator. Do not drop it, hammer on the case, pry against the case to tighten the belt, etc. The rotor and stator are built to very close tolerances and this could cause internal rubbing and subsequent failure.

### INSTALLATION

1. Install pulley of your choice and use the pulley nut supplied. (Discard pulley nut spacer.)
2. Install with quality brackets and bolts.
3. Use care when tightening belt. Do not over tighten belt. Allow 1/2" belt deflection.
4. Attach battery (+) cable to alternator B+ output post. Reattach ground wire to the battery.
5. Start engine and apply a moderate load (30 amps approx.) to charging system. With a digital voltmeter set for DC volts and with one test lead on the grounding bolt at the "adjusting ear" and the other test lead on a good grounding point on the engine block, measure to see if you have DC volts present. If you have a reading of 0.10VDC or higher, you have a poor ground connection between alternator and engine block. Recheck your alternator grounding points at the "foot" or "adjusting ear". (See Figure 3).

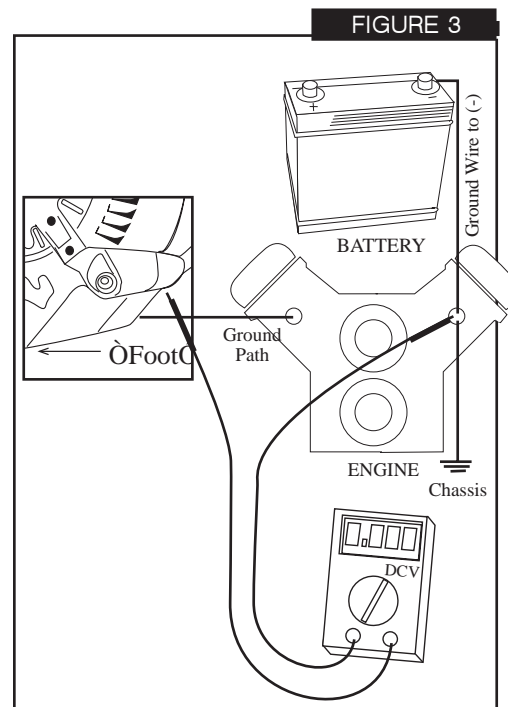
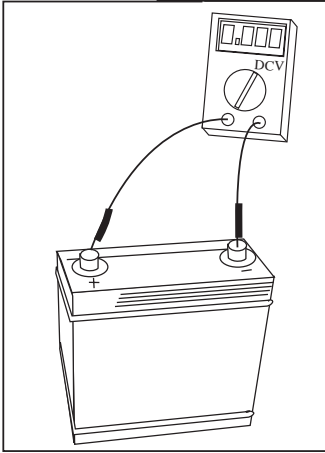


FIGURE 3

To check **ground voltage drop**, set DVM to DC Volts and read voltage between alternator foot bracket or adjusting ear and battery ground (-) terminal. Voltage should be less than 0.10VDC. A higher reading indicates a poor ground.



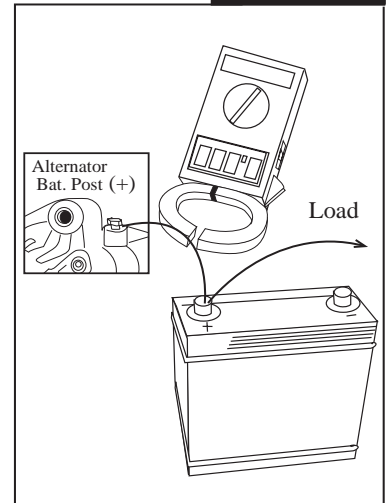
FIGURE 4



To check **charge voltage**, set DVM to DC volts and read voltage. A fully charged battery with engine running will read 14.5-14.9VDC. Voltage will drop.

6. Using the voltmeter, measure the voltage drop between the (+) terminal of the battery and the alternator (+) output terminal (See Figure 5). Voltage should be less than 0.30VDC. If voltage is higher than 0.30VDC, check for poor connections or undersized wire between (+) of alternator (+) of battery.
7. With battery fully charged and engine running, check voltage at battery (+) post and ground post (-). (See Figure 4). Voltage should be 14.5-14.9VDC. The voltage could be low for two reasons:
  - s Amp demands are exceeding alternator capacity at this RPM.
  - s Charge wire size too small or poor connections.

FIGURE 5



To check **positive voltage drop**, set DVM to DC volts and with engine running check voltage between alternator battery post and (+) battery post on battery. Voltage should be less than 0.40VDC. If greater, replace alternator charge cable.