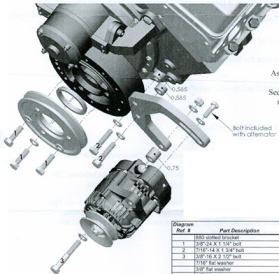
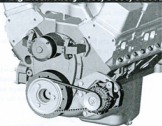


# INSTRUCTION SHEET

50A Racing Alternator Snug Mount Bracket  
Big Block Chevy 880, 8-880, 8-880B

We want to help! If you have any comments or difficulty with this product, please contact technical support at



Assembly per illustration.

See reverse side for special notes and instructions

Diagram Ref. #	Part Description	PIN 880 PIN 8-880 PIN 8-880B		
		Qty.	Qty.	Qty.
880	slotted bracket	1	1	1
1	3/8" x 1 1/4" bolt	3	3	3
2	7/16" x 1 3/4" bolt	2	2	2
3	3/8" x 2 1/2" bolt	1	1	1
	7/16" flat washer	2	2	2
	3/8" flat washer	2	5	5
	3/8" nut	1	1	1
	25/64" ID X 7/8" OD X 0.585" spacer	2	2	2
	25/64" ID X 3/4" OD X 0.75" spacer	1	1	1
	5/16" V-belt crank pulley	1	1	1
	Pulley locating bushing, BS	1	1	1
	3/8" flat washer	3	3	3
	2 8" V-belt alternator pulley	1	1	1
	25 1/4" V-belt (Gates # 7202)	1	1	1
	8162 one wire racing alternator	1		
	8166 X3-volt one wire racing alternator			1

## ***Special Notes:***

\* This system can be used with electric or short mechanical water pumps. The Pro Series kits include a belt for use with an electric water pump.

\* This bracket can be used with most manufacturer's crank and water pump pulleys as long as proper belt alignment is maintained.

\* **One wire** alternators require only the charge wire connection to function. An adequate charge wire should be run between the alternator and the positive battery post or the positive battery side of the safety cut off switch. If the alternator's charge wire is connected to the starter's battery connection or on any other positive point on the car that is on the switched side of the cutoff, the car may continue to run after the cutoff switch is opened.

\* Be certain that any paint or corrosion is removed from the points where the bracket attaches to the engine block. Also be certain that an adequate ground path is supplied from the engine block to the negative battery post.

\* Tension the belt to have 1/2" of deflection.

\* If you are installing an 8-8808 Pro Series kit refer to the XSVolt alternator instruction sheets for special instructions.

\* This bracket can be assembled and mounted on either side of the crank pulley.

### **Crank pulley installation (included in Pro Series kits)**

#### **If installing on an OE balancer:**

- Insert the locating bushing into the center notched side of the pulley with the bushing's raised ring facing out.
- Place the spacer on the crank balancer with the bushing side facing the balancer. The bushing's raised ring should locate into the center opening on the balancer.

#### **If installing on a SEI balancer:**

- Place the pulley on the balancer with the center notched side facing the balancer. The spacer should locate on the step around the outside circumference of the balancer.
- \* Make certain the side of the pulley with the right angle step is toward the motor and the tapered side is facing away from the motor.

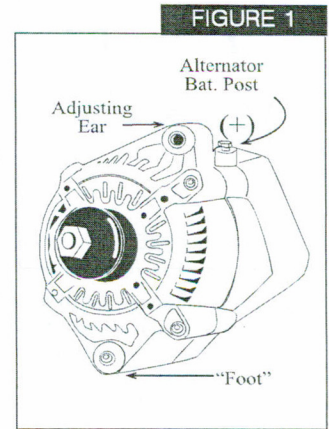
# INSTALLATION INSTRUCTIONS

## 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.*

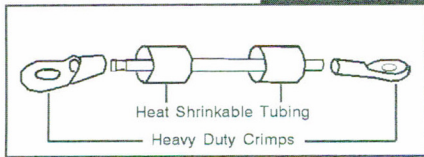
### PRE-INSTALLATION CHECKS

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.



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

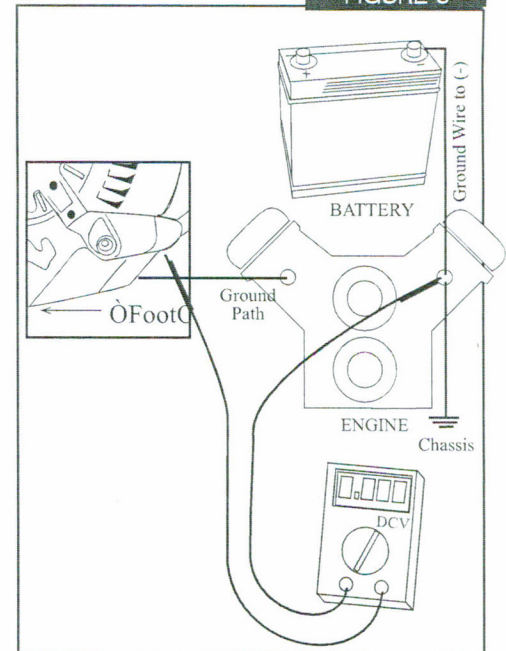


5. Use care in handling the alternator. Do not drop it, hammer on the case, pry against the case to tighten the belt, etc. The rotor and stator are built to very close tolerances and this could cause internal rubbing and subsequent failure.

### 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).

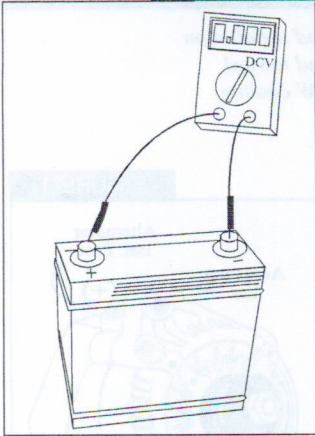
FIGURE 3



*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



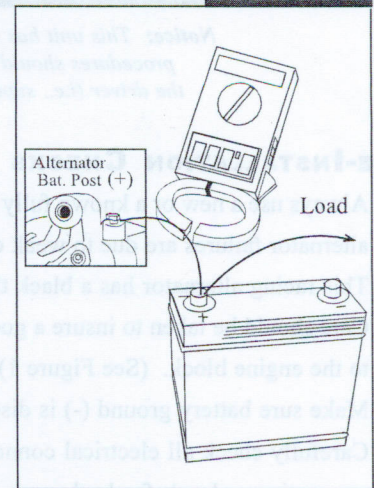
To check **charge voltage**, set DVM to DC volts and read voltage. A fully charged battery with engine running will read 14.5-14.9VDC. Voltage will drop.

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.



# WARNING



This alternator should not be allowed to exceed 18000 RPMs at any time. Alternator components are not designed to withstand the increased stress resulting from excessive RPMs. Powermaster recommends that you calculate your pulley ratio and multiply it times your highest expected engine RPM to determine if your alternator will operate within the acceptable range.

$$\frac{\text{Crank Shaft Pulley Diameter}}{\text{Alternator Pulley Diameter}} = \text{Pulley Ratio}$$

**EXAMPLE:**

$$\frac{7 \text{ crank pulley}}{2 \frac{3}{8} \text{ alt. pulley}} = 2.95 \text{ to one ratio}$$

To calculate a vehicle's pulley ratio, the engine's crank pulley diameter should be divided by the alternator's pulley diameter. This ratio should then be multiplied times the highest expected engine RPMs. The result will be that vehicle's maximum alternator RPM.

$$(\text{Pulley Ratio}) \times (\text{Max. Engine RPM}) = \text{Max. Alternator RPM}$$

$$2.95 \times 6000 \text{ max. rpm} = 17700 \text{ max. alternator rpm}$$

If your situation allows for greater than 18000 alternator RPMs, Powermaster recommends increasing the alternator pulley diameter or decreasing the crank pulley diameter to compensate. Powermaster has various pulleys available to help. If pulley ratio compensation is not an option, installing a rev limiter on the engine is recommended.

Excessive RPMs can cause the alternator fan to flex and contact the drive belt. This could cause property damage and/or personal injury. In addition to RPMs, there are other factors that will substantially increase the likelihood of alternator fan-to-belt contact.

**ALTERNATOR BRACKET ALIGNMENT AND STABILITY:**

Alternator brackets can be misaligned in such a way that the clearance between the alternator fan and belt is reduced. Loose or nonrigid brackets can also increase the likelihood of contact.

**WORN OR LOOSE BELTS:**

Belts that allow for side-to-side movement or deflection will decrease the effective gap between the fan and belt and increase the likelihood of contact.

**IMPROPER BELTS:**

Powermaster supplied V-type pulleys are designed to accommodate up to a 10mm or 3/8" belt. Larger belts will not seat into the pulley groove properly and will increase the likelihood of belt-to-fan contact. If the application requires a belt of greater than 10mm or 3/8" width, Powermaster recommends the original equipment pulley be used instead of the supplied pulley.

**NOTE: Powermaster is not responsible for vehicle damage or any other damage resulting from improper use of this product.**

