



## **PowerStar Alternator Installation Instructions**

**For Installing:**

**SERPENTINE BELT DRIVE 51000, 51001, 51002  
V-BELT BELT DRIVE 51020, 51021, 51022**

### **General Information**

Your new PowerStar alternator is designed as a “one wire” unit. Only the output wire going to the battery source is required for normal operation. It is designed to have maximum output at idle for maintaining voltage in the overall electrical system. This feature is to eliminate engine computer voltage drops due to high current consuming devices such as electric fans or air conditioning.

### **Added Features**

Adjustable voltage settings from 13.5 volts to 18.5 volts, perfect for 16 volt systems.  
Voltage step up/down mode  
Charge light output  
Stator output for tachometers

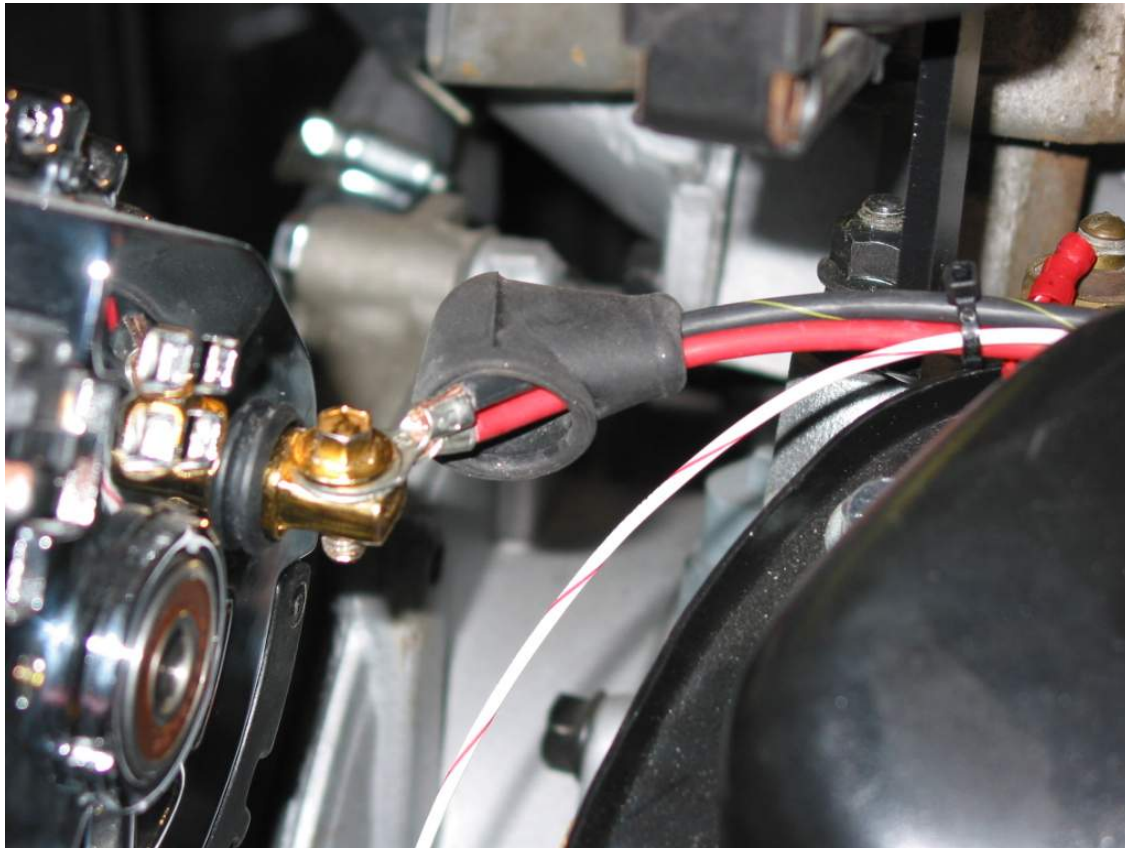
### **Installation (Mounting)**

Before starting the installation process, ensure the battery has been disconnected by removing at least one of its cables.

Install the alternator onto the engine using normal hardware and bracketry. Be sure the belt will have adequate adjustment when using a “V” belt or a good idler on a “serpentine” system. Belt slippage will decrease alternator output when high current accessories are in use.

Once the alternator is mounted, attach the chassis harness output wire to the output post on the back of the alternator. For “one wire” operation, this is the only wire that is required.

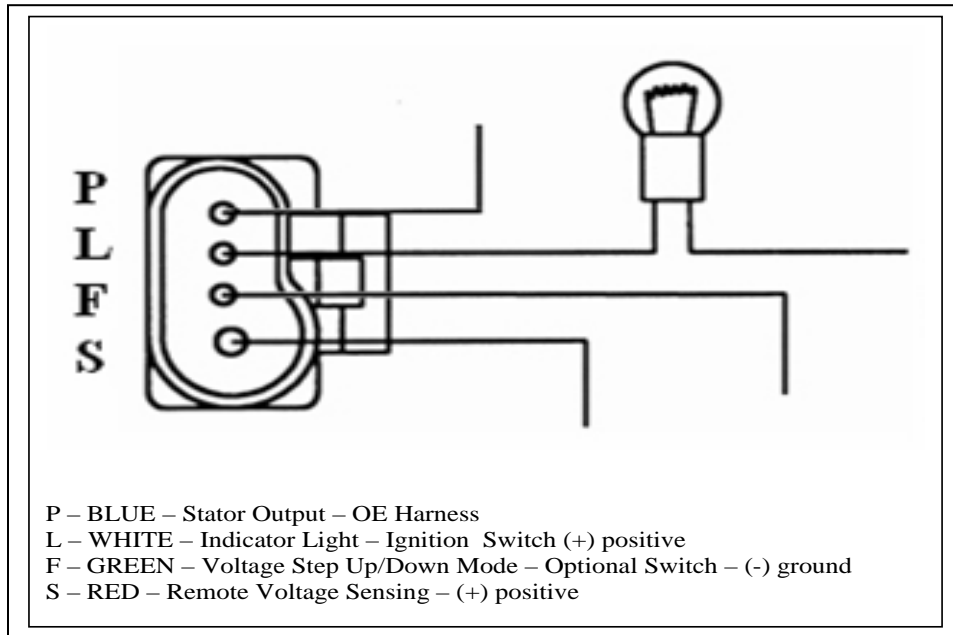
**NOTE:** The addition of a high output wire kit, Painless # 30709, is recommended to insure proper current flow to the battery and accessories. (*Reference Photo #1*) Older harnesses may not have adequate alternator wire size to carry the amperage output of your new PowerStar alternator.



**Photo 1** Chassis Output and High Amp Output Wires Attached To Output Post  
**Optional Wiring Of Extra Features**



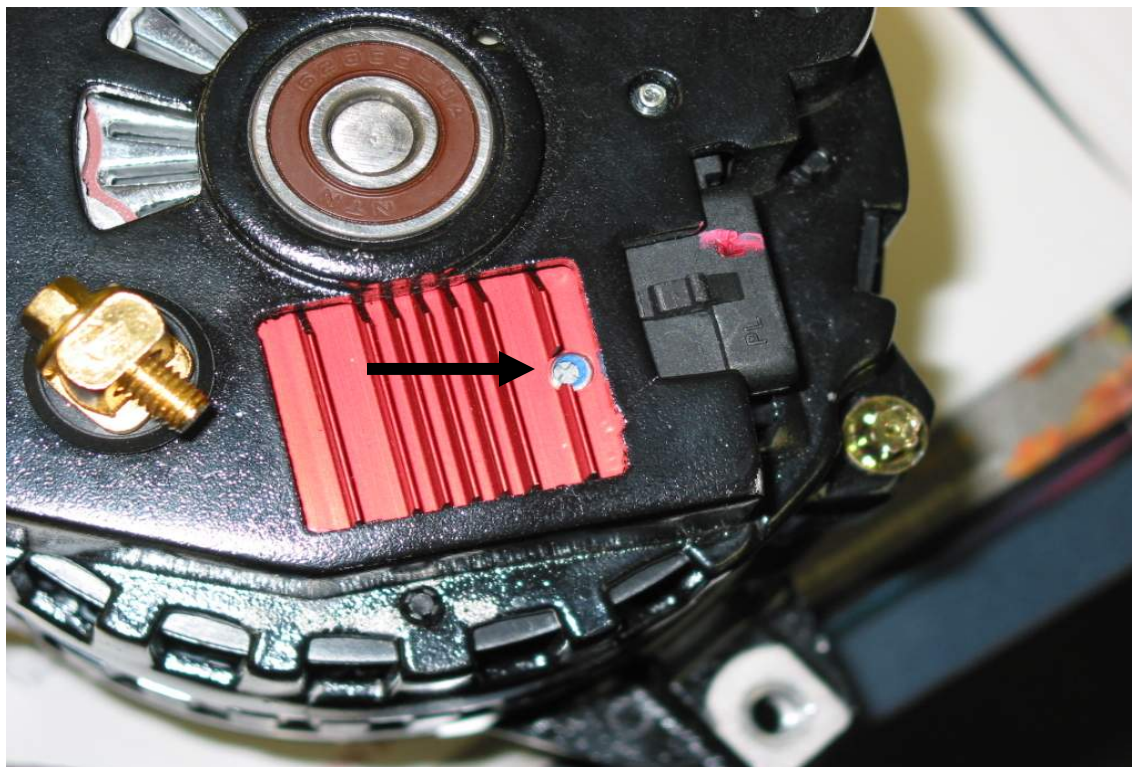
**Photo 2** Installation Of Optional Plug Into Voltage Regulator



**Illustration A** Optional Plug Diagram NOTE: P,L,F and S are molded letters in the plastic plug

Adjustable Voltage Setting:

This feature allows you to adjust the voltage level of the desired alternator output. This is done by turning the adjusting screw in the back of the red heat sink at the rear of the alternator. Turning the screw clockwise increases the voltage. **Caution;** when adjusting screw, do not over power its internal stop. The adjustable range of voltage is between 13.5 and 18.5. The setting from the factory is approximately 14.9 volts. (*Reference Photo #3*)



**Photo 3** Regulator Voltage Adjustment Screw

### Remote Voltage Sensing

This feature allows the voltage regulator to sense voltage from a remote location rather than just at the alternator. This sensing allows for more stable voltage in the system and helps prevent voltage drops.

**Note:** Activating this feature will override the voltage step up/down mode and the adjustable voltage feature. The output will be set at 14.5 volts.

To activate this feature, install the alternator plug with the 4 wires. (*Reference Photo #2*) Connect (splice) the red wire in the plug to a jumper wire, at least a 14 gauge, and splice it to a constant power source somewhere in the system. This can be anywhere such as at the fuse block, light switch or maxi fuse. (*Reference Illustration A*)

### Voltage Step Up/Down

This feature is used to remotely step up or down the voltage by 1.25 volts from the previous setting.

To step up the voltage, ground the green wire with a switch in series between the plug and ground. When the switch is turned off, the voltage will increase.

To step down the voltage, leave the green wire normally ungrounded and using a switch in series, ground the wire. Just the opposite of stepping up the voltage.

### Charge Indicator Light

Unlike most one wire alternators, your new PowerStar unit will operate a charging indicator light as well as a voltmeter. The light will come on in a no charge situation and go off when the alternator is charging.

To activate this feature, install the alternator plug with the 4 wires. Connect the white wire (extra wire may be spliced on) to a dash light bulb and the other side of the bulb to a switched positive source when the ignition switch is in the run position.

### Stator Output For A Tachometer

This blue wire is an output for some diesel and some Ford OE chokes on early Ford vehicles. Not used with typical tachometers on gasoline engines.

# PowerStar Limited Warranty

Painless Performance will repair or replace defective products without charge during the first 12 months from the purchase date. No products will be considered for warranty without a copy of the purchase receipt showing the sellers name, address and date of purchase. You must return the product, either UPS or Fed-Ex, to the following address.

Painless Performance  
1833 Downs Drive  
W. Chicago, IL 60185

An RGA Number must be requested from Painless Performance by calling 1-800-423-9696 during normal business hours 8 am – 5 pm, central time, Monday thru Friday. This number must be written on the outside of the shipping box.

Once received, someone from our warranty center will contact you on the status of your return. For questions regarding the status of the repair or replacement, call 1-630-957-4019.

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