

Installation Instructions - Model S10505R-V8N12

The operation of your new voltage regulator for the FORD V8 is such that the third brush on the generator still sets the maximum charge rate obtainable from the generator. The voltage regulator circuitry senses the current state of charge of the battery and adjusts the generator output power from this maximum charge rate down in proportion to the needs of the battery and the electrical system of the car in much the same manner as a modern car voltage regulator. **It is assumed that the car has already been previously converted to Negative Ground. Contact Fun Projects if any doubt exists** as to the previous successful conversion to Negative Ground operation.

WARNING!! - This voltage regulator is for use on 6 volt generator/12 volt NEGATIVE GROUND battery systems only. Permanent damage will result if the voltage regulator is connected even momentarily to any other system including 6 or 8 volt. Check which post of the battery is connected to the car ground (frame). If the negative (-) terminal is *not* connected to the frame then you do not have the correct voltage regulator or your battery is installed incorrectly!! Do not attempt to proceed until the battery is installed properly!! The "A" terminal must never be connected to the battery or car wiring. Follow all instructions carefully or you will destroy your new regulator.

Never short the voltage regulator terminals together as with a jumper wire to *test* the operation of the regulator or to *flash* the generator - The voltage regulator will be damaged. Remove the voltage regulator from the generator before performing any tests on the generator.

Proper operation of the voltage regulator requires a proper setting of the generator third brush. It is assumed that a good battery and a good generator have already been properly installed on the car. A voltage regulator is *not* a cure for a sick generator or sick battery. A voltage regulator is a great improvement to a good electrical system. **Only the generator *third* brush assembly will be adjusted and under no circumstances should the third brush assembly be set for more than 9 Amps of charge.**

Make certain that all electrical connections in the car are clean and tight. Pay particular attention to the wiring and all connections between the generator terminal and the battery. In order to preserve authenticity the regulator output "B" (Battery) terminal and the input "A" (Armature) terminal are insulated in the exact same manner as the original cutout and these terminals should be inspected regularly to make certain that there is no danger of these terminals shorting to the regulator cover. A 30 Amp fuse placed in series with the generator battery wire at or near the battery end is a very good safety measure for protection from shorts in the car and regulator wiring.

Important! - If your car is equipped with a radio, remove any radio interference suppressor capacitor which might be connected to the armature terminal of your generator. Your voltage regulator contains a built in suppressor and an external suppressor will cause improper operation and damage to your voltage regulator.

Note: All generators are not the same with regard to cutout mounting screw locations. Slight bending of the regulator mounting feet may be necessary to line up the mounting holes of your generator with the voltage regulator mounting foot slots.

Install the regulator in place of the cutout and orient the voltage regulator so that the "A" terminal (marked on top of the regulator) is closest to the generator wiring hole containing the "armature" and "field" wires. Connect the smaller "field" wire coming from the generator to a mounting foot screw of the regulator as with the original cutout. Make certain that regulator mounting screws are tight.

Note: When making connections to the "A" and "B" terminals of the regulator, make certain that the thick insulating washer is between the connection and the metal cover of the regulator.

(CONTINUED ON REVERSE SIDE)

WARNING! - Never connect the battery wire (car wiring) to the "A" terminal! Connect the heavy "armature" wire that comes through the generator housing to the "A" (**Armature**) terminal of the voltage regulator. Connect the battery wire (car wiring) to the "B" (**Battery**) terminal of the regulator. You may notice a momentary "spark" when the battery wire is first connected. **The Ammeter should not show any charge or discharge after the battery wire is connected. Any reading on the Ammeter indicates that something is wrong and your voltage regulator may already be damaged.** Check all connections for shorts to the regulator cover or regulator base.

Do not remove the voltage regulator cover as there are no user serviceable parts or adjustments inside the voltage regulator. **Never allow a modern generator shop to have your VR - remove it.**

Setting the generator third brush

A) Loosen the generator dust cover bolt and lift off the dust cover.

B) Loosen the third brush nut (if equipped) and shift the third brush assembly counterclockwise (as viewed from the front of the car) as far as possible. Some are held in place by friction only.

C) Start the car and bring the engine to a high speed that produces the maximum charge from the generator. Turn on lights and other items that will draw power when the car is operated and observe an Ammeter reading of 6 to 8 Amps discharge.

D) Advance the third brush setting clockwise (as viewed from the front of the car) until the Ammeter shows a slight charge of 1/2 to 1 Amp with engine at the same high speed. The generator is now putting out 7 to 9 Amps. **Do not advance the third brush further or the setting will be too high!** - This is the correct setting and usually should occur with the third brush advanced only slightly further than the center of its mechanical adjustment range.

E) With engine still at high speed turn off lights and all other items and observe that the charge rate jumps to 7 to 9 Amps where the charge rate will remain until the battery reaches full charge. It may take a few seconds, a few minutes, or a few hours for the battery to reach full charge. As the battery is nearing full charge, the rate will taper off until only 1 to 2 Amps of charge current remain.

Make certain that the battery charge rate does not exceed 9 Amps during this charge time. A lower setting of 7 to 9 Amps is best and will result in longer generator life. If charge rate is ever allowed to exceed 9 Amps, generator damage may result. Do not attempt to readjust the third brush once the regulator has begun to taper the charge since the regulator will tend to compensate for the adjustment and it is very easy to advance the third brush too far which will result in generator or voltage regulator failure. Don't experiment with operation of the generator/VR on any test bench.

F) Tighten the third brush nut (if equipped).

G) Check proper operation by idling the engine with lights off and then quickly increasing engine speed. The Ammeter should show a momentary high charge rate (7 to 9 Amps) then regulator action should be observed by a noticeable decrease in charge rate.

H) Install the generator dust cover and tighten the dust cover bolt.

IMPORTANT! - A final check must be made after 24 hours of no operation of car or battery by starting the car with the starter and bringing the engine immediately to high speed. With all lights off the Ammeter reading should be at or below 9 Amps. **If higher than 9 Amps, reduce the third brush setting immediately!** This is the maximum reading you should ever see and it will soon taper off once the battery comes up to charge. Thereafter the peak reading will be in the 7 to 9 Amp range. This first reading is higher right after the car is first started because the battery voltage is lowest since the battery has not been charged for 24 hours.

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