

MGA Alternator Conversion

Installation Instructions

For 1955 to 1962 MGA

Tools required: Small and medium flat blade screwdriver, phillips head screwdriver, 11/32" wrench, 7/16" wrench, 1/2" wrench, 5/8" wrench, 7/16" socket with extension, 1/2" socket, 5/8" socket, 22mm socket, center punch, hammer, 1/4" drill bit, electric drill, deadblow hammer, air impact gun, pry bar, wire cutters, wire crimpers, multimeter.

Note: The vehicle must be converted to negative ground before the alternator can be installed. These instructions will outline this polarity conversion as a part of the alternator conversion.

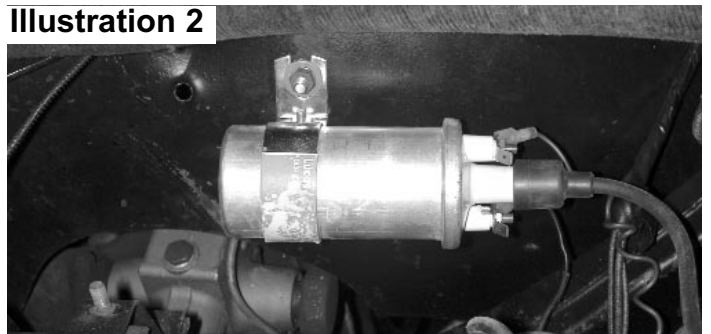
Vehicle Preparation - Positive Ground to Negative Ground Conversion

1. Remove the battery cover behind the seats using a screwdriver to release the dzus fasteners. Disconnect and remove the battery, or both batteries if still configured for a dual 6 volt set up, using a 1/2" wrench.
2. Disconnect the Yellow/Green and Yellow wires from the generator. If the generator uses ring type connectors use a 5/16" and 7/16" wrench.
3. For the installation of the Lucas alternator the ignition coil will have to be relocated to the engine bay side of the right fender well. Remove the coil from the generator using a 7/16" socket. Locate a new place for the coil and mark the hole locations. Using a center punch and hammer, make two dimples at the center of the marks to insure that the drill bit will not walk around when the holes are being started. Using an electric drill with 1/4" drill bit, locate the tip of the bit to the dimple and make two holes. (Illustration 1) Install the coil at the new location using the same hardware from the previous bracket and the two 1/4"-28 x 1 bolts provided. (Illustration 2) Reverse the positions of the two wires on the ignition coil. Note: If the vehicle uses an electronic ignition it will have to be replaced with a negative ground electronic ignition.
4. If an ammeter or voltmeter has been fitted then the position of these wires will need to be reversed.

Illustration 1



Illustration 2



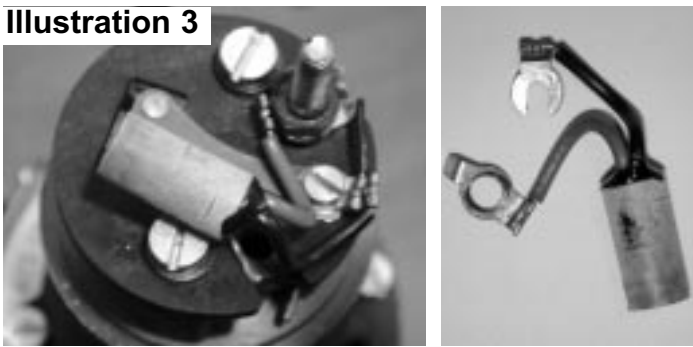
5. If the vehicle uses an original equipment fuel pump move on to the next step. If an S.U. replacement fuel pump has been installed and uses a positive ground diode then simply reverse the diode wires. This will require that the fuel pump be removed. Place an oil pan underneath the inlet and outlet ports on the fuel pump. Disconnect both the inlet and outlet lines from the fuel pump using a 5/8" wrench. Remove the fuel pump bracket mounting bolts using a 7/16" socket with extension. Maneuver the fuel pump and bracket assembly out of the vehicle and drain the rest of the fuel into the oil pan. Remove the blue S.U. Tape and the wider electrical tape underneath. Remove the nut, washer, and male connector to free the plastic shroud at the end of the fuel pump using an 11/32" wrench. The diode should be underneath this shroud. Note: If there is a small green circuit board underneath the shroud then the fuel pump is solid state and will have to be replaced. Remove the diode wires using a small screwdriver and an 11/32" wrench. Note the position of the two sets of contact points. In order to switch the wires

Limora Zentrallager
 Industriepark Nord 21
 D- 53567 Buchholz
 Tel: 49 (0) 26 83- 97 99 0
 E-Mail: Limora@Limora.com
 Internet: www.Limora.com

Filialen:
 • Aachen • Berlin • Bielefeld
 • Düsseldorf • Hamburg
 • Köln • Stuttgart

the eyelet connector should be cut using wire cutters to resemble the forked connector. Make sure the contact points are aligned when refitting the diode. Reassemble the fuel pump replacing the electrical tape if necessary. Make sure the contact points are aligned when refitting the diode. The fuel pump can now be reinstalled. Note: The position of the two leads do not need to be reversed upon reinstallation because the pump itself is not polarity sensitive, just the diode. (Illustration 3)

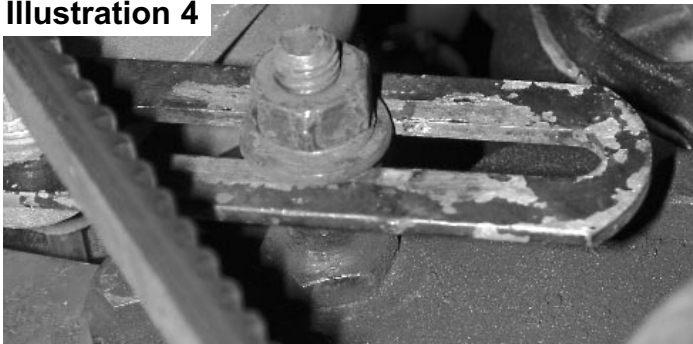
Illustration 3



Alternator Installation

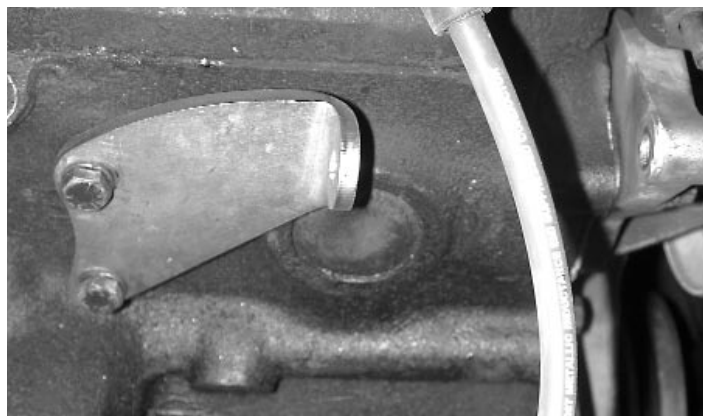
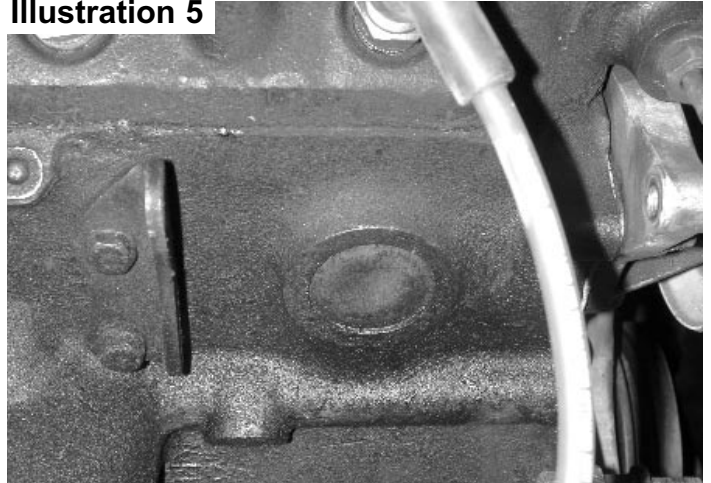
1. Loosen and remove the nut and lock washer on the pillar block using a 5/8" socket to allow the generator to rotate down and remove the drive belt. (Illustration 4) Remove the adjustment link from the generator using a 1/2" socket.

Illustration 4



2. Remove the pivot bolts from the water pump ear and the rear mounting bracket using a 1/2" wrench and 1/2" socket.
3. Remove the rear bracket from the block using a 1/2" socket and replace with the new bracket supplied in the kit using the same hardware. Do not tighten down the bracket yet. (Illustration 5)

Illustration 5



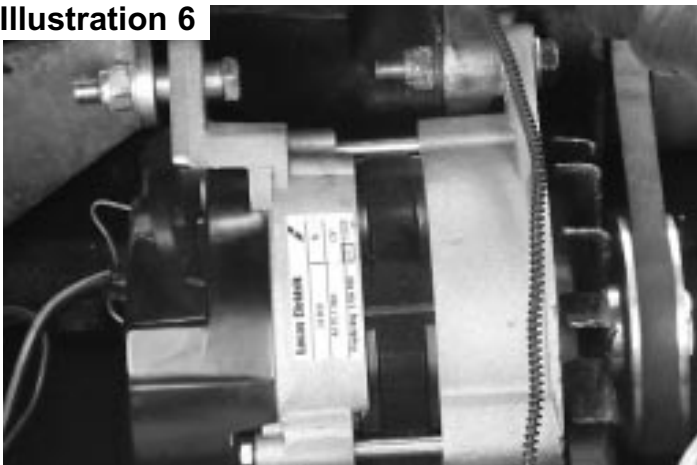
4. Fit the alternator with the fan and pulley supplied in the kit. For vehicles fitted with superchargers, use the 4-rib pulley from the generator. It may help to seat the pulley against the fan by tapping the outer edges evenly with a deadblow hammer. Make sure that the fan blades point toward the alternator. Wrap a shop rag around the fan and hold it firmly, but in a safe manner so that it can be released without damage to the hand or fingers. Tighten the nut with two brief (1 sec. max.) trigger pulls on an air impact gun using a 22mm socket. Check that the fan is not loose and repeat the tightening of the nut if necessary. Attach the adjustment link from the generator to the alternator respective to its original position using the M8x1.25x20 bolt and lock washer provided. For vehicles fitted with superchargers, install the adjuster block provided without the lock washer. Do not tighten this bolt yet.

Limora Zentrallager
 Industriepark Nord 21
 D- 53567 Buchholz
 Tel: 49 (0) 2683-97 99 0
 E-Mail: Limora@Limora.com
 Internet: www.Limora.com

Filialen:
 • Aachen • Berlin • Bielefeld
 • Düsseldorf • Hamburg
 • Köln • Stuttgart

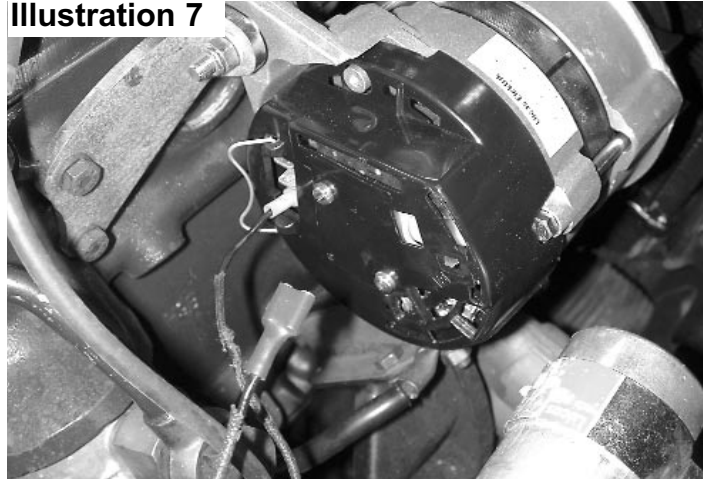
- Fit the alternator to the engine by first sliding the long slot in the adjustment link over the threaded stud on the pillar block. Line up the front-most mounting ear with the water pump mounting ear and insert the original bolt with one of the flat washers provided. Line up the rear-most mounting ear with the new alternator bracket and insert the 5/16-24 bolt provided. Return the pillar block nut and lock washer to the pillar block. For vehicles fitted with superchargers, install the new adjuster base provided. Return the nut and washer to the front mounting bolt with the added flat washer between the water pump mounting ear face and the lock washer. Return the nut and lock washer from the original rear mounting bolt to the new mounting bolt. Leave the mounting bolts snugly tightened. Make sure that the alternator is at full droop. (Illustration 6)

Illustration 6



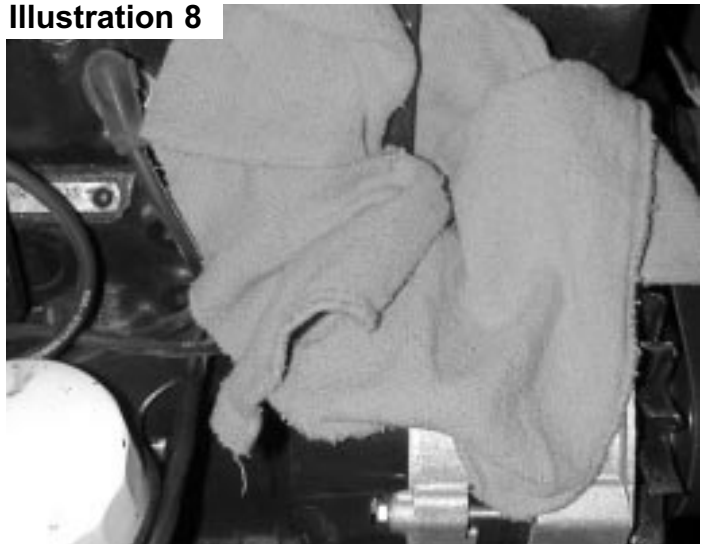
Attach the Yellow/Green and Yellow wires to the leads on the back of the alternator. If the wires are fitted with ring type connectors then female spade connectors will have to be installed. To do so, remove the ring type connectors with wire cutters and strip approximately 1/4" of insulation off of each wire. Attach one of the two non-covered female spade connectors to the Yellow wire and a small red connector to the Yellow/Green wire. Identifying the colors on these old wires can be difficult, so it may help to note that of the two wires that came off the generator only the Yellow/Green wire has two different color threads making up the outer insulation. Use a 1" section of the heat shrink provided to cover the larger spade connector. The Yellow wire will go on either of the two larger leads and the Yellow/Green wire will go on the smaller lead. (Illustration 7)

Illustration 7



- Fit the new belt by first locating the crank pulley with the bottom of the belt and then wrapping it around the water pump pulley and finally walking the belt onto the alternator pulley. Tighten the belt using a shop towel and a pry bar wedged in between the alternator and the block. (Illustration 8) Tighten the pillar block nut to fix the adjustment link. Then tighten the bolt attaching the link to the alternator and the front mounting bolt. Next tighten the rear alternator mounting bolt and then the bracket mounting bolts. The order in which these bolts are tightened is crucial to the fitment of the new mounting bracket. Check that the belt deflects 3/16" - 1/4" at the center of the belt between the water pump pulley and the alternator pulley and adjust as needed.

Illustration 8



Limora Zentrallager
 Industriepark Nord 21
 D- 53567 Buchholz
 Tel: 49 (0) 2683- 97 99 0
 E-Mail: Limora@Limora.com
 Internet: www.Limora.com

Filialen:
 • Aachen • Berlin • Bielefeld
 • Düsseldorf • Hamburg
 • Köln • Stuttgart

7. Remove the regulator assembly using a phillips head screwdriver and turn it over. (Illustration 9) If the posts on the regulator utilize spade connectors then move on to the next step. Remove the Yellow wire from the „D“ terminal using a flat blade screw driver. Use the continuity function of a multimeter to verify that the correct wire has been removed. This Yellow wire should be the other end of the Yellow wire at the alternator. Attach the Yellow wire to the „A“ terminal. Remove the Yellow/Green wire from the „F“ terminal and move it to the „D“ terminal in the same manner. (Illustration 10)

Illustration 9

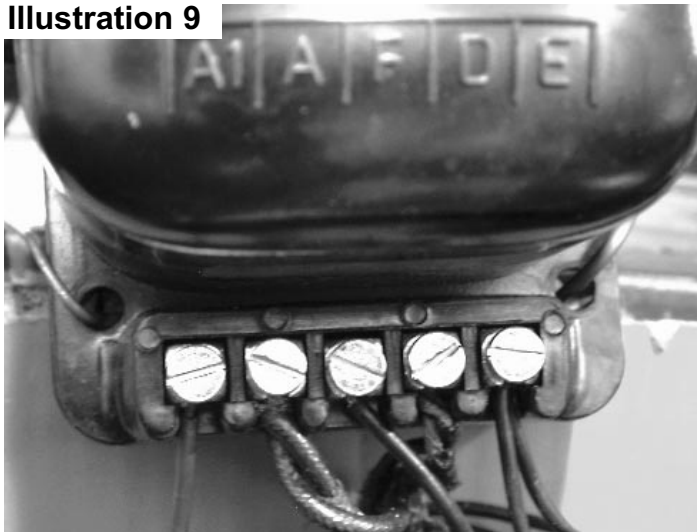
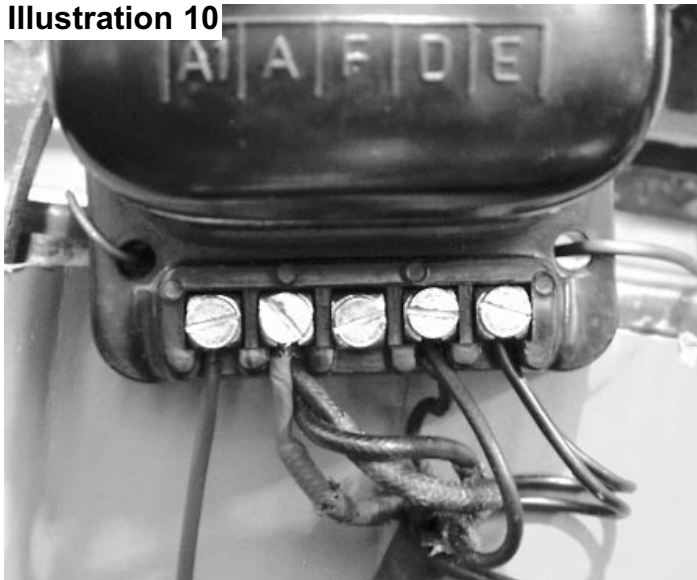
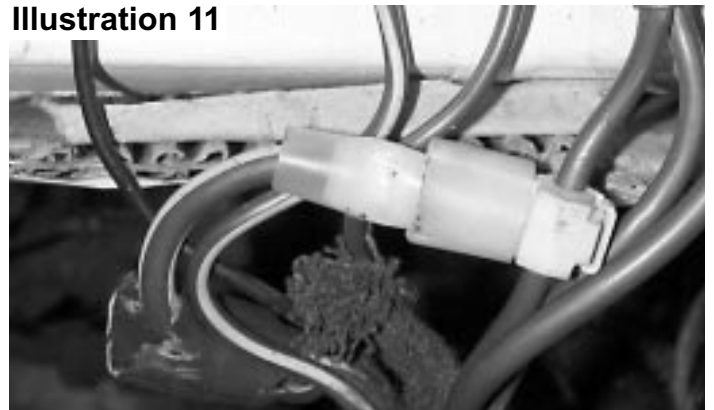


Illustration 10



8. For regulators that utilize spade connectors the wiring procedure is essentially the same as for the screw type regulator. Find the Yellow wire at the „D“ terminal and disconnect it. This should be the wire with the larger spade connector on it. Use the continuity function of a multimeter to verify that the correct wire has been removed. Remove the spade connector from the Yellow wire and strip off 1/4" of insulation. Insert the wire into the yellow male spade connector provided and crimp it in place using a set of wire crimpers. There should be two wires at the „A“ terminal. Of these two wires, select the one that does not go to the battery and attach the yellow wire tap provided. This may require the use of a set of pliers to effectively peirce through the insulation. The wire that goes to the battery should have the larger spade connector on it, but check the wiring diagram to make sure. Connect the Yellow wire (yellow male spade connector) and yellow wire tap. (Illustration 11) Remove the Yellow/Green wire from the „F“ terminal and cut off the spade connector with a set of wire cutters. Strip the wire so that about 1/4" of insulation is removed. Attach the 3/8" female spade connector provided using a set of wire crimpers. Slide a 1" section of heat shrink provided over the spade connector and apply heat to set it in place. Attach the Yellow/Green wire to the „D“ terminal and remount the regulator.

Illustration 11



Limora Zentrallager
 Industriepark Nord 21
 D- 53567 Buchholz
 Tel: 49 (0) 2683-97990
 E-Mail: Limora@Limora.com
 Internet: www.Limora.com

Filialen:
 • Aachen • Berlin • Bielefeld
 • Düsseldorf • Hamburg
 • Köln • Stuttgart

9. Swap the connectors on the battery cables using a 7/16" wrench. Refit the battery, or batteries, making sure that the ground cable is attached to the negative post. For the dual six volt battery set up one negative post is connected to the ground cable and the positive post on the other battery is connected to the starter cable. The wire connecting the two batteries can simply be turned around.
10. Turn the key to the on position and do not start it. Check all of the modified areas and insure that there is no sparking or smoke. Now start the car and bring it to a steady idle. Attach a multimeter to the battery terminals and verify that the reading is greater than 13 volts. Rev the car up and verify that the voltage reading increases with RPM.

MGB Alternator Conversion

Installation Instructions

For 1962 to 1967 MGB

Tools required: Small and medium flat blade screwdriver, phillips head screwdriver, 11/32" wrench, 7/16" wrench, 1/2" wrench, 5/8" wrench, 7/16" socket with extension, 1/2" socket, 5/8" socket, 22mm socket, center punch, hammer, 1/4" drill bit, electric drill, deadblow hammer, air impact gun, pry bar, wire cutters, wire crimpers, multimeter.

Note: The vehicle must be converted to negative ground before the alternator can be installed. These instructions will outline this polarity conversion as a part of the alternator conversion.

Vehicle Preparation - Positive Ground to Negative Ground Conversion

1. Remove the battery cover behind the seats using a screwdriver to release the dzus fasteners. Disconnect and remove the battery, or both batteries if still configured for a dual 6 volt set up, using a 1/2" wrench.
2. Disconnect the Brown/Green and Brown/Yellow wires from the generator.
3. For the installation of the Lucas alternator the ignition coil will have to be relocated to the engine bay side of the right fender well, similar to later MGB coil locations. Remove the coil mounting bracket from the engine mount using a 7/16" wrench and socket. Be sure to return the bolts, nuts and washers to the engine mount. (Illustration 1)



Illustration 1

Limora Zentrallager
 Industriepark Nord 21
 D- 53567 Buchholz
 Tel: 49 (0) 2683- 97 99 0
 E-Mail: Limora@Limora.com
 Internet: www.Limora.com

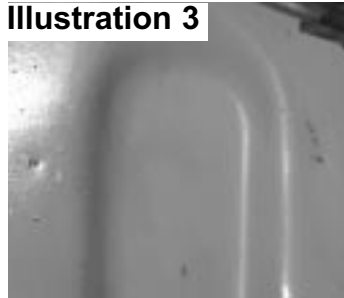
Filialen:
 • Aachen • Berlin • Bielefeld
 • Düsseldorf • Hamburg
 • Köln • Stuttgart

Remove the coil and its primary bracket from the mounting bracket using a 7/16" wrench and socket tools. Locate a new place for the coil as shown, using the primary bracket to mark the hole locations. (Illustration 2) Using a center punch and hammer, make two dimples at the center of the marks. This will insure that the drill bit will not walk around when the holes are being started. (Illustration 3)

Illustration 2



Illustration 3



Using a drill with 1/4" drill bit, locate the tip of the bit to the dimple and make two holes. (Illustration 4) Install the coil at the new location using the same hardware from the previous bracket. (Illustration 5) Reverse the positions of the two wires on the ignition coil. Note: If the vehicle uses an electronic ignition it will have to be replaced with a negative ground electronic ignition.

4. If an ammeter or voltmeter has been fitted the position of these wires will need to be reversed.

Illustration 4

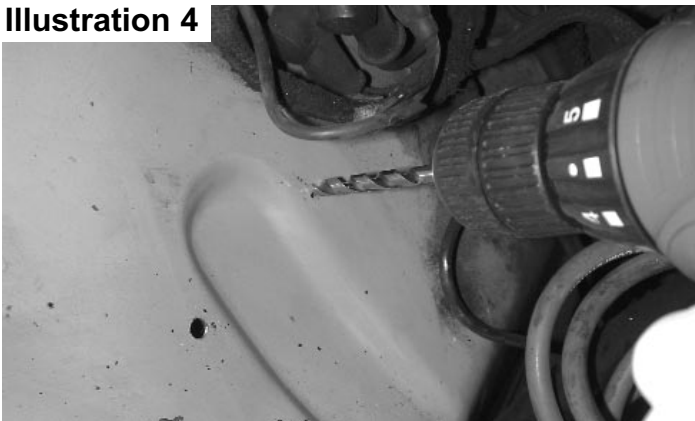
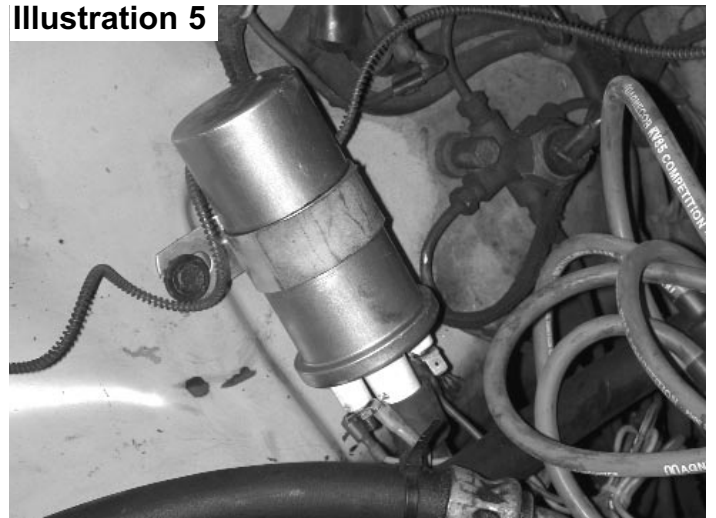


Illustration 5

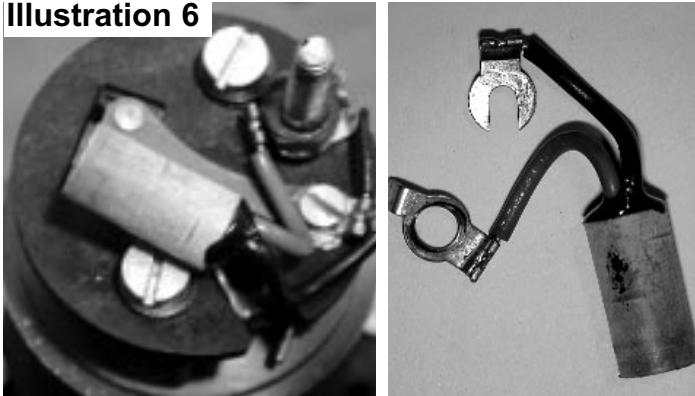


5. If the vehicle uses an original equipment pre-1968 fuel pump move on to the next step. If an S.U. replacement fuel pump has been installed and uses a positive ground diode then simply reverse the diode wires. This will require that the fuel pump be removed. Place an oil pan underneath the inlet and outlet ports on the fuel pump. Disconnect both the inlet and outlet lines from the fuel pump using a 5/8" wrench. Remove the fuel pump bracket mounting bolts using a 7/16" socket with extension. Maneuver the fuel pump and bracket assembly out of the vehicle and drain the rest of the fuel into the oil pan. Remove the blue S.U. Tape and the wider electrical tape underneath. Remove the nut, washer, and male connector to free the plastic shroud at the end of the fuel pump using an 11/32" wrench. The diode should be underneath this shroud. Note: If there is a small green circuit board underneath the shroud then the fuel pump is solid state and will have to be replaced. Remove the diode wires using a small screwdriver and an 11/32" wrench. Note the position of the two sets of contact points. In order to switch the wires the eyelet connector should be cut using wire cutters to resemble the forked connector. Make sure the contact points are aligned when refitting the diode. Reassemble the fuel pump replacing the electrical tape if necessary. The fuel pump can now be reinstalled. Note: The position of the two leads do not need to be reversed upon reinstallation because the pump itself is not polarity sensitive, just the diode. (Illustration 6)

Limora Zentrallager
 Industriepark Nord 21
 D- 53567 Buchholz
 Tel: 49 (0) 2683- 97 99 0
 E-Mail: Limora@Limora.com
 Internet: www.Limora.com

Filialen:
 • Aachen • Berlin • Bielefeld
 • Düsseldorf • Hamburg
 • Köln • Stuttgart

Illustration 6



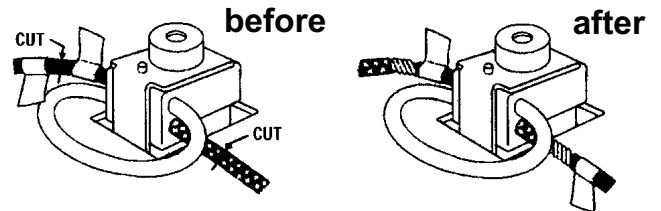
6. If the vehicle uses a mechanical tachometer move on to the next step. If the vehicle uses an electronic tachometer it will need to be converted. To convert the tachometer, John Twist offers the following advice:

Two changes are necessary to completely convert your early positive ground electric tach:

- a.) The wires must be reversed at the „white wire loop“ at the back of the unit, and
 - b.) the power and earth connections must be reversed inside the case.
- a.) The wire in the „white wire loop“ comes from the key switch and travels to the hot side of the coil. Referring to the illustration below, select one of the wires and tag it with two pieces of tape for identification. Then, cut the wire between the pieces of tape, and cut the other wire to the same length. Reverse the connections (now there is one piece of tape on each wire) and solder them (remember, this is the power lead for the coil and is unfused). Tape up the connections carefully. When later replacing the plastic block on the back of the tach, ensure that the metal band around the block is carefully positioned. This is a necessary part of the electromagnetic pickup.
 - b.) To reverse the power wire and earth wire inside the unit, it is necessary to remove the chrome ring, the glass face and the glare shroud. The chrome ring is usually removed with great difficulty by prying the tabs with a small screwdriver, then rotating until the tabs can fit through the slots in the case. Remove the two screws on the back of the unit that hold the internals to the case (not the two whose heads fit in holes in the case), and allow those internals to drop carefully into your hand. Don't bend the needle! The spade terminal is the power connection, just next to this is the earth connection. A resistor is soldered to one of these connections, and a green wire to the other. Unsolder these ends of the green wire and the resi-

stor from their current positions. Re-solder the green wire to where the resistor was connected, and the resistor to where the green wire was connected. Reassemble the unit after cleaning the glass. (Illustration 7)

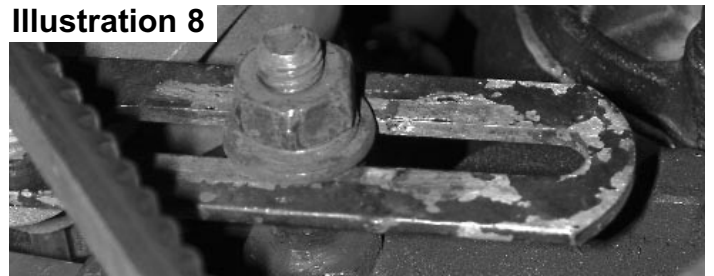
Illustration 7



Alternator Installation

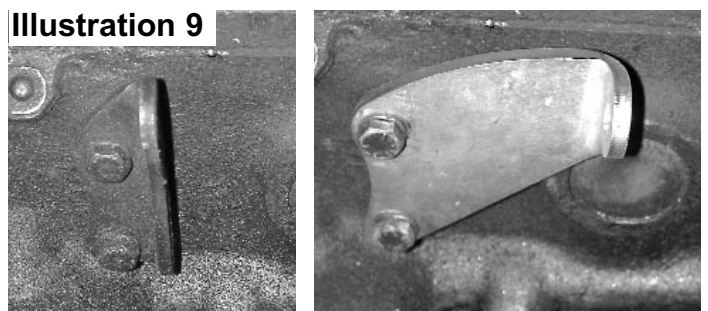
1. Loosen and remove the nut and lock washer on the pillar block using a 5/8" socket to allow the generator to rotate down and remove the drive belt. (Illustration 8) Remove the adjustment link from the generator using a 1/2" socket.

Illustration 8



2. Remove the pivot bolts from the water pump ear and the rear mounting bracket using a 1/2" wrench and 1/2" socket.
3. Remove the rear bracket from the block using a 1/2" socket and replace with the new bracket supplied in the kit using the same hardware. Do not tighten down the bracket yet. (Illustration 9)

Illustration 9



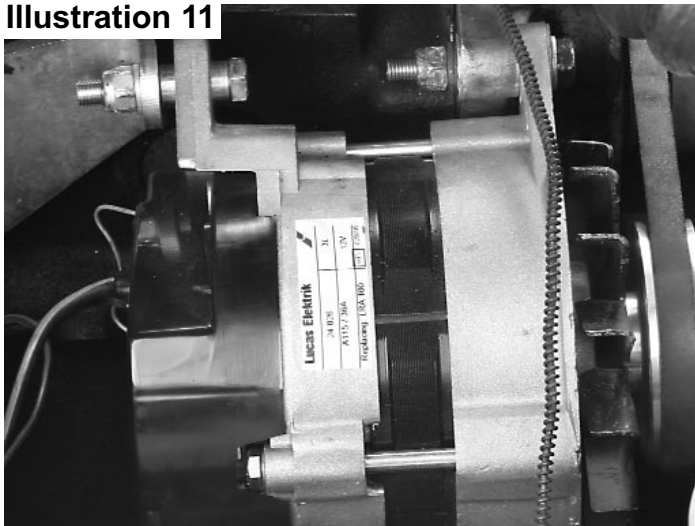
Limora Zentrallager
 Industriepark Nord 21
 D- 53567 Buchholz
 Tel: 49 (0) 2683-97 99 0
 E-Mail: Limora@Limora.com
 Internet: www.Limora.com

Filialen:
 • Aachen • Berlin • Bielefeld
 • Düsseldorf • Hamburg
 • Köln • Stuttgart

4. Fit the alternator with the fan and pulley supplied in the kit. For vehicles with superchargers, use the 4-rib pulley from the generator. It may help to seat the pulley against the fan by tapping the outer edges evenly with a dead-blow or brass hammer. Make sure that the fan blades point toward the alternator. Wrap a shop rag around the fan and hold it firmly, but in a safe manner so that it can be released without damage to the hand or fingers. Tighten the nut with two brief (1 sec. max.) trigger pulls on an air impact gun using a 22mm socket. Check that the fan is not loose and repeat the tightening of the nut if necessary. Attach the adjustment link from the generator to the alternator respective to its original position using the M8x1.25x20 bolt and lock washer provided. For vehicles with superchargers, install the adjuster block provided without the lock washer. Do not tighten this bolt yet.

5. Fit the alternator to the engine by first sliding the long slot in the adjustment link over the threaded stud on the pillar block. Line up the front-most mounting ear with the water pump mounting ear and insert the original bolt with one of the flat washers provided. Line up the rear-most mounting ear with the new alternator bracket and insert the 5/16-24 bolt provided. Return the pillar block nut and lock washer to the pillar block. Return the nut and washer to the front mounting bolt with the added flat washer between the water pump mounting ear face and the lock washer. Return the nut and lock washer from the original rear mounting bolt to the new mounting bolt. Leave the mounting bolts snugly tightened. Make sure that the alternator is at full droop. Connect the Brown/Green wire and Brown/Yellow wire to the alternator. The Brown/Yellow wire should go on one of the two larger posts. (Illustration 11)

Illustration 11



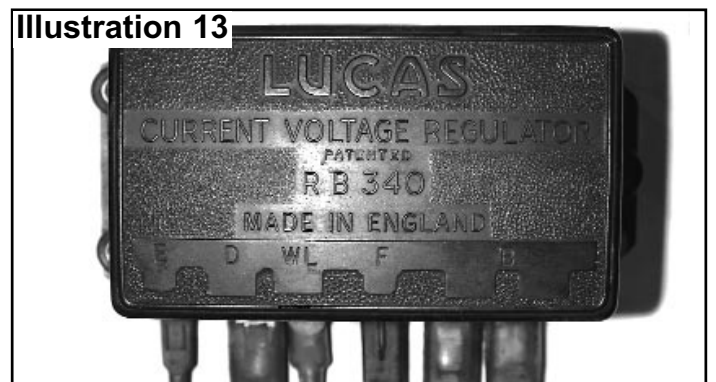
6. Fit the new belt by first locating the crank pulley with the bottom of the belt and then wrapping it around the water pump pulley and finally walking the belt onto the alternator pulley. Tighten the belt using a shop towel and a pry bar wedged in between the alternator and the block. (Illustration 12) Tighten the pillar block nut to fix the adjustment link. Then tighten the bolt attaching the link to the alternator and the front mounting bolt. Next tighten the rear alternator mounting bolt and then the bracket mounting bolts. The order in which these bolts are tightened is crucial to the fitment of the new mounting bracket. Check that the belt deflects 3/16" - 1/4" at the center of the belt between the water pump pulley and the alternator pulley and adjust as needed.

Illustration 12



7. Remove the regulator assembly using a phillips head screwdriver and turn over. (Illustration 13)

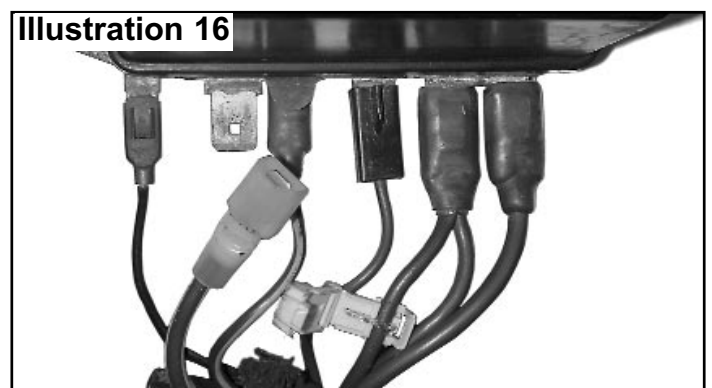
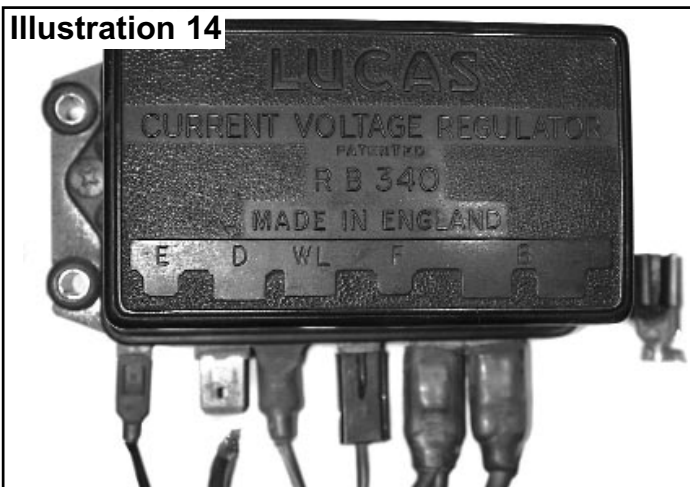
Illustration 13



Limora Zentrallager
 Industriepark Nord 21
 D- 53567 Buchholz
 Tel: 49 (0) 2683- 97 99 0
 E-Mail: Limora@Limora.com
 Internet: www.Limora.com

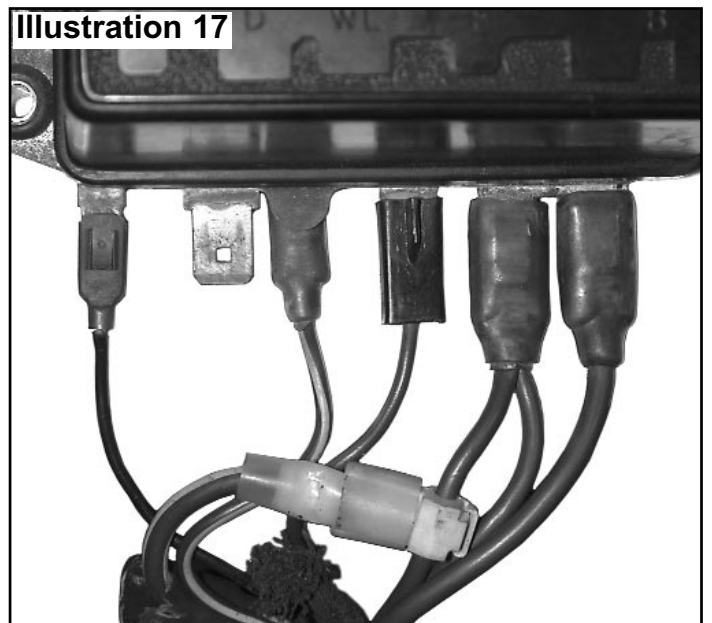
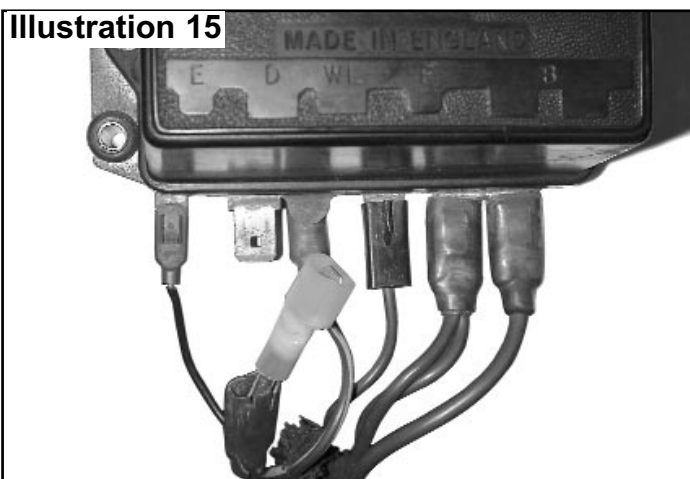
Filialen:
 • Aachen • Berlin • Bielefeld
 • Düsseldorf • Hamburg
 • Köln • Stuttgart

Remove the Brown/Yellow wire on the „D“ terminal and cut off the spade connector with a set of wire cutters. Strip the wire so that about 1/4" of insulation is removed. (Illustration 14)



Connect the Brown/Yellow (yellow male spade connector) and the Brown wire (yellow wire tap). (Illustration 17)

Insert the wire into the yellow male spade connector provided and crimp it in place using a set of wire crimpers. (Illustration 15)



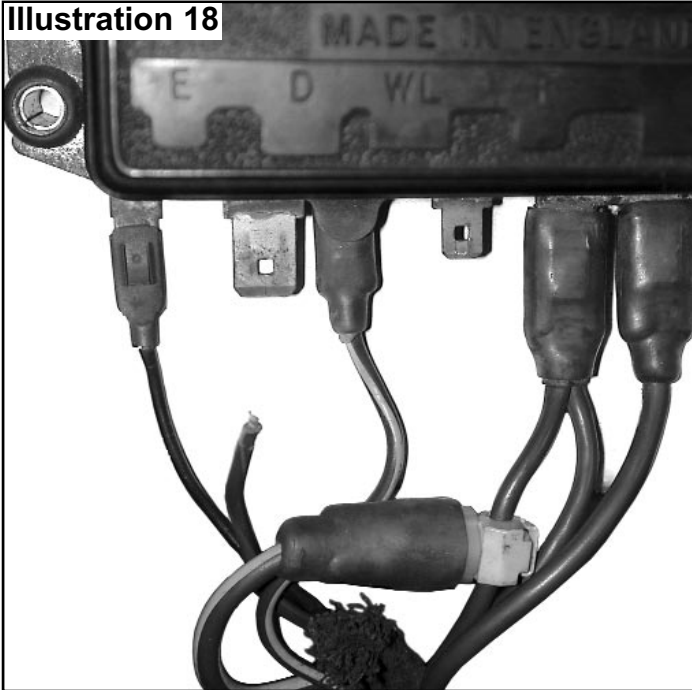
Remove the Brown/Green wire from the „F“ terminal and cut off the spade connector with a set of wire cutters. Strip the wire so that about 1/4" of insulation is removed. (Illustration 18)

There are two posts with three brown wires at the „B“ terminal. Select the post with the spade connector that merges two wires and attach the yellow wire tap provided. This may require the use of a set of pliers to effectively pierce through the wire.

Limora Zentrallager
 Industriepark Nord 21
 D- 53567 Buchholz
 Tel: 49 (0) 26 83- 97 99 0
 E-Mail: Limora@Limora.com
 Internet: www.Limora.com

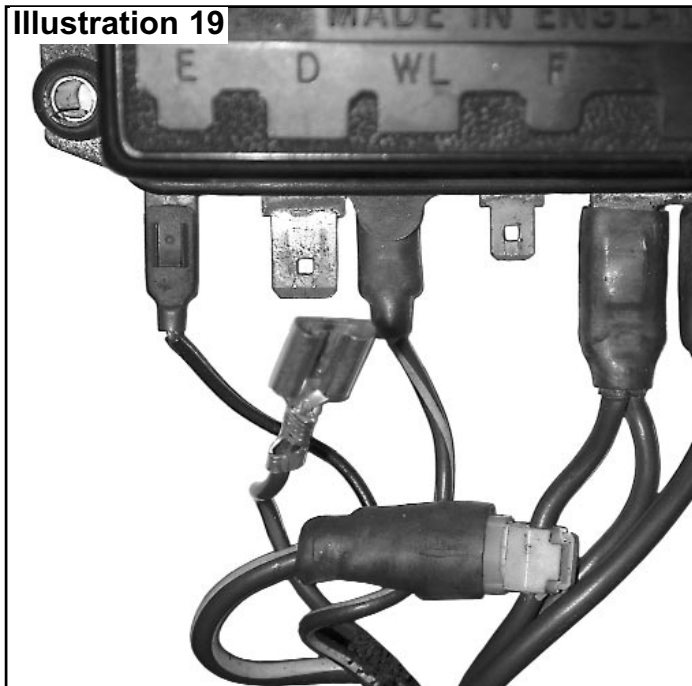
Filialen:
 • Aachen • Berlin • Bielefeld
 • Düsseldorf • Hamburg
 • Köln • Stuttgart

Illustration 18



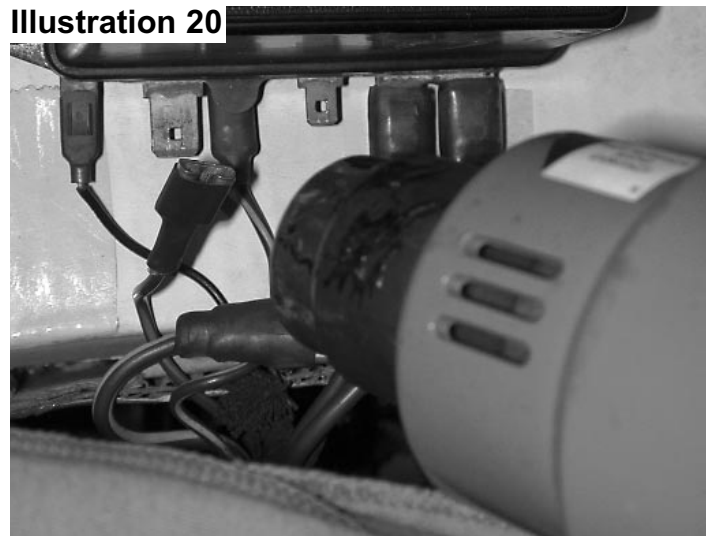
Attach the 3/8" female spade connector provided using a set of wire crimpers. (Illustration 19)

Illustration 19



Slide the section of heat shrink provided over the spade connector and apply heat to set it in place. (Illustration 20)

Illustration 20



Attach the Brown/Green wire to the „D“ and mount the regulator. If the regulator utilizes screw type post then follow the same procedure omitting the modifications to the wires.

8. Swap the connectors on the battery cables using a 7/16" wrench. Refit the battery, batteries, making sure that the ground cable is attached to the negative post. For dual six volt battery set up one negative post is connected to the ground cable and the positive post on the other battery is connected to the starter cable. The wire connecting the two batteries can simply be turned around. (Illustration 21)

Illustration 21



LimoraZentrallager
 Industriepark Nord 21
 D- 53567 Buchholz
 Tel: 49 (0) 2683- 97 99 0
 E-Mail: Limora@Limora.com
 Internet: www.Limora.com

Filialen:
 • Aachen • Berlin • Bielefeld
 • Düsseldorf • Hamburg
 • Köln • Stuttgart

9. Turn the key to the on position and do not start it. Check all of the modified areas and insure that there is no sparking or smoke. Now start the car bring to steady idle. Attach a multimeter to the battery terminals and verify that the reading is greater than 13 volts. Rev the car up and verify that the voltage reading increases with RPM. (Illustration 22)

Illustration 22

