

AMMETER

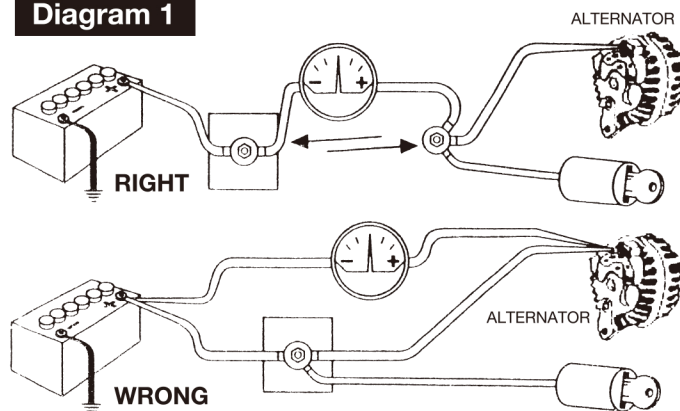
An ammeter measures the amperage (volume of electricity) passing through it. The goal of installation is to reroute all the power through the ammeter (**Diagram 1**) that drains or charges the battery, except the power needed to operate the starter motor. When the vehicle is operating above idle speed, the ammeter should be indicating "0", or a slight charge condition, which shows a balance of charging and drain on the battery.

Read all precautions and installation instructions carefully before proceeding with any installation work as the potential for electrical damage or fire exists if an ammeter is improperly connected.

Precautions

1. Never ground either of the connection posts for the ammeter.
2. Always use a wire size that is rated to handle an electrical load equal to or greater than the manufacturer's specified output of your alternator/generator.
3. Never connect the ammeter into the circuit between the battery and the starter/solenoid.
4. Good electrical connections are important for maintaining gauge accuracy and avoiding heat buildup in the wiring.

Diagram 1



INSTALLATION

As the many different vehicles that have been produced have minor differences in the routing and connection points of their charging systems, it is not possible to provide specific information for each vehicle. The eight drawings of **Diagram 2** cover the relevant connection points of virtually every charging system in modern vehicles. You will need to determine which drawing matches your system. If you have difficulty in locating any of these connection points refer to a wiring diagram in an owner/service manual or contact your local dealer/auto electrical repair shop for assistance.

The following connection points are represented in the drawings of **Diagram 2**:

B - Battery: the positive terminal

S - Starter/Solenoid: the main power wire to the battery (largest wire)

A - Alternator/Generator: the main power wire to the battery (largest wire at alternator) and, in Drawings 1 & 5, the wire from the ignition/accessories

I - Ignition/Accessory: the main power wire, which receives power regardless of ignition key position

Z - Junction: in Drawings 4 & 8, where "I" connects into the circuit

Note: The circuit from the battery (B) to alternator (A) or starter (S) to alternator (A) may also contain a junction block, horn relay or headlight relay, which is not shown. One of these is likely to be connection "Z" in Drawings 4 & 8. These locations are often handy connections that you can disconnect and then attach the ammeter wires to.

1. After you have identified which BEFORE Drawing represents your charging system, observe the corresponding AFTER Drawing which indicates how to connect the ammeter into your charging system.
2. Find a convenient location in the circuit from the battery to the alternator (Drawings 1 - 4) or the starter to the alternator circuit (Drawings 5 - 8) where you can break the circuit by unbolting a connection. In Drawings 4 & 8, this should be at Connection "Z".
3. If your system matches Drawings 2, 3 or 6, disconnect the Ignition/Accessory (I) wire at "B" or "S".
4. Choose a wire size from the table that is a large enough gauge (larger size wire has a smaller gauge number) to handle the maximum rated output of

your vehicle's alternator/generator. Obtain two lengths of this size wire that are each long enough to go from the location that was chosen in Step 2, to the ammeter's mounting location at the dashboard. Attach closed-eye type connectors (**Diagram 3**), to each end of both wires.

5. At the location you chose in Step 2, disconnect all the wires at the connection except the wire going to the battery.
6. Connect an end of one of the wires you obtained in Step 4 to all the wires you disconnected in Step 5.
7. Connect an end of the remaining wire from Step 4 to the connection in Step 5 that still has the battery wire attached to it.
8. If your system matches Drawings 2, 3, or 6, connect the wire you disconnected in Step 3 to the wires already connected in Step 6. Use an additional piece of similar sized wire to join these wires, if necessary.
9. Insulate all connections and use a suitable method to fasten down the wires in Step 6 and 8.
10. Route the two ammeter wires to the mounting location for the ammeter. Insulate the opening in the firewall they pass through.
11. Mount the gauge and attach the remaining end of the wire from Step 6 to the ammeter connection post marked with a "+" sign. Follow the sequence of washer-wire-nut shown in **Diagram 3**.
12. Attach the remaining end of the wire from Step 7 to the ammeter connection post marked with a "-" sign, again following **Diagram 3**.
13. Reconnect the battery ground cable. As you do, watch for sparks and check if the wiring you worked with is getting warm. If either condition is noted, IMMEDIATELY disconnect the battery ground cable and read the **Troubleshooting** section.

TROUBLESHOOTING

1. If, when you reconnected the battery ground cable, you noticed sparks or any of the wiring getting warm, check that all connections are properly located, and insulated from ground.
2. With the vehicle not running and the battery reconnected, turn on the headlights' high beam and observe the ammeter. The gauge should show a drain (-) condition. If a charge (+) condition is shown, reverse the wires on the "+" and "-" posts on the back of the ammeter. If the ammeter shows no change, the circuit from Ignition/Accessory (I) has not been properly included in the connections to the "+" side of the gauge.

Diagram 2

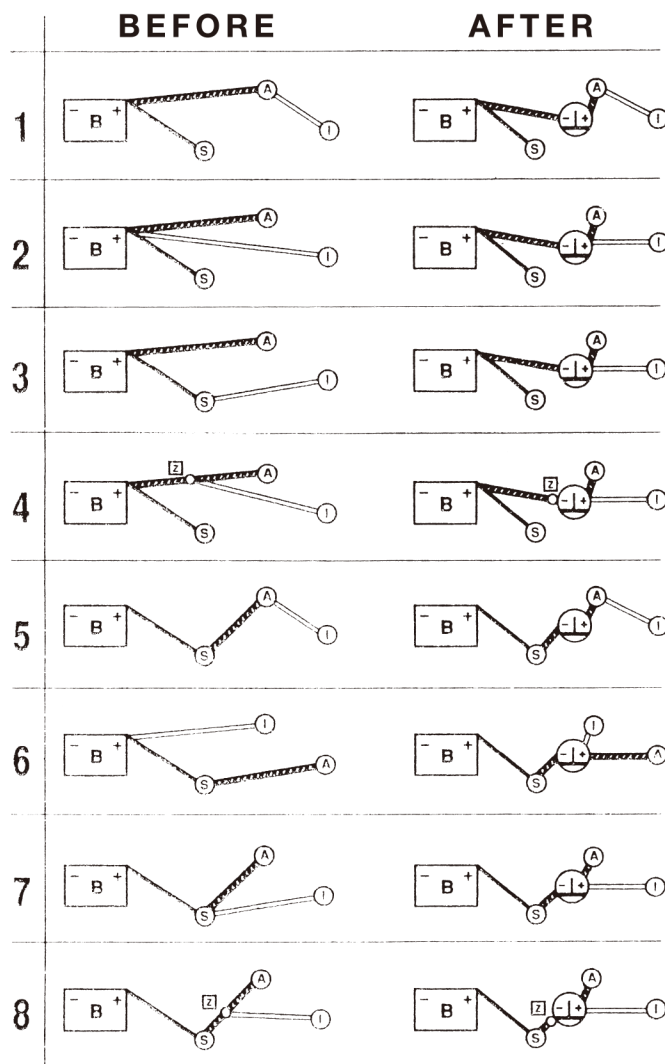
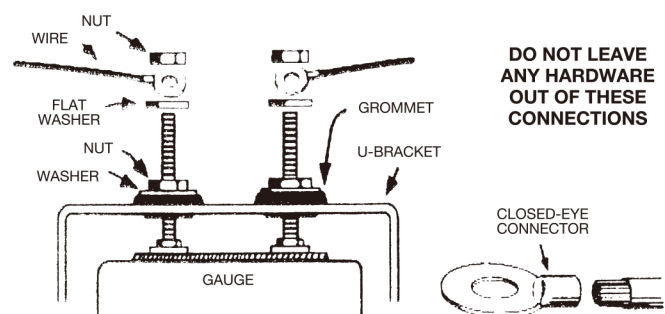


Diagram 3



WIRE SIZE	MAX. AMP. RATING
12	25
10	40
8	65
6	95
4	125