Sun CONSUMER PRODUCTS

# INSTALLATION INSTRUCTIONS

## SUN ELECTRIC GAUGES

SEG-1101 &
AMP-45B Ammeters

### AMMETER

The ammeter is a device which indicates direction and quantity of current flow in an electrical system. Properly installed, it will indicate the rate of battery discharge or discharge.

In a normal system, the ammeter will show a discharge when electrical accessories are used while the engine is not operating. For a rather brief period after the engine is started the ammeter should show charge to indicate that the electrical power supplied by the battery for starting is being replenished. After the engine has been operated for a reasonable period of time, the ammeter should show zero, or just a little to the plus side.

If the ammeter continuously shows readings quite different than those described above, it is an indication of impending trouble. The battery, the starting system and the charging system should be thoroughly tested and serviced or repaired as necessary.

### THE ELECTRICAL SYSTEM

All electrical systems require two paths to carry electrical power. One to carry power from its source to an accessory; and the other, to carry power from the accessory back to its source. In a truck or large boat, its metal structure serves as one of its paths, and is commonly referred to as "ground." A ground symbol, similar to this ⏚, is used in diagrams to represent an electrical connection to the vehicle structure.

In simplified terms, the automotive electrical system consists of three main branches that all meet at a common point. One branch leads from the charging system, one leads from most of the accessory circuits, while the third leads from the battery. For proper operation, the ammeter should be connected into the system at a point between the common junction and the branch leading to the battery.

Figures 1 and 2 represent very much simplified diagrams of a vehicle electrical system. Note that in Figure 1, the main branches come together at a common point somewhere in the wiring harness. Figure 2 shows a system where the common junction point is located at one terminal of the starter switch. For proper indications, the ammeter shunt must be connected into a circuit gap created between the common junction point and the branch leading to the battery. Figures 3 and 4 show correct ammeter shunt connections in the simplified electrical system diagrams. The ammeter shunt should never be connected between the battery and the starter switch.

### AMMETER INSTALLATION

1. Select a mounting location that will provide the best visibility from a normal driving position.
2. For panel mounting, cut a round hole into the panel. (2 19/32'' for AMP-45B or 2/16'' for SEG-1101.)
3. Insert the ammeter into the opening and secure it in place with the mounting bracket as shown in Figure 5.
4. If meter is mounted in a non-metalic panel, install a wire from the mounting bracket to the metal structure of the car as illustrated.

### ELECTRICAL CONNECTIONS

1. Disconnect the battery ground cable to avoid accidental grounding and damage to the car's electrical system.
2. Refer to the make and model listing to determine which illustration most closely indicates an ideal place to connect an ammeter shunt into the system of your car.
3. Break into the electrical system as indicated, and securely connect the ammeter shunt into the gap created.
4. Route the ammeter leads through an existing grommet in the firewall and securely connect one to each ammeter terminal.

NOTE: Do not shorten or add wire to the shunt leads. They have been carefully calibrated to give your ammeter a high degree of accuracy.

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# MOUNTING AND INSTALLATION INSTRUCTIONS

# SUN AMMETER Model CP-7525 (AMP-45)

## THE AMMETER AND WHAT IT CAN TELL YOU

The ammeter indicates direction and quantity of electrical current flow in a system. Properly installed, it will indicate the rate of battery discharge or charge.

In a normal system, the ammeter will show a discharge when accessories are used while the engine is not operating. With the engine started and running at a reasonable speed, the ammeter should show charge to indicate that the electrical power supplied by the battery for starting is being replenished. After the engine has been operated for a period of time, the ammeter reading should begin to return towards zero. When the battery has become fully charged or nearly so, the ammeter should read just a little to the plus side of zero.

If the ammeter continuously shows readings quite different than those just described, it is an indication of impending trouble. Should the ammeter indicate discharge most of the time, it could mean a loose fan belt or a charging system failure. On the other hand, continuously higher than normal charge rates could be caused by a defective regulator, or bad battery. Should any abnormal indications be observed, the battery, the starting system and the charging system should be thoroughly tested, and serviced or repaired as necessary.

## AMMETER COMPONENTS AND ACCESSORIES

| | | |
|---|---|---|
| Internal Lighting Kit | — | Included |
| U-Bracket | — | Included |
| Wiring | — | Included |
| Instructions | — | Included |
| Gauge Panel | — | Optional |
| Gauge Cup | — | Optional |

## MOUNTING INSTRUCTIONS

Select a mounting location that will provide the best visibility from a normal driving position. Snap the light assembly into place in the socket provided on back of meter.

**In-Dash Mounting** — Your new Sun ammeter can be mounted in the vehicle's dash. Cut a round hole, 2-19/32" in diameter, into the dash and secure the meter using the U-bracket provided. (Check behind panel for clearance before cutting. Also be sure not to cut thru existing wires.)

**Gauge Panel Mounting** — Your Sun ammeter may also be panel mounted in a 1, 2 or 3 hole panel using the U-bracket provided.

**Gauge Cup Mounting** — The CP-7525 ammeter can also be mounted in the optional CP-7541 cup which can be placed on the steering column, on top of or under the dash.

## ELECTRICAL CONNECTIONS

1. Disconnect the battery GROUND cable to avoid accidental grounding and damage to the car's electrical system.

2. Refer to the Ammeter Application Listing to determine which Connection Chart illustration most closely indicates an ideal place to connect the ammeter into your car's electrical system.

3. Connect the shunt into the system as illustrated in the Connection Chart. Be certain that all connections are securely fastened. Wire connections should be insulated with electrical tape, and wire leads should be routed so they will not interfere with moving parts or contact any hot engine surfaces. Metal portions of the shunt should not be allowed to contact any metal part of the vehicle.

4. Route the ammeter leads through an existing opening in the fire wall to the driver's compartment. Make sure that the wires will not rub against any sharp edges or corners.

   **NOTE: Do not shorten or add wire to the ammeter leads. They have been carefully calibrated to give your ammeter a high degree of accuracy.**

5. Securely connect an ammeter lead to each ammeter terminal.

6. Connect the long lead of the ammeter light to the instrument light terminal of the head lamp switch, fuse block lamp terminal, or other convenient source within the vehicle's light circuit.

7. Connect the short wire of the light assembly to a good ground.

8. Recheck all steps of your installation and wiring to make sure all connections are correct, properly insulated and that the wires have been properly routed.

9. Reconnect the battery ground cable.

10. Turn on headlamps and observe ammeter.
    Ammeter should be illuminated.

    Ammeter should read discharge (to the left or minus side of the dial).

If the ammeter is not illuminated, recheck condition of lamp bulb, light switch and ground connections.

If the meter reads to the right or plus side of the dial, disconnect battery and reverse the lead connections on the back of the meter. (Reconnect battery and recheck.)

## AMMETER APPLICATION LISTING

| MAKE | APPLICATIONS | ILLUSTRATION |
|---|---|---|
| **American Motors** | | |
| | 1969 Through 1978 | A |
| | 1977 | A or E |
| | 1974 | A or B |
| **Buick** | | |
| | 1969 Through 1978 | B |
| **Cadillac** | | |
| | 1977 and 1978 (Except Eldorado) | B |
| | Earlier Models Not Applicable | |
| **Chevrolet** | | |
| | 1972 Through 1978 | B |
| | 1969 Through 1971 | C |
| **Chrysler** | | |
| | 1976 Through 1978 Not Applicable | |
| | 1969 Through 1975 | D |
| **Datson** | | |
| | 1975 All Models | G |
| | 1974 All Models Except 260Z | G |
| | 260Z | B* |
| | 1973 All Models Except 510 | G |
| | 510 | B |
| | 1972 1200 and 620 | G |
| | 510 | B |
| | 240Z | B* |
| | 1971 All Models Except 411 and 520 | A* |
| | All and 520 | G |
| | 1968 Through 1970 | B* |
| **Dodge** | | |
| | 1976 Through 1978 Not Applicable | |
| | 1969 Through 1975 | D |

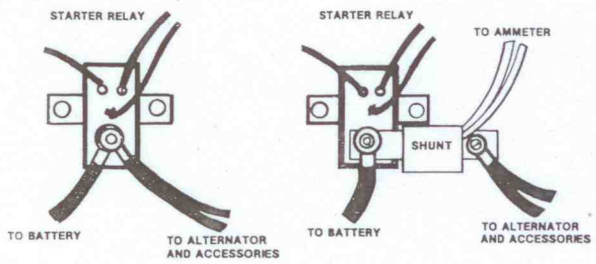
| MAKE | APPLICATIONS | ILLUSTRATION |
|---|---|---|
| **Ford** | | |
| | 1969 Through 1978 | A |
| **Jeep** | | |
| | 1969 Through 1978 | A |
| **Honda** | | |
| | 1973 Through 1975 | G |
| | 1972 | B |
| **Lincoln** | | |
| | 1975 Through 1978 | A |
| | 1971 Through 1974 | E |
| | 1969 and 1970 | A |
| **Mercury** | | |
| | 1969 Through 1978 | A |
| **Oldsmobile** | | |
| | 1972 Through 1978 | B |
| | 1969 Through 1971 | F |
| **Plymouth** | | |
| | 1976 Through 1978 Not Applicable | |
| | 1969 Through 1975 | D |
| | 1974 | B or D |
| **Pontiac** | | |
| | 1969 Through 1978 | B |
| **Toyota** | | |
| | 1974 and 1975 (Except Hi Lux) | G* |
| | Hi Lux | B |
| | 1973 | G |
| | 1972 | B |

| MAKE | APPLICATIONS | ILLUSTRATION |
|---|---|---|
| **Volkswagen** | | |
| | 1972 Through 1975 | |
| | All Models Except Type 2 and 4 | G |
| | Type 2 | B |
| | Type 4 Not Applicable | |

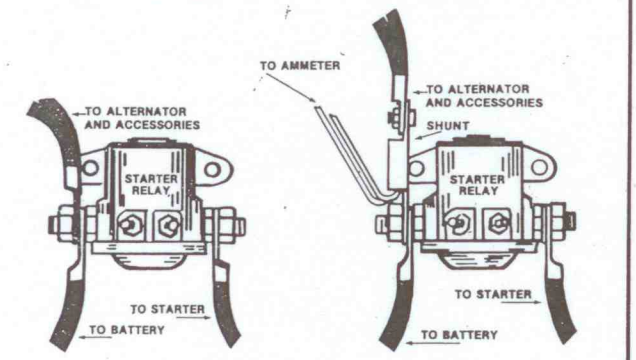
* Vehicle Is Factory Equipped With An Ammeter

Refer To Connection Chart

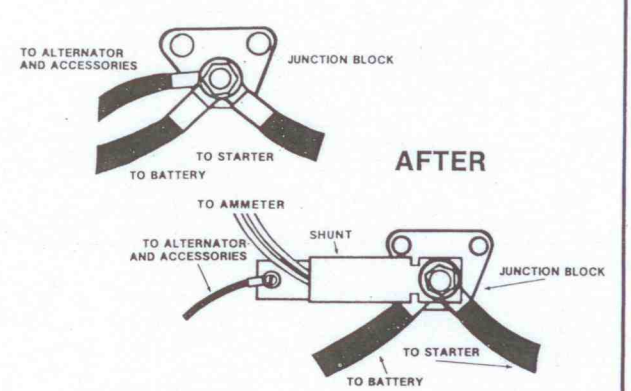
D.



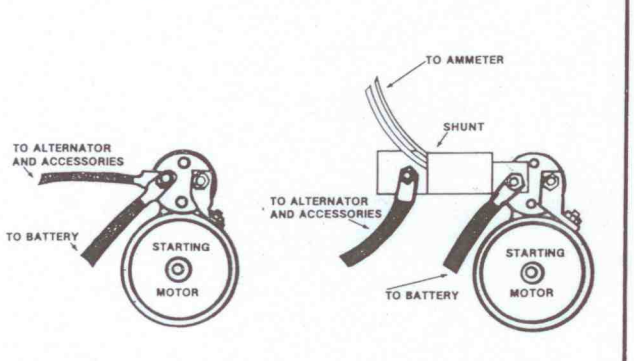

A.



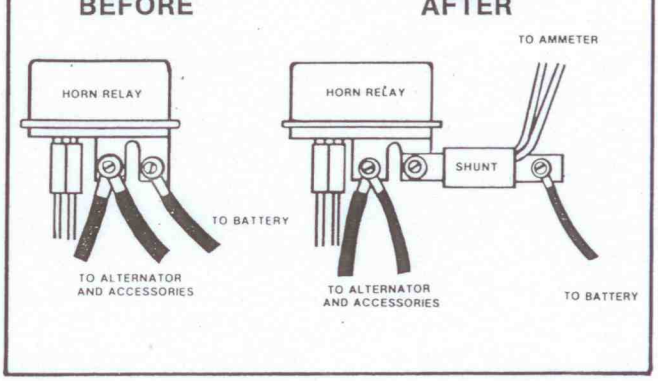

E.



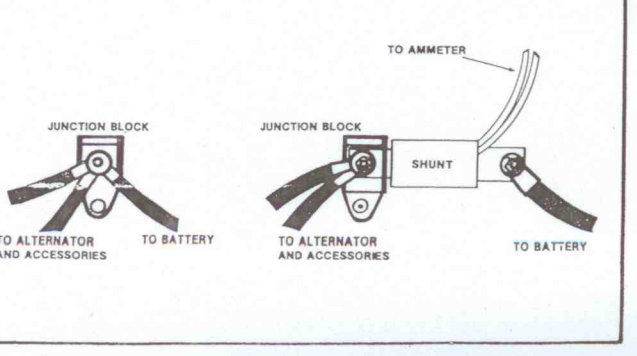

B.




F.




C.

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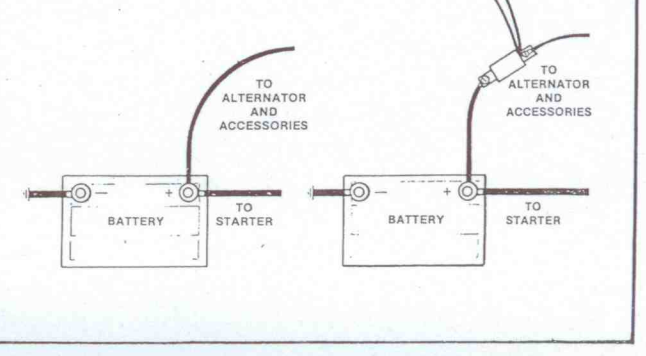
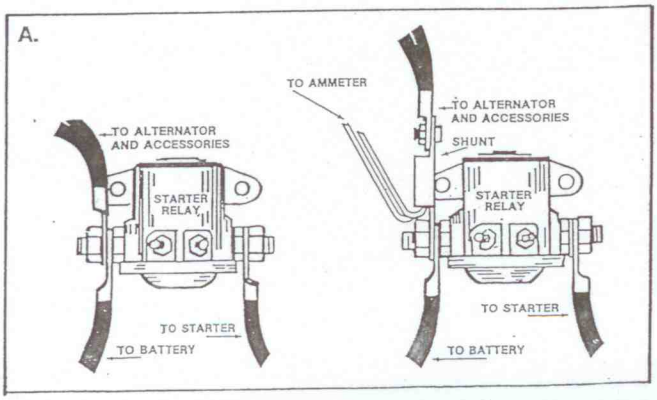


| | |
|---|---|
| **AMERICAN MOTORS** | |
| 1969 through 1976 | A |
| 1974--------- | A or B |
| **BUICK** | |
| 1969 through 1976 | B |
| **CHEVROLET** | |
| 1969 through 1971 | C |
| 1972 through 1976 | B |
| **CHRYSLER** | |
| 1969 through 1975 | D |
| **DODGE** | |
| 1969 through 1975 | D |
| **FORD** | |
| 1969 through 1976 | A |
| **JEEP** | |
| 1970 through 1975 | A |
| **LINCOLN** | |
| 1969 and 1970 | A |
| 1971 through 1974 | E |
| 1975 and 1976 | A |
| **MERCURY** | |
| 1969 through 1976 | A |
| **OLDSMOBILE** | |
| 1969 through 1971 | F |
| 1972 through 1976 | B |
| **PLYMOUTH** | |
| 1969 through 1975 | D |
| 1974--------- | B or D |
| **PONTIAC** | |
| 1969 through 1976 | B |
| 1971--------- | B or F |

A.

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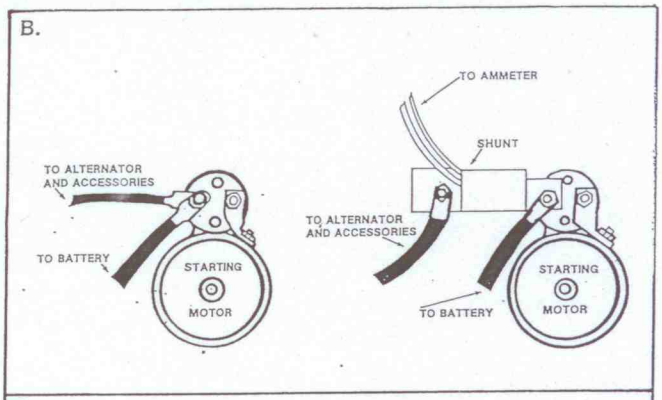


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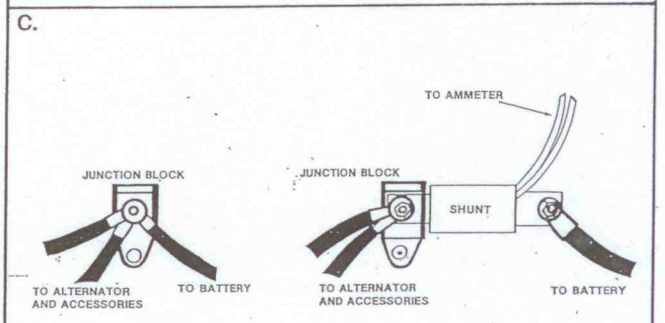
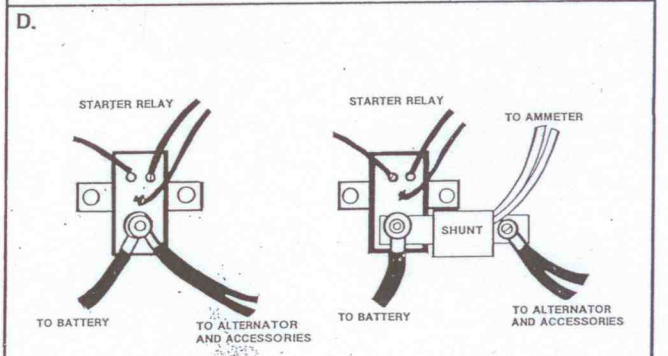



D.

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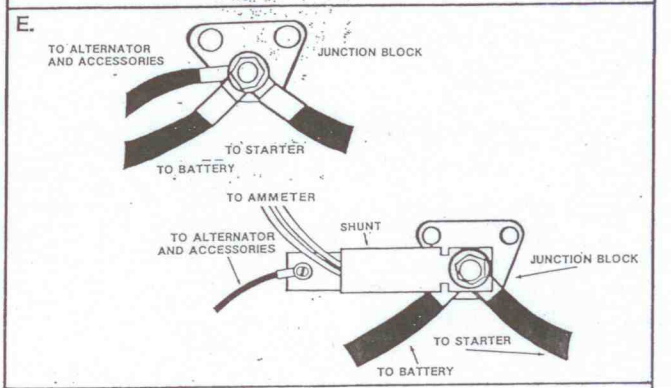
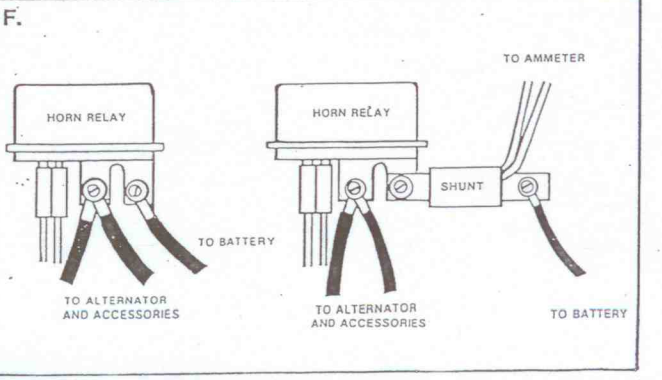



F.



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5. (For SEG-1101) Insert the light socket assembly into the recess at the rear of the meter, and connect its lead to the instrument light terminal of the headlamp switch, fuse block lamp terminal, or other convenient source.
   a. (For AMP-45B) Insert the light socket assembly into the recess at the rear of the meter.
   b. Connect the short wire from the light assembly to a good ground.
   c. Connect the long lead to the instrument light terminal of the headlamp switch, fuse block lamp terminal, or other convenient source.
6. Reconnect battery ground cable.
7. Turn on headlamps and note ammeter indication. It should read to the left or minus side of the scale. If it reads to the right or positive side of the scale, disconnect battery again and reverse leads on back of meter.

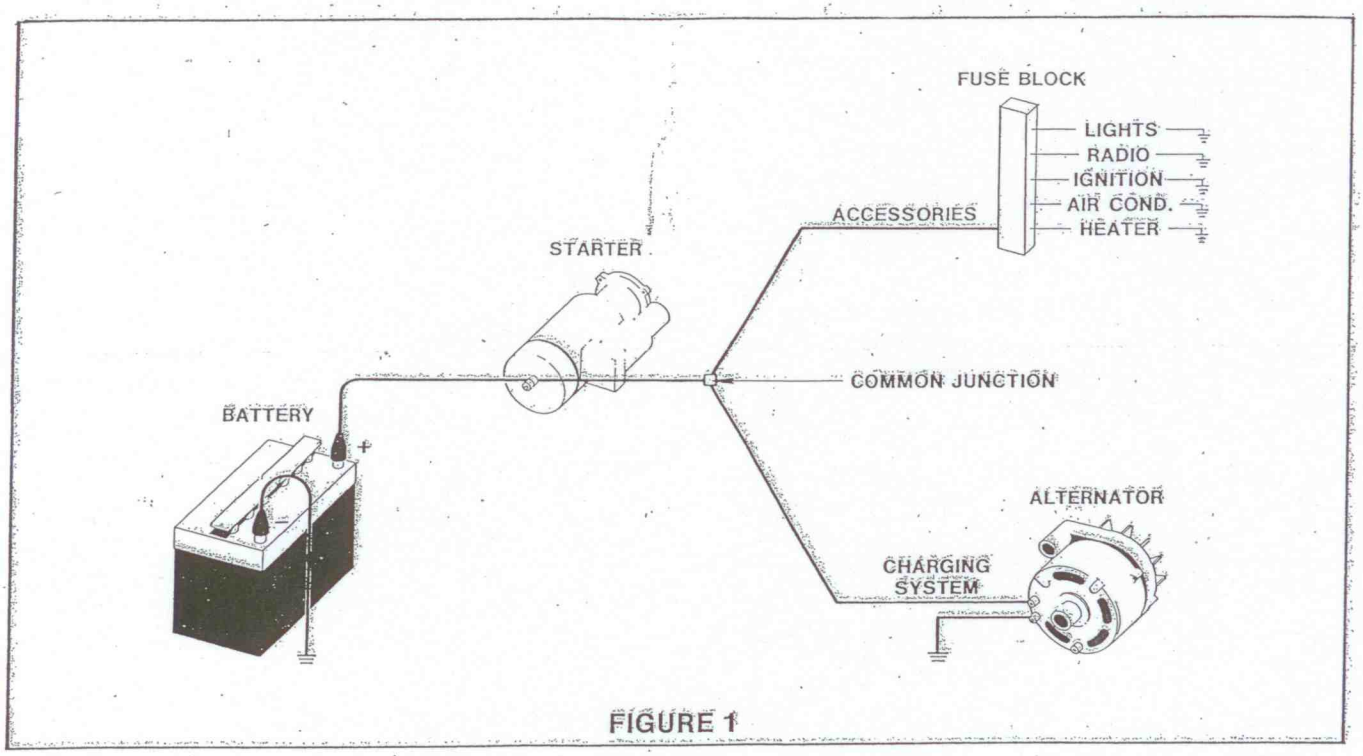


FIGURE 1

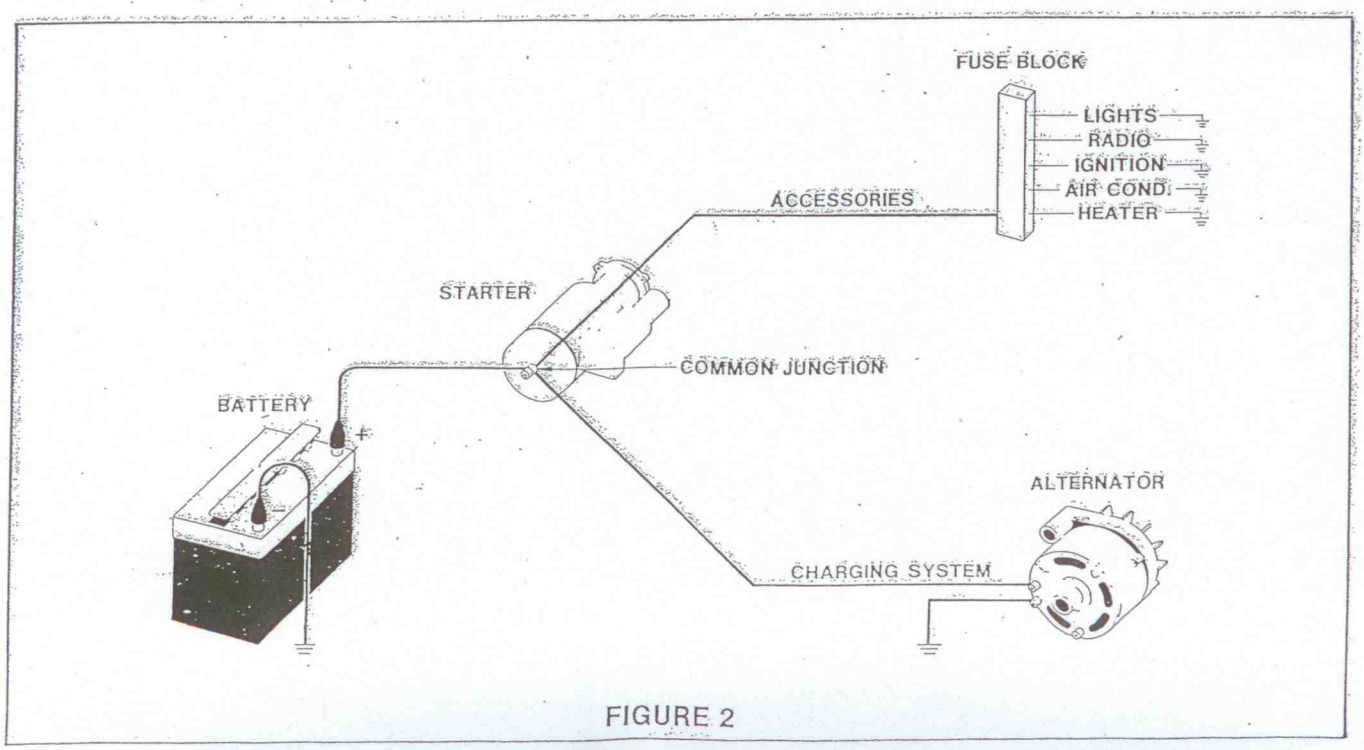


FIGURE 2

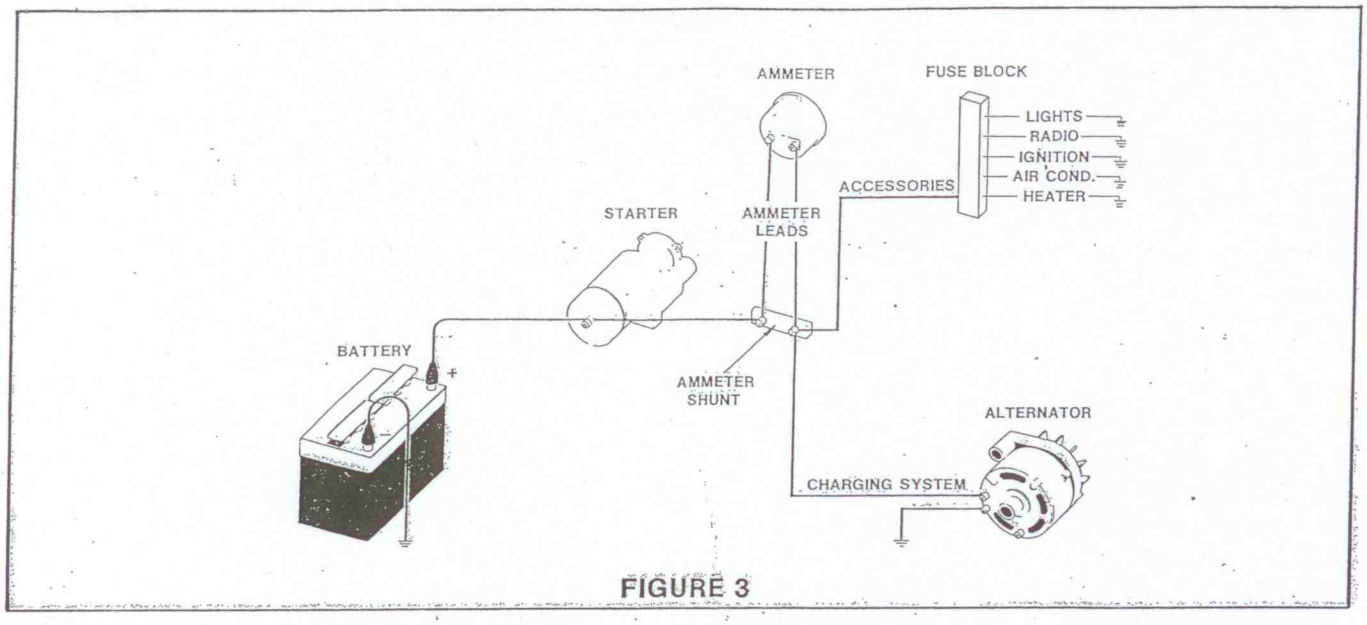


FIGURE 3

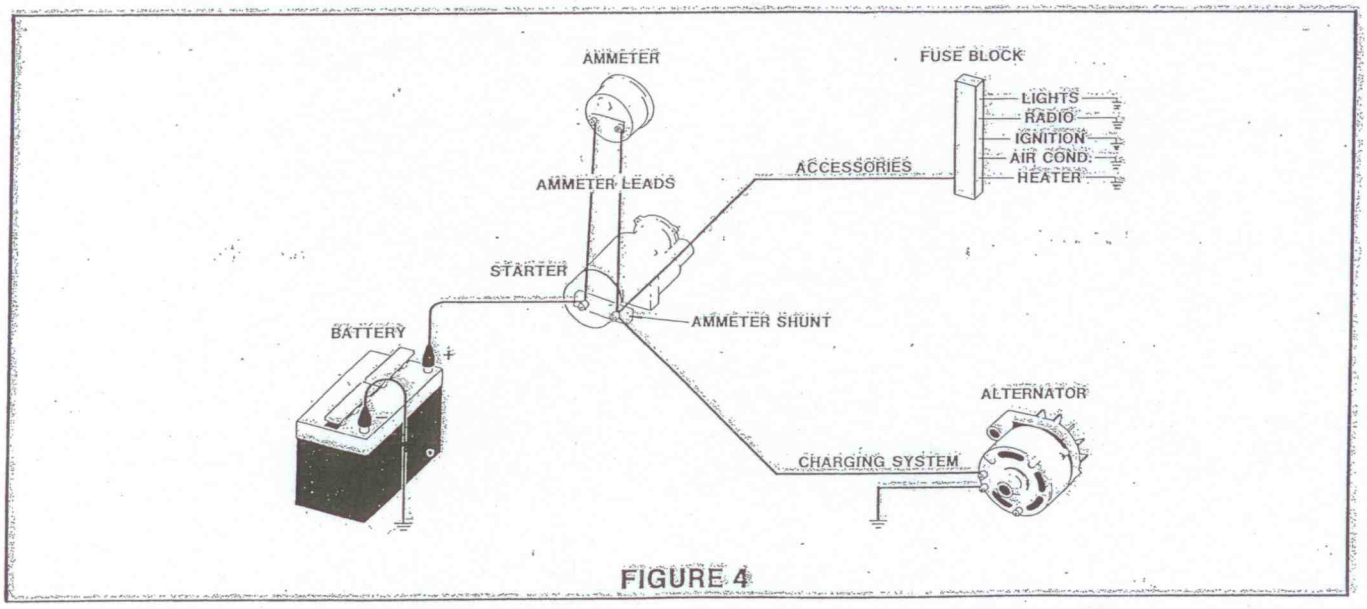


FIGURE 4

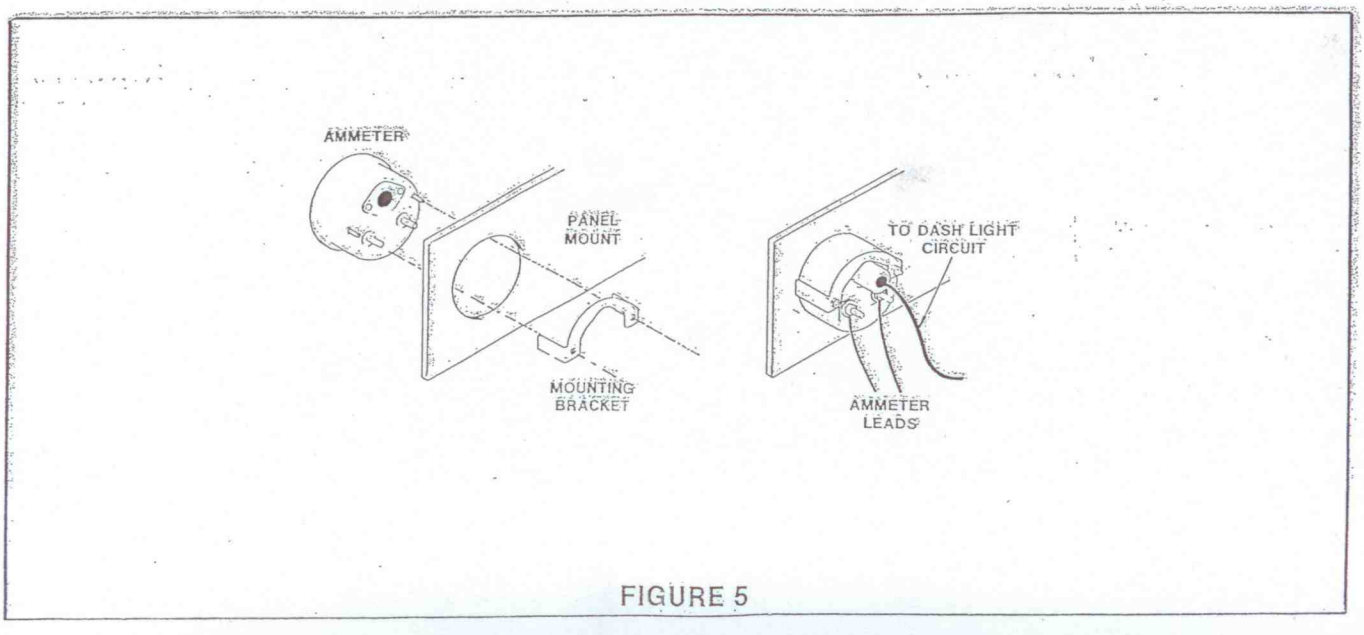


FIGURE 5