

Testing and Inspection

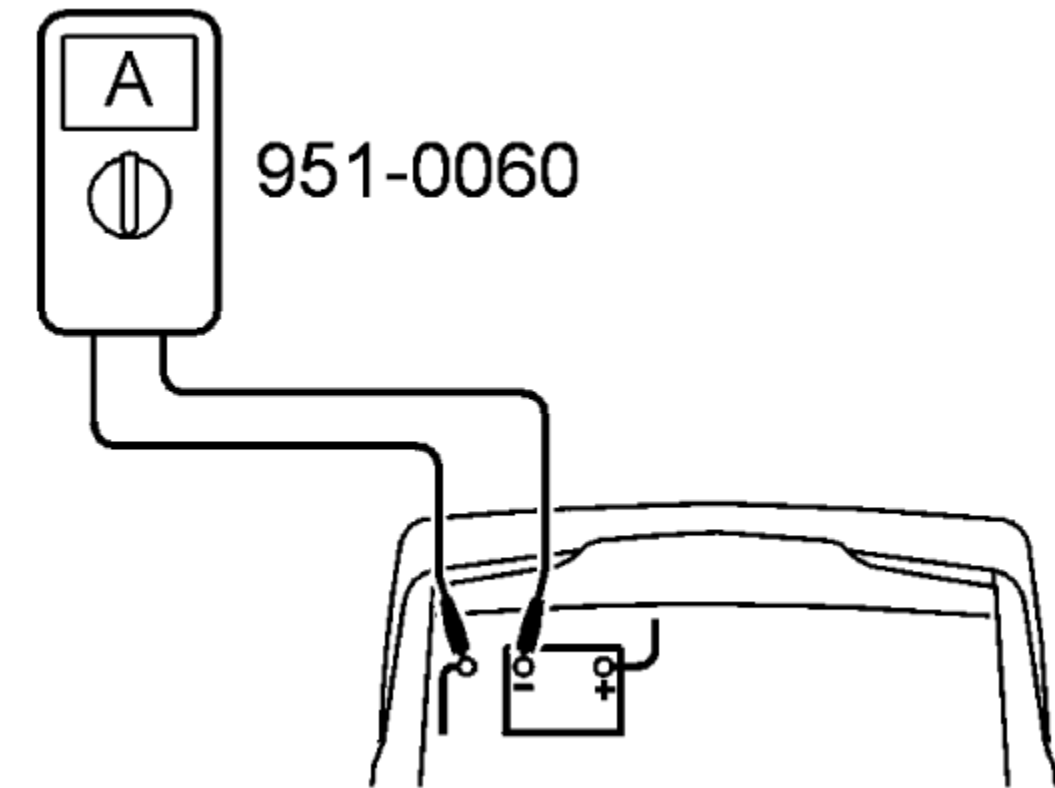
Fault-tracing And Testing The Voltage Supply System

- Check the [battery](#), [starter motor](#) and generator terminals and cables for loose, corroded or damaged cable terminals and wiring.
- Check the generator (GEN) charge current and charge voltage.

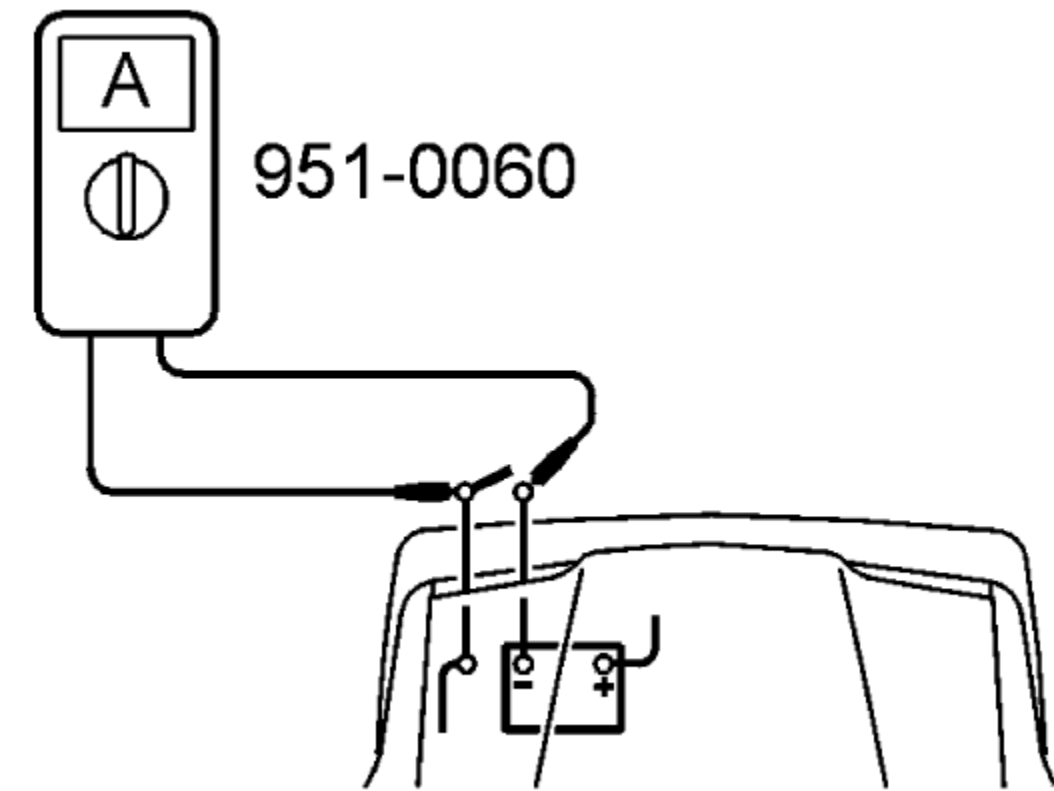
Ensure that the freewheeling generator pulley functions correctly (where applicable):

- Rev the engine to **3,000 rpm**. No extra electrical consumers should be switched on.
- Switch off the engine. Check that the generator rotates for longer than the engine.
- In cold weather, the [battery](#) warning lamp in the combined instrument panel may light up for a **few seconds** after start. This is because the freewheel may require a few revolutions to heat up the bearing grease. A battery warning lamp which is continuously lit may indicate a freewheel which does not lock against the generator (GEN) [rotor](#) shaft.
- Check the auxiliary belt tension. Inspect the belt for wear.
- Measure the vehicle's stand by voltage consumption (below).

Measuring the stand by current



- Measure the stand by voltage consumption with the hood open.
- Connect them multi-meter between the negative lead in the wiring and the [battery](#) negative terminal.
- Begin with measurement area **10 A** . Continue downwards until a suitable measurement area is found.
- If the stand-by current is **10 mA** more than the maximum permissible standby voltage, recommend that the customer purchases a [battery](#) with higher capacity.
- If the customer already has a [battery](#) with the highest capacity, locate the major stand-by voltage consuming components. This is carried out by measuring the stand-by voltage at the same time as the fuses are removed, one after another.
- Then measure the stand-by voltage with the car locked and alarmed.
- Sufficient wiring is required so that the measurement can be carried out while the hood and car are alarmed and locked.
- The wiring must be connected between the negative lead and the [battery](#) negative terminal. Connect the multimeter. Break the circuit after approximately one minute so that the current passes through the multimeter.
- Calculating the maximum permissible standby voltage



- Identify the capacity of the [battery](#) in the car in order to calculate the maximum permitted stand-by voltage.

Formula

$$(1) \text{ Ah}/504 \text{ h}/4 = I \text{ mA}$$

(1) = the [battery](#) capacity, I = the stand-by current

E.g.: capacity/3 weeks * 25% = stand by voltage **65 Ah/504 h * 0.25 =32.2 mA**