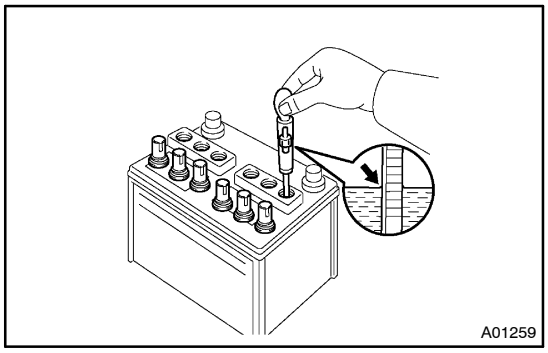
190J7–01

ON–VEHICLE INSPECTION

1. CHECK BATTERY ELECTROLYTE LEVEL

(a) Check the electrolyte quantity of each cell (Maintenance–Free Battery).
  (1) If under the lower level, replace the battery (or add distilled water if possible) and check the charging system.

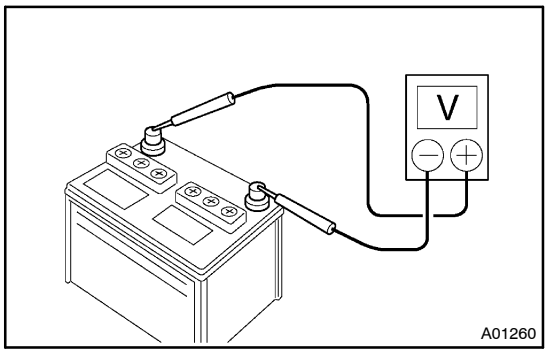
(b) Check the electrolyte quantity of each cell (Except Maintenance–Free Battery).
  (1) If under the lower level, add distilled water.



2. CHECK BATTERY SPECIFIC GRAVITY (Except Maintenance–Free Battery)

(a) Check the specific gravity of each cell.
  Standard specific gravity: 1.25 – 1.29 at 20°C (68°F)

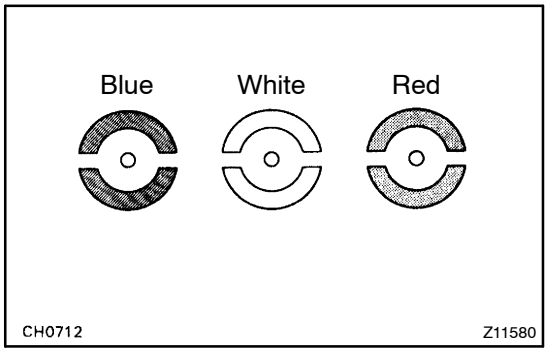
HINT:
If the specific gravity is less than specification, charge the battery.



3. CHECK BATTERY VOLTAGE

(a) After having driven the vehicle and in the case that 20 minutes have not passed after having stopped the engine, turn the ignition switch ON and turn on the electrical system (headlight, blower motor, rear defogger etc.) for 60 seconds to remove the surface charge.
(b) Turn the ignition switch OFF and turn off the electrical systems.
(c) Measure the battery voltage between the negative (–) and positive (+) terminals of the battery.
  Standard voltage: 12.5 – 12.9 V at 20°C (68°F)

HINT:
If the voltage is less than specification, charge the battery.

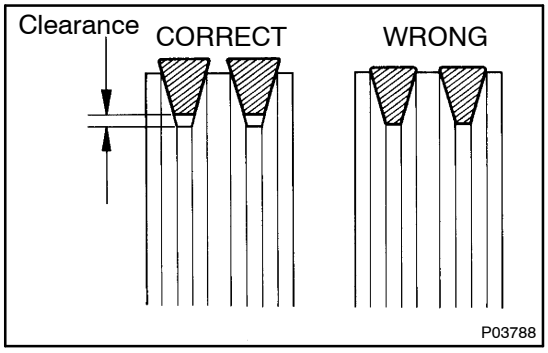


(d) Check the indicator as shown in the illustration.

HINT:
- Blue: OK
- White: Charging Necessary
- Red: Insufficient Water

4. CHECK BATTERY TERMINALS, FUSIBLE LINK AND FUSES

(a) Check that the battery terminals are not loose or corroded.
(b) Check the fusible link, H–fuses and fuses for continuity.



5. INSPECT DRIVE BELTS

(a) Visually check the drive belt for cracks, oiliness or wear. Check that the belt does not touch the bottom of the pulley groove.

If necessary, replace the drive belts as a set.

6. VISUALLY CHECK GENERATOR WIRING

(a) Check that the wiring is in good condition.

7. LISTEN FOR ABNORMAL NOISES FROM GENERATOR

(a) Check that there is no abnormal noise from the generator while the engine is running.

8. INSPECT CHARGE WARNING LIGHT CIRCUIT

(a) Turn the ignition switch ON. Check that the charge warning light comes on.

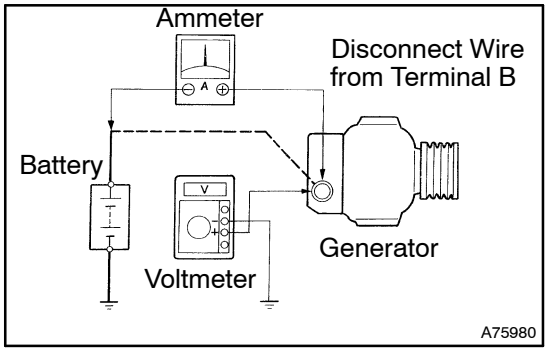
(b) Start the engine. Check that the light goes off.

HINT:

If the light does not operate as specified, troubleshoot the charge warning light circuit.

9. INSPECT CHARGING CIRCUIT WITHOUT LOAD

(a) If a battery/ generator tester is available, connect the tester to the charging circuit as per manufacturer's instructions.



(b) If a tester is not available, connect a voltmeter to the charging circuit as follows.

(1) Disconnect to the wire from terminal B of the alternator and connect it to the negative (–) lead of the ammeter.

(2) Connect the positive (+) lead of the ammeter to terminal B of the generator.

(3) Connect the positive (+) lead of the voltmeter to terminal B of the generator.

(4) Ground the negative (–) lead of the voltmeter.

(c) Check the charging circuit.

(1) With the engine running from idle to 2,000 rpm, check the reading on the ammeter and voltmeter.

Standard amperage: 10 A or less

Standard voltage: 13.2 – 14.8 V

HINT:

- If the voltmeter reading is more than standard voltage, replace the voltage regulator.
- If the voltmeter reading is less than the standard voltage, check the voltage regulator and generator as follows:

10. INSPECT CHARGING CIRCUIT WITH LOAD

(a) With the engine running at 2,000 rpm, turn on the high beam headlights and place the heater blower switch at "HI".

(b) Check the reading on the ammeter.

Standard amperage: 30 A or more

HINT:

- If the ammeter reading is less than standard amperage, repair the generator.
- If the battery is fully charged, the indication will sometimes be less than standard amperage.