

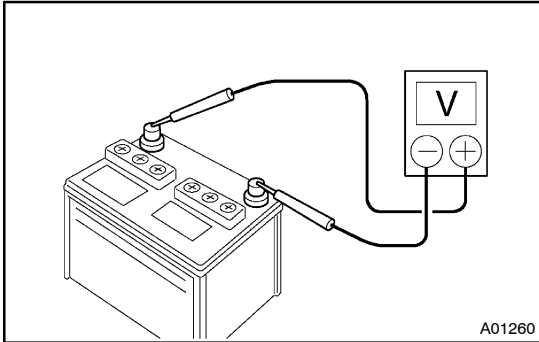
ON-VEHICLE INSPECTION

1. INSPECT BATTERY (MAINTENANCE-FREE BATTERY)

- (a) Check the battery electrolyte level.

- (1) Check the electrolyte quantity of each cell.

If the electrolyte quantity is below the recommended amount, replace the battery.



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- (b) Check the battery voltage.

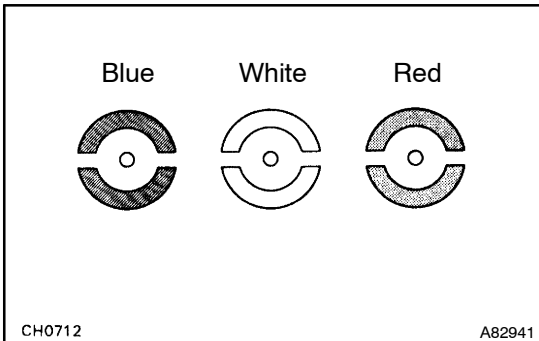
- (1) If it has been less than 20 minutes since you stopped driving the vehicle or since the engine was stopped, turn the ignition switch and electrical systems (headlight, blower motor, rear defogger etc.) to the ON position for 60 seconds. This will remove the surface charge on the battery.

- (2) Turn the ignition switch and electrical systems OFF.

- (3) Using a voltmeter, measure the battery voltage between the negative (-) and positive (+) terminals of the battery.

Standard voltage: 12.5 to 12.9 V at 20°C (68°F)

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



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- (c) Check the indicator as shown in the illustration.

HINT:

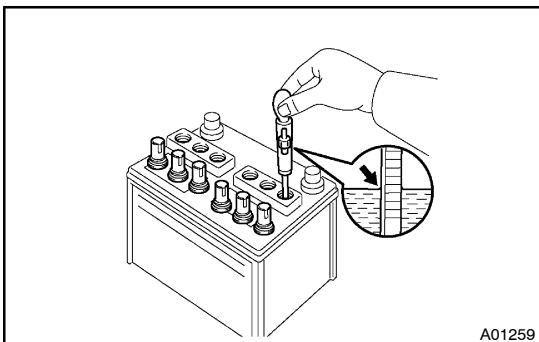
- Blue: OK
- White: Charging Necessary
- Red: Insufficient Water

2. INSPECT BATTERY (EXCEPT MAINTENANCE-FREE BATTERY)

- (a) Check the battery electrolyte level.

- (1) Check the electrolyte quantity of each cell.

If the electrolyte quantity is below the recommended amount, add distilled water.



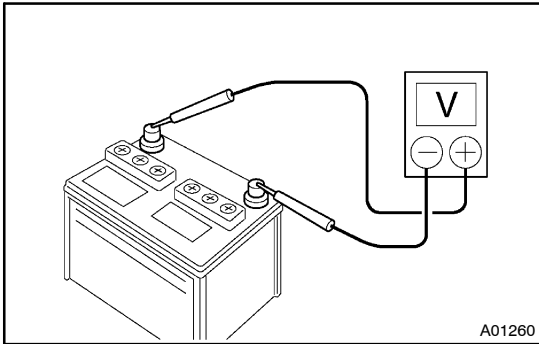
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- (b) Check the battery specific gravity.

- (1) Check the specific gravity of each cell.

Standard specific gravity: 1.25 to 1.29 at 20°C (68°F)

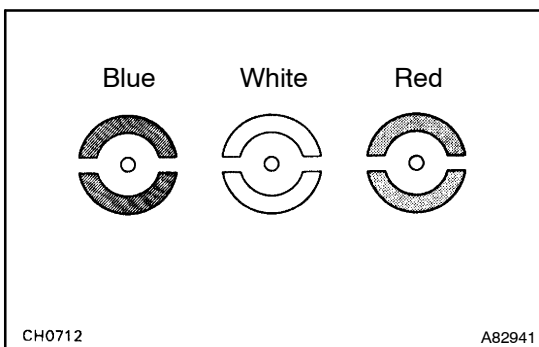
If the specific gravity is less than specification, charge the battery.



- (c) Check the battery voltage.
- (1) If it has been less than 20 minutes since you stopped driving the vehicle or since the engine was stopped, turn the ignition switch and electrical systems (headlight, blower motor, rear defogger etc.) to the ON position for 60 seconds. This will remove the surface charge on the battery.
 - (2) Turn the ignition switch and electrical systems OFF.
 - (3) Using a voltmeter, measure the battery voltage between the negative (-) and positive (+) terminals of the battery.

Standard voltage: 12.5 to 12.9 V at 20°C (68°F)

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

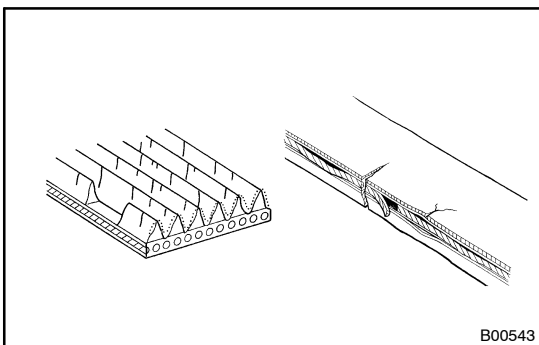


- (d) Check the indicator as shown in the illustration.
HINT:

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

3. INSPECT BATTERY TERMINALS, FUSIBLE LINK AND FUSES

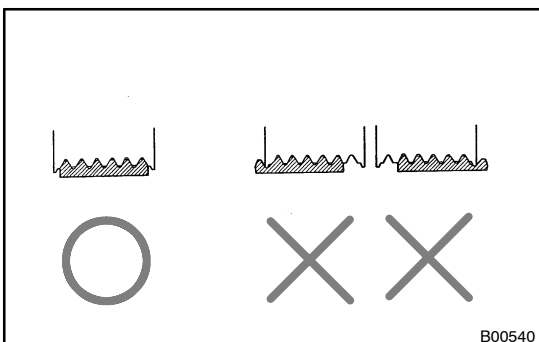
- (a) Visually check the battery terminals.
 - (1) Check that the battery terminals are not loosened or corroded.
- (b) Visually check the fusible link and fuses.
 - (1) Check that there is continuity of the fusible links, high current fuses and regular fuses.



4. INSPECT V-RIBBED BELT

- (a) Visually check the belt for excessive wear, frayed cords, etc.
 - If any defects are found, replace the v-ribbed belt.
 - Cracks on the rib side of the belt are considered acceptable.

If the belt has chunks missing from the ribs, it should be replaced.



- (b) Check that the belt fits properly in the ribbed grooves. Confirm that the belt has not slipped out of the groove on the bottom of the pulley by hand.

5. INSPECT GENERATOR WIRING

- (a) Visually check the generator wiring.
- (1) Check that the wiring is in good condition.

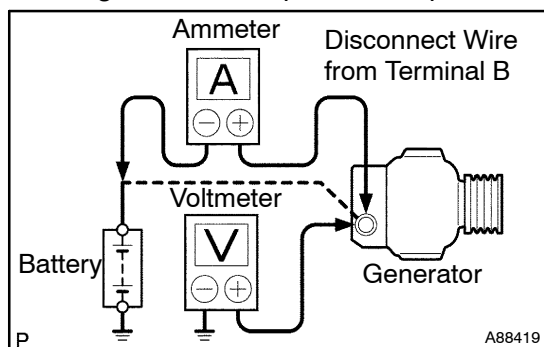
6. INSPECT ABNORMAL NOISES

- (a) Listen to abnormal noises from the generator.
- (1) Check that no abnormal noise is heard from the generator while the engine is running.

7. INSPECT CHARGE WARNING LIGHT CIRCUIT

- (a) Turn the ignition switch to ON. Check that the charge warning light comes on.
- (b) Start the engine, then check that the light goes off.

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

**8. INSPECT CHARGING CIRCUIT WITHOUT LOAD**

- (a) If a tester is not available, connect a voltmeter and ammeter to the charging circuit as follows.
- (1) Disconnect the wire from terminal B of the generator, then 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.
- (b) Check the charging circuit.
- (1) Keep the engine speed at 2,000 rpm, then check the reading on the ammeter and voltmeter.

Standard amperage: 10 A or less

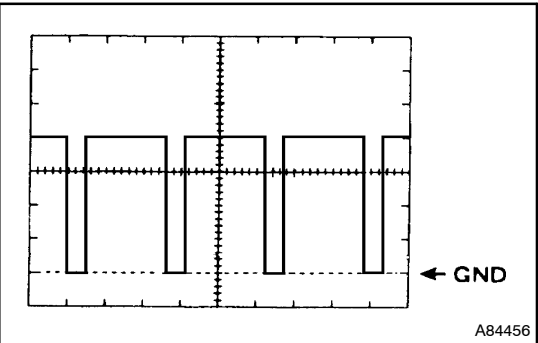
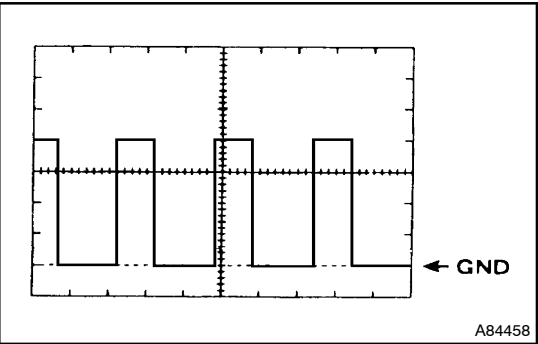
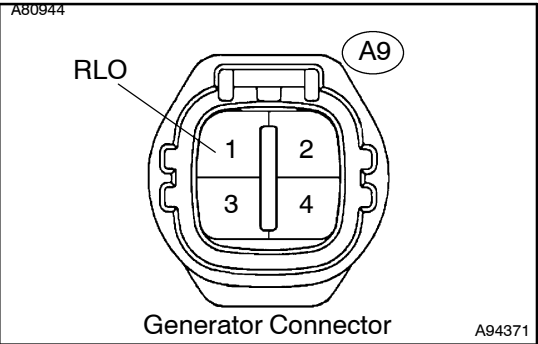
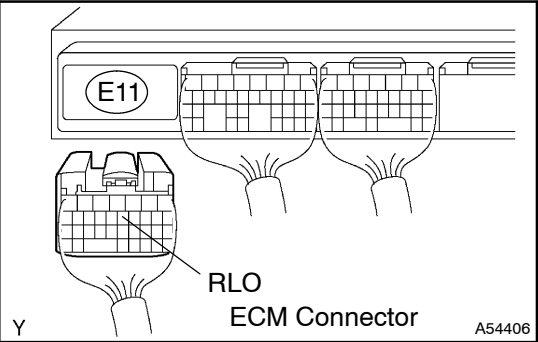
Standard voltage: 13.2 to 14.8 V

9. INSPECT CHARGING CIRCUIT WITH LOAD

- (a) With the engine running at 2,000 rpm, turn the high beam headlights ON and turn the heater blower switch to the "HI" position.
- (b) Check the reading on the ammeter.

Standard amperage: 30 A or more

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



10. INSPECT CHARGING CONTROL

- (a) Check the harness and connector.
- (1) Disconnect the A9 generator connector.
 - (2) Disconnect the E11 ECM connector.
 - (3) Check the resistance between the wire harness side connectors.

Standard (Check for open):

Tester Connection	Specified Condition
RLO (A9-1) – RLO (E11-12)	Below 1 Ω

If the result is not as specified, replace the harness and connector.

Standard (Check for short):

Tester Connection	Specified Condition
RLO (A9-1) or RLO (E11-12) – Body ground	10 kΩ or higher

If the result is not as specified, replace the harness and connector.

- (4) Reconnect the ECM connector.
 - (5) Reconnect the generator connector.
- (b) Check the ECM.
- (1) Start the engine, then warm up the engine for approximately 20 to 30 minutes.

- (2) Check the waveform between terminals RLO and E1 of the E11 ECM connector.

Standard:

Item	Contents
Terminal	RLO – E1
Equipment Setting	5 V/DIV, 500 ms/DIV
Condition	20 minutes after warm-up, under charging control, constant-speed driving

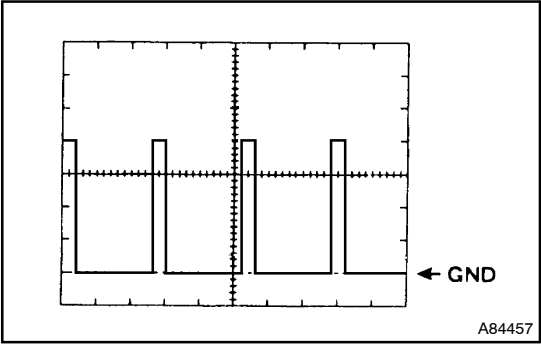
If the result is not as specified, check the generator, harness and connector.

- (3) Check the waveform between terminals RLO and E1 of the E11 ECM connector.

Standard:

Item	Contents
Terminal	RLO – E1
Equipment Setting	5 V/DIV, 500 ms/DIV
Condition	20 minutes after warm-up, under charging control, accelerating

If the result is not as specified, check the generator, harness and connector.



- (4) Check the waveform between terminals RLO and E1 of the E11 ECM connector.

Standard:

Item	Contents
Terminal	RLO - E1
Equipment Setting	5 V/DIV, 500 ms/DIV
Condition	20 minutes after warm-up, under charging control, decelerating

If the result is not as specified, check the generator, harness and connector.