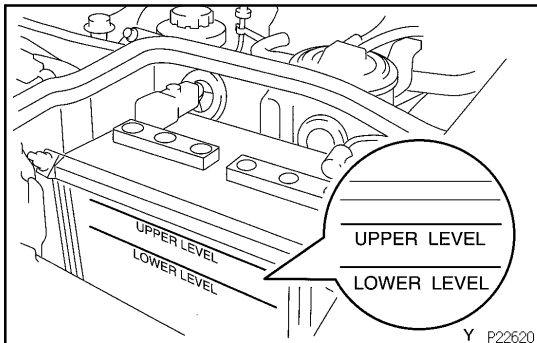


# CHARGING SYSTEM ON-VEHICLE INSPECTION

CH0EO-01

## CAUTION:

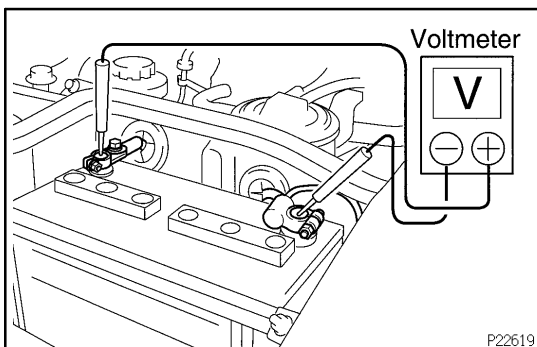
- Check that the battery cables are connected to the correct terminals.
- Disconnect the battery cables when the battery is given a quick charge.
- Do not perform tests with a high voltage insulation resistance tester.
- Never disconnect the battery while the engine is running.



## 1. CHECK BATTERY ELECTROLYTE LEVEL AND VOLTAGE

(a) Check the electrolyte quantity of each cell.

If under the lower level, replace the battery (or add distilled water if possible). check the charging system.



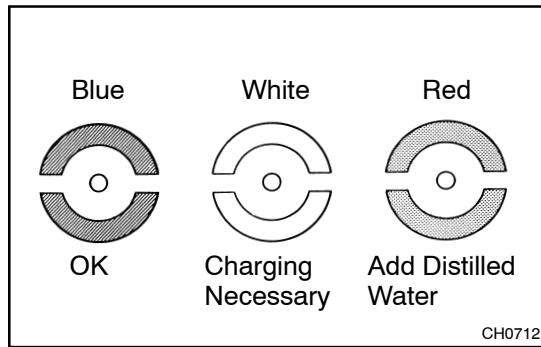
(b) Measure the battery voltage between the negative (-) and positive (+) terminals of the battery.

**Standard voltage: At 20°C (68°F): 12.7 – 12.9 V**

## HINT:

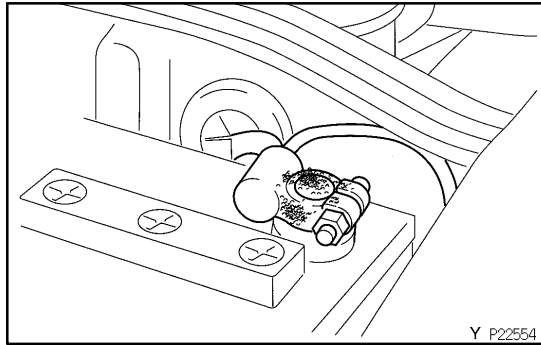
- Before measuring the voltage, turn the ignition switch OFF and turn off the electrical systems (headlight, blower motor, rear defogger etc.).
- If the vehicle has been running, wait 20 minutes or more after the vehicle stops before measuring the battery voltage.

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

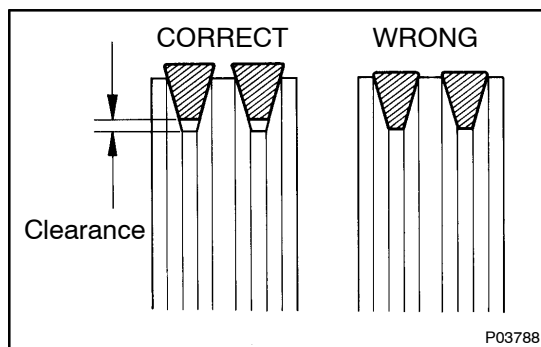


HINT:

Check the indicator as shown in the illustration.

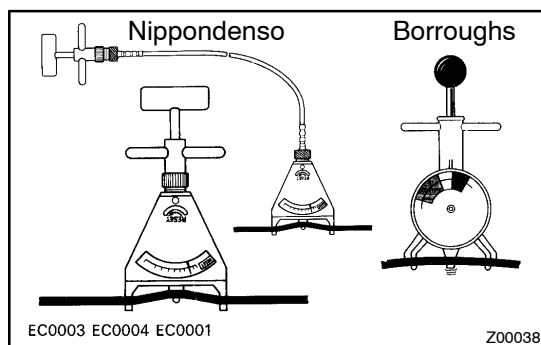
**2. CHECK BATTERY TERMINALS, FUSIBLE LINK AND FUSES**

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

**Fusible link:****MAIN 2.0 L****AM1 1.25 B****AM2 0.3 P****H-Fuse:****AM1 50A****Fuse:****IGN 7.5A****CHARGE 7.5A****3. 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.



- (b) Using a belt tension gauge, measure the belt tension. Belt tension gauge:

Nippondenso BTG-20 (95506-00020)

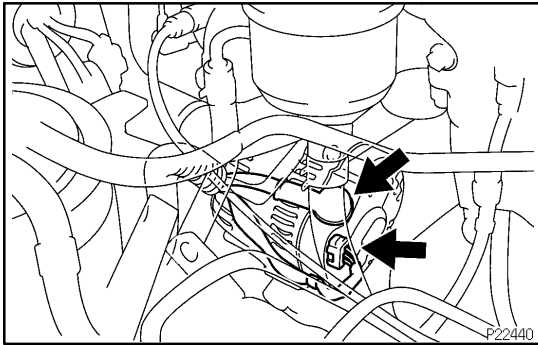
Borroughs No. BT-33-73F

**Drive belt tension:****New belt****88 - 132 lbf****Used belt****44 - 88 lbf**

If the belt tension is not as specified, adjust it.

## HINT:

- "New belt" refers to a belt which has been used less than 5 minutes on a running engine.
- "Used belt" refers to a belt which has been used on a running engine for 5 minutes or more.
- After installing a new belt, run the engine for about 5 minutes and recheck the belt tension.



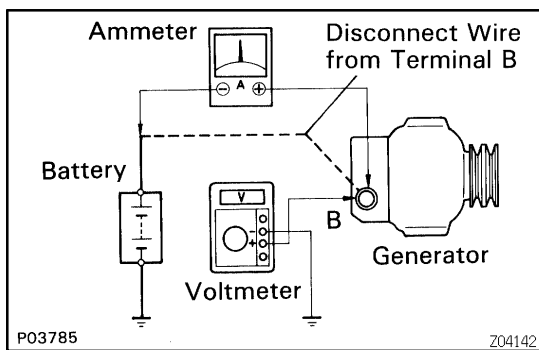
#### 4. VISUALLY CHECK GENERATOR WIRING AND LISTEN FOR ABNORMAL NOISES

- Check that the wiring is in good condition.
- Check that there is no abnormal noise from the generator while the engine is running.

#### 5. INSPECT DISCHARGE WARNING LIGHT CIRCUIT

- Turn the ignition switch "ON". Check that the discharge warning light comes on.
- Start the engine. Check that the light goes off.

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



#### 6. INSPECT CHARGING CIRCUIT WITHOUT LOAD

## HINT:

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

- If a tester is not available, connect a voltmeter and ammeter to the charging circuit as follows:
  - Disconnect the wire from terminal B of the generator and connect it to the negative (–) lead of the ammeter.
  - Connect the positive (+) lead of the ammeter to terminal B of the generator.
  - Connect the positive (+) lead of the voltmeter to terminal B of the generator.
  - Ground the negative (–) lead of the voltmeter.
- Check the charging circuit as follows:  
With the engine running from idle to 2,000 rpm, check the reading on the ammeter and voltmeter.

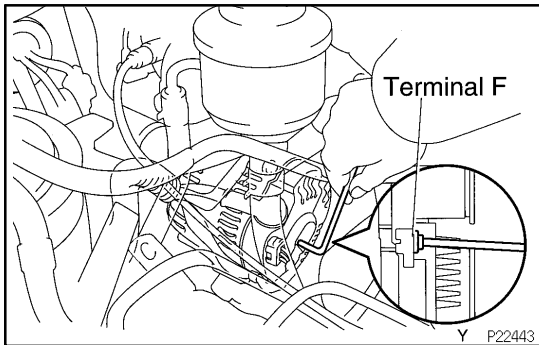
**Standard amperage:**

**10 A or less**

**Standard voltage:****At 25°C (77°F): 14.0 – 15.1 V****At 115°C (239°F): 13.5 – 14.3 V**

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:



- With terminal F grounded, start the engine and check the voltmeter reading of terminal B.
- If the voltmeter reading is more than standard voltage, replace the voltage regulator.
- If the voltmeter reading is less than standard voltage, check the generator.

**7. 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**

If the ammeter reading is less than standard amperage, repair the generator.

**HINT:**

If the battery is fully charged, the indication will sometimes be less than standard amperage.