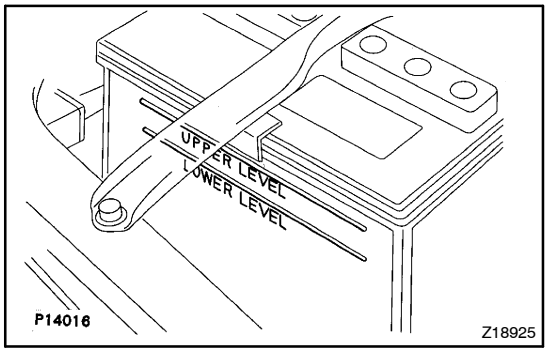
CHARGING SYSTEM

CH0KF–05

ON–VEHICLE INSPECTION

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

Check the electrolyte quantity of each cell.

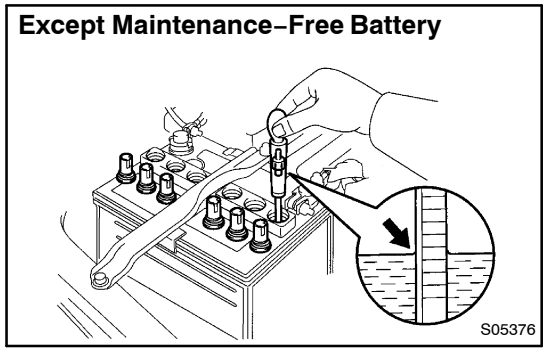
(Maintenance–Free Battery)

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

(Except Maintenance–Free Battery)

If under the lower level, add distilled water.

Except Maintenance–Free Battery

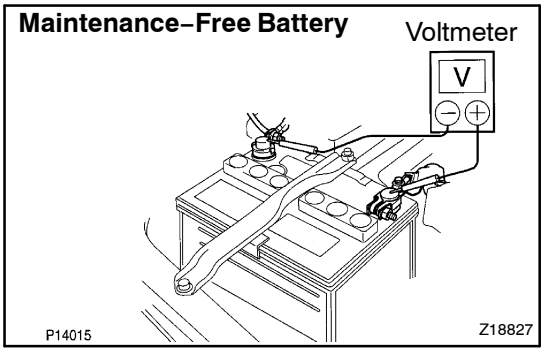


2. (Except Maintenance–Free Battery) CHECK BATTERY SPECIFIC GRAVITY

Check the specific gravity of each cell.

Standard specific gravity: At 20°C (68°F): 1.25 – 1.29

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



3. (Maintenance–Free Battery) CHECK BATTERY VOLTAGE

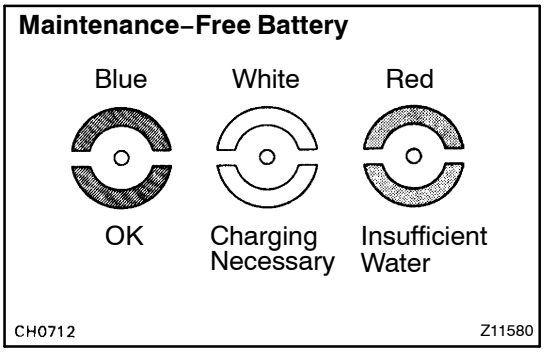
Measure the battery voltage between the negative (–) and positive (+) terminals of the battery.

Standard voltage: At 20°C (68°F): 12.6 – 12.8 V

HINT:

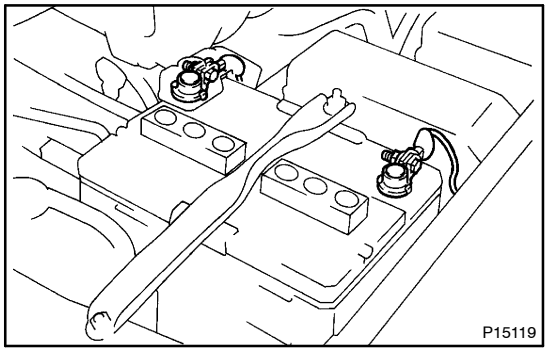
- Before measuring the voltage, turn the ignition switch ON and turn on the electrical systems (headlight, blower motor, rear defogger etc.) for 60 secondsto remove the surface charge.
- When measuring the voltage, however, turn the ignition switch OFF and turn off the electrical systems.

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



HINT:

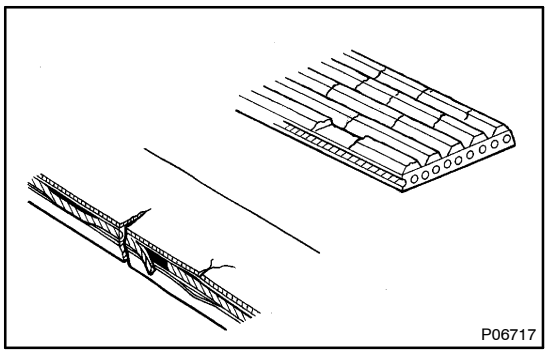
Check the indicator as shown in the illustration.



4. 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.

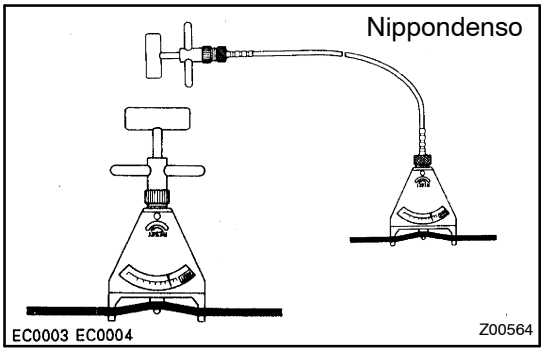


5. INSPECT DRIVE BELT

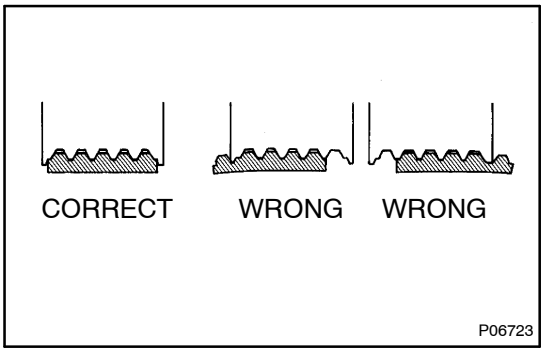
(a) Visually check the belt for excessive wear, frayed cords etc.

HINT:

Cracks on the ribbed side of the belt are considered acceptable. If the belt has chunks missing from the ribs, it should be replaced.



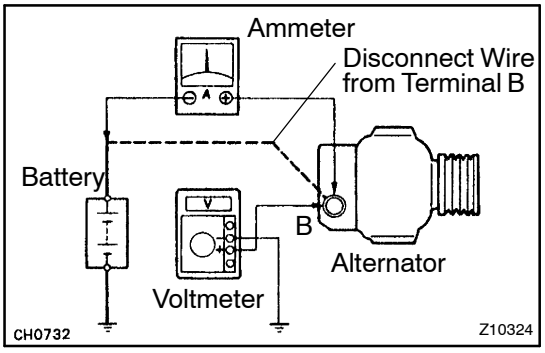
(b) Using a belt tension gauge, check the drive belt tension.
Belt tension gauge:
Nippondenso BTG 20 (95506–00020) or
Drive belt tension:
New belt: 539 – 637 N (55 – 65 kgf)
Used belt: 245 – 392 N (25 – 40 kgf)
If necessary, adjust the drive belt tension.



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 the drive belt, check that it fits properly in the ribbed grooves. Check with your hand to confirm that the belt has not slipped out of the groove on the bottom of the crank pulley.
- After installing a new belt, run the engine for approx. 5 minutes and then recheck the tension.

6. INSPECT FUSES FOR CONTINUITY
- ENGINE 10A
- CHARGE 7.5A
- IGN 7.5A

7. VISUALLY CHECK ALTERNATOR WIRING AND LISTEN FOR ABNORMAL NOISES
(a) Check that the wiring is in good condition.
(b) Check that there is no abnormal noise from the generator while the engine is running.



8. CHECK CHARGING CIRCUIT WITHOUT LOAD
HINT:
If a battery/alternator tester is available, connect the tester to the charging circuit according to the manufactuer’s instructions.
(a) 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 alternator and connect the wire to the negative (–) terminal of the ammeter.
- Connect the test lead from the positive (+) terminal of the ammeter to terminal B of the alternator.
- Connect the positive (+) lead of the voltmeter to terminal B of the alternator.
- Ground the negative (–) lead of the voltmeter.

(b) Check the charging circuit as follows:
With the engine running from idling 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): 13.7 – 14.7 V
At 115 °C (239 °F): 13.2 – 14.0 V

If the voltage reading is greater than the standard voltage, check the voltage regulator.

9. INSPECT CHARGING CIRCUIT WITH LOAD

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

(b) Check the reading on the ammeter.
Standard amperage: 30 A or more

If the ammeter reading is less than 30 A, repair the alternator.
HINT:
If the battery is fully charged, the indication will sometimes be less than 30 A.