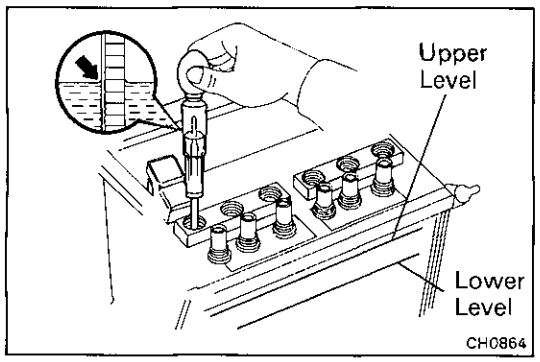


ON-VEHICLE INSPECTION

1. INSPECT BATTERY SPECIFIC GRAVITY AND ELECTROLYTE LEVEL

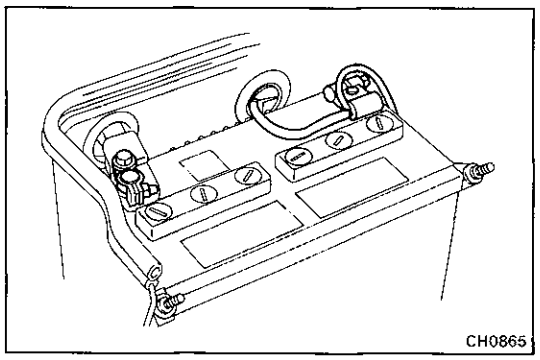
(a) Check the specific gravity of each cell.

Standard specific gravity:
When fully charged at 20°C (68°F)
1.25 – 1.27 (ex. (95D31R and 95D31L))
1.27 – 1.29 (95D31R and 95D31L)

If not as specified, charge the battery.

(b) Check the electrolyte quantity of each cell.

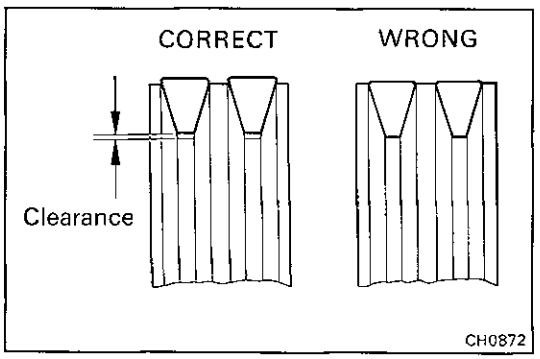
If insufficient, refill with distilled (or purified) water.



2. CHECK BATTERY TERMINALS, FUSIBLE LINKS AND FUSES

(a) Check that the battery terminals are not loose or corroded.

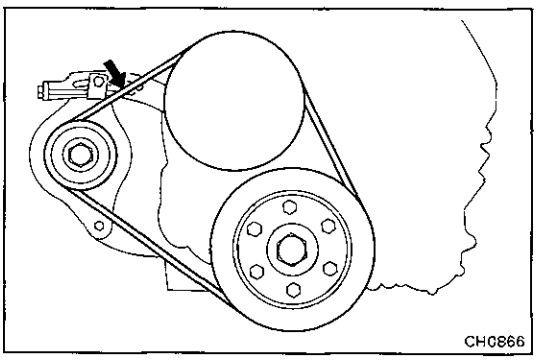
(b) Check the fusible links and fuses for continuity.



3. INSPECT DRIVE BELTS

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

If one belt has any of the above defects, replace both belts.



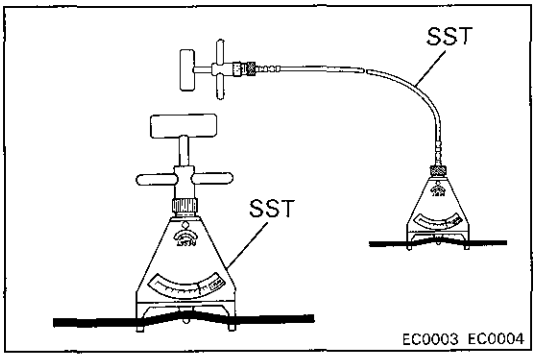
(b) Check the drive belt deflection by pressing on the belt at the points indicated in the illustration with 10 kg (22.0 lb, 98 N) of pressure.

Drive belt deflection:
New belt 6 – 7 mm (0.24 – 0.28 in.)
Used belt 8 – 11 mm (0.31 – 0.43 in.)

If the deflection is not as specified, adjust it.

HINT:

- "New belt" refers to a belt which has been used 5 minutes or less 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 deflection.

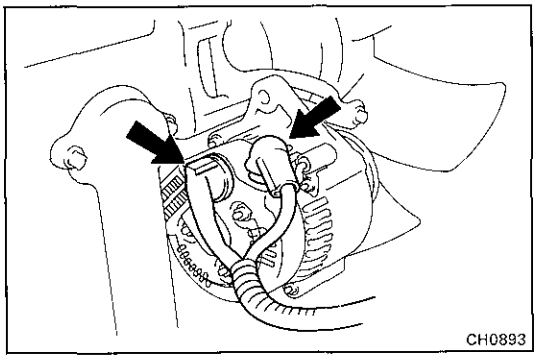


(c) (Reference)
Using SST, measure the drive belt tension.

SST 09216-00020 and 09216-00030

Drive belt tension: New belt 45 – 55 kg
Used belt 20 – 35 kg

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



4. 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 alternator while the engine is running.

5. INSPECT DISCHARGE WARNING LIGHT CIRCUIT

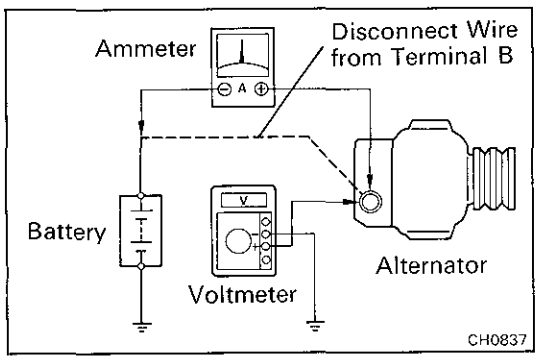
(a) Warm up the engine and then turn it off.

(b) Turn off all accessories.

(c) Turn the starter switch to "ON". Check that the discharge warning light is lit.

(d) Start the engine. Check that the light goes out.

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

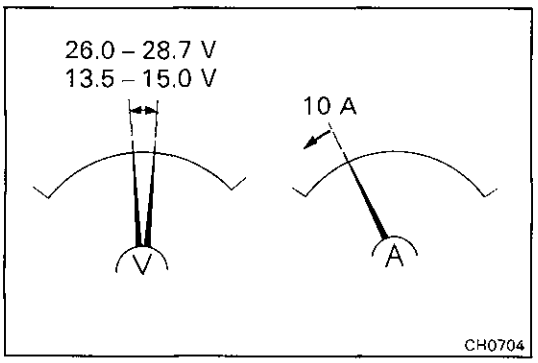


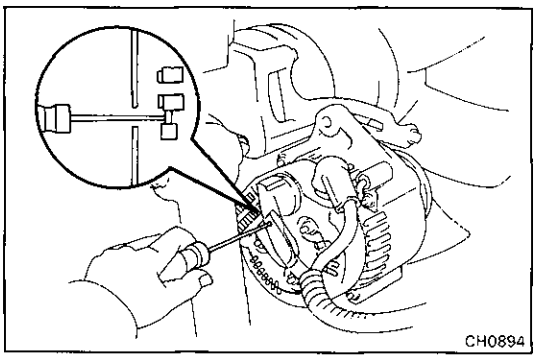
6. INSPECT CHARGING CIRCUIT WITHOUT LOAD

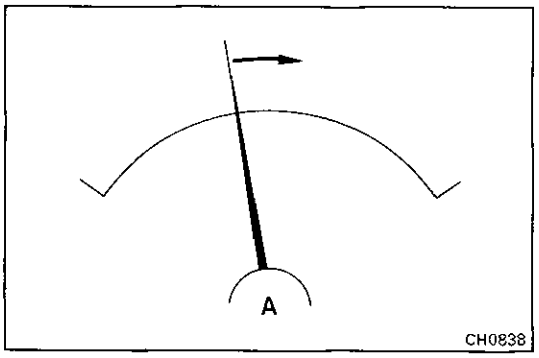
HINT: If a battery/alternator tester is available, connect the tester to the charging circuit as per manufacturer's instructions.

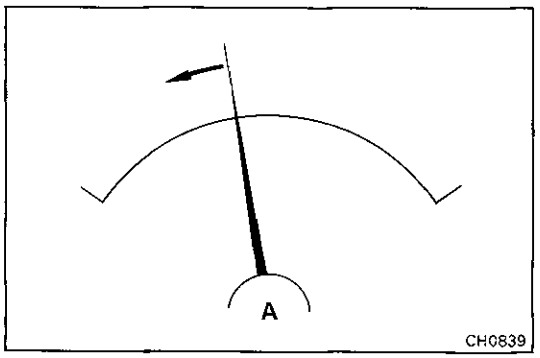
(a) If a tester is not available, connect a voltmeter and ammeter to the charging circuit as follows:

- Disconnect the wire from terminal B of the alternator and connect it to the negative (–) lead of the ammeter.
- Connect the positive (+) lead 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:

12 V type	**14.0 – 15.0 V at 25°C (77°F)**
	13.5 – 14.3 V at 135°C (275°F)
24 V type	**27.7 – 28.7 V at 25°C (77°F)**
	26.0 – 28.7 V at 135°C (275°F)

If the voltmeter reading is more than standard voltage, replace the IC regulator.

If the voltmeter reading is less than standard voltage, check the IC regulator and alternator as follows:

- With terminal F grounded, start the engine and check the voltmeter reading of terminalB.
- If the voltmeter reading is greater than standard voltage, replace the IC regulator.
- If the voltmeter reading is less than standard voltage, check the alternator.

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:

12 V 45, 55, 60, 80 A type	**30 A or more**
12 V 100 A type	**40 A or more**
24 V 30 A type	**15 A or more**
24 V 55 A type	**30 A or more**

If the ammeter reading is less than standard amperage, repair the alternator. (See page CH-8)

HINT: With the battery fully charged, the indication will sometimes be less than standard amperage.