

PRECAUTIONS

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

TROUBLESHOOTING

Problem	Possible cause	Remedy	Page
Discharge warning light does not light with ignition ON and engine not running	Fuse blown Light burned out Wiring connections loose IC regulator faulty	Check "IGN" fuses Replace light Tighten loose connections Replace IC regulator	CH-12
Discharge warning light does not go off with engine running (battery requires frequent recharging)	Drive belt loose or worn Battery cables loose, corroded or worn Fuse blown Fusible link blown IC regulator or generator faulty Wiring faulty	Adjust or replace drive belt Repair or replace cables Check "ECU-IG" fuse Replace fusible link Check charging system Repair wiring	CH-3 CH-4

ON-VEHICLE INSPECTION

1. INSPECT BATTERY SPECIFIC GRAVITY AND ELECTROLYTE LEVEL

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

Standard specific gravity:

1.25 – 1.27 when fully charged at 20°C(68°F)

If not within specification, charge the battery.

- (b) Check the electrolyte level of each cell.

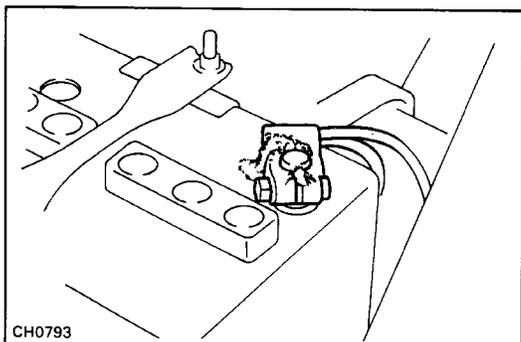
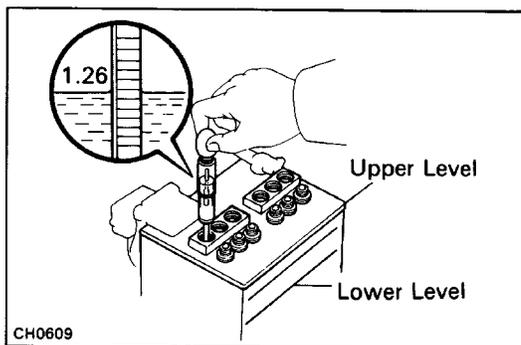
If insufficient, refill with distilled (or purified) water.

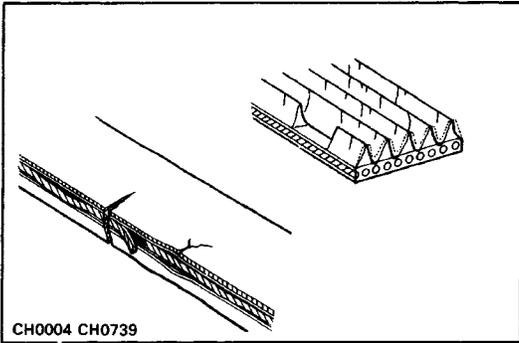
2. CHECK BATTERY TERMINALS, FUSIBLE LINK AND FUSES

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

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

Fusible link:	MAIN	2.0L
H-fuse:	ALT	100A
	AM1	40A
	AM2	30A
Fuse:	ECU-IG	15A
	IGN	7.5A





3. INSPECT DRIVE BELT

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

If necessary, replace the drive belt.

HINT: Cracks on rib side of a drive belt are considered acceptable. If the drive belt has chunks missing from the ribs, it should be replaced.

(b) Using a belt tension gauge, measure the drive belt tension.

Belt tension gauge:

Nippondenso BTG-20 (95506-00020)

Borroughs No. BT-33-73F

Drive belt tension:

4A-FE		New belt 160 ± 20 lbf
		Used belt 130 ± 20 lbf
3S-GTE	w/ A/C	New belt 165 ± 10 lbf
		Used belt 115 ± 20 lbf
	w/o A/C	New belt 150 ± 25 lbf
		Used belt 130 ± 25 lbf
5S-FE	w/ A/C	New belt 165 ± 10 lbf
		Used belt 110 ± 10 lbf
	w/o A/C	New belt 125 ± 25 lbf
		Used belt 95 ± 20 lbf

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

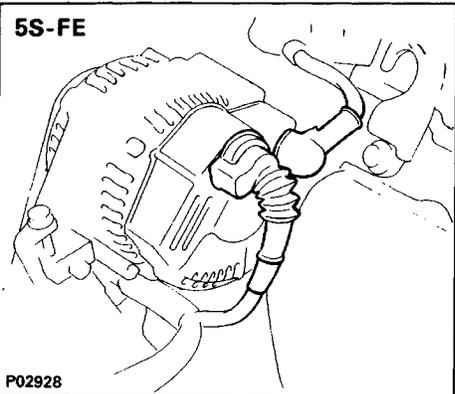
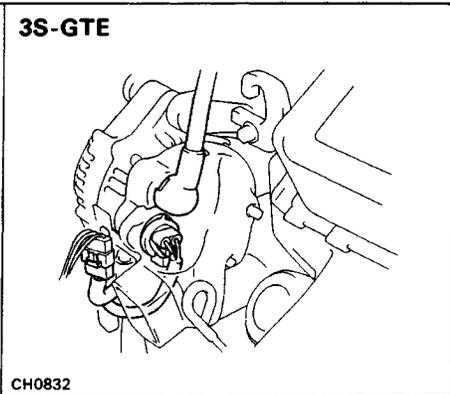
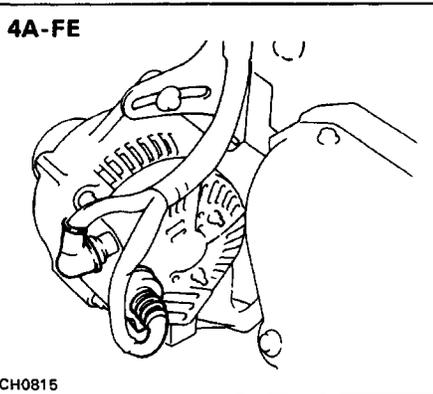
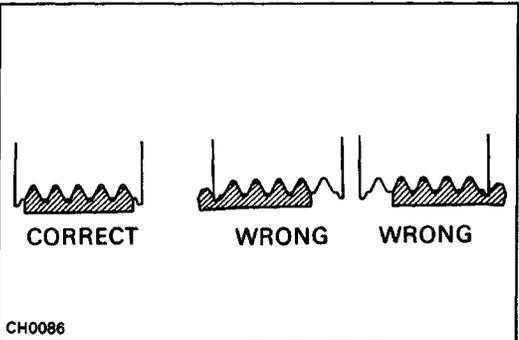
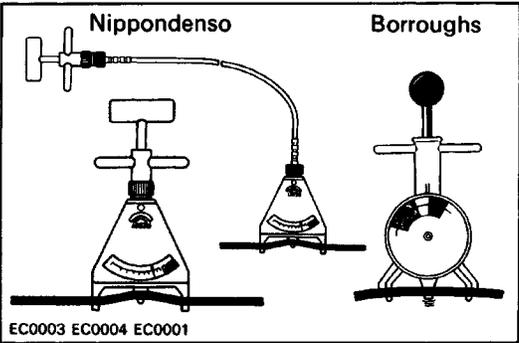
HINT:

- "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 belt, check that it fits properly in the ribbed grooves.
- Check by hand to confirm that the belt has not slipped out of the groove on the bottom of the pulley.
- 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

(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.



5. INSPECT CHARGE WARNING LIGHT CIRCUIT

- (a) Turn the ignition switch ON. Check that the charge warning light is lit.
- (b) Start the engine. Check that the light goes off.
If the light does not go off as specified, troubleshoot the charge 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 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 generator and connect it to the negative probe of the ammeter.
 - Connect the positive (+) probe of the ammeter to terminal B of the generator.
 - Connect the positive (+) probe of the voltmeter to terminal B of the generator.
 - Ground the negative (-) probe of the voltmeter.
- (b) 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

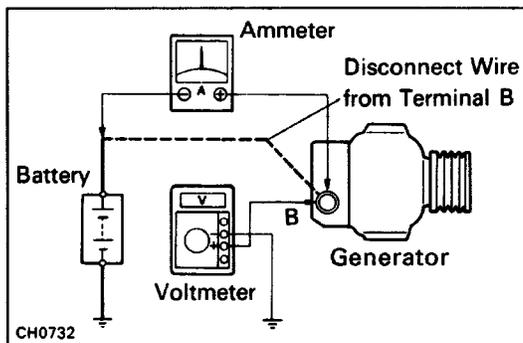
Standard voltage: 13.9 – 15.1 V at 25°C (77°F)

13.5 – 14.3 V at 115°C (239°F)

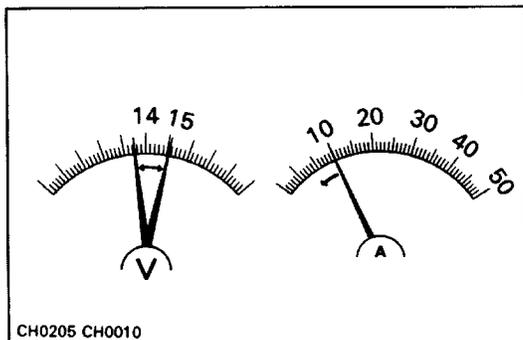
If the voltmeter reading is greater than standard voltage, replace the IC regulator.

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

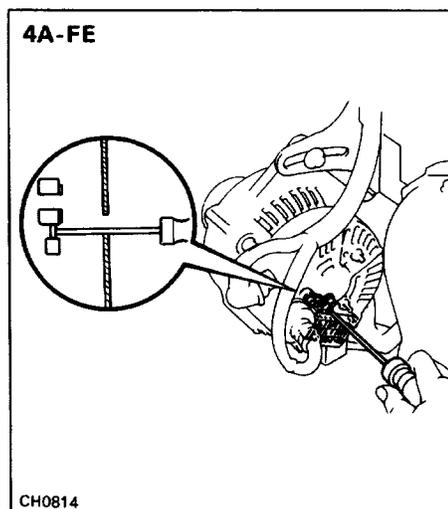
- With terminal F grounded, start the engine and check the voltmeter reading of terminal B.



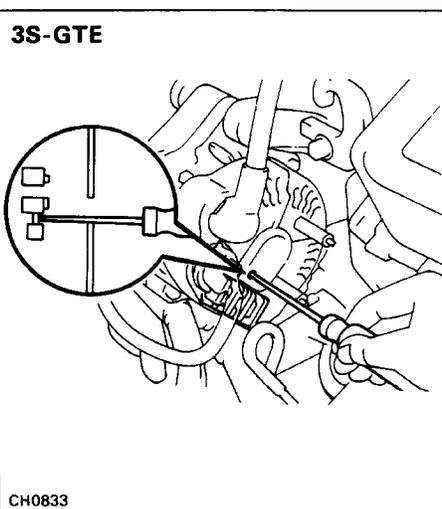
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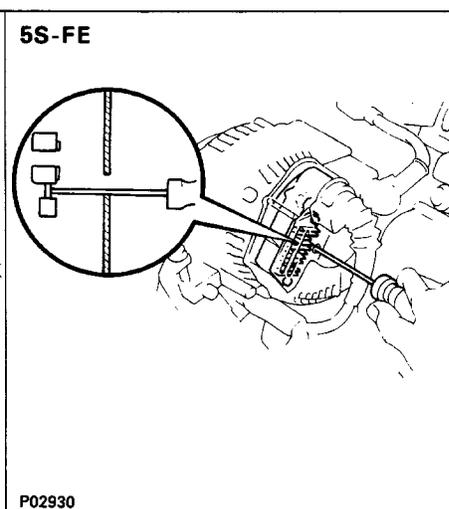
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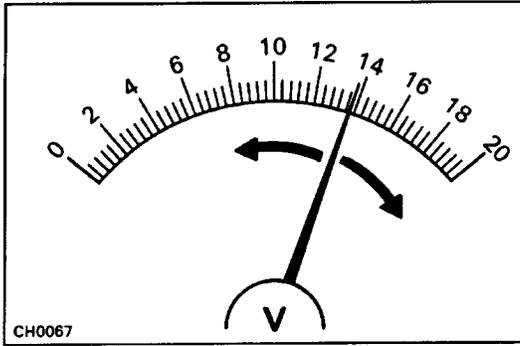
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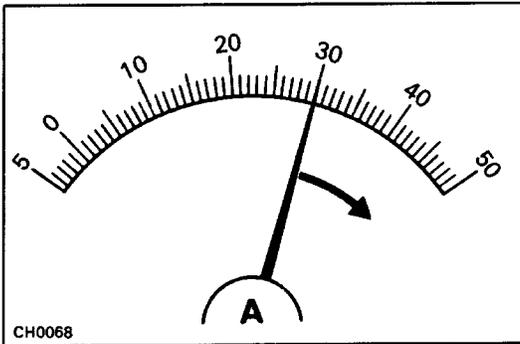
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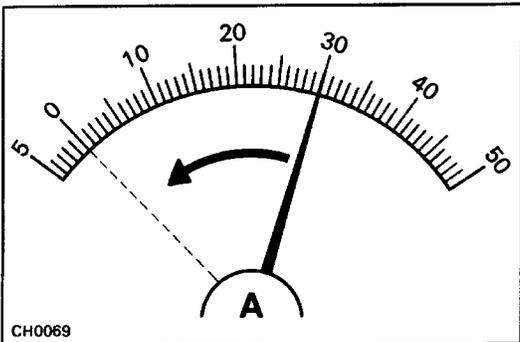
- If the voltmeter reading is greater than standard voltage, replace the IC regulator.
- If the voltmeter reading is less than standard voltage, check the generator.



7. INSPECT CHARGING CIRCUIT WITH LOAD

- With the engine running at 2,000 rpm, turn on the high beam headlights and place the heater blower switch at "HI".
- 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. (See page [CH-12](#))
 HINT: With the battery fully charged, the indication will sometimes be less than standard amperage.