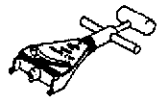
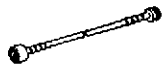
CH00S-17

RECOMMENDED TOOLS

	09082—00040	TOYOTA Electrical Tester.	
	09216—00021	Belt Tension Gauge .	
	09216—00030	Belt Tension Gauge Cable .	

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CH00U-1F

EQUIPMENT

Battery specific gravity gauge	
Torque wrench	
Vernier calipers	Rotor (Slip ring), Brush

ON—VEHICLE INSPECTION

CH0ED-01

1. **CHECK BATTERY ELECTROLYTE LEVEL**

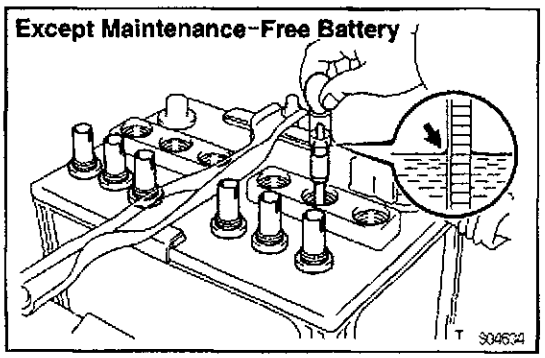
Check the electrolyte quantity of each cell.

Maintenance—Free Battery:

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

Except Maintenance—Free Battery:

If under the lower level, add distilled water.



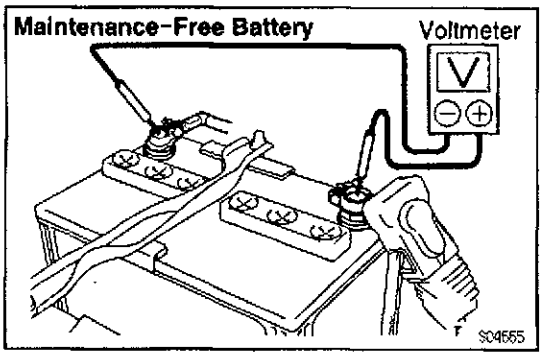
2. **Except Maintenance—Free Battery:**
CHECK BATTERY SPECIFIC GRAVITY

(b) Check the specific gravity of each cell.

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

1.25 — 1.29

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



3. **Maintenance—Free Battery:**
CHECK BATTERY VOLTAGE

(a) After having driven the vehicle and in the case that 20 minutes have not passed after having stopped the engine, turn the ignition switch ON and turn on the electrical system (headlight, blower motor, rear defogger etc.) for 60 seconds to remove the surface charge.

(b) Turn the ignition switch OFF and turn off the electrical systems.

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

Standard voltage at 20°C (68°F):

12.5 – 12.9 V

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

4. CHECK BATTERY TERMINALS, FUSIBLE LINK AND FUSES

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

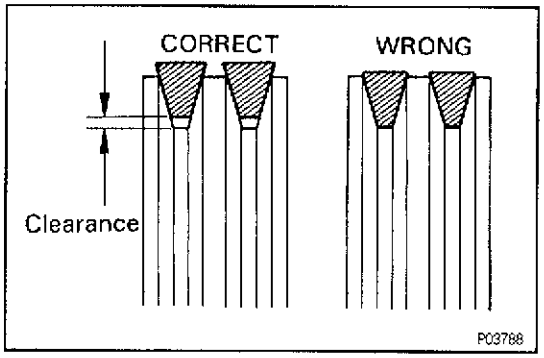
If the terminals are corroded, clean the terminals.

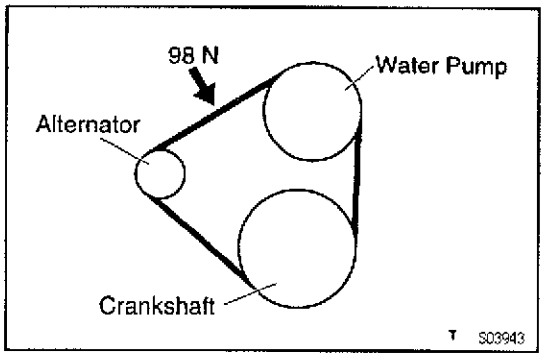
(b) Check the fusible link and fuses for continuity.

5. INSPECT DRIVE BELTS

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

If the belt has any of the above defects, replace it.





(b) Check the drive belt deflection by pressing on the belt at the points indicated in the illustration with 98 N (10 kgf, 22 lbf) of pressure.

Drive belt deflection:

New belt	7 – 10 mm (0.28 – 39 in.)
Used belt	10 – 14 mm (0.39 – 55 in.)

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

Reference:

Using a belt tension gauge, check the drive belt tension.

Drive belt tension:

New belt	440 – 540 N (45 – 55 kgf)
Used belt	200 – 340 N (20 – 35 kgf)

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.

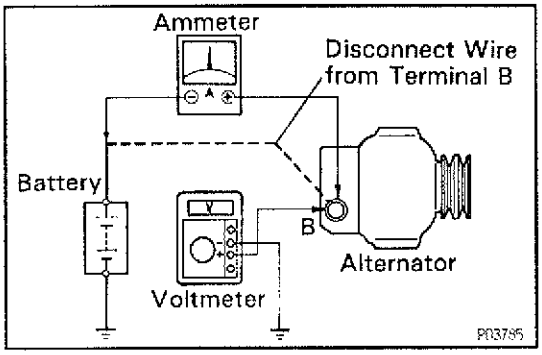
6. VISUALLY CHECK ALTERNATOR WIRING AND LISTEN FOR ABNORMAL NOISES

(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.

7. CHECK CHARGE WARNING LIGHT CIRCUIT

(a) Warm up the engine and then turn it off.
(b) Turn off all accessories.
(c) Turn the ignition switch ON. Check that the charge warning light is lit.
(d) Start the engine. Check that the light goes off.
If the light does not go off as specified, troubleshoot the charge light circuit.



8. INSPECT CHARGING CIRCUIT WITHOUT LOAD

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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 (−) tester probe of the ammeter.
- Connect the positive (+) tester probe of the ammeter to terminal B of the alternator.
- Connect the positive (+) tester probe of the voltmeter to terminal B of the alternator.
- Ground the negative (−) tester probe 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.

w/ IC Regulator:

Standard amperage:

10 A or less

Standard voltage:

Conventional type

at 55°C (131°F)	13.3 – 14.7 V
at 135°C (275°F)	13.2 – 14.0 V

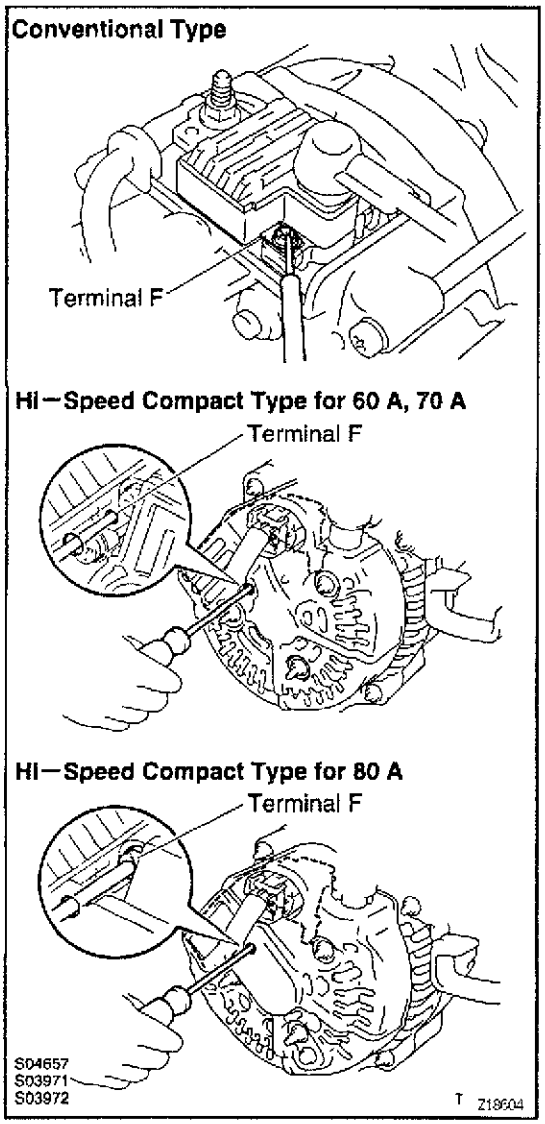
Hi-speed compact type for 60 A

at 25°C (77°F)	13.5 – 14.1 V
at 135°C (275°F)	12.6 – 14.1 V

Hi-speed compact type for 70 A, 80 A

at 25°C (77°F)	13.8 – 14.4 V
at 135°C (275°F)	12.9 – 14.4 V

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:

- Conventional type:
  Remove the brush holder cover, and connect the terminal B wire to the orginal position.

CAUTION: Battery voltage is applied to terminal B, so disconnect the battery before beginning work.

- 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 IC regulator.
- If the voltmeter reading is less than standard voltage, check the alternator.

w/o IC Regulator:

Standard amperage:

10 A or less

Standard voltage:

at 20°C (68°F)	13.8 – 14.8 V
at 60°C (140°F)	13.3 – 15.5 V

If the voltmeter reading is more than standard voltage, replace the alternator 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 blower switch at HI.

(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 alternator.

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