

SECTION 1G

CHARGING SYSTEM

GENERAL DESCRIPTION	1G — 129
Battery	1G — 129
Alternator	1G — 129
ON-CAR SERVICE	1G — 131
Battery	1G — 131
Removal and Replacement	1G — 132
Alternator	1G — 133

GENERAL DESCRIPTION

BATTERY

The battery has 3 functions in the electrical system. First, it cranks engine. Second, it acts as a regulator for electrical system. And third, it provides energy for a limited period when electrical load exceeds the alternator output.

Type	PT28 — 20BL
Capacity(Ah)	35

ALTERNATOR

A small and light weight regulator is adopted.

Output(A)	50
Pulley diameter(mm)	58.5

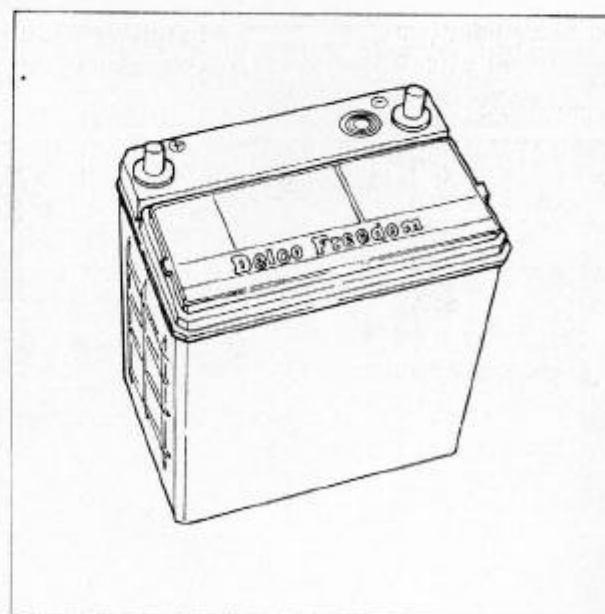


FIG. 1G — 1 BATTERY

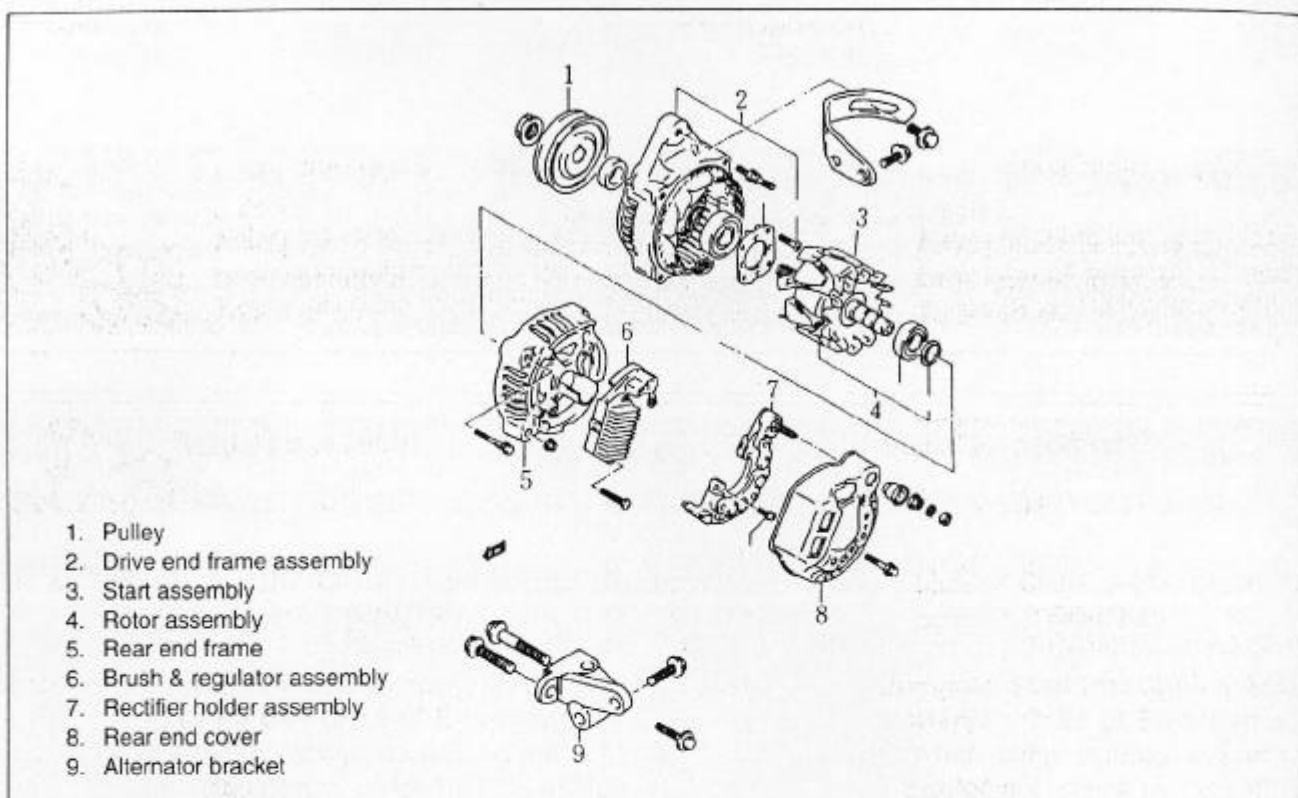


FIG. 1G-2 ALTERNATOR

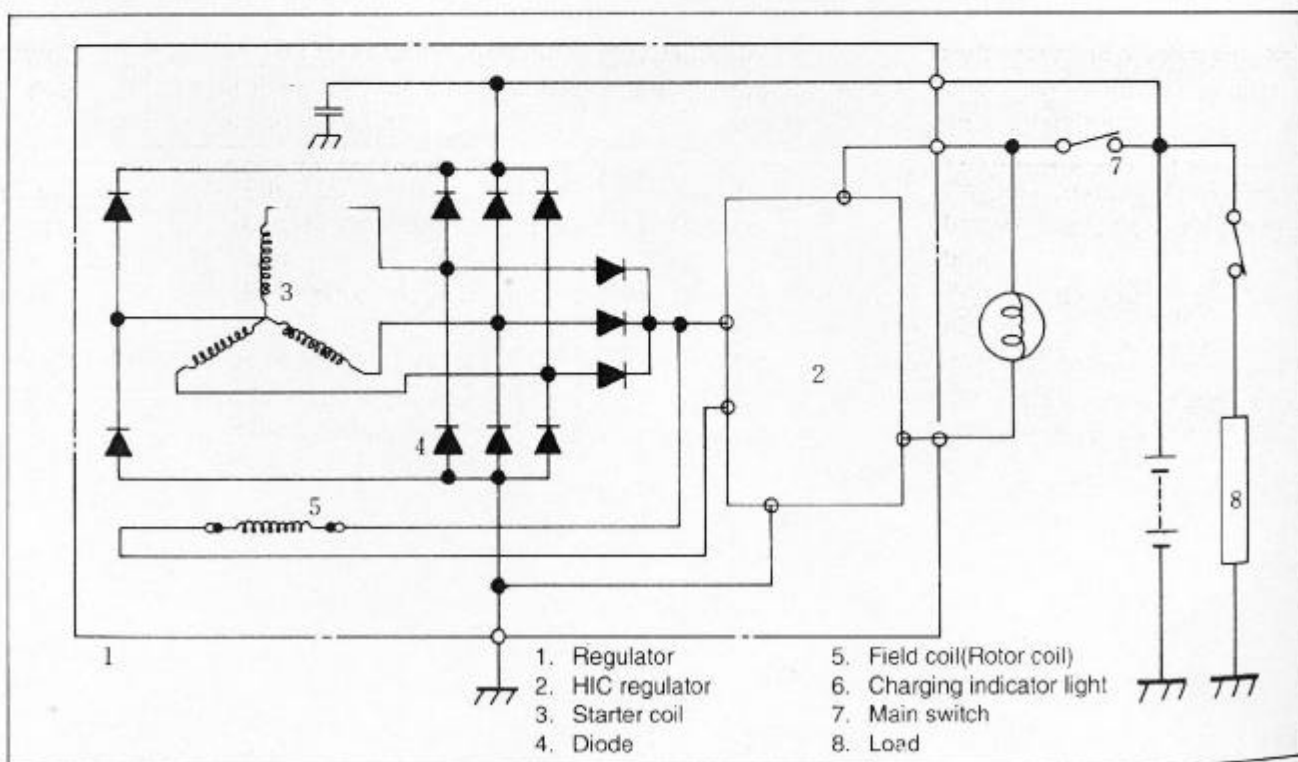


FIG. 1G-3 ALTERNATOR CIRCUIT

ON-CAR SERVICE

BATTERY

Housing and Holder Clamp

Before installing battery, make battery housing and holder clamp free from dirt or parts left in the housing. Tighten firmly the holder down bolts not to keep the battery moving in the housing. However no overtightening is allowed.

Visual Inspection

Check battery case and cover for crack that causes loss of electrolyte and if any one is found, replace the battery. Check out the cause of the damage and correct it, if necessary.

Jumping Start through an Auxiliary(Booster) Battery in Case of Emergency

CAUTION

- Do not push or tow vehicle to start, which cause malfunction in the exhaust system or others.
- When using jumper cable, handle the auxiliary battery and discharging battery with care. Follow the following sequence and do not cause sparking.
- Follow it to prevent from:
 1. Physical damage(especially on eyes) by battery explosion, electrolyte or electrical burn.
 2. Possible damage of electrical device in vehicle.
- Do not put battery near fire to produce inflammable and explosive gases.
- Handle battery without personal or ornaments such as rings, watches, etc.

CAUTION

- Battery fluid is highly acidic. Be careful to avoid spilling on body, fabric or other painted articles.
- Any spilled electrolyte should be flushed with large quantity of water.
- To avoid short-circuited, do not bring metal tool or jumper cable to contact to \oplus battery terminal or metal near from it.
- Keep children away from battery.

1. Release parking brake and put the shift lever to neutral. Turn the ignition switch to OFF, and illumination lights off.
2. Check the level of electrolyte, and replace battery, if it is under the lower level.

CAUTION

- When jump starting engine with charging equipment, check that the equipment is 12V and \ominus grounded.
- Do not use equipment of 24V. It causes damage to electrical system or electrical device.

3. Connect one end of jumper cable to \oplus terminal of the auxiliary battery, and the other end to \oplus terminal of discharging battery. To prevent grounding and for easy work, keep the two vehicles away each other. Employ only the auxiliary battery of 12V.
4. Connect \ominus terminal of cable to \ominus terminal of auxiliary battery. Connect the other end to the earth of body(A/C compressor bracket or alternate attaching bracket) at least 50cm away from the battery of the oscillating vehicle(Never connect it directly to the \ominus terminal of the discharged battery).
5. Start engine of jumping vehicle with OFF for all electrical accessories, and start engine with discharged battery of the other.
6. Disconnect jumper cable in the reverse of connecting procedures. Disconnect terminal first from the engine of the jumping started.

REMOVAL AND REPLACEMENT

When handling a battery, the following safety precautions should be followed.

- Hydrogen gas is produced from the battery. A flame or spark near the battery may cause the gas to ignite.
- Battery fluid is highly acidic. Avoid spilling electrolyte on clothing or other fabric. Any spilled electrolyte should be flushed with large quantity of water and cleaned immediately. To remove or replace a battery, always disconnect the \ominus terminal first, then \oplus terminal.

Adjustment of V Belt Tension

CAUTION

Check and adjust V belt tension after disconnecting \ominus cable of battery.

1. Check belt for crack, damage, distortion, abrasion or dirt, and replace belt, if necessary.
2. When pressing down the belt with thumb, it should have following tensibility.

Tensile length of belt(mm)	New	7 — 9
	Used	7 — 11

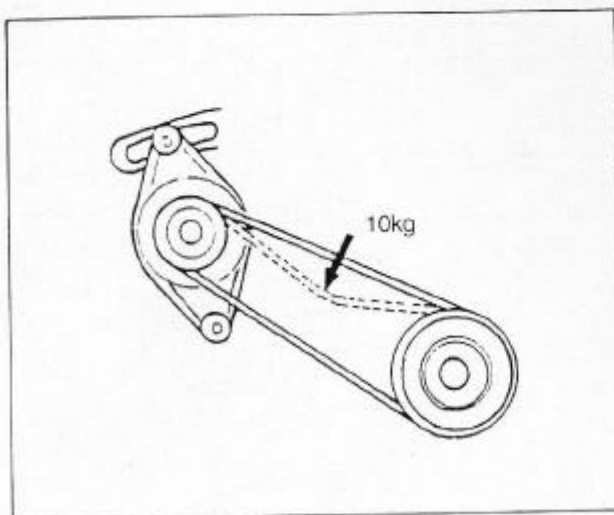


FIG. 1G — 4

3. If the tension of belt is too tight or loose, relocate the alternator to adjust belt for proper tension.

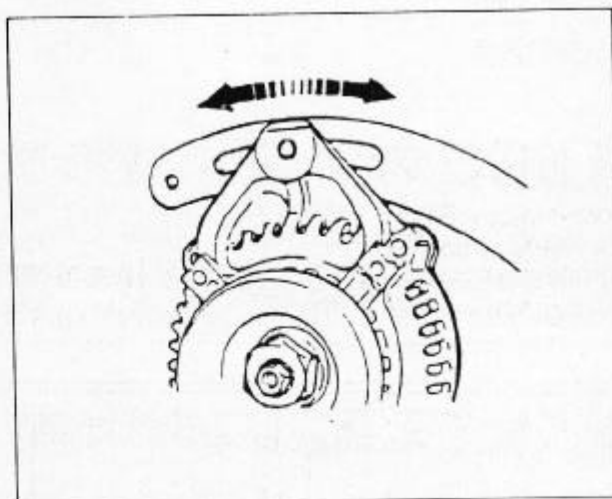


FIG. 1G — 5

4. Tighten alternator adjusting bolts and pivot bolts.
5. Connect \ominus terminal of battery.

ALTERNATOR

Malfunction of Charge Lamp

Condition	Probable Cause	Correction
With ignition switch turned ON, engine OFF, charge light is not lightened	<ul style="list-style-type: none"> • Fuse blown • Lamp burned out • Wiring connection loose • IC regulator faulty • Brush has poor contact to slip ring 	<ul style="list-style-type: none"> • Check fuse • Replace lamp • Attach loosened parts • Check alternator • Repair or replace
Engine is started, belt and charge lamp is still lightened	<ul style="list-style-type: none"> • Loosened or worn V belt • IC regulator or alternator faulty • Wiring faulty 	<ul style="list-style-type: none"> • Adjust or replace the drive belt • Check charging system • Repair the wiring

Undercharged Battery

Check alternator as following procedures when the battery is remaining in a state of charge far below its capacity.

1. Connect voltmeter and ammeter as shown below.

CAUTION
Use battery charged up to its capacity.

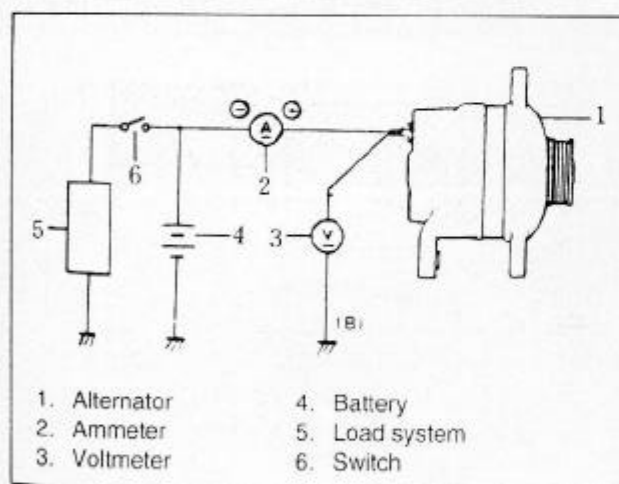


FIG. 1G — 6

2. Speed up the idle engine to 2000 rpm.

CAUTION
Turn off all switches for accessories(wiper, heater, etc.).

Standard current	Max. 50A
Adjusted voltage	14.2 — 14.8V(at 25°C)

CAUTION

Remember the changing voltages according to the charging temperature of regulator case as follows.

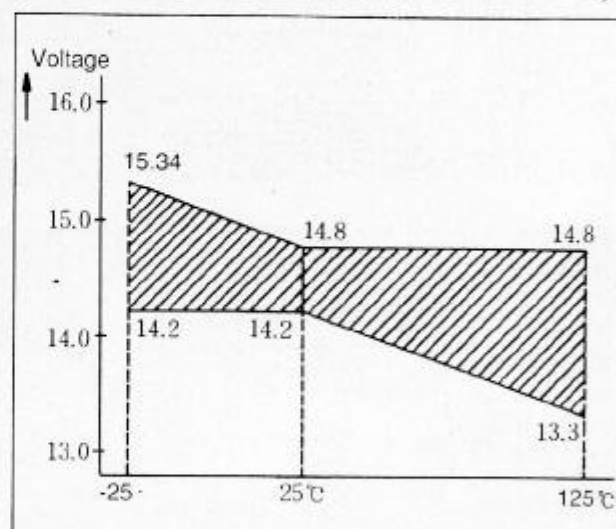


FIG. 1G — 7

3. Check brush for earth when voltage is higher than standard limit. Replace IC regulator if brush is normal in earth.
4. When voltage is lower than standard limit, turn on headlight and heater with engine speed up to 2000 rpm, measure the current, and correct the alternator, if the measured current is less than 20A.