

1J-4 Charging System:

Generator Symptom Diagnosis

S3RH0A1A04002

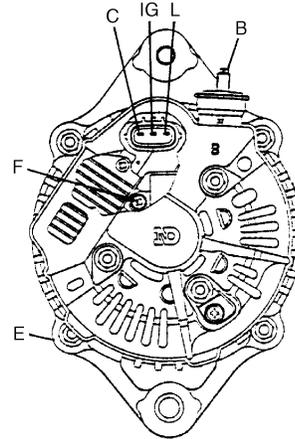
CAUTION:

- Do not mistake polarities of "IG" terminal and "L" terminal.
- Do not create short circuit between "IG" and "L" terminals. Always connect these terminals through a lamp.
- Do not connect any load between "L" and "E" terminals.
- When connecting charger or booster battery to vehicle battery, refer to "Jump Starting in Case of Emergency: ".

Trouble in charging system will show up as one or more of the following conditions:

- 1) Faulty indicator lamp operation.
- 2) An undercharged battery as evidenced by slow cranking or indicator dark.
- 3) An overcharged battery as evidenced by excessive spewing of electrolyte from vents.

Noise from generator may be caused by loose drive pulley, loose mounting bolts, worn or dirty bearings, defective diode, or defective stator.



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B: Generator output (Battery terminal)	F: Field coil terminal
C: C terminal	IG: Ignition terminal
E: Ground	L: Lamp terminal

Charging Indicator Lamp Operation

Condition	Possible cause	Correction / Reference Item
Charge light does not light with ignition ON and engine off	Fuse blown	Check fuse.
	Indicator lamp (LED) faulty	Replace combination meter.
	Wiring connection loose	Tighten loose connection.
	IC regulator or field coil faulty	Check generator.
	Poor contact between brush and slip ring	Repair or replace.
Charge light does not go out with engine running (battery requires frequent recharging)	Drive belt loose or worn	Adjust or replace drive belt.
	IC regulator or generator faulty	Check charging system.
	Wiring faulty	Repair wiring.

Generator Test (Undercharged Battery Check)

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This condition, as evidenced by slow cranking or low specific gravity can be caused by one or more of the following conditions even though indicator lamp may be operating normal. The following procedure also applies to cars with voltmeter and ammeter.

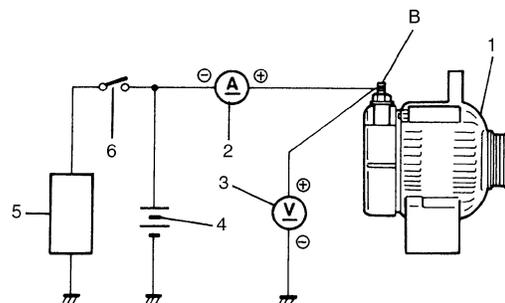
- Make sure that undercharged condition has not been caused by accessories left on for extended period of time.
- Check drive belt for proper tension.
- If battery defect is suspected, refer to "Battery Description: ".
- Inspect wiring for defects. Check all connections for tightness and cleanliness, battery cable connections at battery, starting motor and ignition ground cable.

No-Load Check

- 1) Connect voltmeter and ammeter as shown in the figure.

NOTE:

Use fully charged battery.



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1. Generator
2. Ammeter (between generator "B" terminal and battery (+) terminal)
3. Voltmeter (between generator "B" terminal and ground)
4. Battery
5. Load
6. Switch

- Run engine from idling up to 2,000 rpm with all accessories turned off and read meters.
If voltage is higher than standard value, check ground of brushes.
If brushes are not grounded, replace IC regulator.
If voltage is lower than standard value, proceed to the following check.

Specification for undercharged battery (No-load check)

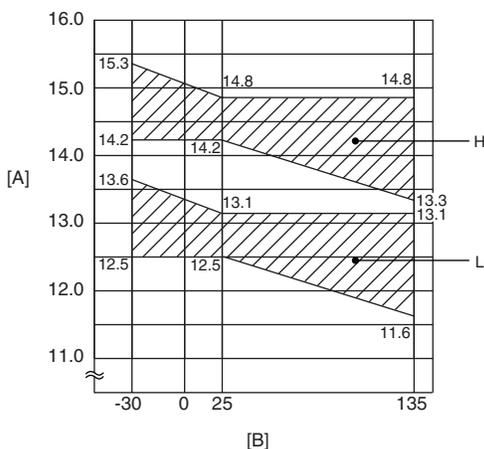
Current: 10 A

Voltage: 14.2 – 14.8 V at Hi (H) (at 25 °C, 77 °F)

Voltage: 12.5 – 13.1 V at Lo (L) (at 25 °C, 77 °F)

NOTE:

Consideration should be taken that voltage will differ somewhat with regulator case temperature as shown in the figure.



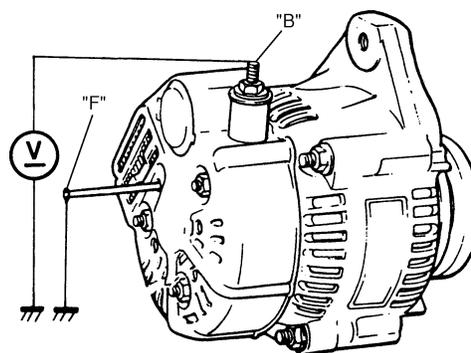
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[A]: Regulated voltage (V)
[B]: Heatsink temperature (°C)

- Ground "F" terminal and start engine, then measure voltage at "B" terminal as shown in the figure.

- Voltage is higher than standard value. It is considered that generator itself is good but IC regulator has been damaged, replace IC regulator.
- Voltage is lower than standard value. It is considered that generator itself has problem, check the generator.

If the generator is in good condition, check generator control signal. Refer to "Generator Control Circuit Check: in Section 1A".



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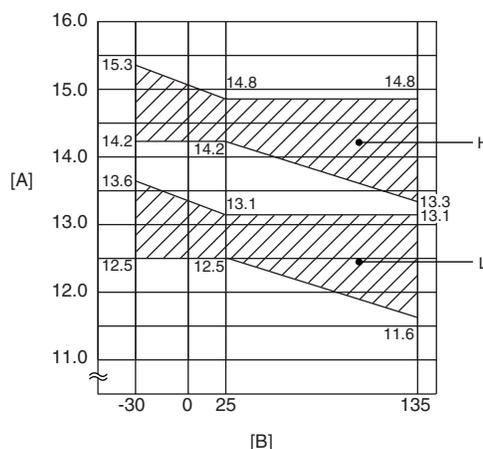
Load Check

- Run engine at 2,000 rpm and turn on head light and heater motor.
- Measure current and if it is less than 20 A, repair or replace generator.

Generator Test (Overcharged Battery Check)

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- To determine battery condition, refer to "Battery Description: ".
- If obvious overcharged condition exists as evidenced by excessive spewing of electrolyte, measure generator "B" terminal voltage at engine 2000 rpm.
- If measured voltage is higher than upper limit value, disassemble generator.
- Check ground of brushes. If brushes are not grounded, replace IC regulator. Then check field coil for grounds and shorts.



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[A]: Regulated voltage (V)
[B]: Heatsink temperature (°C)