

A Look at 1993 Infinity J30 Electrical Systems Part III

Nissan Motor Company, Ltd.

Charging System

Charging System Troubleshooting

Before conducting an alternator test, make sure that the battery is fully charged. A 30-volt voltmeter and suitable test probes are necessary for the test. The alternator can be checked easily by referring to the Inspection Table.

Before troubleshooting, inspect the fusible link.

With IC Regulator

1. Use fully charged battery.
2. Light: Charge warning light.

A.C.G.: Alternator parts except IC regulator

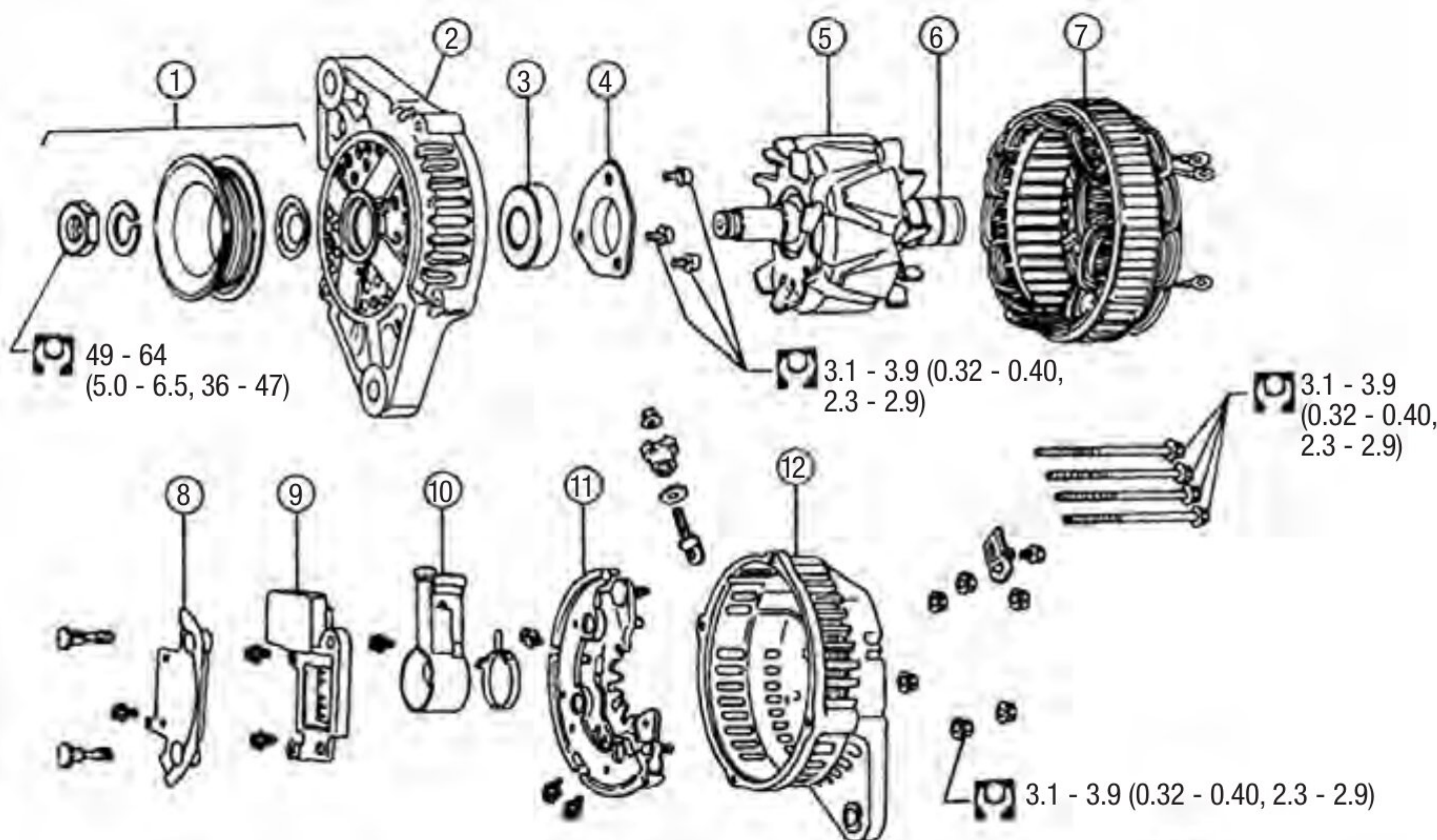
IC-RG: IC regulator

O.K.: IC-alternator is in good condition.

3. When reaching "Damaged A.C.G.," remove alternator from vehicle and disassemble, inspect and correct or replace faulty parts.

4. *Method of grounding F terminal (HITACHI make only).

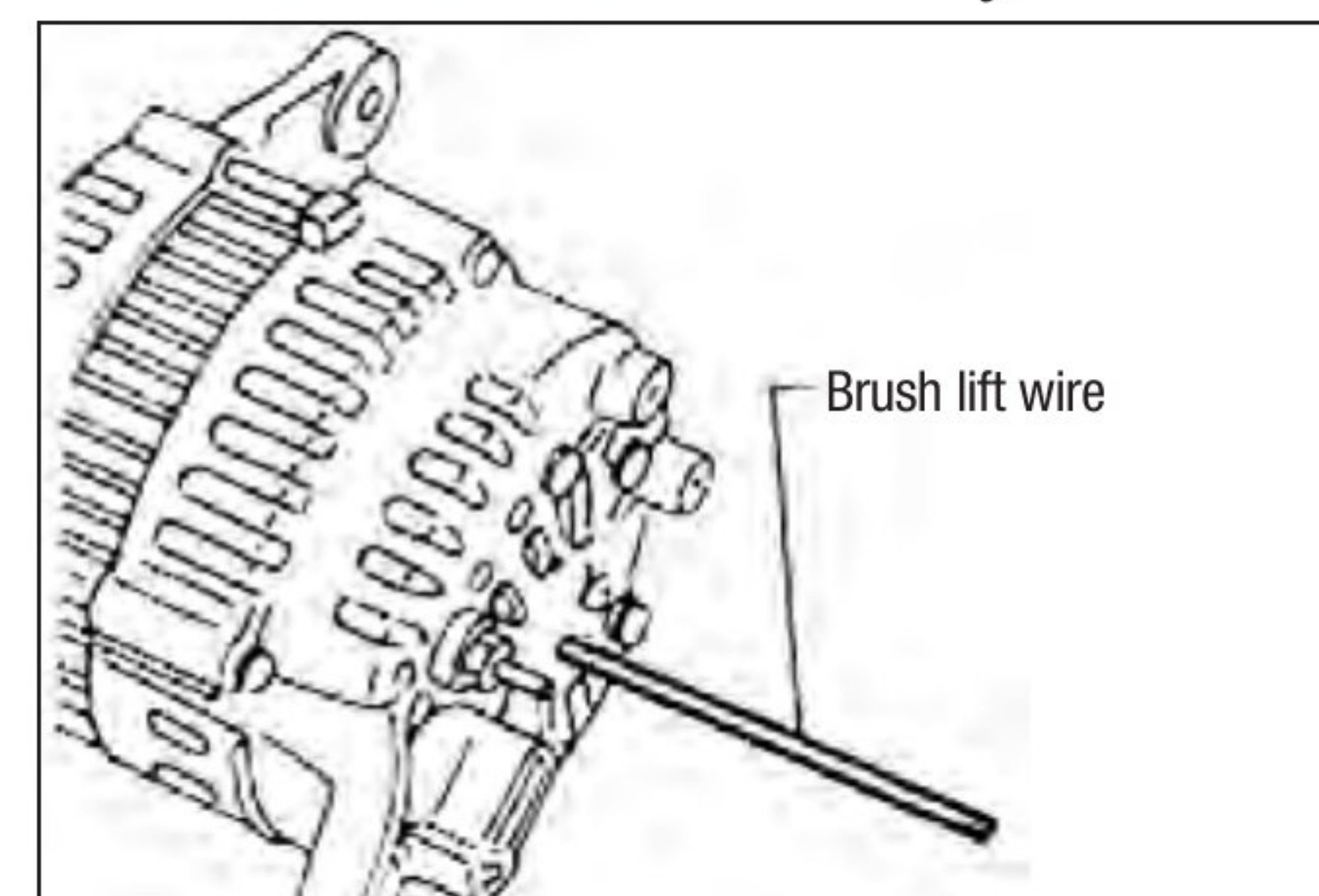
Charging System Construction



- | | | |
|-------------------|-------------|-------------------------|
| ① Pulley assembly | ⑤ Rotor | ⑨ IC regulator assembly |
| ② Front cover | ⑥ Slip Ring | ⑩ Brush holder |
| ③ Front bearing | ⑦ Stator | ⑪ Diode assembly |
| ④ Retainer | ⑧ Condenser | ⑫ Rear cover |

Gasoline engine model

Contact tip of wire with brush and attach wire to alternator body.

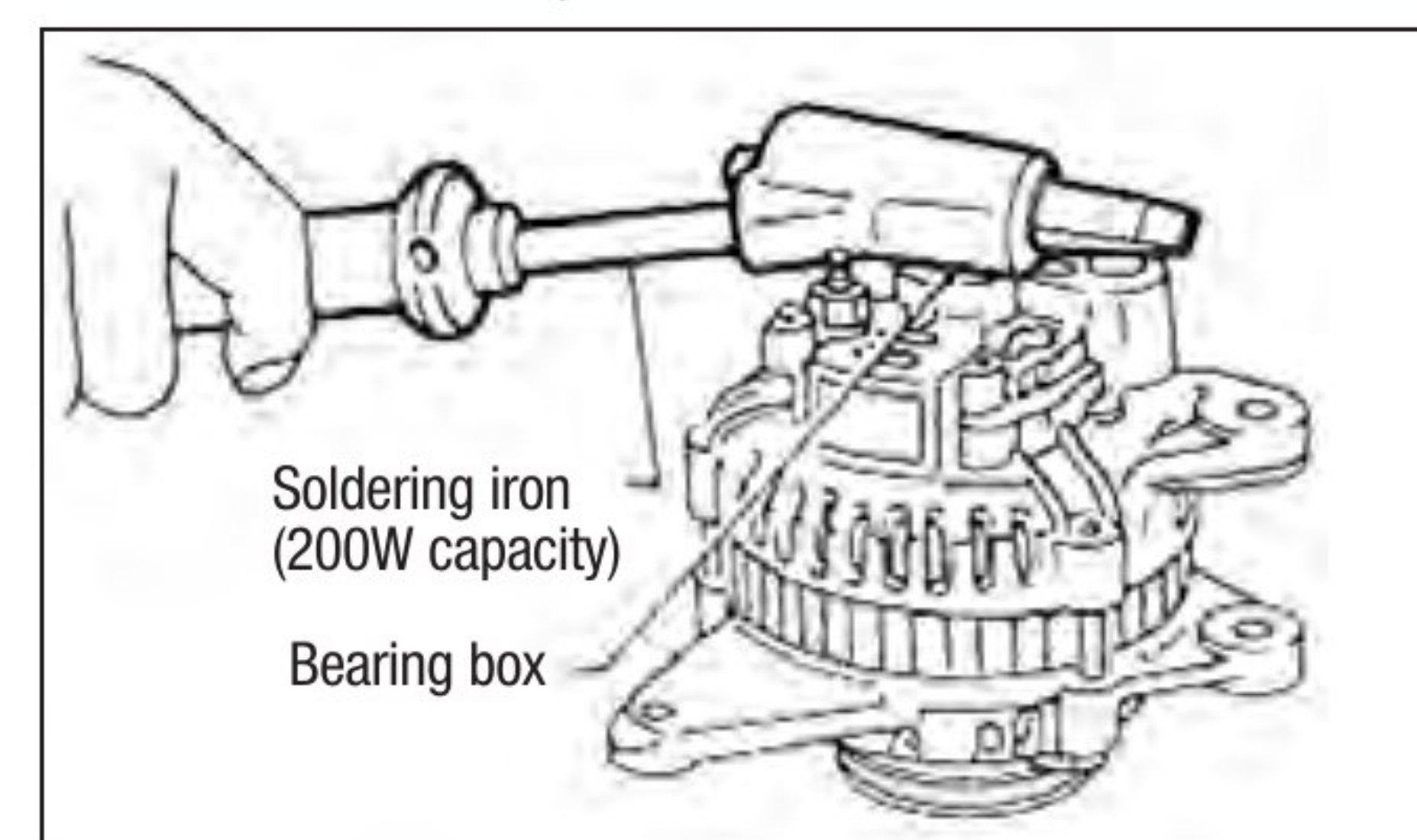


5. Terminals "S," "L," "B" and "E" are marked on rear cover of alternator.

Disassembly

Rear Cover Removal

Caution: Rear cover may be hard to remove because a ring is used to lock outer race of rear bearing. To facilitate removal of rear cover, heat just bearing box section with a 200W soldering iron. Do not use a heat gun, as it can damage diode assembly.



Rear Bearing

Caution: Do not reuse rear bearing after removal. Replace with a new one.

Do not lubricate rear bearing outer race.

Rotor Check

Perform resistance test.

Resistance: Refer to S.D.S.

If not within the specified values,

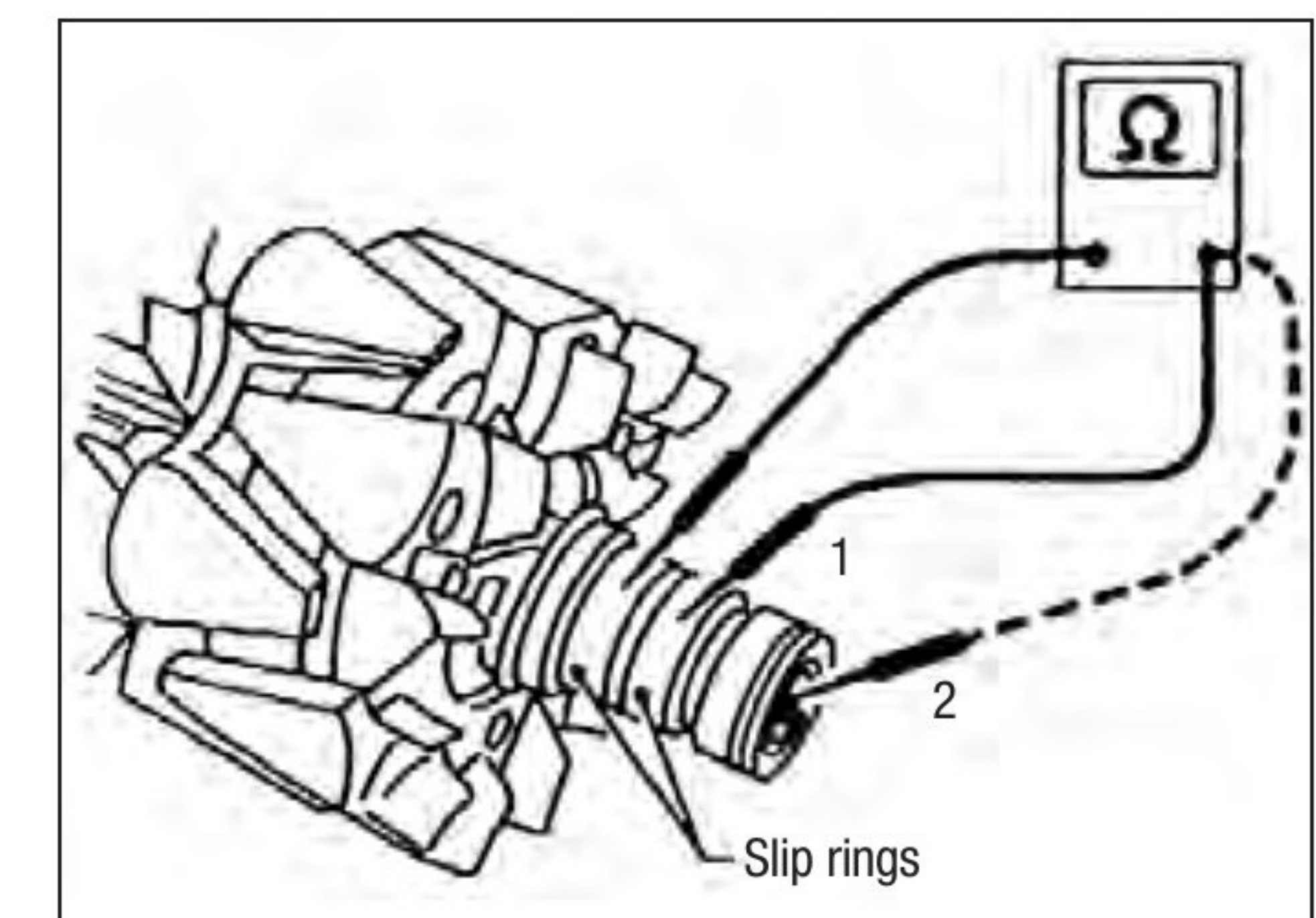
replace rotor.

Perform insulator test. If continuity exists, replace rotor.

Check slip ring for wear.

Slip ring minimum outer diameter: Refer to S.D.S.

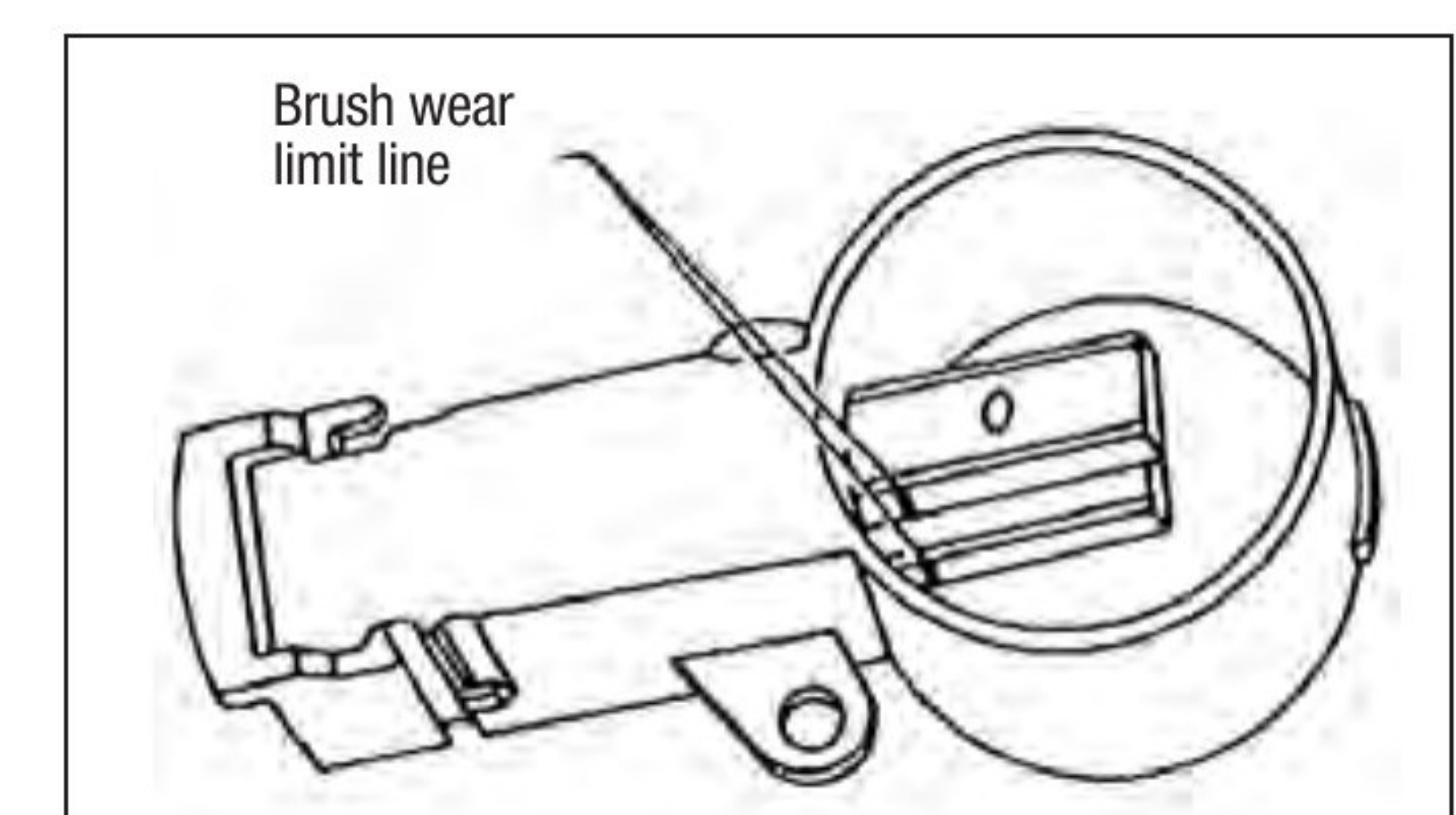
If not within the specified values, replace rotor.



Brush Check

Check smooth movement of brush. If not smooth, check brush holder and clean.

Check brush for wear. Replace brush if it is worn down to the limit line.

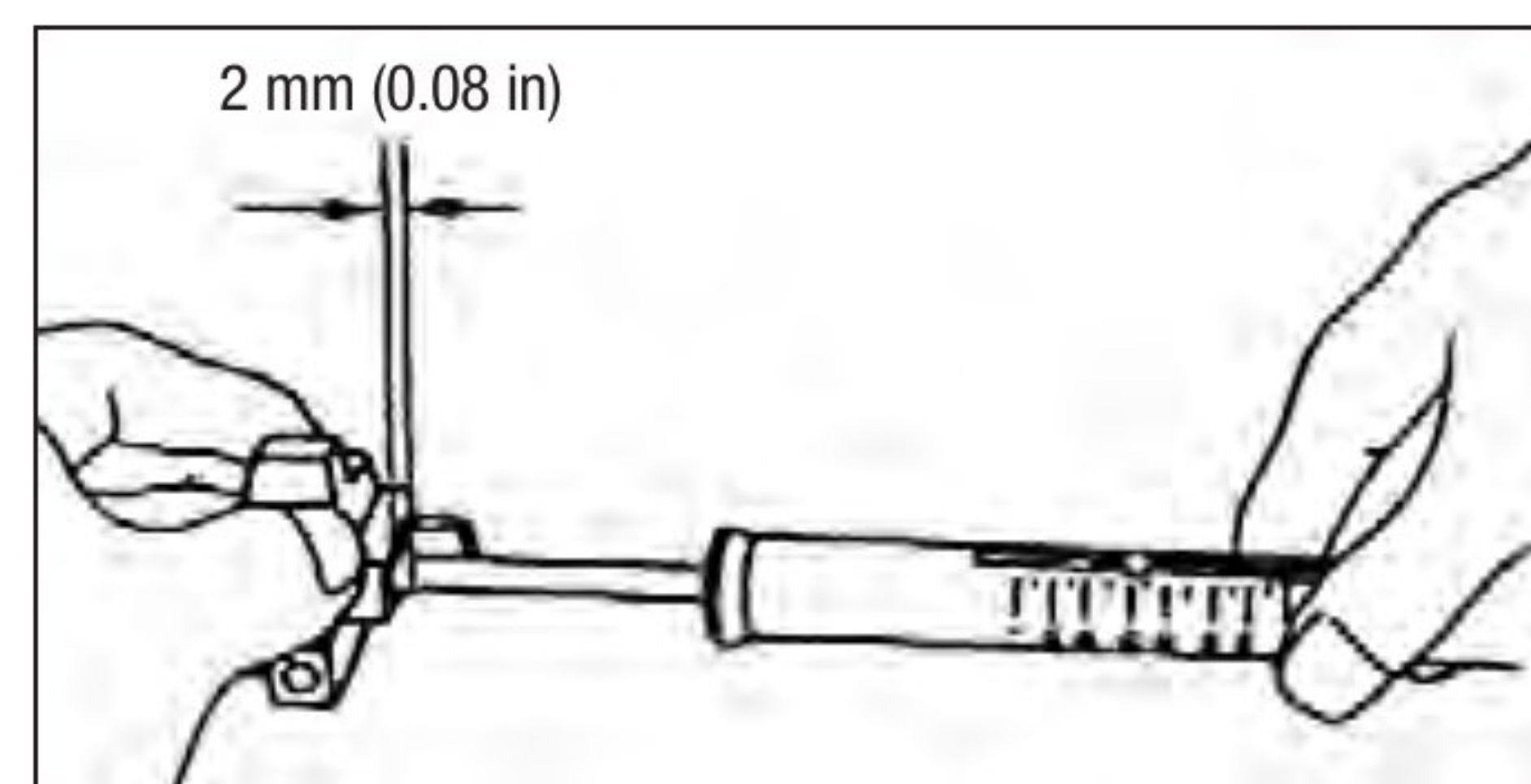


Check brush lead wire for damage. If damaged, replace.

Check brush spring pressure. Measure brush spring pressure with brush projected approximately 2 mm (0.08 in.) from brush holder.

Spring pressure: Refer to S.D.S.

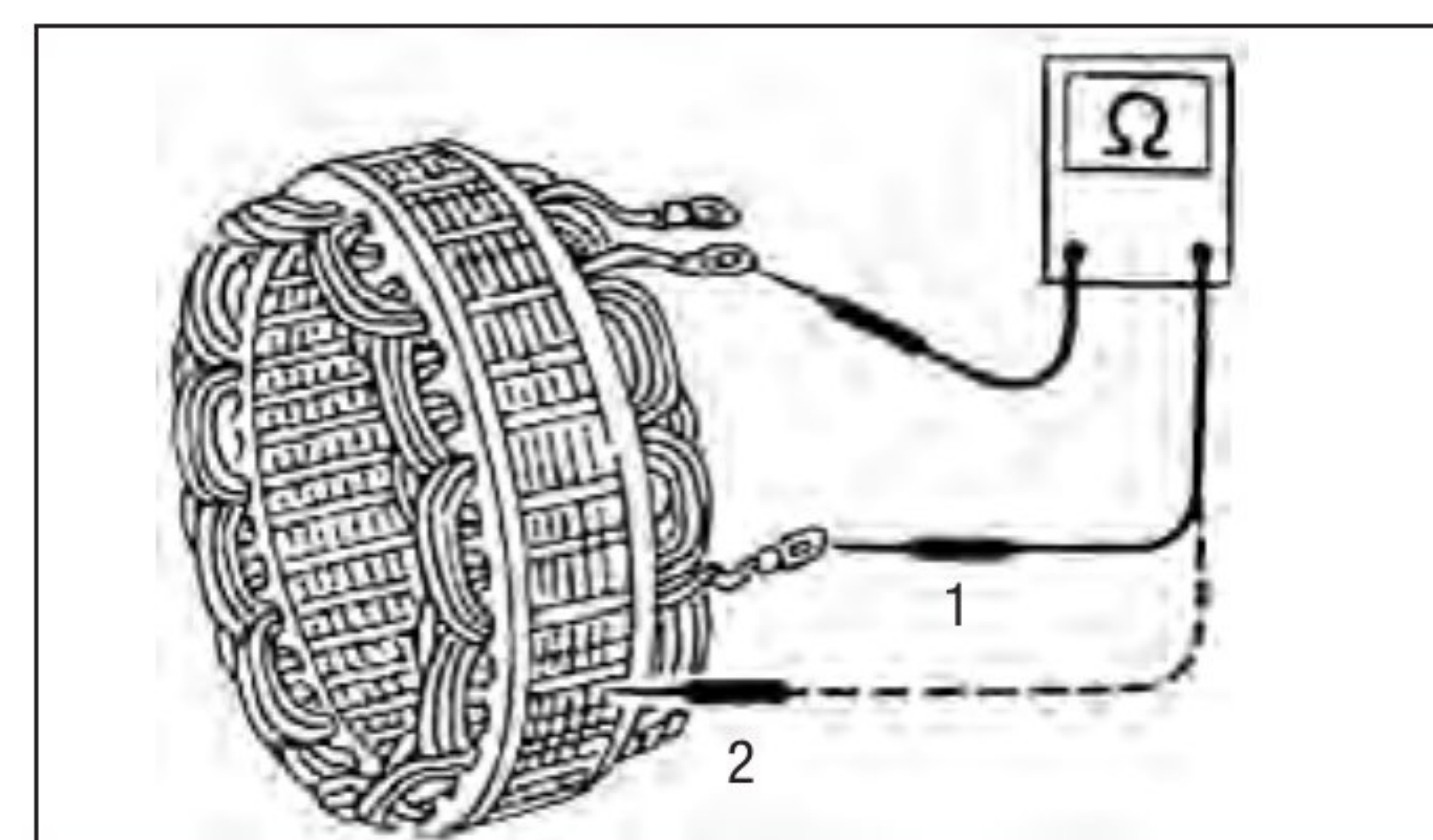
If not within specified values, replace.



Stator Check

Perform continuity test. If no continuity, replace stator.

Perform ground test. If continuity exists, replace stator.



Diode Check Main Diodes

Use an ohmmeter to check condition of diodes as indicated in chart on

page 15. If any of the test results is not satisfactory, replace diode assembly.

Assembly

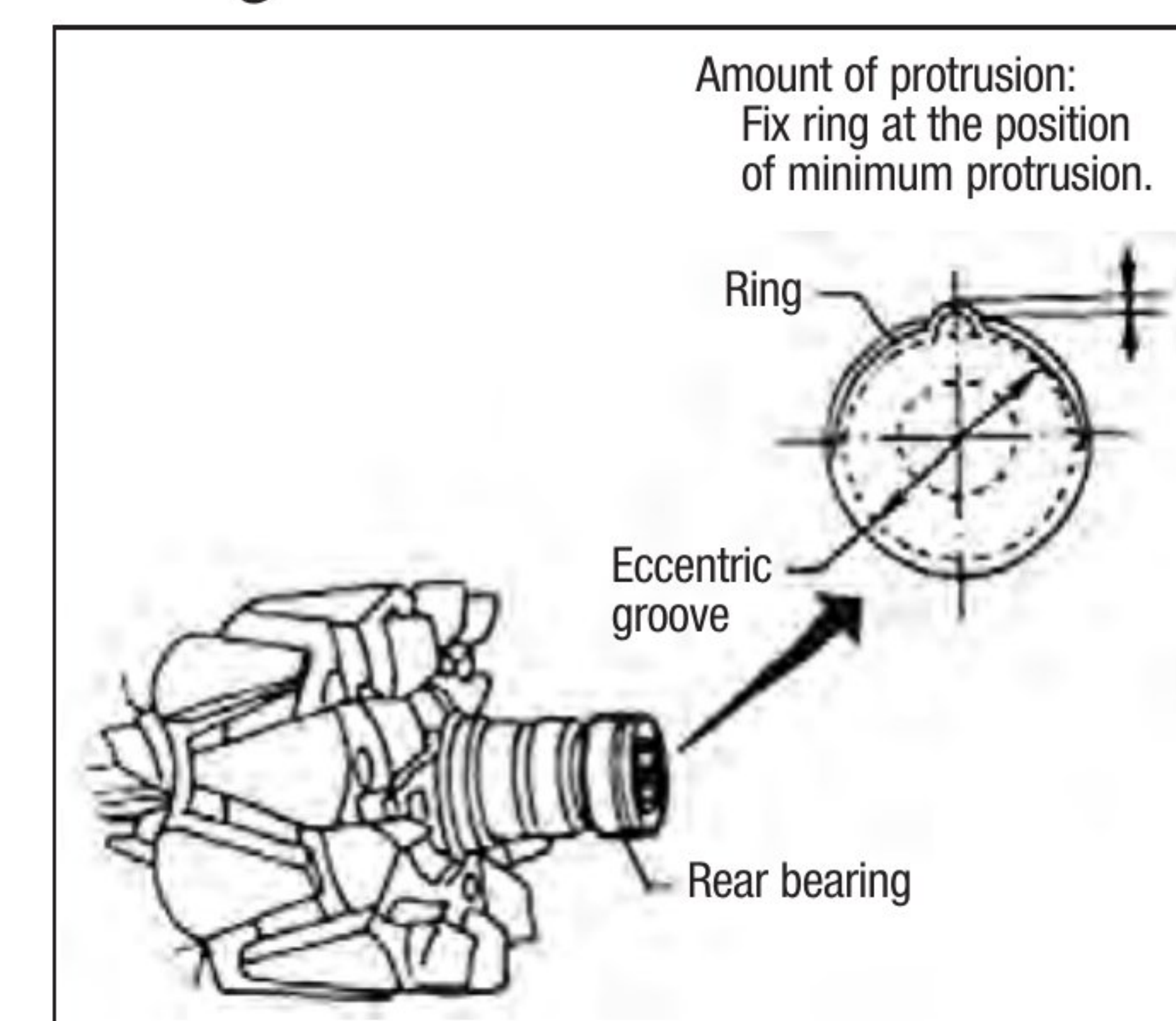
Carefully observe the following instructions.

When soldering each stator coil lead wire to diode assembly terminal, carry out the operation as fast as possible.

Ring Fitting in Rear Bearing

Fix ring into groove in rear bearing so that it is as close to the adjacent area as possible. *Caution:* Do not reuse rear

bearing after removal.

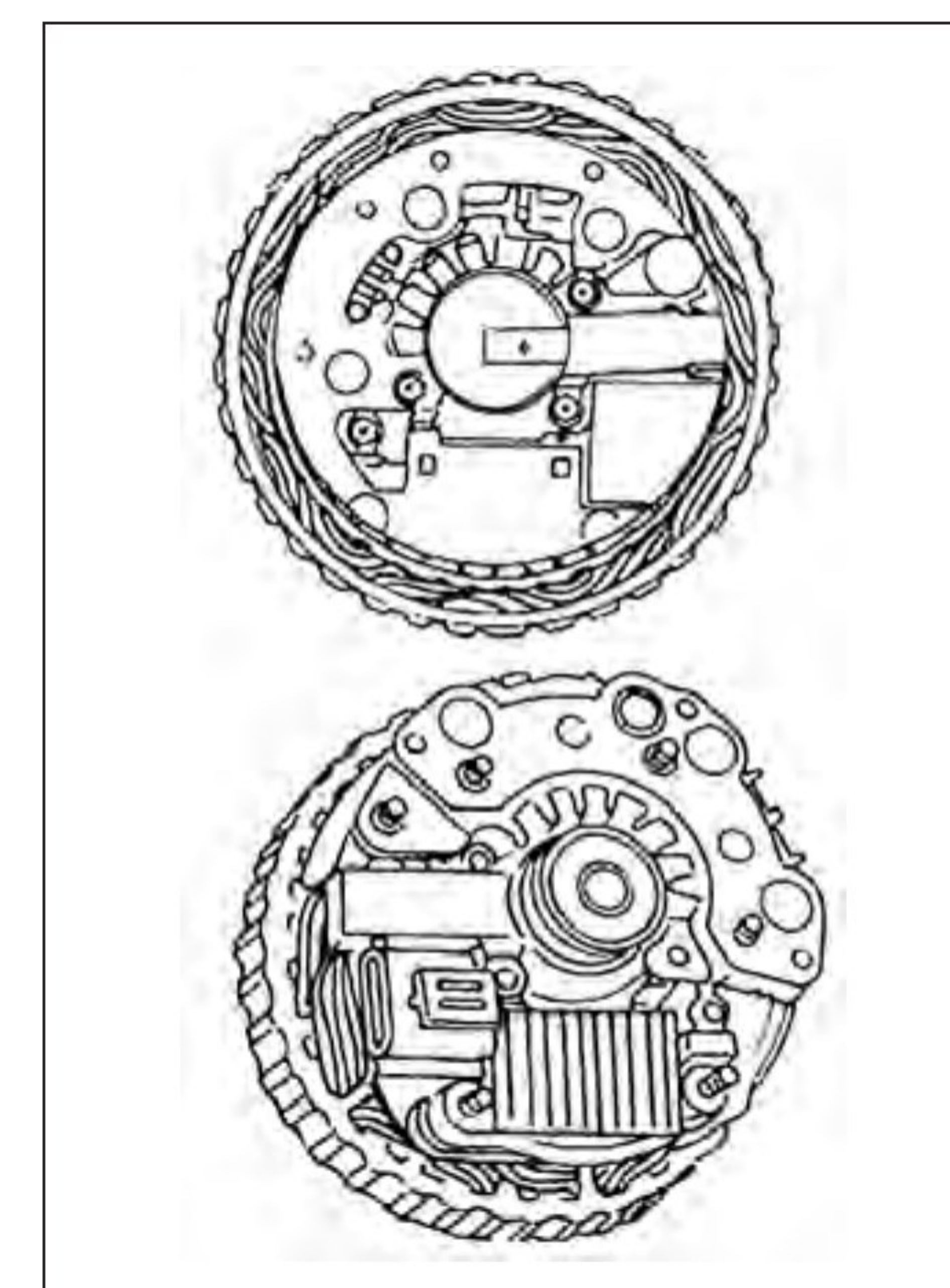


Rear Cover Installation

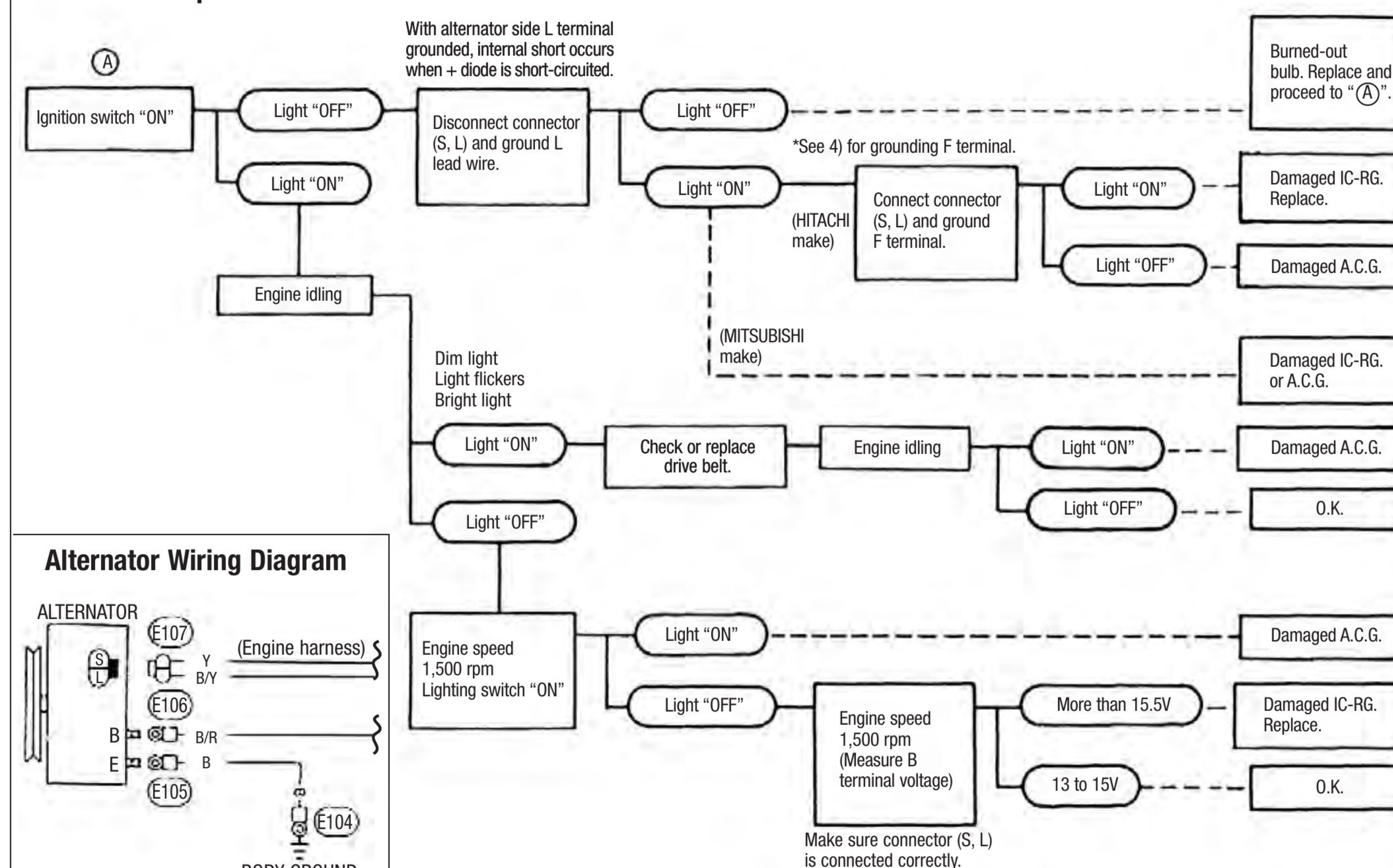
Fit brush assembly, diode assembly, regulator assembly and stator.

Push brushes up with fingers and install them to rotor.

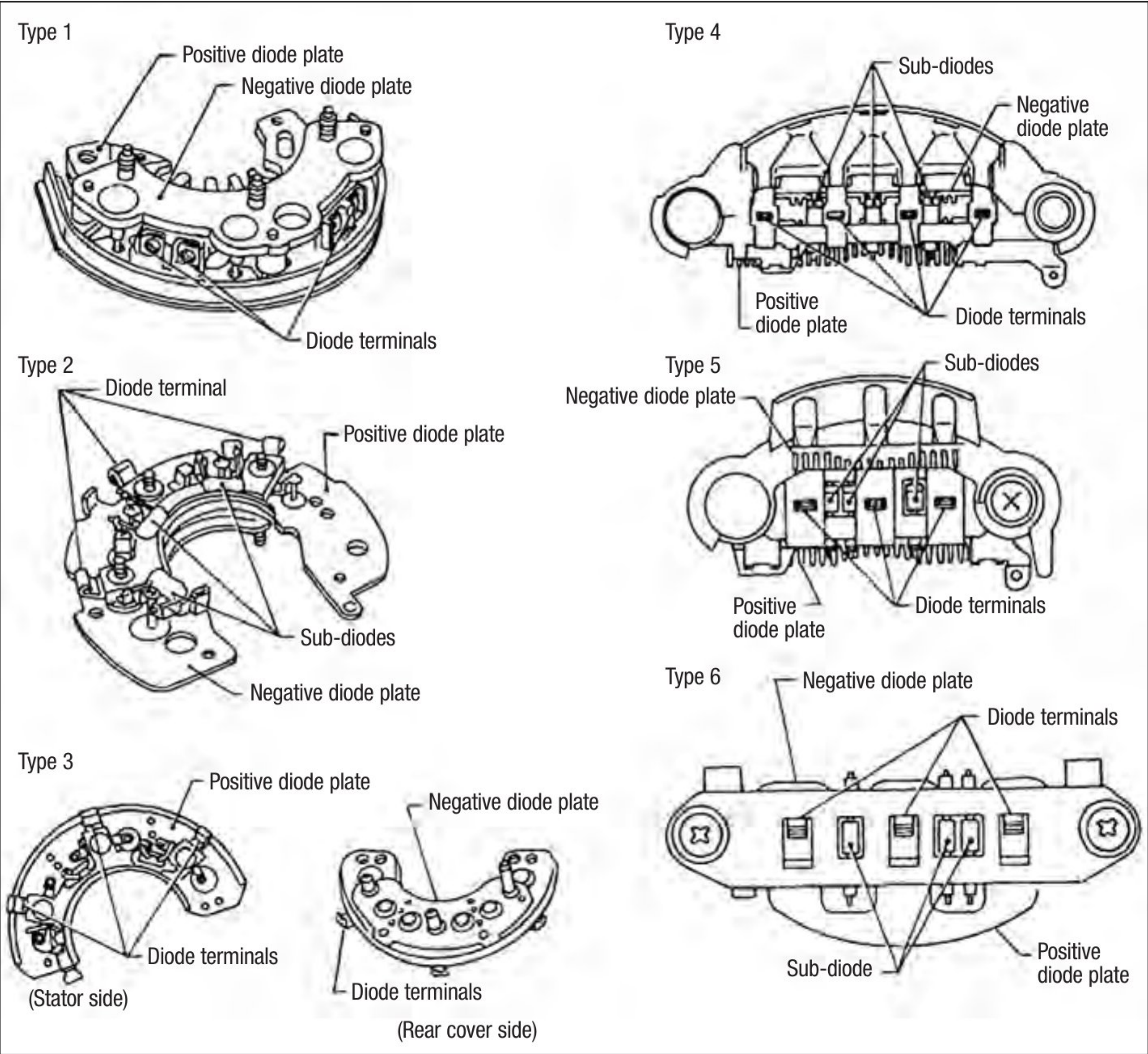
Take care not to damage slip ring sliding surface.



Alternator Inspection Table



Diode Check	Ohmmeter probes		Judgment
	Positive (+)	Negative (−)	
Diodes check (Positive side)	Positive diode plate	Diode terminals	Diode conducts in only one direction.
	Diode terminals	Positive diode plate	
Diodes check (Negative side)	Negative diode plate	Diode terminals	Diode conducts in only one direction.
	Diode terminals	Negative diode plate	



Service Data and Specifications (S.D.S.)—Alternator

Type		LR190-717
		HITACHI
Nominal rating	V-A	12-90
Ground polarity		Negative
Minimum revolution under no-load (When 13.5 volts is applied)	rpm	Less than 1,000
Hot output current	A/rpm	More than 23/1,300 More than 63/2,500 More than 87/5,000
Regulated output voltage	V	14.1 - 14.7
Minimum length of brush	mm (in)	6.0 (0.236)
Brush spring pressure	N (g, oz)	1.000 - 3.432 (102 - 350, 3.60 - 12.34)
Slip ring minimum diameter	mm (in)	More than 26.0 (1.024)
Rotor (Field coil) resistance	Ω	3.4

Combination Switch/Check

