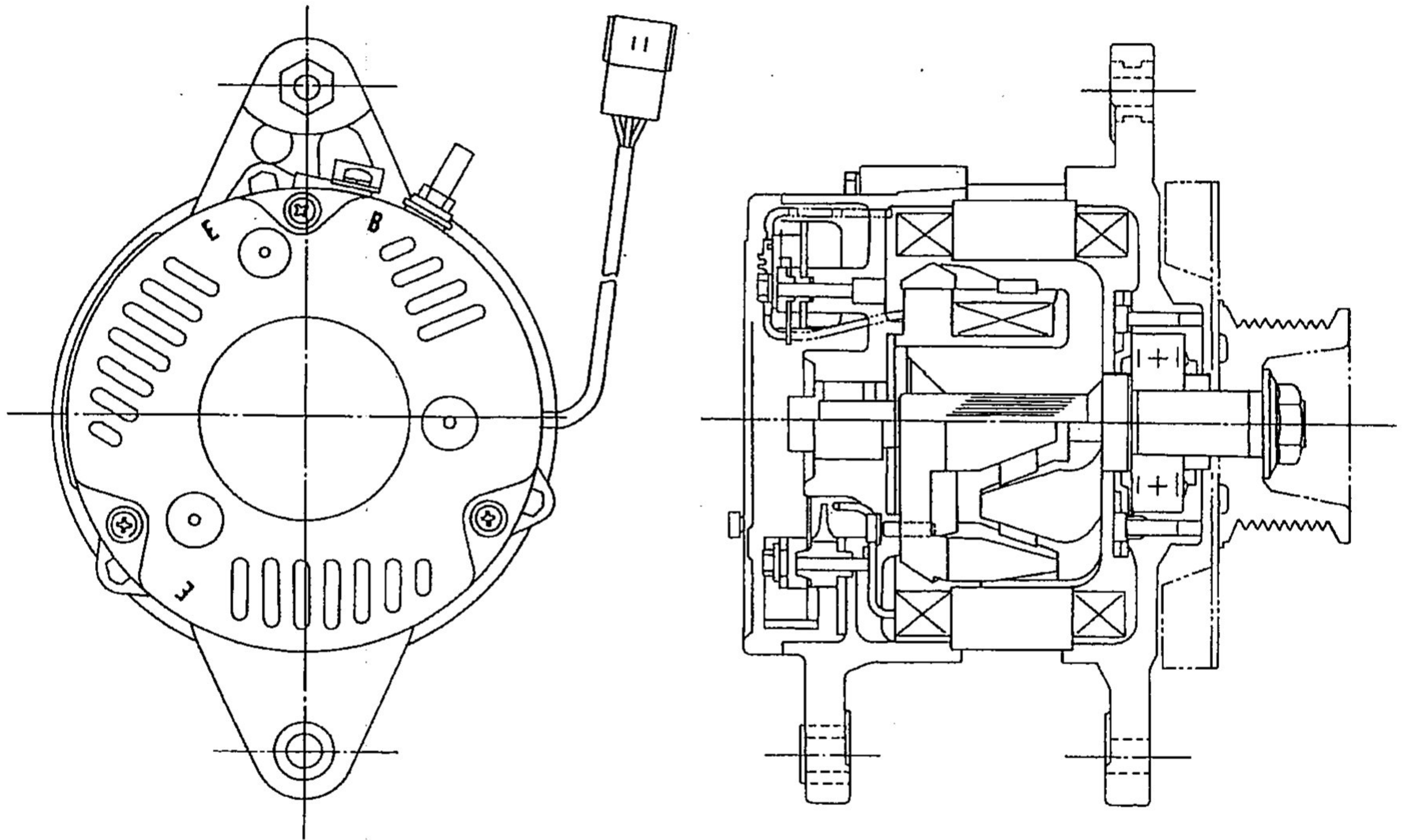


ALTERNATOR

ALTERNATOR

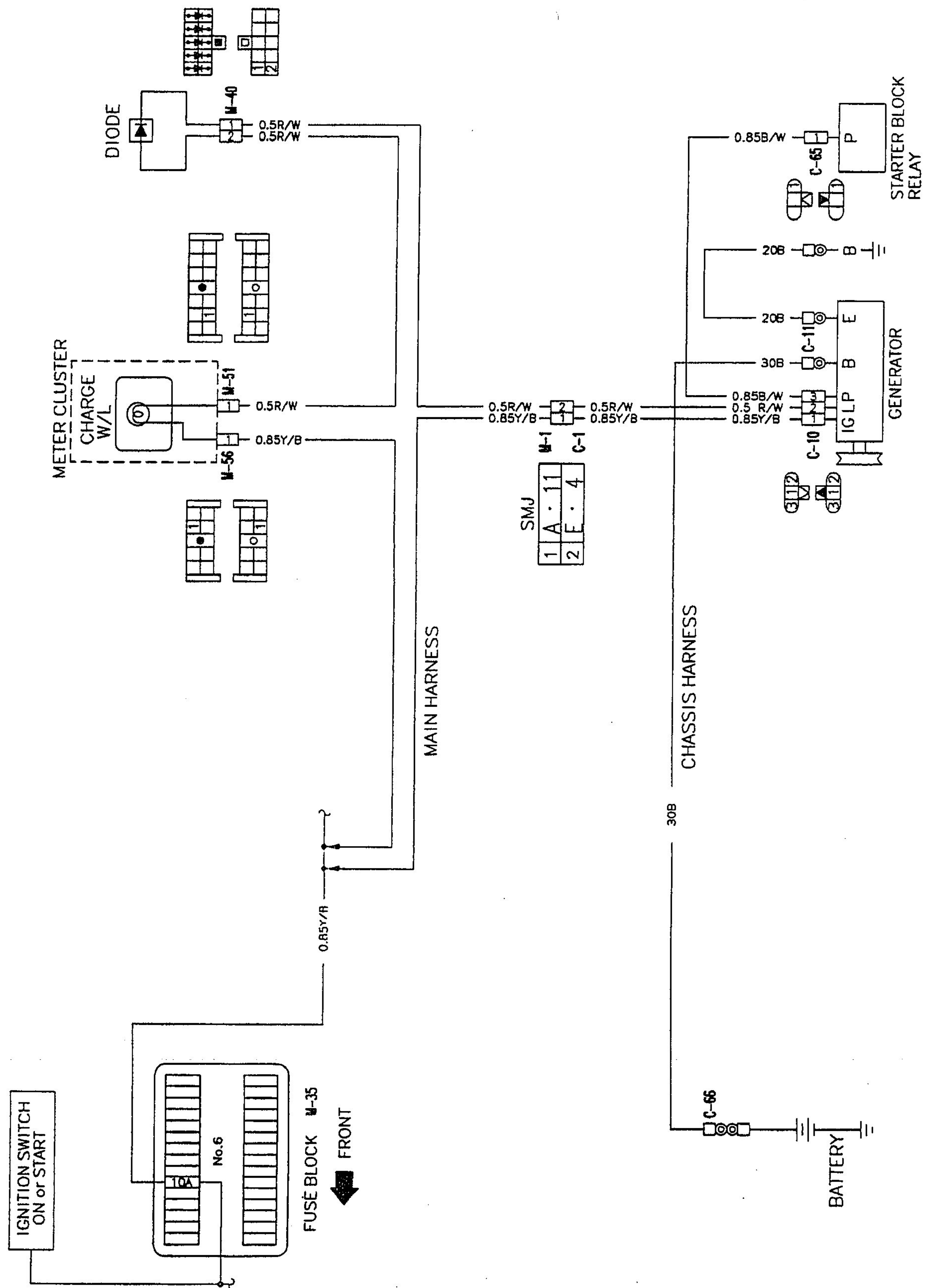
CONSTRUCTION



ZEE063A

WIRING DIAGRAM

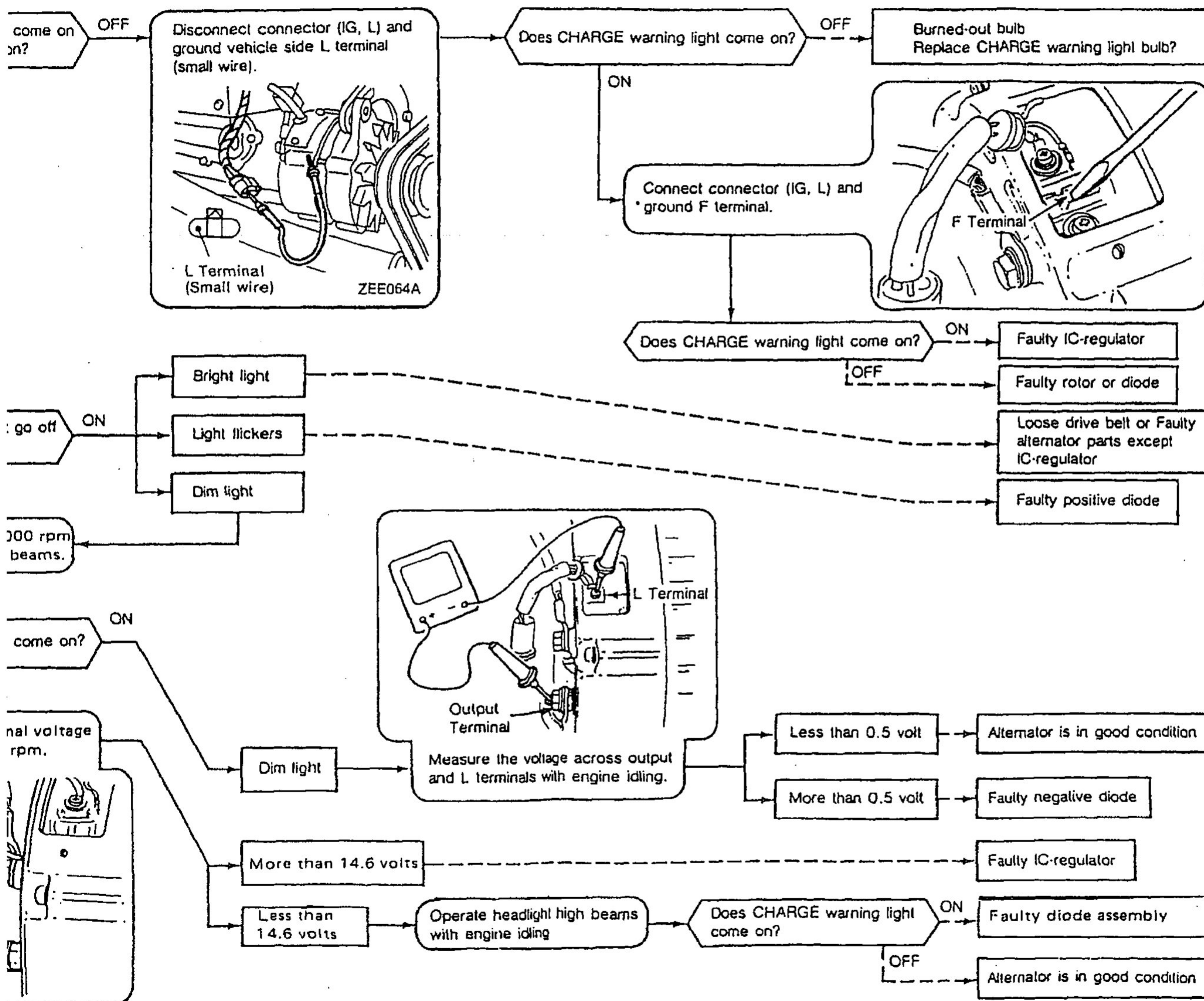
CHARGING SYSTEM



ZEL814B

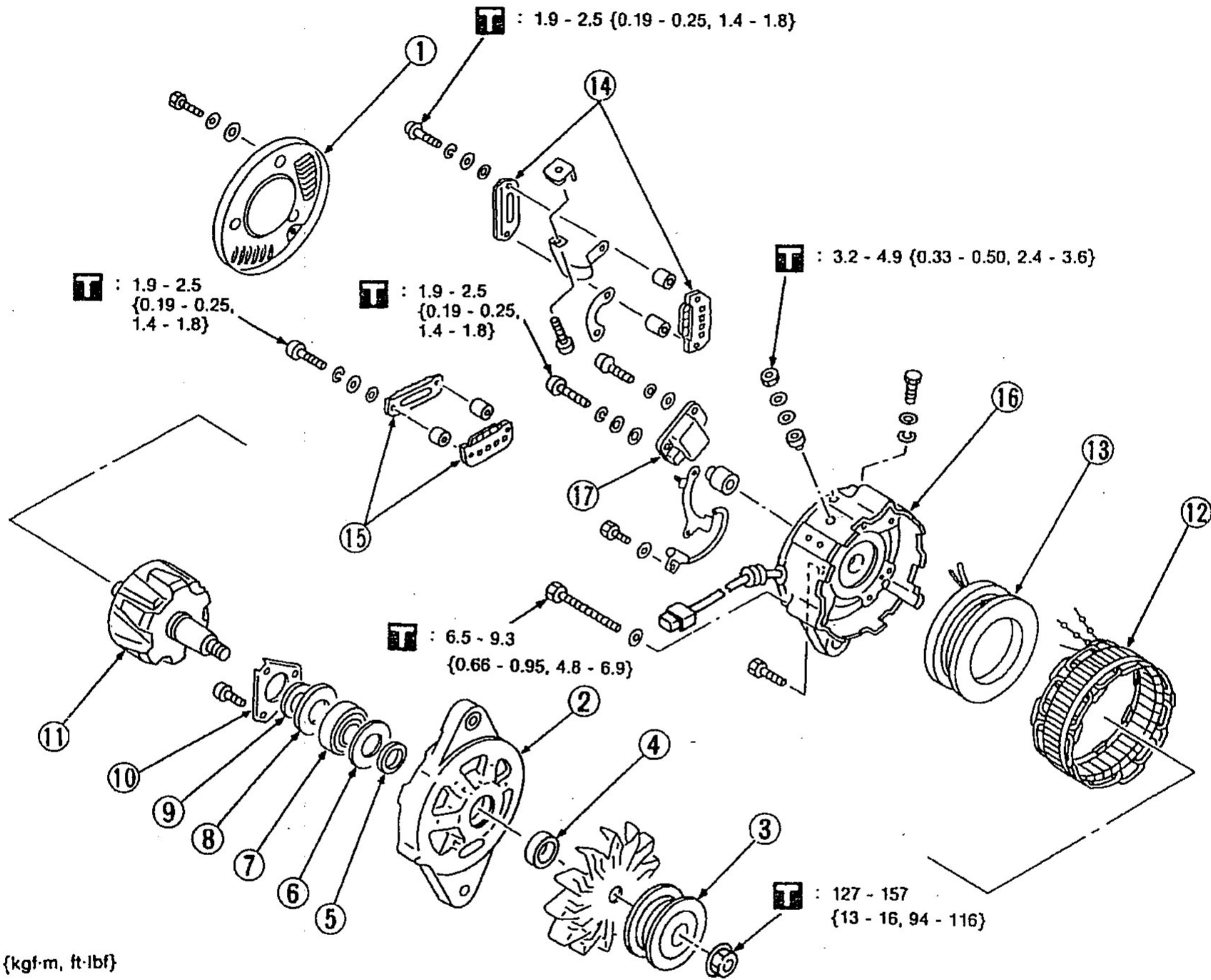
TRUBLESHOOTING CHARGING SYSTEM TEST PROCEDURE

ator test, make sure that the battery is fully charged. A 30-volt voltmeter and suitable test probes are necessary for the test. When any fault is r from the vehicle and disassemble, inspect and correct or replace the faulty parts.



ALTERNATOR

DISASSEMBLY



ZEE065A

- 1.Cover
- ★ 2.Front cover
- ★ 3.Pulley assembly
- 4.Collar
- 5.Dust seal
- 6.Plate

- 7.Ball bearing
- 8.Plate
- 9.Dust seal
- 10.Cover
- 11.Rotor assembly
- 12.Stator assembly

- 13.Coil assembly
- 14.Heat sink
- 15.Heat sink
- 16.Housing
- 17.Regulator
- 13.Coil assembly

Marks "★" and "☆" indicate that the key points of operation are explained in the text.

NOTE

Numbers before part names do not indicate the disassembly sequence.

ALTERNATOR

Key point of disassembly

2.Front cover

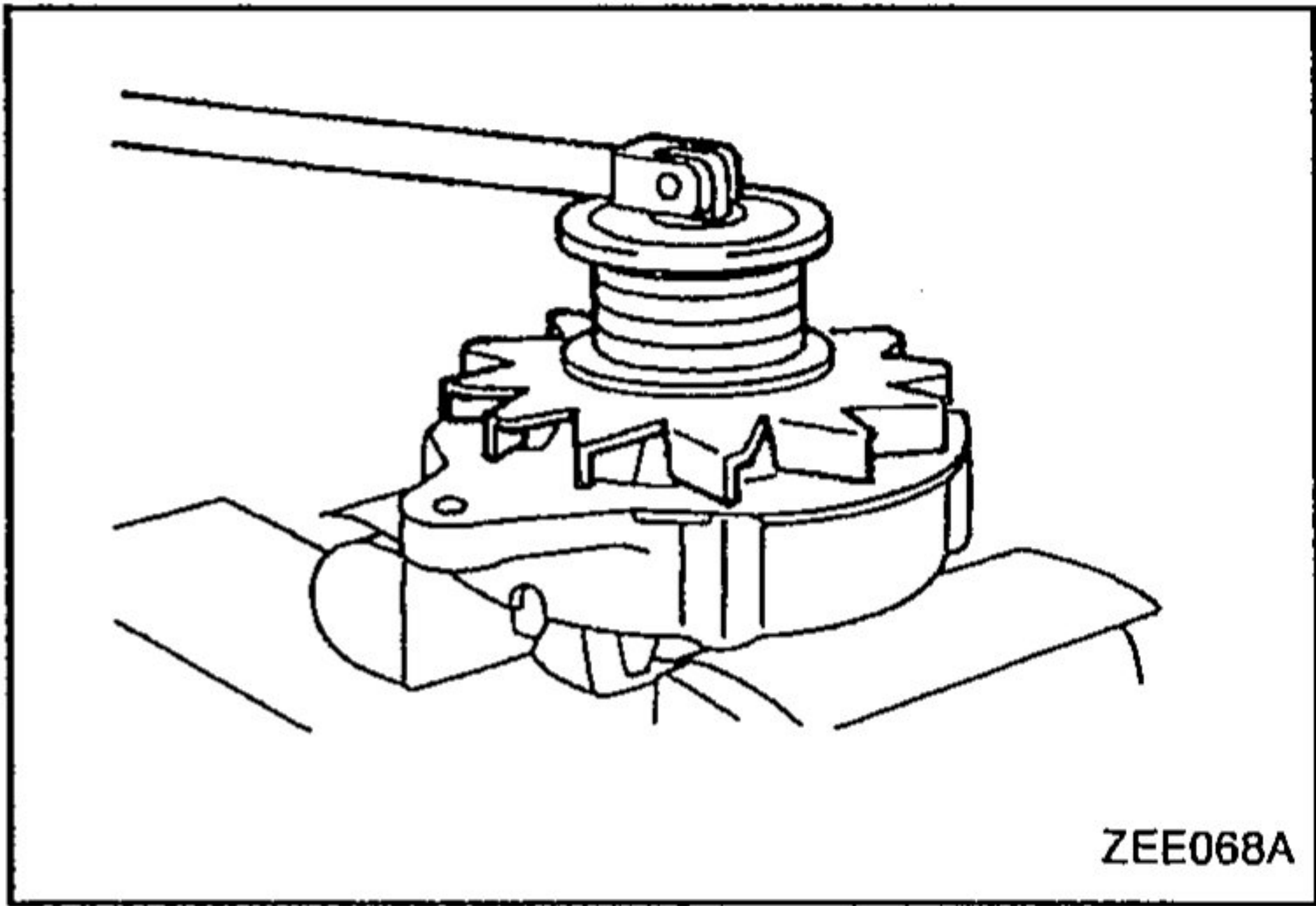
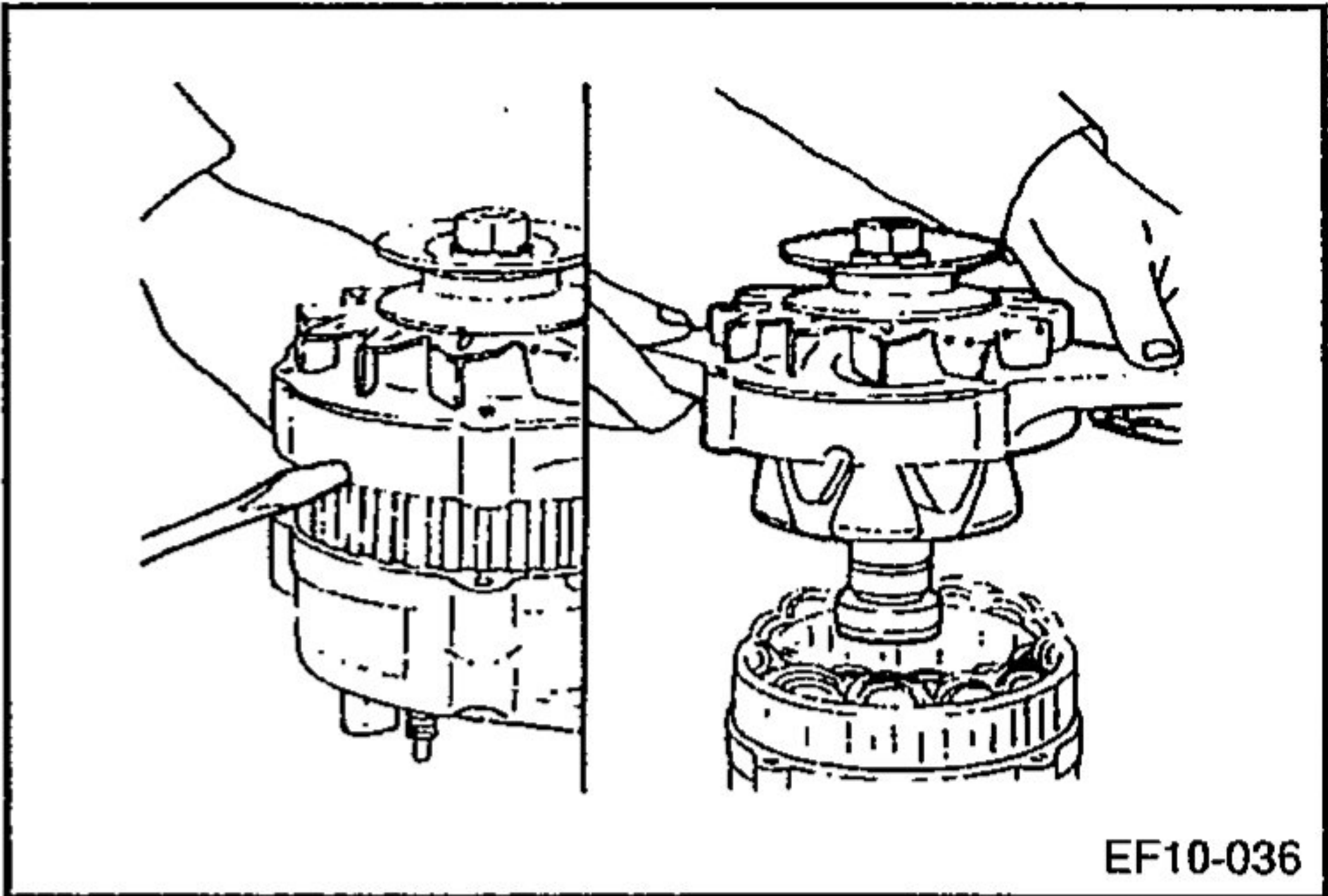
To separate the front cove, insert a screwdriver into the clearance between the front cover and stator core.

NOTE

- Be careful not to damage the stator coil with the screwdriver tip.

3.Pulley assembly

When separating the pulley assembly, secure the rotor periphery with a vise. Then, remove the pulley nut, pulley assembly and spacer. If the pulley assembly is difficult to remove, use a general-purpose puller.



INSPECTION

1. Inspect the pulley for wear, cracks or damage. If faulty, replace.
2. Inspect each terminal for corrosion or damage. If faulty, repair or replace.

STATOR COIL

Stator coil resistance

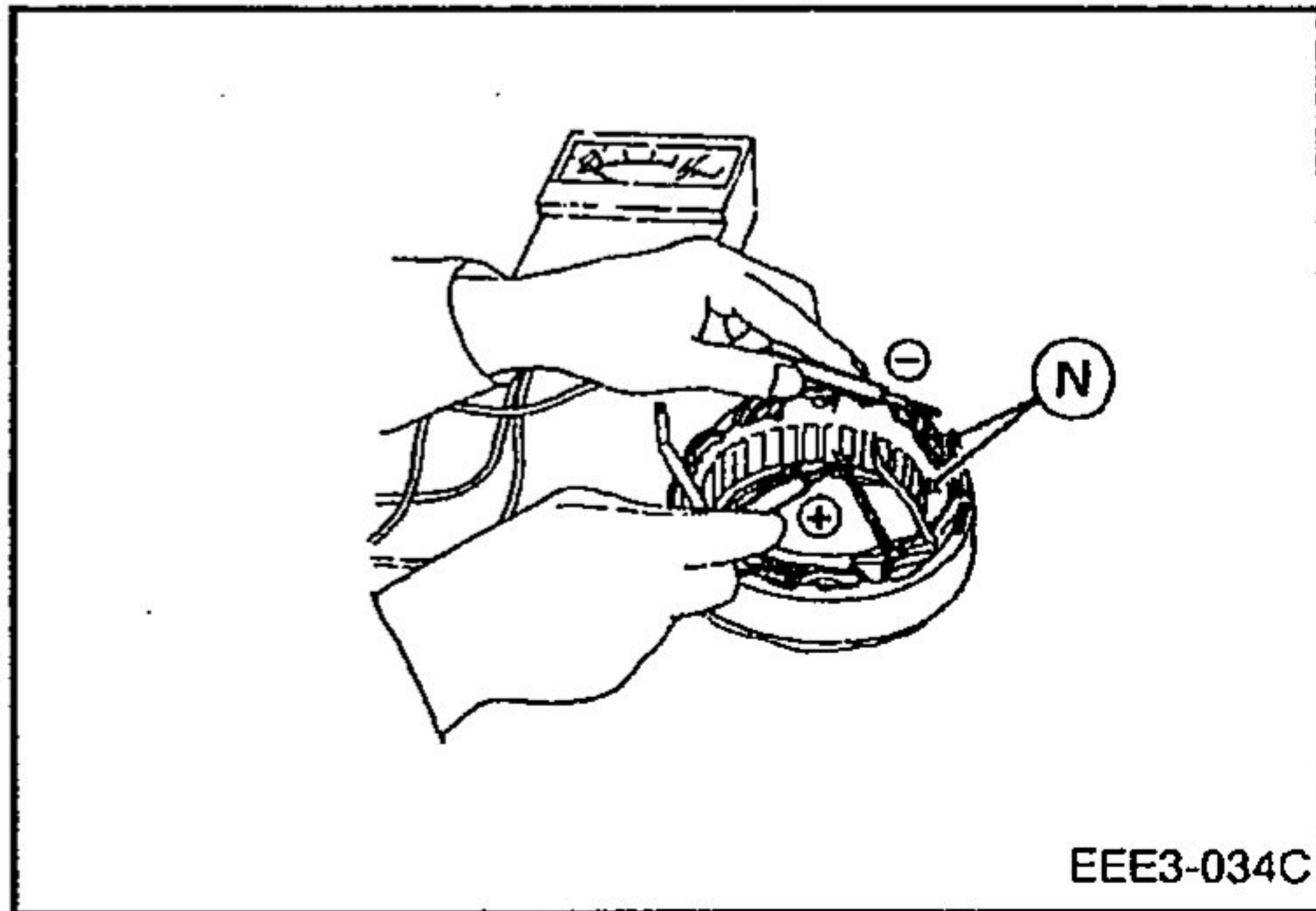
Measure resistance between the two stator coil leads.

Unit: Ω

Maintenance standard	Service limit	Remarks
0.036 - 0.039 [20°C (68°F)]	—	Between the neutral point (N) and each lead wire

If continuity does not exist between the leads, the stator coil circuit may be broken. Replace with a new stator coil assembly.

Stator coil insulation resistance



ALTERNATOR

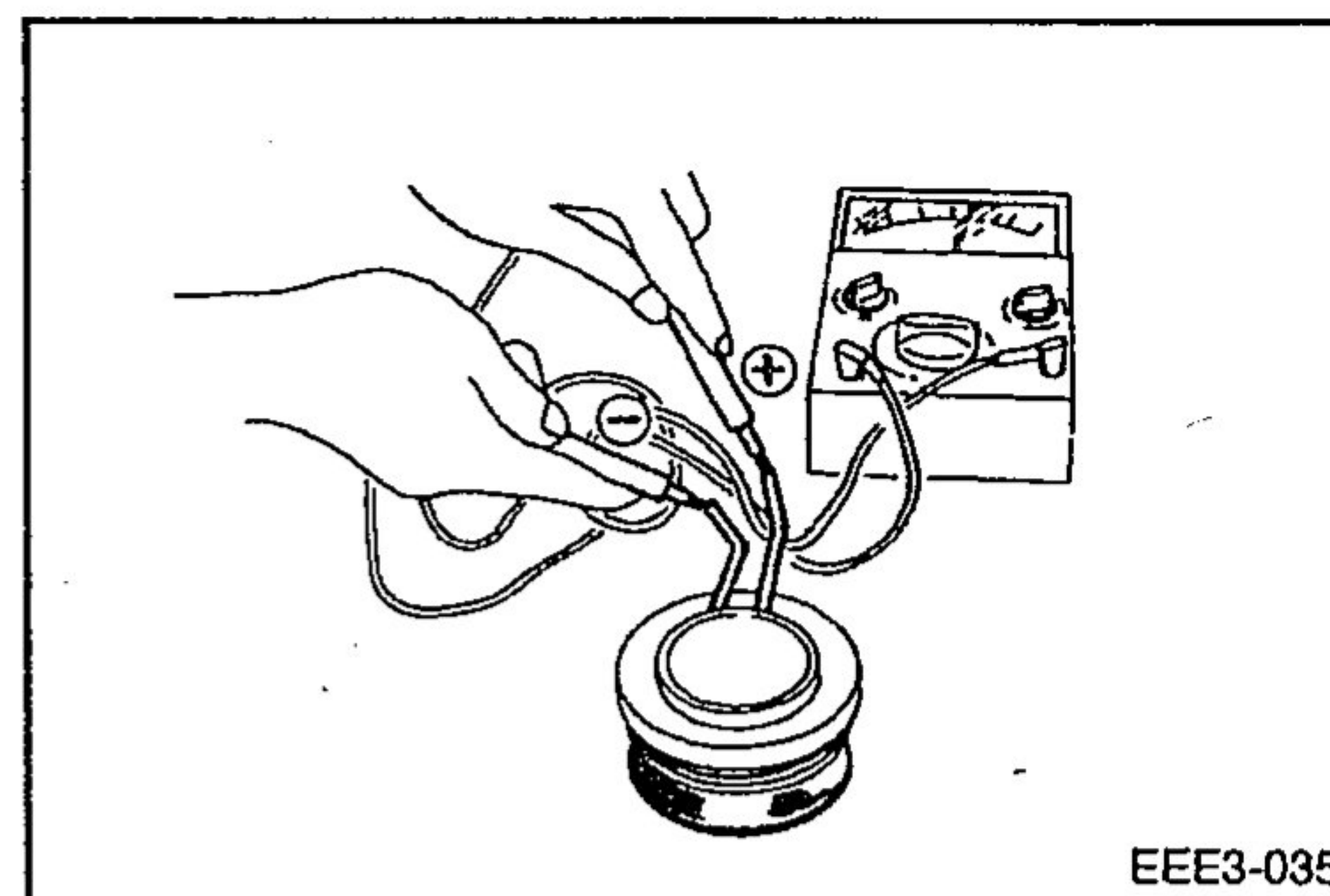
ENERGIZING COIL

Energizing coil

Measure resistance between energizing coil leads.

Unit: Ω

Maintenance standard	Service limit
2.2 - 2.4 [20°C (68°F)]	—



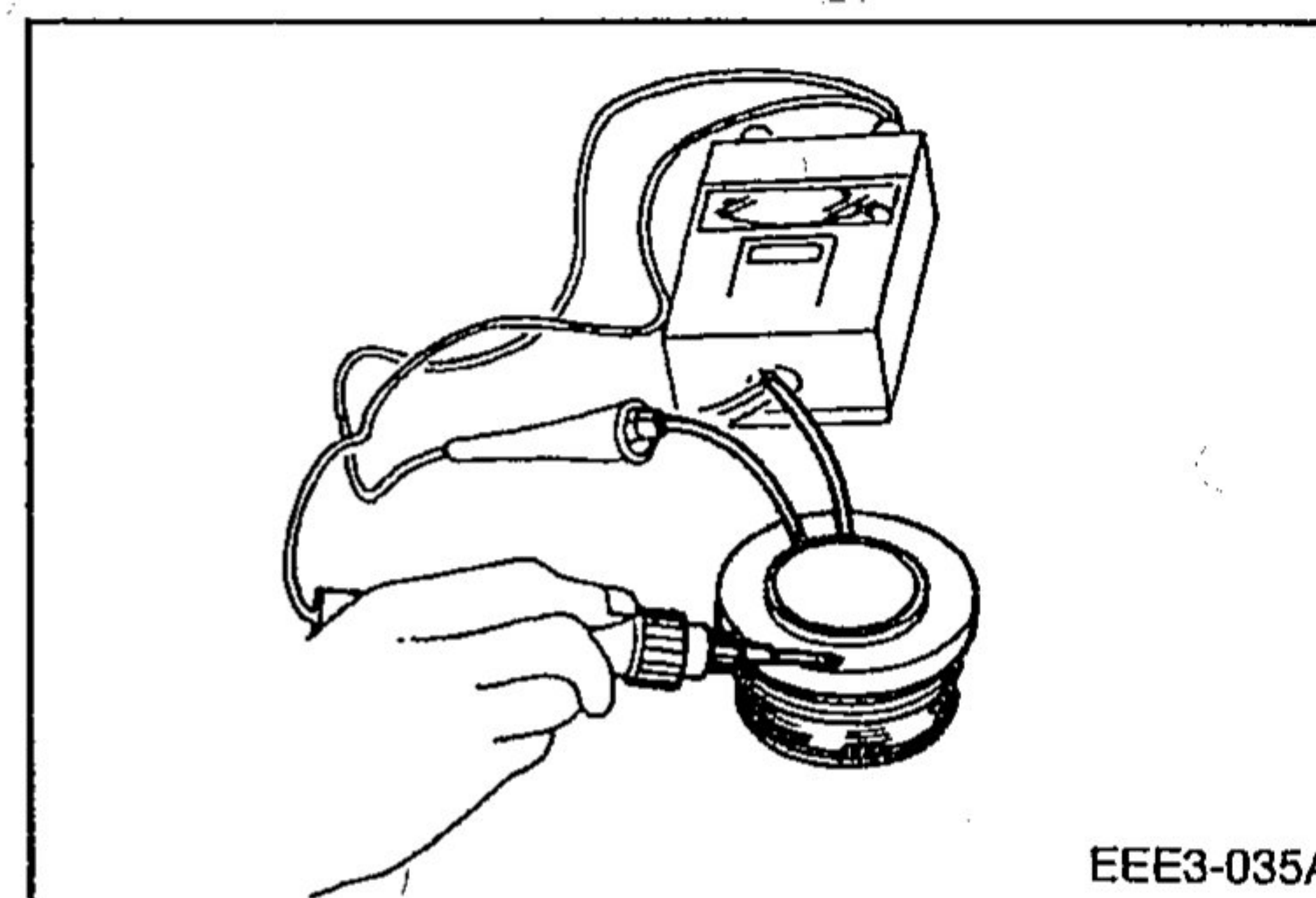
Energizing coil insulation resistance

Measure insulation resistance between the energizing coil and the core.

Unit: M Ω

Maintenance standard	Service limit
5, min.	0.5

If insulation resistance is less than 0.5 M Ω , replace with a new energizing coil assembly.



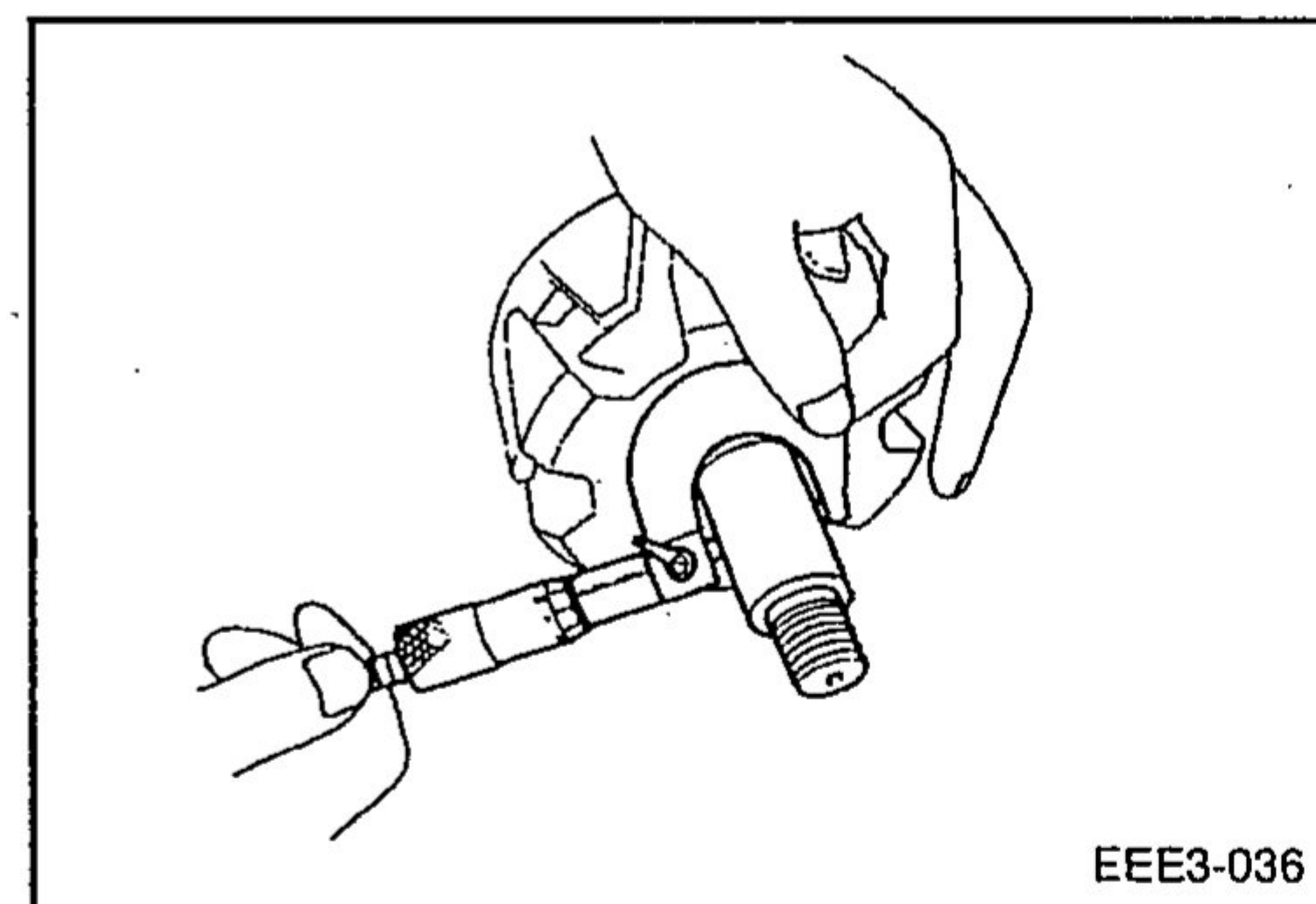
ROTOR

Rotor shaft outside diameter

1. Measure the outside diameter of the rotor shaft at the front bearing.

Unit: mm (in)

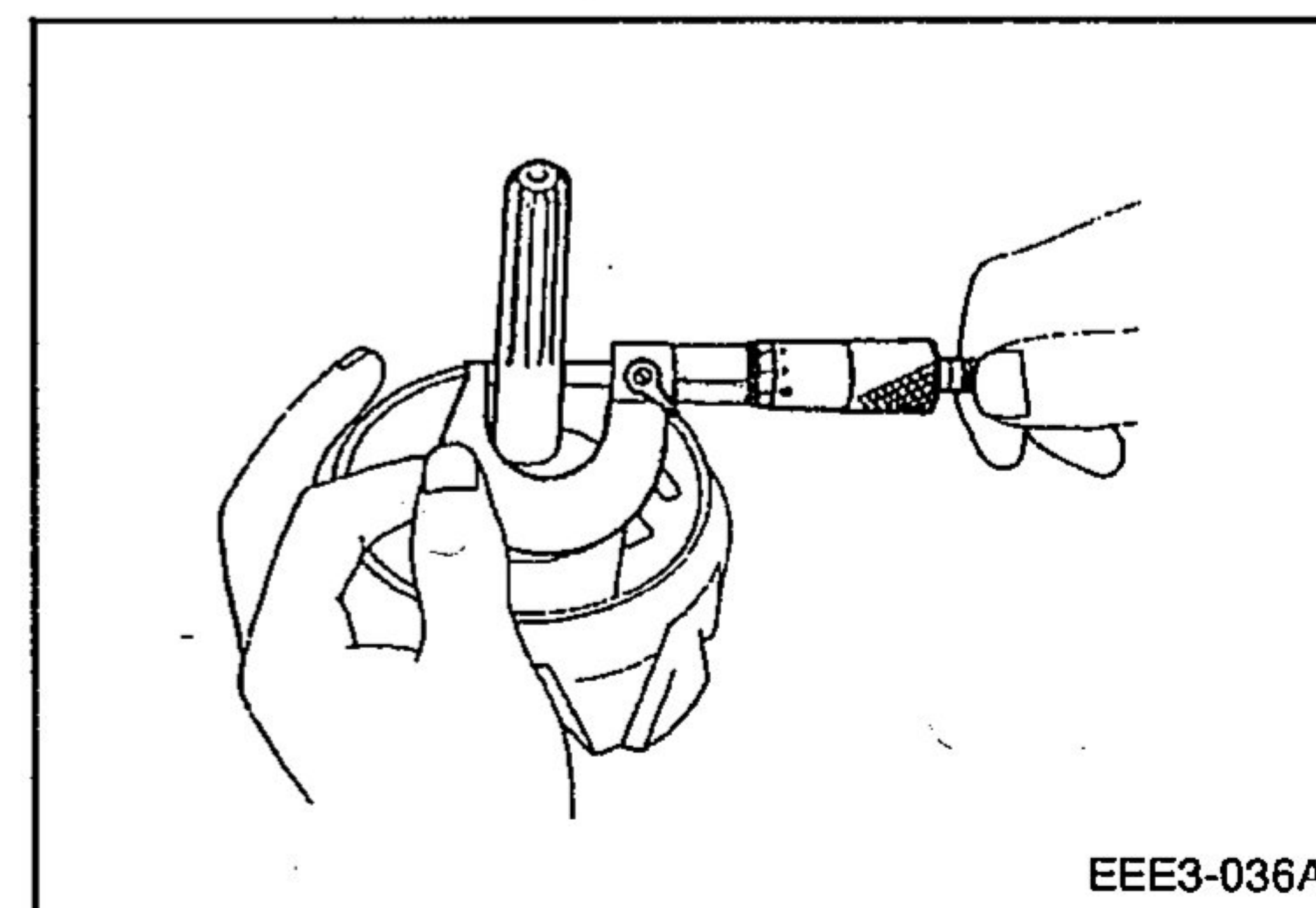
Maintenance standard	Service limit
25.00 (0.9843)	24.98 (0.9835)



2. Measure the outside diameter of the rotor shaft at the vacuum pump.

Unit: mm (in)

Maintenance standard	Service limit
17.00 (0.6693)	16.98 (0.6685)

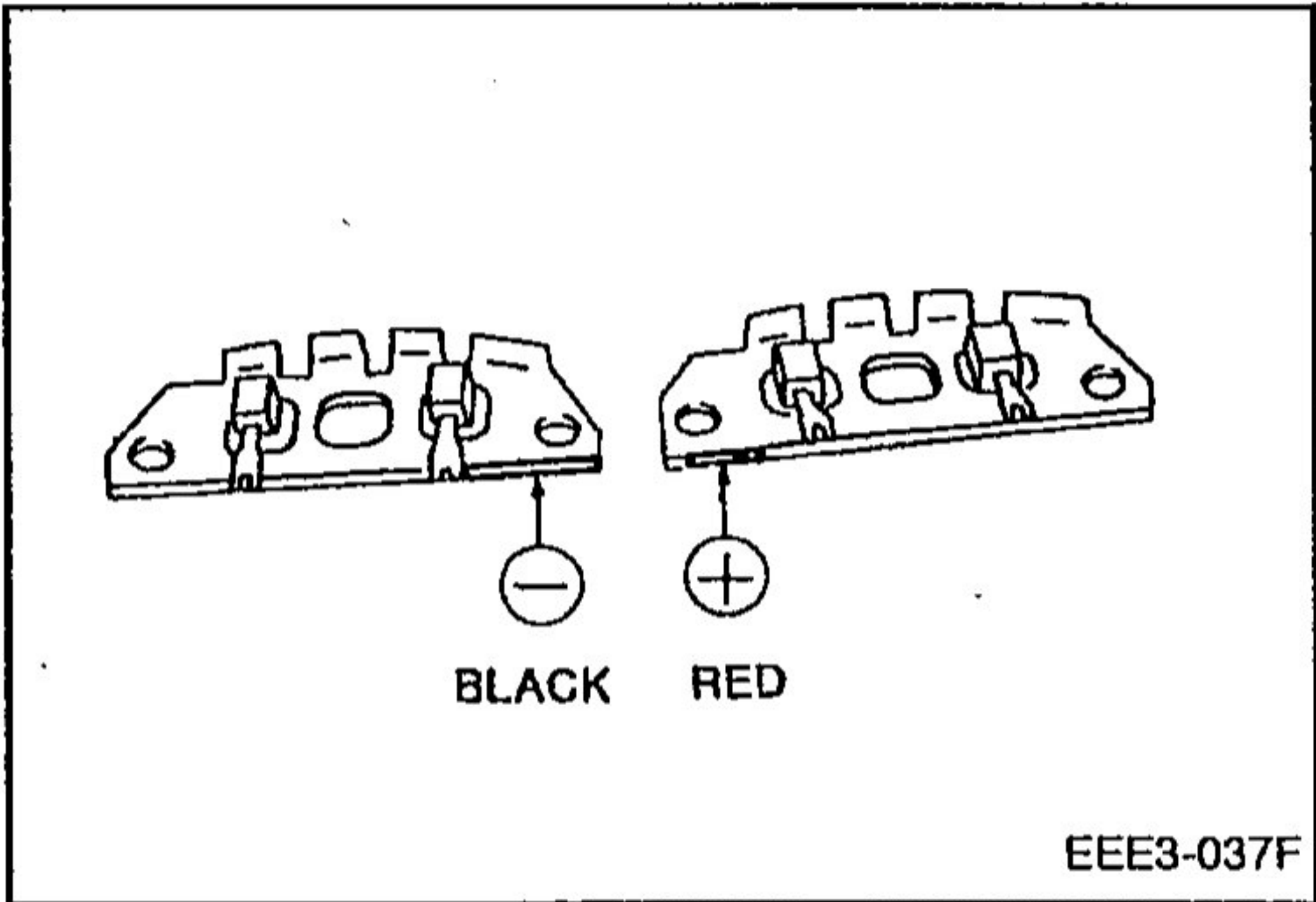
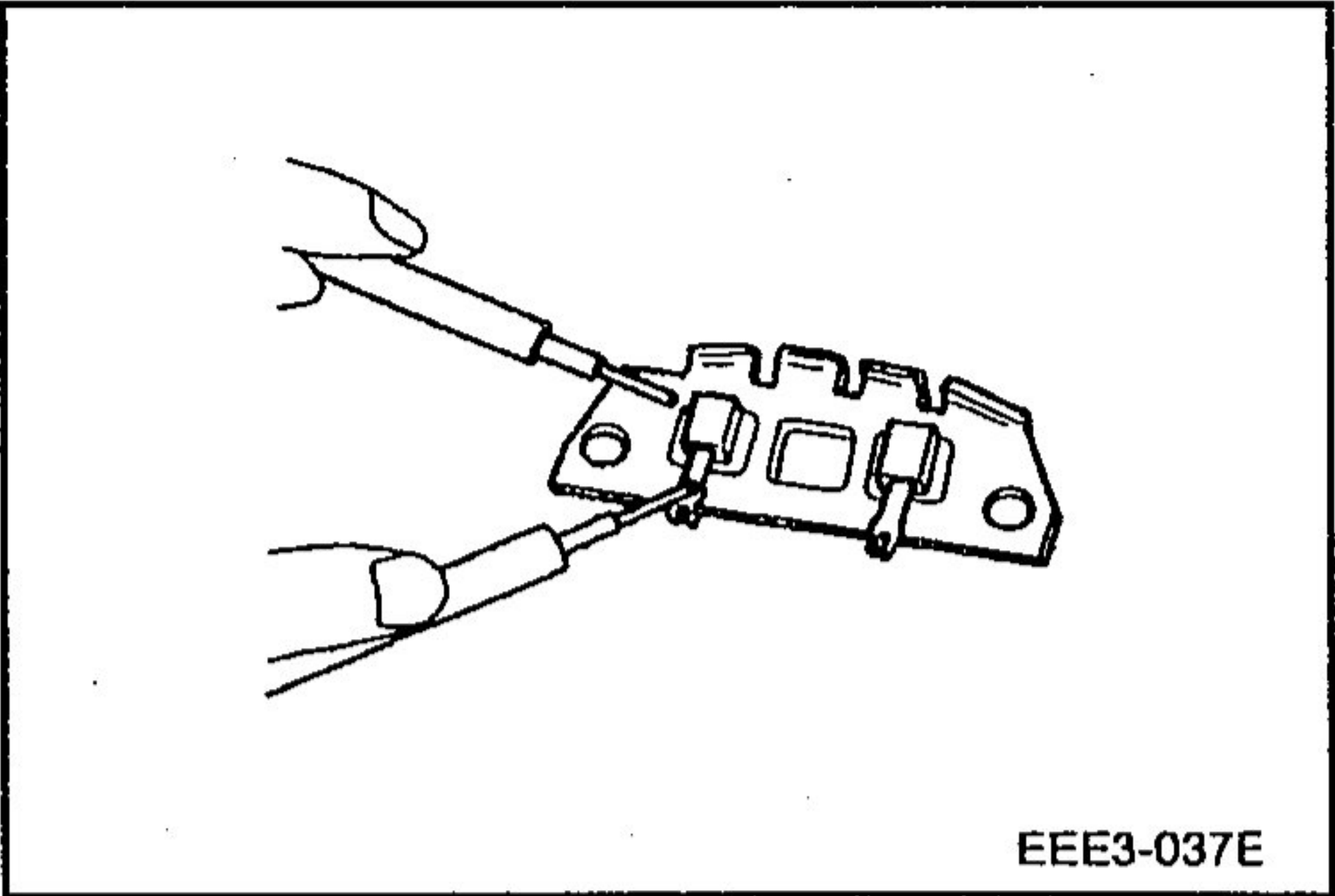


ALTERNATOR

HEAT SINK (DIODE)

Heat sink (diode) continuity

Attach one test lead of a circuit tester to the heat sink plate and the other to one diode terminal to check if continuity exists. With one test lead remaining attached to the heat sink plate, shift the other test lead to the other diode terminal to check if continuity does not exist. Similarly, conduct the above tests on the other two diodes. Continuity must exist in one direction only. If it exists in both directions, replace that diode.



PERFORMANCE TESTS

•Before conducting performance tests on the alternator

Measuring regulating voltage

1. Turn off SW₂ and turn on SW₁.
2. Measure the voltage by raising the generator speed up to the rated speed of 5,000 rpm.

Unit: V

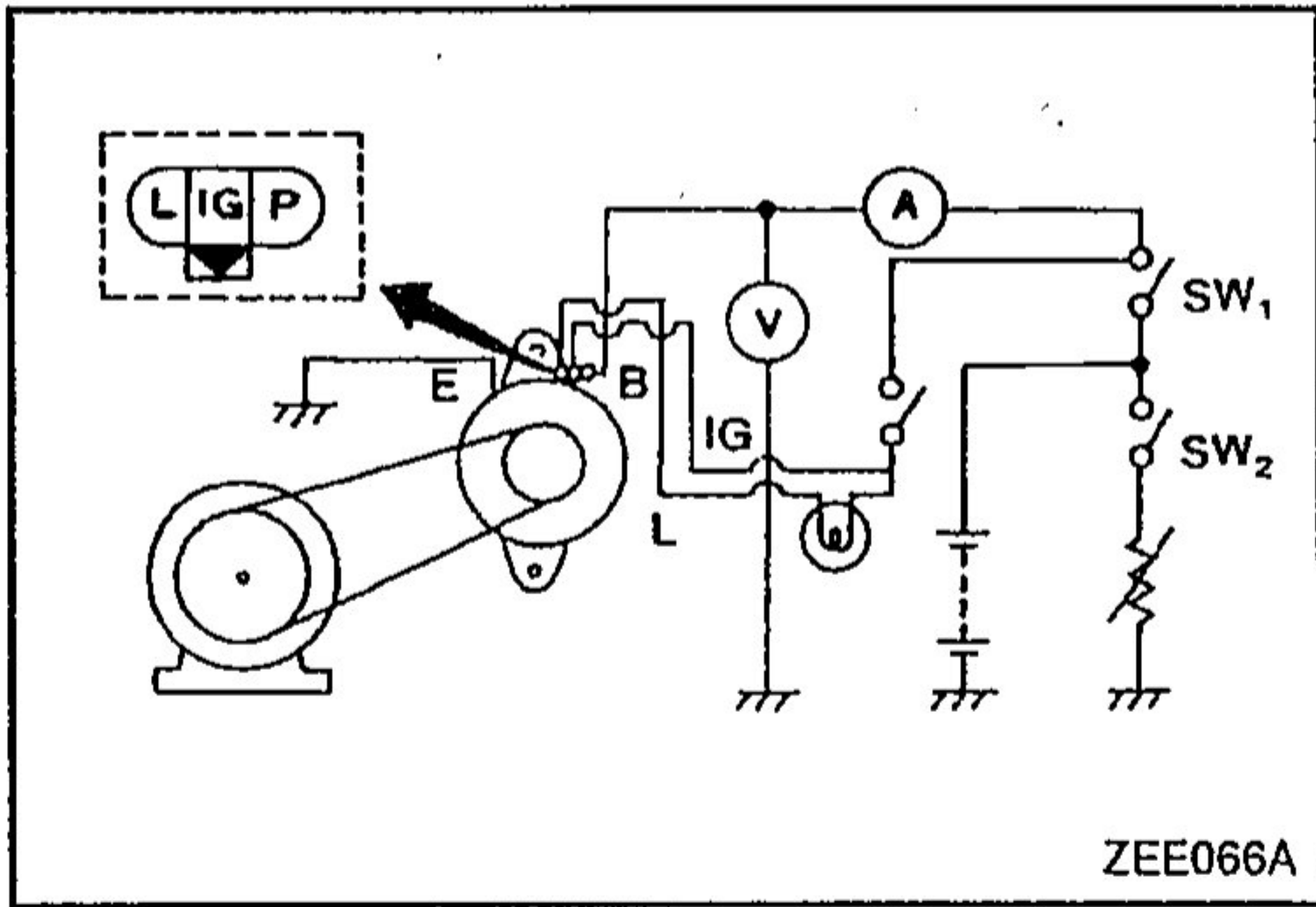
Maintenance standard	Service limit
14.0 - 14.6	—

Measuring alternator speed at 13.5 volts

1. Turn on SW₁ and SW₂, and raise the generator speed gradually.
2. Turn off SW₁ if the voltage raises above that when the generator is stopped.
3. While observing the voltmeter, further raise the generator speed.
4. Check the generator speed when the voltmeter indicates 13.5 V.

Unit: rpm

Maintenance standard	Service limit
900, max.	—



ALTERNATOR

Measuring output current

- 1.Set the variable resistor to the zero position, and turn on SW ₁ and SW ₂.
 - 2.Keep the generator at the rated speed, and adjust the variable resistor so that the terminal voltage becomes the specified voltage. Measure the current at that time.
- Terminal voltage13.5V - 5,000 rpm

Unit: A

Maintenance standard	Service limit
80, min.	—

NOTE

- In all of the above performance tests, use a lead wire whose length is less than 2.5 mm (0.098 in) and cross-sectional area is greater than 8 mm² (0.012 sq in) to connect the line between alternator terminal (B) and positive terminals (+) of the battery, and the lines between the negative (–) terminal of the battery and terminal (E).
- Use switches with a contact resistance as low as possible.
- Conduct performance tests where the ambient temperature is maintained at 20°C (68°F).