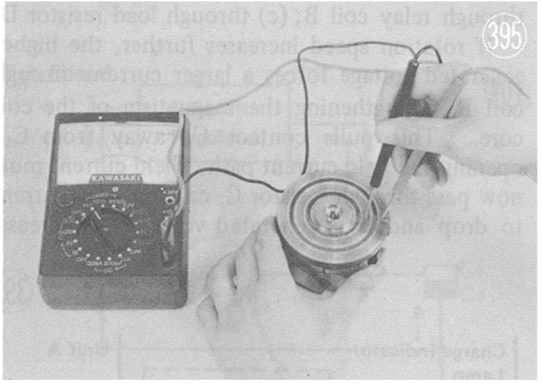
2. When testing diodes or other semiconductors, a very small amount of current may be noted in the reverse direction. This is leakage current and does not usually indicate that the diode is defective.

2) Inspection

To completely test the generator and rectifier, various equipment is required; the tests given here include only those practical with a hand tester, and are usually sufficient for the purpose.

a. Field Windings

As demonstrated in Fig. 395, touch the tester leads one to each slip ring to measure the resistance of the field windings. A resistance of between 3.5 and 5.5 Ω is standard. Less than 3.5 Ω indicates a short somewhere in the windings; no reading indicates an open circuit (a wire in the windings is broken).

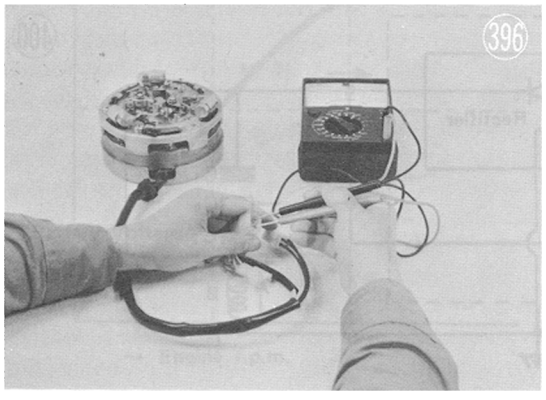


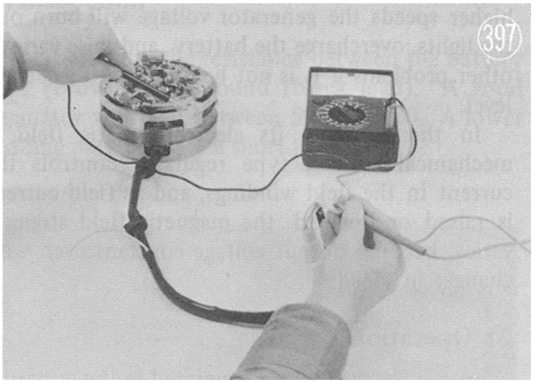
Although the carbon brushes in this AC generator last much longer than those in a DC generator, they should be checked periodically for wear. If the brushes are worn down more than 1/3 (2/3 remaining), they should be replaced. The length of a new brush is 14 mm (9/16 in.)

b. Armature

Check for continuity – i.e. current flow – between all three of the yellow leads, setting the tester leads to two wires at a time.

Check that none of these leads is grounded out to the generator housing by touching one tester lead to the housing and the other to each lead. The ohmmeter should give no reading at all.



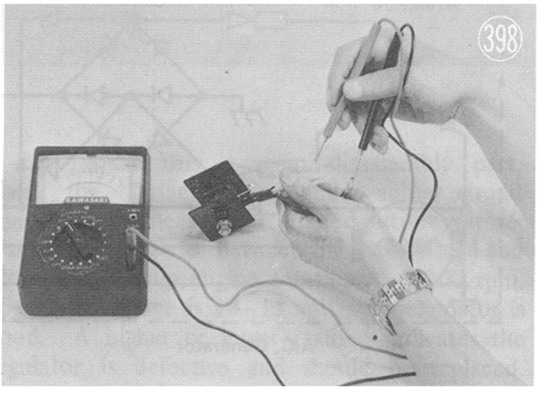


c. Rectifier

The rectifier assembly has three yellow leads, one red, one black and one blue lead, a total of six leads.

Use an ohmmeter as in Fig. 398 and check for continuity in the direction of the arrows only. If there is no continuity, or if there is low resistance in both directions, the rectifier is defective. Where "Yellow" is indicated, three checks must be made each time, one for each yellow wire.

+ Meter leads –
Yellow → Black
Blue → Black
Red → Black
Blue → Yellow
Red → Yellow



NOTE: In many ohmmeters (multi-testers) the batteries in the tester are reversed so that the negative lead is actually the positive side of the batteries inside. If this is not the case with your meter, the direction of current flow will appear to be opposite that shown in the table.

2. VOLTAGE REGULATOR

1) General

As generator speed increases with engine speed, the magnetic field cuts through the armature windings faster, and generated voltage increases. In the H1 this increased voltage supplies field current, so the magnetic field becomes stronger and raises voltage even more. If follows that at