

The Zener diode "monitors" this voltage and signals the transistor (TR) any time too high a voltage is generated. The transistor then conducts to turn on the BCR and regulate the voltage. At this point, though, you will notice that the BCR in para. (1) above is already being turned on by a current through D_2 , and is serving as an integral part of the battery charging circuit. So it can be seen that the regulator circuit operates only on the half of the AC cycle when the generator polarity is as shown in Fig. 468 or 469.

Looking at Fig. 470 then, here is how the regulator works when the generator voltage is too high. Current from A starts to flow through the path shown by arrows 1, 2, 3, 4, and 5 to charge the battery, and a small current also flows up through R_2 and R_1 for ZD to monitor. As the voltage on this half cycle continues to rise excessively, Zener diode ZD breaks down and starts conducting in the direction of arrow 6. This starts the transistor (TR) conducting (arrow 7) to gate the BCR. As soon as the BCR turns on, the current coming through the first rectifier (arrow 1) suddenly finds a short circuit path back to the other side of the generator (arrow 8 and 9), and so the excess current is effectively returned to the generator and the voltage is kept from becoming too high.

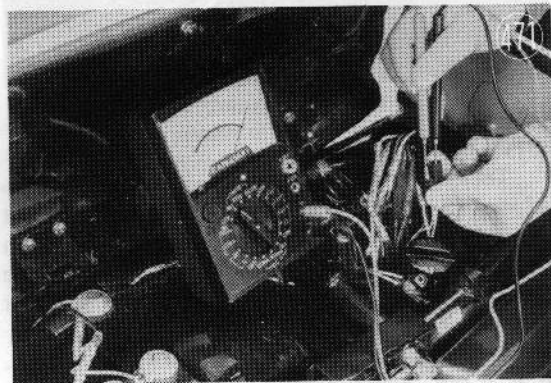
3) Dynamo Test

Open the seat and use a hand tester to measure the resistance of the charge windings, ignition windings, and pick-up coils.

(1) Charge windings

The charge windings consist of five armature coils connected in a series-parallel arrangement. To test them unplug the 2-pin connector connecting the two yellow wires, and using the meter on the $R \times 1$ scale, touch one tester lead to each of the two terminals on the dynamo side. At this time the meter should give a reading between $0.20 \sim 0.30\Omega$. If the reading is less than this there is probably a (layer) short, and if there is more than 0.30Ω resistance or if the meter gives no indication at all, then there is an open wire in the dynamo leads or windings.

If the dynamo is found to be bad with this resistance check, replace the stator.



(2) Ignition winding

There is only one ignition winding. To test it unplug the 2-pin connector that connects the brown leads and the orange leads, and using the meter on the $R \times 10$ resistance range, touch one

Regulation

