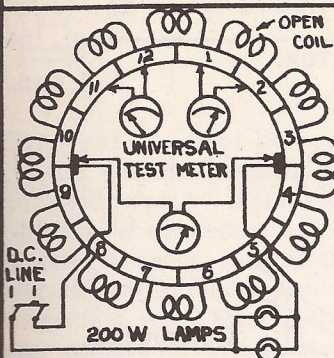


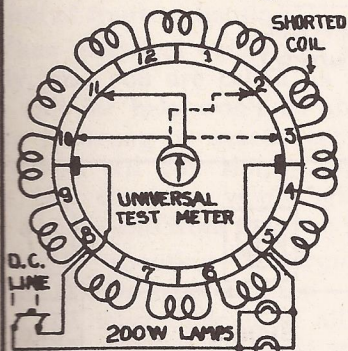
ARMATURE AND FIELD TESTS

OPEN ARMATURE COIL TEST



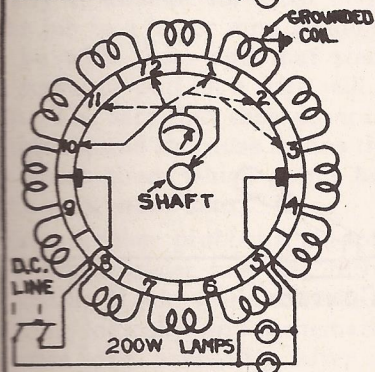
Connect armature across line with current-limiting lamps in series. Place meter selector switch in the 50 volt or the 10 volt position and measure voltage across armature. Next make a bar-to-bar test; meter will read zero until open coil is bridged when total armature voltage will be registered. Example: 8E across armature; bars 11, 12 read zero; bars 1, 2 read 8E. To protect the meter, the test for spans should always be made before any other check involving bar-to-bar readings.

SHORTED ARMATURE COIL TEST



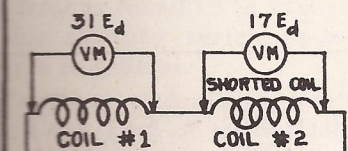
Connect armature to circuit, as directed above. Set meter selector switch to 250 M.A. and make a bar-to-bar test. If necessary, change selector switch to obtain about half-scale reading on a normal coil. A low or zero reading will then indicate a shorted coil; a high reading a poor connection - usually at the commutator riser. Example: Meter reads half scale on bars 11-12, 12-1, 1-2; gives low reading on 2-3, thereby indicating a shorted coil.

GROUNDED ARMATURE COIL TEST



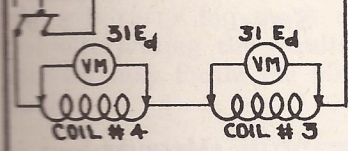
With the test connection remaining the same as before, a meter reading between the commutator segments and the shaft indicates a grounded coil. As the segment to which the grounded coil is connected is approached, the reading will become less and will be minimum when the test prod is in contact with the segments connected to the grounded coil. Example: With meter selector switch set on 50 M.A., a reading from bar 10 to shaft is full-scale and this value is gradually reduced to a minimum on bars 1 and 2. Beyond this point, the reading reverses and starts to increase again.

SHORTED FIELD COIL TEST

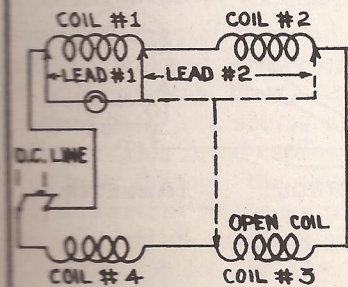


Connect shunt field to line as shown in sketch and take the voltage drop across each field coil with a D.C. voltmeter. If the voltage across all coils is the same, the field is O.K. A reading below normal indicates a shorted or partially shorted coil. The normal voltage across any field coil is equal to the line voltage divided by the number of poles. Example: Coil 1, 31E_d; coil 2, 17E; coil 3, 31E_d; coil 4, 31E_d; coil 2 is shorted.

OPEN FIELD COIL TEST



Connect field as indicated in sketch and place voltmeter or test lamp across each field coil. If the field is open, no reading will be obtained until the open in the circuit is bridged. Then the open may be found by testing each coil individually, or by connecting one test lead to one of the circuit wires and moving the other lead around the field toward the other line until a light is obtained. The open will then be in between the point at which the light was obtained and the previous point tested.



GROUND FIELD TEST

Apply line voltage between the field leads and the frame with a suitable voltmeter or test lamp in series. If the meter indicates or the lamp lights, the field is grounded. To locate the ground, disconnect and test each coil separately.