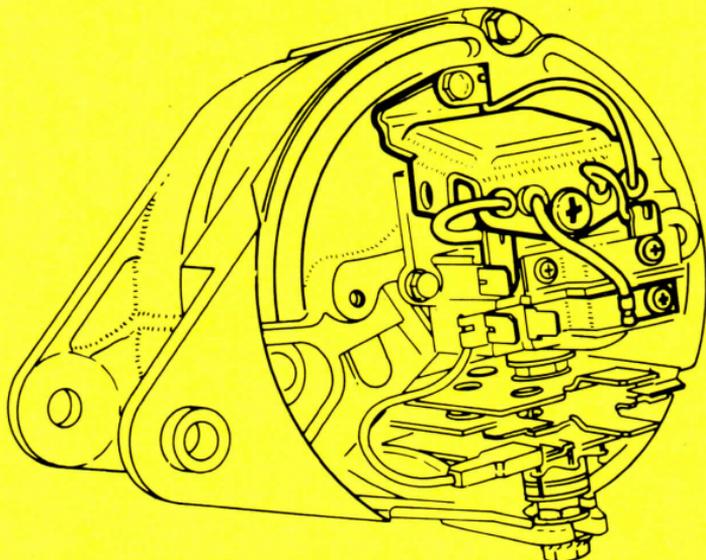


# 4

## ACR Alternator



### ACR ALTERNATORS

Recommended test equipment

Hydrometer

DC Moving coil Voltmeter, scale 0–20V.

DC Moving coil Ammeter, scale 5–0–100A.

Ohmmeter or continuity tester

## BATTERY CONDITION AND TERMINALS

**CAUTION:** Never expose the battery to a naked flame or spark.

Using a hydrometer, read the specific gravity of each battery cell.

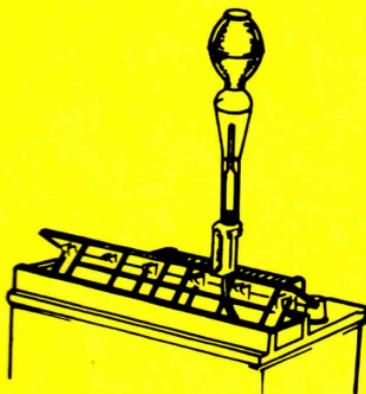
If the readings indicate a defective battery, replace the battery.

If the state of charge is low, but the engine will start, proceed to terminal check.

If the engine will not start, charge the battery.

**WARNING:** All Lucas ACR Alternators are used with negative earth systems. Always observe polarity when charging the battery.

Ensure the battery terminal connections are clean and securely attached



1.110—1.130 Discharged  
1.230—1.250 70% Charged  
1.270—1.290 Charged



## DRIVE BELT TENSION AND CONDITION

There should be approximately  $\frac{1}{2}$  inch play when moderate pressure is applied to the longest run of the alternator drive belt.

If the drive belt is oily, worn or cracked, it must be replaced.

### TEST 1

Remove connections from the alternator.

Switch ignition on.

Do not start the engine.

Connect the Voltmeter between a good earth and each of the disconnected leads in turn.

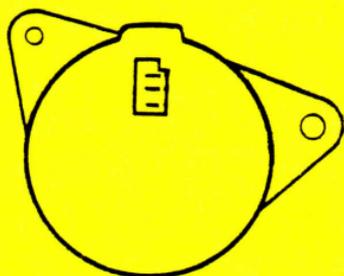
The voltmeter should indicate battery voltage.

**NOTE:** On alternators with internal battery condition sensing, the "S" terminal is used for physical retention of the plug only.

If the voltmeter reads zero when connected to the "IND" terminal and earth, check the warning light bulb, and all connections to the warning light.

If the voltmeter reads zero when connected to the "MAIN OUTPUT" terminal and earth, check the wiring and connections to the starter solenoid and battery.

If the voltmeter reads zero when connected to the "S" terminal and earth, check the wiring and connections to the battery. The alternator output is based directly on battery condition, if the battery sensor circuit is broken there will be no output from the alternator.



## TEST 2

Replace connections.

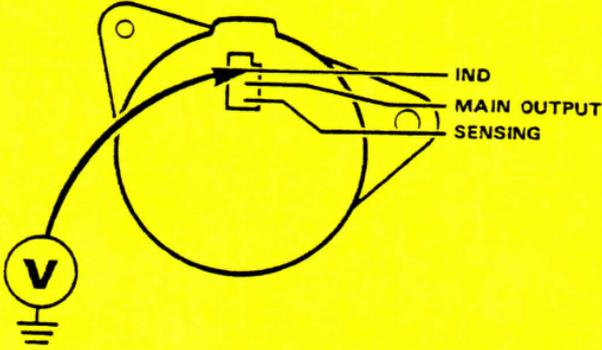
Switch ignition on.

Connect the voltmeter between a good earth and the "IND" terminal. The voltmeter should indicate 1.5 to 2 volts.

If the reading is zero, check the surge protection diode.

NOTE: The cover must not be removed if the alternator is within the warranty period.

If the reading is 12 volts proceed to test 3.



## TEST 3

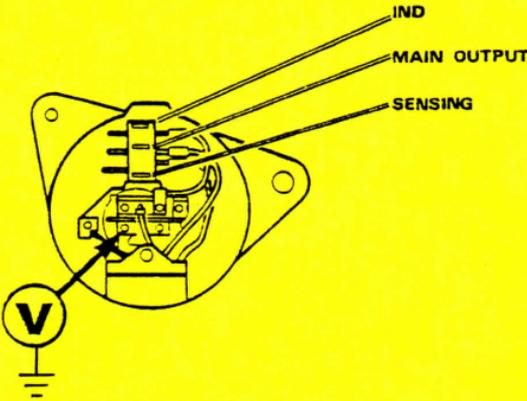
Connect the voltmeter between a good earth and the "F" or green lead, or the case of the 14 TR.

Switch ignition on.

The voltmeter should indicate approximately .5 volts.

If the reading is 12 volts, the control box is faulty.

If the reading is .5 volts but on test 2 the reading was 12 volts, check the brushes and rotor.



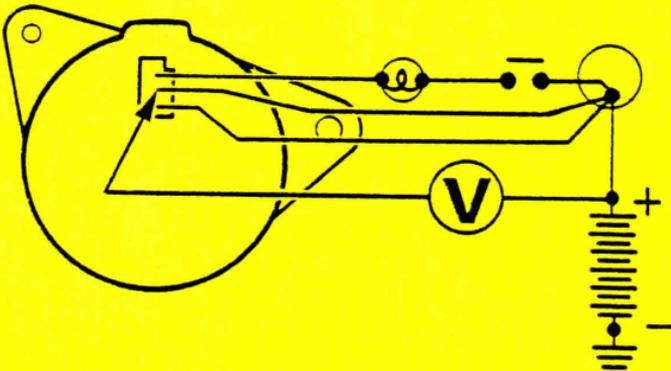
## TEST 4

Connect the voltmeter between the battery insulated terminal and the alternator main output terminal.

Start and run the engine at a constant 3000 rpm, approximately.

The voltmeter reading should not exceed .5 volts.

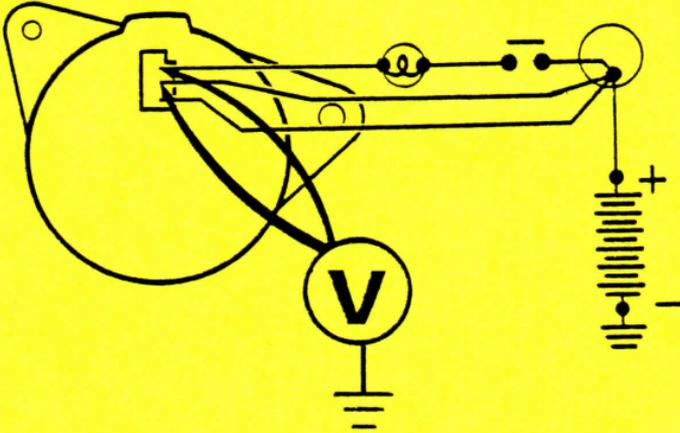
If the voltmeter reading is higher than .5 volts, check the wiring from alternator to battery for loose or dirty connections.



### TEST 5

Start and run the engine at a constant 3000 rpm approximately. Check the voltage at alternator main output terminal and the "IND" terminal. The difference should not exceed .5 volts.

If there is a difference in excess of .5 volts, change the rectifier pack.



### TEST 6

Disconnect the earth cable.

Connect the ammeter between the starter solenoid and the alternator main output cable.

Connect the voltmeter across the battery terminals.

Reconnect the earth cable.

Start and run the engine at a constant 3000 rpm approximately until the ammeter is reading 10 amps or less.

The voltmeter reading should be within 13.6 to 14.4 volts.

If the reading is outside these limits, change the control box.

