

Ignition

Lucas Electrical Limited Parts and Service Division
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10p

RECOMMENDED TEST EQUIPMENT

D.C. Moving Coil Voltmeter Scale 0-20V
Hydrometer
H T Jumper Cable
Test Capacitor (0.18-0.20 µF)

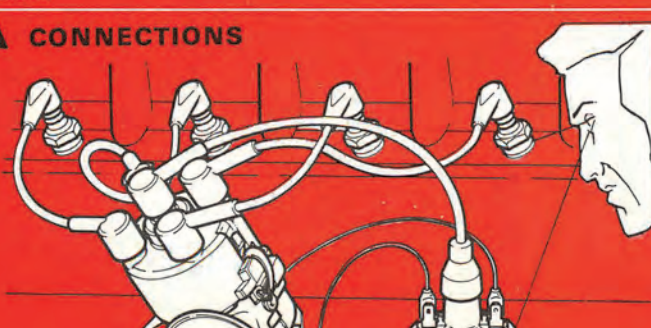
- Note:
1. All meter connections are given for negative earth systems.
 2. The ignition must be switched 'on' for all tests.
 3. Tests A, B and C are preliminary checks.

WARNING

Ignition circuits induce high voltages which are dangerous. Besides the risk from electric shock itself, there could be sudden uncontrolled bodily movement causing, for example, a hand to be damaged by the cooling fan which is rotating at high speed. Take great care when working with the ignition switch 'on'.

TEST:

A CONNECTIONS

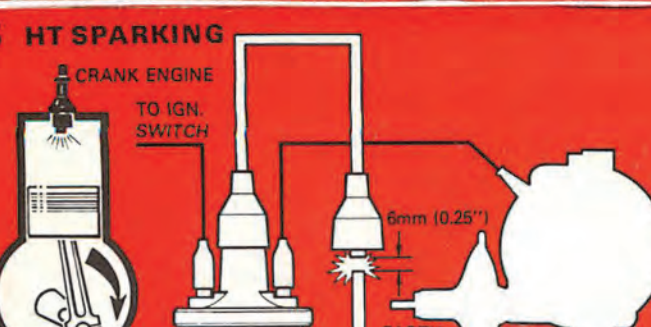


RESULT:

Should be:
Tight and clean TEST B

Loose and/or dirty
Rectify
If engine will not start TEST B

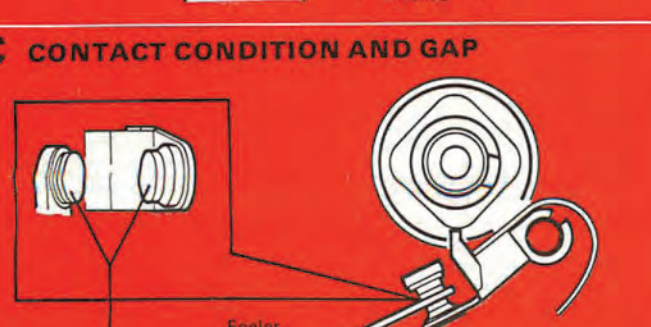
B HT SPARKING



Regular sparking — suggests fault other than coil i.e. distributor, plugs, fuelling, timing etc. TEST C

No sparking. TEST C

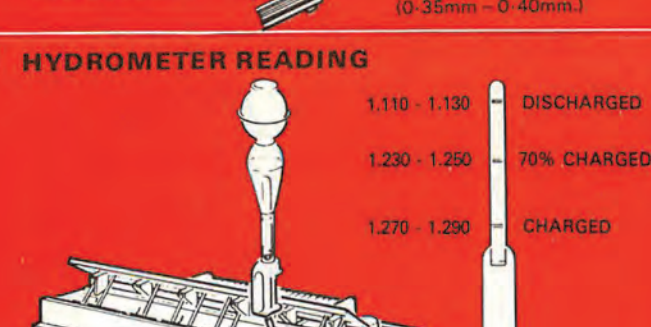
C CONTACT CONDITION AND GAP



Contacts pitted and piled
Remove — clean and/or replace
If engine will not start TEST 1

Incorrect gap
Rectify
If engine will not start TEST 1

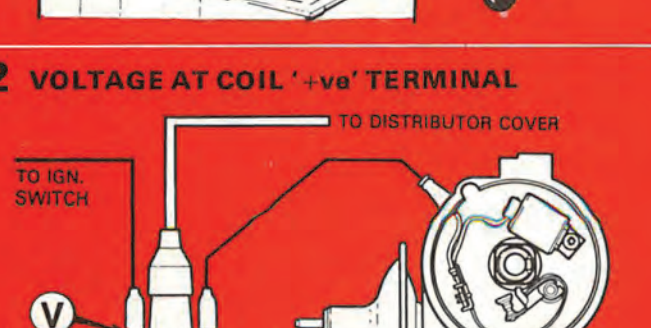
1 HYDROMETER READING



Below 1.230
Recharge and then test TEST 2

1.230-1.290 TEST 2

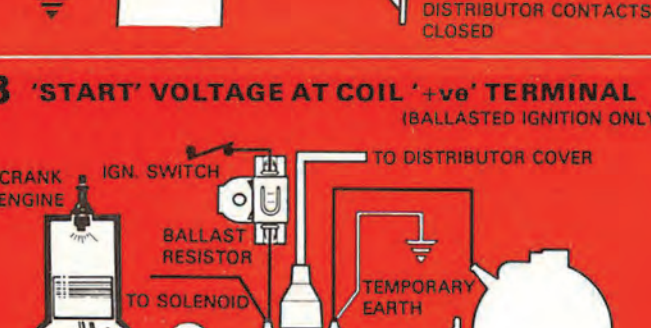
2 VOLTAGE AT COIL '+ve' TERMINAL



Should be:
Battery voltage (or approx. 6V for Ballasted Ignition System) TEST 4 OR TEST 3 (Ballasted Ignition)

Zero voltage — check feed to and from ignition switch, ballast resistor (if fitted) and connections. Rectify
If engine will not start TEST 4 OR TEST 3 (Ballasted Ignition)

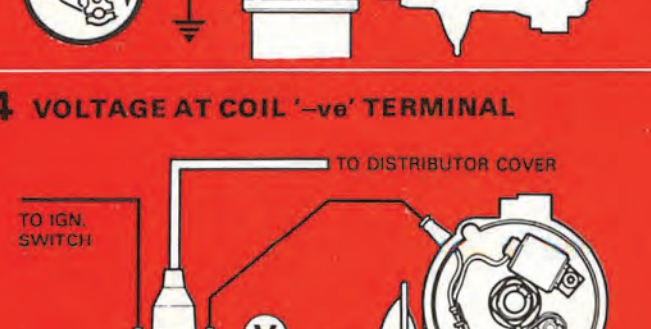
3 'START' VOLTAGE AT COIL '+ve' TERMINAL (BALLASTED IGNITION ONLY)



Voltage should increase while cranking TEST 4

If no increase check supply at ignition terminal starter solenoid while cranking
Rectify
If engine will not start TEST 4

4 VOLTAGE AT COIL '-ve' TERMINAL

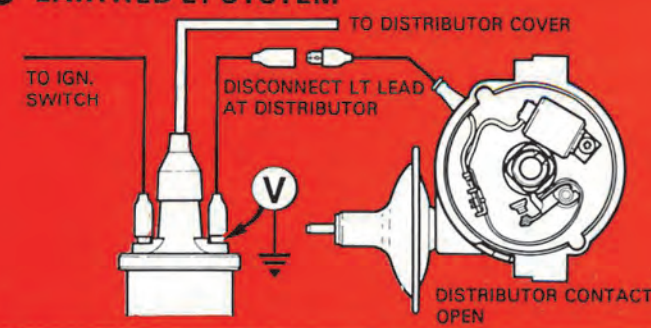


Should be:
Battery voltage TEST 6

Zero voltage: Disconnect LT lead to distributor at coil
Voltmeter should now show battery voltage TEST 5

If zero voltage is still shown, replace coil.
If engine will not start TEST 5

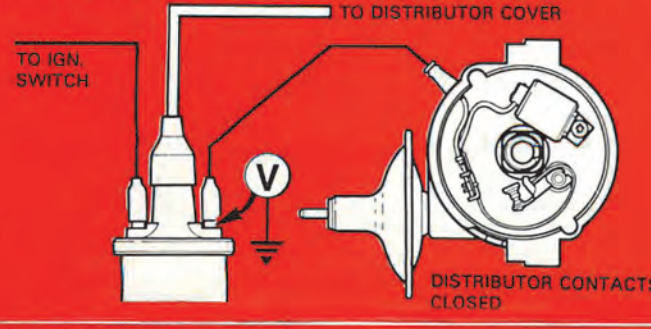
5 EARTHED LT SYSTEM



Should be:
Battery voltage indicating an earth in the distributor
Rectify
If engine will not start TEST 6

Zero voltage: Indicating LT earth in coil to distributor LT lead
Rectify
If engine will not start TEST 6

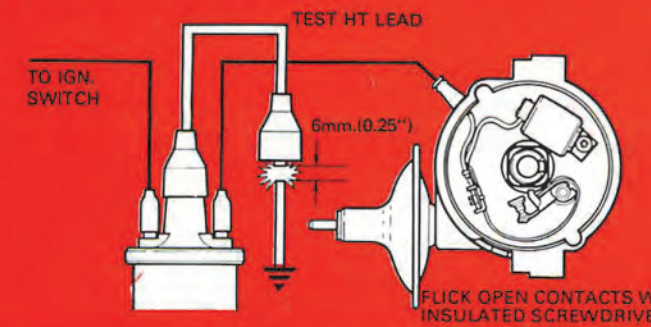
6 VOLTAGE AT COIL '-ve' TERMINAL



Should be:
Zero voltage TEST 7

Above zero voltage. Check contacts, earth links, coil to distributor lead
Rectify
If engine will not start TEST 7

7 CHECK COIL HT

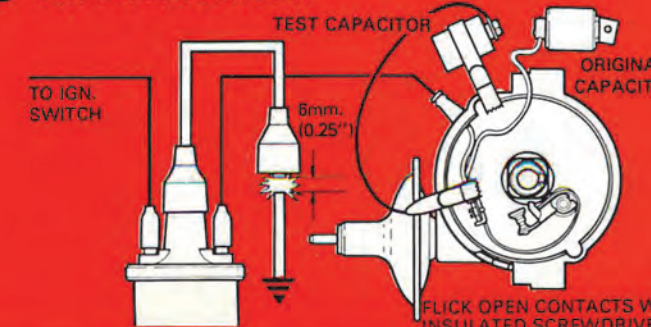


Should be:
Good HT sparking
Repeat with original HT lead TEST 9

Weak HT sparking TEST 8

No sparking TEST 8

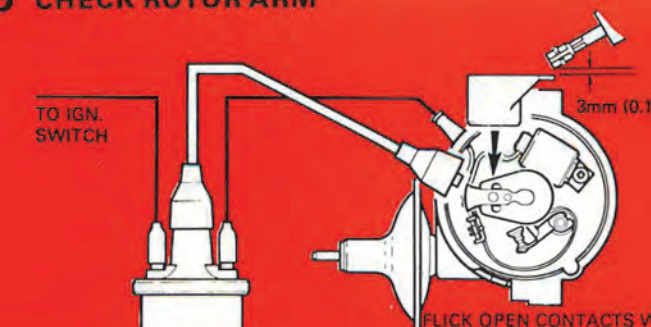
8 CHECK CAPACITOR



Should be:
Improved sparking
Fit new capacitor
If engine will not start TEST 9

Weak or no sparking
Reconnect original capacitor
Replace coil
If engine will not start TEST 9

9 CHECK ROTOR ARM



Should be:
No sparking TEST 10

Good HT sparking
Replace rotor arm
If engine will not start TEST 10

10 VISUAL AND HT CABLE CHECKS

EXAMINE

1. DISTRIBUTOR COVER
2. COIL TOP
3. CHECK HT CABLE INSULATION
4. CHECK HT CABLE CONTINUITY
5. CORRECT CB POINT GAP

Should be:

1. Clean, dry no tracking marks
2. Clean, dry no tracking marks
3. Must not be cracked, chafed or perished
4. Must not be open circuit
5. Reset if incorrect
Replace if unserviceable