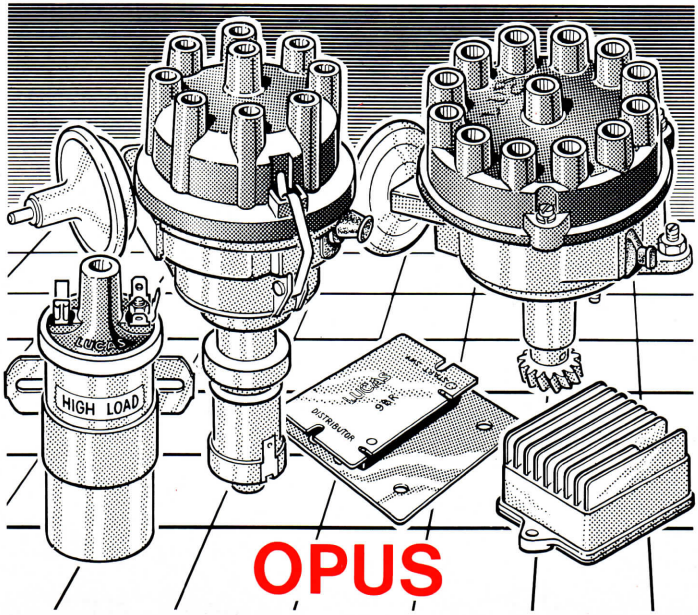
Electronic Ignition Systems



TEST CARD

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RECOMMENDED TEST EQUIPMENT AND TOOLS

DC Moving Coil Voltmeter Scale 0-20 V
HT Test Lead and LT Jumper Cable
Non-Ferrous Feeler Gauges

Note: 1 The ignition must be switched 'on' for all tests except TESTS 3 and 8
2 Key to symbols used in charts for TEST 2

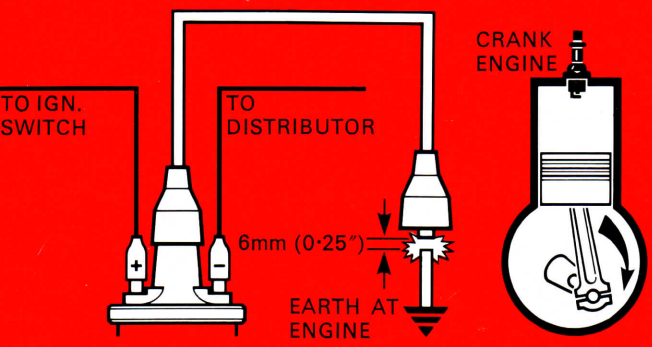
✓ Correct reading
H High reading
L Low reading

WARNING

Ignition systems produce high voltages. Besides the risk from electrical shock, danger can arise through sudden uncontrolled body movement causing contact with rotating fans, pulleys, etc. Even with a stationary engine a thermostatically controlled radiator fan may be rotating or suddenly commence to rotate.

TAKE GREAT CARE TO AVOID THE RISK OF INJURY.

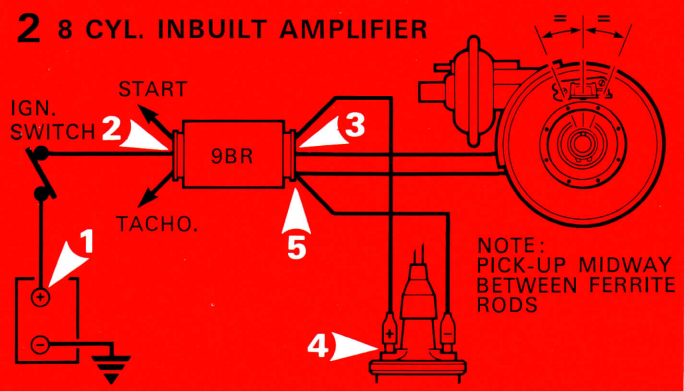
TEST:	RESULT:
1 CHECK HT SPARKING	



Should be:
Regular sparking → TEST 7

No sparking → TEST 2

2 8 CYL. INBUILT AMPLIFIER



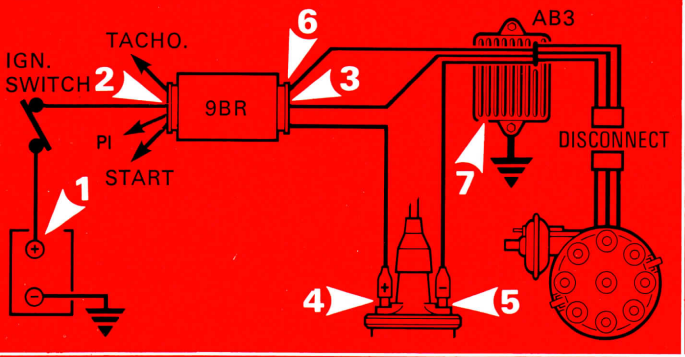
Measure voltages at 1–5 inc.
Should be:
1 More than 11·5V
2 1V max. below V at 1
3 1·5V max. below V at 1
4 4V–8V
5 0·5V–1·8V

All correct → TEST 3

Incorrect reading(s) → SEE CHART

1	2	3	4	5	SUSPECT
L	✓	✓	L or ✓	✓	Battery discharged
✓	L	✓	L or ✓	L or ✓	Ign. switch, feed to/from ign. switch
✓	✓	L	H or ✓	H or ✓	Ballast resistor
✓	✓	✓	L	L or ✓	Ballast resistor, ballast/coil '+' lead
✓	✓	✓	H	✓	Solenoid – cold start circuit
✓	✓	✓	H	L	Coil, ballast/coil '–' lead
✓	✓	✓	H	H	Amplifier
✓	✓	✓	✓	L	Amplifier

2 8/12 CYL. AB3 AMPLIFIERS (48012, 48018, 48019)



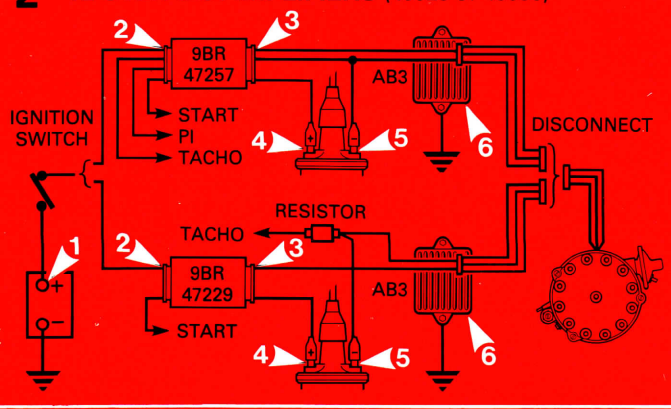
Measure voltages at 1–7 inc.
Should be:
1 More than 11·5V
2 1V max. below V at 1
3 1·5V max. below V at 1
4 4V–8V
5 0·3V–1·3V
6 0·5V–2·5V
7 0V–0·1V

All correct. Reconnect pick-up → TEST 3

Incorrect reading(s) → SEE CHART

1	2	3	4	5	6	7	SUSPECT
L	✓	✓	L or ✓	✓	✓	✓	Battery discharged
✓	L	✓	L or ✓	L or ✓	L or ✓	✓	Ign. switch, feed to/from ign. switch
✓	✓	L	H or ✓	H or ✓	H or ✓	✓	Ballast resistor
✓	✓	✓	L	L or ✓	✓	✓	Ballast resistor, ballast/coil '+' lead
✓	✓	✓	H	✓	✓	✓	Solenoid – cold start circuit
✓	✓	✓	H	L	✓	✓	Coil
✓	✓	✓	H	H	✓	✓	Amplifier
✓	✓	✓	H	H	L	✓	Ballast resistor
✓	✓	✓	✓	L	✓	✓	Amplifier
✓	✓	✓	H or ✓	H or ✓	H or ✓	H	Amplifier earth

2 12 CYL. AB3 AMPLIFIERS (48025 or 48036)



Measure voltages at 1–6 inc.
Should be:

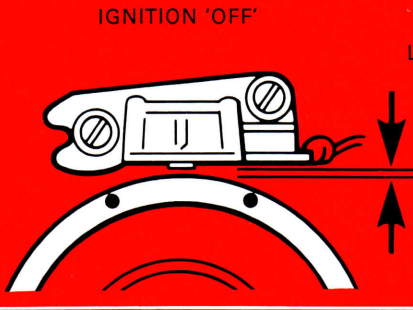
1 More than 11·5V
2 1V max. below V at 1
3 1·5V max. below V at 1
4 4V–8V
5 0·3V–1·3V
6 0V–0·1V

All correct. Reconnect pick-up → TEST 3

Incorrect reading(s) → SEE CHART

1	2	3	4	5	6	SUSPECT
L	✓	✓	L or ✓	✓	✓	Battery discharged
✓	L	✓	L or ✓	L or ✓	✓	Ign. switch, feed to/from ign. switch
✓	✓	L	H or ✓	H or ✓	✓	Ballast resistor
✓	✓	✓	L	L or ✓	✓	Ballast resistor, ballast/coil '+' lead
✓	✓	✓	H	✓	✓	Solenoid – cold start circuit
✓	✓	✓	H	L	✓	Coil
✓	✓	✓	H	H	✓	Amplifier
✓	✓	✓	✓	L	✓	Amplifier
✓	✓	✓	H or ✓	H or ✓	H	Amplifier earth

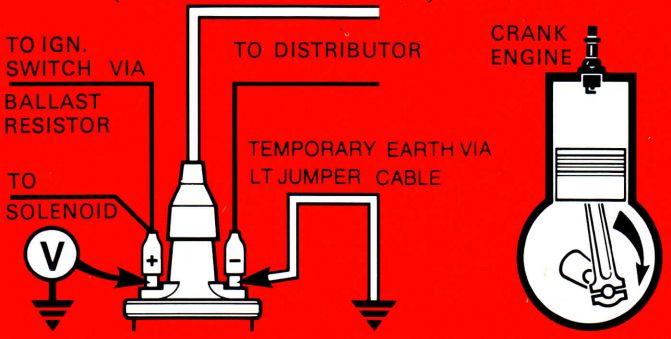
3 CHECK AIR GAP



Correct → TEST 4

Incorrect, adjust
Rectify
If engine will not start → TEST 4

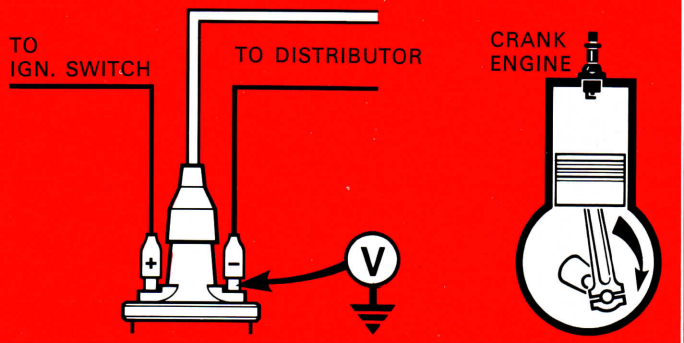
4 CHECK 'START' VOLTAGE AT COIL '+'
(BALLASTED IGNITION ONLY)



Voltage should increase while cranking → TEST 5

If no increase while cranking, check supply from ignition terminal (starter solenoid) and 9BR Ballast Resistor (where fitted)
Rectify
If engine will not start → TEST 5

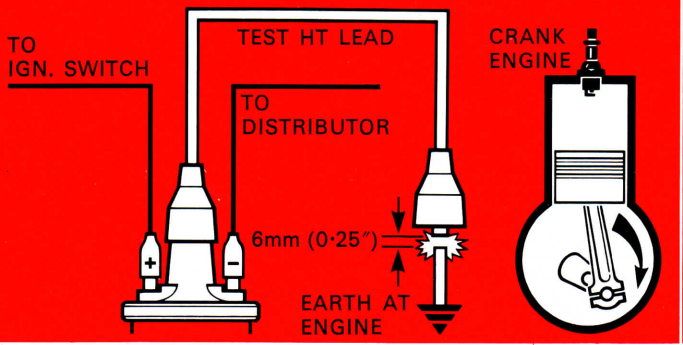
5 CHECK AMPLIFIER SWITCHING



Voltage should increase while cranking → TEST 6

If no increase, amplifier is faulty
Replace amplifier
If engine will not start → TEST 6

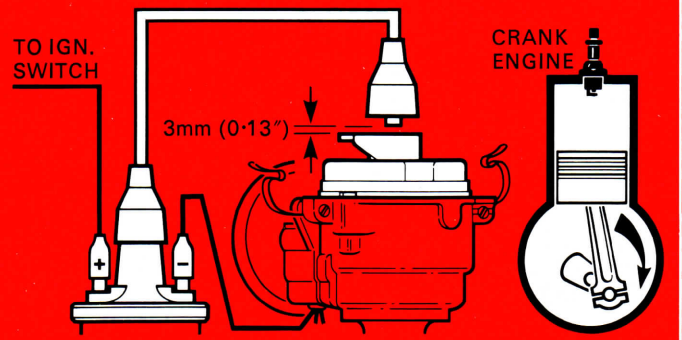
6 CHECK HT SPARKING



Should be:
Good HT sparking
Repeat with original HT lead → TEST 7

No sparking
Replace coil
If engine will not start → TEST 7

7 CHECK ROTOR ARM



Should be:
No sparking → TEST 8

Good HT sparking
Replace rotor arm
If engine will not start → TEST 8

8 VISUAL AND HT CABLE CHECKS

EXAMINE	Should be:
1 DISTRIBUTOR COVER	1 Clean, dry, no tracking marks
2 HT CABLE INSULATION	2 Must not be cracked, chafed or perished
3 HT CABLE CONTINUITY	3 Must not be open circuit
4 SPARK PLUGS	4 Clean, dry and set to correct gap