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Electronic Ignition

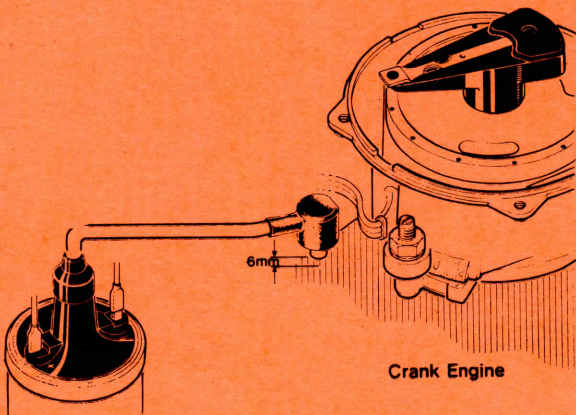
PROCEDURE FOR CHECKING OPUS IGNITION SYSTEMS

PRE-CHECK OPERATIONS

- A. Ensure sparking plugs are clean and efficient.
- B. Battery is in good condition and is fully charged.
- C. Sufficient supply of clean fuel.
- D. Check all connections are made and tight.

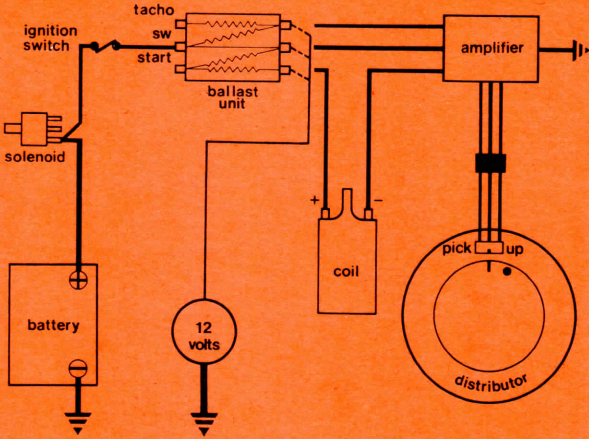
TEST 1. CHECKING FOR SPARKING

- A. Remove the main H.T. feed at the centre of the Distributor and hold the brass ferrule approx. $\frac{1}{4}$ " (6mm) away from the engine block or cylinder head.
Turn on ignition and crank the engine. Sparking should occur between the ferrule and the engine block.
- B. If there is no sparking between the ferrule and engine block proceed to Test No. 2. If there is sparking continue with the following.
 1. Examine distributor cover closely for signs of cracking, check internal electrodes for erosion, if either is evident, replace with new cover.
 2. The carbon plunger in the top of the distributor cap, should not only move very freely, but also the spring tension should extend the brush sufficiently enough to run on the top of the rotor arm.
 3. H.T. Leads, Check for wear and ensure they are all clean and dry, if worn, replace test for continuity by holding the sparking plug end $\frac{1}{4}$ " (6mm) away from the cylinder block whilst cranking, if sparking occurs continuity is present, if no spark, replace the H.T. lead.
 4. Finally, check the insulation of the rotor arm. Remove the H.T. feed to the distributor cap and hold the free end approx. (3mm) away from the electrode of the rotor arm, switch on the ignition and crank the engine. If sparking occurs, the rotor arm insulation is damaged and it needs replacing.



TEST 2. BALLAST RESISTOR CHECK

A. Disconnect the multi socket at the amplifier side of the ballast resistor and connect a voltmeter between the battery earth and each terminal of the ballast resistor in sequence.



CAUTION: TAKE GREAT CARE TO ENSURE THE PROBE DOES NOT TOUCH THE CASING OF THE 9BR BALLAST RESISTOR.

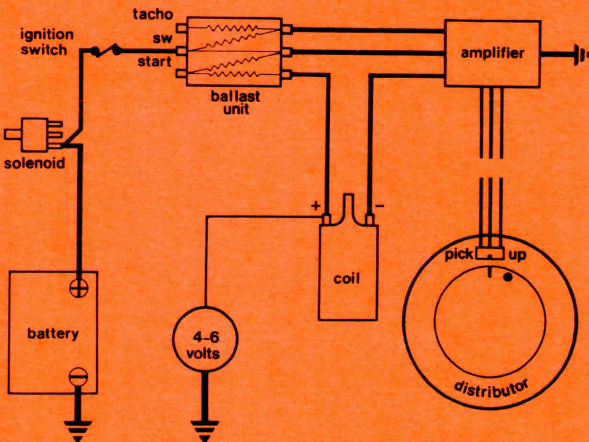
- B. Turn on the ignition, the voltmeter should read battery voltage. If this is the case, carry on to Test 3.
- C. If there is no reading on the meter, check the supply to the 'S.W.' terminal if battery voltage is shown, replace the 9BR unit.
- D. If no reading is obtained trace the fault back through to the ignition switch.

TEST 3. CHECKING COIL VOLTAGE

A. Disconnect the Distributor/Amplifier plug and connect a voltmeter between the '+' positive coil terminal and a known battery earth. Turn on the ignition, it should read 4–6 volts, a very high reading indicates an amplifier or coil fault.

If there is no reading on the voltmeter test the supply by disconnecting the cable (white/green) at the '+' connection of the coil and connect the voltmeter between the cable end and a known battery earth.

With the ignition on the meter should read battery voltage. If no reading, renew the cable.

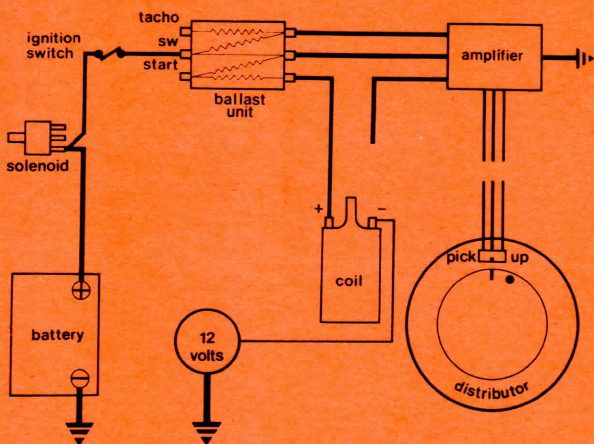


TEST 4. COIL PRIMARY WINDING CHECK

A. Remove the lead from the coil '-' (negative) terminal and connect a voltmeter between the terminal and a good battery earth.

B. With the ignition 'ON' the meter should read battery voltage.

Replace the coil if no reading is registered.

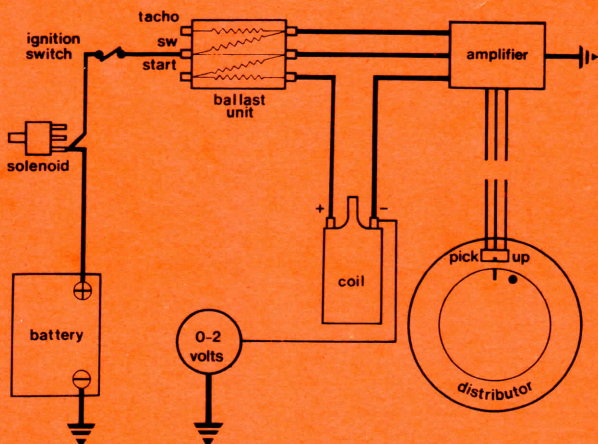


TEST 5. AMPLIFIER VOLTAGE DROP

A. Connect voltmeter between coil '-' negative terminal and known earth, switch ignition on. Meter should read 0-2 volts, if the meter reads over 2 volts, but below battery voltage, check the voltage drop of the earth.

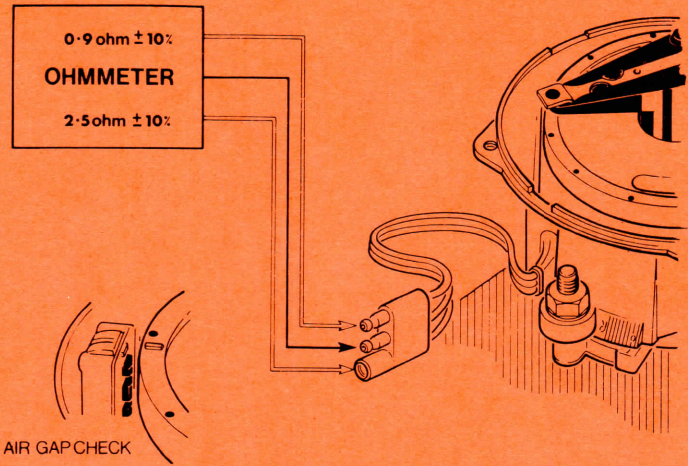
B. Do this by connecting the voltmeter between the amplifier clamping bolt, and the battery earth. Switch on the ignition and the meter should read 0.5 volts maximum.

If higher, a faulty earth is evident.



TEST 6. DISTRIBUTOR PICK-UP MODULE

- A. Check the pick-up module visually making sure the three faces of the core are in line and parallel with the edge of the timing rotor, also that it is held securely in the housing.
- B. Measure the 'air gap' between module core and timing rotor (for data refer to W/S manual).
- C. Using an Ohmmeter check the resistance values between the centre pin and each of the outer pins of the distributor harness socket.
Centre pin to outer RED cable $2.5 \pm 10\%$.
Centre pin to outer BLACK cable $0.9 \pm 10\%$.
N.B. The resistance values remain the same but later Jaguar 12 cyl. colour coding is as follows:
- | | | |
|--------|-------|----------------|
| BLACK | INNER | |
| RED | OUTER | $2.5 \pm 10\%$ |
| YELLOW | OUTER | $0.9 \pm 10\%$ |
- D. If the readings are incorrect or if the core faces are out of line, the pick-up module needs replacing.



TEST 7. COIL H.T. AND AMPLIFIER SWITCHING

- A. Connect voltmeter between coil negative terminal and battery earth, and a known good H.T. lead from the coil, hold the brass ferrule of the H.T. lead approx. $\frac{1}{4}$ " (6mm) away from the block.
- B. Turn on the ignition and crank the engine. The meter should read 3-4 volts, this will fluctuate with the H.T. sparking.
If no spark but the meters shows 3-4 volts replace the coil.
- C. If no spark and the meter only reads 00-2 volts or battery voltage, replace the amplifier.

