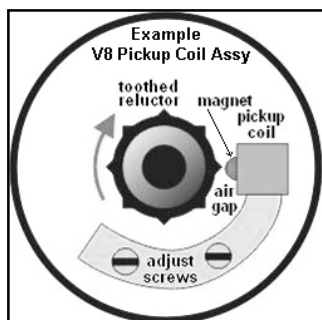
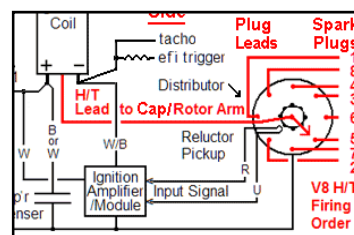


Testing the Rover SD1 V8 Electronic Ignition Distributor Pickup Coil

Within the four primary distributor functions is a little understood multiple use electronic process, the Variable Reluctance Transducer. Inside an electronic ignition distributor it's commonly called a Pickup Coil, it rarely fails, but one of three simple elimination tests can easily be applied when an electronic ignition system is faulty.



In operational context its primary benefit is simplicity, consisting typically of a coil of wire sitting in a magnetic field created by a permanent magnet. A rotating trigger wheel of special magnetic substance has eight equally spaced lobes that pass through the field, each bending it to induce a small voltage in the coil. Upon passing, the field bends the other way resulting in an alternating signal. Driven from the camshaft at half crank speed, it delivers eight sine wave pulses per four stroke cycle to the ignition amplifier. The various tests are as follows:



Test Amplifier and Pickup Coil Together

- Remove the distributor cap.
- On Efi cars, disconnect the W/B trigger wire prevent spurious signals to the ECU.
- Detach W/B amplifier wire from coil negative.
- Connect 12V 21W bulb (proxy load) between W/B and W wires, 12V coil positive.
- Turn ignition on.
- Gently rotate distributor rotor arm back/forward against mechanical advance springs.
- The reluctor wheel triggers the pickup coil and amplifier will flash the bulb.
- If flashing is positive/consistent the amplifier/pickup coil are both working properly.
- If flashing is absent, weak or inconsistent either amplifier or pickup assy is faulty, so:

Measure Pickup Coil Independently

- Detach the (usually) Red (R) and Blue (U) pickup coil connections at the amplifier.
- Use an ohmmeter to measure the resistance of the distributor pickup coil.
- Expect a steady value between 500 to 1500 ohms.
- Flex the wires at the same time testing their integrity.
- A result outside the specified range, short or open circuit indicates a duff pickup coil.
- If pickup coil is OK, one might wrongly conclude that the amplifier is faulty, so:

Dynamic Test for Reluctor and Pickup Coil Together

- Connect an oscilloscope in place of the ohmmeter as described above.
- Turn ignition on and crank the engine to rotate the trigger wheel.
- Observe a rippling sine wave on the oscilloscope.
- With coil OK, weak or no signal indicates damaged magnetic parts or air gap too big.
- If an oscilloscope is not available, a practical option is a sensitive AC voltmeter.

In summary and sequentially, whether by testing the pickup coil and amplifier together, measuring coil resistance independently or by the running the dynamic test for reluctor and pickup coil together, by process of elimination all the pickup parts can be properly assessed.