Boyer Spitting and Popping

Someone told me they fitted a Boyer ignition themselves and it ran right for about a week and then one day the bike stopped running and would only spit, pop and backfire. Another similar situation is where the bike will crank right up, but about a mile from the house the bike acts as if the fuel suddenly went bad. Again it starts to spit and pop. This issue is more common than you would think. Here are 3 tests you can do to solve your problem:

Test 1 - Timing Slip

The first step is to determine if the magnetic rotor has slipped and lost correct ignition timing. To do this test, first replace the sparkplugs with new NGK B7ES. Then, using a ignition strobe lamp, check the timing at 5000 RPM. If the timing marks do not align, you can try moving the timing plate, or you may have to reposition the spinning magnet per the Boyer instructions. This time add a 1/4" lock washer to the center bolt to help keep the rotor in place. See the GABMA article ***Boyer Install Tips***.

Test 2 - Power Loss

Pull your sparkplugs out and leave them connected while they lay on the cylinder head. Turn ON the ignition If you do NOT have bright blue sparks during Test 1, then your Boyer is having a power or signal issue. Power issues can be caused by: a dead battery, poor battery charging, a worn out ignition switch, or corrosion in the kill button.

Test 2a – Dead Battery. See the GABMA article ***Battery Testing***.

Test 2b – Poor battery charge. Place an ammeter capable of 10A in place of the fuse. Start the motorcycle, turn the headlamp ON and rev the engine to higher than 2500 RPM you should see at least a 1A (usually 1.5A to 2A) charge. If not then your charging system needs to be thoroughly investigated by a knowledgeable mechanic.

Test 2c – Poor supply wiring. With both battery wires removed, take an Ohmmeter reading between the Boyer box BLK wire and the harness wire that was attached to the battery negative terminal. With the ignition key turned ON, the meter should read zero Ohms. If not then you have wiring issues or a bad ignition switch. Be sure and wiggle the key all around while taking this reading.

Test 2d – Poor return wiring. Disconnect the battery terminals and the Boyer control box connections. Take an Ohmmeter reading between the Boyer box RED wire and the harness wire that was attached to the battery positive terminal. The meter should

read zero Ohms. If not then you have poor grounding path. See the GABMA article ***Proper Grounding***.

Test 3 - Signal Loss

Signal issues are usually caused by poorly crimped bullet connectors at the "points plate" or where the “points wire” comes up to plug into the Boyer box. (See the GABMA article ***Boyer Install Tips***.) Those 2 wires are running a pulsed signal from the tiny coil and magnets within the timing cover. At best, that signal probably never gets better than 2 or 3V. That's why the wires and crimps have to be absolutely *perfect* conductors, making *perfect* connections.

On a stock bike with points these wires would have 12V which makes up for a lot of poor wiring practices, but the Boyer is a *whole* different ball game. If your computer, running with 5V, couldn’t operate with your bike’s wiring quality, then why would your Boyer with 3V? Which leads us to...

Whatley's First Law of Brit Bikes: The day you fit a Boyer is the first day you start cleaning up your sloppy wiring harness and faulty charging system, or the last day you ride.

Hope this helps! 

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