

Ignition Unit Trouble

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Outline Tests

Outline tests that can be made without test equipment. To check the ignition units.

Spark

To check the ignition spark, pull off the plug wire and fit it to a plug known to be good. Rest the plug against the engine to ground it, and kick the engine over. If a strong blue-white spark jumps across the plug gap, the ignition spark is good.

Spark Plug

If you suspect a spark plug to be bad, first check the spark as above then substitute the suspect plug and check its spark. If there is no spark or if the spark is weak, visually inspect the plug. Dirt or oil around the electrodes or on the ceramic insulation inside the electrode end of the plug will prevent a good spark from jumping. Clean off the plug well or replace it.

Wiring

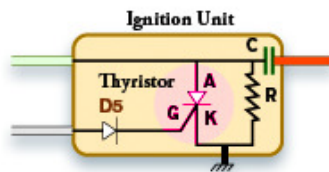
The engine will not start if the plug wires are connected to the wrong spark plug, or if one of the ignition unit red or white wires is reversed with another of the same color. These wires are clearly marked as to left, right or center cylinder connection.

If the spark appears to be grounding out somewhere, examine the high voltage wires and replace any that have broken or cracked insulation.

If no cracks are visible, run the engine in a dark place to see where the spark is jumping. But don't run the engine inside a closed area! Any time wiring mistakes are suspected, in the ignition system or otherwise, check the wiring against the H2 wiring diagram.

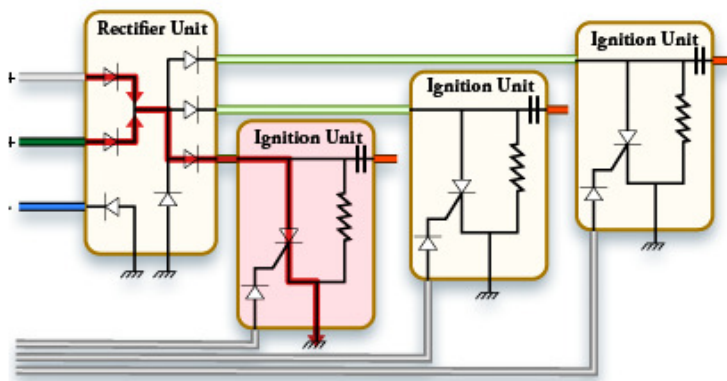
Ignition Unit

This illustration is a ignition unit mechanism.

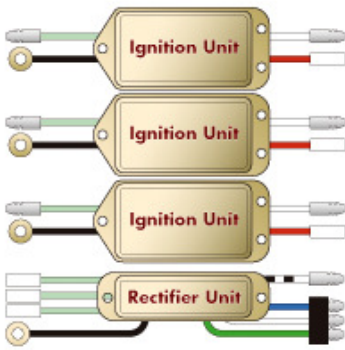


When a central thyristor is concerned with a gate with a signal from a signal coil, it connects a circuit in order to discharge electricity with a condenser. When electric potential of Anode (A) is high it is on, when electric potential of Cathode (K) is high, it is off. The Capacitor is charged by generator current. When a Capacitor receives a signal, it discharges electricity to primary coil of an ignition coil. When a trouble caused in one of the ignition unit, will not spark for any of cylinders. In an example of chart below, a thyristor of ignition unit 2 does continuity. When one of a thyristor has done continuity, most electric currents have flowed to ground, and a condenser of other units can not charge.

Therefore, in the non spark trouble, it must inspect all ignition units.



When there is no spark for any of the cylinders, the trouble can sometimes be caused by a signal ignition unit. In this case the trouble can be located without test equipment:



A) Disconnect the three light green wires going from the ignition rectifier unit to the ignition units

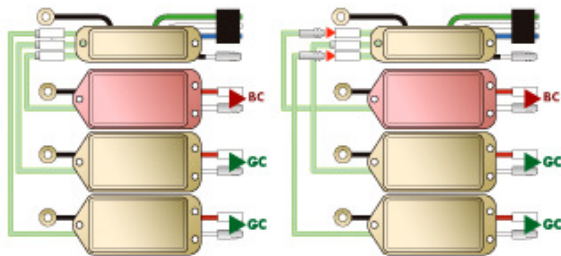
B) Connect one wire at a time to its ignition unit and check the spark for that cylinder.

If two of the cylinders will spark when connected alone, the ignition unit for the non-sparking cylinder bad. When there is no spark for one of the cylinders or when the spark is weak the first step, of course, is to make sure the spark plug is good and that the wiring is not at fault. Proceeding from that point, there are only four possible places for the trouble to be: the coil, the ignition unit, the ignition rectifier unit, or signal generator.

By following the steps below it will be easy to pinpoint the defective part. BC means the cylinder that is bad; GC means either one (pick one) of the two remaining good cylinders.

Step 1

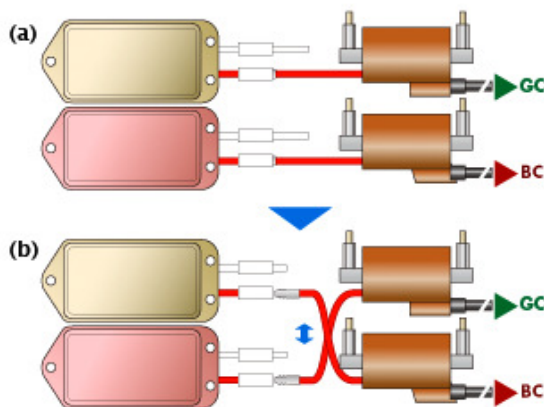
(a) There are three light green wires coming from the ignition rectifier unit, and one goes to each ignition unit. Take the two of these which go to the BC ignition unit and the GC ignition unit and reverse them.



(b) Check the spark for the two cylinders. If the trouble has shifted from the BC to GC, the ignition rectifier unit is bad. If the trouble remains in the BC, go on to Step 2.

Step 2

(a) Reverses the BC and GC plug wires so that the BC wire goes to the GC plug, and the GC wire goes to the BC plug.



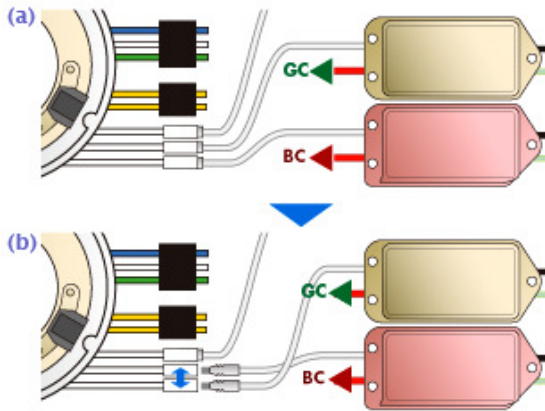
(b) There are three red wires, one from each ignition unit to each coil. Reverses the BC and GC red wires. This can be done at either the junction near the coil or near the ignition unit.

(c) Now check the spark for both cylinders. If the trouble has switched to the GC, the BC ignition coil is bad. If the trouble is still in the BC go on to the next step.

Step 3

(a) Return the spark plug wires to normal but leave the red wires reversed.

(b) Each ignition unit has white wire coming from it. Reverses the BC unit and GC unit white wires.



(c) Check the spark for both cylinders. If the trouble is now in the GC, the BC ignition unit is bad. If the trouble remains in the BC, the BC signal generator coil is bad.

Once the defective part has been located, return all wiring to normal.