



# TROUBLESHOOTING GUIDE FOR CAPACITIVE DISCHARGE (CD) IGNITION SYSTEMS

Most CD boxes operate the same way, making for common basic test procedures. Most CD ignition boxes have two separate triggering circuits in them. One is for a regular points driver signal, which is a square wave, and one for 2 wire magnetic, which is a sine wave, and the two have slightly different test procedures.

Before beginning any testing, start with the basics. Using your ignition instructions as a guide, recheck all of the connections and terminals, and make sure the wires are routed correctly and are free from abrasions or other damage. Some ignitions also are equipped with indicator lights that can check the power source and some internal circuits.

## IGNITION BOXES USING SINGLE WIRE POINTS TYPE TRIGGERING

If the box powers up but does not fire the coil and the white wire is being used as the trigger source, the following tests should be done:

1. With the key off, remove the coil wire from distributor cap and get it where you can jump a spark to the block, with a gap of about 1/2 inch. Separate the triggering wire that connects the box and the distributor together, the wire colors will differ between boxes and distributor combinations, for example: MSD, Crane, ACCEL and Mallory boxes are white. On the Mallory Hyfire I's to IV's and the new Hyfire VI (6) P/N 685, this wire is green. Refer to your ignition's instruction sheet to confirm the color of the wire.
2. Turn the ignition switch to the "ON" position. While holding the coil wire close to the engine block, tap the white wire to an engine ground. This will trigger the box and should fire the coil, jumping a spark to ground through the coil wire. If there is no spark from the coil wire and no audible snap comes from the box, the box is bad. If you hear a snap in the box but no fire at the coil wire, then the coil or the coil wire could be bad and they need to be tested.
3. If the test comes out positive and the box, coil and coil wire are working, the distributor is either not working or is improperly wired into the system and the installation instructions should be revisited.

## IGNITION BOXES USING TWO WIRE MAGNETIC TYPE TRIGGERING

1. With the key off, remove the coil wire from the distributor and position the wire so a spark can be jumped to the block, with a gap of about 1/2 inch. Disconnect the 2 magnetic wires from the box and lay them aside. Next take a short piece of wire and bend it in the shape of a "U". This wire will be used to short the 2 wires of the magnetic connector on the box together.
2. With the key in the "ON" position, the coil wire where you can jump a spark to the engine block, and using the "U" shaped wire you have made up, short the two wires in the connector of the box together and then disconnect the shorting wire.
3. Each time you disconnect the shorting wire the box should fire the coil and should jump a spark to ground. If the coil does not fire then either the magnetic circuit in the box is inoperative or the coil or coil wire are bad. Magnetic distributor pickups are generally 400 to 650 ohms of resistance. If it is a crank trigger, the pickup is rated at about 80 ohms resistance.
4. With any of the larger MSD, Crane, and Mallory 7 and 8 boxes the tests are similar. The difference is that they have a terminal strip instead of a wire harness but have the same two circuits in them and test as follows.
5. To test the magnetic circuit in the box simply disconnect the two wire from the "MAG + and MAG -" terminal on the box. Connect a short piece of wire to one of the terminals. With the key on and coil wire ready to jump a spark to the block, rapidly tap the other end of the short jumper wire to the other magnetic terminal. The box should fire the coil.
6. If the trigger is points or Unilite then disconnect the distributor from the box. Connect a long piece of wire to the "Points" terminal of the box. With the key on, rapidly tap this wire to ground and the box should fire the coil.

7. If both of these tests prove out, then the problem is either in the distributor, crank trigger, or the wiring is incorrect.

## TESTING THE COIL

**NOTE:** This test should only be done on "stock type" coils. DO NOT try this test with "CD Only" coils, such as the Mallory 28880 or ACCEL 140019 and 140010.

This test is also helpful in testing the coil when used with just a distributor and you are having a "No Spark" to the plugs condition. When doing this test you must disconnect the distributor from the coil (-) terminal, taking it out of the loop and allowing the test to be done properly.

1. Disconnect the wires coming from the CD box to the coil (+ and -) terminals and connect the ignition switch 12 volts wire to the coil (+) terminal of the coil.
2. Connect a 24" piece of wire to the coil (-) of the coil.
3. Pull the coil wire out of the distributor cap and get it to where you can jump a spark to ground with it.
4. Turn the ignition to the "ON" position.
5. Rapidly tap the 24" wire to ground. This will fire the coil. You should get a 1/4" to 3/8" spark out of the high voltage coil wire to ground. If you do then the coil and coil wire are good and working.
6. If no spark to ground, change out the coil wire and do the test again. If still no spark, the coil is bad and needs to be replaced.



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