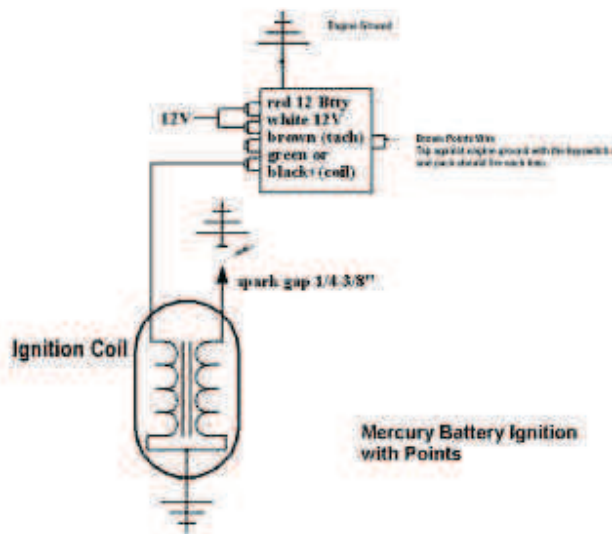


Mercury

Battery CD Ignitions with Points

1. **SERVICE NOTE:** Check the battery voltage at approximately 3500-RPM, MAXIMUM reading allowable is 16 volts. Over 16 volts will damage the ignition. Check for loose connections or a bad battery. Maintenance free batteries are NOT recommended for this application. A CD Tester (CDI Electronics P/N: 511-9701) can be used to test the CD module, distributor cap, rotor button and spark plug wires on the engine.

Engine Wiring Connection for Testing Ignition Module



2. Clean all battery connections and engine grounds.
3. Disconnect the mercury tilt switch and retest. If the ignition works properly, replace the mercury switch.
4. Connect a spark gap tester to the spark plug wires and check for fire on *all cylinders*. If some cylinders fire and not others, the problem is likely in the distributor cap, rotor button or spark plug wires.
5. Connect a spark gap tester to the high-tension lead coming from the ignition coil and set it to approximately 7/16". When you crank the engine over, if it fires while the spark gap tester is connected to the coil and does not fire through the spark plug wires – there is a problem in the distributor cap, rotor button or spark plug wires.
6. Check voltage present on the white and red terminals while at cranking. It MUST be at least 9½ volts. If not, there is a problem in the harness, key switch, starter battery cables or battery.
7. Check DVA voltage on the green wire going to the coil, it should be over 100 volts at cranking.
8. Disconnect the brown points wires. Turn the ignition switch on and strike one of the brown points wire against engine ground. The unit should fire each time. If the coil does fire, this means the CD module is usually good and the points, points plate and grounding wire for the points plate should be checked.
9. Connect a spark gap tester to the high-tension leads coming from the distributor cap and set the gap to approximately 7/16". Align the rotor with #1 spark plug wire. Turn the ignition switch on and strike the brown points wire against engine ground (Or use a CD Tester). Only the #1 spark plug wire should fire. If any other spark plug wire now has fire, there is a problem in the distributor cap. Repeat the test for the other cylinders.
10. Perform a voltage drop test after the engine is repaired to see if there is a problem with the voltage going to the CD module. At cranking and while the engine is running, use a DC voltmeter and put the black meter lead on the battery POS (+) *post* and the red meter lead on the positive battery cable at the starter solenoid. Keep the black lead on the battery post and shift the red meter lead to the positive post of the rectifier, then to the red and white terminals on the switch box. If you find a reading above 0.6V, there is a problem at the point where the voltage jumped up. For example, if the meter reads 0.4V until you get to the white terminal and then jumps to 2.3V on the white terminal –this indicates a problem in the key switch, or harness. Repeat the test for the negative battery post by putting the black meter lead on the battery NEG (-) *post* and the red meter lead on the negative battery cable terminal, then shifting to the engine block, rectifier base and case ground of the CD module.

Mercury

Battery CD Ignitions without Points

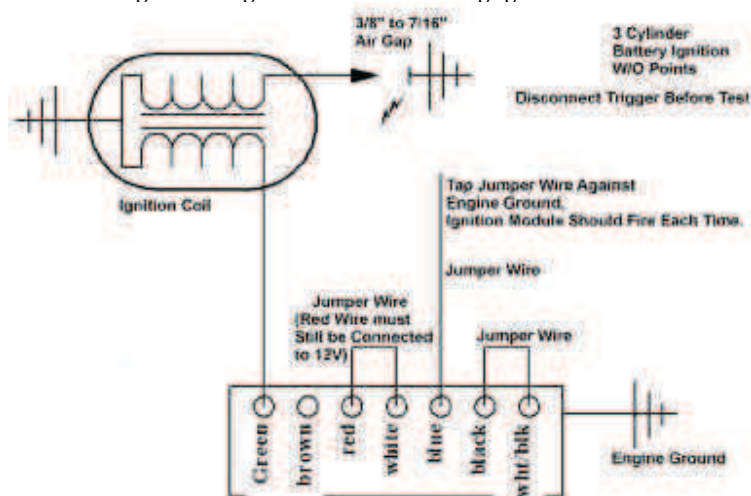
Three Cylinder Engines

332-4796/393-4797 Type Ignitions

Note: A CD Tester by CDI Electronics (511-9701) or Merc-o-Tronics can be used to test the CD module, distributor cap, rotor button and spark plug wires on the engine while the Trigger Tester by CDI can be used to test the distributor trigger.

SERVICE NOTE: Check the battery voltage at approximately 3500 RPM, MAXIMUM reading allowable is 16 volts and minimum is 12V. Running below 12V or over 16 volts will damage the ignition. Check for loose connections or a bad battery. Maintenance free batteries are NOT recommended for this application.

Engine Wiring Connection for Testing Ignition Module



General:

1. Clean all battery connections and engine grounds.
2. Disconnect the mercury tilt switch and retest. If the ignition works properly, replace the mercury switch.
3. Connect a spark gap tester to the spark plug wires and check for fire on *all cylinders*. If some cylinders fire and not others, the problem is likely in the distributor cap, rotor button or spark plug wires.
4. Perform a voltage drop test after the engine is repaired to see if there is a problem with the voltage going to the CD module. At cranking and while the engine is running, use a DC voltmeter and put the black meter lead on the battery POS (+) *post* and the red meter lead on the positive battery cable at the starter solenoid. Keep the black lead on the battery post and shift the red meter lead to the positive post of the rectifier, then to the red and white terminals on the switch box. If you find a reading above 0.6V, there is a problem at the point where the voltage jumped up. For example, if the meter reads 0.4V until you get to the white terminal and then jumps to 2.3V on the white terminal –this indicates a problem in the key switch, or harness. Repeat the test for the negative battery post by putting the black meter lead on the battery NEG (-) *post* and the red meter lead on the negative battery cable terminal, then shifting to the engine block, rectifier base and case ground of the CD module.

No fire at all:

1. Connect a spark gap tester to the high-tension lead coming from the ignition coil and set it to approximately 7/16". When you crank the engine over, if it fires while the spark gap tester is connected to the coil and does not fire through the spark plug wires – there is a problem in the distributor cap, rotor button or spark plug wires.
2. Check the DC voltage present on the white and red terminals while at cranking. It MUST be at least 9½ volts. If not, there is a problem in the harness, key switch, starter battery cables or battery.
3. Check the DC voltage on the white/black trigger terminal at cranking, there must be at least 9V available with the trigger wire connected.
4. Check DVA voltage between the blue and black trigger wires (they must be connected to the switch box). You should read at least 3V. A low reading indicates a bad trigger.
5. Check DVA voltage on the green wire going to the coil, it should be over 100 volts at cranking.

Only has fire when you let off of the key switch:

This symptom usually indicates a bad trigger or low voltage.

No fire or intermittent on one cylinder:

1. Connect a spark gap tester to the high-tension leads coming from the distributor cap and set the gap to approximately 7/16". Use of a CD Tester is highly recommended.
2. Align the rotor with #1 spark plug wire. Disconnect the trigger wires and connect a jumper wire from the white/black trigger terminal to the black trigger terminal on the switch box.
3. Connect another jumper wire to the blue trigger terminal turn the ignition switch on. Strike the jumper wire from the blue terminal against engine ground – (DO NOT HOLD THE JUMPER AGAINST ENGINE GROUND). Only the #1 spark plug wire should fire. If any other spark plug wire now has fire, there is a problem in the distributor cap.
4. Repeat the test for the other cylinders.

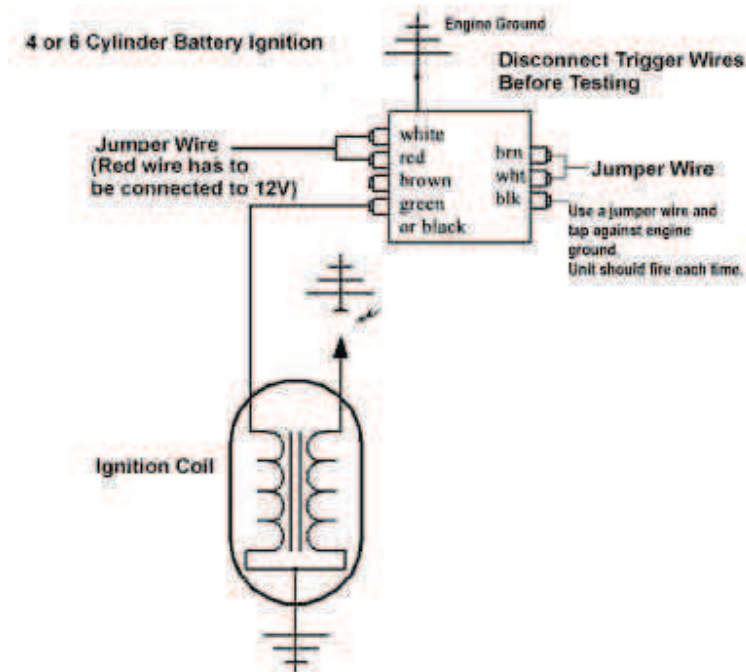
High Speed Miss:

Check the battery voltage on the red and white terminals of the switch box at high speed, the voltage should be between 12.5V and 16V DC. A reading outside this range will damage the CD module. If the readings are abnormal, perform the voltage drop test described above.

Four and Six Cylinder Engines**332-2986/393-3736 Type Ignitions**

Note: A CD Tester like the one by CDI Electronics or Merc-o-Tronics can be used to test the CD module, distributor cap, rotor button and spark plug wires on the engine while the Trigger Tester by CDI can be used to test the distributor trigger.

SERVICE NOTE: Check the battery voltage at approximately 3500 RPM, MAXIMUM reading allowable is 16 volts and minimum is 12V. Running below 12V or over 16 volts will damage the ignition. Check for loose connections or a bad battery. Maintenance free batteries are NOT recommended for this application.

Engine Wiring Connection for Testing Ignition Module**General:**

1. Clean all battery connections and engine grounds.
2. Disconnect the mercury tilt switch and retest. If the ignition works properly, replace the mercury switch.

3. Connect a spark gap tester to the spark plug wires and check for fire on *all cylinders*. If some cylinders fire and not others, the problem is likely in the distributor cap, rotor button or spark plug wires.
4. Perform a voltage drop test after the engine is repaired to see if there is a problem with the voltage going to the CD module. At cranking and while the engine is running, use a DC voltmeter and put the black meter lead on the battery POS (+) *post* and the red meter lead on the positive battery cable at the starter solenoid. Keep the black lead on the battery post and shift the red meter lead to the positive post of the rectifier, then to the red and white terminals on the switch box. If you find a reading above 0.6V, there is a problem at the point where the voltage jumped up. For example, if the meter reads 0.4V until you get to the white terminal and then jumps to 2.3V on the white terminal –this indicates a problem in the key switch, or harness. Repeat the test for the negative battery post by putting the black meter lead on the battery NEG (-) *post* and the red meter lead on the negative battery cable terminal, then shifting to the engine block, rectifier base and case ground of the CD module.

No fire at all:

1. Connect a spark gap tester to the high-tension lead coming from the ignition coil and set it to approximately 7/16". When you crank the engine over, if it fires while the spark gap tester is connected to the coil and does not fire through the spark plug wires – there is a problem in the distributor cap, rotor button or spark plug wires.
2. Check the DC voltage present on the white and red terminals while at cranking. It **MUST** be at least 9½ volts. If not, there is a problem in the harness, key switch, starter battery cables or battery.
3. Check the DC voltage on the brown trigger terminal at cranking, there must be at least 9V available with the trigger wire connected.
4. Check DVA voltage between the white and black trigger wires (they must be connected to the switch box). You should read at least 3V. A low reading indicates a bad trigger.
5. Check DVA voltage on the green wire going to the coil, it should be over 100 volts at cranking.

Only fires when you let off of the key switch:

This symptom usually indicates a bad trigger or low voltage.

No fire or intermittent on one cylinder:

1. Connect a spark gap tester to the high-tension leads coming from the distributor cap and set the gap to approximately 7/16". (Use of a CD Tester is recommended).
2. Align the rotor with #1 spark plug wire. Disconnect the trigger wires and connect a jumper wire from the brown trigger terminal to the white trigger terminal.
3. Connect another jumper wire to the black trigger terminal turn the ignition switch on. Strike the jumper wire from the black terminal against engine ground – (DO NO HOLD THE JUMPER AGAINST ENGINE GROUND). Only the #1 spark plug wire should fire. If any other spark plug wire has fire, there is a problem in the distributor cap.
4. Repeat the test for the other cylinders.

High Speed Miss:

1. Check the battery voltage on the red and white terminals of the switch box at high speed, the voltage should be between 12.5V and 16V DC. A reading outside this range will damage the CD module. If the readings are abnormal, perform the voltage drop test described above.
2. Perform a high-speed shutdown and read the spark plugs. Check for water. A crack in the block can cause a high miss at high speed when the water pressure gets high, but a normal shutdown will mask the problem.

Four Cylinder Engines

1970-1971

337-4406/337-4411 Ignitions

WARNING: Check the battery voltage at approximately 3500 RPM, MAXIMUM allowable reading is 16 volts and minimum is 12V. Running below 12V or over 16 volts will damage the ignition. Check for loose connections or a bad battery. Maintenance free batteries are NOT recommended for this application.

SERVICE NOTE: Due to problems associated with this system, it is recommended that the system be converted over to a 332-2986/393-3736 type system. (CDI Electronics offers a conversion kit, P/N – 332-2986K1)