

How to Install the Spark Control Module in a Corvette

The Corvette has incorporated a ignition module, which is also referred to as a spark control module, since the late 1960s. The ignition control modules control the spark of the ignition coil and proper sequence of firing. A failed ignition module will not permit your Corvette to start; failures can occur due to damage, heat or moisture.

INSTRUCTIONS:

Things you will need:

- Wrench for battery terminal
- Torx screwdriver
- Chalk or masking tape
- Small ¼” socket and ratchet
- New Ignition control module (*GM #1917-9581 , Accel #110-35363*)
- Silicone dielectric grease



1. Open the hood and disconnect the negative battery terminal.
2. Using masking tape, mark each sparkplug wire coming out of the distributor cap with its number designation.
3. Remove the distributor cap using a ¼” socket to remove the four screws. Lift the cap off after removal of the four screws.
4. Mark the position of the rotor using the chalk or masking tape. Remove the ¼” screws holding the rotor in place and pull the rotor straight up.
5. Remove the ignition module by removing the two screws with a ¼” socket. Disconnect the two wiring connectors from the module. One will be on each end of the module. Be gentle when removing the connectors as they may be brittle from exposure to heat from the engine.
6. Spread the dielectric grease evenly over the area where the new ignition module will be installed. Place the new ignition control module in the greased area. Reinstall the two screws holding the module in place. Reconnect each of the two wire connectors to the module.
7. Press the rotor back on the distributor using the chalk marks for guidance. Insert and tighten the screws holding the rotor in place.
8. Place the distributor cap back on the distributor and tighten down ¼” screws. Reconnect the battery terminal and start the engine

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TEST PROCEDURES:

Ignition Module Test:

There is a module test for the ICM. All that you need is a test light. It is a pain on a Corvette because there is not a lot of room back there, but it may save you from replacing good parts. Here goes:

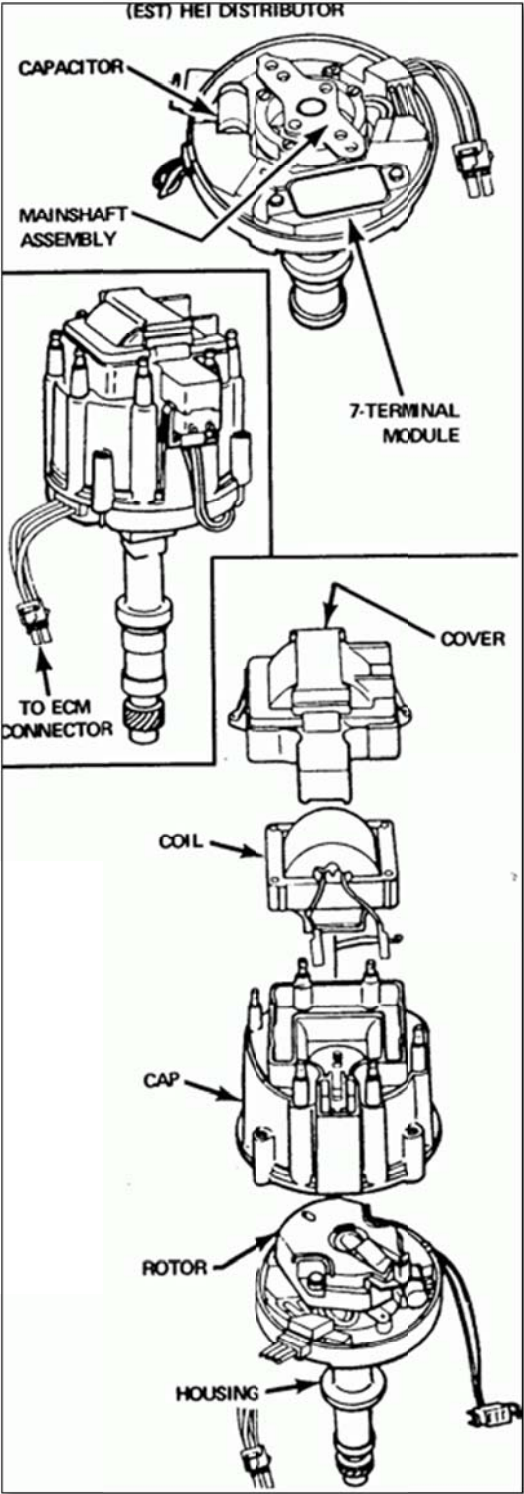
1. Remove plug wires, mark them for replacement.
2. Remove distributor cap.
3. Remove rotor for more room.
4. Plug the Bat, Tach and Distributor wires back into cap with cap inverted.
5. Turn ignition key to on position.
6. Take a test light and connect lead to +ve bat.
7. Touch the test light to the green wire on the module. This simulates the signal from the pick-up coil to the module.
8. You should get a spark from the ignition coil every time you touch the green wire, injectors will fire also.
9. If no spark is obtained, chances are the module is defective.

Coil & Pick-up Coil Test:

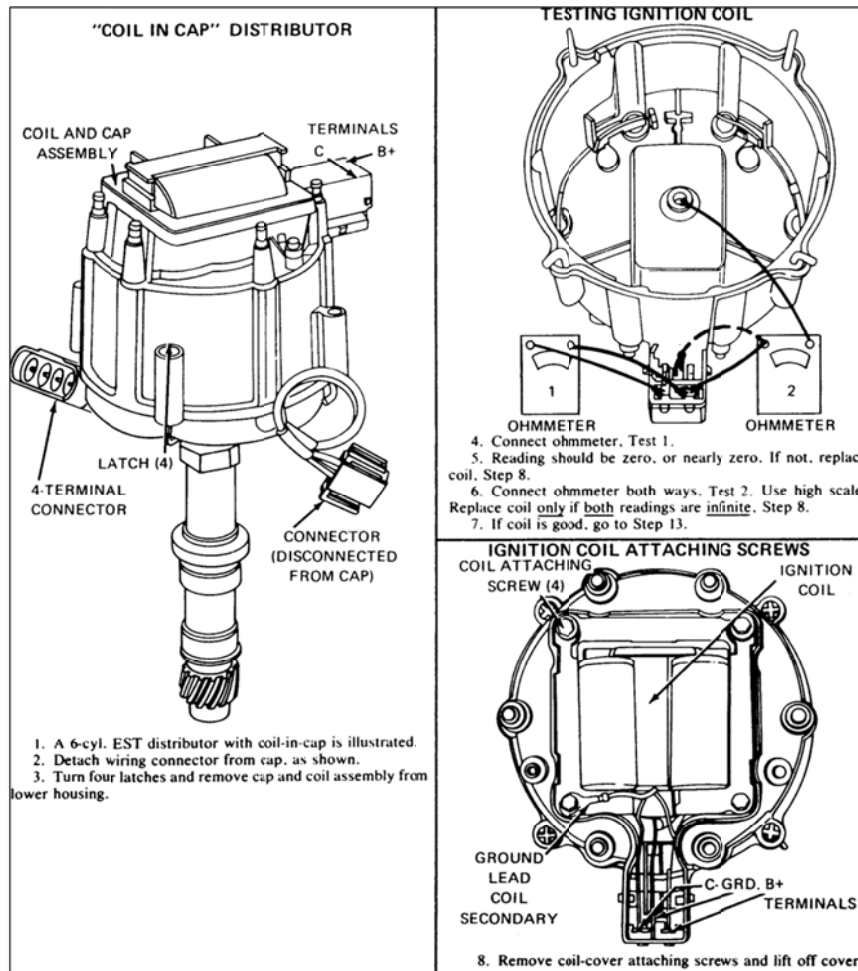
An ignition module, pick up coil, or ignition coil can all cause no spark from the distributor and they can fail at any time. Autozone can test ignition modules in the store with a tester for free. Only the removal of the distributor cap and rotor is required to access the module. Unplug and remove both hold down screws and it is out.

So here's how to test the pick-up coil and main coil while still in the car with a multi-meter:

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There are 3 terminals there. With cap right side up as when on the distributor and viewed from above the center one is the **ground** strap. The left terminal is **C-** and the right is terminal **B+**. Like this:

C- / Ground / B+

Now..

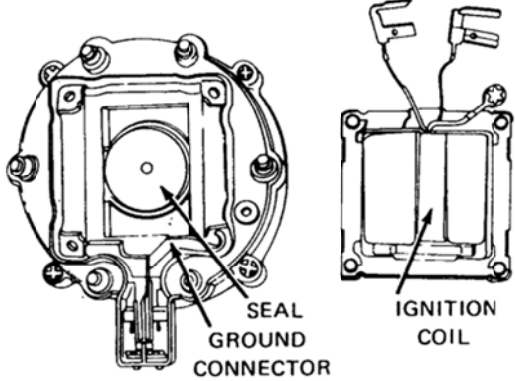
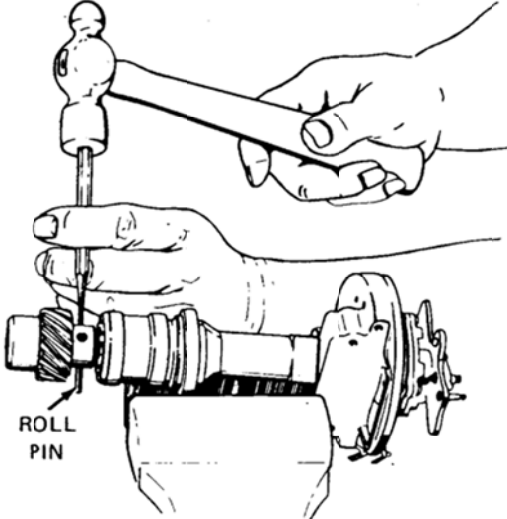
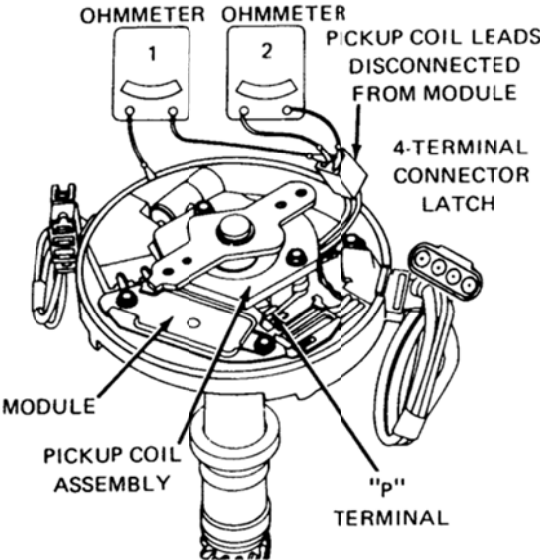
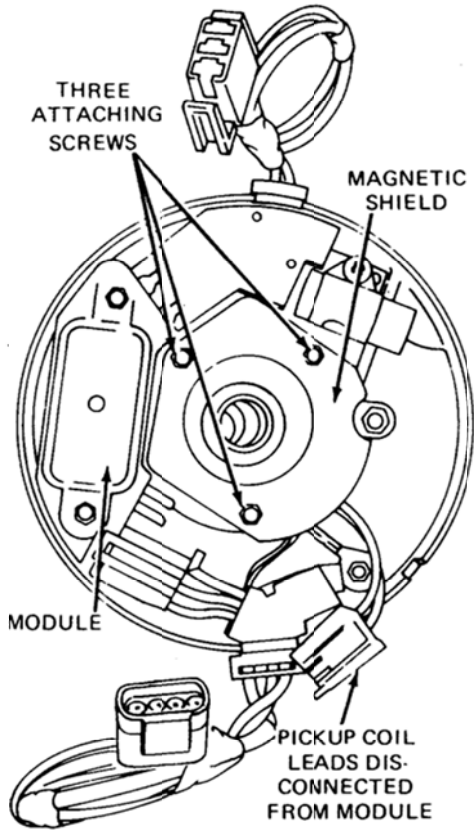
Test 1:

Test across terminals **C-** and **B+**. Readings should be zero or near zero.

Test 2:

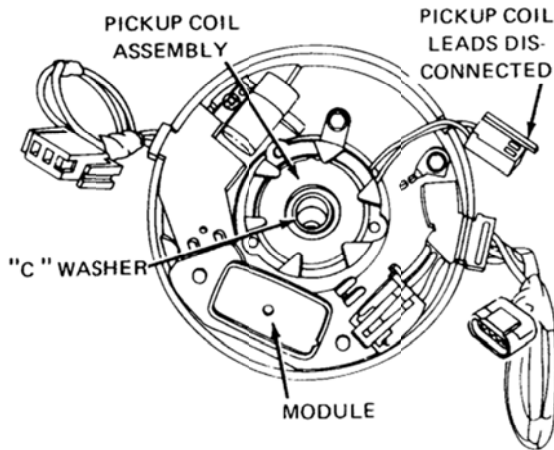
Test between the spring loaded graphite button in the center of cap and terminal **C-**. Then test again between button and center **ground** terminal. If both readings are infinite on your meter's high ohm scale (meaning no continuity) the coil fails.

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<p>IGNITION COIL REMOVED FROM CAP</p>  <p>9. Remove ignition coil attaching screws and lift coil with leads from cap. 10. Remove ignition coil arc seal. 11. Clean with soft cloth and inspect cap for defects. Replace, if needed. 12. Assemble new coil and cover to cap.</p>	<p>DRIVING PIN FROM SHAFT</p>  <p>18. Mark distributor shaft and gear so they can be reassembled in same position. 19. Drive out roll pin.</p>
<p>TESTING PICKUP COIL</p>  <p>13. On all distributors, including distributors with Hall Effect Switch identified in Step 27, remove rotor and pickup coil leads from module. 14. Connect ohmmeter Test 1 and then Test 2. 15. If vacuum unit is used, connect vacuum source to vacuum unit. Replace unit if inoperative. Observe ohmmeter throughout vacuum range; flex leads by hand without vacuum to check for intermittent opens. 16. Test 1 — should read infinite at all times. Test 2 — should read steady at one value within 500-1500 ohm range. NOTE: Ohmmeter may deflect if operating vacuum unit causes teeth to align. This is not a defect. 17. If pickup coil is defective, go to Step 18. If okay, go to Step 23.</p>	<p>SHAFT ASSEMBLY REMOVED</p>  <p>20. Remove gear and pull shaft assembly from distributor.</p>

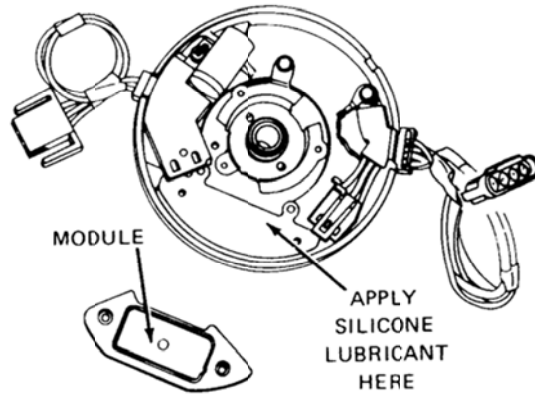
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ALUMINUM NON-MAGNETIC SHIELD REMOVED



21. Remove three attaching screws and remove magnetic shield.

MODULE REMOVED



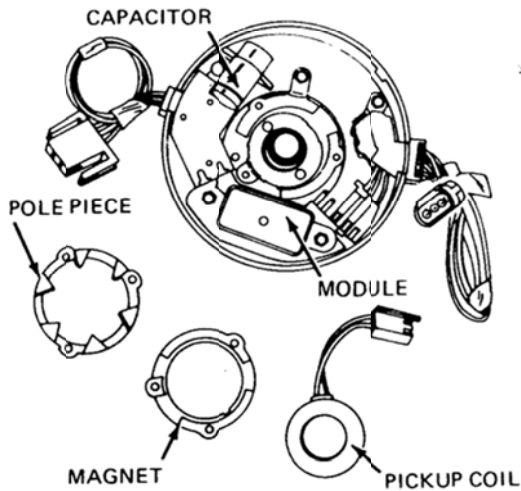
23. Remove two module attaching screws, and capacitor attaching screw. Lift module, capacitor and harness assembly from base.

24. Disconnect wiring harness from module.

25. Check module with an approved module tester.

26. Install module, wiring harness, and capacitor assembly. Use silicone lubricant on housing under module.

PICKUP COIL REMOVED AND DISASSEMBLED



22. Remove retaining ring and remove pickup coil, magnet and pole piece.