

## IGNITOR Test (12- VOLT NEGATIVE GROUND TESTS)

### GROUNDS

It is imperative that the power and grounds be checked as part of the installation procedure. After installing the kit within the distributor and with the distributor in the engine, using a digital multi-meter measure the resistance from the aluminum plate holding the module to battery (-) terminal. The net resistance must be less than 0.2 ohms. If the net resistance is greater than 0.2 ohms the source of the faulty ground must be found and fixed.

The source of the bad ground is easily found by keeping the one probe on battery (-) location and moving the second probe toward the battery (-) probe. Where the resistance drops this identifies the source.

This is a very low ohms reading. It's really important that to zero out the ohm meter. If the meter doesn't have an option to zero it out. The resistance of the probe leads will need to be found by touching them together. Then subtract that number from your final reading. Please see example below:

Maximum Resistance from ignitor Plate to Battery (-) terminal	0.2 Ohms
EXAMPLE:	
Resistance from Ignitor Plate to Battery (-) Terminal	0.4 Ohms
Resistance of Meter leads	(-) 0.2 Ohms
After subtraction Meter lead resistance, your total resistance is:	(=) 0.2 Ohms

In a case an ohms meter is not available. Then you would need to use a jumper wire to do the test. You would connect the ground wire from the ignitor plate then run it directly to the battery negative.

Ground path for the ignition system:

- Ignitor Plate to the distributor plate/housing
- Distributor housing/distributor hold down clamp to engine/intake.
- Engine block to frame or direct to battery
- Battery negative terminal to frame or block

# Coil Resistance and Specifications for Ignitors

Resistance Specification			Recommended Flamethrower coils				
Cylinders	Minimum	Maximum	Black	Chrome	Epoxy	Ind/Ag	HV coil
1-6	3.0 Ohms	4.5 Ohms	40511	40501	40611	20810	60130
8 & 12	1.5 Ohms	3.5 Ohms	40011	40001	40111	N/A	60115
Note: Installation of a Flamethrower coil is not required. Insure the correct resistance is being used is most important.							

## Measuring Coil Resistance with Ohmmeter

1. Zero out the Ohmmeter (refer to steps in ground test for zeroing out meter)
2. Remove all wires from the coil
3. Connect one lead to the positive (+) terminal of the coil and the other lead to the negative (-) terminal of the coil.
  - a. If you are running a ballast resister disconnect the wires from it and measure from terminal to terminal on it
  - b. The resistance in the ballast resister will be added to the coils resistance (Exp. 1.5ohm in coil and 1.5 ohms in ballast = 3.0ohms)
4. If the total resistance is correct. The current coil set up can be used.
5. If the total resistance is incorrect. Then either the coil will need to be changed or a ballast resister add.

## Loaded Voltage Test

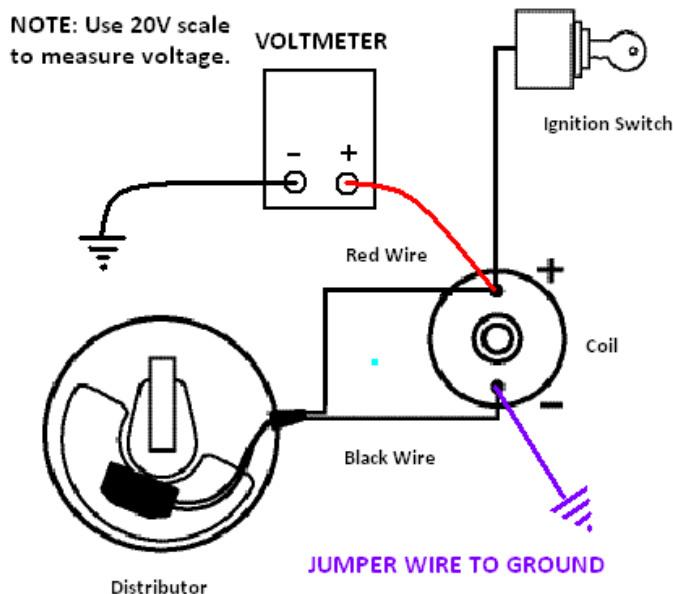
Loaded voltage test are used to find the voltage drop in the ignition system. EVER ignition system has a voltage drop when the coil is charging. This test is designed to see that voltage drop. Also this test will help find hidden resistors in the ignition circuit. A resistor will not drop voltage tell it's under load.

See figure 2 for diagram

1. Start with ignition switch in the off position
2. Do not disconnect wires from ignition coil.
3. Connect jumper wire from negative (-) terminal of coil to a good engine ground.
  - a. A jumper wire with alligator clips on both ends should be used
4. Connect voltmeter red lead to positive (+) terminal of coil and black lead to engine ground
5. Turn "ON" the ignition switch and note voltage reading. Only have the key on long enough to read voltage then turn key "OFF".
6. Remove jumper wire once test is done or engine will not start

	Minimum Voltage	Normal Voltage
Ignition Switch "ON"	8.0V	11.5 V
Engine Cranking	8.0V	9.5V or Greater

**FIGURE 2**



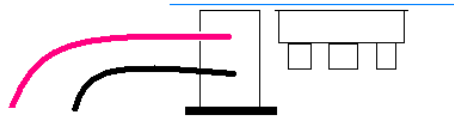
If the test results show low voltage. What can cause low voltage would be poor connection power wire, poor contacts in the ignition switch, a break in the ignition wire, or incorrect gauge wire feeding coil positive. If you have low voltage during cranking that can be caused by poor battery or starter that is dragging to much.

## Other Checks

- Pertronix requires suppression or carbon type spark plug wires, including coil wire.
- What happens if you leave the ignition switch on when the engine is not running? This can cause your coil to overheat, which may cause permanent damage to the coil and the Ignitor.
- Make sure the tach is not grounding the (-) negative terminal of the coil, remove tach Wire if necessary for testing and see if engine starts.
- Install a known "good" coil to verify that new coil is "good".
- Check the sticker on the backside of Ignitor "Ignitor by PerTronix". If the Sticker is shriveled up, wrinkled or if you see any cracks or burn marks on that side of Ignitor the unit over heated and failed due to high current flow.

**On part number 1281 or 91281 (only), make sure the ignitor module and magnet sleeve are level with each other across the top.**

### **Ignitor 1281 & 91281**



**Note: Magnet sleeve & Ignitor must be level with each other on top. If needed, use shims to raise magnet sleeve up.**

## **IGNITOR BENCH TEST**

4, 6, 8, and 12 Cylinder Engines

**NOTE: THIS BENCH TEST IS ONLY TO BE DONE IF THE ENGINE DOES NOT START!**

1. Remove the Ignitor from the distributor, this is a bench test.
  2. Connect a jumper wire from the Ignitor plate to the battery negative terminal (See Diagram Below).
  3. Connect the Ignitor Red wire to the battery positive terminal.
  4. Attach the red voltmeter lead the positive terminal of the battery.
  5. Attach voltmeter black lead to the Ignitor black wire.
  6. The voltmeter should read battery voltage once all the connections are made.
  7. All 1 Cyl, 2 Cyl, 3 Cyl, and Ignitor #1441A, see below for testing procedures.
  8. The magnet sleeve uses (1) magnet per cylinder. Using a paper clip, locate and mark one magnet. Note: With LS modules a magnet sleeve will not be used and a large flat file can be used
  9. Place the magnet in front of the module; An air gap doesn't need to be kept. Moving the magnet around on the face of the module tell the meter start to drop. Hold magnet in this location and the battery voltage should drop to 1.5 volts or lower. The voltage should drop with every magnet.
  10. If the voltage doesn't drop and reads a constant battery voltage, the Ignitor has failed.
- 1 Cyl, 2 Cyl, 3 Cyl, and Ignitor #1441A
1. Remove the Ignitor from the distributor, this is a bench test.
  2. Connect a jumper wire from the Ignitor plate to the battery negative terminal (See Diagram Below).
  3. Connect the Ignitor Red wire to the battery positive terminal.
  4. Attach the red voltmeter lead the positive terminal of the battery.
  5. Attach voltmeter black lead to the Ignitor black wire.
  6. The voltmeter should read battery voltage once all the connections are made.
  7. The magnet sleeve uses (2) magnets per cylinder; one magnet turns it "ON" and one magnet turns it "OFF". Using a paper clip, locate and mark all the magnets on the magnet sleeve.
  8. Rotate the magnet sleeve in front of the module, as one magnet passes the module, the voltage will drop to 0-volts, when the next magnet passes, the voltage will go up to battery voltage.
  9. If the voltage doesn't drop and you read a constant battery voltage on your meter, the Ignitor has failed.

**Bench Test for Ignitors only (not for ignitor II or III's)**

