FIRST STREET IGNITIONS
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TROUBLESHOOT GUIDE
FOR FSI ELECTRONIC IGNITION SYSTEMS

IMPORTANT: If, for testing reasons, it is necessary to remove a plug wire while running, please ground it or hold it 1/8" from a ground or else the coil will spark through the coil tower to the negative terminal and damage the module.

Do not leave switch on over 30 seconds without engine running.
The module and coil depend on the ignition pulses for cooling. Otherwise, they act as resistance heaters until they destroy themselves. The module will normally be the first to go. This is similar to what happens if the key is left on with a standard point system and the points are in the closed position.

Kits Only
Check the magnetic sleeve to make sure the top of it sets 1/8" below the rotor notch in the distributor shaft. The magnetic sleeve can be rotated 90 degrees and tried in four different positions (sometimes it will fit in one position and not the other three). Due to differences in distributor point cams, some filing may be required on the four bumps inside the magnetic sleeve. Check for fit (often just removing a few thousandths makes a big difference). We cannot control the size of the point cam, but the magnetic sleeve requires a tight fit to prevent spark scatter.

The spring wiring conduit that runs from the distributor to the firewall terminal box can short out on the terminal box lugs if the terminal box grommet is not positioned properly and in good shape. If it is not positioned properly, it will send current backwards through the module possibly burning it out.

Ground
It is critical that the distributor be securely grounded. Check for loose connections in ignition circuit. Check battery terminals for corrosion and loose connections. All distributors must be grounded to the cylinder head or have a separate ground wire to a good clean ground. Model" A" cylinder heads have a bad habit of getting painted, rusty, and oily around the distributor mount hole. Make sure the distributor base has a clean metal to metal ground at the mount.

Coil
FSI provides correct coils with each electronic ignition system. If you are not using the coil provided by FSI, it is critical that the OHM output of your coil is correct. To check the primary resistance of the coil, connect one lead of an OHM meter to the positive (+) terminal and one lead to the negative (-) terminal of the coil at 70°F for best results.

MINIMUM PRIMARY RESISTANCE:	FSI 12V Electronic Ignition System:	3.0 to 3.5 OHM
	FSI 6V Electronic Ignition System:	1.3 to 1.5 OHM

DO NOT MAKE MODIFICATIONS TO ANY IGNITOR COMPONENT!
This will void your warranty and may cause damage to your engine. Some individuals may choose to change the length of the ignitor wires – this is the only modification allowed.

OVER►

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Testing

If the vehicle will not start after installation or vehicle quits after starting, the following test may be done to check the system.

1. Connect the positive (+) lead of a voltmeter to the negative side of the coil. Connect the negative (-) lead of a voltmeter to an engine ground. Set the voltmeter to a 15-volt DC scale.
2. Disconnect the high voltage wire from the center of the distributor cap, and ground it to the engine block or chassis.
3. Crank the engine over a few turns while watching the voltmeter.
4. The voltmeter should fluctuate from 1 or 2 volts of battery voltage as the engine rotates.
5. If the voltmeter does not fluctuate, one of the following problems exist:
    a. If the voltmeter shows a constant 0 reading, there is an open circuit somewhere in the primary ignition. Check to make sure all connections are good and correct.
    b. If the voltmeter shows a constant voltage, either low or high, the power transistor or hall cell may be damaged. (This could have been caused by a coil without a ballast resistor, the key being left on, or reversed polarity connection.)
    c. If the voltmeter shows a fluctuation from 1 to 12 volts, and the engine does not run, check to insure all other parts and functions of the engine are proper.

External Timing – FSI Electronic Ignition Conversion Kits:
Initial timing should be at Top Dead Center at idle: 450 – 500 RPM.

External Timing – FSI & FSI Zipper Electronic Ignition Centrifugal Advance Distributor:

Set the engine on top dead center using the cam pin as you would normally. Find a very heavy gauge wire and bend a loop on one end. Use one of the top timing cover bolts to attach this wire to the cover. Point the sharp end of the wire towards the crankshaft pulley almost touching it. Where it is pointing, put a small dot of white paint and allow it to dry. Measure the outside diameter of the crank pulley, multiply this number times 3.1416 - this will give you the circumference of the pulley. Divide this number by 360 - this will give you the distance. 1° is from the top dead center mark. Multiply this number by 28 and this will give you the distance around the pulley where 28° is located. Depending on the accuracy of your math and measurements this should give you total advance. It's a good idea to remove the wire when you are finished with the procedure. Initial timing should be at Top Dead Center at idle of 450 – 500 RPM.
(Stock Pulley: .045" = 1 crankshaft degree approx)

Example: Pulley diameter 5.25 X 3.1416 = 16.4934 divided by 360 (degrees) = 0.045815 X 28 (degrees) = 1.28282 inches. This distance represents full distributor advance of 28°. This distance can be measured with a flexible machinist's scale with some accuracy.

These units have been in use since 1995 and have had very few problems. If you follow the directions you will have many years of service from the unit.

Never hesitate to contact us if you have questions (580-762-8322).
Enjoy!
J. D. Hanks and Mel Mallory, FSI Partners Revised 9/7/2010