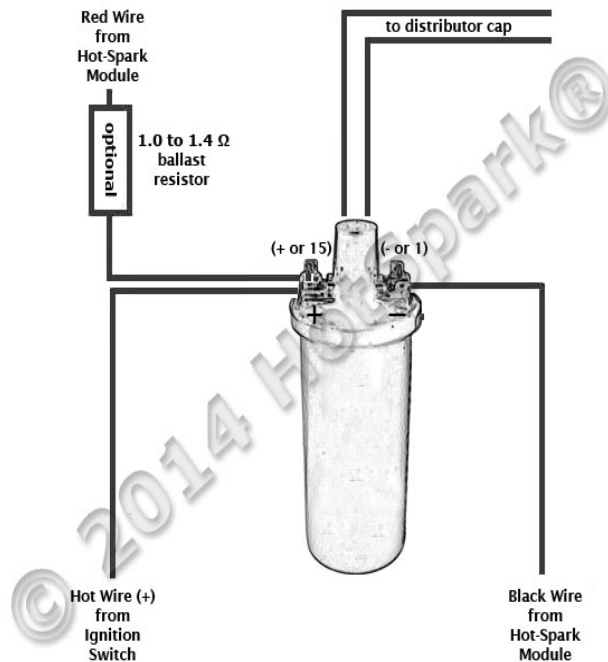


## Installing the Hot-Spark Electronic Ignition Conversion Kits and Distributors



**Test Maximum Charging System Voltage:** If the charging system voltage, measured at the coil's positive terminal, is more than 14.0 volts at any RPM level, the voltage regulator likely needs replacing. Too much voltage can damage the coil, ignition module and other electronic components. A maximum charging system voltage of 13.7 volts or so is plenty. A quick fix would be to wire an external ballast resistor between the coil's + terminal and the HotSpark ignition's red wire.

### Latest On-Line Electronic Ignition Conversion Kit Installation Instructions:

**Bosch Distributors:** [www.Hot-Spark.com/Installing-Hot-Spark-Bosch.pdf](http://www.Hot-Spark.com/Installing-Hot-Spark-Bosch.pdf)

**Volvo-Penta (Bosch) Distributors:** [www.Hot-Spark.com/Installing-Hot-Spark-Volvo-Penta.pdf](http://www.Hot-Spark.com/Installing-Hot-Spark-Volvo-Penta.pdf)

**Ford (non-Bosch) Distributors (3FOR4V3, 3FOR6U1, 3FOR8U1):** [www.Hot-Spark.com/Installing-Hot-Spark-Ford.pdf](http://www.Hot-Spark.com/Installing-Hot-Spark-Ford.pdf)

**Delco Distributors (3DEL4U1, 3DEL6U1):** [www.Hot-Spark.com/Installing-Hot-Spark-Delco.pdf](http://www.Hot-Spark.com/Installing-Hot-Spark-Delco.pdf)

**Ducellier Distributors (3DUC4U1):** [www.Hot-Spark.com/Installing-Hot-Spark-Ducellier.pdf](http://www.Hot-Spark.com/Installing-Hot-Spark-Ducellier.pdf)

**Hitachi Distributors (3HIT4U1):** [www.Hot-Spark.com/Installing-Hot-Spark-Hitachi.pdf](http://www.Hot-Spark.com/Installing-Hot-Spark-Hitachi.pdf)

**Hitachi HS-HIT4 Distributor Installation Instructions:** [www.hot-spark.com/Installing-HS-HIT4-Distributor.pdf](http://www.hot-spark.com/Installing-HS-HIT4-Distributor.pdf)

**Lucas Distributors (3LUC4-25D, 3LUC4-45D, 3LUC6-22D, 3LUC8-35D):** [www.Hot-Spark.com/Installing-Hot-Spark-Lucas.pdf](http://www.Hot-Spark.com/Installing-Hot-Spark-Lucas.pdf)

**Mallory 8-cylinder Marine Distributor: (3MAL8U1):** [www.Hot-Spark.com/Installing-Hot-Spark-Mallory.pdf](http://www.Hot-Spark.com/Installing-Hot-Spark-Mallory.pdf)

Nippondenso Distributors (3ND4U1, 3ND6U1): [www.Hot-Spark.com/Installing-Hot-Spark-Nippondenso.pdf](http://www.Hot-Spark.com/Installing-Hot-Spark-Nippondenso.pdf)

Prestolite Distributors (3PRE8U1, 3PRE8U2, 3PRE6U2): [www.Hot-Spark.com/Installing-Hot-Spark-Prestolite.pdf](http://www.Hot-Spark.com/Installing-Hot-Spark-Prestolite.pdf)

Autolite Distributors (3AUT4U1, 3AUT4U2, 3AUT6U1, 3AUT6U2): [www.Hot-Spark.com/Installing-Hot-Spark-Autolite.pdf](http://www.Hot-Spark.com/Installing-Hot-Spark-Autolite.pdf)

Installing SVDA 034 Distributor (also Bosch SVDA 034): [www.Hot-Spark.com/Installing-SVDA-034.pdf](http://www.Hot-Spark.com/Installing-SVDA-034.pdf)

Installing 009 Distributor: [www.Hot-Spark.com/Installing-009-3BOS4U1.pdf](http://www.Hot-Spark.com/Installing-009-3BOS4U1.pdf)

Installing HS45D4 (Lucas) 45D4 4-Cyl Distributor: [www.Hot-Spark.com/Installing-HS45D4-Distributor.pdf](http://www.Hot-Spark.com/Installing-HS45D4-Distributor.pdf)

**Coil Required:** Do not use a low-resistance coil that does not have the minimum primary resistance required by the ignition module, as stated in the instructions (minimum 3.0 ohms for 4- and 6-cyl or 1.5 ohms for 8-cyl, assuming a 12-Volt electrical system). The coil resistance regulates the current in the ignition module/coil circuit. Too little coil primary resistance results in too much amperage going to the ignition module, which can overheat the electronics. The failure may not happen immediately, but the excess heat will shorten the life of the ignition module electronics. How long the electronics will last depends on how much heat is generated. It could be a matter of a couple of hours to a few hundred hours, depending on temperature.

**To measure coil primary resistance:** Label and remove all wires to coil ( + or - ). Using a common digital multimeter in the 200  $\Omega$  mode, cross the red and black leads of the Ohmmeter. Allow 10 seconds or more for the reading to settle and write down the reading. Still in the 200 Ohm mode, measure between coil's + and - terminals. Allow a few seconds for the reading to settle, until it stabilizes. Subtract the previous reading, taken with the leads crossed, to compensate for Ohmmeter's inherent resistance. Do not use a low-resistance coil, such as the MSD or Accel coil; they don't have enough primary resistance for this application. For best performance, the coil should also have 7,000 Ohms or more secondary resistance (measured from coil's + or - terminal to center high tension terminal, in the 20K  $\Omega$  mode of the Ohmmeter).

**Ballast Resistor:** If the coil's primary resistance is not quite enough or is borderline, you can wire an external ceramic ballast resistor (with 1.0 to 1.4 Ohms resistance) between the coil's + terminal and the red HotSpark ignition wire: [www.Hot-Spark.com/1-HS14BR.htm](http://www.Hot-Spark.com/1-HS14BR.htm)

**Test the charging system's maximum voltage:** Check the voltage reading at the coil's + terminal, engine running. If the voltage measures more than +14.0 volts, at any RPM level, you'll need to replace the voltage regulator, install a coil with 3.0 Ohms or more internal primary resistance and/or install a 1.0 to 1.4 Ohm external ballast resistor between the coil's + terminal and the HotSpark ignition's red wire.

**Included: Packet of white thermal transfer paste.** Clean distributor's breaker plate spotlessly clean. Apply a uniform layer of the included packet of white thermal paste to bottom of ignition module to ensure better cooling of ignition module.

### **Wiring Installation Basics:**

1. Begin with a fully-charged battery. Turn on the ignition switch. With engine not running, using a voltmeter in the 20 Volt DC mode, check that the voltage, measured at the coil's + terminal, is around +12.5 volts, about the same as battery voltage. The red voltmeter lead should touch the coil's + terminal while the black voltmeter lead is touching engine ground. If voltage reading is too low or there's no reading, the battery's terminals or ground connection may be corroded and need cleaning. Some vehicles have a resistor wire running from the ignition switch to the coil's + terminal. If this resistor wire drops the voltage below 10 volts or so, you may need to run a non-resistor wire from the ignition switch to the coil's + terminal or run a +12V wire directly from the ignition switch to the red Hot-Spark ignition wire. Make sure that the ignition switch terminal to which you connect this wire has power only when the ignition switch is in the ON position.

Or, you can, for temporary testing purposes only, run a wire directly from the battery's + terminal to the Hot Spark ignition's red wire and the black Hot-Spark wire to the coil's - terminal. Do not leave the wire from the battery connected to the ignition module's red wire for more than a minute or so without the engine running.

2. Remove the points, condenser and the condenser's wire from the vehicle.

To get the ignition running initially, only these wires should be attached to the coil's + and - terminals:

A. +12 volts from the ignition switch (+12-volt power source) to the coil's + terminal

B. **Red** Hot-Spark wire to the coil's + terminal

C. **Black** Hot-Spark wire to the coil's - terminal. DO NOT touch any +12-volt wire to the coil's - terminal. Never connect either the coil's + nor - terminal to ground (earth).

D. The automatic choke and fuel shut-off valve may also need to be attached to the coil's + terminal.

E. Generally, only the black Hot-Spark wire is attached to the coil's - terminal. If a tachometer wire is usually attached to the coil's - terminal, don't attach it until the timing has been set and engine is running properly. No other wires should be connected to the coil's + and - terminals at this time.

F. Attach a stroboscopic timing light to the spark plug wire of Cylinder number 1. With engine rotated to TDC (0 degrees) on the firing stroke of Cylinder number 1, ignition switch ON, turn the distributor until the timing light flashes. Start the engine. You may need to turn the distributor left or right a little, a little at a time, until the engine will stay running, so that you can set the timing with the engine running, using a stroboscopic timing light, according to factory specifications.

Set the ignition timing, with a stroboscopic light, to the distributor's factory specification. The difference in distributor position with points vs. electronic ignition can be as much as 30 degrees or so clockwise or counterclockwise, so you'll definitely have to reset the timing. **The old method of setting the timing statically, using a simple 12-volt test lamp, doesn't work** with electronic ignition, as it does with points. The only way to bench-test an electronic distributor is by using a distributor testing machine. In other words, the distributor needs to be mounted in the engine and tested and/or timed using a stroboscopic timing light, connected to number one cylinder's spark plug wire.

G. For testing purposes, no other wires should be attached to the coil terminals, except for the center high-tension lead to the distributor cap.

**Troubleshooting/FAQ: Having installation problems? Click [here](#)**

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