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TECH: SWAP MEET

By Jim O'Clair

Electronic ignition swaps

Upgrading your ignition is simple and economical

One of easiest ways to increase the efficiency of the ignition system on your Sixties or early Seventies muscle car is by converting to electronic ignition. Numerous aftermarket suppliers offer changeover kits that will convert your existing breaker-point distributor to an electronic system. In addition, many other companies offer drop-in distributor packages that include the coil and control module.

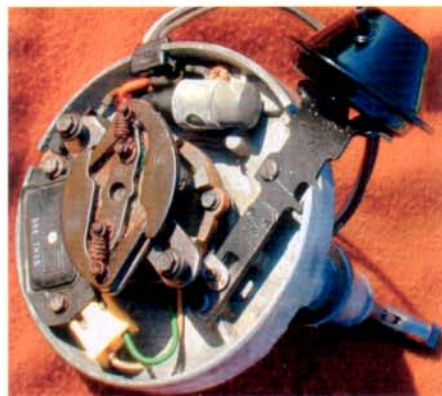
An alternative to using either of these options—one that could potentially save you some money—is to convert to an electronic system using a distributor from a range of later-model carbureted donor vehicles. With the right distributor, ignition module and a little adaptation of the wiring harness, you can convert your breaker-point distributor setup to an electronic system and take advantage of the hotter ignition spark that electronic systems use. Replacement parts are readily available and the electronic setup requires little maintenance.

These distributors are still plentiful at swap meets or your local salvage yard, making them very inexpensive to buy. There are several different procedures, depending on the make of car, but none of these conversions is so involved that you cannot do it yourself.

Delco electronic distributors, which were, for the most part, self-contained, are highly desirable as an easy conversion for pre-electronic General Motors vehicles. The easiest Mopar electronic ignition system to use involves using the four- or five-pin electronic control module setup from the mid Seventies. The simplest conversion for a Ford distributor for this type of exchange involves installation of the early two-piece pre-EEC-IV electronic unit, which was powered by the metal two-pigtail control module mounted to the firewall or wheel house.

These distributors are all readily available at an economical price, both as rebuilt units from auto parts stores or from other used parts sources. Most parts stores also carry all the components necessary to complete this exchange; with the exception of the distributor itself, these extra components would be new.

The General Motors distributor exchange is probably the easiest to perform because all components of the electronic ignition system are contained within the



Kick pesky points and condensers to the curb!

distributor. The ignition coil sits atop the distributor cap and is connected to the pickup coil by one harness, which plugs directly into the terminals on the end of the coil. The control module is attached to the other end of the harness, and is located inside the distributor under the pickup assembly.

The only external wiring necessary to install this ignition system is a single hot wire from the "run" terminal on the ignition switch (or similar 12-volt source that is hot during both run and start), which attaches to the distributor right next to the pickup coil harness at the end of the coil. With the exception of a tach wire in some applications, all other wiring is self-contained.

Because you are exchanging the entire system at once, you will be using the electronic coil, which will deliver a much higher voltage to your ignition wires and spark plugs, in turn giving you a much hotter spark. It is important that you use 8mm spark plug wires on a GM electronic system to contain this extra voltage.

When searching for the correct distributor to use for this exchange, you simply need to find one from the same engine family, produced in a later year. Here is a list of GM engines using point distributors and the appropriate electronic replacement units you can use for them:

- 1967-'74 Buick 340 and 350 can use a distributor from 1974-'81 Buick 350.
- 1967-'74 Buick 400, 430, and 455 can use the distributor from a 1974-'76 Buick 455.
- 1968-'74 Cadillac 472 or 500 engine can use a unit from a 1974-'79 Cadillac 500 or 425 engine without fuel injection.

- 1955-'74 small-block Chevrolets, as well as 1965-'74 Mark IV big-block engines, can use the later 1974-'79 distributors with single vacuum advance (as long as the original engine does not have a tach drive).
- 1961-'63 Olds 215 and 394 engines, as well as 1965-'74 Olds 350 and 400 engines, can use a unit from a 1974-'79 Oldsmobile 260, 350 "R" engine, 403 (except Toronado) or 455.
- 1963-'67 Pontiac 326, 389, 421 and 428 engines can use a distributor from a 1974-'76 455, a 1974-'79 400, or a 1974-'77 350 Pontiac engine. They can also use a distributor from a 1977-'80 265 or 301 Pontiac.

Obviously, these engine sizes were not used entirely through the model years listed; however, we have listed them this way to save repetition.

The earliest Ford electronic distributors were used in 1974. The electronic ignition exchange in a Ford is a little more complicated than the Chevy conversion, because you will need to do some more wiring to get the distributor to fit into your Ford vehicle.

Once you have located the correct distributor, you should also purchase the appropriate control module. Ford used quite a few different modules, and the wiring harnesses were different for each. All Ford modules can be identified by the plastic wire retainer at the edge of the module where the wires come out. The most common units had a blue plastic retainer; however, there were also yellow, brown, green and red retainers. These were used for California and high-altitude applications.

For ease of installation, stay away from those distributors that do not use the blue-coded control module, because you will have less wiring to do if you can find one that uses the blue-coded unit. We recommend that you replace the control module when doing the exchange anyway, and the blue-coded module is much cheaper than the other units, which is another reason to seek one out.

You should also replace your existing coil with the Ford "blue-top" electronic coil. This coil generates a higher voltage to the spark plugs. The connector for the blue-top coil slides across the button terminals on this unit; you can wire these terminals separately or purchase the proper connector from an auto parts store. When exchanging Ford distributors, you should also exchange a single vacuum advance with a donor that is also single advance.

Ford distributors that will interchange:

- 1962-'74 221, 260, 289 and 302 engines can use a distributor from a 1974-'84 302 with a cast-iron distributor gear.
- 1968-'74 351 "C" and "M" engines, as well as 400 and 429 engines, can use a 1974-'79 351 "C" or "M" distributor or a single advance unit from a 400 or 460 engine.
- 1969-'74 351 Windsor engines can use 1974-'91 351 Windsor distributor for carbureted engines.
- Ford 300 six-cylinder engines that used breaker-point distributors from 1968-'77 can use the electronic-type distributor for the 300 engines from 1974-'87.

Wiring the Ford module and distributor into your existing system is pretty straightforward. After installing the distributor, coil and module, you will see that the module has six wires on two separate pigtails. A two-wire pigtail will have a red wire and a white wire. The red wire is connected to the ignition run terminal on your ignition switch. This terminal will only be hot when you turn the key to "on."

The white wire connects to the start circuit. There are various ways to make this connection, but we have found the easiest way is to connect the white wire to the small "S" terminal on your starter solenoid.

The second connector on your control module will have four wires. Three of the wires correspond by color with the three wires coming out of the electronic distributor. Purple and orange mate to the two stator wires; the black wire goes to the distributor's internal ground. The fourth wire on this connector is green and is routed to the negative or tach-side of the ignition coil. The positive side of the coil is wired in the same manner as the original.

Mopar distributor exchanges on both six-cylinder and V-8 engines are also relatively simple. For this conversion, you'll want to find a single-vacuum advance distributor from a non-Lean Burn donor car; avoid any dual pickup distributors. Some Chrysler direct swap applications:

- 1964-'72 273, 318, 340 and 360 engines can use a 1973-'80 318 or 360 distributor
- 1958-'72 361, 383 or 400 engines can use a distributor from a 1972-'78 400 engine
- 1962-'72 413, 426 or 440 engines can use the 1972-'78 440 distributor
- Chrysler six-cylinder engines, includ-

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ing the 1960-'72 198 and 225, can be adapted to electronic ignition by using a distributor from a 1973-'80 225 engine. Wiring procedures are the same as for the V-8 engines.

Not all the Mopar engines listed here were used over the entire year ranges.

For any Chrysler exchange, it is again important that you get the module, coil, module connector and four-prong ballast resistor from the donor car or parts store if the control box is a five-wire module (Chrysler modules will have four or five pins, depending on the year of your donor car).

Earlier Chrysler breaker-point ignition systems only had a two-prong resistor, but later models could have two or four prongs. Two-prong resistors can be used in a four-pin module conversion.

The terminals on both the four-pin and five-pin module are shaped like the letter "D." On either module, the top left pin is attached to the negative side of the coil. The center pin on the flat side of the "D" connects to one side of the ballast resistor. The resistor should also have a wire that runs from this connection to the run terminal on the ignition switch. The other side of the ballast resistor should also have two wires connected to it. One wire goes to the positive side of the coil; the other goes to the start terminal on the ignition switch.

Back to the module: The two lower terminals connect to the dual pigtail coming from the pickup assembly in the distributor. There should be a brown/white wire on the lower right pin and a gray/black wire on the lower left pin. This is all that is necessary to wire the four-pin module—the top right pin is not used.

On a five-pin module installation, the top right pin is connected to the second output connection on your four-wire ballast resistor. The terminal opposite this connection has two wires, one going to the positive on the coil and the other connecting to the run terminal on the ignition switch. On a dual ballast resistor, the connection from the left center terminal attaches to the other output terminal on the ballast and the other side of this auxiliary ballast has a wire that runs directly to the start terminal on the ignition switch.

Converting to an electronic ignition system on your Sixties and Seventies muscle car makes good sense, for efficiency, availability, and the fact that it is a relatively inexpensive upgrade, as well. Check out www.hemmings.com for the necessary wiring diagrams for these changeovers, located on the Parts Locator page. 📌