We have ignition!

Still on points? Ditch them and you'll find extra reliability and smoothness... won't you?

Pics: Tricky

Car manufacturers ditched transistorised ignition systems (points and condenser) in the late-'70s/early-'80s and they did it for good reason. Points need changing more often as they tend to wear out quickly and have a habit of closing up. This can affect the car's ability to start and can contribute to general rough running and poor performance... which is a pain for most of us old-skool lovers whose cars were built from the factory with points.

There is a solution to this problem though, in the form of Lumenition's electronic ignition kit. Most of you probably know about it already and many have fitted the system to their Pintos and Crossflows, but a lot of you haven't. There are still people running points; either because they're not aware of the kit, don't know the advantages it'll give in the real world or they're just not sure what it entails.

This feature will tell you all that and more, so sit back, relax and see what electronic ignition can do for you...

The kit

We fitted a Lumenition Performance ignition system. The manufacturer and distributor is Autocar Electrical Equipment (020 7403 4334), but you can buy it from loads of places like Burtons and Demon Tweeks. It'll cost you around £190 and comes with everything you need... although tool-wise you'll need screwdrivers, wire connectors, crimps and a mate or local garage with a strobe light.

The Lumenition system works by using an optical switch which contains a light-emitting diode (LED). This sits in the switch bracket opposite a matching silicon phototransistor.

When the ignition is switched on, the LED emits an invisible infrared beam towards the silicon phototransistor which receives or 'sees' the beam. The LED and phototransistor fit inside the cars standard dizzy (both Ford Motorcraft and Bosch versions).

Secondly, an interrupter called a chopper is also fitted inside the dizzy, and rotates, interrupting the beam of light causing a pulse. It has one blade for each cylinder of the engine

Thirdly, a power module receives this pulse via its internal electronic device which switches the included low-resistance constant energy ignition coil on and off. The coil produces a high-tension spark when switched off and is recharged when switched on.

First check

First out, check whether your car has a ballast resistor or not. Do this by tracing the positive wire on the coil back to the bulkhead. Using an ohm meter, measure electrical resistance in this wire – if it shows resistance you have a ballast resistor, if not you don't. If you do have one, you have to run another new piece of wire from as far back towards the ignition switch as you can, and connect it to the positive side of the coil. Basically, you're bypassing the ballast resistor, and then it's your choice whether you ditch the section of original wiring with the resistor in or keep it (it'll work the same either way).

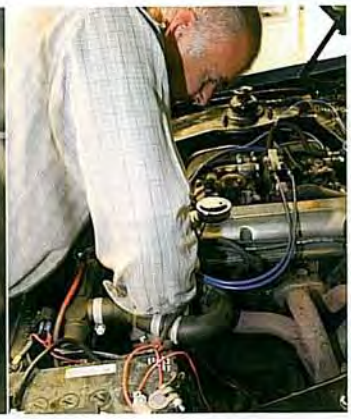
The car

The car we're conducting the fitting and testing on is Dave Roberts' Mk1 Escort. It's his daily driver and although the mildly-tuned Crossflow (twin 40s, BCF2 cam) seems to run okay on its standard Ford Motorcraft points-style setup, Dave admitted he's been meaning to get a Lumenition kit for a while. Needless to say, he jumped at the chance of a free kit like a dog in a Pedigree Chum factory.

The dizzy

Take the dizzy cap off and rest it somewhere out of the way.

Mark the distributor body and the block where they meet so you can line up the two for correct timing when you put the dizzy back in the block. Dave was a clever git and did this by eye. Make sure you note down which direction the rotor arm is pointing in.



Turn the engine over by hand until it's at top dead centre – on a Crossflow you'll see the timing mark on the pulley align with the longest mark on the timing chain cover.

Undo the retaining bolts and take the dizzy out of the block.

Take the rotor arm off.

Undo the screws holding the big mounting plate on to the dizzy body and lift it off.

Remove the points and condenser.

In their place, mount the Lumenition optical switch and phototransistor bracket.

Thread the wiring through the supplied grommet and fit the whole lot through the original wiring hole.

Mount the big mounting plate back on to the dizzy body and refit screws to hold it on.

Slide one of the choppers down the dizzy shaft – be sure it covers two thirds of the optical switch before it goes back into action.

Follow this by the rotor arm.

As per the instructions and with the tool supplied, feed the three coloured wires coming from the optical switch through the black clip as shown. This black clip attaches to the module box's wiring later on...

There you have it – a Lumenition'd dizzy!

Replace the dizzy, lining up the marks you made earlier and making sure the rotor arm is pointing in the same direction.

Replace the dizzy cap.

The coil

Remove the coil lead and terminals.

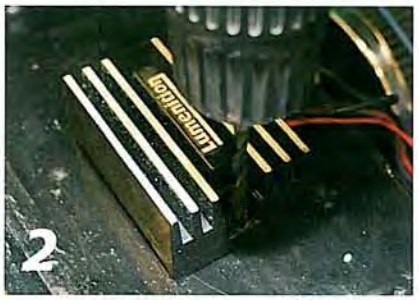
Remove the coil from its mounting position.

Lumenition supplies a cool bracket which mounts the coil and the module box together, so you don't have to drill more holes in your car.

However, Dave decided to refit the new Lumenition coil in its original position.

The module

As we said in the coil section, Lumenition supplies a cool bracket which mounts the coil and the module box together, so you don't have to drill more holes in your car. However, Dave wanted the Lumenition box up on the classic inner wing position...



So, place the box where you want it and mark through its mounting holes on to the wing.

Drill two holes as per the sizes in the instructions.

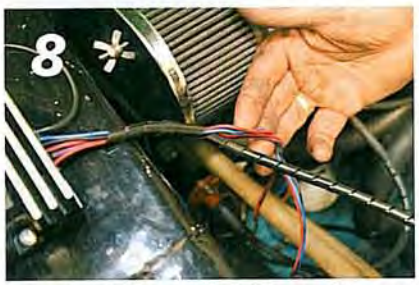
Fit power module using self-tapping screws supplied and placing eyelet of short black wire beneath one screw head as earth... tighten down securely ensuring a good earth.

Connect the black wiring clip of the module to the black wiring clip of the dizzy.

The module

Connect the purple wire to the negative side of the coil.

Connect the red wire to Feed side of ignition terminal of fuse box, or ignition switch side of ballast resistor (not coil side), or ignition terminal of ignition switch – do not connect to auxiliary terminals which switches "off" in start or cranking position.



Using the tubing supplied, tidy everything up.

Ignition leads

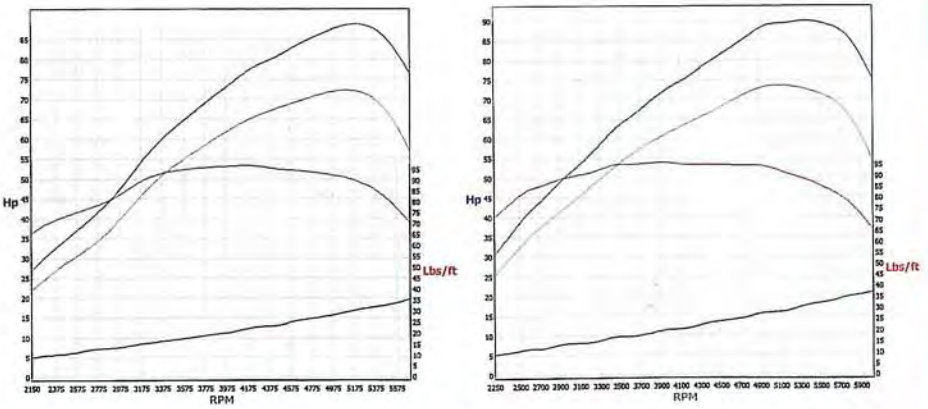
Lumenition supplies and recommends pukka ignition leads to get the best out of the system. If you need to be shown how to replace ignition leads you should be reading another mag! Handy hint – do one at a time so you know which is which!

Timing

With a strobe light, check the timing is as per Ford intended (in this case it's 14° advance) – if it's out, swing it with the dizzy cap. Be sure to get this right, if in doubt ask someone who knows what they're doing to come round and do it. If not timed correctly you could blow your engine up!

Conclusion

Well, it's a very neat system and can definitely be done by the DIY'er. We tested it on the rolling road and saw no power increase at all, but we didn't expect any so that was cool. It did seem to smooth out the power and torque curves a bit though, which points to more efficient ignition and there's also the piece of mind that this system is completely maintenance free... no more replacing points! If you're still on points there really is no excuse not to upgrade and with the added reliability, reduced hassle and cost when servicing the car, not to mention slightly smoother running in our case, it's well worth the money.



Before (left) and after (right) – as you can see, the after graph is slightly smoother. Billy bonus

Thanks

Our rolling road tests were carried out by Jed at Auto Gym near Chester. Jed usually deals with ECU mapping and the sort, but learnt his trade on old-skool Fords and his facilities can really get the best out of your motor. So, if you need a friendly, efficient rolling road, get your arse down there. Go to www.autogym.co.uk or call 07966 515164. Cheers Jed!