3800 ignition control module

ignition control module controls spark by activating the three ignition coils that sit on top of it without help from the fuel injection computer. When does the ignition control module ICM create this switching signal? After receiving 12 Volts, Ground, and the Triggering signals from the crankshaft position sensor Assembly which is located behind the crankshaft pulley. The crankshaft position sensor is two hall effect sensors in one. In other words, the assembly is two crank sensors in one and in this article I'll also show you how to test it. As stated before, both of these signals are critical for the ignition control module to start the car to start sparking the ignition coils. Although an oscilloscope is the best way to check for the pulses from the crankshaft position sensor 3X CKP and 18X CKP to the ignition control module, there's another way that I've used successfully for a number of years. This is using an LED Light. If you have access to an oscilloscope, I have included photos of what the waveforms should look like. Whether you use the LED Light, or a multimeter, or an oscilloscope, you'll be able to successfully diagnose this no-start condition! So, read on my friend. The ignition module test is a very straightforward and simple test. This is what it's composed of:. P -What Does It Mean? What's my mother going to do? This material may not be reproduced without the author's consent. As an Amazon Associate, I may earn a small commission from qualifying purchases from the Amazon product links from this website. Your purchase helps support my work in bringing you real diagnostic testing information to help you solve the problem on your vehicle. Page 1 Page 2 Page 3 Page 4 Page 5. For a list of all of the 3. How The 3. More specifically: When you turn the Key to start the engine, the ignition control module gets power 12 Volts and Ground. Once the ICM gets power, it in turn supplies power to: The crank sensor. The cam sensor if equipped. The 3 ignition coil packs sitting on top of it. As the engine cranks, the ignition module receives the crank sensor signal. As soon as the ICM gets the crank sensor signal, it starts activating the ignition coils sitting atop of it. The ignition control module does this by switching the ignition coils' primary current On and Off in a base timing mode so that they'll start sparking away. The PCM uses this signal to start activating the fuel injectors. All Tutorials: 3. Applies To:. Buick Vehicles:. Chevrolet Vehicles:. Oldsmobile Vehicles:. Pontiac Vehicles:. Do NOT follow this link or you will be banned from the site! Hate Spam. The ignition module of your vehicle is the heart of your entire ignition system. The ignition module has a direct impact on the performance of the engine. The module resembles a small electrical box with a wire harness. It is usually located on or in the distributor housing in domestic vehicles, and on the firewall or wheel-well in foreign vehicles. Like all automobile components, the ignition module will eventually deteriorate and break. However, you can anticipate and prepare for the failure. These tips will help you recognize the two most common symptoms of ignition module failure. Overheating is a common indicator that you could be having an ignition module problem. Ignition modules that are overheating will soon completely cease to function and in the meantime can cause cause electrical shorts, engine stuttering, lower gas mileage, power loss, stalling, and gasoline odors in the exhaust. You can test for overheating while the car still runs. Idle the engine for 30 minutes, and then tap the module with a screwdriver. The car may stall, which would strongly suggest that ignition control module may be the cause of the overheating you're experiencing. If you are caught with an overheated module in an emergency situation, you can cool it down with ice water, engine coolant, or refrigerant fluid. However, this is a temporary solution only to be used as a last resort until you can reach repair facilities. If your vehicle stalls unexpectedly during operation and will not start again, it is likely because of loose or corroded electrical connections in the ignition module. In this case, check the switch, clean oxidized terminals, and replace broken wires if necessary. If you cannot start the car, you need to test the ignition control module using a light timing tester to check the output of the module. Connect the timer to the positive terminal of the battery and check the continuity of the black output wire while cranking the starter. If the light blinks, the module is good. If the light is blank or constant, the module is bad. Before you attempt to replace the control module, you must rule out other ignition system components. The module is expensive and replacing it is a laborious process. Check the ignition coil for a spark. Examine the wires at the cap, rotor, and spark plugs. We welcome your comments and suggestions. All information is provided "AS IS. All rights reserved. You may freely link to this site, and use it for non-commercial use subject to our terms of use. View our Privacy Policy here. Toggle navigation subscribe. Written by Robert Miller. To ensure our content is always up-to-date with current information, best practices, and professional advice, articles are routinely reviewed by industry experts with years of hands-on experience. How to Repair Car Rolling Chassis. Troubleshooting Your Digital Weight Scale. How to Reset Camshaft Timing in a Vehicle. Vehicle Repairs. Related Posts Viking rangetop won't stop clicking or won't light. Read More. Viking Ignition Module- no spark. Kohler M20 Twin cylinder, no spark with new ignition module. Bought this engine used, off a Ransomes rotary mower. I cannot get any spa Dacor range: igniters keep sparking after light. Related Posts

Viking Ignition Module- no spark. Help with connecting Furnace Ignition Module That one went out Ignition control module or gas valve. Dementia symptoms. I am not sure what Dementia is but thought that I ask those of you who may Popular Articles. How to Replace an Ignition Coil. By Carol S. How to Test an Ignition Module. By Robert LeBlanc. How to Build a Custom Ignition for Your How to Repair a Weed Eater Trimmer. By Avantica David. You'll be able to troubleshoot and diagnose a bad ignition coil, or bad spark plug wires, or a bad ignition control module as the cause of a misfire condition on your 3. If you're looking for the article to test the ignition coil packs on the 3. The most common complaint is that your car or mini-van will start and run, but run with a misfire. Here are few others symptoms that your car or mini-van may be experiencing:. Each ignition coil sitting on top of the ignition control module ICM has two towers. Both towers fire off spark to two different cylinders at the exact same time. In case you're wondering what the heck is the switching signal, this term describes the switching On and Off of the Primary Current 12 Volts that flows thru' the ignition coil by interrupting its path to Ground by the ignition control module. As already mentioned, if both power and the switching signal are present, then the ignition coil has to fire off spark Testing for these two signals is easy and doesn't require any expensive testing equipment, you don't even need a scan tool. I'm gonna' walk you thru' the whole testing process in detail. P -What Does It Mean? Melvin Udall: Never, never, interrupt me, okay? Not if there's a fire, not even if you hear the sound of a thud from my home and one week later there's a smell coming from there that can only be a decaying human body and you have to hold a hanky to your face because the stench is so thick that you think you're going to faint. Even then, don't come knocking As Good As It Gets. This material may not be reproduced without the author's consent. As an Amazon Associate, I may earn a small commission from qualifying purchases from the Amazon product links from this website. Your purchase helps support my work in bringing you real diagnostic testing information to help you solve the problem on your vehicle. Page 1 Page 2 Page 3 Page 4 Page 5. All Tutorials: 3. Applies To:. Buick Vehicles:. Chevrolet Vehicles:. Oldsmobile Vehicles:. Pontiac Vehicles:. Do NOT follow this link or you will be banned from the site! Hate Spam. Also, a one-piece rear crankshaft oil seal was offered in some engines to reduce oil leaks. It also had improved cylinder heads with bigger valves, a composite plastic intake manifold, revised accessory mountings on the engine, dual knock sensors, improved oil seals and a plastic engine cover to muffle noise. Advertisement â€" End of the road for the Production will cease this year, with the being retired to the big boneyard in the sky. Service Issues One of the reasons why the has had such a long production run is that it has been a very reliable, trouble-free engine for the most part. Many of these engines have racked up well over , miles with normal maintenance. One of the few trouble spots has been coolant leaks on the Series II engines with the plastic intake manifold. The OEM intake manifold gasket tends to deteriorate after 60, or so miles in the area that seals the cylinder head coolant passage to the manifold. The seepage of coolant past the leaky gasket leads to overheating, and may cause bearing damage if coolant leaks down into the lifter valley and gets into the crankcase. The coolant leakage problem has been blamed on a number of factors, including coolant neglect and a less-than-robust OEM intake manifold gasket design. Though Dex-Cool is supposed to last up to five years or , miles, some say changing the coolant every two years can avert many of the problems that occur with aging coolant. Also, if the coolant level gets low, oxygen mixes with the coolant, which tends to cause problems with Dex-Cool. The sealer will circulate with the coolant and hopefully stop any small seepage leaks in the intake manifold gasket from getting any worse, at least for a while. This may save your customer the expense of having to replace the intake manifold gasket. If the gasket is already leaking, sealer may plug it up temporarily. But, eventually, the gasket will have to be changed. The coolant leak on these engines was at the gasket between the intake manifold and throttle body or, in some cases, between the upper and lower intake manifold. The recall involved replacing the three throttle body fasteners, applying sealer to the threads, and dumping some sealer pellets into the cooling system reservoir. Recall was issued in July, , but was only good until July, If a vehicle was repaired under this recall, there should be a GM recall decal affixed to the engine or under the hood. Ignition System The distributorless ignition system has also been fairly reliable, with some occasional crankshaft position sensor or coil failures. The PCM controls spark timing. Since the polarity of the ignition coil primary and secondary windings is fixed, one spark plug always fires with normal polarity while its companion plug fires with reverse polarity. This allows the coils to produce up to 40Kv if needed. If the coil module gets too hot, it will fail. If an engine is hard to start or has a misfire at higher speeds, the problem may be a weak coil, a bad plug wire, or a fouled or worn spark plug. On and newer vehicles, you should get a cylinder misfire code. A code for one cylinder would likely indicate a fouled plug, bad plug wire, or possibly a clogged or dead fuel injector, or a compression leak burned exhaust valve. Misfire codes for two cylinders

that share a coil would likely point to a bad coil. Another way to figure out if a misfire is a bad coil is to swap two of the coils on the coil pack. If the misfire moves to the new cylinders, the problem is the coil. If the misfire remains in the same cylinders, the coil is OK and the problem is the wires, plugs, injectors or compression. If you test a coil with an ohmmeter, the test specs are 0. Pages: 1 2 3. Special Topics Webinars Video Podcasts. Magazine Current Issue Past Issues. Connect with us. Advertise Subscribe Contact Us. By Larry Carley. An Eaton blower boosts horsepower to In this article: Diagnostics , Driveability. Watch a webinar for free on-demand! Listen to the latest Underhood Service podcast. Stay up to date with the latest Underhood Service news. By Larry Carley Carley. By Underhood Service Staff Writers. By Brendan Baker Baker. By Andrew Markel. Diagnostics: Power Window Regulator Replacement. Video Series View More Videos. Sponsored Content. Common Problems with the Engine: An intermittent chuggle or hesitation that can be felt during light acceleration or while cruising at highway speeds with no Check Engine light or no fault codes set may be caused by intermittent operation of the automatic transmission torque converter clutch TCC. The fix for this problem is to replace the TPS sensor. The OEM intake manifold gasket tends to deteriorate after 60, or so miles in the area that seals the cylinder head coolant passage to the manifold. The fix is to replace the intake manifold gaskets. Intermittent Hesitation While Accelerating or While Cruising Intermittent Misfire While Driving An intermittent misfire that occurs while driving may be caused by a weak coil or worn spark plugs. The distributorless ignition system on the V6 is a waste spark system with three ignition coils. Each pair of cylinders shares a common ignition coil. This reduces the total number of coils needed. When each coil discharges its high voltage output, it fires two spark plugs simultaneously: one when cylinder is on its compression stroke, and the other when the cylinder is on its exhaust stroke. Only the plug that fires during its compression stroke produces power. Even so, both spark plugs experience roughly twice the electrode wear that spark plugs in other types of ignition systems undergo because the fire every engine revolution rather than every other engine revolution. Remove and inspect the spark plugs. Replace the spark plugs if any are found to be fouled or worn. The spark plugs should be gapped to. If the spark plugs appear to be okay, inspect the ignition wires. High mileage wires those with over , miles on them can develop increased resistance that may cause the engine to misfire. Replace any wires that are cracked, fit loosely or are damaged. The Check Engine light should be on, and there should be one or more misfire codes for the cylinders that are misfiring. The last digit on a misfire code indicates the cylinder number. A code P, for example, would tell you cylinder 2 is misfiring. Chances are the misfire is due to a weak ignition coil. The three ignition coils on the engine fire cylinders 6 and 3, 2 and 5, and 1 and 4. If you find misfire codes for any of these paired cylinders, you can be sure the problem is a bad ignition coil and not something else such as lean misfire caused by a bad fuel injector, vacuum leak or EGR leak, or compression misfire due to leaky or sticky valves. Ignition coils can be replaced separately on the ignition module. But if one coil is bad, it may be a good idea to replace all three on a high mileage engine to prevent similar problems down the road. The crank sensor contains two hall effect sensors that sends two signals to the engine computer. A problem with the sensor or the wiring connection between the sensor and computer can prevent the computer from receiving a cranking signal. The crank sensor has four circuits: a volt reference circuit, a low voltage reference circuit, and two signal output circuits. NOTE: If the crank sensor is bad and needs to be replaced, a special relearn procedure must be performed after the new sensor has been installed using a GM scan tool or an aftermarket scan tool with similar software. Diagnosing the crank sensor requires looking up the engine wiring diagram for your vehicle, then testing the voltages for the various crank sensor and ignition module circuits to find the fault. With the key on, you should find about 4 to 8 volts between each of the crank sensors two output circuits and the low voltage reference circuit. If the crank sensor tests bad, it needs to be replaced. The sensor is located on the front of the engine under a cover behind the crankshaft pulley. If the crank sensor tests good, the problem is likely the ignition control module, a fault in the ignition wiring harness, or possibly a fault in the engine computer. You must be logged in to post a comment. Car Diagnostics. Related product. Autel MV Autel MS Autel MD Share this:. Related Posts. Car Safety. Why should I use winter tires instead of all-seasoned ones? Drivers are recommen â€¦ Read More. What are the meanings of your car nosies? Your car has been pr â€¦ Read More. Car Maintenance. The overall ways to keep the cost of car ownership low The total money that â€¦ Read More. Realizing the thought of car performance improvement We all know that car â€¦ Read More. Protecting and cooling your boiling car in hot summer Summer is in the air â€¦ Read More. Is your car cleaning a thorough one? Car cleaning also ne â€¦ Read More. Leave a Reply Click here to cancel reply. Do you apply your car code reader correctly? Have you ever take the challenge to diagnose A Heading off problems Navigation system troubleshooting guidelines t The hidden truth of car cooling

system. Recent Posts. The overall ways to keep the cost of car ownership low. The really cool thing about testing this type of ignition control module ICM and crankshaft position sensor CKP is that you can use some very simple and inexpensive tools. Here's the basic list:. Anything to do with working on or around a car is dangerous. Since some of the tests in this article are done with the engine cranking, it goes without saying that you have to be alert, extra careful and use common sense to perform them. Whomever is gonna' help you crank the vehicle, while you observe the multimeter, has to wait outside of the car or minivan until after you've connected your connections and you're clear of the engine. After the test is done and you don't need your helper to crank the engine anymore Taking these safety precautions may save you from any unfortunate accident that may happen if said helper thinks he or she heard you say "crank it". I'll begin by explaining the photo above. Each circuit is described by a letter. If you look closely at the connector on the car you'll find these exact same letters cast on it. For ease of testing in this article, I'll use the same letter method of circuit description. I'm sure you've noticed that the letters I and O are omitted this is standard operating procedure in the electronics field to avoid confusing them with a number or other letters. Also, you're specific vehicle may not have all of the wires circuits coming out of the ignition control module ICM , this is also no cause for concern since it will be exact same ignition module as long as the vehicle is a 3. Remember, you won't be testing and you don't need to all of the circuits. Now, don't worry, it's not necessary to check every single wires' signal to test the ignition control module. All right, lets get started! P -What Does It Mean? This material may not be reproduced without the author's consent. As an Amazon Associate, I may earn a small commission from qualifying purchases from the Amazon product links from this website. Your purchase helps support my work in bringing you real diagnostic testing information to help you solve the problem on your vehicle. Page 1 Page 2 Page 3 Page 4 Page 5. What Tools Do I Need? Here's the basic list: A multimeter. Either a Digital multimeter or an analog multimeter can be used don't have a digital multimeter? Need to buy one? An LED light. You can buy this bad boy at any auto parts store like Auto Zone, O'reilly, Pepboys or do like a do.. I buy mine at Radio Shack they're cheaper there. Click here to see how mine looks like: Abe's LED light test tool. When testing for power 12 Volts , you can use the test light instead of a multimeter. Wire piercing probes. These tools are time savers and not only that, will help you to keep from peeling too much from the wire to test whatever signal runs thru' it. If you've never seen one of these tools, click here: Wire piercing tool example. A repair manual. There's some stuff that this article does not cover, like the actual remove and replace of the components you're gonna' test. This is where a repair manual will come in super handy. Someone to help you crank the vehicle. I recommend someone who isn't gonna' whine and nag about it. I mean, it's stressful enough that the vehicle won't start and you have to fix it! All Tutorials: 3. Applies To:. Buick Vehicles:. Chevrolet Vehicles:. Oldsmobile Vehicles:. Pontiac Vehicles:. Do NOT follow this link or you will be banned from the site! Hate Spam. Our Address. Kings Mills, OH I am having a no spark issue on cylinders 3 and 6. The back ground is this. The wires are only 2 years old and I bought the AC Delco wires. I have troubleshot this down to the coil pack or the Ignition control module. The question I have is I know the Ignition Control Module is supposed to put out a voltage of 10 to 12 volts. Mine is putting out 14 volts when I hook up the volt meter to this. Being in IT and a former Computer Repair tech, I know that too much voltage can do just as much damage that not enough. Is this reading okay? Or does it mean that the Ignition Control Module is putting out too much juice and fried the Coil Pack. Could it be that when its cold which the engine is and the car is outside and it is 20 something here that it puts out move voltage for more spark? So it seems like it could be regulated down once warm. Did I just answer my own question? I did test this while the engine was running and I got a steady Then compare it to the voltage coming out of the alternator. As far as your miss, sounds like the one coil, that fires cylinders 3 and 6 is dead. Well, I figured it was the coil, so I bought one and put it on. I know that its a no spark issue as I pull the plug wires off this coil and it does nothing to how the engine is running. I figure the control line is dead for the top circuit. I am going to get it into my parents garage where all the tools are and take it apart tomorrow. Since the alternator of any given vehicle is cranking out 13 to The likelihood that you need a new ECM are pretty slim, but does sound like a new coil is needed. You COULD disconnect the battery which clears the codes, swap the positions of two of the coils, connect battery, fire up engine and then see if you start getting codes for misfires on different cylinders. Right now I assume you have codes P and P? You say you swapped that coil for the coil, then codes n and p would come up. I don;t remember exactly what cylinders are fed by the other two coils, if they are 1 â€" 4 and 2 â€" 5 but you can figure that out real easy. January 17, at am Vlad2 Participant. Thanks for any insight you can give. Viewing 4 replies - 1 through 4 of 4 total. Jim Davis Participant. Erin Participant. You must be logged in to reply to this topic. Condition is "Used". Skip to main content. Email to friends Share on Facebook - opens in a new window or tab Share

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