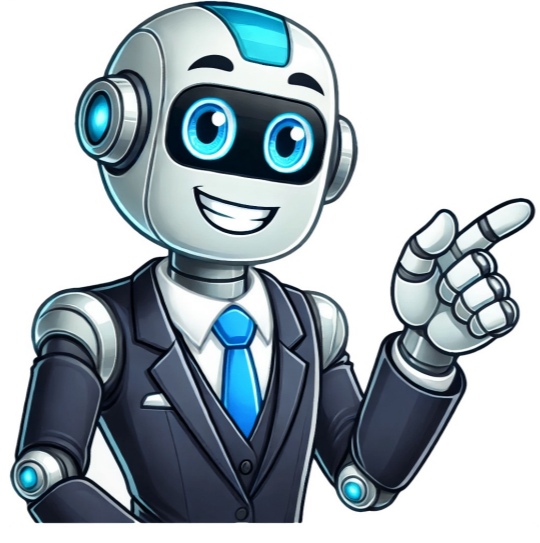


Continue



How to test spark plug coil

1 Turn the vehicle off and open the hood. As with most types of vehicular maintenance, you'll want to begin the test with the vehicle in park and with the engine off. Open the hood to locate the ignition coil. Though its precise location may vary from vehicle to vehicle, generally, it is located near the fender or bolted to a bracket fairly close to the distributor. Note that in vehicles without a distributor, the spark plugs will be connected directly to the coil. One sure-fire way to find the ignition coil is to locate the distributor and follow the wire that does not connect to any spark plug. Before beginning, it's very wise to ensure you're wearing safety goggles or other eye protection and that you have access to insulated tools (especially pliers) to protect from electric shock. 2 Remove one spark plug wire from its plug. Next, remove one of the spark plugs' wires from the plug itself. Usually, these wires run from the distributor cap to each of the spark plugs individually. To prevent injury, be very careful when working with your vehicle's electrical system - use gloves and insulated tools at all times. If your vehicle has been running for a while, its internal components are likely to be very hot. A car that has been driven for as little as 15 minutes can heat the engine to around 200 degrees. Allow the car to sit and cool for an hour to prevent significant injury. To save time and avoid potentially damaging your spark plug, consider using a spark plug tester instead. Instead of attaching the spark plug back to the wire, attach the spark plug tester to the wire. Ground the alligator clip. Then skip ahead and have your friend crank the engine, watching for sparks in the tester's gap. Using a spark plug tester also means you won't expose your combustion chamber to debris. Advertisement 3 Remove the spark plug using a spark plug socket. Once you've removed the spark plug wire, remove the spark plug itself. This is easiest with a specialized socket wrench called a spark plug socket. From this point forward, be careful not to let anything drop into the empty hole left where your spark plug was. Leaving debris in this hole can cause damage to the engine as the vehicle runs and, since removing anything from this hole can be a big pain, it's best to take preventative care to ensure nothing of the sort happens. Cover the cavity with a clean rag or towel to prevent debris from entering the combustion chamber. 4 Attach the spark plug back to the spark plug wire. Now, carefully reattach the spark plug to its wire. You should be left with a spark plug that's connected to the distributor but not seated in its "hole." Handle the spark plug with insulated pliers to avoid the possibility of electric shock. 5 Touch the threaded portion of the spark plug to any exposed metal in the engine. Next, maneuver your spark plug (wire still attached) so that the threaded "head" of the plug is touching some metal part of the engine. This can be virtually any sturdy metal part of the engine block - even the engine itself. Again, hold the spark plug carefully with insulated pliers (and, if possible, gloves). Don't risk electric shock in the next few steps by neglecting this simple safety measure. 6 Remove the fuel pump relay or fuse. Before you crank the engine to test the spark plug, you must disable the fuel pump. When this is done, the engine will not start, allowing you to test the coil for spark. Failing to remove the fuel pump relay means cylinder being tested will not fire because there is no spark plug. It will, however, still be flooded with fuel, which may cause serious damage. Check your manual to locate the fuel pump relay. 7 Have a friend "crank" the engine. Get a friend or assistant to turn the key in the vehicle's ignition. This will provide power to the car's electrical system and, thus, to the spark plug you're holding (assuming your ignition coil is working). 8 Look for blue sparks. If your ignition coil is working properly, when your friend cranks the engine, you should see a bright blue spark jump across the spark plug gap. This spark will be clearly visible in the daylight. If you don't see a blue spark, your ignition coil is probably malfunctioning and needs replacement. Orange sparks are a bad sign. These mean that the ignition coil is supplying insufficient electricity to the spark plug (this can be for any number of reasons, including cracked coil casings, "weak" current, faulty connections, etc.). The final possibility you may observe is that no spark occurs. This is usually a sign that either the ignition coil is completely "dead," that one or more electrical connections are faulty, or that you've done something wrong in your test. 9 Carefully re-install the spark plug and re-connect its wire. When you've concluded your test, ensure the vehicle is turned off before essentially repeating the preparatory steps above in reverse order. Disconnect the spark plug from its wire, re-insert it into its hole, and re-connect the wire. Congratulations! You've completed your ignition coil test! Advertisement 1 Remove the ignition coil from the vehicle. The test above isn't the only way to determine whether the ignition coil in your vehicle is functioning as it should. If you have access to a piece of electrical equipment called an ohmmeter, which measures electrical resistance, you can measure the effectiveness of your ignition coil in a definitive, quantifiable way, rather than in the somewhat subjective way described above.[1] However, to begin this test, you'll need to remove the vehicle's ignition coil so that you can easily access its electrical terminals. Refer to your service manual for precise instructions on removing your ignition coil. Usually, you'll need to disconnect it from the distributor wire, then unscrew it from its mounting with a wrench. Ensure your vehicle is turned off and has had a chance to cool before beginning this process.[2] Diagnose engine issues quickly. "My old Honda started having trouble turning over recently. I used the steps in this guide to test the ignition coil, and it turned out the coil was still working fine. Now, I can focus on other potential issues instead of replacing parts that are still good. This article helped me quickly figure out what's wrong with my car." - Sander W. Confirm coil failure before buying a new one. "I was worried there was something wrong with the ignition coil in my Civic because the engine had been misfiring occasionally. I did the resistance test described here and got a reading that was outside the factory specs for my coil. Now I know for sure that I need to replace the bad coil instead of just guessing at the problem." - Garold M. Learn the right way to test parts. "When my engine started sputtering, I had no idea where to even start troubleshooting. This article walked me through how to systematically test the ignition coil and other components. Now, I know the proper bench testing procedures, which will really come in handy for diagnosing issues down the road." - Lee F. Avoid unnecessary repairs with targeted testing. "My car was having some ignition issues, so my first instinct was to just replace the whole system. But after reading this, I tested just the coil, specifically using these steps. Since that single part tested badly, I can swap in a new coil without wasting time and money replacing other stuff that's still working fine." - Kundai M. Did you know that wikiHow has collected over 365,000 reader stories since it started in 2005? We'd love to hear from you! Share your story here. 2 Find the resistance specifications for your ignition coil. Every vehicle's ignition coil has its own unique specifications in terms of the electrical resistance within the coil.[3] If your coil's actual resistance levels fall outside of these specifications, you'll know that your coil is damaged. Usually, you'll be able to find the resistance specifications unique to your vehicle by consulting your service manual. However, if you can't find it here, you may find success by contacting your dealership or by searching online vehicular resources. Generally speaking, most automotive coils will have a resistance reading of about .7 - 1.7 ohms for the primary winding and 7,500 - 10,500 ohms for the secondary winding. 3 Position the leads of the ohmmeter on the poles of the primary coil. The distributor will have three electrical contacts - two on either side and one in the middle. These may be either external (jutting out) or internal (sunken in) - it makes no difference. Turn on your ohmmeter and touch one lead to each of the outer electrical contacts. Record the resistance reading - this is the resistance of the coil's primary winding. Note that some newer models of ignition coil have contact configurations that differ from this traditional arrangement. Consult your vehicle's manual for information if you are unsure which contacts correspond to the primary winding. 4 Position the leads of the ohmmeter on the poles of the secondary coil. Next, keep one lead on one of the outer contacts and touch the other to the central, inner contact of the ignition coil (where the main wire to the distributor connects). Record the resistance reading - this is the resistance of the coil's secondary winding. 5 Determine whether the readings you recorded fall within your vehicle's specifications. Ignition coils are delicate components of a vehicle's electrical system. [4] If either the primary or secondary windings are even a little outside of your vehicle's specifications, you'll want to replace your ignition coil, as your current one is likely damaged or malfunctioning. Advertisement Ask a Question Advertisement Thanks Thanks Advertisement Wrenches (including spark plug socket) Screwdriver Insulated pliers Spark plug Wire Ignition key Ohmmeter or multimeter with resistance function (for resistance test) This article was co-authored by Rocco Lovetere. Rocco Lovetere is the Owner and a Master Mechanic at Rocco's Mobile Auto Repair in California. With over 20 years of experience, he specializes in Honda, Acura, Toyota, Nissan, Infiniti, and Volvo cars. He is an ASE Certified Automotive technician and has worked in automotive repair since 1999. This article has been viewed 958,662 times. Co-authors: 11 Updated: February 19, 2025 Views: 958,662 Categories: Car Batteries and Ignitions Article SummaryxThe ignition coil in your vehicle sends electricity to the spark plugs, and you might need to test the coil if your vehicle isn't starting or frequently stalls. You can usually test your ignition coils by plugging a diagnostic machine, like an OBD2 scanner, into the port underneath the dashboard and turning it on. On most scanners, a code P0352 indicates that your coils aren't working correctly. If you don't have a diagnostic tool, you can remove the coils to test them instead. The ignition coils in your vehicle should be located on the right side of the engine, next to the spark plugs. Remove the cables from each spark plug, then unscrew the first ignition coil carefully and lift it out of the engine block. To test the primary resistance on the coil, grab a multimeter and attach the positive probe to the positive terminal on the coil. Then, attach the negative probe to the negative terminal. Set the multimeter to 200 ohms in the resistance category and take the reading. Typically, the primary resistance should be somewhere between 0.4-2 ohms. Next, check the secondary resistance by moving the negative probe to the metal piece that connects the coil to the spark plug. Generally, the secondary resistance should be between 6,000-8,000 ohms. If either reading is off, that means your coils likely aren't working properly. Look up your vehicle's ignition coil requirements online since the ideal level of resistance for each reading can vary by vehicle. For tips from our mechanic reviewer on performing a resistance test, keep reading! Print Send fan mail to authors Thanks to all authors for creating a page that has been read 958,662 times. "I was worried there was something wrong with the ignition coil in my Civic because the engine had been misfiring occasionally. I did the resistance test described here and got a reading that was outside the factory specs for my coil. Now I know for sure that I need to replace the bad coil instead of just guessing at the problem." - Lee F. Avoid unnecessary repairs with targeted testing. "My car was having some ignition issues, so my first instinct was to just replace the whole system. But after reading this, I tested just the coil, specifically using these steps. Since that single part tested badly, I can swap in a new coil without wasting time and money replacing other stuff that's still working fine." - Kundai M. Did you know that wikiHow has collected over 365,000 reader stories since it started in 2005? We'd love to hear from you! Share your story here. 2 Find the resistance specifications for your ignition coil. Every vehicle's ignition coil has its own unique specifications in terms of the electrical resistance within the coil.[3] If your coil's actual resistance levels fall outside of these specifications, you'll know that your coil is damaged. Usually, you'll be able to find the resistance specifications unique to your vehicle by consulting your service manual. However, if you can't find it here, you may find success by contacting your dealership or by searching online vehicular resources. Generally speaking, most automotive coils will have a resistance reading of about .7 - 1.7 ohms for the primary winding and 7,500 - 10,500 ohms for the secondary winding. 3 Position the leads of the ohmmeter on the poles of the primary coil. The distributor will have three electrical contacts - two on either side and one in the middle. These may be either external (jutting out) or internal (sunken in) - it makes no difference. Turn on your ohmmeter and touch one lead to each of the outer electrical contacts. Record the resistance reading - this is the resistance of the coil's primary winding. Note that some newer models of ignition coil have contact configurations that differ from this traditional arrangement. Consult your vehicle's manual for information if you are unsure which contacts correspond to the primary winding. 4 Position the leads of the ohmmeter on the poles of the secondary coil. Next, keep one lead on one of the outer contacts and touch the other to the central, inner contact of the ignition coil (where the main wire to the distributor connects). Record the resistance reading - this is the resistance of the coil's secondary winding. 5 Determine whether the readings you recorded fall within your vehicle's specifications. Ignition coils are delicate components of a vehicle's electrical system. [4] If either the primary or secondary windings are even a little outside of your vehicle's specifications, you'll want to replace your ignition coil, as your current one is likely damaged or malfunctioning. Advertisement Ask a Question Advertisement Thanks Thanks Advertisement Wrenches (including spark plug socket) Screwdriver Insulated pliers Spark plug Wire Ignition key Ohmmeter or multimeter with resistance function (for resistance test) This article was co-authored by Rocco Lovetere. Rocco Lovetere is the Owner and a Master Mechanic at Rocco's Mobile Auto Repair in California. With over 20 years of experience, he specializes in Honda, Acura, Toyota, Nissan, Infiniti, and Volvo cars. He is an ASE Certified Automotive technician and has worked in automotive repair since 1999. This article has been viewed 958,662 times. Co-authors: 11 Updated: February 19, 2025 Views: 958,662 Categories: Car Batteries and Ignitions Article SummaryxThe ignition coil in your vehicle sends electricity to the spark plugs, and you might need to test the coil if your vehicle isn't starting or frequently stalls. You can usually test your ignition coils by plugging a diagnostic machine, like an OBD2 scanner, into the port underneath the dashboard and turning it on. On most scanners, a code P0352 indicates that your coils aren't working correctly. If you don't have a diagnostic tool, you can remove the coils to test them instead. The ignition coils in your vehicle should be located on the right side of the engine, next to the spark plugs. Remove the cables from each spark plug, then unscrew the first ignition coil carefully and lift it out of the engine block. To test the primary resistance on the coil, grab a multimeter and attach the positive probe to the positive terminal on the coil. Then, attach the negative probe to the negative terminal. Set the multimeter to 200 ohms in the resistance category and take the reading. Typically, the primary resistance should be somewhere between 0.4-2 ohms. Next, check the secondary resistance by moving the negative probe to the metal piece that connects the coil to the spark plug. Generally, the secondary resistance should be between 6,000-8,000 ohms. If either reading is off, that means your coils likely aren't working properly. Look up your vehicle's ignition coil requirements online since the ideal level of resistance for each reading can vary by vehicle. For tips from our mechanic reviewer on performing a resistance test, keep reading! Print Send fan mail to authors Thanks to all authors for creating a page that has been read 958,662 times. "I was worried there was something wrong with the ignition coil in my Civic because the engine had been misfiring occasionally. I did the resistance test described here and got a reading that was outside the factory specs for my coil. Now I know for sure that I need to replace the bad coil instead of just guessing at the problem." - ... more Share your story