How to use a fuse tester

When the circuit in your home quits working, and you suspect that it is likely a blown fuse, you can test that theory by using a multi-meter for testing fuses. By setting the selector switch to ohms and setting it on a lower range, you can test the resistance between the two points of the fuse. This will measure the resistance of the fuse link, if intact. When working with anything electrical, shut the power off to the device that you'll be working on and check with a tester to make sure it is not live. Fuses come in different styles, cartridge, and screw-in. The Ferrule-type cartridge fuse is generally used for the main feeder and range protection. Normally, range feeds will have amp fuses, and the main fuses are generally 60 amps, being more common in older homes. Plug fuses screw in and come in 15, 20, and amp ratings. These fuses supply the branch circuits in your home to run lights, outlets, and appliances. Plug fuses are common fuses used in a home's fuse panel. They come in 15, 20, and amp sizes and are screwed into the electrical panel. They control the amount of amperage to the circuit it connects to. Plug fuses control volt circuits that normally feed lighting and receptacle loads throughout your home. Plug fuses have a metal alloy ribbon inside that carries the current of the circuit. In the case of a short or overload, causing too much current to flow, the ribbon will melt and open the circuit. When this happens, no current can flow, and the circuit is disconnected from the power supply. Plug fuses come in a screw-type configuration. They come with a sight glass that shows if the fuse is blown or not. The older type fuses have a brass screw thread on the side and a center contact point. The newer style, Edison-based, have a plastic thread with a spring-type contact and a center contact. The Edison-type base has an advantage over the older style. It only allows the appropriately sized fuse to be installed, unlike the old style that you could install a amp fuse in a amp socket. Cartridge fuses come in a cylindrical shape and have contacts points at each end. They have a fuse link connected to the two ends and are rated for volt circuits and protect the circuit from over-current. The Ferrule-type fuses are rated up to and including 60 amps. It's big brother, the knife-blade cartridge fuse, is similarly shaped with blades on each end. The difference is that they protect circuits above 60 amps up to amps. All of these fuses can be installed and removed by using a special tool, a fuse puller. It mimics the shape of the fuse and snaps over the fuse for easy removal. It is usually made out of plastic. Cartridge fuses are cylindrical and have the contact points at either end. These fuses are used in fuse panels and disconnects for amperages over 30 amps. You've heard the term blown fuses, but what is this exactly? First, you need to know what fuses are and just exactly what they are designed to do. Without a fuse or circuit breaker with this specific rating, there would be nothing to protect the wiring, devices, or the operator running things like power tools. Just as the wiring is sized specifically for the load it can handle without breaking down and heating up, so works the fuse. This type of protection is in place to keep your home from having an electrical fire. Read More. This article was co-authored by Ricardo Mitchell. Ricardo has over 10 years of electrical and construction experience and his partners have over 30 years of relevant experience. This article has 11 testimonials from our readers, earning it our reader-approved status. This article has been viewed , times. Sometimes these fuses require testing to check that they are still in good working order. Testing fuses can be done using a multimeter, and doing so is both fast and easy to learn. Before you test a fuse with a multimeter, turn off the equipment and remove the fuse by pulling it straight out of its slot. Turn the meter to ohms, then touch the positive and negative leads together and check the reading. Next, put one lead on each end of the fuse and check the reading. If the reading is close to the one you got when you touched the positive and negative leads, the fuse is fine. Did this summary help you? Yes No. We've been helping billions of people around the world continue to learn, adapt, grow, and thrive for over a decade. Every dollar contributed enables us to keep providing high-quality how-to help to people like you. Please consider supporting our work with a contribution to wikiHow. Log in Social login does not work in incognito and private browsers. Please log in with your username or email to continue. No account yet? Create an account. Edit this Article. We use cookies to make wikiHow great. By using our site, you agree to our cookie policy. Cookie Settings. Learn why people trust wikiHow. Download Article Explore this Article parts. Tips and Warnings. Related Articles. Article Summary. Part 1 of Understand fuses. Fuses are really just wires that are designed not to last, but their purpose is to prevent damage to more valuable electrical equipment or prevent fires especially in homes caused by power surges. If too much power runs through the fuse, it will "burn out," quite literally, and open the circuit, preventing the current from flowing through the circuit. There are several varieties of fuses, but their differences are primarily in appearance. Here is a description of the two you are most likely to see: The cartridge fuse is a cylindrical fuse that has been common in a wide variety of devices for many years, from homes to small electronic devices. They have metal contact or terminal points on either end and consist primarily of a tube that contains the wire. They vaguely resemble the plug of a power cord, with two metal prongs emanating from a plastic housing that contains the wire. Previously, most

vehicles also contained small glass cartridge fuses. Blade fuses plug conveniently into banks, and relatively little space is required to house a large number of them together. Learn how a multimeter works. Multimeters measure AC and DC voltage, electrical resistance, and the flow of current. For testing a fuse, you can either use it to measure the continuity which tests if the circuit is complete or the ohms which tests resistance. When testing resistance in a circuit, the meter will transmit a small quantity of electricity from its own battery and then measure the amount that passes through the circuit or object. Understand why you must test fuses. Testing fuses is the simplest way to examine what is going on in the electrical systems of your car or home, and for that reason, it is a vital skill to possess. It is easier to test fuses than it is to test other electrical equipment. Other components in your car or home involve complex wiring systems that run on for some length. In addition, most car parts can only be tested at repair shops, and to do so will usually cost quite a lot of money. Testing fuses with a multimeter is comparatively simple to do, and the equipment involved is cheap and easy to operate. Many types of fuses allow for visual confirmation that the fuse is still functional. They are made clear so that you can see if the wire remains intact. If the translucent area is blackened, it is usually because the fuse has burned out. However, some fuses will create that blackened stain after only slightly overheating, and that may have even been the result of an unnoticed incident weeks or months earlier. If a device is not working, you should test the fuses. If the fuses are all still working, there is likely a more serious problem and it may be time to call on an expert. Part 2 of Turn the equipment off and remove the fuse. Make sure the device, equipment, or vehicle is turned off before the fuse is removed. To remove the fuse, simply pull it straight out of the slot. Turn the meter on and set it to measure continuity. Turn the dial on the multimeter so it points to the continuity setting, which looks like 5 curved vertical lines. Put one lead on each end of the fuse and look at the display. Because the fuse is little more than a single wireâ€"and no complex parts to worry aboutâ€"it does not matter which side receives the positive or negative lead. Test the fuse. Listen for the multimeter to beep continuously as you hold the probes against the fuse. Then put the probes on either side of the fuse and check if the reading is similar. If it is, then the fuse works properly. If the multimeter reads "Open" or "Not complete," it means the fuse is broken. Ricardo Mitchell. When a fuse is broken, it reads the circuit is not complete, so it reads an open line. Not Helpful 0 Helpful 3. What should I do if I have a circuit that reads 0 ohms but continually blows fuses? Well, your circuit is putting out too much power for your multimeter to read. I would recommend lowering your power source's output through resistors or adding additional places for electricity to flow. Not Helpful 10 Helpful Yes, you can, provided that the source is cut-off from the fuse itself. Not Helpful 7 Helpful Oleg Ivanchenko. The rating of the fuse determines the maximum amount of amperage that could go through it, the resistance ohms do not matter as long as it's not OL. Not Helpful 6 Helpful The meter will read OL if the fuse is bad. Any reading other than OL or a blank screen tells you the fuse is good. Not Helpful 16 Helpful What do I do if the reading is A reading of So if you get Not Helpful 8 Helpful 8. Why is a blown fuse showing v when I use a voltmeter on both ends of the fuse? This is because the blown fuse allows there to be a voltage differential between the two sides. A good fuse would have shown zero volts. Not Helpful 0 Helpful 4. Unanswered Questions. Using a test light to check a fuse that appears not to work but changing the connection to a positive source touching the same fuse and the test light goes on. If a fuse blows does that mean there's problem with the amp? Include your email address to get a message when this question is answered. By using this service, some information may be shared with YouTube. Household installations these days shouldn't really be protected by just fuses. Modern circuit breakers and protective devices are fuse-less and much safer. Consider having an old fuse installation upgraded to modern standards. Helpful 1 Not Helpful 0. Regarding car fuses, most cars use a colored 'blade' type fuse, and looking at the top of the fuse in situ in the fuse box will show that the metal strip that runs along the visible top of the fuse will either be intact fuse good or broken fuse blown. Never test a fuse on equipment that is still on. Helpful 0 Not Helpful 2. Never replace a blown or suspect fuse with one of a higher rating. The rating ensures that the current can pass through the wiring safely. Always replace a fuse with the same rating as or a lower rating than the old one. Helpful 0 Not Helpful 0. Related wikiHows How to. How to. About This Article. Co-authored by:. Co-authors: Updated: November 18, Article Summary X Before you test a fuse with a multimeter, turn off the equipment and remove the fuse by pulling it straight out of its slot. Italiano: Testare un Fusibile con un Multimetro. Nederlands: Een zekering testen met een multimeter. Thanks to all authors for creating a page that has been read , times. This article really helped me on how to test a fuse and hopefully save me hundreds of dollars in repairs by just replacing a blown fuse. Rated this article:. Scott Basham Apr 25, Great stuff, many thanks. Eloy Pol Mar 24, Thanks a lot. Bill Hinton Jul 3, James Kennedy May 25, Feb 22, Exactly what I wanted. Thanks a million. Dave K. Nov 23, Anonymous Oct 4, Anonymous May 30, Obi Alex Jul

In older electrical service panels, the circuits are protected with fuses rather than circuit breakers. Larger, volt circuits will be protected by cylindrical cartridge fuses, while standard volt household circuits use screw-in fuses that fit into threaded sockets. These are known as plug fuses or Edison-base fuses. The outer threaded part is one contact point for the fuse and the bottom of the fuse is the other. Plug fuses have a metal alloy ribbon inside that carries the current of the circuit. In the case of a short or overload that causes too much current to flow, the ribbon will melt "blow" and open the circuit. When this happens, no current can flow and the circuit is disconnected from the power supply. When a plug fuse blows due to a circuit overload or short circuit , it is often quite evident because the metal fuse element inside the view panel will be obviously melted through, or the glass panel will be fogged or scorched. But if in doubt, it is possible to check the fuse with a multimeter. Screw-in plug fuses come in several types, and while all are tested the same way, it is important to know the difference between the types, since you will need to install replacement fuses that match. Always make sure the floor around the fuse panel is perfectly dry before you open the panel or do any work. Any moisture on the floor increases the chance of shock. Open the door on the fuse panel and look for the fuse you want to test. If the panel is properly indexed, the circuit that has lost power can be identified by the circuit label. You may notice that the glass view window on the fuse is fogged or scorched. Put on eye protection to guard against the possibility of flying sparks, which sometimes occur if there is a short circuit or other problem in the panel. Carefully grip the fuse by the outer ceramic rim and twist counterclockwise to unthread it from the fuse socket. Take care not to touch any metal parts in the fuse panel as you remove the fuse. Safe practice for professional electricians often involves using only one hand while unscrewing a fuse, since this reduces the chance of deadly shock. Move the dial on the face of the meter to the lowest range of the Ohms scale. With most meters, this action turns the multimeter on, but if there is a separate ON switch, turn the meter to the ON position. Test the meter's function by touching the metal tips of the testing leads together. The meter needle should move to show that little or no resistance is present. Power is simply flowing from one lead through the other, with no interruption. Place the fuse on a non-conductive surface, such as a laminate or wood tabletop. Touch the tip of one multimeter lead to the metal threads on the base of the fuse, then touch the tip of the other lead to the metal tip on the end of the fuse. If the needle on the meter moves to show little or no resistance, this means that current is flowing through the fuse and that it is functioning correctly and is not blown. If the fuse is blown, install a replacement that is is exactly the same style and same amperage rating as the blown fuse. Under no circumstances should you install a fuse with a larger amp rating, as this could allow the circuit wires to carry more current than they can safely handle. These adapters come in 15, 20, and amp sizes. They allow the newer and safer S-type tamper-proof fuses to be screwed into the standard fuse sockets. Simply screw the new S-type fuse into the base and then screw the whole assembly into the fuse panel socket. In the future, if a tamper-proof fuse blows, the adapter will remain in place as you screw out the S-type fuse and screw in a new one. An electrical service that is protected by fuses rather than circuit breakers is by definition an old service, since circuit breakers became the norm in the late s and s. Most fuse panels carry only 30 or 60 amps of power, and this is woefully inadequate for modern power needs. It is, therefore. While there is nothing inherently dangerous about a fuse panel that is functioning properly, upgrading the electrical service may make it easier and cheaper to obtain homeowner's insurance, and it will be a decided advantage when you try to sell your home. In This Article Expand. How Plug Fuses Work. Tools and Supplies. Safety Tip Always make sure the floor around the fuse panel is perfectly dry before you open the panel or do any work. Consider an Upgrade An electrical service that is protected by fuses rather than circuit breakers is by definition an old service, since circuit breakers became the norm in the late s and s. Consider an Electrical Service Upgrade An electrical service that is protected by fuses rather than circuit breakers is by definition an old service, since circuit breakers became the norm in the late s and s. Read More. Home Articles Test Light Instructions How to Use a Test Light Easy step by step guide on how to use an automotive test light, information pertains to all 12 volt vehicles. Step 1 - A test light is needed to perform electrical power and ground testing to facilitate automotive repairs, this tool is easy to use and is reasonable priced. Test Light Step 2 - Before staring any testing the test light itself must be tested, connect the clip or clamp to a known ground source, in this case the battery negative terminal is being used but

almost any metal surface on the vehicle will work. Gently, touch the test light probe to a known power source, we use the battery positive is this example but any known power source such as a fuse or positive battery cable will work. Testing the Test Light Step 3 - Once the test light is properly grounded, it can be used to test not only fuse condition by touching each side of the fuse, it also confirms power at the fuse. If an accessory has failed such as brake lights and the fuse tests okay, testing can then proceed further down the circuit such as the brake light switch and so on, a wiring schematic is useful when performing these tests. Test Fuse Power Step 4 - When power tests okay for power at the source such as a relay or fuse, yet power is not present at a particular accessory such as the cooling fan a test light can trace the problem down through a process of elimination. Burned Wiring Step 5 - Power must be present at the large terminal of the alternator to charge, a test light performs this task easily. Alternator Power Step 6 - This electrical connector tested good while probing the wires before the connector, it wasn't until the technician removed the connector was the problem discovered. Rusted Electrical Connector Step 7 - A test light can be used to test for power at the fuel injector, reversing the clamp to the negative side of the battery will check the trigger side of the injector circuit. A test light utilizes a bulb held in a probe attached to a sharply pointed rod with a connection lead. This design is optimal for piercing a wire, testing a fuse or checking the surface charge of a battery. If power is present, the bulb will illuminate confirming the circuit has power and is operating properly. Also, reversing the test light lead to the positive battery to be able to check for system ground continuity. A voltmeter is used to check resistance and to give a voltage reading which can be used for more in-depth troubleshooting. Home Articles Test Light Instructions. How to Use a Test Light. Easy step by step guide on how to use an automotive test light, information pertains to all 12 volt vehicles. Difficulty Scale: 2 of 10 Step 1 - A test light is needed to perform electrical power and ground testing to facilitate automotive repairs, this tool is easy to use and is reasonable priced. Test Light. Testing the Test Light. Test Fuse Power. Burned Wiring. Alternator Power. Rusted Electrical Connector. Testing Fuel Injector Pulse. Ask a Car Question. It's Free! Whilst it is easy to visually inspect the element in a glass fuse to see if it has blown, the majority of fuses have solid, non-transparent bodies that hide the element from view. To test if the fuse is blown, we require a multimeter. Once configured, a multimeter can measure the resistance of the fuse element. The following tutorial uses a digital multimeter, however the same principles apply when using an analogue multimeter ie. If you are using an analogue meter, firstly read the tutorial and then refer to the additional notes at the end. All rights reserved. We use cookies and similar technologies to provide website functionality and traffic analysis. By using this website you consent to the use of cookies. To learn more please read our cookie policy. All phone, website and email orders are being despatched as usual. Counter sales are OPEN. Search for products using a part number or keyword, or try one of our other search tools. Please contact us if you are unable to find a product. We often have an equivalent product from a different manufacturer. Search for fuses using dimensions. Type the QR Code below to view a datasheet. Testing for a Blown Fuse How to test a fuse with a multimeter Whilst it is easy to visually inspect the element in a glass fuse to see if it has blown, the majority of fuses have solid, non-transparent bodies that hide the element from view. Need a replacement fuse? View our large range of fuses. Connecting the Test Leads. The black lead should be connected to the Common socket. Not sure what fuse you need? We can help. How do you set the ohms on a multimeter. Move the dial to the lowest range of the Ohms scale ohms is the lowest setting on this mulitmeter. This should also power the meter ON. If there is a seperate ON switch, please turn the meter ON. You can see in the picture that the Ohms range is illustrated by a light green band in lower left area. How to test if your multimeter is working Touch the metal tips of the 2 testing leads and whilst holding them together, the meter display should change to show that little or no resistance is present. Power will simply flow from one lead back through the other. Measure the Fuse. Place the fuse on a non-conducting surface such as wood, laminate or plastic. Touch the metal caps at each end of the fuse with the metal tips of the testing leads. There is no polarity so you can use any lead for either fuse cap. Ensure to make good contact by touching a clean metal surface on each cap. Whilst the leads are firmly connected to the fuse, look at the reading displayed on the multimeter. Note: If you wish to test a fuse still located in a circuit. Please ensure that you have turned off power and disconnected the power source to avoid possibility of electric shock. Replace your fuses for the best price! Understanding a Digital Multimeter Reading. Fuse is OK: If the multimeter reading changes to a low resistance value similar to the result of touching the 2 leads together. Don't forget to turn the multimeter OFF when you have finished testing. How to use an Analogue Multimeter. Analogue multimeters provide readings by moving a needle over a fixed scale. The testing process is exactly the same. The needle will 'sweep' across the scale to show little to no resistance. A good fuse will generate the same reading. A blown fuse will generate the same

reading. Make sure that the testing lead tips make a good connection to the metal end caps or blades of the fuse and the fuse is tested on a non-conducting surface. Same day processing of orders received before 2pm Australian Eastern Standard Time. If your car fuse is not functioning and doesn't appear to have blown, here are some reasons why that may happen; 1. The fuse has a manufacturing defect. Is it a quality fuse or a cheap replacement? A blown fuse has been replaced incorrectly with a lower rated fuse. The device powered by the fuse is faulty, drawing a higher current. The fuse is OK, but something went wrong in the testing process. A car fuse wouldn't commonly fail because of overuse or ageing. Automotive fuses are designed to function for a very long period of time when operated within the manufacturer's specified parameters. Electrical circuits in modern vehicles are designed by qualified electrical engineers and subjected to rigorous testing in extreme environments so they are usually very reliable. Additionally, car manufacturers use high quality fuses which are manufactured and tested to strict standards. Want to learn more about fuses? View all fuse tutorials. How to tell if a Car Fuse is blown? There are a few ways to quickly chec

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 k if a car fuse is blown. There may be a diagram inside the fuse box lid or owner's manual or you can find it online. Then, remove the fuse using fuse pullers - make sure your car is completely switched off before you do this! Next, inspect the fuse for visual signs of discoloration or broken filaments. You can then install a replacement car fuse. Shop our range of car fuses. Need a Replacement Fuse? We are the Fuse Specialists. We carry a massive stock range of high quality fuses which you can buy on our website. If you are unable to find the fuse you require, our expert staff can cross reference fuses between the many different brands. Contact us. We service all requirements from small retail customers to large OEM companies and distributors and can organise special pricing and credit accounts. If you are not sure how to identify a fuse, we have created this fuse identification guide. We only sell quality approved products by globally recognised manufacturers. Contact Us Top of Page.