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Parasitic drain battery test

1 Unplug all devices from your vehicle and make sure no electrical components are on. Turn off the radio, heat or A/C, lights, windshield wipers, etc. and close your glovebox and lighted mirror covers. Engage the emergency brake, turn your vehicle off, and remove the key from the ignition if you haven't already. Then, close all of the doors and the trunk or back hatch so that none of the circuits are activated.[1] Be sure to remove any cables that may be plugged into your vehicle, like a GPS unit or phone charger, as well. Tip: In some cases, you may need to input a security code when you turn on the vehicle after disconnecting the battery, so check your owner's manual for the code before you get started. 2 Charge your battery fully. In order to accurately detect the parasitic draw, you need to begin with a fully-charged battery. Pop the hood and locate your vehicle's battery. Use a vehicle battery charger to charge the battery to 100%.^[2] Many car batteries are 12.6 volts. You can check the power with a multimeter to ensure the battery is fully charged. If your battery is old or damaged or isn't reading 12.6 volts when fully charged, you may want to replace it before moving on. Advertisement 3 Remove the negative battery cable from the negative battery terminal. Find the negative cable, which will be marked with a minus sign (-) and may have a black cover over it. Remove the cover, if applicable, and use a wrench to unbolt the negative cable from the terminal.[3] Be sure to use the negative, not the positive, cable to test for the draw to prevent electrical shorts! Generally, a 10-mm open-ended wrench is the tool you'll need to remove the cable. 4 Set up a digital multimeter. The multimeter has both a black wire and a red wire attached to it as well as several different input slots. Connect the black wire to the "com" (common ground) input and plug the red wire into the highest amp input (usually 20A). Set the dial on the multimeter to measure amps.[4] [5] Choose a digital meter than can read up to 20 amps and down to 200 milliamps.[6] 5 Attach the multimeter to the negative battery cable and terminal. Place the red lead through the metal circle at the end of the negative battery cable. Touch the black lead to the negative battery terminal.[7] You can use plastic clamps to secure the leads in place so your hands are free and the meter continues to operate. 6 Note that you have a parasitic draw if the reading is more than 50 milliamps. There are a few things that constantly draw power in a vehicle, such as the clock on the radio, so it's normal to have a reading between 20 and 50 milliamps. If your reading is higher than that, it means there's a draw and something is using too much power.[8] Advertisement 1 Pull out the fuses one at a time while watching the multimeter reading. Locate the fuse box under the hood. Use a fuse puller to remove the fuses, starting with the ones with the smallest amp ratings and working toward the ones with the highest amp ratings. After you pull a fuse, check the multimeter to see if the reading changes. If it doesn't, replace the fuse and move onto the next one.[9] Once you've worked through all of the fuses in the fuse box under the hood, check the fuses in the fuse box(es) under the dash. It's best if you have a friend help you with this so one person can pull fuses while the other person watches the reading on the multimeter. If you don't have anyone to help, prop the meter against the windshield so you can read it from inside the vehicle. Warning: Disconnect the multimeter before you open the door to check the fuses under the dash. Disable the door switch by clamping a piece of scrap wood over it so it remains depressed. Then, reconnect the multimeter. 2 Stop when pulling a fuse makes the reading drop significantly. Removing a fuse may cause the multimeter reading to drop a few milliamps, which is normal. What you're looking for is a significant drop, such as if the reading goes from 3.03 amps to 0.03 amps. When this happens, you've found the electrical circuit that's creating the parasitic draw![10] 3 Find out what's running on the affected circuit. Consult the chart on the fuse box and/or the owners' manual to find out what components are powered by the fuse that's causing the drain. You can also check the wiring diagram for the particular circuit to help you narrow down the problem.[11] Usually, you can find digital copies of the manual and wiring diagrams online. 4 Check each device or component on that circuit. Replace the fuse and disconnect each lamp, heater, or electrical device one at a time. Flip all of the switches that correspond to the components as well. Watch for the reading on the multimeter to drop to find out which component is causing the drain.[12] For instance, say the offending fuse controls the power antenna as well as the radio. Unplug the radio and see if the draw goes away. If it doesn't, unplug the antenna and watch for the reading on the multimeter to drop. 5 Repair the component causing the draw, disconnect the multimeter, and reconnect the battery. The repair process will vary widely depending on what the problem is, so if you're not sure how to fix the component, hire a certified mechanic to make the repair or replacement. If you can make the repair yourself, check it by ensuring the reading on the multimeter is less than 50 milliamps. Once you're done, disconnect the multimeter and reconnect the battery cable. You may be able to simply flip a switch into the "off" position to eliminate the draw, or you might be facing a more complex problem, such as an issue with a wiring harness. Advertisement Add New Question Question Why is the ammeter connected between the negative terminal and cable instead of the positive side? The ammeter can be connected to either terminal with identical results with one exception: if you get against a metal object while using a positive terminal, there is potential for a short circuit with a shower of sparks. Use the negative terminal - that is safer. Question If a new stereo was installed and it wasn't done properly, can that drain the battery? Yes, if it was connected straight to the battery rather than through the ignition. It should only draw a small amount for the clock when the ignition is off. If you can use the radio with the ignition in the off position, you have a problem. Question Does a car alarm drain the battery? Yes, it can. If checking for a drain, the alarm should be the first thing to be disconnected to see if the drain stops. 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This article has been viewed 2,747,335 times. Co-authors: 33 Updated: September 6, 2024 Views: 2,747,335 Categories: Car Batteries and Ignitions Print Send fan mail to authors Thanks to all authors for creating a page that has been read 2,747,335 times. "I have been having issues with my Peugeot Traveller van due to a parasitic drain. I've just been disconnecting the battery, but I want to resolve the issue once and for all. This guide has given me a much better idea of what to do and how to approach it!" ..." more Share your story 1 Unplug all devices from your vehicle and make sure no electrical components are on. Turn off the radio, heat or A/C, lights, windshield wipers, etc. and close your glovebox and lighted mirror covers. Engage the emergency brake, turn your vehicle off, and remove the key from the ignition if you haven't already. 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Duston specializes in leading a team that handles a variety of automotive repairs including replacing spark plugs, front and rear brake pads, fuel pumps, car batteries, alternators, timing belts, and starter motors. Duston holds an Associate's degree in Automotive/Diesel Technology from The Universal Technical Institute of Arizona and is a Certified Diagnostic Technician and Automobile Mechanics Technician through BMW STEP. RepairSmith received The 2020 Big Innovation Award by Business Intelligence Group and The Startup of the Year by the American Business Awards. RepairSmith was also included in Built in LA's 50 Startups to Watch and The Business Intelligence Group's 52 Names Leading the Way in Customer Service. RepairSmith offers in-home services to provide car owners convenient and complete auto repair everywhere. This article has been viewed 2,747,335 times. Co-authors: 33 Updated: September 6, 2024 Views: 2,747,335 Categories: Car Batteries and Ignitions Print Send fan mail to authors Thanks to all authors for creating a page that has been read 2,747,335 times. "I have been having issues with my Peugeot Traveller van due to a parasitic drain. I've just been disconnecting the battery, but I want to resolve the issue once and for all. This guide has given me a much better idea of what to do and how to approach it!" ..." more Share your story It's important to know how to test for parasitic battery drain to keep your car's battery healthy. Prevent unexpected breakdowns and extend the life of your battery by identifying and addressing this issue early. You'll learn everything you need to know in this article. Let's talk about everything involved, like how to check for parasitic battery drain, when to call for professional help, and the ultimate fuse pulling method. Before you start testing for parasitic battery drain, it's essential to gather the right tools and take some precautions to ensure a smooth and safe process. Here are the necessary steps to prepare for the test:Digital multimeter capable of measuring both volts and amps. Set of basic hand tools, such as screwdrivers and pliers, to disconnect and reconnect the battery safely. Having a flashlight on hand will also be helpful, as some components might be challenging to see under the vehicle's hood.Safety should always be a top priority when working on your vehicle. Before starting the test, make sure the vehicle is parked in a well-ventilated area with enough space to move around. Wear appropriate protective gear, such as gloves and safety glasses, to avoid potential accidents. Also, ensure that the transmission is in "Park" or the gear is set to "Neutral" (for manual transmissions) to prevent unexpected movement during the test.To get accurate test results, it's crucial to take a few precautions before starting. Turn off all the vehicle's electrical components, such as lights, radio, air conditioning, and infotainment system. Close all doors and make sure the engine is off. Disconnect any aftermarket devices or accessories that might have been installed. If you're not sure how to do this, consult your vehicle's manual or seek assistance from a professional. These precautions will help isolate the parasitic drain more effectively.Read more about How to Test Deep Cycle Battery with MultimeterYou can easily test for parasitic battery drain if you pay attention. Follow these straightforward instructions to identify and address any unwanted power draw:Start by disconnecting the negative terminal (black) of the battery using a wrench or pliers. Be careful not to touch the positive terminal (red) with the wrench to avoid any accidental short circuits. After disconnecting the battery, wait for at least 10-15 minutes to allow the vehicle's electronic modules to power down fully.Switch the digital multimeter to the DC amps setting and select the appropriate amperage range (typically 10 or 20 amps). Connect the multimeter's red probe to the battery's negative terminal and the black probe to the negative battery cable. This will allow you to measure the current draw from the vehicle's electrical system.To narrow down the search for the parasitic drain, note the initial ammeter reading. As you start the test, be prepared for a brief surge in current draw, which should settle within a few minutes. If the ammeter reading remains high after the initial surge, it could indicate a parasitic drain.Monitor the ammeter readings closely while the vehicle is in a "sleep" mode (usually after 10-30 minutes of inactivity). A normal parasitic drain typically falls in the range of 20-50 milliamps (mA). If the reading exceeds this range, it may indicate an excessive parasitic draw. To identify the culprit, move on to the next section and start isolating specific circuits.Read more about How to Check the Mah of Your BatteryRegularly checking your battery's health is essential to ensure it functions optimally and prolong its lifespan.The first step is to perform a voltage test using a digital multimeter. Make sure the vehicle is turned off and all electrical components are shut down. Attach the multimeter's positive (red) probe to the battery's positive terminal and the negative (black) probe to the negative terminal.Take note of the voltage reading displayed on the multimeter. A healthy battery should ideally read around 12.6 volts. If the voltage is significantly lower, it may indicate a weak or discharged battery.Understanding the voltage readings is crucial. If the voltage is above 12.6 volts, your battery is likely in good condition. However, if the reading is below 12.2 volts, the battery may require recharging or potential replacement. It's essential to consider external factors like temperature, as cold weather can affect voltage readings. Remember, a battery's voltage may fluctuate depending on its charge level and recent usage.If your battery's voltage is low, you can recharge it using a suitable battery charger. Ensure you follow the manufacturer's instructions while charging to avoid overcharging, which can damage the battery. Additionally, keep your battery clean and free from corrosion by regularly inspecting and cleaning the terminals. Tighten any loose connections and inspect the battery case for damage. Regular maintenance and care will help your battery perform at its best and extend its overall lifespan.If you are wonder about how to test for parasitic battery drain? The "Fuse-Pulling" method is a handy technique to narrow down the source of a parasitic battery drain when you suspect multiple circuits may be involved. Follow these steps to effectively use this method and pinpoint the problematic circuit:The "Fuse-Pulling" method involves removing fuses related to different systems or components in your vehicle to see which one is causing the abnormal current draw. By pulling out a fuse and observing the ammeter reading, you can determine if a particular circuit is responsible for the drain. This method is particularly useful when you suspect multiple culprits or when you don't have access to advanced diagnostic tools.Start by disconnecting the negative battery cable as before and wait for the vehicle's systems to power down. Then, locate the fuse box, typically found in the engine bay or inside the vehicle's cabin. Refer to your vehicle's manual to identify the fuses related to the suspected circuits. Carefully pull out one fuse at a time and note any change in the ammeter reading. If you pull a fuse and the amperage draw drops significantly, you've likely found the problematic circuit.Read more about Who to Call for a Jump StartWhile testing for parasitic battery drain and resolving minor issues can be a DIY endeavor, there are situations where seeking help from a professional mechanic is the best course of action. Knowing when to consult an expert will save you time, effort, and potential complications. Here are some guidelines to help you make that decision:Modern vehicles come equipped with intricate electrical systems, including complex wiring, modules, and electronic components. If you encounter difficulties during testing or suspect multiple issues, it's best to consult a professional mechanic who has the expertise and diagnostic tools to handle such complexities.Some vehicles have unique electrical systems designed by manufacturers, and diagnosing issues with these proprietary circuits might require specialized knowledge and software. Professional mechanics often have access to manufacturer-specific databases and resources, making them better equipped to diagnose and resolve such problems.Professional mechanics have access to advanced diagnostic tools and equipment, which can pinpoint issues more accurately and efficiently. These tools can read error codes, perform system tests, and provide detailed information about your vehicle's electrical health.Diagnosing a parasitic battery drain involves a step-by-step process. First, ensure all electrical devices are off, and the vehicle is parked in a safe area. Disconnect the negative battery cable and attach an ammeter in series. If the reading is above 50 milliamps, there might be a parasitic drain. Next, start removing fuses one by one to identify the circuit causing the drain. Once found, inspect that circuit for faulty components or wiring issues.First, park your vehicle and turn off all electrical devices. Set your multimeter to the DC Amps mode. Disconnect the negative battery cable and connect the multimeter in series between the battery terminal and the cable. Wait for a few minutes to let the modules power down. A normal draw should be around 20-50 milliamps (mA). If it's higher, start removing fuses one by one and note any drop in current. When you find the circuit causing the draw, diagnose and fix the issue.Yes, a parasitic drain can indeed ruin a battery. When your vehicle or device is turned off, certain electrical components may continue drawing power, leading to a gradual discharge of the battery over time. This persistent drain, if left unchecked, can significantly reduce the battery's lifespan and potentially render it useless. Regularly inspecting and fixing any sources of parasitic drain can help preserve your battery and prevent unnecessary headachesChecking the battery health regularly will prolong its life. I got all the tips for maintaining the battery and the ultimate way to test parasitic battery drain. Now you can help other people who want to know how to test for parasitic battery drain.Visited 37 times, 1 visit(s) today Maybe you installed a new battery or alternator and now your vehicle won't start. Maybe your car battery dies overnight, after sitting for a few days, or keeps dying but the alternator and battery is good. If your battery keeps dying when you try to start your vehicle and you know it's in good condition, chances are a parasitic draw is draining the battery from a light or a module that may be stuck on. This post explains how to perform a parasitic draw test with a tester tool and a multimeter to find out what's draining the battery and how to fix it. Steps for Performing a Parasitic Draw Test Charge the Battery Charge the battery with a battery charger or make sure the battery is charged before beginning Find a Battery Shut Off Tool or Parasitic Draw Tester Tool You will need a battery shut off tool or a parasitic draw tester. This tool basically fits between the battery and the negative battery cable. It requires you to road test the vehicle with all the electronics on, such as the radio, heating and air conditioning, cruise control, and connect a multimeter to either end of the tool to get a reading without disrupting the modules. Remove the Fuse Panel Covers Remove the fuse panel covers to access them easily. Close the Door Latches or Dome Light Switches If the vehicle has dome lights connected to the latch, close the latches. If you have a dome light switch, push these down as well. Connect the Multimeter to the Shut Off Tool Connect the multimeter to the tool. Each multimeter is different, but connect the positive lead to the 10 amp max fuse setting. Set the dial to milliamps. Hook a lead to each side of the tool (doesn't matter which side). Let the Modules Power Down You want the modules to power down before opening the switch on the tool or else it will put a draw on the battery, which is normal. On older vehicles it takes about 10 minutes for the modules to power down. On newer vehicles it could take up to an hour for the vehicles to power down. Open the Switch and Take a Reading Open the switch on the parasitic draw tester tool. Read the reading of milliamps on the screen. Wait up to 10 minutes to an hour to see if the reading falls below 30 milliamps.If lights are on the reading can be much higher.Don't open any doors or unlatch any latched door latches while the multimeter is taking a reading or it could blow a fuse in the meter. Remove One Fuse at a Time To find out where the draw is originating, remove one fuse at a time and check the meter. If the reading falls, that fuse's circuit is probably causing the parasitic draw.When reinserting the fuse, depending on what circuit it is in, it may turn on a module on and you may have to wait a minute or two if the reading spikes. If it significantly spikes or drops, you'll probably have to wait another 10 minutes for the module power down before pulling the next fuse. We recommend pulling one fuse per circuit to save hassle when reinstalling the fuses. Check Any Fuse's Circuits with Low Readings If the reading drops below the fuse's amps, check that circuit by reconnecting the fuse to the circuit and disconnecting the suspected part from the circuit. If the parasitic drawing stops, that part is the cause. Tools & EquipmentDiagnostic & Measuring Tools