

- ATTENTION:**
- GENERAL MANAGER
 - PARTS MANAGER
 - CLAIMS PERSONNEL
 - SERVICE MANAGER

IMPORTANT - All Service Personnel Should Read and Initial in the boxes provided, right.

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QUALITY DRIVEN® SERVICE

SERVICE INFORMATION

APPLICABILITY: All Models

NUMBER: 07-85-14

SUBJECT: Measurement of “Dark Current”
(Parasitic Battery Draw)

DATE: 06/09/14

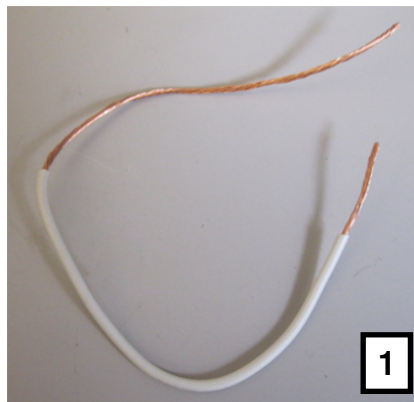
INTRODUCTION

This bulletin will provide the proper procedure for measuring Dark Current (parasitic battery draw) along with the specification for maximum allowable limits. Customer concerns of batteries going dead over a period of time should be diagnosed using this procedure once any obvious contributing factors have been eliminated.

SERVICE PROCEDURE / INFORMATION

1- Vehicle Preparation

- Before beginning this procedure, the vehicle’s battery must be fully charged and in peak operating condition. If needed, charge the battery fully using the MidTronics GR8 or replace it if your diagnosis determines necessary. A battery in poor condition or in need of charge will likely have an adverse effect on the accuracy of the dark current draw test results.
- The battery posts and cable ends must be free of corrosion, dirt, sealer and in good condition.
- Be sure to record the customer’s radio station pre-sets and navigation system favorites (if applicable) as they will be lost during the test along with any seat memory settings. **DO NOT** use an aftermarket 9-volt memory retention device in the power outlet to retain any ECU memory.
- Disconnect or remove any aftermarket (non-OEM) electrical accessories or equipment.
- Install the back-up power supply fuse then, (if applicable) using the SSMIII, confirm the Body Integrated Unit (BIU) is set “Market Mode”.
- Using a short piece of wire, make a jumper lead to connect to the negative battery post as shown in the photo sequence below. Once in place and twisted tightly around the battery post, reconnect the negative battery cable. (16 ga. wire was used for this bulletin.)



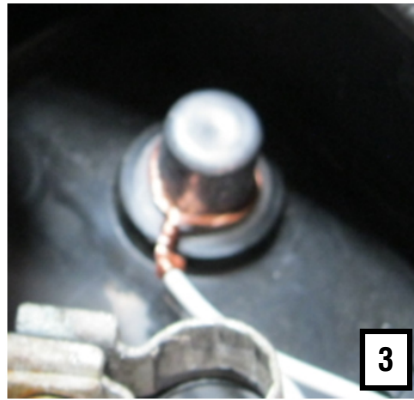
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CAUTION: VEHICLE SERVICING PERFORMED BY UNTRAINED PERSONS COULD RESULT IN SERIOUS INJURY TO THOSE PERSONS OR TO OTHERS.

Subaru Service Bulletins are intended for use by professional technicians ONLY. They are written to inform those technicians of conditions that may occur in some vehicles, or to provide information that could assist in the proper servicing of the vehicle. Properly trained technicians have the equipment, tools, safety instructions, and know-how to do the job correctly and safely. If a condition is described, DO NOT assume that this Service Bulletin applies to your vehicle, or that your vehicle will have that condition.

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ISO 14001 is the international standard for excellence in Environmental Management Systems. Please recycle or dispose of automotive products in a manner that is friendly to our environment and in accordance with all local, state and federal laws and regulations.



- Leaving the hood open, start the engine then position all the electrical switches as specified in the chart below.

Electrical System	Control Switch Position
Headlights	ON or AUTO
Fog lights (if equipped)	ON
Wipers (Front and Rear)	On or Low Speed
Audio and Navigation system (OEM)	ON
Rear window defogger	ON
Dome light	Door
Cargo area light	Door
Map light	OFF
Air conditioner (Auto models)	ON (AUTO)
Air conditioner (Manual models)	ON (Speed 1)
EPB (Electric Parking Brake)	ON
All other electric components (except those items specified above).	OFF

- After all the switches have been set according to the chart, shut off the engine and remove the ignition key.
- Leaving the hood open, exit the vehicle, making sure all the doors (including the rear gate if equipped) are fully closed. Lock all the doors and confirm all interior lights go off.
- On push-start vehicles, the smart key (remote) will need to be at least 10 feet away to allow the system to “go to sleep”. **The smart key must remain away from the vehicle until testing has been completed.**
- From this point, allow 5 minutes for the electrical system to stabilize (“go to sleep”) before proceeding with the actual dark current testing.

IMPORTANT:

The “window” for performing this test is only 20 minutes from the time the vehicle goes to sleep. After approximately 20 minutes, the ELCM (if equipped) testing begins and will have an effect on your test results. Another option is to wait approximately 5 hours after vehicle shut-down to perform the test. This will allow plenty of time for ELCM testing to complete and eliminates the 20-minute “window”.

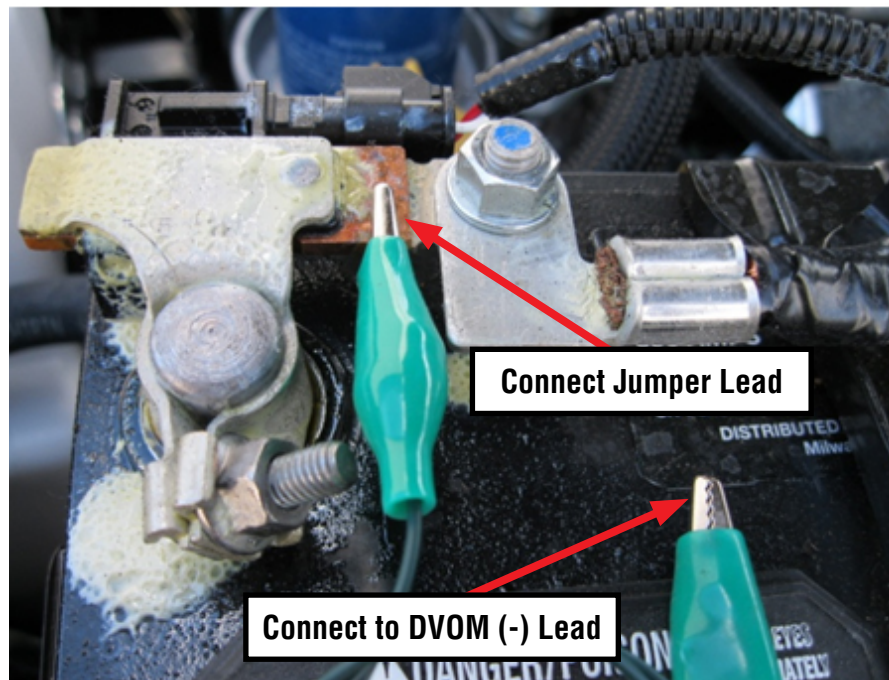
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2- Test Procedure

- Loosen the nut securing (but do not remove) the negative (-) battery cable to the battery post.
- Connect the positive (+) probe of your ammeter to the negative (-) battery cable terminal end.
- Connect the negative (-) probe of the ammeter to the exposed end of the jumper wire.



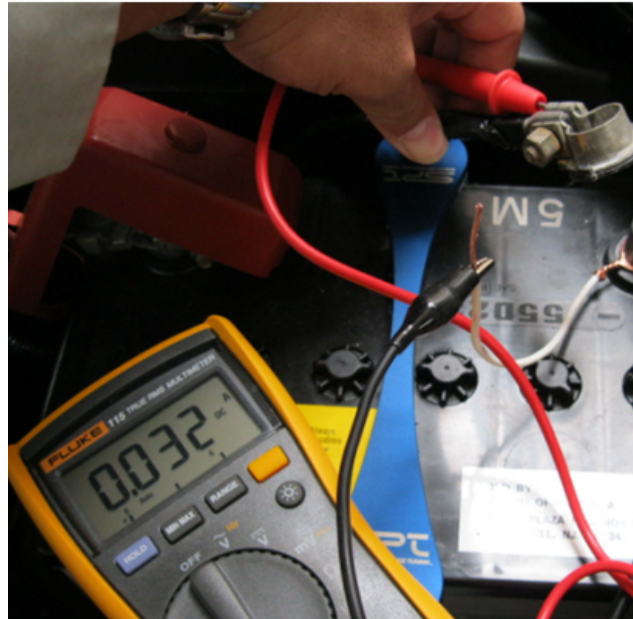
On vehicles with a battery sensor on the negative battery terminal, leave the terminal connected and connect a jumper lead to the bus bar area between the terminal end and the 12mm nut as shown below for the feed to the DVOM. Once the DVOM is connected, remove the 12mm nut, the battery cable from the stud then perform the test. After testing, re-torque the nut to 7.5 Nm (5.5 ft. lbs.).



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Make sure your ammeter is set to read Amperage and not Voltage. (The red lead had to be moved from the Voltage and Ohm socket to the “A” socket on the meter used in the photos.)

- While keeping the ammeter probe in contact with the negative (-) battery cable terminal and the end of the jumper wire, remove the battery cable terminal end from the battery post.
- After the current reading stabilizes, read the value displayed on the ammeter. (On push-start models, if the current reading on the ammeter continues to fluctuate, the smart key may be too close to the vehicle which will prevent the vehicle from going to sleep.)



- The Dark Current reading shown here is .032 A or 32 mA.

The maximum allowable average dark current draw is 70mA.* If the measured dark current draw exceeds 70mA, begin diagnostics by removing fuses to isolate circuits one at a time while closely monitoring the ammeter reading for a corresponding decrease. Once a circuit (or circuits) has been identified, continue with normal electrical diagnostics of that circuit to determine the source of the current draw.

*While 70mA is the maximum allowable average dark current draw, this does not mean a vehicle exhibiting an unusual current draw will always exceed 70mA. In some cases, a vehicle with less than a 70mA draw may be experiencing an unusual current draw. It is recommended whenever possible, a like comparison vehicle be used to benchmark the vehicle which has a reported unusual current draw.

- When repairs are complete, always be sure to reset the customer’s radio station presets and (if equipped) navigation system favorites before releasing the vehicle.