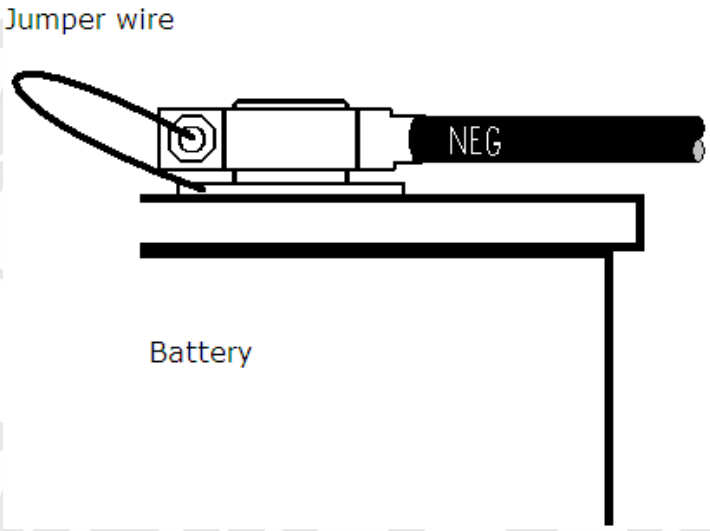
TECH TIPS

Measuring Quiescent Draw

As vehicle technology advances one of the drawbacks is that the on board systems often require power even in the quiescent mode (also referred to as dark mode, sleep, mode etc. depending on which manufacture's manual you are reading). The second draw back when repairing some vehicles as soon as complete (or near complete) power failure occurs the systems need to be restored using the appropriate scan tool and software. Many manufacturers have released bulletins indicating that the quiescent draw must be checked when trouble shooting the electrical system. Often restoring the on board systems after disconnecting the battery is required, which is time consuming. Below is a method that may reduce the time required to perform this task.

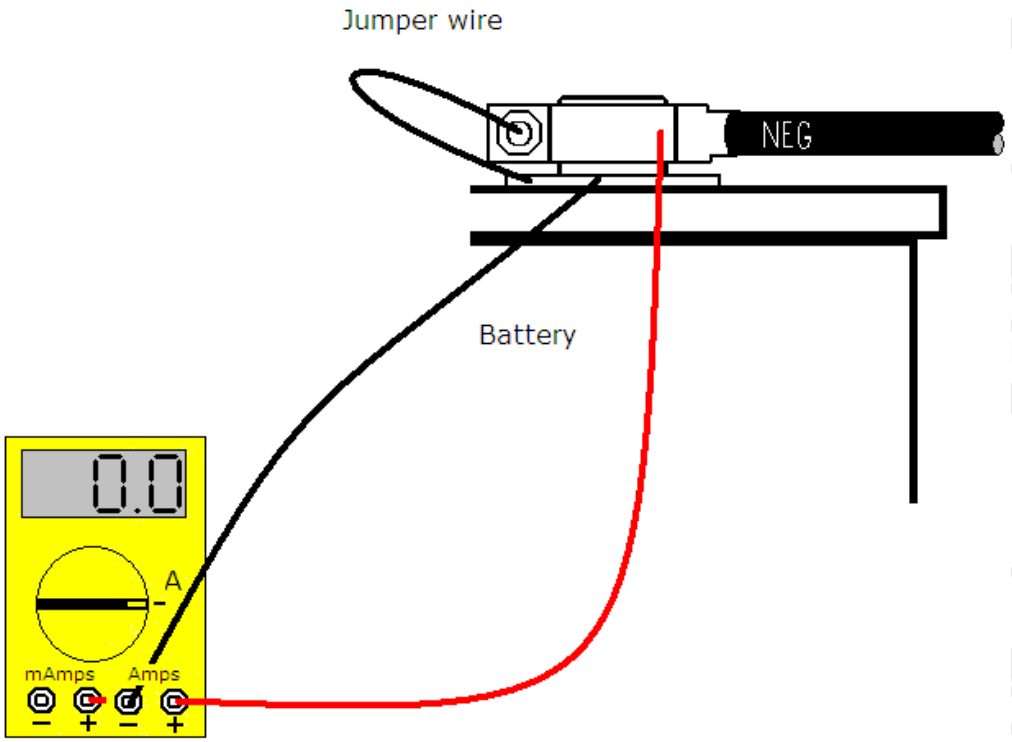
1) Turn off the ignition and remove the key. Close all the doors and the trunk. Ensure that any lights, such as timed interior lights have turned off.
2) Disconnect any anti-theft hood sensors and/or hood service lights (these will cause the current readings to increase, possibly beyond the capacity of the amp meter. Note: It is good practice to ensure that the customer has any security codes for things such as audio equipment… just in case the power does get interrupted.
3) Connect a jumper wire from the negative battery cable to the negative battery post (shown below). This may require cleaning first with a wire brush to ensure good contact.



4) Disconnect the battery cable ensuring that the jumper wire does not break contact.
5) Connect the ampere meter between the battery terminal and the negative battery wire. It is not too critical which lead goes to which unless the "-" sign bothers you. If so connect the red lead to the battery cable and the black lead to the battery post (shown below).

WARNING! Make sure that the leads are positioned in the high ampere reading position as well as the selector knob (if applicable). Failure to do so could result in blowing the fuse in the meter, permanent damage to the meter and render this process useless as the circuit will be open if the fuse blows when obtaining the reading.

6) With the ampere meter connected disconnect the jumper wire. The reading on the meter will be the quiescent draw.



7) Check the manufacturer's recommended acceptable range for quiescent draw. If none are available a guide would be 30 mA on 12V systems and 15 mA on 24V systems.
8) If the reading is excessive then first check if there are any service bulletins for known issues. If not then begin disconnecting circuits one at a time to determine which circuit is the issue.
9) If the quiescent draw is in the acceptable range reconnect the jumper wire. Disconnect the meter and reattach the negative battery clamp to the battery post and tighten it. Remove the jumper wire.
   NOTE: Why not use the meter and eliminate the jumper wire? Battery clamps don't always come off easily and the jumper wire allows you to wiggle and pull the battery cable off with out interrupting the ground circuit.