PART SMART

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What are the signs that you need to check your negative side electrical circuits, or ground circuits?

- Why wont my starter crank?
- Why is my starter cranking slow or sluggish?
- Why won't my battery charge?
- Why is my battery overcharged?

Symptoms: no - crank conditions, slow or sluggish cranking, no - charge or low charge conditions, overcharge conditions.

Diagnosis:
Problems with the ground, or the negative side of the starting or charging system electrical circuit.

The Solution:
Verify the condition of all of the vehicle ground circuits.

It is critical to verify the condition of all of the vehicle ground circuits

The Real Estate professionals often like to say that "The 3 most important things in Real Estate are Location, Location, and Location."

Well when it comes to vehicle starting and charging system problems as well as other vehicle electrical system problems it could be said that the 3 most important things are Grounds, Grounds, and Grounds. The ground or negative side of any electrical circuit is no less important and just as critical as the positive side of the circuit. The performance and operation of any electrical circuit and the components within that circuit will be greatly affected by problems on the ground portion of that circuit.

For example problems on the ground side of the starting and charging system will often result in no – crank conditions, slow or sluggish cranking, no – charge or low charge conditions, overcharge conditions, and can cause premature failure of replacement Starters and Alternators.

Therefore it is critical to verify the condition of all of the vehicle ground circuits whenever there are starting or charging system problems on a vehicle.

This should start with a careful and complete visual inspection of the main ground cable from the battery negative connection to the cable terminating connection at the engine or chassis depending on the vehicle. Next a good visual inspection should be performed on the accessory or auxiliary grounds. These are the smaller diameter and typically shorter wires from the battery negative terminal to the vehicle body or chassis. Also look for any ground straps from the engine to the body or engine to the chassis and carefully inspect these. Try to get your eyes and hands on all of these various ground connections and wires to inspect for loose connections, corrosion, oxidation and rust, frayed or broken wires, damaged connectors, evidence of overheating or arcing, and connections that may have been inadvertently left off or damaged during previous repairs.

If there are no obvious visual problems detected a voltage drop test should be performed on these ground circuits to locate excessive resistance in the circuits. The advantage of the voltage drop test is that the test is performed on a live circuit with current flowing; it is a "load test" of the circuit. The voltage drop test can often locate problems which cannot be easily seen during the visual inspection.

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