

Electrical Troubleshooting Checklist

- Verify the customer complaint
- Walk-around and look for unusual road signs... Things that are not normal.
- Connect to ET, and download a *Product Status Report* – Do the codes match the complaint?
- Verify that the machine's software is up-to-date. A software update can solve known problems
- Search SIS for Service Letters, TIB's, etc. Are any related to the customer complaint?

Free and Easy Stuff:

Remember: Every electrical problem is caused by a change in resistance... You just need to find it.

1. After each of these steps, verify the problem still exists.
2. If the problem changes or goes away with any of these steps, investigate further.

NOTE: Depending on the machine you are troubleshooting, some of the steps below will be easier or harder. Perform these in any order from the easiest to the hardest:

- Verify battery voltage.
- Verify & clean BOTH battery terminals.
- Verify Fuses, replacing or re-seating as necessary.
- Verify all ground straps and ground wires.
 - Anything bolted to the frame must be clean and make good electrical contact.
- Pull on wires and harnesses, and inspect for any obvious damage.
- Remove connectors, and inspect for obvious blue/green or rust-colored corrosion

SIS & ET

If none of the "Free and Easy Stuff" changes the problem, open your laptop and start SIS & ET.

- Use ET Diagnostics to view & verify the active and logged diagnostic & event codes
- Follow every step of the SIS Troubleshooting tree.

Verify suspect components

- **Components:** (Troublesome relays, solenoids, lights, etc.)
 - Use Voltage Drops and "Divide and Conquer" to find parasitic voltage use
 - Verify current on a meter, *in series* with the input power pin
 - Verify power & ground wire integrity by bypassing with jumper wires
- **Sensors:** Refer to the Pull-Up Voltage Troubleshooting Guide

After 2 hours of troubleshooting, call a TC:

If the SIS Troubleshooting tree suggests replacing an expensive component such as a wiring harness, ECM, or difficult to access sensor, or if you have been troubleshooting for 2 hours, prepare your notes, and call a TC for advice and help.