



EQUIPMENT GROUNDING

Field Failure: The Power Touch System tests OK in the shop, but out in the field the entire system may turn itself off under heavy use.

Cause: The “Ground” path from PDC-12 back through the toolbox to the “C” Rail Frame and battery Neg. was inadequate.

Diagnosis: The PDCs were grounded to the toolbox that is mounted with brackets to the vehicle cross members which are then attached to the “C” Rail Frame. This multitude of daisy chained mechanical connections provides too many opportunities for vibration, and moisture, to eventually develop corrosion inside the assembled hardware until the electrical connection fails. This practice provides a predictably unreliable electrical ground return for the vehicles electrical system. The electrical equipment is designed to operate with 12vDC and will operate reliably with supply voltages between 10.5v - 14.5v. If poorly grounded, the voltage available to the equipment will decrease as the load current increases until this low voltage threshold is crossed and the equipment stops working.

Field Service: Customer installed a ground cable directly from the GND stud inside the PDC-12 to the “C” Rail frame.

Recommended Corrective Action: During installation of all PowerUp electrical equipment a proper electrical ground, independent of the mechanical ground, shall be installed. A single ground needs to run from the GND post inside the equipment to the drivers side “C” Rail through a proper wire gauge for the the product. The ground cable connectors shall only be crimped with an approved ratcheting crimp tool specifically designed for the size wire and connector used. The connection to the frame will be made with a properly tensioned nut and bolt to clean bare metal or to a similarly clean welded stud.