

Engineering Change Order: PowerStation G-3500 Cabinet Door Seal & EPDM Gasket Upgrade

ECO Tracking Identifier: ECO-2024-052

Target Platform: Gigavolt PowerStation G-3500 (Model: G-3500)

Effective Manufacturing Date: January 5, 2025

Impacted Subsystem: Mechanical Enclosure — Exterior Access Doors

Originating Engineer: Rachel Lin, Enclosure Environmental Durability Lead

Reason for Change

Over a six-month operating period, warranty claim records (Warranty_Claims) documented an elevated frequency of humidity alarms (ERR_SENS_005) and tracking-induced isolation faults (ERR_ISO_109) on G-3500 commercial units located in coastal marine climates (e.g., Corpus Christi, TX and Tampa, FL). Physical audit revealed that the factory-installed open-cell neoprene foam door gasket (Part Number: GSK-DR-1200) absorbed ambient airborne moisture and experienced premature elastic loss under intense solar UV exposure, allowing driving rain and salt-fog ingress through cabinet seams.

Engineering Specification Change

- Old Gasket Material:** Open-cell cellular neoprene foam strip GSK-DR-1200.
- New Gasket Material:** Dual-durometer closed-cell Ethylene Propylene Diene Monomer (EPDM) hollow D-bulb extrusion with integrated stainless-steel mechanical spring retention core (Part Number: GSK-DR-EPDM-02).
- Environmental Rating:** Continuous ozone and UV resistance per ASTM D1149; operational temperature rating from -40 °C to 125 °C. Ingress protection rating upgraded from IP54 to IP66 across all exterior door perimeters.

Field Action and Retrofit Kit

- Kit Identifier:** Retrofit Kit RET-G35-052 (Includes 22 meters of GSK-DR-EPDM-02 gasket strip and surface prep solvent wipes).

- **Field Requirement:** Any technician dispatched for [ERR_SENS_005](#) or quarterly routine service in coastal counties (within 50 miles of coastline) must remove legacy neoprene stripping, clean door flanges with isopropyl alcohol, and install the upgraded EPDM gasket strip.