

CIL
END CRITICAL ITEMS LIST

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| NAME P/N QTY | CRIT | FAILURE MODE & CAUSES | FAILURE EFFECT | RATIONALE FOR ACCEPTANCE |
|---|------|--|--|--|
| CAUTION AND WARNING SYSTEM SWITCH, ITEM 368 ----- 84767792-2 (1) | 2/2 | 368P007: Switch jams in the proceed position or proceed contacts weld. CAUSE: Contact weld caused by arcing or a failure of the hermetic seal and exposure to vacuum, jamming; shorting due to contamination. | END ITEM: Unable to display CMS status information. E/E INTERFACE: Loss of capability to display EMI data. Loss of capability to access status. MISSION: Terminate EVA. CREW/VEHICLE: None. | A. Design - Switch mechanism and contacts enclosed in a hermetically sealed case backfilled with dry nitrogen. The switch is designed to withstand a toggle force of 25 lbs. without degradation in subsequent performance. Contact is accomplished through a roller type contact. This keeps switch forces to a minimum. The toggle/case interface is accomplished through a welded bellows which keeps switching forces to a minimum. B. Test - Component Acceptance Test - Vendor acceptance tests include 500 actuation cycles, contact resistance, and dielectric withstanding voltage tests. In-process Test - Switch operation and continuity are verified during in-process tests during DCN item 350 assembly. PDA Test - Proper operation is verified during DCN PDA which includes continuity, functional tests, and operating torque. The switch is vibrated and exposed to thermal cycles during PDA as part of the DCN. Certification Test - The item completed the 15 year structural vibration and shock cert requirement during 10/83. The item was cycle certified by completed 127,000 cycles during B/B5. No Class I engineering changes have been issued since this configuration was certified. C. Inspection - To preclude failure due to internal contamination, the switches are assembled by the vendor in a Class 100,000 clean room. These switches are flushed internally using chloroethane 80 and Genesolve D to remove contaminants prior to case welding. After welding, the switches are vacuum baked and backfilled with GN2 to a pressure of 3-5 psig and sealed. Leak checks are performed during subsequent processing to verify seal integrity. X-ray inspections are performed, prior to run-in cycling and after vibration, to |

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 EMU CRITICAL ITEMS LIST

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|--------------------|------|-----------------------------|----------------|---|
| | 2/2 | 360FMD7: | | <p>verify absence of weld splatter and loose pieces, and to verify alignment.</p> <p>D. Failure History - None.</p> <p>E. Ground Turnaround - Tested per FEMU-R-001, Transducer and DCN Gage Calibration Check.</p> <p>F. Operational Use - Crew Response - PreEVA: If detected during EMU checkout or programmed leak check, discontinue use of EMU. Use third EMU if available. EVA: When detected during periodic status check, troubleshoot using RIGS. Terminate EVA. Training - Standard EMU training covers this failure mode. Operational Considerations - EVA checklist procedures verify hardware integrity and systems operational status prior to EVA. Flight rules define go/no go criteria related to EMU CVS. Real Time Data System allows ground monitoring of EMU systems.</p> |