NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
CAUTION AND WARNING SYSTEM SWITCH, ITEM 368 SV767792-2 (1)	2/2	368FM05: Switch jams in off position. CAUSE: Contamination.	END ITEM: Unable to request status displays, acknowledge warnings or recall fault messages. SFE INTERFACE: Loss of display capability and unable to acknowledge fault messages. MISSION: Loss of use of one EMU. Terminate EVA. CREW/VEHICLE: None.	A. Design - Switch mechanism and contacts encased in a hermetically sealed case back-filled 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, and operating torque tests. 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 requirements during 10/85. The item was cycle certified by completing 127,000 cycles during 8/85. No Class I Engineering changes have been issued since this configuration was certified. C. Inspection - The external lead wires are inspected for damage as part of source inspection for the part and again during assembly of the DCH. To preclude failure due to internal contamination, the switches are assembled by the vendor in a Class 100,000 clean room. The switches are flushed internally using chlorothane NU and Genesolve D to remove contaminants prior to glass welding. After welding the switches are vacuum baked and back filled with GN2 to a pressure of 3-5 psig and sealed. Leak checks are performed during subsequent

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	2/2	368FM05:		processing to verify seal integrity. X-ray inspections are performed, prior to run-in cycling and after vibration, to verify absence of weld splatter and loose pieces, and to verify contact alignment. B. Failure History - None. E. Ground Turnaround - Tested per SEMU-E-801, DCH Display Verification. 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 RTDS. 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 CWS. Real Time Data System allows ground monitoring of EMU systems.