

NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
POROUS PLATE SUBLIMATOR, ITEM 140 ----- SV783850-24 (1)	2/1R	Internal leakage, coolant to feedwater circuit.	END ITEM: Water flow path from coolant loop (15 psi) to feedwater loop.	A. Design - The interface between the feedwater and coolant circuits consists of a .06 thick welded cover plate in the main sublimator. The supplemental sublimator interface is a parent material separator.
OR ----- SV805279-5 (1)		Structural failure, pin hole in parting sheet.	GFE INTERFACE: Increase in pressure in the feedwater circuit causing a possible breakthrough. Breakthrough results in loss of EMU cooling/defog capability.  MISSION: Terminate EVA.	B. Test - Component Acceptance Test - A leakage test is performed on the coolant loop per AT-E-140-2. With the coolant loop pressurized to 28.1 - 29.1 psig, and the feedwater loop open to ambient, leakage is observed for 60 minutes minimum and must not exceed 3 scc/hr.  PDA Test - None.  Certification Test - Certified for a useful life of 25 years (ref. EMUM1-0243, EMUM1-1269).
			CREW/VEHICLE: None for single failure. Possible loss of crewman with loss of SOP.	C. Inspection - Inspection of the EB weld joint includes x-ray, penetrant, and visual inspections per HS1442CLI. HS1442 CLI calls for 100% x-ray examination, 100% magnetic or penetrant inspection and 100% visual inspection of the weld joint. The first piece welded must be destructively evaluated for penetration and weld defects by a metalgraphically prepared cross section at no less than 100x magnification. During in-process manufacture, the weld joint is leak tested using nitrogen pressurized to 37.5-42 psig.
			TIME TO EFFECT /ACTIONS: Minutes. Activate the SOP for defog by opening the purge valve.	D. Failure History - None.  E. Ground Turnaround - Tested for non-EET processing per FEMU-R-001, Water Servicing, Leakage, and Gas Removal. FEMU-R-001 Para 8.2 EMU Preflight KSC Checkout for EET processing.
			TIME AVAILABLE: Minutes.	F. Operational Use - Crew Response - EVA: When CWS data confirms increase in sublimator pressure trouble-shoot problem. If cooling insufficient or helmet fogging, terminate EVA. Open helmet purge vlv to anti-fog helmet if required.
			TIME REQUIRED: Seconds.	Training - Crewmen are trained for one man EVA scenario. Operational Considerations - Flight rules define go/no go criteria related to EMU thermal control. Flight rules define EMU go to remain on SCU (available for rescue if required). EVA checklist and FDF procedures verify hardware integrity and systems operational status prior to EVA. Real Time Data System allows ground monitoring of EMU systems.
			REDUNDANCY SCREENS: A-PASS	

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140FM06A

B-PASS  
C-PASS

EXTRAVEHICULAR MOBILITY UNIT  
SYSTEMS SAFETY REVIEW PANEL REVIEW  
FOR THE  
I-140 SUBLIMATOR  
CRITICAL ITEM LIST (CIL)

EMU CONTRACT NO. NAS 9-97150

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