

NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
PACKAGING (PLSS), ITEM 100 (PIVOTED) ----- SV799100-14 (1) OR (PLANAR) ----- SV799100-15 (1) OR (ORU) ----- SV799100-16 (1)	2/1R	100FM02 External water leakage. Make-up water tube ruptures.	END ITEM: Water leakage to ambient. GFE INTERFACE: Depletion of the water reservoir. Possible helmet fogging. MISSION: Terminate EVA when the water supply drops below CWS limits. CREW/VEHICLE: None for single failure. Possible loss of crewman with loss of SOP. TIME TO EFFECT /ACTIONS: Minutes. If EVA, return to the vehicle when CWS warning is issued. If there is insufficient water to provide defog, activate the SOP. TIME AVAILABLE: Minutes. TIME REQUIRED: Seconds. REDUNDANCY SCREENS:	A. Design - The maximum operating pressure in this tube results from the supply pressure at the Primary Water Tank Assembly. The tube material is AMS 5571 (347 Stainless Steel). The minimum wall thickness is .018 in., which makes this .125 in. O.D. (nominal) tube a thick-walled cylinder. The minimum tube factor of safety is 590 at burst pressure of 40 psid and 1179 at maximum operating pressure of 20 psid. The tube retainer (SV774103-3) located at the Item 127/128 housing module is fabricated of AMS 5512 (347 Stainless Steel). The retaining clips minimum factor of safety is 6.6 at maximum operating pressure compared to the allowable yield stress. B. Test - Component Acceptance Test - The tube undergoes a proof pressure test and a leakage test per SV784989 operation sheets. The tube is pressurized to 30 +/- psid and there shall be no permanent deformation. The tube is then pressurized to 20 +/- psig and there shall be no leakage present. PDA Test - An external leakage test is performed per SEMU-60-010. The water loop is pressurized to 15.8 +/- psig with water. The measured leakage is not to exceed 6 cc/Hr. Certification Test - Certified for a useful life of 20 years (ref. EMUM1-0106). C. Inspection - The interfacing surfaces between the tube, the Item 171/172 housing, and the valve module bore are 100% inspected to meet dimensional and surface finish requirements. The O-seals are inspected for surface finish characteristics per SVHS3432: 100% for Class I and II. D. Failure History - H-EMU-100-A010 (9-2-87) Water leakage was noted at interface between the {171} outlet bore and the H2O make-up tube fitting. Corrective Action: Additional assembly instructions were added to check for proper engagement of the tube prior to clamping. E. Ground Turnaround - Tested for non-EET processing per FEMU-R-001. Water servicing. Leakage and Gas Removal. None for EET processing. F. Operational Use - Crew Response - EVA: When CWS data confirms activation of reserve water tank, terminate EVA. Training: Standard training covers this failure mode. Operational Considerations: EVA checklist procedures verify hardware integrity and system operational status prior to EVA. Flight rules define go/no go criteria related to thermal control. Real time data system allows ground monitoring of EMU systems.

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100FM02

A-PASS
B-PASS
C-PASS

EXTRAVEHICULAR MOBILITY UNIT
SYSTEMS SAFETY REVIEW PANEL REVIEW
FOR THE
I-100 PRIMARY LIFE SUPPORT SUBSYSTEM (PLSS)
CRITICAL ITEM LIST (CIL)

EMU CONTRACT NO. NAS 9-97150

Prepared by: *J. Johnson* 3/27/02
HS - Project Engineering

Approved by: *RMB* 4/11/02
~~NASA - SSA/SSM~~

M. Snyder
HS - Reliability

L. Pence 4/16/02
~~NASA - SSA/SSM~~

Alan H. Poyler Jr R. Mc
HS - Engineering Manager

J. F. ... 5/8/02
~~NASA - SSA/SSM~~

Boyd J. ... 5-3-02
~~NASA - SSA/SSM~~

Chick ... 5/7/02
~~NASA - SSA/SSM~~

G. ... 5-10-02
~~NASA - Program Manager~~