NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
		102FM25A		
MULTIPLE CONNECTOR (HUT HALF) ITEM 102 --- A/L 9694-08 (1)	2/2	Fails to remain engaged. Defective lock/spring; loss of latch keeper screw.	END ITEM: Loss of LCVG water flow. GFE INTERFACE: No liquid cooling supplied to suit. MISSION: Terminate EVA CREW/VEHICLE: None. TIME TO EFFECT /ACTIONS: Minutes. TIME AVAILABLE: Minutes. TIME REQUIRED: Seconds. REDUNDANCY SCREENS: A-N/A B-N/A C-N/A	A. Design - The HUT MWC is designed to automatically lock to the LCVG MWC side when the catch slide is engaged by the steel pin located on the front surface of the LCVG MWC. When activated, the latch plate automatically slides sideways, two engagement dogs on the latch plate are captured in the LCVG MWC housing groove and the automatic lock is captured by the latch keeper. The redundant lock-lock slide is manually activated. The automatic lock is fabricated from stainless steel for strength and endurance. The lock compression spring is a standard AISI type 302 stainless steel spring. All sliding surfaces of the latch plate and locks are coated with a dry film lubricant (Dow Corning 321) for ease of operation. The proper selection of materials including 6061 T6 aluminum for the housing and latch keeper, 302 stainless for the springs and 17-4 ph for the latch, in concept with correct tolerancing and machining of the components precludes acceptance of defective materials. Incidence of missing latch keeper screws is precluded in design by adherence to standard engineering torque requirements for screw installation and via use of self locking screws. B. Test - Acceptance: An engagement force verification test is performed on each MWC per airlock ATP 9694-08 prior to acceptance by ILC. PDA: During PDA, an engagement force verification test is performed on the MWC per ILC Document 0111-70028J (Pivoted HUT) or 0111-710112 (Planar HUT). Certification: The MWC was successfully tested (manned) during SSA certification to duplicate operational life. (Ref. Em 83-1083, ILC Report 0111-70027 and EM 98-0008). The following usage reflecting requirements of significance to the MWC was documented during certification: Requirement / S/AD / Actual MWC Actuation Cycles: 300 / 1080 Pressure Hours: 458 / 916 Pressure Cycles: 300 / 600 C. Inspection - At Airlock, visual inspection and dimensional verification is performed per ATP 9694-08. During PDA, the connector subjected to visual inspection and five engagement cycles per ILC Document 0111-70028J (Pivoted HUT) or 0111-710112 (Planar HUT). It is also inspected for cleanliness to VC level. D. Failure History - B-EMU-102-A014 (8/30/89) - The HUT side MWC latch plate would not slide laterally into the locked position due to a cocked dovetail groove of the latch keeper which impeded latch plate lateral movement. Revised Maintenance Manual assembly procedures ensure keeper (dovetail) is contacting the two locating set

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		102FM25A		screws prior to torquing the keeper attachment screws in place. E. Ground Turnaround - Tested for non-EET processing per FEMU-R-001, SSA Connector Verification. FEMU-R-001 Para 8.2 EMU Preflight KSC Checkout for EET processing. Every 369 days the MWC is disassembled, inspected, cleaned, lubricated. Following reassembly gas and water (Structural and leakage) tests and subjective engagement evaluation are performed at the SEMU or EMU level. F. Operational Use - Crew Response - Pre/post-EVA : If detected during LCVG connection to HUT, troubleshoot problem. Attempt In-Flight maintenance to correct problem. If failure not detected, no response. EVA: No response, failure not detectable by crew or ground. Special Training - No training specifically covers this failure mode. Operational Considerations - EVA checklist procedures verify hardware integrity and systems operational status prior to EVA. EMU checkout during EVA prep.

EXTRAVEHICULAR MOBILITY UNIT

SYSTEMS SAFETY REVIEW PANEL REVIEW

FOR THE

I-102 HARD UPPER TORSO (HUT)

CRITICAL ITEM LIST (CIL)

EMU CONTRACT NO. NAS 9-97150

Prepared by: _____ 3/29/02
HS - Project Engineering

Approved by: _____
NASA - SSA/SSM

_____
HS - Reliability

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HS - Engineering Manager

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NASA - S&MA

_____ 5/23/02
NASA - MOD

_____ 6/04/02
NASA - Crew

_____ 6/14/02
NASA - Flight Ops Manager