

12/24/94 SUPERSEDES 12/24/92

ANALYST:

NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
COMMON MULTIPLE CONNECTOR, ITEM 430 ----- SV778872-18 (?)	2/2	410FM07: Fails latch closed, SCU "I" handle. CAUSE: Failure, binding of locking mechanism, jamming of one or more couplings.	END ITEM: Unable to remove SCU from BCM. DFE INTERFACE: None. MISSION: Terminate EVA. Unable to conduct EVA with affected EMU. CREW/VEHICLE: None.	A. Design - Positive camming action by the SCU lever insures the axial engagement of the connector halves. The electrical connector, although rectangular, has a sufficiently flexible and floating part at the DCM half to allow easy connect/disconnect. Moment balance around the DCM latch shaft at the start of closing aids smooth mating. B. Test - Component Acceptance Test: Airlock ATP 9902-03 requires that 1005 + 30 psig (H2) oxygen ports, 22.5 + .5 psig (H2O), 22.5 + .3 psig (H2O) Potable Water Port, the maximum allowable connect/ disconnect force is 10 lbs. The required handle detent force is 0.5 to 3 lb. IPF: An in-process test is performed at R.S to check that the "I" handle is operative under a minimum force while the assembly is pressurized at working conditions. POA: An SCU "I" handle latch test is performed per SEMU-60-005. The force required to actuate the handle latch must be 2-6 lbs. Certifications: Item completed 3600 mtc/donate cycles to the Item 330 multiple connector in August 1985 fulfilling the certification requirement of 1493 cycles. Class I EC 42506-691 (elimination of the possibility of SCU loosening by increasing preload torque and utilizing Loctite) has been incorporated and certified by analysis/similarity since this configuration was certified. C. Inspection - Striding, failure of locking mechanism, jamming of one or more of the couplings. An in process test is performed at R.S./M.L. to cycle the engagement and pressurizing of the Item 10 times. An in process test is also performed to check that the item engages properly under a maximum force of ten pounds while it is pressurized at working conditions. R.S. source inspection visually inspects SCU connector, in addition to, Airlock final inspection.

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	2/2	410FND7;		

D. Failure History -
None.

E. Ground Turnaround -
Tested per FEMU-R-001, EMU Checkout in Orbiter, also
V1103-02, SCU/DCM Interface verification.

F. Operational Use -
Crew Response -
Pre/PostEVA: Troubleshoot problem. If no success,
discontinue use of SCU and EMU. Use third EMU if available.
Special Training - Standard EMU training covers this failure
mode.
Operational Considerations - EVA checklist procedures verify
hardware integrity and systems operational status prior to
EVA.