NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
COMMON MULTIPLE CONNECTOR, ITEM 410 --- SV778872-18 (1)	2/2	410FM01: External leakage, coupled, oxygen. CAUSE: Failure, coupling O-seal bypass leakage, defective interfacing dynatube hose or hose fitting leakage.	END ITEM: Leakage of vehicle oxygen supply to ambient. Unable to charge the PLSS primary O2 bottles if the leakage is excessive. OPE INTERFACE: Excessive consumption of vehicle oxygen. MISSION: Unable to use one EMU during EV activity if leakage is excessive. CREW/VEHICLE: None.	A. Design - The coupled oxygen supply fitting has three potential external leakage paths. One path is blocked by a single static radial O-Seal. The second leakage path contains a radial O-seal which slides axially along a sealing surface provided by the SCU connector plunger coupling end uncoupling. The O-ring seal design configurations, dimensions and rigidness of assembly, provide squeeze under all loading conditions. The third leakage path is by a dynatube fitting joint at the flex hose to SCU connector oxygen elbow. These fittings are required to have a 32 micro-inch maximum circular lap surface finish to preclude leakage. B. Test - Component Acceptance: Air-Lock, Inc. ATP 9902-06 requires that at 1005 + 32 - 0 psig (N2), the maximum allowable leakage is 5.0 scc/hr, coupled. IPT - An external leakage test is performed at H.S/H.L. (after O2 Compatibility Cycle Test) with the oxygen line coupled. NO visible leakage is allowed. PDA: The SCU oxygen circuit leakage tests are performed per SEMU-60-019. Before and after the Oxygen Compatibility Cycle Test, the multiple connector (with O2 line attached) is mated and pressurized with oxygen to 850-950 psia. Leakage is monitored for 10 minutes minimum and must not exceed 30 SCC/minute. Certification: Certification testing to be accomplished on new design. REF EC 163402-627-001. C. Inspection - Inspection - Airlock, Inc. visually inspects the SCU Half at final inspection. H.S source inspection visually inspects the SCU Half at final inspection.

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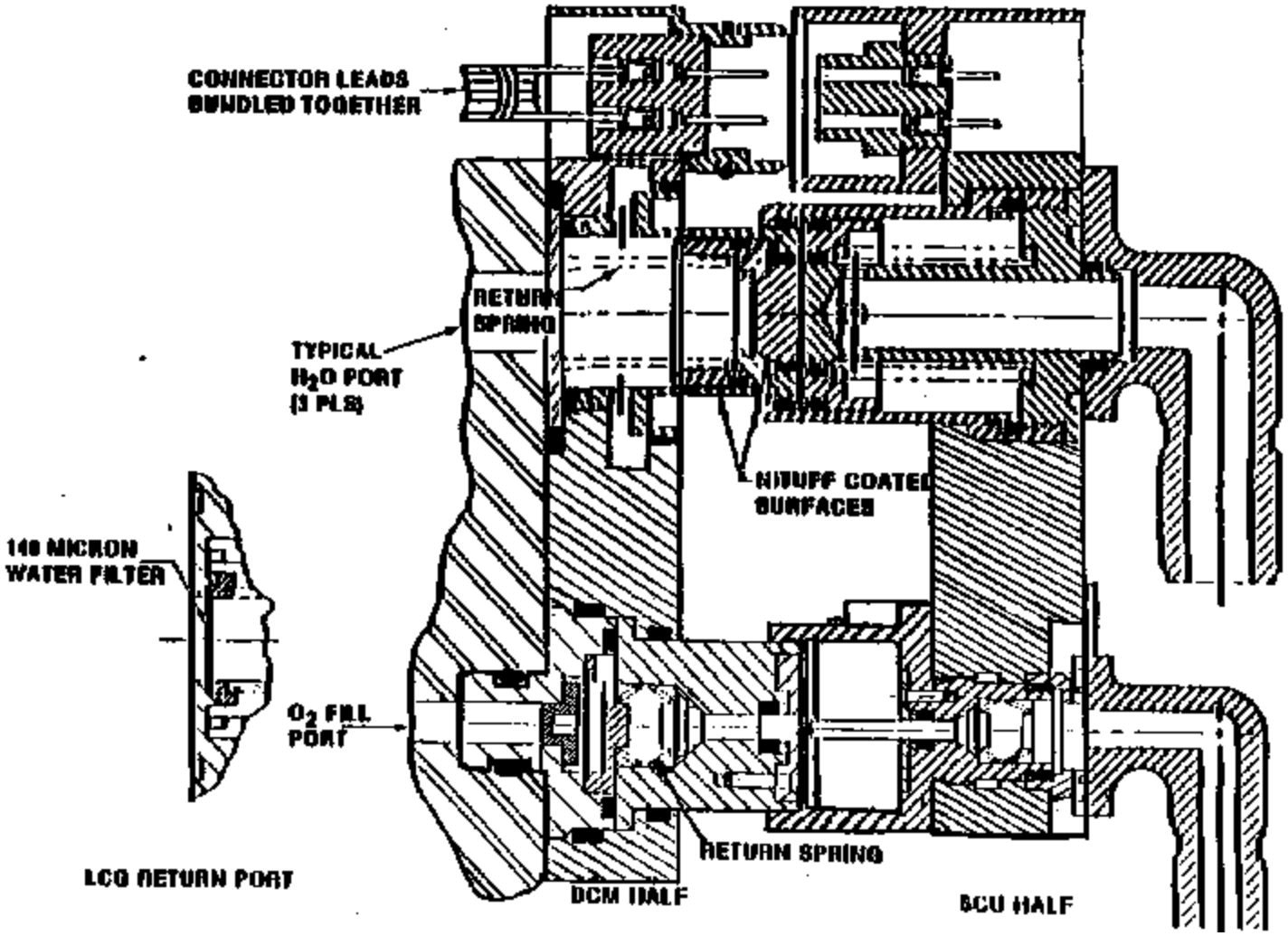
	2/2	410FM01:		

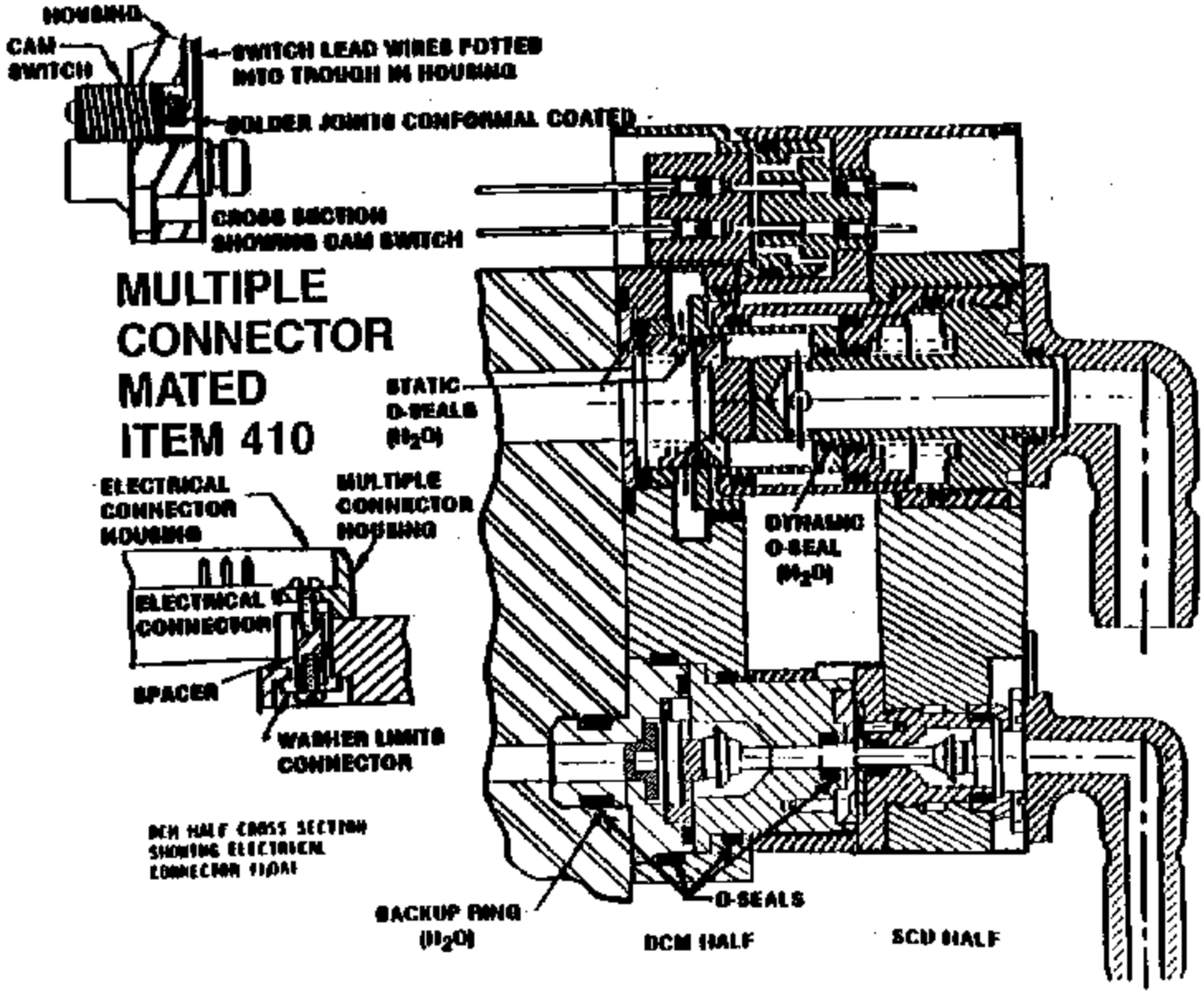
D. Failure History -
B-EMU-410-0001 (9/12/90) - Excessive leakage of SCU-side MVC 02 port due to cracks in the teflon impregnated hardcoat at the O-ring sealing surface. Leakage was initially masked by braycote lubrication which effectively provided a fluid seal at the 02 port O-rings until the braycote deteriorated over time. Per Catt Task L88-139, the 02 housing material was changed to Nitronic 60 to eliminate the hardcoat in new builds. Ref EC 163402-454-001.

E. Ground Turnaround -
Tested per FEMU-R-001, EMU checkout in Orbiter, V1103-02, Orbiter Oxygen System Functional Check.

F. Operational Use -
Crew Response -
Pre/PostEVA: Use airlock panel 02 valve to isolate leak between 02 recharge operations.
Special Training - Standard EMU training covers this failure mode.
Operational Considerations - EVA checklist procedures verify hardware integrity and systems operational status prior to EVA.

ITEM 410
MULTIPLE CONNECTOR DISCONNECTED




HOUSING
CAM SWITCH
SWITCH LEAD WIRES POTTED INTO TROUGH IN HOUSING
SOLDER JOINTS CONFORMAL COATED
CROSS SECTION SHOWING CAM SWITCH
MULTIPLE CONNECTOR MATED ITEM 410
STATIC O-SEALS (H_2O)
ELECTRICAL CONNECTOR HOUSING
MULTIPLE CONNECTOR HOUSING
ELECTRICAL CONNECTOR
SPACER
WASHER LIMITS CONNECTOR
DCM HALF CROSS SECTION SHOWING ELECTRICAL CONNECTOR FINAL
DYNAMIC O-SEAL (H_2O)
BACKUP RING (H_2O)
O-SEALS
DCM HALF
SCD HALF