

11
 CRITICAL ITEMS LIST
 FILE: CIL-PASS/2

NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
FAI/SEPAR- ATOR/ PUMP/MOTOR ASSEMBLY ITEM 129 S074794-B 111	2/10	129FH001: EXTERNAL LEAKAGE, MAYEN. CAUSE: SEAL FAILURE.	END ITEM: WATER LEAKAGE TO AMBIENT. O/E INTERFACE: DEPLETION OF THE WATER RESERVOIR & LOSS OF LEW COOLING. POSSIBLE HELMET FOGGING. MISSION: TERMINATE EVA WHEN THE WATER SUPPLY DROPS BELOW CR LIMITS. CREW/VEHICLE: NONE FOR SINGLE FAILURE. POSSIBLE LOSS OF CREWMAN WITH LOSS OF SOP.	A. DESIGN - INIT HAS LEAKAGE PATHS THROUGH ANEAL "O" SEALS (VITON) ON INLET AND OUTLET TUBES; A CLAMP ON THE OUTLET TUBE PREVENTS DISMOUNTMENT OF SEAL. "B" RING SEAL CONFIGURATION DIMENSION AND RIGIDNESS OF ASSEMBLY PROVIDE SQUEEZE UNDER ALL LOAD CONDITIONS. OPERATING FLUID TEMPERATURE AND PRESSURE ARE NOT EXTREME. FLUID IS ACG OUTLET WATER AT 20 PSIG. B. TEST - CERTIFICATION TEST - THE ITEM COMPLETED 10,000 HOURS OF OPERATION AND 8,400 ON/OFF CYCLES EXCEEDING THE 15 YEAR CERT. REQUIREMENT BY MORE THAN A FACTOR OF TWO. THE 15 YEAR STRUCTURAL VIBRATION, ELECTRICAL VIBRATION AND DESIGN SINCE HAS COMPLETED 12/84. THE FOLLOWING ENGINEERING CHANGES HAVE BEEN INCORPORATED AND CERTIFIED SINCE THIS CONFIGURATION WAS CERTIFIED: 4200A-142-35 (CHANGE POWER CONSUMPTION REQUIREMENT - NONE INPS), 42004-404 (INCORPORATE MOUNTING SO BEARING), 42006-824 (SEAL CUP CHANGE TO ASSURE A GOOD MOUNT), 42006-838 (WATER PUMP CHANGES FOR INSPECTION IN AREAS SUSCEPTIBLE TO CONTAMINATION, MOVE BREAK EDGES AND BEARING OPERATIONS TO CLOSE FOR J-EMB-923-0100, 42008-134 (CHANGE BEARING LIMITED LIFE REQUIREMENT. COMPONENT ACCEPTANCE TEST - INTERNAL AND EXTERNAL LEAKAGE ARE CHECKED BY PRESSURIZING THE WATER CIRCUIT TO 24-30 PSIA GME. THE ITEM IS IN CHAMBER VACUUM. ALONG WITH THE VENT OUTLET (LEAKAGE FROM THE VENT OUTLET INDICATES INTERNAL LEAKAGE). LEAKAGE AS MEASURED WITH A MASS SPECTROMETER SHALL NOT EXCEED 6.3 X 10-2 SCC/SEC. HE. *SEE PRA TESTING PER: SEM-60-010. WITH THE ITEM INSTALLED ON THE PLSS, A COMBINED WATER CIRCUIT LEAKAGE IS PERFORMED. INTERNAL AND EXTERNAL LEAKAGE WOULD BE VERIFIED. THE ITEM IS PRESSURIZED 15.7-16.9 PSIG H2O AND LEAKAGE IS MEASURED OVER A 60 MINUTE PERIOD WITH A VOLUOMETRIC MICROMETER. LEAKAGE SHALL BE LESS THAN 6 CC/HR. THIS VALUE IS A SYSTEM LEAK RATE.

CIL
 CRITICAL ITEMS LIST
 FILE: CIL-PL99/2

NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	WARRANTABLE FOR ACCEPTANCE
FAN/SEPAR- ATOR/ PUMP/MOTOR ASSEMBLY ITEM 325 SV787994-B (1) FC78-R B	Z/BR	BEARING EXTERNAL LEAKAGE, WATER. EVA.		<p>C. INSPECTION - THE BEARING CARRIER AND SEAL CUP O-SEAL GROOVES ARE 100% INSPECTED FOR PROPER DIMENSIONS AND SURFACE FINISH REQUIREMENTS TO ACHIEVE PROPER O-SEAL SQUEEZE. THE PUMP HOUSING BORE WHICH INTERFACES WITH THESE O-SEALS IS ALSO 100% INSPECTED FOR SIZE AND SURFACE FINISH. THE PUMP OUTLET AND INLET PUMP BRANZED ADAPTER FITTINGS ARE 100% INSPECTED FOR O-SEAL GROOVE SIZE AND DIMENSIONS AND SURFACE FINISH REQUIREMENTS. FILTER MATHING BORES IN THE ITEM 327/328 FILTER ASSEMBLY AND VALVE NOZZLE ARE 100% INSPECTED FOR SIZE AND SURFACE FINISH. OUTLET TUBE CLAMP IS TORQUED PER S/P SPEC WITH AN ASSEMBLY NOTE THAT STATES "KEEP CLAMP FROM IDENTIFYING WHILE TORQUING". THIS PROCEDURE PREVENTS THE CLAMP FROM ROTATING INTO THE TUBE POSSIBLY CAUSING DAMAGE/PIN-HOLE LEAKS, ETC. VERIFICATION OF TORQUE ALSO ASSURES THAT THE TUBE WILL REMAIN STATICALLY POSITIONED WHEN ASSEMBLED. AN IN-PROCESS TEST IS PERFORMED WHICH VERIFIES PUMP FLOW. ANY LEAKAGE WOULD BE NOTED DURING THIS TEST. AT THE SV772277-B WATER PUMP ASSEMBLY LEVEL, A FLOW VS. RPM DELTA-P ENGINEERING DATA MAPPING TEST IS PERFORMED ON THE WATER PUMP ASSEMBLY, AND LEAKAGE WOULD BE NOTED DURING THIS TEST.</p> <p>D. FAILURE HISTORY - NONE.</p> <p>E. CORING TOWARDEND - TESTED PER FEMU-R-001, WATER SERVICING, LEAKAGE, AND GAS REMOVAL.</p> <p>F. OPERATIONAL USE - CREW RESPONSE EVA: HIGH CMS DATA CONFIRMS DEPLETION OF PRIMARY WATER TANKS. TERMINATE EVA. CONSIDER VACUUM WATER RECHARGE TO RECOVER EHU OPERATION. TRAINING- STANDARD EHU TRAINING COVERS THIS FAILURE MODE. CREWMAN ARE TRAINED ON VACUUM WATER RECHARGE PROCEDURES. OPERATIONAL CONSIDERATIONS FLIGHT RULES DEFINE CO/NO GO CRITERIA RELATED TO EHU BUT THERMAL CONTROL. FLIGHT RULES DEFINE EHU TO REMAIN ON SCU (AVAILABLE FOR RESUME IF REQUIRED). EVA CHECKLIST PROCEDURES VERIFY HARDWARE INTEGRITY AND SYSTEMS OPERATIONAL STATUS PRIOR TO EVA. REAL TIME DATA SYSTEM ALLOWS DROUD MONITORING OF EHU SYSTEMS.</p>