

CIL
 CRITICAL ITEMS LIST
 FILE: CIL-SOP/2

NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
PRESSURE TRANSDUCER 176H 216 SV779073-4 (1) FC192-1 6	2/1R	216FN00B; EXTERNAL GAS LEAKAGE. CAUSE: FAILURE OF SEAL.	END ITEM: LEAKAGE OF EMERGENCY OR SUPPLY TO AMBIENT. O/E INTERFACE; LOSS OF THE SOP OZ SUPPLY. HISSON; TERMINATE EVA, LOSS OF USE OF ONE CHL. CREW/VEHICLE; NONE FOR SINGLE FAILURE, POSSIBLE LOSS OF CREWMAN WITH LOSS OF PLSS.	A. DESIGN - EXTERNAL LEAK PATH IS THROUGH A RADIAL SILICONE "O" RING SEAL WHICH HAS A BACK UP RING (DEFEND) UPSTREAM, AND ALSO A METAL TO METAL INTERFACE. THE "O" RING SEAL DESIGN CONFIGURATION DIMENSIONS AND RIGIDNESS OF ASSEMBLY PROVIDE SQUEEZE UNDER ALL LOAD CONDITIONS AND ENVIRONMENTAL CONDITIONS. B. TEST - COMPONENT ACCEPTANCE TEST - ONE PRESSURE TRANSDUCER IS TESTED FOR EXTERNAL LEAKAGE PER SYMS9105 PARA. 3.2.2.2. LEAKAGE SHALL NOT EXCEED 1.0×10^{-8} SCC OF HELIUM/SEC. WHILE PRESSURIZED TO 7400 +/- 600 PSIG. CRJ PDA TEST - THE INTEGRITY OF THE ITEM IS VERIFIED BY PROOF AND LEAKAGE TESTS, PLUS A TRANSDUCER CHECK TEST. THE ITEM IS PROOF PRESSURE TESTED AT 10,900 -31,500 PSIG ONE FOR 5 MINUTES MINIMUM, AND THEN VISUALLY INSPECTED FOR EVIDENCE OF DISTORTION, CRACKS, OR OTHER DEFECTS. SEQUENTIALLY, THE ITEM IS EXTERNALLY LEAK TESTED WITH A 2% ONE AND 90% ONE MINIMUM AT A PRESSURE OF 6000 - 4200 PSIG IN CHAMBER VACUUM. LEAKAGE MUST NOT EXCEED 5.55×10^{-8} SCC/SEC ONE. 5.55×10^{-8} SCC/SEC ONE REPRESENTS TOTAL END ITEM (SOP) LEAKAGE. * CERTIFICATION TEST - SUCCESSFULLY COMPLETED THE EXTERNAL LEAKAGE REQUIREMENT WITH AN ACTUAL LEAK RATE OF 1.5×10^{-8} SCC/SEC ONE ISPEC. REQUIREMENT IS 5.5×10^{-8} . THIS IS RECORDED IN TER3310 (30-16-02). THE PRESSURE TRANSDUCER COMPLETED THE 10 YEAR STRUCTURAL VIBRATION AND SHOCK CERTIFICATION REQUIREMENT DURING 10/03. C. INSPECTION - THE SEAL WHICH IS USED WHEN INSTALLING THE PRESSURE TRANSDUCER INTO THE SOP IS 100% INSPECTED FOR DIMENSIONAL AND SURFACE FINISH REQUIREMENTS. DETAILS, INCLUDING THE O-RING GROOVES AND SEALING SURFACES, ARE 100% INSPECTED PER DRAWING DIMENSIONS AND SURFACE FINISH CHARACTERISTICS. D. FAILURE HISTORY - NONE. E. GROUND FORWARDING - TESTER PER FE001-R-001, SOP PREFLIGHT PROCESSING, EXTERNAL LEAKAGE.

CEL
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NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
PRESSURE TRANSDUCER ITEM #18 6V770475-4 111	E/IR	#15FWB19 INTERNAL GAS LEAKAGE.		F. OPERATIONAL USE - CREW RESPONSE - EVA: SINCE EVA TERMINATION SHOULD BEGIN AS SOON AS SOP IS FLOWING, CREW RESPONSE IS TO ABORT THE EVA. TRAINING - STANDARD EMU TRAINING COVERS THIS FAILURE MODE. OPERATIONAL CONSIDERATIONS - REFERENCE LOGS/ FAILURE FLIGHT RULES: DEFINE AN EMU AS LOST FOR LOSS OF OPERATIONAL SOP. EVA CHECKLIST AND FOP PROCEDURES VERIFY HARDWARE INTEGRITY AND OPERATIONAL STATUS PRIOR TO EVA. REAL TIME DATA SYSTEM ALLOWS GROUP MONITORING OF EMU SYSTEMS.
FC192-2 A				