

CIL
 CRITICAL ITEMS LIST
 FILE: CIL-SOP/E

NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
PRESSURE GAUGE ITEM #886 SV770475- 13 111	2/10	2156/NO301; EXTERNAL OAS LEAKAGE. GALICE; SEAL FAILURE.	END ITEM; LEAKAGE OF EMERGENCY O2 SUPPLY TO ADJUTANT. DFE INTERFACE; LOSS OF BACKUP O2 SUPPLY WHEN THE SOP IS ON-LINE. MISSION; TERMINATE EVA WHEN CNG ISSUES THE LHM SOP PRESSURE WARNING. LOSS OF USE OF ONE END. CREW/VEHICLE; NONE FOR SINGLE FAILURE. POSSIBLE LOSS OF CREW/VAH WITH LOSS OF PLSS.	A. DESIGN - THE GAUGE TO REGULATOR SEAL IS A RADIAL SHOCKWAVE O-SEAL WITH A TEFLON BACKUP RING ON ONE SIDE AND A DELTA KEL-F BACK UP RING ON THE OTHER. THE SEAL DESIGN CONFIGURATION DIMENSION AND RIGIDNESS OF ASSEMBLY PROVIDE SQUEEZE UNDER ALL LOAD CONDITIONS. THE MAXIMUM EXPECTED NUMBER OF GAUGE OPERATING PRESSURE CYCLES DURING THE LIFE OF THIS ITEM IS 175, AND PROOF PRESSURE CYCLES IS 25. B. TEST - COMPONENT ACCEPTANCE TEST - THE REGULATOR MANUFACTURER, CIT PERFORMS AN EXTERNAL LEAKAGE TEST TO ASSURE SEAL INTEGRITY. GAUGE TESTS PERFORMED BY THE MANUFACTURER, KRATOS, WHICH WOULD DETECT A DEFECTIVE MATERIAL HEAT TREATMENT ON BRASS. THE SENSING TUBE IS SUBJECTED TO A 15,000 PSI STRESS PROOF TEST, 11,000 PSI PROOF TEST, 7,400 PSI CALIBRATION TEST AND AN EXTERNAL LEAKAGE TEST. THE GAUGE IS THEN TESTED BY THE REGULATOR MANUFACTURER, CTE. THE GAUGE IS SUBJECTED TO A 11,200 PSI PROOF TEST, A 7,400 PSI CALIBRATION TEST AND AN EXTERNAL LEAKAGE TEST.
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CIL
 CRITICAL ITEMS LIST
 FILE: CIL-589/2

NAME P/N QTY	CMT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
PRESSURE ORCE ITEM 213E SV778475- 13 11)	R/1N	213E P/WASD: EXTERNAL GAS LEAKAGE.		<p>POA TEST - THE ITEM IS PROOF PRESSURE TESTED AT 10,400 - 13,300 PSIG DUE TO 5 MINUTES MINIMUM, AND THEN VISUALLY INSPECTED FOR EVIDENCE OF DISTORTION, CRACKS, OR OTHER DEFECTS. SEQUENTIALLY, THE ITEM IS EXTERNALLY LEAK TESTED WITH A 22 HE AND 99% N2 GAS MIXTURE AT A PRESSURE OF 5000 - 6200 PSIG IN A CHAMBER VACUUM. LEAKAGE MUST NOT EXCEED 5.55 X 10⁻⁵ SCC/SEC HE 45.55 X 10⁻⁵ SCC/SEC HE MAX REPRESENTS TOTAL END ITEM (SOP) LEAKAGE I. THE ACCURACY OF THE ITEM IS CHECKED BY PRESSURIZING IT TO 2400 PSIG AND THEN COMPARING WITH A MINOR PRESSURE. THE TWO PRESSURES MUST AGREE WITHIN 400 PSI. UPON COMPLETION OF POA TESTING, THE ITEM IS VISUALLY FINAL INSPECTED FOR DAMAGE TO EXTERNAL SURFACES, MOUNTING POINTS AND GENERAL APPEARANCE.</p> <p>CERTIFICATION TEST - THE ITEM COMPLETED 800 PROOF AND 1250 OPERATING CYCLES DURING 4/79 TO FULFILL THE CYCLE CERTIFICATION OF 25 AND 500 CYCLES RESPECTIVELY. THE ITEM COMPLETED A 14,000 PSI TEST DURING 4/79 WHICH FULFILLED THE ALIST REQUIREMENT. THE ITEM COMPLETED THE 18 YEAR STRUCTURAL VIBRATION AND SHOCK CERTIFICATION REQUIREMENT DURING 10/03, AND CLASS I EC'S HAVE BEEN INCORPORATED SINCE THIS CONFIGURATION WAS CERTIFIED.</p>
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C11
 CRITICAL ITEMS LIST
 FILE: C11-SOP/Z

NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
PRESSURE GAGE BREM 2136 SV770475- 13 010	R/IN	INTERNAL GAS LEAKAGE.		<p>C. INSPECTION - A PREL ASSEMBLY IS PERFORMED ON ALL DEVICES AND THEN THEY ARE VISUALLY INSPECTED, THE TORQUE AND FINAL TORQUE OF ALL THREADED CONNECTIONS ARE VERIFIED BY VENDOR AND QC'S INSPECTION, THERE IS 100% INSPECTION, INCLUDING PROOF PRESSURE AND LEAKAGE TEST OF ALL THE ELEMENTS EXPOSED TO THE HIGH PRESSURE MEDIUM DURING VENDOR ACCEPTANCE TESTING PER DRAWING SV770475.</p> <p>D. FAILURE HISTORY - NONE.</p> <p>E. GROUND TOWARDING - TESTED PER ITEM-R-DO1, PRESSURE RISE CALIBRATION CHECK, SOP SERVICING FOR FLIGHT.</p> <p>F. OPERATIONAL USE - EMU RESPONSE - EVA: SINCE EVA TERMINATION IS REQUIRED AS SOON AS SOP IS FLIGHTING, CREW SHOULD ABOUT EVA WHEN EXCESSIVE SAP NOISE IS DETECTED. TRAINING - STANDARD EMU TRAINING COVERS THIS MODE, OPERATIONAL CONSIDERATIONS - EVA CHECKLIST PROCEDURES VERIFY AIRFRAME INTEGRITY AND SYSTEMS OPERATIONAL STATUS PRIOR TO EVA. FLIGHT RULES DEFINE CO/NO GO CRITERIA RELATED TO EMU PRESSURE INTEGRITY AND REGULATION, FLIGHT RULES DEFINE EMU AS LOST FOR LOSS OF OPERATIONAL SOP. REAL TIME DATA SYSTEM ALLOWS GROUND MONITORING OF EMU SYSTEMS.</p>
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