NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
VALVE, PITOT ACTUATED, ITEM 125 SV769480-4 (1)	2/1R	125FM03: External water leakage. CAUSE: Housing seal failure, valve push button shaft seal leakage.	END ITEM: Water leakage from internal passageway to ambient. EFE INTERFACE: Depletion of the water in reservoir to ambient. Loss of cooling. Possible helmet fogging. MISSION: Terminate EVA when the water supply drops below CWS limits. CREW/VEHICLE: None for single failure. Possible loss of crewman with loss of SOP.	A. Design - Housing bypass leakage and push button shaft leakage is prevented by radial elastomeric O-ring seals whose design dimensions and rigidness of assembly, provides O-ring squeeze under all temperature and pressure conditions. The O-seal material is fluorosilicone and is lubricated with Braycote 601. B. Test - Component Acceptance Test - The item is proof pressure tested by pressurizing each port separately for 5 minutes. The valve inlet and outlet are pressurized to 85.2 - 89.2 Psia. The pitot sense port is pressurized to 68.2 - 72.2 psia. Sequentially the item is externally leak tested by pressurizing the inlet to 61.7 - 63.7 psia and examining for bubble formation while submerged in water for 5 minutes. A second leakage test is performed by pressurizing the pitot sense port to 48 - 50 psig and examining for bubble formation while submerged in water for 5 minutes. PDA Test - The item is leakage tested in a system leakage test. With the item pressurized to 15.7 - 15.9 Psig, the leakage shall be 6 cc/HR maximum, as measured with a volumetric micrometer over a 60 minute period. This leakage represents system leakage. Certification Test - The item completed the 15 year structural vibration and shock certification requirement during 10/83. the item completed 4,000 pressure and 1,017 manual cycles during 3/85 and an additional 4000 manual cycles during 9/86, for a total of 5017 manual cycles. This fulfills the cycle certifcation requirements of 3,978 and 1,011 respectfully. No class I engineering changes have been incorporated since this time. C. Inspection - Cause - Housing seal failure. The sealing interfaces between the valve module housing and the valve housing are 100% inspected to meet dimensional and surface finish requirements. The O-seal is 100% inspected to meet

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	2/1R	125FM03:		dimensional and surface finish requirements. An inprocess test is run to check for external leakage past the valve housing seal. No leakage is allowed. Cause - Push button shaft seal failure. The sealing interfaces between the valve housing and the push button shaft are 100% inspected to meet dimensional and surface finish requirements. The O-seal is 100% inspected to meet dimensional and surface finish requirements. An inprocess test is run to check for external leakage past the shaft seal. No leakage is allowed. B. Failure History - M-EMU-125-0002 (5-21-81) External leakage was due to improperly seated diaphragm. The valve was reassembled properly with the same diaphragm and no leakage was found. Corrective action: An assembly fixture was made and caution notes were added to the valve op sheets. E. Ground Turnaround - Tested, per FEMU-R-001 water servicing, leakage and gas removal. F. Operational Use - Crew Response - Pre EVA: Trouble-shoot problem, if no success, consider EMU 3 if available. EMU go for SCU without fan. EVA: When CWS data confirms primary water tank depletion, terminate EVA. Consider vacuum water recharge to recover EMU operation. Training - Crewmen are trained on vacuum water recharge procedures. Crewmen are trained for one man EVA scenario. Operational Considerations - Flight rules define go/no criteria related to EMU thermal control. Flight rules define EMU as go to remain on SCU (available for rescue if required). EVA checklist and FOF procedures verify hardware integrity and systems operational status prior to EVA. Real Time Data System allows ground monitoring of EMU systems.