NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
WATER CHECK VALVE, ITEM 143 --- RW769406-2 (1)	2/1R	143FM02: Fails to open. CAUSE: Failure, diaphragm sticks to seat, plunger jams.	END ITEM: Blocked water flow path through valve seat. Unable to charge the reserve water tank with feedwater. OTE INTERFACE: Unable to supply an additional 30 minute feedwater supply upon depletion of the primary water tank during EVA. Possible helmet fogging. MISSION: None for single failure. No warning that 30 minute reserve water tank is empty. CREW/VEHICLE: None for single failure. Possible loss of crewman with loss of SOP.	A. Design - Teflon coating the valve seat minimizes stiction force on the elastomeric silicone diaphragm. The seat compression is controlled by a metal to metal stop. The plunger and bore are Teflon coated to reduce friction. B. Test - Component Acceptance: The item shall relieve at 0.3 - 1.0 psid and then after pressure has been increased sufficiently to fully open valve, the valve shall reseat at 0.3 - 1.0 psid. Note: Relief and reseat is the point when H2O drips out of valve at 1.0 cc/min or less. PDA: The item fails closed if no H2O from the reserve tank is measured, during reserve bladder expulsion test. The primary H2O tanks are expelled at bladder differential pressure of (O2 side) 14.6 - 15.7 psig and (H2O side) 13.2 - 14.2 psig. The amount of H2O shall be 8.3 lbs min. The differential pressure across the bladder is increased by reducing the pressure on the H2O side of the bladder to 4.5 - 5.5 psig. Water from the reserve bladder is expelled. Total water expelled shall be 0.83 lbs minimum and shall expell in 15 minutes. Certification: The item is cycle certified by similarity to the item 142. The item 142 completed 1,620 cycles during 1/82 which is 1.5 times the item 143 cycle certification requirement. No Class I engineering changes have been incorporated since this configuration was certified. C. Inspection - The diaphragm is 100% visually inspected under 10X magnification for meeting surface finish requirements and for surface defects. All diaphragms are manufactured in engineering approved molds to insure meeting the dimensional requirements. The valve seat is 100% inspected for being properly teflon coated.

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	2/HR	143FM02:		the interfacing surfaces between the plunger and the valve housing are 100% inspected to meet dimensional and surface finish requirements, as well as for being properly teflon coated. D. Failure History - M-EMU-100-A-005 (4-7-85) The secondary water tank bladder could not be charged with water because a drilled passage that connects the Item 143 bore to the water charging lines was not drilled. The operation sheets were revised to add inspection for passage intersections and the presence of burrs. E. Ground Turnaround - None. F. Operational Use - Crew Response. Pre EVA: No response, single failure undetectable by crew or ground. EVA: When CWS data confirms depletion of primary water, 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 go criteria related to EMU thermal control. EVA checklist and FDF procedures verify hardware integrity and systems operational status prior to EVA. Real time Data System allows ground monitoring of EMU systems.