NAME P/N QTY	END	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
RELIEF VALVE 3IEH 498 SV702696-3 (1)	1/0	498FN02: Fails open. CAUSE: Spring failure, jamming, contamination.	END ITEM: Suit gas leakage to ambient through poppet seat. EVE (INTERFACE: Inability to pressurize suit. MISSION: Loss of breath treatment capability. CREW/VEHICLE: Possible loss of crewman from decompression sickness.	A. Design - Spring Failure: The valve loading spring stress of 94ksi is 30% below the torsional yield. Because of the very short (0.015 inch) valve stroke, the spring is not subjected to significant fatigue loading. These conditions result in a conservatively stressed spring. Jamming: The pin and wheelbase of the valve guide provide close concentricity control while allowing free pitch and alignment to seat the valve. With this geometry, jamming due to side loads is prevented, while valve seating is maintained under all tolerance conditions. Contamination: An inlet filter protects the valve from particles greater than .086" in size. The valve seat, consisting of a sharp lip contacting an elastomeric seal, can accept tiny particles and maintain a seal. B. Test - Component Acceptance Test - The item is external leakage tested per vendor test sheets to 7.9-8.0 psi where a maximum leakage of 25.0 scc/min O2 is allowed, the item is also maximum flow, then reseat tested. Reseat must occur by 7.9 psig minimum. PDA Test - Both an external leakage, and reseat test, identical to the tests defined above, are conducted during PDA per SEMP-40-016 except maximum allowed external leakage is 25.0 scc/min O2. Certification Test - The DIA completed the following Certification Cycles in 9/90:

Test	Actual Cycles	Spec. Cycles
Proof Pres. (13.3 psi)	16	16
Crack/Res Flow	2108	2100
Mate Demate	598 Latch Seal	500 Latch Seal
Poppet Keeper Retraction	312	312
Burst Pres. (32.2 psi)	1	1

The DIA Assembly completed the 15-year random vibration (48 minutes per axis), sinusoidal vibration, design and bench quick testing in 9/89.

NAME P/N QTY	CRIT	FAILURE MODE & CAUSE	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
	1/1	403#M02#		

C. Inspection -
The springs and sliding surfaces of the poppet and housing are 100% inspected for dimensional and surface finish requirements. The parts are cleaned to level EM150E SVHS5150 prior to assembly.

D. Failure History -
A-EMU-405-0001 (11-30-87) - The relief valve leaked over specification due to contaminants preventing the poppet from fully seating on the valve body seat. As a result, a filter was installed in the vendor test rig immediately upstream of the item.

E. Ground Turnaround -
Tested per FEMU-R-001, DTA relief valve checkout.

F. Operational Use -
Crew Response -
Trouble shoot problem. Consider EVA to clean relief valve and use helmet purge valve to control suit pressure.
Training - Standard EMU training covers this failure mode.
Operational Considerations -
Not applicable.