

CRITICAL ITEMS LIST

ASSY NOMENCLATURE: ANTI-SUFFOCATION VALVE

SYSTEM: CREW ESCAPE SYSTEM

REVISION:

ASSY P/N: 12931G-02

SUBSYSTEM: LAUNCH ENTRY SUIT

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FMEA		NAME, QTY & DRAWING REF DESIGNATION	CRITY	FAILURE MODE AND CAUSE	FAILURE EFFECT ON END ITEM	RATIONALE FOR ACCEPTANCE
REF	REV					
1.2.2		ANTI-SUFFOCATION VALVE, (1) 18959G-03	1/1	1.2.2 Mode: Valve fails open Cause: • compression spring fails • contamination	Unable to provide 10-minute O ₂ supply	<p>1. DESIGN FEATURES TO MINIMIZE FAILURE MODE</p> <ul style="list-style-type: none"> a. The valve is protected by a windshield and dust cover. b. The valve closes at 0.10 psi vacuum. c. The valve has a dual stainless steel compression spring. d. The valve was previously used in the ejection escape suit and is used by the Air Force. <p>2. TEST OR ANALYSIS TO DETECT FAILURE MODE</p> <ul style="list-style-type: none"> a. <u>Acceptance Testing</u> <ul style="list-style-type: none"> (1) Valve flow test at 0.10 psi minimum vacuum, anti-suffocation valve will open and allow a minimum of 60.0 slpm flow. (2) Valve leak test at 0.10 psi minimum vacuum the valve shall not leak more than 100 scc/minute maximum. b. <u>Certification</u> <ul style="list-style-type: none"> (1) High altitude chamber testing by Brooks Air Force Base. <ul style="list-style-type: none"> (a) Unmanned testing series of gradual ascents and descents from ground level to 100,000 feet and rapid decompression. (b) Manned testing series. <ul style="list-style-type: none"> 1 Gradual ascents/descents to 100,000 feet. 2 Rapid decompression to 90,000 feet. 3 Endurance runs rapid decompression to 100,000 feet for 37 minutes. (2) Live jumped at Naval Weapons Center. <ul style="list-style-type: none"> (a) At 200 knots, 25,000 feet, four jumps. (b) At 110 knots, 10,000 feet, four jumps.

PREPARED BY: R. L. ALLISON

SUPERSEDING DATE:

APPROVED BY: J. O. SCHLOSSER

DATE:

CEE/LES-1

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CRITICAL ITEMS LIST

ASSY NOMENCLATURE: ANTI-SUFFOCATION VALVE

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FMEA		NAME, QTY & DRAWING REF DESIGNATION	CRIT'Y	FAILURE MODE AND CAUSE	FAILURE EFFECT ON END ITEM	RATIONALE FOR ACCEPTANCE
REF	REV					
1.2.2		ANTI-SUFFOCATION VALVE, (1) 18959G-03	1/1	1.2.2 Mode: Valve fails open Cause: • compression spring fails • contamination	Unable to provide 10-minute O ₂ supply	<p>(c) At 110 knots, 6,000 feet, four jumps. (d) At 170 knots, 15,000 feet, four jumps. (e) At 185 knots, 20,000 feet, four jumps. (f) Water drop at 30 feet per second (fps), two jumps. (g) Water drop at 27 fps, two jumps.</p> <p>(3) Valve flow test at 0.10 psi minimum vacuum, anti-suffocation valve will open and allow a minimum of 60.0 slpm flow.</p> <p>(4) Valve leak test at 0.10 psi minimum vacuum the valve shall not leak more than 100 scc/minute maximum.</p> <p>c. <u>Turnaround Testing.</u> (In accordance with PIA 23033)</p> <p>(1) Valve flow test at 0.10 psi minimum vacuum, anti-suffocation valve will open and allow a minimum of 60.0 slpm flow.</p> <p>(2) Valve leak test at 0.10 psi minimum vacuum the valve shall not leak more than 100 scc/minute maximum</p> <p>3. <u>INSPECTION</u></p> <p>a. One hundred percent visual inspection during assembly.</p> <p>b. Verify leakage is less than 100 scc/minute maximum.</p> <p>c. Verify flow is a minimum of 60 slpm at 3 inches of water maximum.</p> <p><u>Turnaround Inspection.</u> (In accordance with PIA 23033)</p> <p>a. One hundred percent visual inspection during assembly.</p> <p>b. Verify leakage is less than 100 scc/minute maximum.</p>

PREPARED BY: R. L. ALLISON

SUPERSEDING DATE:

APPROVED BY: J. O. SCHLOSSER

DATE:

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CRITICAL ITEMS LIST

ASSY NOMENCLATURE: ANTI-SUFFOCATION VALVE

SYSTEM: CREW ESCAPE SYSTEM

REVISION:

ASSY P/N: 12931G-02

SUBSYSTEM: LAUNCH ENTRY SUIT

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FMEA		NAME, QTY & DRAWING REF DESIGNATION	CRIT'Y	FAILURE MODE AND CAUSE	FAILURE EFFECT ON	RATIONALE FOR ACCEPTANCE
REF	REV				END ITEM	
1.2.2		ANTI-SUFFOCATION VALVE, (1) 18959G-03	1/1	1.2.2 Mode: Valve fails open Cause: • compression spring fails • contamination	Unable to provide 10-minute O ₂ supply	<p>c. Verify flow is a minimum of 60 slpm at 3 inches of water maximum.</p> <p>4. FAILURE HISTORY None. This valve is used in Air Force programs and has been in service for more than 25 years.</p> <p>5. OPERATIONAL USE</p> <p>a. Operational Effect of Failure - Possible loss of crewmember.</p> <p>b. Crew Action - None.</p> <p>c. Crew Training - Not applicable.</p> <p>d. Mission Constraints - None. Mission would be terminated prior to use of this equipment.</p> <p>e. In-Flight Checkout - None. Crew could inspect anti-suffocation valve, but could not repair or replace a defective valve.</p>

PREPARED BY: R. L. ALLISON

SUPERSEDING DATE:

APPROVED BY: J. O. SCHLOSSER

DATE:

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