

CRITICAL ITEMS LIST

ASSY NOMENCLATURE: EXHALATION VALVE

SYSTEM: CREW ESCAPE SYSTEM

REVISION:

ASSY P/N: F1033-5

SUBSYSTEM: HELMET RETENTION ASSEMBLY

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| FMEA | | NAME, QTY & DRAWING REF DESIGNATION | QTY | FAILURE MODE AND CAUSE | FAILURE EFFECT ON END ITEM | RATIONALE FOR ACCEPTANCE |
|-------|-----|----------------------------------------------|------|--------------------------------------------------------------------------------------------------|-------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| REF | REV | | | | | |
| 4.4.2 | | EXHALATION VALVE (2), SKD11101586-301 | 2/1R | <p>4.4.2 Mode: Valve fails closed</p> <p>Cause: • defective material • contamination</p> | Buildup of carbon dioxide if second valve fails | <p>1. DESIGN FEATURES TO MINIMIZE FAILURE MODE</p> <ul style="list-style-type: none"> a. The exhalation valve is in current use by the Air Force. b. The valve is a mica disc. c. The case and seat is aluminum. d. The spring is phosphor bronze under calibrated compression e. The valve opens at 1.65 ± 0.15 inches H₂O at a minimum input flow which shall not exceed 25 cc/minute. f. Resistance at flows of 0 to 95 slpm, 3.0 inches H₂O maximum; 0 to 2 slpm, 0.3 inch H₂O maximum above pressure setting. <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) Flow of 25 cc/minute, at 70 psig - back pressure should read 1.65 ± 0.15 inches H₂O (2) Flow of 2 slpm, at 70 psig - back pressure should not increase more than 0.3 inch H₂O (3) Flow of 95 slpm, at 70 psig - back pressure should be less than 3.0 inches H₂O. b. <u>Certification Test.</u> <ul style="list-style-type: none"> (1) High altitude chamber test, Brooks Air Force Base. <ul style="list-style-type: none"> (a) Manned test series. <ul style="list-style-type: none"> 1 Gradual ascents and descents to 39,000 feet 2 Deminrogenation verification for function as an extravehicular activity prebreath device |

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SUPERSEDING DATE:

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DATE

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CRITICAL ITEMS LIST

ASSY NOMENCLATURE: EXHALATION VALVE
 ASSY P/N: F1833-5

SYSTEM: CREW ESCAPE SYSTEM

SUBSYSTEM: HELMET RETENTION ASSEMBLY

REVISION:

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| FMEA | | NAME, QTY & DRAWING REF DESIGNATION | CRITY | FAILURE MODE AND CAUSE | FAILURE EFFECT OR END ITEM | RATIONALE FOR ACCEPTANCE |
|-------|-----|---------------------------------------|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| REF | REV | | | | | |
| 4.4.2 | | EXHALATION VALVE (2), SKD13181586-301 | Z/R | <p>4.4.2 Mode: Valve fails closed</p> <p>Cause: • defective material • contamination</p> | Buildup of Carbon dioxide if second valve fails | <p>c. <u>Turnaround Test</u> (In accordance with PIA 230337)</p> <p>(1) Flow of 25 cc/minute, at 70 psig - back pressure should read 1.65 ± 0.15 inches H₂O.</p> <p>(2) Flow of 2 slpm, at 70 psig - back pressure should not increase more than 0.3 inch H₂O.</p> <p>(3) Flow of 95 slpm, at 70 psig - back pressure should be less than 3.0 inches H₂O.</p> <p>3. INSPECTION</p> <p>a. Visual inspection of parts for defects.</p> <p>b. One hundred percent visual inspection during assembly.</p> <p>c. Visual inspection on glyptal seal for defect</p> <p>d. Visual inspection for contamination.</p> <p>e. Verify flows are within specifications of the acceptance test.</p> <p>f. Verify exhalation valve is cleaned to level 300 in accordance with JSCM 5322.</p> <p><u>Turnaround Inspection</u> (In accordance with PIA 230337)</p> <p>a. Visual inspection of parts for defects.</p> <p>b. One hundred percent visual inspection during assembly</p> <p>c. Visual inspection on glyptal seal for defect</p> |

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CRITICAL ITEMS LIST

ASSY NOMENCLATURE: EXHALATION VALVE

SYSTEM: CREW ESCAPE SYSTEM

REVISION:

ASSY P/N: F1003-5

SUBSYSTEM: HELMET RETENTION ASSEMBLY

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| FMEA | | NAME, QTY & DRAWING REF DESIGNATION | QTY | FAILURE MODE AND CAUSE | FAILURE EFFECT ON | RATIONALE FOR ACCEPTANCE |
|-------|-----|---------------------------------------|------|--------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| REF | REV | | | | END ITEM | |
| 4.4.2 | | EXHALATION VALVE (2), SKD3310Y508-381 | 2/1R | <p>4.4.2 Mode: Valve fails closed</p> <p>Cause: * defective material * contamination</p> | Buildup of carbon dioxide if second valve fails | <p>d. Visual inspection for contamination.</p> <p>e. Verify flows are within specifications of the acceptance test.</p> <p>f. Verify exhalation valve is cleaned to level 300 in accordance with JSCM 5322.</p> <p>4. FAILURE HISTORY</p> <p>None. This exhalation valve is used by the Air Force in high altitude suits for high performance aircraft and Dryden Flight Research Center.</p> <p>5. OPERATIONAL USE</p> <p>a. Operational Effect of Failure - Possible loss of crewmember if second valves fails.</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 emergency use of this equipment</p> <p>e. In Flight Checkout - None. Crew could not repair or replace defective valves</p> |

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