

CRITICAL ITEMS LIST

ASSY NOMENCLATURE: *NECK RING DISCONNECT ASSY.*

SYSTEM: *CREW ESCAPE SYSTEM*

REVISION:

ASSY P/N: *10040-07*

SUBSYSTEM: *LAUNCH ENTRY SUIT*

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FMEA		NAME, QTY & DRAWING REF DESIGNATION	CRIT'Y	FAILURE MODE AND CAUSE	FAILURE EFFECT OR EMD ITEM	RATIONALE FOR ACCEPTANCE
REF	REV					
3.12.2		NECK RING DISCONNECT ASSEMBLY (1), 1B951G-02	1/1	<p>3.12.2 Mode: Jammed neck ring</p> <p>Cause: • defective material • overstress</p>	Cannot lock helmet or maintain suit pressure	<p>1. DESIGN FEATURES TO MINIMIZE FAILURE MODE</p> <p>a. The cam slots and side grooves of the locking ring are coated with Molykote (321R).</p> <p>b. The edge of the latch is beveled to provide positive installation of the helmet onto the neck ring</p> <p>c. The locking ring is installed with four screws to ensure proper alignment.</p> <p>d. The neck ring is made of anodized cast aluminum.</p> <p>e. The inner race top surface is coated with Molykote.</p> <p>f. This configuration is currently being flown by the Department of Defense in high performance aircraft</p> <p>2. TEST OR ANALYSIS TO DETECT FAILURE MODE</p> <p>a. <u>Acceptance Testing.</u></p> <p>(1) Functional test lock to ensure proper operation.</p> <p>(2) Rotate locking ring, inner race and outer race.</p> <p>(3) Test running torque to 14 pounds.</p> <p>(4) Test breakaway torque to 10 pounds.</p> <p>b. <u>Certification Test.</u></p> <p>(1) High altitude chamber test, Brooks Air Force Base</p> <p>(a) Unmanned testing series</p> <p>1 Gradual ascent/descent to 100 000 feet.</p> <p>2 Rapid decompression to 90 000 feet</p> <p>3 Endurance runs rapid decompression to 100 000 feet for 37 minutes</p>

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SUPERSEDING DATE:

APPROVED BY: *J. O. SCHLOSSER*

DATE:

CEE/LES-75

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CRITICAL ITEMS LIST

ASSY NOMENCLATURE: *NECK RING DISCONNECT ASSY.*

SYSTEM: *CREW ESCAPE SYSTEM*

REVISION:

ASSY P/N: *10040-07*

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					
3.12.2		NECK RING DISCONNECT ASSEMBLY (1), 18951G-02	1/1	<p>3.12.2 Mode: Jammed neck ring</p> <p>Cause: • defective material • overstress</p>	Cannot lock helmet or maintain suit pressure	<p>(b) Manned testing series.</p> <ol style="list-style-type: none"> 1 Gradual ascent/descent to 100,000 feet. 2 Rapid decompression to 90,000 feet 3 Endurance runs rapid decompression to 100,000 feet for 30 minutes <p>(2) Live jumped at Naval Weapons Center.</p> <ol style="list-style-type: none"> (a) At 200 knots, 25,000 feet, four jumps. (b) At 110 knots, 10,000 feet, four jumps. (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><u>Turnaround Testing</u> (in accordance with PIA 23033)</p> <ol style="list-style-type: none"> a. Functional test lock to ensure proper operation b. Rotate locking ring, inner race and outer race. <p>3. INSPECTION</p> <ol style="list-style-type: none"> a. <u>Manufacturing Inspections</u> <ol style="list-style-type: none"> (1) One hundred percent inspection during assembly of neck ring. (2) Visually inspect inner and outer race, static seal, and lip seal for burrs, defects, and nicks. (3) Verify seals are properly seated (4) Verify all latch fits are free moving

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CRITICAL ITEMS LIST

ASSY NOMENCLATURE: NECK RING DISCONNECT ASSY.

SYSTEM: CREW ESCAPE SYSTEM

REVISION:

ASSY P/N: 10040-01

SUBSYSTEM: LAUNCH ENTRY SUIT

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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					
3.12.1		NECK RING DISCONNECT ASSEMBLY (II), 18951G-02	VI	<p>3.12.2 Mode: Jammed neck ring</p> <p>Cause: • defective material • overstress</p>	Cannot lock helmet or maintain suit pressure	<p>(5) Verify locking ring does not stick or bind when pulled from three different positions.</p> <p>(6) Verify torque values are within tolerance.</p> <p>b. <u>Turnaround Inspection:</u> (In accordance with PIA 23033)</p> <p>(1) Visually inspect inner and outer race, static seal, and lip seal for burrs, defects, and nicks</p> <p>(2) Verify seals are properly seated.</p> <p>(3) Verify all latch fits are free moving.</p> <p>(4) Verify locking ring does not stick or bind when pulled from three different positions</p> <p>(5) Verify torque values are within tolerance.</p> <p>4. FAILURE HISTORY</p> <p>None. This neck ring 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</p> <p>b. Crew Action - None</p> <p>c. Crew Training - Crew is trained in the proper operation of the equipment.</p> <p>d. Mission Constraints - None</p> <p>e. In Flight Checkout - None. Crew could not repair or replace a defective neck ring.</p>

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