

# CRITICAL ITEMS LIST

REFERENCE DESIGNATOR:  
 NAME/QUANTITY: Demand Breathing Regulator/1  
 DRAWING REFERENCE: F241-1760-1

PROJECT: Emergency Oxygen Mask Assy  
 LRU NAME/QUANTITY: EOMA  
 LRU PART NUMBER: 0001170075-301-302-305

SUBSYSTEM:  
 EFFECTIVITY: AN Orbiters

FAILURE MODE NUMBER EOMA-FM-003	CRITICALITY 1R/2	FAILURE EFFECT	RETENTION RATIONALE
<b>FUNCTION</b> Supplies oxygen on demand to the face cavity.		<b>END ITEM</b> No oxygen flow to facial cavity.	<b>1. DESIGN FEATURE TO MINIMIZE FAILURE MODE</b>  A. Regulator designed to preclude a no flow failure B. Diaphragm made of silicone elastomer material C. Demand spring fabricated of stainless steel. D. A stainless steel 20 micron filter is incorporated on the inlet port to prevent contamination. E. Regulator designed to withstand a minimum of 100,000 cycles at a rate of 15 to 18 cycles per minute  <b>2. TEST OF ANALYSIS TO DETECT FAILURE MODE</b>  A. Acceptance (1) Safety pressure flow test at 50, 70, and 100 psig; and zero flow, 10 slpm and 70 slpm flow. Specification: 0.1 to 1.0 in. water (2) Safety pressure test at 100 psig and 100 slpm flow. Spec: .5 to 1.0 in. water (3) External leakage test at 50 and 100 psig. No leakage allowed (4) Internal leakage test at 70 psig. Specification: < 1 in. water rise after 5 minutes  B. Certification (1) Certified in accordance with MIL-R-19121, "Regulators, Aviators' Minute Oxygen Breathing." (2) Subjected to temperatures of 160 +/- 5 Deg F and -65 Deg F +/- 5 Deg F for 3 hours after which a complete functional test was performed. (3) Cycle tested 100,000 cycles at a rate of 15 to 18 cycles per minute after which a complete functional test was performed. (4) Proof pressure test at 140 psig after which a complete functional test was performed.
<b>FAILURE MODE AND CAUSE</b> Fails Closed Cause: 1. Defective demand valve 2. Defective demand spring 3. Contamination		<b>MISSION</b> None.	
<b>REUNDANCY SCREENS</b> A - P B - N/A C - P		<b>CREW/VEHICLE</b> Possible loss of crewmember due to loss of oxygen.	
<b>REMAINING PATHS</b> Requires previous single point Orbiter failure.		<b>INTERFACE</b> None.	
<b>MISSION PHASE</b> Orbiter Emergency	<b>TIME TO EFFECT</b> Seconds	<b>TIME TO CORRECT</b> N/A	

PREPARED BY:

REVISION:

SUPERSEDING DATE:

DATE:

# CRITICAL ITEMS LIST

REFERENCE DESIGNATOR:  
NAME/QUANTITY: Demand Breathing Regulator  
DRAWING REFERENCE: F241-1760-1

PROJECT: Emergency Oxygen Mask Assy  
LRU NAME/QUANTITY: EQMA  
LRU PART NUMBER: 5001180275-301, -302, -305

SUBSYSTEM:  
EFFECTIVITY: All Orbiters

FAILURE MODE NUMBER EQMA-FM-002	CRITICALITY 1R/2	FAILURE EFFECT	RETENTION RATIONALE
<b>FUNCTION</b> Supplies oxygen on demand to the face cavity.		<b>END ITEM</b> No oxygen flow to facial cavity.	C. Turnaround Testing (Per PDA/PIA JSC 27130) (1) Complete PDA performed every 24 months including positive pressure, flow and leakage test (2) Replacement of regulator softgoods every 24 months.  3. INSPECTION  A. Manufacturing (1) Verify all materials, parts and assembly processes meet requirements. (2) Visual inspection of parts for defects. (3) All internal parts cleaned for oxygen service per MIL STD 1359, paragraph 5.  B. Turnaround Inspection (Per PDA/PIA JSC 22130) (1) Visual inspection of parts for defects (2) 100% visual inspection during regulator assembly/overhaul (3) Verify regulator operates within positive pressure and leakage specifications. (4) Replacement of regulator softgoods 24 months after PDA. (5) Verify external cleanliness per JSCM 5322, level GC  4. FAILURE HISTORY  This regulator assembly has been in use by DOD (US Navy, LRU-19AP) and NASA for approximately 30 years. No known failure on this or similar programs.
<b>FAILURE MODE AND CAUSE</b> Fails closed  Cause:  1. Defective demand valve 2. Defective demand spring 3. Contamination		<b>MISSION</b> None	
<b>REUNDANCY SCREENS</b>  A - P B - N/A C - P		<b>CREW/VEHICLE</b> Possible loss of crewmember due to loss of oxygen.	
<b>REMAINING PATHS</b> Requires previous single point Orbiter failure.		<b>INTERFACE</b> None	
<b>MISSION PHASE</b>  Orbiter Emergency	<b>TIME TO EFFECT</b>  Seconds	<b>TIME TO CORRECT</b>  N/A	

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REFERENCE DESIGNATOR:  
 NAME/QUANTITY: Demand Breathing Regulator  
 DRAWING REFERENCE: F241-1760-1

PROJECT: Emergency Oxygen Mask Assy  
 LRU NAME/QUANTITY: EOMA  
 LRU PART NUMBER: SDD17100275-201, -101, -305

SUBSYSTEM:  
 EFFECTIVITY: All Orbiters

FAILURE MODE NUMBER EOMA-FM-002	CRITICALITY 1R/2	FAILURE EFFECT	RETENTION RATIONALE
<b>FUNCTION</b> Supplies oxygen on demand to the face cavity.		<b>END ITEM</b> No oxygen flow to facial cavity.	<b>5. OPERATIONAL USE</b>  A. Operational effect of failure: Potential loss of crewmember due to contaminated atmosphere B. Crew Action: No work around if failure occurs C. Crew Training: None D. Mission Constraint: None E. In-flight Checkout: None
<b>FAILURE MODE AND CAUSE</b> Falls closed  Cause: 1. Defective demand valve 2. Defective demand spring 3. Contamination		<b>MISSION</b> None.	
<b>REUNDANCY SCREENS</b>  A - P B - N/A C - P		<b>CREW/VEHICLE</b> Possible loss of crewmember due to loss of oxygen.	
<b>REMAINING PARTS</b> Requires previous single part Orbiter failure.		<b>INTERFACE</b> None.	
<b>MISSION PHASE</b>	<b>TIME TO EFFECT</b>	<b>TIME TO CORRECT</b>	
Orbiter Emergency	Seconds	N/A	

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