

# CRITICAL ITEMS LIST

Reference Designator:  
Name/Quantity: Overpressure Valve  
Drawing Reference: 555036

Project: Quick Don Mask Assy.  
LRU Name/Quantity: QDMA  
LRU Part Number: SED32104528-303

Subsystem: CEE  
Effectivity: ALL ORBITERS

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Failure Mode Number QDMA-FM-007	Criticality 1R/2	Failure Effect	Retention Rationale
<b>Function</b> Provides positive pressure capability for mask assembly		<b>End Item</b> Mask will not have positive pressure capability. Regulator will provide oxygen on demand with reference to ambient conditions.  <b>Mission</b> None  <b>Crew/Vehicle</b> Possible loss of crewmember due to inability of mask to provide positive pressure. Possible inward leakage of contaminated atmosphere  <b>Interface</b> None	<b>1. DESIGN FEATURES TO MINIMIZE FAILURE MODE</b>  A. Over pressure valve seat material fabricated silicone material with minimum age life of 6 years. B. Valve and supply tube capable of withstanding 1.5 psig (max. operational pressure 3.0 in H <sub>2</sub> O). C. Inlet port contains 20 micron stainless steel filter to prevent internal contamination. D. Coated with non-stick lubricant to prevent jamming.  <b>2. TEST OR ANALYSIS TO DETECT FAILURE MODE</b>  A. Acceptance Test (1) Safety pressure test at 60, 70, and 110 psig inlet pressure and 70 slpm flow. Specification: 0.1 to 1.0 in H <sub>2</sub> O. (2) Press to test at 110 psig inlet O flow. Specification: 1.35 to 2.8 in H <sub>2</sub> O.  B. Certification (1) Certified in accordance with TSO-C89, FAA Technical Standard Order, Protective Breathing Equipment. (2) Subjected to temperatures of 160° F for 12 hours and 67° F for 2 hours after which a complete functional test is performed (3) Oxygen supply tube and valve leak tested to 1.5 psig (operational pressure 1.5 in. H <sub>2</sub> O). (4) Cycle tested, "Normal-Emergency-Normal", 1000 cycles. Functional test performed after cycling.  C. Turnaround Testing (per PDA/PIA procedures)  (1) Complete PDA testing performed every 24 months or prior to flight. Testing includes positive pressure, inward/outward leakage tests
<b>Failure Mode and Cause</b>  <b>Falls Off</b>  1. Defective materials/components 2. Contamination			
<b>Redundancy Screens</b>  A-P B-N/A C-P	<b>Remaining Paths</b> Requires previous single point Orbiter failure.		
<b>Mission Phase</b>  Orbiter Emergency	<b>Time to Effect</b>  Seconds		

# CRITICAL ITEMS LIST

Reference Designator:  
 Name/Quantity: Overpressure Valve  
 Drawing Reference: 555038

Project: Quick Don Mask Assy.  
 LRU Name/Quantity: QDMA  
 LRU Part Number: SED33104528-303

Subsystem: CEE  
 Effectivity: ALL ORBITERS

Failure Mode Number QDMA-FM-007	Criticallity 1R/2	Failure Effect	Retention Rationale
<b>Function</b> Provides positive pressure capability for mask assembly		<b>End Item</b> Mask will not have positive pressure capability. Regulator will provide oxygen on demand with reference to ambient conditions.	3. INSPECTION A. Manufacturing (1) Verify all materials, parts and assembly processes meet requirements. (2) Visual inspection of parts for defects. (3) Verify all internal parts cleaned for oxygen service per JSCM 5322, level 100C. B. Turnaround Inspection (per PDA/PIA procedure) (1) Visual inspection of parts for defects. (2) Visual inspection during regulator assembly/overhaul. (3) Verify regulator operates within positive pressure specifications. (4) Verify replacement of regulator softgoods and overhaul every 6 years. (5) Verify regulator internal cleanliness per JSCM 5322, level 100C, external cleanliness per JSCM 5322, level GC. 4. FAILURE HISTORY This mask assembly is utilized in commercial applications (Grumman Gulfstream, Boeing 747-400). No service failures reported.
<b>Failure Mode and Cause</b> Falls Off 1. Defective material/components 2. Contamination		<b>Mission</b> None	
<b>Redundancy Screens</b> A-P B-M/A C-P		<b>Crew/Vehicle</b> Possible loss of crewmember due to inability of mask to provide positive pressure. Possible inward leakage of contaminated atmosphere	
<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> None	

DATE: 4/92 REVISION: BASIC

# CRITICAL ITEMS LIST

Reference Designator:  
Name/Quantity: Overpressure Valve  
Drawing Reference: 556036

Project: Quick Don Mask Assy.  
LRU Name/Quantity: QDMA  
LRU Part Number: SED33104526-303

Subsystem: CEE  
Effectivity: ALL ORBITERS

Failure Mode Number QDMA-FM-007	Criticality 1R/2	Failure Effect	Retention Rationale
<b>Function</b> Provides positive pressure capability for mask assembly		<b>End Item</b> Mask will not have positive pressure capability. Regulator will provide oxygen on demand with reference to ambient conditions.	<b>5. OPERATIONAL USE</b>  A. <b>Operational Effect of Failure:</b> Possible loss of crewmember due to inability of mask to provide positive pressure. Possible inward leakage of contaminated atmosphere.  B. <b>Crew Action:</b> Crew could inspect and attempt to clear valve of any visual contamination. Defective valve could not be replaced or repaired by crew. Mask assembly could still be utilized; however, positive pressure capability is not ensured.  C. <b>Crew Training:</b> Crew is trained in correct function and use of QDMA.  D. <b>Mission Constraints:</b> None.  E. <b>Inflight Checkout:</b> None
<b>Failure Mode and Cause</b>  <b>Faults Off</b>  1. Defective material/components 2. Contamination		<b>Mission</b>  None	
<b>Redundancy Screens</b> A-P B-N/A C-P		<b>Crew/Vehicle</b> Possible loss of crewmember due to inability of mask to provide positive pressure. Possible inward leakage of contaminated atmosphere	
<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> None	