

CRITICAL ITEMS LIST

ASSY NOMENCLATURE: ET DOOR LATCH TOOL

SYSTEM: ORBITER

REVISION:

ASSY P/N: SED39110687-001

SUBSYSTEM: EVA EQUIPMENT

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FMEA		NAME, QTY & DRAWING REF DESIGNATION	CRIT'Y	FAILURE MODE AND CAUSE	FAILURE SECTION	RATIONALE FOR ACCEPTANCE
REF	REV					
1A		<p>HANDLE (1) HANDLE ASSY. (1)</p> <p>50039110687-001 50039110689-301</p>	(1)	<p>Mode: Handle/Handle Assy fails to deploy</p> <p>Cause: • Contamination • Defective material</p>	<p>END ITEM Cannot rotate manually</p> <p>CREW VEHICLE Possible loss of crew vehicle Door facilities cannot be released, resulting in the inability to close ET doors</p>	<p>1. DESIGN FEATURES TO MINIMIZE FAILURE MODE</p> <ul style="list-style-type: none"> a. Constructed of 6061 T6 aluminum alloy b. Tolerances used on parts to minimize binding due to temperature extremes or contamination <p>2. TEST OR ANALYSIS TO DETECT FAILURE MODE</p> <ul style="list-style-type: none"> a. <u>Acceptance</u> Functional Test: Complete functional testing to verify handle/handle assembly will extend, freely rotate, smoothly, and release for stowage. Barrel and shaft are locked together when in the fully retracted position, and the shaft extends and locks freely b. <u> Certification</u> (1) Qualification test consists of: Interfacing with at least one Orbiter, including one complete cycle (full deployment and latch retraction) at both latch locations (2) Cycle Life: Subjected to 15 complete cycles as defined below by the definition of one cycle: (a) Allen Wrench: Fourteen complete revolutions resulting in maximum torque of 400 (shear) and (b) Extension/retraction of shaft including latch engagement (c) Ten complete revolutions of spring wrench (3) Thermal qualification testing to certify the tool for a functional temperature environment of -200 F to +350 F <p>3. Postassembly Complete functional testing will be performed once each year or after each EVA use to ensure that the tool functions properly</p>

1d 24
1e 25
1f 26
1g 27
1h 28
1i 29
1j 30
1k 31
1l 32
1m 33
1n 34
1o 35
1p 36

CRITICAL ITEMS LIST

ASSY NOMENCLATURE E7 DOOR LATCH TOOL

SYSTEM URBITER

REVISION

ASSY P/N SDD39110691-301

SUBSYSTEM EVA EQUIPMENT

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FMEA		NAME, QTY & DRAWING REF DESIGNATION	CMT'Y	FAILURE MODE AND CAUSE	FAILURE EFFECT ON	RATIONALE FOR ACCEPTANCE
REF	REV					
1A		HANDLE (1) HANDLE ASSY (1) <hr/> SDD39110691-001 SDD39110691-301	111	Mode: Handle/handle Assy fails to deploy Cause: • Contamination • Defective material	END ITEM Cannot rotate Staff Assy CREW VEHICLE Nonfunction of crew vehicle Door latches cannot be released, resulting in the inability to close (1) doors	3. INSPECTION a. <u>Manufacturing</u> (1) Quality Assurance verification of compliance for materials (requirements) (2) Verified conformance to drawings as built configuration (3) Visual inspection of tool for damage (4) Verified proper operation of tool (5) Functional test (PDA) performed (6) Verified visibly clean b. <u>Turnaround</u> (1) Inspect for visible damage, contamination, and clean according to PDA (2) Verify completion of functional test for acceptance 4. FAILURE HISTORY None

SPACE
ATTACHMENT
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CRITICAL ITEMS LIST

ASSY NOMENCLATURE ET DOOR LATCH TOOL

SYSTEM ORITER

REVISION

ASSY P/N SED2918689-303

SUBSYSTEM EVA EQUIPMENT

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IMEA		NAME, QTY & DRAWING REF DESIGNATION	CRIT'Y	FAILURE MODE AND CAUSE	FAILURE EFFECT ON	RATIONALE FOR ACCEPTANCE
REF	REV					
1A		HANDLE (1) HANDLE ASSY. (1) SDD29118687-001 SDD29118689-301	1/1	Mode: Handle/handle Any fail to deploy Cause: • Contamination • Defective material	<u>END USER</u> Cannot rotate shaft assy <u>CREW VEHICLE</u> Possible loss of crew vehicle Door latches cannot be released, resulting in the inability to close ET doors	5. OPERATIONAL USE a. <u>Operational Effect of Failure</u> - The ET door latch tool cannot be used if the handles cannot be deployed. However, if the handles can be partially deployed, the tool still may be useful but the task may take longer. b. <u>Crew Action</u> - Crew would attempt to use wire grips to deploy handles. c. <u>Crew Training</u> - None. d. <u>Mission Constraint</u> - None identified. e. <u>In Flight Checkout</u> - Verify proper operation before transitioning to work site.

SECTION
ATTACHMENT
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