

CRITICAL ITEMS LIST

ASSY NOMENCLATURE ET DOOR LATCH TOOL

SYSTEM ORBITER

REVISION

ASSY P/N 5ED99118691 302

SUBSYSTEM EVA EQUIPMENT

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FMEA		NAME, QTY & DRAWING REF DESIGNATION	CRITY	FAILURE MODE AND CAUSE	FAILURE IMPLICATION	RATIONALE FOR ACCEPTANCE
REF	REV					
SA		BARREL (1) 5DD39118694-983	1/1	<p>Mode: Barrel will not thread into override mechanism</p> <p>Cause: • Contamination • Defective, stopped/galvanized threads</p>	<p>END USER Tool cannot be engaged in manual override clutch mechanism</p> <p>CREW VEHICLE Possible loss of crew vehicle door latches cannot be released, resulting in the inability to close ET door</p>	<p>1. DESIGN FEATURES TO MINIMIZE FAILURE MODE</p> <ul style="list-style-type: none"> a. Constructed of high strength, 17-4 stainless steel b. Tolerances used on parts to minimize binding due to temperature extremes in combat situation c. Designed with grade 2 one half 20 threads for ease of engagement of all grade 1 threads of manual override mechanism <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 and handle assembly will engage freely - mate smoothly, and release for storage, barrel and plunger are locked together when in the full retracted position the shaft extends and locks freely b. <u>Verification</u> <ul style="list-style-type: none"> (1) Qualification test consist of - Interfacing with at least one Quarter size robot over complete cycle (latch 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 <ul style="list-style-type: none"> (a) Allow 1000 full - free turn complete revolutions reaching a maximum torque of 40 in lb/turn (b) 1 - between each turn of shaft including latch engagement (c) 100 complete revolutions of spacers when in (3) Thermal qualification testing to verify this use for a minimum temperature environment of -200 to +150 F c. Comparison Complete functional testing with a full complement of crew vehicle door latch assembly to ensure that all latches function properly

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ASSY NOMENCLATURE EF DOOR LATCH TOOL

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ASSY P/N 6003010691-201

SUBSYSTEM EVA EQUIPMENT

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FMEA		NAME, QTY & DRAWING REF DESIGNATION	QNTY	FAILURE MODE AND CAUSE	FAILURE EFFECT ON	RATIONALE FOR ACCEPTANCE
REF	REV					
SA		BARREL (1) ----- SEPJ01TMB94-001	101	<p>Mode: Barrel will not thread into override mechanism</p> <p>Cause: • Contamination • Defective, stripped/galled threads</p>	<p>CREW ITEM Tool cannot be engaged in manual override clutch mechanism</p> <p>CREW VEHICLE Possible loss of crew/vehicle Door latches cannot be released, resulting in the inability to close 11 doors</p>	<p>3. INSPECTION</p> <p>a. <u>Manufacturing</u></p> <p>(1) Quality Assurance verification of compliance for materials (requirements)</p> <p>(2) Verified conformance to drawings as built configuration</p> <p>(3) Visual inspection of tool for damage</p> <p>(4) Verified proper operation of tool</p> <p>(5) Functional test (PDA) performed</p> <p>(6) Verified visually clean</p> <p>b. <u>Turnaround</u></p> <p>(1) Inspect for visible damage, contamination, and clean according to PIA</p> <p>(2) Verify completion of functional test for reacceptance</p> <p>4. FAILURE HISTORY</p> <p>None</p>

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ASSY NUMERICALS: EY DOOR LATCH TOOL

SYSTEM: ORBITER

REV: 000000

ASSY P/N: SED39118698-001

SYSTEMS: EVA EQUIPMENT

DATE: 12/11/14

FMEA		NAME, QTY & DRAWING REF DESIGNATION	CRITY	FAILURE MODE AND CAUSE	FAILURE EFFECTS	RATIONALE FOR ACCEPTANCE
REF	REV					
5A		BARREL (1) SD039118698-001	1/1	<p>Mode: Barrel will not thread into override mechanism</p> <p>Cause: • Contamination • Defective, stripped/galled threads</p>	<p>NO ITEM Tool cannot be engaged in manual override clutch mechanism</p> <p>CREW VEHICLE Possible loss of crew/vehicle Door latches cannot be released, resulting in the inability to close E1 doors</p>	<p>5 OPERATIONAL USE</p> <ol style="list-style-type: none"> <u>Operation</u> (Effect of failure) Use of tool is extremely diminished <u>Crew Action</u> Crew would attempt to repair the tool or remove contamination <u>Crew Training</u> None <u>Mission Constraint</u> None identified <u>In Flight Check out</u> Verify tool status by visually inspecting tool before tool being to work site

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ATTACHMENT
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