CIL
Critical Items List

Assembly Name/Part Number: Reaction Arm Assembly/10139-20260-01
Reference: CIL_RAMM
Prepared By: C. Hartman — Approved By: M. Milkey
Superceding Date: 7/88 — Date: 1/89 Rev A

NAME / P/N / REV	CAT	FAILURE MODE & CAUSE	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
Captive T-Handle 10139-20260-01 Item 5.3 Qua	1/1	5.3(F001) Fails to secure Torque Multiplier. CAUSE: Defective material. Broken or lost swivel pad. Broken collar. Loss of spring pin or collar screws. Binding. Contamination.	END EFFECT: Unable to use T-Handle to secure Torque Multiplier to Reaction Arm. Torque Multiplier inoperative and to lost. SFE INTERFACE: Handle to Issues latch bolts. MISSION: Terminate EVA. Unable to Jettison Payload. CREW/VEHICLE: Loss of crew and vehicle.	A. DESIGN: The T-Handle swivel pad is fabricated from high strength Rubrin L-P-312. When the T-Handle is in the open position, the swivel pad is completely enclosed within the Reaction Arm Housing and therefore protected from the possibility of damage by impact. The T-Handle and collar are fabricated from 15-5 PH stainless steel heat treated to H1050 condition and are passivated per QQ-P-35 specifications. High strength materials and heat treated conditions preclude wear and breakage. Stainless steel collar housing screws and collar spring pins are procured to NS specifications. Loss of collar housing screws is precluded in design by adherence to standard engineering torque requirements for screw installation and the use of thread lock adhesive. They are installed using medium strength Loctite 0242 and are torqued to 9.4 in/lbs to insure that they remain in place. The shelf life of Loctite is carefully monitored to eliminate unacceptable deterioration. The Reaction Arm Assembly is stowed in a foam cushion in the Payload Bay PBA to protect it from the possibility of damage from impact.

CIL
Critical Items List

Assembly Name/Part Number: Reaction Arm Assembly/10139-20260-01
References: CIL_RAAM
Prepared By: D. Hartman — Approved By: M. Withey
Superceding Date: 9/88 — Date: 1/89 Rev: A

NAME / P/N / QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
Captive T-Handle 10139-20261-01 Item 5.3 Qty 2	1/1	5.3FM03 Fails to secure Torque Multiplier.		D: TEST: Component Acceptance Test - None PQR Test - The following tests are conducted at the Reaction Arm Assembly level in accordance with ILC Document 10107-20619: 1. Functional test to verify proper operation of T-Handle. Certification Test - The Reaction Arm Assembly was tested to D/RB requirements of eight cycles and exhibited no damage. It was certified for the worst case PRA Stowage temperature range of -200 degrees F to +350 degrees F and interfaced with the Torque Multiplier and the Payload Bay passive latches. I: INSPECTION Components and material manufactured to ILC requirements at an approved supplier are documented from procurement through shipping by the supplier. ILC incoming receiving inspection verifies that the materials received are as identified in the procurement documents, that no damage has occurred during shipment and that supplier certification has been received which provides traceability information.

PJE/RAA - 2

CIL
Critical Items List

Assembly Name/Part Number: Reaction Arm Assembly/10159-20240-01
References: CIL_RARM
Prepared By: C. Hartman
Superceding Date: 9/00
Approved By: R. Withey
Date: 1/89 Rev: A

(NAME (P/N (QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
(Captive (T-Handle (10159- (20287-01 (Item 3.3 (One	1/1	3.3FM03 Fails to secure Torque Multiplier.		The following MIP's are performed during the Reaction Arm Assembly manufacturing process to assure the failure causes are precluded from the fabricated item: 1. Inspection of all components for damage or defective material. 2. Verify conformance to drawing. 3. The issuance of Loctite is controlled by inspection. 4. Verification that Loctite shelf life is within specification. 5. Witness of Loctite application and verify torque of screws. During PDA, the following inspection points are performed at the Reaction Arm Assembly level in accordance with ILC Document 10107-70470: 1. Verify successful completion of functional test. 2. Verify conformance to drawing. 3. Inspection for damage or material degradation. 4. Verify cleanliness to VC Level. D. FAILURE HISTORY: None E. GROUND TURNAROUND: During ground turnaround, in accordance with ILC Document 10107-70713, the Reaction Arm Assembly is inspected for damage and proper operation and cleaned to VC Level.

CIL
Critical Items List

Assembly Name/Part Numbers Reaction Arm Assembly/10159-20160-01
References CIL_RAAM
Prepared By: C. Harlan — Approved By: M. Withey
Superceding Date: 9/88 — Date: 1/89 Rev: A

NAME / P/N / DFY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
Captive T-Handle (10159-20203-01 Item 3.1 One	1/1	3.3F103 Fails to secure Torque Multiplier.		#. OPERATIONAL USE: 1. Crew Response Pre/Post EVA - N/A EVA - Torque Multiplier does not need to be secured in Reaction Arm for proper operation. Prevent loss of Torque Multiplier by restraining with strap assembly, or tape/velcro. 2. Training Crew briefing. 3. Operational Considerations Minimal impact. Tool usefulness unaffected. Task may require additional time.