

NAME P/H QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE																				
WRIST DISCONNECT ITEM 103 (1) LEFT (1) RIGHT ----- 9813-05 9814-05 (2)	2/2	103FH182: Loss of cam bracket adjustment.  CAUSE: Defective material; ball/spring subassembly. Contamination or wear of cam pin or bracket.	END ITEM: Unable to rotate restraint cam to lengthen or shorten lower arm axial restraint.  GFE INTERFACE: Unable to resize lower arm.  MISSION: Terminate EVA prep. Loss of EMU use for designated crewmembers.  CREW/VEHICLE: None.	A. Design - The cam bracket and primary pin are fabricated from 17-4 stainless steel bar stock. The bracket and pin are heat treated to a condition H-1050, ultrasonically cleaned, passivated and either electropolished or dry hone finished. The primary cam pin has a 16 finish to preclude restraint webbing abrasion. The primary cam pin adjusts to allow increase or decrease in axial length of the primary webbing. A spring and ball detent system allows for positioning of the cam pin. The cam pin is retained by two 17-4 stainless steel retention screws.  Rotation of the cam pin can only occur in one direction. The axial load of the primary restraint when pressurized results in the opposite direction of the designed rotation, hence inadvertent rotation while pressurized is precluded.  B. Test - Acceptance: See Inspection.  Certification: The wrist disconnect was successfully tested (manned) during SSA certification to duplicate 458 hours operational life (Ref. ILC Report 0111-711330). The following usage, reflecting requirements of significance to the cam bracket, was documented during certification:  <table border="1"> <thead> <tr> <th>Requirement</th> <th>S/AD</th> <th>Actual</th> <th>Equiv. Hrs.</th> </tr> </thead> <tbody> <tr> <td>Rotation</td> <td>40224</td> <td>82000</td> <td>933.7</td> </tr> <tr> <td>Engage/Disengage</td> <td>300</td> <td>400</td> <td>610.6</td> </tr> <tr> <td>Don/DoFF</td> <td>98</td> <td>400</td> <td>1869</td> </tr> <tr> <td>Pressure Hours</td> <td>458</td> <td>916</td> <td>916</td> </tr> </tbody> </table> C. 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 occur during shipment and that the supplier certifications have been received which provide traceability information.	Requirement	S/AD	Actual	Equiv. Hrs.	Rotation	40224	82000	933.7	Engage/Disengage	300	400	610.6	Don/DoFF	98	400	1869	Pressure Hours	458	916	916
Requirement	S/AD	Actual	Equiv. Hrs.																					
Rotation	40224	82000	933.7																					
Engage/Disengage	300	400	610.6																					
Don/DoFF	98	400	1869																					
Pressure Hours	458	916	916																					

CIL  
EMU CRITICAL ITEMS LIST

12/26/95 SUPERSEDES / /

ANALYST:

Page: 2  
Date: 12/10/95

NAME P/M QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
	2/2	103FM182:		<p>The following NIPs are performed during the arm assembly manufacturing process to assure that the failure causes are precluded from the fabricated item:</p> <ol style="list-style-type: none"> <li>1. Visually inspect static seal for damage.</li> <li>2. Visually inspect ring for scratches, burrs.</li> </ol> <p>During FDA, the following inspection points are performed at the arm assembly level in accordance with ILC Document 0111-710112:</p> <ol style="list-style-type: none"> <li>1. Inspection for cleanliness to VC level.</li> <li>2. Visual inspection for damage, wear or material degradation.</li> <li>3. Visual inspection for damage following proof-pressure test.</li> </ol> <p>D. Failure History - None.</p> <p>E. Ground Turnaround - During pre-EIA ground turnaround, in accordance with FEMU-1-001, Para. 7.1.2.6.3.4, proper arm sizing is verified. Additionally, every 4 years chronological time or 229 hours of manned pressurized time, during the wrist disconnect maintenance, the primary and secondary restraint brackets are removed and reinstalled, during which time, lockite application and screw torque are verified.</p> <p>F. Operational Use - Crew Response - PreEVA/PostEVA: Troubleshoot problem. Consider use of third EMU. If no success, terminate EVA prep. EMU is no go for EVA. EVA: N/A</p> <p>Training - EMU training specifically covers this failure mode.</p> <p>Operational Considerations - Not applicable.</p>