

CRITICAL ITEMS LIST (CIL)

SYSTEM: Electrical  
 SUBSYSTEM: LH2 Aft Feedthru Receptacle  
 REV & DATE: J, 12-19-97  
 DCN & DATE:  
 ANALYSTS: J. Bowski/A. Oser

FUNCTIONAL CRIT: 1  
 PHASE(S): b  
 HAZARD REF: E.01

FAILURE MODE: Fails Open  
 FAILURE EFFECT: b) Loss of mission and vehicle/crew due to engine(s) being destroyed.  
 TIME TO EFFECT: Seconds  
 FAILURE CAUSE(S): A: Faulty Contact  
 B: Mating Connector Falls Off  
 REDUNDANCY SCREENS: Not Applicable

FUNCTIONAL DESCRIPTION: The cryogenic feedthru connector provides the electrical connection between the depletion sensors in the LH2 tank and the external harnesses.

<u>FMEA ITEM CODE(S)</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY</u>	<u>EFFECTIVITY</u>
3.11.7.1	81L2-2 (302A02 J1, J2)	Feedthru Receptacle	1	LWT-54 & Up

REMARKS:

CRITICAL ITEMS LIST (CIL)  
CONTINUATION SHEET

SYSTEM: Electrical  
SUBSYSTEM: LH2 Aft Feedthru Receptacle  
FMEA ITEM CODE(S): 3.11.7.1

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RATIONALE FOR RETENTION

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DESIGN:

The cryogenic feedthru receptacle is a jam nut mount. It is designed with a shell made from CRES 304 or 304L per QQ-S-763. The jam nut is CRES 321 or 304L per QQ-S-763. The shell and nut are cadmium plated per QQ-P-416. The insert is virgin teflon per MIL-P-19468. The hermetic sealing is accomplished by the use of a fused glass insert of a vitreous material. The pin contacts are constructed of iron-nickel alloy per MIL-I-23011 and are gold plated per MIL-G-45204. This connector is designed to meet the dielectric requirements of 1000V RMS at 60 Hz and 5000 megohms insulation resistance. Moisture protection for the external face of the receptacle is provided by a silicon wafer on the mating harness connector.

A: The fusing of the glass insert provides for setting of the contacts in required position. Contacts are gold plated per MIL-G-45204 to minimize corrosion. The location and contact set up is per Lockheed Martin Standard Drawing 81L2.

B: Connector is designed to provide positive retention.

TEST:

The Feedthru Receptacle is qualified. Reference CDD MMC-ET-TM06-116.

MAF:

A: Perform System Resistance Test (TM04k).

Launch Site:

A: Perform System Resistance Test (OMRSD File IV).

A: Perform System Functional Test (OMRSD File II).

INSPECTION:

MAF Quality Inspection:

A, B: Inspect connector and pins for freedom of damage, are not broken, bent, misaligned or corroded, and the connector is free of foreign material (STP6501).

A, B: Witness connector mating (STP6501).

A: Witness System Resistance Test from excitation to return (TM04k).

Launch Site:

A: Witness System Resistance Test (OMRSD File IV).

A: Witness System Functional Test (OMRSD File II).

FAILURE HISTORY:

Current data on test failures, unexplained anomalies and other failures experienced during ground processing activity can be found in the PRACA data base.