Critical Items List (CIL) Sheet

Critical Item: Disconnect, Quick, Female (1 item) **B/L:** 810.64

Find Number: 11D16

Criticality Category: 2

FMEA/CIL No.:	STS88-0210/A	**System/Area:**	ECLSS/OPF
NASA Part No.:	-	**PMN/Name:**	S70-0790-11/ECLSS, CFES
Mfg. Part No.:	Symetrics/502060-2152	**Drawing/Sheet No.:**	G070-684710/-

Function: Provides quick connect and disconnect of fluid path (water)

Critical Failure Mode/Failure Mode No.: Leak before disconnect/STS88-0210.015

Failure Cause: Broken/worn sleeve O-ring seal or worn/corroded sleeve

Failure Effect: Water is released inside vehicle crew compartment. Possible damage to a vehicle system. Failure is detectable visually.

Acceptance Rationale

Design:

This 3/8 inch female coupling is a mechanical connector which permits separation of a fluid system line without fluid loss. Both the male and female halves have integral poppet valves which stop flow when the halves are separated.

		RATED:	ACTUAL:
Temperature:	Fluid media	120°F	50-80°F
	Ambient	160°F	70-90°F

Pressure:	System Operating	55 psig	50 psig
	Proof	83 psig	-
	Burst	110 psig	-
Fluid Media:		Water	Water
Material:	Body	15-5 Stainless Steel (precipitation hardened)	
	Sleeve	15-5 Stainless Steel (precipitation hardened)	
	O-Ring	Ethylene Propylene	

Test:

At initial fabrication, the following is performed:

- Hydrostatically proof-pressure test to 1-1/2 times maximum operating pressure
- Hydrostatically burst-pressure test to 2 times maximum operating pressure
- Side-load test (bending moment to test for premature disconnection)
- Leakage verified bubble tight when checked with nitrogen at operating pressure

Disconnects are verified functional during system verification

Inspection:

KSC procedures require periodic inspection to suit individual system requirements.

OMRSD File VI TBD

Failure History:

The PRACA database was queried and no failure data were found on this component in the critical failure mode.

The GIDEP failure data interchange system was queried and no failure data were found on this component in the critical failure mode.

Operational Use:

Correcting Action: Terminate water flow

Timeframe: Minutes