

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM : EPO&C - FWD-RCS

FMEA NO 05-6KF-2038 -1

REV: 11/03/87

ASSEMBLY : PANEL A14  
 P/N RI : ME452-0102-7206  
 P/N VENDOR:  
 QUANTITY : 1  
 : ONE  
 :

	VEHICLE	102	103	104	
EFFECTIVITY:		X	X	X	
PHASE(S):	PL	LO	X	OO	X DO LS

CRIT. FUNC: 2

CRIT. HDW: 2

PREPARED BY:

DES D SOVEREIGN  
 REL J BEEKMAN  
 QE

REDUNDANCY SCREEN: A- B- C-

APPROVED BY:

DES *D.S. Bunn* APPROVED BY (NASA):  
 REL *M. J. ... 11-14-87* SSM *[Signature]*  
 QE *[Signature]* REL *[Signature]*

ITEM:

TOGGLE SWITCH (2P3T) HERMETIC SEAL - PRESSURIZATION/PROPELLANT SYSTEM HEATER SELECT.

FUNCTION:

PROVIDES THE CREW WITH THE CAPABILITY TO SELECT BETWEEN REDUNDANT SYSTEMS "AUTO A/AUTO B", OR "OFF" FOR OPERATING THE PRESSURIZATION/PROPELLANT SYSTEM HEATERS. CIRCUITS MUST BE COMPLETED THROUGH BOTH SWITCH LEGS, IN EITHER AUTO POSITION, BEFORE HEATER CIRCUITS CAN BE ENERGIZED.  
 36V73A14S3.

FAILURE MODE:

FAILS TO CONDUCT, FAILS TO CLOSE, INADVERTENTLY OPENS (ONE OR MORE CONTACT SETS).

CAUSE(S):

PIECE PART STRUCTURAL FAILURE, CONTAMINATION.

EFFECT(S) ON:

(A) SUBSYSTEM (B) INTERFACES (C) MISSION (D) CREW/VEHICLE

(A) HEATER CIRCUIT POWER RELAY OR THERMAL SWITCH LOGIC CIRCUIT IS NOT ENERGIZED.

(B) LOSS OF POWER OR TURN-ON CONTROL OF PRESSURIZATION/PROPELLANT HEATER SYSTEMS.

(C) POSSIBLE MISSION MODIFICATION OR EARLY MISSION TERMINATION. FAILURE COULD DISABLE ALL OF THE FORWARD RCS MANEUVERING CAPABILITY DUE TO LOW SYSTEM TEMPERATURE.

(D) NO EFFECT.

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DISPOSITION & RATIONALE:

(A) DESIGN (B) TEST (C) INSPECTION (D) FAILURE HISTORY (E) OPERATIONAL USE

(A-D) FOR DISPOSITION AND RATIONALE REFER TO APPENDIX A, ITEM NO. 1 - TOGGLE SWITCH.

(B) GROUND TURNAROUND TEST

COMPONENT CHECKED OUT EVERY FLIGHT DURING GROUND TURNAROUND. THE TESTING CONSISTS OF CYCLING VALVE MANUAL SWITCHES AND/OR SENDING GENERAL PURPOSE COMPUTER (GPC) COMMANDS TO CYCLE VALVES OR HEATERS WHILE MONITORING VEHICLE INSTRUMENTATION TO DETERMINE IF COMPONENTS HAVE FAILED.

(E) OPERATIONAL USE

IF FORWARD RCS PROPELLANT LINES BECOME TOO COLD FOR USE, REDLINE ADDITIONAL AFT RCS PROPELLANT FOR TAIL-ONLY ATTITUDE CONTROL. MAY RESULT IN EARLY MISSION TERMINATION.