

FAILURE MODES AND EFFECTS ANALYSIS

ASSY NOMENCLATURE: RMS IFM D&C KIT
 ASSY PIN: 540300300300

SYSTEM: REMOTE MANIPULATOR SYSTEM
 SUBSYSTEM: RMS IN-FLIGHT MAINTENANCE D&C KIT

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NAME AND DRAWING	FUNCTION	FAILURE MODE AND CAUSE	MISSION PHASE	FAILURE EFFECT ON			FAILURE DETECTION		CORRECTIVE ACTION TIME AVAILABLE/ TIME REQUIRED	CRIT. H/F	HAZARDS/REMARKS
				END ITEM	MISSION	CREW/VEHICLE	FLIGHT	GROUND			
DIRECT DRIVE SWITCH, (S3) QTY. 1 PIN MS90311-231	Provides commands and enables signals to drive a selected joint in direct drive	S030 Mode: • Fails open, premature open Cause: • structural failure • contamination • mechanical shock • vibration	Orbit	Loss of ability to drive joints <u>Worst Case</u> Subsequent failures may result in inability to cradle arm Redundant Paths <u>Remaining</u> Backup mode: RMS Jettison.		Subsequent failures may result in inability to cradle arm or jettison arm, resulting in loss of crew/vehicle	Operator detects arm does not drive	Remove command Select backup mode or jettison RMS immediate/hours	M/K	<u>Redundancy Screening:</u> A - Pass B - Pass C - Pass	
		S040 Mode: • Fails closed • Premature close Cause: • structural failure • contamination • mechanical shock • vibration	Orbit	Joint will drive in either positive or negative direction as soon as dc power is applied to the RMS IFM D & C kit. Unable to change direction of joint drive <u>Worst Case</u> Unexpected motion Crew action required		Loss of crew or vehicle due to unexpected RMS motion	Operator detects unexpected motion	Turn off dc power to the RMS IFM D & C kit. Select backup mode or jettison RMS immediate/ immediate	M/I	<u>Redundancy Screening:</u> A - N/A B - N/A C - N/A	

S040207L
 ATTACHMENT
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