

DECLARED PROCESS LIST		ORIGINATOR: UK ATC	
SPACECRAFT / PROJECT:		Herschel	Doc. Number
			SPIRE-ATC-PRJ-708
SYSTEM / EXPERIMENT:		SPIRE	Sheet No
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SUB-SYSTEM:		BSM	Issue: (last CTD – 0324)
			1.6
			Date:
			15-Jun-04

Process ID	Process	Specification	Description / Identification	Use and Location	User Code	Associated DML Items	Criticality of Process	Approval / Status	Project Approval	ESA Approval
1.	Adhesive bonding	SPI-BSM-NOT-0712 Author: BG	Bonding of sensors into mounts and potting of wiring	Jiggle frame & structure & motor terminations	N/A	Eccobond 285 + catalyst 24LV, G-10,	medium	Identical to ID#17		
2.	Adhesive bonding	SPI-BSM-NOT-0715 Author: BG	Bonding of flex-pivots into sleeves	Chop and Jiggle stage	N/A	inconel, Eccobond 285 + catalyst 24LV, aluminium 6082	high	Confirmed by DM-1 warm shake		
3.	Adhesive bonding	N/A	Bonding of sleeves into housings	Chop and Jiggle stage	N/A	N/A	N/A	NOT USED		
4.	Adhesive bonding	SPI-BSM-NOT-0720 Author: BG	Harness tie-down	Back of BSM	N/A	Eccobond 285 + catalyst 24LV, aluminium 6082	low	Standard RAL practice. Used on BSM STM		
5.	Adhesive bonding	SPI-BSM-NOT-0718 Author: BG	fastener locking,	applied in visible location, eg under heads	N/A	Eccobond 285 + catalyst 24LV, aluminium 6082, stainless steel	medium	Standard RAL practice . Used as repair scheme on STM chop mirror screw		
6.	Adhesive bonding	SPI-BSM-NOT-0716 Author: BG	Bonding of magnets into pockets	Chop and Jiggle stage	N/A	Eccobond 285 + catalyst 24LV, aluminium 6082/6061, magnet	medium	Confirmed by DM-1 warm shake		
7.	Adhesive bonding	SPI-BSM-NOT-0717 Author: BG	Bonding of sensor actuators into pockets	Chop and Jiggle stage	N/A	Eccobond, aluminium 6082/6061, soft iron	medium	Similar process used on ISOPhot		
8.	Thermal stabilization	SPI-BSM-NOT-003 Author IP	Mirror stability cycling	Chop stage	N/A	Aluminium 6061	high	ATC standard, adopted from NASA practice.		

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9.	Electro-forming copper	Waveform Electroforming Ltd procedure EP/003-C iss2	Manufacturing technique (sub-contract process)	Motor thermal shields	N/A	Electro formed Copper	medium	Confirmed by inspection and DM-1 warm shake		
10.	Gold plating 2-10 um	MOD DEF STAN 03-17/iss2 5 um thick	Plating (sub-contract process)	thermal contact, Emmisivity control	N/A	Gold, copper, nickel plate	medium	Accepted RAL and ESA process.		
11.	Niobium plating	N/A	Plating	Magnetic shielding	N/A	N/A	N/A	Not used		
12.	Alochrome	MOD DEF STAN: 03-18.iss2 To a light yellow appearance	Alocrom 1200 AL Alloy Surface Conversion	Corrosion control	N/A	Aluminium components where specified	low	Accepted RAL and ESA process.		
13.	Varnish application	Zeiss process	Coating	Insulation/ corrosion control	N/A	Not used	high	Zeiss motor coils have polyimide coating, but these are treated as bought-in components (see DCL)		
14.	Soldering	SPI-BSM-NOT-0723 Author BCG	Soldering	Connectors	N/A	Wiring, connectors, sensors, motors	high	ESA approved soldering practice		

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15.	Crimping	N/A	Crimping	Connectors	N/A	Wiring, connectors	high	Not used		
16.	Fastener Assembly	SPI-BSM-NOT-0018 V1.0 Author IP	Screw thread lubrication and torque control for BSM	BSM	N/A	All bolted components	High	Confirmed by DM-1 warm shake		
17.	Bond Motors into housing	SPI-BSM-NOT-0714 Author BG	Potting / bonding	Motor coils and their wires into G10 and Al housing, and	N/A	Eccobond 285 + catalyst 24LV Wiring, Zeiss coils, Aluminium 6082, G-10	High	Confirmed by DM-1 warm shake		
18.	Cleaning before assembly	SPI-BSM-NOT-0029 Author BG	Clean with ultrasound, IPA, tap water	After machining and before clean room acceptance	N/A	All	Medium	Similar to RAL cleaning process		
19.	Optical Surface cleaning	N/A	Clean with 'opti-clene'	BSM mirror, if required	N/A	BSM mirror	High	Not used		
20.	Optical Surface cleaning	N/A	Clean with IPA or acetone	BSM mirror, if required	N/A	BSM mirror	High	Not used		
21.	Optical Surface polishing	N/A	Abrasive clean with fine diamond paste	BSM mirror, if required (repair technique)	N/A	BSM mirror	High	Not Used		
22.	Wiring routing	SPI-BSM-NOT-0724 Author BCG	Wiring routing and tie down	BSM wiring harness	N/A	Wiring, connectors, P-Cips, lacing tape	Medium	Confirmed by DM-1 warm shake		
23.	Annealing	N/A	Annealing of Brass P-clips	BSM wiring harness	N/A	Wiring	Low	Not Used		

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24.	Magnet Removal	SPI-BSM-NOT-0719 Author TB/BG	Removing motor magnets from holder	Chop & Jig Stage	N/A	Stripper 93	High	Verified with dummy mirror		