

NCR Number: HSO-CDF-NCR-100

Spacecraft / Project	Herschel	Originator's Name	Peter Hargrave	
Experiment / Model	SPIRE / PFM	Signature		
Sub-System	300mK strap support system LTS-PFM-000	Date	June 29 th 2005	
Assembly	300mK photometer light baffle	Level (Highlight if applicable)	Major	Minor
Sub-Assembly				
Item		NRB Reference		
Serial Number	LTS-PFM-400			

NCR Occurred During (Highlight if applicable)	Manufacture	Inspection	Test	Integration	Other
---	-------------	------------	------	-------------	-------

NCR Title	Difficulty fitting light baffle to photometer box
------------------	---

NCR Description

On fitting the photometer light baffle to the photometer 2K box, RAL found that the light baffle was not sitting flush on the interface.

Cause of NCR

Close inspection revealed a very small "shoulder" at the inner corner of the light baffle / photometer box interface (see attached figure). This is due to the difficulty in producing a perfectly square inner corner, which requires very careful machining and very carefully ground turning tools.

This problem was raised at STM integration time, and MSSSL had agreed to introduce a chamfer on their side of the light baffle interfaces such that this would not be an issue for PFM manufacture. This modification was implemented on the spectrometer detector box, as agreed. However, this has evidently not been done for the photometer detector box (identical interface). The Structure ICD is still not available at RAL, but examination of the manufacturing drawings for the photometer box spine shows that this change was never implemented.

Disposition / Corrective Action

Cardiff will undertake to produce a small undercut at this interface, to compensate for the lack of the chamfer. This is because, at the time of writing, the photometer box is ~90% integrated, and modifying the light baffle is less upheaval overall.

The undercut can be carried out with the photometer baffle intact, but fully bagged / sealed, and with the alignment jigs in place to prevent any stress on the supported hub. The baffle will then undergo the full cleaning procedure (ultrasonic bath with iso-propanol, 24 Hr bake @ 80C) and then full visual inspection with microscope to check for signs of debris & Kevlar distress.

Document or Drawing Affected (Title, Number & Issue)

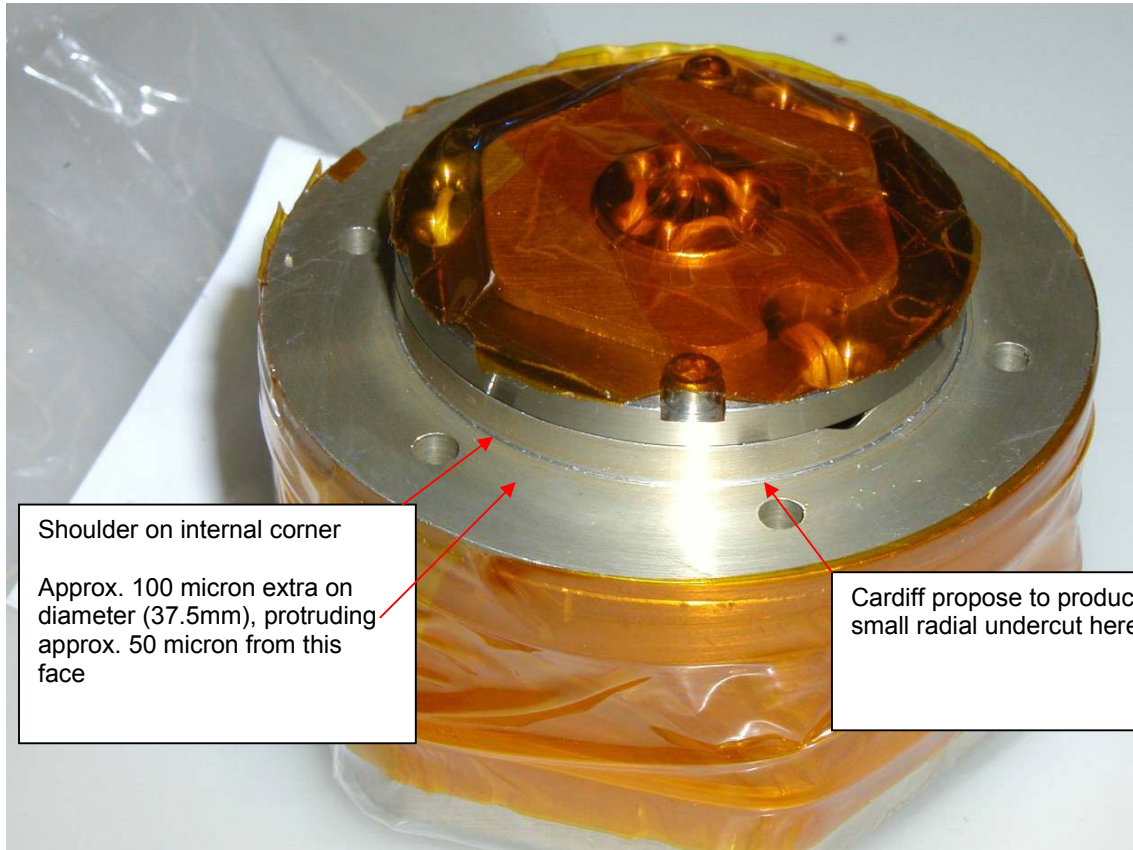
MSSL /SPIRE/SP004.03 issue 3.0. Structure mechanical interface. The relevant interface drawings need to be added (section 2.12.4)

Estimated COST OF NCR (cost of : correction, Materials, Resource, and delay to Project etc.)

Three person-days of effort at Cardiff. Task can be completed in two days.

NCR CLOSED (Signatures Required)	PA Manager (Or Deputy)	Project Manager (Or Deputy)	Date
			06/07/04

NCR Number: HSO-CDF-NCR-100



Shoulder on internal corner

Approx. 100 micron extra on diameter (37.5mm), protruding approx. 50 micron from this face

Cardiff propose to produce very small radial undercut here

Report on modification to baffle – carried out after agreement at NRB – 30/06/05.

The baffle was fully bagged and sealed with Kapton tape, as shown below. Note that the alignment jig was in place for this procedure.



The radial undercut was made using a sharp tool bit, and undercut the offending corner by 50 microns. Modification carried out by I. Thomas, Cardiff AIG.

The baffle was then taken to the clean room and un-bagged. Microscopic visual inspection was carried out by P. Hargrave, Cardiff AIG. No signs of contamination or Kevlar distress were evident. The component was then ultrasonically cleaned in a bath of iso-propyl-alcohol for 30 minutes. The baffle was then removed and dried in an oven at 80°C for one hour. A second visual inspection was then carried out by P. Hargrave, and photographs were taken of the component (see below). The component passed visual inspection, and was then placed back in the oven at 80°C, and baked for 24 hrs.

NCR Number: HSO-CDF-NCR-100



NCR Number: HSO-CDF-NCR-100



Pre-delivery visual inspection passed by P. Hargrave, 30/06/05