



Spacecraft/Project:	HERSCHEL	Document No:	SPIRE RAL PRJ 0001094		
Instrument/Model:	SPIRE	Issue No:	1	REV:	0
Subsystem:		Date:	30 Jan 2002		

SUBJECT: COMBINED DECLARED MECHANICAL PARTS LIST

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INDEX

DISTRIBUTION	1
CHANGE RECORD	2
INDEX	3
DOCUMENT LIST	3
INTRODUCTION	4
SCOPE	4
CONTENT OF THE MECHANICAL PARTS LIST	6
APPENDIX A	9

DOCUMENT LIST

Note

Where a Sub-Systems / Institutes has combined some or all of their Declared lists and / or EEE parts etc into one document, that documents details are recorded below. However only the applicable pages are included in this document .

Sub-System	Document	
Institute	Title	Number
ATC	Declared Component List	SPIRE-ATC-PRJ-709 Iss 2
CDF (QMW)		
CEA/SAp		
CEA/SBT		
CSA/USK		
IFS (IFSI)		
JPL		
LAM (LAS)		
MSSL		



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INTRODUCTION


Mechanical Parts used by RAL Space Science Technical Department (SSTD) and co-producers / sub-system suppliers are listed on spreadsheets,

SCOPE

This document lists the “Declared Mechanical Parts” used in the provision of the supplied parts of **Spire** Instrument from the following sub system suppliers. See Table 1.

Table 1


Sub-System / Institute		List Supplied
Acronym	Name	Yes / No / NA
ATC	Astronomy Technology Centre	YES
CDF (QMW)	Department of Physics and Astronomy, University of Wales, Cardiff,	No
CEA/Sap	CEA, Service d'Astrophysique Saclay	No
CEA/SBT	(CEA) Service du Basse Temperatures Grenoble	No
CSA/USK	Canadian Space Agency (CSA) University of Saskatchewan Canada	No
IFS (IFSI)	Instituto di Fisica dello spazio Interplanetario, Rome	No
JPL	JPL/Caltech, Pasadena	No
LAM (LAS)	Laboratoire d'Astronomie Spatiale, Marseille	No
MSSL	Mullard Space Science Lab Surrey	NA

 Rutherford Appleton Laboratory	COMBINED DECLARED MECHANICAL PARTS LIST		PRODUCT ASSURANCE Space Science and Technology Department		
	Spacecraft/Project:	HERSCHEL	Document No:	SPIRE RAL PRJ 0001094	
Instrument/Model:	SPIRE	Issue No:	1	REV:	0
Subsystem:		Date:	30 Jan 2002		

Appendix A to this document is a printout from that spreadsheet showing the mechanical parts on the hardware provided for **Spire** by the above sub-system suppliers

The spreadsheet printout is compliant with **ESA: PSS-01-700 Issue 2**, each mechanical part has an individual identification number, the first digit being the group type as follows.

51. Spacing Parts (Washers, Spacers,....)
52. Connecting Parts (Bolts, Nuts, Rivets, Inserts, Clips,....)
53. Bearing Parts (Ball-Bearings, Needle Bearings,....)
54. Separating Parts (Pyrotechnics, Springs, Cutters,....)
55. Control (Gears,....)
56. Fluid Handling Parts (Diffusers,....)
57. Heating Parts
58. Measuring Instruments (Gauges, Thermocouples,....)
59. Optical Passive Equipment
60. Magnetic Parts
61. Other Parts

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	Spacecraft/Project:	HERSCHEL	Document No:	SPIRE RAL PRJ 0001094		
Instrument/Model:	SPIRE	Issue No:	1	REV:	0	
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CONTENT OF THE MECHANICAL PARTS LIST

Extract from **ESA PSS -01 -700 Issue 2 (August 1993) ANNEX C**

The mechanical Parts list consists of 10 columns, which shall be completed as indicated below. If a particular item does not apply, write N.A. (Not Applicable).

COLUMN 1 : Item Number

Sequential item number in each group of the list. One only per mechanical part type. Does not change during the life of the mechanical parts list.

COLUMN 2 : Commercial Identification

As required :

- type and number
- specification number (whether national, ESA, company in-house, etc.) and issue status. This document must be available for sending to ESA on request.
- materials

COLUMN 3 : Type of Part

Use a standard nomenclature, in order to ensure correct grouping of similar parts, e.g.: Value, one way
Value , two ways
and not one-way value or two-way value.

COLUMN 4 : Procurement Information

- Manufacturer/supplier : name of the manufacture and the name of the supplier if different.
- Specification : reference of the procurement specification with issue and revision. It may be replaced by a national specification number if this exists and makes source of procurement irrelevant.

COLUMN 5 : Elementary Function, Main Characteristics

- function to be ensured by the mechanical part
- main characteristics: e.g. number of revolutions per minute for a ball bearing

COLUMN 6 : Use and Location

indicate in which subsystem, equipment or box the mechanical part is used + subcontractor's name/abbreviation.



Spacecraft/Project:	HERSCHEL	Document No:	SPIRE RAL PRJ 0001094		
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- **COLUMN 7** : Environmental Code

Radiation /UV/ATAXIA (1) (R)		Ambience (A)	Temperature (2) (T)
G = Geostationary L = Low Orbit B = Radiation Belts I = Interplanetary	S = Outside Shadow L = Outside Light	V = Vacuum H = Hermetic M = Manned E = Elevated Pressure	1 = 0 to 100 2 = 101 to 200K 3 = 201 to 300 K “ etc.

(1) For parts inside the spacecraft, choose a letter from the left-hand side column.

For parts on the surface of the spacecraft, combined this letter with “L” or “S”.

(2) Thermal cycle to be indicated by two values, e.g. 3/5.

(3) “RT” can be accepted as a code between 238 K (10°C) and 313 K (40°C).


Parts which are at a boundary between environments shall be described by two sets of codes.

- **COLUMN 8** : Criticality & Hazards

Mark here all parts participating in a safety-critical and/or reliability-critical function

- **SUBCOLUMN 9.1** : Justification for Approval

The purpose of this sub column is to enter any additional information that may be necessary in order to achieve customer approval. This information is reference of the Requests For Approval; reference of justificatory file for materials approved for other space or aeronautical programmes meeting the specific needs of the programme, reference of the evaluation report or waivers etc. These documents must be made available to ESA on request.

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SUBCOLUMN 9.2 : Approval Status of the Contractor

A - Approved = All Mechanical Parts classified "A" may be used without restriction.

Y - Approved with restriction = These Mechanical Parts require the preparation of QC test specimens or a treatment before use: potting, coating, test specimens...

W - Approved with a waiver = These Mechanical Parts do not meet the requirements but are used for functional reasons. The use of such materials shall be reduced to a minimum. All the waivers shall be approved by ESA. The waiver number shall be entered in Subcolumn 9.2.

P - Pending a decision = Mechanical Parts for which an evaluation report or a waiver is awaiting the contractor's provisional or definitive approval.

O - Open = New Mechanical Parts or Mechanical Parts for which investigations and qualification are in progress.

D - Deleted = This clarification is used for a Mechanical Part, which is no longer used.

- **COLUMN 10 : ESA Approval and Comments**

This column will be completed by ESA in accordance with the standard comments list in Annex E.



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APPENDIX A

DECLARED COMPONENT LIST		ORIGINATOR: UK ATC	
SPACECRAFT / PROJECT:	Herschel	Doc. Number	SPIRE-ATC-PRJ-709
SYSTEM / EXPERIMENT:	SPIRE	Sheet No	Page 1 of 2
SUB-SYSTEM:	BSM	Issue:	0.2
		Date:	20.Jul. 01

Part ID (used on)	Description	Manufacturer/ Supplier	Country	Specification	Quality	Notes
SPIRE-BSM-020-001 item xxx	DISC-SPRING-ID-3.2mm stainless steel	TBD	E.U	Austenitic, DIN A2, Grade 70	TBD	
SPIRE-BSM-020-001 item xxx	CERNOX-THERMISTOR COPPER-CANISTER	Lakeshore	U.S	CX-1030-CU	TBD	Supplied via SPIRE Project office
SPIRE-BSM-020-001 item xxx	CAP-HD-SCREW-SS-M4x10	TBD	E.U	Austenitic, DIN A2, Grade 70	TBD	
SPIRE-BSM-020-001 item xxx	CAP-HD-SCREW-SS-M2x10	TBD	E.U	Austenitic, DIN A2, Grade 70	TBD	
SPIRE-BSM-020-001 item xxx	CAP-HD-SCREW-SS-M2-5x7.75	TBD	E.U	Austenitic, DIN A2, Grade 70	TBD	
SPIRE-BSM-020-001 item xxx	CAP-HD-SCREW-SS-M2-5x7	TBD	E.U	Austenitic, DIN A2, Grade 70	TBD	
SPIRE-BSM-020-001 item xxx	CAP-HD-SCREW-SS-M2-5x6	TBD	E.U	Austenitic, DIN A2, Grade 70	TBD	
SPIRE-BSM-020-001 item xxx	CAP-HD-SCREW-SS-M2-5x12	TBD	E.U	Austenitic, DIN A2, Grade 70	TBD	
SPIRE-BSM-020-001 item xxx	P-CLIPS BRASS (TBC)	TBD	E.U	TBD	TBD	
SPIRE-BSM-020-001 item xxx	P-CLIP FASTENERS	TBD	E.U	TBD	TBD	
SPIRE-BSM-020-001 item xxx	LOCKING INSERTS	TBD	E.U	TBD	TBD	
SPIRE-BSM-020-001 item xxx	DOWELS	TBD	E.U	Austenitic, DIN A2, Grade 70	TBD	

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SPACECRAFT / PROJECT:	Herschel	Doc. Number	SPIRE-ATC-PRJ-709
SYSTEM / EXPERIMENT:	SPIRE	Sheet No	Page 2 of 2
SUB-SYSTEM:	BSM	Issue:	0.2
		Date:	20.Jul. 01

Part ID (used on)	Description	Manufacturer/ Supplier	Country	Specification	Quality	Notes
SPIRE-BSM-020-001 item xxx	LACING	TBD	E.U	TBD	TBD	