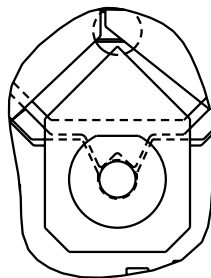
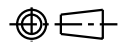
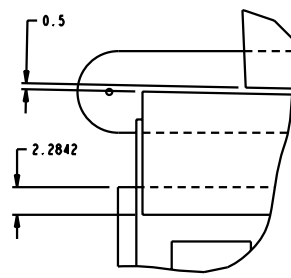
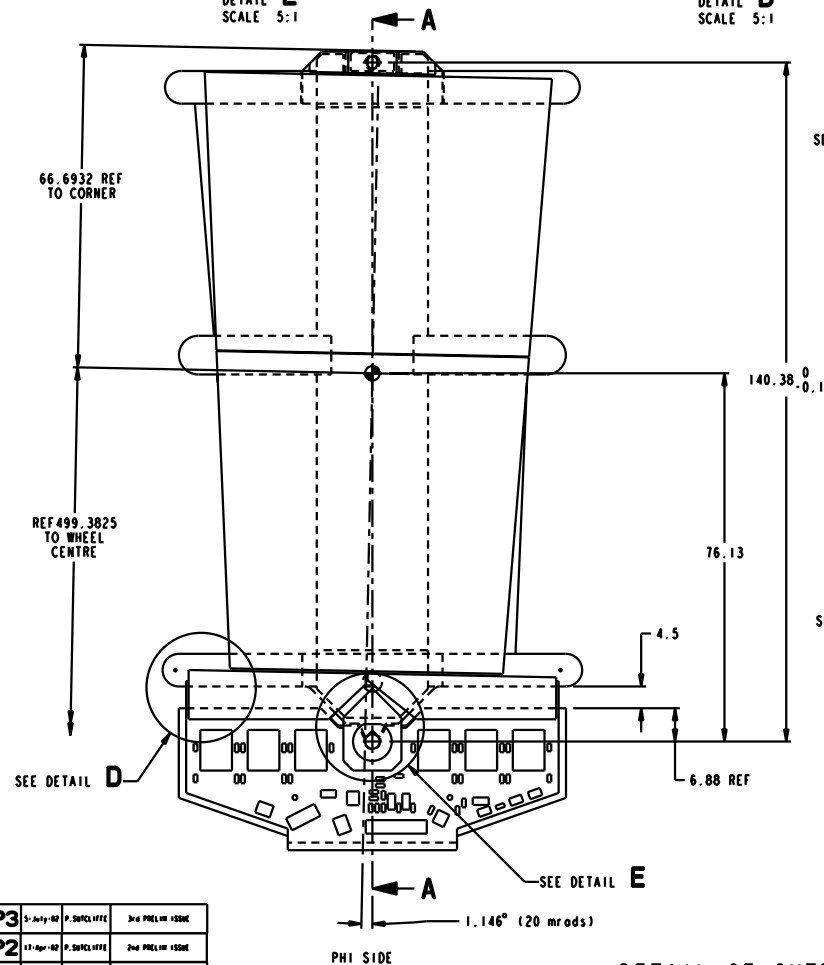
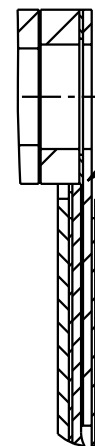


THIRD ANGLE PROJECTION

DETAIL E
SCALE 5:1DETAIL D
SCALE 5:1DETAIL OF OUTER MODULE
52 OFF PER RINGLOCATION
WASHERDETAIL C
SCALE 16:1AIN UPPER SUPPORT
0.225 ± 0.5 THICK
K = 165 W/m.KTPG HEAT SPREADER
0.5 THICK
K = 1700 X 1700 X 25 W/m.KTYPICAL GLUE LAYER
0.09 THICKSi WAFERS
0.285 THICK
K = 136 W/m.KD263 FAN-IN
0.3 THICK
K = 1.5 W/m.KLOCATION
WASHERAIN LOWER SUPPORT
0.225 ± 0.5 THK
K = 165 W/m.K

SEE DETAIL C

SEE DETAIL B

SECTION A-A

15.113

29.464

1.146° (20 mrad)

STEREO SIDE

13.984

TO Si WAFER
CORNERDETAIL B
SCALE 16:1

UNLESS OTHERWISE SPECIFIED:-

ALL DIMENSIONS IN MILLIMETRES
TO BEHOLD CLASS 400

SURFACE FINISHES IN MICROMETRES

SURFACE TEXTURE TO BE 3.2 ✓

MACHINE ALL OVER OR WHERE MARKED ✓

REMOVE BURRS AND BREAK SHARP EDGES

METRIC SCREW THREADS
TO BEHOLD CLASS 400TOLERANCES
UNLESS OTHERWISE SPECIFIED

MACHINED DIMS. ± 0.1

ANGULAR ± 0.5°

DO NOT SCALE

DRAWING PRACTICE AND TOLERANCE
INTERPRETATION TO BEHOLD

MATERIAL

SPEC

TREATMENT

FINISH

SEE PARTS

SEE PARTS

SEE PARTS

APPROVED

WELDING SYMBOLS TO BS 499

DATE

CHECKED

APPROVED

P. SURCLIFFE

PS

P. SURCLIFFE

THE UNIVERSITY OF LIVERPOOL
DEPARTMENT OF PHYSICS

PROJECT ATLAS FORWARD TRACKER

TITLE OUTER MODULE - K5 HYBRID

DRAWING NUMBER

NP27-05-10

SHEET 1

OF 4 SHEETS

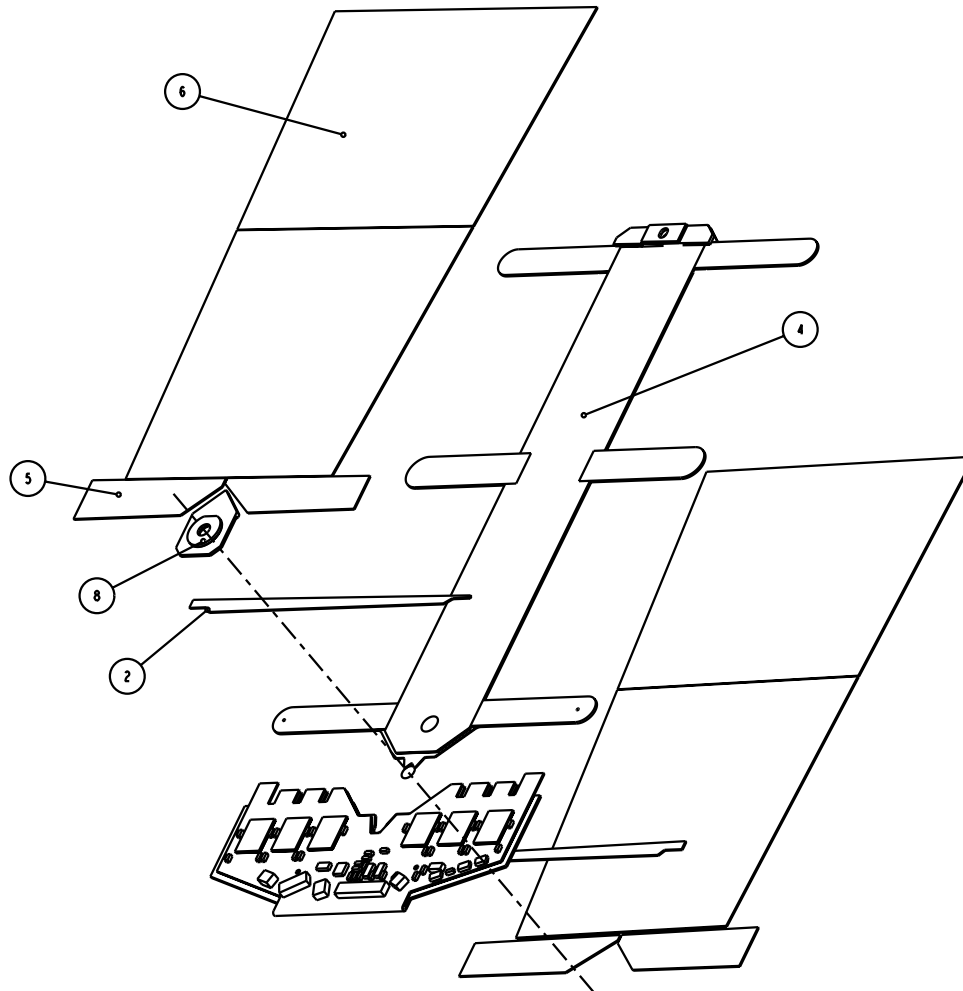
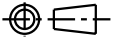
SCALE: 2:1

A1

APPROVED
NP27-03-00

P3	5-Jul-02	P. SURCLIFFE	3rd PHELIM ISSUE
P2	17-Apr-02	P. SURCLIFFE	2nd PHELIM ISSUE
P1	5-Sep-01	P. SURCLIFFE	1st PHELIM ISSUE
A	20-May-02	P. SURCLIFFE	FIRST ISSUE
ISSUE	DATE	NAME	DESCRIPTION
MODIFICATIONS			

THIRD ANGLE PROJECTION



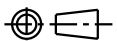
ITEM	PART/CAD No	DWG TITLE	MATERIAL	REMARK	QTY
1	NP27-05-01	HYBRID BASE ASSY - K5	SEE PARTS	-	1
2	NP27-05-08	FAN IN SPACER	AIN	-	2
4	NP27-05-11	OUTER MODULE SPINE ASSY	SEE PARTS	SEE PARTS	1
5	NP27-05-12	OUTER STEREO/PHI FAN-IN	BOROSILICATE GLASS	0.3mm THICK	2
6	NP27-05-13	OUTER SILICON WAFERS - W31 & W32	SILICON	0.3mm THICK	2
7	NP27-05-10-GLUE				1
8	NP27-05-82	LOCATION PAD ASSY	SEE PARTS	-	1
9	NP27-05-10-WIRE_BONDS				1

P3	5-July-02	P.SUTCLIFFE	3rd PRELIM ISSUE
P2	17-Apr-02	P.SUTCLIFFE	2nd PRELIM ISSUE
P1	5-Sept-01	P.SUTCLIFFE	1st PRELIM ISSUE
A	06-Dec-02	P.SUTCLIFFE	FIRST ISSUE
ISSUE	DATE	NAME	DESCRIPTION
MODIFICATIONS			

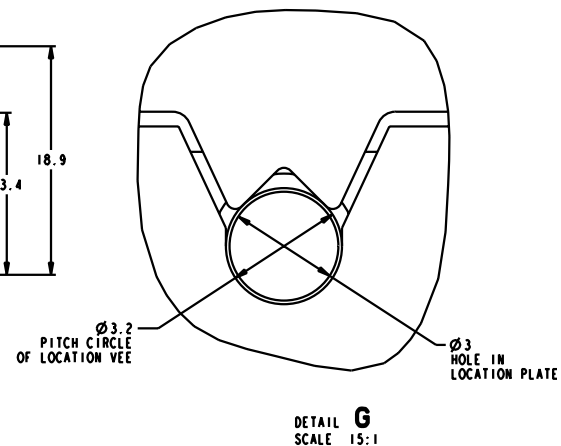
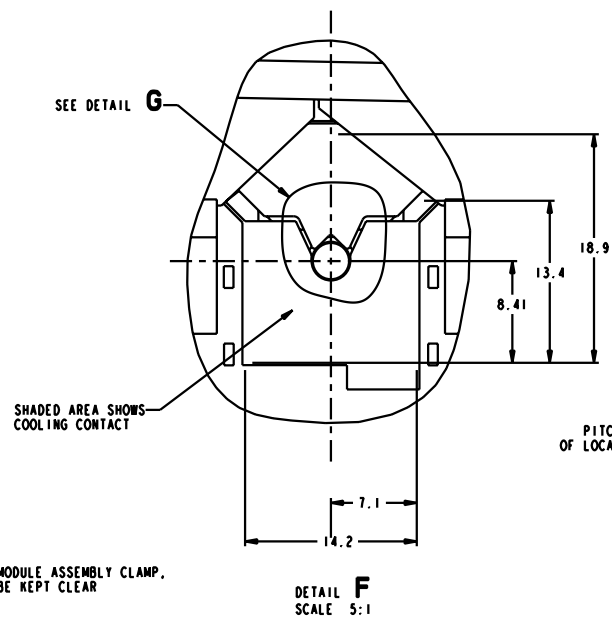
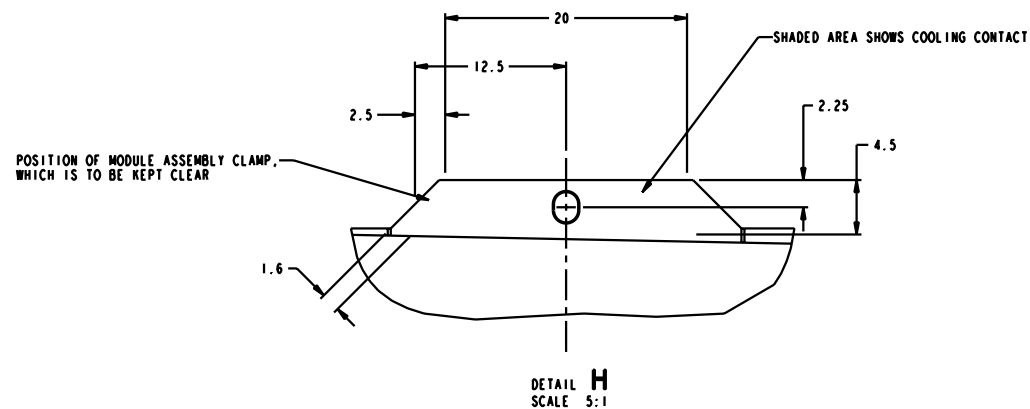
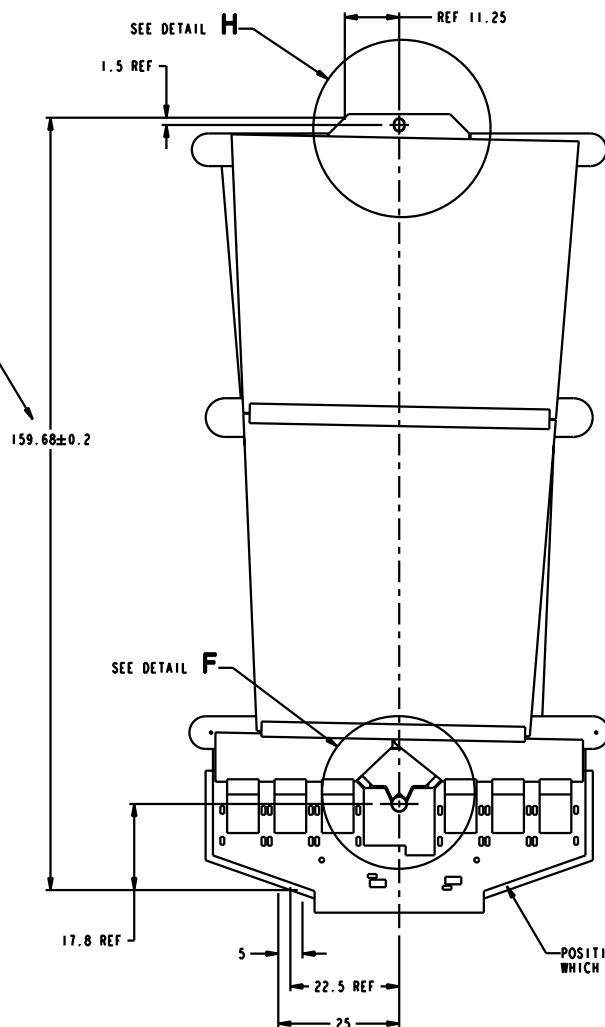
UNLESS OTHERWISE SPECIFIED:-				METRIC SCREW THREADS TO BS43 CLASS 8.8				GRINDING PRACTICE AND TOLERANCE INTERPRETATION TO BS400				WELDING SYMBOLS TO BS 400			
ALL DIMENSIONS IN MILLIMETRES				TOLERANCES UNLESS OTHERWISE SPECIFIED				MATERIAL				DATE			
SURFACE TEXTURE VALUES IN MICROMETRES				MACHINED DIMS. ± 0.1				SPEC				CHECKED			
SURFACE TEXTURE TO BE 3.2				ANGULAR $\pm 0.5^\circ$				TREATMENT				APPROVED			
MACHINE ALL OVER OR WHERE MARKED				DO NOT SCALE				FINISH				P.SUTCLIFFE			
REMOVE BURRS AND BREAK SHARP EDGES															

THE UNIVERSITY OF LIVERPOOL				DEPARTMENT OF PHYSICS			
PROJECT				ATLAS FORWARD TRACKER			
TITLE				OUTER MODULE - K5 HYBRID			
DRAWING NUMBER				NP27-05-10			
SHEET 2				OF 4 SHEETS			
SCALE: 2:1				A1			

THIRD ANGLE PROJECTION



IT IS IMPORTANT
THAT THIS DIM IS
MAINTAINED FOR THE
MODULE MOUNTING JIG



P3	5-Jul-02	P. Sutcliffe	3rd PRELIM ISSUE
P2	11-Apr-02	P. Sutcliffe	2nd PRELIM ISSUE
P1	5-Sep-01	P. Sutcliffe	1st PRELIM ISSUE
A	11-Jun-01	P. Sutcliffe	FIRST ISSUE
ISSUE	DATE	NAME	DESCRIPTION

MODIFICATIONS

THE UNIVERSITY OF LIVERPOOL
DEPARTMENT OF PHYSICS

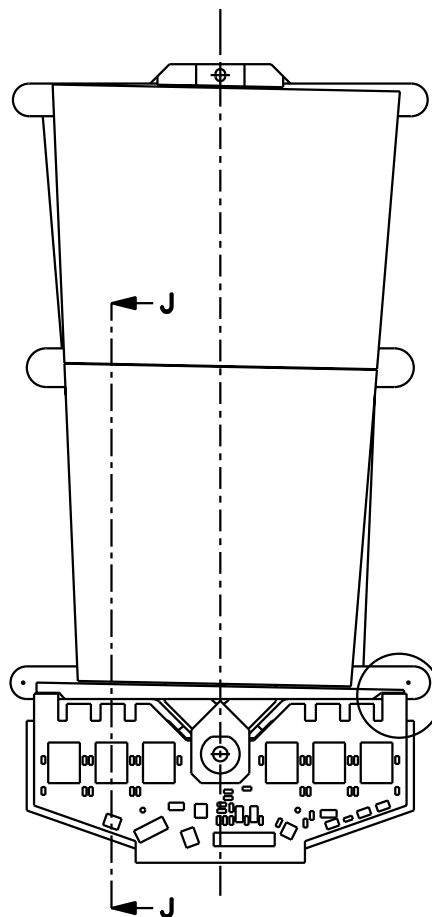
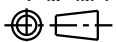
PROJECT ATLAS FORWARD TRACKER

TITLE OUTER MODULE - K5 HYBRID

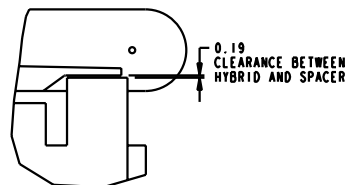
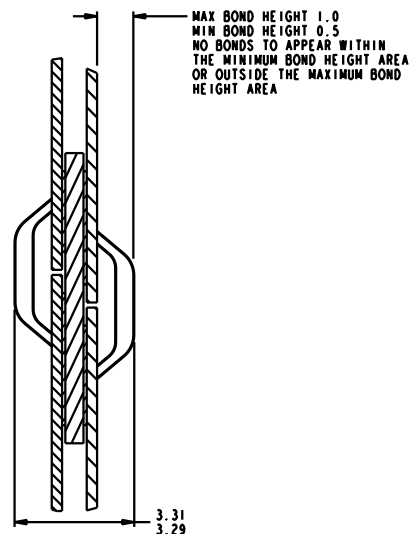
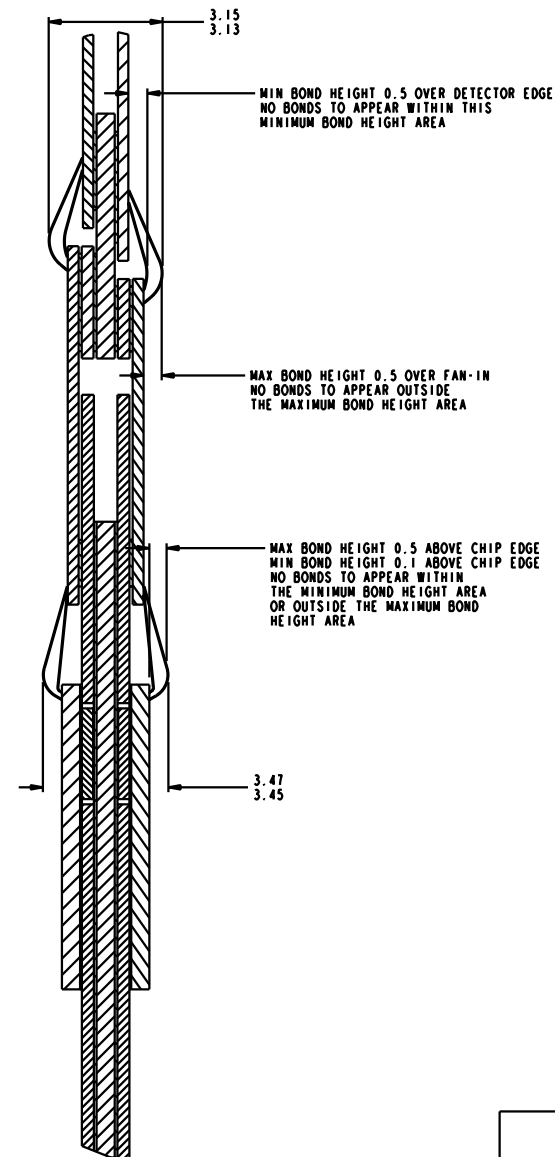
DRIVING NUMBER	NP27-05-10	AMDT. NUMBER	NP27-
SHEET	3	OF	4 SHEETS
SCALE	2:1		

UNLESS OTHERWISE SPECIFIED:-	METRIC SCREW THREADS TO BS4130 CLASS 8.8	DRIVING PRACTICE AND TOLERANCE INTERPRETATION TO BS4130	WELDING SYMBOLS TO BS 499
ALL DIMENSIONS IN MILLIMETRES	TOLERANCES UNLESS OTHERWISE SPECIFIED	MATERIAL	DATE
SURFACE TEXTURE VALUES IN MICROMETRES	UNLESS OTHERWISE SPECIFIED	SPEC	11-Jun-01
SURFACE TEXTURE TO BE	UNLESS OTHERWISE SPECIFIED	TREATMENT	CHECKED
UNLESS OTHERWISE SPECIFIED	UNLESS OTHERWISE SPECIFIED	FINISH	APPROVED
REMOVE BURRS AND BREAK SHARP EDGES	DO NOT SCALE		

THIRD ANGLE PROJECTION



VIE SHOWING MODULE SPACER, WITHOUT FAN-IN

DETAIL **K**
SCALE 5:1SEE DETAIL **K**REPEAT SECTION J-J
SCALE: 15:1
SHOWING WAFER/WAFER BONDSSECTION J-J
SCALE 15:1

A			
09-Jun-03	P. SUTCLIFFE	FIRST ISSUE	
ISSUE	DATE	NAME	DESCRIPTION
MODIFICATIONS			

UNLESS OTHERWISE SPECIFIED:-				METRIC SCREW THREADS TO BS4343 CLASS 6.8/8.8				WELDING SYMBOLS TO BS 499			
ALL DIMENSIONS IN MILLIMETRES				TOLERANCES UNLESS OTHERWISE SPECIFIED				DRAWING PRACTICE AND TOLERANCE INTERPRETATION TO BS20			
SURFACE TEXTURE VALUES IN MICROMETRES				MACHINED SURF. ± 0.1				DATE			
SURFACE TEXTURE TO BE				ANGULAR ± 0.5°				CHECKED			
MACHINE ALL OVER OR WHERE MARKED ✓				DO NOT SCALE				APPROVED			
REMOVE BURRS AND BREAK SHARP EDGES				FINISH				P. SUTCLIFFE			
								SHEET 4			
								OF 4 SHEETS SCALE: 2:1			

THE UNIVERSITY OF LIVERPOOL
DEPARTMENT OF PHYSICS

PROJECT ATLAS FORWARD TRACKER

TITLE OUTER MODULE - K5 HYBRID

DRAWING NUMBER
NP27-05-10

AMDT. DRAWING

A1