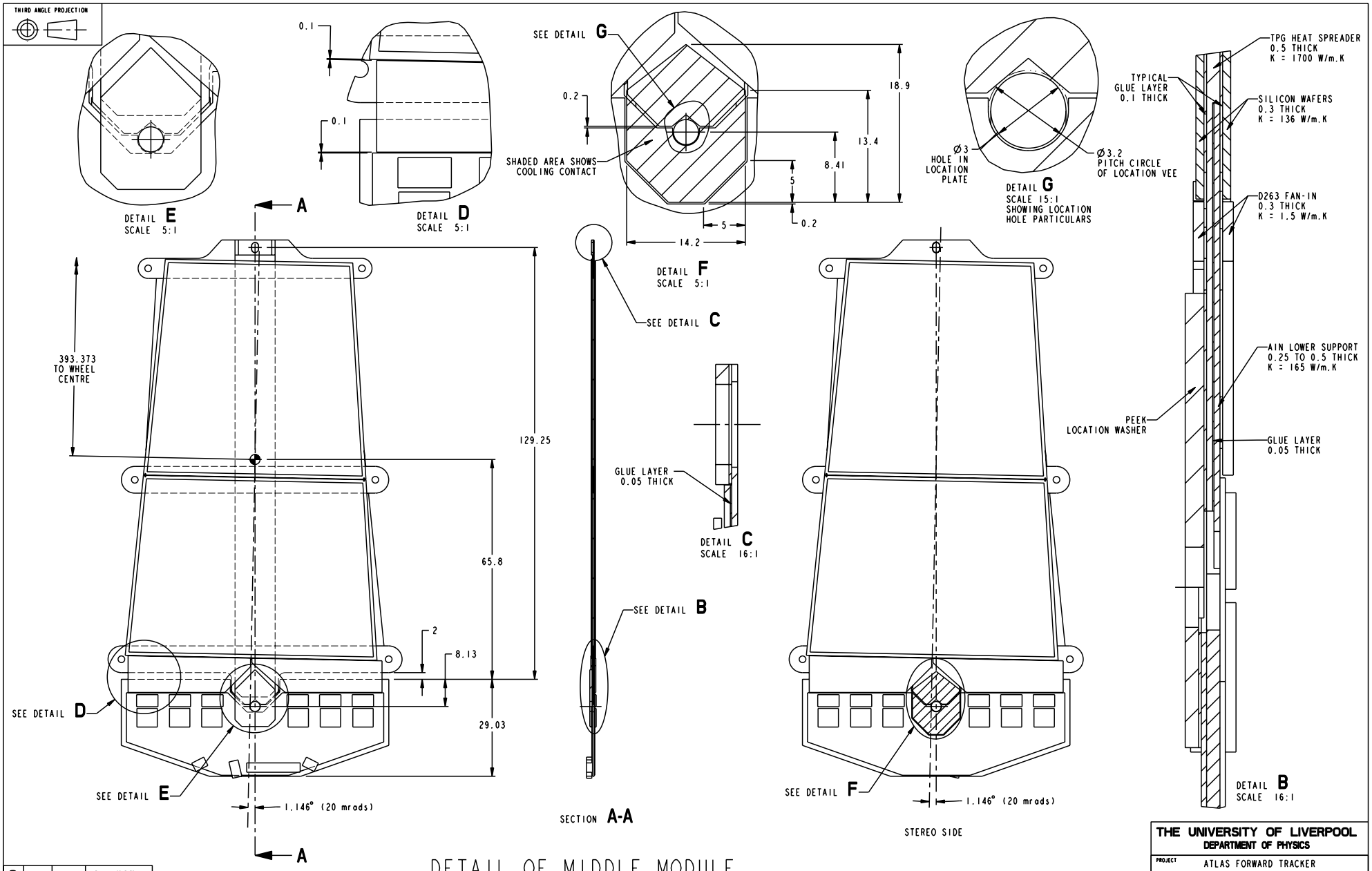



# DETAIL OF MIDDLE MODULE
## 40 OFF PER RING
## F -1 PROTOTYPE MODULES ONLY

| ISSUE | DATE | NAME | DESCRIPTION |
|---|---|---|---|
| C | 30-Oct-98 | P.SUTCLIFFE | FAN-IN MODIFIED IN ACCORDANCE WITH SPEC. |
| B | 27-Oct-98 | P.SUTCLIFFE | HYBRID CHANGED IN LINE WITH ELECTRONIC DESIGN. LOCATION VEE CLARIFIED |
| A | 24-Sep-98 | P.SUTCLIFFE | FIRST ISSUE |

MODIFICATIONS

UNLESS OTHERWISE SPECIFIED:-
ALL DIMENSIONS IN MILLIMETRES
SURFACE TEXTURE VALUES IN MICROMETRES
SURFACE TEXTURE TO BE ☐ ✓
MACHINE ALL OVER OR WHERE MARKED ✓
REMOVE BURRS AND BREAK SHARP EDGES

METRIC SCREW THREADS TO BS3643 CLASS 6H/6g
TOLERANCES UNLESS OTHERWISE SPECIFIED
MACHINED ☐.☐ ±
ANGULAR ±
DO NOT SCALE

DRAWING PRACTICE AND TOLERANCE INTERPRETATION TO BS308

| | |
|---|---|
| MATERIAL | SEE CHART |
| SPEC | SEE PARTS |
| TREATMENT | SEE PARTS |
| FINISH | SEE PARTS |

WELDING SYMBOLS TO BS 499

| | |
|---|---|
| DRAWN | P.SUTCLIFFE |
| DATE | 24-Sep-98 |
| CHECKED | P.SUTCLIFFE |
| APPROVED | P.SUTCLIFFE |

**THE UNIVERSITY OF LIVERPOOL**
**DEPARTMENT OF PHYSICS**

PROJECT: ATLAS FORWARD TRACKER

TITLE: MIDDLE MODULE, BeO/AIN/TPG VERS.

DRAWING NUMBER: NP27-03-120

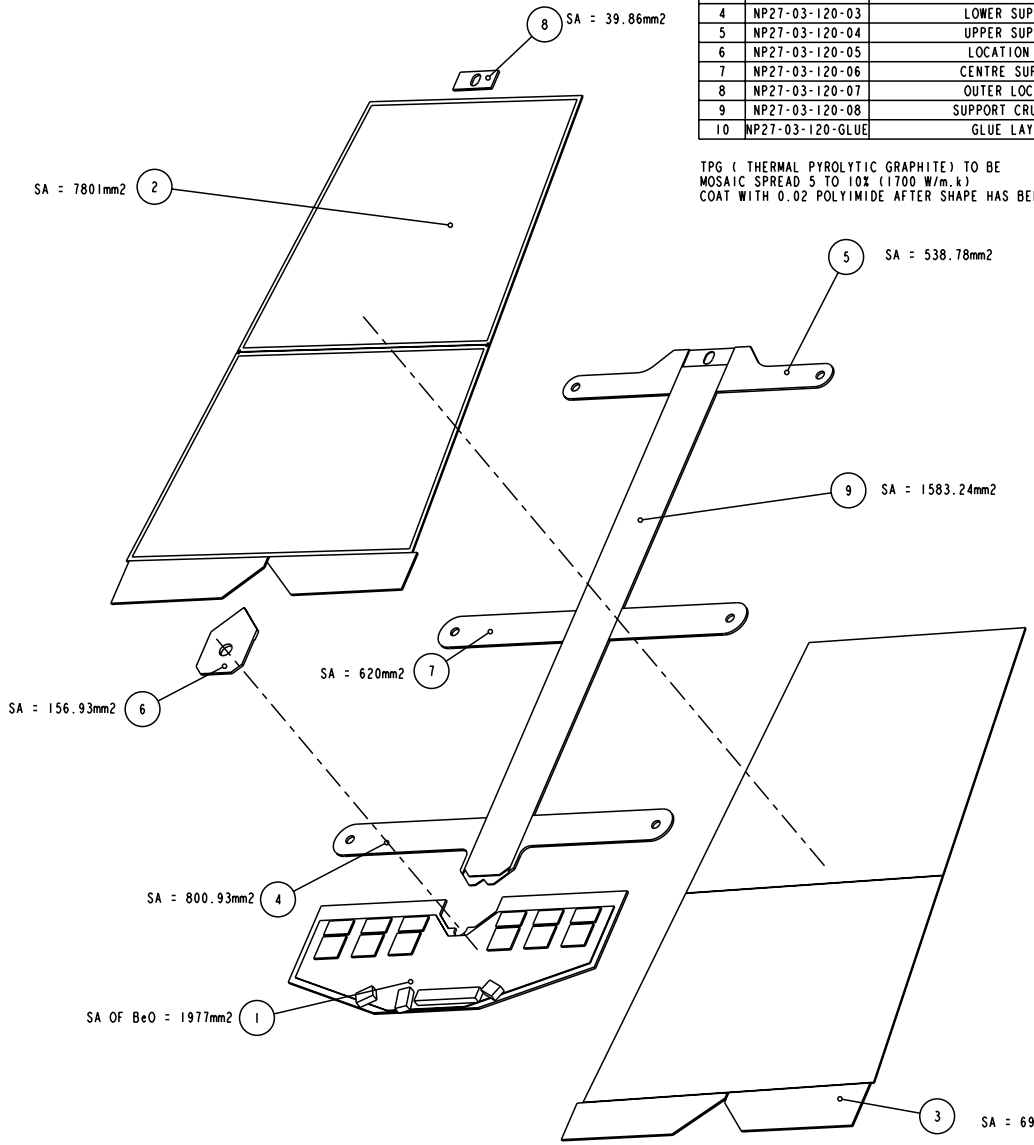
ARRGT. DRAWING: NP27-03-90

SHEET 1 OF 3 SHEETS SCALE:-2:1 A1

THIRD ANGLE PROJECTION

| ITEM | PART/CAD No | DWG TITLE | MATERIAL | MAT SPEC | REMARK | QTY |
|---|---|---|---|---|---|---|
| 1 | NP27-03-116 | HYBRID BASE ASSEMBLY - TPG/BeO | SEE PARTS | SEE PARTS | - | 1 |
| 2 | NP27-03-120-01 | MIDDLE SILICON WAFERS | SILICON | - | 0.3mm THICK | 2 |
| 3 | NP27-03-120-02 | STEREO/PHI FAN-IN | BOROSILICATE GLASS | D263 | 0.3mm THICK | 2 |
| 4 | NP27-03-120-03 | LOWER SUPPORT | AIN | - | 0.5mm THICK | 1 |
| 5 | NP27-03-120-04 | UPPER SUPPORT | AIN | - | 0.5mm THICK | 1 |
| 6 | NP27-03-120-05 | LOCATION PAD | PEEK | - | - | 1 |
| 7 | NP27-03-120-06 | CENTRE SUPPORT | AIN | - | 0.5mm THICK | 1 |
| 8 | NP27-03-120-07 | OUTER LOCATOR | PEEK | - | 0.5mm THICK | 1 |
| 9 | NP27-03-120-08 | SUPPORT CRUCIFIX | TPG | SEE NOTE | 0.5mm THICK | 1 |
| 10 | NP27-03-120-GLUE | GLUE LAYERS | ? | ? | 0.1mm OR 0.05mm thick | 1 |

TPG ( THERMAL PYROLYTIC GRAPHITE) TO BE
MOSAIC SPREAD 5 TO 10% (1700 W/m.k)
COAT WITH 0.02 POLYIMIDE AFTER SHAPE HAS BEEN CUT.




| ISSUE | DATE | NAME | DESCRIPTION |
|---|---|---|---|
| C | 30-Oct-98 | P.SUTCLIFFE | FAN-IN MODIFIED IN ACCORDANCE WITH SPEC. |
| B | 27-Oct-98 | P.SUTCLIFFE | HYBRID CHANGED IN LINE WITH ELECTRONIC DESIGN. LOCATION VEE CLARIFIED |
| A | 24-Sep-98 | P.SUTCLIFFE | FIRST ISSUE |

MODIFICATIONS

UNLESS OTHERWISE SPECIFIED:-
ALL DIMENSIONS IN MILLIMETRES
SURFACE TEXTURE VALUES IN MICROMETRES
SURFACE TEXTURE TO BE ☐ ✓
MACHINE ALL OVER OR WHERE MARKED ✓
REMOVE BURRS AND BREAK SHARP EDGES

METRIC SCREW THREADS TO BS3643 CLASS 6H/6g
TOLERANCES UNLESS OTHERWISE SPECIFIED
MACHINED ☐ ±
ANGULAR ±
DO NOT SCALE

DRAWING PRACTICE AND TOLERANCE INTERPRETATION TO BS308

| | |
|---|---|
| MATERIAL | SEE CHART |
| SPEC | SEE PARTS |
| TREATMENT | SEE PARTS |
| FINISH | SEE PARTS |

WELDING SYMBOLS TO BS 499

| | |
|---|---|
| DRAWN | P.SUTCLIFFE |
| DATE | 24-Sep-98 |
| CHECKED | P.SUTCLIFFE |
| APPROVED | P.SUTCLIFFE |

**THE UNIVERSITY OF LIVERPOOL**
**DEPARTMENT OF PHYSICS**

PROJECT: ATLAS FORWARD TRACKER

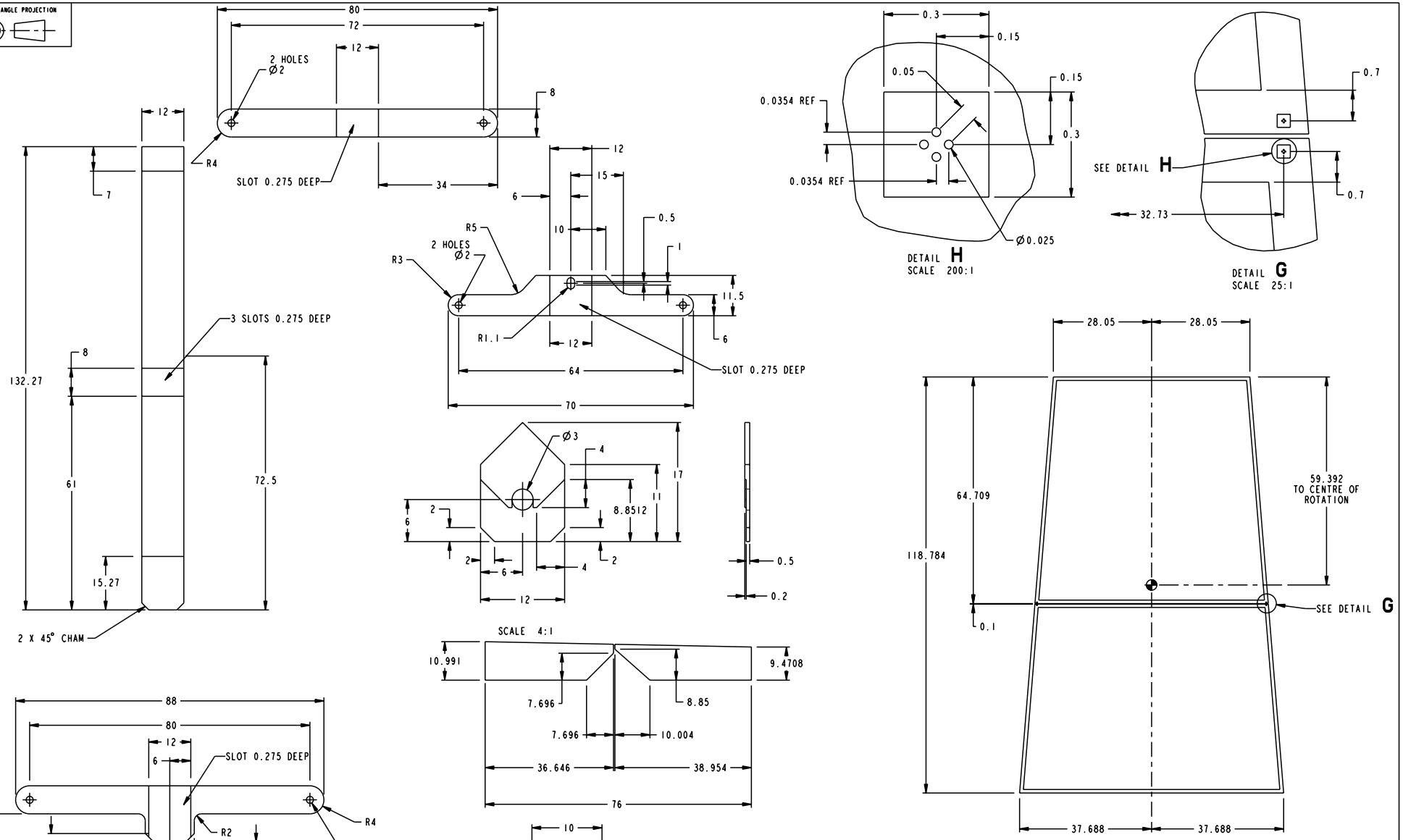
TITLE: MIDDLE MODULE, BeO/AIN/TPG VERS.

DRAWING NUMBER: NP27-03-120

ARRGT. DRAWING: NP27-03-90

SHEET 2 OF 3 SHEETS SCALE:-2:1 A1

THIRD ANGLE PROJECTION




| ISSUE | DATE | NAME | DESCRIPTION |
|---|---|---|---|
| C | 30-Oct-98 | P.SUTCLIFFE | FAN-IN MODIFIED IN ACCORDANCE WITH SPEC. |
| B | 27-Oct-98 | P.SUTCLIFFE | HYBRID CHANGED IN LINE WITH ELECTRONIC DESIGN. LOCATION VEE CLARIFIED |
| A | 24-Sep-98 | P.SUTCLIFFE | FIRST ISSUE |

MODIFICATIONS

UNLESS OTHERWISE SPECIFIED:-
ALL DIMENSIONS IN MILLIMETRES
SURFACE TEXTURE VALUES IN MICROMETRES
SURFACE TEXTURE TO BE ☐ ✓
MACHINE ALL OVER OR WHERE MARKED ✓
REMOVE BURRS AND BREAK SHARP EDGES

METRIC SCREW THREADS TO BS3643 CLASS 6H/6g
TOLERANCES UNLESS OTHERWISE SPECIFIED
MACHINED ☐ ±
ANGULAR ±
DO NOT SCALE

DRAWING PRACTICE AND TOLERANCE INTERPRETATION TO BS308

| | |
|---|---|
| MATERIAL | SEE CHART |
| SPEC | SEE PARTS |
| TREATMENT | SEE PARTS |
| FINISH | SEE PARTS |

WELDING SYMBOLS TO BS 499

| | |
|---|---|
| DRAWN | P.SUTCLIFFE |
| DATE | 24-Sep-98 |
| CHECKED | P.SUTCLIFFE |
| APPROVED | P.SUTCLIFFE |

**THE UNIVERSITY OF LIVERPOOL**
**DEPARTMENT OF PHYSICS**

PROJECT: ATLAS FORWARD TRACKER

TITLE: MIDDLE MODULE, BeO/AlN/TPG VERS.

DRAWING NUMBER: NP27-03-120

ARRGT. DRAWING: NP27-03-90

SHEET 3 OF 3 SHEETS SCALE:-2:1 A1