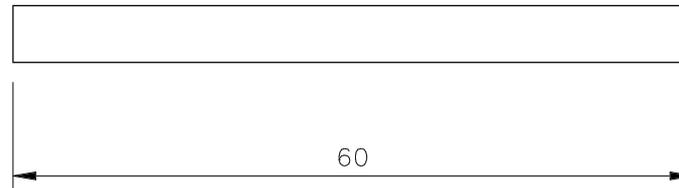
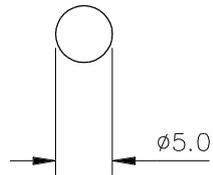
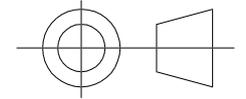


DO NOT SCALE

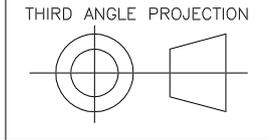
THIRD ANGLE PROJECTION



DRG. TITLE:		Z-BEARING RODS (HARDENED AND GROUND)	
SCALES:		2:1	ASTRONOMICAL INSTRUMENTATION GROUP DURHAM UNIVERSITY, PHYSICS DEPARTMENT SCIENCE LABS, SOUTH ROAD, DURHAM, DL1 3LE TEL. (091) 374 2107 & 2108
DRG. TYPE:		PARTS	THIS DRAWING IS THE PROPERTY OF THE ASTRONOMICAL INSTRUMENTATION GROUP, DURHAM UNIVERSITY, PHYSICS DEPT. IT MUST NOT BE COPIED OR LENT WITHOUT THE CONSENT OF THE INSTRUMENTATION GROUP
DRAWN BY:		IRP	
DATE		13/07/90	DRG. SIZE A3
		DRAWING No.	REV.
		AF2\GRP-10	B

ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED			
IMPLIED TOLERANCES			
X (OVER 100) ± 0.20			
X (UP TO 100) ± 0.1			
X.X ± 0.10			
X.XX ± 0.05			
Material:		ST STEEL	
Quantity:		4 OFF	
B	DIA WAS $\phi 6.0$	GD	17/6/92
ISSUE	GD REVISION	DRN	DATE

DO NOT SCALE



2-HOLES DRILL $\phi 2.9$ THRO'

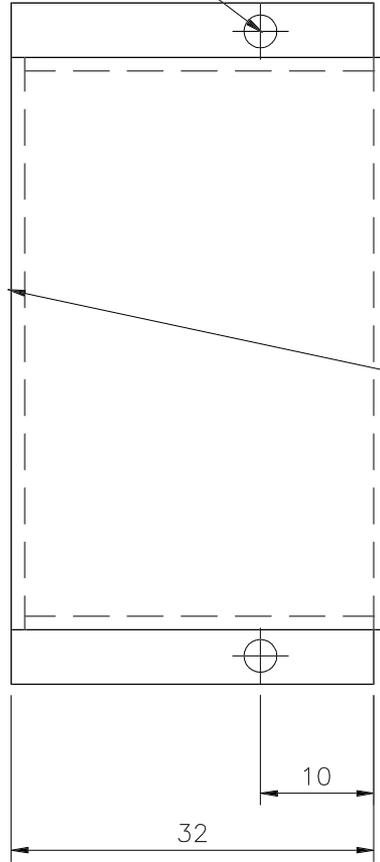
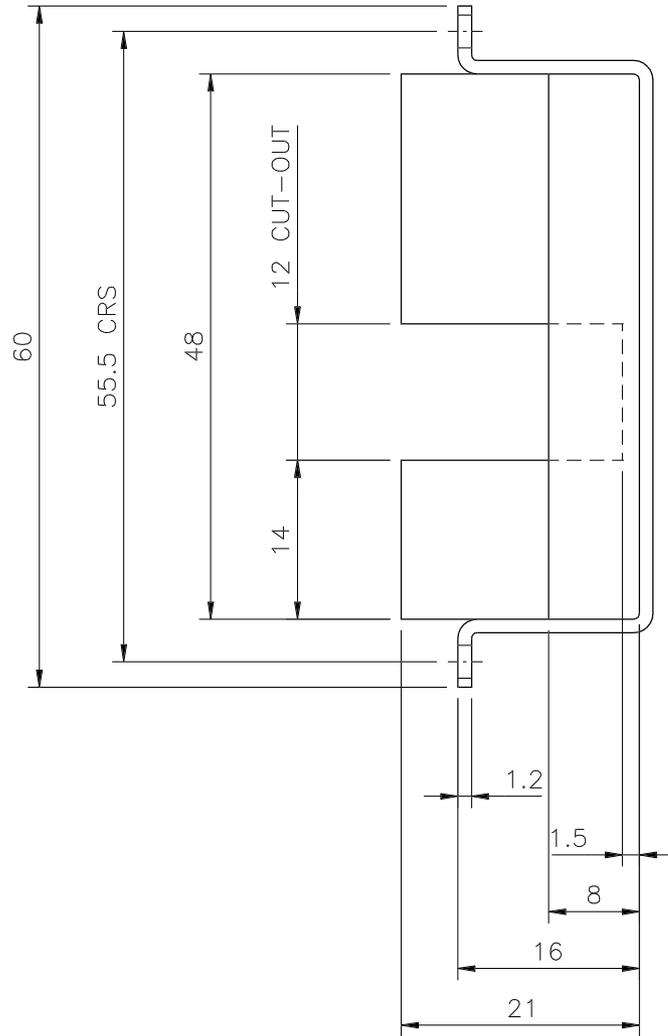


PLATE FOLDED TO FORM
END PLATES

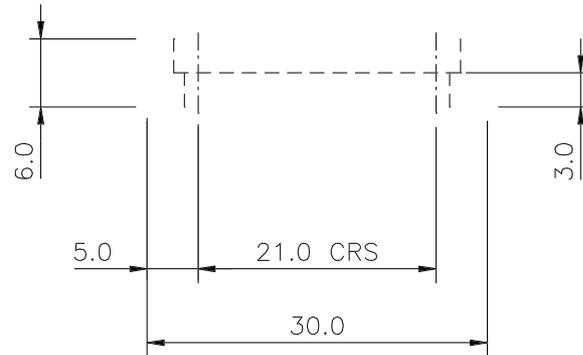
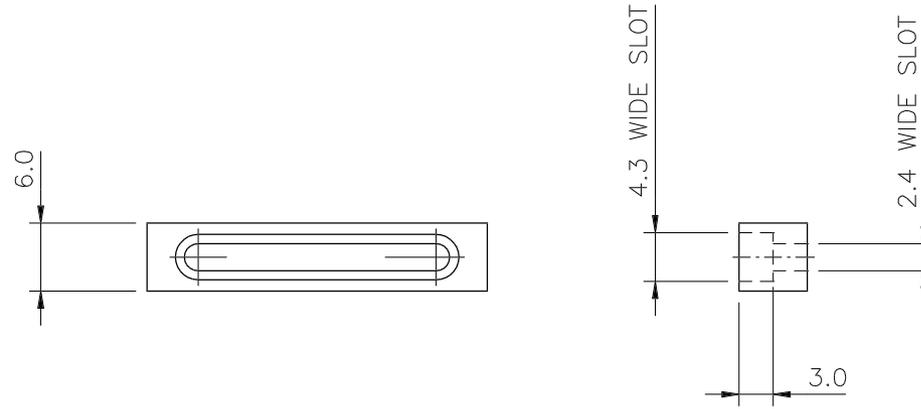
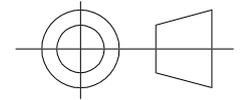
DRG. TITLE:		LIGHT COVER FOR OPTO SWITCH - AF2 GRIPPER	
SCALES:		2:1	ASTRONOMICAL INSTRUMENTATION GROUP DURHAM UNIVERSITY, PHYSICS DEPARTMENT SCIENCE LABS, SOUTH ROAD, DURHAM, DH1 3LE TEL. (091) 374 2107 & 2108
DRG. TYPE:		PARTS	THIS DRAWING IS THE PROPERTY OF THE ASTRONOMICAL INSTRUMENTATION GROUP, DURHAM UNIVERSITY, PHYSICS DEPT. IT MUST NOT BE COPIED OR LENT WITHOUT THE CONSENT OF THE INSTRUMENTATION GROUP
DRAWN BY:		G.D.	
DATE		11/01/95	DRAWING No.
		AF2\GRP-42	REV. A

ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED			
IMPLIED TOLERANCES			
X (OVER 100) ± 0.20			
X (UP TO 100) ± 0.1			
X.X ± 0.10			
X.XX ± 0.05			
ISSUE	REVISION	DRN	DATE

Material:
AL ALLOY
Quantity: 1 OFF

DO NOT SCALE

THIRD ANGLE PROJECTION



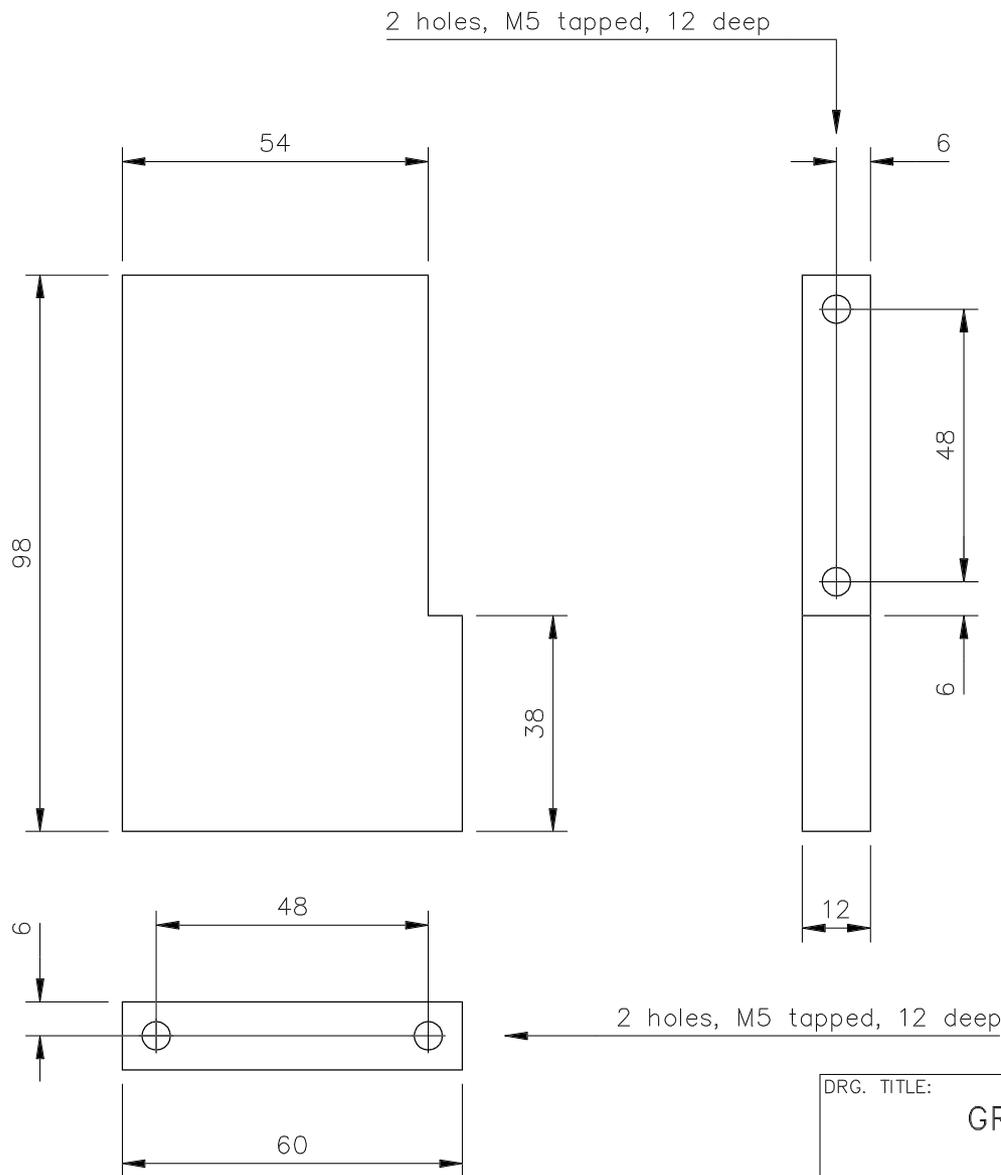
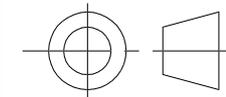
FINISH - MACHINE ALL OVER

DRG. TITLE:		END STOP	
SCALES:	2:1	ASTRONOMICAL INSTRUMENTATION GROUP DURHAM UNIVERSITY, PHYSICS DEPARTMENT SCIENCE LABS, SOUTH ROAD, DURHAM, DH1 3LE TEL. (091) 374 2107 & 2108	
DRG. TYPE:	PARTS	THIS DRAWING IS THE PROPERTY OF THE ASTRONOMICAL INSTRUMENTATION GROUP, DURHAM UNIVERSITY, PHYSICS DEPT. IT MUST NOT BE COPIED OR LENT WITHOUT THE CONSENT OF THE INSTRUMENTATION GROUP	DRG. SIZE A3
DRAWN BY:	G.D		
DATE	24/02/94	DRAWING No.	AF2\GRP-41
REV.	B		

ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED			
IMPLIED TOLERANCES		Material:	
X (OVER 100) ±0.20		AL ALLOY	
X (UP TO 100) ±0.1		Quantity: 1 OFF	
X.X ±0.10			
X.XX ±0.05			
B	SLOT ALTERED TO SUIT M2 SCREW	GD	29/3/94
ISSUE	REVISION	DRN	DATE

DO NOT SCALE

THIRD ANGLE PROJECTION

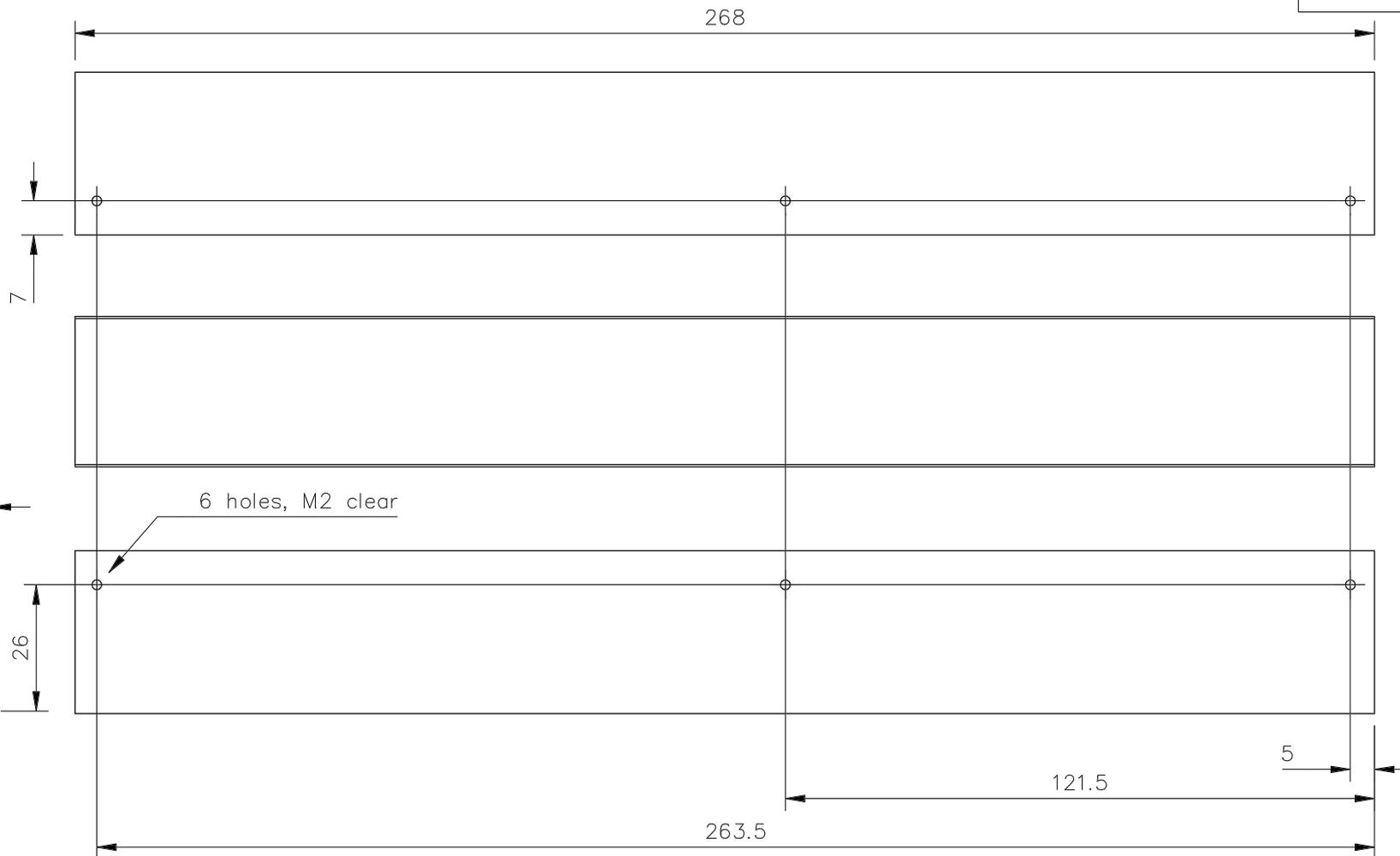
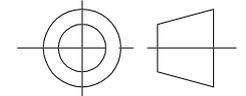


DRG. TITLE:		GRIPPER UNIT MOUNTING BRACKET	
SCALES:		1:1	ASTRONOMICAL INSTRUMENTATION GROUP DURHAM UNIVERSITY, PHYSICS DEPARTMENT SCIENCE LABS, SOUTH ROAD, DURHAM, DL1 3LE TEL. (091) 374 2107 & 2108
DRG. TYPE:		PARTS	THIS DRAWING IS THE PROPERTY OF THE ASTRONOMICAL INSTRUMENTATION GROUP, DURHAM UNIVERSITY, PHYSICS DEPT. IT MUST NOT BE COPIED OR LENT WITHOUT THE CONSENT OF THE INSTRUMENTATION GROUP
DRAWN BY:		IRP	
DATE		08/08/90	DRAWING No. AF2\GRP-40
			DRG. SIZE A3
			REV. A

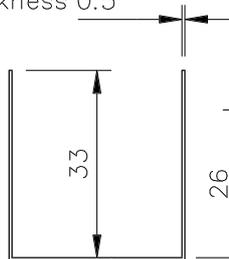
ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED			
IMPLIED TOLERANCES		Material:	
	X (OVER 100) ±0.20	AL TOOL PL	
	X (UP TO 100) ±0.1	Quantity: 2 OFF	
	X.X ±0.10		
	X.XX ±0.05		
ISSUE	REVISION	DRN	DATE

DO NOT SCALE

THIRD ANGLE PROJECTION



Suggested sheet thickness 0.5



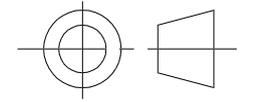
6 holes, M2 clear

DRG. TITLE:		GRIPPER OPTICS COVER	
SCALES:	1:1	ASTRONOMICAL INSTRUMENTATION GROUP DURHAM UNIVERSITY, PHYSICS DEPARTMENT SCIENCE LABS, SOUTH ROAD, DURHAM, DL1 3LE TEL. (091) 374 2107 & 2108	
DRG. TYPE:	PARTS	THIS DRAWING IS THE PROPERTY OF THE ASTRONOMICAL INSTRUMENTATION GROUP, DURHAM UNIVERSITY, PHYSICS DEPT. IT MUST NOT BE COPIED OR LENT WITHOUT THE CONSENT OF THE INSTRUMENTATION GROUP	DRG. SIZE
DRAWN BY:	IRP		A3
DATE	17/08/90	DRAWING No.	REV.
		AF2\GRP-38	A

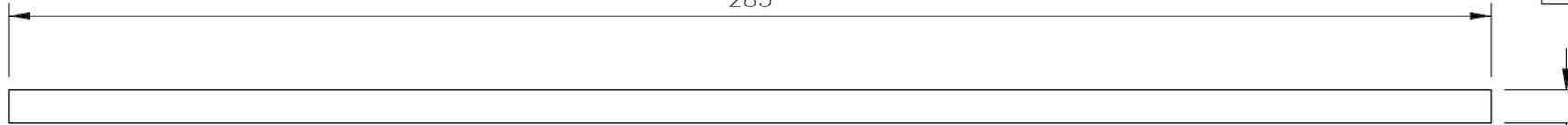
ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED			
IMPLIED TOLERANCES		Material:	
	X (OVER 100) ±0.20	ALUMINIUM	
	X (UP TO 100) ±0.1	Quantity: 1 OFF	
	X.X ±0.10		
	X.XX ±0.05		
ISSUE	REVISION	DRN	DATE

DO NOT SCALE

THIRD ANGLE PROJECTION



285



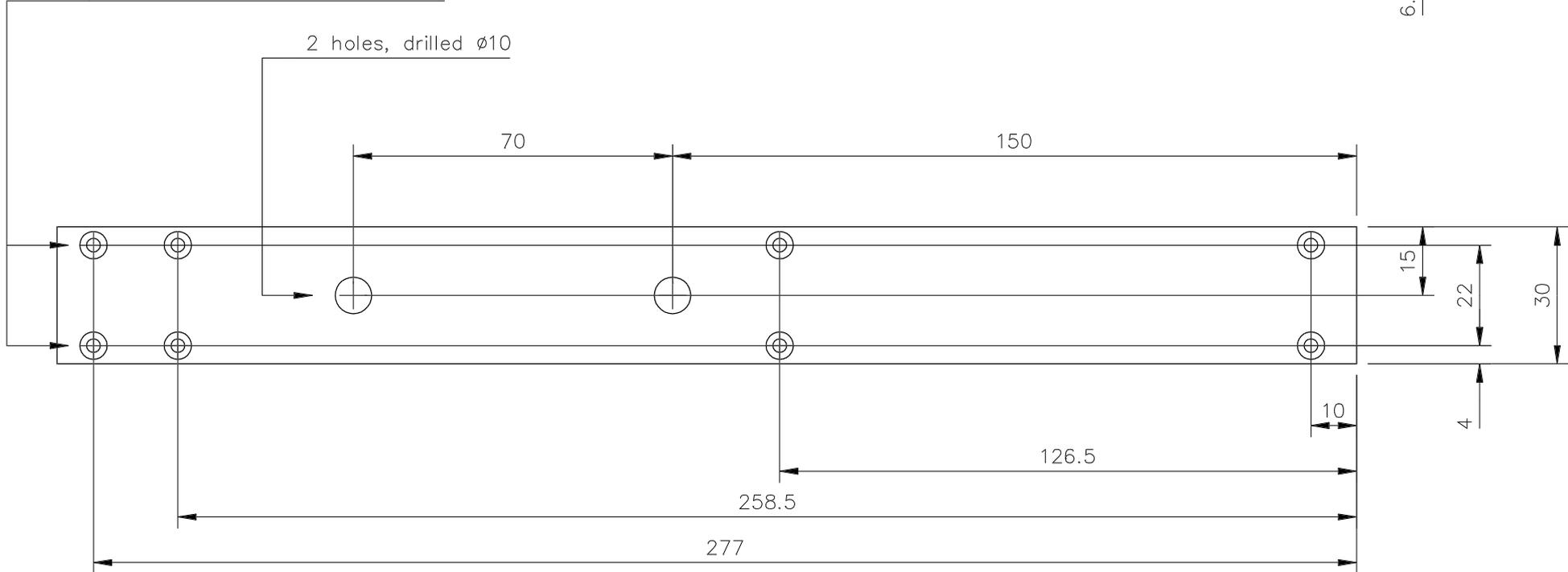
6.35

8 holes, M3 clear, counterbored

2 holes, drilled $\phi 10$

70

150



15

22

30

10

4

126.5

258.5

277

DRG. TITLE:

GRIPPER OPTICS BASE

SCALES:

1:1

ASTRONOMICAL INSTRUMENTATION GROUP
DURHAM UNIVERSITY, PHYSICS DEPARTMENT
SCIENCE LABS, SOUTH ROAD, DURHAM, DL1 3LE
TEL. (091) 374 2107 & 2108

DRG. TYPE:

PARTS

DRAWN BY:

IRP

THIS DRAWING IS THE PROPERTY OF THE ASTRONOMICAL INSTRUMENTATION GROUP, DURHAM UNIVERSITY, PHYSICS DEPT. IT MUST NOT BE COPIED OR LENT WITHOUT THE CONSENT OF THE INSTRUMENTATION GROUP

DRG. SIZE
A3

DATE

08/08/90

DRAWING No.

AF2\GRP-37

REV.

A

ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED

IMPLIED TOLERANCES
X (OVER 100) ± 0.20
X (UP TO 100) ± 0.1
X.X ± 0.10
X.XX ± 0.05

Material:

AL TOOL PL

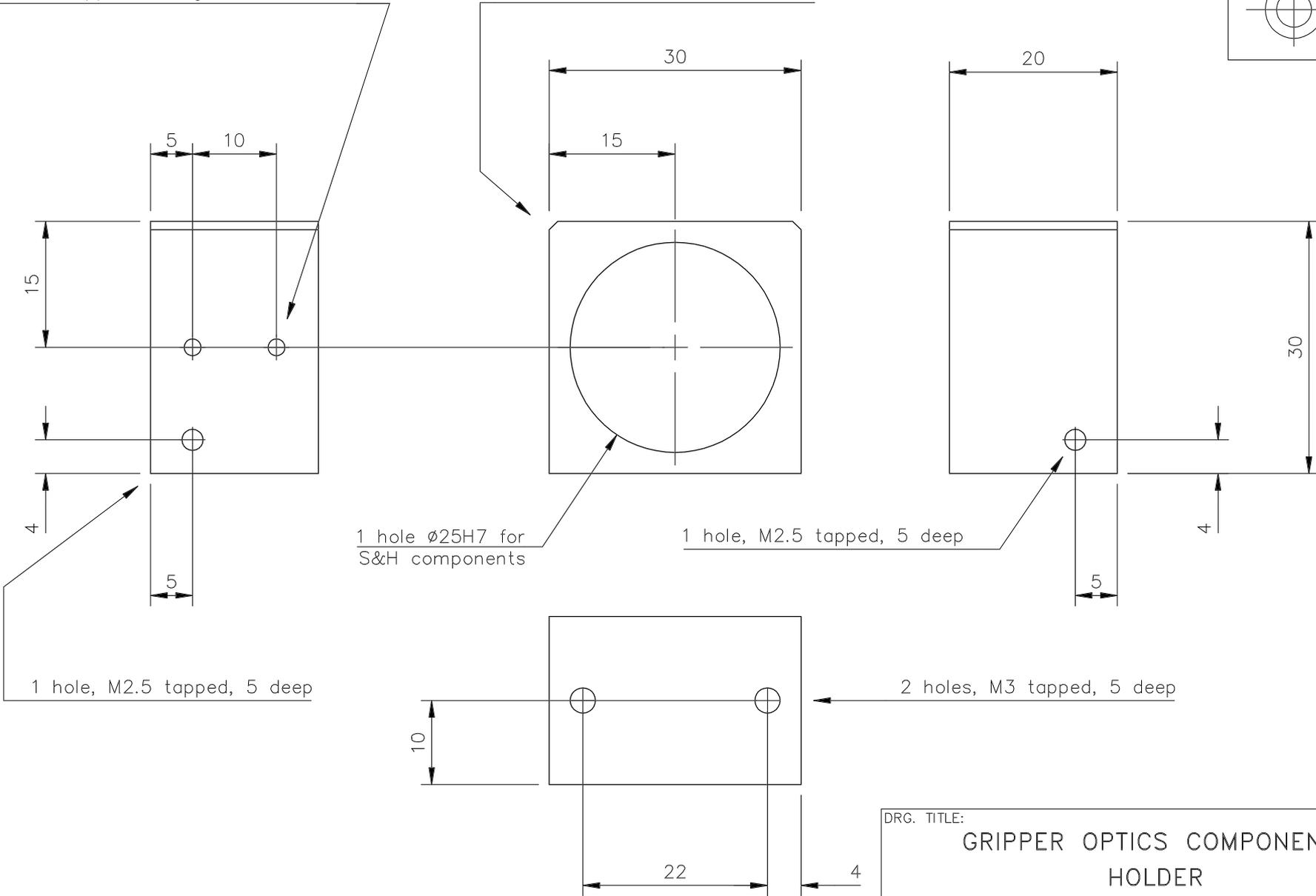
Quantity: 1 OFF

ISSUE	REVISION	DRN	DATE

2 holes, M2 tapped through to $\phi 25$ bore

DO NOT SCALE
chamfer to fit cover, AF2-037

THIRD ANGLE PROJECTION



ISSUE	REVISION	DRN	DATE

ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED

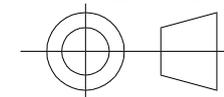
IMPLIED TOLERANCES
 X (OVER 100) ± 0.20
 X (UP TO 100) ± 0.1
 X.X ± 0.10
 X.XX ± 0.05

Material:
ALUMINIUM
 Quantity: 3 OFF

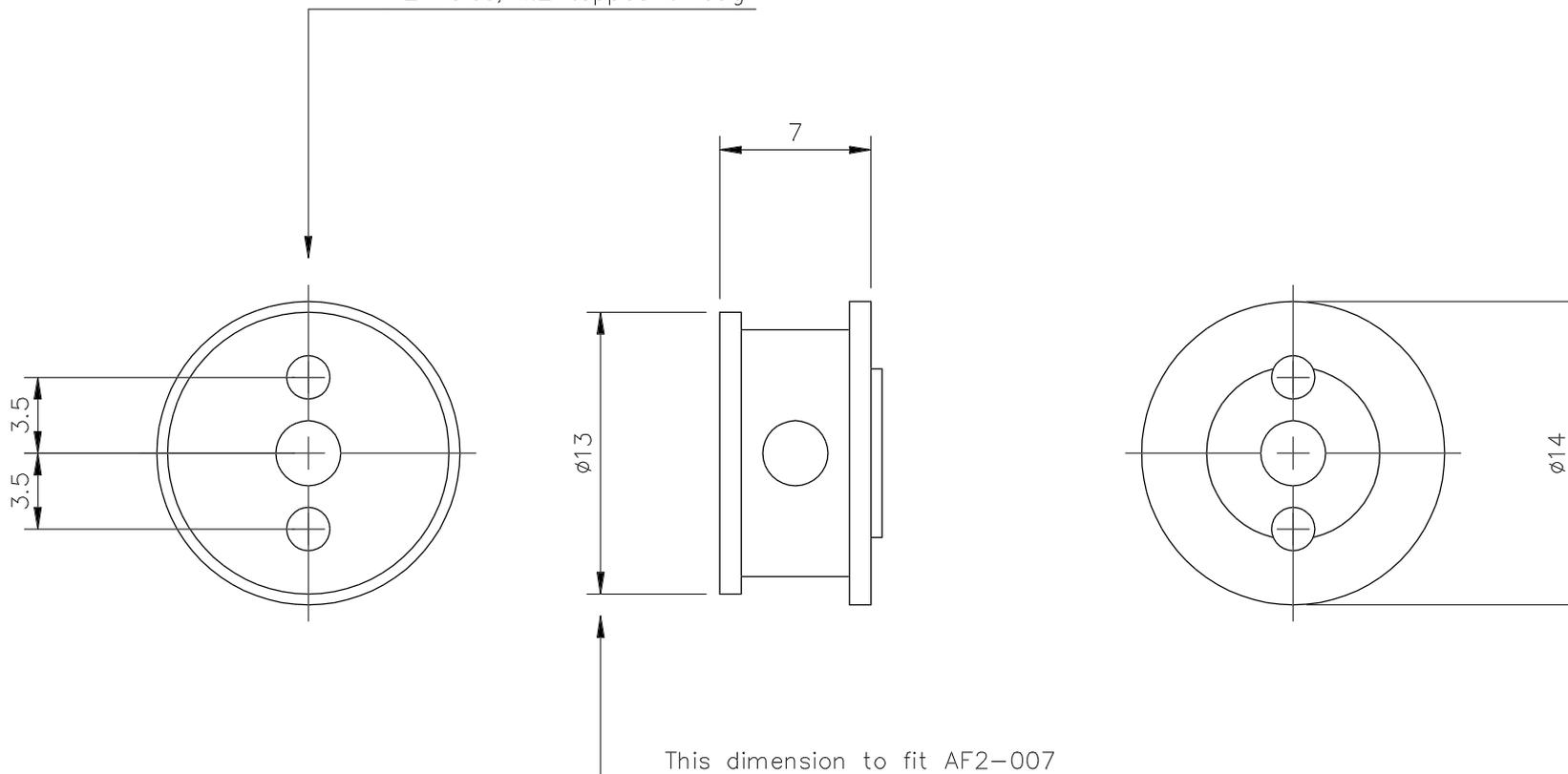
DRG. TITLE: GRIPPER OPTICS COMPONENT HOLDER	
SCALES: 2:1	ASTRONOMICAL INSTRUMENTATION GROUP DURHAM UNIVERSITY, PHYSICS DEPARTMENT SCIENCE LABS, SOUTH ROAD, DURHAM, DL1 3LE TEL. (091) 374 2107 & 2108
DRG. TYPE: PARTS	THIS DRAWING IS THE PROPERTY OF THE ASTRONOMICAL INSTRUMENTATION GROUP, DURHAM UNIVERSITY, PHYSICS DEPT. IT MUST NOT BE COPIED OR LENT WITHOUT THE CONSENT OF THE INSTRUMENTATION GROUP
DRAWN BY: IRP	
DATE 23/08/90	DRAWING No. AF2\GRP-36
	DRG. SIZE A3 REV. A

DO NOT SCALE

THIRD ANGLE PROJECTION



2 holes, M2 tapped through



This dimension to fit AF2-007

DRG. TITLE:		AF2-Z TIMING PULLEY MODIFICATIONS	
SCALES:	4:1	ASTRONOMICAL INSTRUMENTATION GROUP DURHAM UNIVERSITY, PHYSICS DEPARTMENT SCIENCE LABS, SOUTH ROAD, DURHAM, DL1 3LE TEL. (091) 374 2107 & 2108	
DRG. TYPE:	PARTS	THIS DRAWING IS THE PROPERTY OF THE ASTRONOMICAL INSTRUMENTATION GROUP, DURHAM UNIVERSITY, PHYSICS DEPT. IT MUST NOT BE COPIED OR LENT WITHOUT THE CONSENT OF THE INSTRUMENTATION GROUP	DRG. SIZE A3
DRAWN BY:	IRP		DRAWING No.
DATE	21/08/90	AF2\GRP-35	REV. A

ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED

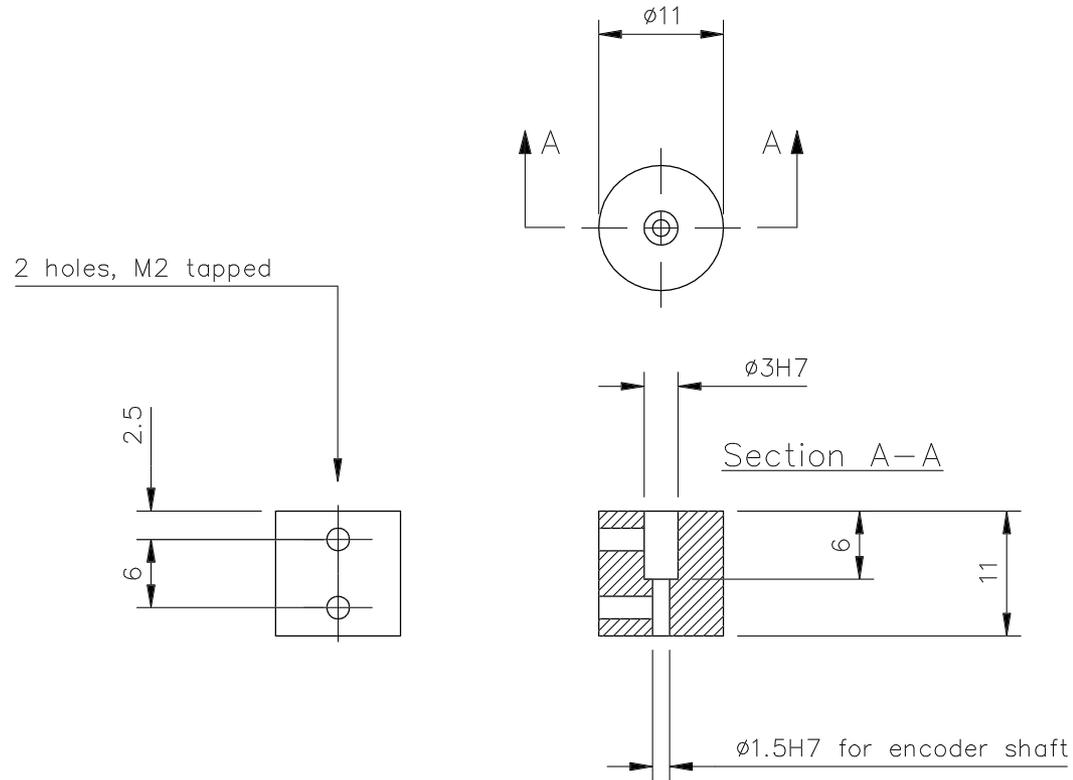
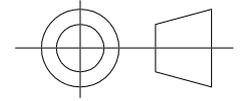
IMPLIED TOLERANCES
 X (OVER 100) ±0.20
 X (UP TO 100) ±0.1
 X.X ±0.10
 X.XX ±0.05

Material:
AL ALLOY
 Quantity: 1 OFF

ISSUE	REVISION	DRN	DATE

DO NOT SCALE

THIRD ANGLE PROJECTION

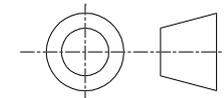


DRG. TITLE:		AF2-THETA ENCODER SHAFT COUPLING	
SCALES:	2:1	ASTRONOMICAL INSTRUMENTATION GROUP DURHAM UNIVERSITY, PHYSICS DEPARTMENT SCIENCE LABS, SOUTH ROAD, DURHAM, DL1 3LE TEL. (091) 374 2107 & 2108	
DRG. TYPE:	PARTS	THIS DRAWING IS THE PROPERTY OF THE ASTRONOMICAL INSTRUMENTATION GROUP, DURHAM UNIVERSITY, PHYSICS DEPT. IT MUST NOT BE COPIED OR LENT WITHOUT THE CONSENT OF THE INSTRUMENTATION GROUP	DRG. SIZE A3
DRAWN BY:	IRP		
DATE	26/07/90	DRAWING No.	AF2\GRP-34
			REV. A

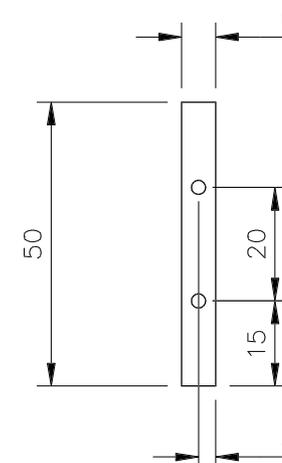
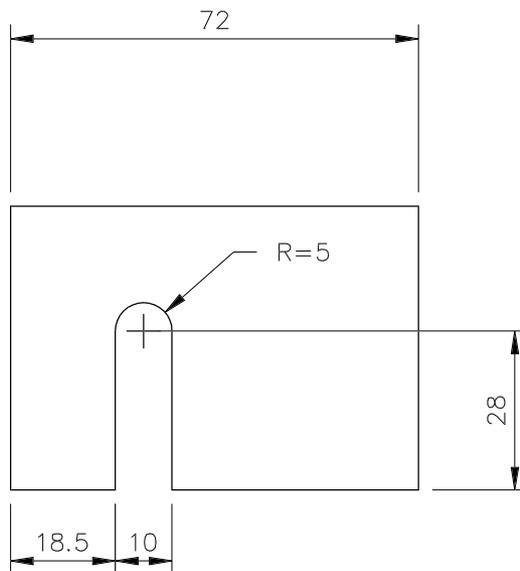
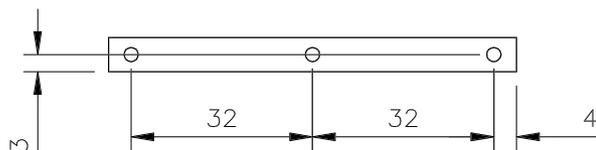
				ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED
				IMPLIED TOLERANCES
				X (OVER 100) ±0.20
				X (UP TO 100) ±0.1
				X.X ±0.10
				X.XX ±0.05
ISSUE	REVISION	DRN	DATE	Material: AL ALLOY Quantity: 1 OFF

DO NOT SCALE

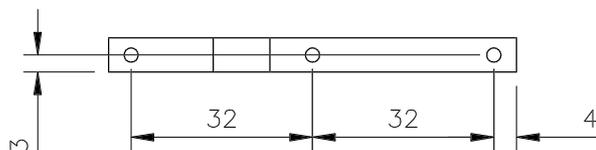
THIRD ANGLE PROJECTION



3 holes, M2.5 tapped
10 deep. 3 similar
holes on opposite face



2 holes, M2.5 tapped, 10 deep

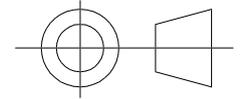


DRG. TITLE:		AF2-GRIPPER SIDE PLATE (MOTOR SIDE)	
SCALES:		1:1	ASTRONOMICAL INSTRUMENTATION GROUP DURHAM UNIVERSITY, PHYSICS DEPARTMENT SCIENCE LABS, SOUTH ROAD, DURHAM, DL1 3LE TEL. (091) 374 2107 & 2108
DRG. TYPE:		PARTS	THIS DRAWING IS THE PROPERTY OF THE ASTRONOMICAL INSTRUMENTATION GROUP, DURHAM UNIVERSITY, PHYSICS DEPT. IT MUST NOT BE COPIED OR LENT WITHOUT THE CONSENT OF THE INSTRUMENTATION GROUP
DRAWN BY:		IRP	
DATE:		22/02/90	DRG. SIZE A3
			DRAWING No.
			AF2\GRP-33
			REV. A

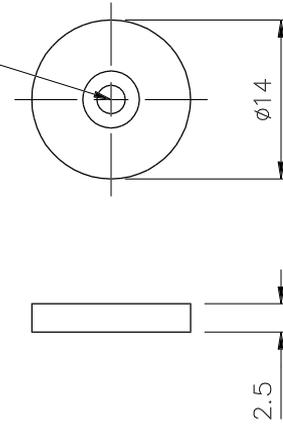
ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED			
IMPLIED TOLERANCES		Material:	
X (OVER 100) ±0.20		AL TOOL PL	
X (UP TO 100) ±0.1		Quantity: 1 OFF	
X.X ±0.10			
X.XX ±0.05			
ISSUE	REVISION	DRN	DATE

DO NOT SCALE

THIRD ANGLE PROJECTION



1 hole, M2.5, countersunk



DRG. TITLE:		AF2-THETA BEARING RETAINING WASHERS	
SCALES:	2:1	ASTRONOMICAL INSTRUMENTATION GROUP DURHAM UNIVERSITY, PHYSICS DEPARTMENT SCIENCE LABS, SOUTH ROAD, DURHAM, DL1 3LE TEL. (091) 374 2107 & 2108	
DRG. TYPE:	PARTS	THIS DRAWING IS THE PROPERTY OF THE ASTRONOMICAL INSTRUMENTATION GROUP, DURHAM UNIVERSITY, PHYSICS DEPT. IT MUST NOT BE COPIED OR LENT WITHOUT THE CONSENT OF THE INSTRUMENTATION GROUP	DRG. SIZE A3
DRAWN BY:	IRP		DRAWING No.
DATE	19/08/90	AF2\GRP-32	REV. A

ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED

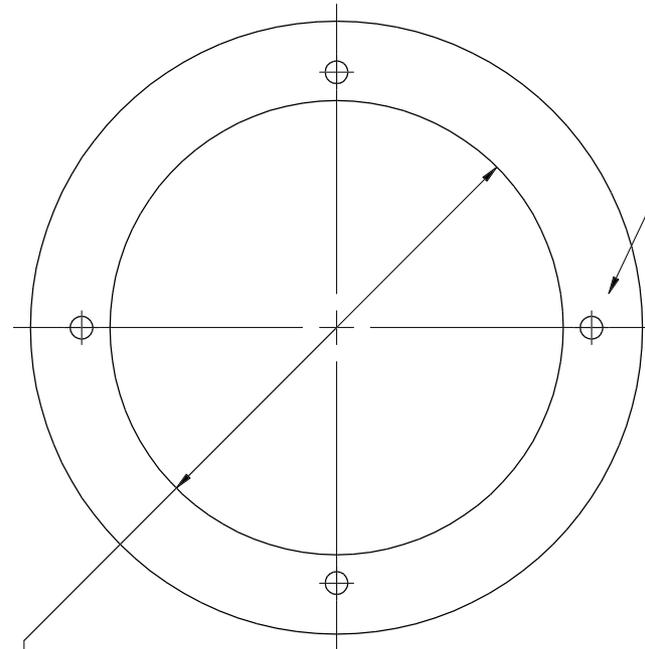
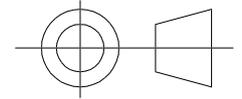
IMPLIED TOLERANCES
 X (OVER 100) ±0.20
 X (UP TO 100) ±0.1
 X.X ±0.10
 X.XX ±0.05

Material:
AL ALLOY
 Quantity: 2 OFF

ISSUE	REVISION	DRN	DATE

DO NOT SCALE

THIRD ANGLE PROJECTION



4 holes, M2 clear, equispaced on $\phi 45$

$\phi 40H7$ to fit AF2-014

DRG. TITLE:		AF2-THETA WORMWHEEL	
SCALES:	2:1	ASTRONOMICAL INSTRUMENTATION GROUP DURHAM UNIVERSITY, PHYSICS DEPARTMENT SCIENCE LABS, SOUTH ROAD, DURHAM, DL1 3LE TEL. (091) 374 2107 & 2108	
DRG. TYPE:	PARTS	THIS DRAWING IS THE PROPERTY OF THE ASTRONOMICAL INSTRUMENTATION GROUP, DURHAM UNIVERSITY, PHYSICS DEPT. IT MUST NOT BE COPIED OR LENT WITHOUT THE CONSENT OF THE INSTRUMENTATION GROUP	DRG. SIZE
DRAWN BY:	IRP		A3
DATE	19/08/90	DRAWING No.	REV.
		AF2\GRP-30	A

ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED

IMPLIED TOLERANCES
 X (OVER 100) ± 0.20
 X (UP TO 100) ± 0.1
 X.X ± 0.10
 X.XX ± 0.05

Material:

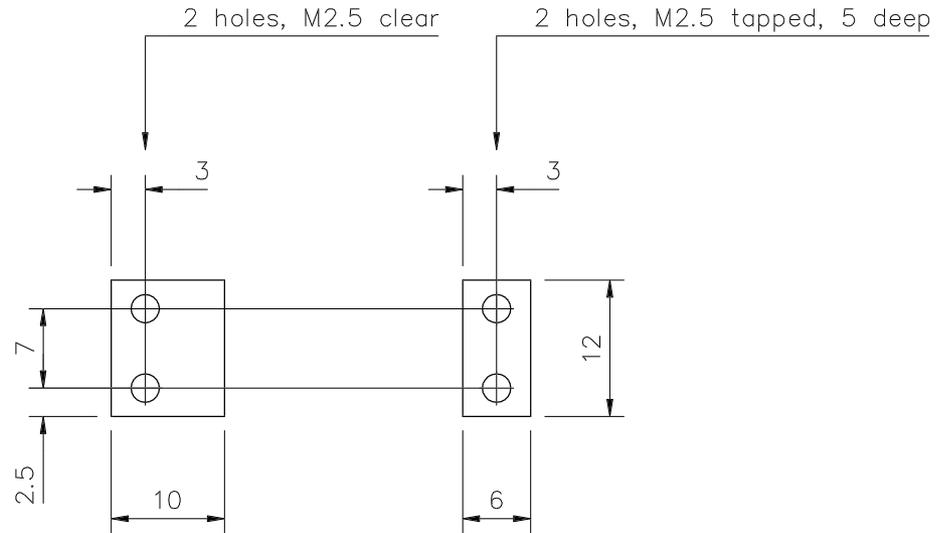
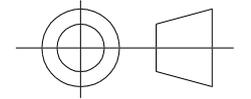
PH BRONZE

Quantity: 1 OFF

ISSUE	REVISION	DRN	DATE

DO NOT SCALE

THIRD ANGLE PROJECTION

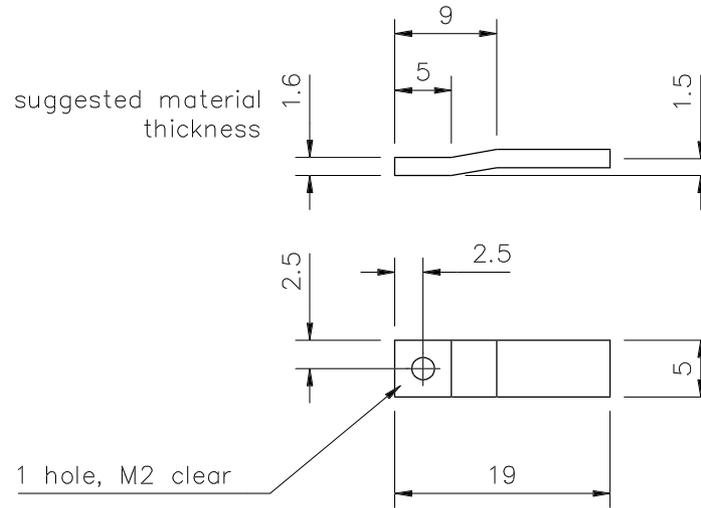
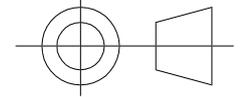


DRG. TITLE:		AF2-THETA OPTOSWITCH BRACKET	
SCALES:	2:1	ASTRONOMICAL INSTRUMENTATION GROUP DURHAM UNIVERSITY, PHYSICS DEPARTMENT SCIENCE LABS, SOUTH ROAD, DURHAM, DL1 3LE TEL. (091) 374 2107 & 2108	
DRG. TYPE:	PARTS	THIS DRAWING IS THE PROPERTY OF THE ASTRONOMICAL INSTRUMENTATION GROUP, DURHAM UNIVERSITY, PHYSICS DEPT IT MUST NOT BE COPIED OR LENT WITHOUT THE CONSENT OF THE INSTRUMENTATION GROUP	
DRAWN BY:	IRP	DRAWING No.	A3
DATE	19/08/90	AF2\GRP-29	REV. A

ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED			
IMPLIED TOLERANCES X (OVER 100) ±0.20 X (UP TO 100) ±0.1 X.X ±0.10 X.XX ±0.05			
Material:		AL ALLOY	
Quantity:		1 OFF	
ISSUE	REVISION	DRN	DATE

DO NOT SCALE

THIRD ANGLE PROJECTION

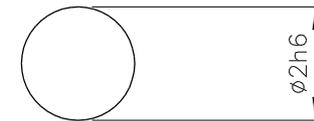
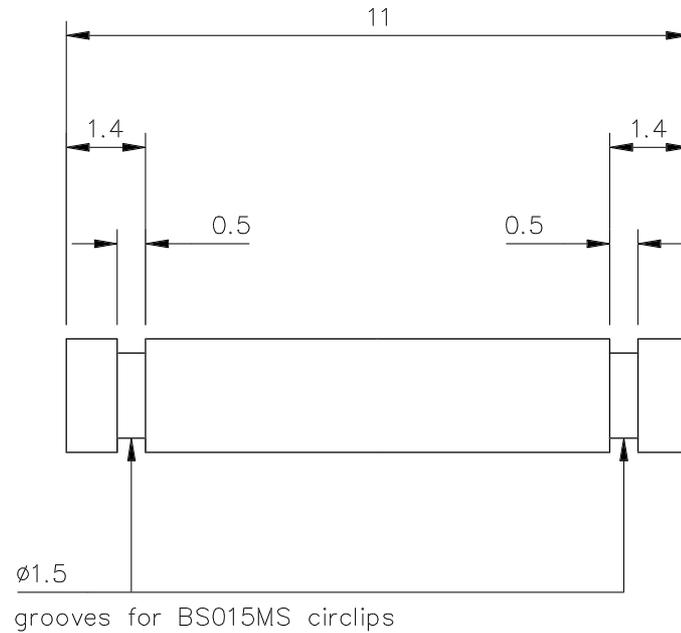
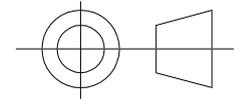


DRG. TITLE:		AF2-THETA OPTOSWITCH VANE	
SCALES:	2:1	ASTRONOMICAL INSTRUMENTATION GROUP DURHAM UNIVERSITY, PHYSICS DEPARTMENT SCIENCE LABS, SOUTH ROAD, DURHAM, DL1 3LE TEL. (091) 374 2107 & 2108	
DRG. TYPE:	PARTS	THIS DRAWING IS THE PROPERTY OF THE ASTRONOMICAL INSTRUMENTATION GROUP, DURHAM UNIVERSITY, PHYSICS DEPT. IT MUST NOT BE COPIED OR LENT WITHOUT THE CONSENT OF THE INSTRUMENTATION GROUP	DRG. SIZE A3
DRAWN BY:	IRP		DRAWING No.
DATE	19/08/90	AF2\GRP-28	REV. A

ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED			
IMPLIED TOLERANCES		Material:	
X (OVER 100) ±0.20		AL ALLOY	
X (UP TO 100) ±0.1		Quantity: 1 OFF	
X.X ±0.10			
X.XX ±0.05			
ISSUE	REVISION	DRN	DATE

DO NOT SCALE

THIRD ANGLE PROJECTION



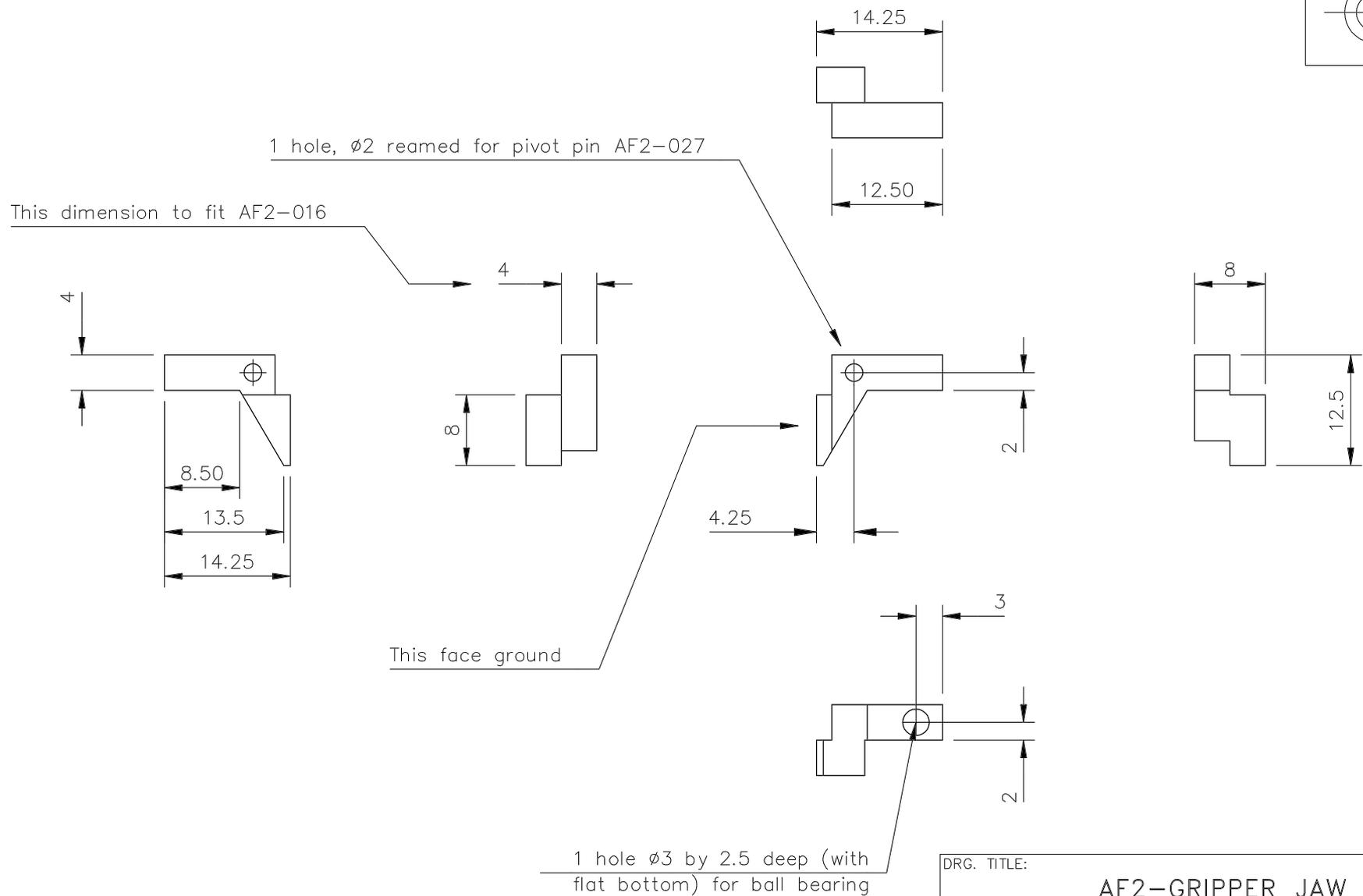
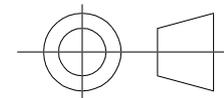
pin diameter to fit
AF2-016, Af2-025
and AF2-026

DRG. TITLE:		AF2-PIVOT PINS FOR GRIPPER JAWS	
SCALES:	10:1	ASTRONOMICAL INSTRUMENTATION GROUP DURHAM UNIVERSITY, PHYSICS DEPARTMENT SCIENCE LABS, SOUTH ROAD, DURHAM, DLI 3LE TEL. (091) 374 2107 & 2108	
DRG. TYPE:	PARTS	THIS DRAWING IS THE PROPERTY OF THE ASTRONOMICAL INSTRUMENTATION GROUP, DURHAM UNIVERSITY, PHYSICS DEPT. IT MUST NOT BE COPIED OR LENT WITHOUT THE CONSENT OF THE INSTRUMENTATION GROUP	A3
DRAWN BY:	IRP		
DATE	10/08/90	DRAWING No.	AF2\GRP-27
			REV. A

				ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED
				IMPLIED TOLERANCES X (OVER 100) ±0.20 X (UP TO 100) ±0.1 X.X ±0.10 X.XX ±0.05
				Material: STEEL
				Quantity: 2 OFF
ISSUE	REVISION	DRN	DATE	

DO NOT SCALE

THIRD ANGLE PROJECTION

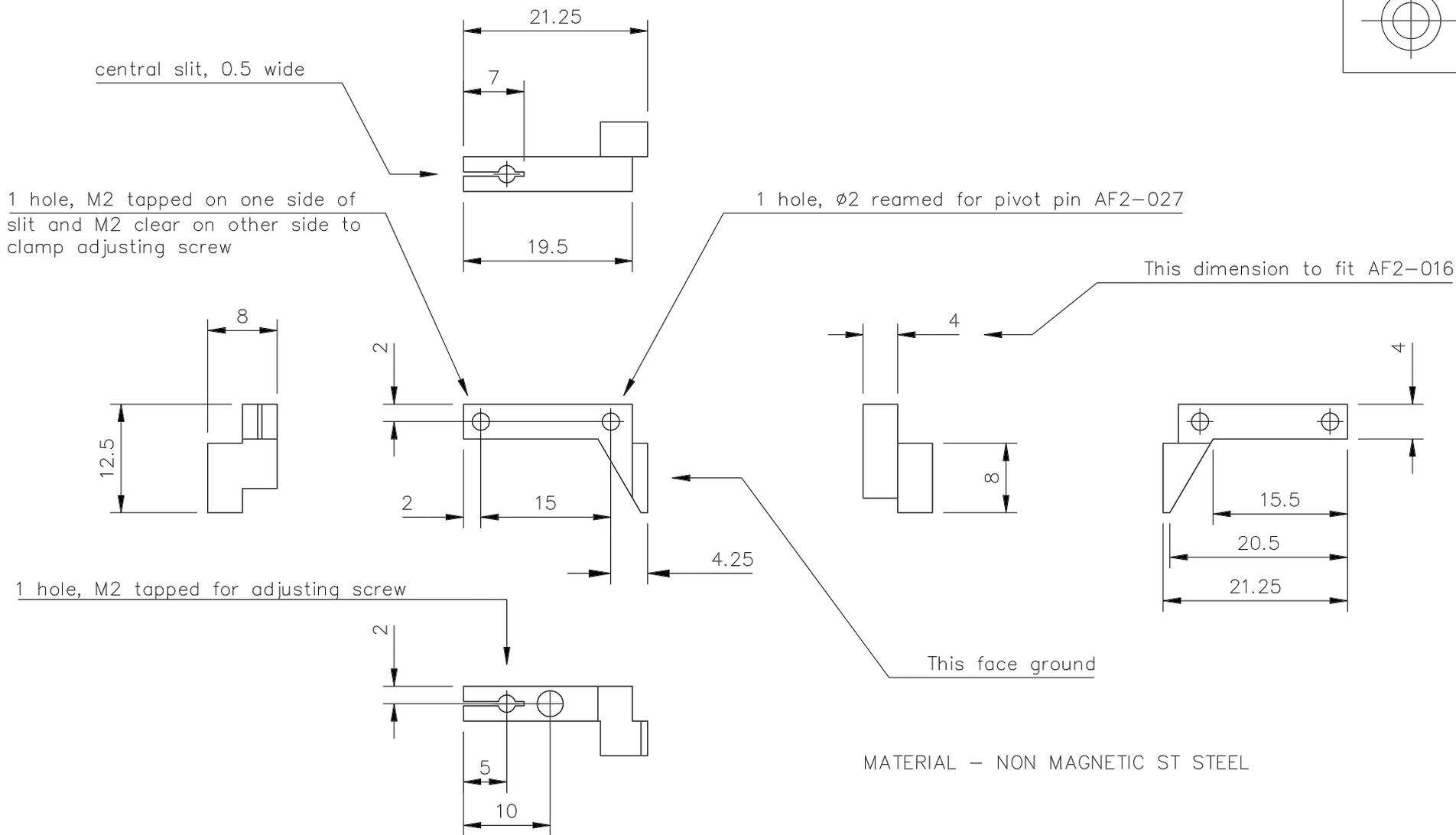
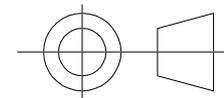


DRG. TITLE:		AF2-GRIPPER JAW	
SCALES:	2:1	ASTRONOMICAL INSTRUMENTATION GROUP DURHAM UNIVERSITY, PHYSICS DEPARTMENT SCIENCE LABS, SOUTH ROAD, DURHAM, DL1 3LE TEL. (091) 374 2107 & 2108	
DRG. TYPE:	PARTS	THIS DRAWING IS THE PROPERTY OF THE ASTRONOMICAL INSTRUMENTATION GROUP, DURHAM UNIVERSITY, PHYSICS DEPT. IT MUST NOT BE COPIED OR LENT WITHOUT THE CONSENT OF THE INSTRUMENTATION GROUP	DRG. SIZE A3
DRAWN BY:	IRP		
DATE	09/08/90	DRAWING No.	REV. A
		AF2\GRP-26	

ISSUE	REVISION	DRN	DATE	ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED	Material:
				IMPLIED TOLERANCES	STEEL
				X (OVER 100) ±0.20	Quantity: 1 OFF
				X (UP TO 100) ±0.1	
				X.X ±0.10	
				X.XX ±0.05	

DO NOT SCALE

THIRD ANGLE PROJECTION



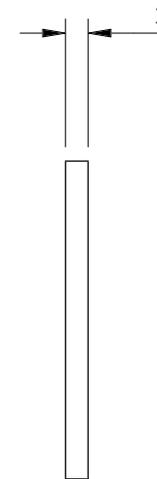
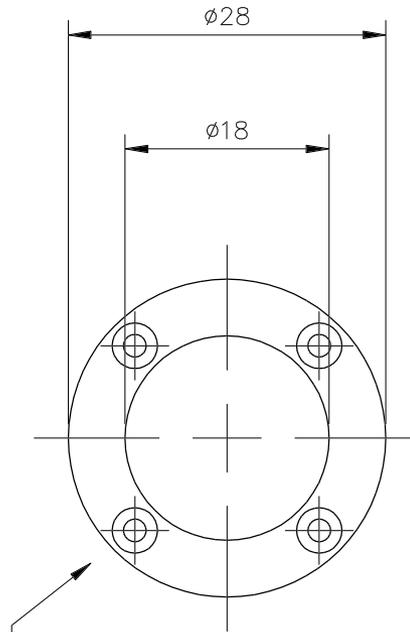
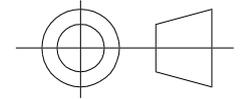
MATERIAL – NON MAGNETIC ST STEEL

DRG. TITLE:		AF2-GRIPPER JAW WITH ADJUSTABLE STOP	
SCALES:		2:1	ASTRONOMICAL INSTRUMENTATION GROUP DURHAM UNIVERSITY, PHYSICS DEPARTMENT SCIENCE LABS, SOUTH ROAD, DURHAM, DL1 3LE TEL. (091) 374 2107 & 2108
DRG. TYPE:		PARTS	
DRAWN BY:		IRP	
DATE:		09/08/90	
DRG. SIZE:		A3	
DRAWING No.		AF2\GRP-25	
REV.		A	

ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED			
IMPLIED TOLERANCES			
X (OVER 100) ±0.20			
X (UP TO 100) ±0.1			
X.X ±0.10			
X.XX ±0.05			
Material:		SEE ABOVE	
Quantity:		1 OFF	
ISSUE	REVISION	DRN	DATE

DO NOT SCALE

THIRD ANGLE PROJECTION



4 holes, M2 clear, countersunk, equispaced on $\varnothing 23$

DRG. TITLE:		AF2-GRIPPER PISTON END RING	
SCALES:	2:1	ASTRONOMICAL INSTRUMENTATION GROUP DURHAM UNIVERSITY, PHYSICS DEPARTMENT SCIENCE LABS, SOUTH ROAD, DURHAM, DL1 3LE TEL. (091) 374 2107 & 2108	
DRG. TYPE:	PARTS	THIS DRAWING IS THE PROPERTY OF THE ASTRONOMICAL INSTRUMENTATION GROUP, DURHAM UNIVERSITY, PHYSICS DEPT. IT MUST NOT BE COPIED OR LENT WITHOUT THE CONSENT OF THE INSTRUMENTATION GROUP	DRG. SIZE A3
DRAWN BY:	IRP		
DATE	26/07/90	DRAWING No.	REV. A
		AF2\GRP-24	

ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED

IMPLIED TOLERANCES
 X (OVER 100) ± 0.20
 X (UP TO 100) ± 0.1
 X.X ± 0.10
 X.XX ± 0.05

Material:

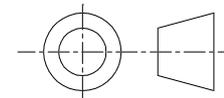
BRASS

Quantity: 1 OFF

ISSUE	REVISION	DRN	DATE

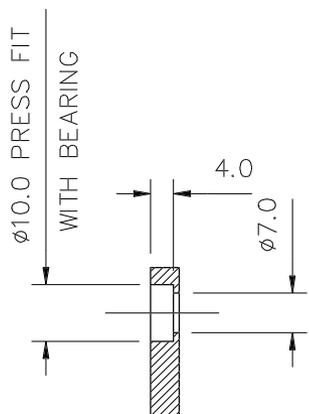
DO NOT SCALE

THIRD ANGLE PROJECTION

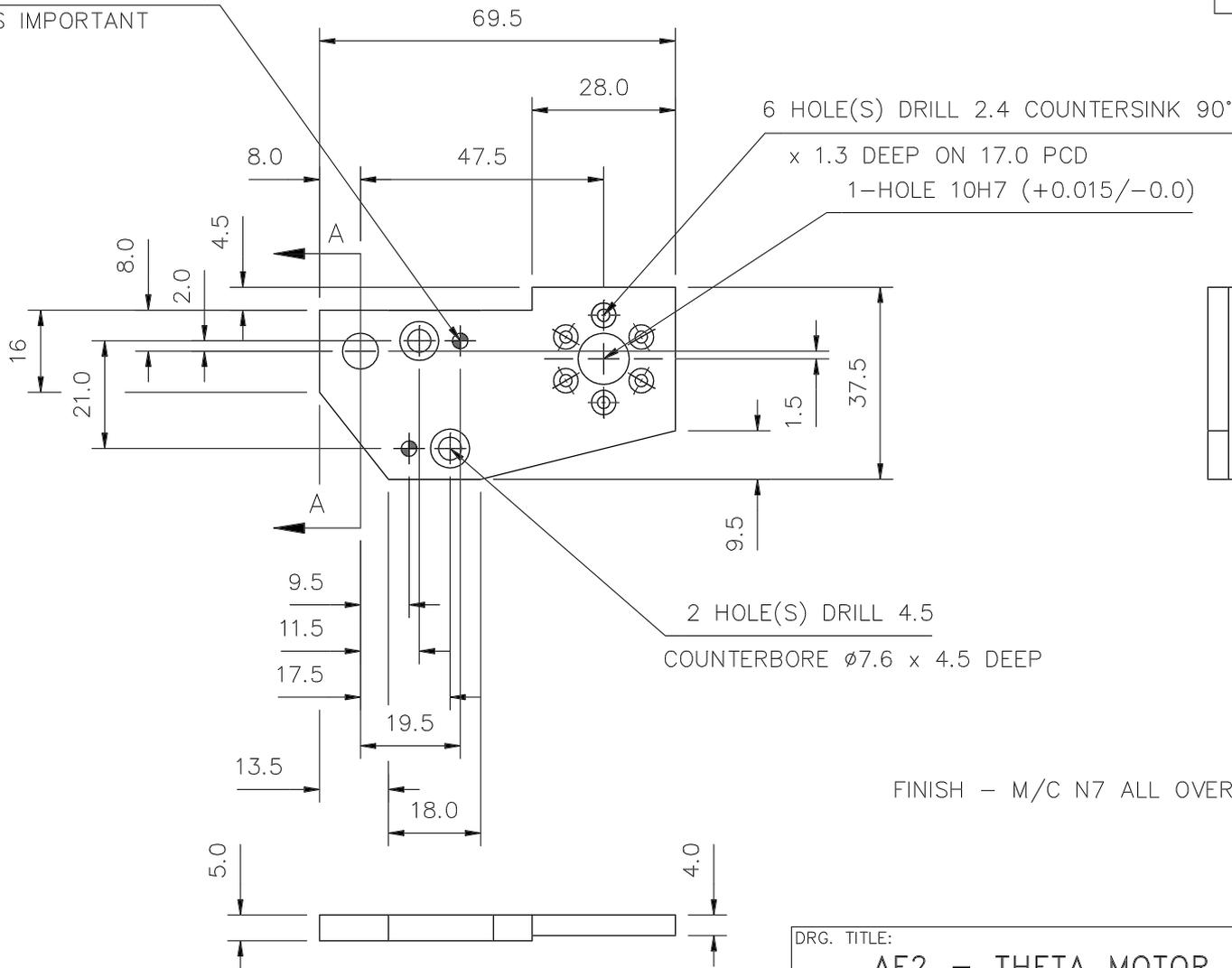


2-HOLES DRILL & REAM $\phi 3.0$ THRO'

NOTE - POSITION IS IMPORTANT



SECTION A-A



6 HOLE(S) DRILL 2.4 COUNTERSINK 90°
x 1.3 DEEP ON 17.0 PCD
1-HOLE 10H7 (+0.015/-0.0)

2 HOLE(S) DRILL 4.5
COUNTERBORE $\phi 7.6$ x 4.5 DEEP

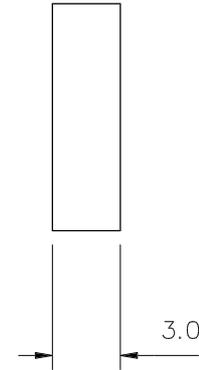
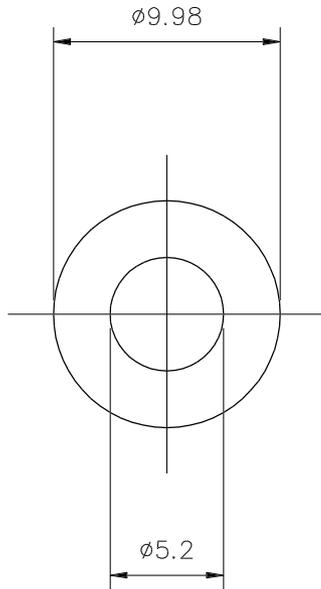
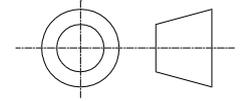
FINISH - M/C N7 ALL OVER

DRG. TITLE: AF2 - THETA MOTOR BRACKET	
SCALES: 1:1	ASTRONOMICAL INSTRUMENTATION GROUP DURHAM UNIVERSITY, PHYSICS DEPARTMENT SCIENCE LABS, SOUTH ROAD, DURHAM, DH1 3LE TEL. (091) 374 2107 & 2108
DRG. TYPE: PARTS	THIS DRAWING IS THE PROPERTY OF THE ASTRONOMICAL INSTRUMENTATION GROUP, DURHAM UNIVERSITY, PHYSICS DEPT. IT MUST NOT BE COPIED OR LENT WITHOUT THE CONSENT OF THE INSTRUMENTATION GROUP
DRAWN BY: G.D	
DATE 22/06/92	DRAWING No. AF2\GRP-23
	DRG. SIZE A3
	REV. B

ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED			
IMPLIED TOLERANCES		Material:	
X (OVER 100) ± 0.20		AL ALLOY	
X (UP TO 100) ± 0.1		Quantity: 1 OFF	
X.X ± 0.10			
X.XX ± 0.05			
B	REDESIGNED	GD	22/6/92
ISSUE	REVISION	DRN	DATE

DO NOT SCALE

THIRD ANGLE PROJECTION

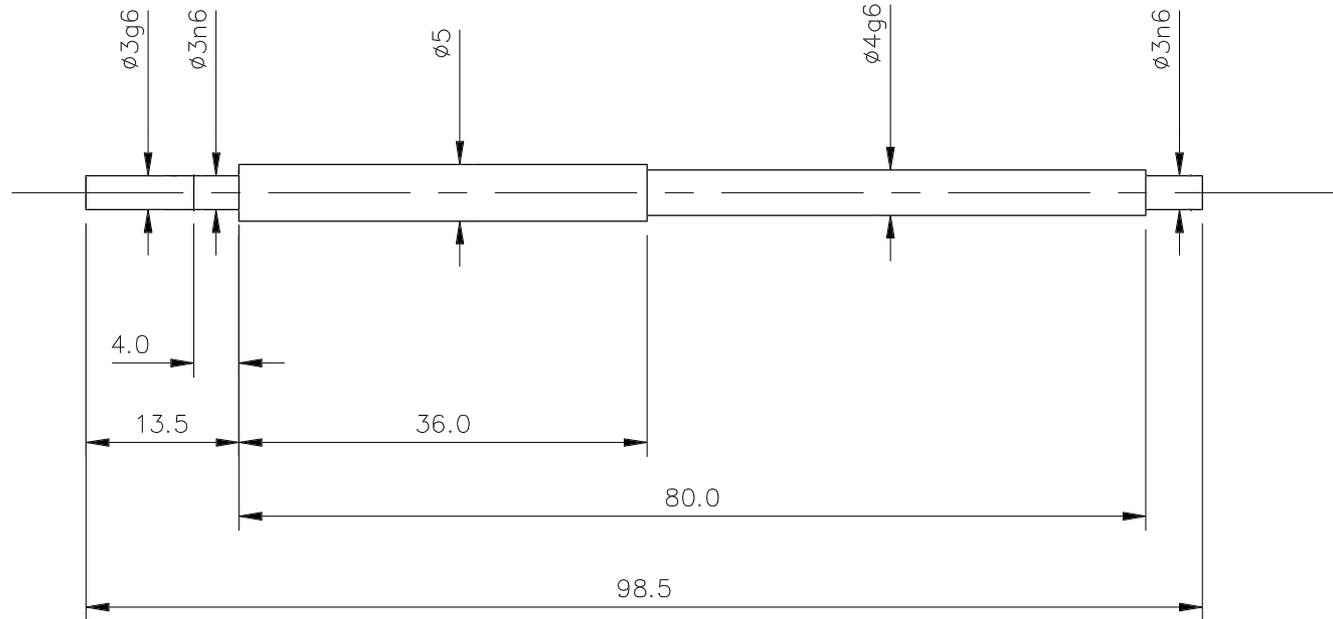
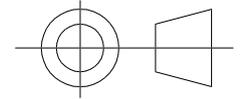


DRG. TITLE:		BEARING SPACER	
SCALES:	4:1	ASTRONOMICAL INSTRUMENTATION GROUP DURHAM UNIVERSITY, PHYSICS DEPARTMENT SCIENCE LABS, SOUTH ROAD, DURHAM, DH1 3LE TEL. (091) 374 2107 & 2108	
DRG. TYPE:	PARTS	THIS DRAWING IS THE PROPERTY OF THE ASTRONOMICAL INSTRUMENTATION GROUP, DURHAM UNIVERSITY, PHYSICS DEPT. IT MUST NOT BE COPIED OR LENT WITHOUT THE CONSENT OF THE INSTRUMENTATION GROUP.	DRG. SIZE A3
DRAWN BY:	G.D		
DATE	29/06/92	DRAWING No.	REV.
		AF2\GRP-22	A

ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED			
IMPLIED TOLERANCES		Material: AL ALLOY Quantity: 4 OFF	
X (OVER 100) ± 0.20			
X (UP TO 100) ± 0.1			
X.X ± 0.10			
X.XX ± 0.05			
ISSUE	REVISION	DRN	DATE

DO NOT SCALE

THIRD ANGLE PROJECTION

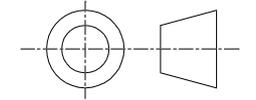


DRG. TITLE:		AF2-THETA DRIVE SHAFT	
SCALES:	2:1	ASTRONOMICAL INSTRUMENTATION GROUP DURHAM UNIVERSITY, PHYSICS DEPARTMENT SCIENCE LABS, SOUTH ROAD, DURHAM, DL1 3LE TEL. (091) 374 2107 & 2108	
DRG. TYPE:	PARTS	THIS DRAWING IS THE PROPERTY OF THE ASTRONOMICAL INSTRUMENTATION GROUP, DURHAM UNIVERSITY, PHYSICS DEPT. IT MUST NOT BE COPIED OR LENT WITHOUT THE CONSENT OF THE INSTRUMENTATION GROUP	
DRAWN BY:	IRP	DRAWING No.	DRG. SIZE
DATE	25/07/90	AF2\GRP-21	A3
Quantity: 1 OFF		REV.	B

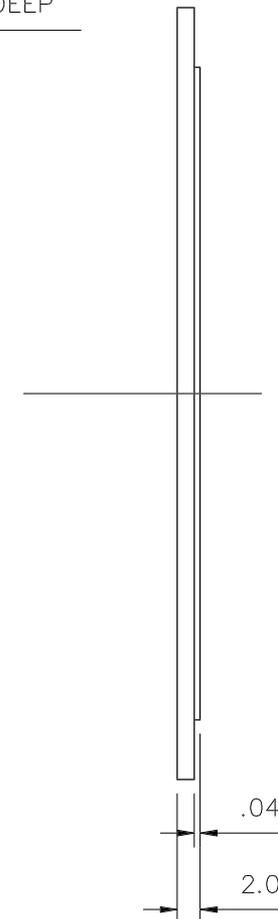
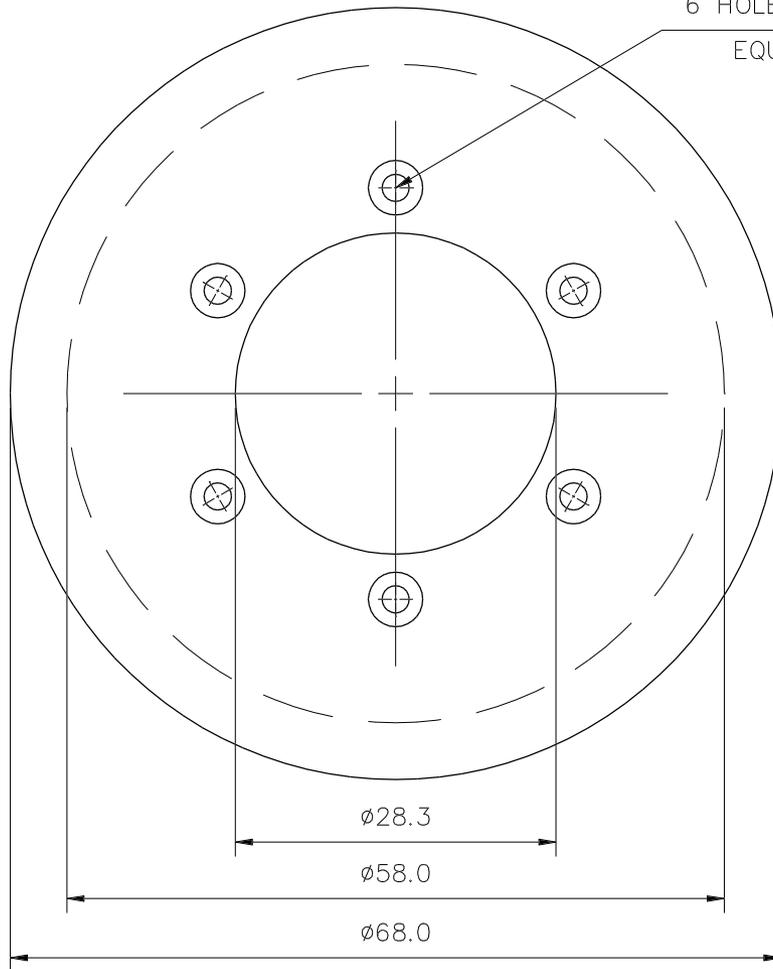
ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED			
IMPLIED TOLERANCES		Material:	
X (OVER 100) ±0.20		ST STEEL	
X (UP TO 100) ±0.1		Quantity: 1 OFF	
X.X ±0.10			
X.XX ±0.05			
B	REDESIGNED	GD	22/6/92
ISSUE	REVISION	DRN	DATE

DO NOT SCALE

THIRD ANGLE PROJECTION



6 HOLE(S) DRILL 2.4 COUNTERSINK 90° x 1.3 DEEP
EQUI-SPACED ON A 36.25 PCD

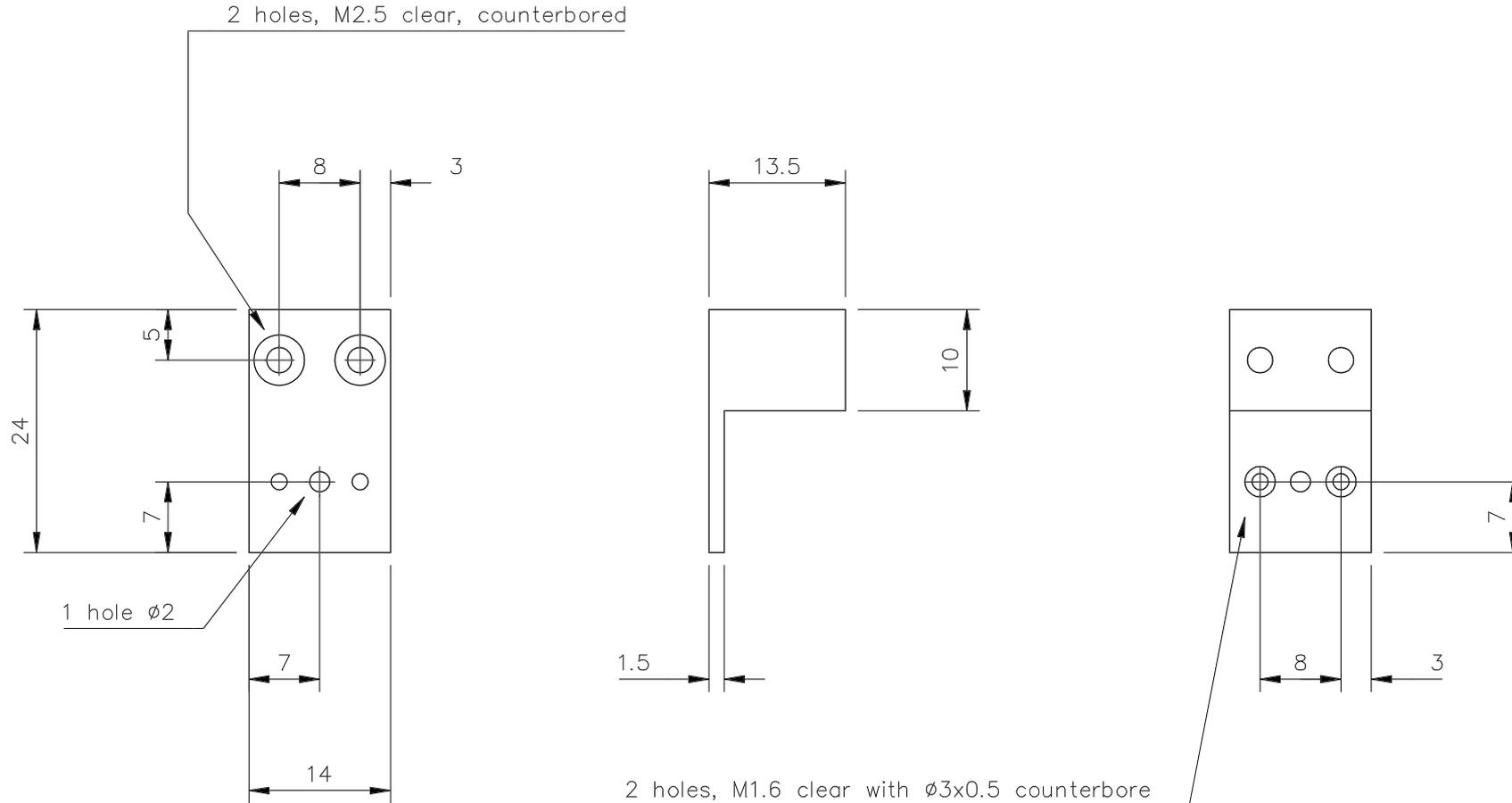
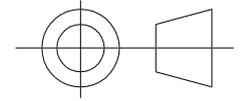


DRG. TITLE:		SPRING RETAINER	
SCALES:	2:1	ASTRONOMICAL INSTRUMENTATION GROUP DURHAM UNIVERSITY, PHYSICS DEPARTMENT SCIENCE LABS, SOUTH ROAD, DURHAM, DH1 3LE TEL. (091) 374 2107 & 2108	
DRG. TYPE:	PARTS	THIS DRAWING IS THE PROPERTY OF THE ASTRONOMICAL INSTRUMENTATION GROUP, DURHAM UNIVERSITY, PHYSICS DEPT. IT MUST NOT BE COPIED OR LENT WITHOUT THE CONSENT OF THE INSTRUMENTATION GROUP.	
DRAWN BY:	G.D		
DATE	23/06/92	DRAWING No.	AF2\GRP-20
			DRG. SIZE A3
			REV. B

ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED			
IMPLIED TOLERANCES		Material:	
X (OVER 100) ±0.20		AL ALLOY	
X (UP TO 100) ±0.1			
X.X ±0.10			
X.XX ±0.05			
B	O.DIA WAS 45.0 DIA	GD	13/1/93
ISSUE	REVISION	DRN	DATE
		Quantity: 1 OFF	

DO NOT SCALE

THIRD ANGLE PROJECTION

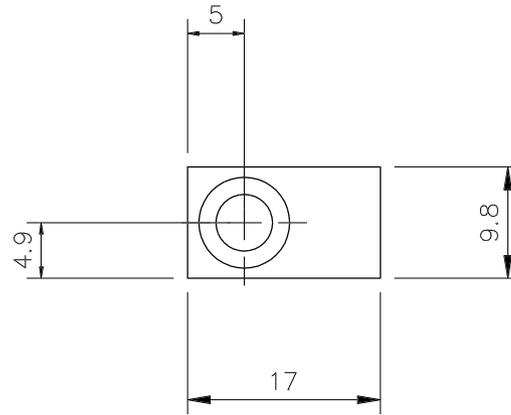
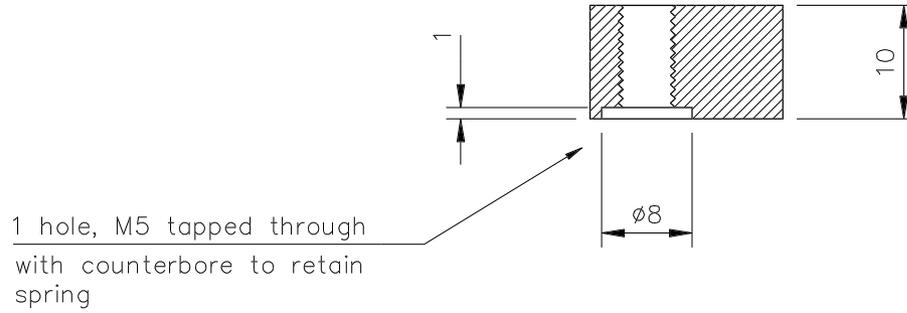
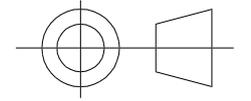


DRG. TITLE:		AF2-THETA ENCODER BRACKET	
SCALES:	1:1	ASTRONOMICAL INSTRUMENTATION GROUP DURHAM UNIVERSITY, PHYSICS DEPARTMENT SCIENCE LABS, SOUTH ROAD, DURHAM, DL1 3LE TEL. (091) 374 2107 & 2108	
DRG. TYPE:	PARTS	THIS DRAWING IS THE PROPERTY OF THE ASTRONOMICAL INSTRUMENTATION GROUP, DURHAM UNIVERSITY, PHYSICS DEPT. IT MUST NOT BE COPIED OR LENT WITHOUT THE CONSENT OF THE INSTRUMENTATION GROUP	DRG. SIZE A3
DRAWN BY:	IRP		DRAWING No.
DATE	25/07/90	AF2\GRP-19	REV. A

ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED			
IMPLIED TOLERANCES		Material:	
X (OVER 100) ± 0.20		AL ALLOY	
X (UP TO 100) ± 0.1		Quantity: 1 OFF	
X.X ± 0.10			
X.XX ± 0.05			
ISSUE	REVISION	DRN	DATE

DO NOT SCALE

THIRD ANGLE PROJECTION

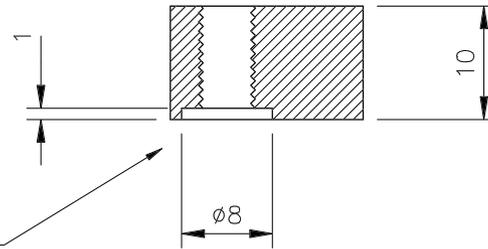
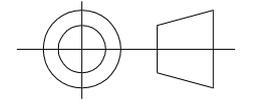


DRG. TITLE:		AF2-Z LIMIT SWITCH BRACKET (UP)	
SCALES:	2:1	ASTRONOMICAL INSTRUMENTATION GROUP DURHAM UNIVERSITY, PHYSICS DEPARTMENT SCIENCE LABS, SOUTH ROAD, DURHAM, DL1 3LE TEL. (091) 374 2107 & 2108	
DRG. TYPE:	PARTS	THIS DRAWING IS THE PROPERTY OF THE ASTRONOMICAL INSTRUMENTATION GROUP, DURHAM UNIVERSITY, PHYSICS DEPT. IT MUST NOT BE COPIED OR LENT WITHOUT THE CONSENT OF THE INSTRUMENTATION GROUP	DRG. SIZE A3
DRAWN BY:	IRP		
DATE	25/07/90	DRAWING No.	AF2\GRP-18
			REV. A

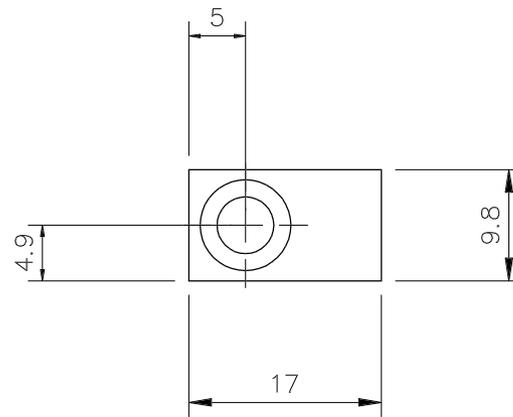
				ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED
				IMPLIED TOLERANCES X (OVER 100) ±0.20 X (UP TO 100) ±0.1 X.X ±0.10 X.XX ±0.05
				Material: AL ALLOY
				Quantity: 1 OFF
ISSUE	REVISION	DRN	DATE	

DO NOT SCALE

THIRD ANGLE PROJECTION



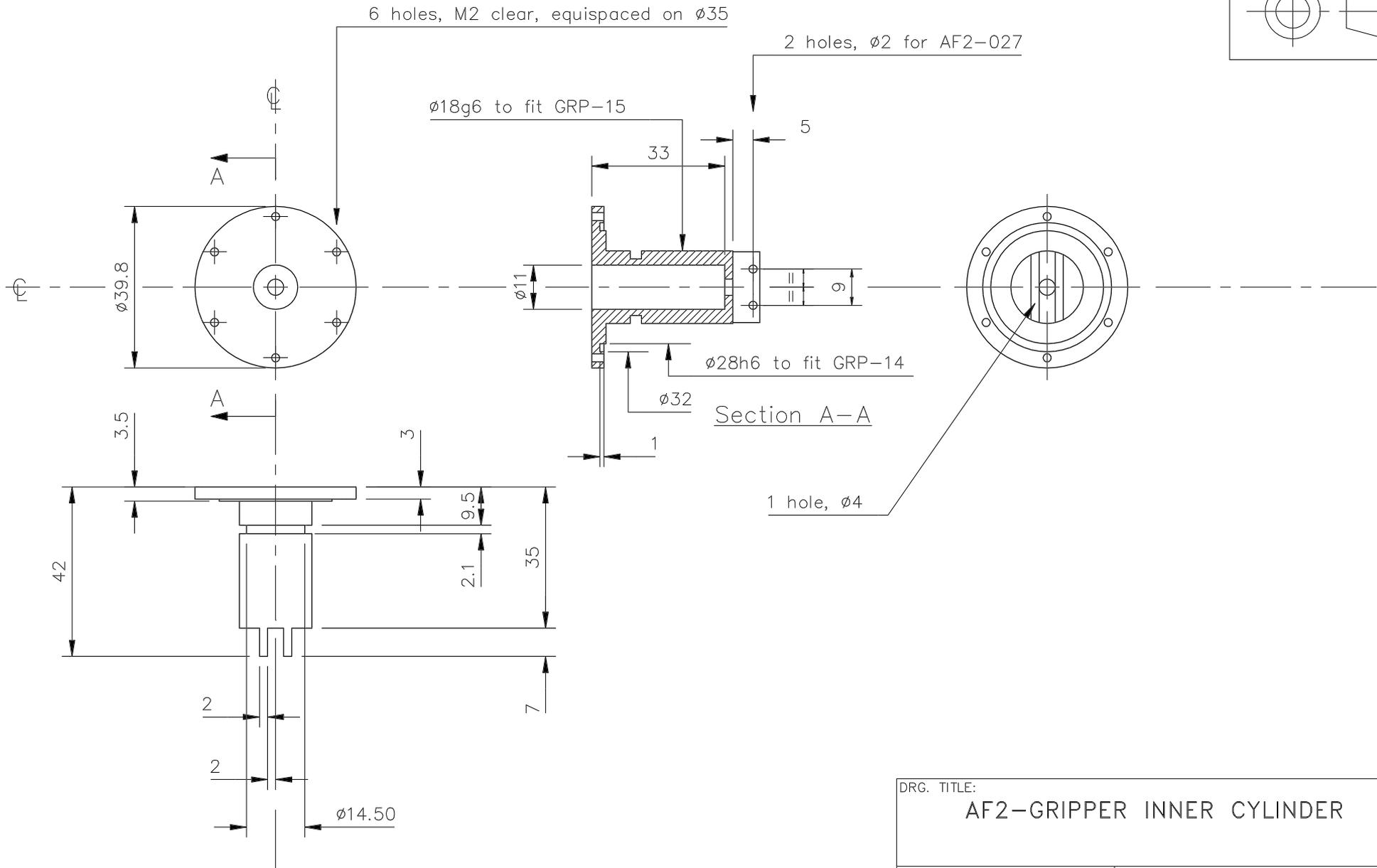
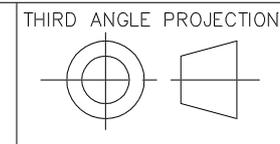
1 hole, M5 tapped through
with counterbore to retain
spring



DRG. TITLE:		AF2-Z AXIS LEADNUT	
SCALES:	2:1	ASTRONOMICAL INSTRUMENTATION GROUP DURHAM UNIVERSITY, PHYSICS DEPARTMENT SCIENCE LABS, SOUTH ROAD, DURHAM, DL1 3LE TEL. (091) 374 2107 & 2108	
DRG. TYPE:	PARTS	THIS DRAWING IS THE PROPERTY OF THE ASTRONOMICAL INSTRUMENTATION GROUP, DURHAM UNIVERSITY, PHYSICS DEPT. IT MUST NOT BE COPIED OR LENT WITHOUT THE CONSENT OF THE INSTRUMENTATION GROUP	DRG. SIZE A3
DRAWN BY:	IRP		
DATE	25/07/90	DRAWING No.	REV. A
		AF2\GRP-17	

ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED			
IMPLIED TOLERANCES		Material:	
	X (OVER 100) ±0.20	Ph. Bronze	
	X (UP TO 100) ±0.1	Quantity: 1 OFF	
	X.X ±0.10		
	X.XX ±0.05		
ISSUE	REVISION	DRN	DATE

DO NOT SCALE

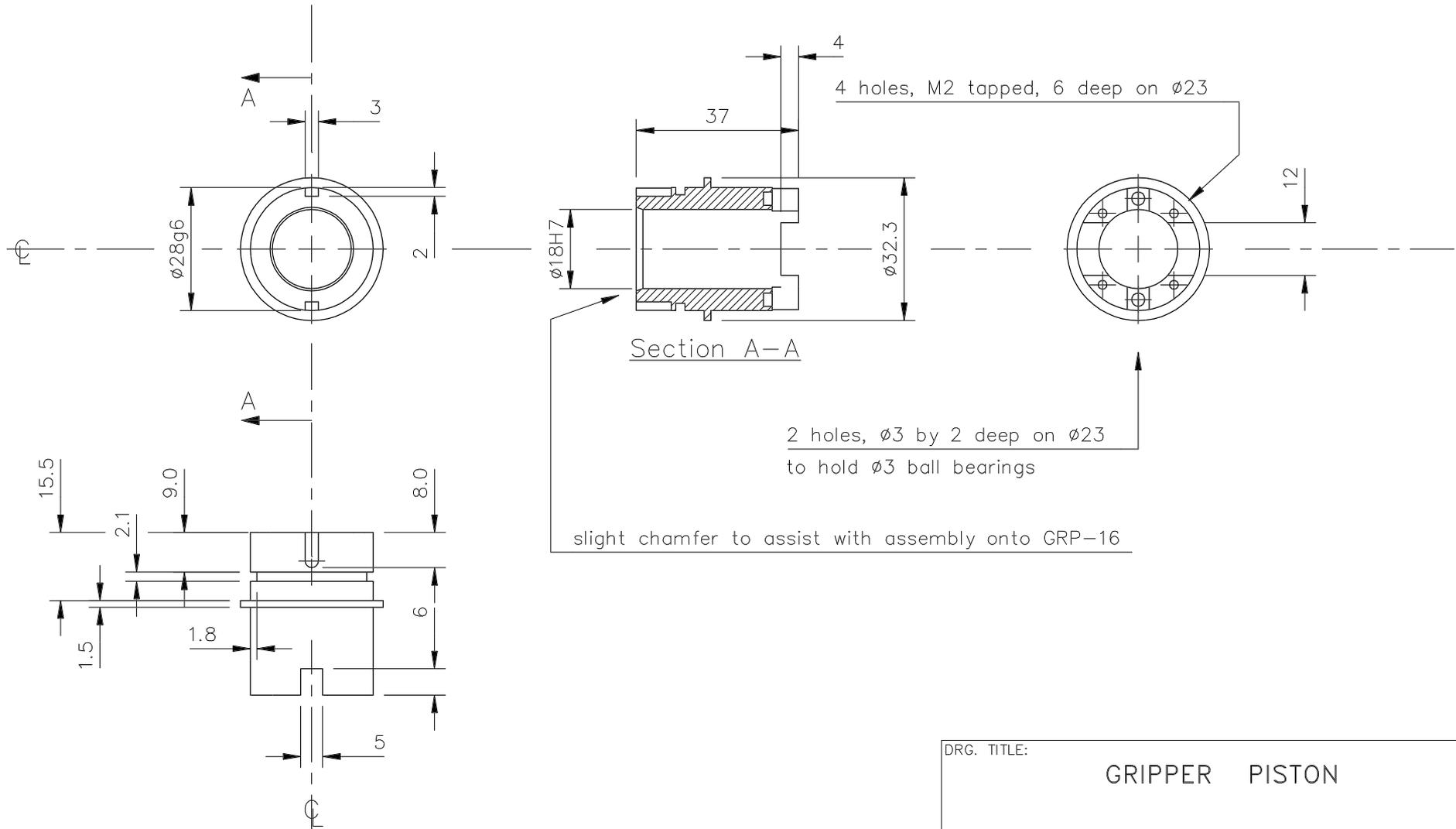
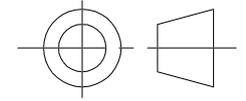


DRG. TITLE:		AF2-GRIPPER INNER CYLINDER	
SCALES:	1:1	ASTRONOMICAL INSTRUMENTATION GROUP DURHAM UNIVERSITY, PHYSICS DEPARTMENT SCIENCE LABS, SOUTH ROAD, DURHAM, DL1 3LE TEL. (091) 374 2107 & 2108	
DRG. TYPE:	PARTS	THIS DRAWING IS THE PROPERTY OF THE ASTRONOMICAL INSTRUMENTATION GROUP, DURHAM UNIVERSITY, PHYSICS DEPT. IT MUST NOT BE COPIED OR LENT WITHOUT THE CONSENT OF THE INSTRUMENTATION GROUP	DRG. SIZE A3
DRAWN BY:	IRP		DRAWING No.
DATE:	24/07/90	AF2\GRP-16	REV. B

ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED			
IMPLIED TOLERANCES		Material:	
X (OVER 100) ±0.20		ST ST GR 316	
X (UP TO 100) ±0.1		Quantity: 1 OFF	
X.X ±0.10			
X.XX ±0.05			
B	O-RING GROOVE REDUCED, MAT WAS AL ALLOY	GD	17/6/92
ISSUE	REVISION	DRN	DATE

DO NOT SCALE

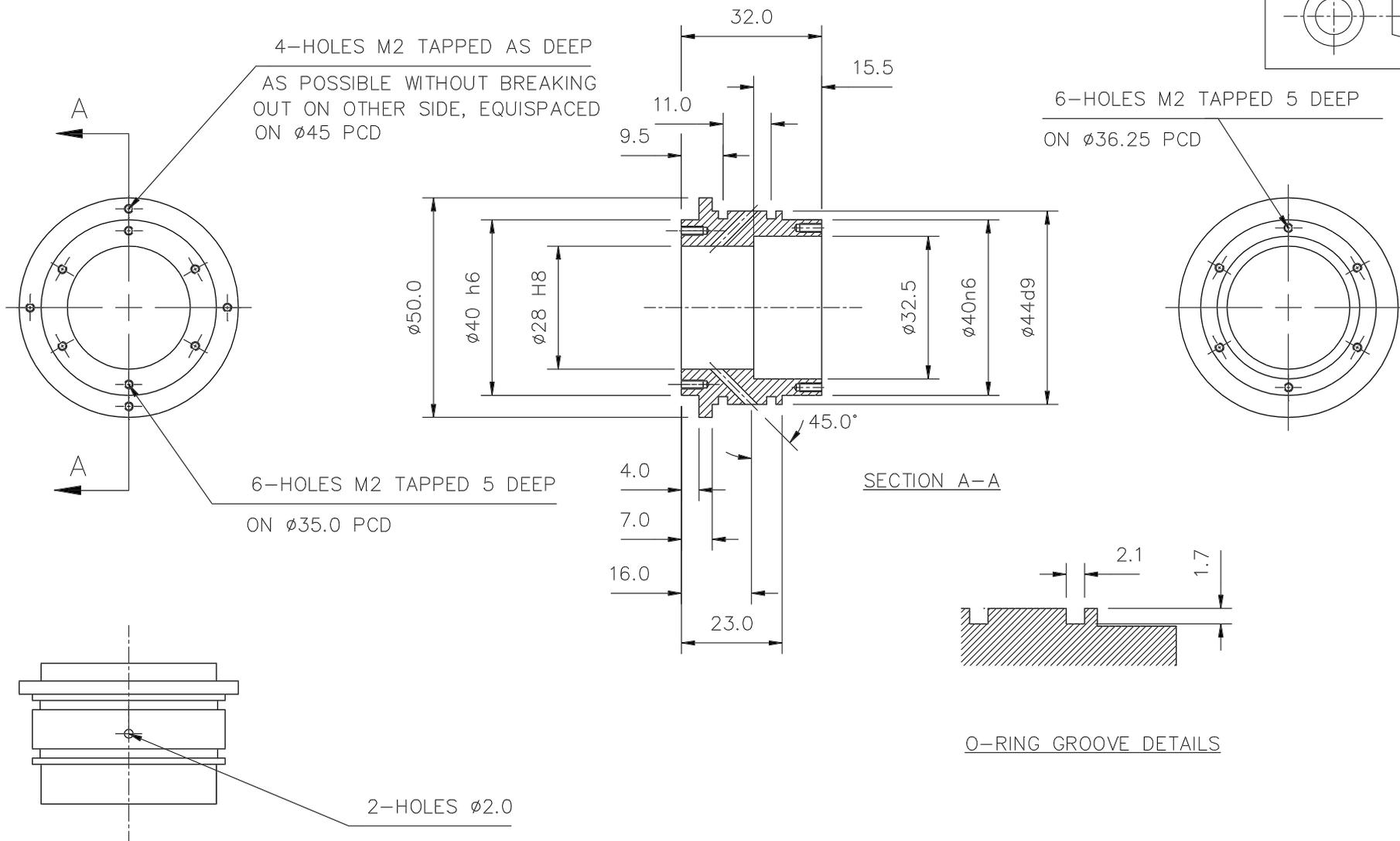
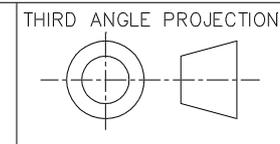
THIRD ANGLE PROJECTION



DRG. TITLE:		GRIPPER PISTON	
SCALES:	1:1	ASTRONOMICAL INSTRUMENTATION GROUP DURHAM UNIVERSITY, PHYSICS DEPARTMENT SCIENCE LABS, SOUTH ROAD, DURHAM, DL1 3LE TEL. (091) 374 2107 & 2108	
DRG. TYPE:	PARTS	THIS DRAWING IS THE PROPERTY OF THE ASTRONOMICAL INSTRUMENTATION GROUP, DURHAM UNIVERSITY, PHYSICS DEPT. IT MUST NOT BE COPIED OR LENT WITHOUT THE CONSENT OF THE INSTRUMENTATION GROUP	DRG. SIZE A3
DRAWN BY:	IRP		
DATE	24/07/90	DRAWING No.	REV.
		AF2\GRP-15	B

ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED			
IMPLIED TOLERANCES		Material:	
X (OVER 100) ± 0.20		BRASS	
X (UP TO 100) ± 0.1		Quantity: 1 OFF	
X.X ± 0.10			
X.XX ± 0.05			
B	RE-DESIGNED	GD	22/6/92
ISSUE	REVISION	DRN	DATE

DO NOT SCALE



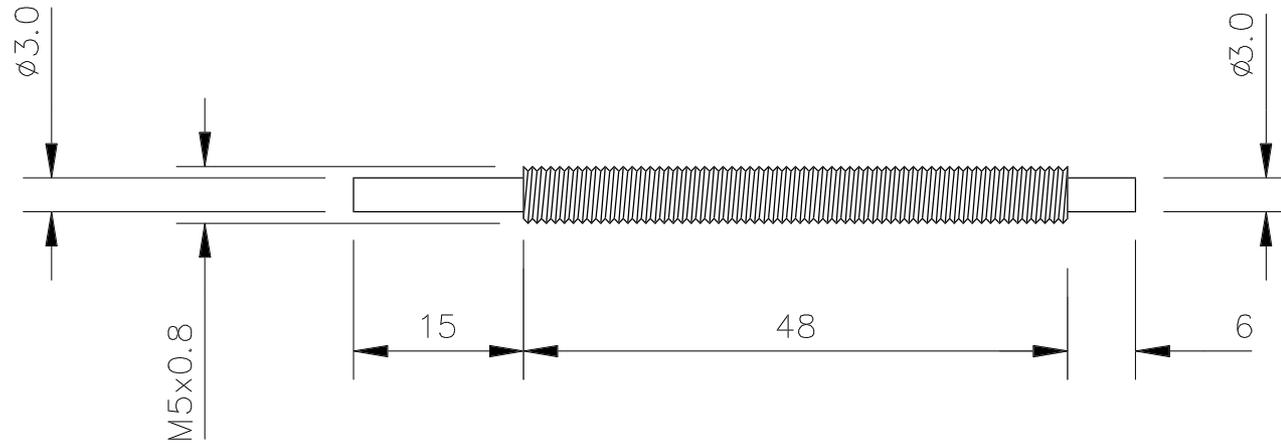
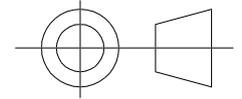
O-RING GROOVE DETAILS

DRG. TITLE: AF2 - GRIPPER OUTER CYLINDER	
SCALES: 1:1	ASTRONOMICAL INSTRUMENTATION GROUP DURHAM UNIVERSITY, PHYSICS DEPARTMENT SCIENCE LABS, SOUTH ROAD, DURHAM, DH1 3LE TEL. (091) 374 2107 & 2108
DRG. TYPE: PARTS	THIS DRAWING IS THE PROPERTY OF THE ASTRONOMICAL INSTRUMENTATION GROUP, DURHAM UNIVERSITY, PHYSICS DEPT. IT MUST NOT BE COPIED OR LENT WITHOUT THE CONSENT OF THE INSTRUMENTATION GROUP
DRAWN BY: IRP	
DATE: 23/07/90	DRAWING No. AF2\GRP-14
	DRG. SIZE A3
	REV. B

ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED			
IMPLIED TOLERANCES		Material:	
	X (OVER 100) ±0.20	AL ALLOY	
	X (UP TO 100) ±0.1	Quantity: 1 OFF	
	X.X ±0.10		
	X.XX ±0.05		
B	REDISIGNED	GD	22/6/92
ISSUE	REVISION	DRN	DATE

DO NOT SCALE

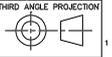
THIRD ANGLE PROJECTION



DRG. TITLE:		Z-LEAD SCREW	
SCALES:		2:1	ASTRONOMICAL INSTRUMENTATION GROUP DURHAM UNIVERSITY, PHYSICS DEPARTMENT SCIENCE LABS, SOUTH ROAD, DURHAM, DL1 3LE TEL. (091) 374 2107 & 2108
DRG. TYPE:		PARTS	THIS DRAWING IS THE PROPERTY OF THE ASTRONOMICAL INSTRUMENTATION GROUP, DURHAM UNIVERSITY, PHYSICS DEPT. IT MUST NOT BE COPIED OR LENT WITHOUT THE CONSENT OF THE INSTRUMENTATION GROUP
DRAWN BY:		IRP	
DATE		13/07/90	DRAWING No. AF2\GRP-11
REV.		A	DRG. SIZE A3

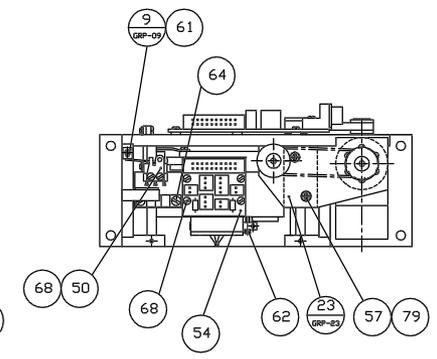
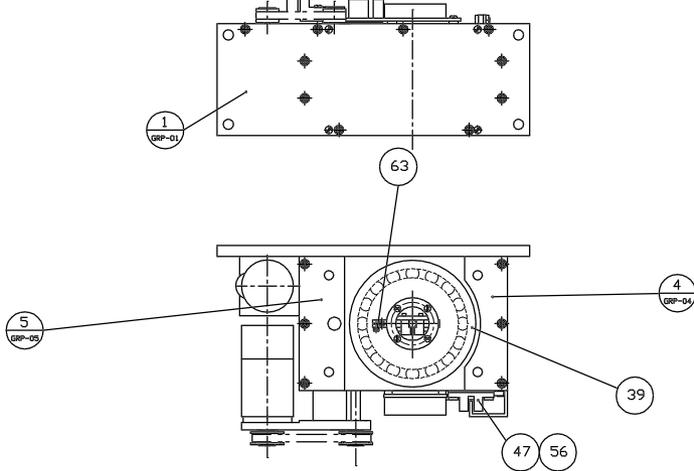
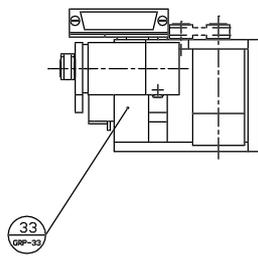
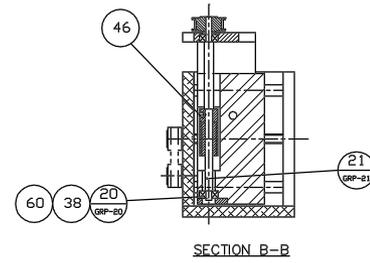
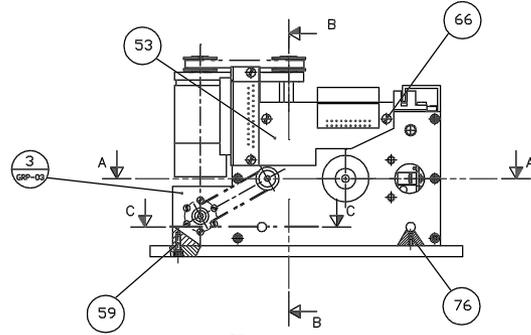
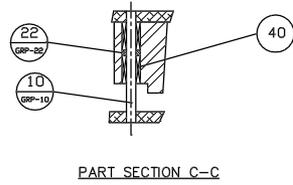
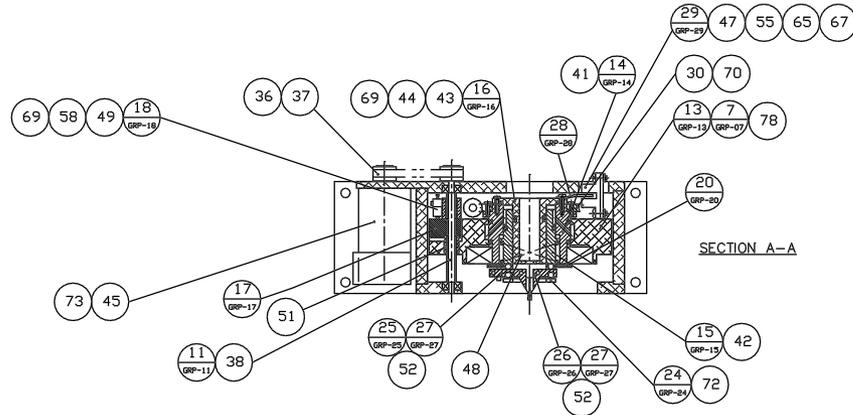
ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED			
IMPLIED TOLERANCES		Material:	
X (OVER 100) ±0.20		STEEL	
X (UP TO 100) ±0.1		Quantity: 1 OFF	
X.X ±0.10			
X.XX ±0.05			
ISSUE	REVISION	DRN	DATE

DO NOT SCALE



NOTES

1/ REFERENCE DRAWING : - AF2-GA, YAX-SA, SVS-SA, FVS-SA, GRP-PTS
(3 SHEETS), GRIPPER WIRING DIAGRAM

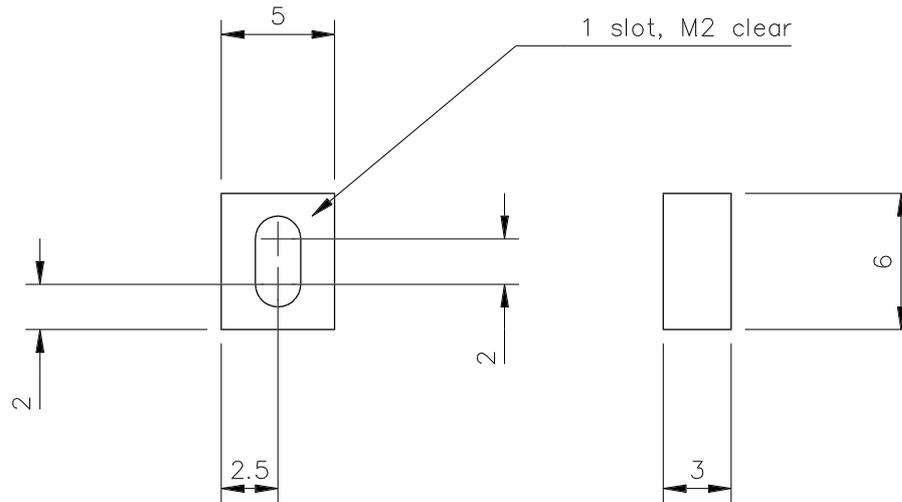
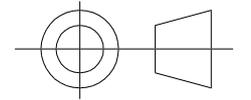


DRG. TITLE:		AF2 GRIPPER SUB ASSEMBLY	
SCALES:	1:1	ASTRONOMICAL INSTRUMENTATION GROUP DURHAM UNIVERSITY'S PHYSICS DEPARTMENT SCIENCE LABS, SOUTH ROAD, DURHAM, ENGLAND TEL: (0191) 574 5107 & 5108	
DRG. TYPE:	SUB ASSY	THIS DRAWING IS THE PROPERTY OF THE ASTRONOMICAL INSTRUMENTATION GROUP, DURHAM UNIVERSITY. PHYSICS DEPT IT MUST NOT BE COPIED OR LENT WITHOUT THE CONSENT OF THE INSTRUMENTATION GROUP. DRAWING NO.	
DRAWN BY:	IRP/GD	DATE	11/03/91
Quantity:	1 OFF	REV. NO.	AF2\GRP-SA A0

ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED				IMPLIED TOLERANCES				Material:					
X (OVER 100) ±0.20				X (UP TO 100) ±0.1									
X.X ±0.10													
X.XX ±0.05													
B	REDESIGNED	GD	26/8/92	ISSUE	REVISION	GRID	DRN	DATE	GRID	DRN	DATE	Quantity:	1 OFF

DO NOT SCALE

THIRD ANGLE PROJECTION

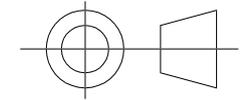


DRG. TITLE:		Z-LIMIT SWITCH ACTUATOR (DOWN)	
SCALES:	4:1	ASTRONOMICAL INSTRUMENTATION GROUP DURHAM UNIVERSITY, PHYSICS DEPARTMENT SCIENCE LABS, SOUTH ROAD, DURHAM, DL1 3LE TEL. (091) 374 2107 & 2108	
DRG. TYPE:	PARTS	THIS DRAWING IS THE PROPERTY OF THE ASTRONOMICAL INSTRUMENTATION GROUP, DURHAM UNIVERSITY, PHYSICS DEPT. IT MUST NOT BE COPIED OR LENT WITHOUT THE CONSENT OF THE INSTRUMENTATION GROUP	DRG. SIZE A3
DRAWN BY:	IRP		
DATE	10/03/90	DRAWING No.	REV. A
		AF2\GRP-09	

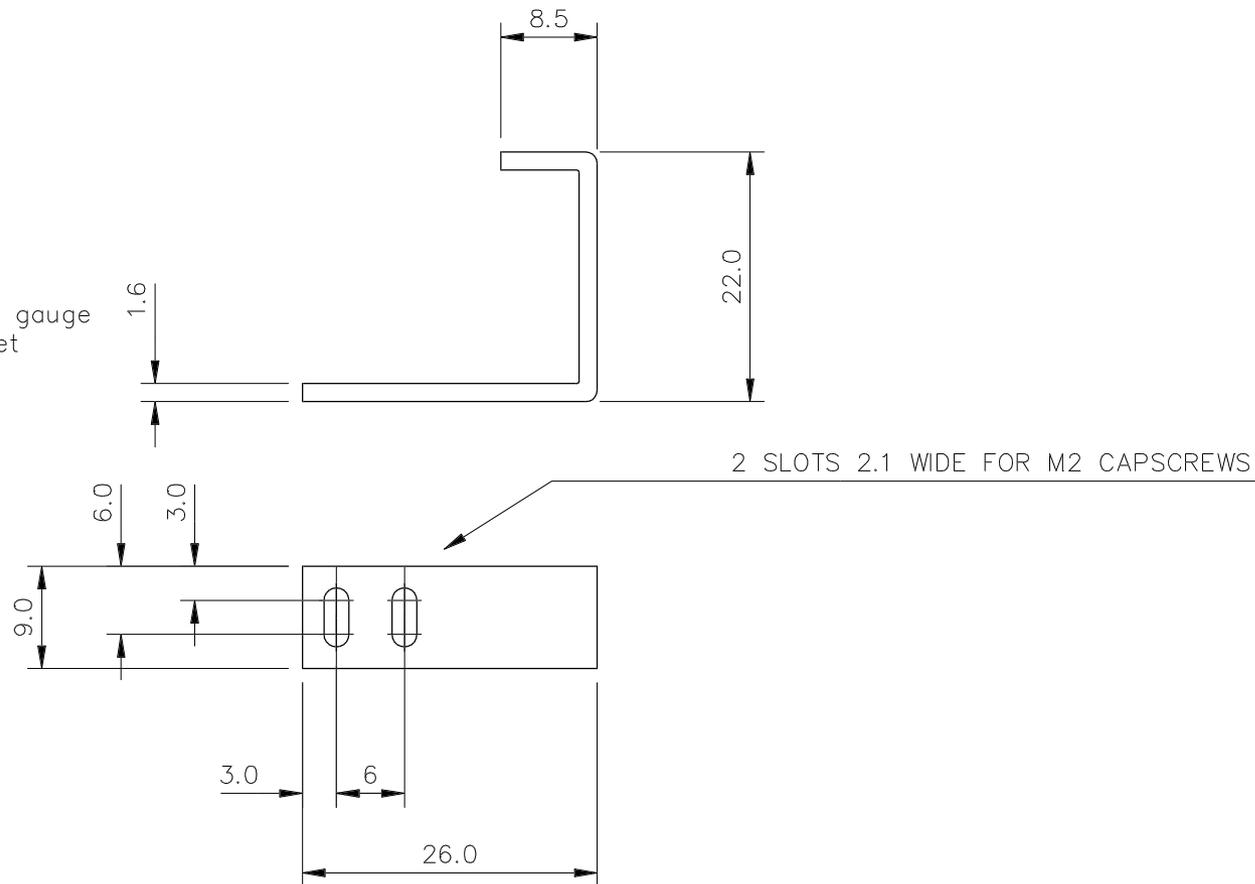
ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED			
IMPLIED TOLERANCES			
X (OVER 100) ±0.20			
X (UP TO 100) ±0.1			
X.X ±0.10			
X.XX ±0.05			
ISSUE	REVISION	DRN	DATE
		Material: AL ALLOY	
		Quantity: 1 OFF	

DO NOT SCALE

THIRD ANGLE PROJECTION



Vane made from 16 gauge aluminium alloy sheet

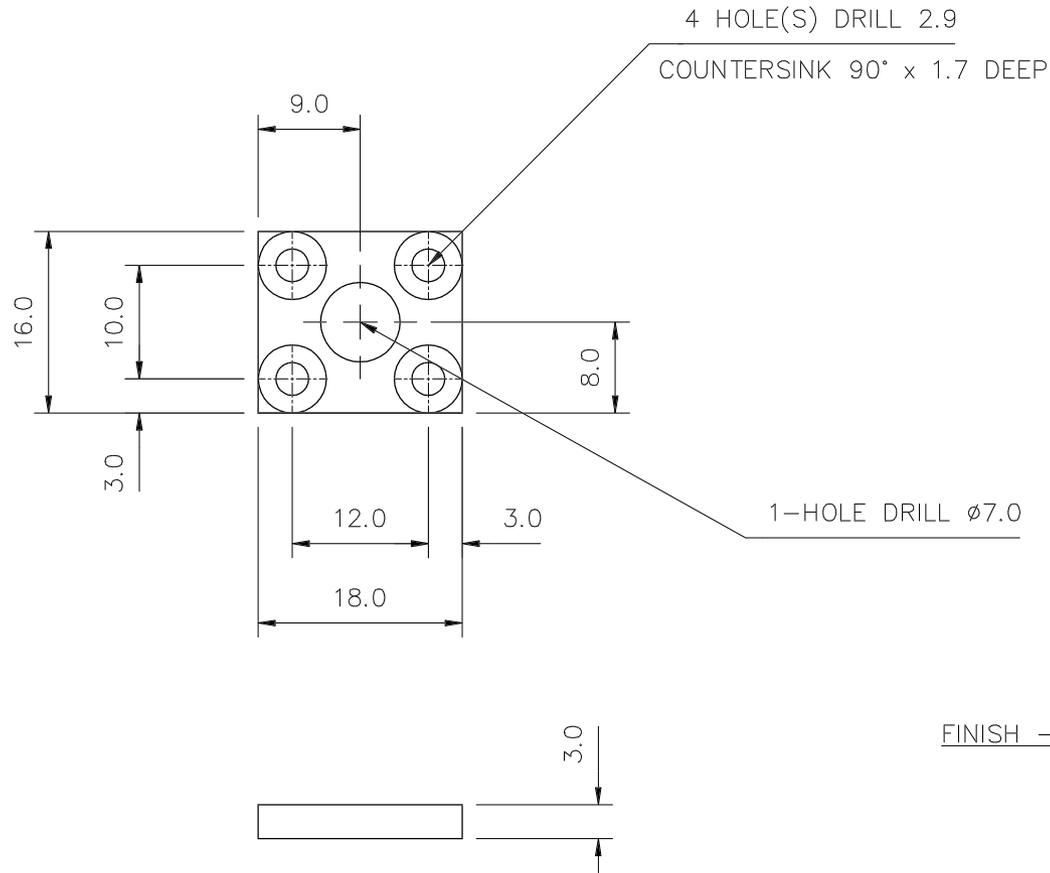
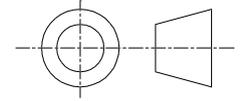


DRG. TITLE:		Z-OPTO SWITCH VANE	
SCALES:		2:1	ASTRONOMICAL INSTRUMENTATION GROUP DURHAM UNIVERSITY, PHYSICS DEPARTMENT SCIENCE LABS, SOUTH ROAD, DURHAM, DL1 3LE TEL. (091) 374 2107 & 2108
DRG. TYPE:		PARTS	THIS DRAWING IS THE PROPERTY OF THE ASTRONOMICAL INSTRUMENTATION GROUP, DURHAM UNIVERSITY, PHYSICS DEPT. IT MUST NOT BE COPIED OR LENT WITHOUT THE CONSENT OF THE INSTRUMENTATION GROUP
DRAWN BY:		IRP	
DATE:		16/07/91	DRAWING No. AF2\GRP-08
			DRG. SIZE A3
			REV. B

ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED			
IMPLIED TOLERANCES		Material:	
X (OVER 100) ±0.20		AL ALLOY	
X (UP TO 100) ±0.1		Quantity: 1 OFF	
X.X ±0.10			
X.XX ±0.05			
B	REDESIGNED	GD	29/06/92
ISSUE	REVISION	DRN	DATE

DO NOT SCALE

THIRD ANGLE PROJECTION

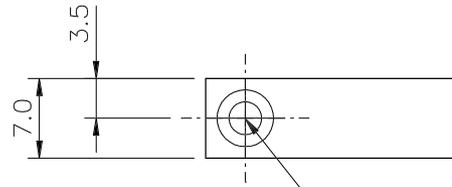
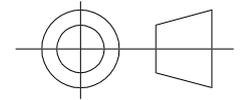


DRG. TITLE:		BEARING RETAINER	
SCALES:	2:1	ASTRONOMICAL INSTRUMENTATION GROUP DURHAM UNIVERSITY, PHYSICS DEPARTMENT SCIENCE LABS, SOUTH ROAD, DURHAM, DH1 3LE TEL. (091) 374 2107 & 2108	
DRG. TYPE:	PARTS	THIS DRAWING IS THE PROPERTY OF THE ASTRONOMICAL INSTRUMENTATION GROUP, DURHAM UNIVERSITY, PHYSICS DEPT. IT MUST NOT BE COPIED OR LENT WITHOUT THE CONSENT OF THE INSTRUMENTATION GROUP	DRG. SIZE A3
DRAWN BY:	G.D		DRAWING No.
DATE	23/06/92	AF2\GRP-07	REV. A

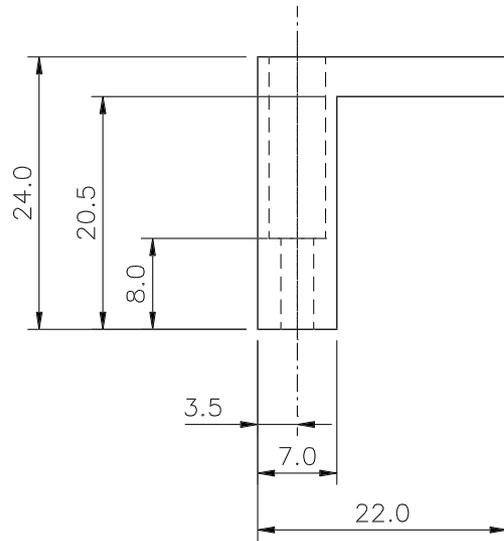
ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED			
IMPLIED TOLERANCES		Material:	
	X (OVER 100) ± 0.20	AL ALLOY	
	X (UP TO 100) ± 0.1	Quantity: 1 OFF	
	X.X ± 0.10		
	X.XX ± 0.05		
ISSUE	REVISION	DRN	DATE

DO NOT SCALE

THIRD ANGLE PROJECTION



1-HOLE DRILL $\phi 2.9$ THRO' C-BORE $\phi 5.0$ X 16 DEEP



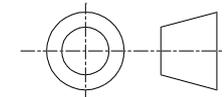
DRG. TITLE:		Gripper ribbon cable retaining bracket	
SCALES:	2:1	ASTRONOMICAL INSTRUMENTATION GROUP DURHAM UNIVERSITY, PHYSICS DEPARTMENT SCIENCE LABS, SOUTH ROAD, DURHAM, DHI 3LE TEL. (091) 374 2107 & 2108	
DRG. TYPE:	PARTS	THIS DRAWING IS THE PROPERTY OF THE ASTRONOMICAL INSTRUMENTATION GROUP, DURHAM UNIVERSITY, PHYSICS DEPT. IT MUST NOT BE COPIED OR LENT WITHOUT THE CONSENT OF THE INSTRUMENTATION GROUP	DRG. SIZE A3
DRAWN BY:	G.D		
DATE	15/03/94	DRAWING No.	REV. A
		AF2\GRP-06	

ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED			
IMPLIED TOLERANCES			
X (OVER 100) ± 0.20			
X (UP TO 100) ± 0.1			
X.X ± 0.10			
X.XX ± 0.05			
ISSUE	REVISION	DRN	DATE

Material:
AL ALLOY
Quantity: 1 OFF

DO NOT SCALE

THIRD ANGLE PROJECTION

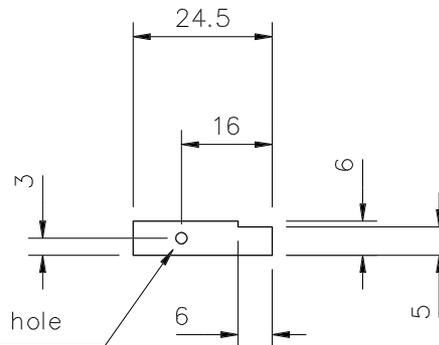


1 hole, $\phi 10$, 4 deep for bearing

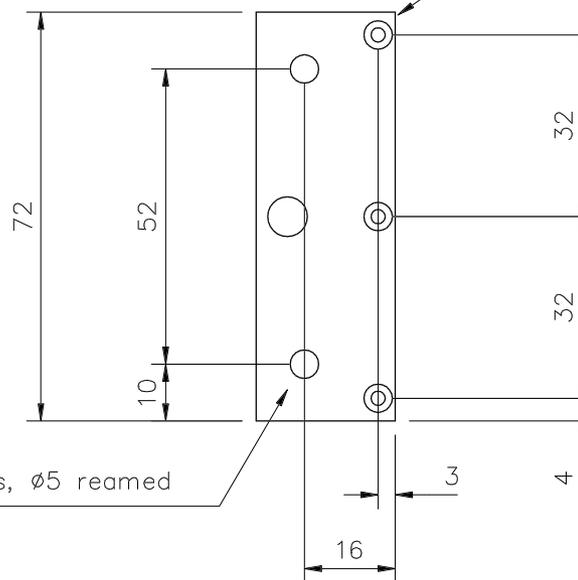
1 hole, $\phi 7$ through

1 hole, M2 tapped through to $\phi 5$ hole

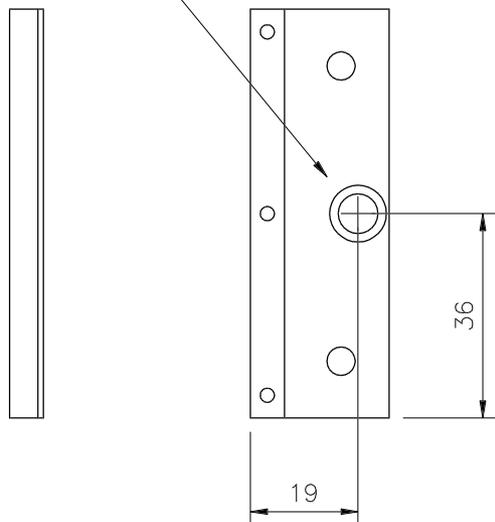
(similar hole in opposite face)



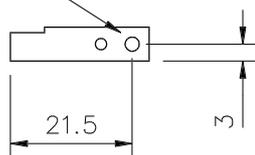
3 holes, M2.5 clear, counterbored



2 holes, $\phi 5$ reamed



1 hole, M2.5 tapped 6 deep



DRG. TITLE:		AF2 GRIPPER TOP PLATE (STRAIGHT)	
SCALES:		1:1	ASTRONOMICAL INSTRUMENTATION GROUP DURHAM UNIVERSITY, PHYSICS DEPARTMENT SCIENCE LABS, SOUTH ROAD, DURHAM, DL1 3LE TEL. (091) 374 2107 & 2108
DRG. TYPE:		PARTS	THIS DRAWING IS THE PROPERTY OF THE ASTRONOMICAL INSTRUMENTATION GROUP, DURHAM UNIVERSITY, PHYSICS DEPT. IT MUST NOT BE COPIED OR LENT WITHOUT THE CONSENT OF THE INSTRUMENTATION GROUP
DRAWN BY:		IRP	
DATE:		12/07/91	DRAWING No.
		AF2\GRP-05	DRG. SIZE A3
			REV. B

ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED

IMPLIED TOLERANCES
X (OVER 100) ± 0.20
X (UP TO 100) ± 0.1
X.X ± 0.10
X.XX ± 0.05

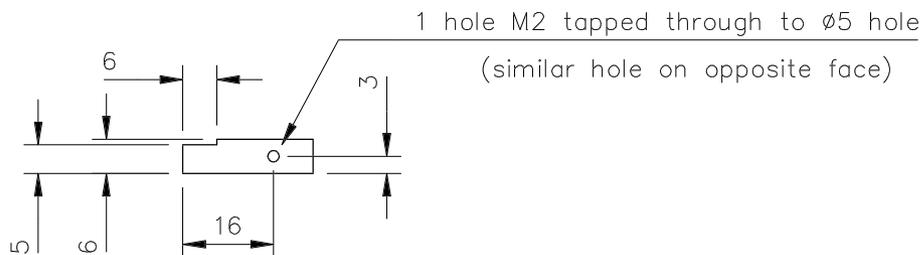
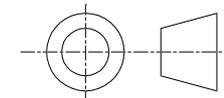
Material:
AL TOOL PLATE

Quantity: 1 OFF

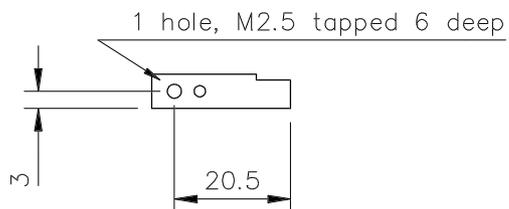
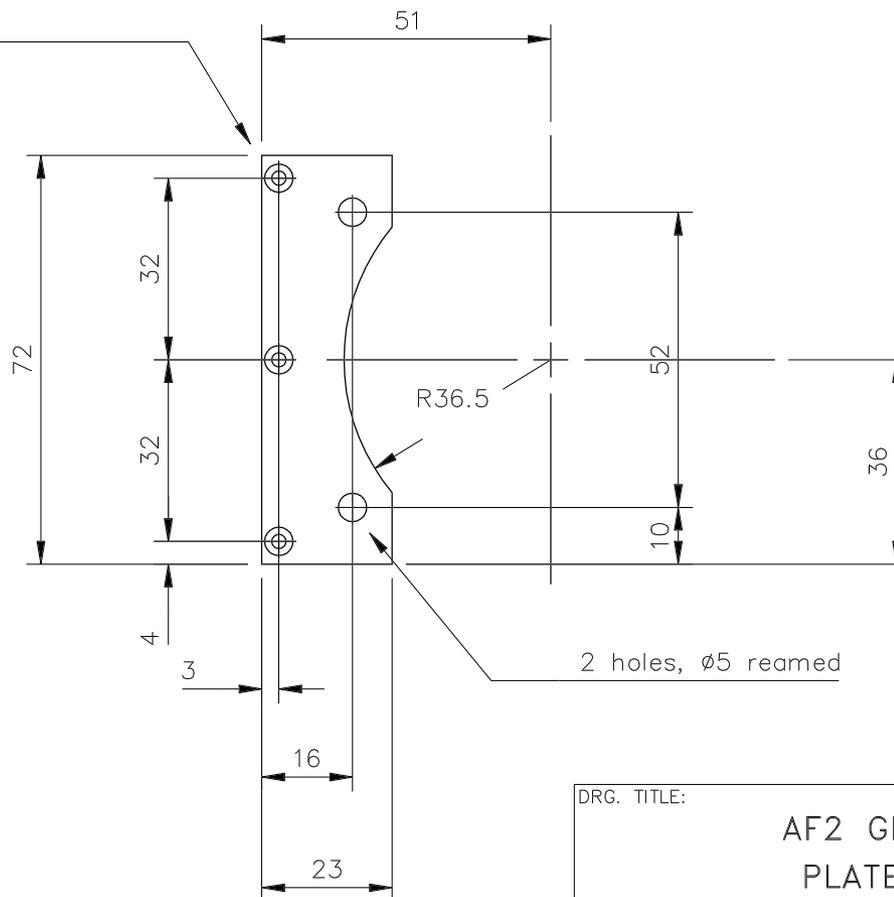
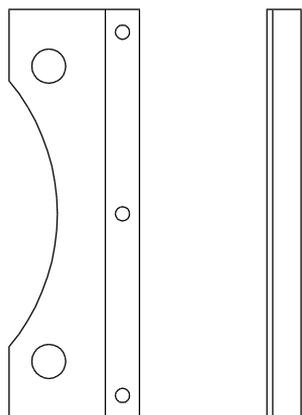
B	2- $\phi 5$ REAMED HOLES WERE $\phi 6$	GD	8/6/92
ISSUE	REVISION	DRN	DATE

DO NOT SCALE

THIRD ANGLE PROJECTION



3 holes, M2.5 clear counterbored

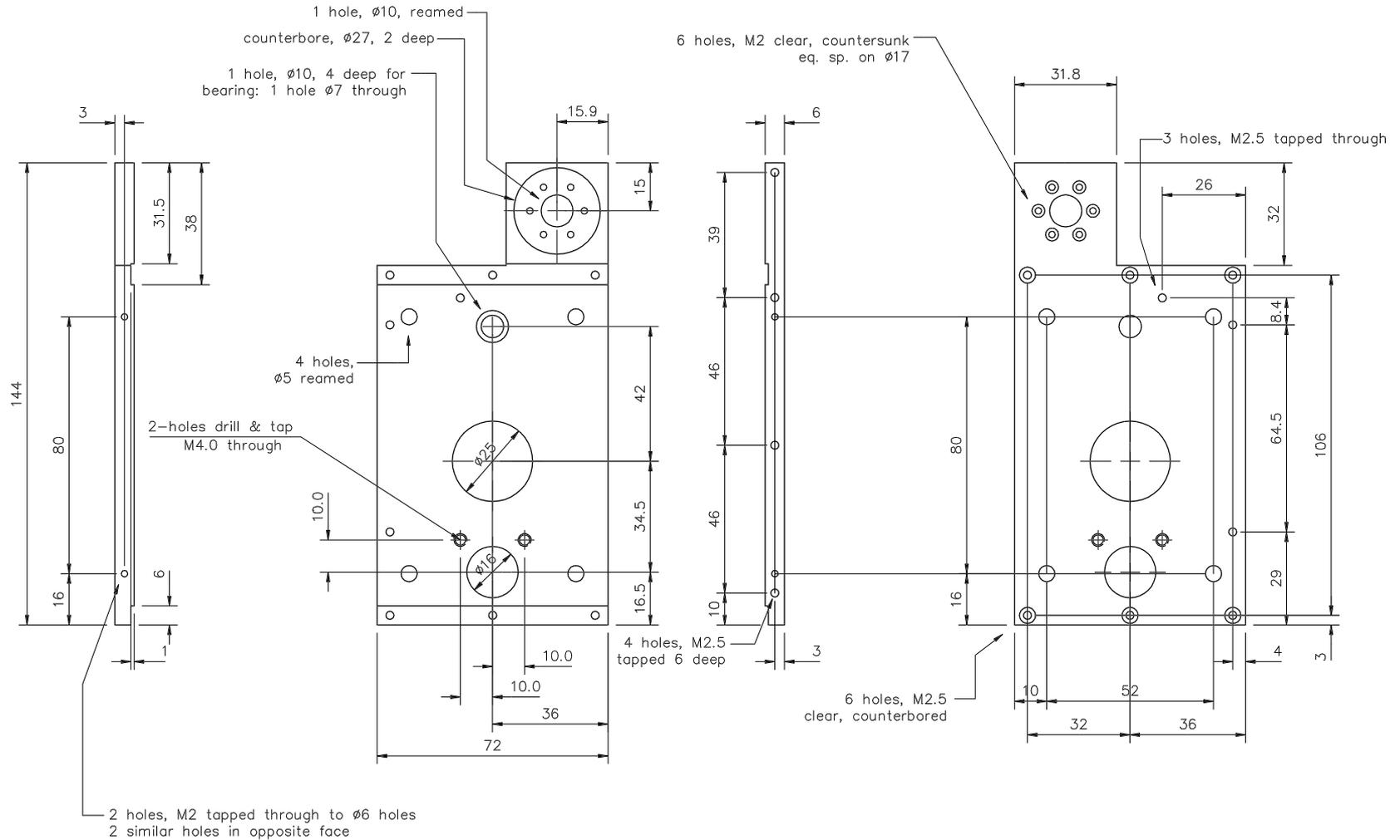
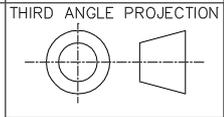


DRG. TITLE:		AF2 GRIPPER TOP PLATE (CURVED)	
SCALES:	1:1	ASTRONOMICAL INSTRUMENTATION GROUP DURHAM UNIVERSITY, PHYSICS DEPARTMENT SCIENCE LABS, SOUTH ROAD, DURHAM, DL1 3LE TEL. (091) 374 2107 & 2108	
DRG. TYPE:	PARTS	THIS DRAWING IS THE PROPERTY OF THE ASTRONOMICAL INSTRUMENTATION GROUP, DURHAM UNIVERSITY, PHYSICS DEPT. IT MUST NOT BE COPIED OR LENT WITHOUT THE CONSENT OF THE INSTRUMENTATION GROUP.	DRG. SIZE A3
DRAWN BY:	IRP		
DATE:	12/07/91	DRAWING No.	REV.
		AF2\GRP-04	B

ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED			
IMPLIED TOLERANCES			
			X (OVER 100) ±0.20
			X (UP TO 100) ±0.1
			X.X ±0.10
			X.XX ±0.05
B	2-ø5 REAMED HOLES WERE ø6	GD	8/6/92
ISSUE	REVISION	DRN	DATE

Material:
AL TOOL PLATE
Quantity: 1 OFF

DO NOT SCALE

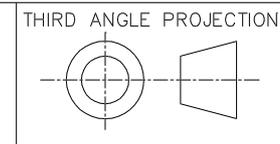


DRG. TITLE:		AF2 GRIPPER BOTTOM PLATE	
SCALES:		1:1	ASTRONOMICAL INSTRUMENTATION GROUP DURHAM UNIVERSITY, PHYSICS DEPARTMENT SCIENCE LABS, SOUTH ROAD, DURHAM, DL1 3LE TEL. (091) 374 2107 & 2108
DRG. TYPE:		PARTS	DRG. SIZE
DRAWN BY:		IRP	A2
DATE		23/06/91	DRAWING No.
		Quantity: 1 OFF	AF2\GRP-03
			REV. B

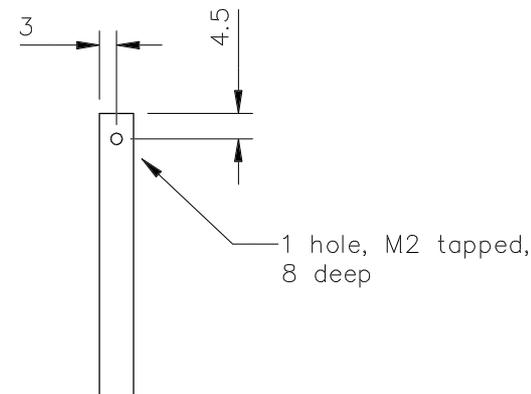
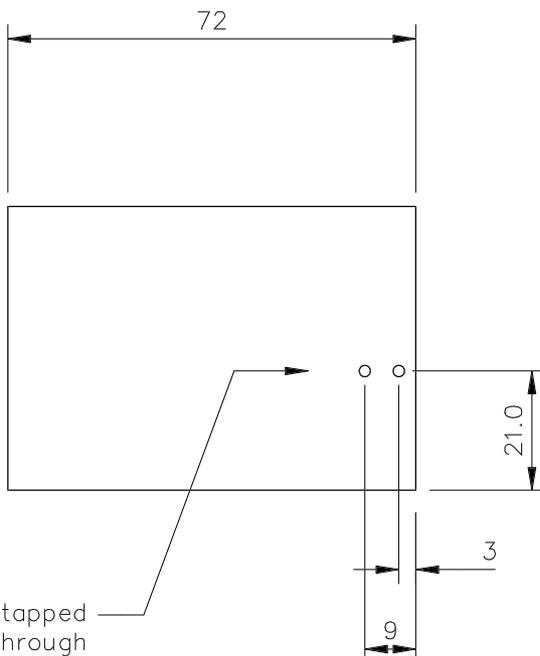
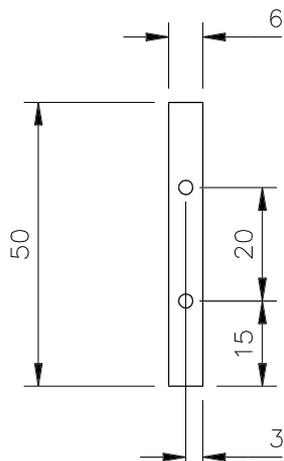
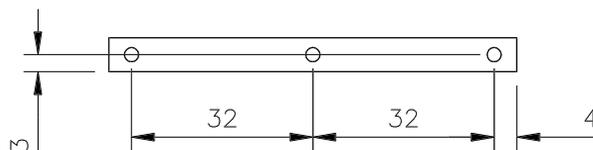
ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED			
IMPLIED TOLERANCES			
X (OVER 100)	± 0.20		
X (UP TO 100)	± 0.1		
X.X	± 0.10		
X.XX	± 0.05		
Material:		AL TOOL PLATE	
Quantity: 1 OFF			

ISSUE	REVISION	DRN	DATE	ISSUE	REVISION	DRN	DATE
		GD	1/06/92				
B		2-M4 HOLES ADDED, 1-M2.5 HOLE DELETED					
		$\phi 5$ REAMED HOLES WERE $\phi 6$					

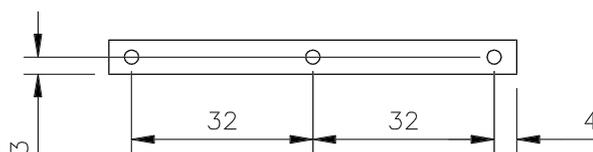
DO NOT SCALE



3 holes, M2.5 tapped
10 deep. 3 similar
holes on opposite face



2 holes, M2 tapped
through



2 holes, M2.5 tapped, 10 deep

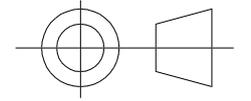
DRG. TITLE:		AF2-GRIPPER SIDE PLATE (OPTO SWITCH SIDE)	
SCALES:		1:1	ASTRONOMICAL INSTRUMENTATION GROUP DURHAM UNIVERSITY, PHYSICS DEPARTMENT SCIENCE LABS, SOUTH ROAD, DURHAM, DLI 3LE TEL. (091) 374 2107 & 2108
DRG. TYPE:		PARTS	THIS DRAWING IS THE PROPERTY OF THE ASTRONOMICAL INSTRUMENTATION GROUP, DURHAM UNIVERSITY, PHYSICS DEPT. IT MUST NOT BE COPIED OR LENT WITHOUT THE CONSENT OF THE INSTRUMENTATION GROUP.
DRAWN BY:		IRP	
DATE:		22/07/91	DRAWING No.
		AF2\GRP-02	REV. B

ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED			
IMPLIED TOLERANCES			
			X (OVER 100) ±0.20
			X (UP TO 100) ±0.1
			X.X ±0.10
			X.XX ±0.05
B	6 WIDE SLOT REMOVED, & HOLES REPOSITIONED	GD	8/6/92
ISSUE	REVISION	DRN	DATE

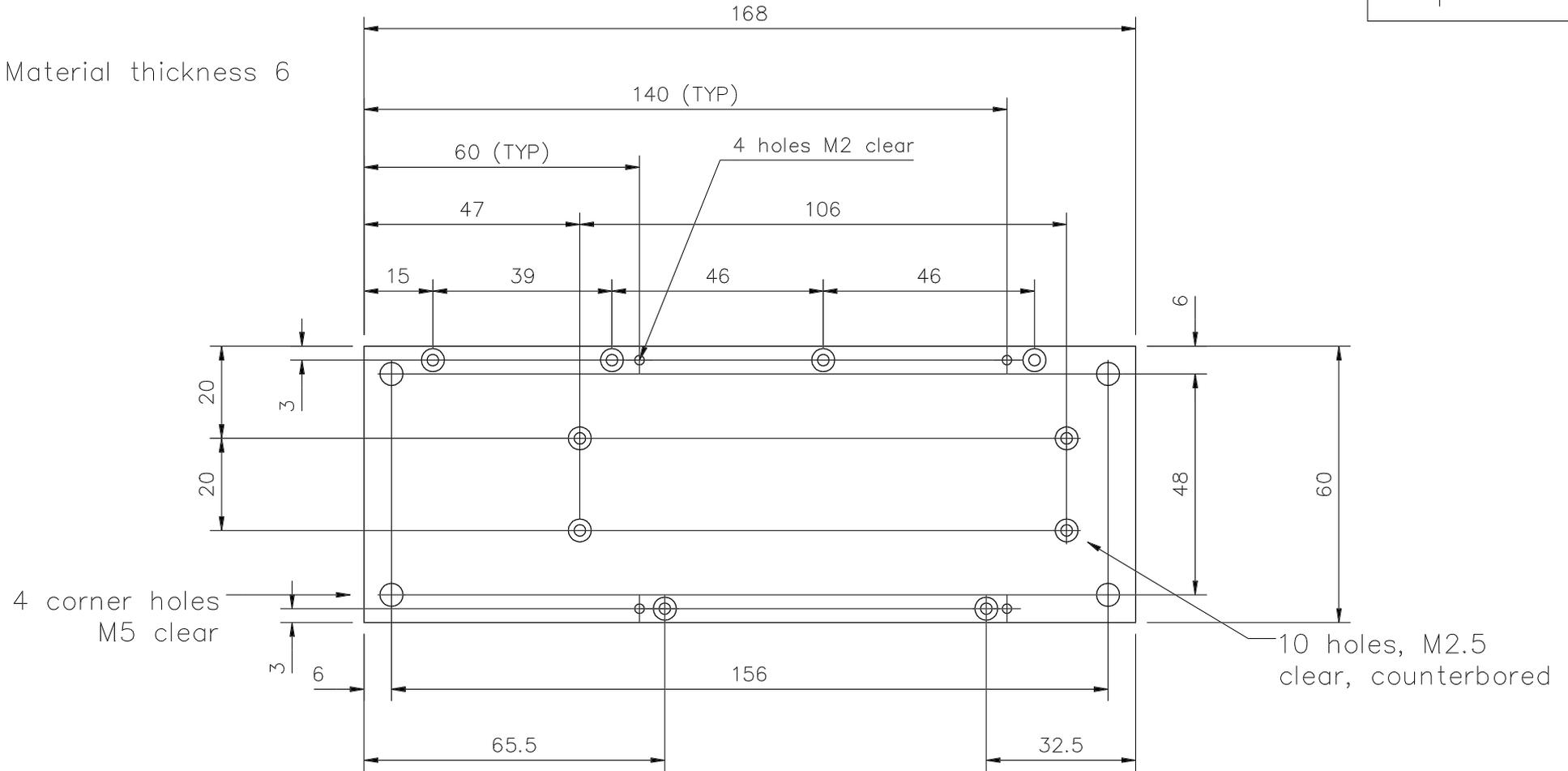
Material:
AL TOOL PLATE
Quantity: 1 OFF

DO NOT SCALE

THIRD ANGLE PROJECTION



Material thickness 6



DRG. TITLE:		AF2 GRIPPER BACK PLATE	
SCALES:		1:1	ASTRONOMICAL INSTRUMENTATION GROUP DURHAM UNIVERSITY, PHYSICS DEPARTMENT SCIENCE LABS, SOUTH ROAD, DURHAM, DL1 3LE TEL. (091) 374 2107 & 2108
DRG. TYPE:		PARTS	
DRAWN BY:		IRP	
DATE:		27/06/90	
ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED		DRG. SIZE	
IMPLIED TOLERANCES		A3	
X (OVER 100) ±0.20			
X (UP TO 100) ±0.1		DRAWING No.	
X.X ±0.10			
X.XX ±0.05		AF2\GRP-01	
Material:		REV.	
AL TOOL PLATE		C	

ISSUE	REVISION	DRN	DATE
C	15 WIDE SLOT DELETED	GD	8/6/92
B	4 - M2 CLEARANCE HOLES ADDED	GD	11/9/91