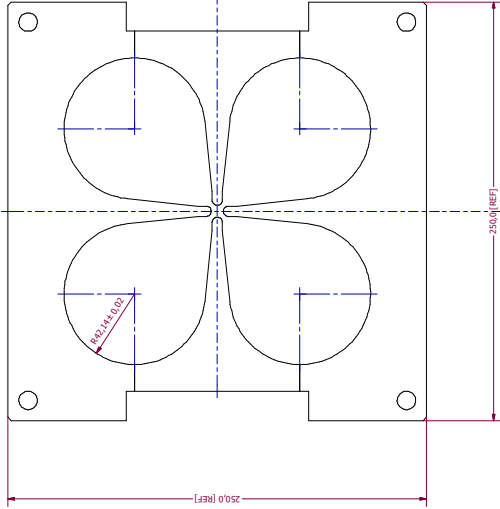
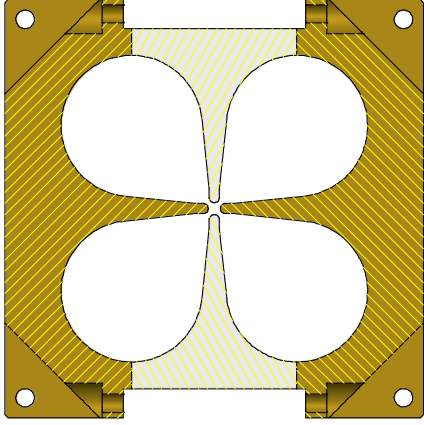


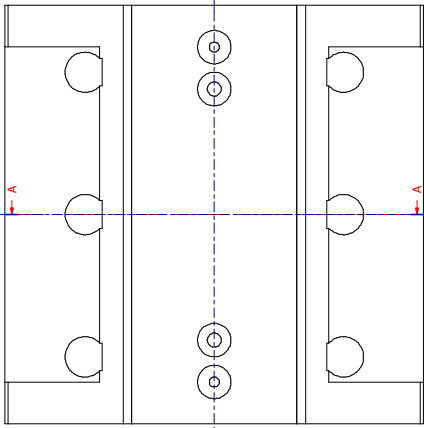
END VIEW



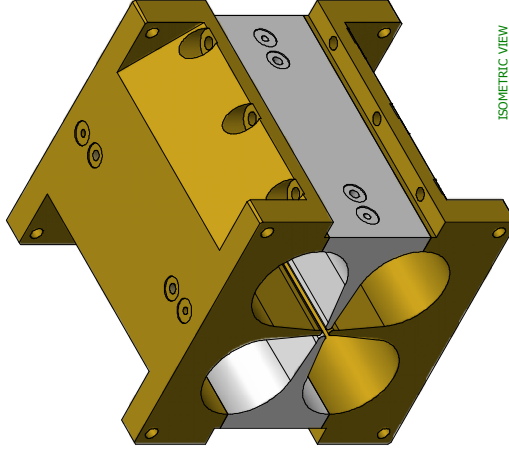
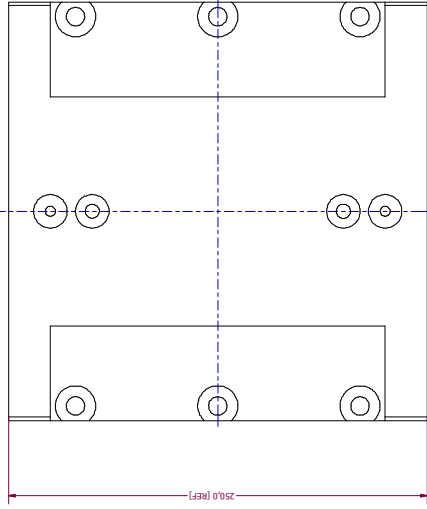
SECTION VIEW
A-A



SIDE VIEW



TOP/BOTTOM VIEW



ISOMETRIC VIEW

Material: Wrought High Conductivity Copper Alloy C10100
Also known as Oxygen-Free Electronic (OFE). This is a 99.99% pure copper with 0.0005% oxygen content. It achieves a minimum 101% IACS conductivity rating. This copper is finished to a final form in a carefully regulated, oxygen-free environment.

Defined in:
UNS - Unified Numbering System
ASTM - American Society for Testing and Materials

Why Oxygen Free?
In particle accelerator applications, the release of oxygen (and/or other impurities) can cause undesirable chemical reactions with other materials in the local environment.

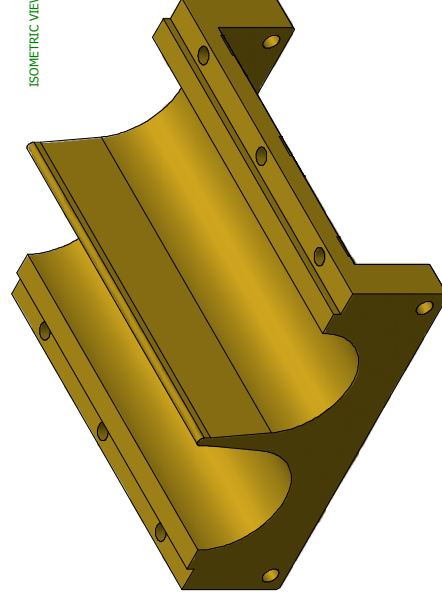
VERSION 2

Joint Test Model - Overview

Drawn by:	P. Savage	Projection:	Third angle
Designed by:	P. Savage	Model file:	WitchModl_SimpleSim
Checked by:	N/A	Drawing file:	WitchModl_Version2.dwg
Date:	25 May 2010	Version number:	1
Manufactured by:	Oxygen Free Cu C10100	Project:	FETS / Blank
Material:	Oxygen Free Cu C10100	Sheet number:	1 / 18
Remove all burrs	Remove all burrs	Number of:	4 Complete Assemblies
Scale:	Do not scale	Drawing number:	IC-REF P 25, FETS, BB_0001
Notes:	Remove all burrs	Notes:	
Contact:	p.savage@imperial.ac.uk (Work) 01474 93007, 994 7937 (Mobile) 01474 930 8058	Unless otherwise stated:	
		Dimensional tolerance:	X ± 0.5 mm X.X ± 0.2 mm X.XX ± 0.1 mm
		Angular tolerance:	± 0.5°
		Hole centres:	± 0.05 mm
		Surface finish:	1.6 microns
		Dimensions in:	mm

Four complete assemblies to be made for the following tests:

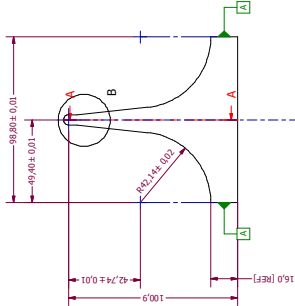
- 1) Electron beam welding
- 2) Laser welding
- 3) Vacuum brazing
- 4) Bolting



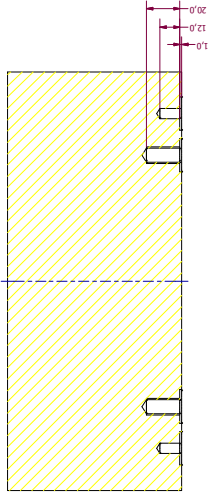
Unless otherwise stated:	
Dimensional tolerance:	X ± 0.5 mm X.X ± 0.2 mm X.XX ± 0.1 mm
Angular tolerance:	± 0.5°
Hole centres:	± 0.05 mm
Surface finish:	1.6 micro
Dimensions in mm	□

NOTES:
FACES 'A' TO BE MACHINED FLAT AND COPLANAR TO $\pm 0.01\text{mm}$
WHERE ONE SIDE ONLY IS DIMENSIONED SYMMETRY IS ASSUMED
PROTECT INTERNAL FACES & JOINT INTERFACES AFTER MACHINING

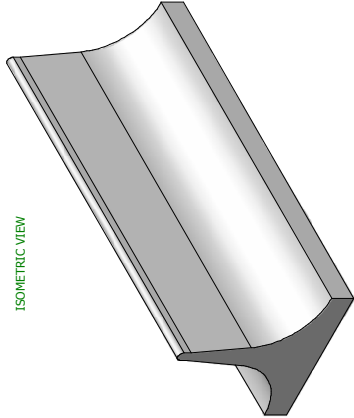
END VIEW



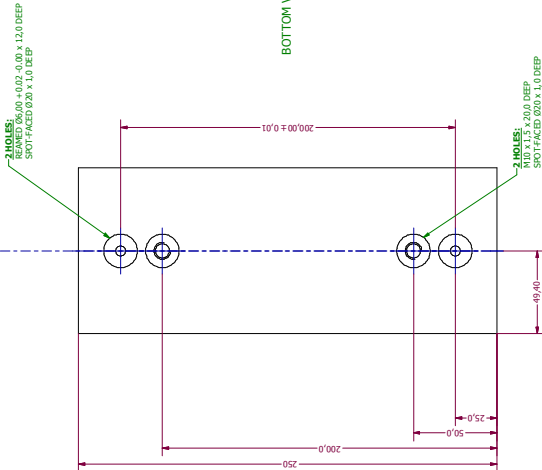
SIDE SECTION
VIEW A



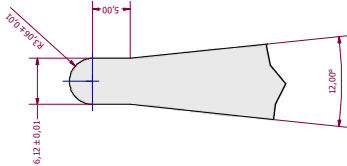
ISOMETRIC VIEW



BOTTOM VIEW



DETAIL VIEW
B
VANE TIP REGION



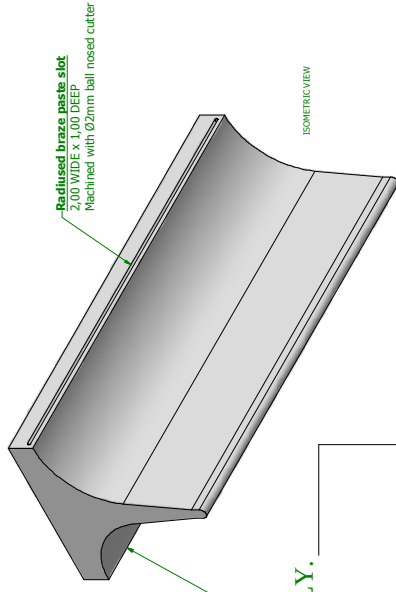
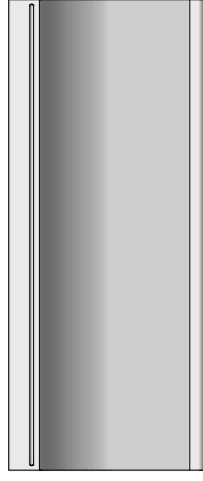
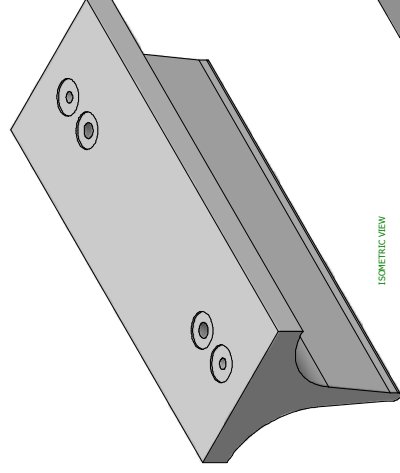
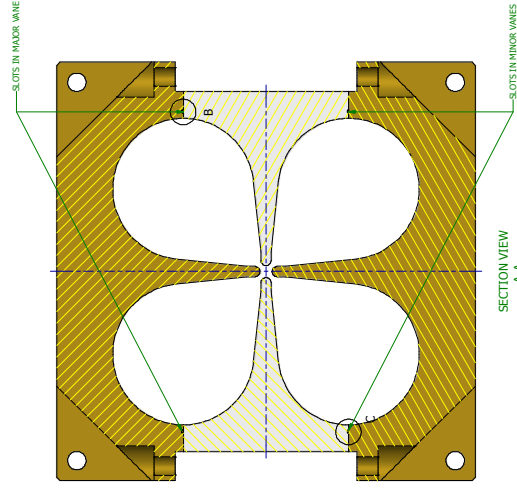
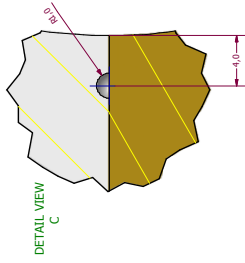
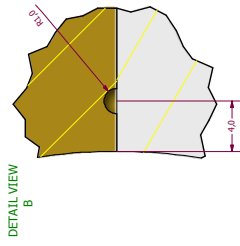
VERSION 2

Title		Joint Test Model - Minor Vane	
Drawn by:	P. Savage	Projection:	Third angle
Designed by:	P. Savage	Model file:	RFQ_MinorVane_VidTest_Simple.dwg
Checked by:	N/A	Drawing file:	VidTestModel_Version2.dwg
Date:	25 Mar 2010	Version number:	1
Manufactured by:	Oxygen Free Cu Cl 0100	Project:	FETS / Bland
Material:	Oxygen Free Cu Cl 0100	Sheet number:	3 / 18
Remove all burrs		Number of:	8
Scale:	Drawn scale	Drawing number:	XC-REF-2-35_FETS_05_0003
Notes:		Notes:	
Contact:	p.savage@imperial.ac.uk	(Ver 1) 10/04/2007 09:17:37	(Ver 2) 10/04/2007 14:08:00

NOTES:

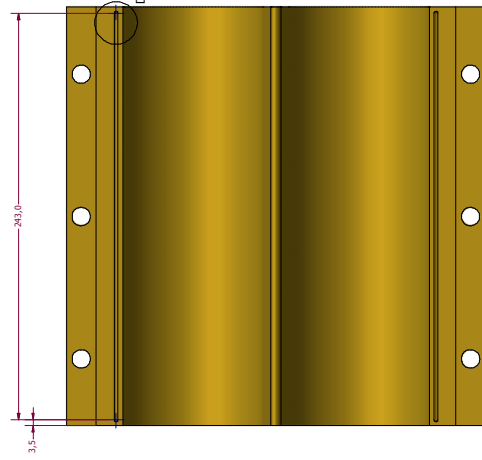
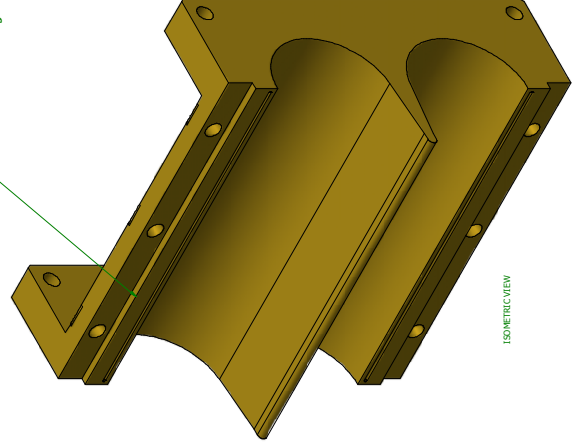
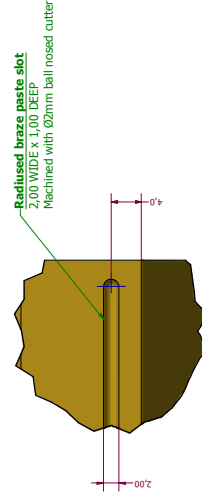
FACES 'A' TO BE MACHINED FLAT AND PARALLEL TO $\pm 0.01\text{mm}$
WHERE ONE SIDE ONLY IS DIMENSIONED SYMMETRY IS ASSUMED
PROTECT INTERNAL FACES & JOINT INTERFACES AFTER MACHINING

Unless otherwise stated:	
Dimensional tolerance:	X $\pm 0.5\text{ mm}$
	X.X $\pm 0.2\text{ mm}$
	X.XX $\pm 0.1\text{ mm}$
Angular tolerance:	$\pm 0.5^\circ$
Hole centres:	$\pm 0.05\text{ mm}$
Surface finish:	1.6 microns
Dimensions in:	mm



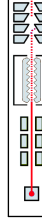
Minor Vane slots for vacuum braze paste:
On BOTH Minor Vane parts: machine 1 slot ONLY.

- Major Vane slots for vacuum braze paste:
On one Major Vane part ONL Y: machine 2 slots.

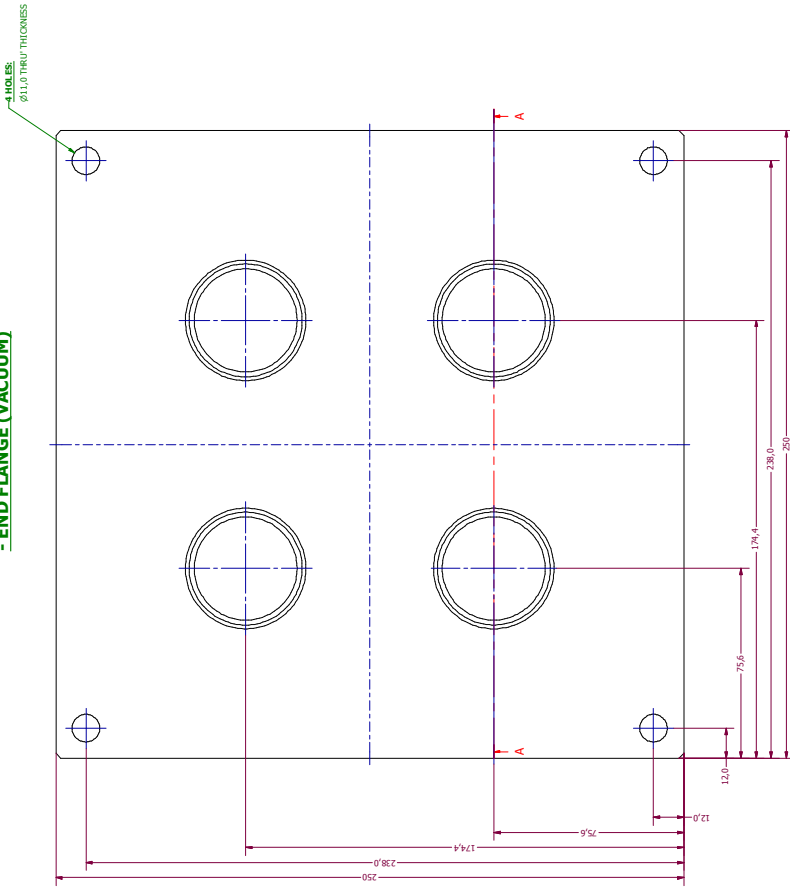


VERSION 2

File	Joint Test Model - Brazo Slot Detail						
Drawn by:	P. Savage	Model file:	Weldbook, Weldcase, lam	Brazo angle			
Designed by:	P. Savage	Drawing file:	Weldbook, Versatex.dwg				
Checked by:	N/A	Version number:	2				
Date:	23 May 2010	Part / Subso	Part / Subso				
Manufactured by:	Brazo	Sheet number:	1 / 18				
Material:	Oxygen free Cr/Cu100	Number of	Number of				
Marked as bars:		Drawing number:	IC-PT-25, PT-18, 0009				
Scale:	1:1 not scale						
Notes:							
Control:	p.savage@imperial.ac.uk (work) 0207027 597 7817 (06800) 100 070 781 85 005						

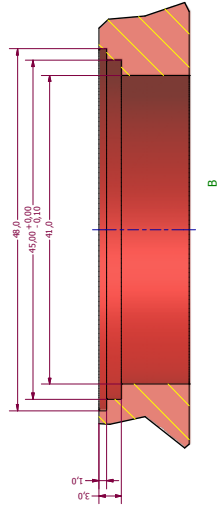


INDIUM SEALING TEST - END FLANGE (VACUUM)

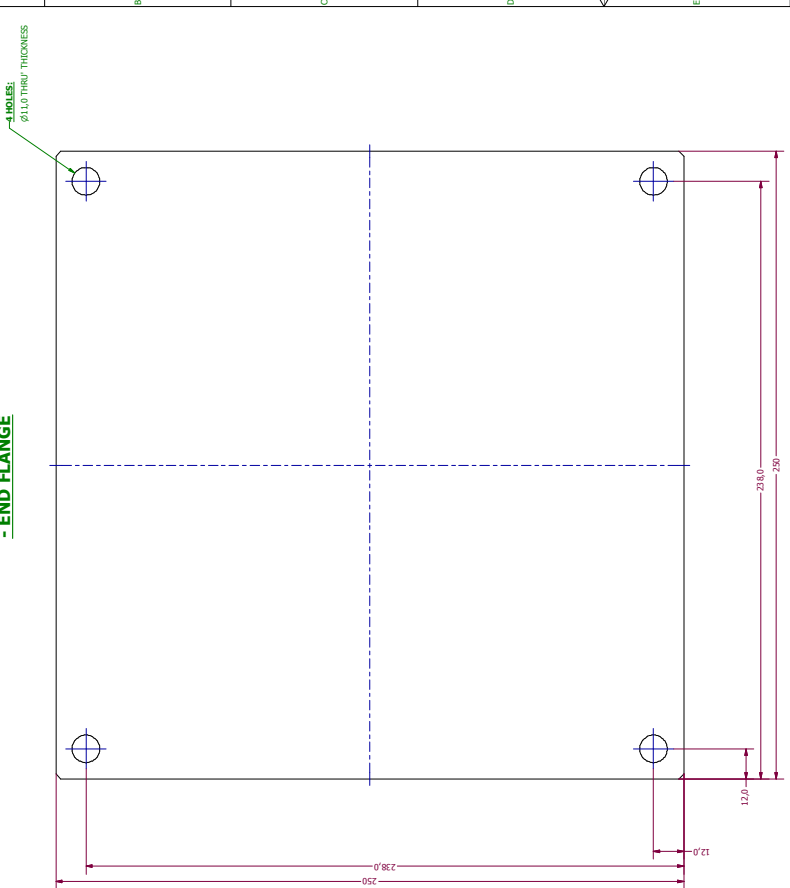


NOTES:

- 1) 2 OFF
- 2) SEE FILE: WeldTestEndFlange.igs
- 3) Large holes to match from Leybold D1440K flange (PART 86634)



INDIUM SEALING TEST - END FLANGE

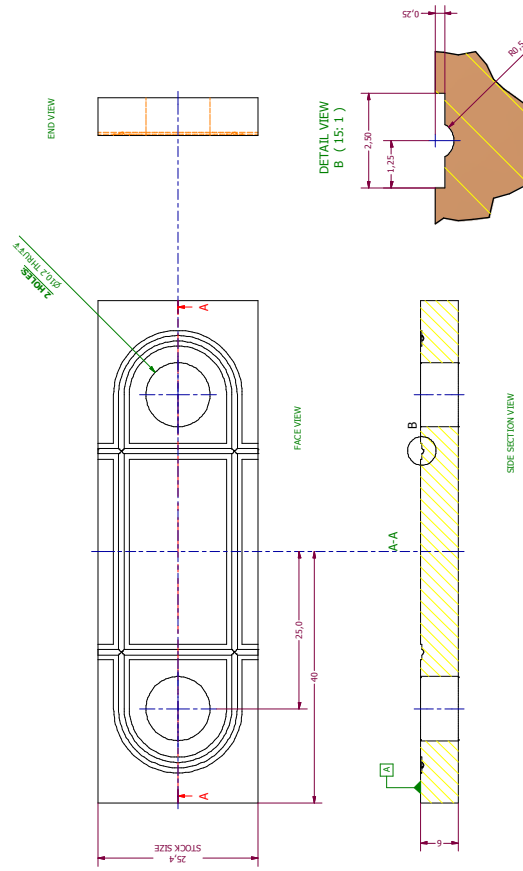


NOTES:

- 1) 2 OFF
- 2) SEE FILE: WeldTestEndFlange_Blank.igs

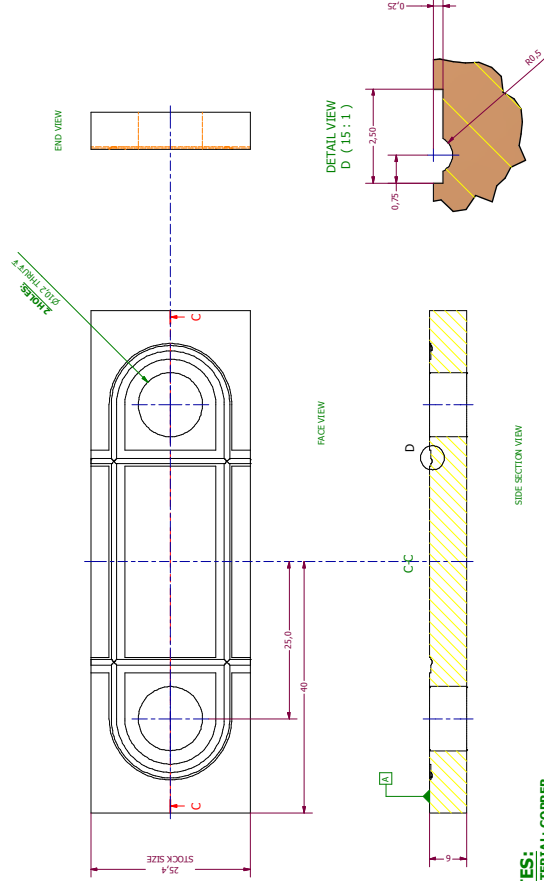
Title:		Indium Sealing Test - End Flanges	
Drawn by:	P. Savage	Projection:	Third angle
Designed by:	P. Savage	Model file:	WeldTestEndFlange.igt
Checked by:	N/A	Drawing file:	WeldTestEndFlange.dwg
Date:	7th June 2010	Version number:	1
Manufactured by:	I. Clark, BEP workshop	Project:	Front End Test Stand
Material:	C30100 Copper	Sheet number:	2 each
Remove all burrs		Number of:	2 each
Scale:	Drawn scale	Drawing number:	IC_FET2.FS_FETS_BE_0005
Notes:		Dimensions in mm	
Contact:	p.savage@imperial.ac.uk (Work) ukq0170812@imperial.ac.uk (Home)		

INDIUM SEALING TEST - CENTRED GROOVE



- NOTES:**
- 1) MATERIAL: COPPER
 - 2) MACHINE FACE 'A' (INDIUM GROOVE FACE) FLAT
 - 3) 1 OFF
 - 4) GROOVE DETAILS IN FILE: IndiumTest_Centred.igs

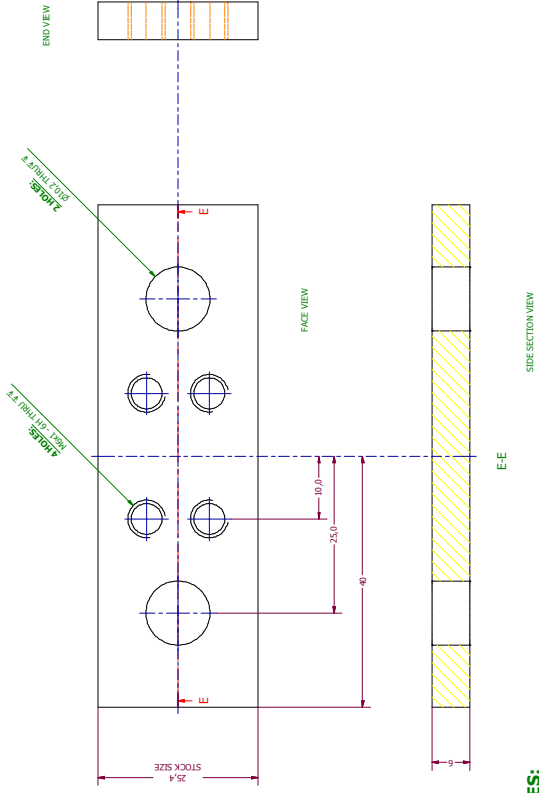
INDIUM SEALING TEST - OFFSET GROOVE



- NOTES:**
- 1) MATERIAL: COPPER
 - 2) MACHINE FACE 'A' (INDIUM GROOVE FACE) FLAT
 - 3) 1 OFF
 - 4) GROOVE DETAILS IN FILE: IndiumTest_Offset.igs

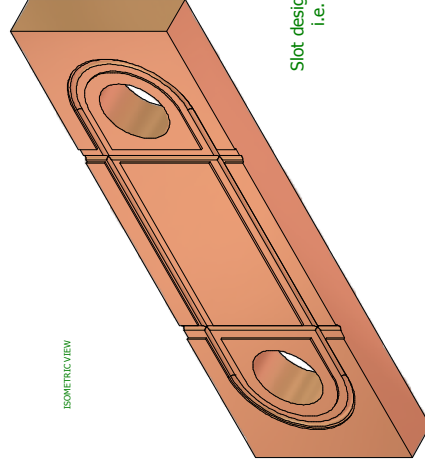
FRONT END TEST STAND (F.E.T.S.)

<http://fets.lis.lis.rli.ac.uk/>



- NOTES:**
- 1) MATERIAL: COPPER
 - 2) MACHINE ONE FACE FLAT
 - 3) 4 OFF
 - 4) SEE FILE: IndiumTest_Closing.igs

INDIUM SEALING TEST - CLOSING PLATE



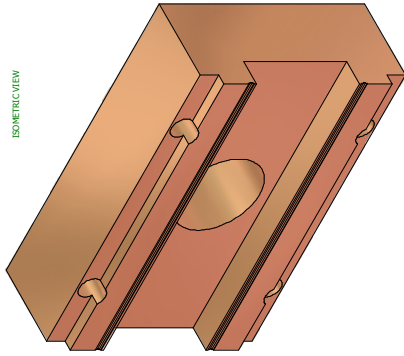
Indium Sealing Test

Drawn by:	P. Savage	Projection:	Third angle
Designed by:	P. Savage	Model file:	IndiumTestProc1.ipt
Checked by:	N/A	Drawing file:	IndiumTest_Ver02.dwg
Date:	7th May 2010	Version number:	1
Manufactured by:	I. W. Clark	Project:	Front End Test Stand
Material:	Copper	Sheet number:	6 / 18
Remove all burrs		Number of:	3 + 1 + 1
Scale:	Drawn scale	Drawing number:	IC-FE2725-FETS_06_0006
Notes:			
Contact:	p.savage@imperial.ac.uk (Work) 01494 787 797 (Mobile) 01494 788 8058		

Unless otherwise stated:	
Dimensional tolerance:	X ± 0.5 mm
	X.X ± 0.2 mm
	X.XX ± 0.1 mm
Angular tolerance:	± 0.5°
Hole centres:	± 0.05 mm
Surface finish:	1.6 microns
Dimensions in:	mm

INDIUM VACUUM SEALING TEST - GROOVED HALF

FRONT END TEST STAND (F.E.T.S.)
<http://fets.lsis.rl.ac.uk/>

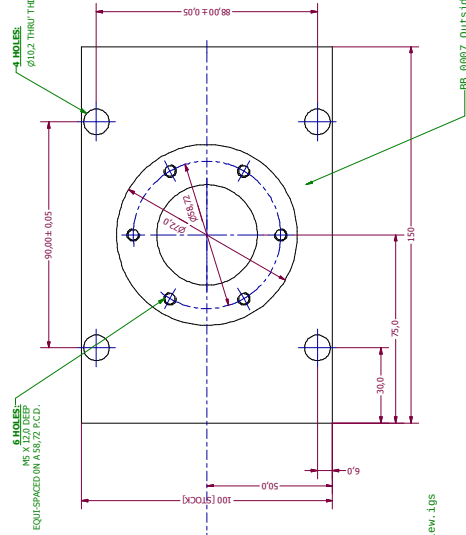


ISOMETRIC VIEW

INSIDE FACE VIEW

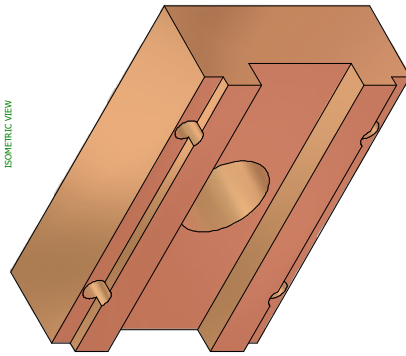
END VIEW

OUTSIDE FACE VIEW



NOTES:

- 1) MATERIAL: COPPER
- 2) APART FROM GROOVE - PARTS GROOVED AND UNGROOVED ARE IDENTICAL
- 3) 1 OFF
- 4) SURFACES 'A' TO BE FLAT & COPLANAR TO ± 0.01 mm



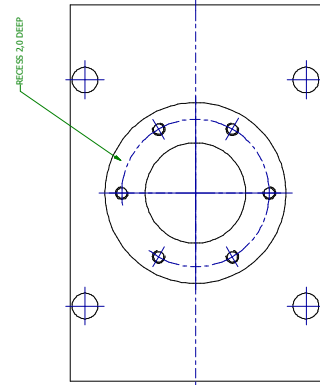
ISOMETRIC VIEW

INSIDE FACE VIEW

NOTES:

- 1) MATERIAL: COPPER
- 2) APART FROM GROOVE - PARTS GROOVED AND UNGROOVED ARE IDENTICAL
- 3) 1 OFF
- 4) SURFACES 'A' TO BE FLAT & COPLANAR TO ± 0.01 mm

OUTSIDE FACE VIEW



Indium Vacuum Test

Drawn by:	P. Savage	Projection:	Third Angle
Designed by:	P. Savage	Model file:	IndiumTestVacuumFogel7_NoteCopper
Checked by:	N/A	Drawing file:	IndiumTestVacuumFogel7_Vers02.dwg
Date:	11th June 2010	Version number:	1
Manufactured by:	HEP Workshop, I. Clark	Project:	Front End Test Stand
Material:	Copper C1030	Sheet number:	7 / 18
Remove all burrs		Number of:	2 each
Scale:	Drawn scale	Drawing number:	IC-FET-7-5_FETS_BB_0007
Notes:			
Contact:	p.savage@imperial.ac.uk	(Ver 1) 10/06/2010 09:37:07	(Ver 01) 10/06/2010 09:38

Unless otherwise stated:
Dimensional tolerance: X ± 0.5 mm
X.X ± 0.2 mm
X.XX ± 0.1 mm
Angular tolerance: $\pm 0.5^\circ$
Hole centres: ± 0.05 mm
Surface finish: 1.6 microns
Dimensions in mm

- ASSEMBLED VIEW



18 X 12,0 DEEP
EQUI-SPACED ON A
Ø85.00 P.C.D.

SLOT BOTH ENDS—

BB 0008 EndView.iqs-

END VIEW



-SLOT DETAILS ARE IDENTICAL TO THOSE SHOWN ON DWG. BB 0007

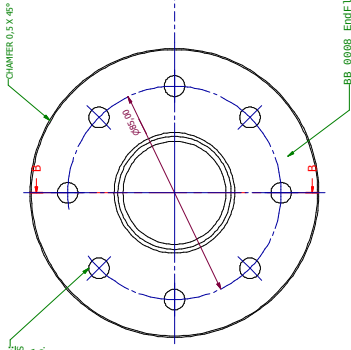
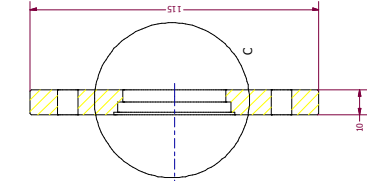
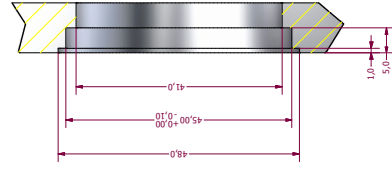
17

- END DETAILS



ASSEMBLY PROCEDURE:

1. Degrease grooved half from dwg # BB_0007
2. Place M10x120 bolts through holes.
3. Place Q1,00mm Indium wire in grooves.
4. Carefully lower un-grooved half onto Indium
5. Add nuts and washers.
6. Tighten nuts progressively until copper faces
7. Machine end faces flat.
8. Machine tapped end holes.
9. Machine end Indium grooves.
10. Fit end M8 x 40 studs.
11. Degrease assembly.
12. Lay Indium into end slots - QN: Can it be do
13. Fit end flanges.
14. Tighten until faces meet.
15. Fit top and bottom DN40CF flanges.
16. Vacuum test at RAL.



FACE VIEW

-BB_0008_EndFlange.igs

- END FLANGE

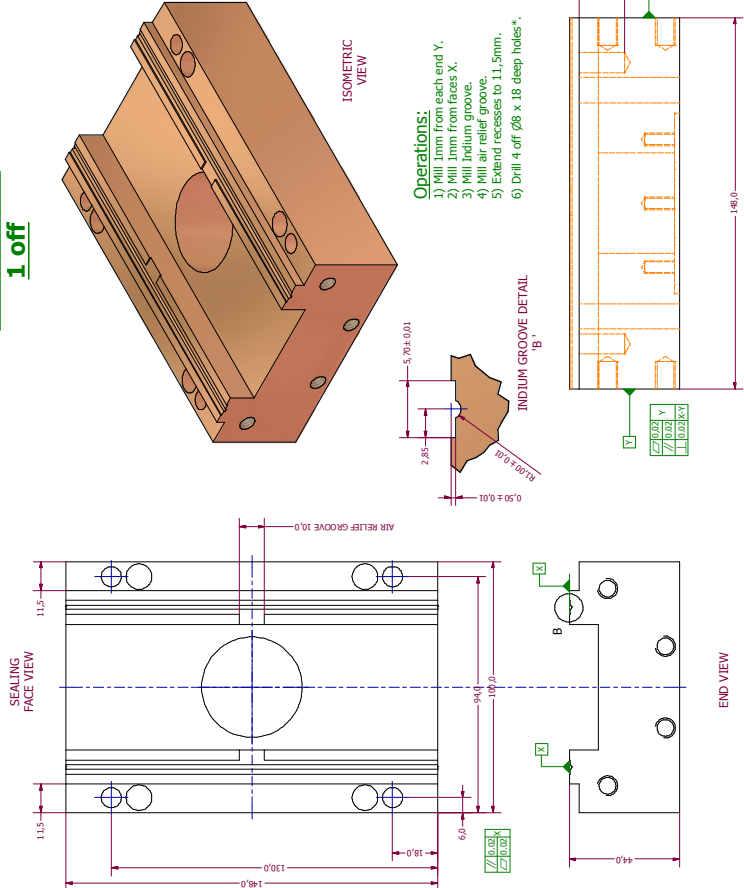
NOTES:
1) MATERIAL: STAINLESS STEEL
2) 2 OFF

[illegible]

2mm Ø INDIUM VACUUM SEALING TEST

Grooved Half

1 off

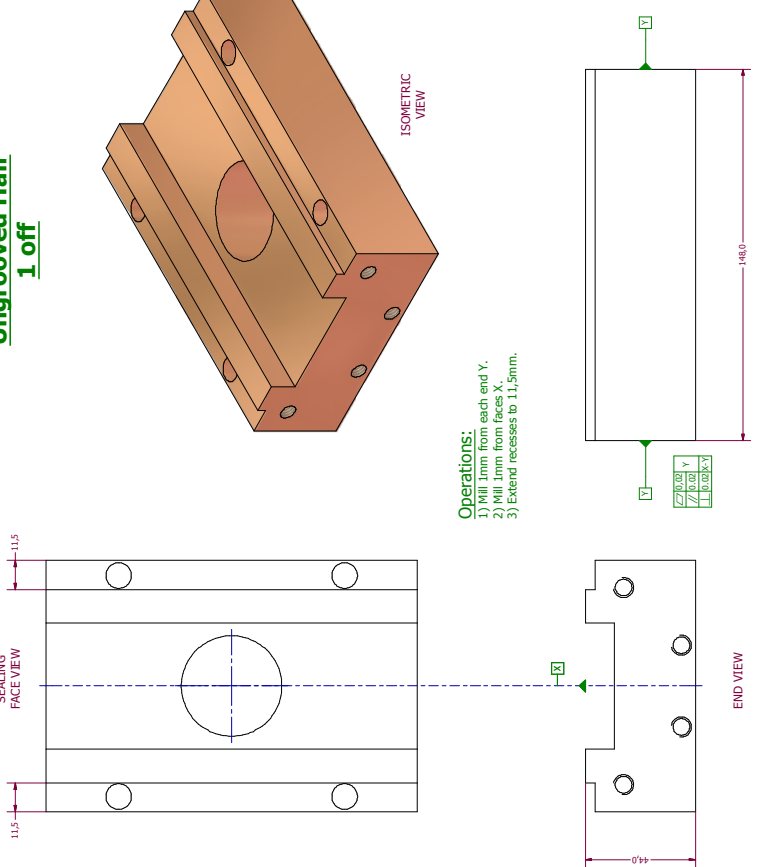


Material: Copper

2mm Ø INDIUM VACUUM SEALING TEST

Ungrooved Half

1 off



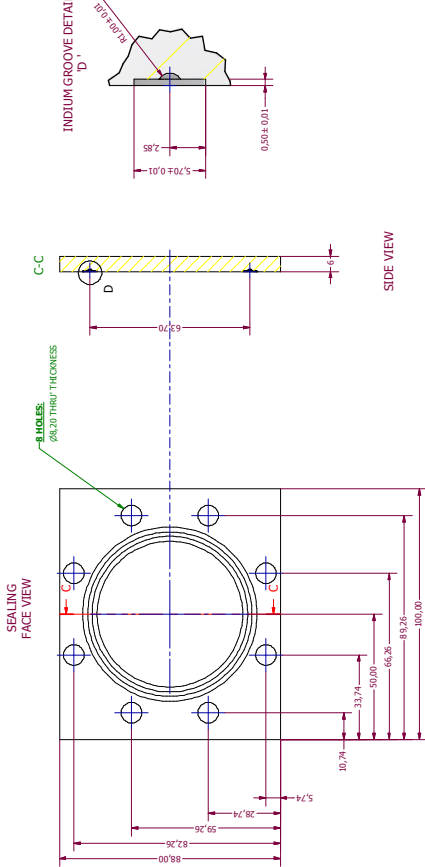
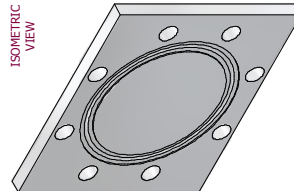
Material: Copper

Operations:
1) Mill 1mm from each end Y.
2) Mill 1mm from faces X.
3) Extend recesses to 11.5mm.

2mm Ø INDIUM VACUUM SEALING TEST

End flange

2 off



Material: Cast Aluminium Tooling Plate

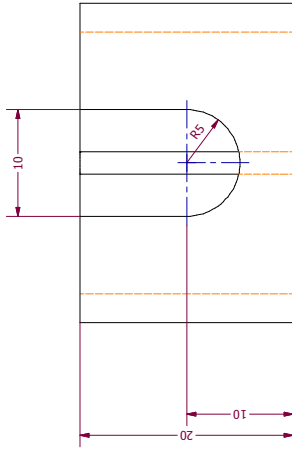
Indium Vacuum Test 3

Drawn by:	P. Savage	Projection:	Third angle
Designed by:	P. Savage	Model file:	IndiumTestVacuumFogel_2mmVms.dwg
Checked by:	N/A	Drawing file:	IndiumTestVacuumFogel_2mmVms.dwg
Date:	1st November 2010	Version number:	3
Manufactured by:	I. Clark, HEP workshop	Project:	Front End Test Stand
Material:	Stainless steel	Sheet number:	9 / 18
Remove all burrs		Number of:	Indium vacuum
Scale:	1:1	Drawing number:	IC-HEP-2-25-10-00009
Notes:		Notes:	1) 12 2mm diameter Indium wire
Contact:	p.savage@imperial.ac.uk	(Ver 3) 10/04/2010 09:17:17	(Ver 3) 10/04/2010 09:17:17

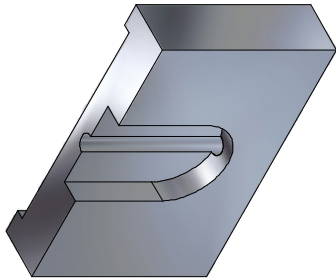
Unless otherwise stated:	
Dimensional tolerance:	X ± 0.5 mm
	X.X ± 0.2 mm
	X.XX ± 0.1 mm
Angular tolerance:	± 0.5°
Hole centres:	± 0.05 mm
Surface finish:	1.6 microns
Dimensions in mm	□

2mm Ø INDIUM CUTTING GUIDE

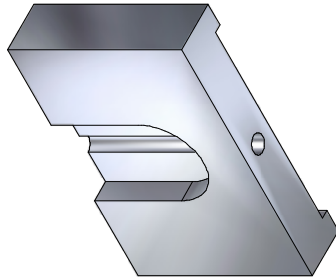
Straight



TOP VIEW



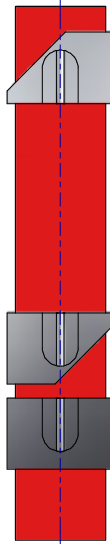
ISOMETRIC VIEWS



END VIEW

Material: Aluminium alloy or brass
Quantity: 2 off

TOP VIEW



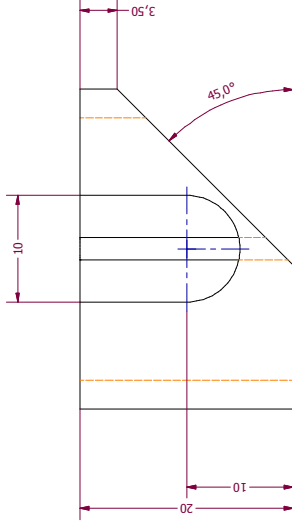
END VIEW



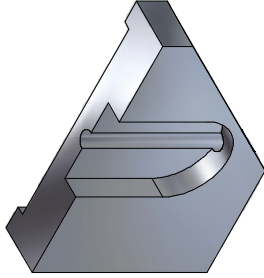
Cutting guides shown on
steel rule

2mm Ø INDIUM CUTTING GUIDE

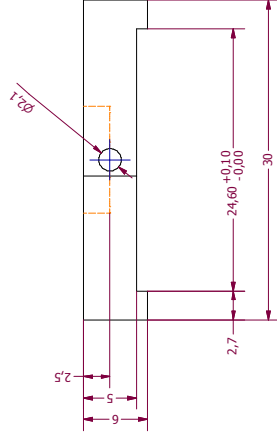
45°
2 off



TOP VIEW

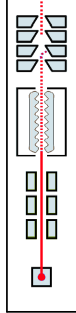


ISOMETRIC VIEWS



END VIEW

Material: Aluminium alloy or brass
Quantity: 2 off



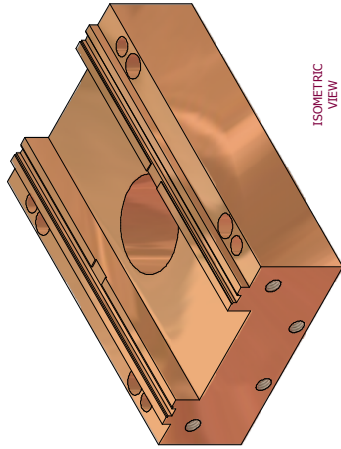
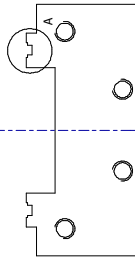
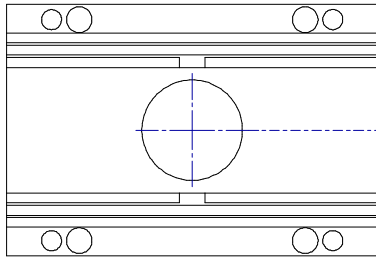
Indium Vacuum Test - 2mm cutting guides

Title:	Indium Vacuum Test - 2mm cutting guides
Drawn by:	P. Savage
Designed by:	P. Savage
Checked by:	N/A
Date:	18th Nov 2010
Manufactured by:	I. Clark, HEP workshop
Material:	Al alloy or brass
Remove all burrs	Do not scale
Scale:	Do not scale
Notes:	
Projection:	Third angle
Model file:	IndiumCutting jig iam
Drawing file:	WeldModel_Version2.dwg
Version number:	1
Project:	Front End Test Stand
Sheet number:	10 / 18
Number off:	2 each type
Drawing number:	IC_HEP_PIS_FETS_BB_0010
Contact:	p.savage@imperial.ac.uk (Work) +00(44)207 594 7817 (Mobile) +00(44)888 426 8058

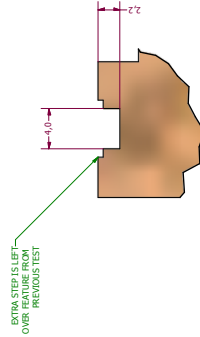
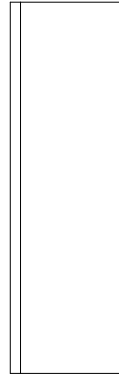
3D 'O' RING VACUUM SEALING TEST

Grooved Half

2 off



ISOMETRIC VIEW



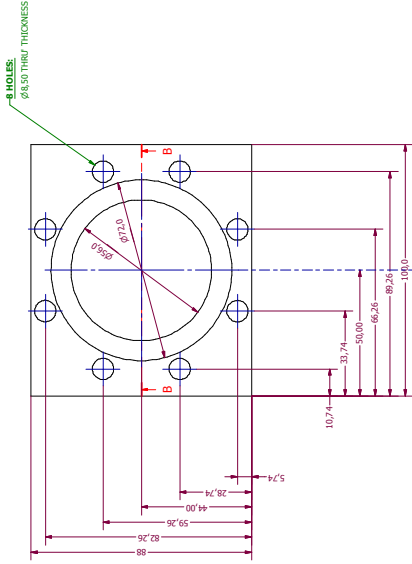
003.0mm 'O' RING GROOVE DETAIL 'A'

MODIFICATION
OF EXISTING
TEST PIECE

3D 'O' RING VACUUM SEALING TEST

End flange

2 off



ISOMETRIC VIEW



CUSTOM MADE SQUARE RING
GROOVE DETAIL 'C'



FRONT END TEST STAND (F.E.T.S.)

<http://fets.isis.rl.ac.uk/>

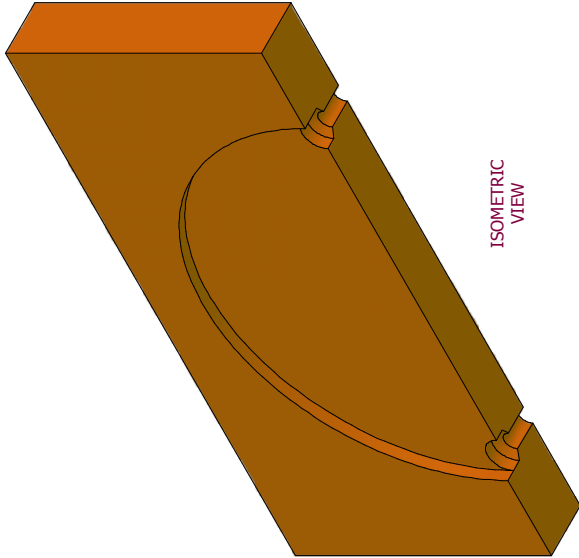
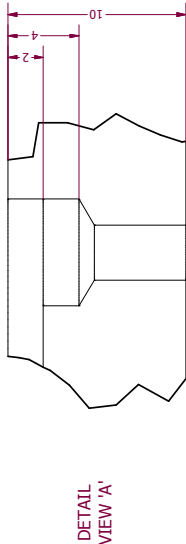
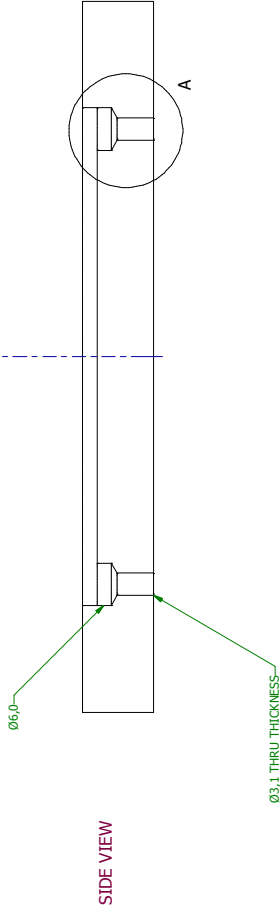
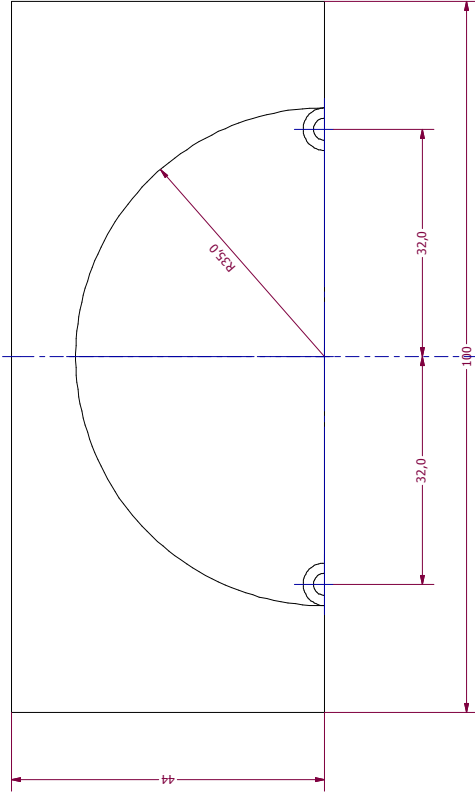
File:	Projection:	Model file:	BoxsetO-ring test.glt
Drawn by:	Checked by:	Drawing file:	Weldcode_Ver2.dwg
Date:	Version number:	Project:	
Manufactured by:	Sheet number:	Number of:	11 / 18
Material:	Remove all burrs	Drawing number:	
Notes:			
Contact:	p.sanger@imperial.ac.uk	(Ver 1) 10/04/2007 09:17:37	(M300) 10/04/2007 09:18:08

Unless otherwise stated:	
Dimensional tolerance:	X ± 0.5 mm
	X.X ± 0.2 mm
	X.XX ± 0.1 mm
Angular tolerance:	± 0.5°
Hole centres:	± 0.05 mm
Surface finish:	1.6 microns
Dimensions in mm	□

3D 'O' RING BONDING JIG

CAST ALUMINIUM TOOLING PLATE

2 off

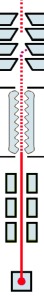


FRONT END TEST STAND (F.E.T.S.)

http://fets.isis.rl.ac.uk/

Title: 3D 'O' Ring Bonding Jig			
Drawn by:	P. Savage	Projection:	Third angle
Designed by:	P. Savage	Model file:	BondingJig.jpt
Checked by:	N/A	Drawing file:	WeldModel_Version2.dwg
Date:	13th December 2010	Version number:	1
Manufactured by:	1 Clark, HEP workshop	Project:	Front End Test Stand
Material:	Cast alu bonding plate	Sheet number:	12 / 18
Remove all burrs		Number off:	2
Scale:	Do not scale	Drawing number:	IC_HEP_PIS_FETS_BB0012
Notes:			
Contact:	p.savage@imperial.ac.uk (Work) +00(44)207 594 7817 (Mobile) +00(44)288 426 8058		

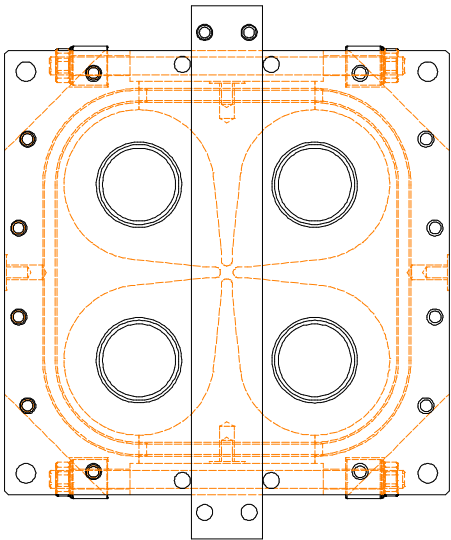
Unless otherwise stated:			
Dimensional tolerance:		X	± 0.5 mm
		X.X	± 0.2 mm
		X.XX	± 0.1 mm
Angular tolerance:			± 0.5°
Hole centres:			± 0.05 mm
Surface finish:			1.6 microns
Dimensions in mm			□



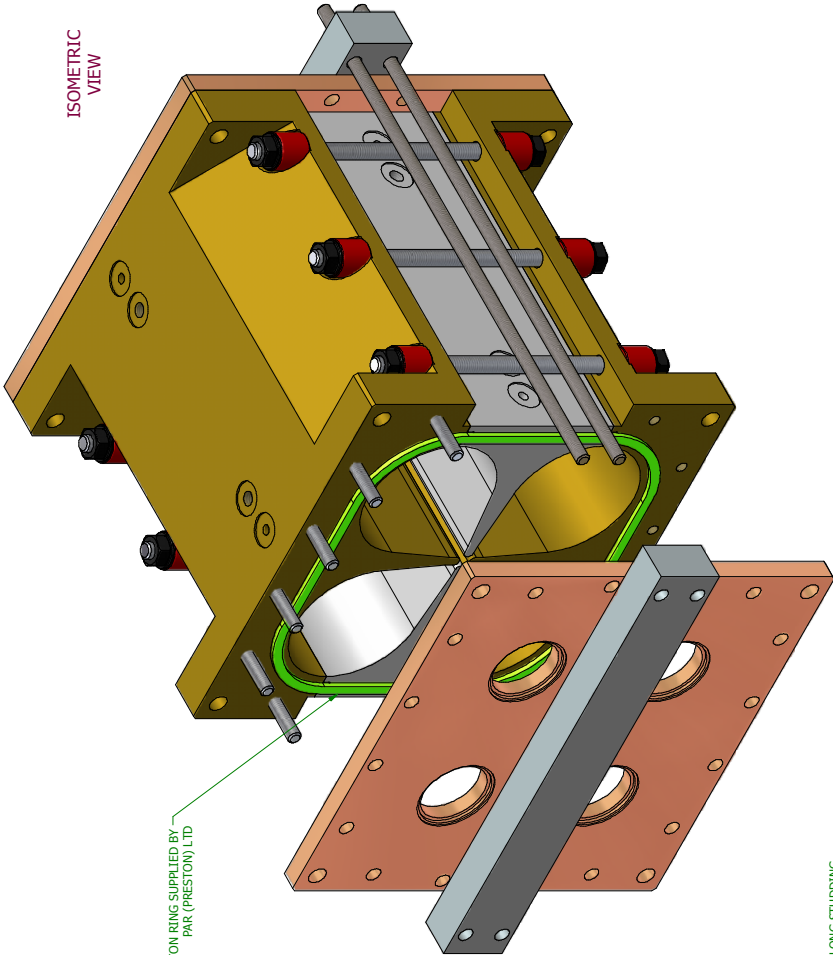
3D 'O' RING TEST ASSEMBLY OVERVIEW

FRONT END TEST STAND (F.E.T.S.)
http://fets.isis.rl.ac.uk/

END VIEW

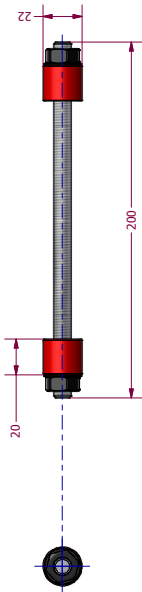


ISOMETRIC
VIEW



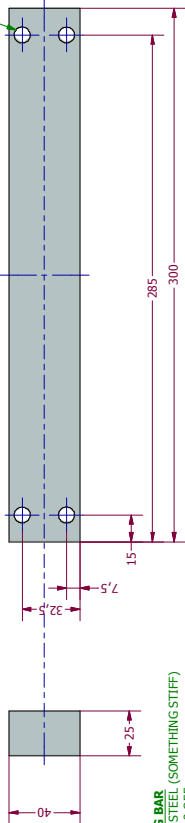
VITON RING SUPPLIED BY
PAR (PRESTON) LTD

M8 x 45 LONG STUDDING,
RS PART NO. 303-1029
24 OFF



M10 x 200 LONG STUDDING,
6 ASSEMBLIES

4 HOLES;
Ø9 THRU THICKNESS

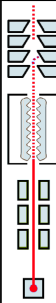


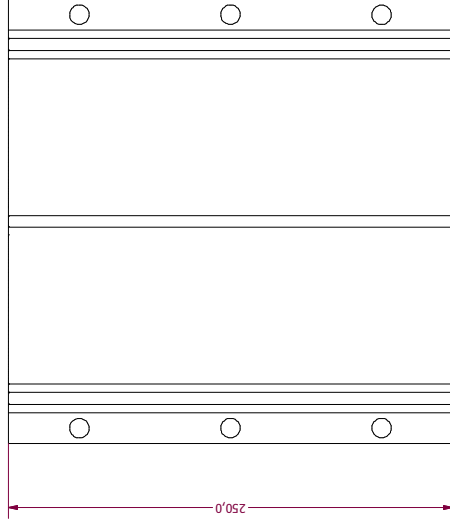
CLAMPING BAR
MATERIAL: STEEL (SOMETHING STIFF)
QUANTITY: 2 OFF
DIMENSIONS ARE FLEXIBLE
MUST PASS BETWEEN KF40 FLANGES

3D 'O' Ring Test - Overview

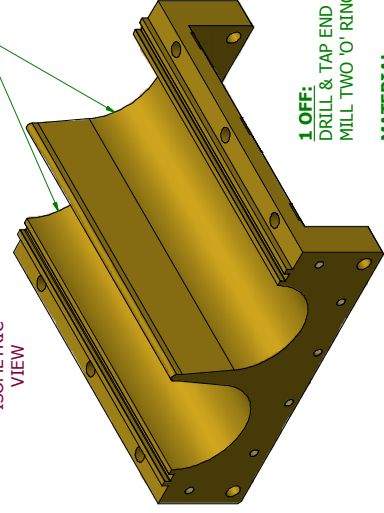
Title:	3D 'O' Ring Test - Overview
Drawn by:	P. Savage
Designed by:	P. Savage
Checked by:	N/A
Date:	20th January 2011
Manufactured by:	I. W. Clark, HEP
Material:	304SS per part
Sheet number:	13 / 18
Remove all burrs	1 complete assembly
Scale:	Do not scale
Drawing number:	IC_HEP_PIS_FETS_BB_0013
Notes:	
Contact:	p.savage@imperial.ac.uk (Work) +00(44)207 594 7817 (Mobile) +00(44)288 426 8058

Unless otherwise stated:
Dimensional tolerance: X ± 0.5 mm
X.X ± 0.2 mm
X.XX ± 0.1 mm
Angular tolerance: ± 0.5°
Hole centres: ± 0.05 mm
Surface finish: 1.6 microns
Dimensions in mm □





ISOMETRIC
VIEW

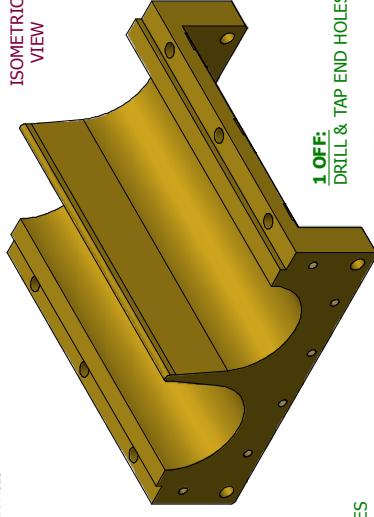
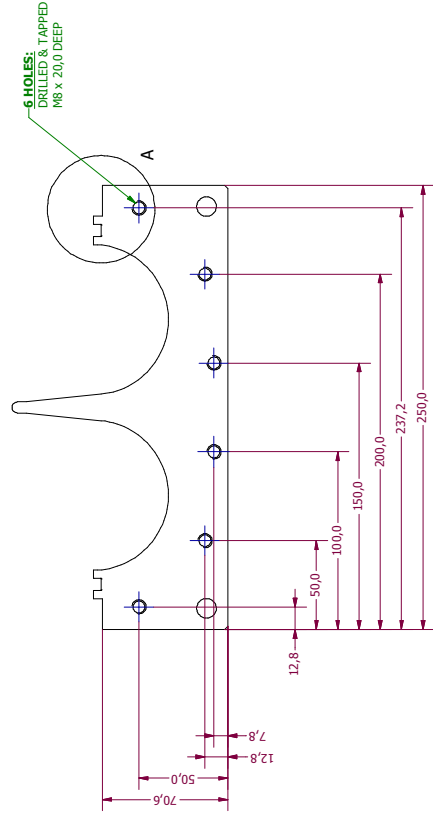


PROTECT VANE SURFACES

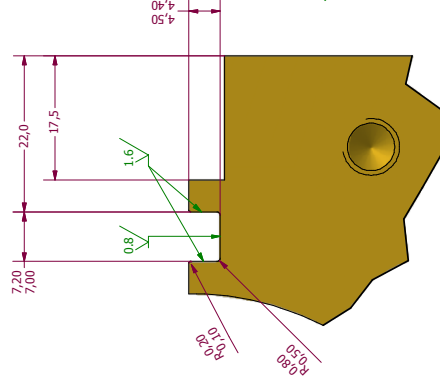
1 OFF:
DRILL & TAP END HOLES
MILL TWO 'O' RING GROOVES

MATERIAL:
OXYGEN FREE COPPER

1 OFF: DRILL & TAP END HOLES
MATERIAL: OXYGEN FREE COPPER

ISOMETRIC
VIEW

—6 HOLES:
DRILLED & TAPPED
M8 x 20.0 DEEP

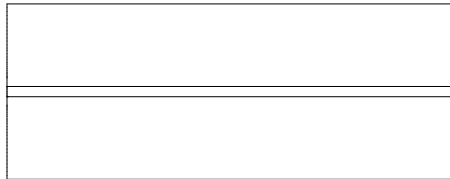


'O' RING GROOVE
DETAIL VIEW 'A'
TO SUIT Ø5,7 ±0,12 VITON 'O' RING CORD
RS PART NO. 245-9678

3D 'O' Ring Test - Major Vane			
Title:			
Drawn by:	P. Savage	Project:	Third angle
Designed by:	P. Savage	Model file:	RFC_MajorVane_WeldTest_OringGroove.dwg
Checked by:	N/A	Drawing file:	WeldModel_Version2.dwg
Date:	20th January 2011	Version number:	1
Manufactured by:	I. Clark, HEP workshop	Project:	Front End Test Stand
Material:	Oxygen Free Copper	Sheet number:	14 / 18
Remove all burrs		Number off:	2
Scale:	Do not scale	Drawing number:	IC_HEP_PIS_FET'S_BB_0014
Notes:			
Contact:	p.savage@imperial.ac.uk	(Work)	+00(44)207 594 7817
		(Mobile)	+00(44)7888 126 8058

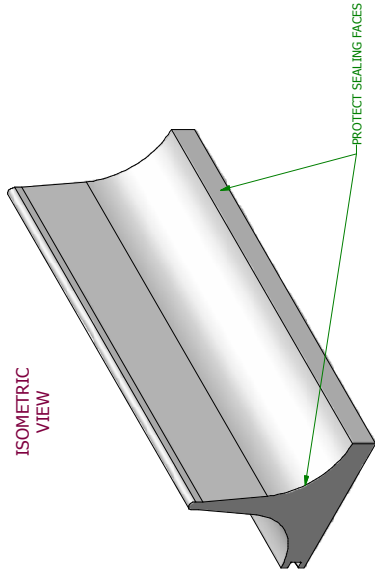
3D 'O' RING TEST

FRONT END TEST STAND (F.E.T.S.)
<http://fets.isis.rl.ac.uk/>



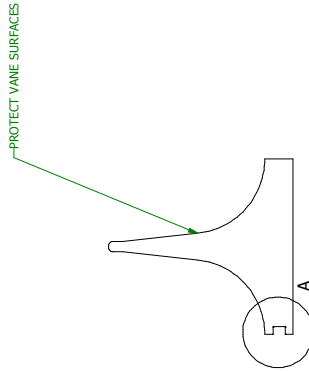
PLAN VIEW

ISOMETRIC
VIEW



2 OFF:
MILL ONE 'O' RING GROOVE

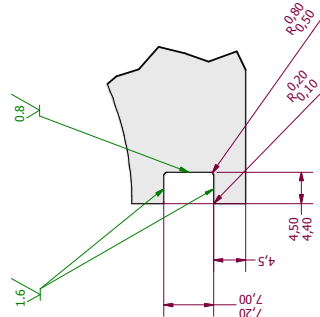
MATERIAL:
OXYGEN FREE COPPER



END VIEW

'O' RING GROOVE
DETAIL VIEW 'A'

TO SUIT $\phi 5,7 \pm 0,12$ VITON 'O' RING CORD
RS PART NO. 245-9678

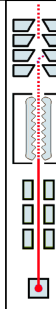


3D 'O' Ring Test - Minor Vane

Title:	3D 'O' Ring Test - Minor Vane
Drawn by:	P. Savage
Designed by:	P. Savage
Checked by:	N/A
Date:	20th January 2011
Manufactured by:	I. Clark, HEP workshop
Material:	Oxygen Free Copper
Remove all burrs	
Scale:	Do not scale
Notes:	
Contact:	p.savage@imperial.ac.uk (Work) +00(44)207 594 7817 (Mobile) +00(44)288 426 8058

3D 'O' RING TEST MINOR VANE

Unless otherwise stated:	
Dimensional tolerance:	X ± 0.5 mm
	X.X ± 0.2 mm
	X.XX ± 0.1 mm
Angular tolerance:	$\pm 0.5^\circ$
Hole centres:	± 0.05 mm
Surface finish:	1.6 microns
Dimensions in mm	☐



3D 'O' RING TEST

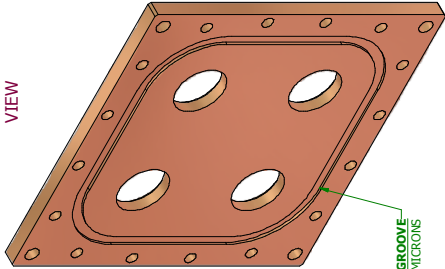
COPPER END PLATES

2 off - PLAIN

2 off - WITH DN40KF VACUUM FLANGES

Hole Table			
HOLE	XDIM	YDIM	DESCRIPTION

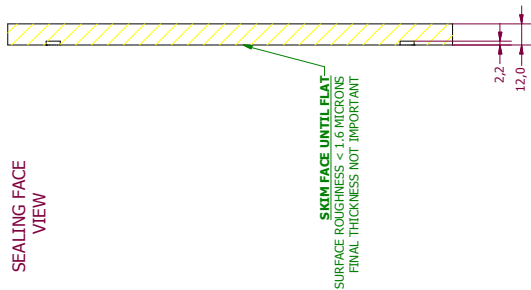
ISOMETRIC
VIEW



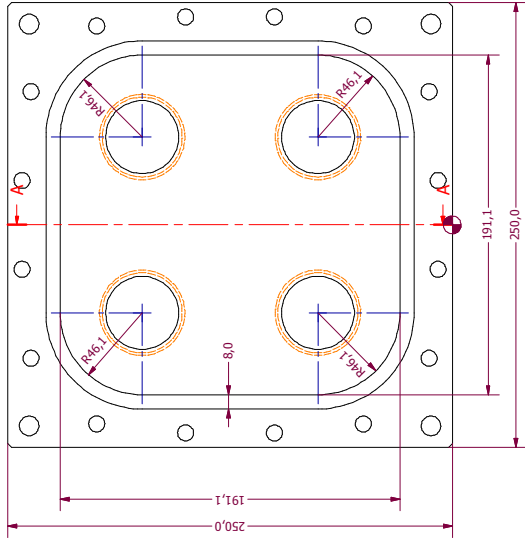
VITON FLAT RING GROOVE
SURFACE ROUGHNESS < 0.8 MICRONS

SIDE SECTION
VIEW

A-A (1:2)

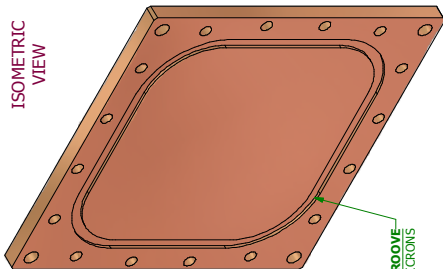


SEALING FACE
VIEW



SKIM FACE UNTIL FLAT
SURFACE ROUGHNESS < 1.0 MICRONS
FINAL THICKNESS NOT IMPORTANT

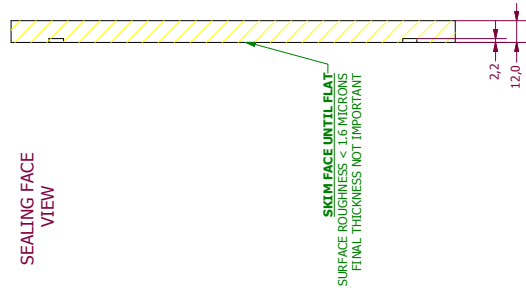
ISOMETRIC
VIEW



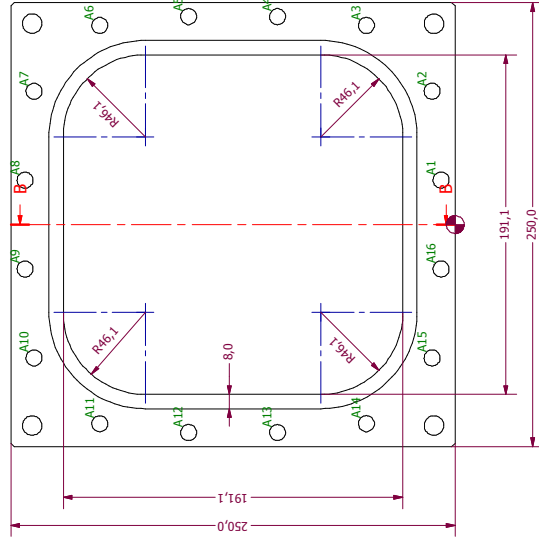
VITON FLAT RING GROOVE
SURFACE ROUGHNESS < 0.8 MICRONS

SIDE SECTION
VIEW

B-B (1:2)

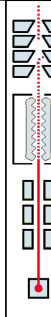


SEALING FACE
VIEW



SKIM FACE UNTIL FLAT
SURFACE ROUGHNESS < 1.6 MICRONS
FINAL THICKNESS NOT IMPORTANT

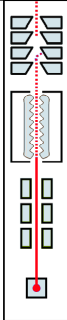
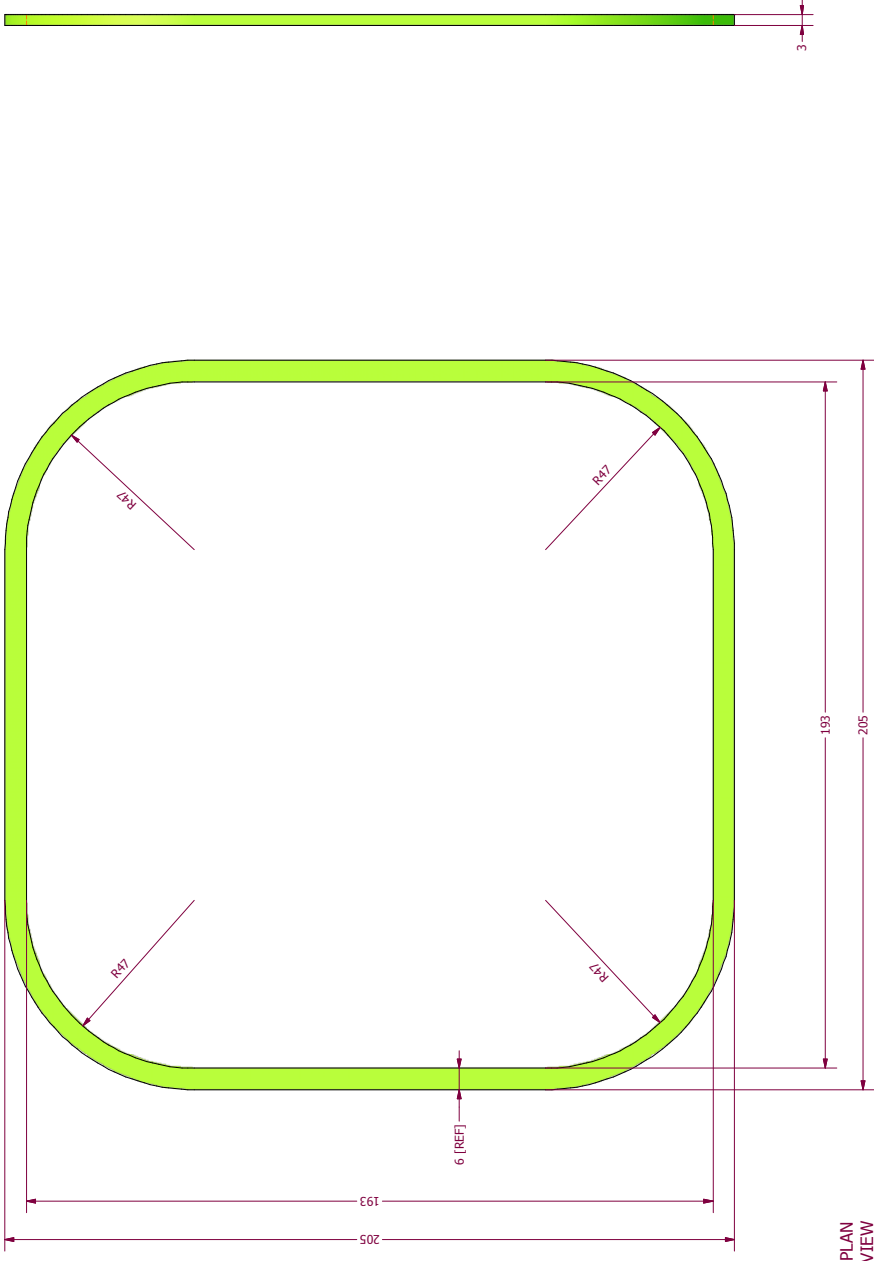
Hole Table			
HOLE	XDIM	YDIM	DESCRIPTION
A1	25.00	8.00	Ø9.0 THRU
A2	75.00	13.03	Ø9.0 THRU
A3	111.97	50.00	Ø9.0 THRU
A4	117.00	100.00	Ø9.0 THRU
A5	117.00	150.00	Ø9.0 THRU
A6	111.97	200.00	Ø9.0 THRU
A7	75.00	236.97	Ø9.0 THRU
A8	25.00	242.00	Ø9.0 THRU
A9	-25.00	242.00	Ø9.0 THRU
A10	-75.00	236.97	Ø9.0 THRU
A11	-111.97	200.00	Ø9.0 THRU
A12	-117.00	150.00	Ø9.0 THRU
A13	-117.00	100.00	Ø9.0 THRU
A14	-111.97	50.00	Ø9.0 THRU
A15	-75.00	13.03	Ø9.0 THRU
A16	-25.00	8.00	Ø9.0 THRU



3D 'O' Ring Test - End Flanges

Title:	3D 'O' Ring Test - End Flanges
Drawn by:	P. Savage
Designed by:	P. Savage
Checked by:	N/A
Date:	19th January 2011
Manufactured by:	I. Clark, HEP workshop
Material:	Copper
Remove all burrs	2 each type
Scale:	Do not scale
Notes:	IC_HEP_PIS_FETS_BB_0016
Contact:	p.savage@imperial.ac.uk (Work) +00(44)207 594 7817 (Mobile) +00(44)888 426 8058

Unless otherwise stated:	
Dimensional tolerance:	X ± 0.5 mm
	X.X ± 0.2 mm
	X.XX ± 0.1 mm
Angular tolerance:	± 0.5°
Hole centres:	± 0.05 mm
Surface finish:	1.6 microns
Dimensions in mm	□



Title: 3D 'O' Ring Test - End Flange Viton Ring	
Drawn by: P. Savage	Projection: Third angle
Designed by: P. Savage	Model file: EndFlangeORing.ipt
Checked by: N/A	Drawing file: WeldModel_Version2.dwg
Date: 19th January 2011	Version number: 1
Manufactured by: PAR (Preston) Ltd	Project: Front End Test Stand
Material: Viton	Sheet number: 17 / 18
Remove all burrs	Number off: 8
Scale: Do not scale	Drawing number: IC_HEP_PIS_FETS_BB_0017
Notes:	
Contact: p.savage@imperial.ac.uk (Work) +00(44)207 594 7817 (Mobile) +00(44)888 426 8058	

Unless otherwise stated:	
Dimensional tolerance:	X ± 0.5 mm
	X.X ± 0.2 mm
	X.XX ± 0.1 mm
Angular tolerance:	± 0.5°
Hole centres:	± 0.05 mm
Surface finish:	1.6 microns
Dimensions in mm	□

3D 'O' RING TEST

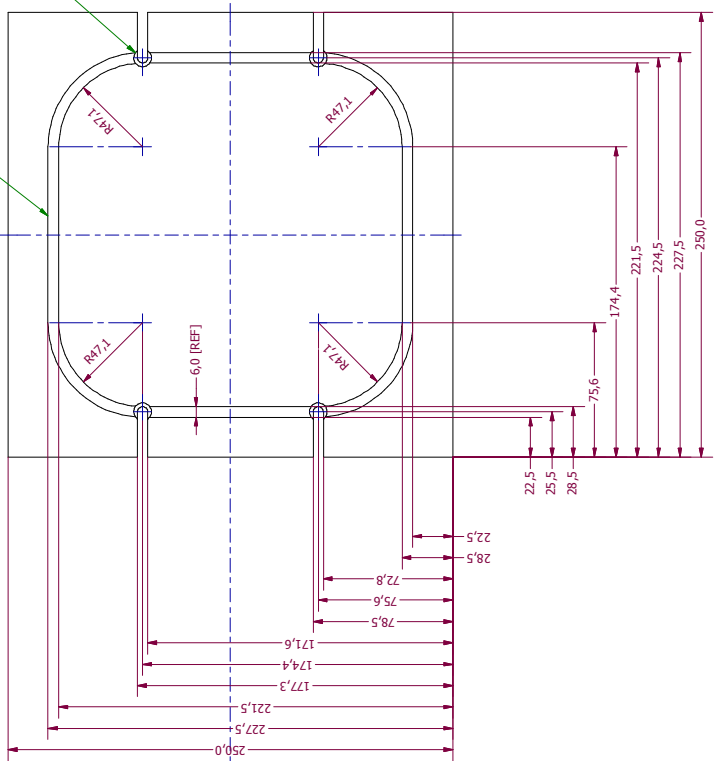
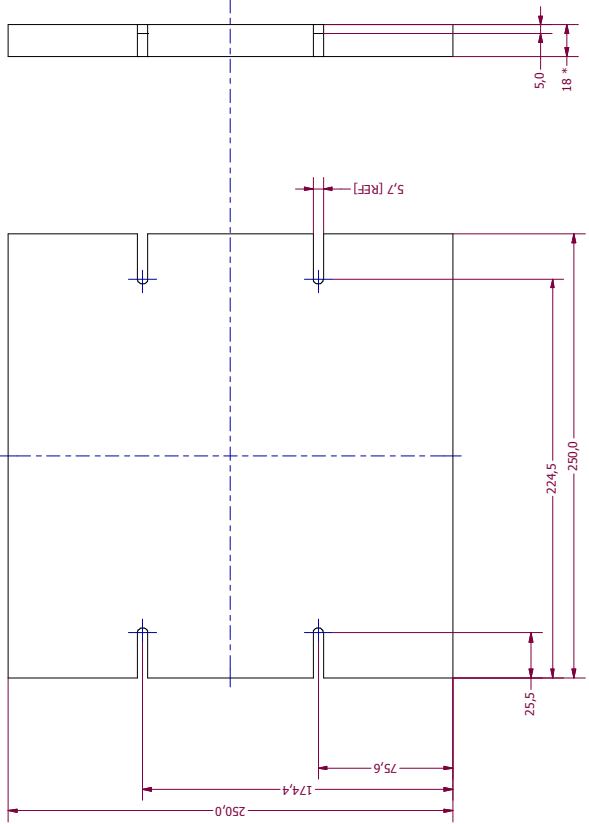
BONDING JIG

1 OFF

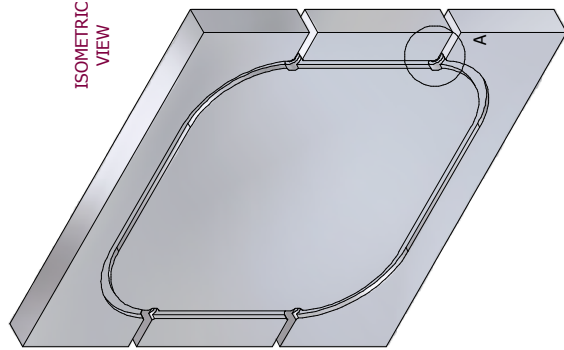
MATERIAL: ALU ALLOY

FRONT VIEW

BACK VIEW

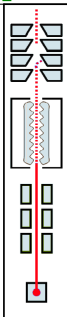


C/BORE DETAIL
'A'



C/BORE DETAIL
'A'

FRONT END TEST STAND (F.E.T.S.)
<http://fets.isis.rl.ac.uk/>



Title: 3D 'O' Ring Test - Bonding Jig	
Drawn by: P. Savage	Projection: Third angle
Designed by: P. Savage	Model file: BondingJig.jpt
Checked by: N/A	Drawing file: WeldModel_Version2.dwg
Date: 20th January 2011	Version number: 1
Manufactured by: I. Clark, HEP workshop	Project: Front End Test Stand
Material: Alu alloy	Sheet number: 18 / 18
Remove all burrs	Number off: 1
Scale: Do not scale	Drawing number: IC_HEP_PIS_FETS_BB_0018
Notes:	
Contact: p.savage@imperial.ac.uk (Work) +00(44)207 594 7817 (Mobile) +00(44)88 426 8058	

Unless otherwise stated:
Dimensional tolerance: X ± 0.5 mm
X.X ± 0.2 mm
X.XX ± 0.1 mm

Angular tolerance: ± 0.5°
Hole centres: ± 0.05 mm
Surface finish: 1.6 microns

Dimensions in mm

* MATERIAL
THICKNESS NOT
VERY IMPORTANT