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TOLERANCES LINEAR DIMENSIONS					
OVER 0.3 TO 3	OVER 3 TO 6	OVER 6 TO 30	OVER 30 TO 120	OVER 120 TO 300	OVER 400 TO 1000
± 0.0125	± 0.015	± 0.02	± 0.03	± 0.05	± 0.08
TOLERANCES ANGULAR DIMENSIONS					
OVER 0.5 TO 50	OVER 50 TO 100	OVER 120 TO 300	OVER 400		
$\pm 0.05^\circ$	$\pm 0.075^\circ$	$\pm 0.1^\circ$	$\pm 0.15^\circ$		
$\pm 1^\circ$	$\pm 0.5^\circ$	$\pm 0.2^\circ$	$\pm 0.1^\circ$		

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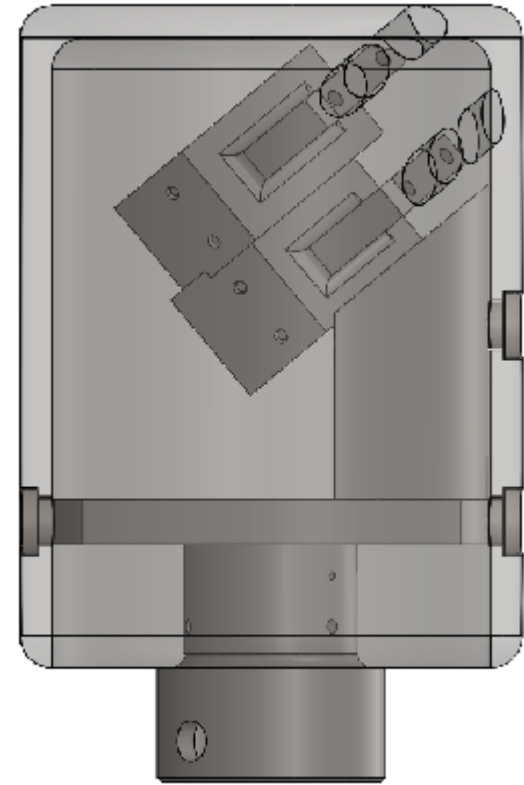
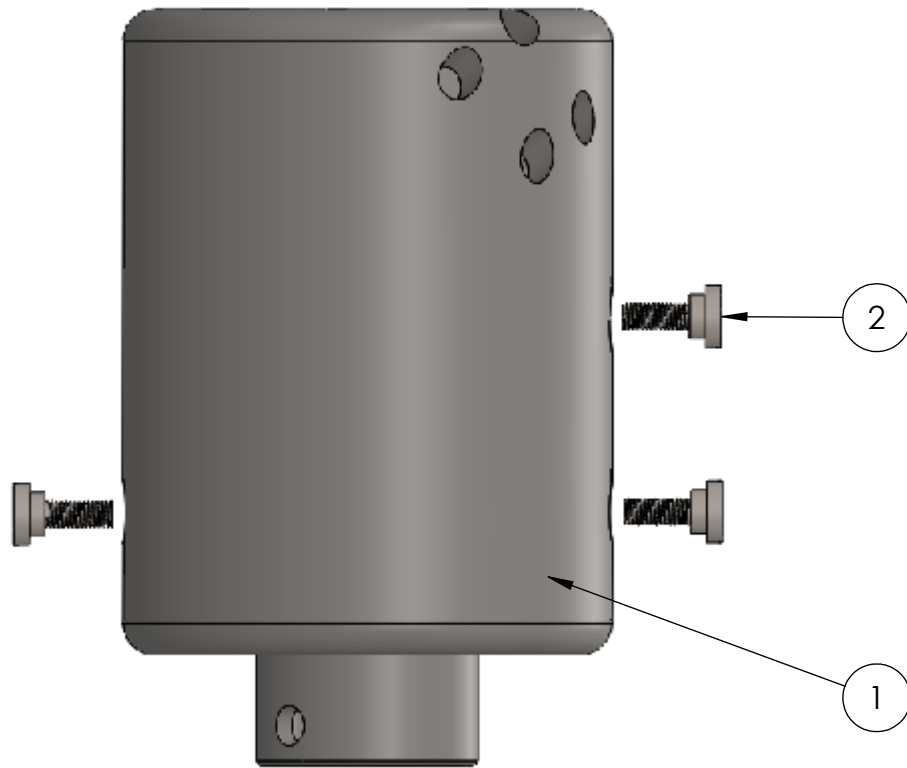
MATERIAL	PEEK 1000, SS316, BN CERAMIC GRADE XP	
	NAME	DATE
DRAWN	RAMONA V PEREZ	06/13/13
CHECKED	RAMONA V PEREZ	06/28/13
DRAWN	RAMONA V PEREZ	09/05/14
UNLESS OTHERWISE STATED DIMENSIONS ARE IN MM	REMOVE ALL BURRS AND SHARP EDGES	

TITLE:

**PROTON DETECTOR
ASSEMBLED TOTAL**

SIZE	DWG. NO.	REV
A	PD_22_TOTAL_VIEW	2

SHEET 1 OF 1



PARTS LIST			
ITEM NO.	TITLE	DWG. NO.	QUANTITY
1	PROTON DETECTOR SHIELD	PD_22_Shell	1
2	PROTON DETECTOR SHOULDER SCREW	PD_22_shoulder_screw	3

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TOLERANCES LINEAR DIMENSIONS					
OVER 0.3 TO 3	OVER 3 TO 6	OVER 6 TO 30	OVER 30 TO 120	OVER 120 TO 400	OVER 400 TO 1000
±0.0125	±0.025	±0.05	±0.1	±0.2	±0.5
TOLERANCES ANGULAR DIMENSIONS					
OVER 0 TO 30	OVER 30 TO 90	OVER 90 TO 120	OVER 120 TO 300	OVER 300 TO 900	OVER 900 TO 1800
±0.005	±0.01	±0.02	±0.05	±0.1	±0.2

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MATERIAL: SS316 AND BN CERAMIC GRADE XP

	NAME	DATE
DRAWN	RAMONA V PEREZ	06/13/13
CHECKED	RAMONA V PEREZ	06/28/13
DRAWN	RAMONA V PEREZ	09/05/14

UNLESS OTHERWISE STATED DIMENSIONS ARE IN MM

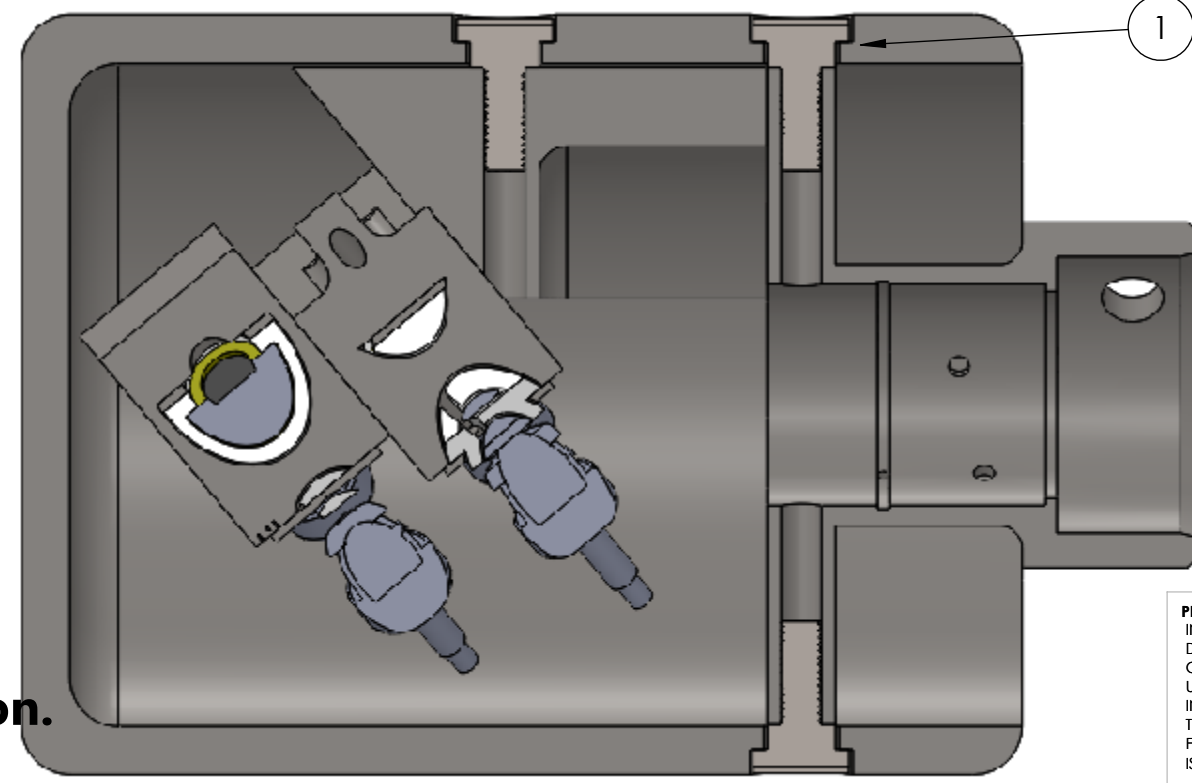
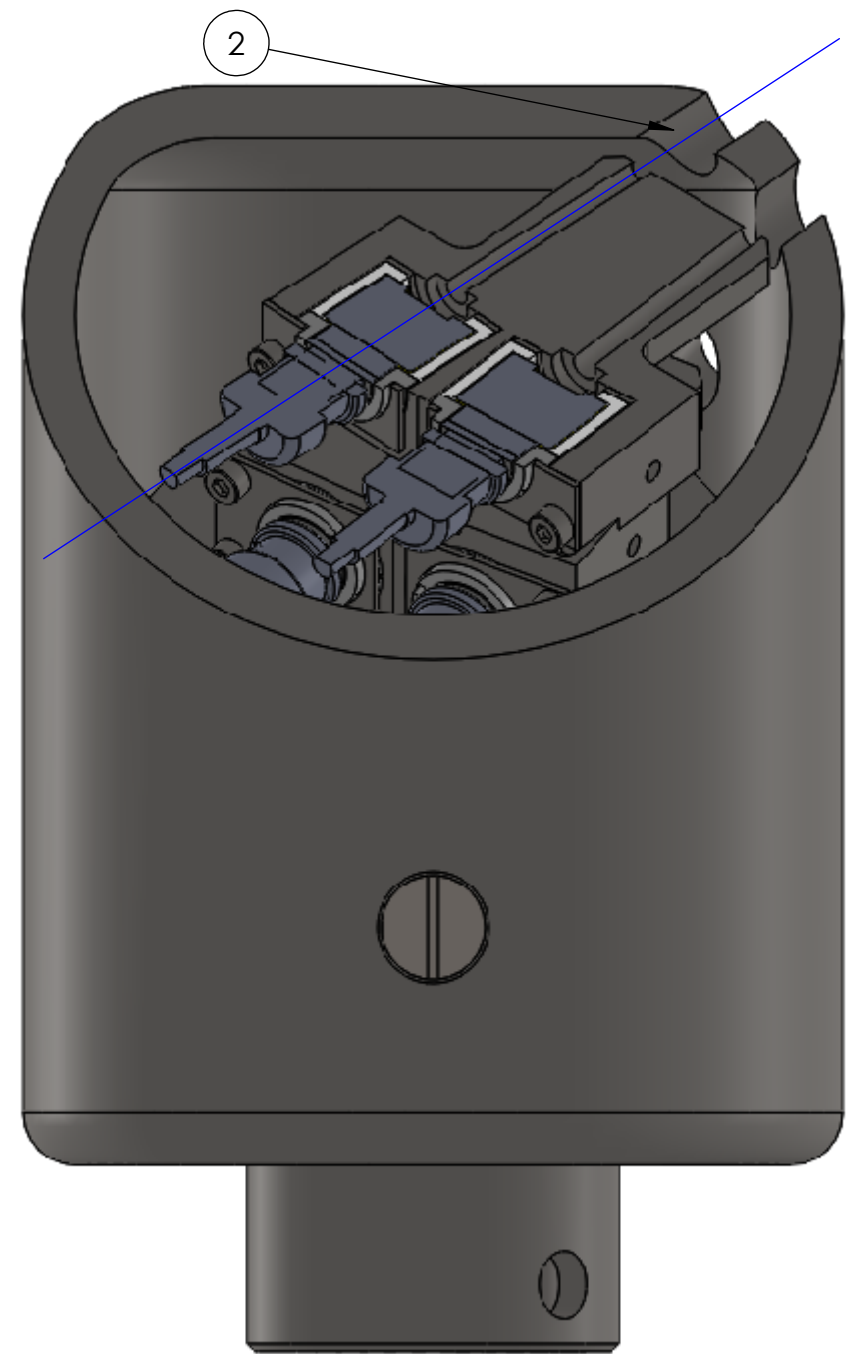
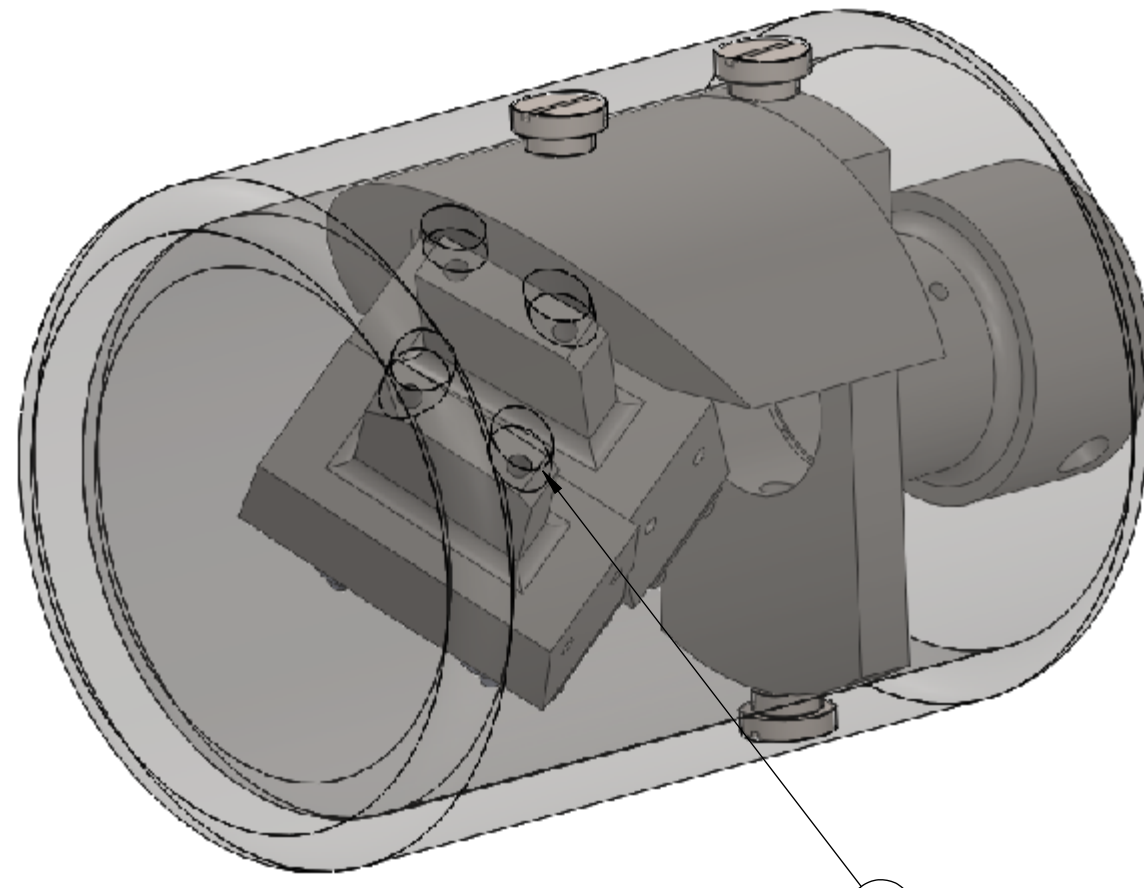
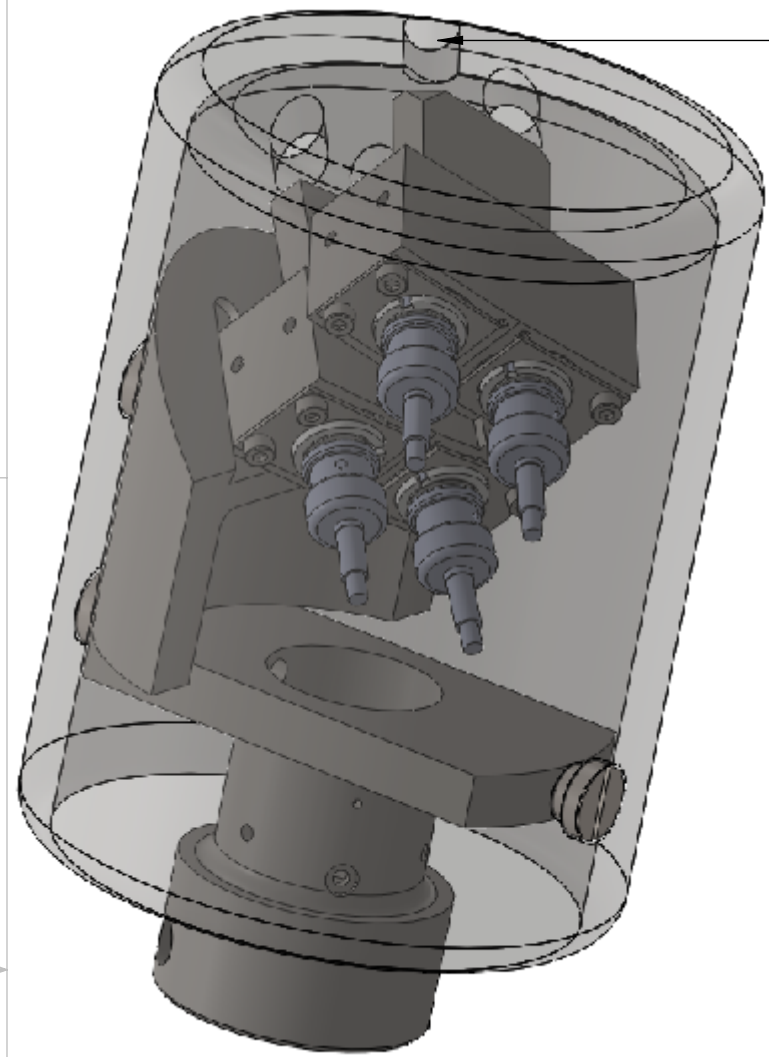
REMOVE ALL BURRS AND SHARP EDGES

TITLE: **PROTON DETECTOR ASSEMBLED SHIELD**

SIZE A	DWG. NO. PD_22_Shield_assembled	REV 2
---------------	---------------------------------	-------

SHEET 1 OF 1

8 7 6 5 4 3 2 1



- NOTES:
1. SHIELD ATTACHED TO SS316 COMPONENTS WITH SHOULDER SCREWS.
 2. CROSS SECTIONAL VIEW OF 10mm DIAMETER COLLIMATOR HOLES IN SHIELD.
 3. VIEW OF ASSEMBLED INSTRUMENT WITH SHIELD HOLES (SHIELD IS TRANSPARENT).

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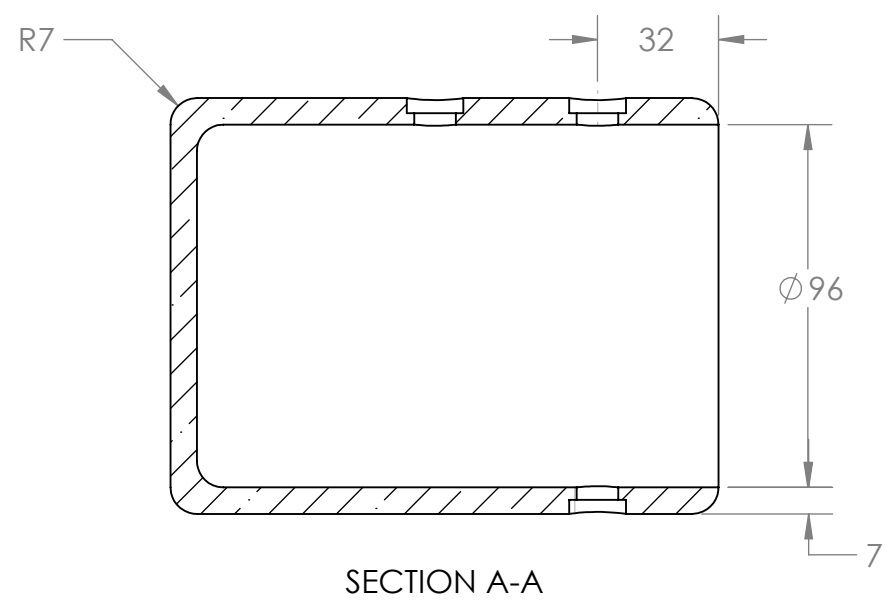
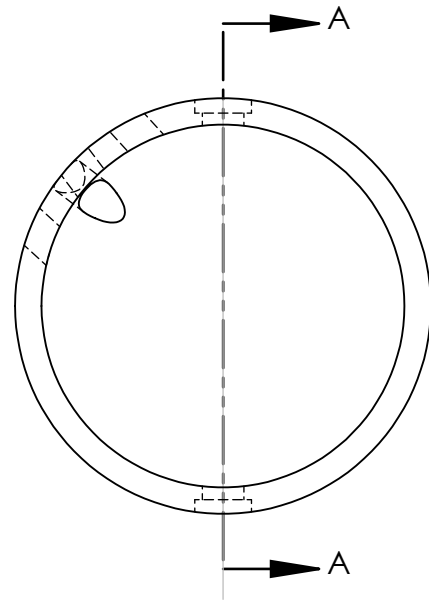
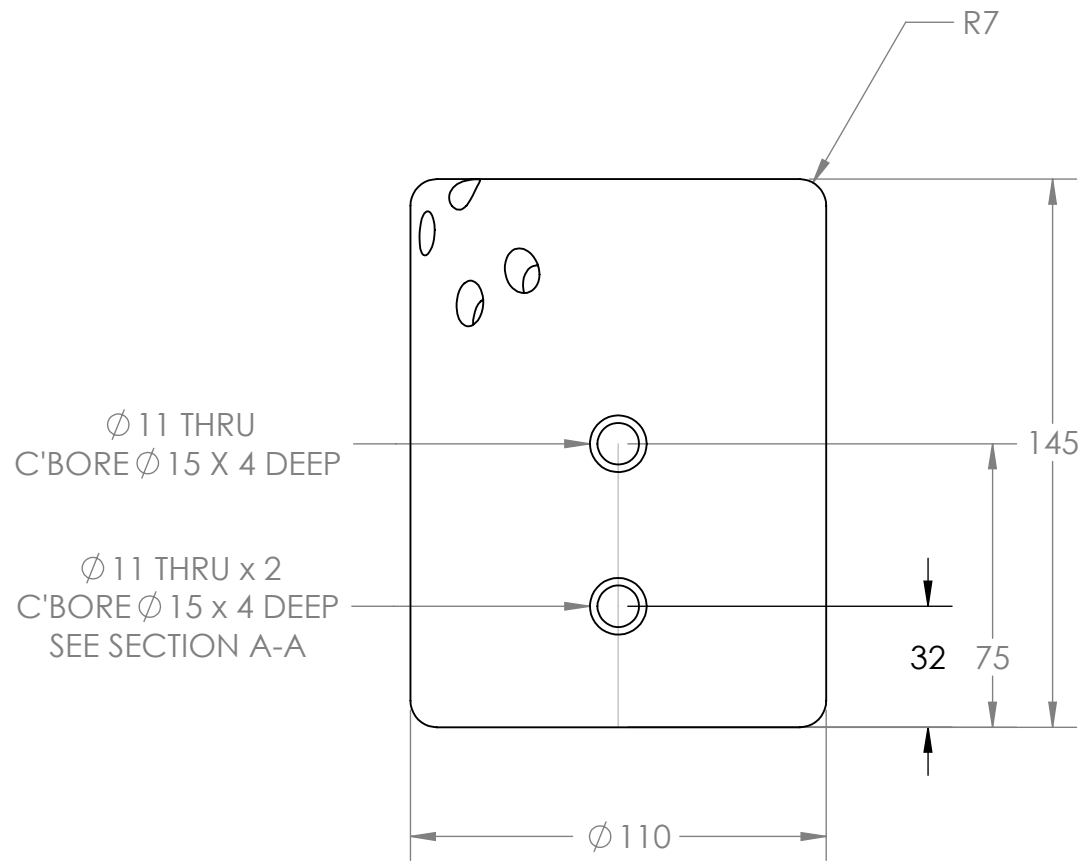


MATERIAL	BN CERAMIC GRADE XP	
	NAME	DATE
DRAWN	RAMONA V PEREZ	06/06/13
CHECKED	RAMONA V PEREZ	07/02/13
DRAWN	RAMONA V PEREZ	09/05/14
UNLESS OTHERWISE STATED DIMENSIONS ARE IN MM		REMOVE ALL BURRS AND SHARP EDGES

TITLE: PROTON DETECTOR SHIELD		
SIZE B	DWG. NO. PD_22_Shell	REV 2
not to scale	WEIGHT: 1.2kg	SHEET 1 OF 4

8 5 7 4 6 3 5 2 4 1 2 1

NOTES:
 1. ALL MACHINING TOLERANCES TO +/-0.2mm AND +/- 0Degree 30' EXCEPT WHERE SHOWN OTHERWISE.



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TOLERANCES LINEAR DIMENSIONS					
OVER 0.5 TO 3	OVER 3 TO 6	OVER 6 TO 30	OVER 30 TO 120	OVER 120 TO 400	OVER 400 TO 1000
+/- 0.1	+/- 0.1	+/- 0.2	+/- 0.3	+/- 0.5	+/- 0.8

TOLERANCES ANGULAR DIMENSIONS				
10 OR LESS	OVER 10 TO 50	OVER 50 TO 120	OVER 120 TO 400	OVER 400
1/- 1'	1/- 0'30"	1/- 0'20"	1/- 0'10"	1/- 0'5"

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 DO NOT SCALE DRAWING



MATERIAL BN CERAMIC GRADE XP		
NAME	DATE	
DRAWN RAMONA V PEREZ	06/06/13	
CHECKED RAMONA V PEREZ	07/02/13	
DRAWN RAMONA V PEREZ	09/03/14	
UNLESS OTHERWISE STATED DIMENSIONS ARE IN MM	REMOVE ALL BURRS AND SHARP EDGES	

TITLE:
PROTON DETECTOR SHIELD

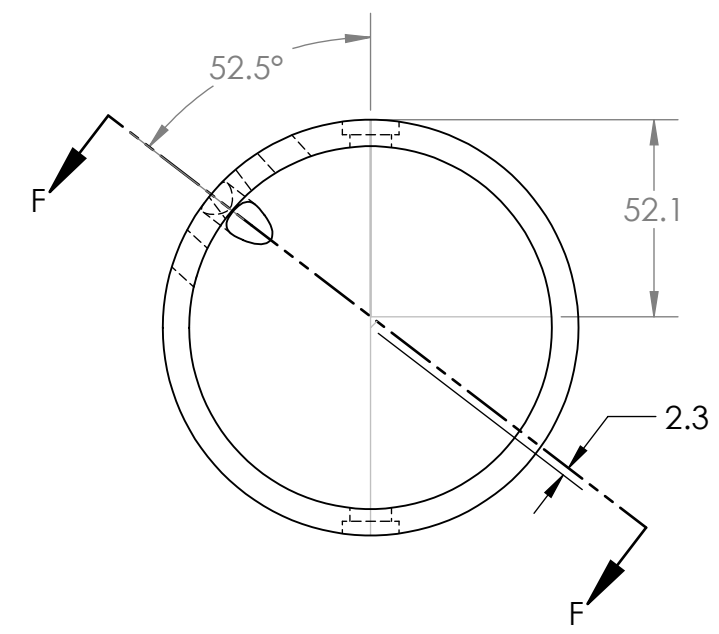
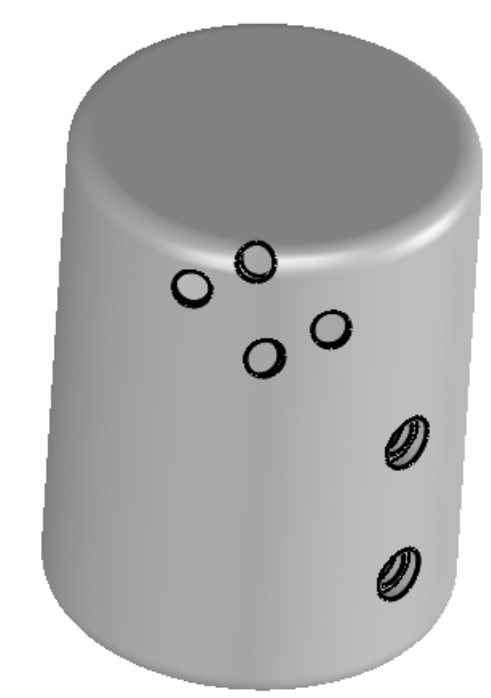
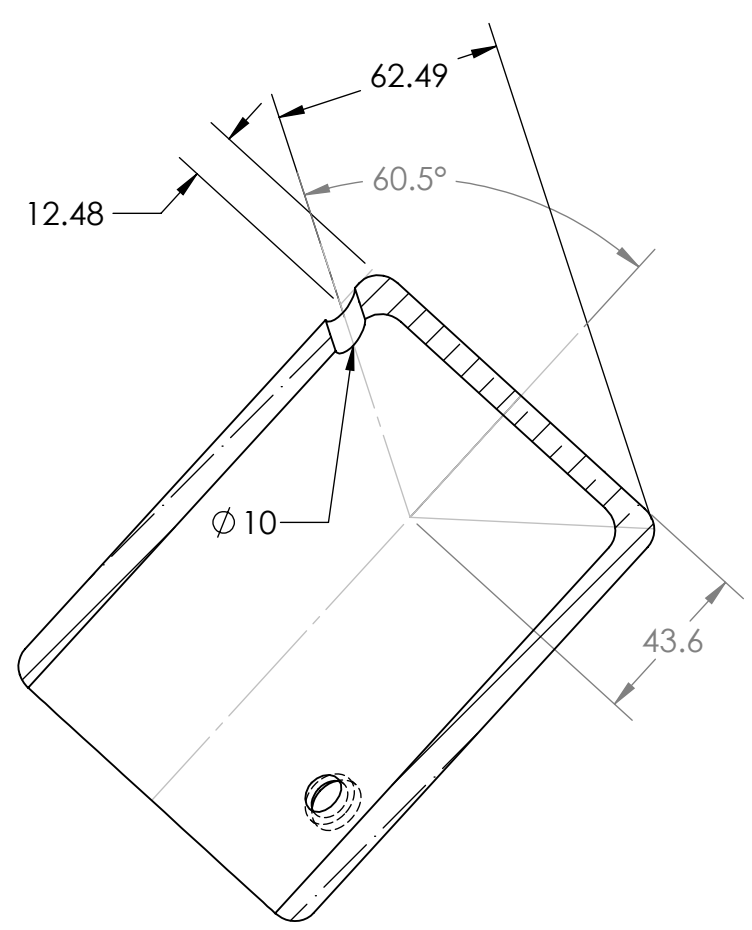
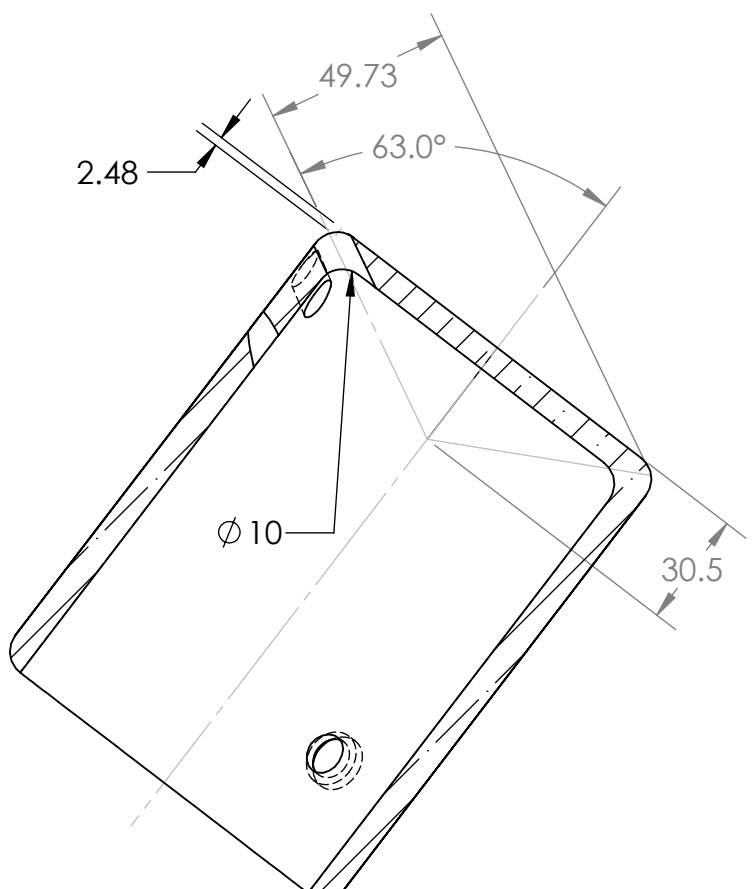
SIZE	DWG. NO.	REV
B	PD_22_Shell	2

SCALE: 1:2 WEIGHT: 1.2kg SHEET 2 OF 4

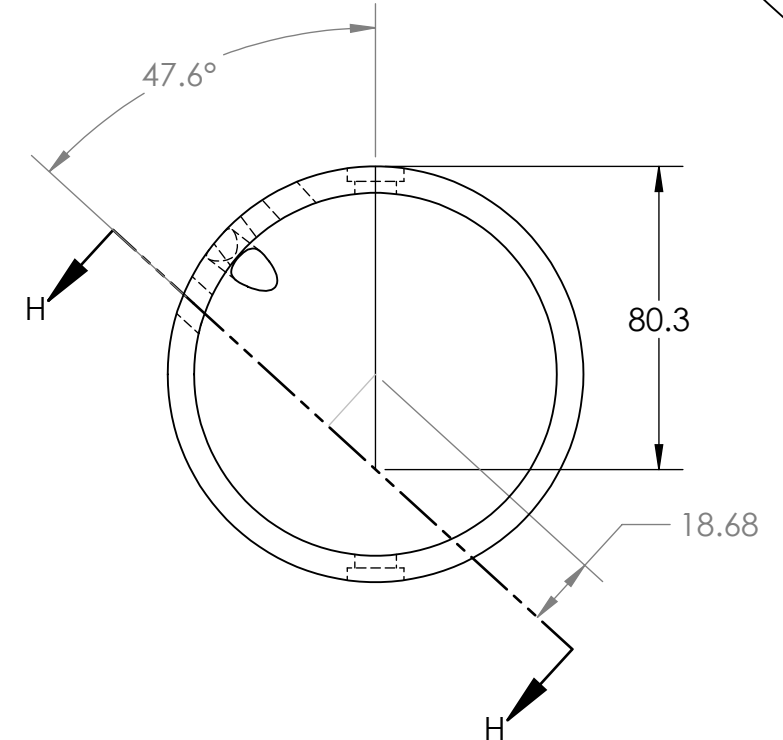
8 7 6 5 4 3 2 1

D
C
B
A

D
C
B
A



SECTION F-F



SECTION H-H

NOTES:
1. ALL MACHINING TOLERANCES TO +/-0.2mm AND +/- 0Degree 30' EXCEPT WHERE SHOWN OTHERWISE.

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TOLERANCES LINEAR DIMENSIONS					
OVER 0.5 TO 3	OVER 3 TO 6	OVER 6 TO 30	OVER 30 TO 120	OVER 120 TO 400	OVER 400 TO 1000
+/- 0.1	+/- 0.1	+/- 0.2	+/- 0.3	+/- 0.5	+/- 0.8

TOLERANCES ANGULAR DIMENSIONS				
10 OR LESS	OR OVER 10 TO 50	OVER 50 TO 120	OVER 120 TO 400	OVER 400
1/- 1'	1/- 0'30"	1/- 0'20"	1/- 0'10"	1/- 0'5"

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MATERIAL BN CERAMIC GRADE XP	
DRAWN	RAMONA V PEREZ 06/06/13
CHECKED	RAMONA V PEREZ 07/02/13
DRAWN	RAMONA V PEREZ 09/05/14
UNLESS OTHERWISE STATED DIMENSIONS ARE IN MM	REMOVE ALL BURRS AND SHARP EDGES

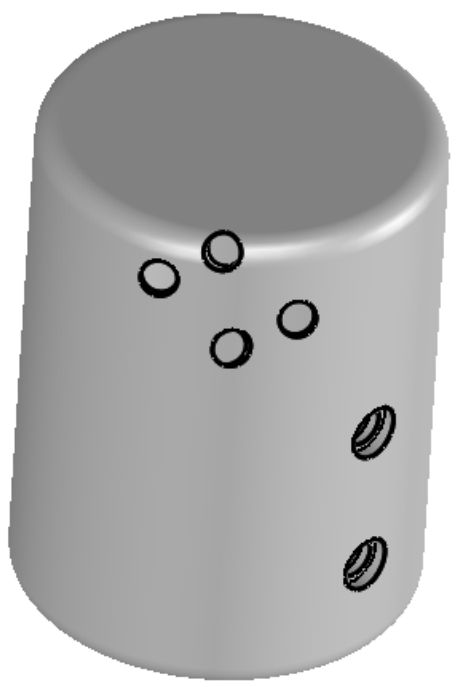
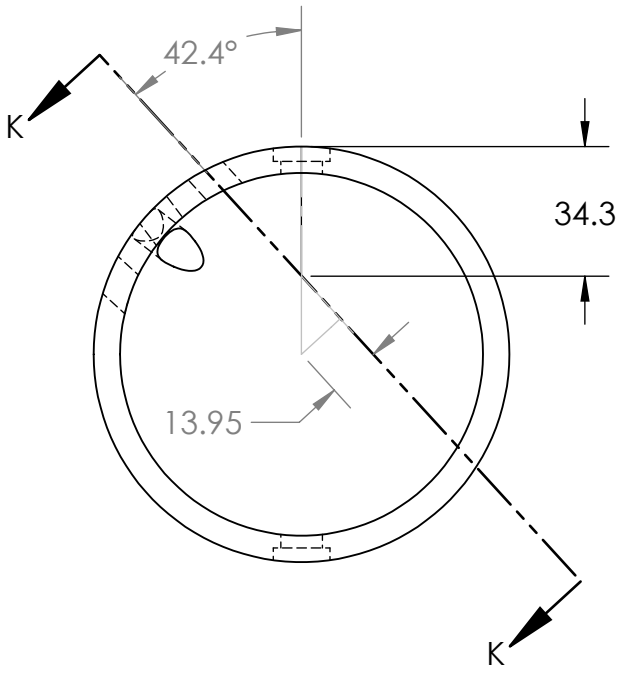
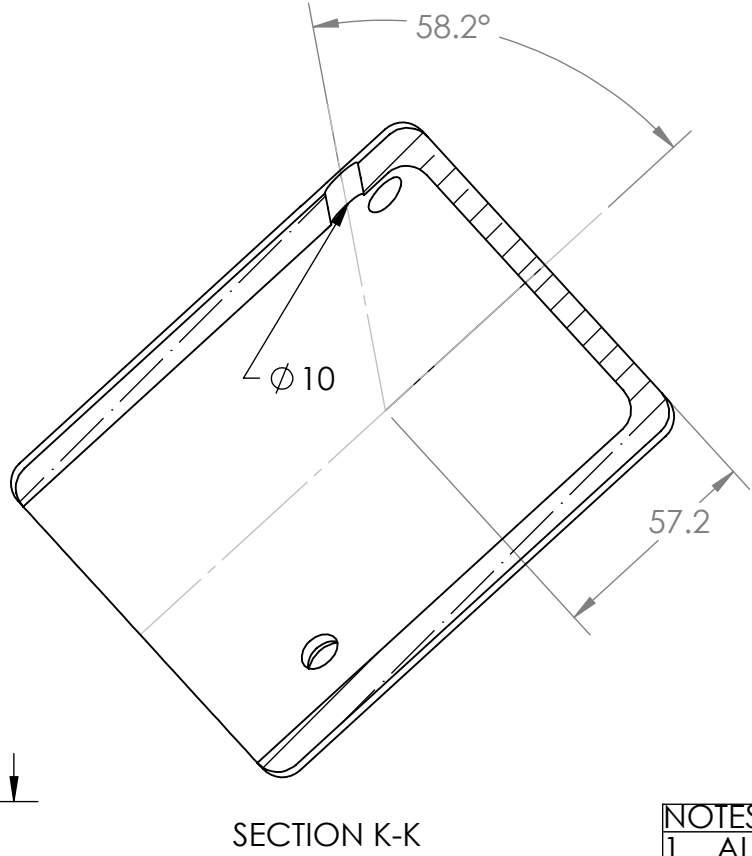
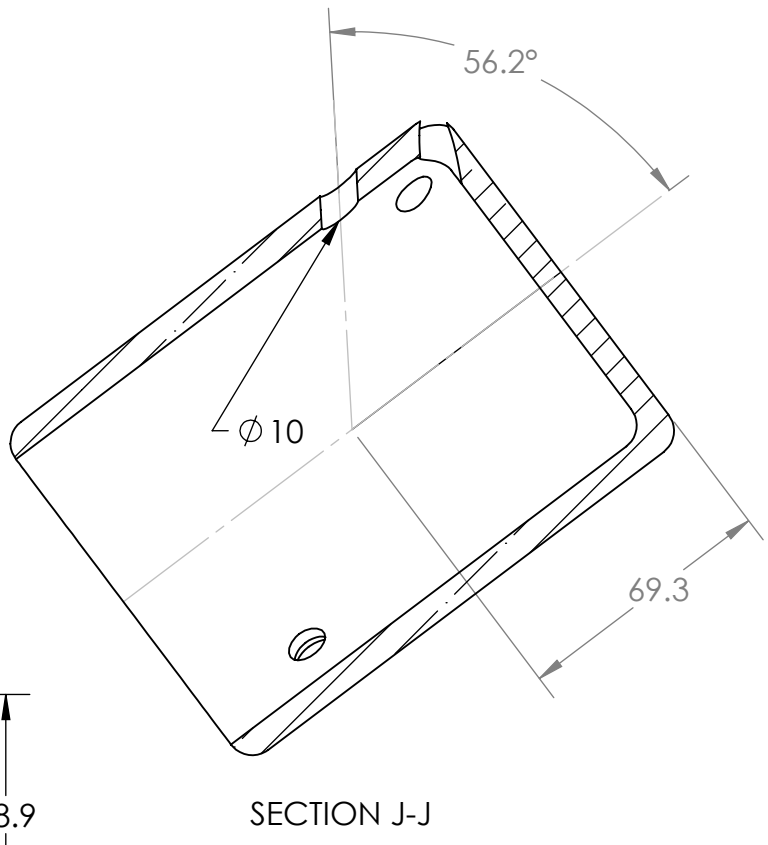
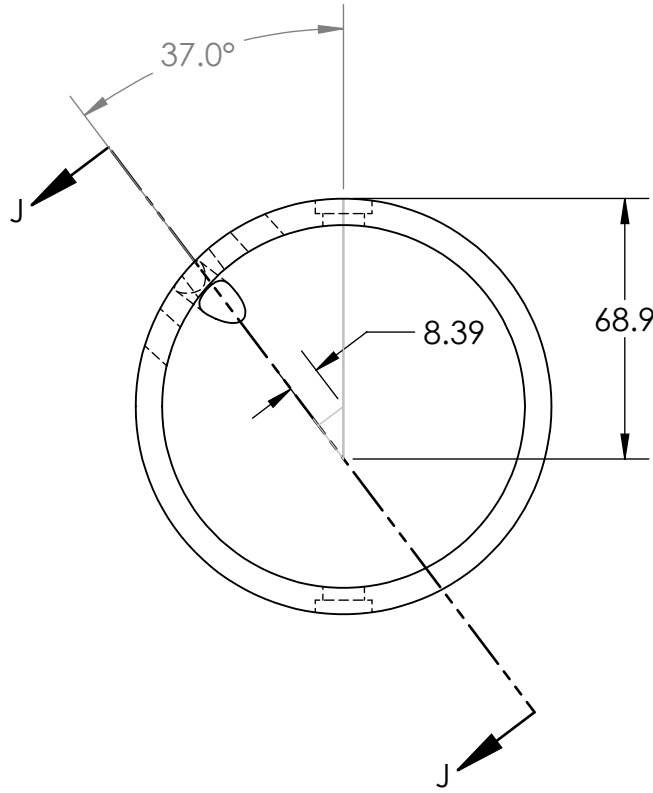
TITLE: PROTON DETECTOR SHIELD		
SIZE B	DWG. NO. PD_22_Shell	REV 2
SCALE: 1:2	WEIGHT: 1.2kg	SHEET 3 OF 4

8 5 7 4 6 3 5 2 4 1 2 1

8 7 6 5 4 3 2 1

D
C
B
A

D
C
B
A



NOTES:
1. ALL MACHINING TOLERANCES TO +/-0.2mm AND +/- 0Degree 30' EXCEPT WHERE SHOWN OTHERWISE.

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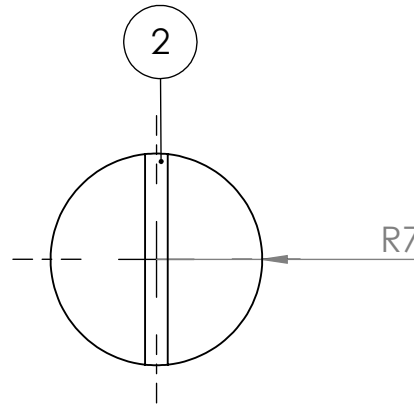
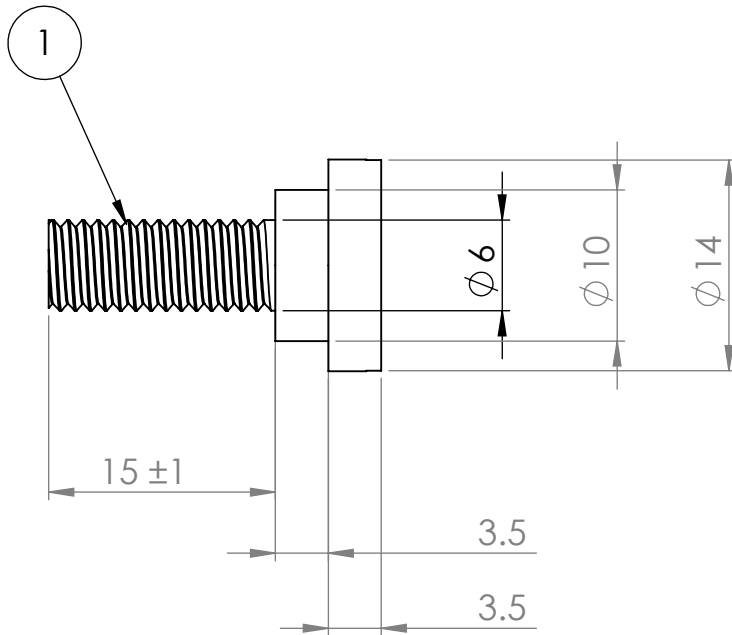
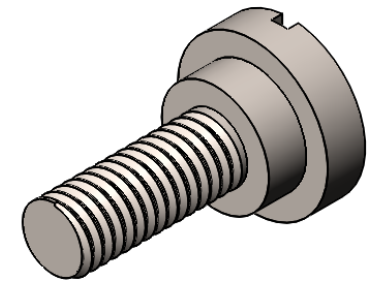
TOLERANCES LINEAR DIMENSIONS					
OVER 0.5 TO 3	OVER 3 TO 6	OVER 6 TO 30	OVER 30 TO 120	OVER 120 TO 400	OVER 400 TO 1000
+/- 0.1	+/- 0.1	+/- 0.2	+/- 0.3	+/- 0.5	+/- 0.8
TOLERANCES ANGULAR DIMENSIONS					
10 OR LESS	OVER 10 TO 50	OVER 50 TO 120	OVER 120 TO 400	OVER 400	
1/- 1'	1/- 0'30"	1/- 0'20"	1/- 0'10"	1/- 0'5"	

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FIU FLORIDA INTERNATIONAL UNIVERSITY		
MATERIAL	BN CERAMIC GRADE XP	
DRAWN	NAME	DATE
CHECKED	RAMONA V PEREZ	06/06/13
DRAWN	RAMONA V PEREZ	09/05/14
UNLESS OTHERWISE STATED DIMENSIONS ARE IN MM	REMOVE ALL BURRS AND SHARP EDGES	

TITLE: PROTON DETECTOR SHIELD		
SIZE	DWG. NO.	REV
B	PD_22_Shell	2
SCALE: 1:2	WEIGHT: 1.2kg	SHEET 4 OF 4

8 5 7 4 6 3 5 2 4 1 2 1



NOTES:

1. M6X1 THREAD ALONG LENGTH.
2. CHEESEHEAD/ SLOT DRIVE.
3. REQUEST QUANTITY 3.
4. ALL MACHINING TOLERANCES TO +/- 0.2mm EXCEPT WHERE SHOWN OTHERWISE.

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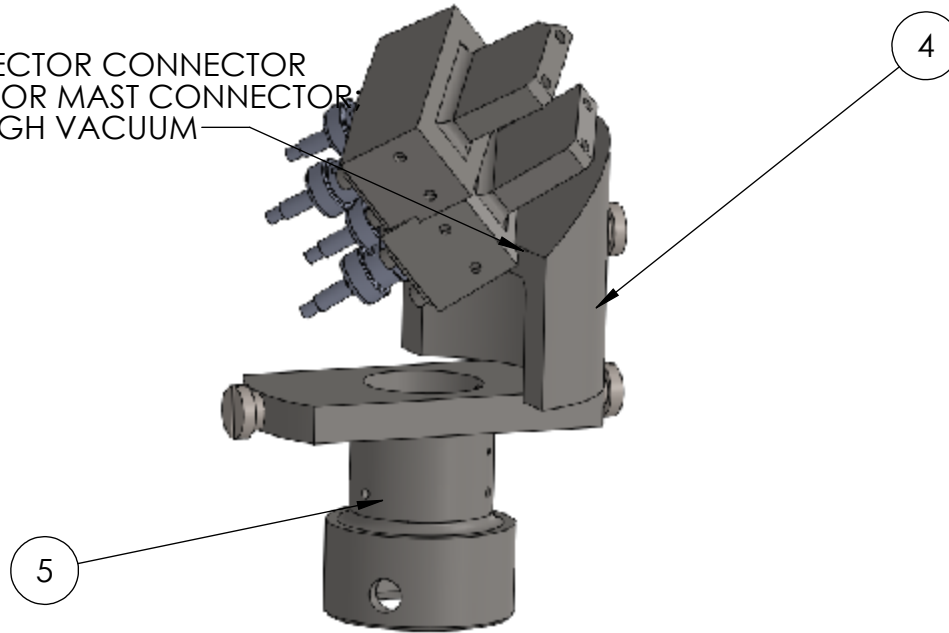
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MATERIAL	316SS	
	NAME	DATE
DRAWN	RAMONA V PEREZ	07/26/13
CHECKED	RAMONA V PEREZ	07/26/13
DRAWN	RAMONA V PEREZ	09/03/14
UNLESS OTHERWISE STATED DIMENSIONS ARE IN MM	REMOVE ALL BURRS AND SHARP EDGES	

TITLE:		
PD Custom Shield Shoulder Screw		
SIZE	DWG. NO.	REV
A	PD22_shoulder_screw	2
SCALE: 2:1	WEIGHT: .009kg	SHEET 1 OF 1

WELD PROTON DETECTOR CONNECTOR
TO PROTON DETECTOR MAST CONNECTOR
WELD FOR ULTRA HIGH VACUUM



PARTS LIST			
ITEM NO.	TITLE	DWG. NO.	QUANTITY
4	PROTON DETECTOR CONNECTOR	PD_22_connector	1
5	PROTON DETECTOR MAST CONNECTOR	MAST_connector_1	1

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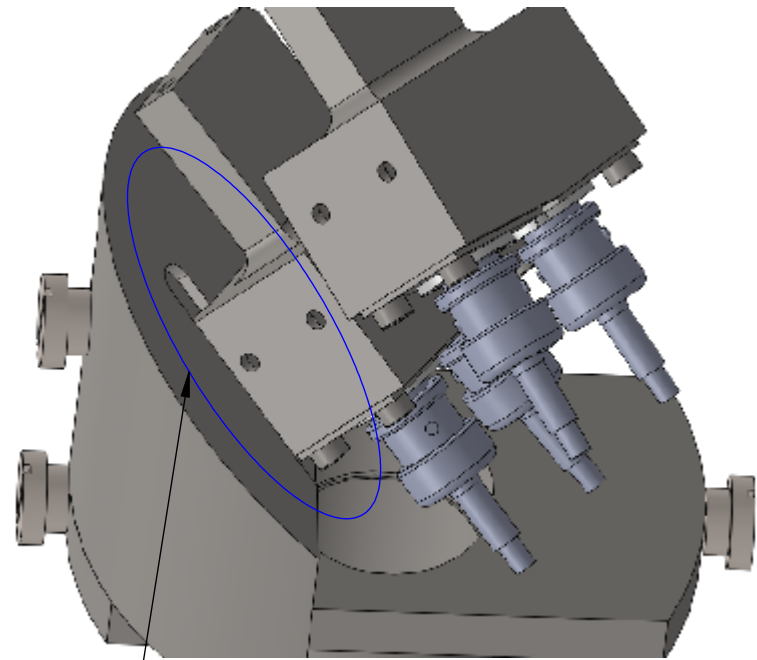
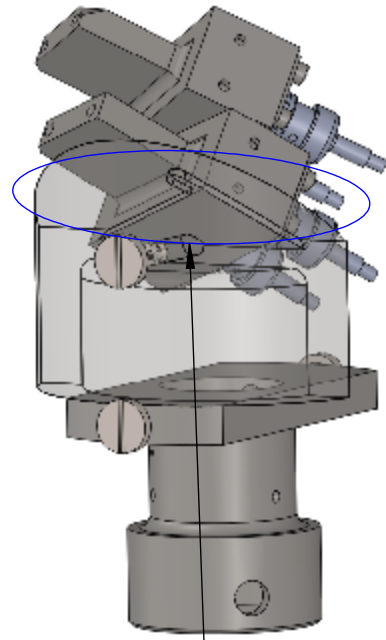
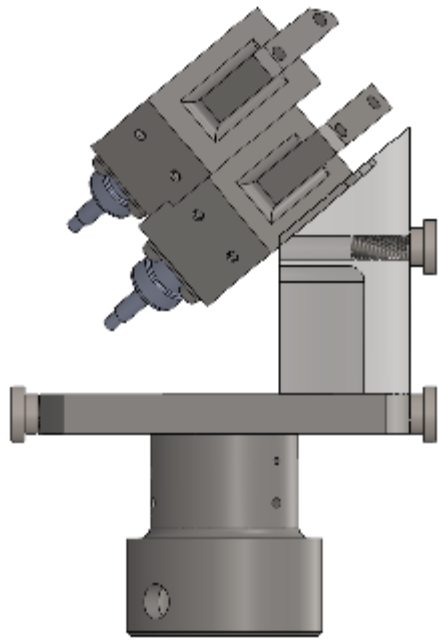
TOLERANCES LINEAR DIMENSIONS					
OVER 0.5 TO 3	OVER 3 TO 6	OVER 6 TO 30	OVER 30 TO 120	OVER 120 TO 500	OVER 400 TO 1000
±0.0125	±0.025	±0.05	±0.1	±0.2	±0.5
TOLERANCES ANGULAR DIMENSIONS					
OVER 0.5 TO 10	OVER 10 TO 50	OVER 50 TO 120	OVER 120 TO 300	OVER 300	
±0.05°	±0.1°	±0.2°	±0.5°	±1°	

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MATERIAL	SS316	
	NAME	DATE
DRAWN	RAMONA V PEREZ	05/28/13
CHECKED	RAMONA V PEREZ	07/02/13
DRAWN	RAMONA V PEREZ	09/05/14
UNLESS OTHERWISE STATED DIMENSIONS ARE IN MM	REMOVE ALL BURRS AND SHARP EDGES	

TITLE:		
PROTON DETECTOR ASSEMBLED CONNECTOR		
SIZE	DWG. NO.	REV
A	PD_22_connector_assembled	2
		SHEET 1 OF 2



NOTES:
ANOTHER VIEW OF STEP ON
TRANSPARENT CONNECTOR.

- NOTES:
1. WELD PROTON DETECTOR MODULE A TO PROTON DETECTOR CONNECTOR
 2. WELD FOR ULTRA HIGH VACUUM
 3. NOTE STEP ON CONNECTOR IS TO CORRECTLY POSITION PROTON DETECTOR MODULE A

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TOLERANCES LINEAR DIMENSIONS					
OVER 0.3 TO 3	OVER 3 TO 6	OVER 6 TO 30	OVER 30 TO 120	OVER 120 TO 300	OVER 400 TO 1000
±0.012	±0.015	±0.020	±0.030	±0.050	±0.080
TOLERANCES ANGULAR DIMENSIONS					
OVER 0.3 TO 3	OVER 3 TO 30	OVER 30 TO 120	OVER 120 TO 300	OVER 400 TO 1000	
±0.05°	±0.08°	±0.10°	±0.15°	±0.20°	

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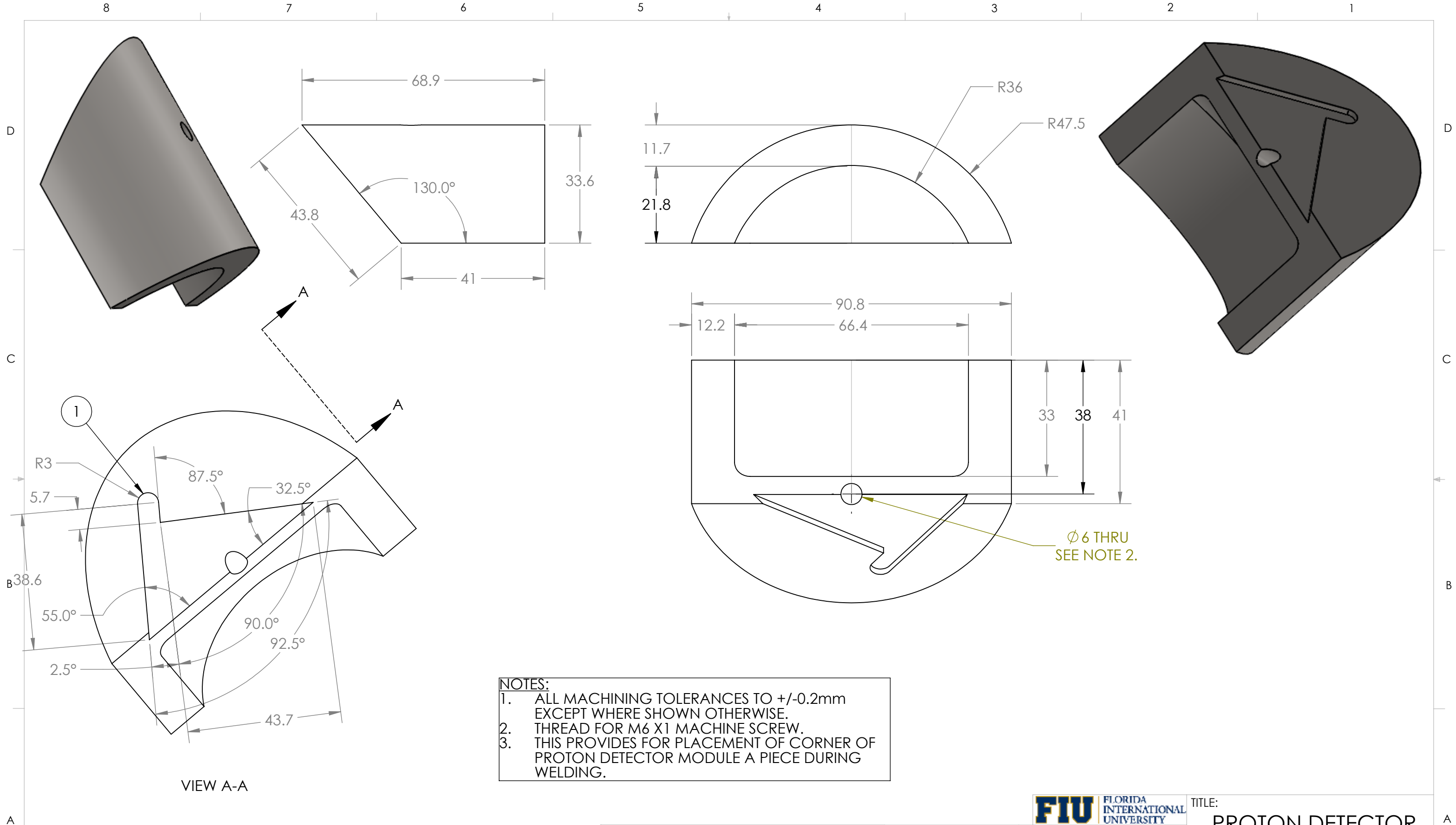
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MATERIAL		SS316
NAME		DATE
DRAWN	RAMONA V PEREZ	06/13/13
CHECKED	RAMONA V PEREZ	07/02/13
DRAWN	RAMONA V PEREZ	09/05/14
UNLESS OTHERWISE STATED DIMENSIONS ARE IN MM		REMOVE ALL BURRS AND SHARP EDGES

TITLE:
**PROTON DETECTOR
ASSEMBLED CONNECTOR**

SIZE	DWG. NO.	REV
A	PD_22_connector_assembled	2



NOTES:

1. ALL MACHINING TOLERANCES TO +/-0.2mm EXCEPT WHERE SHOWN OTHERWISE.
2. THREAD FOR M6 X1 MACHINE SCREW.
3. THIS PROVIDES FOR PLACEMENT OF CORNER OF PROTON DETECTOR MODULE A PIECE DURING WELDING.

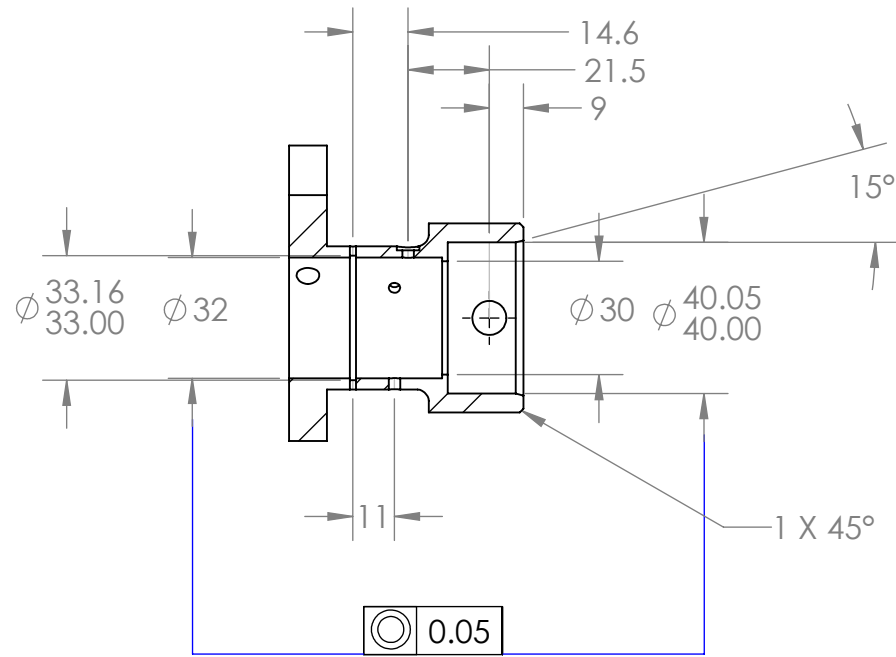
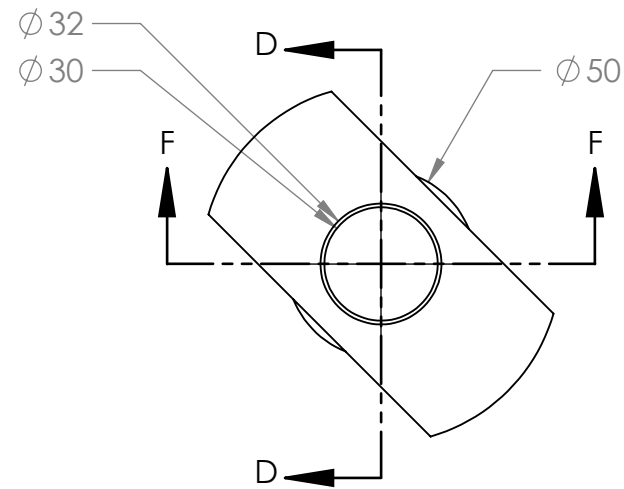
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+/- 0.1	+/- 0.1	+/- 0.2	+/- 0.3	+/- 0.5	+/- 0.8
TOLERANCES ANGULAR DIMENSIONS					
10 OR LESS	OVER 10 TO 30	OVER 30 TO 90	OVER 90 TO 120	OVER 120 TO 400	OVER 400
1/- 1'	1/- 0'30"	1/- 0'20"	1/- 0'10"	1/- 0'5"	

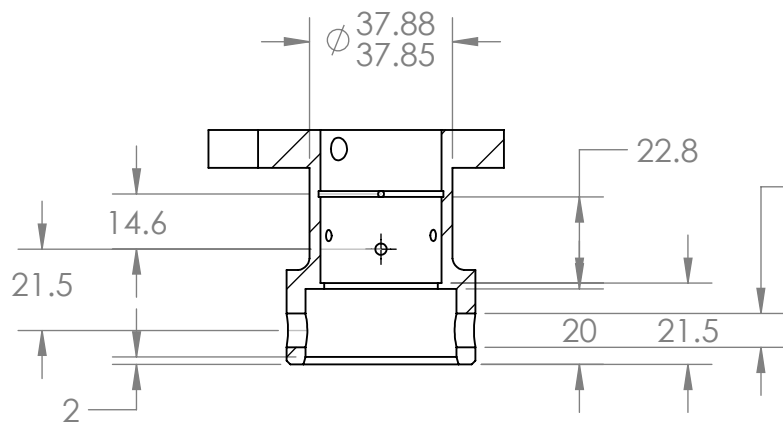
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FIU FLORIDA INTERNATIONAL UNIVERSITY	
MATERIAL	SS316
NAME	DATE
DRAWN	RAMONA V PEREZ 06/13/13
CHECKED	RAMONA V PEREZ 07/05/13
UNLESS OTHERWISE STATED DIMENSIONS ARE IN MM	REMOVE ALL BURRS AND SHARP EDGES

TITLE: PROTON DETECTOR CONNECTOR		
SIZE	DWG. NO.	REV
B	PD_22_connector	1
SCALE: 1:1	WEIGHT: 0.64kg	SHEET 1 OF 1

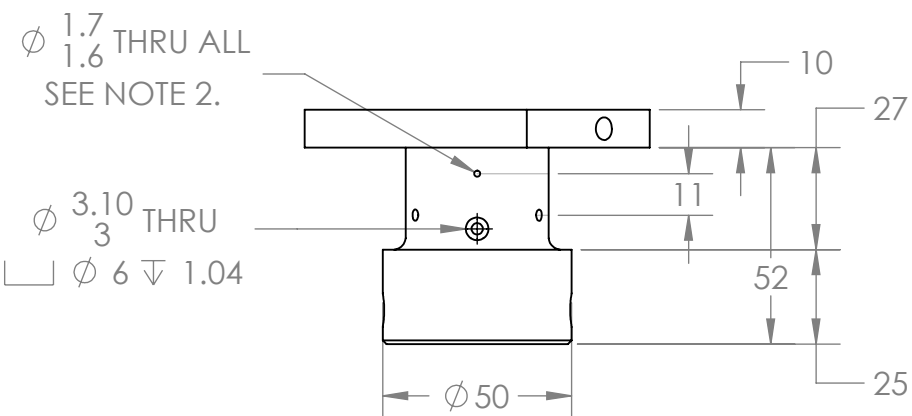
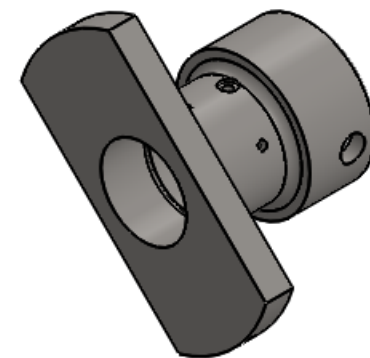


SECTION D-D



SECTION F-F

Ø 9.05
9.00 x 2
SEE NOTE 3.



- NOTES:**
1. ALL MACHINING TOLERANCES TO +/-0.2mm EXCEPT WHERE SHOWN OTHERWISE.
 2. AIR VENT THRU HOLES. SEE SECTION D-D.
 3. THRU HOLES FOR TWO METRIC 9MM MACHINE SCREWS. SEE SECTION D-D.

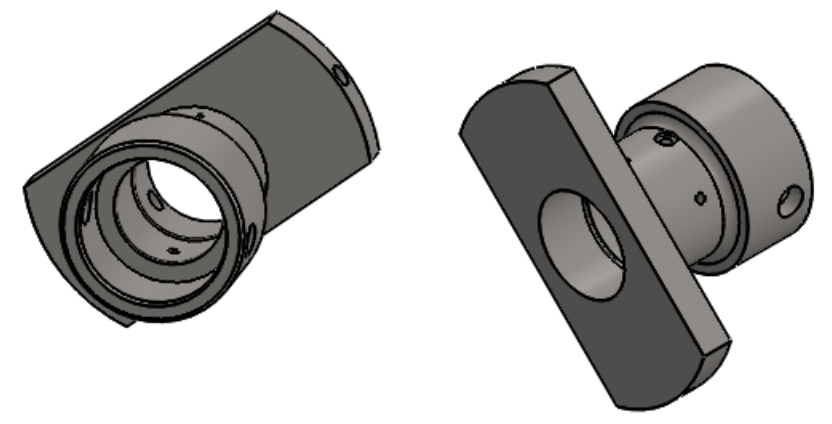
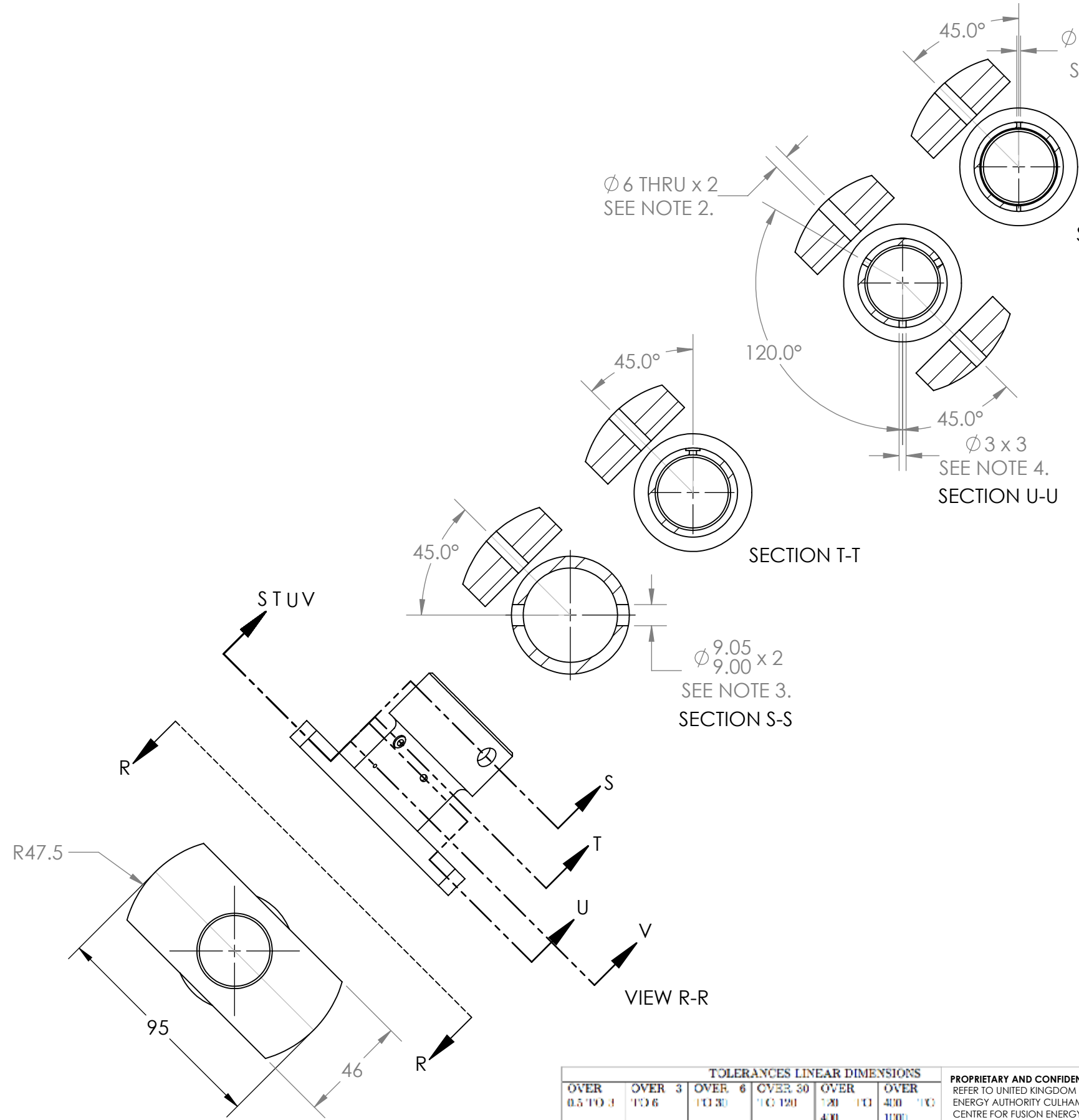
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OVER 0.5 TO 3	OVER 3 TO 6	OVER 6 TO 30	OVER 30 TO 120	OVER 120 TO 400	OVER 400 TO 1000
+/- 0.1	+/- 0.1	+/- 0.2	+/- 0.3	+/- 0.5	+/- 0.8
TOLERANCES ANGULAR DIMENSIONS					
10 OR LESS	OR OVER 10 TO 50	OVER 50 TO 120	OVER 120 TO 400	OVER 400 TO 1000	
1/- 1'	1/- 0'30"	1/- 0'20"	1/- 0'10"	1/- 0'5"	

PROPRIETARY AND CONFIDENTIAL
REFER TO UNITED KINGDOM ATOMIC ENERGY AUTHORITY CULHAM CENTRE FOR FUSION ENERGY DWG M1150123 ISSUE C. DWG PROPERTIES USED TO COMPLY WITH MAST RECIPROCATING PROBE INSTALLATION OF PROTON DETECTOR.

FIU FLORIDA INTERNATIONAL UNIVERSITY	
MATERIAL	SS316
DRAWN	RAMONA V PEREZ
CHECKED	RAMONA V PEREZ
DRAWN	RAMONA V PEREZ
UNLESS OTHERWISE STATED DIMENSIONS ARE IN MM	REMOVE ALL BURRS AND SHARP EDGES

TITLE: PROTON DETECTOR MAST CONNECTOR		
SIZE B	DWG. NO. MAST_connector_2	REV 2
SCALE: 1:2	WEIGHT: 0.49kg	SHEET 1 OF 2



- NOTES:**
1. ALL MACHINING TOLERANCES TO +/-0.2mm EXCEPT WHERE SHOWN OTHERWISE.
 2. THREAD FOR M6 X1 MACHINE SCREW.
 3. SEE SECTION D-D IN SHEET 1 OF 2.
 4. THREAD FOR M3 X0.5 SET/GRUB SCREWS.

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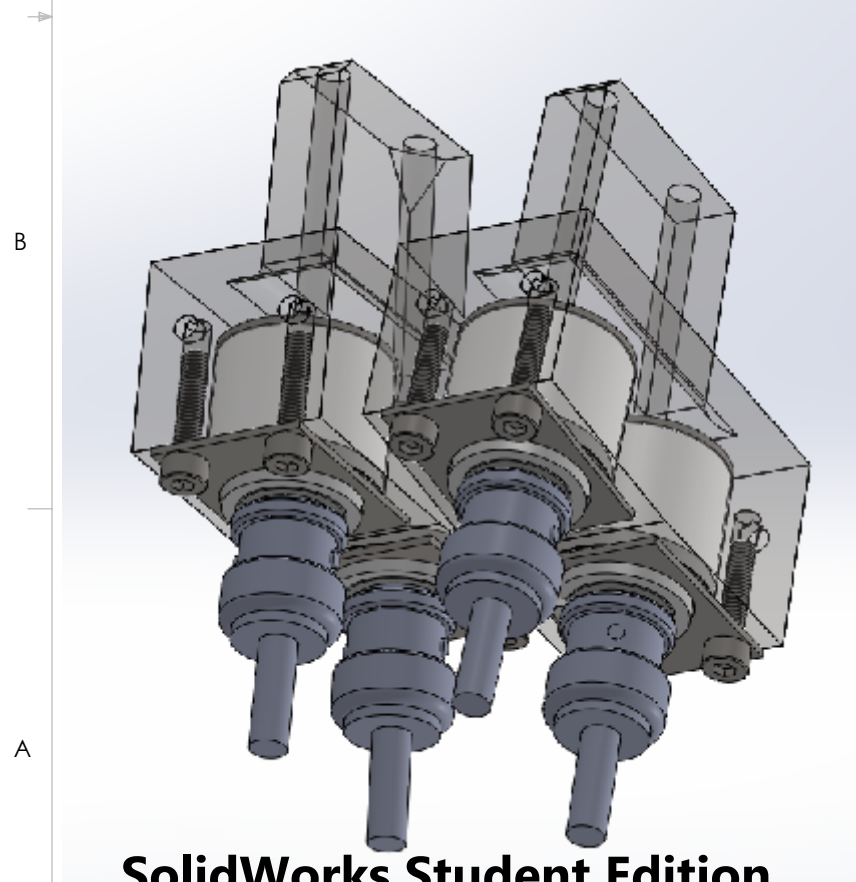
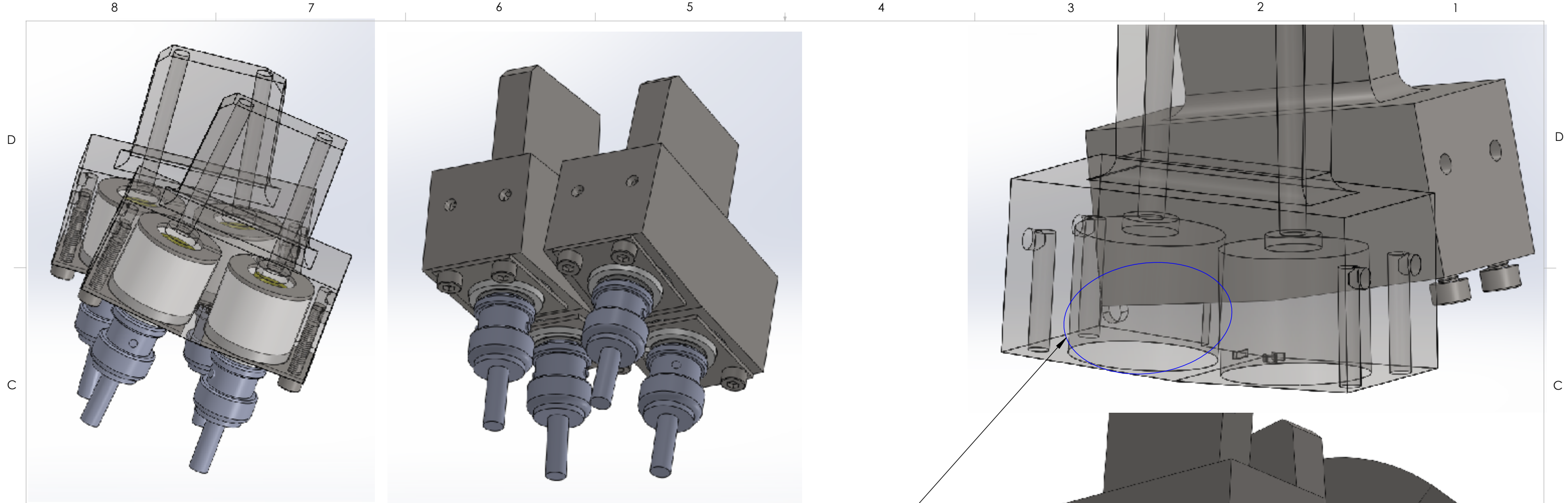
TOLERANCES LINEAR DIMENSIONS					
OVER 0.5 TO 3	OVER 3 TO 6	OVER 6 TO 30	OVER 30 TO 120	OVER 120 TO 400	OVER 400 TO 1000
+/- 0.1	+/- 0.1	+/- 0.2	+/- 0.3	+/- 0.5	+/- 0.8

TOLERANCES ANGULAR DIMENSIONS				
10 OR LESS	OVER 10 TO 50	OVER 50 TO 120	OVER 120 TO 400	OVER 400
1/- 1'	1/- 0'30"	1/- 0'20"	1/- 0'10"	1/- 0'5"

PROPRIETARY AND CONFIDENTIAL
REFER TO UNITED KINGDOM ATOMIC ENERGY AUTHORITY CULHAM CENTRE FOR FUSION ENERGY DWG M1150123 ISSUE C. DWG PROPERTIES USED TO COMPLY WITH MAST RECIPROCATING PROBE INSTALLATION OF PROTON DETECTOR.

FIU FLORIDA INTERNATIONAL UNIVERSITY	
MATERIAL	SS316
DRAWN	RAMONA V PEREZ
CHECKED	RAMONA V PEREZ
DRAWN	RAMONA V PEREZ
UNLESS OTHERWISE STATED DIMENSIONS ARE IN MM	REMOVE ALL BURRS AND SHARP EDGES

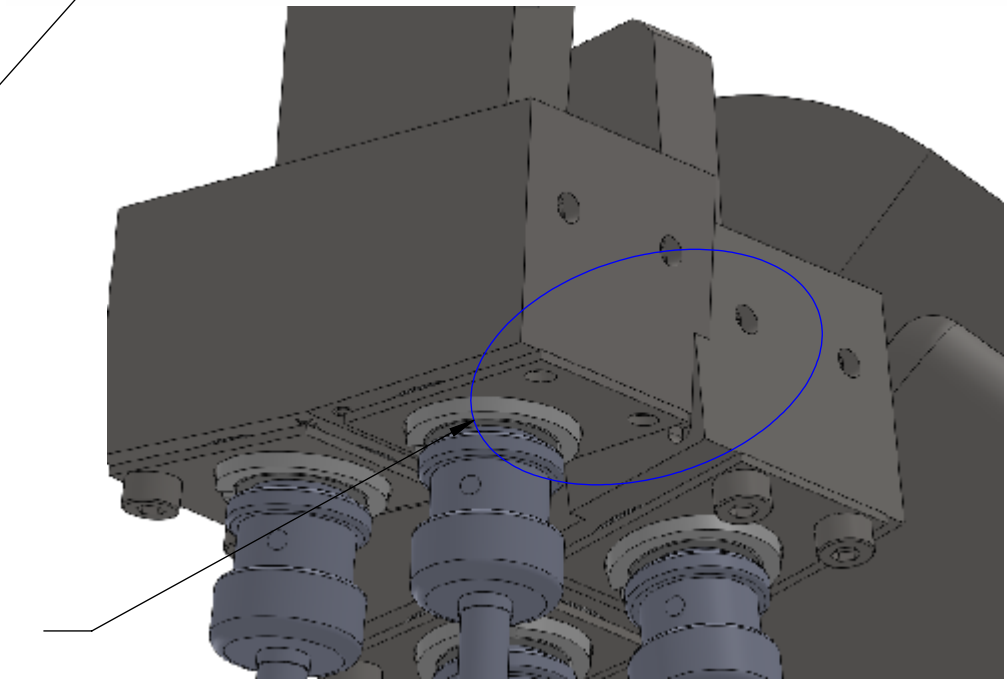
TITLE: PROTON DETECTOR MAST CONNECTOR		
SIZE B	DWG. NO. MAST_connector_2	REV 2
SCALE: 1:2	WEIGHT: 0.49kg	SHEET 2 OF 2



NOTES:

1. WELD PROTON DETECTOR MODULE B TO PROTON DETECTOR MODULE A
2. WELD FOR ULTRA HIGH VACUUM
3. NOTE STEP ON PROTON MODULE A TO CORRECTLY POSITION PROTON DETECTOR MODULE B

NOTES:
ANOTHER VIEW OF STEP TO USE FOR WELDING MODULE B TO MODULE A.



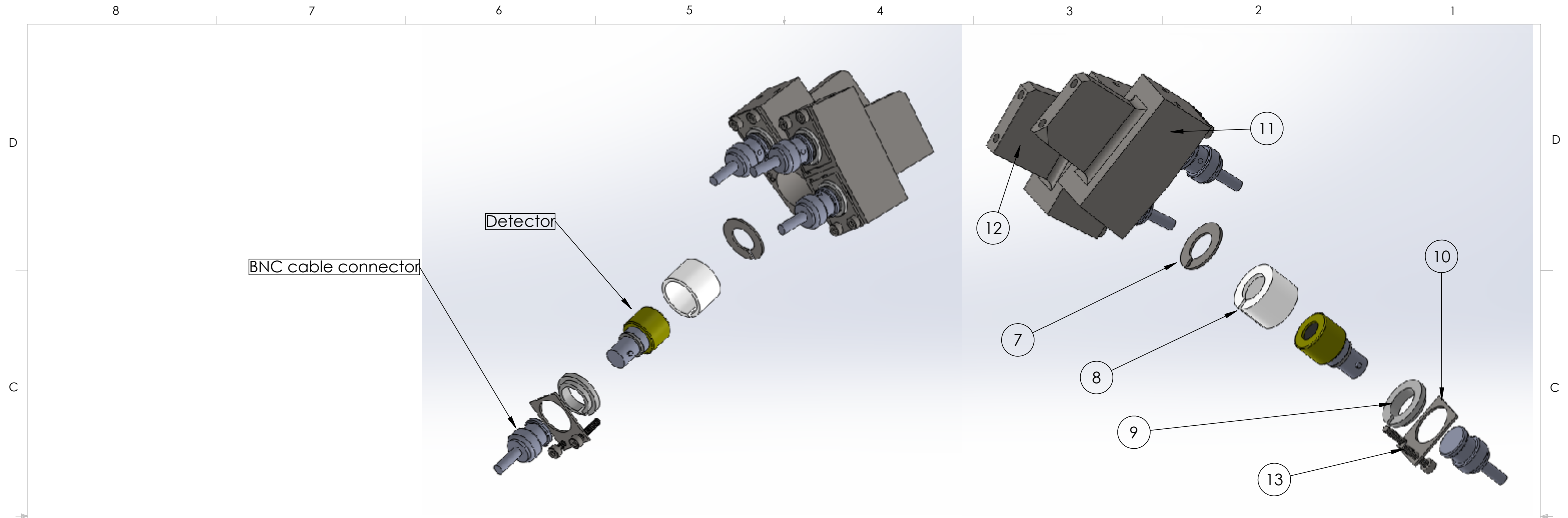
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TOLERANCES LINEAR DIMENSIONS					
OVER 0.5 TO 3	OVER 3 TO 6	OVER 6 TO 30	OVER 30 TO 120	OVER 120 TO 400	OVER 400 TO 1000
+/- 0.1	+/- 0.1	+/- 0.2	+/- 0.3	+/- 0.5	+/- 0.8
TOLERANCES ANGULAR DIMENSIONS					
10 OR LESS	OVER 10 TO 50	OVER 50 TO 120	OVER 120 TO 400	OVER 400	
1/- 1'	1/- 0'30"	1/- 0'20"	1/- 0'10"	1/- 0'5"	

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FIU FLORIDA INTERNATIONAL UNIVERSITY		TITLE:	
MATERIAL SS316, PEEK 1000		PROTON DETECTOR ASSEMBLED MODULE	
DRAWN	RAMONA V PEREZ	NAME	DATE
CHECKED	RAMONA V PEREZ		06/13/13
DRAWN	RAMONA V PEREZ		07/02/13
			09/05/14
UNLESS OTHERWISE STATED DIMENSIONS ARE IN MM		REMOVE ALL BURRS AND SHARP EDGES	

SIZE B	DWG. NO. PD_22_Module_assembled	REV 2
		SHEET 1 OF 2



PARTS LIST			
ITEM	TITLE	DWG. NO.	QUANTITY
6	NO ITEM 6	N/A	N/A
7	PROTON DETECTOR WASHER	PD_22_Washer	4
8	PROTON DETECTOR PEEK SLEEVE	PD_22_Peek_sleeve	4
9	PROTON DETECTOR PEEK BOTTOM	PD_22_Peek_bottom	4
10	PROTON DETECTOR MODULE BASE	PD_22_base	4
11	PROTON DETECTOR MODULE A	PD_22_b	1
12	PROTON DETECTOR MODULE B	PD_22_a	1
13	McMaster-Carr PN#92290A118		8

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TOLERANCES LINEAR DIMENSIONS					
OVER 0.5 TO 3	OVER 3 TO 6	OVER 6 TO 30	OVER 30 TO 120	OVER 120 TO 400	OVER 400 TO 1000
+/- 0.1	+/- 0.1	+/- 0.2	+/- 0.3	+/- 0.5	+/- 0.8

TOLERANCES ANGULAR DIMENSIONS				
10 OR LESS	OVER 10 TO 50	OVER 50 TO 120	OVER 120 TO 400	OVER 400
1/- 1'	1/- 0'30"	1/- 0'20"	1/- 0'10"	1/- 0'5"

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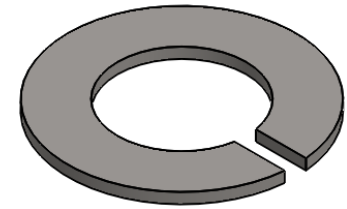
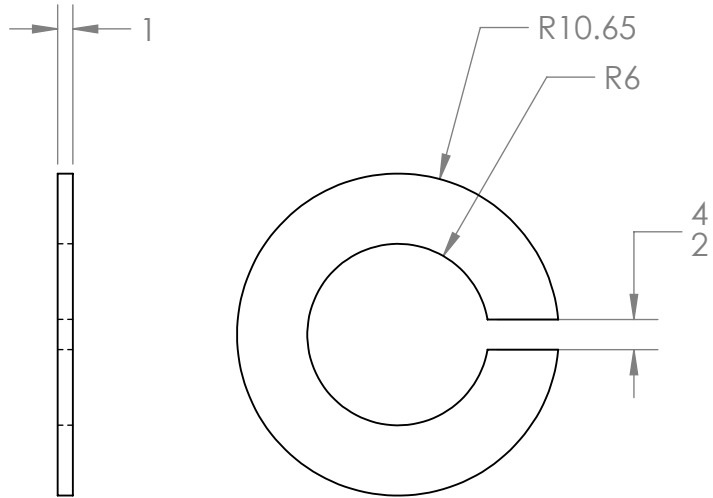
MATERIAL		SS316, PEEK 1000
NAME		DATE
DRAWN	RAMONA V PEREZ	06/13/13
CHECKED	RAMONA V PEREZ	06/19/13
UNLESS OTHERWISE STATED DIMENSIONS ARE IN MM		REMOVE ALL BURRS AND SHARP EDGES



TITLE:
**PROTON DETECTOR
ASSEMBLED MODULE**

SIZE	DWG. NO.	REV
B	PD_22_Module_assembled	1

DO NOT SCALE DRAWING



- NOTES:**
1. ALL MACHINING TOLERANCES TO +/-0.2mm EXCEPT WHERE SHOWN OTHERWISE.
 2. NOTE THAT THE WASHER IS USED AS A SPACER FOR TWO SS316 SHIM STOCK WASHERS (OF SAME DIAMETER) ATTACHED TO A FOIL. ASSEMBLY OF SHIM STOCK WASHERS AND FOIL IS EQUIVALENT TO 1mm.

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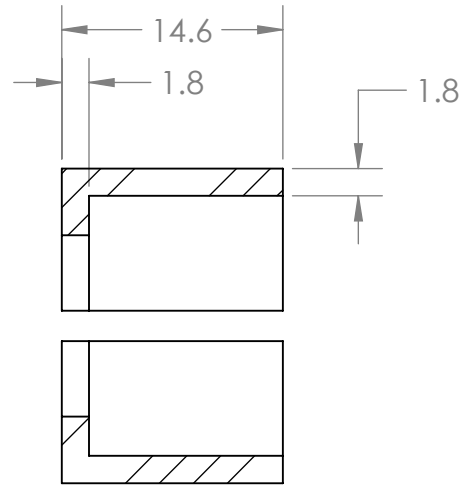
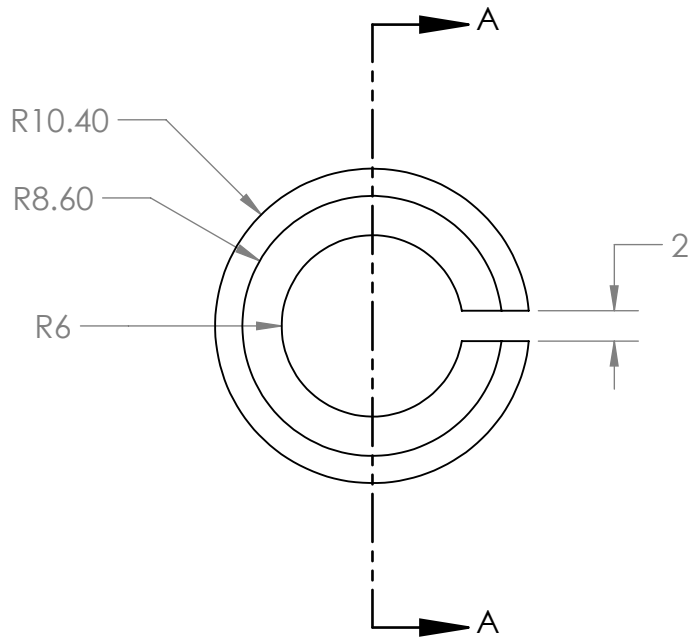
TOLERANCES LINEAR DIMENSIONS					
OVER 0.3 TO 3	OVER 3 TO 6	OVER 6 TO 30	OVER 30 TO 120	OVER 120 TO 400	OVER 400 TO 1000
+/- 0.1	+/- 0.15	+/- 0.2	+/- 0.3	+/- 0.5	+/- 0.8
TOLERANCES ANGULAR DIMENSIONS					
OVER 15	OVER 15 TO 30	OVER 30 TO 60	OVER 60 TO 120	OVER 120 TO 400	OVER 400 TO 1000
+/- 1°	+/- 0°30'	+/- 0°20'	+/- 0°15'	+/- 0°10'	+/- 0°05'

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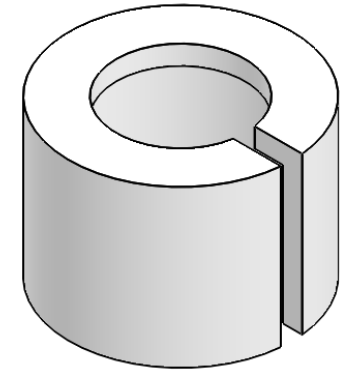
DO NOT SCALE DRAWING

FIU FLORIDA INTERNATIONAL UNIVERSITY	
MATERIAL	SS316
NAME	DATE
DRAWN	RAMONA V PEREZ 06/13/13
CHECKED	RAMONA V PEREZ 07/02/13
DRAWN	RAMONA V PEREZ 09/05/14
UNLESS OTHERWISE STATED DIMENSIONS ARE IN MM	REMOVE ALL BURRS AND SHARP EDGES

TITLE: PROTON DETECTOR WASHER		
SIZE	DWG. NO.	REV
A	PD_22_Washer	2
SCALE: 2:1	WEIGHT:0.002kg	SHEET 1 OF 1



SECTION A-A



NOTES:

- ALL MACHINING TOLERANCES TO +/-0.2mm EXCEPT WHERE SHOWN OTHERWISE.

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TOLERANCES LINEAR DIMENSIONS					
OVER 0.3 TO 3	OVER 3 TO 6	OVER 6 TO 30	OVER 30 TO 120	OVER 120 TO 300	OVER 400 TO 1000
+/- 0.1	+/- 0.15	+/- 0.2	+/- 0.3	+/- 0.5	+/- 0.8
TOLERANCES ANGULAR DIMENSIONS					
OVER 15 TO 30	OVER 30 TO 60	OVER 60 TO 120	OVER 120 TO 300	OVER 300 TO 600	
+/- 1°	+/- 0°30'	+/- 0°20'	+/- 0°10'	+/- 0°5'	

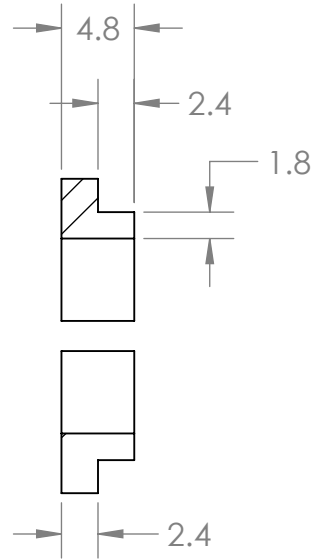
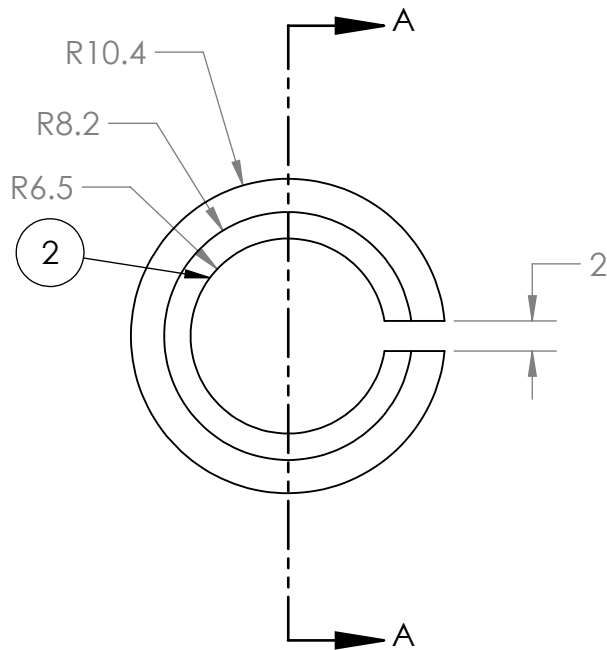
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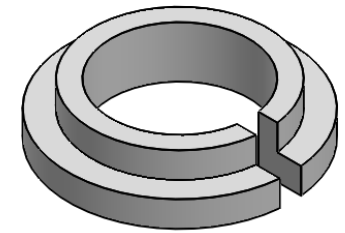


MATERIAL PEEK 1000		
	NAME	DATE
DRAWN	RAMONA V PEREZ	06/13/13
CHECKED	RAMONA V PEREZ	06/14/13
UNLESS OTHERWISE STATED DIMENSIONS ARE IN MM		REMOVE ALL BURRS AND SHARP EDGES

TITLE: PROTON DETECTOR PEEK SLEEVE		
SIZE A	DWG. NO. PD_22_Peek_sleeve	REV 1
SCALE: 2:1	WEIGHT: 0.002kg	SHEET 1 OF 1



SECTION A-A



NOTES:

1. ALL MACHINING TOLERANCES TO +/-0.2mm EXCEPT WHERE SHOWN OTHERWISE.
2. MACHINED AS R6.4mm.

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TOLERANCES LINEAR DIMENSIONS					
OVER 0.3 TO 3	OVER 3 TO 6	OVER 6 TO 30	OVER 30 TO 120	OVER 120 TO 300	OVER 300 TO 1000
+/- 0.1	+/- 0.15	+/- 0.2	+/- 0.3	+/- 0.5	+/- 0.8
TOLERANCES ANGULAR DIMENSIONS					
OVER 15 TO 30	OVER 30 TO 60	OVER 60 TO 120	OVER 120 TO 300	OVER 300 TO 1000	
+/- 1°	+/- 0°30'	+/- 0°20'	+/- 0°10'	+/- 0°5'	

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DO NOT SCALE DRAWING

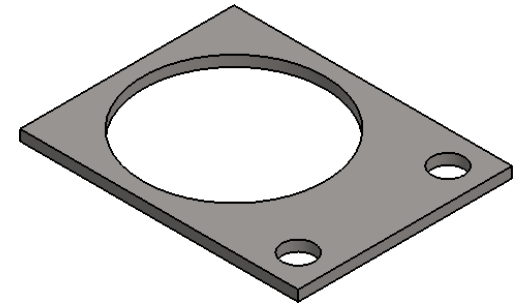
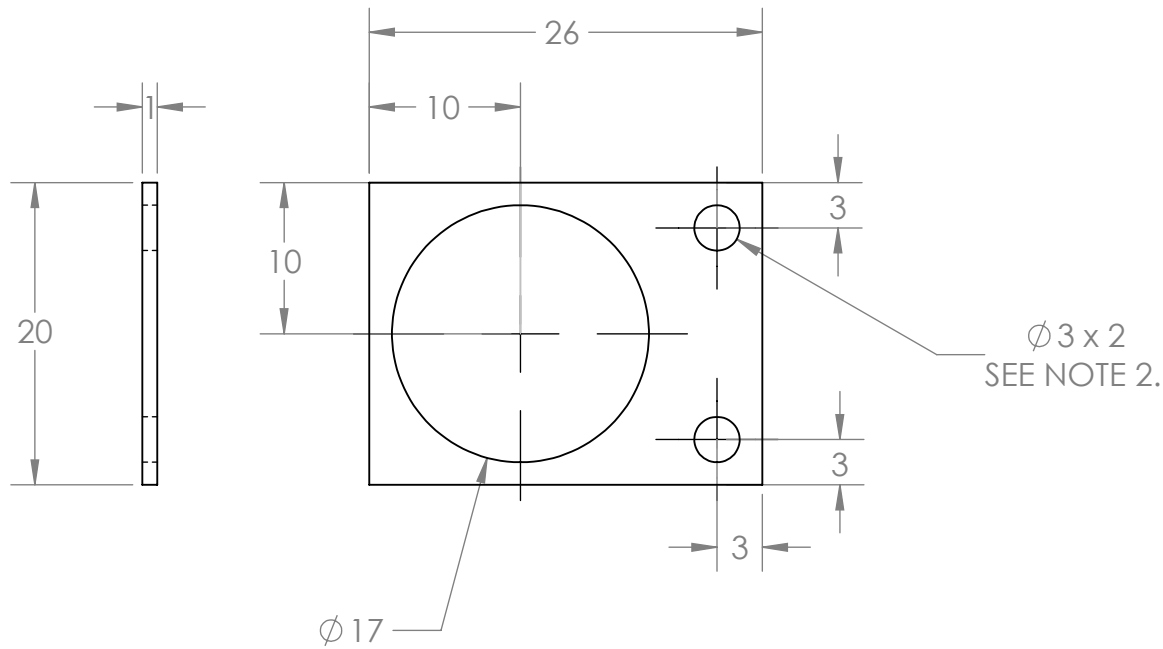


MATERIAL	PEEK 1000	
	NAME	DATE
DRAWN	RAMONA V PEREZ	06/13/13
CHECKED	RAMONA V PEREZ	06/14/13
DRAWN	RAMONA V PEREZ	09/05/14
UNLESS OTHERWISE STATED DIMENSIONS ARE IN MM	REMOVE ALL BURRS AND SHARP EDGES	

TITLE:
**PROTON DETECTOR
 PEEK BOTTOM**

SIZE	DWG. NO.	REV
A	PD_22_Peek_bottom	2

SCALE: 2:1 WEIGHT: 0.001kg SHEET 1 OF 1



NOTES:

1. ALL MACHINING TOLERANCES TO +/-0.2mm EXCEPT WHERE SHOWN OTHERWISE.
2. THRU HOLES FOR M3 MACHINE SCREW.

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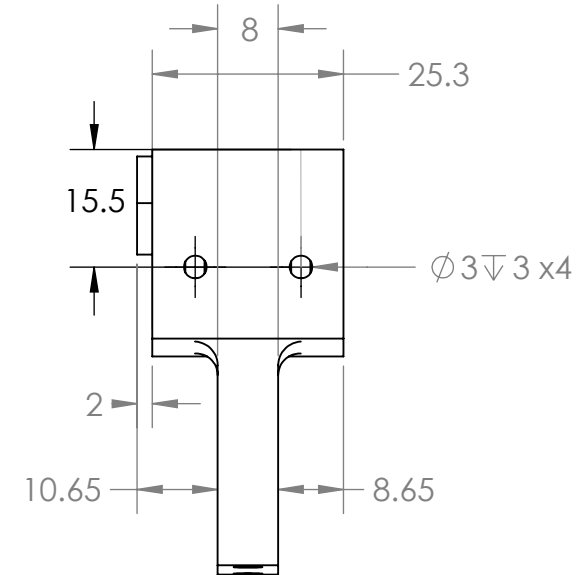
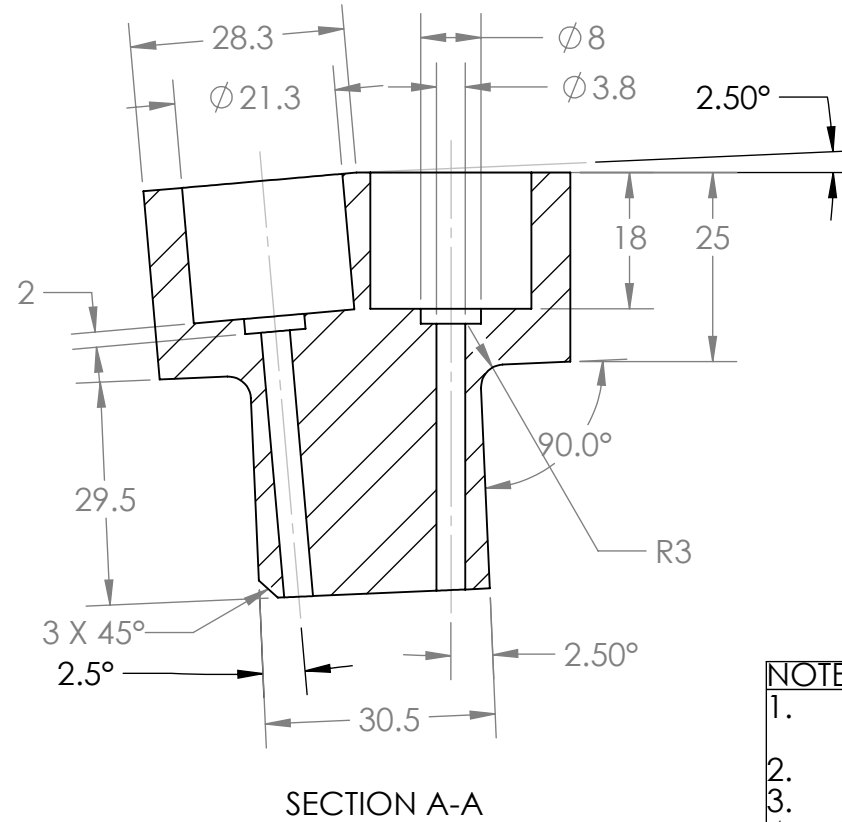
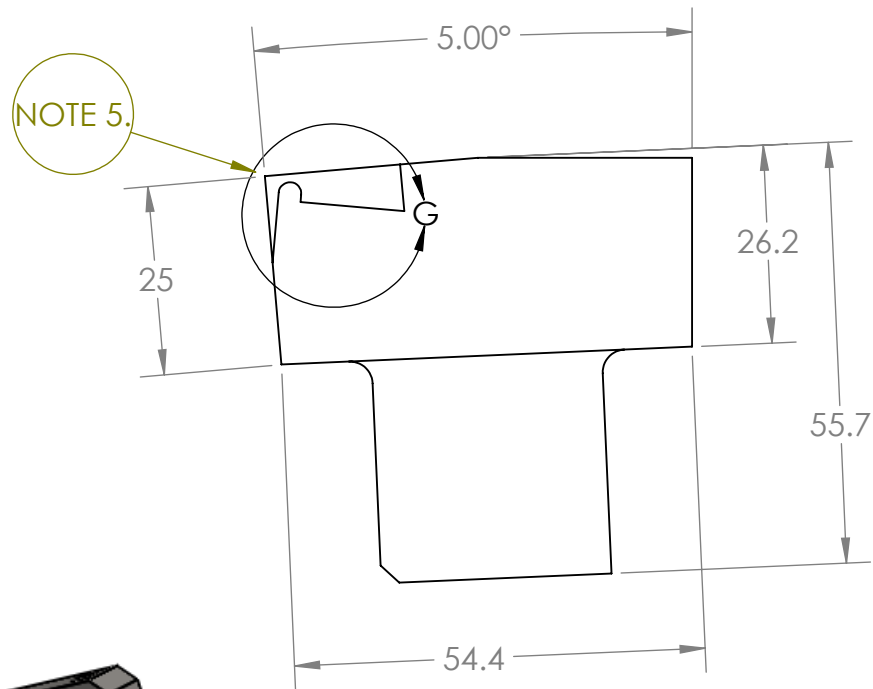
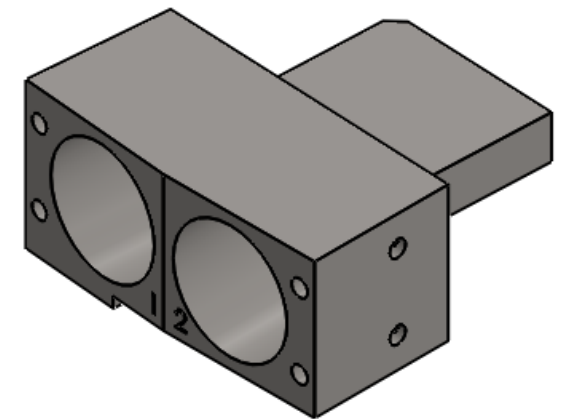
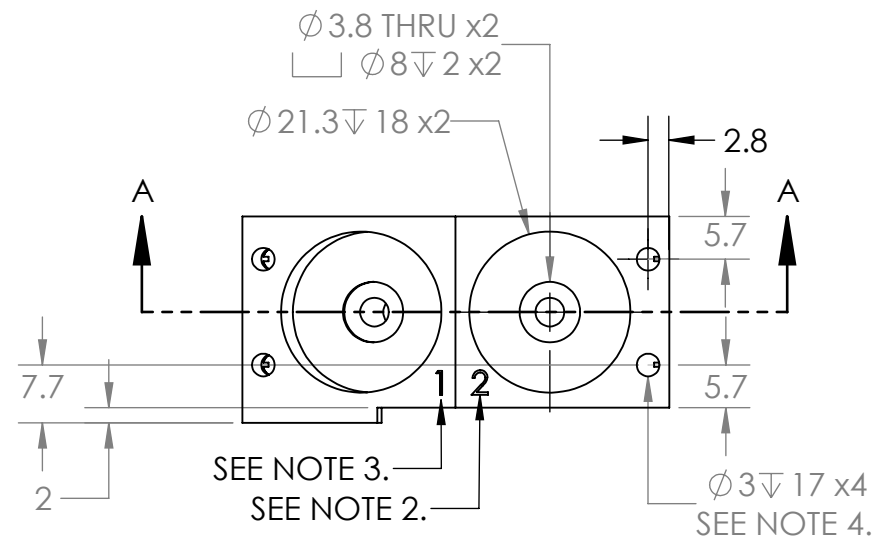
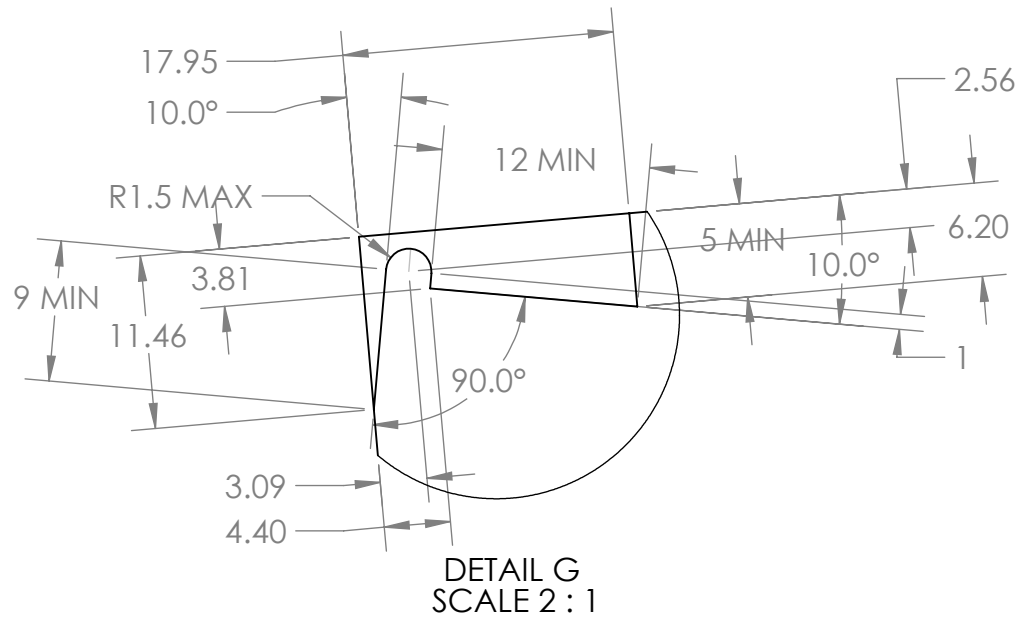
TOLERANCES LINEAR DIMENSIONS					
OVER 0.3 TO 3	OVER 3 TO 6	OVER 6 TO 30	OVER 30 TO 120	OVER 120 TO 300	OVER 300 TO 1000
+/- 0.1	+/- 0.15	+/- 0.2	+/- 0.3	+/- 0.5	+/- 0.8

TOLERANCES ANGULAR DIMENSIONS					
OVER 15	OVER 15 TO 30	OVER 30 TO 60	OVER 60 TO 90	OVER 90 TO 120	OVER 120 TO 180
+/- 1°	+/- 0°30'	+/- 0°20'	+/- 0°15'	+/- 0°10'	+/- 0°05'

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 DO NOT SCALE DRAWING

FIU		FLORIDA INTERNATIONAL UNIVERSITY	
MATERIAL		SS316	
	NAME	DATE	
DRAWN	RAMONA V PEREZ	06/13/13	
CHECKED	RAMONA V PEREZ	06/14/13	
DRAWN	RAMONA V PEREZ	09/05/14	
UNLESS OTHERWISE STATED DIMENSIONS ARE IN MM		REMOVE ALL BURRS AND SHARP EDGES	

TITLE:		
PROTON DETECTOR MODULE BASE		
SIZE	DWG. NO.	REV
A	PD_22_base	2
SCALE: 2:1	WEIGHT: 0.002kg	SHEET 1 OF 1



- NOTES:**
1. ALL MACHINING TOLERANCES TO +/-0.2mm EXCEPT WHERE SHOWN OTHERWISE.
 2. ENGRAVE "2."
 3. ENGRAVE "1."
 4. THREAD FOR M3X0.5 MACHINE SCREW.
 5. THIS PROVIDES FOR PLACEMENT OF CORNER OF MODULE B PIECE DURING WELDING.

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TOLERANCES LINEAR DIMENSIONS					
OVER 0.5 TO 3	OVER 3 TO 6	OVER 6 TO 30	OVER 30 TO 120	OVER 120 TO 400	OVER 400 TO 1000
+/- 0.1	+/- 0.1	+/- 0.2	+/- 0.3	+/- 0.5	+/- 0.8

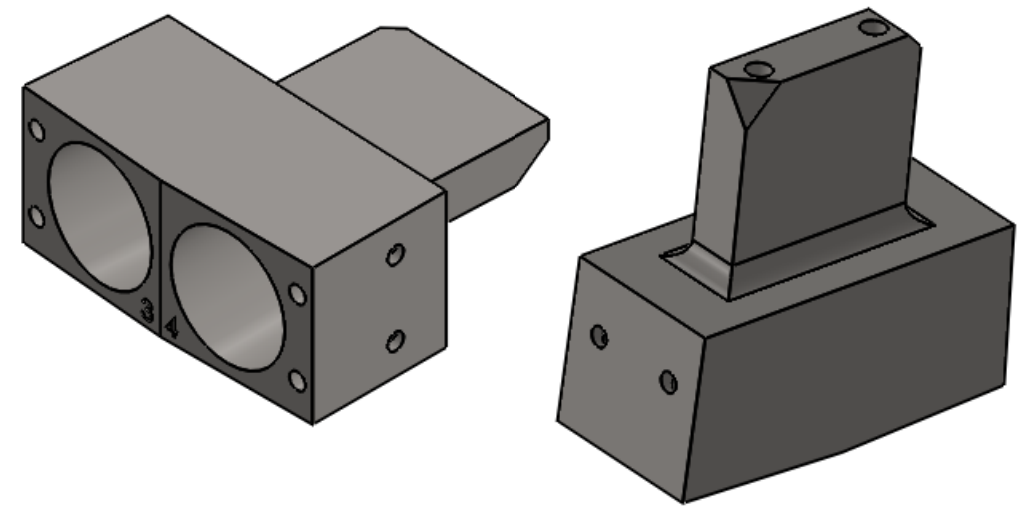
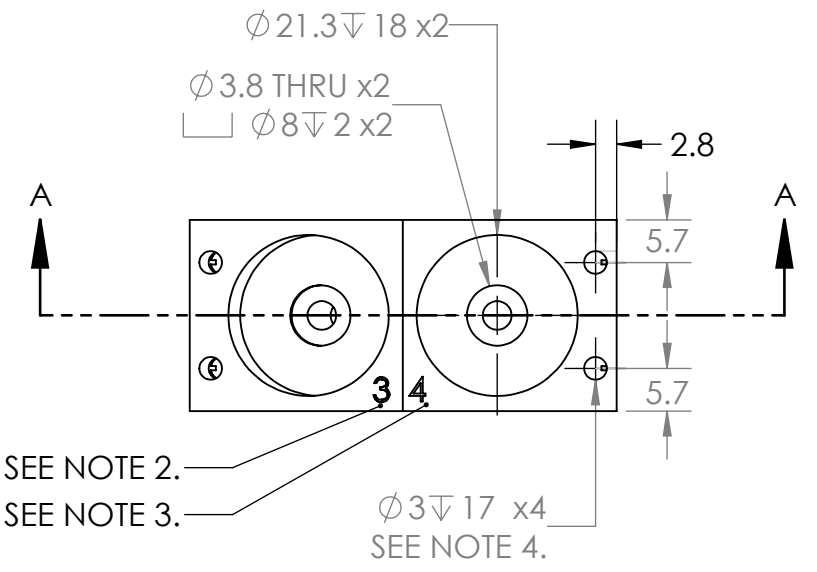
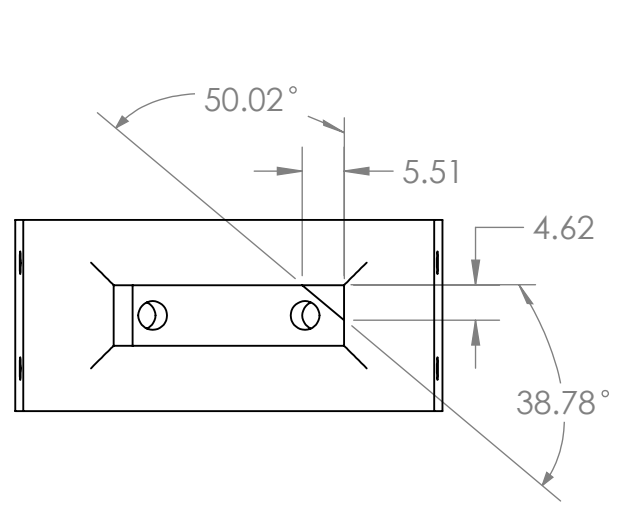
TOLERANCES ANGULAR DIMENSIONS				
10 OR LESS	OVER 10 TO 50	OVER 50 TO 120	OVER 120 TO 400	OVER 400
1/- 1'	1/- 0'30"	1/- 0'20"	1/- 0'10"	1/- 0'5"

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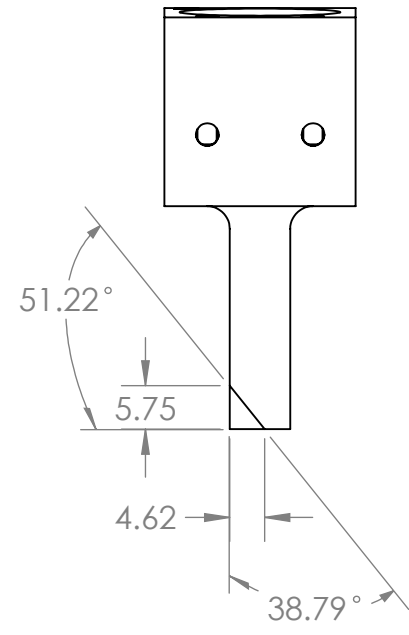
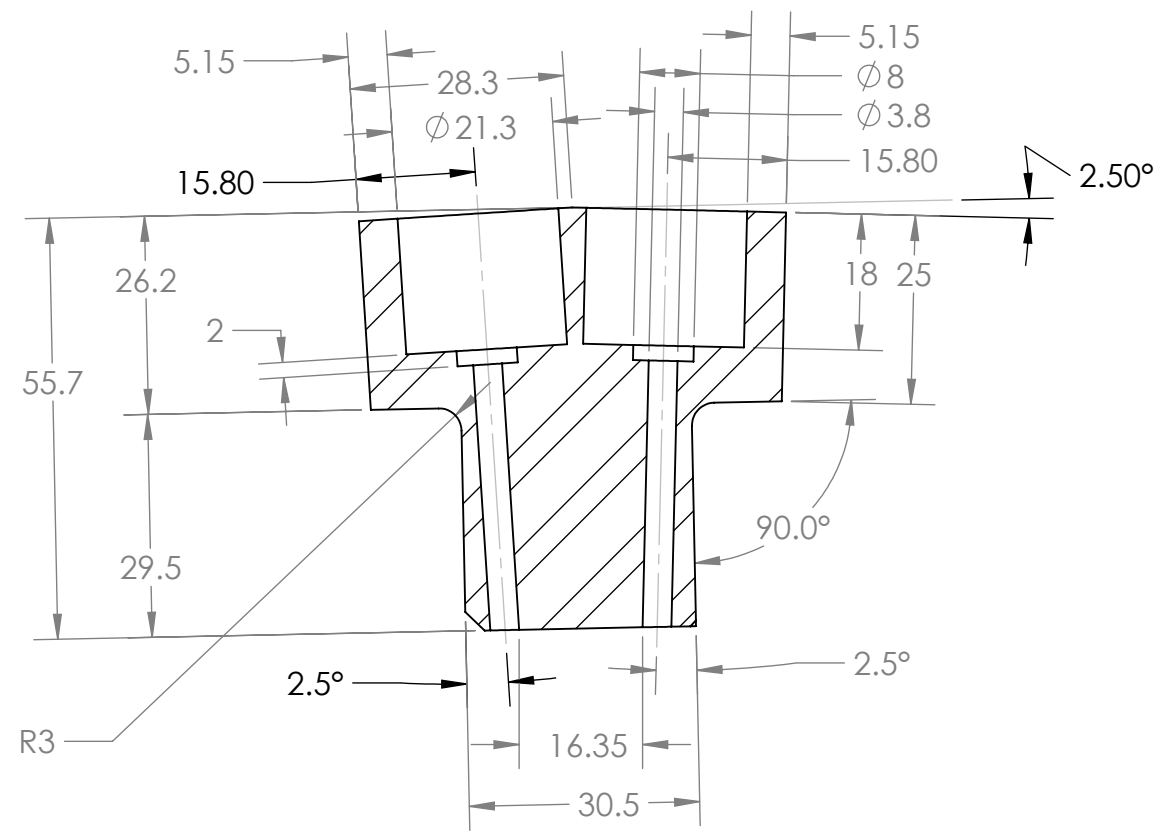
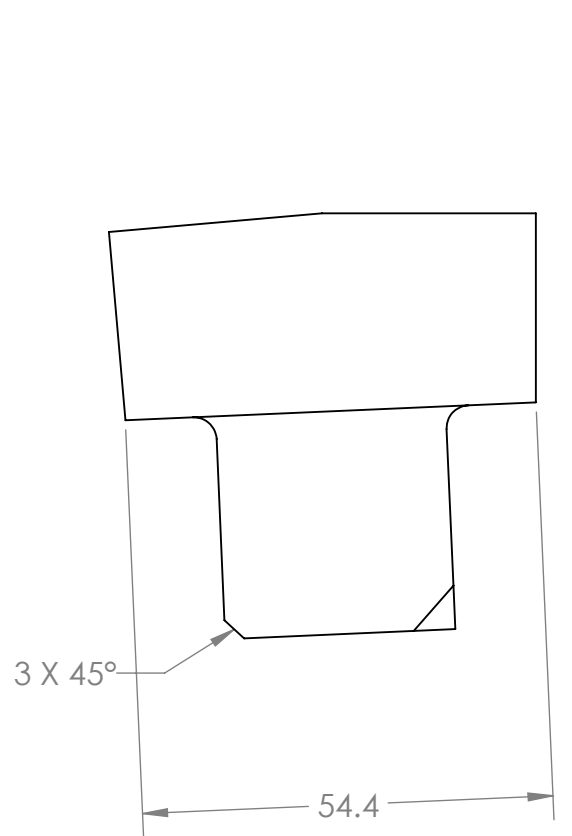
FIU FLORIDA INTERNATIONAL UNIVERSITY	
MATERIAL	SS316
NAME	DATE
DRAWN	RAMONA V PEREZ 06/13/13
CHECKED	RAMONA V PEREZ 07/02/13
DRAWN	RAMONA V PEREZ 09/05/14
UNLESS OTHERWISE STATED DIMENSIONS ARE IN MM	REMOVE ALL BURRS AND SHARP EDGES

TITLE: PROTON DETECTOR MODULE A		
SIZE	DWG. NO.	REV
B	PD_22_a	2
SCALE: 1:1	WEIGHT: .23kg	SHEET 1 OF 1

8 7 6 5 4 3 2 1



NOTES:
 1. ALL MACHINING TOLERANCES TO +/-0.2mm EXCEPT WHERE SHOWN OTHERWISE.
 2. ENGRAVE "3."
 3. ENGRAVE "4."
 4. THREAD FOR M3X0.5 MACHINE SCREW.



SECTION A-A

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TOLERANCES LINEAR DIMENSIONS					
OVER 0.5 TO 3	OVER 3 TO 6	OVER 6 TO 30	OVER 30 TO 120	OVER 120 TO 400	OVER 400 TO 1000
+/- 0.1	+/- 0.1	+/- 0.2	+/- 0.3	+/- 0.5	+/- 0.8

TOLERANCES ANGULAR DIMENSIONS					
10 OR LESS	OR OVER 10 TO 50	OVER 50 TO 120	OVER 120 TO 400	OVER 400 TO 1000	
1/- 1'	1/- 0'30"	1/- 0'20"	1/- 0'10"	1/- 0'5"	

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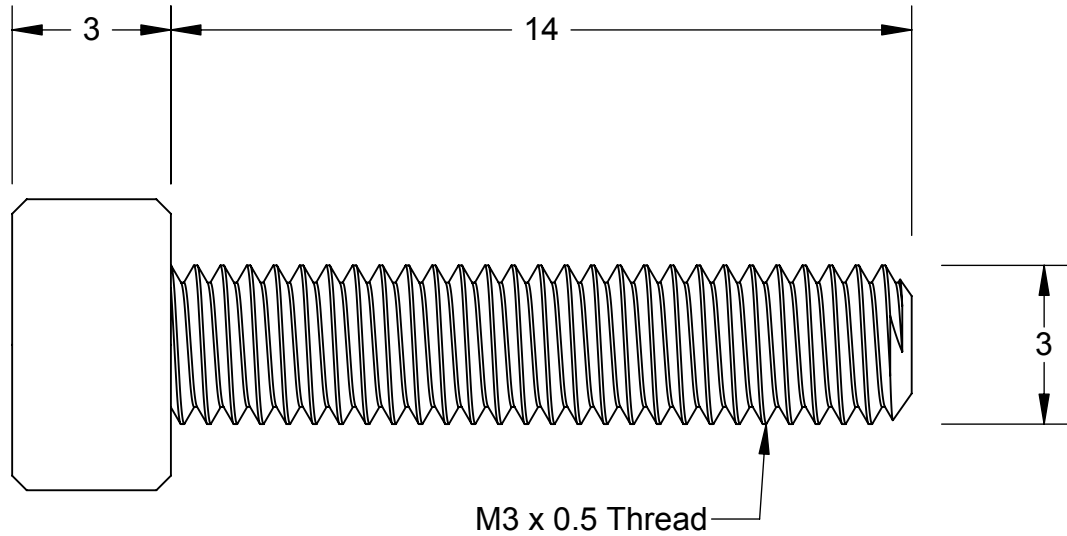
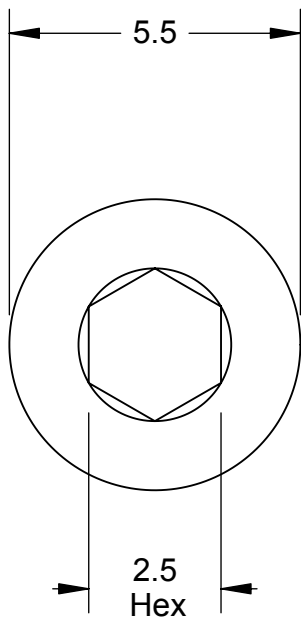
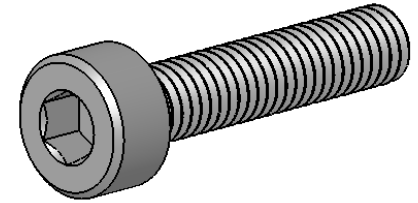
FIU FLORIDA INTERNATIONAL UNIVERSITY	
MATERIAL	SS316
DRAWN	RAMONA V PEREZ
CHECKED	RAMONA V PEREZ
DRAWN	RAMONA V PEREZ
UNLESS OTHERWISE STATED DIMENSIONS ARE IN MM	REMOVE ALL BURRS AND SHARP EDGES

TITLE: PROTON DETECTOR MODULE B		
SIZE B	DWG. NO. PD_22_b	REV 2
SCALE: 1:1	WEIGHT: 0.23kg	SHEET 1 OF 1

8 5 7 4 6 3 5 2 4 1 2 1

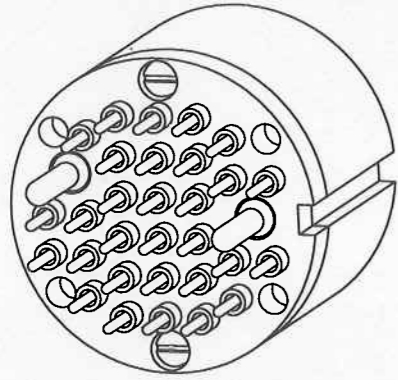
NOTES 08/02/13:

1. DURING WELDING ONE THREADED HOLE ON ONE MODULE WAS DEFORMED. FOR THAT HOLE USE M3x0.5 THREAD WITH 6MM LENGTH AS OPPOSED TO 14MM LENGTH.

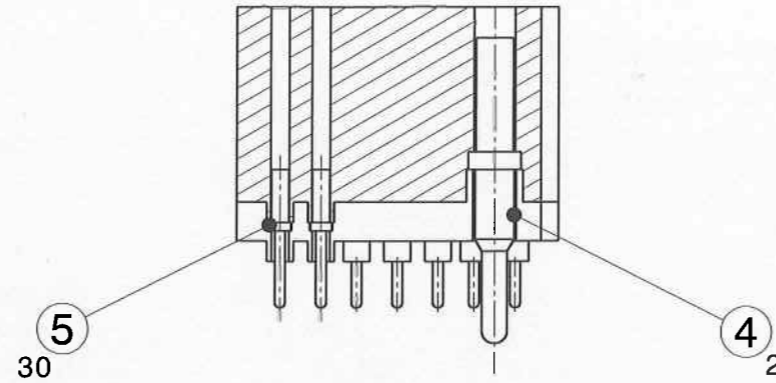


McMASTER-CARR CAD	PART NUMBER	92290A118
http://www.mcmaster.com	Type 316 Stainless Steel Socket Head Cap Screw	
© 2008 McMaster-Carr Supply Company	Unless otherwise specified, dimensions are in millimeters. Information in this drawing is provided for reference only.	

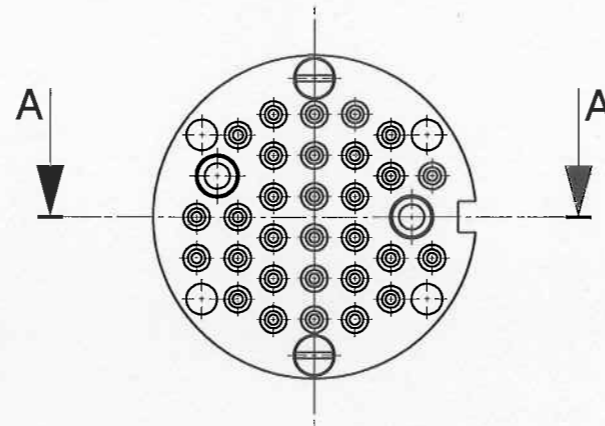
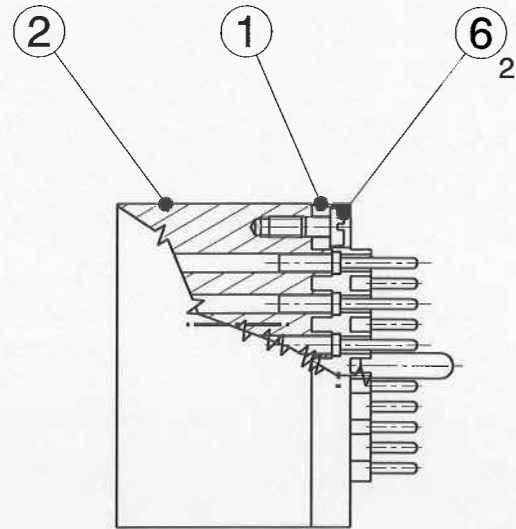
THIRD ANGLE PROJECTION - DO NOT SCALE - IF IN DOUBT ASK



ISOMETRIC VIEW



SECTION A - A



ITEM No	DRAWING No	DESCRIPTION	No OFF
1	M11501201	PIN HOUSING	1
2	M11501202	PIN RETAINER	1
3			
4	LBCX SEE NOTE 1.	CONTACT PIN 1.5-2.5sq.mm RS stock No 437-4709	2
5	DJVX SEE NOTE 2.	MALE CONTACT DPIN-MC Caburn Pt No 1510101	30
6	JCHS-2-6	SCREW M2 x 6Lg CHEESE HD STAIN.S.	2

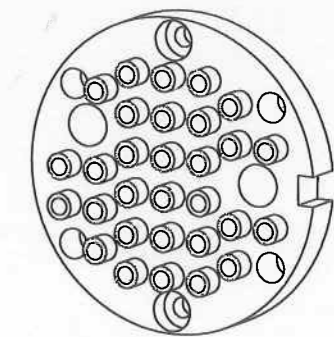
NOTES:-

- ITEMS 4 AVAILABLE FROM:-
RS COMPONENTS LTD
WALSINGHAM DRIVE
NUNEATON
CV10 7RS
TEL:- 02476 3377700 FAX:- 0845 850 9911
uk.rs-online.com
- ITEMS 5 AVAILABLE FROM:-
CABURN-MDC LTD
MENZIES ROAD
PONSWOOD INDUSTRIAL ESTATE
ST. LEONARDS-ON-SEA
EAST SUSSEX TN38 9BB
TEL:- 0870 428 7646 FAX:- 0870 428 7647
www.sales@caburn.co.uk

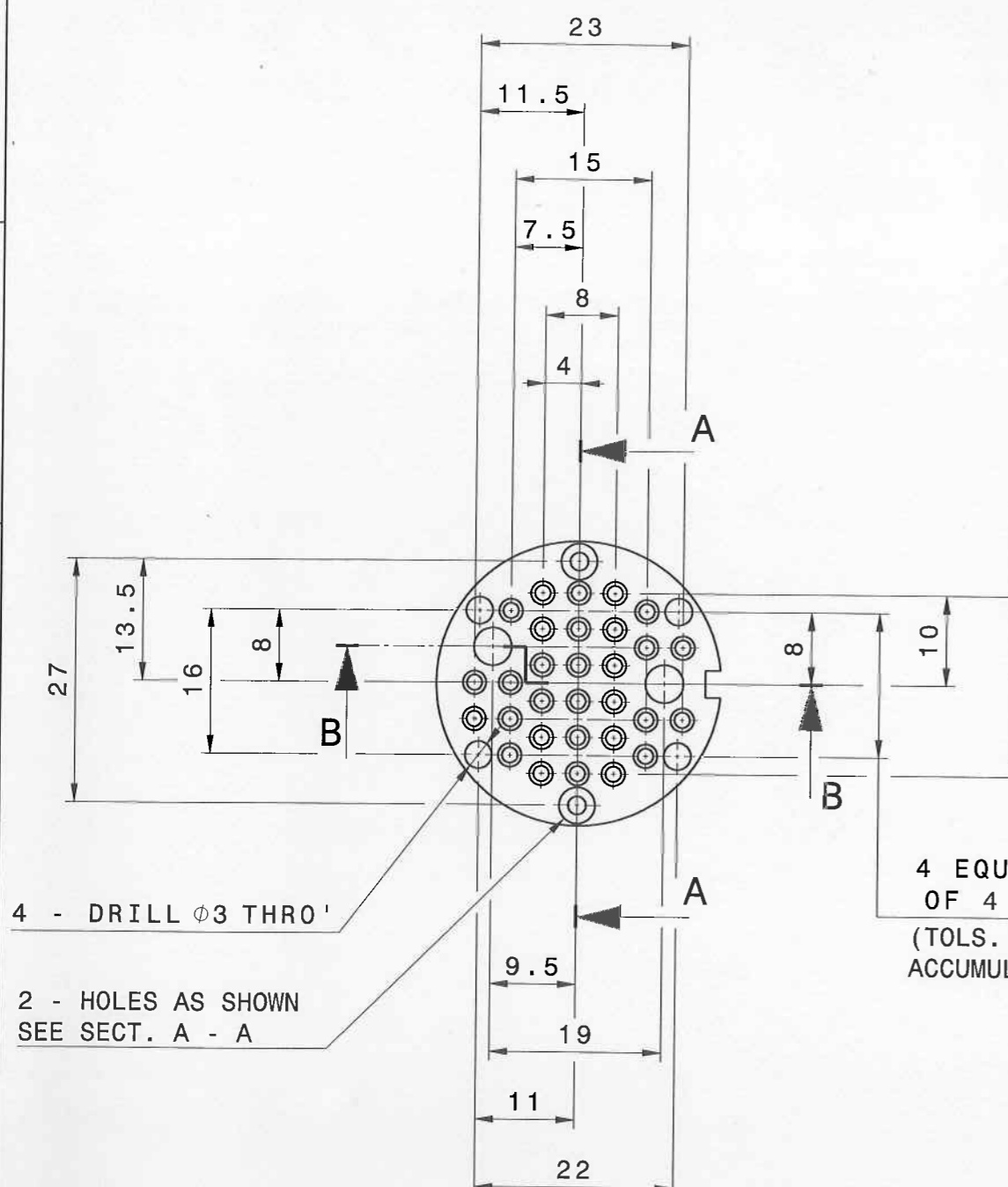
CAD DRAWN NOT TO BE MODIFIED BY HAND				MATERIAL AND SPECIFICATION				DIMENSIONS IN MILLIMETERS UNLESS STATED				TECHNICAL CLASSIFICATIONS (FOR INTERNAL USE ONLY)				DRAWN BY P.R.JONES		SUBJECT TO WORK PROCEDURE			
				SEE ITEMS LIST				GENERAL TOLERANCING IS TO 2768-1 & -2				R/H RAD. VAC. TRIT.				CHECKED BY S.BAILEY		WELD ENG.			
				SURFACE TEXTURE UNLESS STATED				PERMISSIBLE DEVIATIONS FOR LINEAR DIMS.				QUALITY CLASS				APPROVED BY S.ALLAN					
				SURFACE TREATMENT CLEAN				PERMISSIBLE DEVIATIONS FOR ANGULAR DIMS				THIS DRAWING IS THE PROPERTY OF CCFE AND MAY NOT WITHOUT THE PRIOR CONSENT OF CCFE BE COPIED IN WHOLE OR IN PART OR USED FOR ANY PURPOSE OTHER THAN THAT FOR WHICH IT IS SUPPLIED				TITLE MALE CONNECTOR ASSY					
ISSUE DATE MODIFICATIONS/COMMENTS				DRN.BY CHKD. APPD. REF				D.O. REF				ORIGINAL SCALE				FIRST ISSUE DATE		DRG No M11501205		CURRENT ISSUE B	
WEIGHT 0.02kg				REMOVE ALL BURRS AND SHARP EDGES				SEE SMARTTEAM				50				1:1		010310		SHEET No 01 01 SHEETS A2	



THIRD ANGLE PROJECTION - DO NOT SCALE - IF IN DOUBT ASK

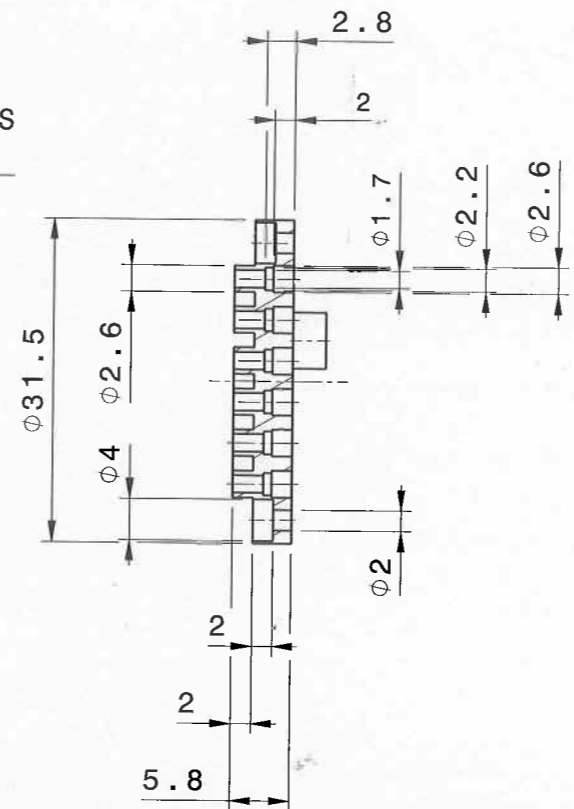


ISOMETRIC VIEW

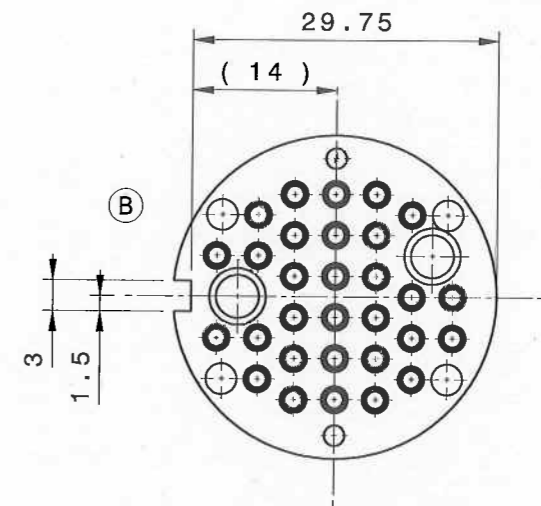


5 EQUAL PITCHES
OF 4 = 20
(TOLS. NON-
ACCUMULATIVE)

4 EQUAL PITCHES
OF 4 = 16
(TOLS. NON-
ACCUMULATIVE)

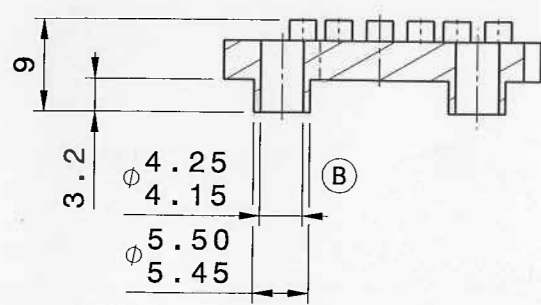


SECTION A - A



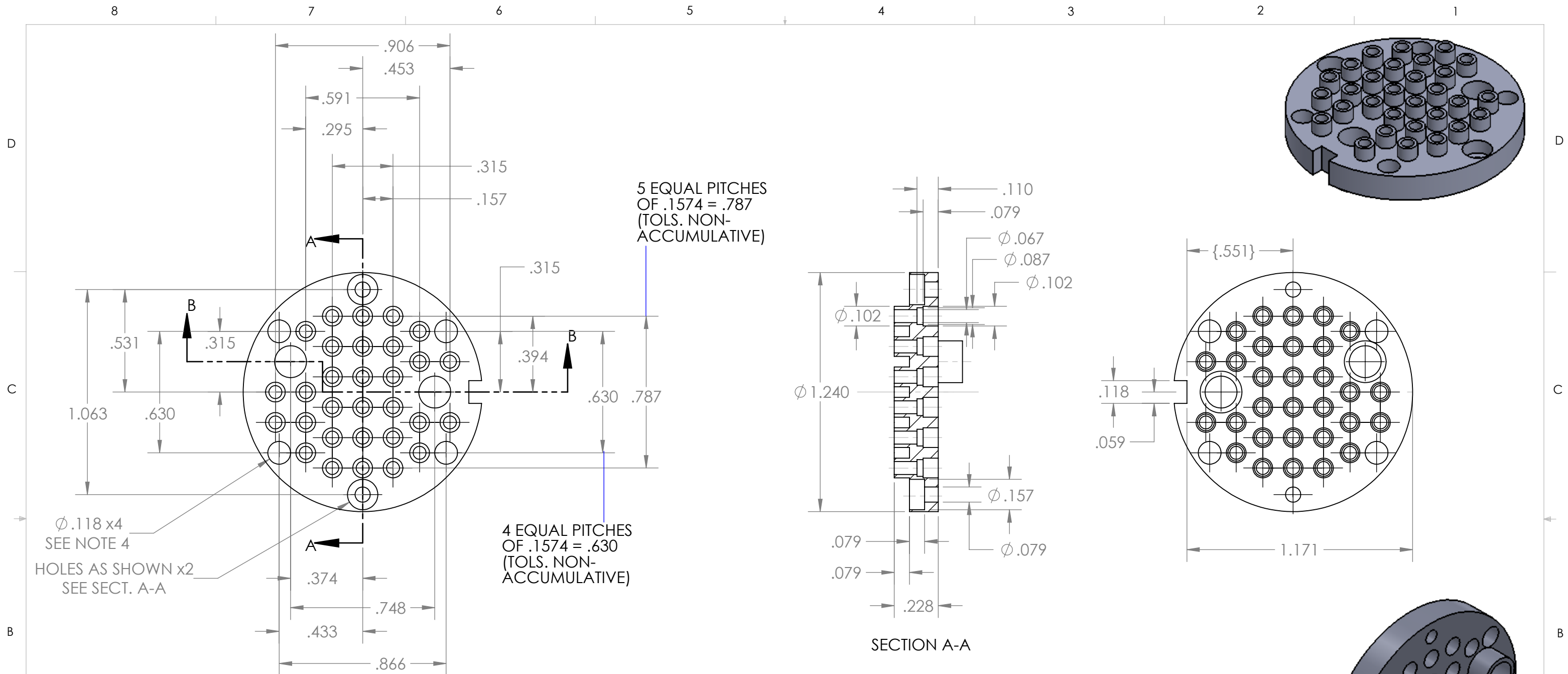
NOTES:-

1. ALL CUT OR MACHINED SHARP EDGES TO BE DE-BURRED.
2. DIMENSIONS IN BRACKETS ARE FOR REFERENCE ONLY.



SECTION B - B

CAD DRAWN NOT TO BE MODIFIED BY HAND				MATERIAL AND SPECIFICATION				DIMENSIONS IN MILLIMETERS UNLESS STATED				TECHNICAL CLASSIFICATIONS (FOR INTERNAL USE ONLY)				DRAWN BY		P. R. JONES		SUBJECT TO WORK PROCEDURE			
				PEEK 1000				GENERAL TOLERANCING IS TO 2768-1 & -2				R/H				CHECKED BY		S. BAILEY		WELD ENG.			
				SURFACE TEXTURE UNLESS STATED				PERMISSIBLE DEVIATIONS FOR LINEAR DIMS.				R/H				APPROVED BY		S. ALLAN					
				N7				PERMISSIBLE DEVIATIONS FOR ANGULAR DIMS				QUALITY CLASS				United Kingdom Atomic Energy Authority		CCFE		CULHAM CENTRE FOR FUSION ENERGY			
				SURFACE TREATMENT				PERMISSIBLE DEVIATIONS FOR RANGES OF LENGTHS OF THE SHORTER SIDE OF THE ANGLE CONCERNED				THIS DRAWING IS THE PROPERTY OF CCFE AND MAY NOT WITHOUT THE PRIOR CONSENT OF CCFE BE COPIED IN WHOLE OR IN PART OR USED FOR ANY PURPOSE OTHER THAN THAT FOR WHICH IT IS SUPPLIED				TITLE		PIN HOUSING					
				CLEAN												DRG No		M 11501201		CURRENT ISSUE			
				USED ON/REF DRAWING												SHEET No		01 OF 01 SHEETS		A2			
B 210411				NOTCH & DIMS: 1.5, 3, (14) & 29.75 ADDED. HOLES DIA. 4.15/4.25 WERE 3.8/3.85				D.O. REF				ORIGINAL SCALE				FIRST ISSUE DATE							
ISSUE DATE				MODIFICATIONS/COMMENTS				50				2:1				010310							
WEIGHT				0.00kg				SEE SMARTTEAM															
				REMOVE ALL BURRS AND SHARP EDGES																			



- NOTES:
1. ALL CUT OR MACHINE SHARP EDGES TO BE DE-BURRED.
 2. TOLERANCES +/- .008in (+/- .02mm) UNLESS OTHERWISE STATED.
 3. DIMENSIONS IN BRACKETS ARE FOR REFERENCE ONLY.
 4. THRU HOLE FOR M3 MACHINE SCREW.

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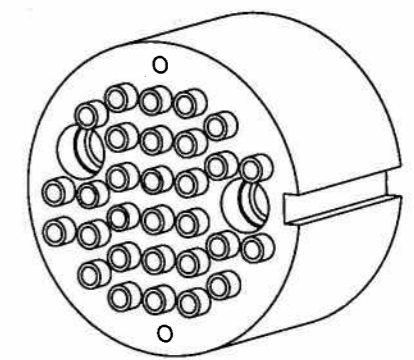
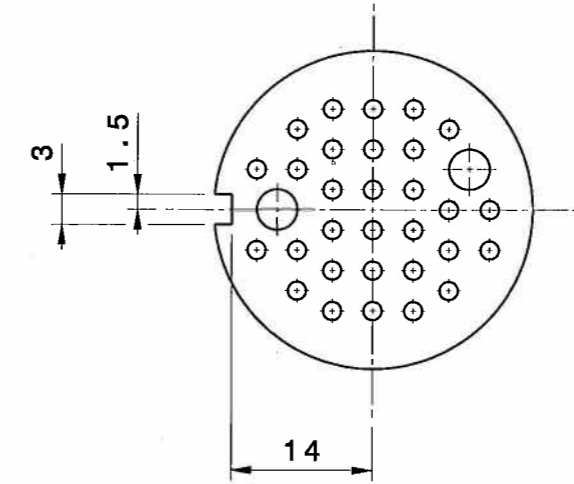
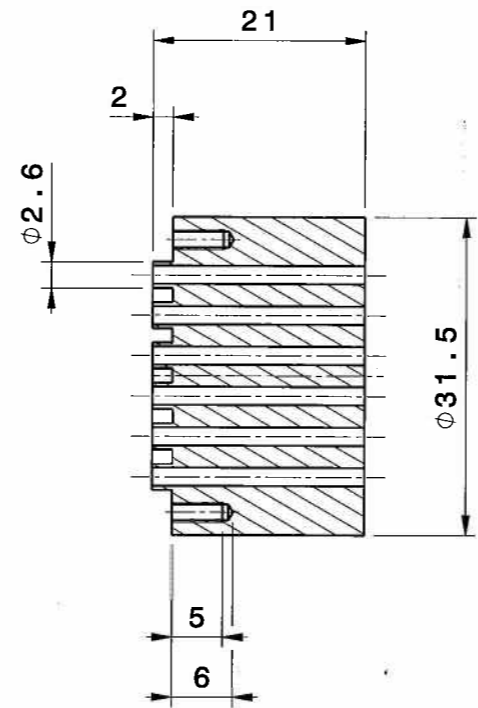
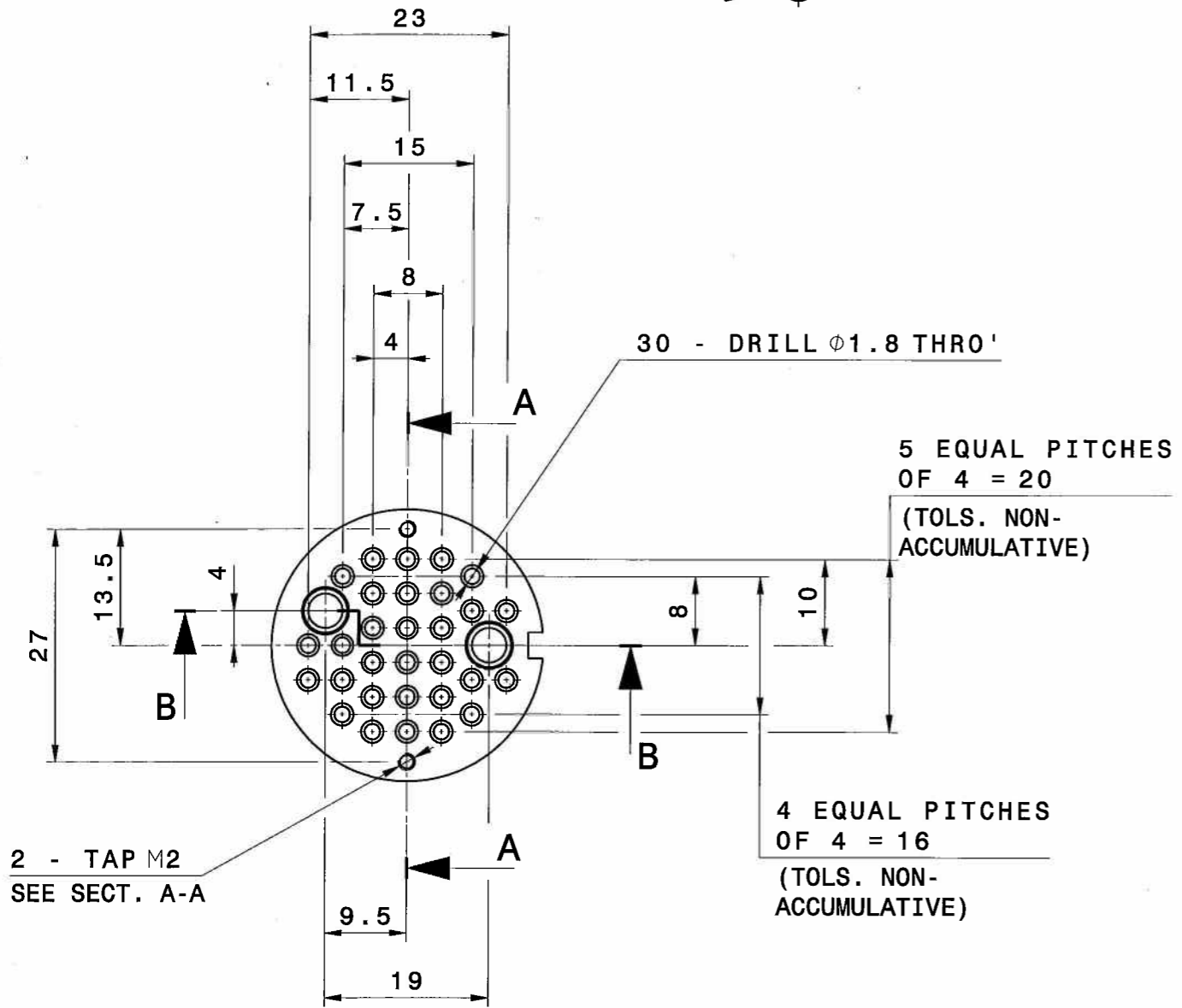
TOLERANCES LINEAR DIMENSIONS					
OVER 0.5 TO 3	OVER 3 TO 6	OVER 6 TO 30	OVER 30 TO 120	OVER 120 TO 400	OVER 400 TO 1000
+/- 0.1	+/- 0.1	+/- 0.2	+/- 0.3	+/- 0.5	+/- 0.8
TOLERANCES ANGULAR DIMENSIONS					
10 OR LESS	OVER 10 TO 50	OVER 50 TO 120	OVER 120 TO 400	OVER 400	
+/- 1°	+/- 0°30'	+/- 0°20'	+/- 0°10'	+/- 0°5'	

PROPRIETARY AND CONFIDENTIAL
REFER TO UNITED KINGDOM ATOMIC ENERGY AUTHORITY CULHAM CENTRE FOR FUSION ENERGY DWG M11501201 ISSUE B. DWG PROPERTIES USED TO COMPLY WITH MAST RECIPROCATING PROBE INSTALLATION OF PROTON DETECTOR.

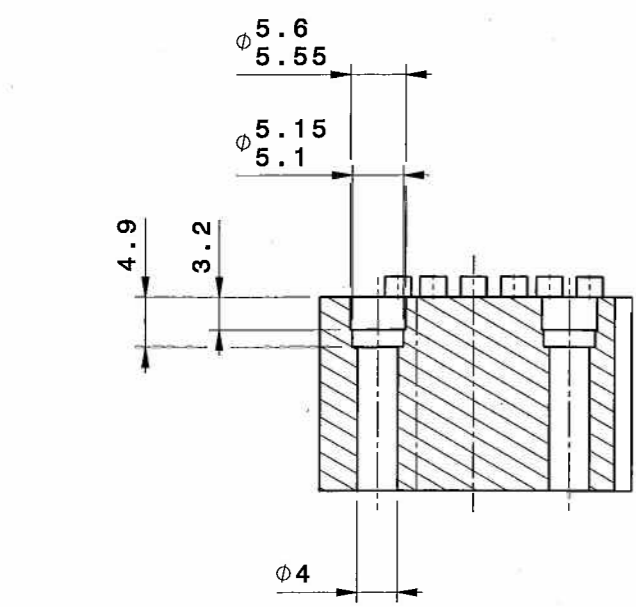
FIU FLORIDA INTERNATIONAL UNIVERSITY	
MATERIAL	PEEK 1000
NAME	DATE
DRAWN	RAMONA V PEREZ 06/23/13
CHECKED	RAMONA V PEREZ 06/23/13
UNLESS OTHERWISE STATED DIMENSIONS ARE IN INCHES	REMOVE ALL BURRS AND SHARP EDGES

TITLE: PIN HOUSING INCHES		
SIZE B	DWG. NO. PD_22_M11501201_inches	REV
SCALE: 2:1	0.00kg	SHEET 1 OF 1

THIRD ANGLE PROJECTION - DO NOT SCALE - IF IN DOUBT ASK



ISOMETRIC VIEW

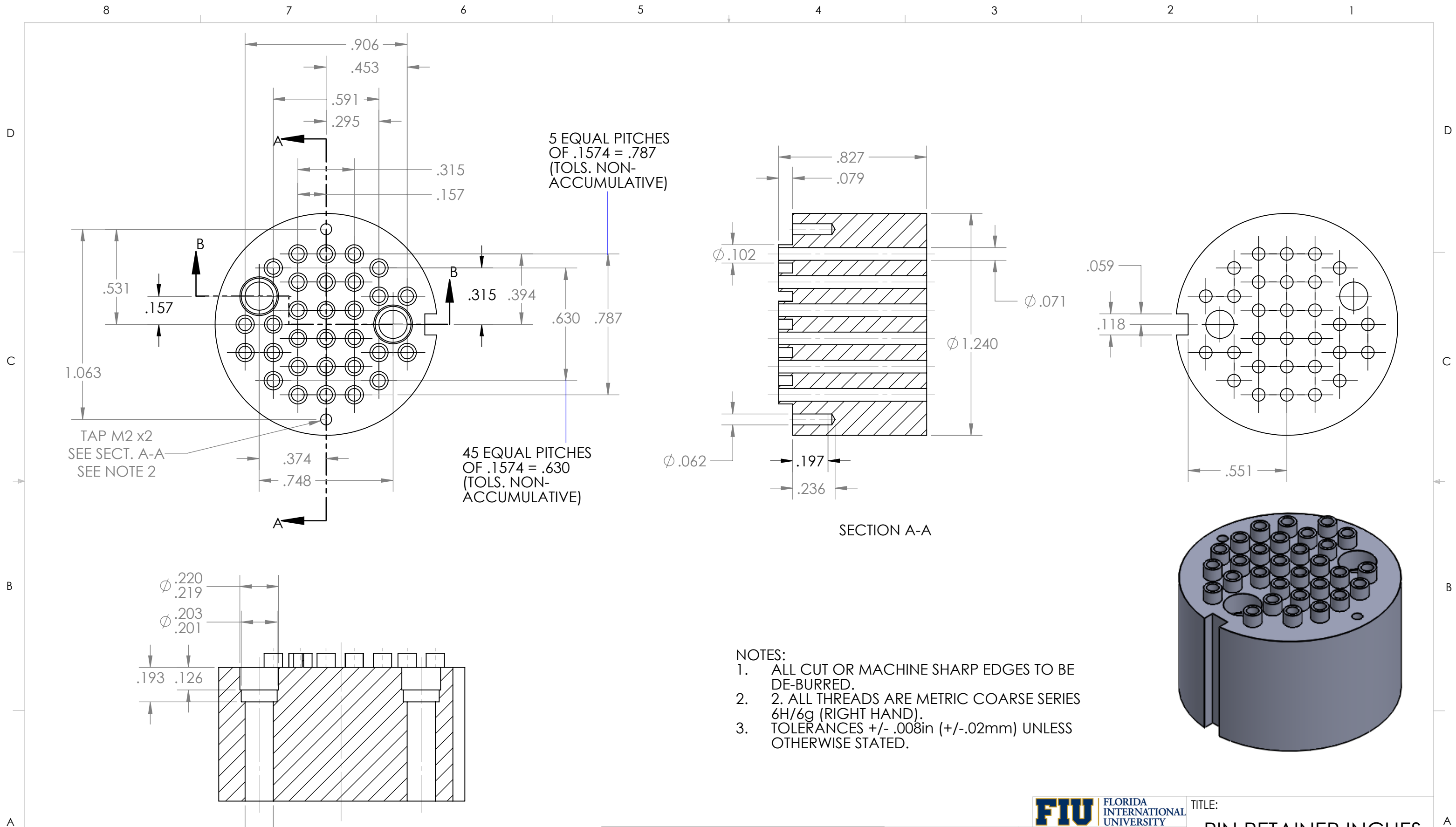


SECTION B - B

SECTION A - A NOTES:-

1. ALL CUT OR MACHINED SHARP EDGES TO BE DE-BURRED.
2. ALL THREADS ARE METRIC COARSE SERIES 6H/6g (RIGHT HAND)

CAD DRAWN NOT TO BE MODIFIED BY HAND				MATERIAL AND SPECIFICATION				DIMENSIONS IN MILLIMETERS UNLESS STATED				TECHNICAL CLASSIFICATIONS (FOR INTERNAL USE ONLY)				DRAWN BY P. R. JONES		SUBJECT TO WORK PROCEDURE	
				PEEK 1000				GENERAL TOLERANCING IS TO 2768-1 & -2				R/H RAD. VAC. TRIT.				CHECKED BY S. BAILEY		WELD ENG.	
				SURFACE TEXTURE UNLESS STATED				PERMISSIBLE DEVIATIONS FOR LINEAR DIMS.				QUALITY CLASS				APPROVED BY S. ALLAN			
				N7				PERMISSIBLE DEVIATIONS FOR ANGULAR DIMS PERMISSIBLE DEVIATIONS FOR RANGES OF LENGTHS OF THE SHORTER SIDE OF THE ANGLE CONCERNED				THIS DRAWING IS THE PROPERTY OF CCFE AND MAY NOT WITHOUT THE PRIOR CONSENT OF CCFE BE COPIED IN WHOLE OR IN PART OR USED FOR ANY PURPOSE OTHER THAN THAT FOR WHICH IT IS SUPPLIED				TITLE		CCFE	
				SURFACE TREATMENT CLEAN				UP TO 3 OVER 3 UP TO 6 OVER 6 UP TO 30 OVER 30 UP TO 120 OVER 120 UP TO 400 OVER 400								United Kingdom Atomic Energy Authority		CULHAM CENTRE FOR FUSION ENERGY	
				USED ON/REF DRAWING				UP TO 10 OVER 10 UP TO 50 OVER 50 UP TO 120 OVER 120 UP TO 400 OVER 400								DRG No M11501202		CURRENT ISSUE A	
ISSUE DATE MODIFICATIONS/COMMENTS DRN BY CHKD. APPD. REF				WEIGHT 0.02kg REMOVE ALL BURRS AND SHARP EDGES				SEE SMARTTEAM 1206				D.O. REF 50 ORIGINAL SCALE 2:1 FIRST ISSUE DATE 010310				SHEET No 01 OF 01 SHEETS A2			



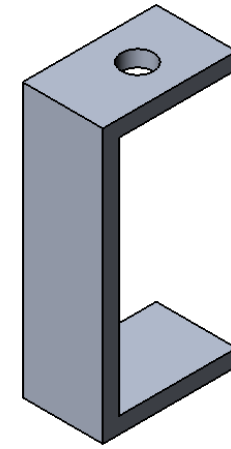
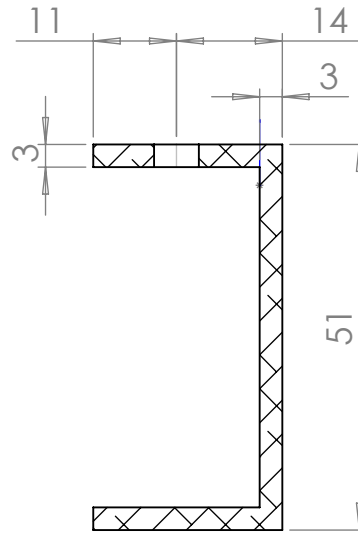
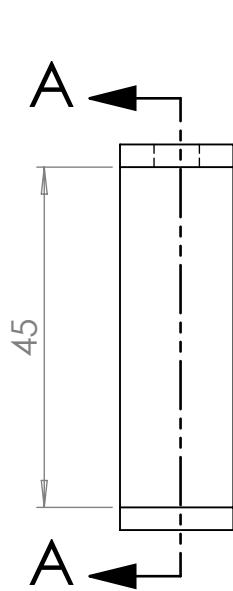
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TOLERANCES LINEAR DIMENSIONS					
OVER 0.5 TO 3	OVER 3 TO 6	OVER 6 TO 30	OVER 30 TO 120	OVER 120 TO 400	OVER 400 TO 1000
+/- 0.1	+/- 0.1	+/- 0.2	+/- 0.3	+/- 0.5	+/- 0.8
TOLERANCES ANGULAR DIMENSIONS					
10 OR LESS	OVER 10 TO 50	OVER 50 TO 120	OVER 120 TO 400	OVER 400	
+/- 1°	+/- 0°30'	+/- 0°20'	+/- 0°10'	+/- 0°5'	

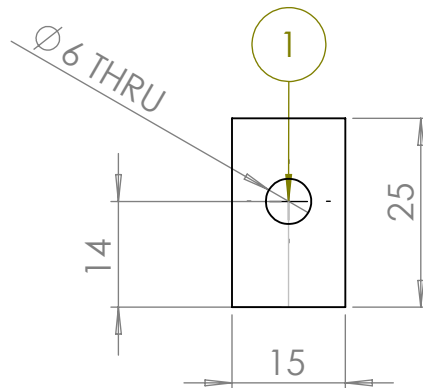
PROPRIETARY AND CONFIDENTIAL
REFER TO UNITED KINGDOM ATOMIC ENERGY AUTHORITY CULHAM CENTRE FOR FUSION ENERGY DWG M11501202 ISSUE A. DWG PROPERTIES USED TO COMPLY WITH MAST RECIPROCATING PROBE INSTALLATION OF PROTON DETECTOR.

FIU FLORIDA INTERNATIONAL UNIVERSITY	
MATERIAL	PEEK 1000
NAME	DATE
DRAWN	RAMONA V PEREZ 06/23/13
CHECKED	RAMONA V PEREZ 06/23/13
UNLESS OTHERWISE STATED DIMENSIONS ARE IN INCHES	REMOVE ALL BURRS AND SHARP EDGES

TITLE: PIN RETAINER INCHES		
SIZE B	DWG. NO. PD_22_M11501202_inches	REV
SCALE: 2:1	0.02kg	SHEET 1 OF 1



SECTION A-A



NOTES:

1. M6X1 THREAD.
2. REQUEST QUANTITY 3.
3. ALL MACHINING TOLERANCES TO +/- 0.5mm EXCEPT WHERE SHOWN OTHERWISE.

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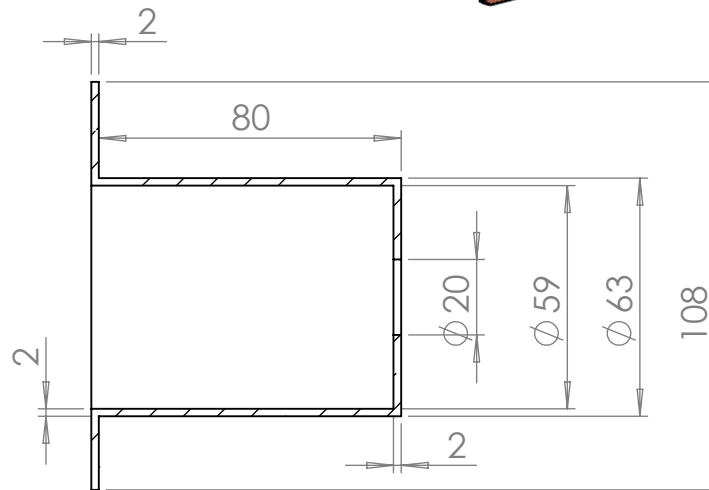
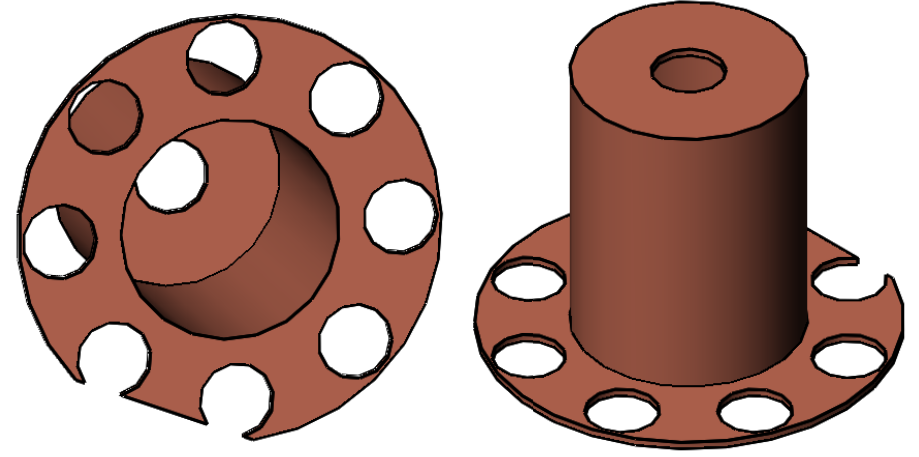
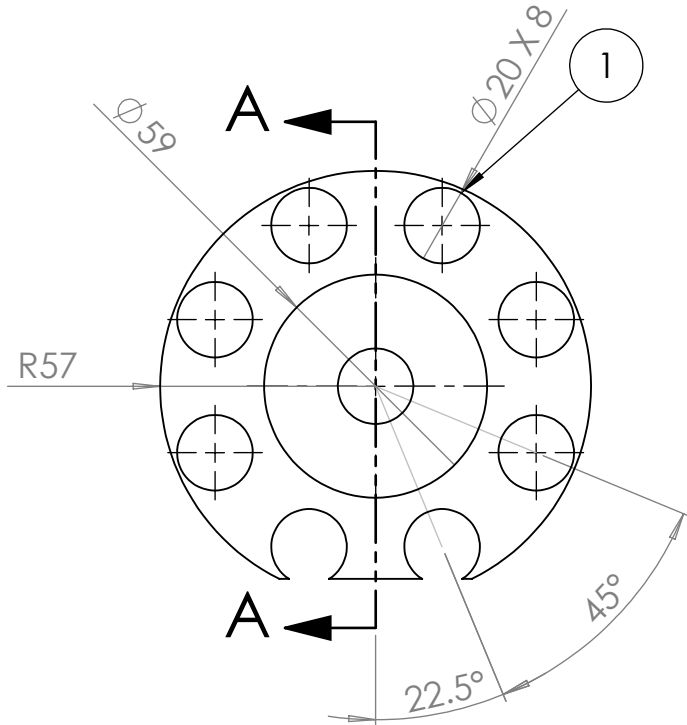
DO NOT SCALE DRAWING

MATERIAL	ALUMINUM	
	NAME	DATE
DRAWN	DOUGLASS DARROW	08/13/13
CHECKED	DOUGLASS DARROW	08/13/13
DRAWN	RAMONA V PEREZ	09/03/14
UNLESS OTHERWISE STATED DIMENSIONS ARE IN MM	REMOVE ALL BURRS AND SHARP EDGES	

TITLE: PD Clamp for RP RF Screen Cap Barrel		
SIZE A	DWG. NO. PD22_clamp_screen_cap	REV 2
SCALE: 1:1	WEIGHT: .011kg	SHEET 1 OF 1

NOTES:

1. HOLE CENTERS LIE ALONG 92MM DIAMETER CIRCLE (FROM BARREL CENTER).
2. ALL MACHINING TOLERANCES TO +/-0.5mm EXCEPT WHERE SHOWN OTHERWISE.



SECTION A-A

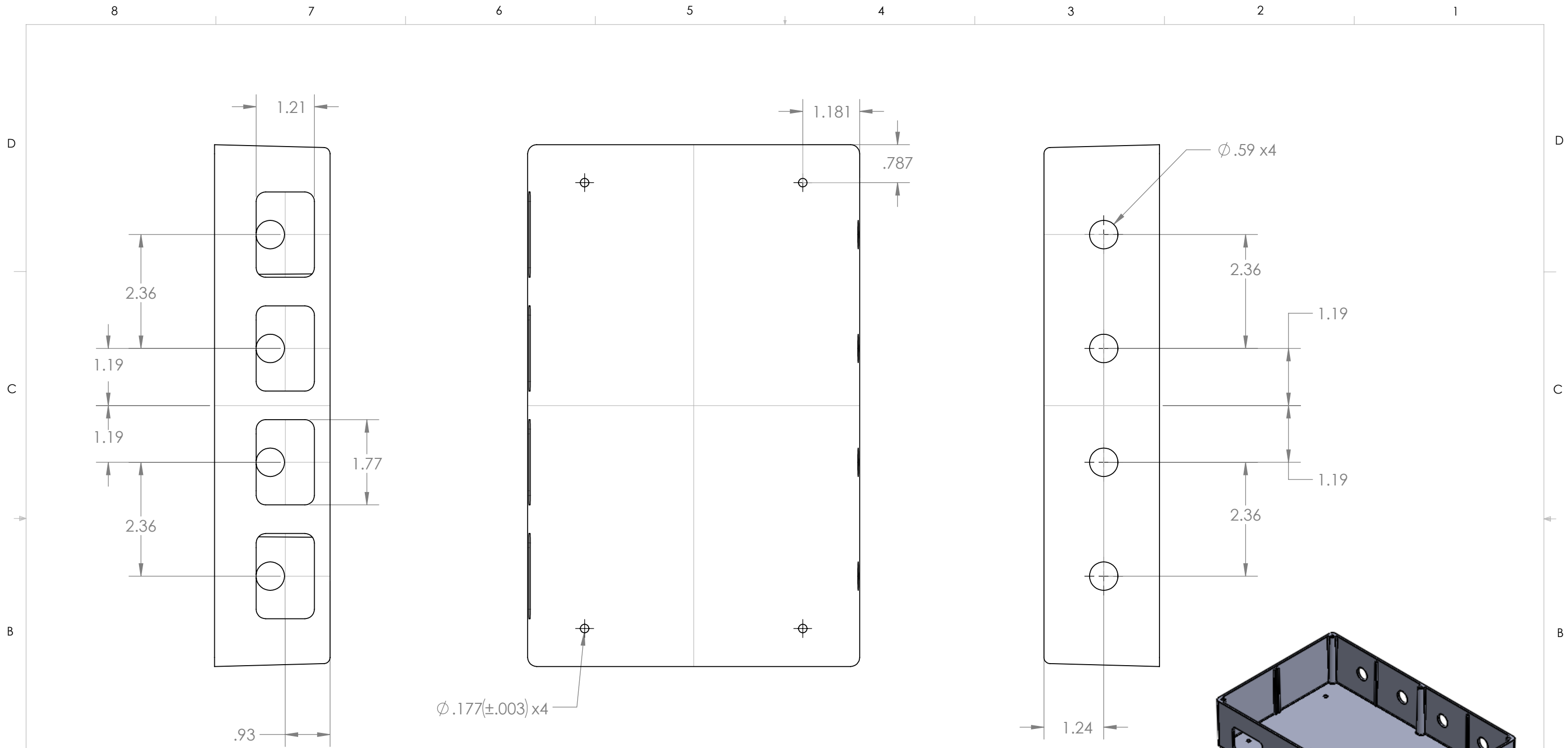
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MATERIAL		COPPER/ BRASS	
	NAME	DATE	
DRAWN	DOUGLASS DARROW	08/13/13	
CHECKED	DOUGLASS DARROW	08/13/13	
DRAWN	RAMONA V PEREZ	09/03/14	
UNLESS OTHERWISE STATED DIMENSIONS ARE IN MM		REMOVE ALL BURRS AND SHARP EDGES	

TITLE:			
RP RF Screen Cap Barrel			
SIZE	DWG. NO.	REV	
A	PD22_RP_RF_screen_cap_barrel	2	
SCALE: 1:2	WEIGHT: 0.4kg	SHEET 1 OF 1	



NOTES:
 1. TOLERANCES +/- .01 INCHES UNLESS OTHERWISE STATED.

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TOLERANCES LINEAR DIMENSIONS					
OVER 0.5 TO 3	OVER 3 TO 6	OVER 6 TO 30	OVER 30 TO 120	OVER 120 TO 400	OVER 400 TO 1000
+/- 0.1	+/- 0.1	+/- 0.2	+/- 0.3	+/- 0.5	+/- 0.8
TOLERANCES ANGULAR DIMENSIONS					
10 OR LESS	OVER 10 TO 50	OVER 50 TO 120	OVER 120 TO 400	OVER 400	
1/- 1'	1/- 0'30"	1/- 0'20"	1/- 0'10"	1/- 0'5"	

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FIU FLORIDA INTERNATIONAL UNIVERSITY	
MATERIAL	ALUMINUM
NAME	DATE
DRAWN	RAMONA V PEREZ 07/08/13
CHECKED	RAMONA V PEREZ 07/09/13
UNLESS OTHERWISE STATED DIMENSIONS ARE IN INCHES	REMOVE ALL BURRS AND SHARP EDGES

TITLE: PROTON DETECTOR AL BOX ALTERATION		
SIZE B	DWG. NO. Linkboard_box_new	REV
SCALE: 1:2	WEIGHT:	SHEET 1 OF 1