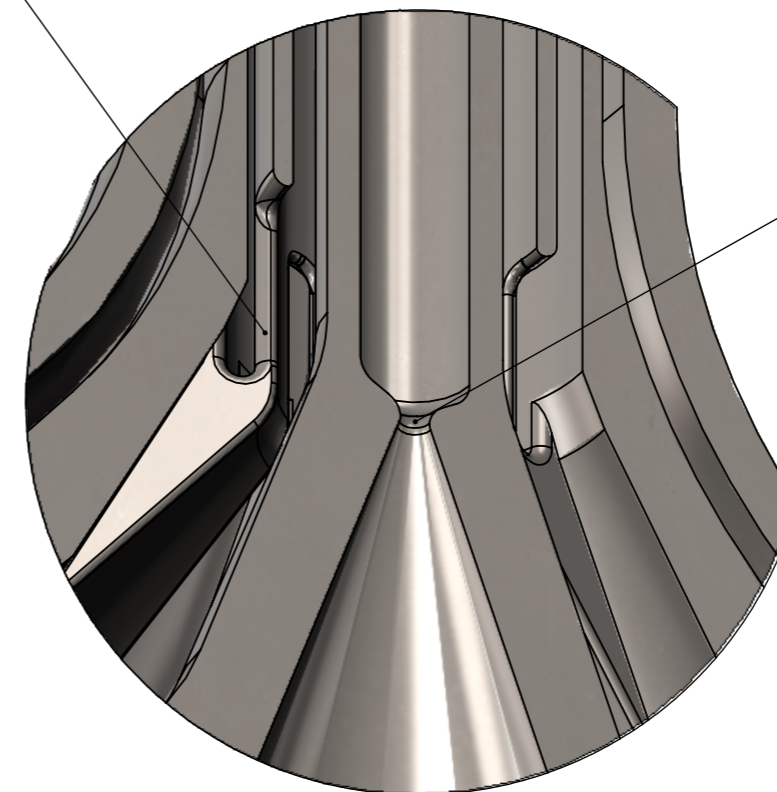
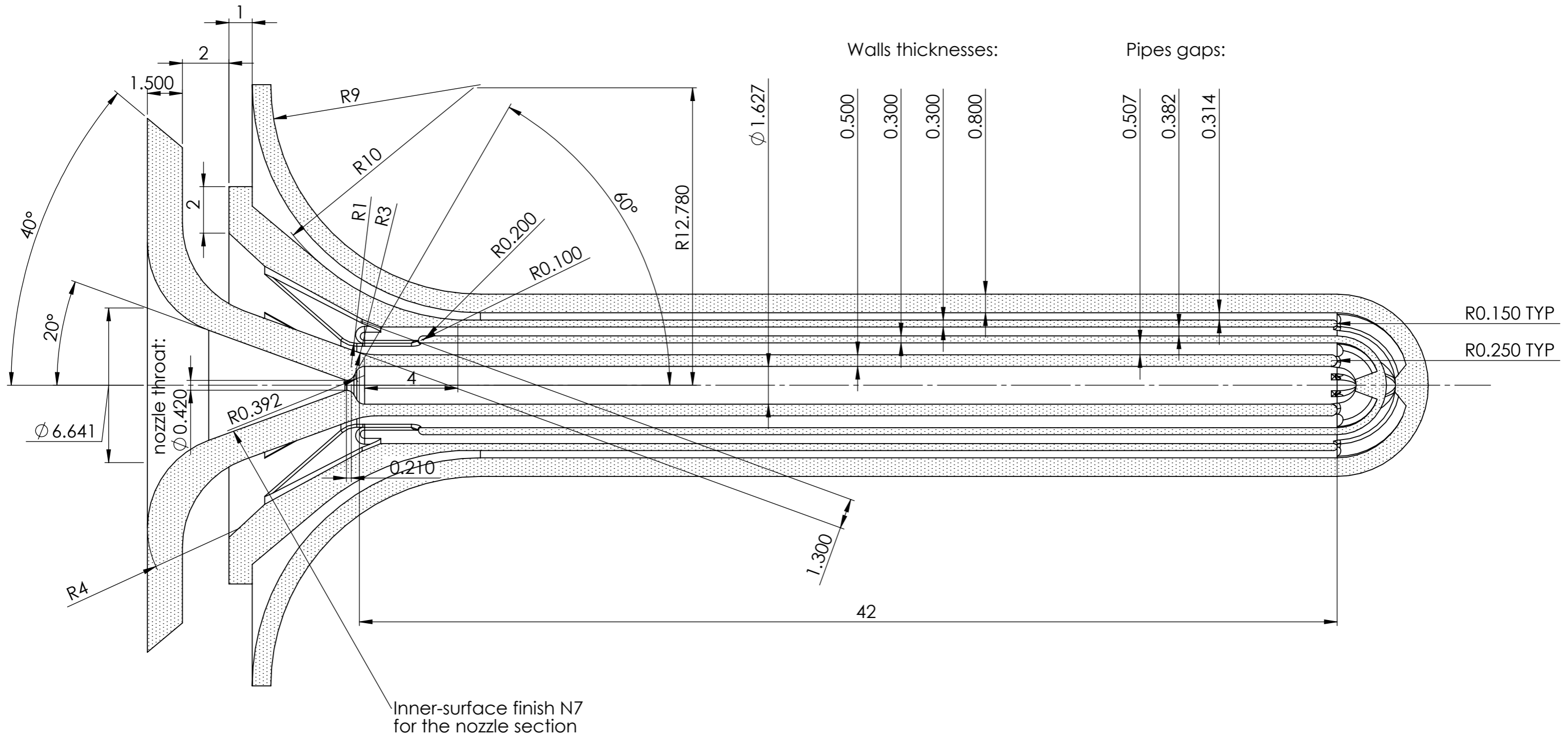


DETAIL B
SCALE 10 : 1

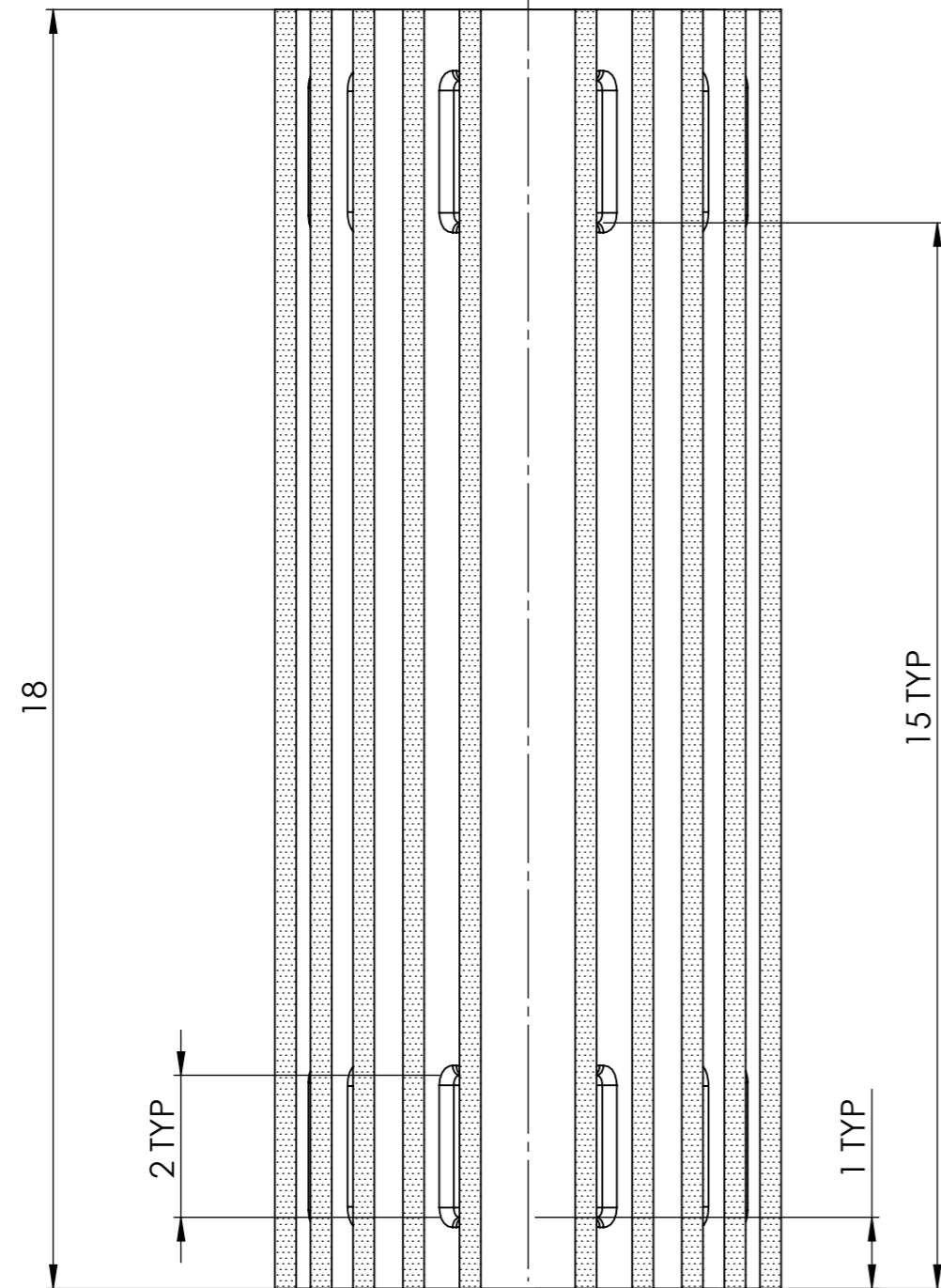
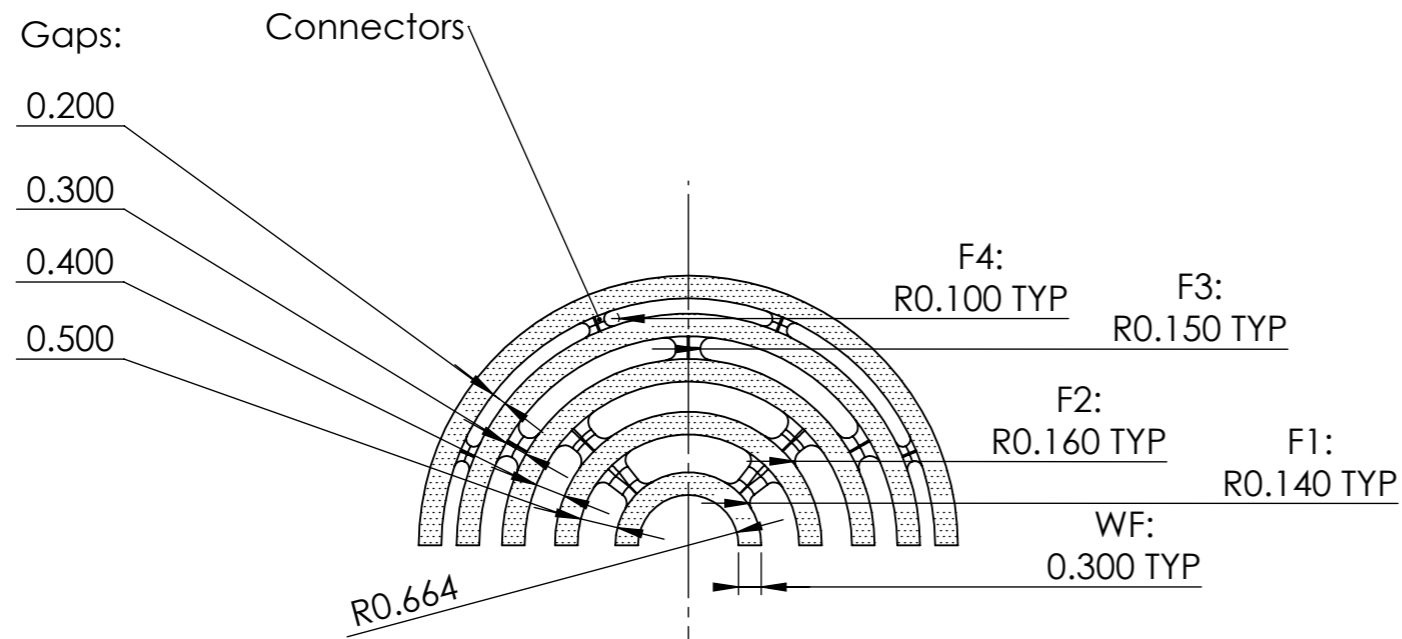


DETAIL A
SCALE 10 : 1

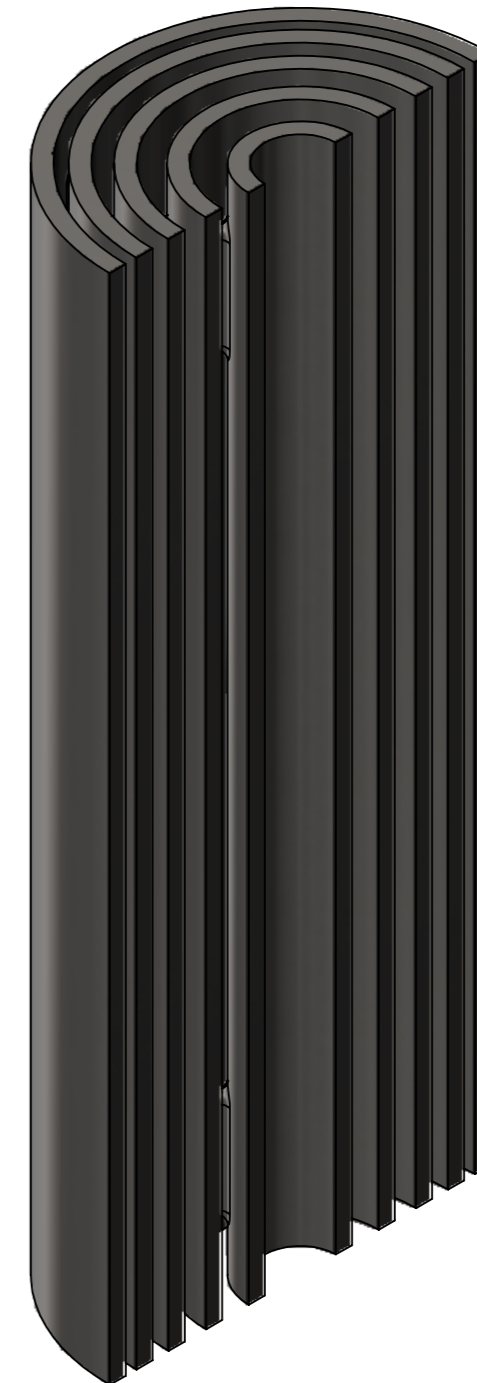
DO NOT SCALE		DRAWN AND DESIGNED BY F Romei		TOLERANCES UNLESS OTHERWISE STATED		UNIVERSITY OF Southampton Faculty of Engineering and the Environment				
A3		APPROVED BY GT Roberts		LINEAR X = +/- 0.20 XX = +/- 0.10 XXX = +/- 0.05 ANGULAR +/- 0.50						
EDMC JOB No 1	DEPARTMENT Astronautics	DATE 22/07/2015	SCALE 5:1	ALL DIMENSIONS IN mm UNLESS OTHERWISE STATED		TITLE full_heat_exchanger				
PROJECT VHTR	SUPERVISORS AN Grubisic GT Roberts	MATERIAL Stainless Steel	TEXTURE	SURFACE FINISH ✓ ALL OVER UNLESS OTHERWISE STATED		SHEET 1 of 2	No OFF	ASSEMBLY NUMBER	DRAWING NUMBER 1 of 7	REVISION 1
REMOVE ALL SHARP EDGES IF IN DOUBT PLEASE ASK		THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF THE UNIVERSITY OF SOUTHAMPTON DO NOT COPY WITHOUT WRITTEN PERMISSION.								



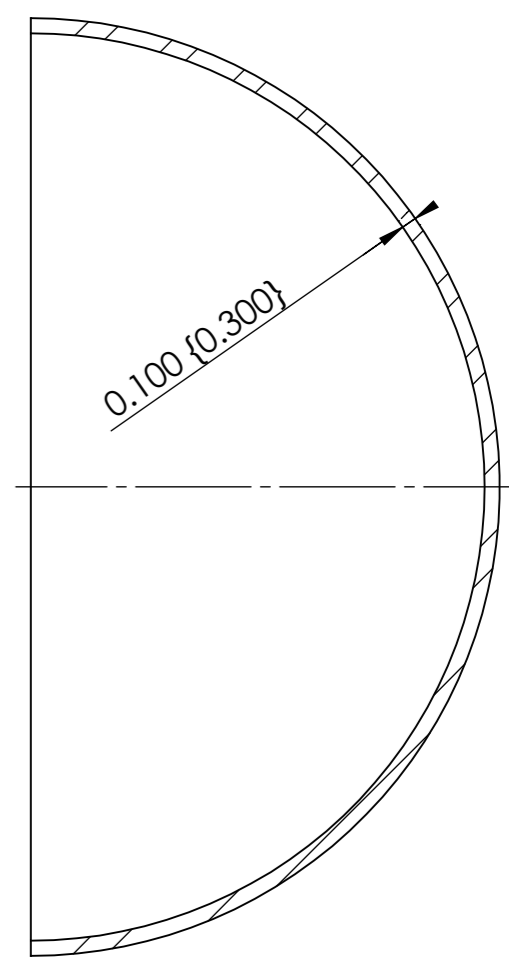
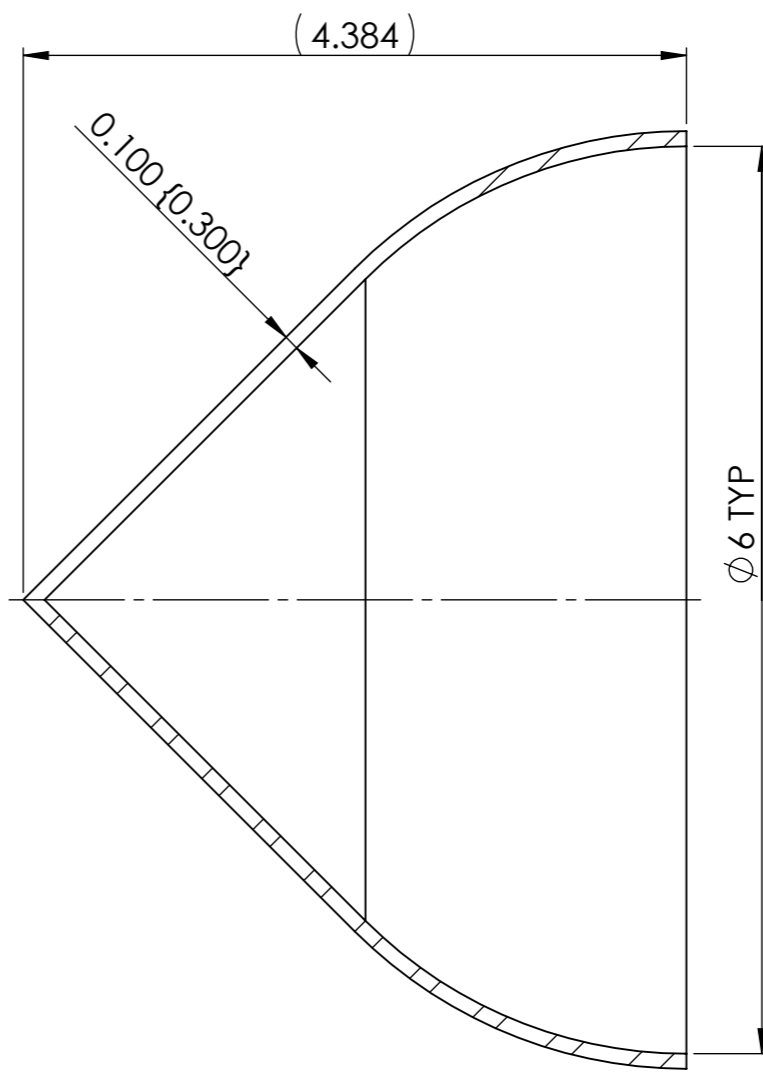
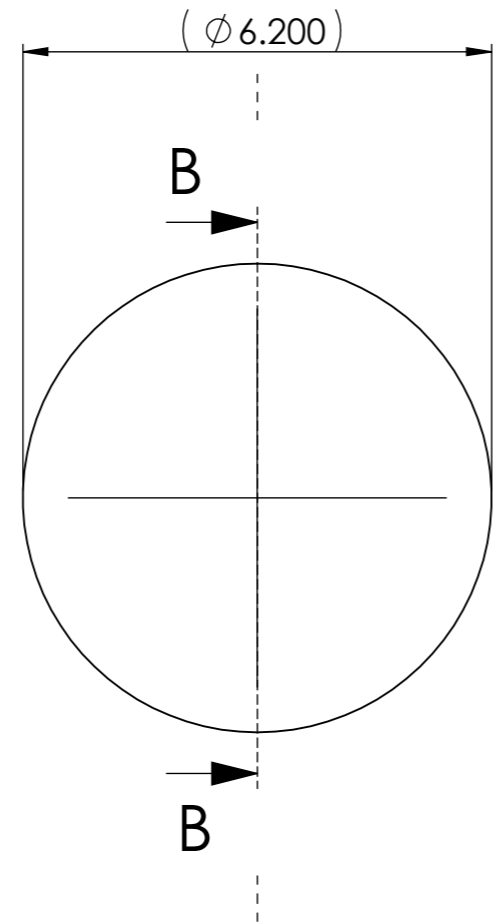
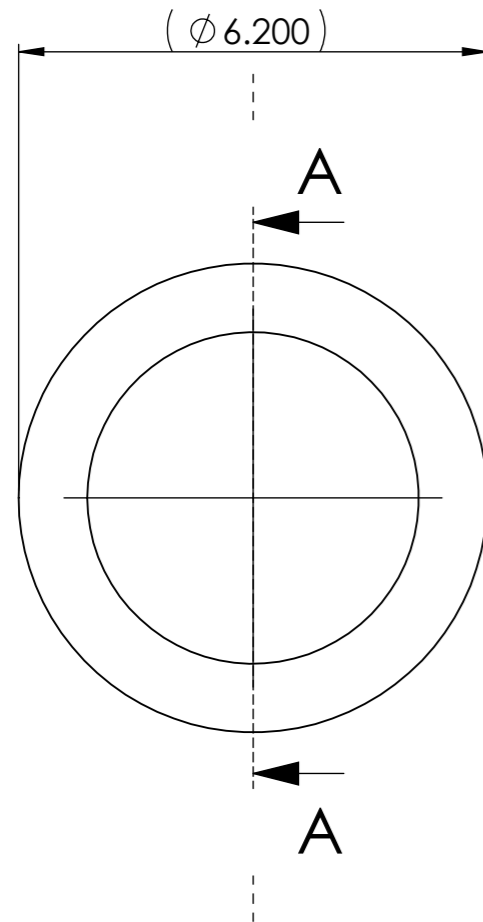
DO NOT SCALE		DRAWN AND DESIGNED BY F Romei		TOLERANCES UNLESS OTHERWISE STATED		UNIVERSITY OF Southampton Faculty of Engineering and the Environment				
A3		APPROVED BY GT Roberts		LINEAR X = +/- 0.20 XX = +/- 0.10 XXX = +/- 0.05 ANGULAR +/- 0.50						
EDMC JOB No 1	DEPARTMENT Astronautics	DATE 22/07/2015	SCALE 6:1	ALL DIMENSIONS IN mm UNLESS OTHERWISE STATED		TITLE full_heat_exchanger				
PROJECT VHTR	SUPERVISORS AN Grubisic GT Roberts	MATERIAL Stainless Steel	TEXTURE	SURFACE FINISH <input checked="" type="checkbox"/> ALL OVER UNLESS OTHERWISE STATED		SHEET 2 of 2	No OFF	ASSEMBLY NUMBER	DRAWING NUMBER 1 of 7	REVISION 1
REMOVE ALL SHARP EDGES IF IN DOUBT PLEASE ASK		THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF THE UNIVERSITY OF SOUTHAMPTON DO NOT COPY WITHOUT WRITTEN PERMISSION.								



file	WF	F1	F2	F3	F4
walls_and_connectors_300u	0.300	0.140	0.160	0.150	0.100
walls_and_connectors_200u	0.200	0.120	0.140	0.140	0.090
walls_and_connectors_100u	0.100	0.100	0.130	0.120	0.080
walls_and_connectors_80u	0.080	0.100	0.120	0.110	0.070
walls_and_connectors_50u	0.050	0.100	0.120	0.110	0.070

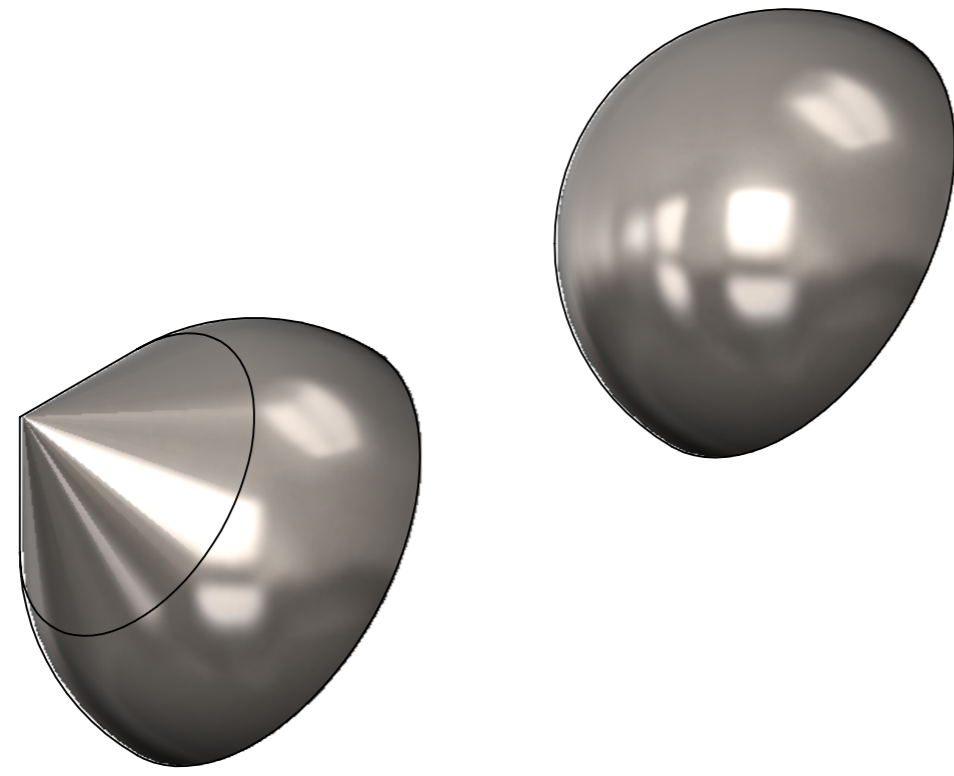


DO NOT SCALE		DRAWN AND DESIGNED BY F Romei		TOLERANCES UNLESS OTHERWISE STATED LINEAR X = +/- 0.20 XX = +/- 0.10 XXX = +/- 0.05 ANGULAR +/- 0.50		UNIVERSITY OF Southampton Faculty of Engineering and the Environment				
A3		APPROVED BY GT Roberts								
EDMC JOB No 1	DEPARTMENT Astronautics	DATE 22/07/2015	SCALE 10:1	ALL DIMENSIONS IN mm UNLESS OTHERWISE STATED		TITLE walls_and_connectors_300u				
PROJECT VHTR	SUPERVISORS AN Grubisic GT Roberts	MATERIAL Stainless Steel	TEXTURE	SURFACE FINISH <input checked="" type="checkbox"/> ALL OVER UNLESS OTHERWISE STATED		SHEET 1 of 1	No OFF	ASSEMBLY NUMBER	DRAWING NUMBER 2 of 7	REVISION 1
REMOVE ALL SHARP EDGES IF IN DOUBT PLEASE ASK		THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF THE UNIVERSITY OF SOUTHAMPTON DO NOT COPY WITHOUT WRITTEN PERMISSION.								



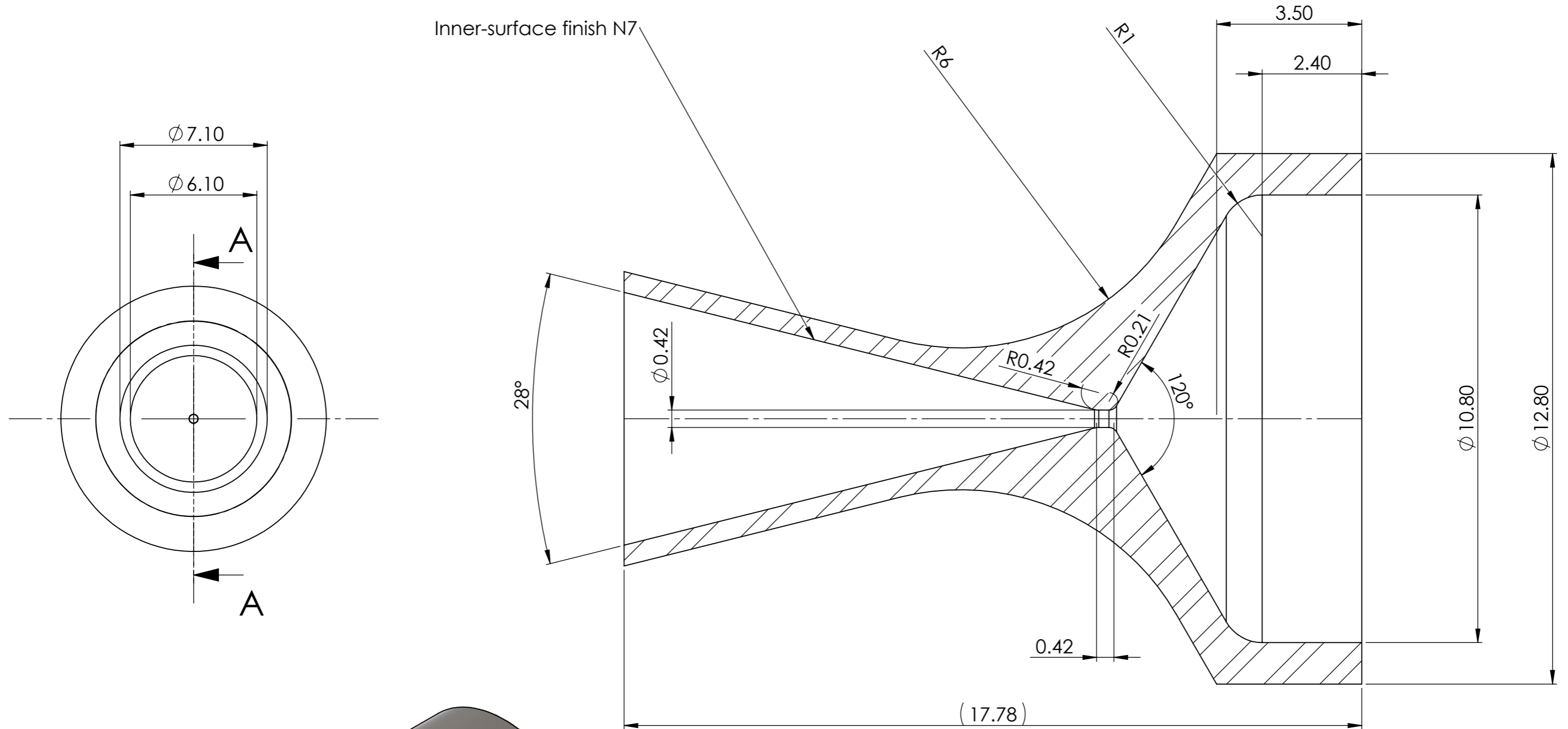
SECTION A-A
SCALE 20 : 1

SECTION B-B
SCALE 20 : 1

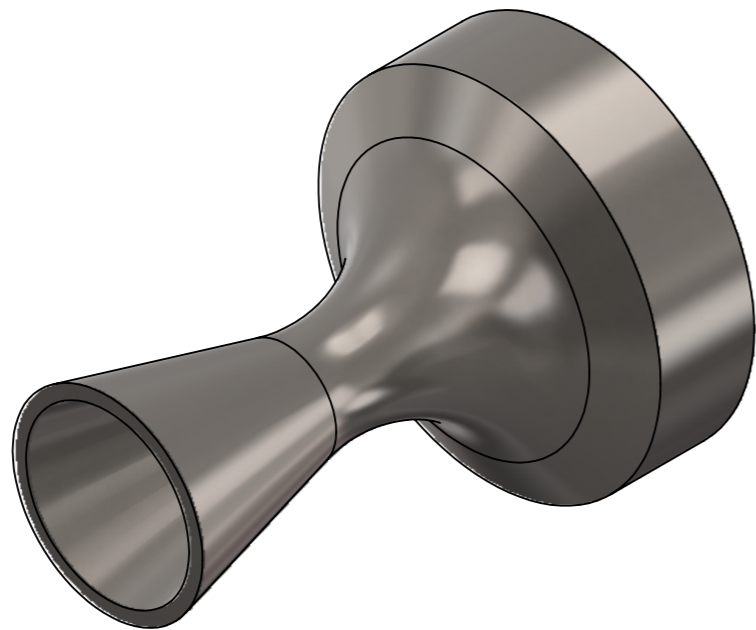


NOTE:
"elbow_300u.SLDprt" has same dimensions but a bigger wall thickness marked in curly brackets {.}

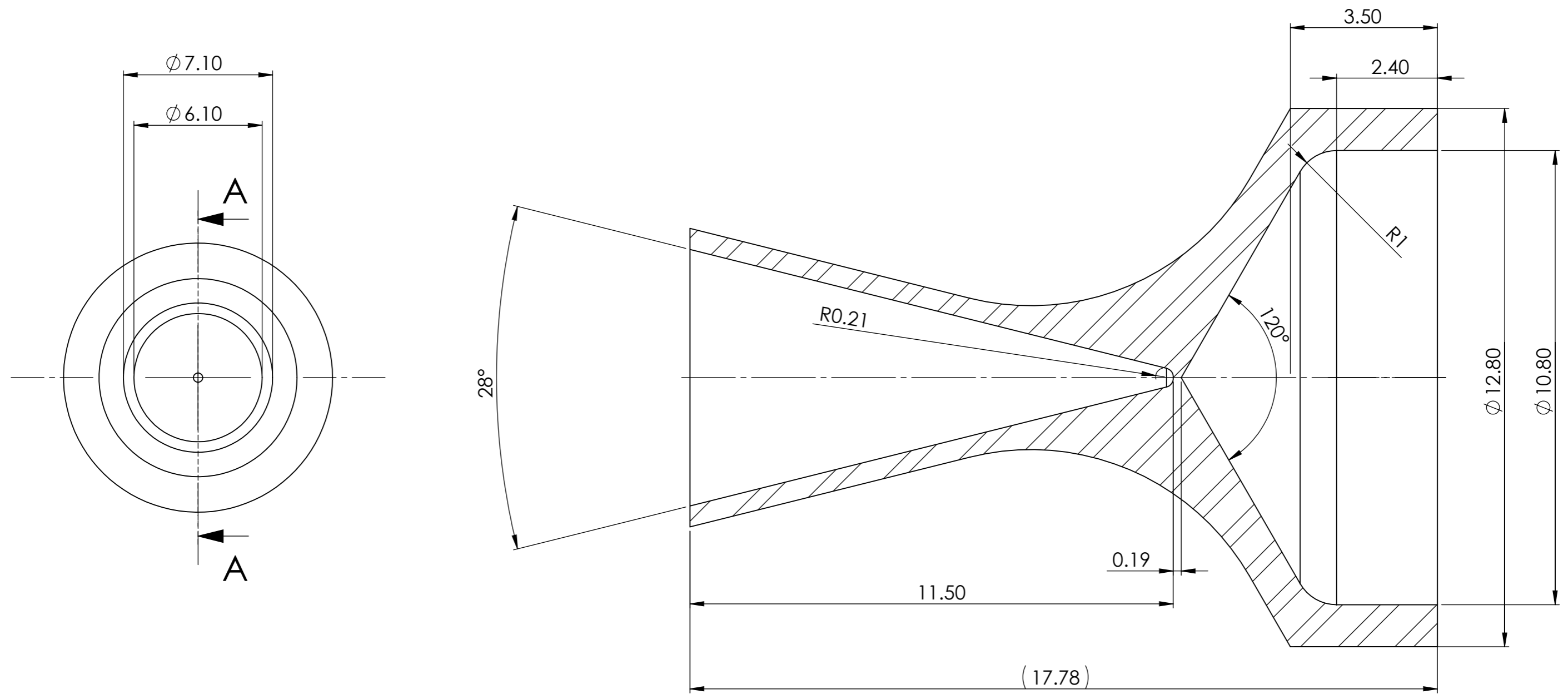
DO NOT SCALE		DRAWN AND DESIGNED BY F Romei		TOLERANCES UNLESS OTHERWISE STATED LINEAR X = +/- 0.20 XX = +/- 0.10 XXX = +/- 0.05 ANGULAR +/- 0.50		UNIVERSITY OF Southampton Faculty of Engineering and the Environment				
A3		APPROVED BY GT Roberts								
EDMC JOB No 1	DEPARTMENT Astronautics	DATE 22/07/2015	SCALE 10:1	ALL DIMENSIONS IN mm UNLESS OTHERWISE STATED		TITLE elbows_100u				
PROJECT VHTR	SUPERVISORS AN Grubisic GT Roberts	MATERIAL Stainless Steel	TEXTURE	SURFACE FINISH <input checked="" type="checkbox"/> ALL OVER UNLESS OTHERWISE STATED		SHEET 1 of 1	No OFF	ASSEMBLY NUMBER	DRAWING NUMBER 3 of 7	REVISION 1
REMOVE ALL SHARP EDGES IF IN DOUBT PLEASE ASK		THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF THE UNIVERSITY OF SOUTHAMPTON DO NOT COPY WITHOUT WRITTEN PERMISSION.								



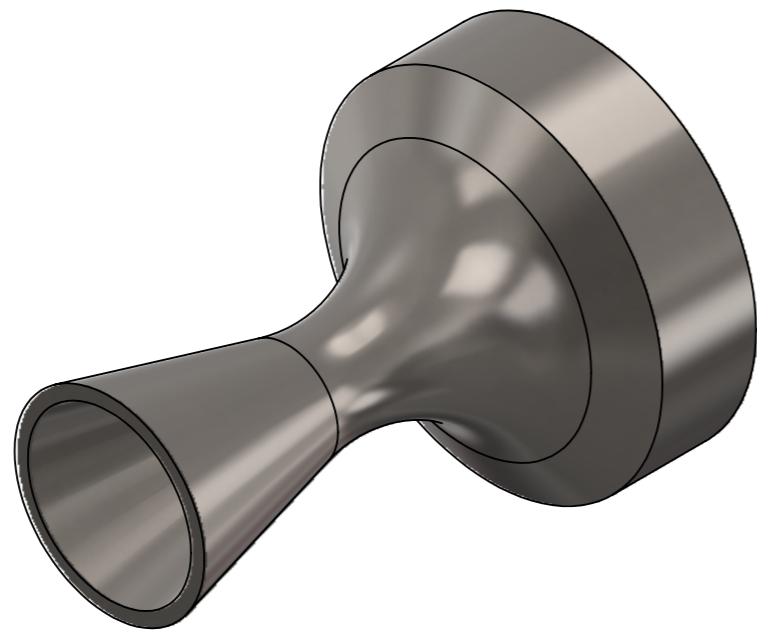
SECTION A-A
SCALE 10 : 1



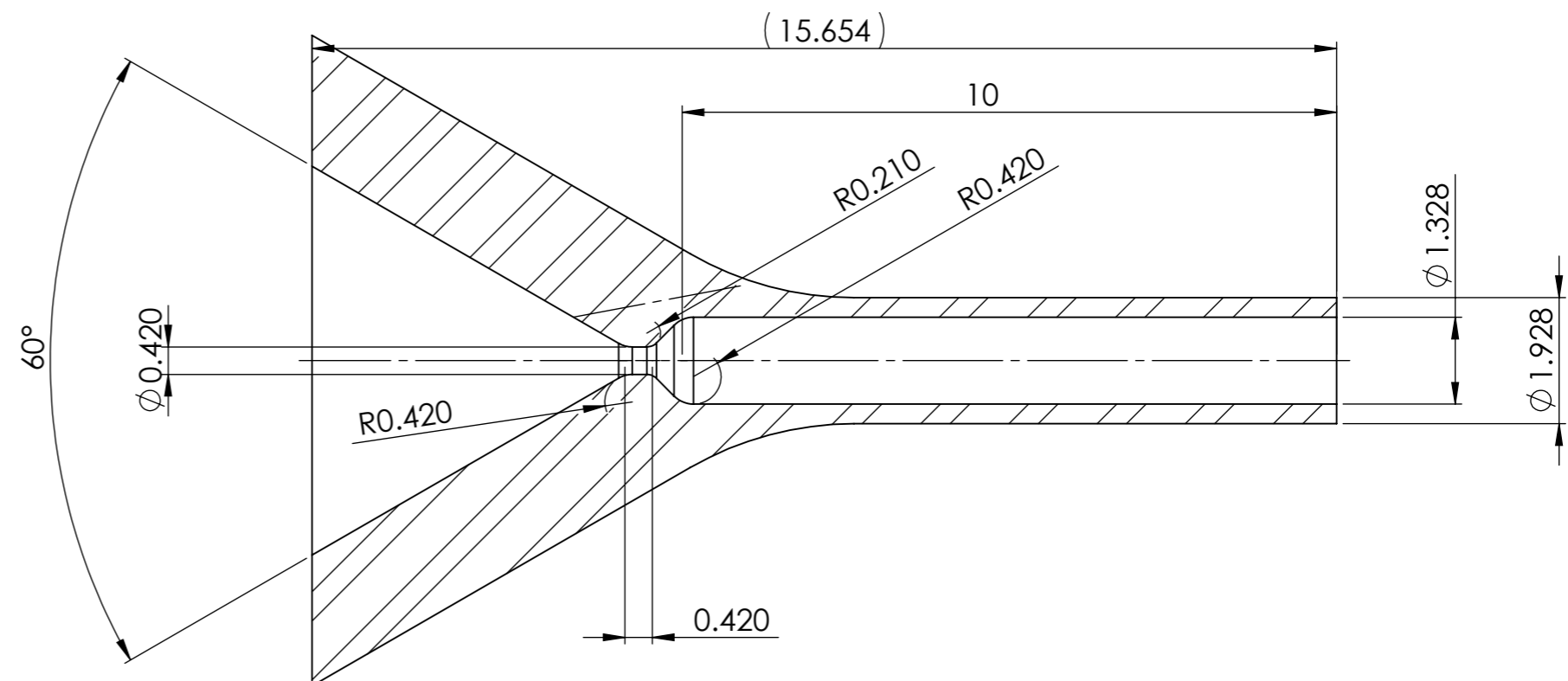
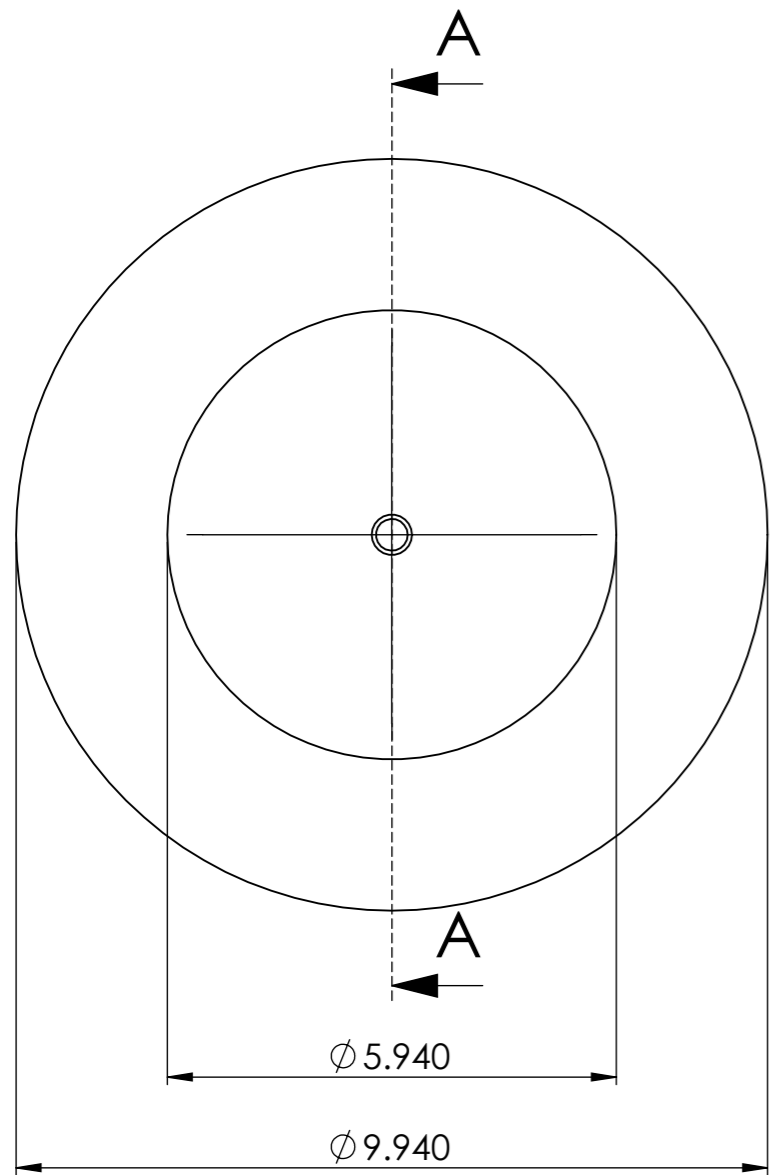
DO NOT SCALE		DRAWN AND DESIGNED BY F Romei		TOLERANCES UNLESS OTHERWISE STATED LINEAR X = +/- 0.20 XX = +/- 0.10 XXX = +/- 0.05 ANGULAR +/- 0.50		UNIVERSITY OF Southampton Faculty of Engineering and the Environment			
A3		APPROVED BY GT Roberts							
EDMC JOB No 1	DEPARTMENT Astronautics	DATE 22/07/2015	SCALE 5:1	ALL DIMENSIONS IN mm UNLESS OTHERWISE STATED		TITLE nozzle_T50			
PROJECT VHTR	SUPERVISORS AN Grubisic GT Roberts	MATERIAL Stainless Steel	TEXTURE	SURFACE FINISH <input checked="" type="checkbox"/> ALL OVER UNLESS OTHERWISE STATED		SHEET 1 of 1			
REMOVE ALL SHARP EDGES IF IN DOUBT PLEASE ASK		THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF THE UNIVERSITY OF SOUTHAMPTON DO NOT COPY WITHOUT WRITTEN PERMISSION.				No OFF	ASSEMBLY NUMBER	DRAWING NUMBER 4 of 7	REVISION 1



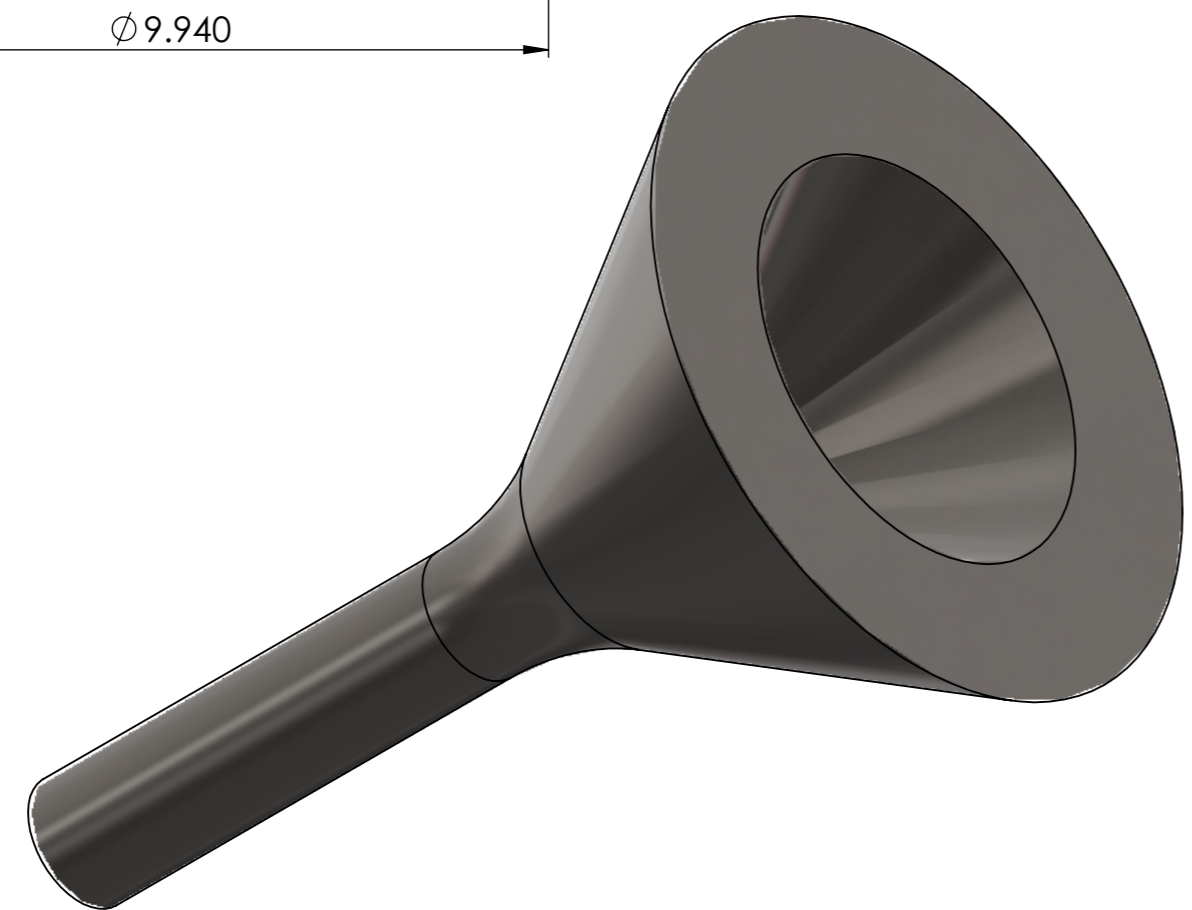
SECTION A-A
SCALE 10:1



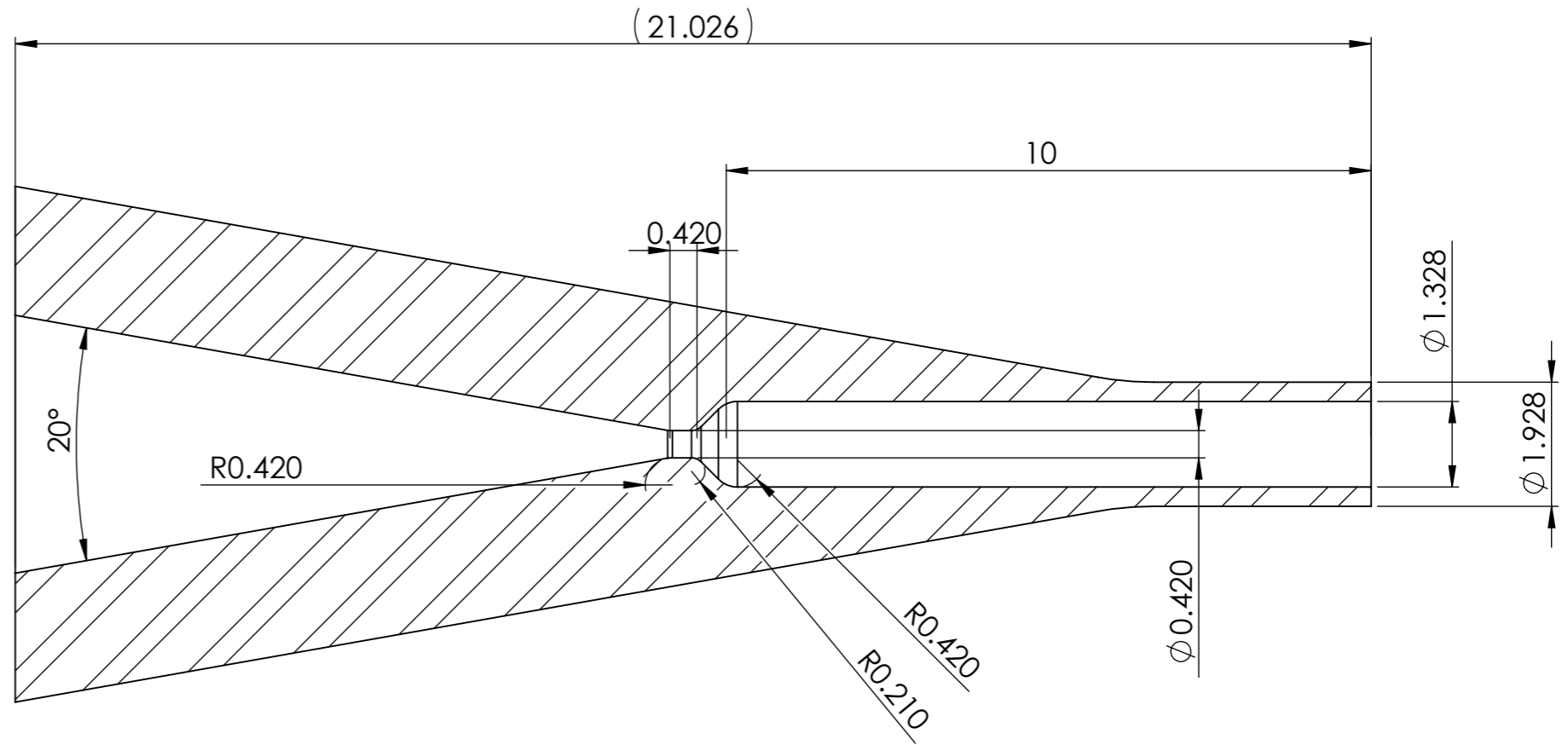
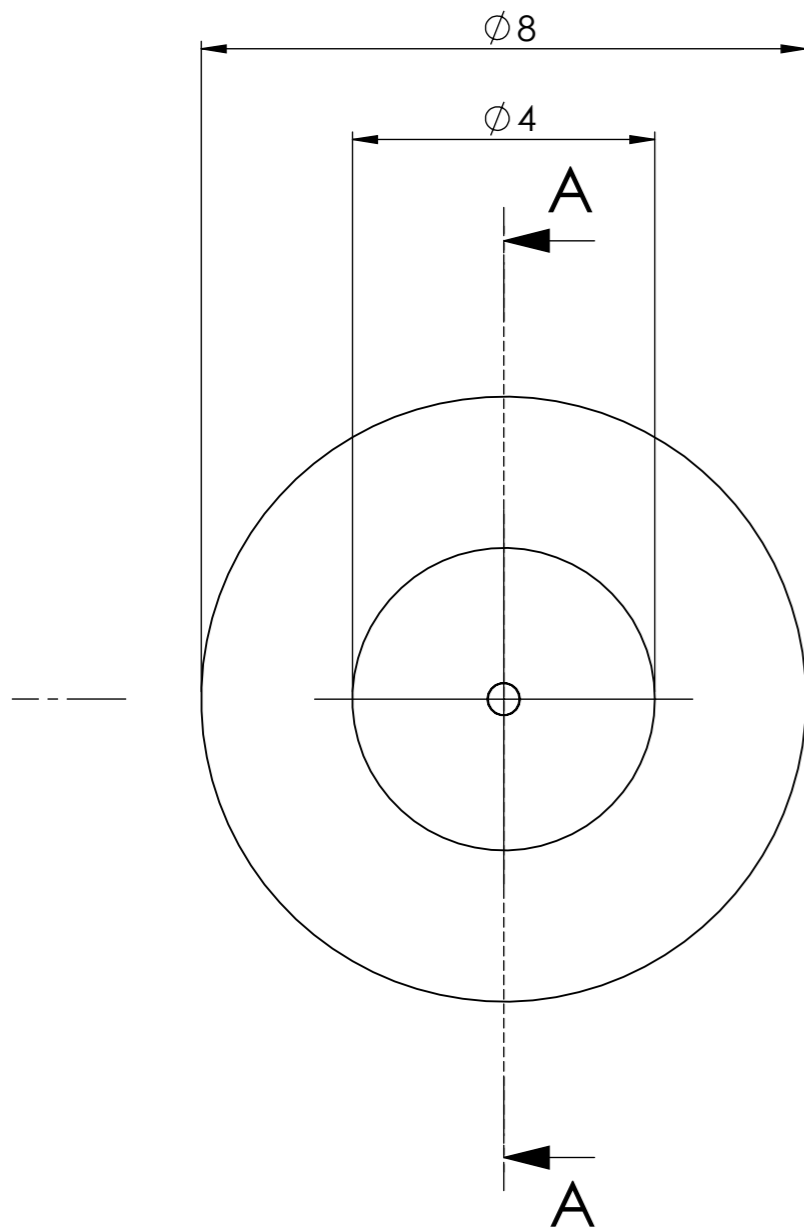
DO NOT SCALE		DRAWN AND DESIGNED BY F Romei		TOLERANCES UNLESS OTHERWISE STATED LINEAR X = +/- 0.20 XX = +/- 0.10 XXX = +/- 0.05 ANGULAR +/- 0.50		UNIVERSITY OF Southampton Faculty of Engineering and the Environment				
A3		APPROVED BY GT Roberts								
EDMC JOB No 1	DEPARTMENT Astronautics	DATE 22/07/2015	SCALE 5:1	ALL DIMENSIONS IN mm UNLESS OTHERWISE STATED		TITLE nozzle_T50_full				
PROJECT VHTR	SUPERVISORS AN Grubisic GT Roberts	MATERIAL Stainless Steel	TEXTURE	SURFACE FINISH <input checked="" type="checkbox"/> ALL OVER UNLESS OTHERWISE STATED		SHEET 1 of 1	No OFF	ASSEMBLY NUMBER	DRAWING NUMBER 5 of 7	REVISION 1
REMOVE ALL SHARP EDGES IF IN DOUBT PLEASE ASK		THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF THE UNIVERSITY OF SOUTHAMPTON DO NOT COPY WITHOUT WRITTEN PERMISSION.								



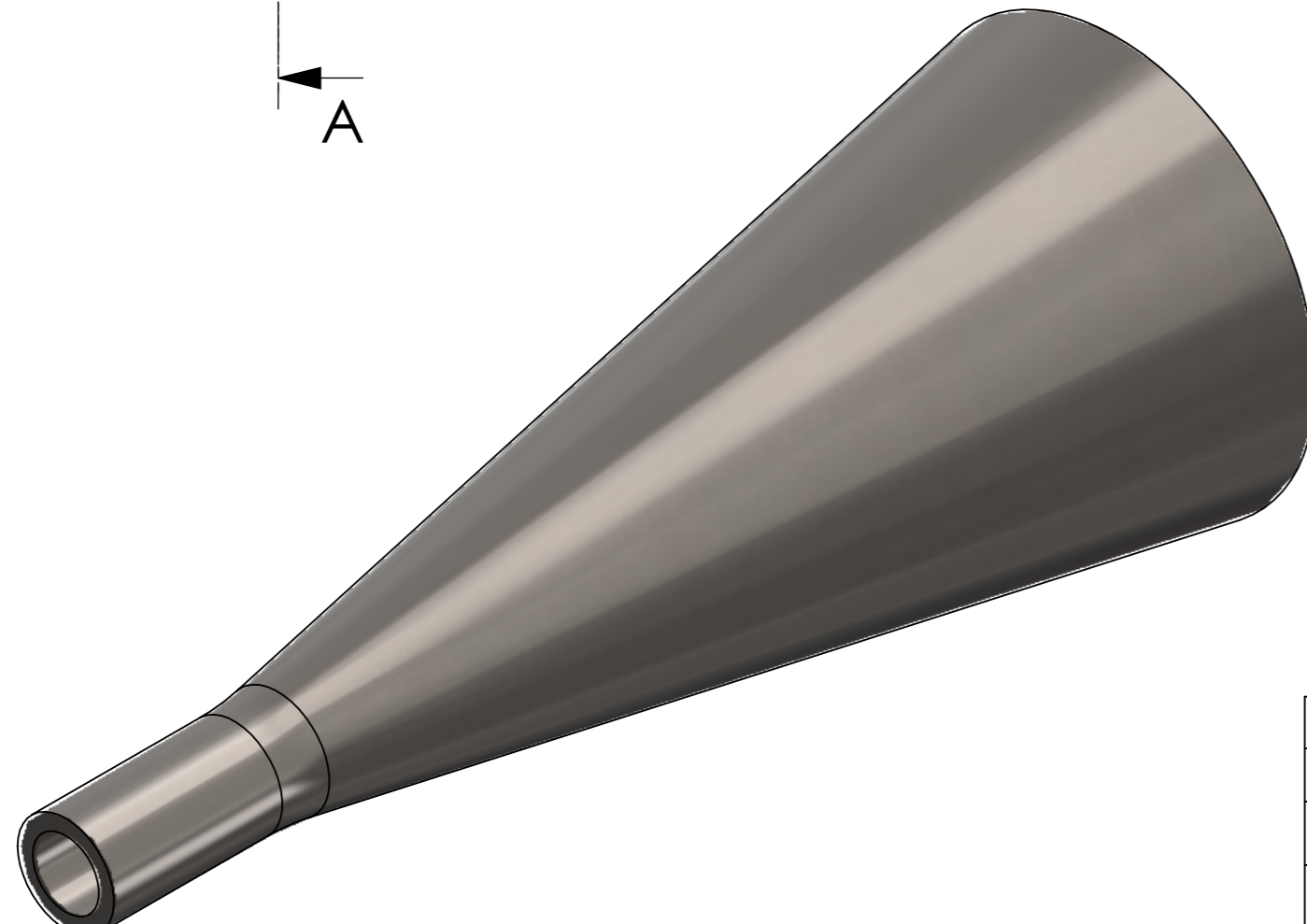
SECTION A-A



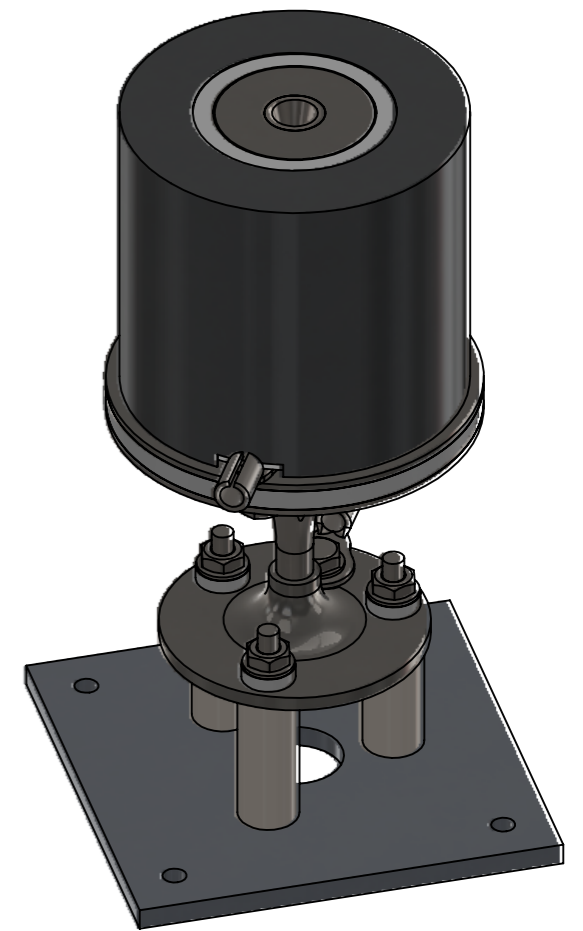
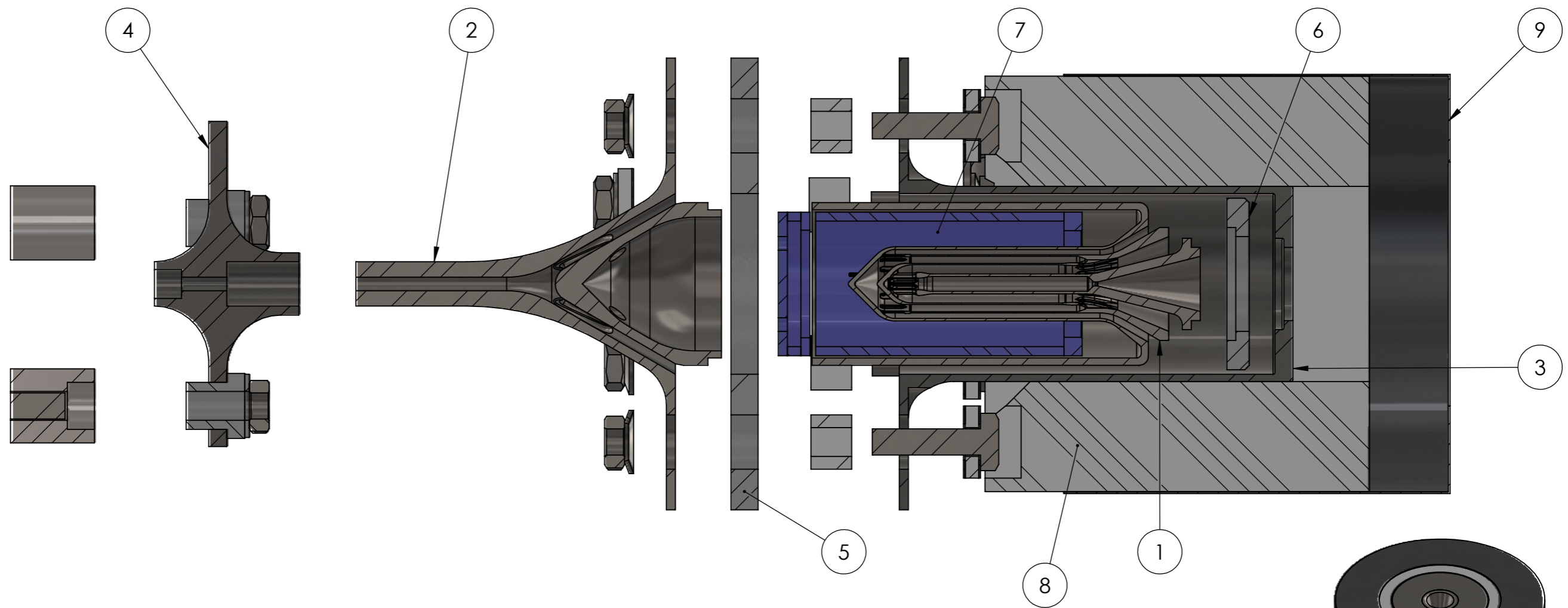
DO NOT SCALE		DRAWN AND DESIGNED BY F Romei		TOLERANCES UNLESS OTHERWISE STATED		UNIVERSITY OF Southampton Faculty of Engineering and the Environment			
A3		APPROVED BY GT Roberts		LINEAR X = +/- 0.20 XX = +/- 0.10 XXX = +/- 0.05					
EDMC JOB No 1	DEPARTMENT Astronautics	DATE 22/07/2015	SCALE 10:1	ANGULAR +/- 0.50		TITLE nozzle_30deg			
PROJECT VHTR	SUPERVISORS AN Grubisic GT Roberts	MATERIAL Stainless Steel	TEXTURE	SURFACE FINISH <input checked="" type="checkbox"/> ALL OVER UNLESS OTHERWISE STATED		SHEET 1 of 1			
REMOVE ALL SHARP EDGES IF IN DOUBT PLEASE ASK		THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF THE UNIVERSITY OF SOUTHAMPTON DO NOT COPY WITHOUT WRITTEN PERMISSION.				No OFF	ASSEMBLY NUMBER	DRAWING NUMBER 6 of 7	REVISION 1



SECTION A-A
SCALE 10 : 1



DO NOT SCALE		DRAWN AND DESIGNED BY F Romei		TOLERANCES UNLESS OTHERWISE STATED		UNIVERSITY OF Southampton Faculty of Engineering and the Environment			
A3		APPROVED BY GT Roberts		LINEAR X = +/- 0.20 XX = +/- 0.10 XXX = +/- 0.05 ANGULAR +/- 0.50					
EDMC JOB No 1	DEPARTMENT Astronautics	DATE 22/07/2015	SCALE 10:1	ALL DIMENSIONS IN mm UNLESS OTHERWISE STATED		TITLE nozzle_10deg			
PROJECT VHTR	SUPERVISORS AN Grubisic GT Roberts	MATERIAL Stainless Steel	TEXTURE	SURFACE FINISH <input checked="" type="checkbox"/> ALL OVER UNLESS OTHERWISE STATED		SHEET 1 of 1			
REMOVE ALL SHARP EDGES IF IN DOUBT PLEASE ASK		THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF THE UNIVERSITY OF SOUTHAMPTON DO NOT COPY WITHOUT WRITTEN PERMISSION.				No OFF	ASSEMBLY NUMBER	DRAWING NUMBER 7 of 7	REVISION 1

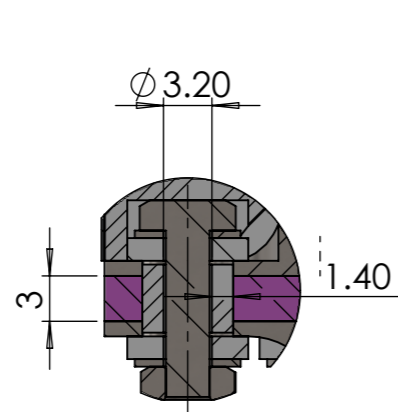
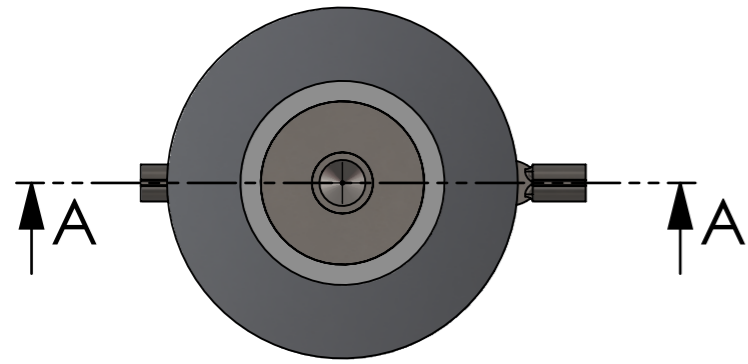


VHTR manufacturing at EDMC

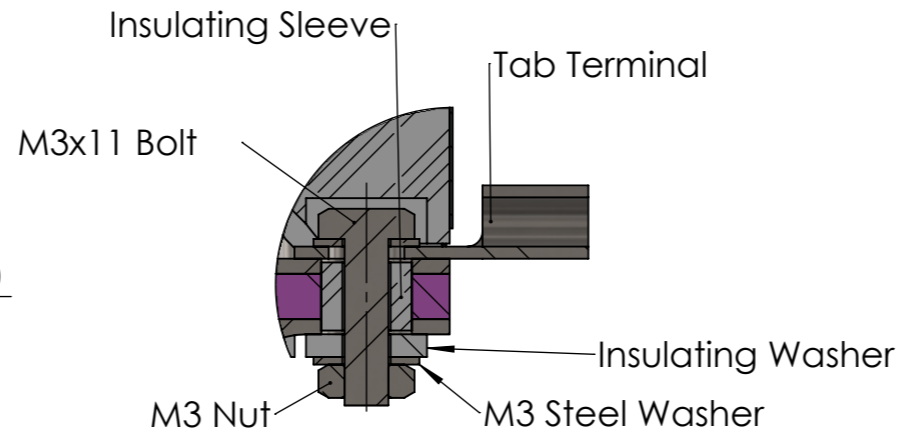
Item #	Name	Material	Manufacturer	Notes
1	Heat Exchanger	316L	EDMC	AM Metal Printer + lathe post manufacturing
2	Thruster Inflow	316L	EDMC	AM Metal Printer + lathe post manufacturing
3	Thruster Casing	316L	EDMC	CNC machining
4	Thruster Support	316L	EDMC	CNC machining
5	Collar	Alumina	-	-
6	Nozzle Spacer	Shapal	-	-
7	Radiation Shielding Assembly	Shapal	-	-
8	Insulation Package	Porous Ceramic	-	-
9	Thruster Casing	Metal Foil	-	-

DO NOT SCALE		DRAWN AND DESIGNED BY F Romei		TOLERANCES UNLESS OTHERWISE STATED LINEAR X = +/- 0.20 XX = +/- 0.10 XXX = +/- 0.05 ANGULAR +/- 0.50
A3		APPROVED BY AN Grubisic		
JOB No	DEPARTMENT Astronautics	DATE 07/11/2017	SCALE 2:1	ALL DIMENSIONS IN mm UNLESS OTHERWISE STATED
PROJECT VHTR	SUPERVISORS AN Grubisic	MATERIAL 316L	TEXTURE	SURFACE FINISH <input checked="" type="checkbox"/> ALL OVER UNLESS OTHERWISE STATED
REMOVE ALL SHARP EDGES IF IN DOUBT PLEASE ASK		THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF THE UNIVERSITY OF SOUTHAMPTON DO NOT COPY WITHOUT WRITTEN PERMISSION.		

UNIVERSITY OF Southampton Faculty of Engineering and the Environment				
TITLE VHTR assembly				
SHEET 1 of 3	No OFF	ASSEMBLY NUMBER	DRAWING NUMBER 1 of 1	REVISION 1

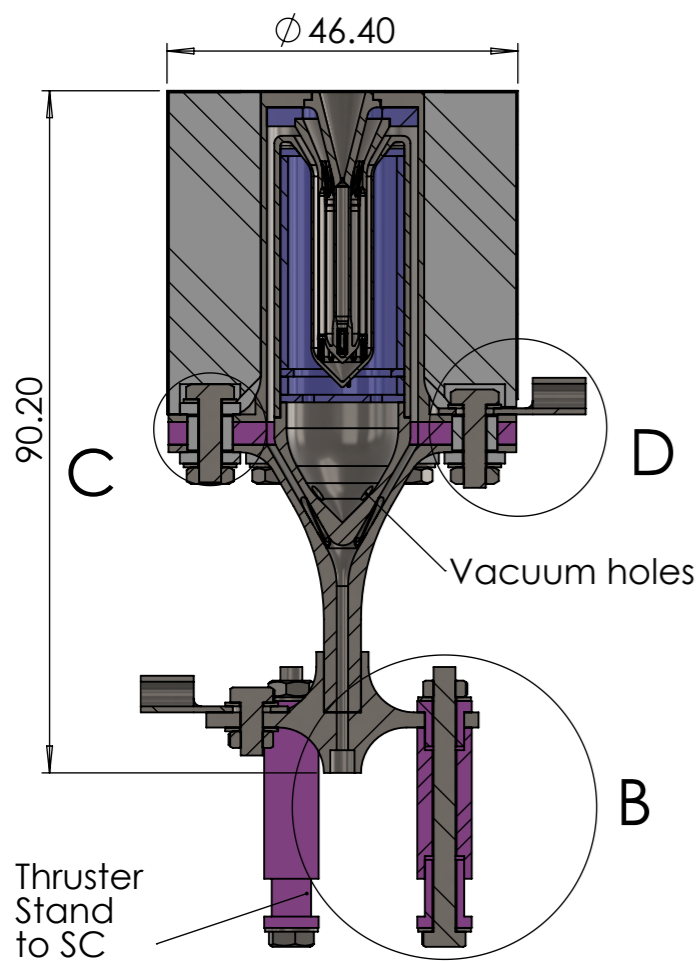
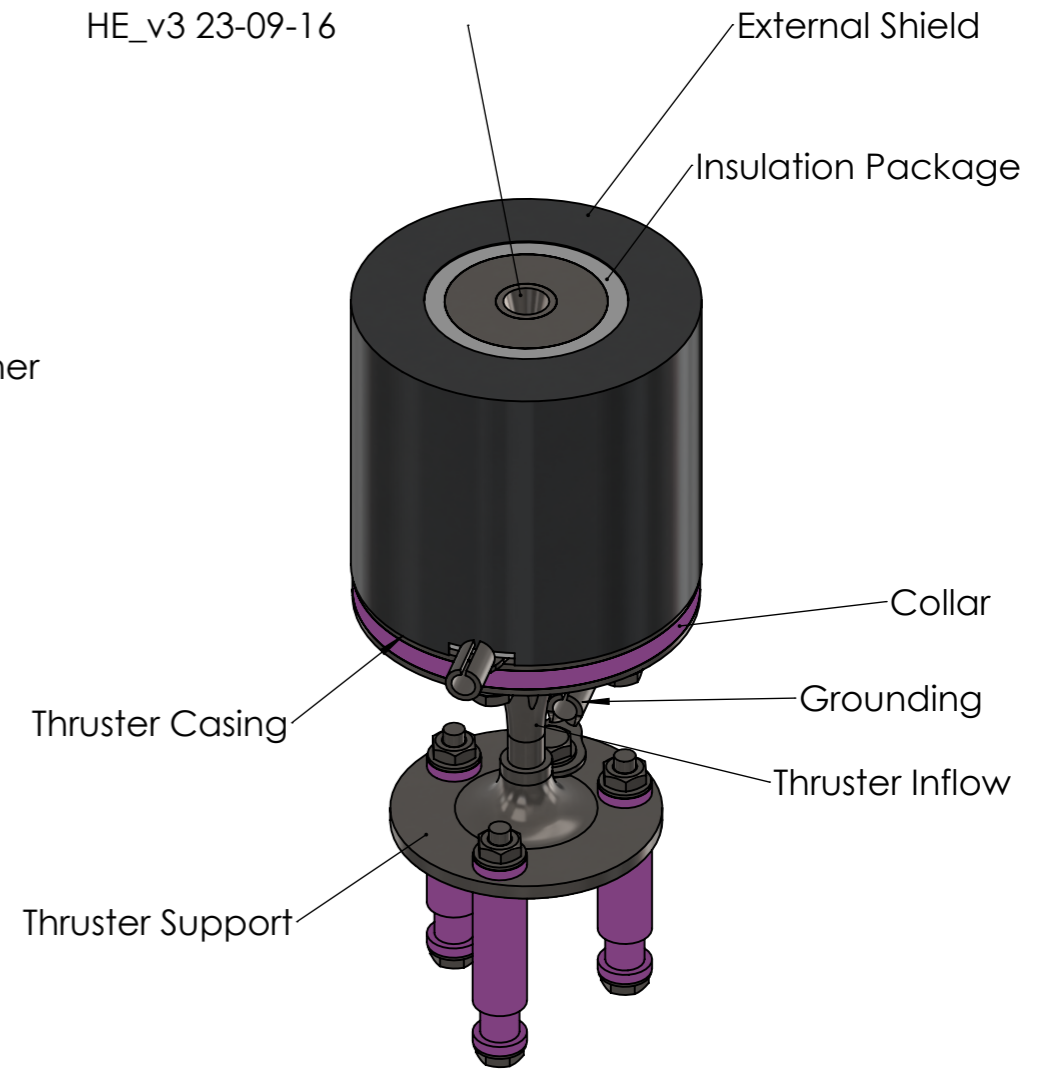


DETAIL C
SCALE 2 : 1

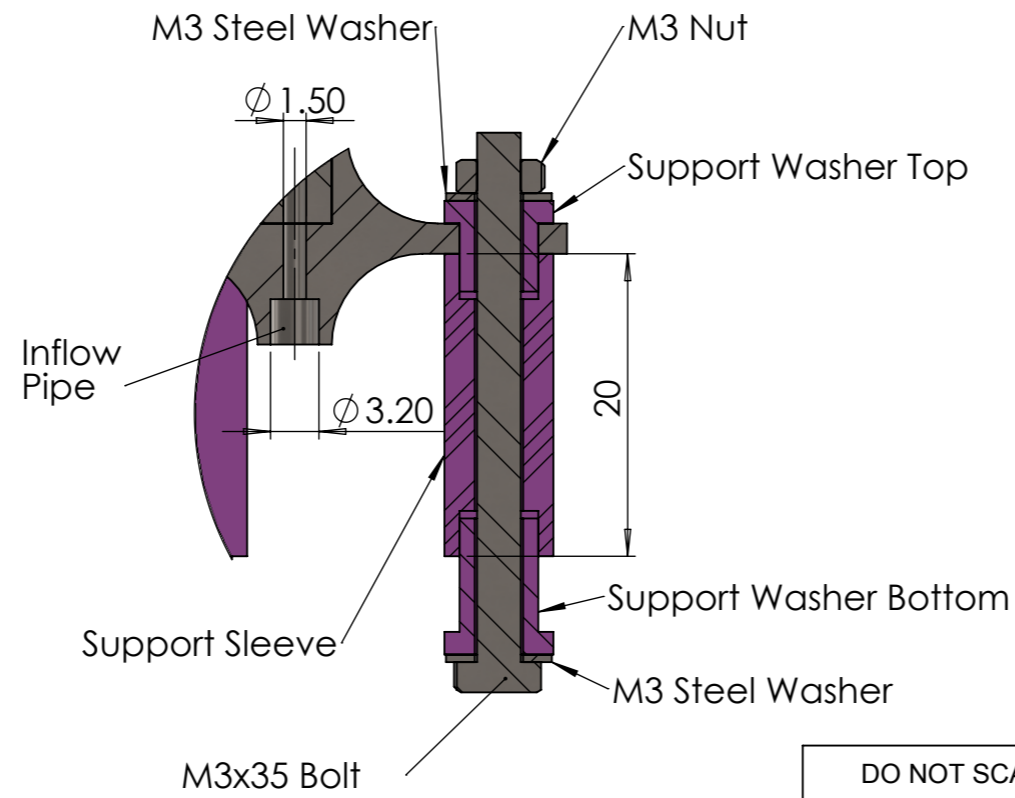


DETAIL D
SCALE 2 : 1

HE_v3 23-09-16

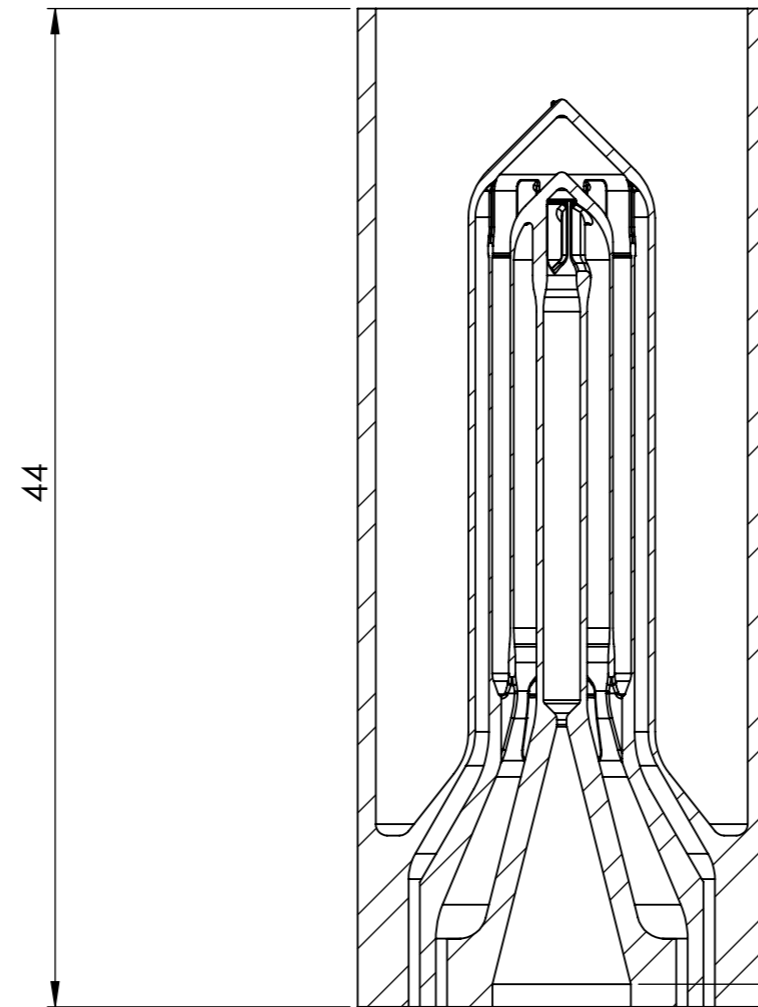
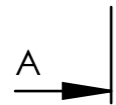


SECTION A-A



DETAIL B
SCALE 2 : 1

DO NOT SCALE		DRAWN AND DESIGNED BY F Romei		TOLERANCES UNLESS OTHERWISE STATED		UNIVERSITY OF Southampton Faculty of Engineering and the Environment				
A3		APPROVED BY AN Grubisic		LINEAR X = +/- 0.20 XX = +/- 0.10 XXX = +/- 0.05 ANGULAR +/- 0.50						
EDMC JOB No 3	DEPARTMENT VHTR	DATE 24/10/2016	SCALE 1:1	ALL DIMENSIONS IN mm UNLESS OTHERWISE STATED		TITLE STAR-0 assembly REV02 v2 - details				
PROJECT VHTR	SUPERVISORS AN Grubisic GT Roberts	MATERIAL	TEXTURE	SURFACE FINISH ✓ ALL OVER UNLESS OTHERWISE STATED		SHEET 2 of 2	No OFF	ASSEMBLY NUMBER	DRAWING NUMBER 1 of 1	REVISION 2
REMOVE ALL SHARP EDGES IF IN DOUBT PLEASE ASK		THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF THE UNIVERSITY OF SOUTHAMPTON DO NOT COPY WITHOUT WRITTEN PERMISSION.								



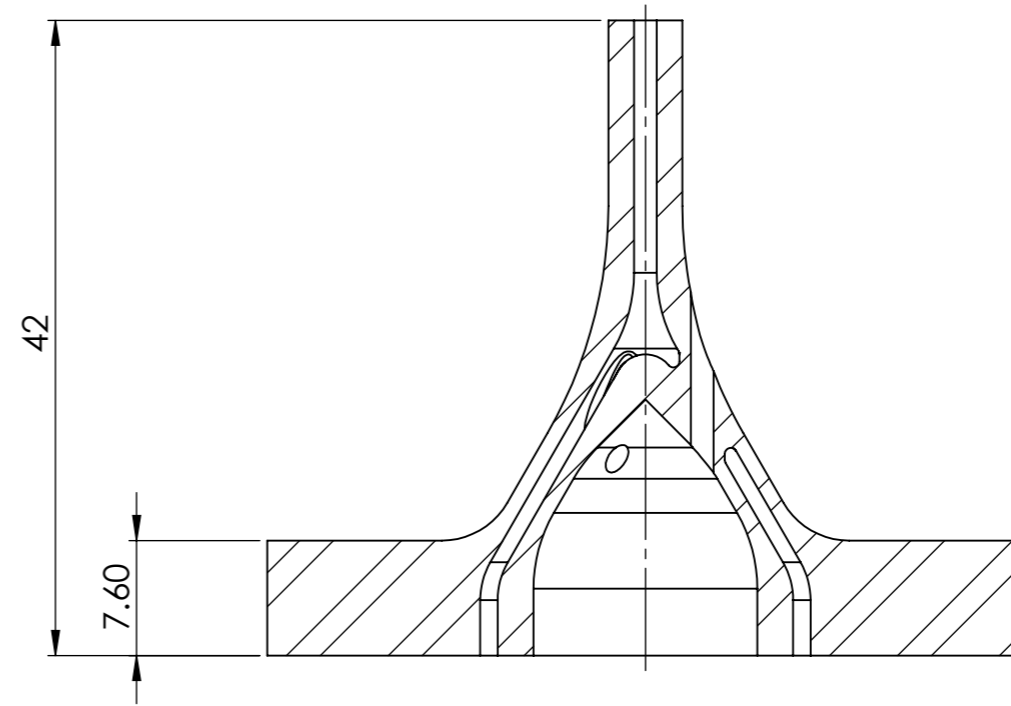
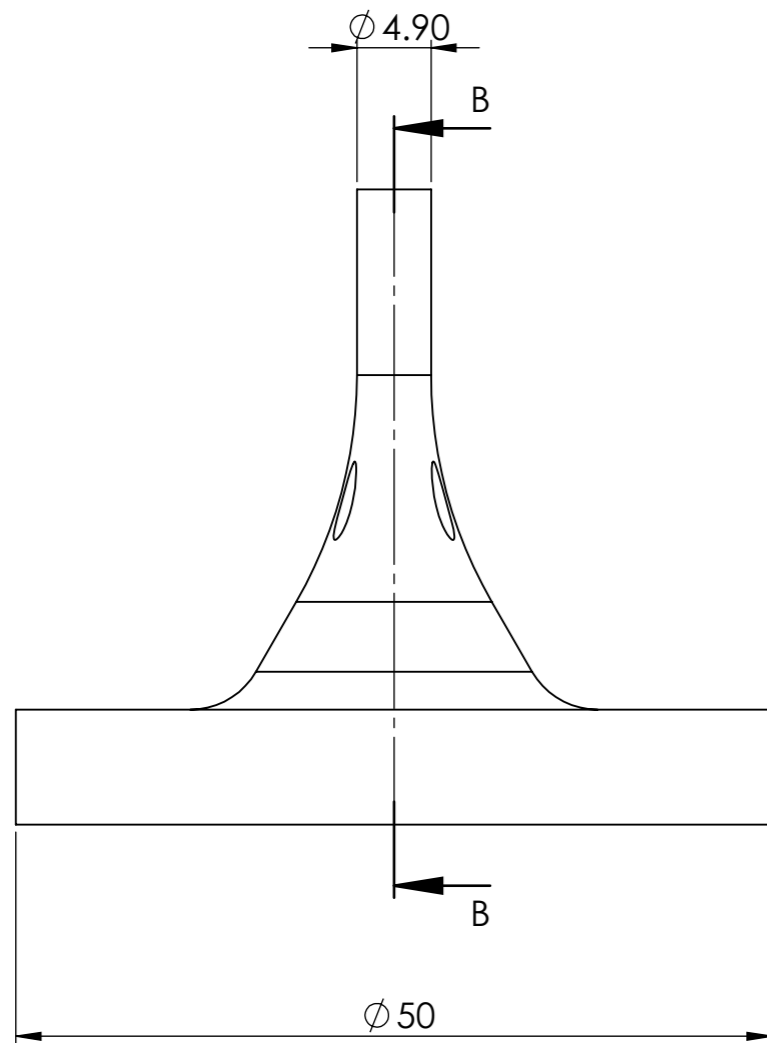
SECTION A-A

Print Direction



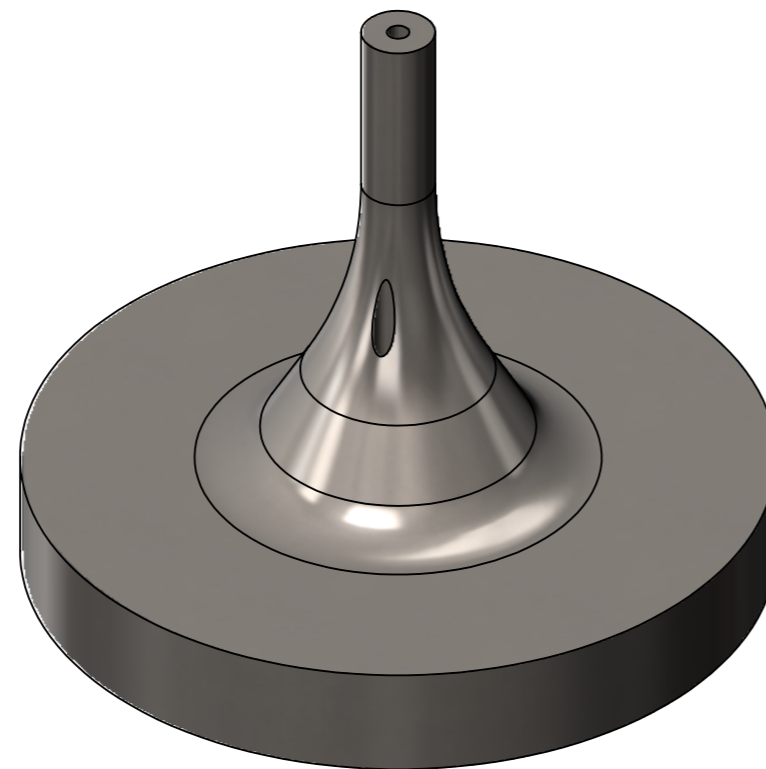
NOTE: EDM wire cut to be performed at 1mm from print base plate

DO NOT SCALE		DRAWN AND DESIGNED BY FRomei		TOLERANCES UNLESS OTHERWISE STATED LINEAR X = +/- 0.20 XX = +/- 0.10 XXX = +/- 0.05 ANGULAR +/- 0.50		UNIVERSITY OF Southampton Faculty of Engineering and the Environment				
A3		APPROVED BY AN Grubisic								
JOB No	DEPARTMENT Astronautics	DATE 30/10/2017	SCALE 3:1	ALL DIMENSIONS IN mm UNLESS OTHERWISE STATED		TITLE Heat Exchanger (v3.1 and v3.2)				
PROJECT VHTR	SUPERVISORS AN Grubisic	MATERIAL 316L SLM	TEXTURE	SURFACE FINISH <input checked="" type="checkbox"/> ALL OVER UNLESS OTHERWISE STATED		SHEET 1 of 2	No OFF 6	ASSEMBLY NUMBER	DRAWING NUMBER 1 of 1	REVISION 1
REMOVE ALL SHARP EDGES IF IN DOUBT PLEASE ASK		THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF THE UNIVERSITY OF SOUTHAMPTON DO NOT COPY WITHOUT WRITTEN PERMISSION.								



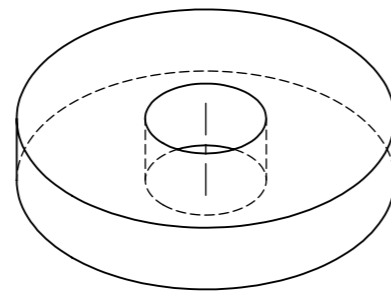
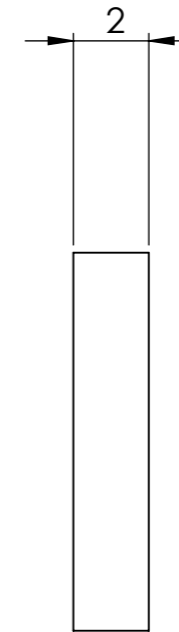
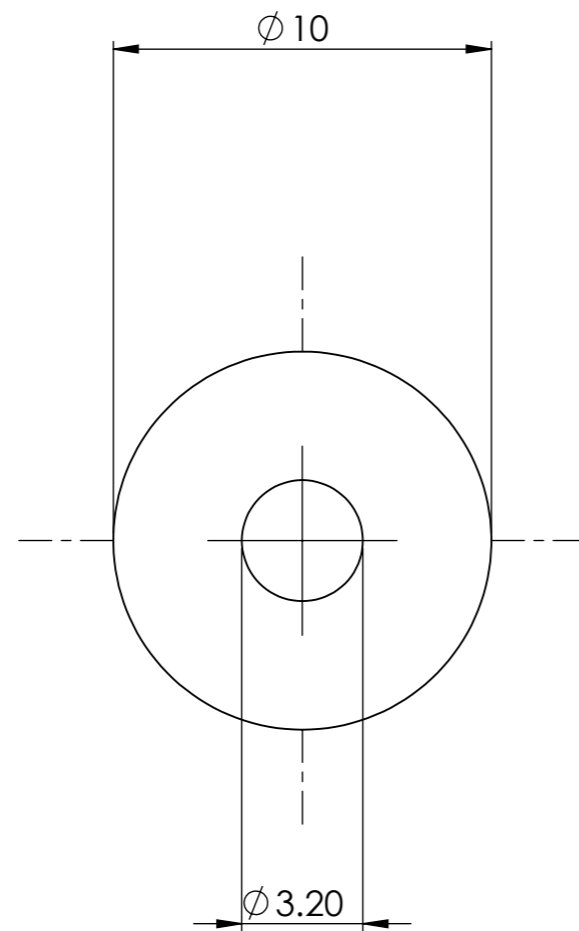
SECTION B-B

NOTE: EDM wire cut to be performed at 1mm from print base plate

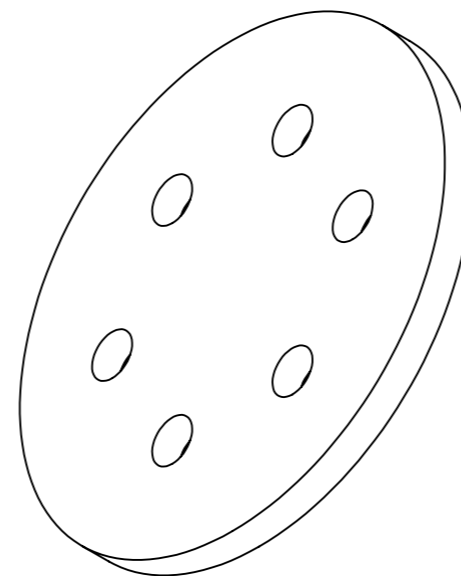
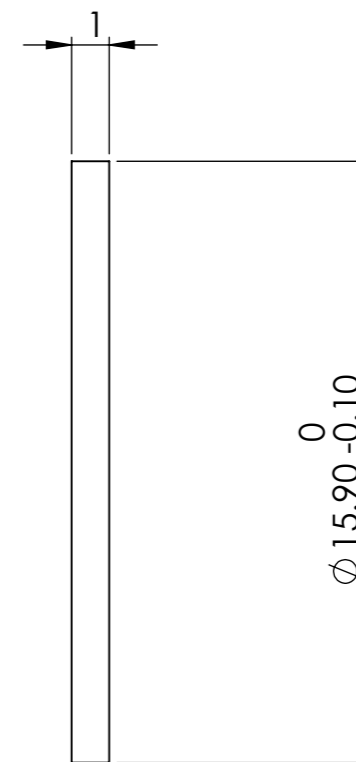
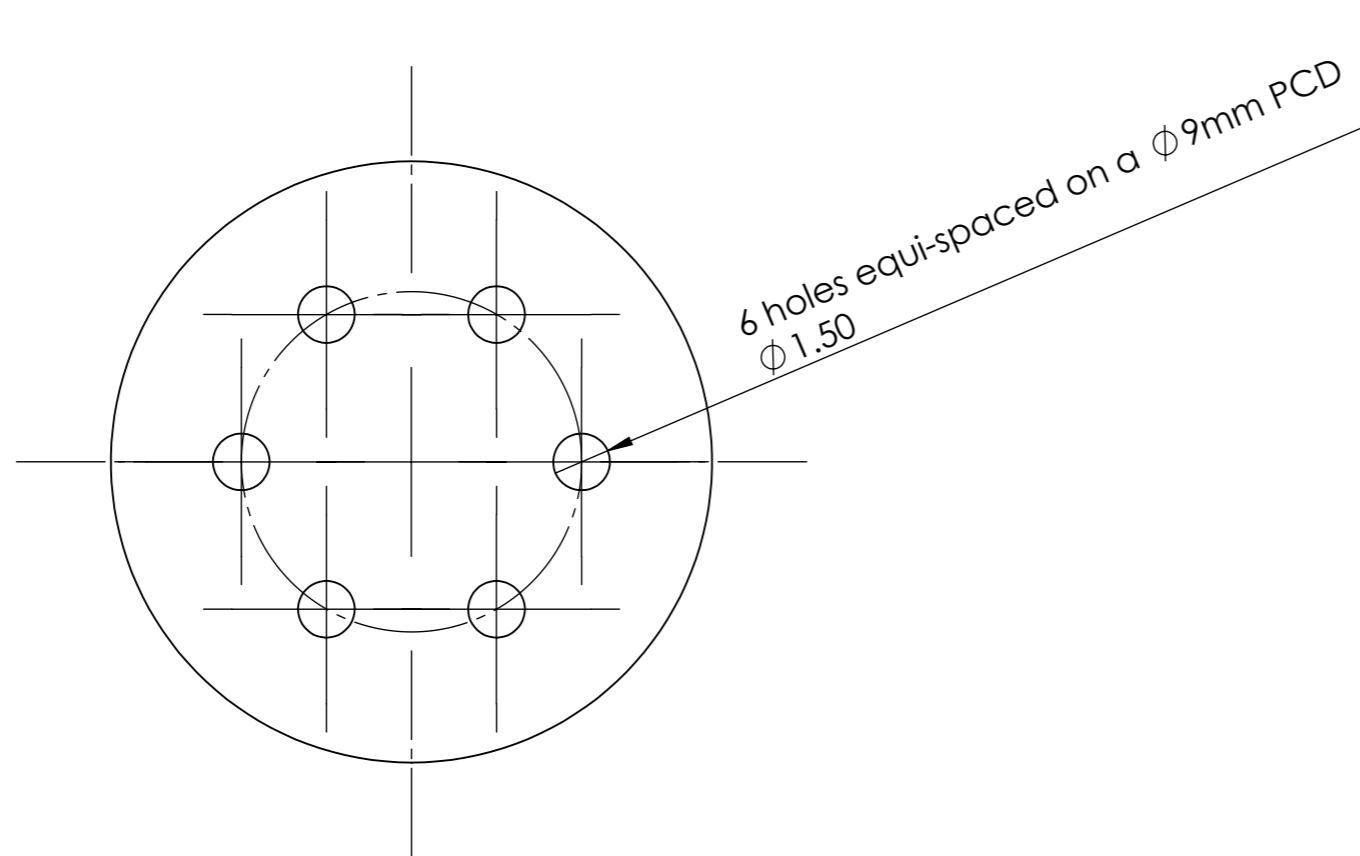


Print Direction

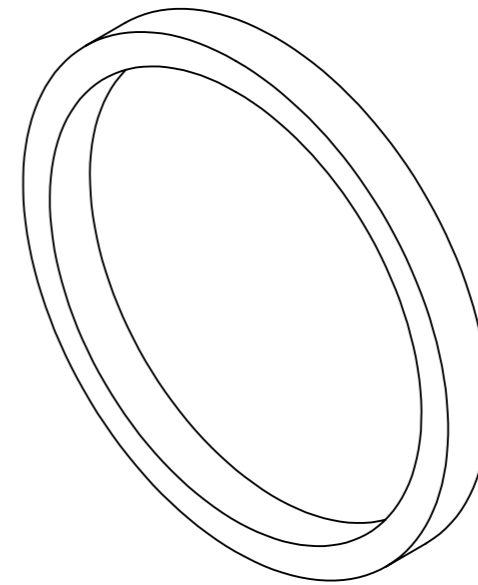
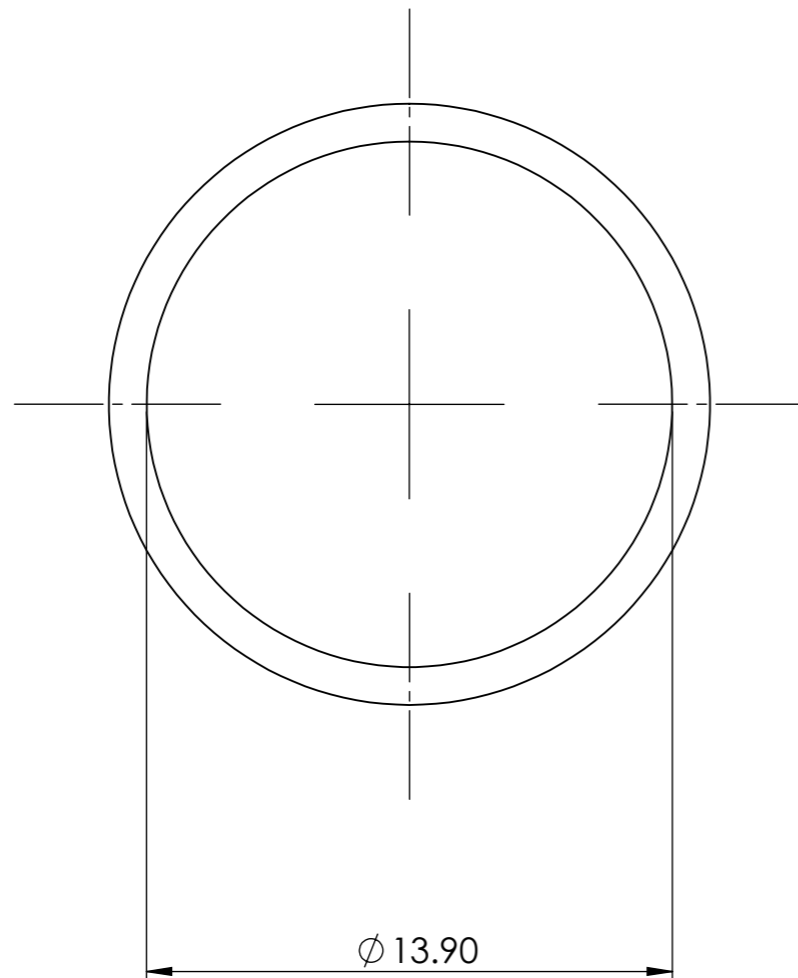
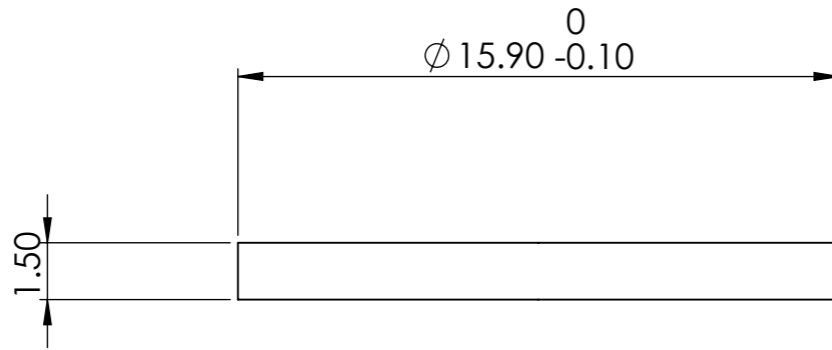
DO NOT SCALE		DRAWN AND DESIGNED BY FRomei		TOLERANCES UNLESS OTHERWISE STATED		UNIVERSITY OF Southampton Faculty of Engineering and the Environment				
A3		APPROVED BY AN Grubisic		LINEAR X = +/- 0.20 XX = +/- 0.10 XXX = +/- 0.05 ANGULAR +/- 0.50						
JOB No	DEPARTMENT Astronautics	DATE 30/10/2017	SCALE 2:1	ALL DIMENSIONS IN mm UNLESS OTHERWISE STATED		TITLE Thruster Inflow				
PROJECT VHTR	SUPERVISORS AN Grubisic	MATERIAL 316L SLM	TEXTURE	SURFACE FINISH <input checked="" type="checkbox"/> ALL OVER UNLESS OTHERWISE STATED						
REMOVE ALL SHARP EDGES IF IN DOUBT PLEASE ASK		THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF THE UNIVERSITY OF SOUTHAMPTON DO NOT COPY WITHOUT WRITTEN PERMISSION.				SHEET 2 of 2	No OFF 6	ASSEMBLY NUMBER	DRAWING NUMBER 1 of 1	REVISION 1



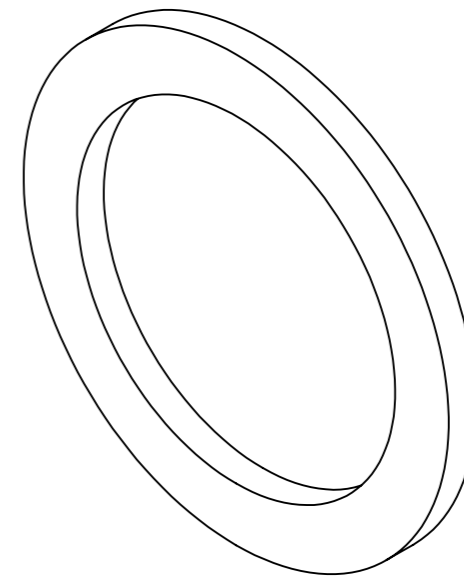
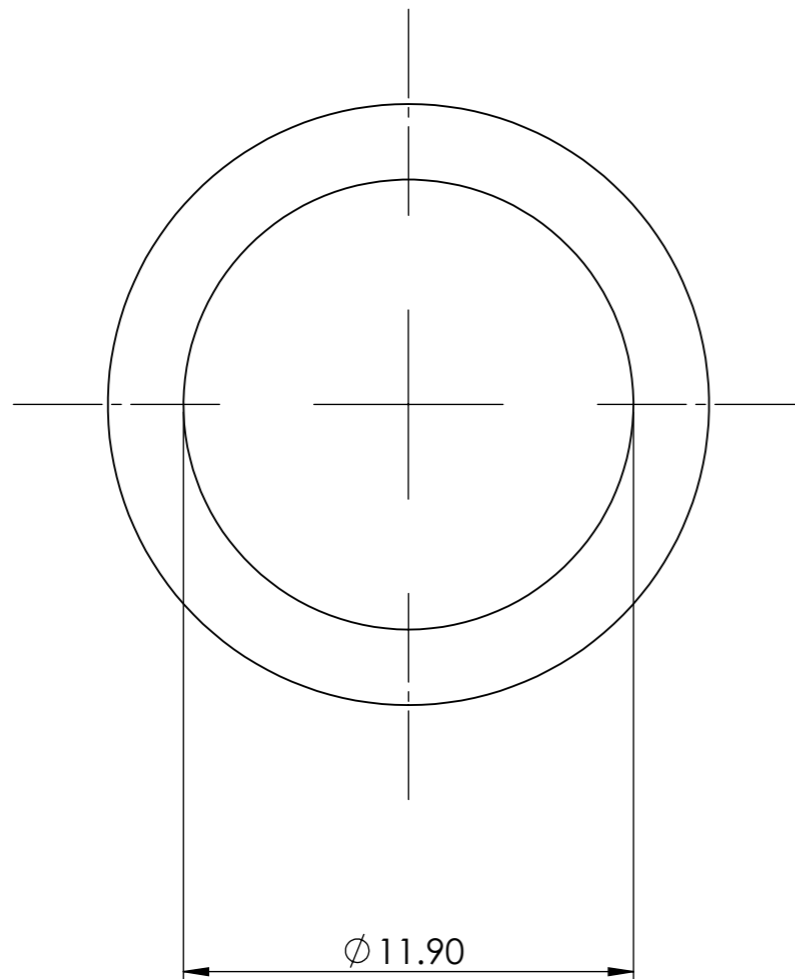
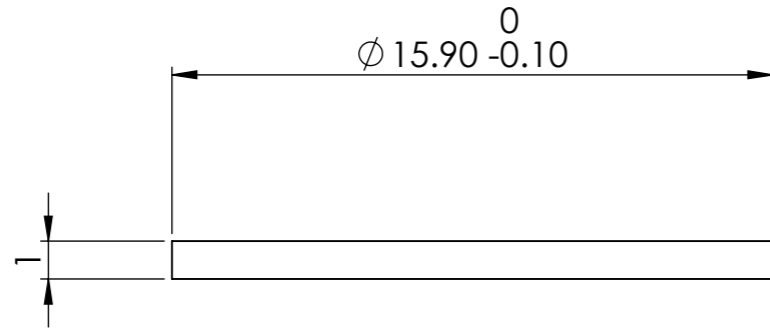
DO NOT SCALE		DRAWN AND DESIGNED BY F Romei		TOLERANCES UNLESS OTHERWISE STATED LINEAR X = +/- 0.20 XX = +/- 0.10 XXX = +/- 0.05 ANGULAR +/- 0.50		UNIVERSITY OF Southampton Faculty of Engineering and the Environment				
A3		APPROVED BY AN Grubisic								
JOB No	DEPARTMENT Astronautics	DATE 07/11/2017	SCALE 5:1	ALL DIMENSIONS IN mm UNLESS OTHERWISE STATED		TITLE Washer				
PROJECT VHTR	SUPERVISORS AN Grubisic	MATERIAL Alumina 99.7%	TEXTURE	SURFACE FINISH <input checked="" type="checkbox"/> ALL OVER UNLESS OTHERWISE STATED		SHEET 1 of 11	No OFF 16	ASSEMBLY NUMBER	DRAWING NUMBER 1 of 1	REVISION 4
REMOVE ALL SHARP EDGES IF IN DOUBT PLEASE ASK		THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF THE UNIVERSITY OF SOUTHAMPTON DO NOT COPY WITHOUT WRITTEN PERMISSION.								



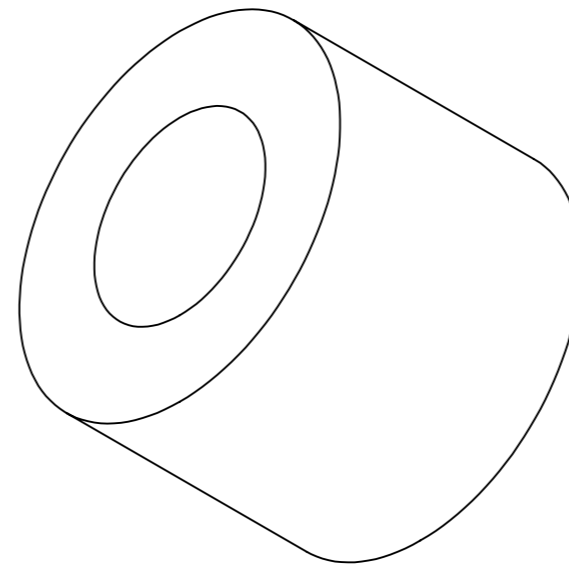
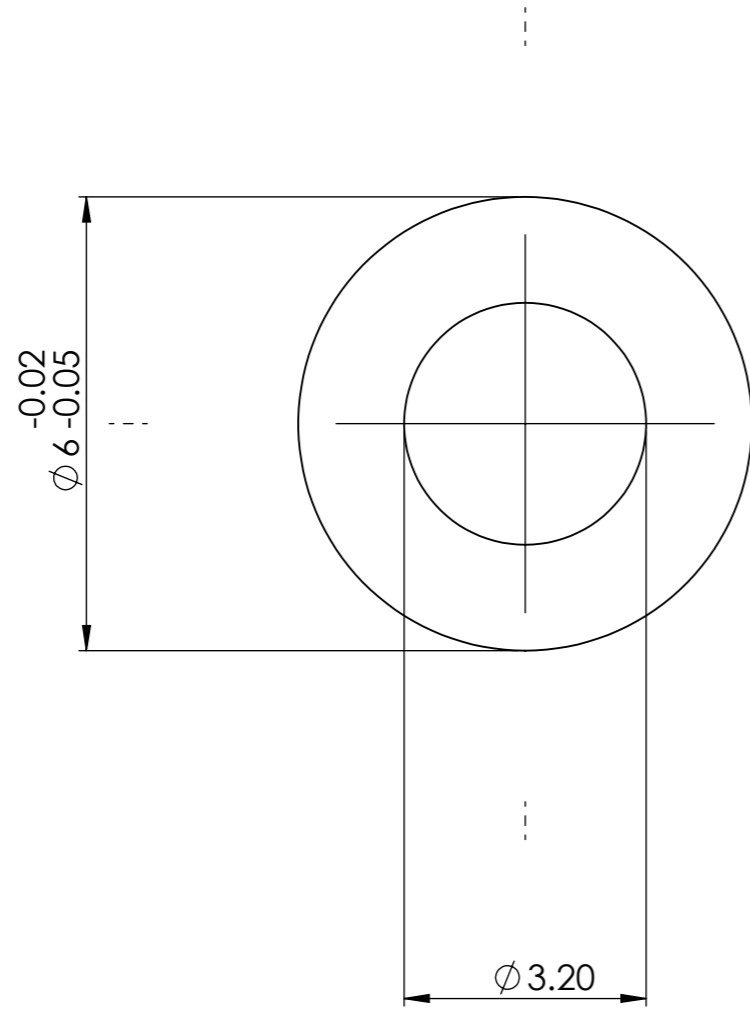
DO NOT SCALE		DRAWN AND DESIGNED BY F Romei		TOLERANCES UNLESS OTHERWISE STATED LINEAR X = +/- 0.20 XX = +/- 0.10 XXX = +/- 0.05 ANGULAR +/- 0.50		UNIVERSITY OF Southampton Faculty of Engineering and the Environment				
A3		APPROVED BY AN Grubisic								
JOB No	DEPARTMENT Astronautics	DATE 07/11/2017	SCALE 5:1	ALL DIMENSIONS IN mm UNLESS OTHERWISE STATED		TITLE Disk Bottom Insulator				
PROJECT VHTR	SUPERVISORS AN Grubisic	MATERIAL Shapal	TEXTURE	SURFACE FINISH <input checked="" type="checkbox"/> ALL OVER UNLESS OTHERWISE STATED		SHEET 2 of 11	No OFF 3	ASSEMBLY NUMBER	DRAWING NUMBER 1 of 1	REVISION 4
REMOVE ALL SHARP EDGES IF IN DOUBT PLEASE ASK		THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF THE UNIVERSITY OF SOUTHAMPTON DO NOT COPY WITHOUT WRITTEN PERMISSION.								



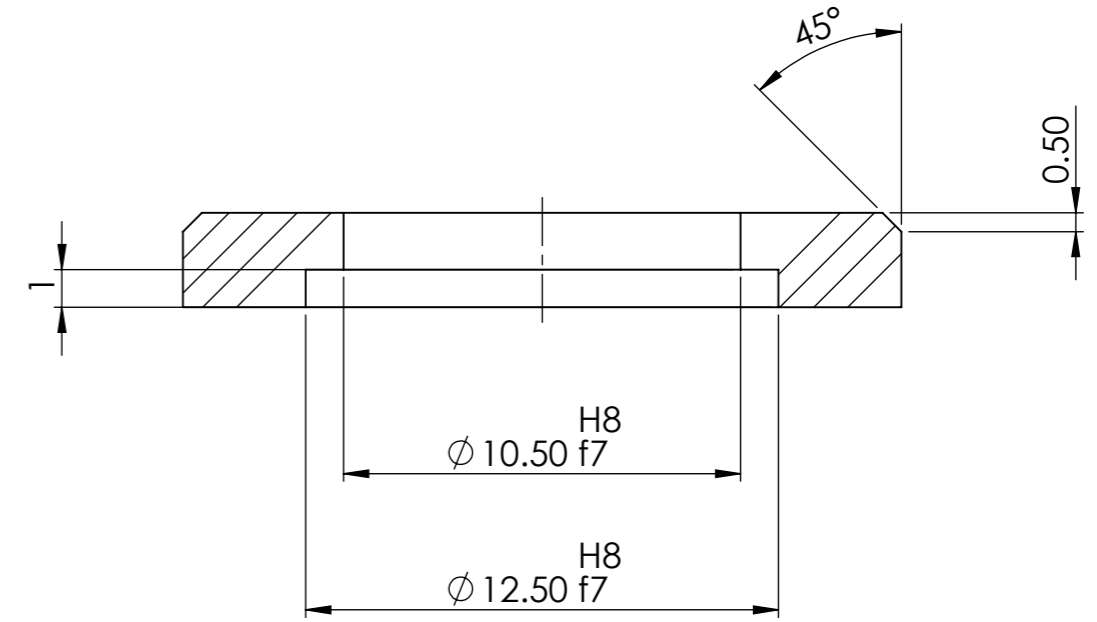
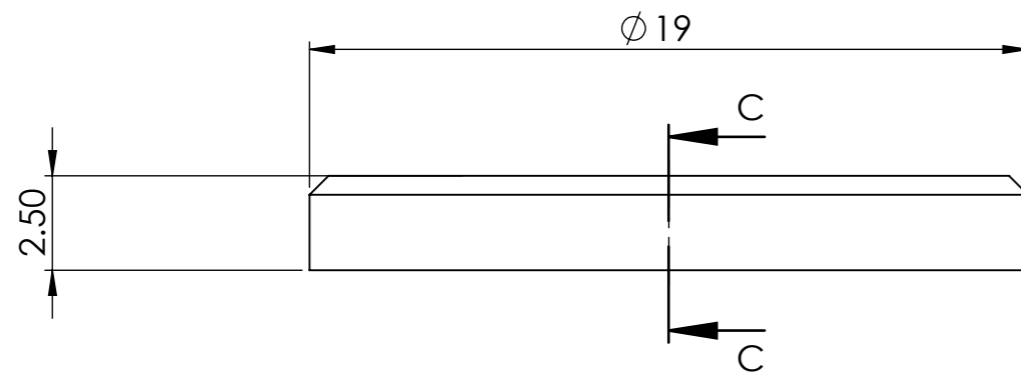
DO NOT SCALE		DRAWN AND DESIGNED BY F Romei		TOLERANCES UNLESS OTHERWISE STATED LINEAR X = +/- 0.20 XX = +/- 0.10 XXX = +/- 0.05 ANGULAR +/- 0.50		UNIVERSITY OF Southampton Faculty of Engineering and the Environment				
A3		APPROVED BY AN Grubisic								
JOB No	DEPARTMENT Astronautics	DATE 07/11/2017	SCALE 5:1	ALL DIMENSIONS IN mm UNLESS OTHERWISE STATED		TITLE Disk Pipe Insulator				
PROJECT VHTR	SUPERVISORS AN Grubisic	MATERIAL Shapal	TEXTURE	SURFACE FINISH <input checked="" type="checkbox"/> ALL OVER UNLESS OTHERWISE STATED						
REMOVE ALL SHARP EDGES IF IN DOUBT PLEASE ASK		THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF THE UNIVERSITY OF SOUTHAMPTON DO NOT COPY WITHOUT WRITTEN PERMISSION.				SHEET 3 of 11	No OFF 3	ASSEMBLY NUMBER	DRAWING NUMBER 1 of 1	REVISION 4



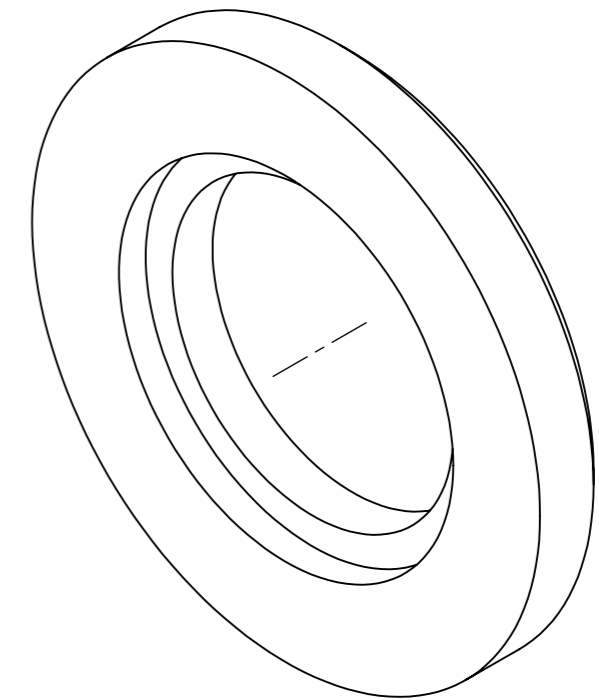
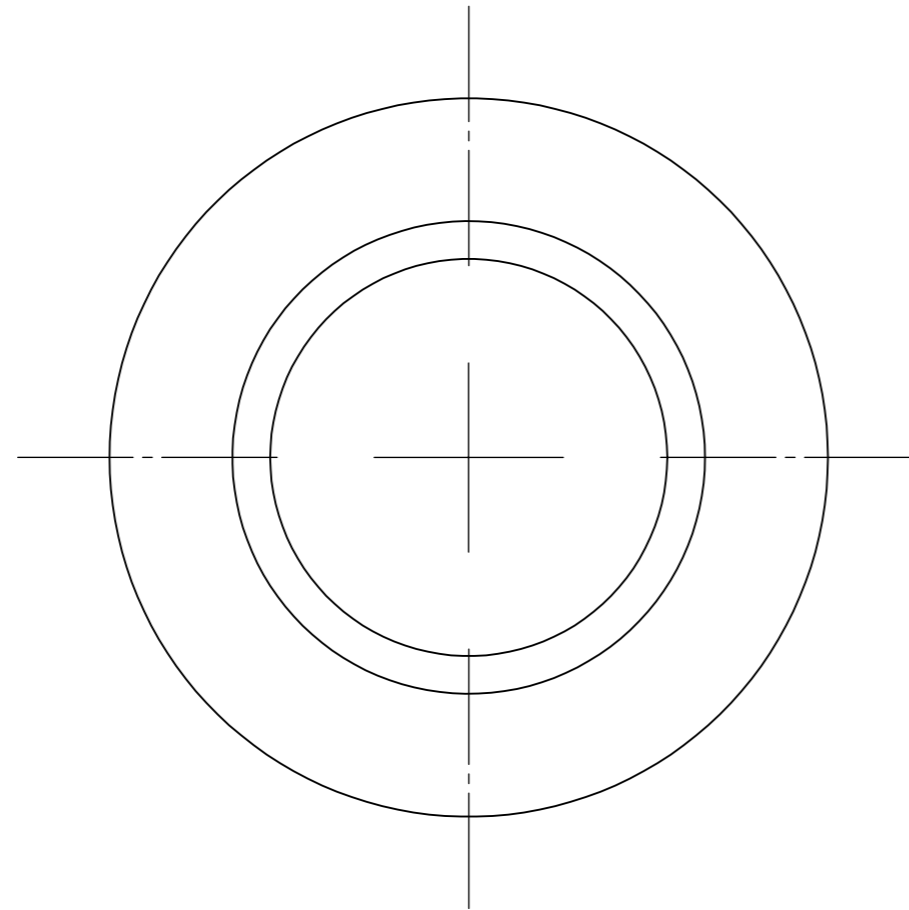
DO NOT SCALE		DRAWN AND DESIGNED BY F Romei		TOLERANCES UNLESS OTHERWISE STATED LINEAR X = +/- 0.20 XX = +/- 0.10 XXX = +/- 0.05 ANGULAR +/- 0.50		UNIVERSITY OF Southampton Faculty of Engineering and the Environment				
A3		APPROVED BY AN Grubisic								
JOB No	DEPARTMENT Astronautics	DATE 07/11/2017	SCALE 5:1	ALL DIMENSIONS IN mm UNLESS OTHERWISE STATED		TITLE Disk Top Insulator				
PROJECT VHTR	SUPERVISORS AN Grubisic	MATERIAL Shapal	TEXTURE	SURFACE FINISH <input checked="" type="checkbox"/> ALL OVER UNLESS OTHERWISE STATED		SHEET 4 of 11	No OFF 3	ASSEMBLY NUMBER	DRAWING NUMBER 1 of 1	REVISION 4
REMOVE ALL SHARP EDGES IF IN DOUBT PLEASE ASK		THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF THE UNIVERSITY OF SOUTHAMPTON DO NOT COPY WITHOUT WRITTEN PERMISSION.								



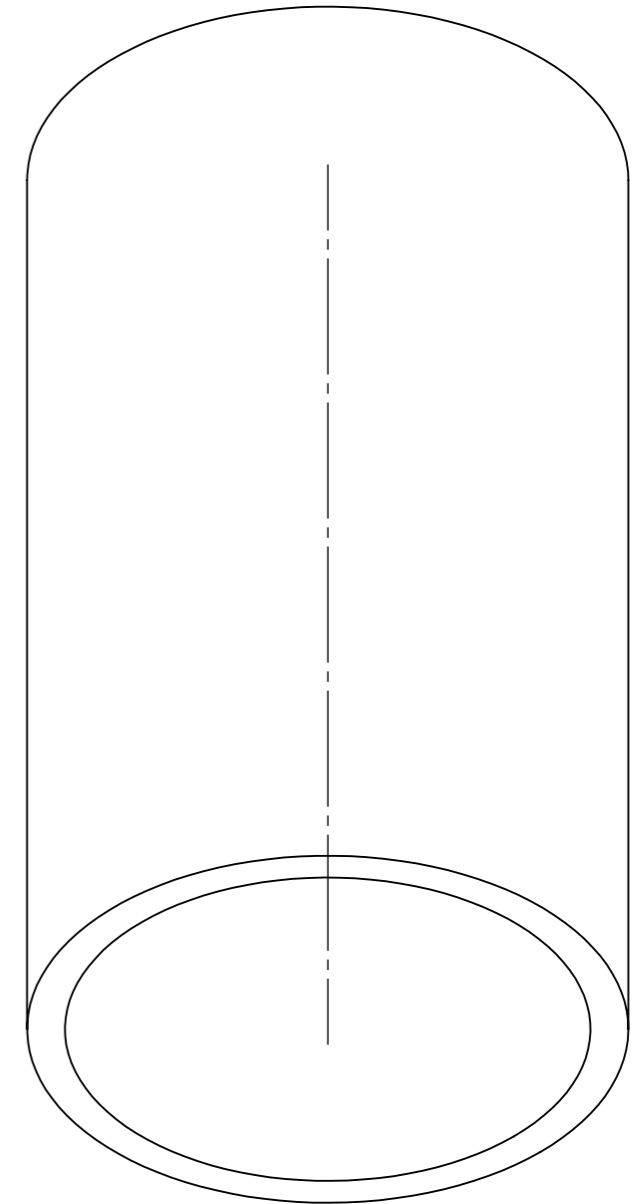
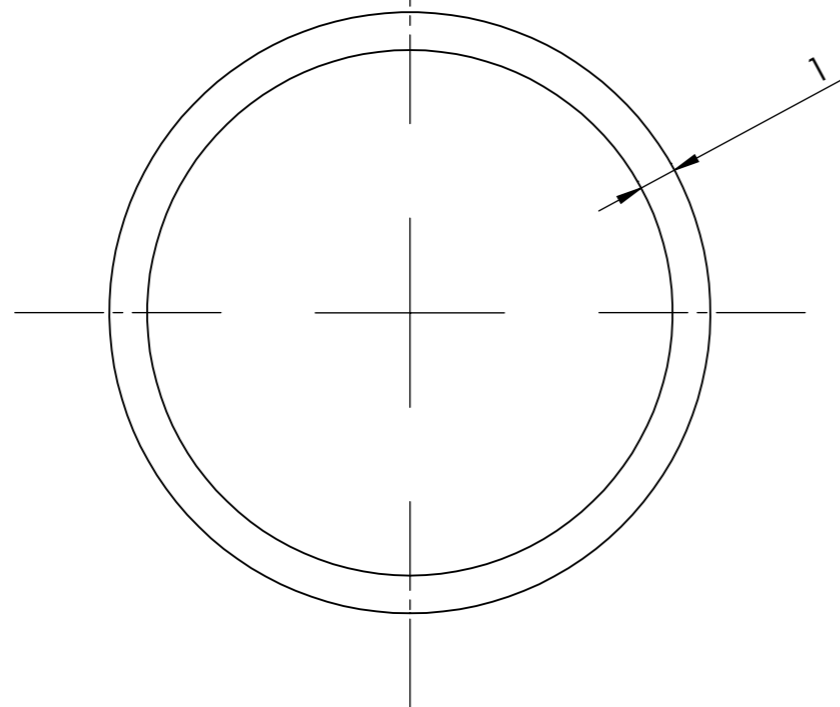
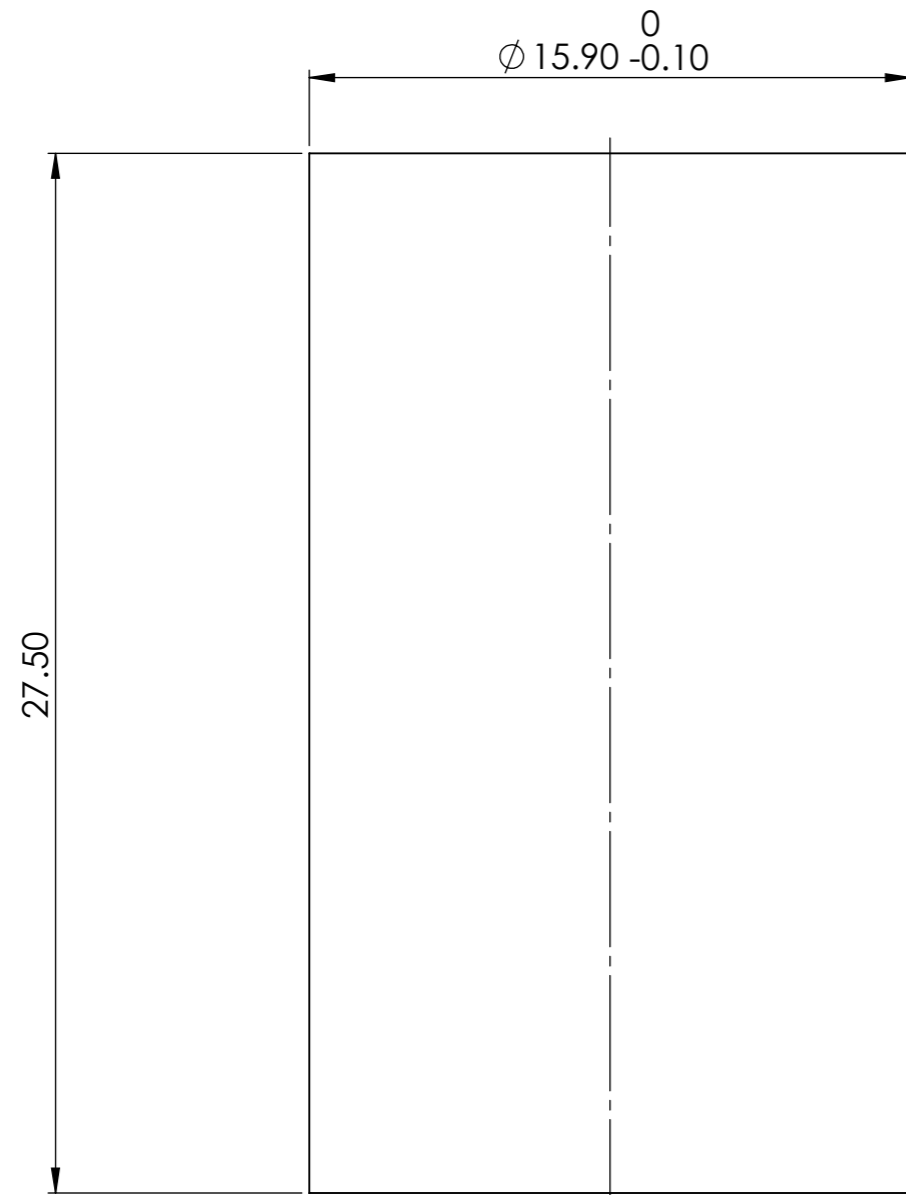
DO NOT SCALE		DRAWN AND DESIGNED BY F Romei		TOLERANCES UNLESS OTHERWISE STATED LINEAR X = +/- 0.20 XX = +/- 0.10 XXX = +/- 0.05 ANGULAR +/- 0.50		UNIVERSITY OF Southampton Faculty of Engineering and the Environment				
A3		APPROVED BY AN Grubisic								
JOB No	DEPARTMENT Astronautics	DATE 07/11/2017	SCALE 10:1	ALL DIMENSIONS IN mm UNLESS OTHERWISE STATED		TITLE Insulating Sleeve				
PROJECT VHTR	SUPERVISORS AN Grubisic	MATERIAL Macor	TEXTURE	SURFACE FINISH <input checked="" type="checkbox"/> ALL OVER UNLESS OTHERWISE STATED		SHEET 5 of 11	No OFF 18	ASSEMBLY NUMBER	DRAWING NUMBER 1 of 1	REVISION 4
REMOVE ALL SHARP EDGES IF IN DOUBT PLEASE ASK		THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF THE UNIVERSITY OF SOUTHAMPTON DO NOT COPY WITHOUT WRITTEN PERMISSION.								



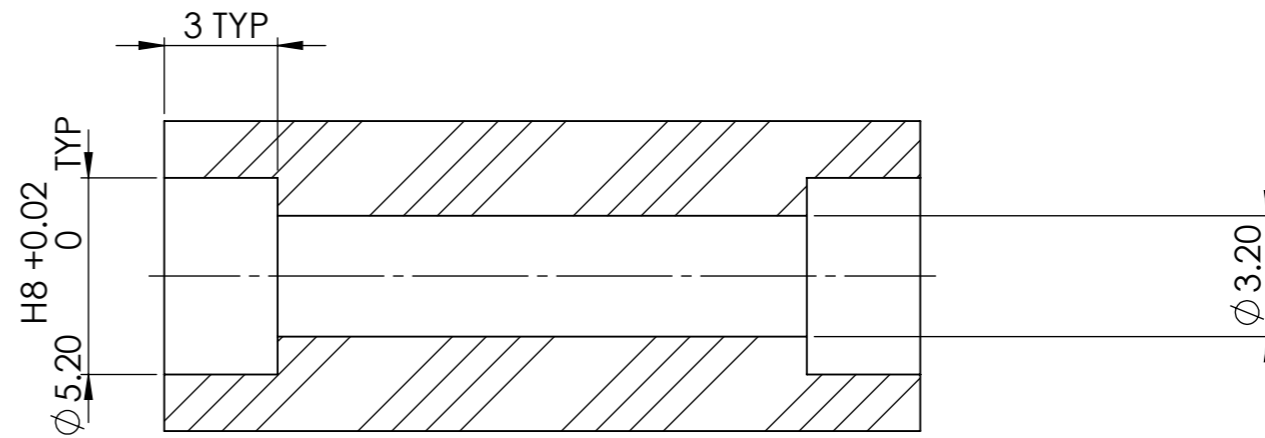
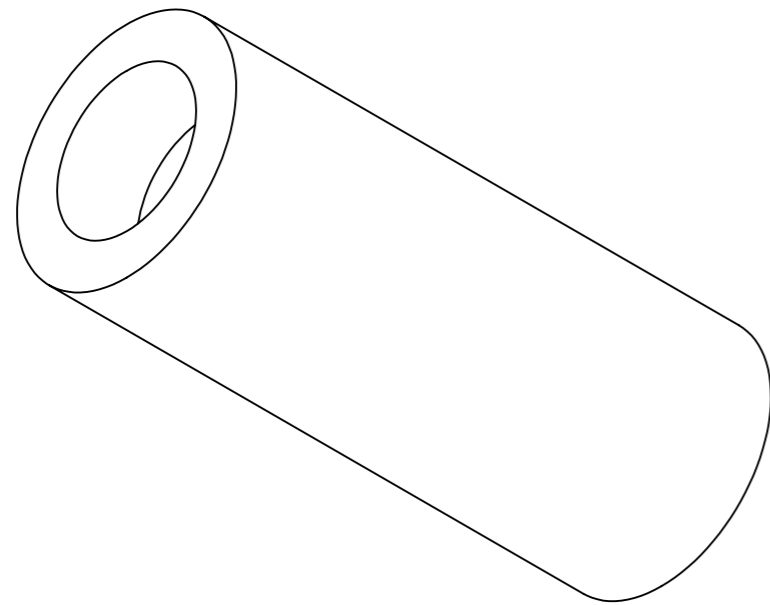
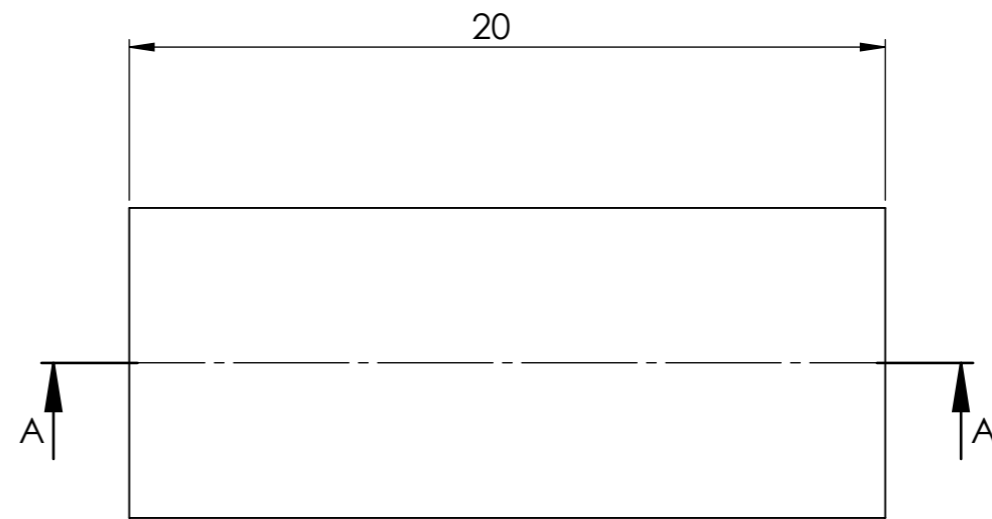
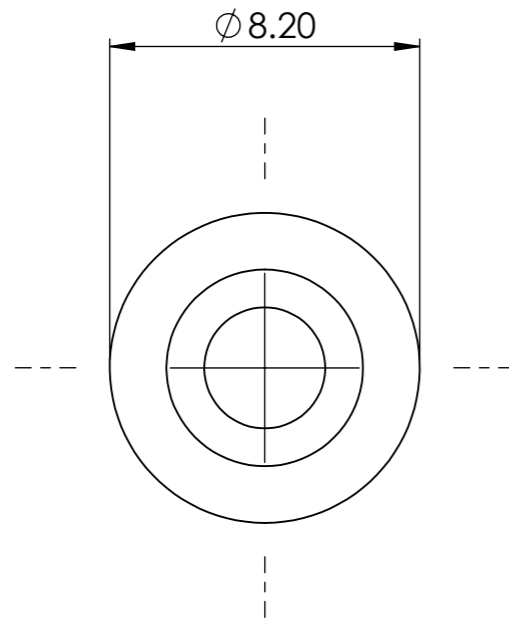
SECTION C-C



DO NOT SCALE		DRAWN AND DESIGNED BY F Romei		TOLERANCES UNLESS OTHERWISE STATED LINEAR X = +/- 0.20 XX = +/- 0.10 XXX = +/- 0.05 ANGULAR +/- 0.50		UNIVERSITY OF Southampton Faculty of Engineering and the Environment				
A3		APPROVED BY AN Grubisic								
JOB No	DEPARTMENT Astronautics	DATE 07/11/2017	SCALE 5:1	ALL DIMENSIONS IN mm UNLESS OTHERWISE STATED		TITLE Nozzle Spacer				
PROJECT VHTR	SUPERVISORS AN Grubisic	MATERIAL Shapal	TEXTURE	SURFACE FINISH <input checked="" type="checkbox"/> ALL OVER UNLESS OTHERWISE STATED						
REMOVE ALL SHARP EDGES IF IN DOUBT PLEASE ASK		THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF THE UNIVERSITY OF SOUTHAMPTON DO NOT COPY WITHOUT WRITTEN PERMISSION.				SHEET 6 of 11	No OFF 3	ASSEMBLY NUMBER	DRAWING NUMBER 1 of 1	REVISION 4

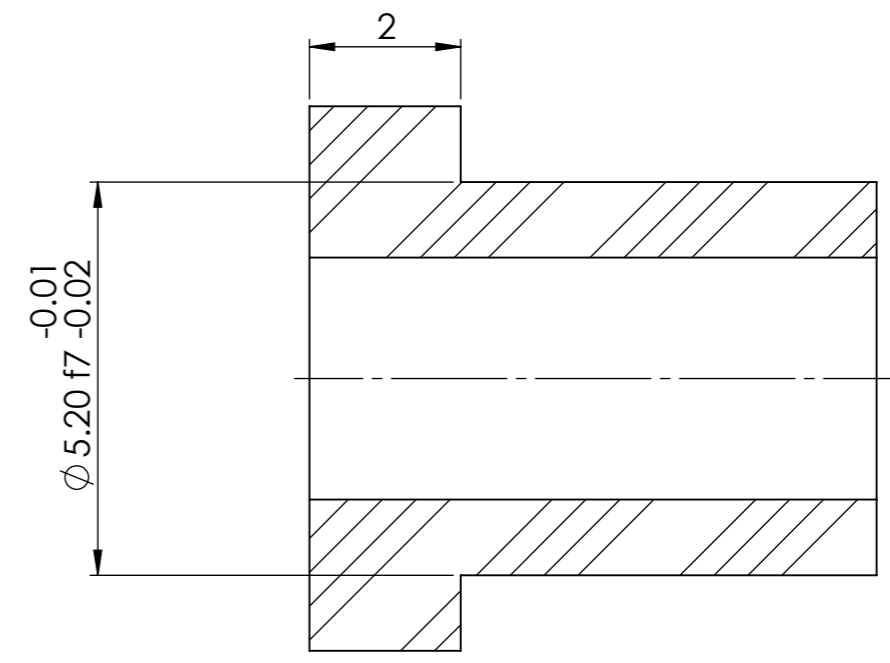
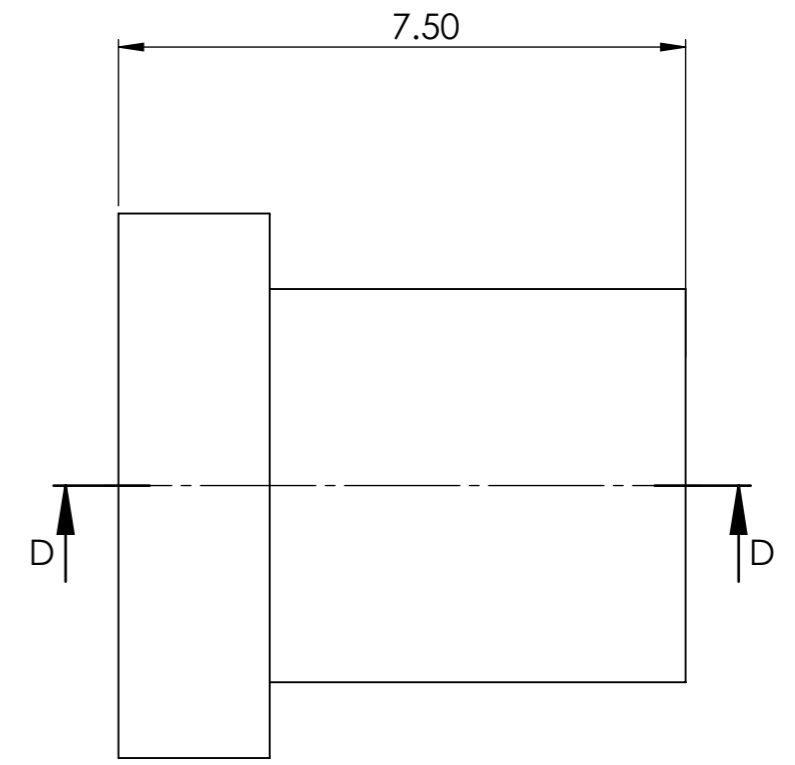
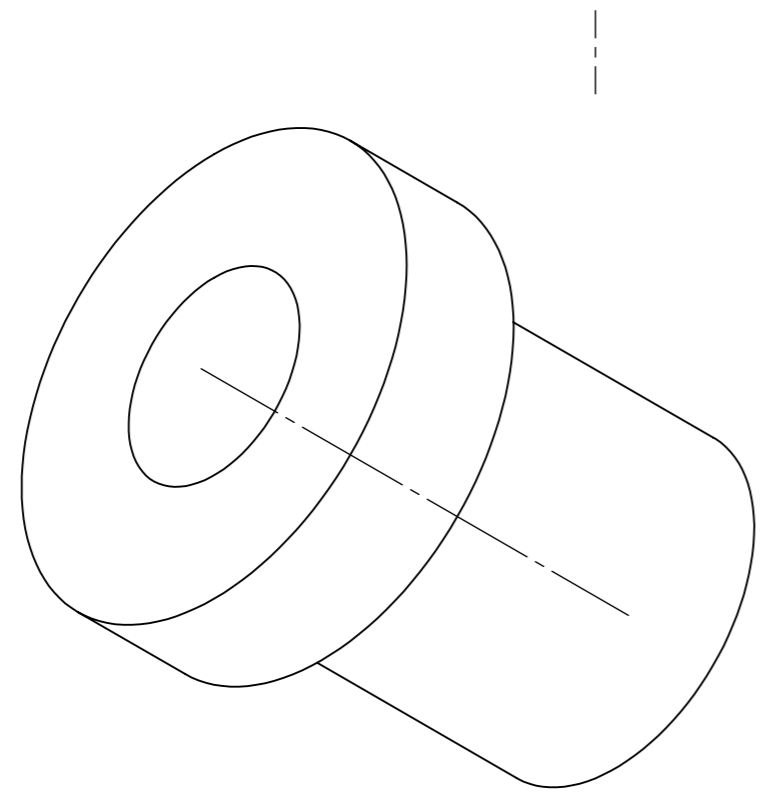
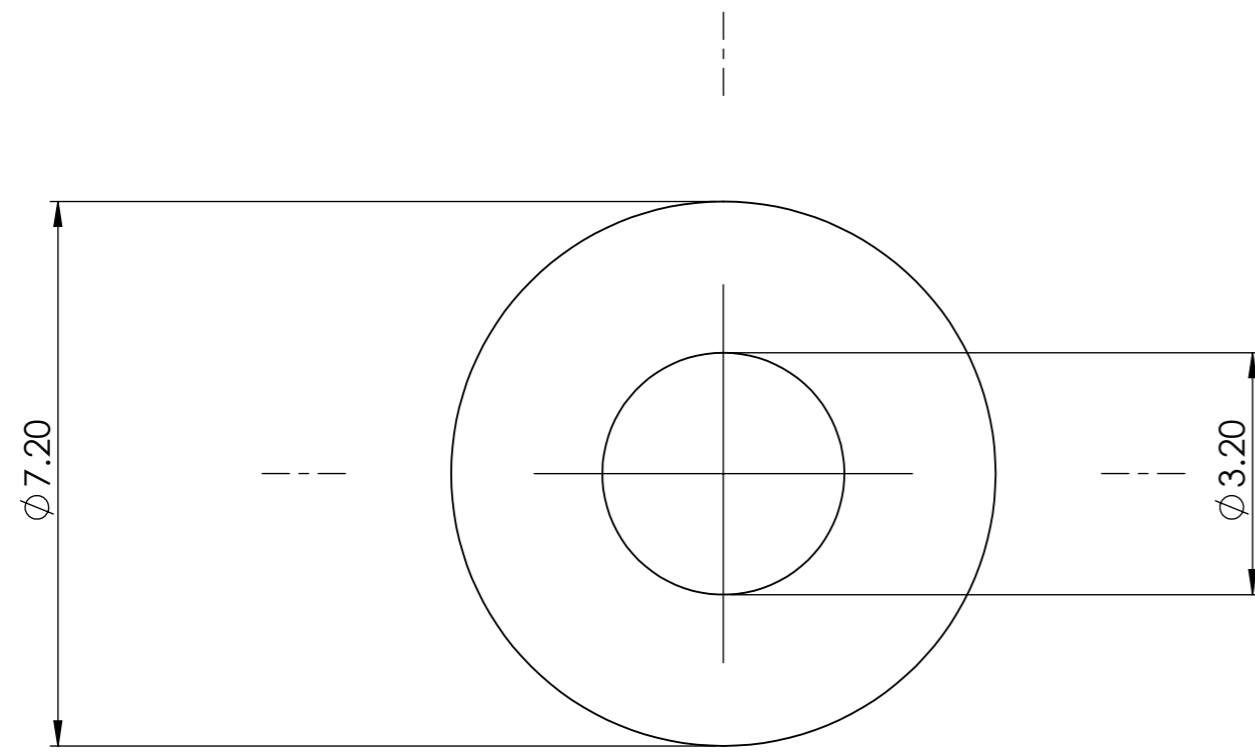


DO NOT SCALE		DRAWN AND DESIGNED BY F Romei		TOLERANCES UNLESS OTHERWISE STATED LINEAR X = +/- 0.20 XX = +/- 0.10 XXX = +/- 0.05	UNIVERSITY OF Southampton Faculty of Engineering and the Environment				
A3		APPROVED BY AN Grubisic							
JOB No	DEPARTMENT Astronautics	DATE 07/11/2017	SCALE 5:1	ANGULAR +/- 0.50	TITLE Pipe Insulator				
PROJECT VHTR	SUPERVISORS AN Grubisic	MATERIAL Shapal	TEXTURE	SURFACE FINISH <input checked="" type="checkbox"/> ALL OVER UNLESS OTHERWISE STATED	ALL DIMENSIONS IN mm UNLESS OTHERWISE STATED				
REMOVE ALL SHARP EDGES IF IN DOUBT PLEASE ASK		THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF THE UNIVERSITY OF SOUTHAMPTON DO NOT COPY WITHOUT WRITTEN PERMISSION.			SHEET 7 of 11	No OFF 3	ASSEMBLY NUMBER	DRAWING NUMBER 1 of 1	REVISION 4



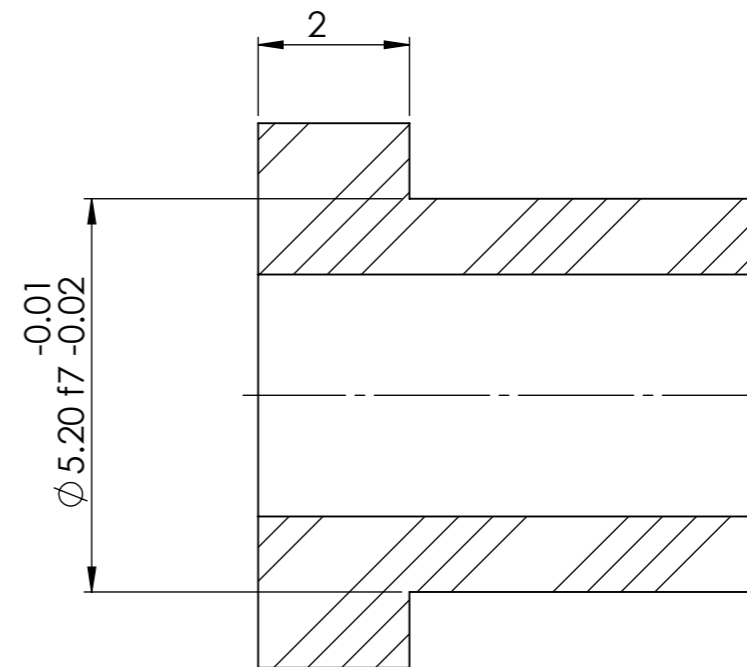
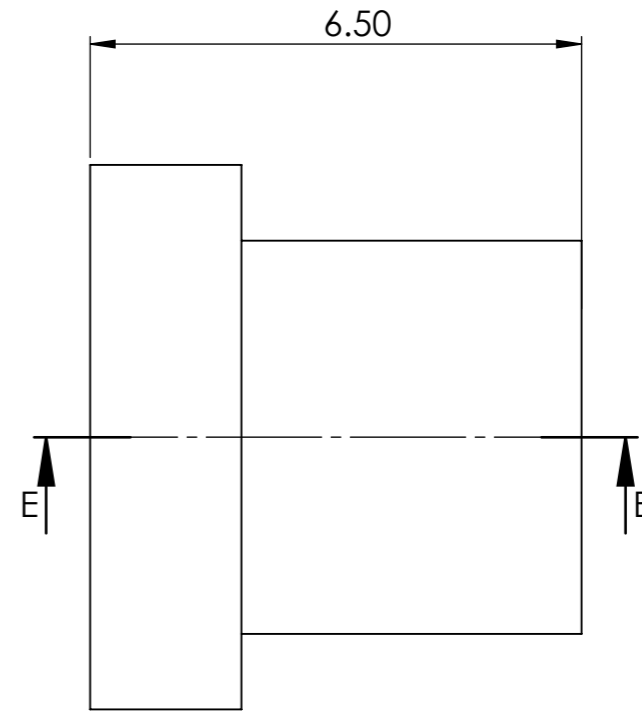
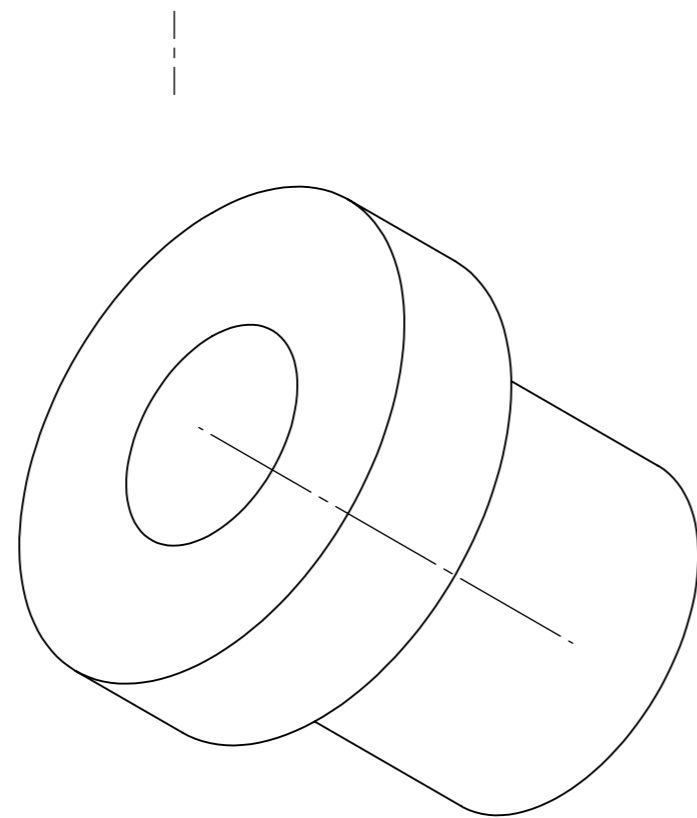
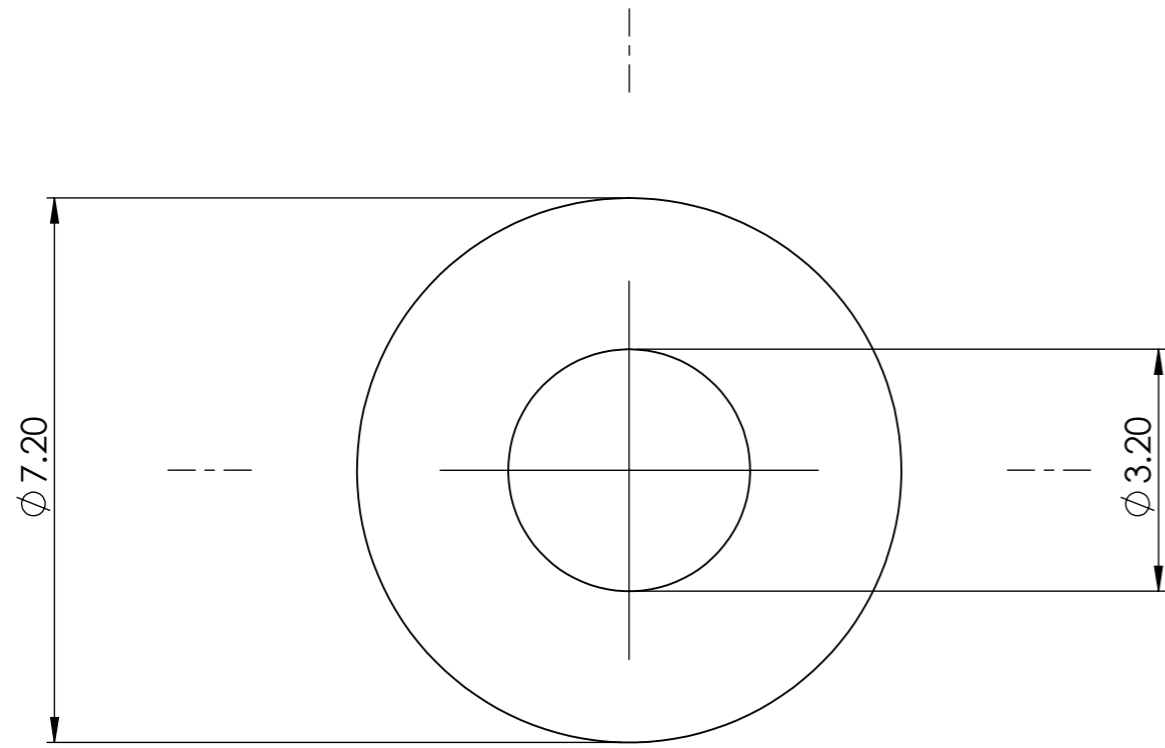
SECTION A-A

DO NOT SCALE		DRAWN AND DESIGNED BY F Romei		TOLERANCES UNLESS OTHERWISE STATED LINEAR X = +/- 0.20 XX = +/- 0.10 XXX = +/- 0.05 ANGULAR +/- 0.50		UNIVERSITY OF Southampton Faculty of Engineering and the Environment				
A3		APPROVED BY AN Grubisic								
JOB No	DEPARTMENT Astronautics	DATE 07/11/2017	SCALE 5:1	ALL DIMENSIONS IN mm UNLESS OTHERWISE STATED		TITLE Support Sleeve				
PROJECT VHTR	SUPERVISORS AN Grubisic	MATERIAL Macor	TEXTURE	SURFACE FINISH <input checked="" type="checkbox"/> ALL OVER UNLESS OTHERWISE STATED						
REMOVE ALL SHARP EDGES IF IN DOUBT PLEASE ASK		THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF THE UNIVERSITY OF SOUTHAMPTON DO NOT COPY WITHOUT WRITTEN PERMISSION.				SHEET 8 of 11	No OFF 6	ASSEMBLY NUMBER	DRAWING NUMBER 1 of 1	REVISION 4



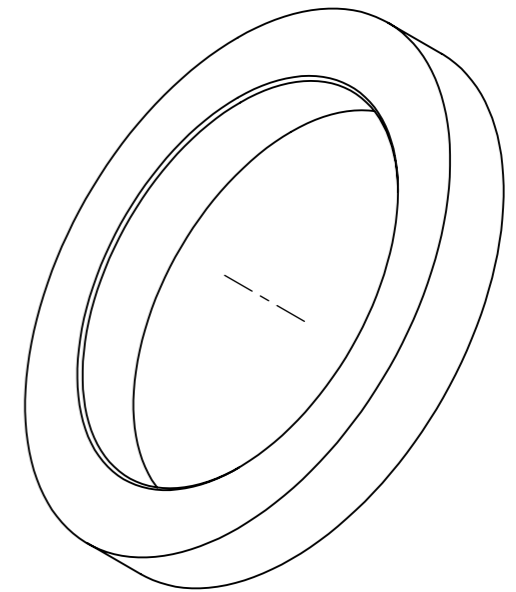
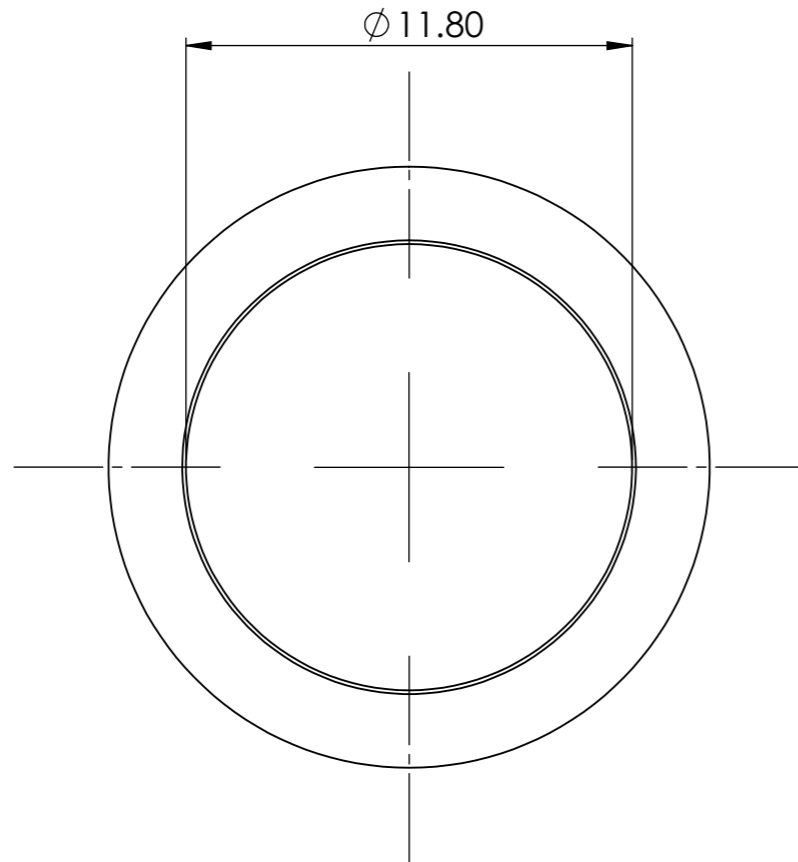
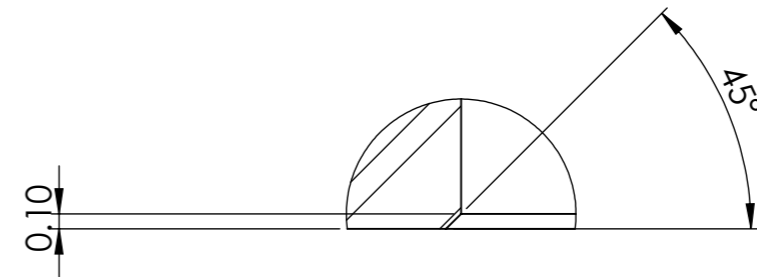
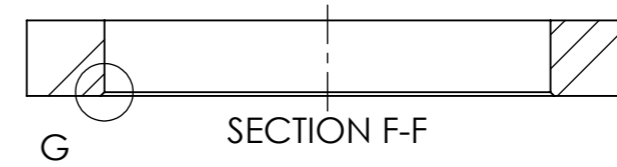
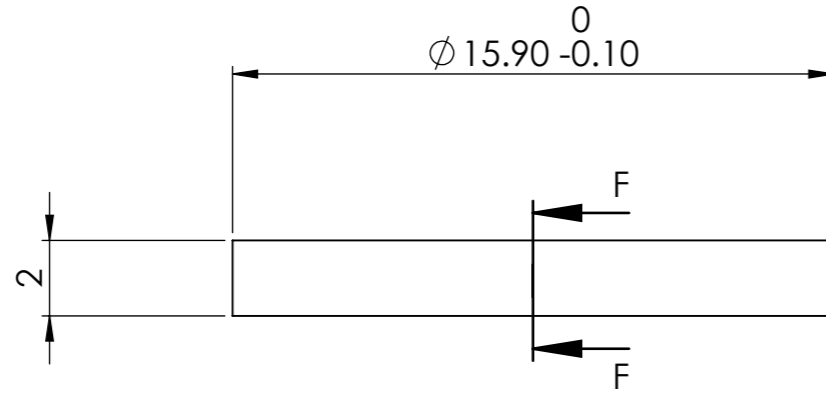
SECTION D-D

DO NOT SCALE		DRAWN AND DESIGNED BY F Romei		TOLERANCES UNLESS OTHERWISE STATED LINEAR X = +/- 0.20 XX = +/- 0.10 XXX = +/- 0.05 ANGULAR +/- 0.50		UNIVERSITY OF Southampton Faculty of Engineering and the Environment				
A3		APPROVED BY AN Grubisic								
JOB No	DEPARTMENT Astronautics	DATE 07/11/2017	SCALE 10:1	ALL DIMENSIONS IN mm UNLESS OTHERWISE STATED		TITLE Support Washer Bottom				
PROJECT VHTR	SUPERVISORS AN Grubisic	MATERIAL Macor	TEXTURE	SURFACE FINISH <input checked="" type="checkbox"/> ALL OVER UNLESS OTHERWISE STATED		SHEET 9 of 11	No OFF 6	ASSEMBLY NUMBER	DRAWING NUMBER 1 of 1	REVISION 4
REMOVE ALL SHARP EDGES IF IN DOUBT PLEASE ASK		THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF THE UNIVERSITY OF SOUTHAMPTON DO NOT COPY WITHOUT WRITTEN PERMISSION.								

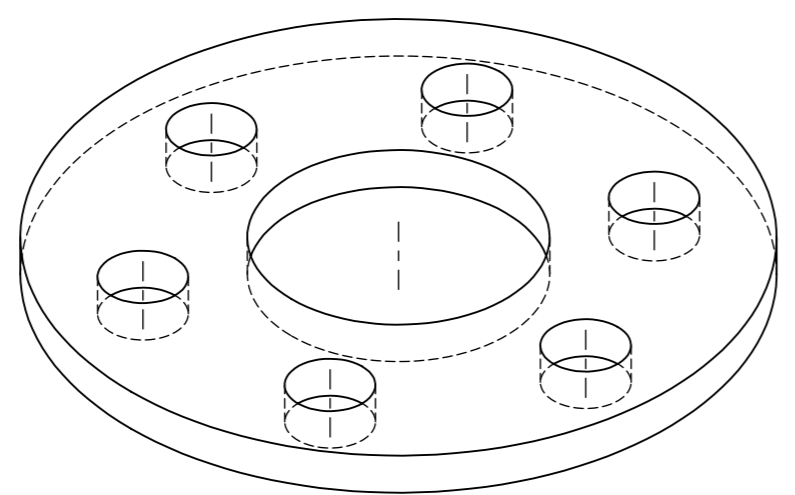
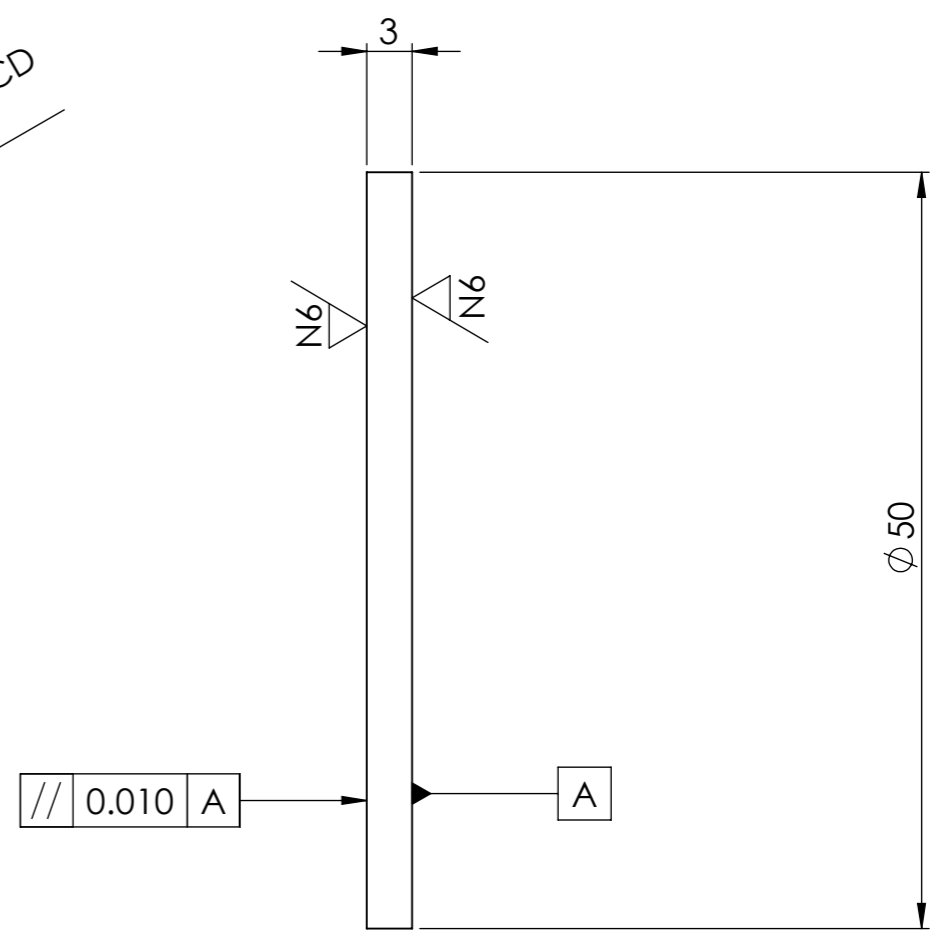
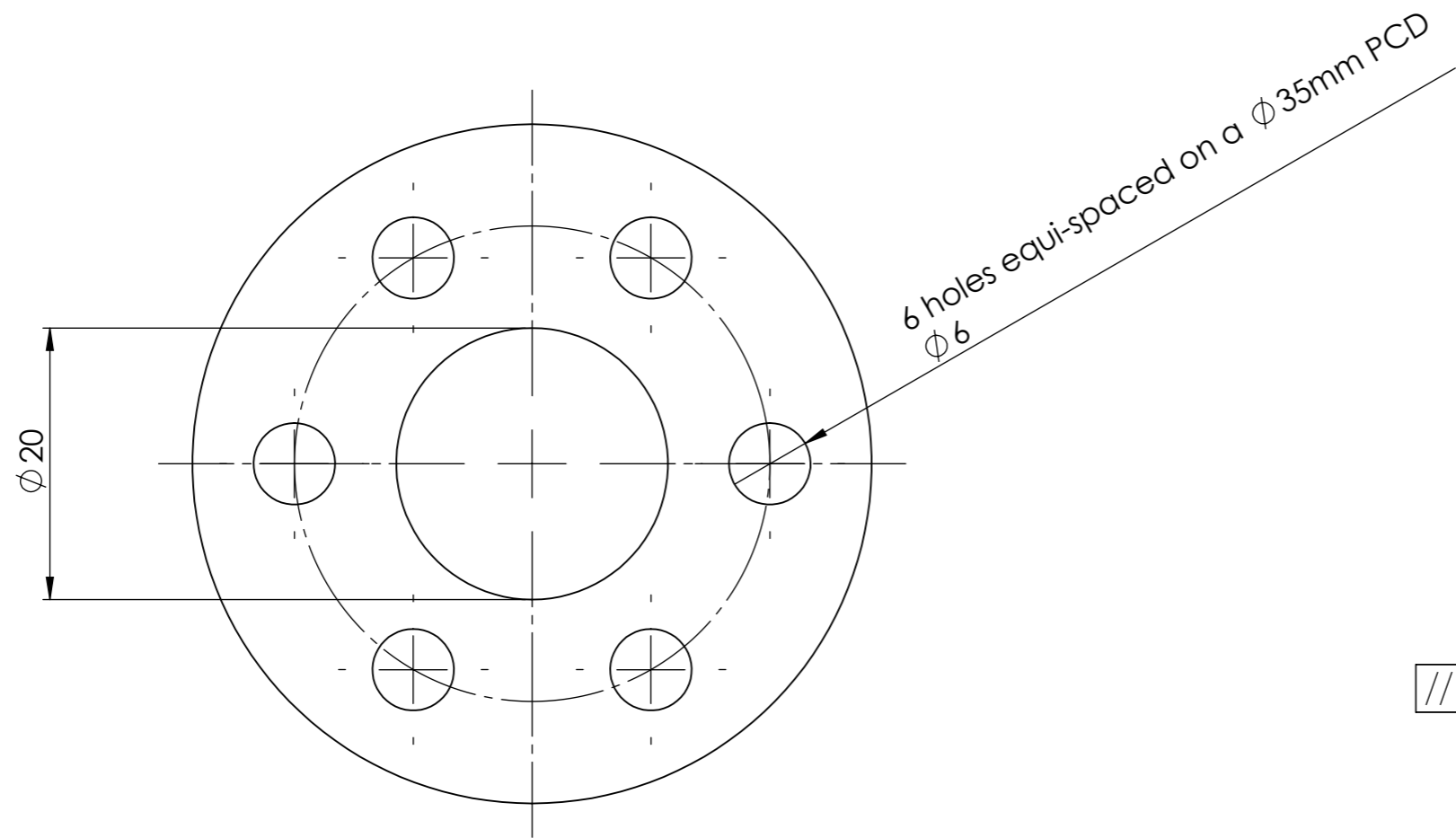


SECTION E-E

DO NOT SCALE		DRAWN AND DESIGNED BY F Romei		TOLERANCES UNLESS OTHERWISE STATED LINEAR X = +/- 0.20 XX = +/- 0.10 XXX = +/- 0.05 ANGULAR +/- 0.50		UNIVERSITY OF Southampton Faculty of Engineering and the Environment				
A3		APPROVED BY AN Grubisic								
JOB No	DEPARTMENT Astronautics	DATE 07/11/2017	SCALE 10:1	ALL DIMENSIONS IN mm UNLESS OTHERWISE STATED		TITLE Support Washer Top				
PROJECT VHTR	SUPERVISORS AN Grubisic	MATERIAL Macor	TEXTURE	SURFACE FINISH <input checked="" type="checkbox"/> ALL OVER UNLESS OTHERWISE STATED						
REMOVE ALL SHARP EDGES IF IN DOUBT PLEASE ASK		THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF THE UNIVERSITY OF SOUTHAMPTON DO NOT COPY WITHOUT WRITTEN PERMISSION.				SHEET 10 of 11	No OFF 6	ASSEMBLY NUMBER	DRAWING NUMBER 1 of 1	REVISION 4

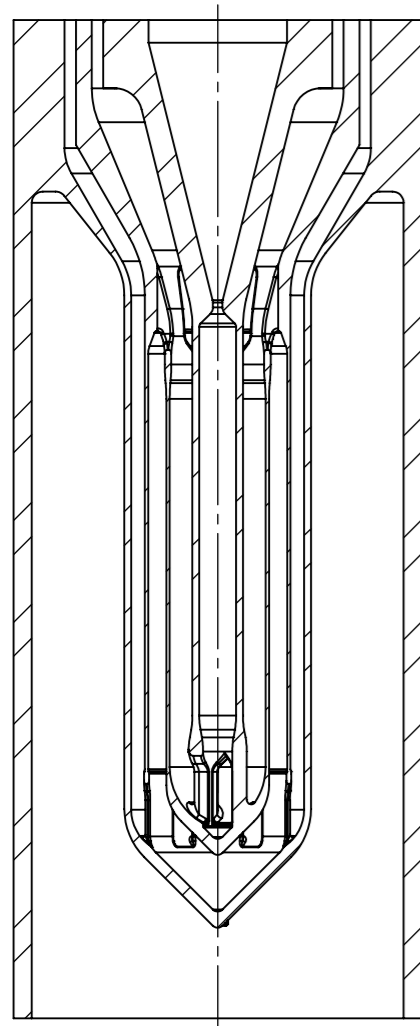


DO NOT SCALE		DRAWN AND DESIGNED BY F Romei		TOLERANCES UNLESS OTHERWISE STATED LINEAR X = +/- 0.20 XX = +/- 0.10 XXX = +/- 0.05 ANGULAR +/- 0.50		UNIVERSITY OF Southampton Faculty of Engineering and the Environment				
A3		APPROVED BY AN Grubisic								
JOB No	DEPARTMENT Astronautics	DATE 07/11/2017	SCALE 5:1	ALL DIMENSIONS IN mm UNLESS OTHERWISE STATED		TITLE Top Insulator Ring				
PROJECT VHTR	SUPERVISORS AN Grubisic	MATERIAL Shapal	TEXTURE	SURFACE FINISH <input checked="" type="checkbox"/> ALL OVER UNLESS OTHERWISE STATED						
REMOVE ALL SHARP EDGES IF IN DOUBT PLEASE ASK		THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF THE UNIVERSITY OF SOUTHAMPTON DO NOT COPY WITHOUT WRITTEN PERMISSION.				SHEET 11 of 11	No OFF 3	ASSEMBLY NUMBER	DRAWING NUMBER 1 of 1	REVISION 4

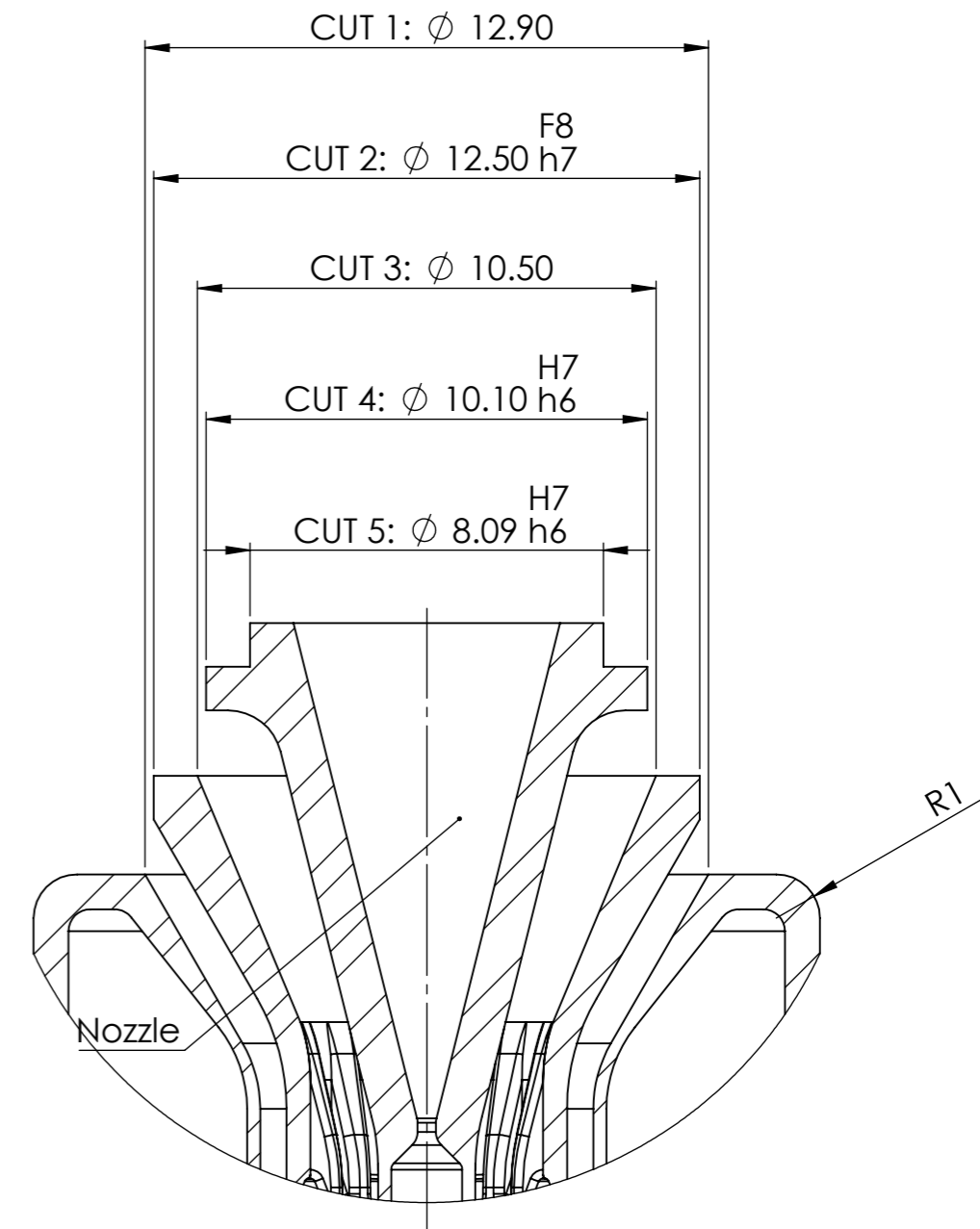
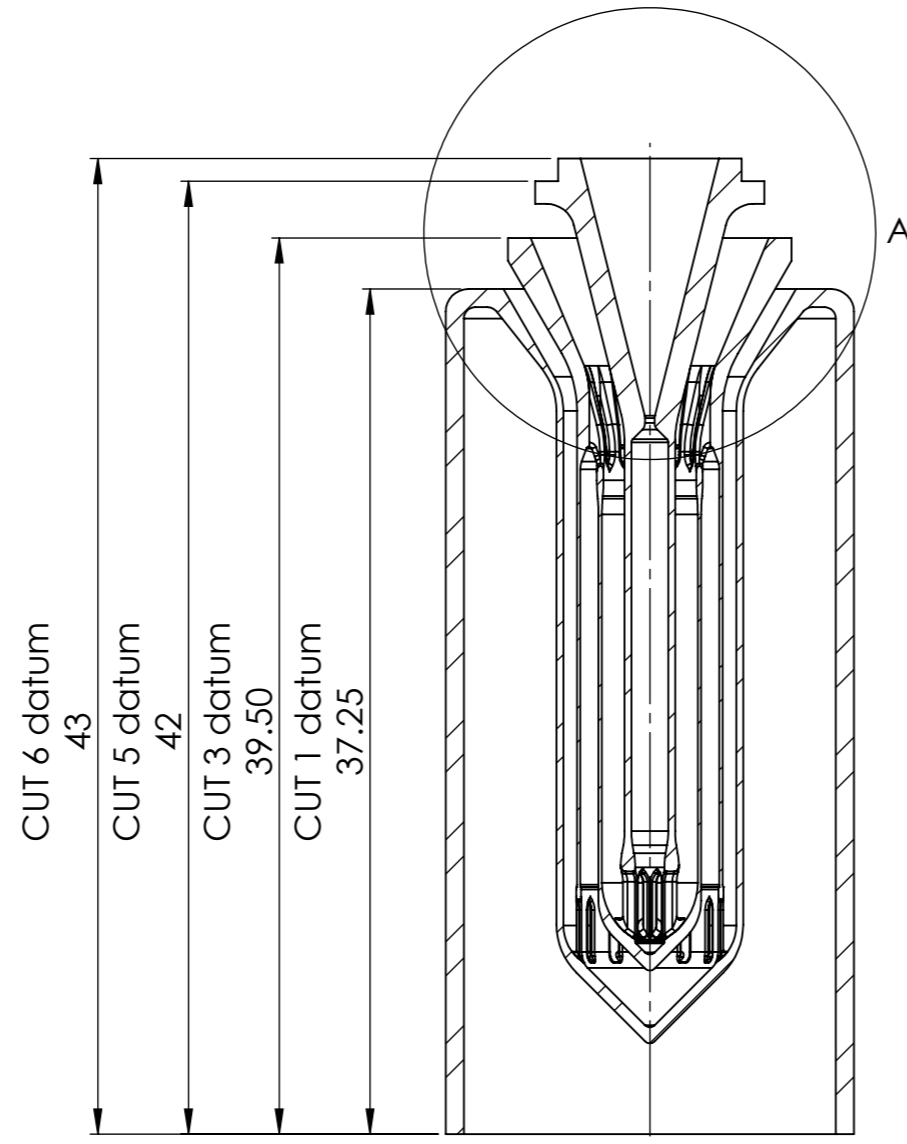


DO NOT SCALE		DRAWN AND DESIGNED BY F Romei		TOLERANCES UNLESS OTHERWISE STATED LINEAR X = +/- 0.20 XX = +/- 0.10 XXX = +/- 0.05 ANGULAR +/- 0.50		UNIVERSITY OF Southampton Faculty of Engineering and the Environment				
A3		APPROVED BY AN Grubisic								
JOB No -	DEPARTMENT Astronautics	DATE 20/10/2017	SCALE 2:1	ALL DIMENSIONS IN mm UNLESS OTHERWISE STATED		TITLE Collar				
PROJECT VHTR	SUPERVISORS AN Grubisic	MATERIAL Aluymina 99.7%	TEXTURE	SURFACE FINISH <input checked="" type="checkbox"/> ALL OVER UNLESS OTHERWISE STATED		SHEET 1 of 1	No OFF 4	ASSEMBLY NUMBER	DRAWING NUMBER 1 of 1	REVISION 3
REMOVE ALL SHARP EDGES IF IN DOUBT PLEASE ASK		THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF THE UNIVERSITY OF SOUTHAMPTON DO NOT COPY WITHOUT WRITTEN PERMISSION.								

As-printed (section view)



Final component (section view)



DETAIL A
SCALE 6 : 1

NOTES:

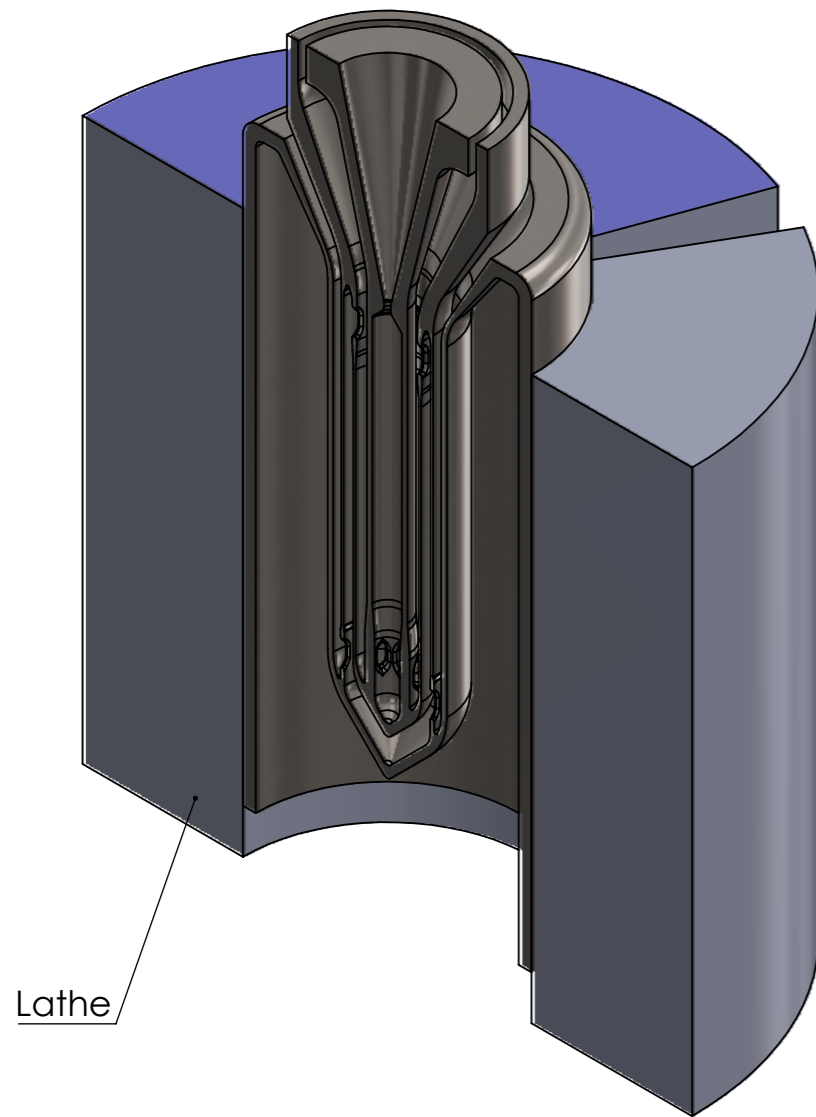
- the as-printed Heat Exchangers are manufactured in job 772270
- use suggested jig for performing this job
- all cuts are performed on the nozzle end

Suggested machining steps:

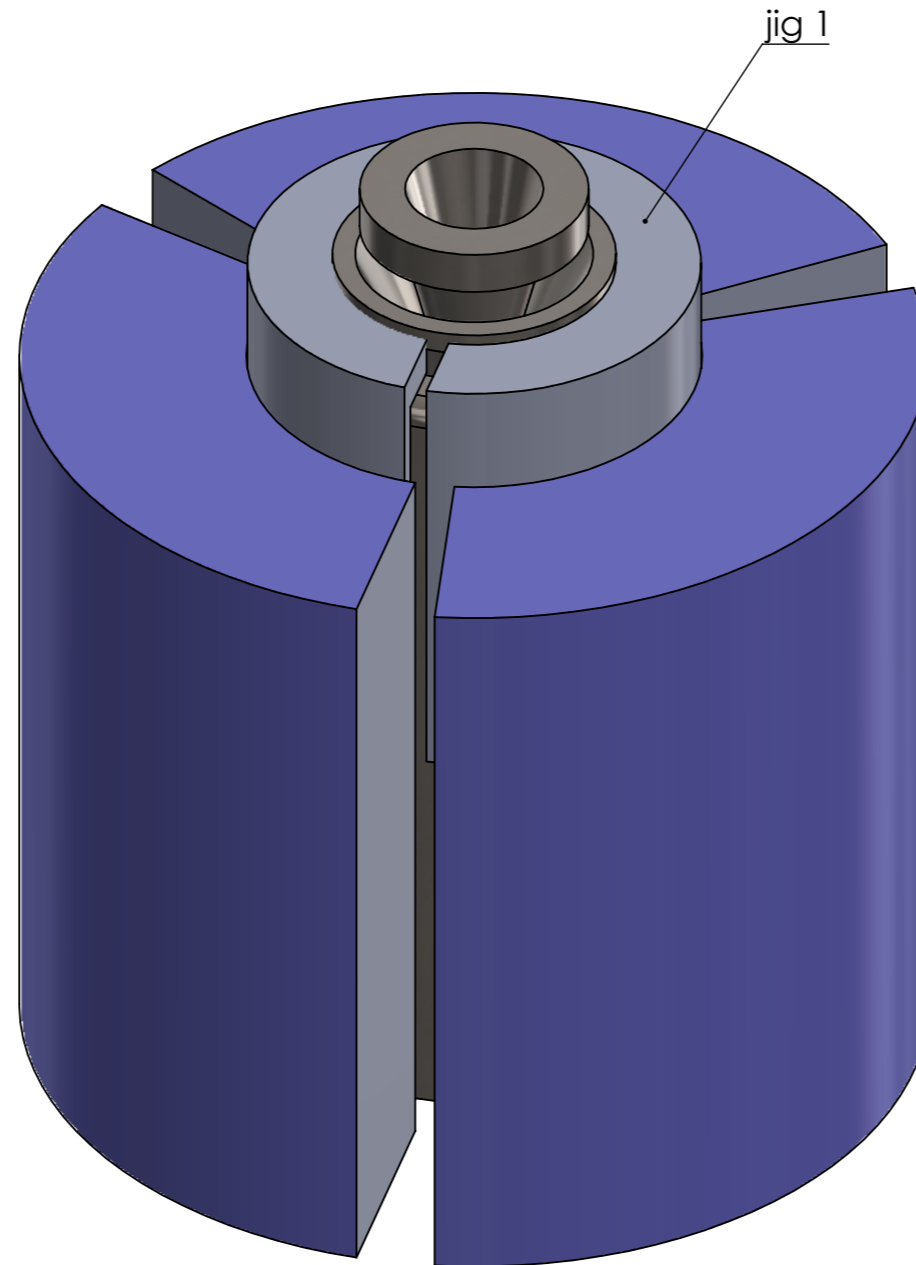
1. Polish down the bottom cylindrical surface;
2. CUT 1 (with the datum provided and up to the CUT 1 dia.);
3. Radius R1;
4. CUT 2 to obtain the required close running fit with a ceramic component.
5. CUT 3 up to the specified dia. to avoid contact with the internal nozzle;
6. CUT 4 and CUT 5 to obtain the specified tolerance to couple the nozzle with the Thruster Casing component;
7. CUT 6 to obtain the nominal Heat Exchanger length;
8. Manual nozzle surface polishing on lathe (using jig for CUT 3), details to be further discussed with technician
9. Nozzle throat drilling with 0.42mm drill bit (using jig for CUT 3)

DO NOT SCALE		DRAWN AND DESIGNED BY F Romei		TOLERANCES UNLESS OTHERWISE STATED		UNIVERSITY OF Southampton Faculty of Engineering and the Environment					
A3		APPROVED BY AN Grubisic		LINEAR X = +/- 0.20 XX = +/- 0.10 XXX = +/- 0.05 ANGULAR +/- 0.50						TITLE Heat Exchanger post-man.	
JOB No	DEPARTMENT Astronautics	DATE 07/11/2017	SCALE 3:1	ALL DIMENSIONS IN mm UNLESS OTHERWISE STATED		SHEET					
PROJECT VHTR	SUPERVISORS AN Grubisic	MATERIAL 316L	TEXTURE	SURFACE FINISH ✓ ALL OVER UNLESS OTHERWISE STATED		No OFF		ASSEMBLY NUMBER		DRAWING NUMBER	
REMOVE ALL SHARP EDGES IF IN DOUBT PLEASE ASK		THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF THE UNIVERSITY OF SOUTHAMPTON DO NOT COPY WITHOUT WRITTEN PERMISSION.				2 of 5		6		1 of 1	
						1				1	

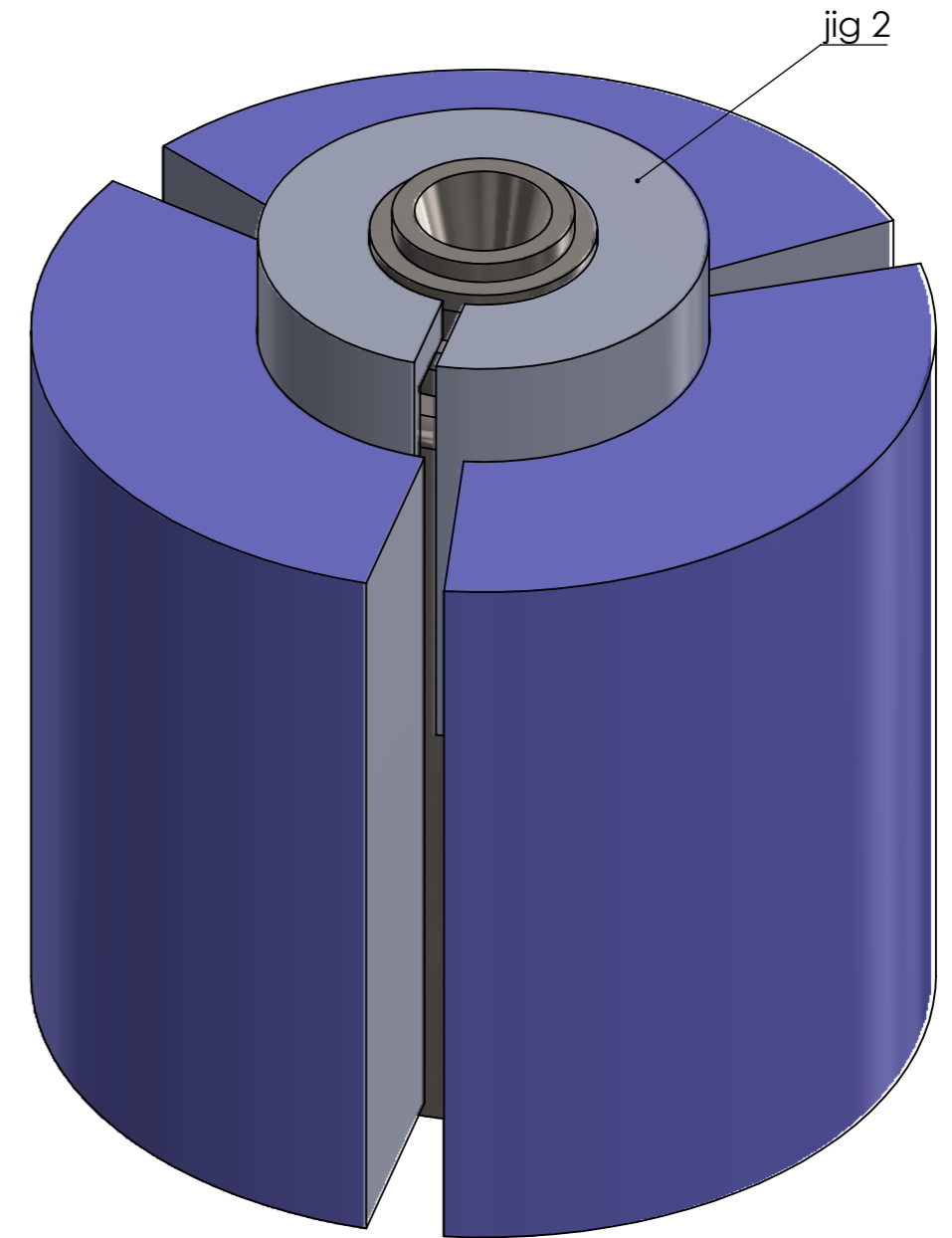
CUT 1 + radius R1 (section view)



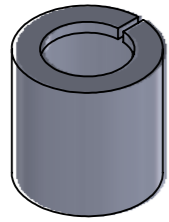
CUT 2



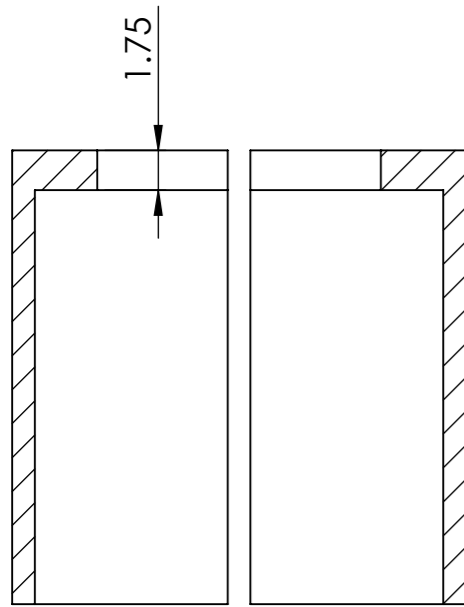
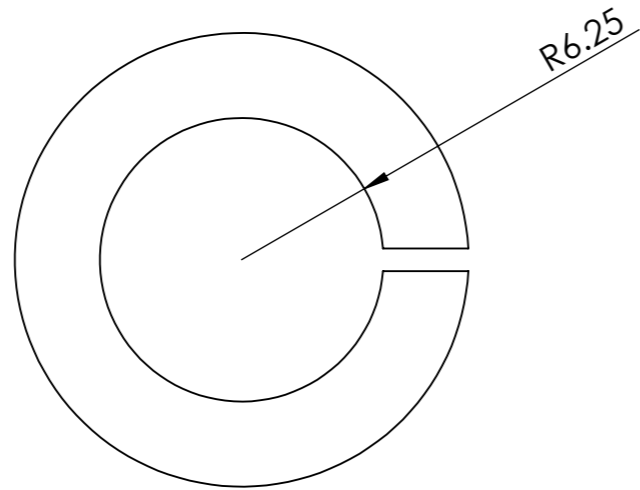
CUT 3 + CUT 4 + nozzle polishing + throat drilling



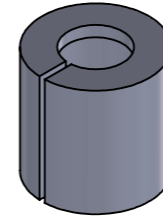
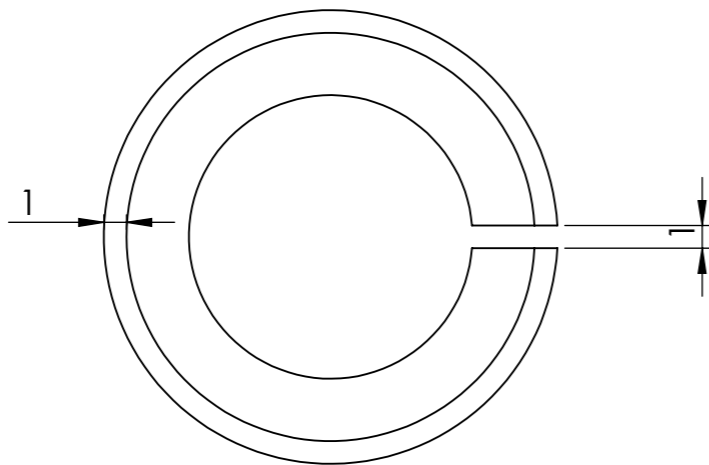
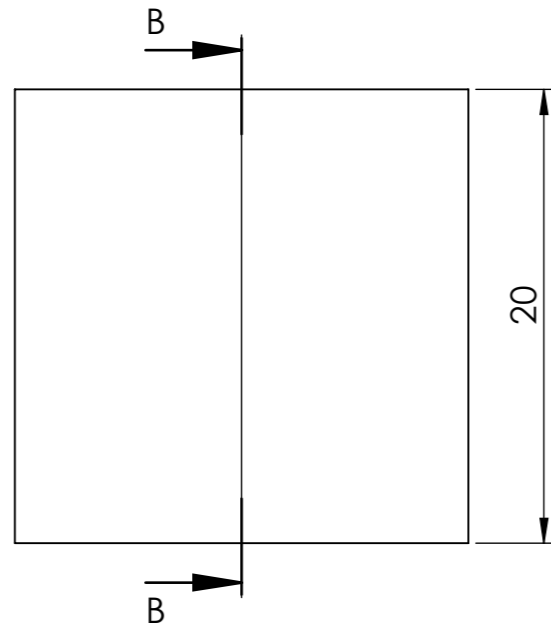
DO NOT SCALE		DRAWN AND DESIGNED BY F Romei		TOLERANCES UNLESS OTHERWISE STATED LINEAR X = +/- 0.20 XX = +/- 0.10 XXX = +/- 0.05 ANGULAR +/- 0.50		UNIVERSITY OF Southampton Faculty of Engineering and the Environment				
A3		APPROVED BY AN Grubisic								
JOB No	DEPARTMENT Astronautics	DATE 07/11/2017	SCALE 3:1	ALL DIMENSIONS IN mm UNLESS OTHERWISE STATED		TITLE Suggested jig for HE post-man				
PROJECT VHTR	SUPERVISORS AN Grubisic	MATERIAL 316L	TEXTURE	SURFACE FINISH <input checked="" type="checkbox"/> ALL OVER UNLESS OTHERWISE STATED		SHEET 3 of 5	No OFF 6	ASSEMBLY NUMBER	DRAWING NUMBER 1 of 1	REVISION 1
REMOVE ALL SHARP EDGES IF IN DOUBT PLEASE ASK		THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF THE UNIVERSITY OF SOUTHAMPTON DO NOT COPY WITHOUT WRITTEN PERMISSION.								



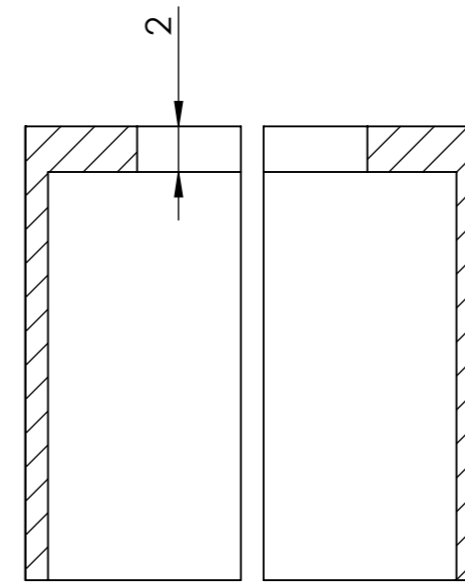
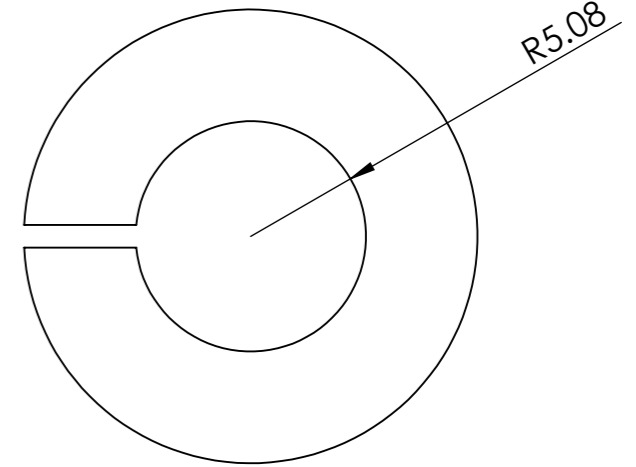
jig 1



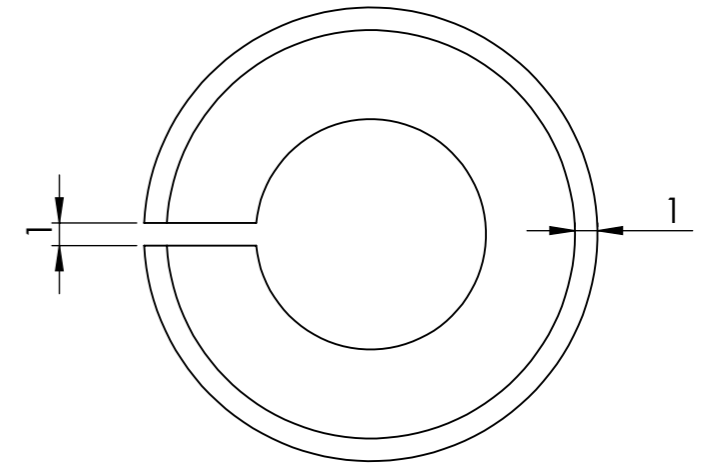
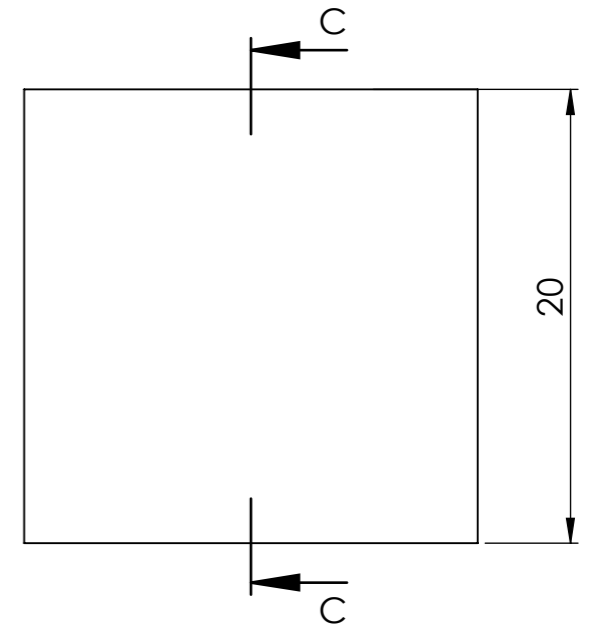
SECTION B-B



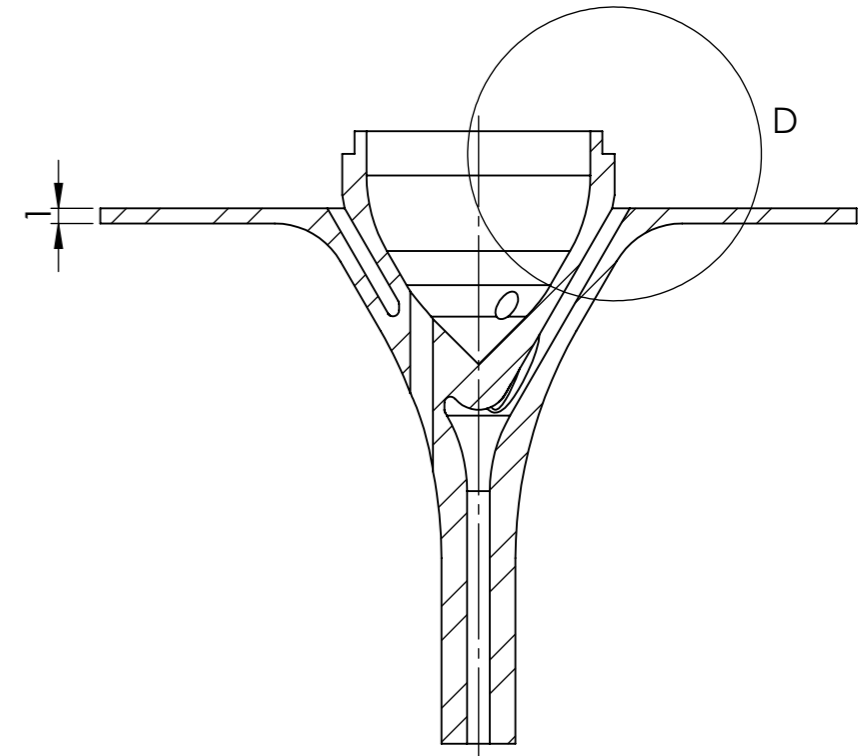
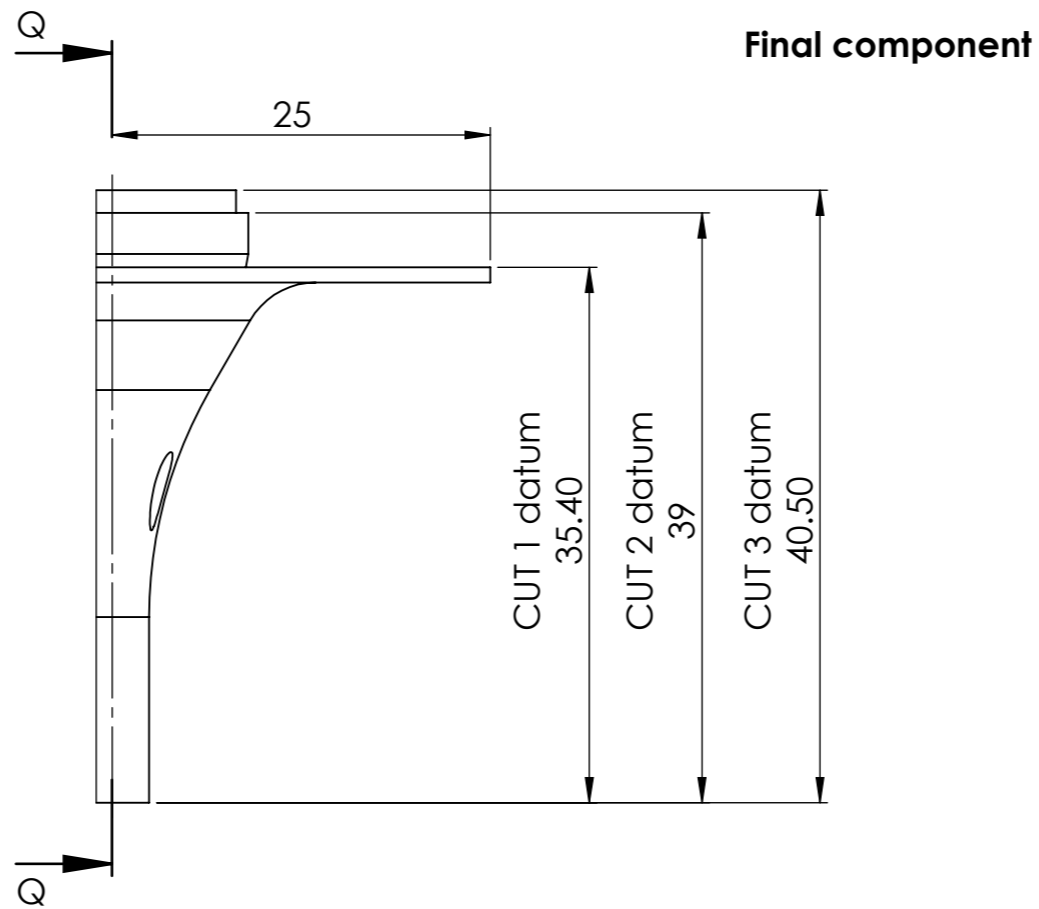
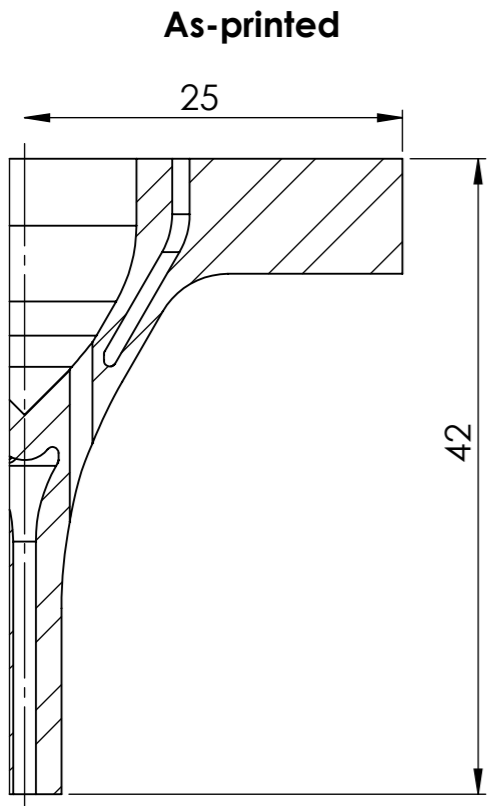
jig 2



SECTION C-C



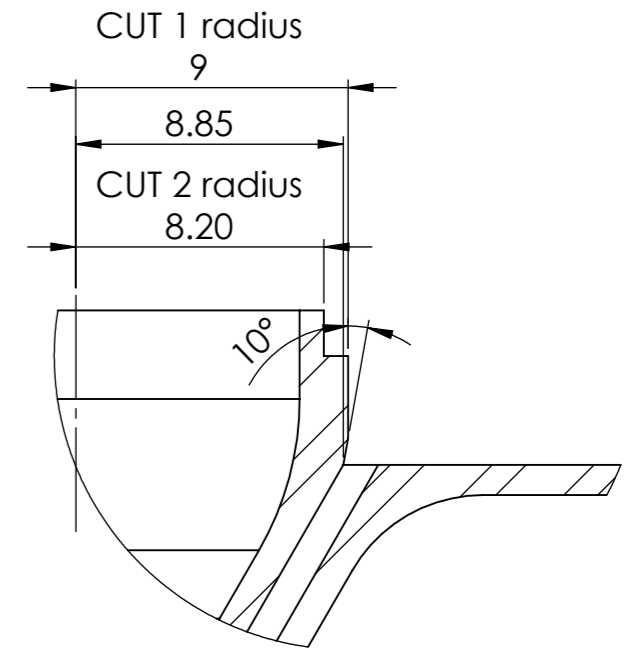
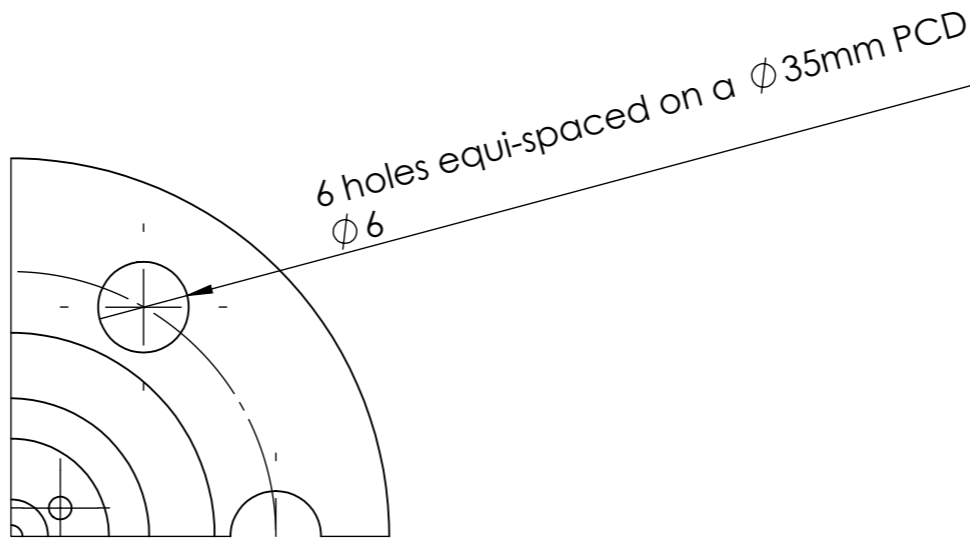
DO NOT SCALE		DRAWN AND DESIGNED BY F Romei		TOLERANCES UNLESS OTHERWISE STATED LINEAR X = +/- 0.20 XX = +/- 0.10 XXX = +/- 0.05 ANGULAR +/- 0.50	UNIVERSITY OF Southampton Faculty of Engineering and the Environment				
A3		APPROVED BY AN Grubisic							
JOB No	DEPARTMENT Astronautics	DATE 07/11/2017	SCALE 3:1	ALL DIMENSIONS IN mm UNLESS OTHERWISE STATED					
PROJECT VHTR	SUPERVISORS AN Grubisic	MATERIAL 316L	TEXTURE	SURFACE FINISH <input checked="" type="checkbox"/> ALL OVER UNLESS OTHERWISE STATED					
REMOVE ALL SHARP EDGES IF IN DOUBT PLEASE ASK		THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF THE UNIVERSITY OF SOUTHAMPTON DO NOT COPY WITHOUT WRITTEN PERMISSION.			SHEET 4 of 5	No OFF 6	ASSEMBLY NUMBER	DRAWING NUMBER 1 of 1	REVISION 1



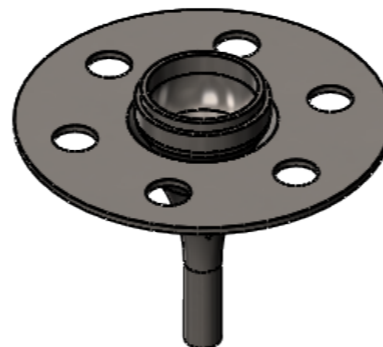
NOTES:
 - the as-printed Thruster Inflows are manufactured in job 772270
 - all cuts are performed on the top end

Suggested machining steps:

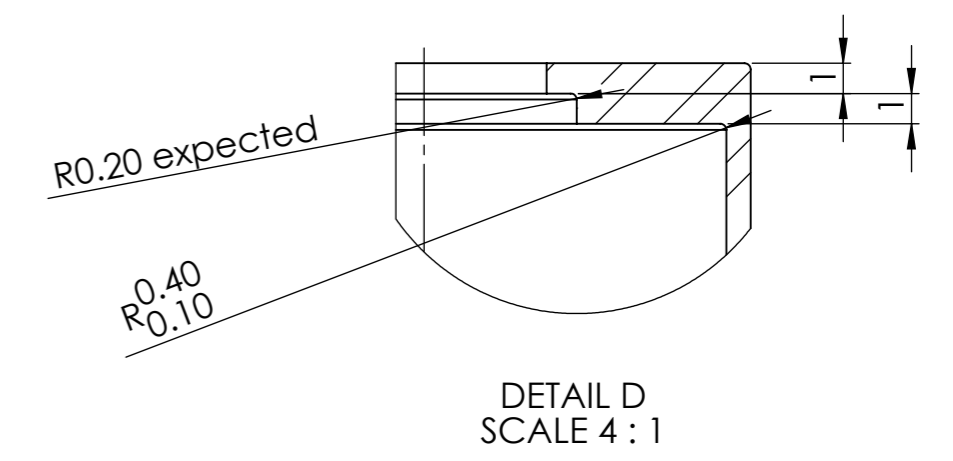
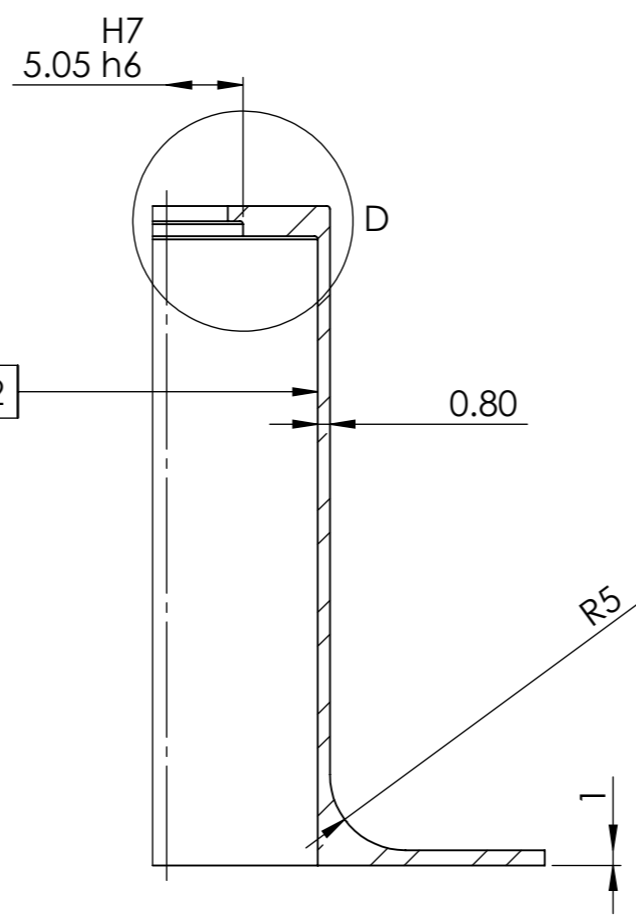
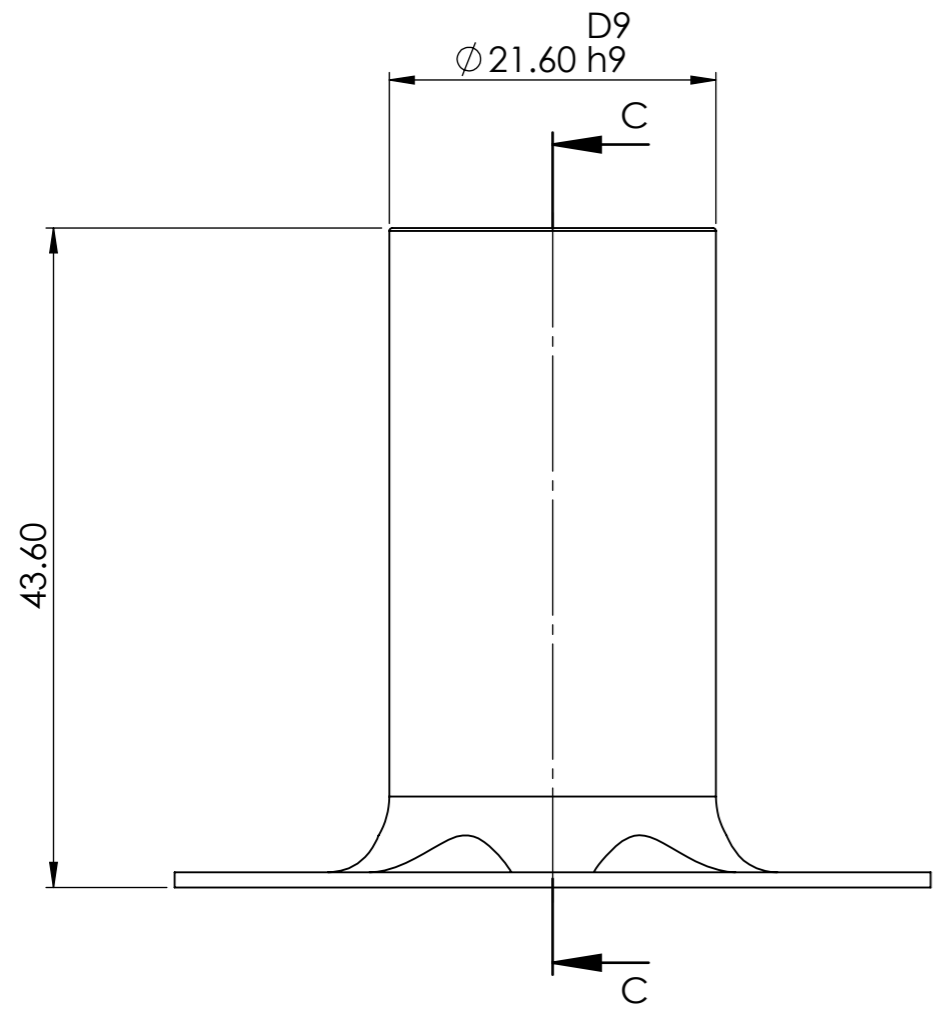
1. 6 holes machining
2. CUT 1 (with the datum provided and up to the CUT 1 radius)
3. 10° chamfer up to 8.85mm radius at top face of disk
4. CUT 2
5. CUT 3 to obtain the ominal Thruster Inflow length



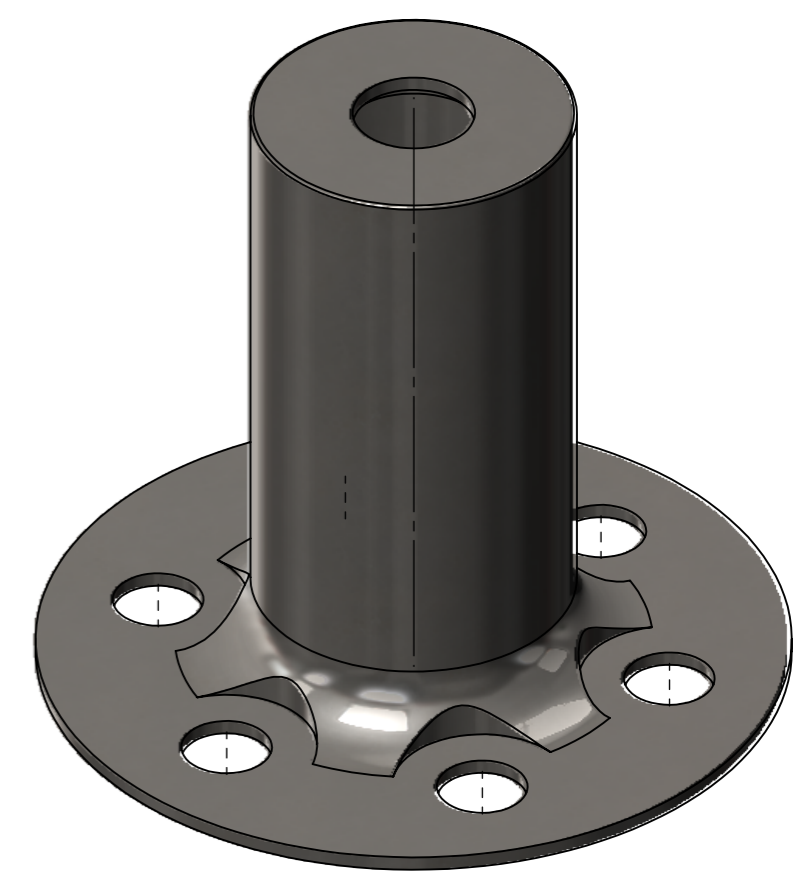
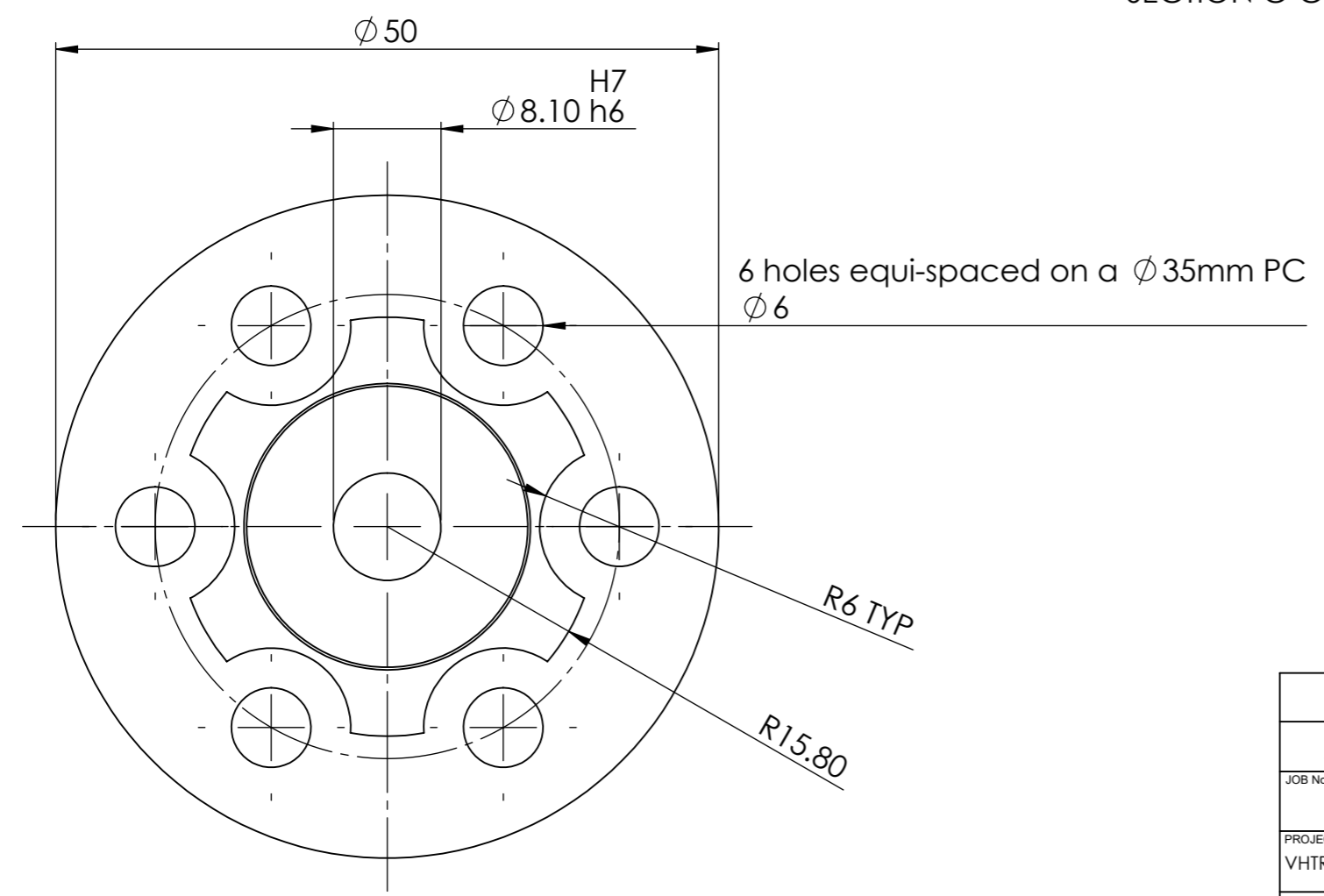
DETAIL D
 SCALE 4 : 1



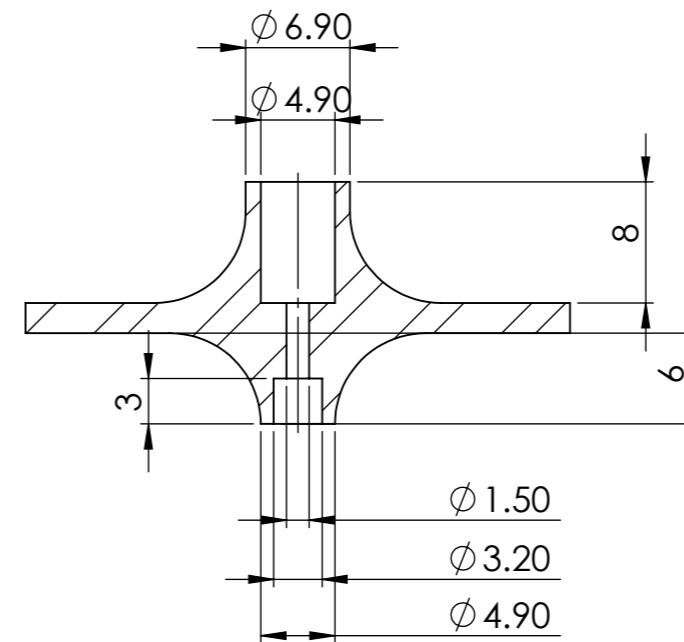
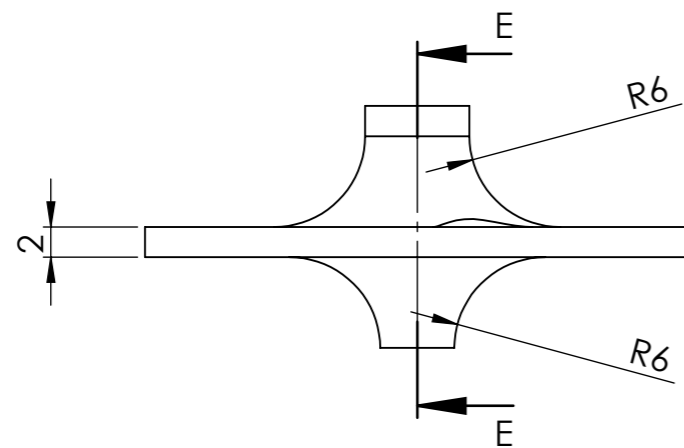
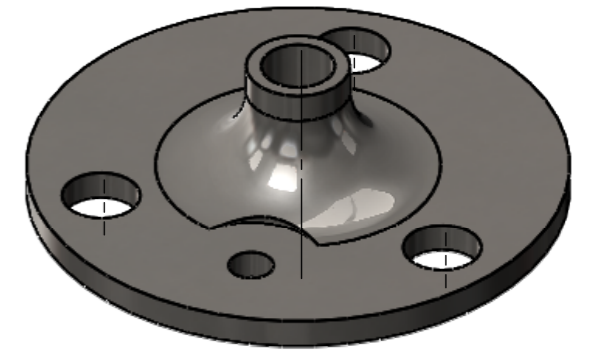
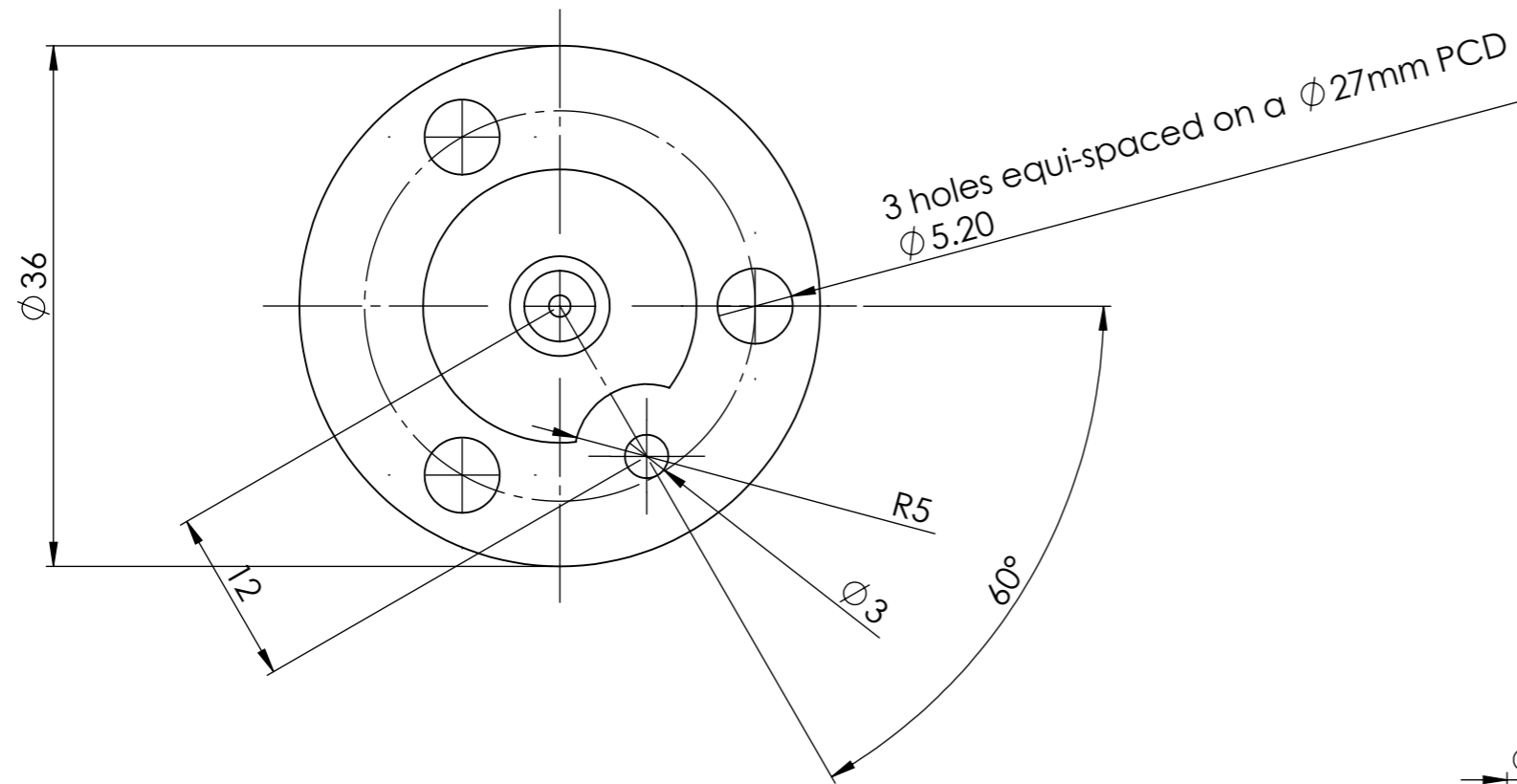
DO NOT SCALE		DRAWN AND DESIGNED BY F Romei		TOLERANCES UNLESS OTHERWISE STATED		UNIVERSITY OF Southampton Faculty of Engineering and the Environment				
A3		APPROVED BY AN Grubisic		LINEAR X = +/- 0.20 XX = +/- 0.10 XXX = +/- 0.05 ANGULAR +/- 0.50						
JOB No	DEPARTMENT Astronautics	DATE 07/11/2017	SCALE 2:1	ALL DIMENSIONS IN mm UNLESS OTHERWISE STATED		TITLE Thruster Inflow post-man.				
PROJECT VHTR	SUPERVISORS AN Grubisic	MATERIAL 316L	TEXTURE	SURFACE FINISH <input checked="" type="checkbox"/> ALL OVER UNLESS OTHERWISE STATED		SHEET 5 of 5	No OFF 6	ASSEMBLY NUMBER	DRAWING NUMBER 1 of 1	REVISION 1
REMOVE ALL SHARP EDGES IF IN DOUBT PLEASE ASK		THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF THE UNIVERSITY OF SOUTHAMPTON DO NOT COPY WITHOUT WRITTEN PERMISSION.								



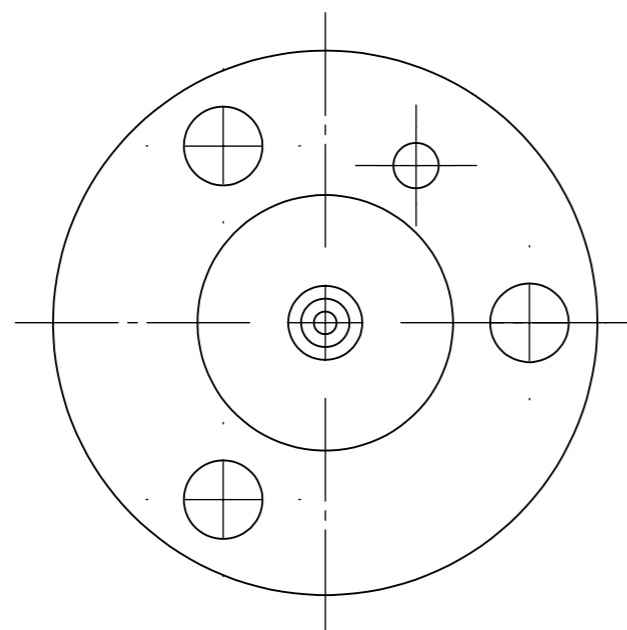
SECTION C-C



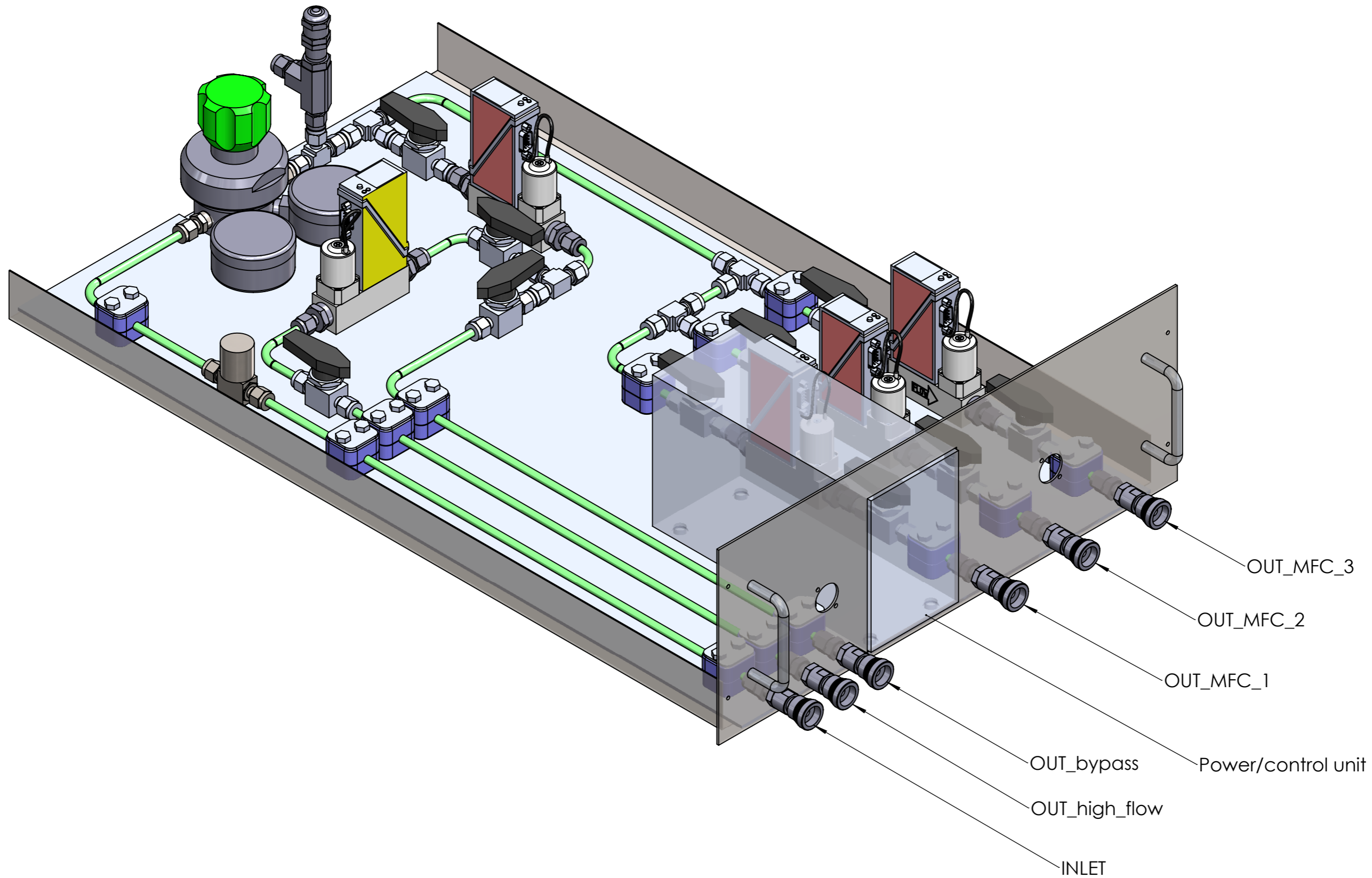
DO NOT SCALE		DRAWN AND DESIGNED BY F Romei		TOLERANCES UNLESS OTHERWISE STATED LINEAR X = +/- 0.20 XX = +/- 0.10 XXX = +/- 0.05 ANGULAR +/- 0.50		UNIVERSITY OF Southampton Faculty of Engineering and the Environment				
A3		APPROVED BY AN Grubisic								
JOB No	DEPARTMENT Astronautics	DATE 07/11/2017	SCALE 2:1	ALL DIMENSIONS IN mm UNLESS OTHERWISE STATED		TITLE Thruster Casing				
PROJECT VHTR	SUPERVISORS AN Grubisic	MATERIAL 316L	TEXTURE	SURFACE FINISH ✓ ALL OVER UNLESS OTHERWISE STATED		SHEET 2 of 3	No OFF 4	ASSEMBLY NUMBER	DRAWING NUMBER 1 of 1	REVISION 1
REMOVE ALL SHARP EDGES IF IN DOUBT PLEASE ASK		THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF THE UNIVERSITY OF SOUTHAMPTON DO NOT COPY WITHOUT WRITTEN PERMISSION.								



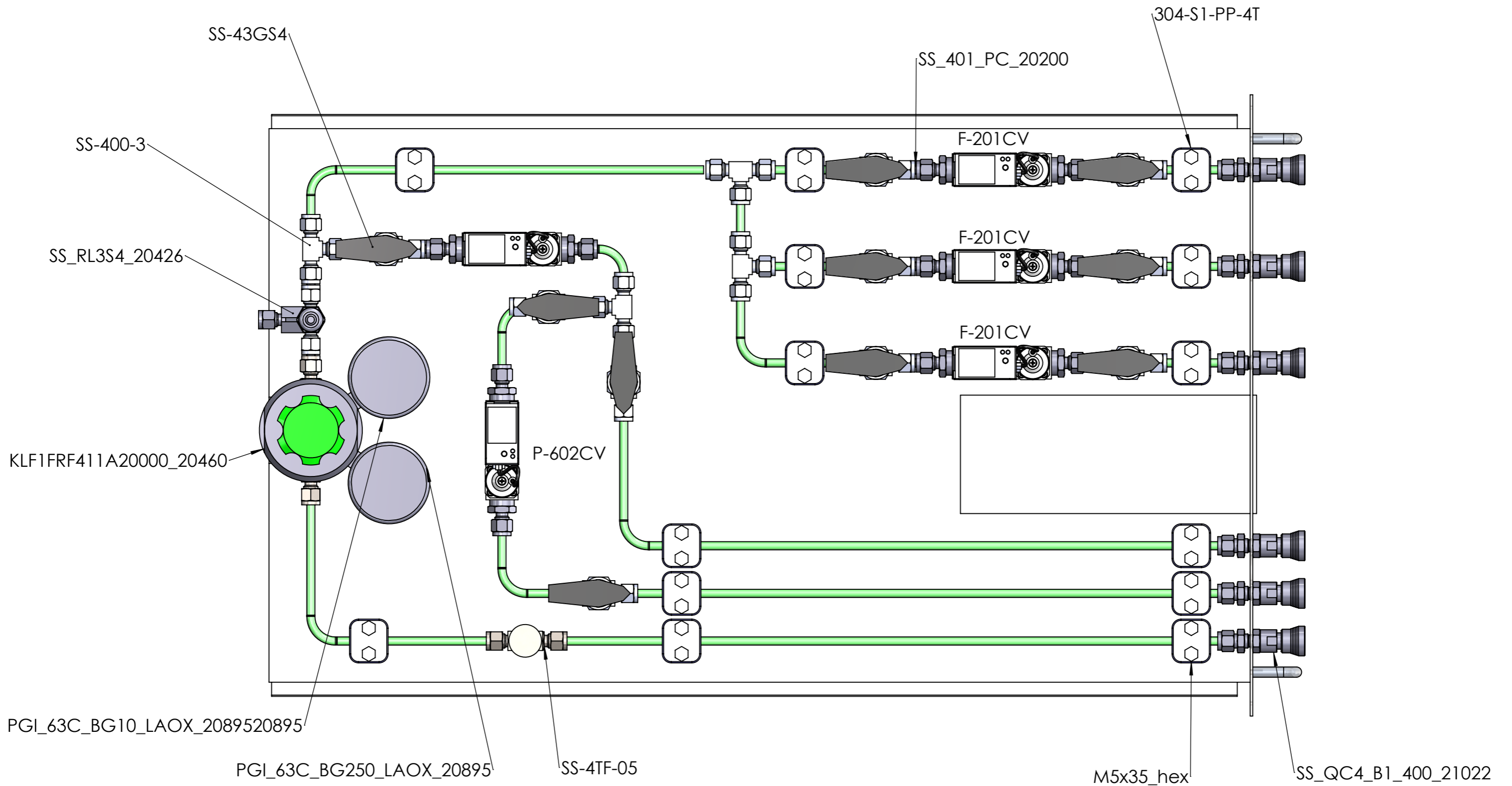
SECTION E-E



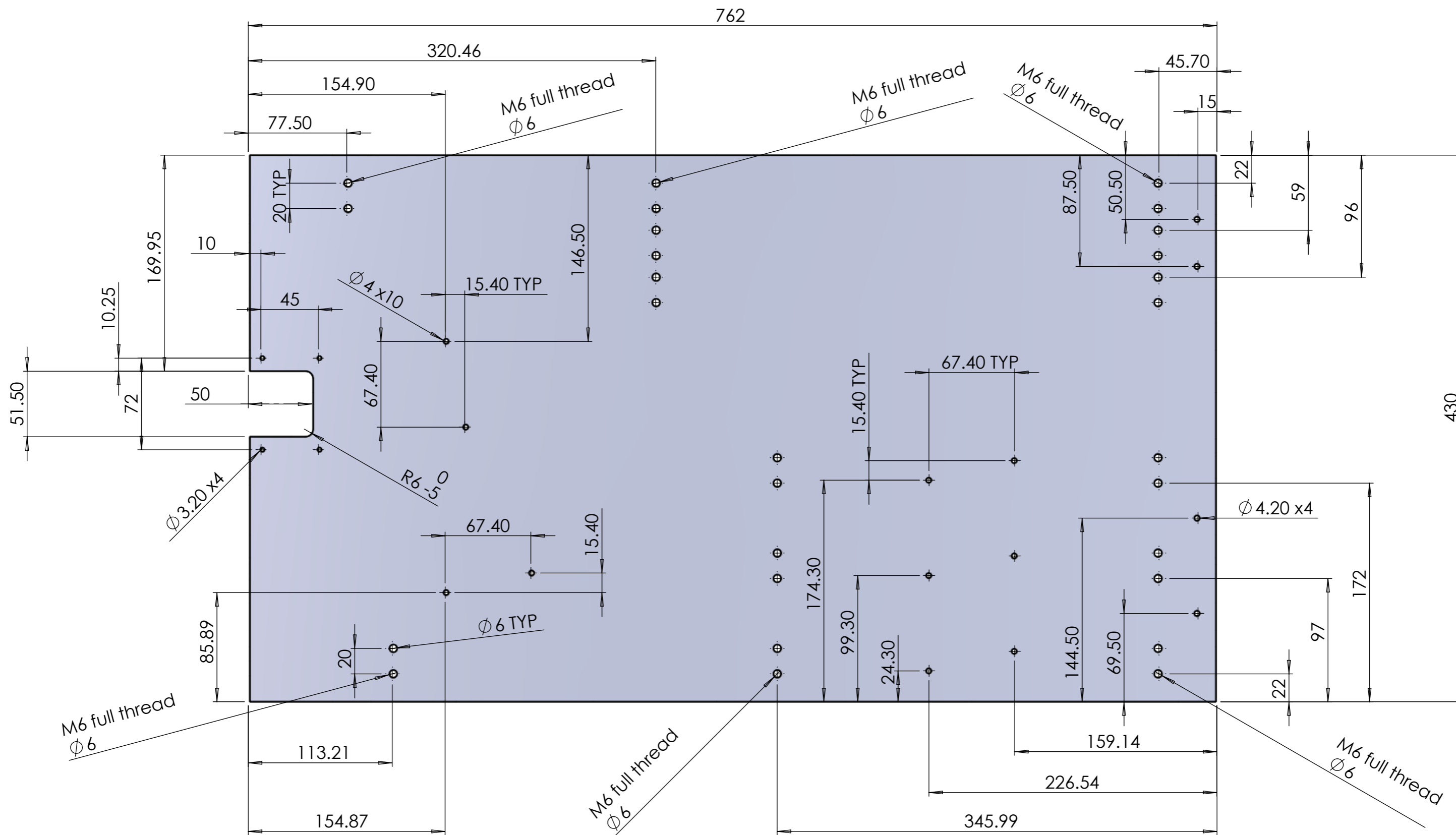
DO NOT SCALE		DRAWN AND DESIGNED BY F Romei		TOLERANCES UNLESS OTHERWISE STATED LINEAR X = +/- 0.20 XX = +/- 0.10 XXX = +/- 0.05 ANGULAR +/- 0.50		UNIVERSITY OF Southampton Faculty of Engineering and the Environment				
A3		APPROVED BY AN Grubisic								
JOB No	DEPARTMENT Astronautics	DATE 07/11/2017	SCALE 2:1	ALL DIMENSIONS IN mm UNLESS OTHERWISE STATED		TITLE Thruster Support				
PROJECT VHTR	SUPERVISORS AN Grubisic	MATERIAL 316L	TEXTURE	SURFACE FINISH <input checked="" type="checkbox"/> ALL OVER UNLESS OTHERWISE STATED		SHEET 3 of 3	No OFF 4	ASSEMBLY NUMBER	DRAWING NUMBER 1 of 1	REVISION 1
REMOVE ALL SHARP EDGES IF IN DOUBT PLEASE ASK		THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF THE UNIVERSITY OF SOUTHAMPTON DO NOT COPY WITHOUT WRITTEN PERMISSION.								



DO NOT SCALE		DRAWN AND DESIGNED BY FRomei		TOLERANCES UNLESS OTHERWISE STATED LINEAR X = +/- 0.20 XX = +/- 0.10 XXX = +/- 0.05		UNIVERSITY OF Southampton Faculty of Engineering and the Environment				
A3		APPROVED BY AN Grubisic		ANGULAR +/- 0.50						
JOB No	DEPARTMENT Astronautics	DATE 25/04/2017	SCALE 1:3	ALL DIMENSIONS IN mm UNLESS OTHERWISE STATED		TITLE Flow System overview				
PROJECT Flow System	SUPERVISORS AN Grubisic	MATERIAL	TEXTURE	SURFACE FINISH <input checked="" type="checkbox"/> ALL OVER UNLESS OTHERWISE STATED		SHEET 2 of 2	No OFF	ASSEMBLY NUMBER	DRAWING NUMBER 1 of 1	REVISION 2
REMOVE ALL SHARP EDGES IF IN DOUBT PLEASE ASK		THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF THE UNIVERSITY OF SOUTHAMPTON DO NOT COPY WITHOUT WRITTEN PERMISSION.								



DO NOT SCALE		DRAWN AND DESIGNED BY FRomei		TOLERANCES UNLESS OTHERWISE STATED LINEAR X = +/- 0.20 XX = +/- 0.10 XXX = +/- 0.05 ANGULAR +/- 0.50	UNIVERSITY OF Southampton Faculty of Engineering and the Environment					
A3		APPROVED BY AN Grubisic								
JOB No	DEPARTMENT Astronautics	DATE 25/04/2017	SCALE 1:3	ALL DIMENSIONS IN mm UNLESS OTHERWISE STATED		TITLE Main components				
PROJECT Flow System	SUPERVISORS AN Grubisic	MATERIAL	TEXTURE	SURFACE FINISH <input checked="" type="checkbox"/> ALL OVER UNLESS OTHERWISE STATED		SHEET 1 of 2	No OFF	ASSEMBLY NUMBER	DRAWING NUMBER 1 of 1	REVISION 2
REMOVE ALL SHARP EDGES IF IN DOUBT PLEASE ASK		THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF THE UNIVERSITY OF SOUTHAMPTON DO NOT COPY WITHOUT WRITTEN PERMISSION.								

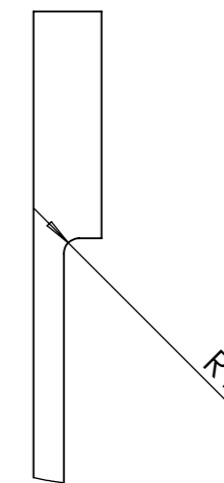
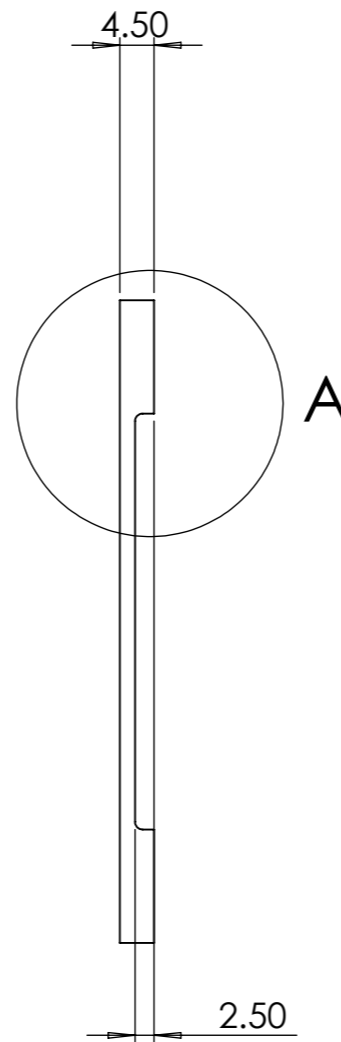
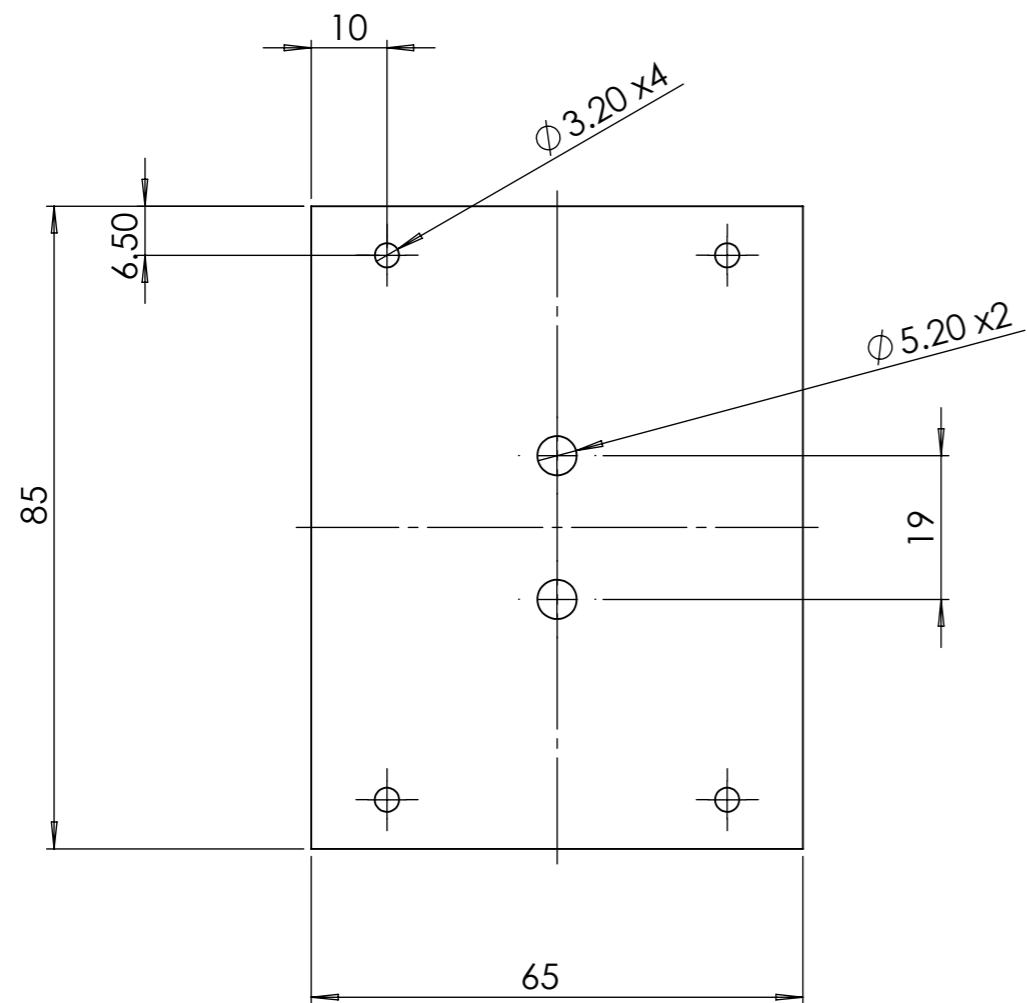


Thickness required = 3mm

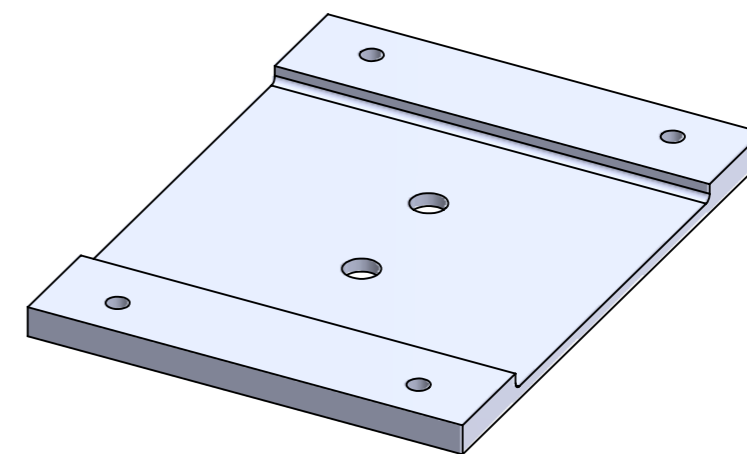
Holes summary:

- M6 full thread x6
- 6mm x 22
- 4mm x 10
- 3.2mm x 4

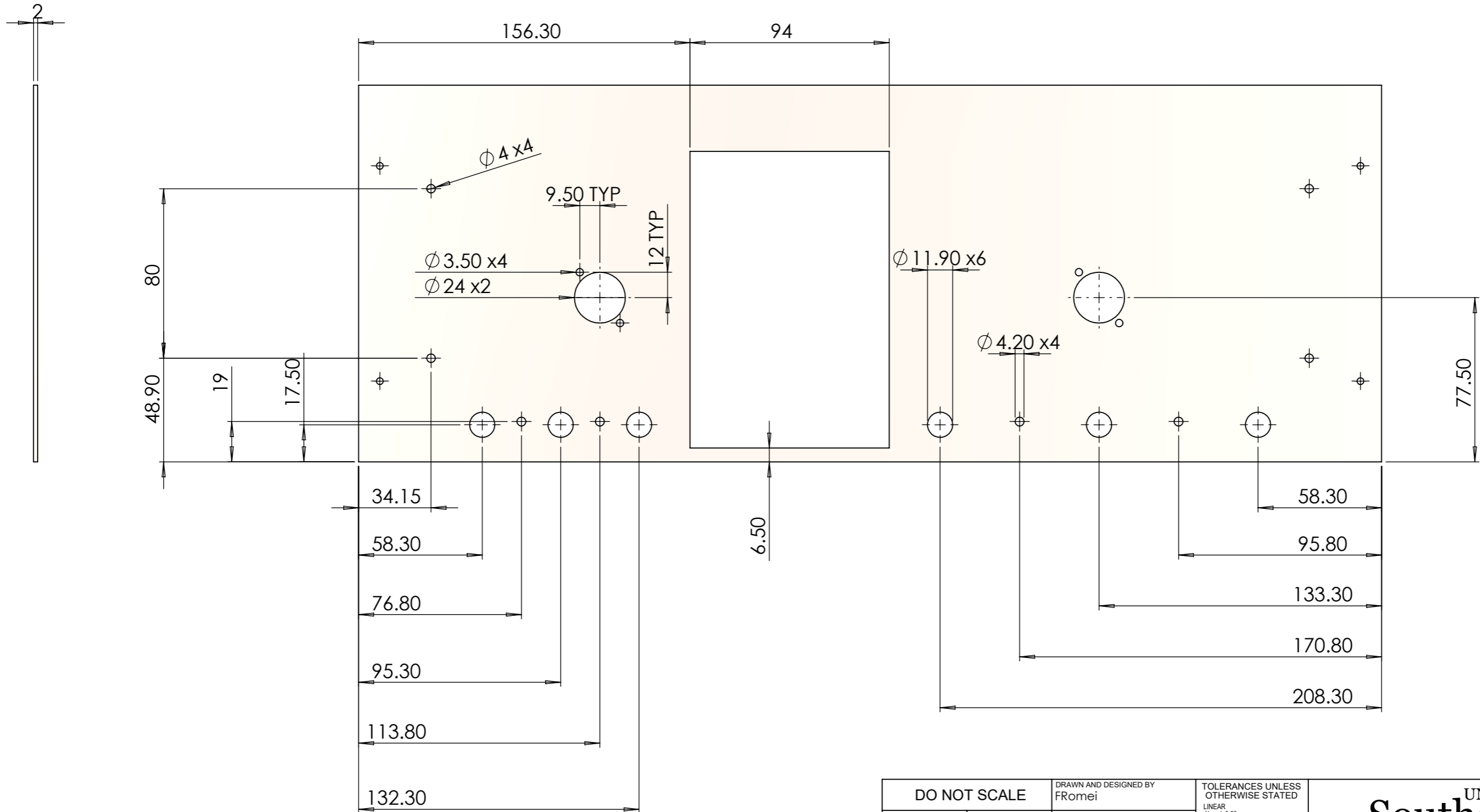
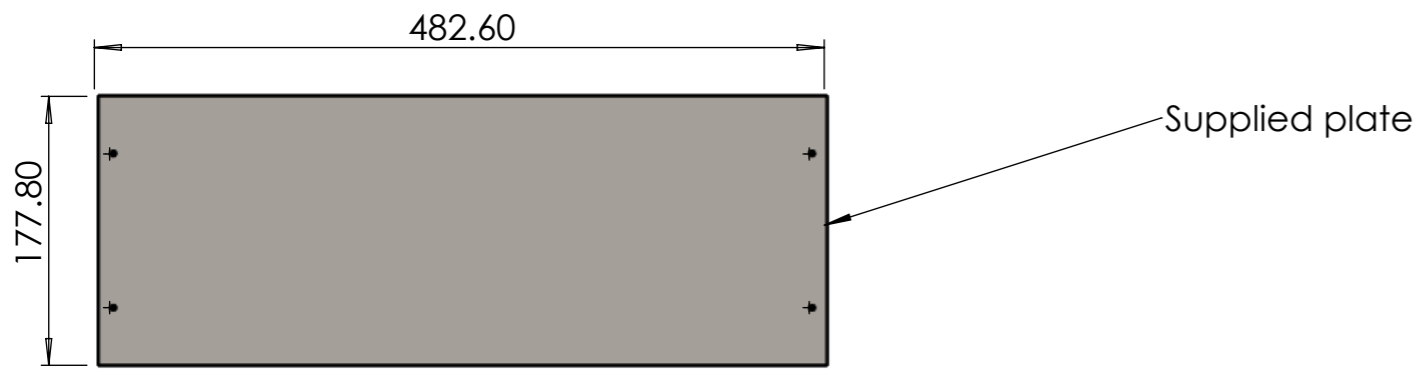
DO NOT SCALE		DRAWN AND DESIGNED BY FRomei		TOLERANCES UNLESS OTHERWISE STATED		UNIVERSITY OF Southampton Faculty of Engineering and the Environment				
A3		APPROVED BY AN Grubisic		LINEAR X = +/- 0.20 XX = +/- 0.10 XXX = +/- 0.05 ANGULAR +/- 0.50						
JOB No TWI-0	DEPARTMENT Astronautics	DATE 16/08/2017	SCALE 1:3	ALL DIMENSIONS IN mm UNLESS OTHERWISE STATED		TITLE Rack plate				
PROJECT Flow System	SUPERVISORS AN Grubisic GT Roberts	MATERIAL Steel	TEXTURE	SURFACE FINISH ✓ ALL OVER UNLESS OTHERWISE STATED						
REMOVE ALL SHARP EDGES IF IN DOUBT PLEASE ASK		THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF THE UNIVERSITY OF SOUTHAMPTON DO NOT COPY WITHOUT WRITTEN PERMISSION.				SHEET 2 of 5	No OFF 1	ASSEMBLY NUMBER	DRAWING NUMBER 1 of 1	REVISION 2



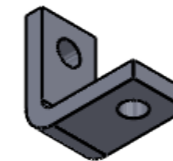
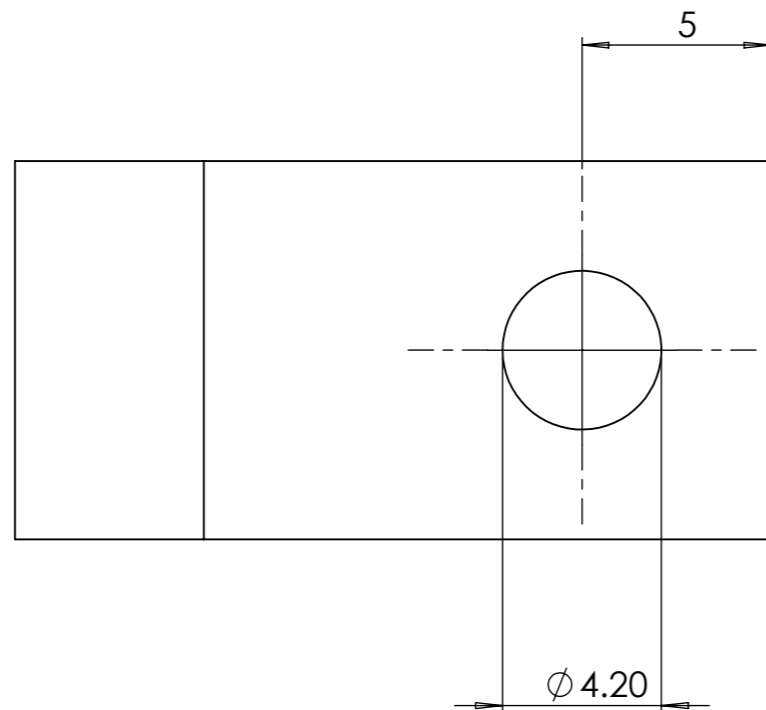
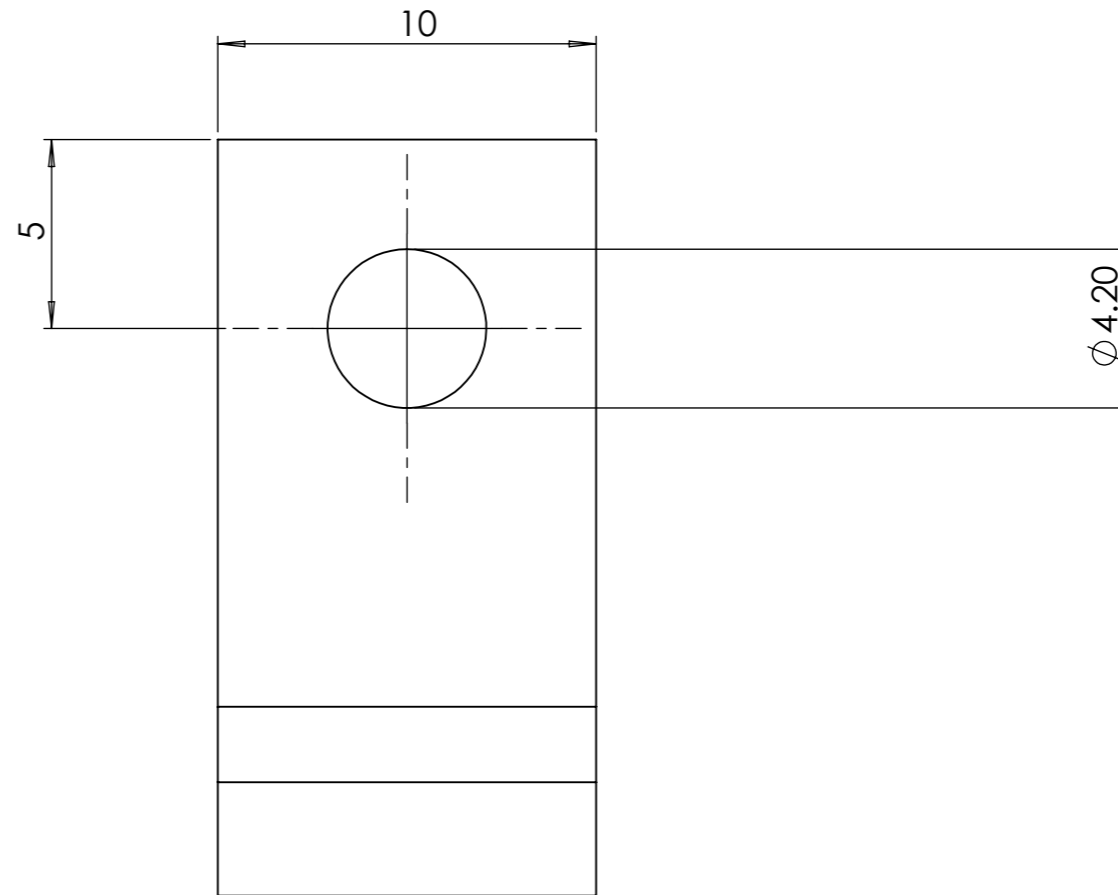
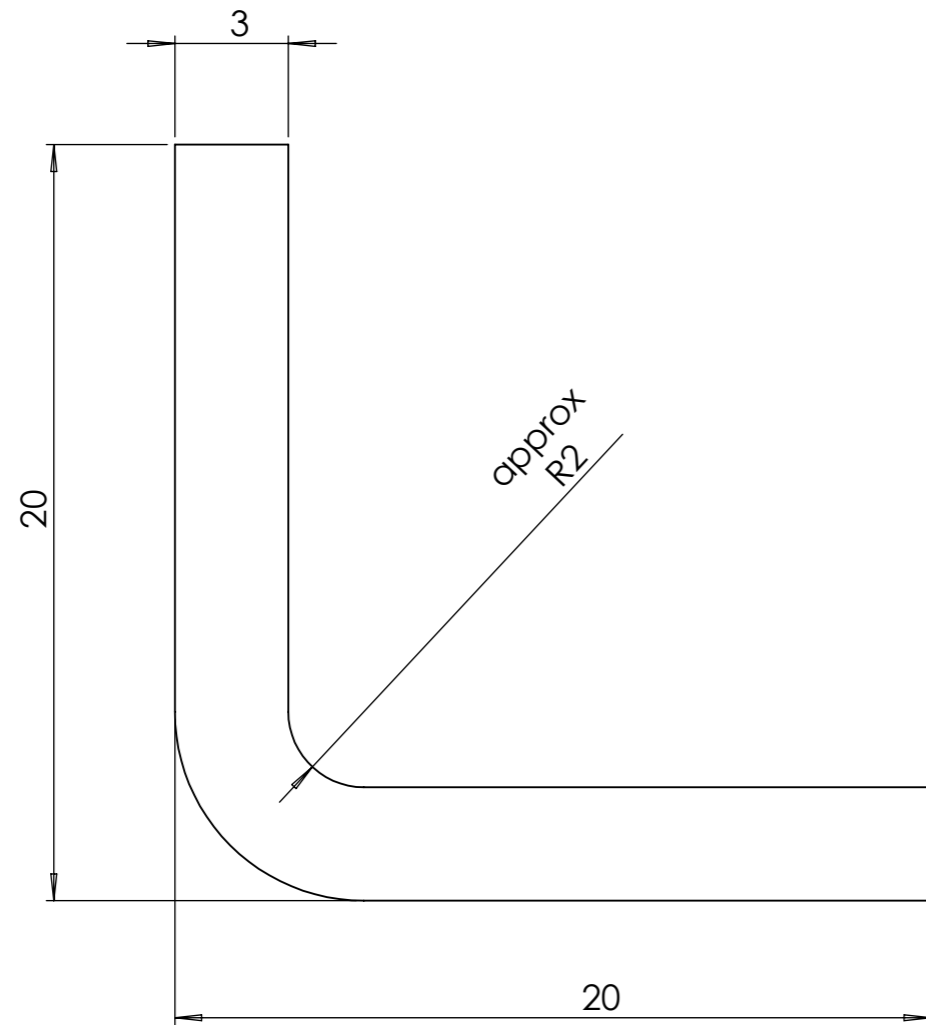
DETAIL A
SCALE 2:1



DO NOT SCALE		DRAWN AND DESIGNED BY FRomei		TOLERANCES UNLESS OTHERWISE STATED LINEAR X = +/- 0.20 XX = +/- 0.10 XXX = +/- 0.05 ANGULAR +/- 0.50		UNIVERSITY OF Southampton Faculty of Engineering and the Environment				
A3		APPROVED BY AN Grubisic								
JOB No TWI-0	DEPARTMENT Astronautics	DATE 16/08/2017	SCALE 1:1	ALL DIMENSIONS IN mm UNLESS OTHERWISE STATED		TITLE Regulator plate				
PROJECT Flow System	SUPERVISORS AN Grubisic GT Roberts	MATERIAL Steel	TEXTURE	SURFACE FINISH <input checked="" type="checkbox"/> ALL OVER UNLESS OTHERWISE STATED		SHEET 3 of 5	No OFF 1	ASSEMBLY NUMBER	DRAWING NUMBER 1 of 1	REVISION 2
REMOVE ALL SHARP EDGES IF IN DOUBT PLEASE ASK		THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF THE UNIVERSITY OF SOUTHAMPTON DO NOT COPY WITHOUT WRITTEN PERMISSION.								



DO NOT SCALE		DRAWN AND DESIGNED BY FRomei		TOLERANCES UNLESS OTHERWISE STATED		UNIVERSITY OF Southampton Faculty of Engineering and the Environment					
A3		APPROVED BY AN Grubisic		LINEAR X = +/- 0.20 XX = +/- 0.10 XXX = +/- 0.05 ANGULAR +/- 0.50							
JOB No TWI-0	DEPARTMENT Astronautics	DATE 16/08/2017	SCALE 1:2	ALL DIMENSIONS IN mm UNLESS OTHERWISE STATED		TITLE Front panel					
PROJECT Flow System	SUPERVISORS AN Grubisic GT Roberts	MATERIAL Steel	TEXTURE	SURFACE FINISH ✓ ALL OVER UNLESS OTHERWISE STATED		SHEET 4 of 5					
REMOVE ALL SHARP EDGES IF IN DOUBT PLEASE ASK		THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF THE UNIVERSITY OF SOUTHAMPTON DO NOT COPY WITHOUT WRITTEN PERMISSION.				No OFF 1		ASSEMBLY NUMBER		DRAWING NUMBER 1 of 1	
										REVISION 2	



DO NOT SCALE		DRAWN AND DESIGNED BY FRomei		TOLERANCES UNLESS OTHERWISE STATED LINEAR X = +/- 0.20 XX = +/- 0.10 XXX = +/- 0.05 ANGULAR +/- 0.50		UNIVERSITY OF Southampton Faculty of Engineering and the Environment				
A3		APPROVED BY AN Grubisic								
JOB No TWI-0	DEPARTMENT Astronautics	DATE 16/08/2017	SCALE 5:1	ALL DIMENSIONS IN mm UNLESS OTHERWISE STATED		TITLE Joint				
PROJECT Flow System	SUPERVISORS AN Grubisic GT Roberts	MATERIAL steel	TEXTURE	SURFACE FINISH <input checked="" type="checkbox"/> ALL OVER UNLESS OTHERWISE STATED		SHEET 5 of 5	No OFF 6	ASSEMBLY NUMBER	DRAWING NUMBER 1 of 1	REVISION 2
REMOVE ALL SHARP EDGES IF IN DOUBT PLEASE ASK		THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF THE UNIVERSITY OF SOUTHAMPTON DO NOT COPY WITHOUT WRITTEN PERMISSION.								