

INSTITUTE FOR PLASMA RESEARCH

An Aided institute of department of Atomic Energy, Govt. of India)
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MINOR FABRICATION WORKS ENQUIRY

Office Copy

ENQUIRY NO :IPR/MFW/20-21/85

Date : 19-11-2020

Due Date : 16-12-2020 13:00 IST

Please send your offer in sealed envelope specifying Inquiry No, Date & Due Date, ALONG WITH your credentials for the following items:

Important Note:

Please note that e-mail quotations are not acceptable however you may send your queries (if any) to **rkumar@ipr.res.in**

Please Ensure that your sealed quotation reaches this office not later than above mentioned due date and time.

Kindly go through the following document properly before Quoting which are available on the IPR web portal i.e., <http://www.ipr.res.in/documents/tenders.html/> attached here with.

1. Technical specification as enclosed.
2. Instruction to the bidders & terms and Condition (refer Form NO:**IPR-MFW-01-V1**)
3. Bidding format(refer Biddingformat MFW-Bid.pdf)

GST fro Goods and Services (IGST/CGST/SGST TAX BENEFITS): PLEASE REFER clause no:8 of Form No:**IPR-MFW-01-V1**

QUOTATION SHOULD BE ADDRESSED TO **RAJESH KUMAR** ONLY.

Sr.No.	Description	Quantity	Rate
1	Fabrication and supply of Components of Multi-Charged Ion Source as per technical specifications	1	No.

Free Issue Material

Sr.No.	Description	Quantity	Unit	Value
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Note : Please quote with complete technical details (Technical Compliance sheet and product data sheet)

Encl:As per attachment

Sd/-
RAJESH KUMAR
Scientific Officer-G

Technical documents for fabrication & supply of “Components of multi-charged ion source” as per given guideline & drawing

Contents:

1. Introduction
2. Drawings
3. Scope of work and Technical Specification

1. INTRODUCTION:

This document contains the scope of work and technical specifications of “Components of multi-charged ion source” supply & fabrication as per drawings. There are four parts of the “Ion source” which has to be fabricated namely:-

1. 14 GHz ECR plasma source
2. Argon plasma chamber
3. 150 CF FC Chamber
4. Deuterium Plasma chamber

The fabrication should be carried out as per the specifications and drawings given in *this technical document*.

2. DRAWINGS

Engineering drawing for estimate is supplied by IPR along with this Technical document mentioned in Annexure-I.

3. SCOPE OF WORK AND TECHNICAL SPECIFICATION

3.1 SCOPE OF WORK

a) SCOPE OF WORK AT VENDOR’S SITE

The scope of work at vendor’s site includes,

- 1 Preparation of fabrication drawings from supplied engineer design drawings. (Ref. Annexure-I).
- 2 Vendor shall procure all the materials and standard parts (Ref. section 3.2.1) required for fabrication/machining of all components.
- 3 Fabrication of “Components of multi-charged ion source” as per drawing approved by IPR (Ref. Section 3.4.a)
- 4 Ultrasonic cleaning of all S.S., and copper components with surface finish of 1.6 micron to 3 micron. Pickling and passivation with nitric acid & HF cleaning shall also clean all size components
- 5 Inspection (Ref. Section 3.4.).
- 6 Acceptance test (Ref. Section 3.5).
- 7 Packing and supply (Ref. Section 3.6).

All the components should conform to the technical specifications, drawings and the standards mentioned in this document and to the satisfaction of IPR.

3.2 MATERIAL

The vendor shall procure all the materials required for the fabrication. Material should be according to applicable ASTM standard. The procurement of all the tools, fixtures, jigs,

equipment's, material etc.; required for the fabrication, inspection and testing shall be in the scope of vendor.

3.2.1 List of material to be procured by vendor:-

Sr. No.	Description of material	Preferred brand and its part	Total quantity
1	HN Feedthroughs -Weldable, Single-Ended	Kurt J. Lesker Part No: IFTHG013051	1
2	Viton O rings	Pls. ref to drawings	
4	PU connectors	Pls. ref to drawing	4
3.	Ferrule connector	Pls. ref to drawings	2
4.	35 CF view port	Pls. ref to drawings	3
5	25 KF view port	Pls. ref to drawings	2

These materials will be provided by the vendor cost of which must be included. If the materials bought by the vendor is other than the preferred brand then they should be of reputed make, of matching specifications and must be compatible with the assembly.

3.3 FABRICATRION GUIDELINES

All surfaces specifically the inner ones exposed to high vacuum shall be with the surface finished of 1.6 to 3 microns as shown in the drawing and as per the specifications.

All welding involved in the fabrication shall be carried out in accordance with applicable code or approved equivalent.

All the standard components like flanges should be fabricated as per applicable standards. Alignment between the components should be perfect.

The following practice shall be followed for all welding/fabrication,

- Before welding all parts should be cleaned with detergent and finally cleaned with acetone or 1:1:1 trichloroethane.
- All welding (if required) to be done on Material SS304 should be Tungsten Argon Arc Welding (TIG) according to ASME – Sec. 4.
- Trapped volume should be avoided during welding. Full penetration weld should be employed wherever it is possible. When is to be done on both side of the wall, continues welding on inner side (high vacuum side) and tack welding outside is to be done.
- Single pass weld up to maximum extent is preferred. Interruption during welding should be reduced to a minimum possible extent.
- If leaks develops weld should be ground off with the base metals and re-welded.
- Filler material, if used, should be compatible with the parent material.
- All welds should be ground smooth and flush with adjoining surfaces with convex curvature with adjoining wall everywhere prior to leak test.
- The welding shall be carried out only by qualified welders.

3.4 INSPECTION

- a) All the fabrication drawings along with dimensions and tolerances will be checked by IPR authority and only after **approval of this drawing** by IPR, the fabrication shall commence. Vendor shall specifically bring out any deviation from drawings separately in a covering sheet. All other fabrication related details have to be worked out by vendor

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- and approval should be taken from IPR.
- b) After fabrication all the components shall be inspected for dimensional accuracy as per approved drawing and specifications.
 - c) IPR authority/representative shall be provided access to all manufacturing facilities, inspection and testing facilities, tools, drawing etc. during all stages of manufacture.

The components shall be delivered only after **issue of 'Release of shipment'**. This document shall be issued by IPR authority/representative after verification of dimensions, testing, etc. (Ref. Section 3.5.1) to his/her satisfaction of compliance with drawings, specifications and functional requirements.

3.5 ACCEPTANCE TESTS

3.5.1 AT VENDOR'S SITE

Acceptance tests shall be carried out at vendor's site before dispatch of procured & fabricated parts.

- a. All components shall be checked for dimensions and surface finish.
- b. All identical components shall be checked for interchangeability. Once all the individual components are accepted for their vacuum compatibility, it should be assembled (dummy assembly) to make a check for mechanical integrity, dimensional requirements.
- c. After achieving satisfactory assembly and other requirements mentioned above, all the components shall be scrupulously cleaned by washing off the entire buffing flux etc.
- d. Helium leak (1×10^{-8} mbar l/s)

3.5.2 AT IPR SITE

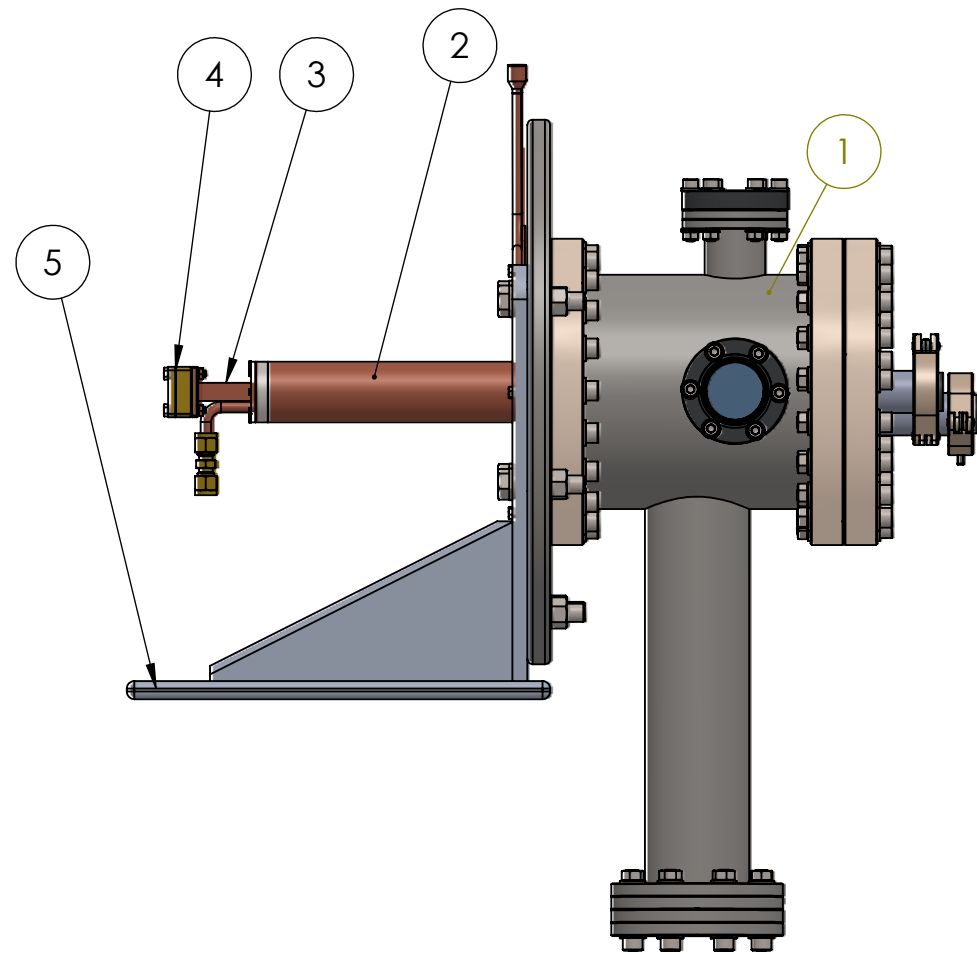
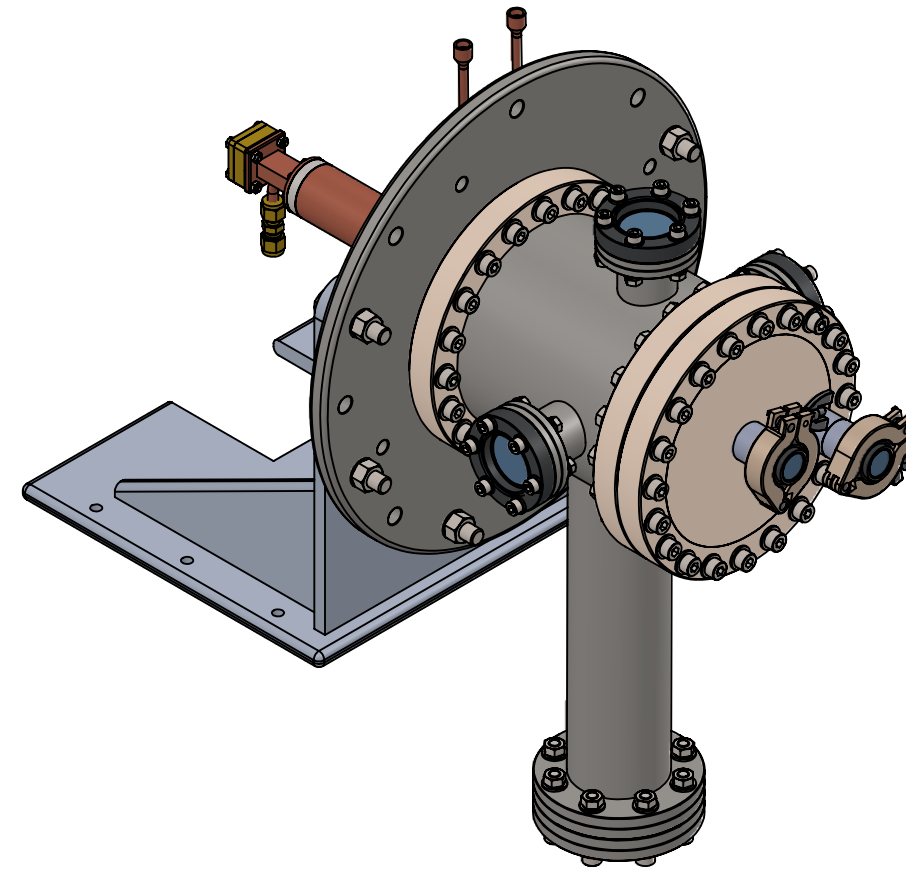
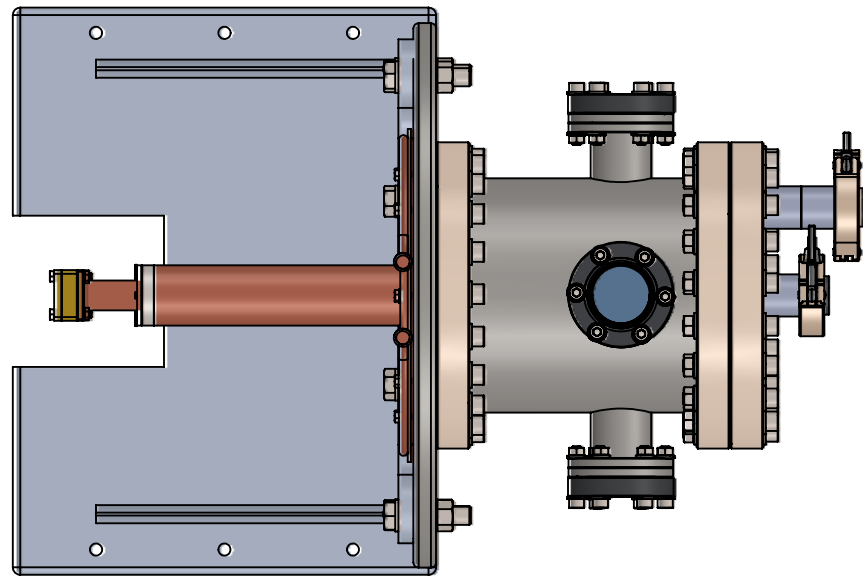
- a. All components shall be checked for dimensions and surface finish.
- b. All parts shall be assembled (dummy assembly) to make a check for mechanical integrity, dimensional requirements etc.

3.6 PACKING AND SUPPLY

All the vacuum components shall be packed with the proper packing material to avoid damages during transportation. All components shall be cleaned thoroughly with detergent and acetone, dried before packing. Vendor shall obtain 'Release of Shipment' from IPR authority before supply of the material to IPR.

4. GUARANTEE

Vendor shall give guarantee for the performance of the full system for twelve months from the date of final acceptance. During this period if any fault occurs vendor shall rectify at no extra cost.



SCALE 1 : 5

part no	Description	Sheet No.	Material	Nos.
1	Vacuum assembly	2	ss	1
2	Plasma cavity	5	Copper & carbon steel	1
3	RF Feed System	10	Copper	1
4	WR 62 MW Window	15	copper & Fiber glass	2
5	stand	19	Aluminium	1

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN MILLIMETERS
SURFACE FINISH:
TOLERANCES:
LINEAR:
ANGULAR:

FINISH:

DEBUR AND
BREAK SHARP
EDGES

DO NOT SCALE DRAWING

REVISION

	NAME	SIGNATURE	DATE		
DRAWN					
CHK'D					
APPV'D					
MFG					
Q.A					
				MATERIAL:	
				WEIGHT:	

TITLE:

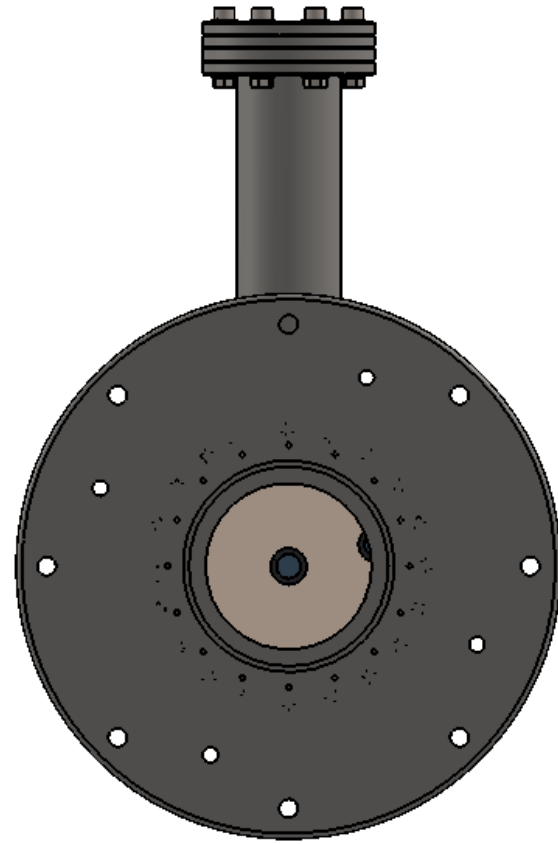
14 GHz ECR Plasma Source

DWG NO.1

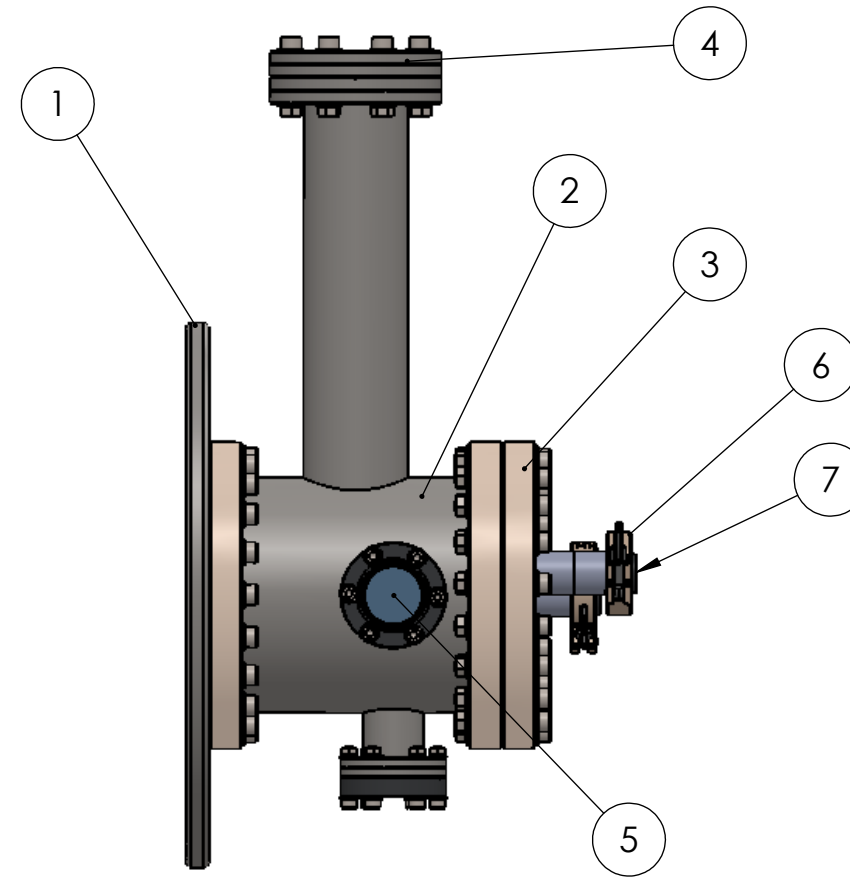
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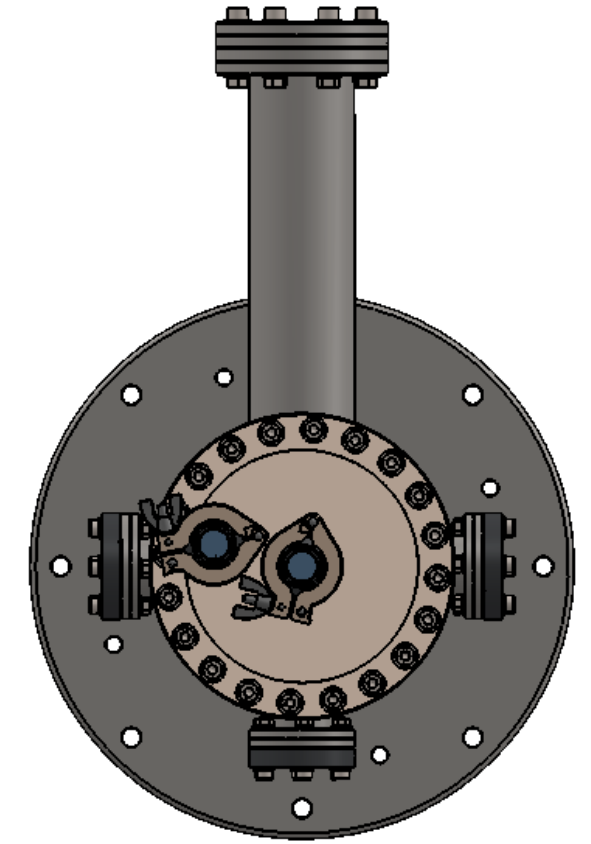
SHEET 1 OF 1



SCALE 1 : 5



SCALE 1 : 5



SCALE 1 : 5

part no	Description	Sheet No.	Material	Nos.
1	Big flange	3A	ss	1
2	Vacuum chamber	3B	ss	1
3	150 cf to 25 kf flange	4	SS	1
4	63 CF blanck Flange	AS per standerd	ss	1
5	35 CF view Port	AS per standerd	Quartz	3
6	2f KF clamp and O ring	as per standerd		2
7	25 KF view port	AS per standerd	Quartz	2

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN MILLIMETERS
SURFACE FINISH:
TOLERANCES:
LINEAR:
ANGULAR:

FINISH:

DEBUR AND
BREAK SHARP
EDGES

DO NOT SCALE DRAWING

REVISION

	NAME	SIGNATURE	DATE		
DRAWN					
CHK'D					
APPV'D					
MFG					
Q.A					
				MATERIAL:	
				WEIGHT:	

TITLE: Vacuum Assembly

Vacuum Assembly

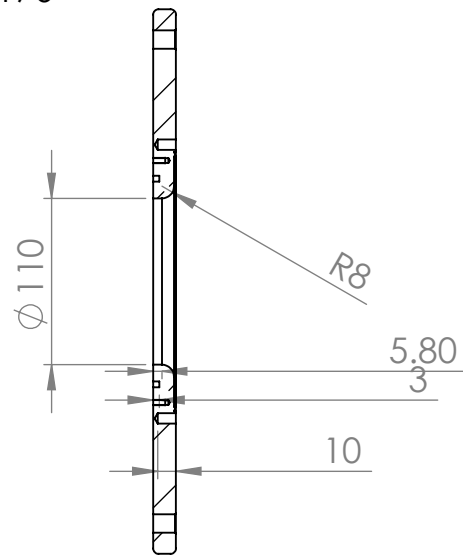
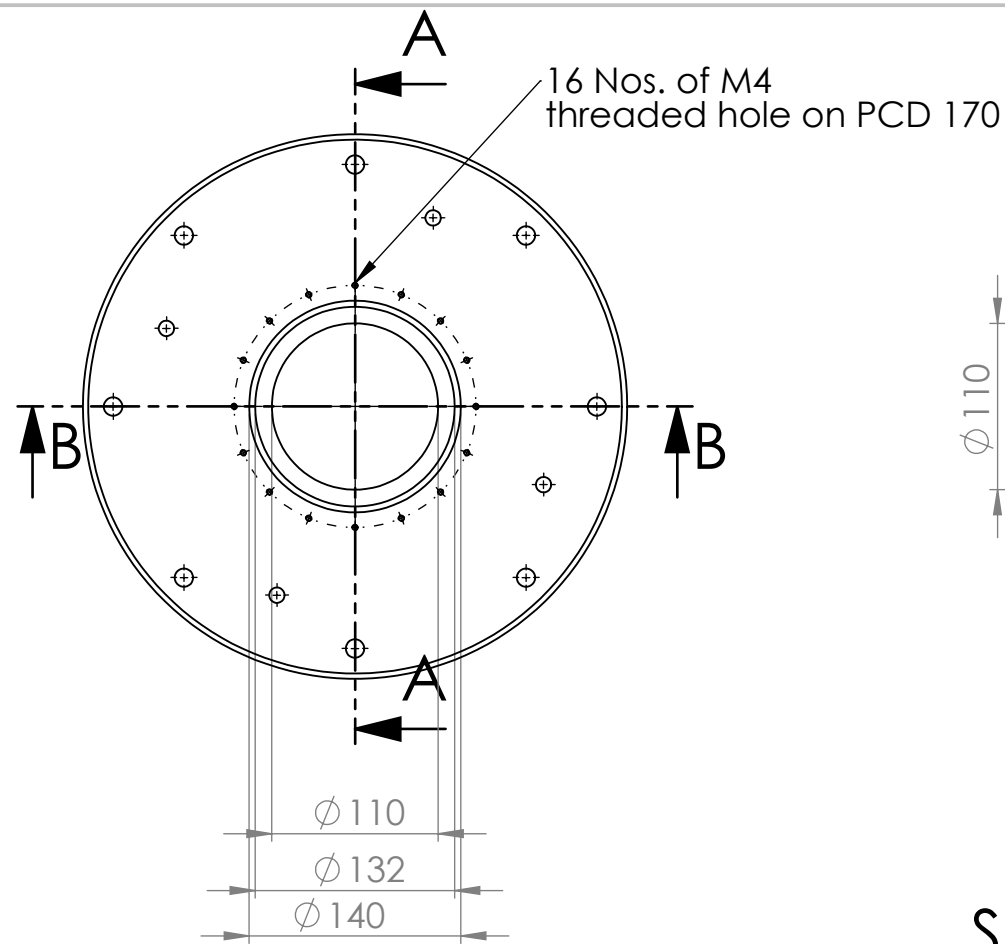
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Sheet No 2

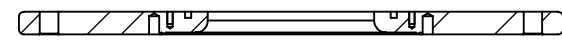
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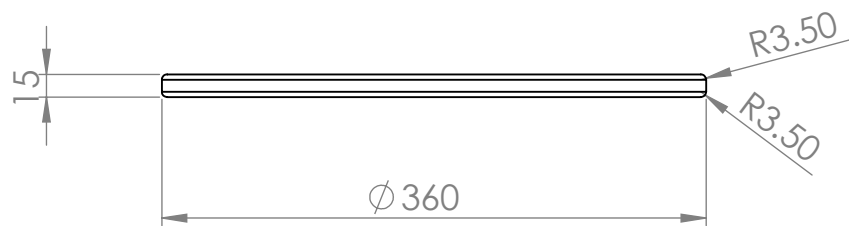
SHEET 1 OF 1



SECTION A-A

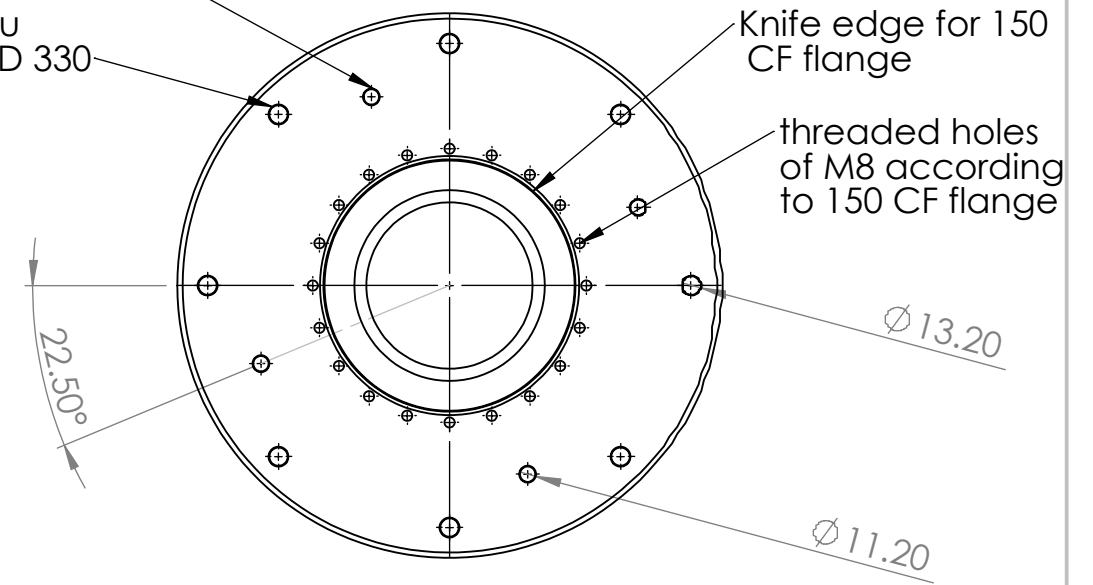


SECTION B-B

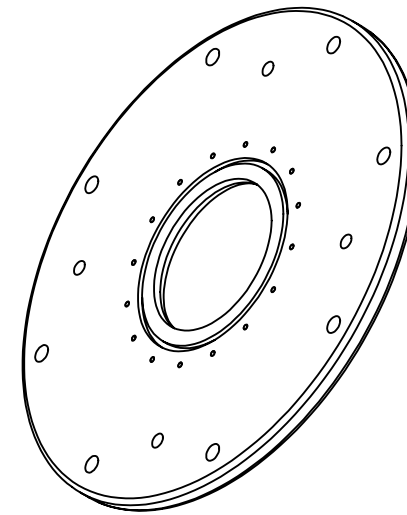


4 nos of thru hole on PCD 270

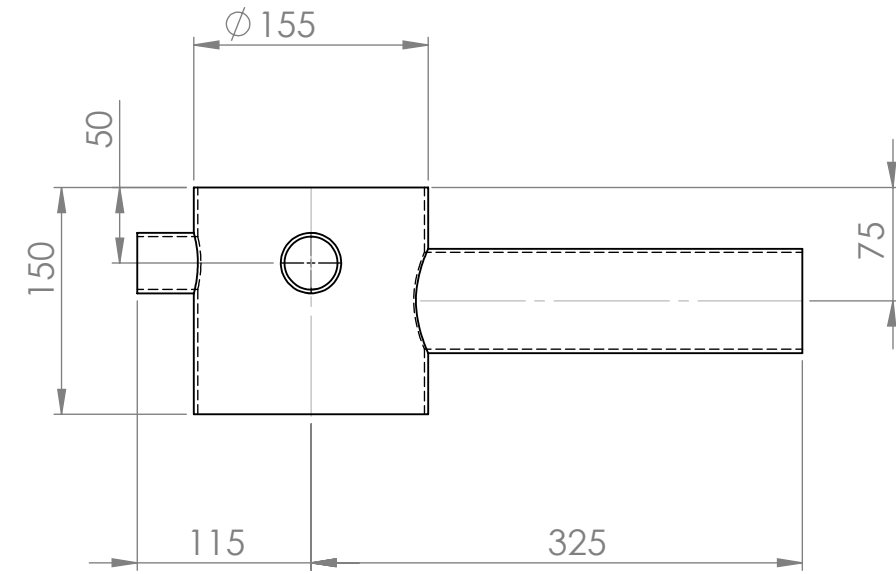
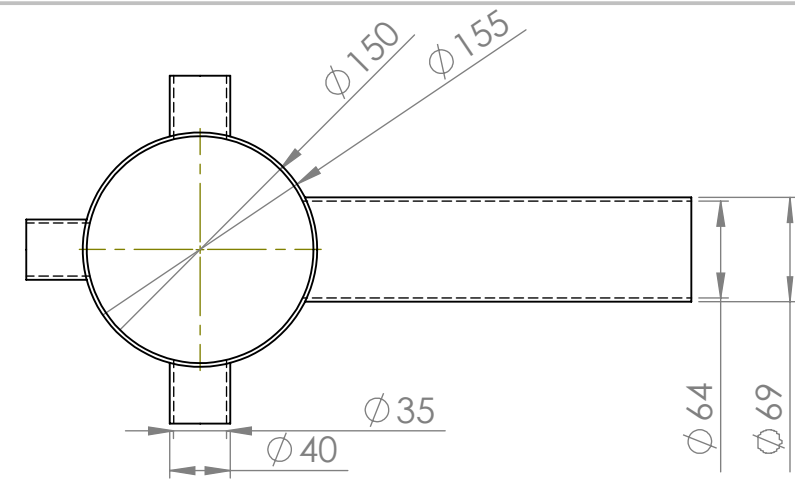
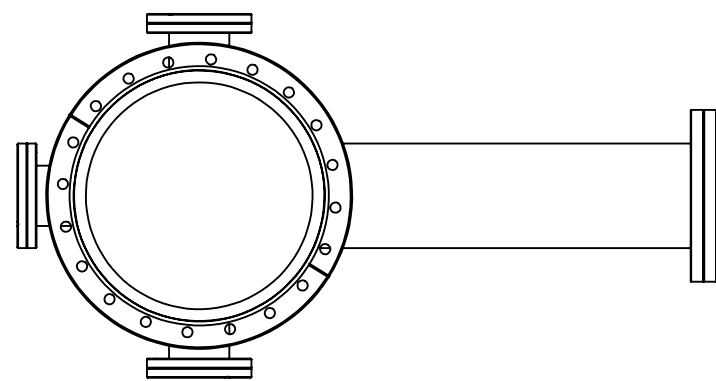
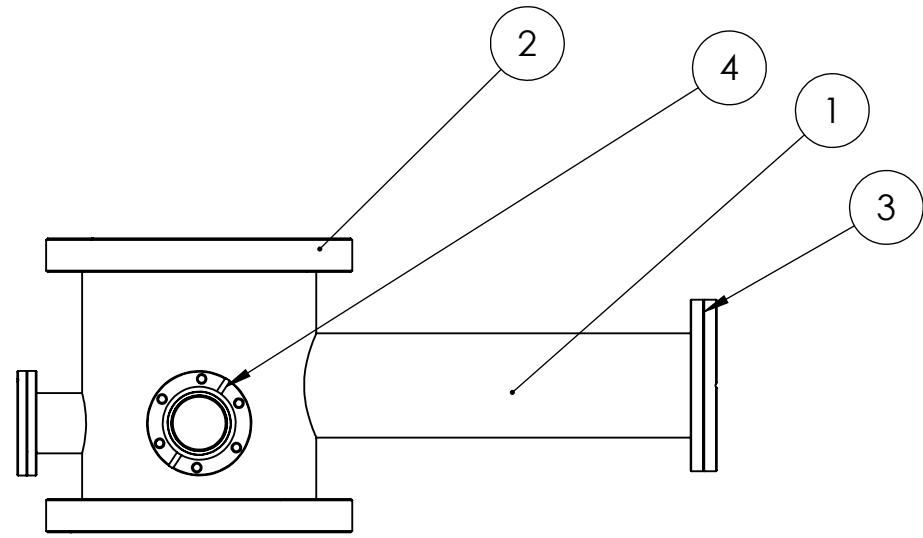
8 Nos. of thru hole on PCD 330



Back View



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:				FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
DRAWN				NAME		SIGNATURE		DATE		TITLE: Big Flange	
CHK'D											
APPV'D											
MFG											
Q.A								MATERIAL:		DWG NO. Sheet No 3A	
								WEIGHT:		SCALE:1:5	
										SHEET 1 OF 1	
										A3	

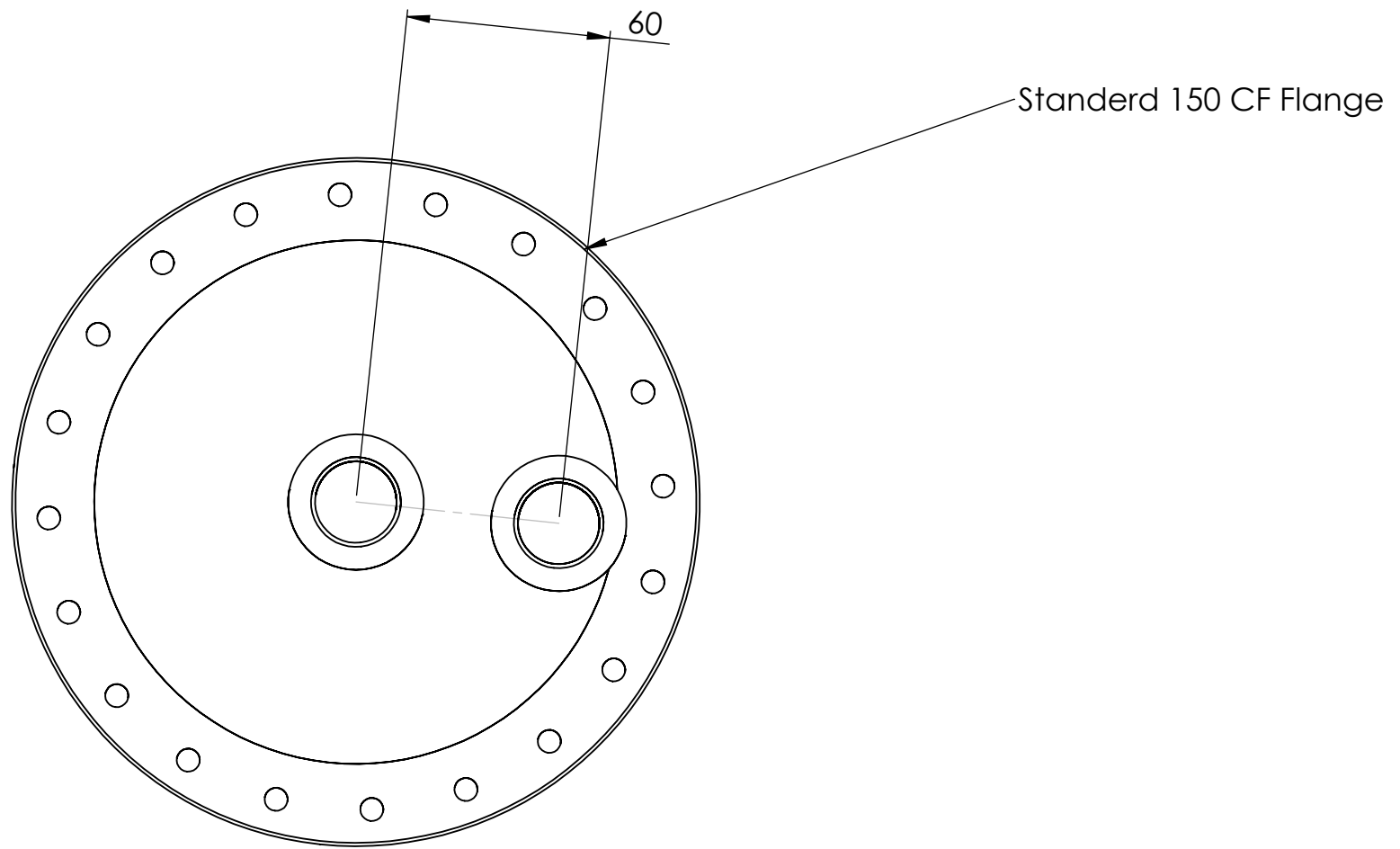


Pipe

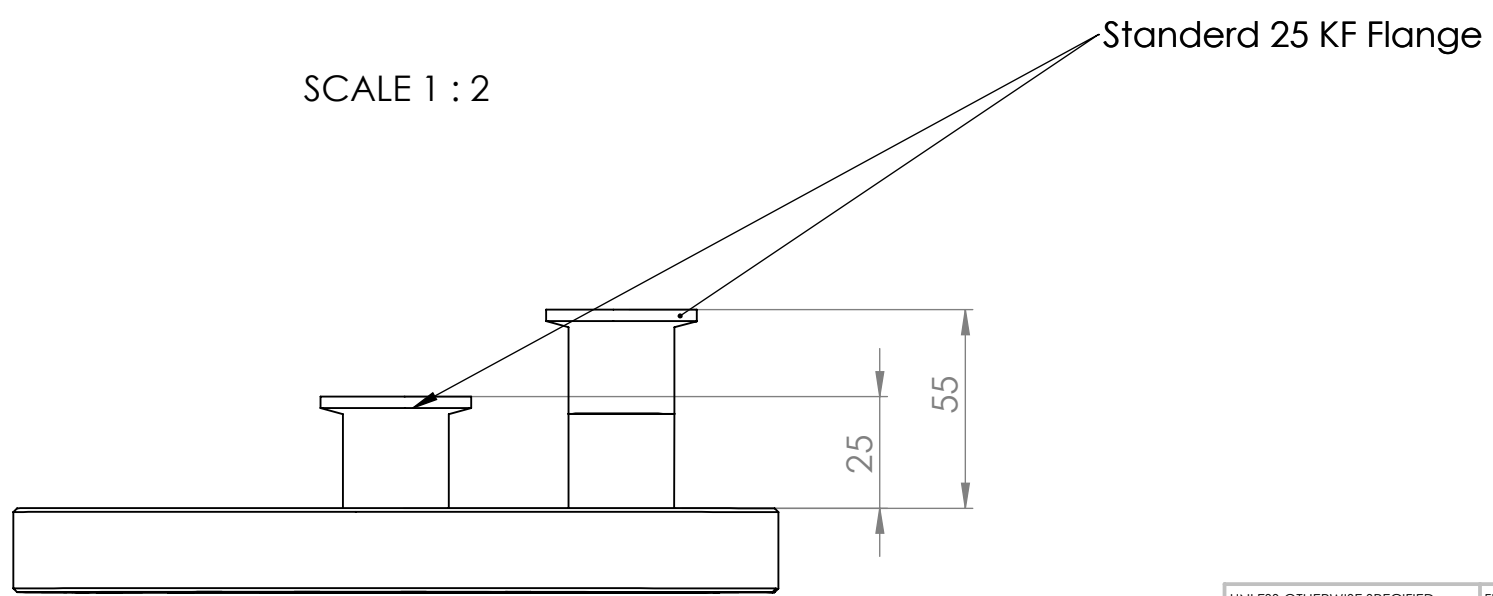
part no	Description	Sheet No.	Material	Nos.
1	Pipe	3B	SS	1
2	150 CF rotatable Flange	As per standerd	SS	2
3	63 CF rotatable Flange	As per standerd	SS	1
4	35 CF ROTatable Flange	As per standerd	SS	3

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:				FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
DRAWN				NAME		SIGNATURE		DATE		TITLE:	
CHK'D										<h1>Vacuum Chamber</h1>	
APPV'D											
MFG											
Q.A											
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										Sheet No 3B	
								WEIGHT:		SCALE:1:5	
										SHEET 1 OF 1	

A3

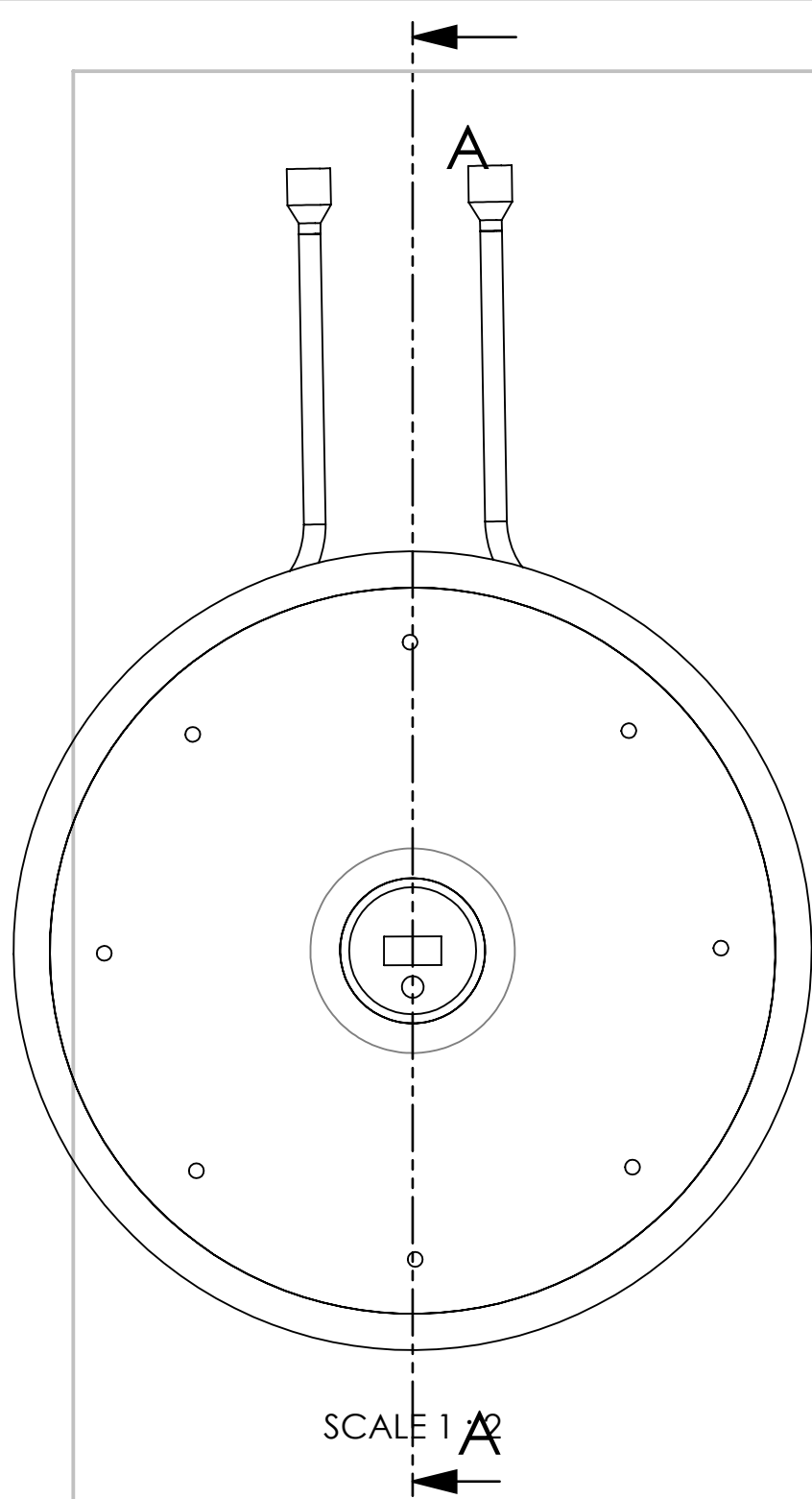


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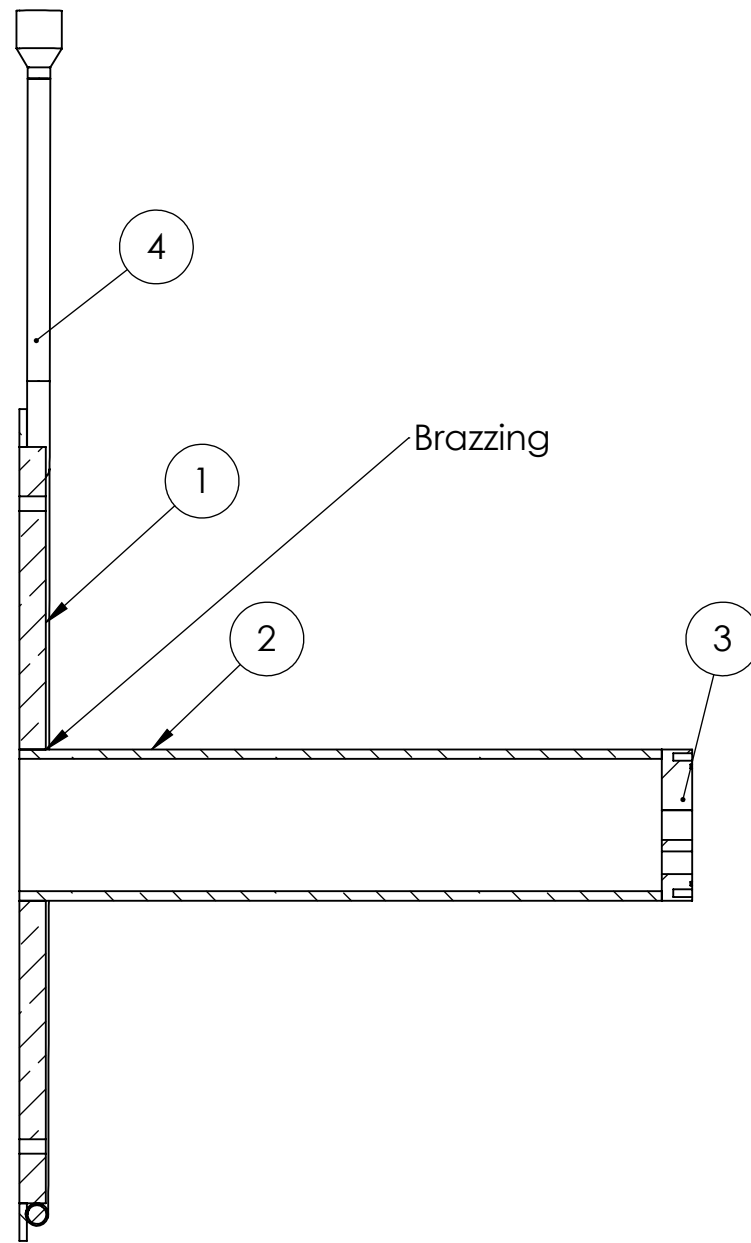


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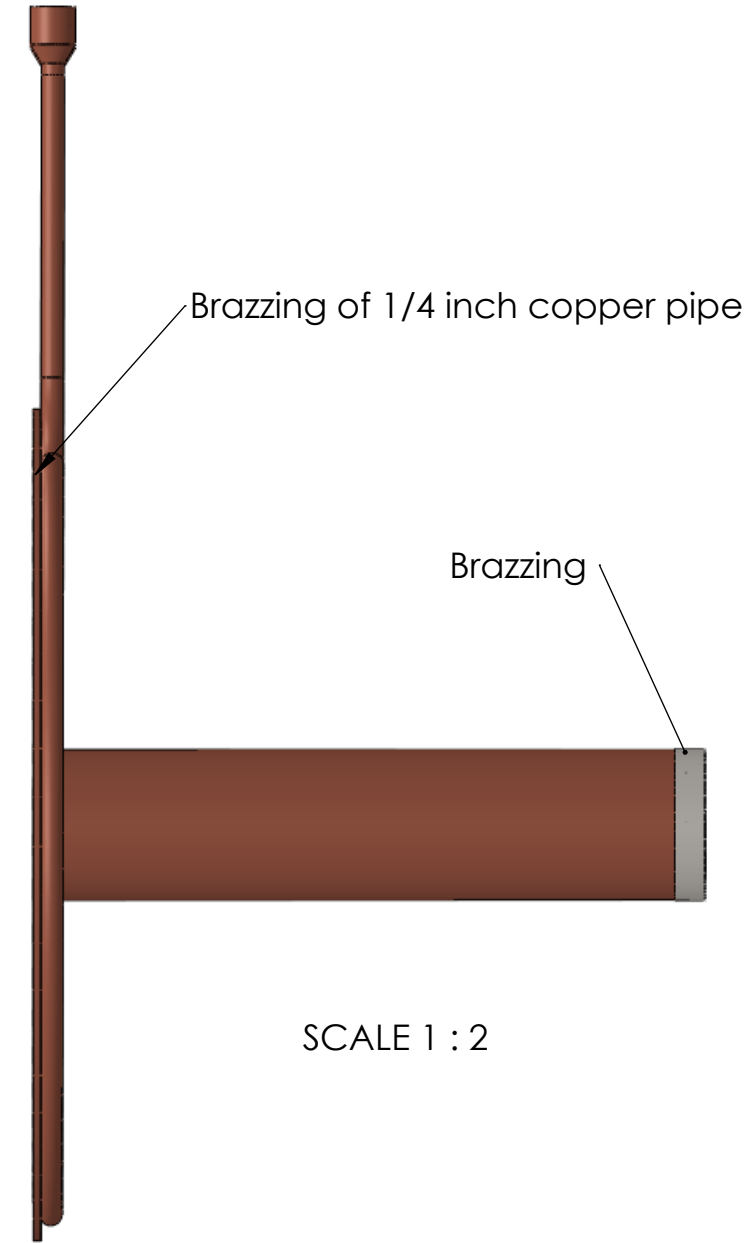
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DRAWN				NAME		SIGNATURE		DATE		TITLE: 150 to 25 KF Flange	
CHK'D											
APPV'D											
MFG											
Q.A								MATERIAL:		DWG NO. Sheet NO 4	
								WEIGHT:		SCALE:1:5	
										SHEET 1 OF 1	
										A3	



SCALE 1 : 2



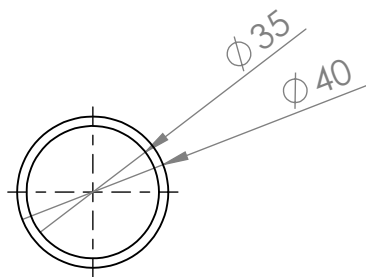
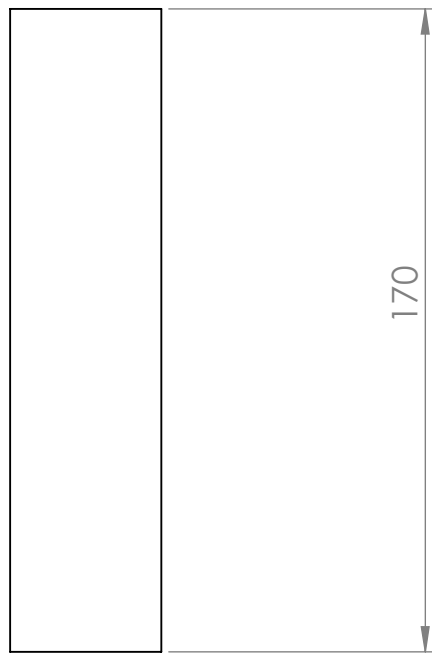
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SCALE 1 : 2



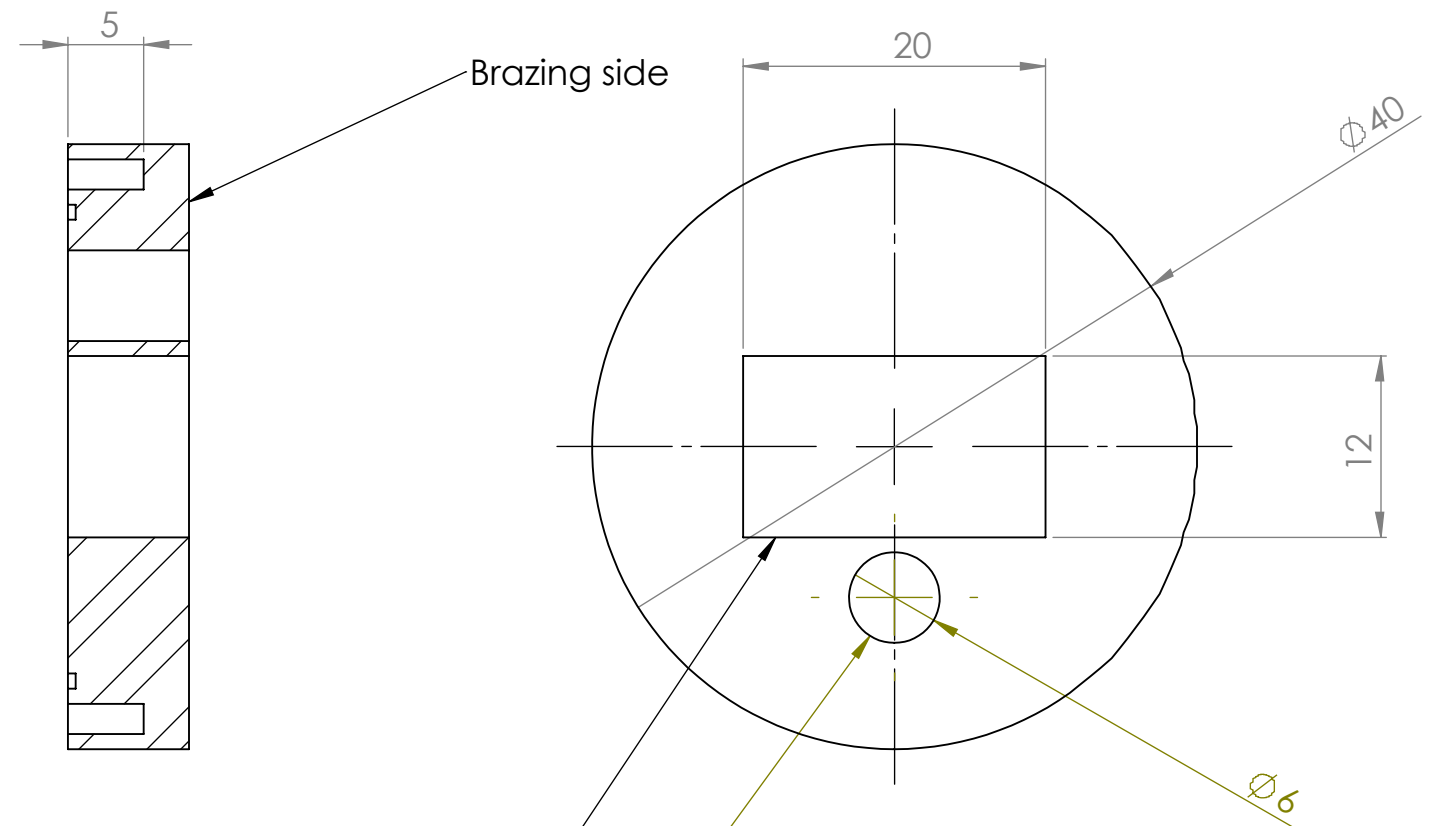
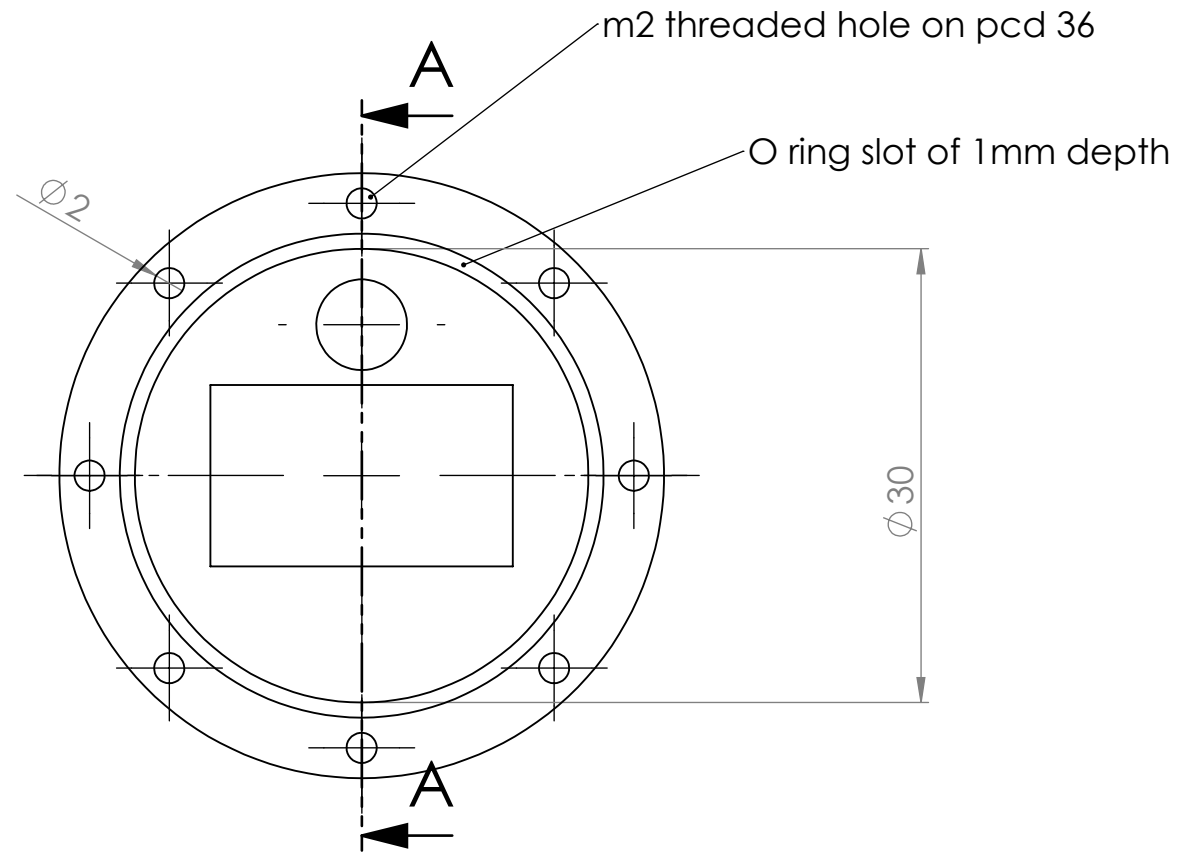
SCALE 1 : 2

part no	Description	Sheet No.	Material	Nos.
1	copper flange	6	copper	1
2	copper pipe	7	Copper	1
3	carbon steel flange	8	carbon steel	1
4	cooling pipe	9	copper	1

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:				FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
DRAWN						TITLE: Plasma Chamber					
CHK'D						DWG NO.5					
APPV'D											
MFG						A3					
Q.A						SCALE:1:5					
WEIGHT:						SHEET 1 OF 1					



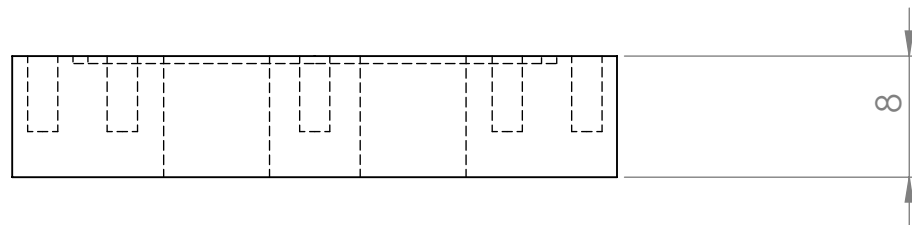
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								TITLE:			
								Copper Pipe			
								A3			
								WEIGHT:			
								SCALE:1:2			
								SHEET 1 OF 1			



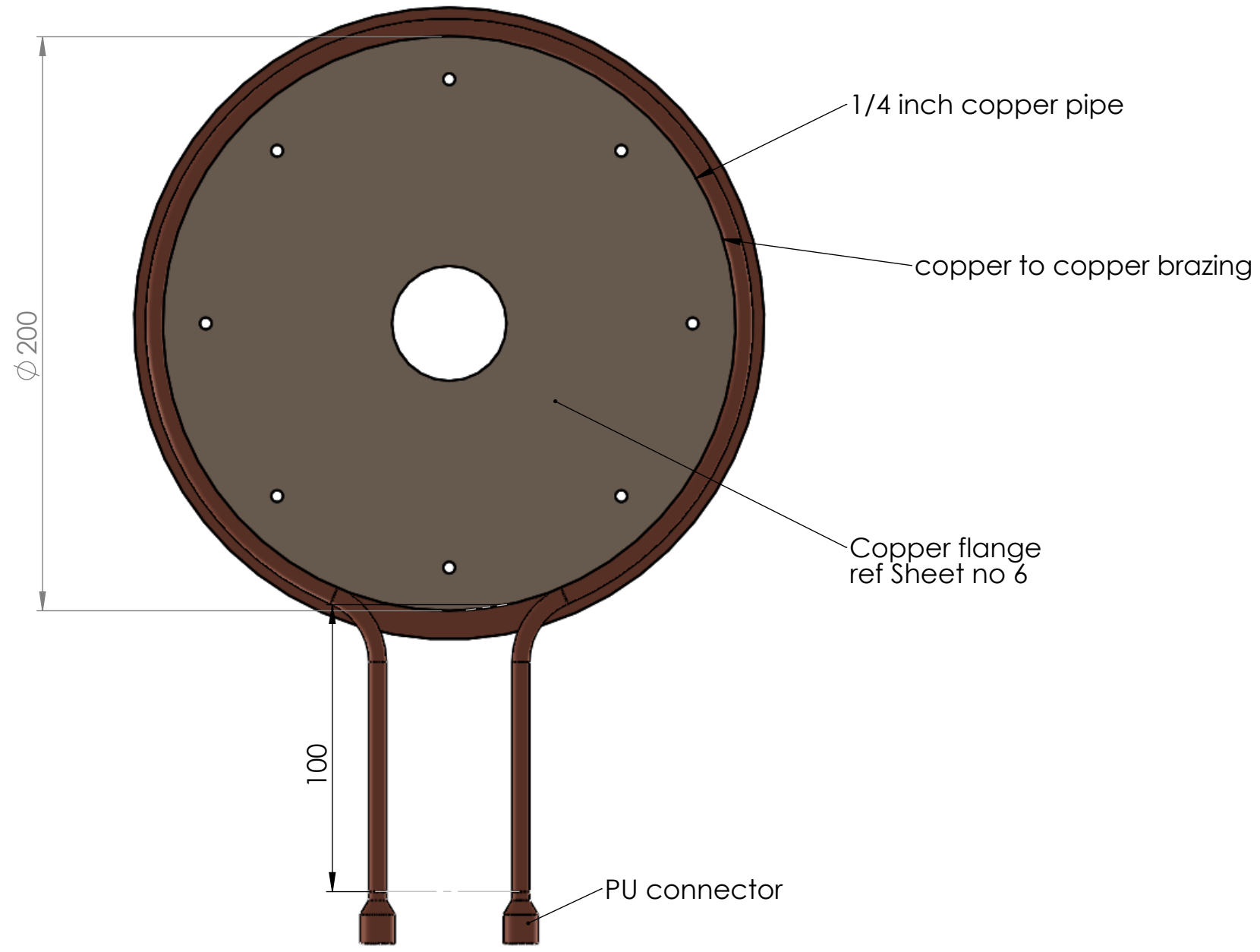
SECTION A-A

Rectangular hole

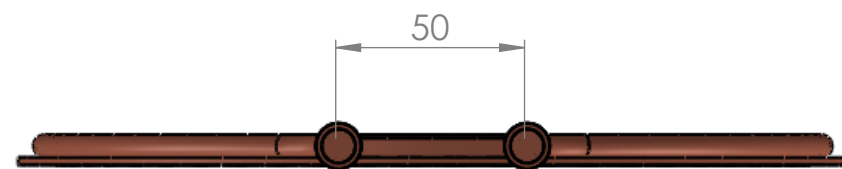
Circular thru hole



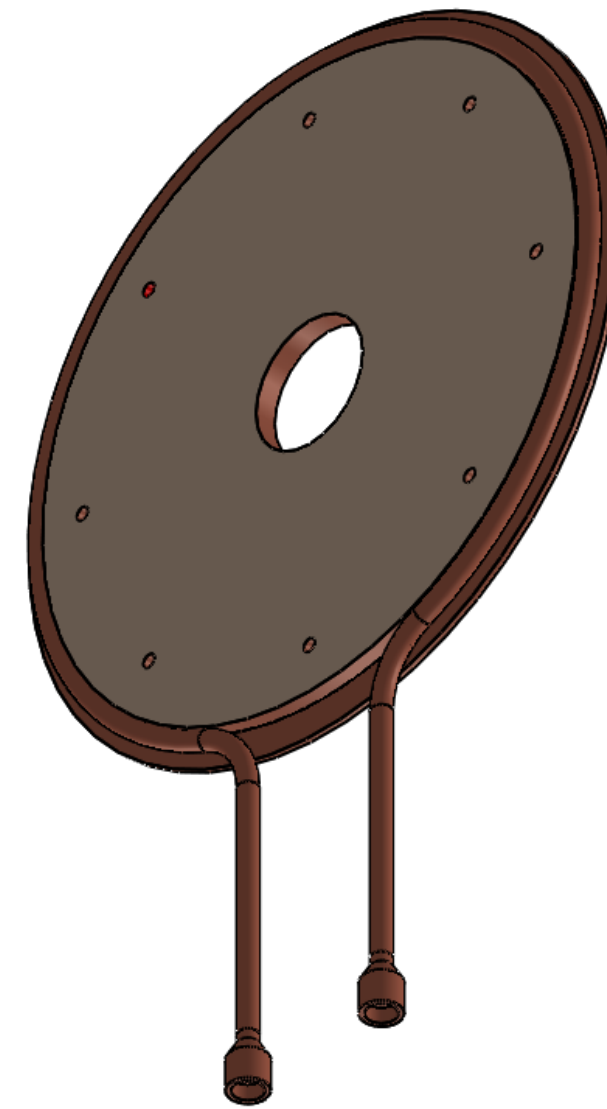
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DRAWN				NAME		SIGNATURE		DATE		TITLE:	
CHK'D										Carbon Steel Flange	
APPV'D											
MFG										DWG NO.8	
Q.A											
										A3	
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								WEIGHT:		SHEET 1 OF 1	



SCALE 1 : 2

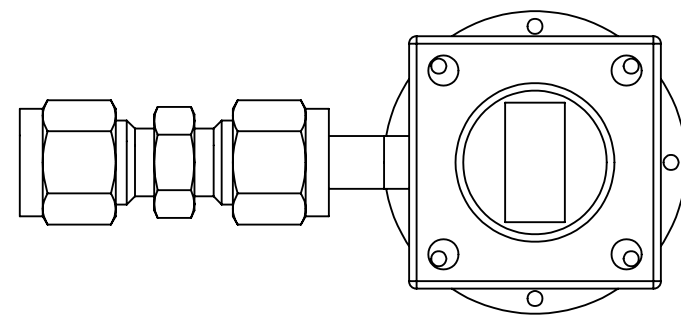
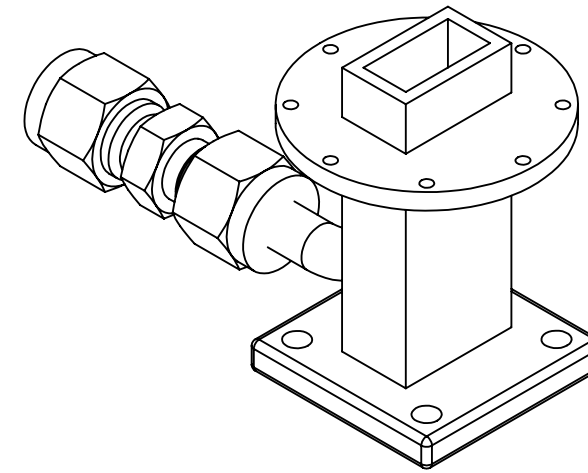
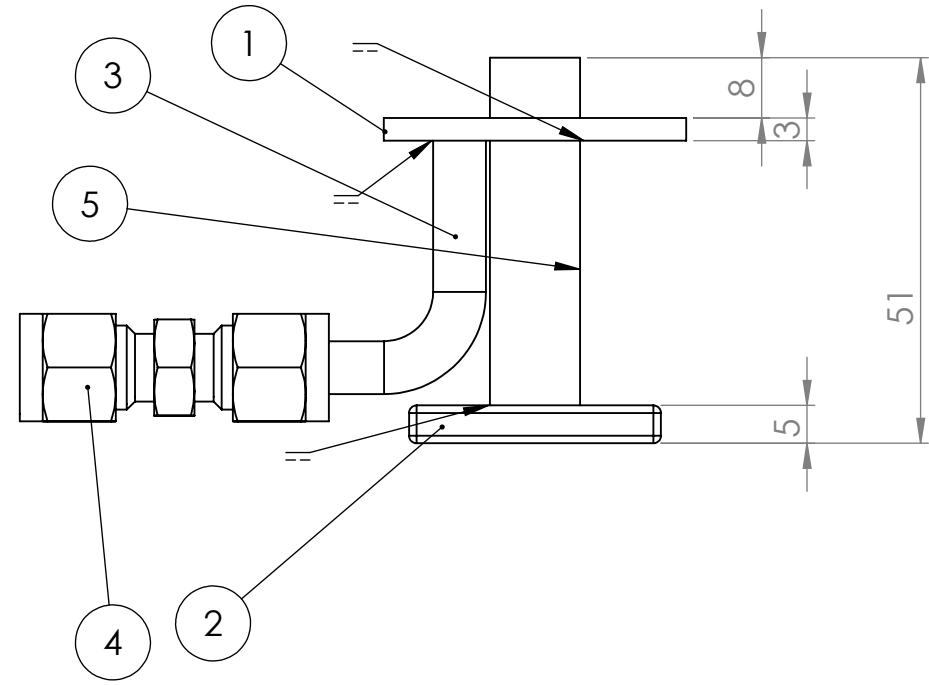


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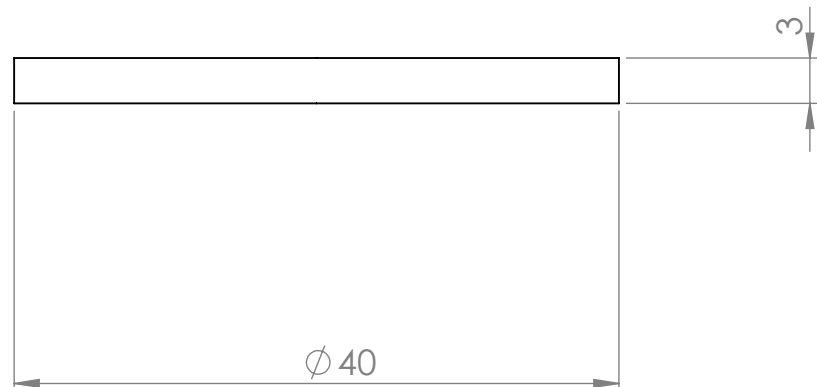
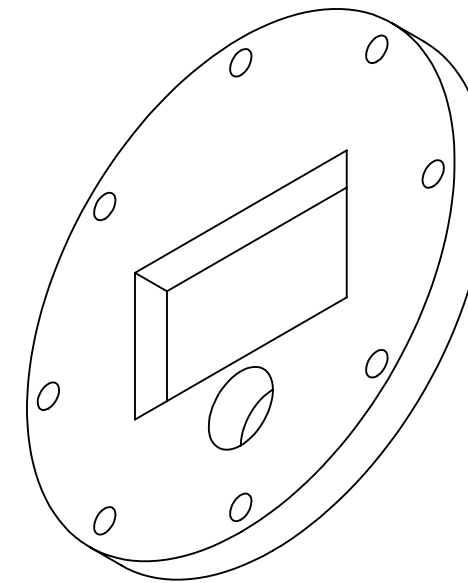
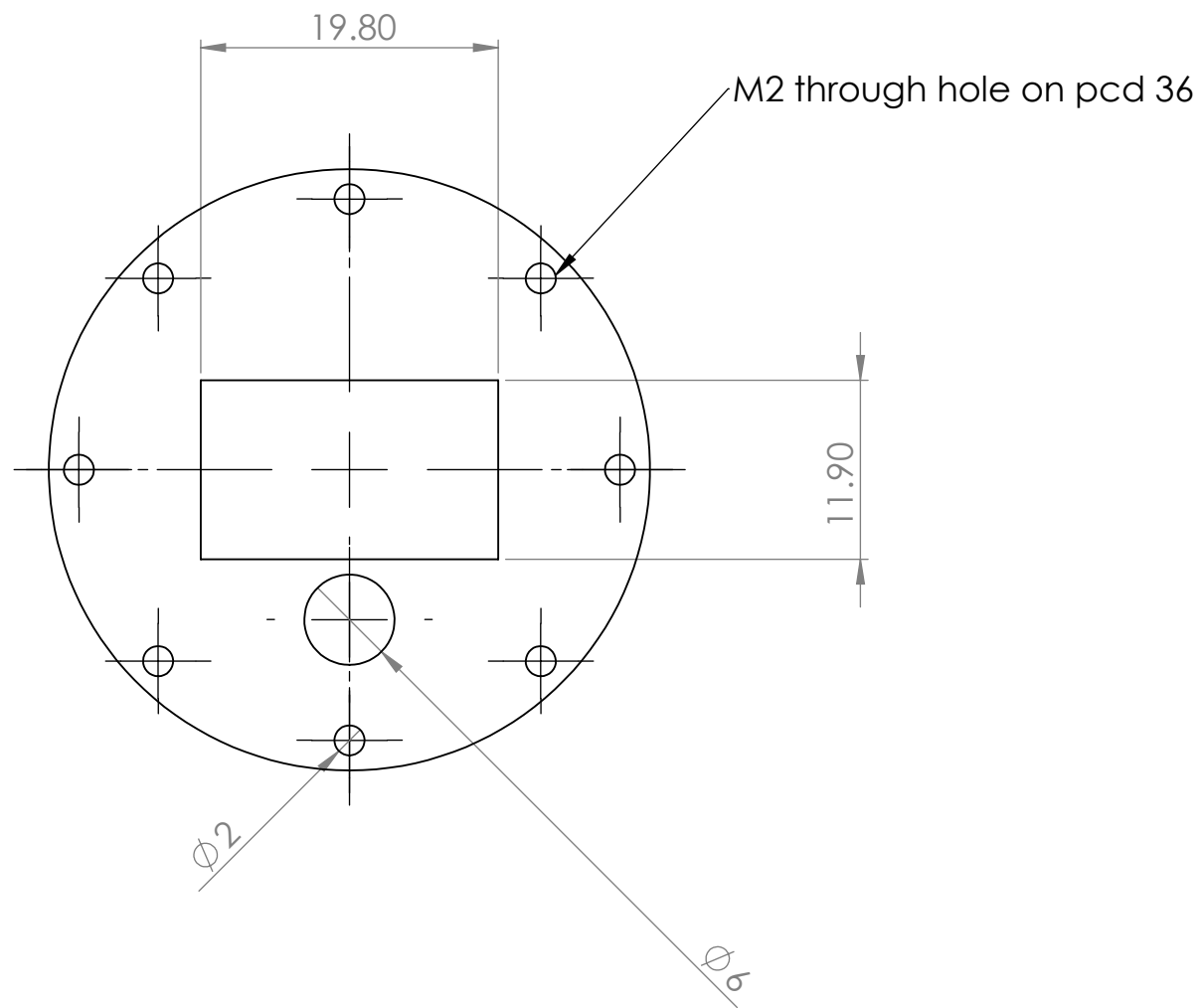
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DRAWN				NAME		SIGNATURE		DATE		TITLE:	
CHK'D										Colling Pipe	
APPV'D											
MFG										DWG NO. 9	
Q.A											
										A3	
								MATERIAL: Copper		SCALE:1:5	
								WEIGHT:		SHEET 1 OF 1	

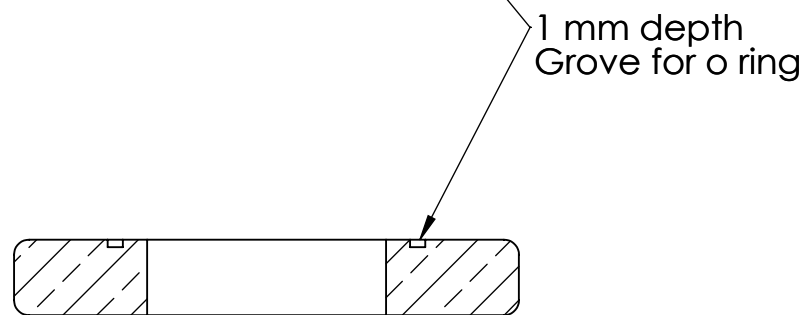
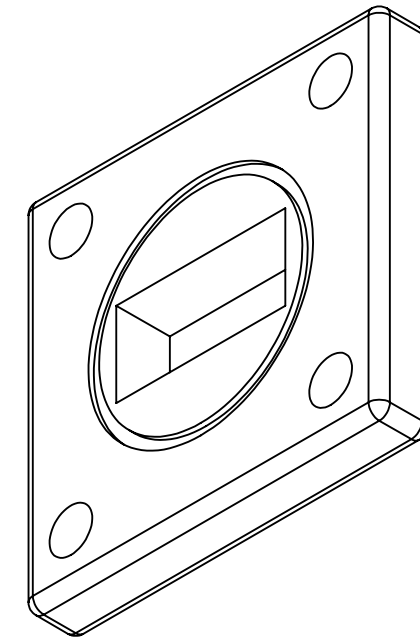
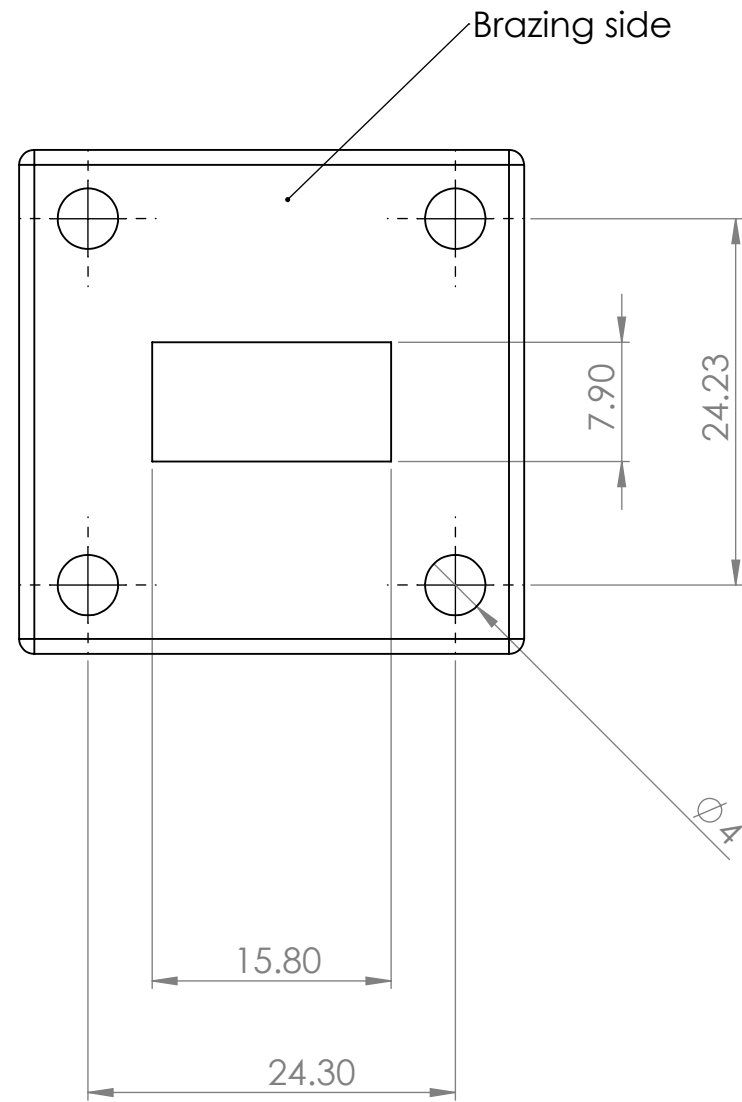
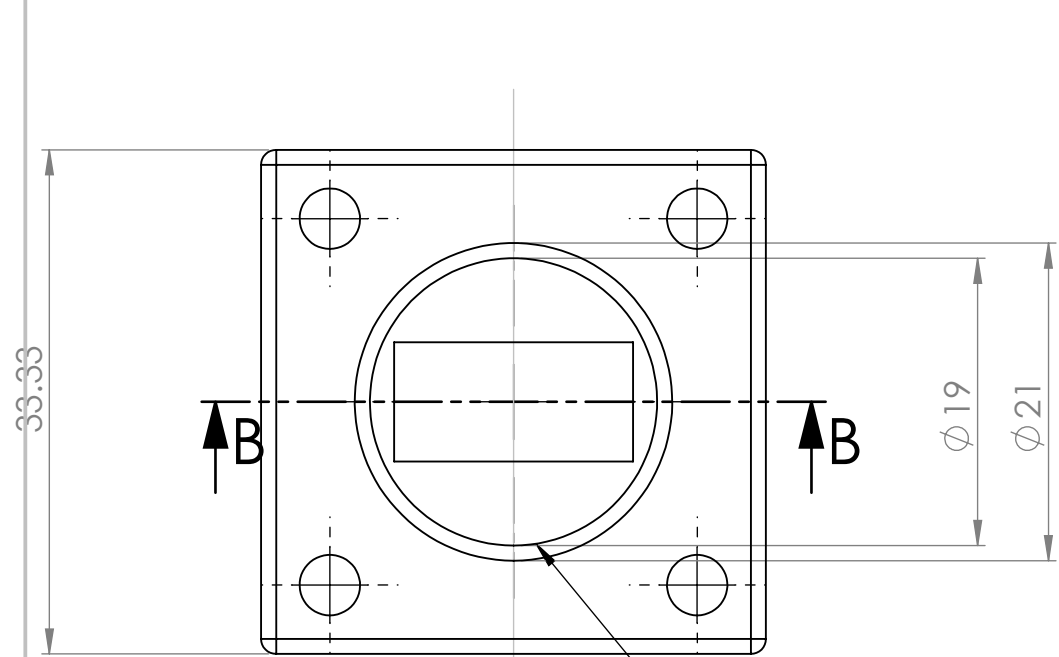


part no	Description	Sheet No.	Material	Nos.
1	RF circular flange	11	copper	1
2	UBR 120 Flange	12	Copper	1
3	Gas feed pipe	13	copper 1/8 inch pipe	1
4	ferrule connector	as per standard	Brass	1
5	WR 63 Waveguide	14	Copper	1

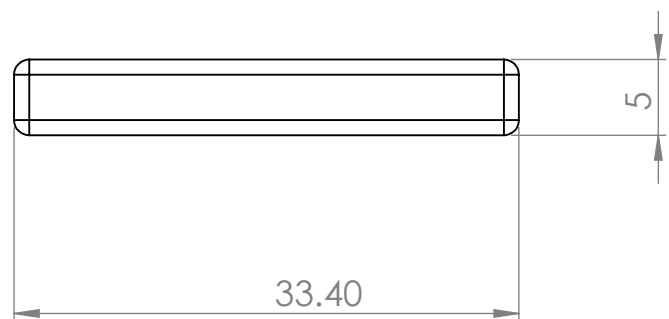
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DRAWN	NAME	SIGNATURE	DATE			TITLE: RF Feed System			
CHK'D									
APPV'D									
MFG									
Q.A									
MATERIAL:						DWG NO. 10		A3	
WEIGHT:						SCALE:1:1		SHEET 1 OF 1	



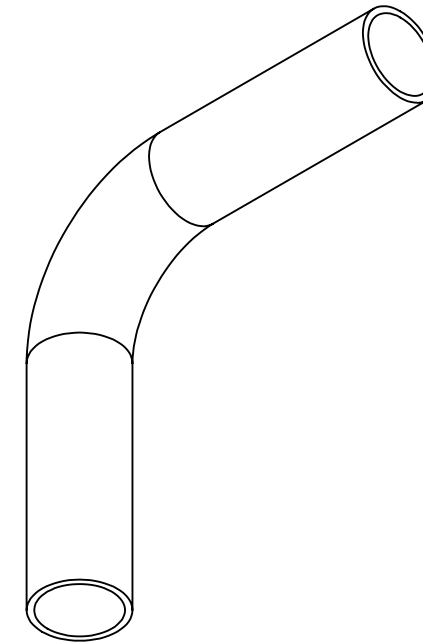
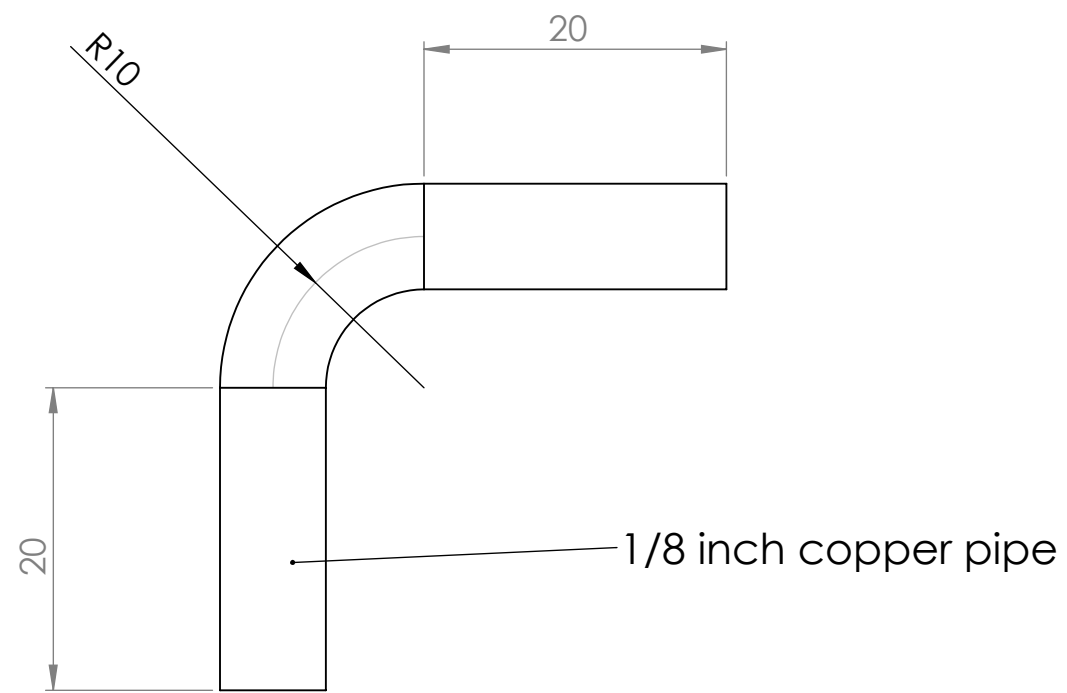
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								TITLE: RF Circular Flange			
DRAWN				NAME		SIGNATURE		DATE		MATERIAL: Copper	
CHK'D										DWG NO. 11	
APPV'D										A3	
MFG										SCALE: 2:1	
Q.A.										SHEET 1 OF 1	
										WEIGHT:	



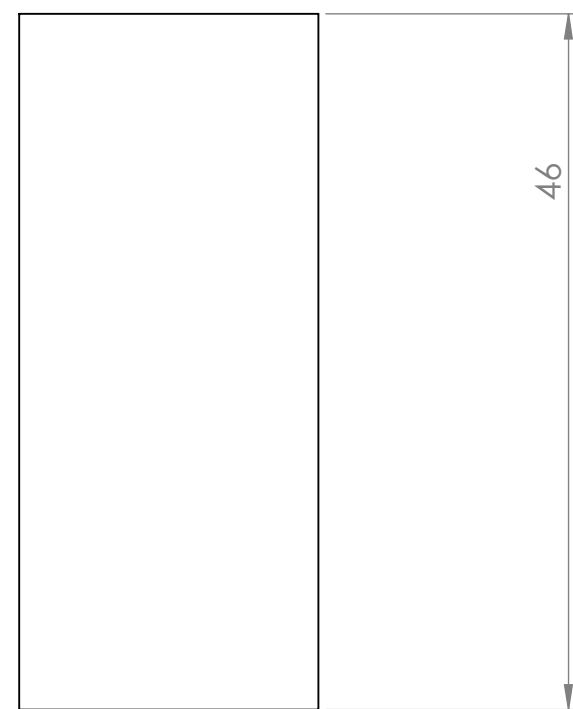
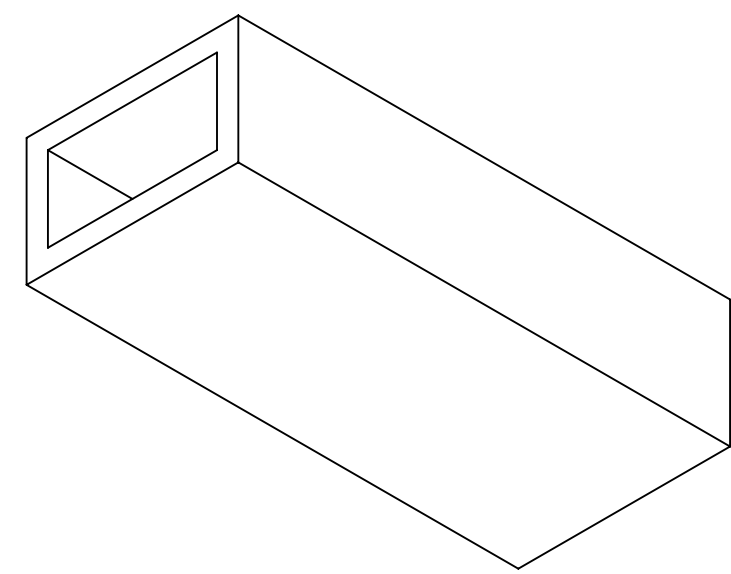
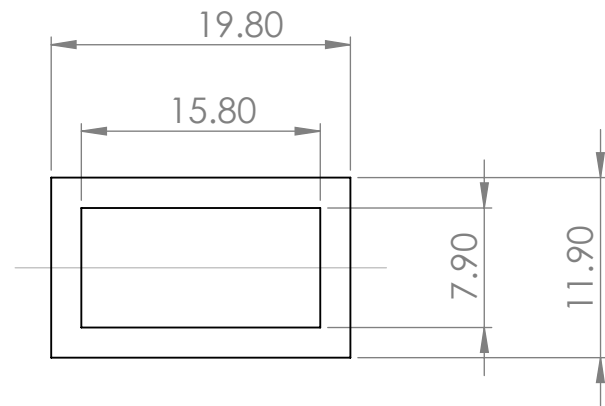
SECTION B-B



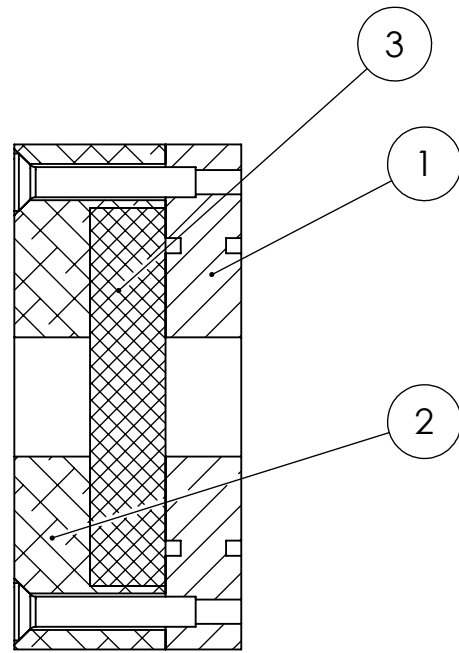
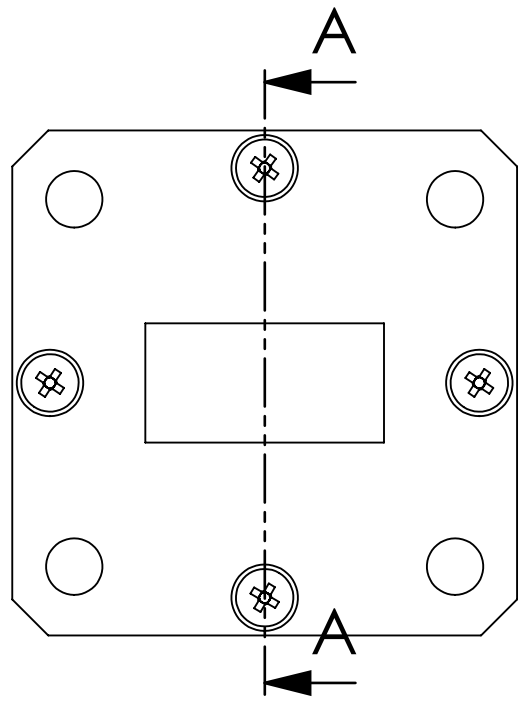
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DRAWN	NAME	SIGNATURE	DATE					TITLE: UBR 120			
CHK'D								DWG NO. 12			
APPV'D											
MFG								A3			
Q.A											
								MATERIAL: Copper		SCALE:2:1	
								WEIGHT:		SHEET 1 OF 1	



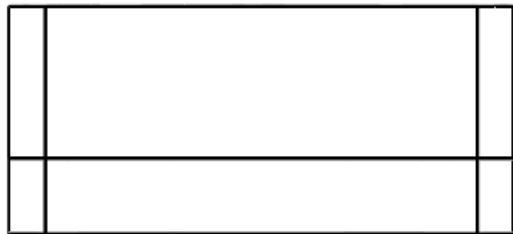
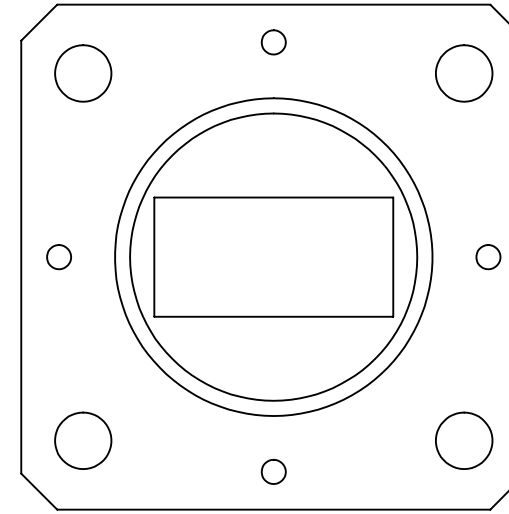
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								TITLE: Gas Feed Pipe			
								DWG NO.13			
						MATERIAL: Copper		A3			
						WEIGHT:		SCALE:2:1		SHEET 1 OF 1	



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:				FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
								TITLE: WR 62 Waveguide			
								MATERIAL: Copper			
								DWG NO. 14			
								A3			
								SCALE:2:1			
								SHEET 1 OF 1			



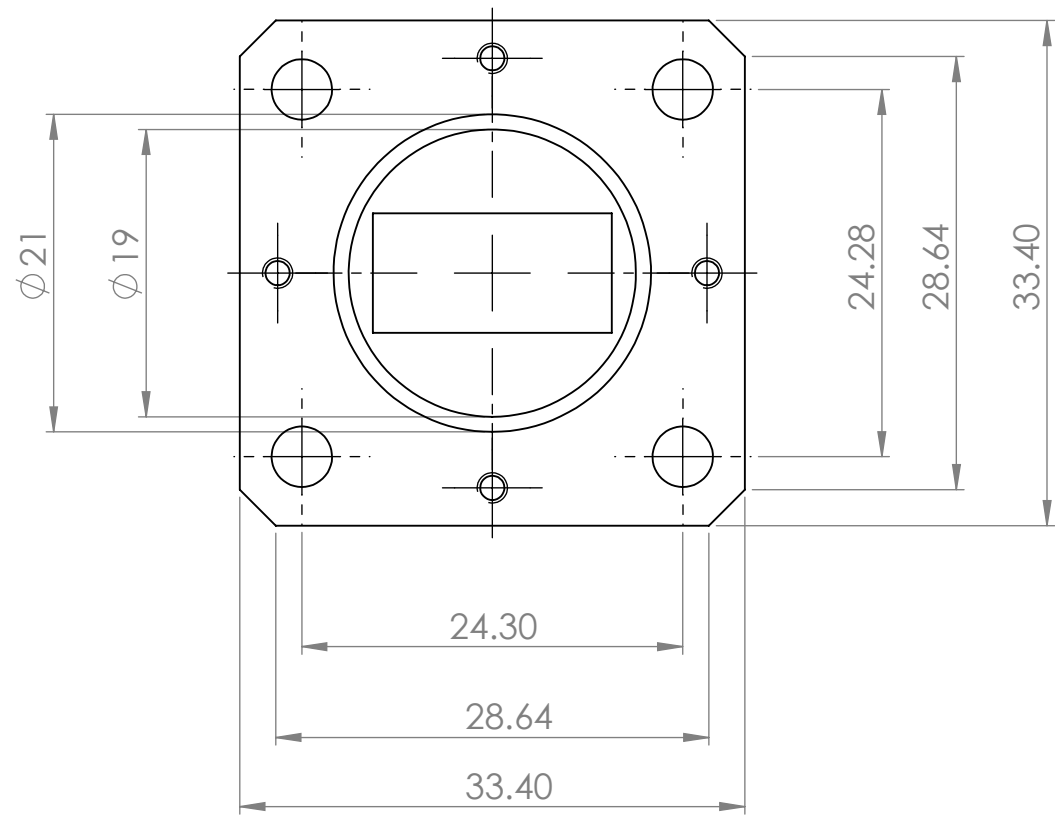
SECTION A-A



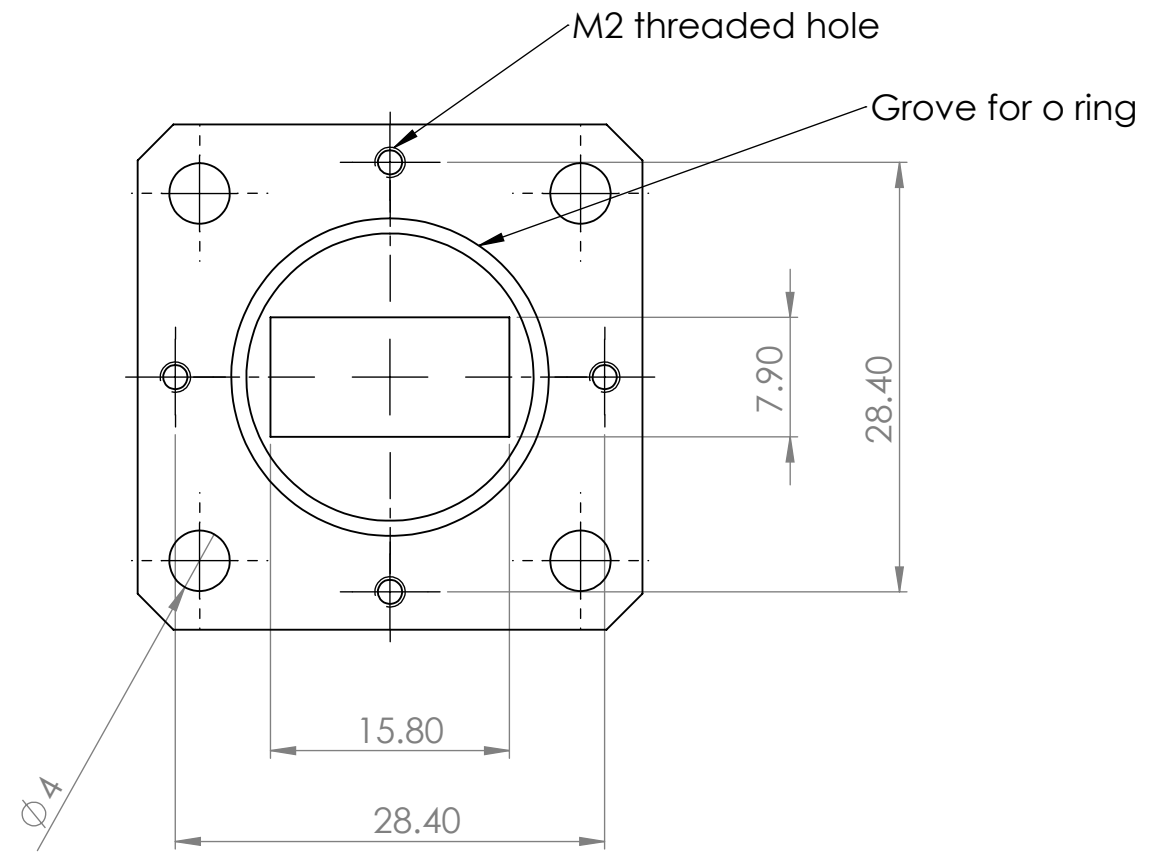
Quantity required 2

part no	Description	Sheet No.	Material	Nos.
1	UBR 120 Flange vacuum side	16	copper	1
2	Circular fiber glass	17	fiber glass	1
3	UBR 120 Flange modified	18	copper	1

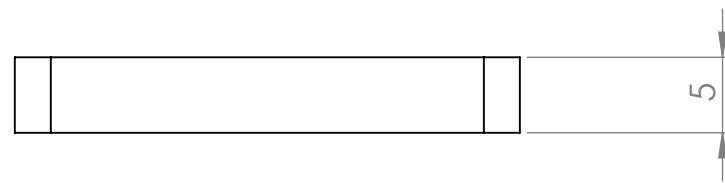
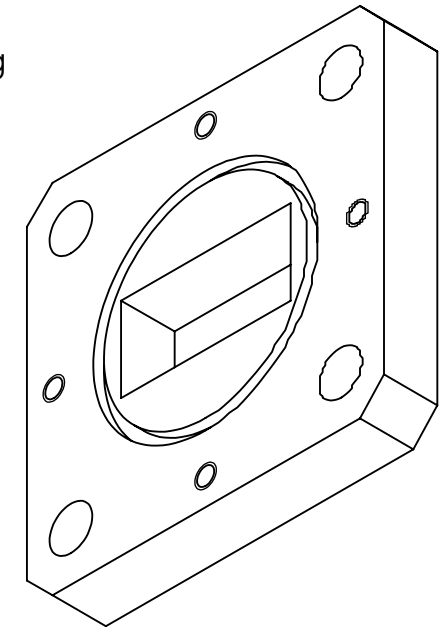
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DRAWN	NAME	SIGNATURE	DATE		TITLE: WR62 MW Window 1	
CHK'D						
APPV'D						
MFG						
Q.A						
				MATERIAL:	DWG NO. 15	A3
				WEIGHT:	SCALE:2:1	SHEET 1 OF 1



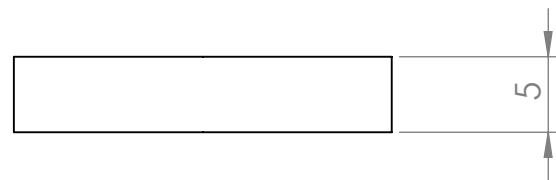
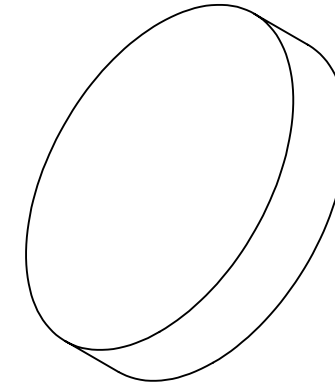
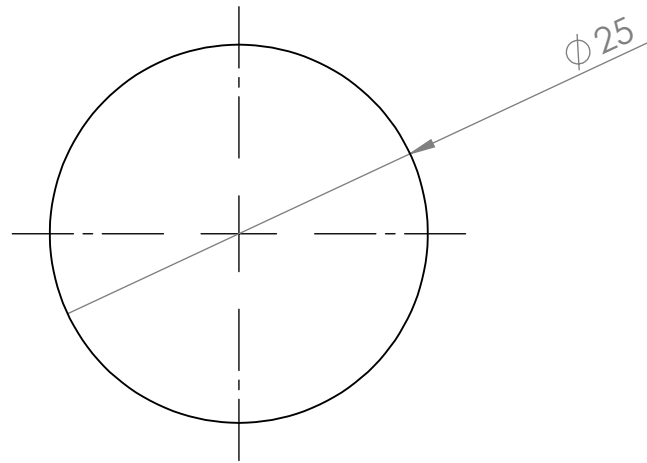
Top view



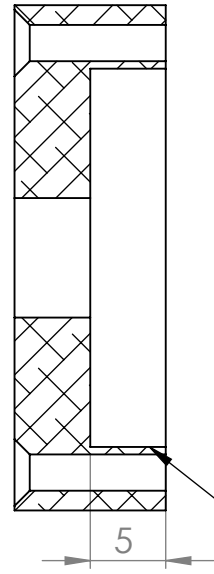
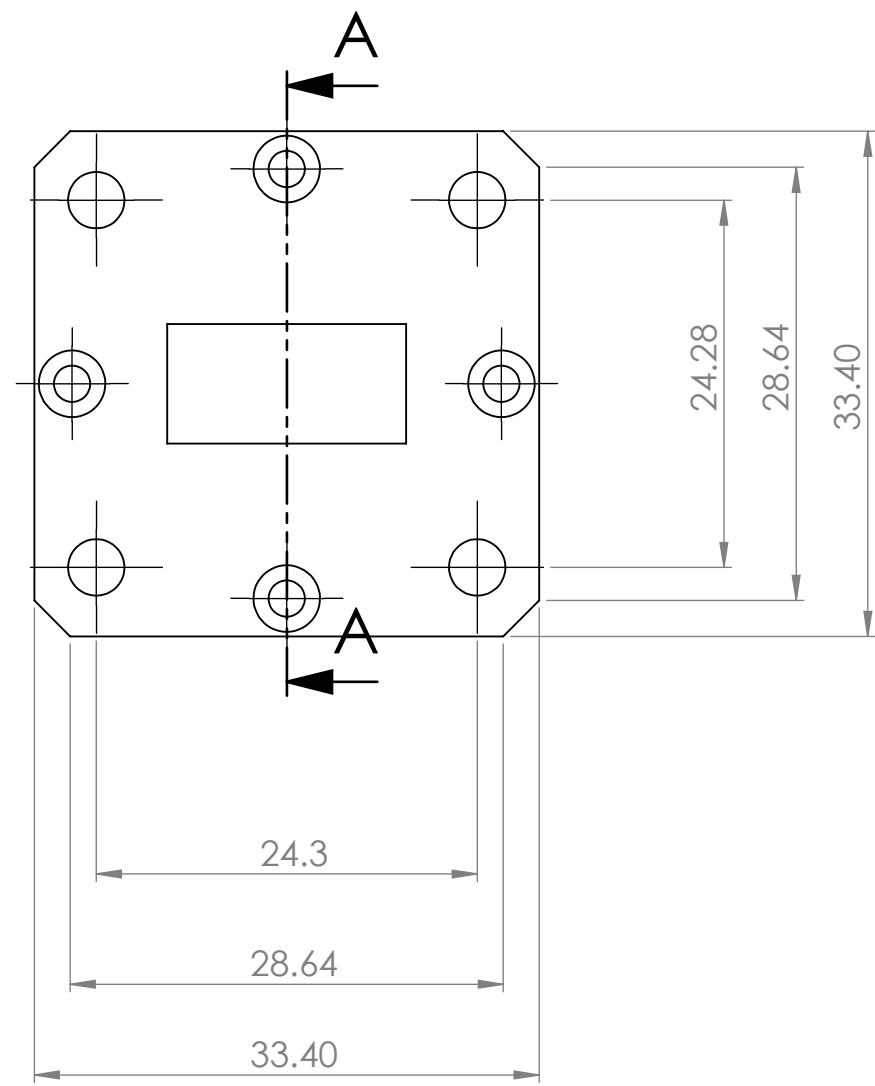
Bottom view



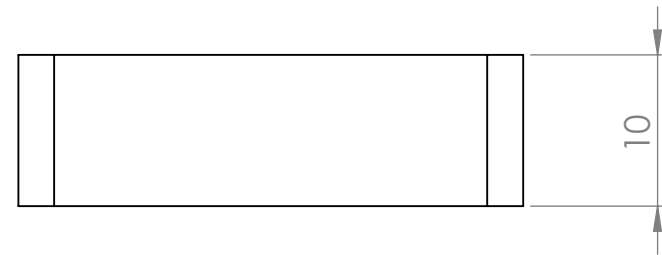
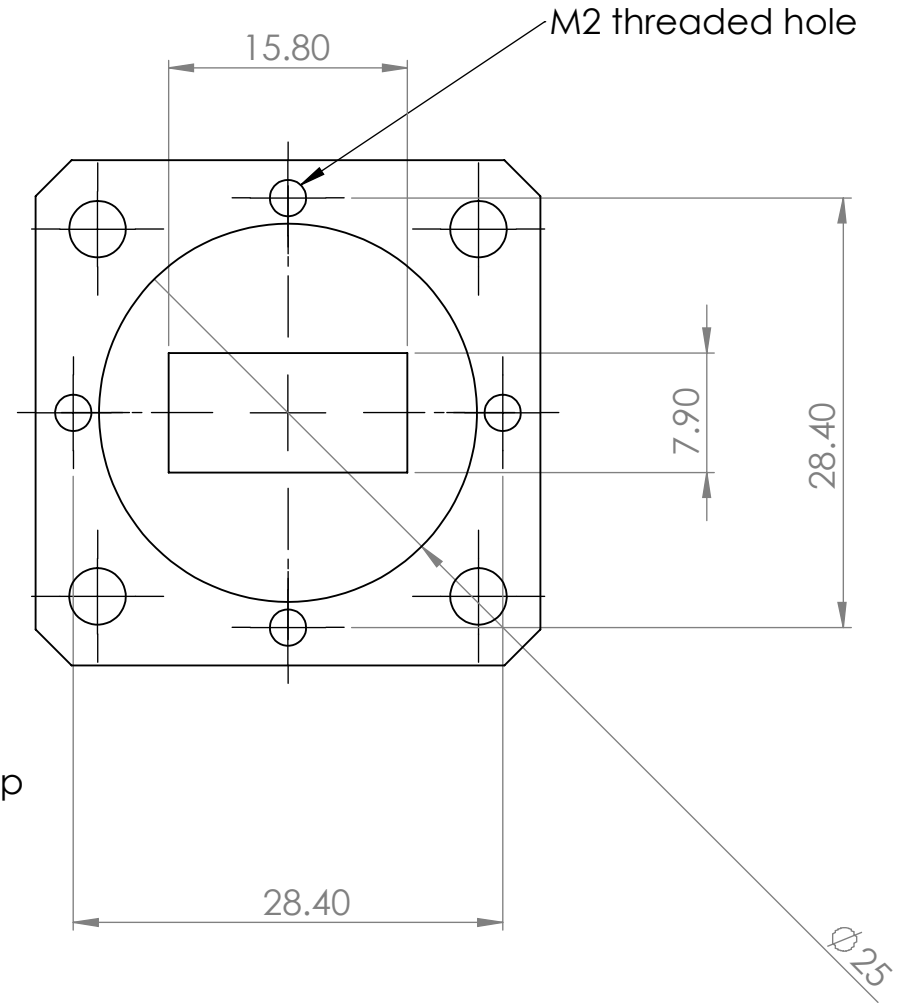
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NAME	SIGNATURE	DATE				<p>TITLE:</p> <h2 style="text-align: center;">UBR 120 flange Vacuum Side</h2> <p style="text-align: center;">DWG NO. 16</p>					A3
DRAWN											
CHK'D											
APPV'D											
MFG											
Q.A.				MATERIAL: Copper			SCALE:2:1		SHEET 1 OF 1		
				WEIGHT:							



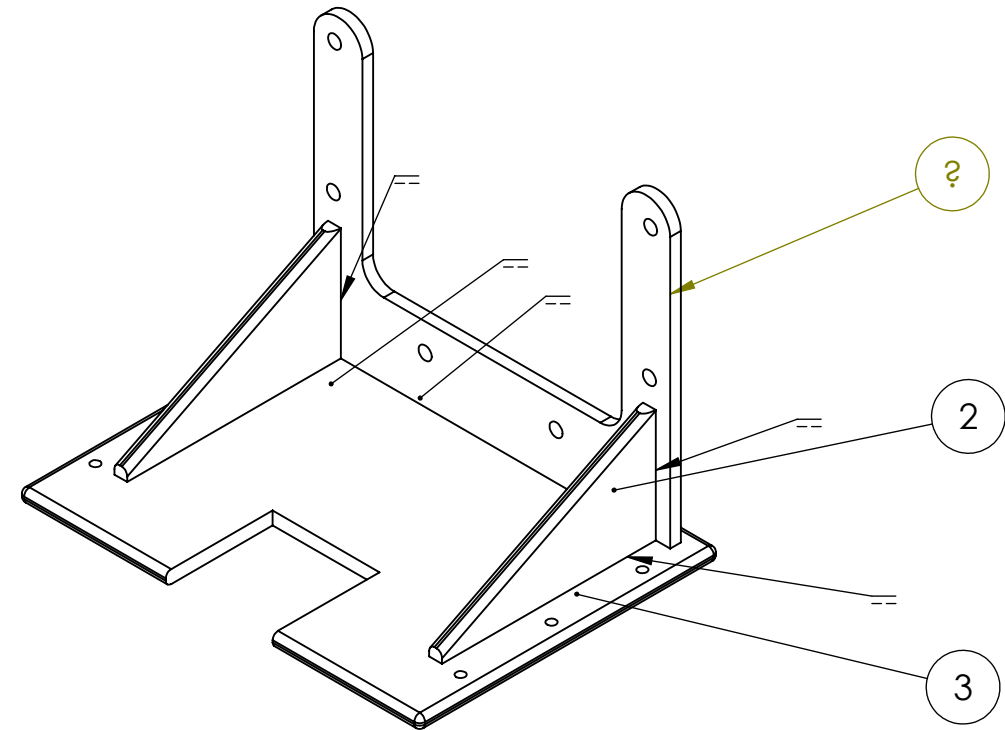
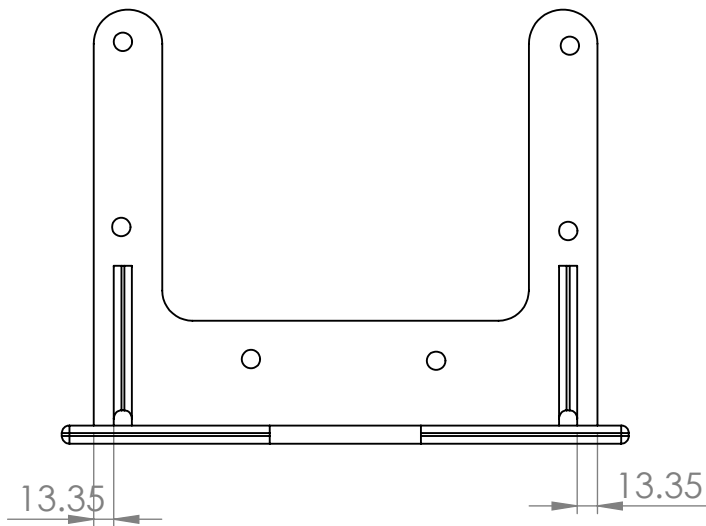
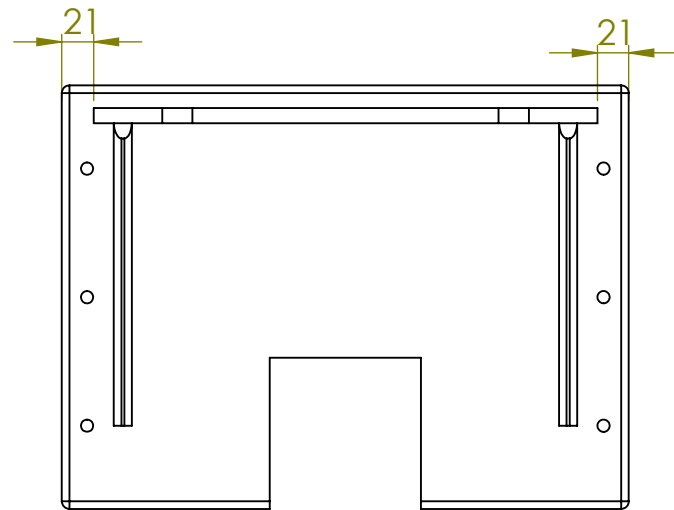
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								TITLE: Circular Fiber Glass			
								MATERIAL: Fiber Glass			
								DWG NO.17			
								A3			
								SCALE:2:1			
								SHEET 1 OF 1			



SECTION A-A

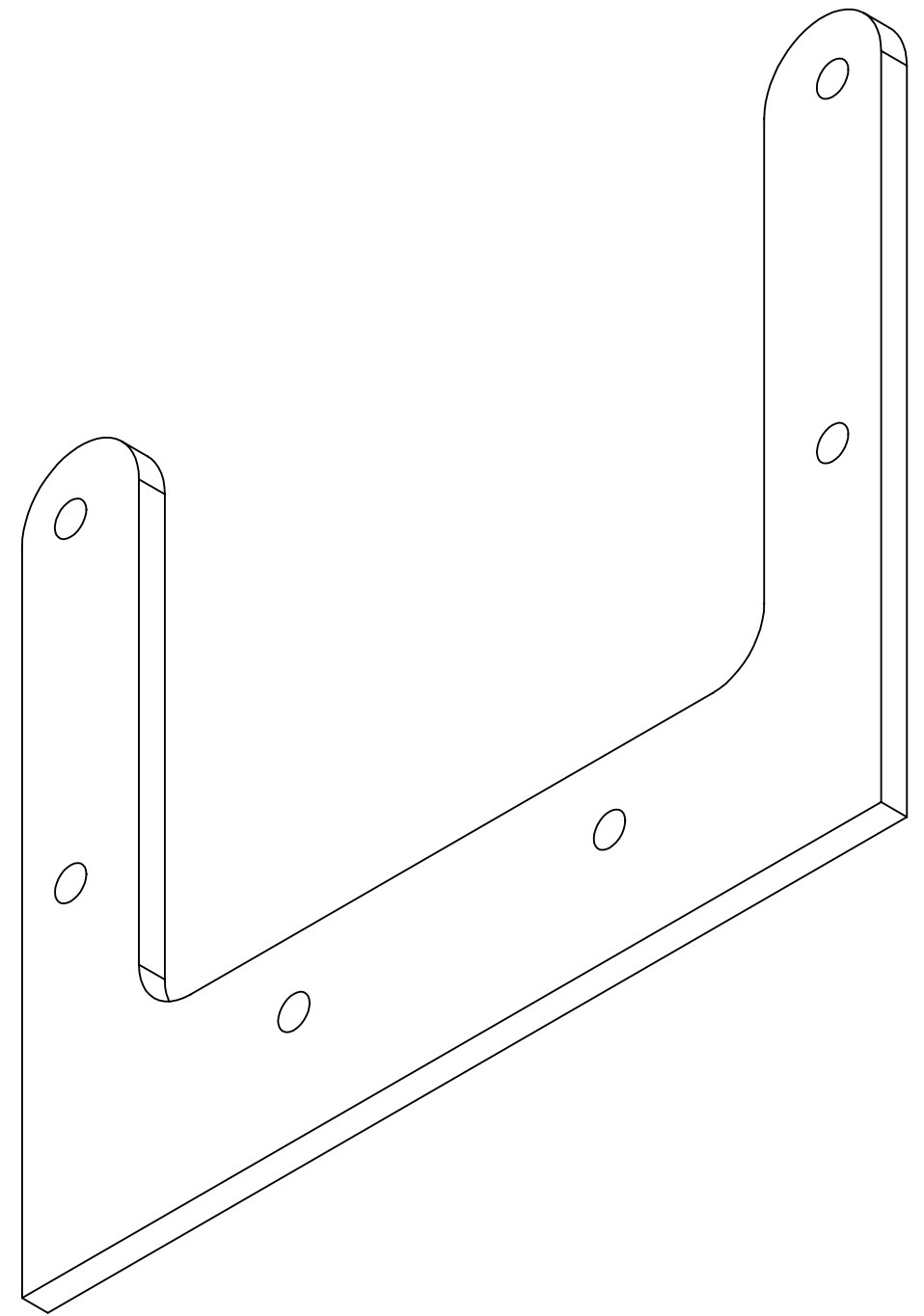
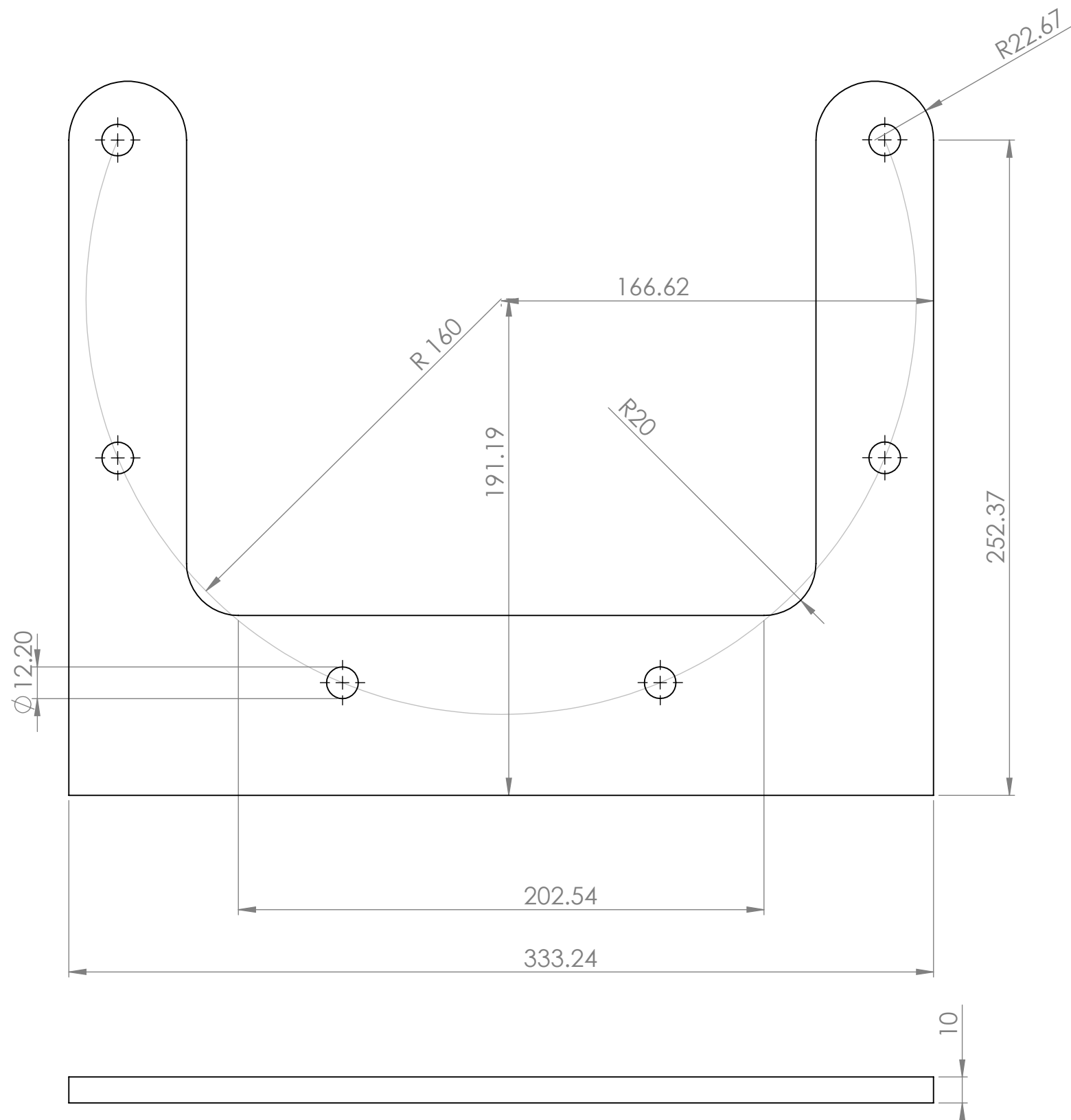


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DRAWN	NAME	SIGNATURE	DATE					TITLE: UBR 120 flange Modified				
CHK'D								DWG NO. 18				A3
APPV'D								MATERIAL: Copper				
MFG								WEIGHT:				
Q.A.								SCALE:2:1				SHEET 1 OF 1

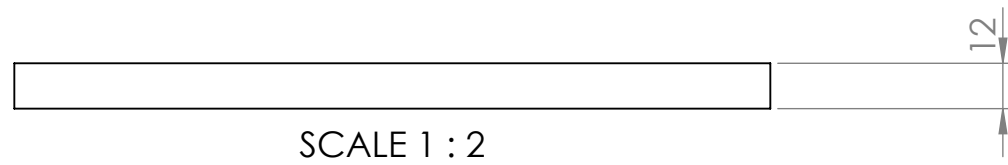
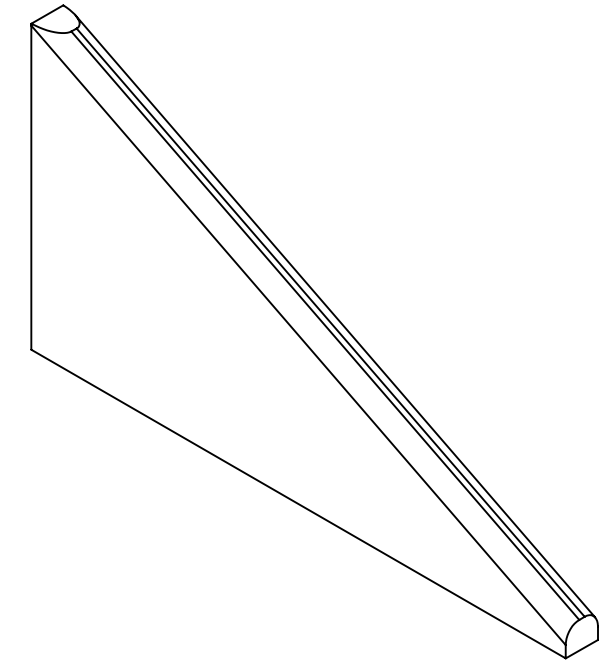
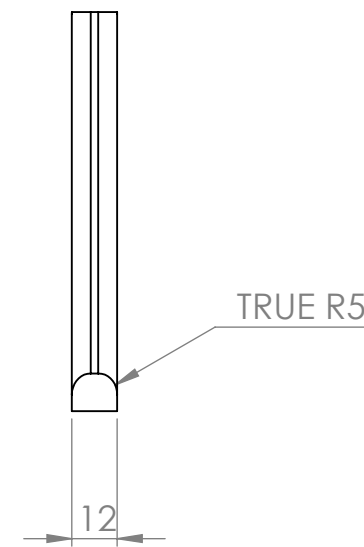
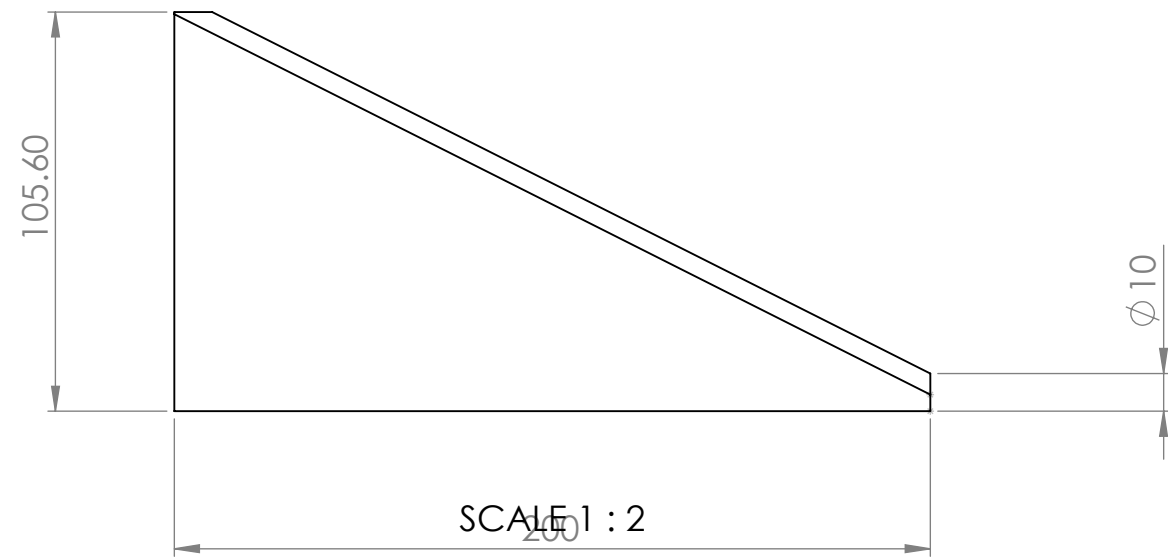


part no	Description	Sheet No.	Material	Nos.
1	Part 1	20	Aluminium	1
2	Part 2	21	Aluminium	2
3	Part 3	22	Aluminium	1

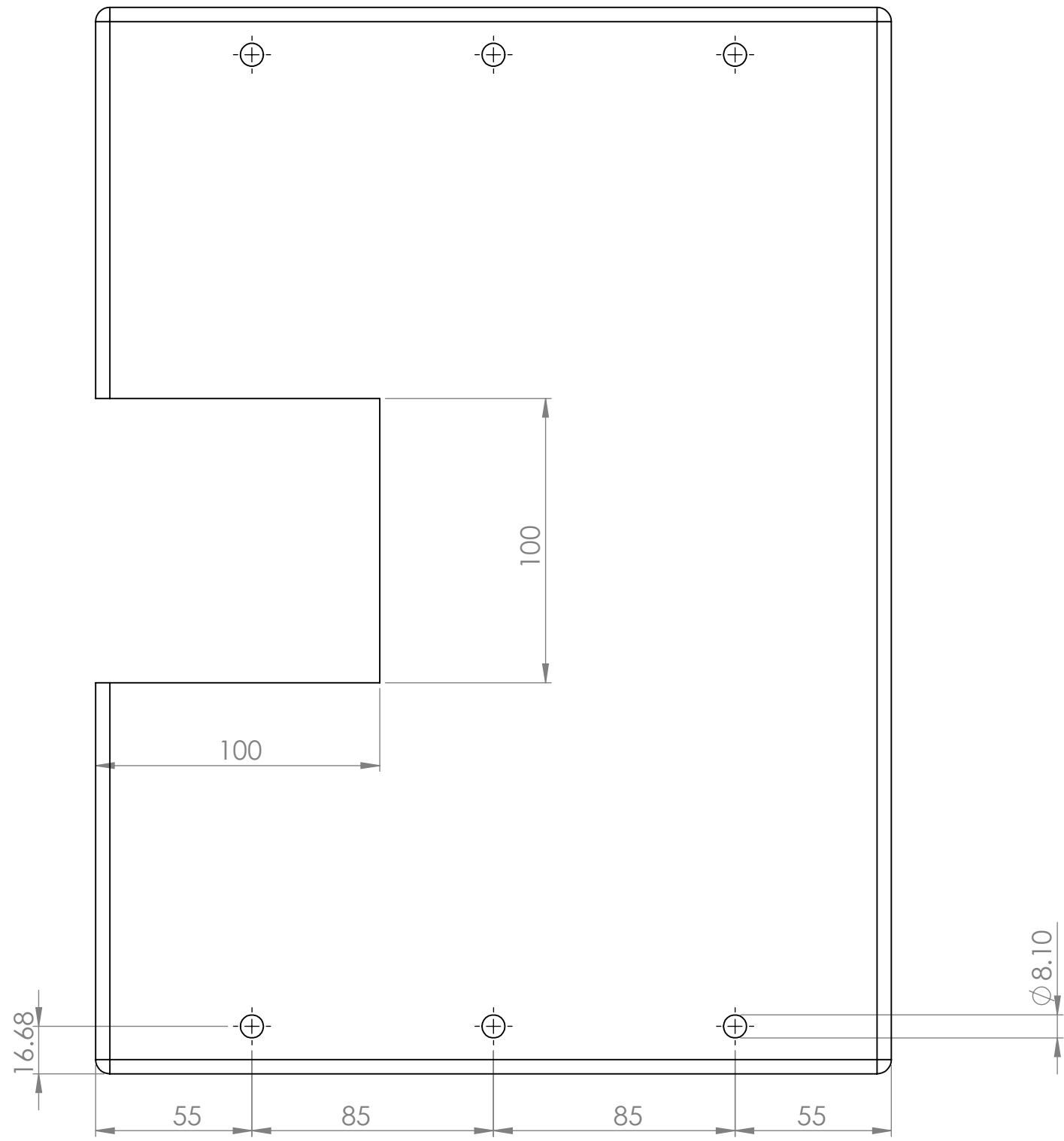
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DRAWN		SIGNATURE		DATE		TITLE: <h1>Stand</h1>			
CHK'D						MATERIAL: Aluminium		DWG NO. 19	
APPV'D						WEIGHT:		SCALE:1:5	
MFG								SHEET 1 OF 1	
Q.A								A3	



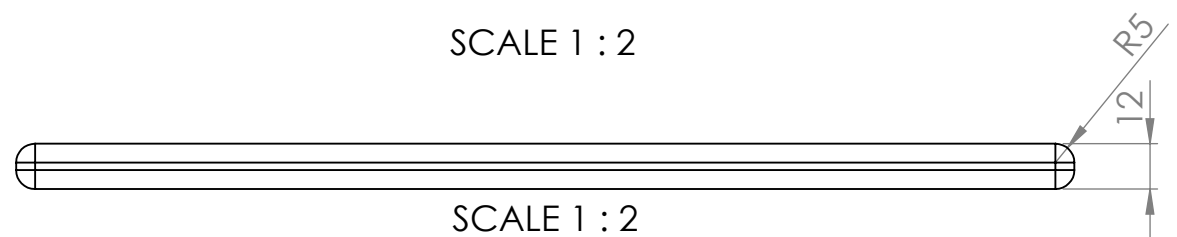
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DRAWN						TITLE: <h1>Part 1</h1> DWG NO. 20					
CHK'D											
APPV'D											
MFG											
Q.A											
					MATERIAL: Aluminium		SCALE:1:2		A3		
					WEIGHT:		SHEET 1 OF 1				



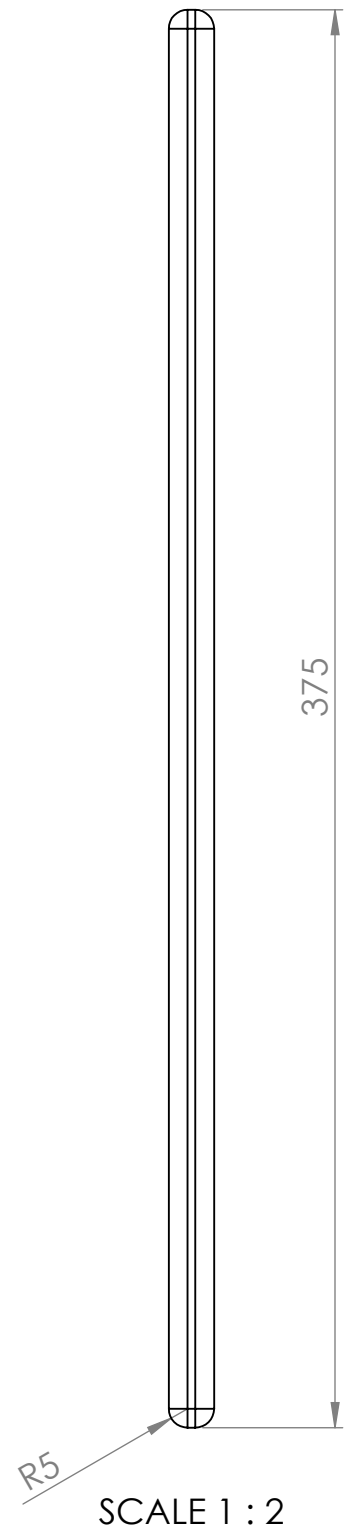
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								TITLE: Part 2			
								DWG NO. 21			
								A3			
								MATERIAL: Aluminium			
								WEIGHT:			
								SCALE:1:1			
								SHEET 1 OF 1			



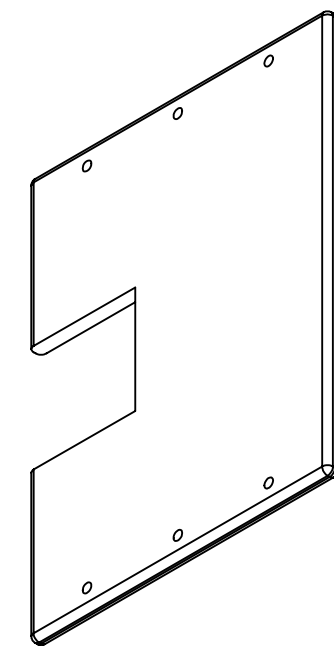
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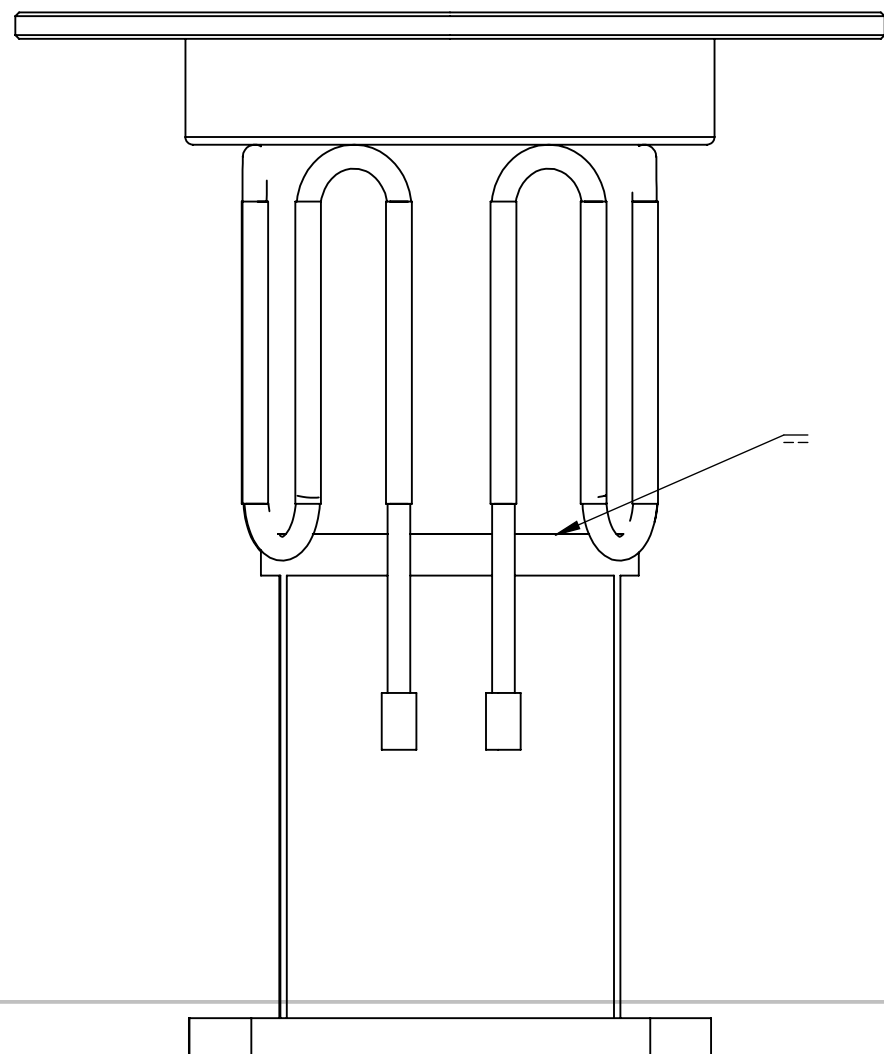
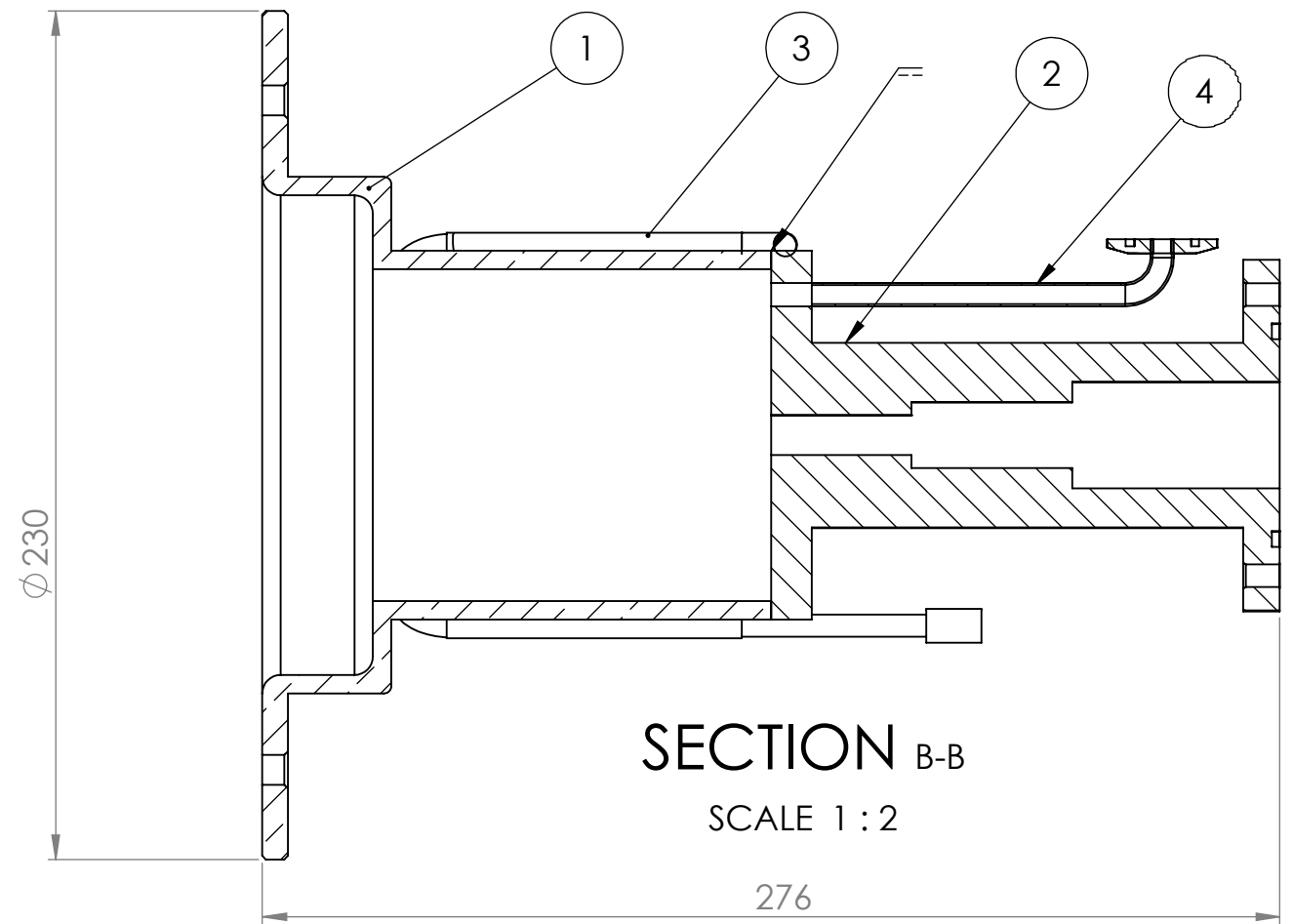
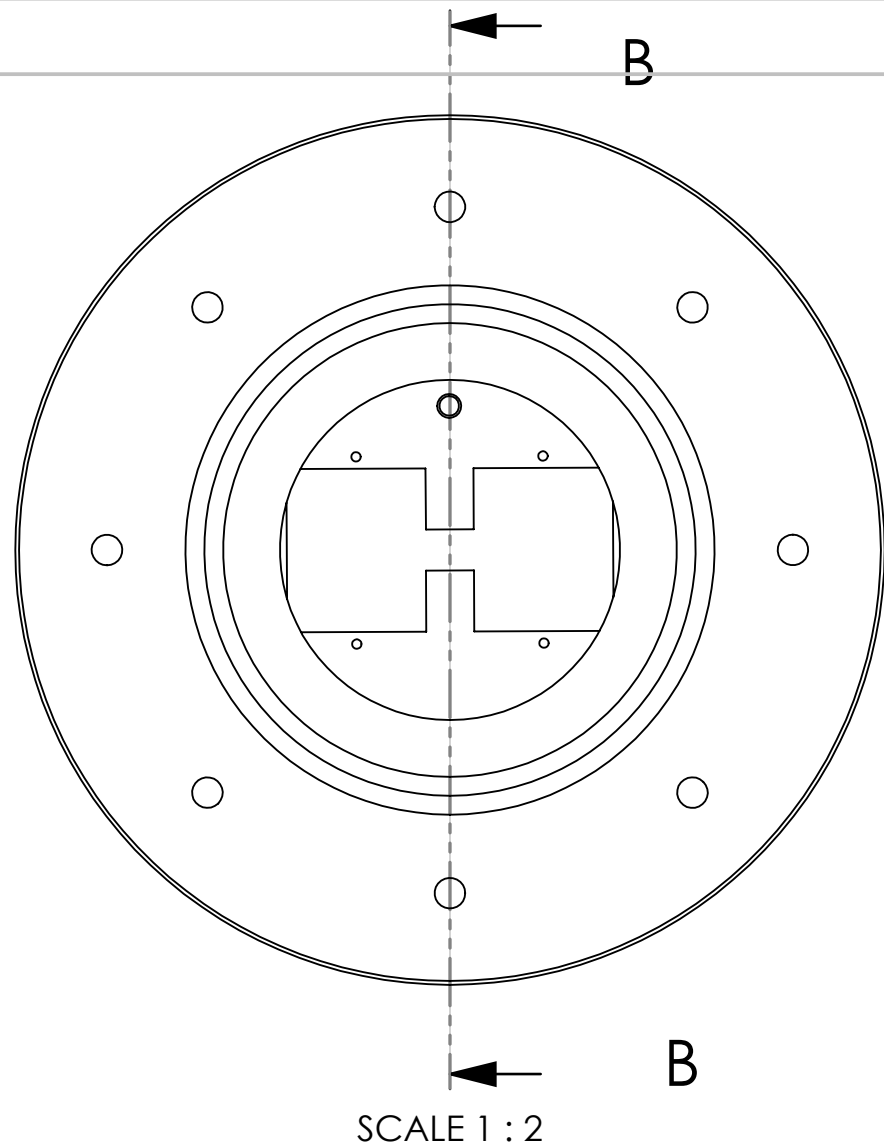
SCALE 1 : 2



SCALE 1 : 2

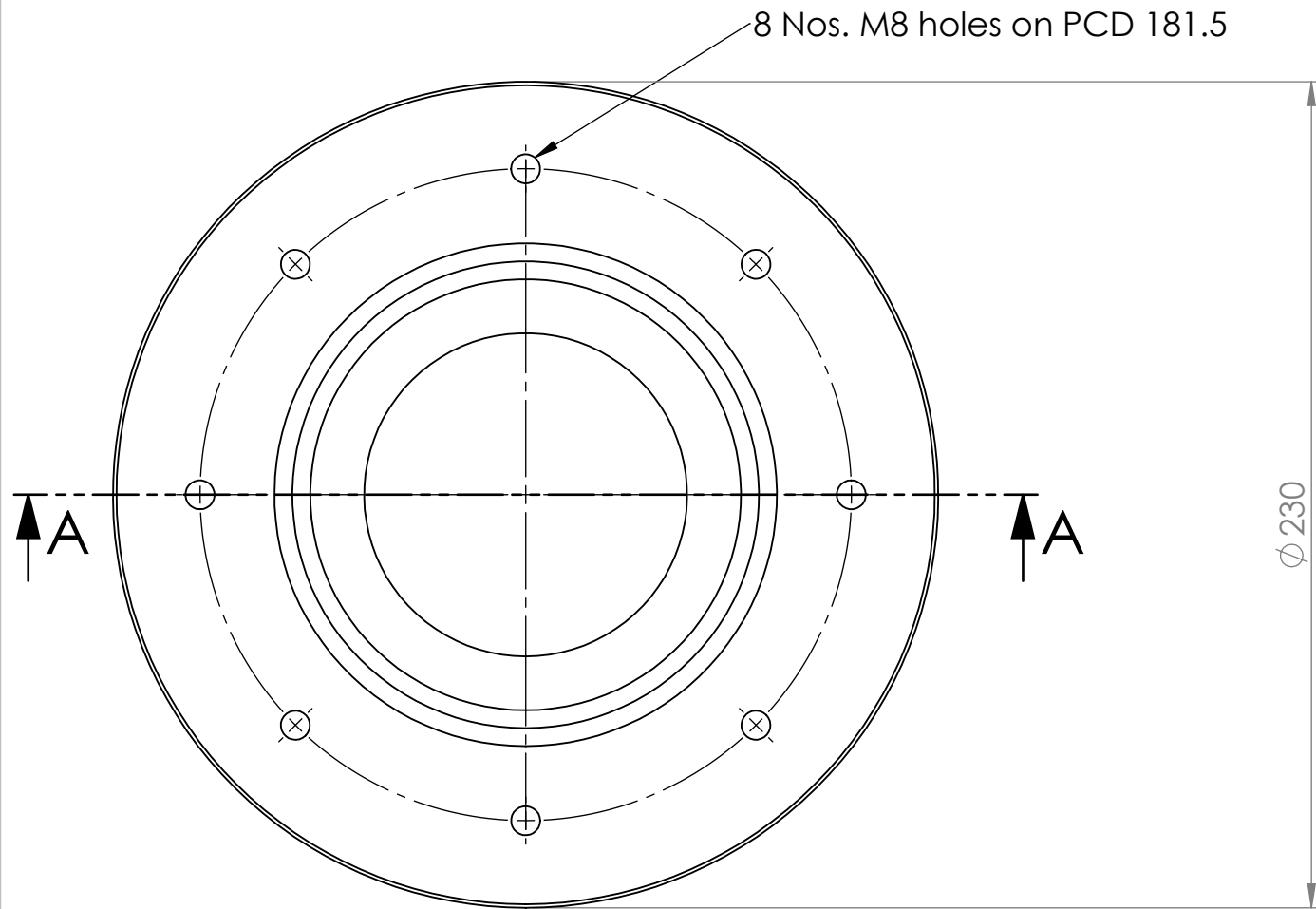


UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:				FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
DRAWN				NAME		SIGNATURE		DATE		TITLE:	
CHK'D										Part 3	
APPV'D											
MFG										DWG NO. 22	
Q.A											
										A3	
								MATERIAL: Aluminium		SCALE:1:5	
								WEIGHT:		SHEET 1 OF 1	

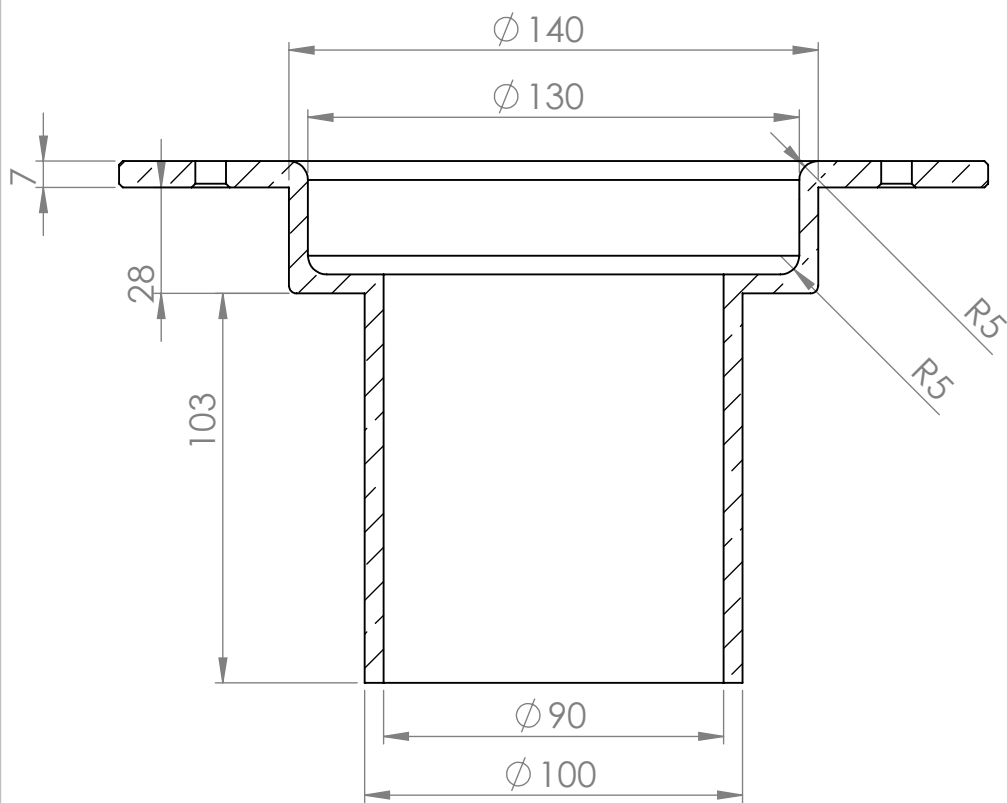
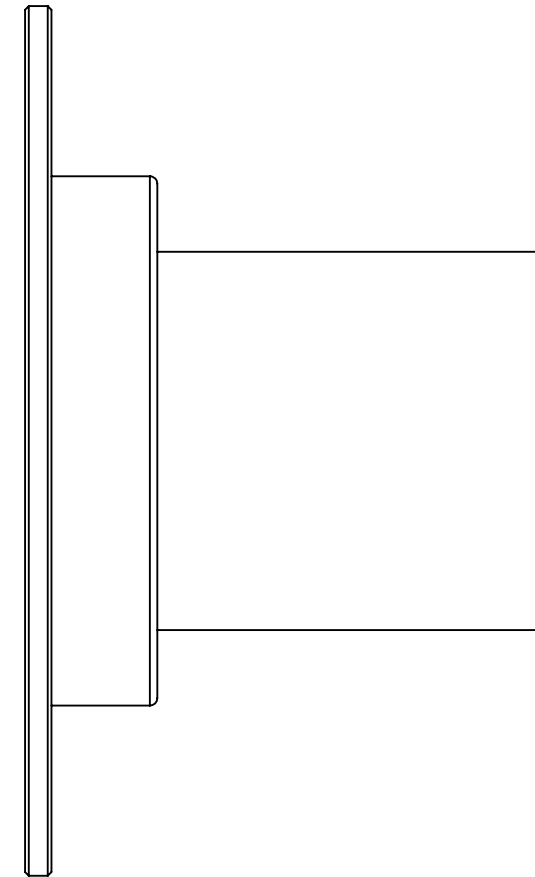


Sr. No.	Part	Sheet no	material
1	Chamber	2	Copper
2	Ridged waveguide	3	Copper
3	colling line	4	copper
4	gas feed line	5	ss

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:				FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
DRAWN	NAME	SIGNATURE	DATE			TITLE: Argon Plasma Chamber					
CHK'D						DWG NO. 1					
APPV'D											
MFG						A3					
Q.A											
				MATERIAL: Copper		SCALE:1:5		SHEET 1 OF 1			
				WEIGHT:							



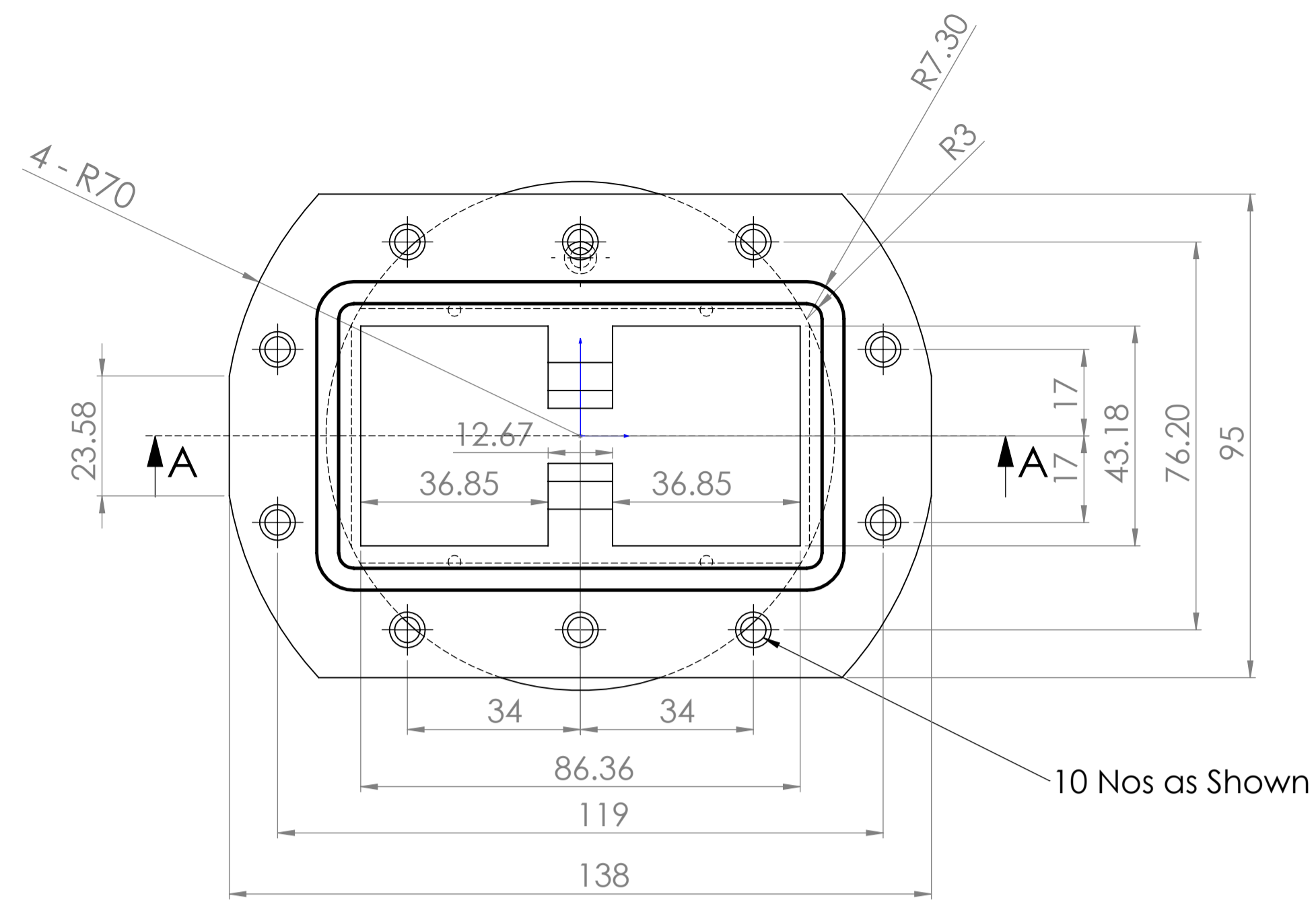
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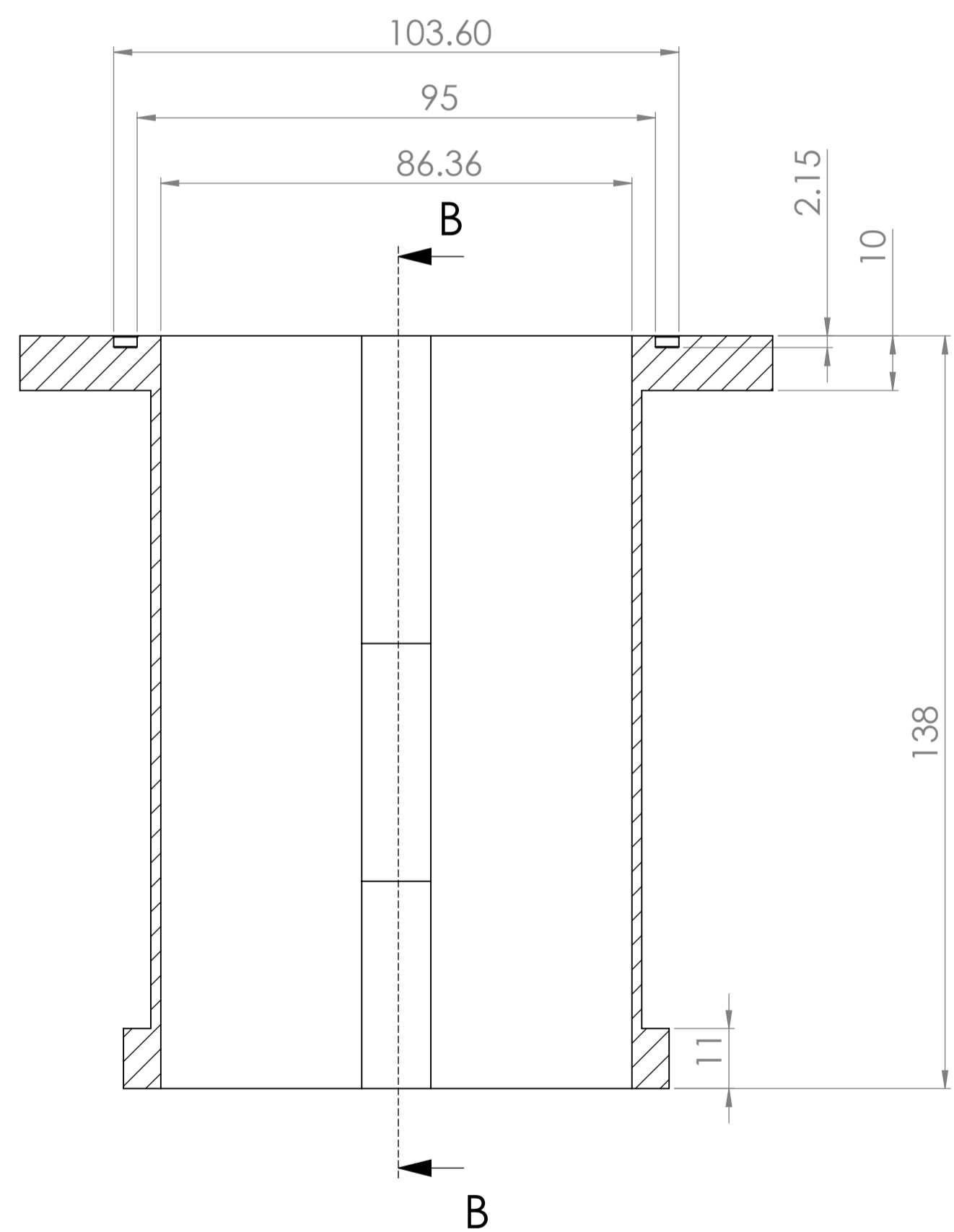
SECTION A-A

SCALE 1 : 2

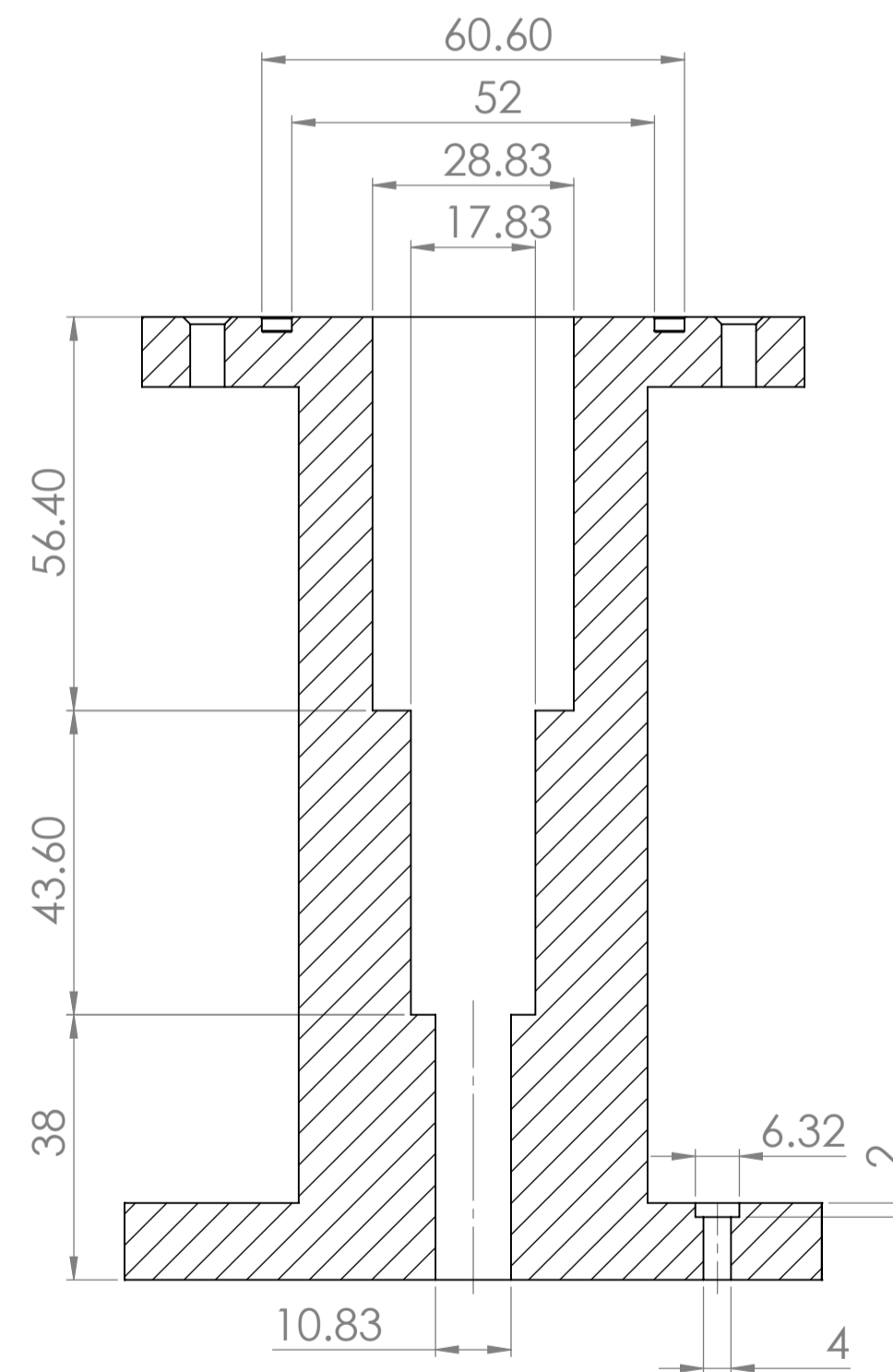
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DRAWN				NAME		SIGNATURE		DATE		TITLE: Chamber	
CHK'D											
APPV'D											
MFG											
Q.A										MATERIAL: Copper	
										DWG NO.2	
										A3	
										WEIGHT:	
										SCALE:1:5	
										SHEET 1 OF 1	



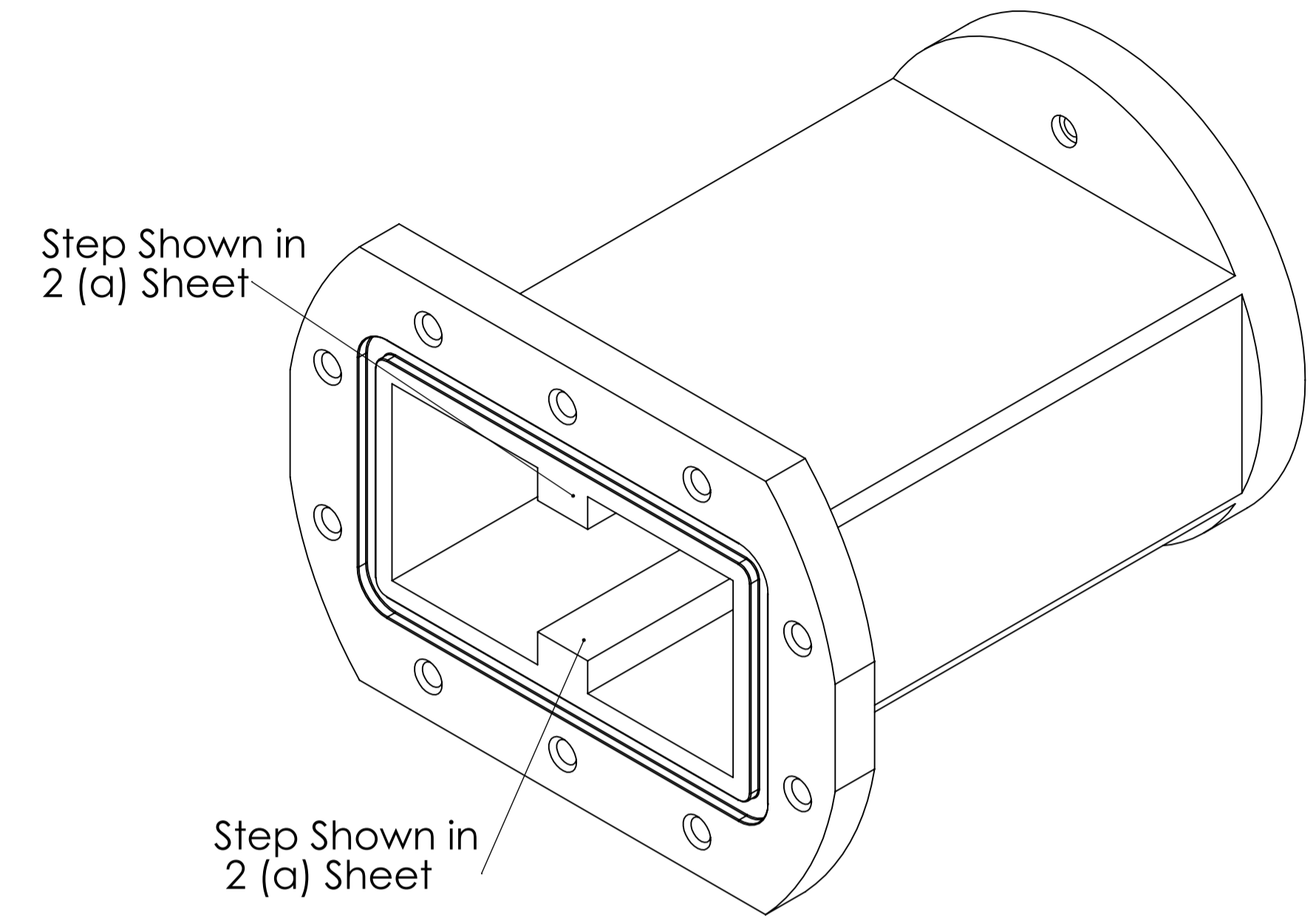
10 Nos as Shown



SECTION A-A



SECTION B-B



Iso Metric View

DRG.NO-	REF-SYMBOL-	8.25	1.6-8	0.025-1.6	< 0.025
CO-ORDINATEDBY					

PART : Wave Guide			
ALL DIMENSIONS ARE IN 'mm' UNLESS OTHERWISE STATED			
SCALE	1:1	DATE	REVISION: 00
DRAWN	S.R.C		SHEET SHEET TOTAL
CHECKED			
APPROVED			
REF DRG FROM :			
TITLE : Wave Guide			

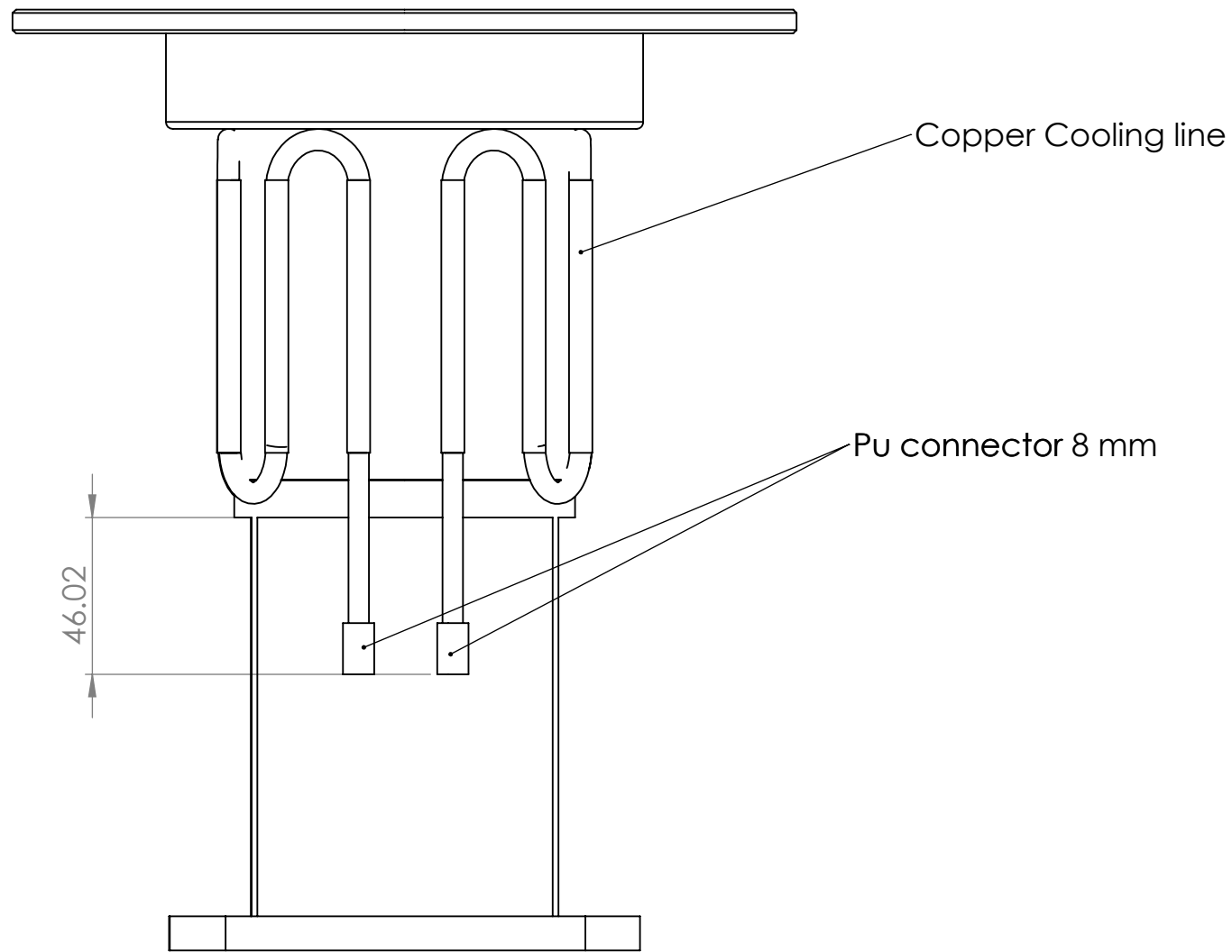
Qty: 1 MAT: Copper

MACHINING DEVIATIONS FOR NON-TOLERANCED DEMENSIONS							
LENGTH IN MM OF SHORTER SIDE OF ANGLES							
UPTO-10	10-50	50-120	OVER 120-400	UPTO-6	6-30	30-120	120-125
± 1°	± 0-30°	+ 0-20	+ 0-10°	± 0.1	± 0.2	± 0.3	± 0.5

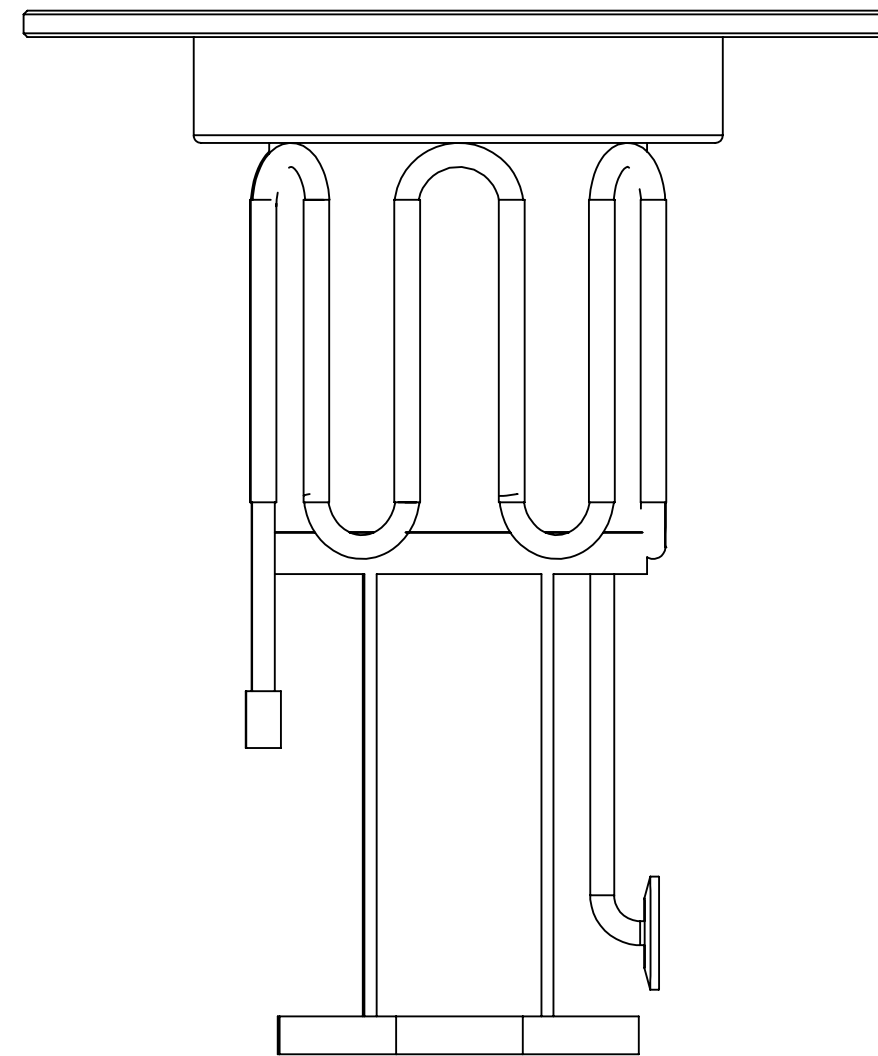
Institute for Plasma Research
Bhat, gandhinagar -382428



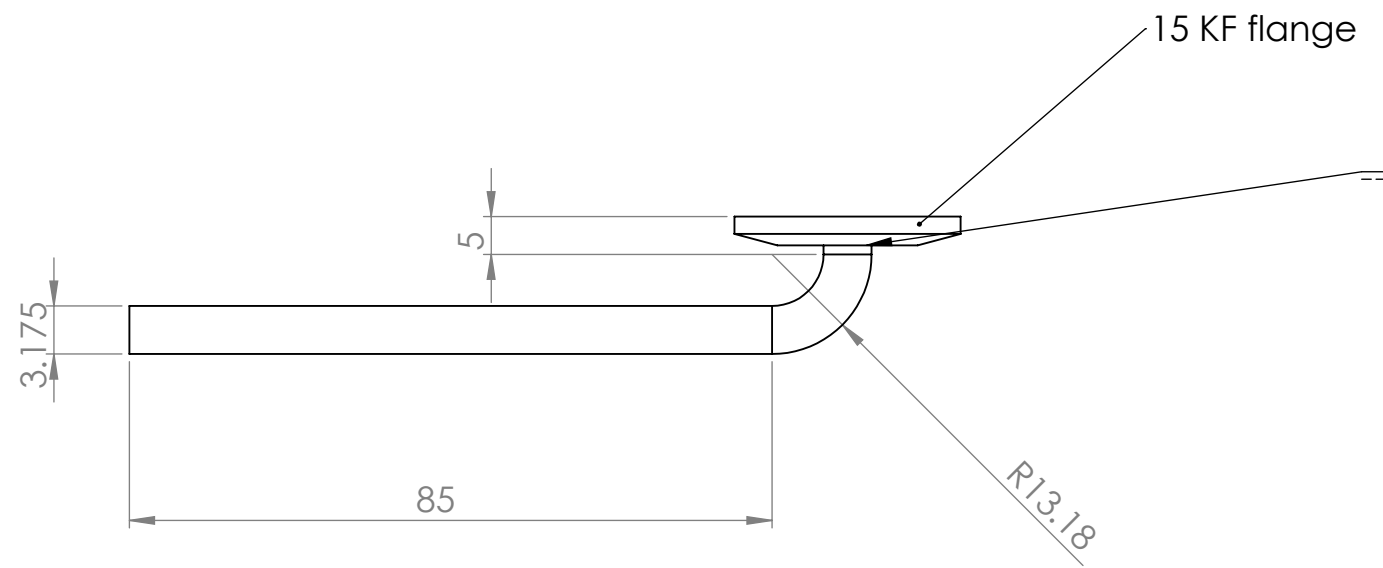
Sheet :2



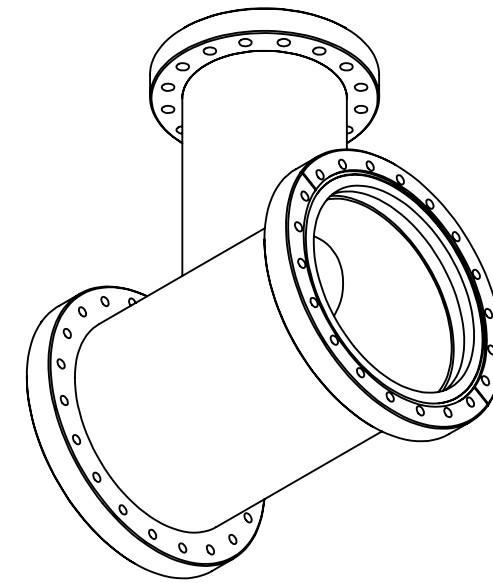
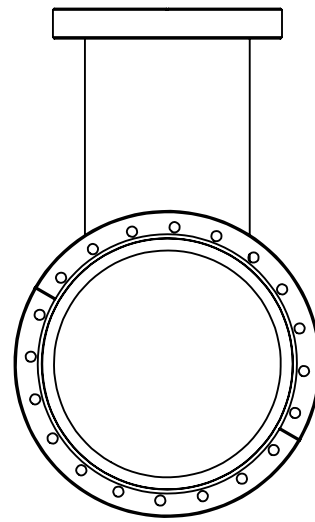
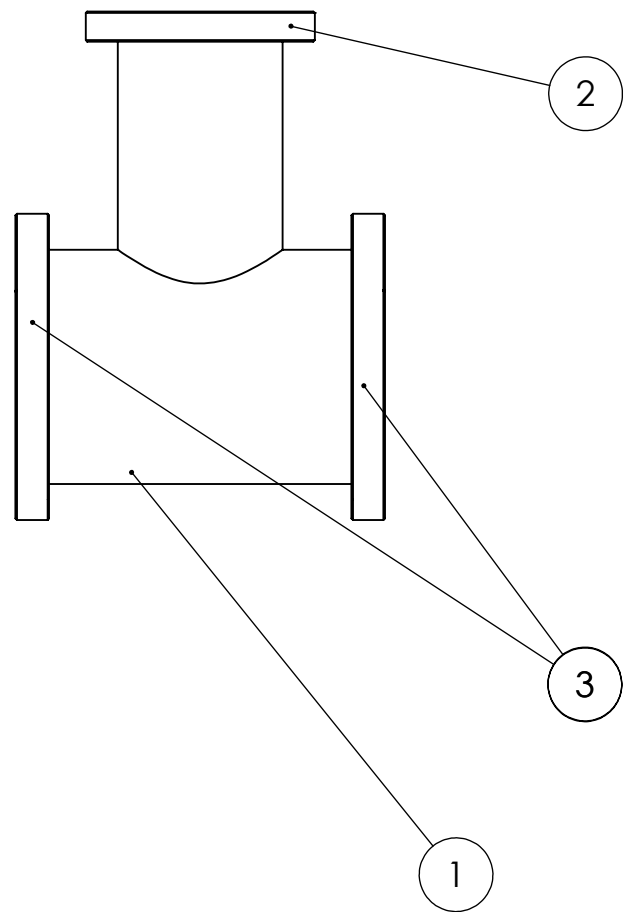
SCALE 1 : 2



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:				FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
								TITLE: Cooling Line			
DRAWN				NAME		SIGNATURE		DATE		DWG NO. Sheet No 3	
CHK'D										A3	
APPV'D										SCALE:1:5	
MFG										SHEET 1 OF 1	
Q.A								MATERIAL: Copper			
								WEIGHT:			

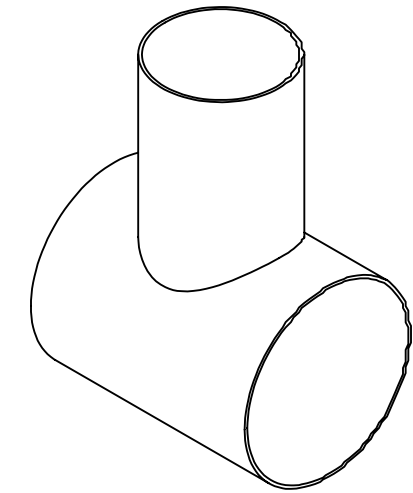
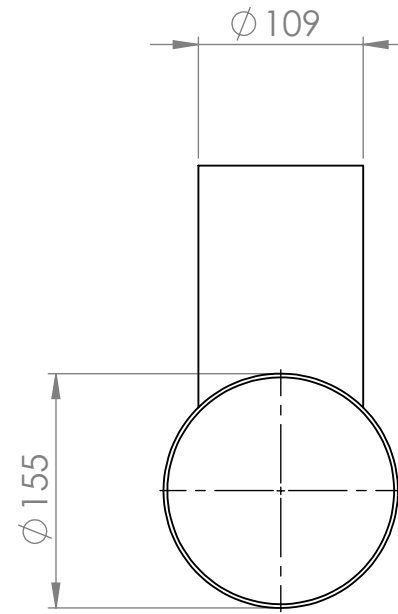
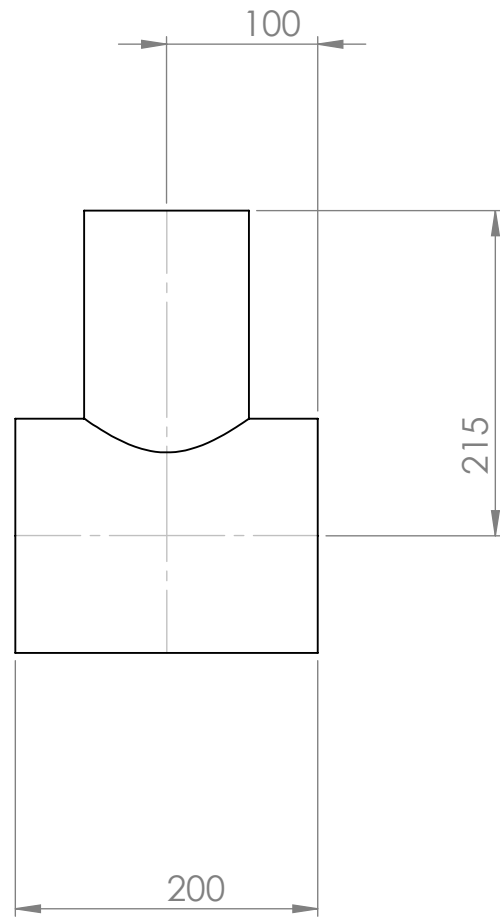


UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:				FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION			
								TITLE: GAS Feed Line					
DRAWN				NAME		SIGNATURE						DATE	
CHK'D													
APPV'D													
MFG													
Q.A								MATERIAL:		DWG NO.			
										Sheet No 4			
								WEIGHT:		SCALE:1:1			
										SHEET 1 OF 1			
										A3			

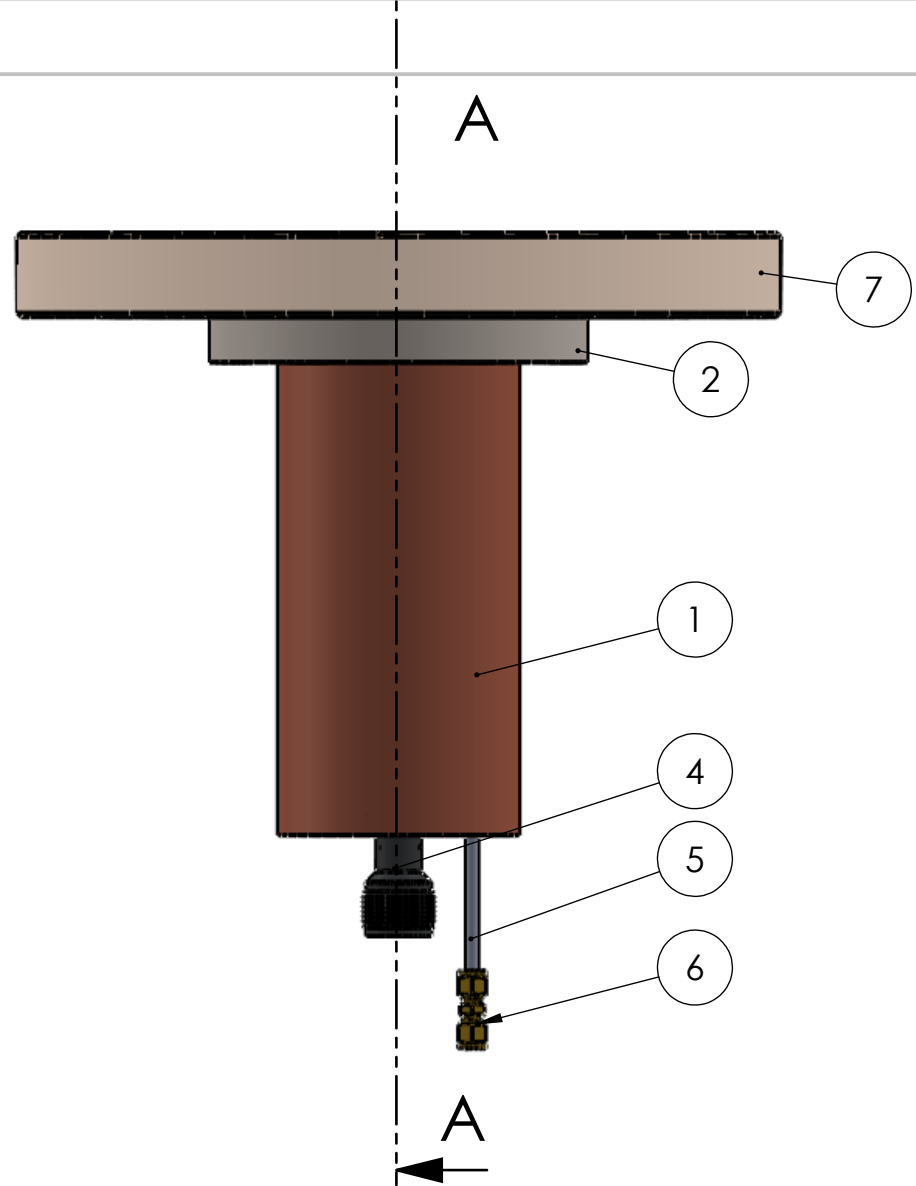


Sr. no.	description	
1	Pipe	sheet no 2
2	100 cf rotatable flange	as per standerd
3	150 cf rotatable flange	as per standerd

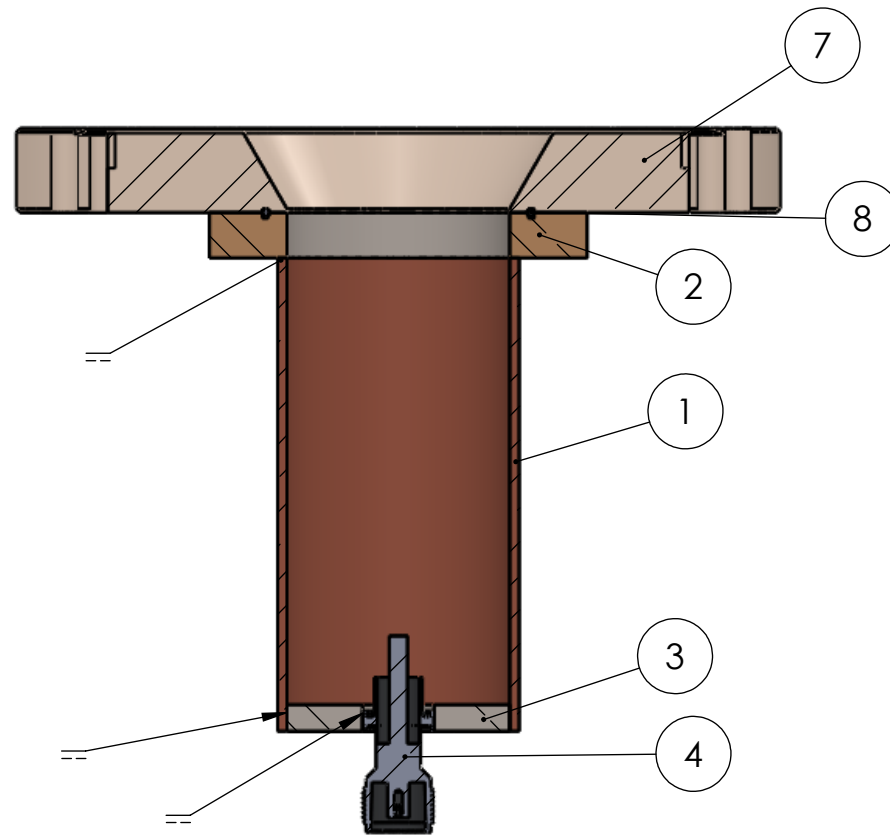
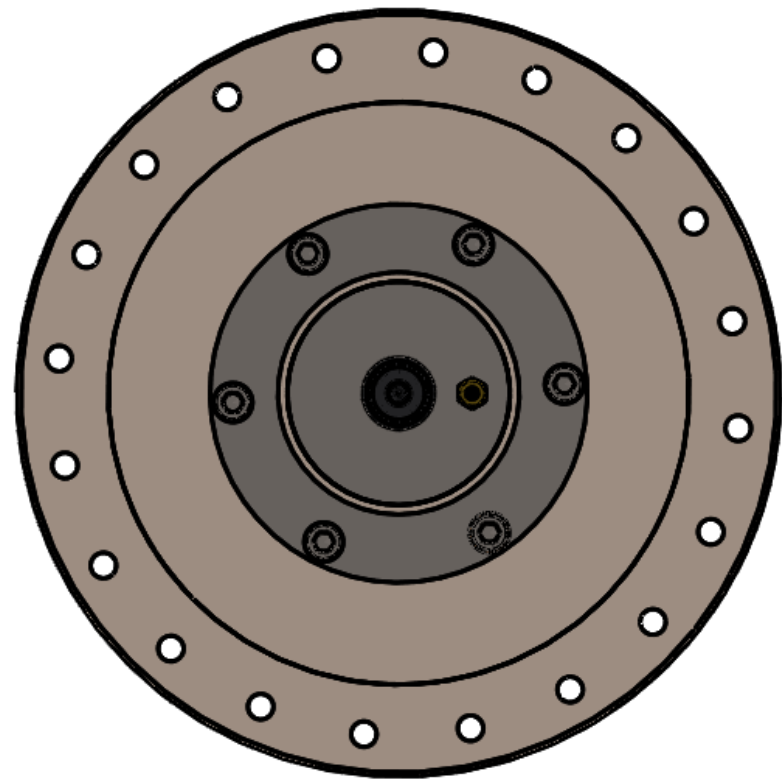
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								TITLE: 150 CF FC Chamber			
DRAWN				NAME		SIGNATURE		DATE		MATERIAL:	
CHK'D										DWG NO.	
APPV'D										A3	
MFG										SCALE:1:5	
Q.A										SHEET 1 OF 1	
										WEIGHT:	



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:				FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION			
								TITLE: <h1>Pipe</h1>					
DRAWN				NAME		SIGNATURE						DATE	
CHK'D													
APPV'D													
MFG													
Q.A								MATERIAL:		DWG NO.			
								WEIGHT:		SCALE:1:5			
										SHEET 1 OF 1			
										A3			



SCALE 1 : 2



SECTION A-A

SCALE 1 : 2

Sr. no.	Description	material	sheet no	Quantity
1	chamber pipe	copper	2	1
2	Front flange	SS 316	3	1
3	end flange	SS 316	4	1
4	HN Feedthroughs - Weldable, Single-Ended	Part No: IFTHG013051	As per standerd	1
5	1/8 inch pipe	ss	5	1
6	Ferrule connector	ss	As per standerd	1
7	150 CF modified Flange	ss	6	1
8	oring	viton	AS per grove	1

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN MILLIMETERS
SURFACE FINISH:
TOLERANCES:
LINEAR:
ANGULAR:

FINISH:

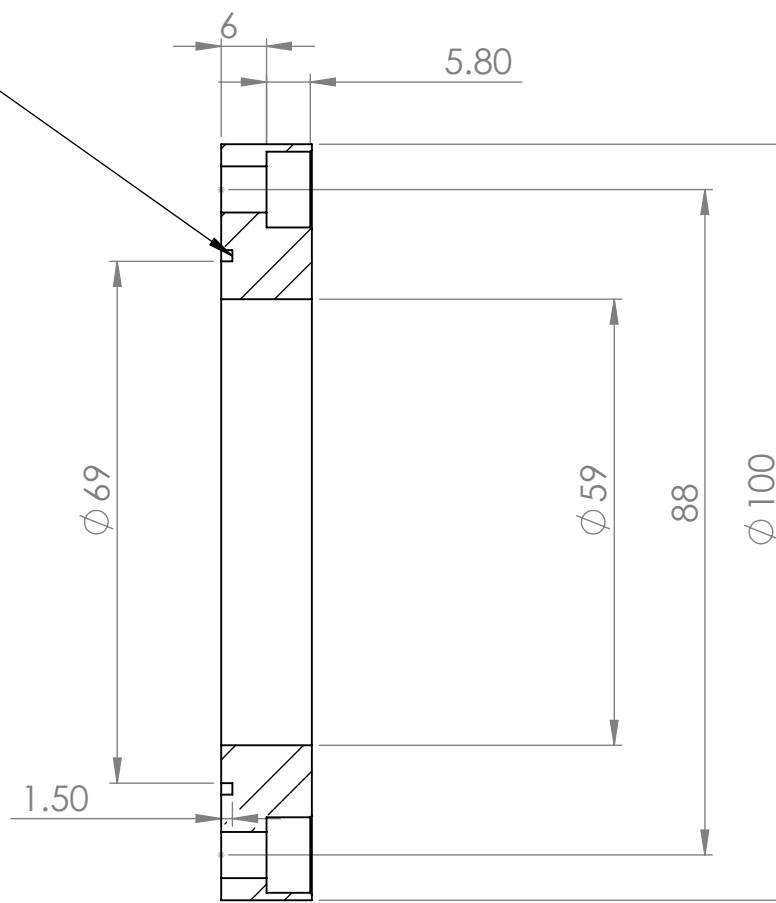
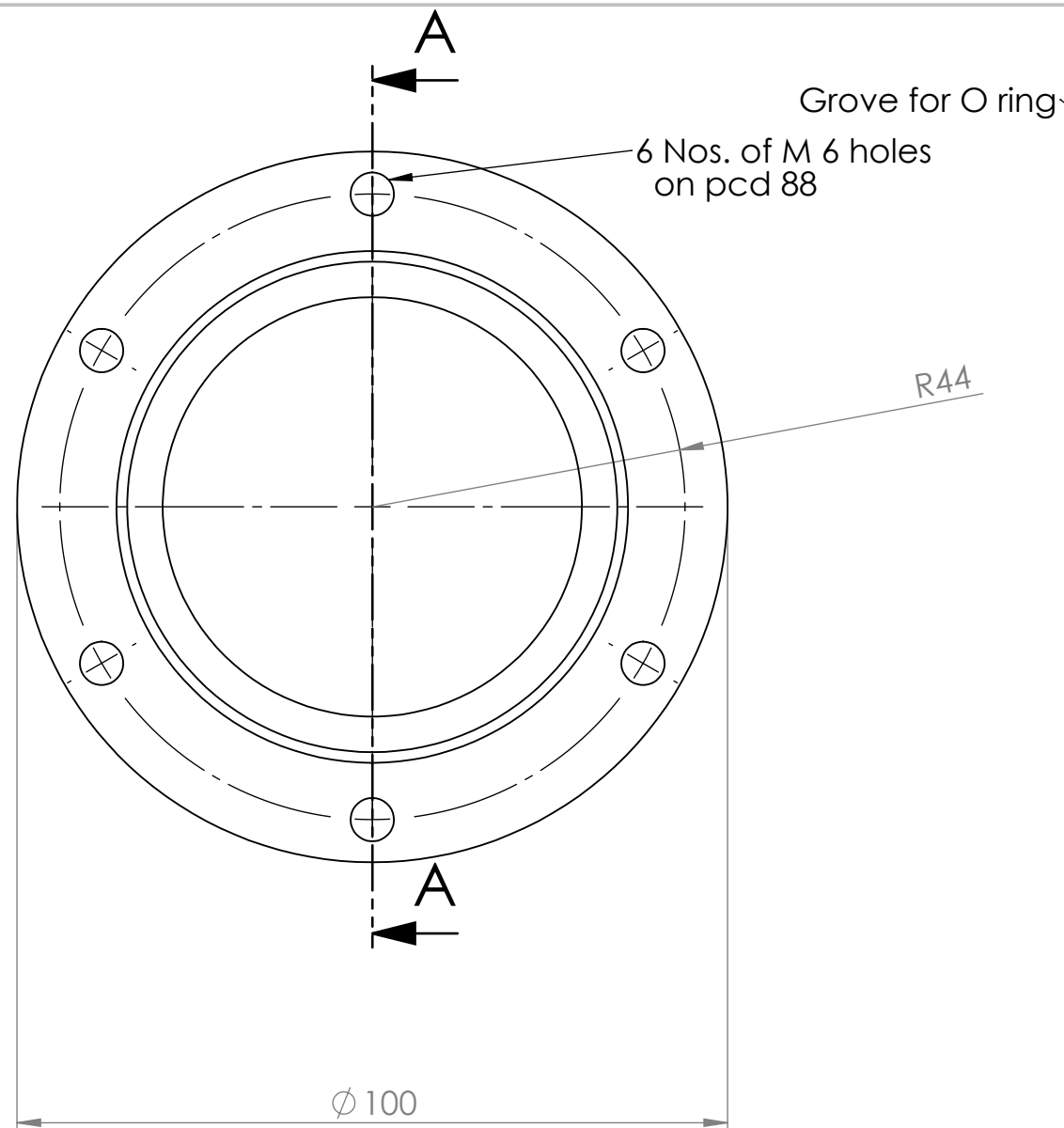
DEBUR AND
BREAK SHARP
EDGES

DO NOT SCALE DRAWING

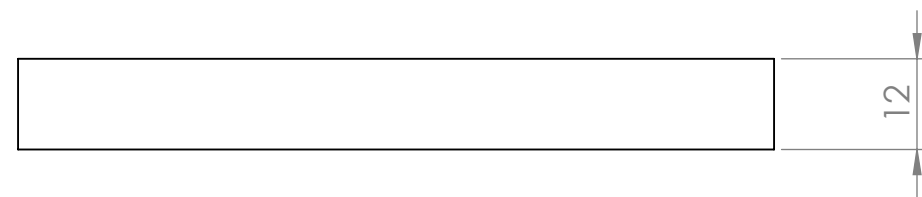
REVISION

	NAME	SIGNATURE	DATE		
DRAWN					
CHK'D					
APPV'D					
MFG					
Q.A					
				MATERIAL:	
				WEIGHT:	

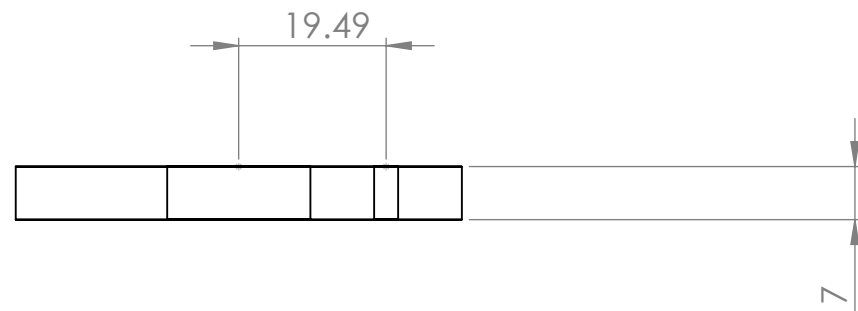
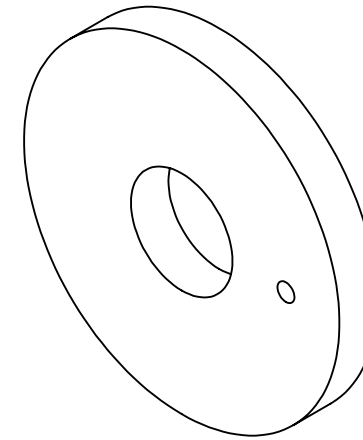
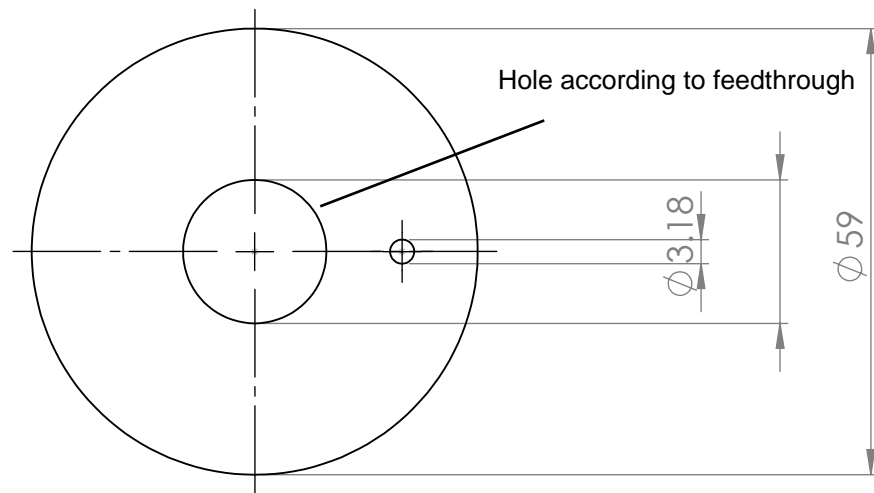
TITLE: Deuterium Plasma chamber	
DWG NO. Sheet No 1	A3
SCALE:1:5	SHEET 1 OF 1



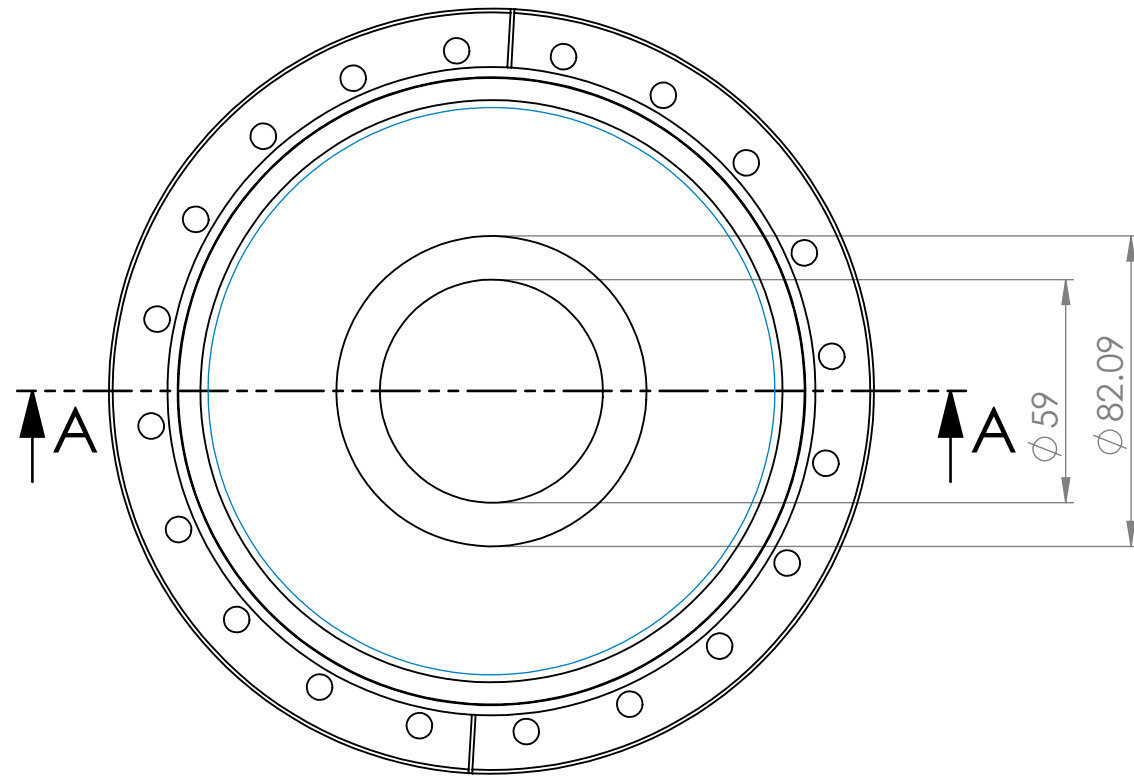
SECTION A-A



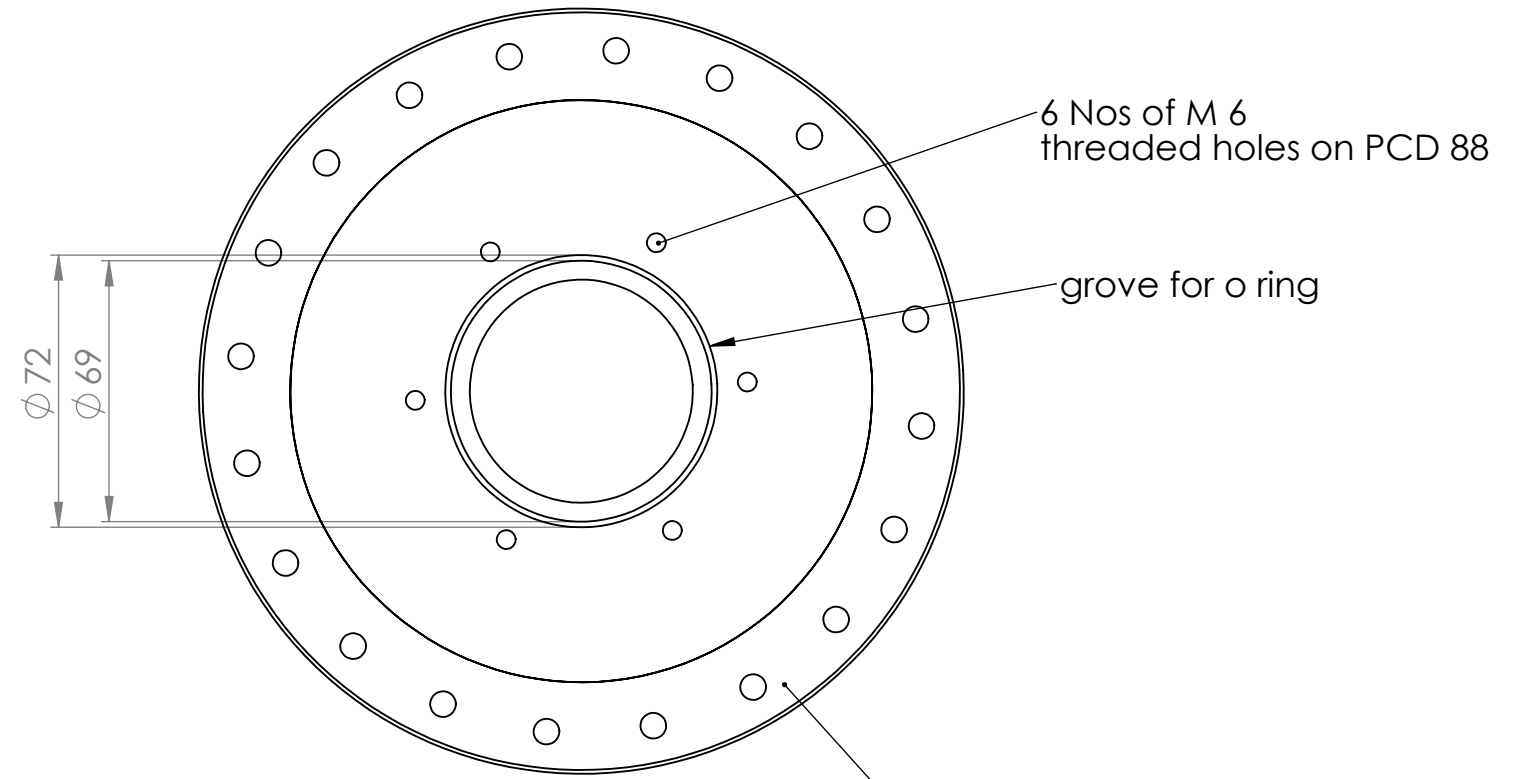
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:				FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
DRAWN				NAME		SIGNATURE		DATE		TITLE: Front Flange	
CHK'D											
APPV'D											
MFG											
Q.A								MATERIAL: SS 316		DWG NO. Sheet No 3	
								WEIGHT:		SCALE:1:1	
										SHEET 1 OF 1	
										A3	



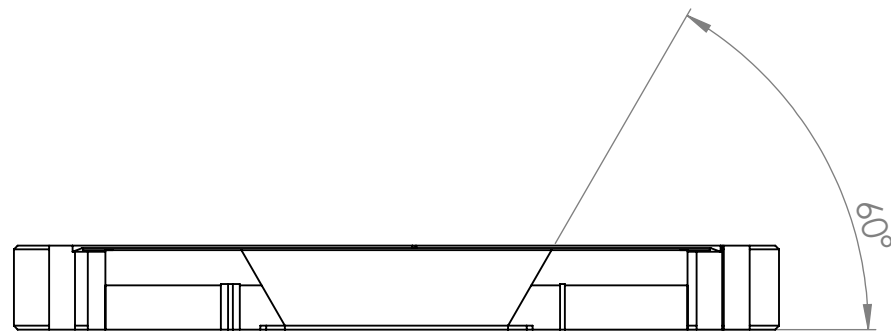
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DRAWN				NAME		SIGNATURE		DATE		TITLE: End flange	
CHK'D											
APPV'D											
MFG											
Q.A								MATERIAL: SS 316		DWG NO. Sheet no 4	
								WEIGHT:		SCALE:1:1	
										SHEET 1 OF 1	
										A3	



Top view



Bottom View



SECTION A-A

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:				FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
DRAWN				NAME		SIGNATURE		DATE		TITLE:	
CHK'D										150 CF Modified Flange	
APPV'D											
MFG										DWG NO.	
Q.A										Sheet no 6	
										A3	
										SCALE:1:2	
										SHEET 1 OF 1	

Compliance Form for fabrication & supply of “Components of multi-charged ion source” as per given guideline & drawing

Sr. No	Description	IPR specification	Vendor response
1.	Documents to be provided	Fabrication Drawing before starting the fabrication.	
2.	Codes and standard to be followed	According to point 3.3 of technical specification	
3.	Fabrication	<u>“Components of multi-charged ion source”</u> shall be as per drawing approved by IPR (Ref. Section 3.4.a)	
4.	Acceptance test (at vendor site)	According to point 3.5.1 of technical specification.	
5.	Acceptance test (at IPR site)	According to point 3.5.2 of technical specification.	
6.	All vacuum flanges like DN 150 CF, DN 100 CF, DN 63 CF and DN 35 CF will be as per standards and are rotatable.		
7.	All surfaces specifically the inner ones exposed to high vacuum shall be with the surface finished of 1.6 to 3 microns		
8.	The assembly/unit shall be delivered only after issue of “ Release of shipment”		
9.	The material which is to be procured by vendor it should be of reputed make, of matching specifications with preferred parts and must be compatible with the assembly.		
10.	GUARANTEE: Vendor shall give guarantee for the performance of the full system for twelve months from the date of final acceptance		

Bidder’s sign with official Stamp



INSTRUCTIONS TO BIDDERS AND TERMS AND CONDITIONS

1. The Quotation and any order resulting from this enquiry shall be governed by our Conditions of Work Order and Contractor quoting this enquiry shall be deemed to have read and understood the same completely.
2. Where counter terms and conditions have been offered by the Tenderer, the same shall not be deemed to have been accepted by IPR unless our specific written acceptance thereof is obtained.
3. **Quotation:** Quotation should be submitted in the prescribed QUOTATION FORMAT attached with this Enquiry and the same should be submitted in a sealed envelope super-scribing the same with our enquiry No., date, due date and brief description of item on or before the due date. Late/delayed/incomplete/unsigned quotations will not be considered. Envelopes received without Enquiry number, date, due date and brief description of item may be rejected. The quoted prices should be firm for a period of 90 days from due date for placing order. IPR is not bound to accept lowest rate/s. IPR reserves the right to place on one or more parties. The scope of supply includes insurance by the Contractor.
4. **Specifications:** Goods should be offered strictly confirming to our specifications/drawings. Deviation, if any, should be clearly indicated by the contractor in their quotation. The Tenderer should also indicate the Make/Type number of the goods offered and catalogues, technical literature and samples, wherever necessary should accompany the quotation. Clarification/s on drawings should be obtained before submitting quotation.
5. **Terms of Prices:** Quotation should be submitted on door delivery basis without extra charge wherever possible. For quotations on Ex-Works, Ex-godown basis the approximate packing and forwarding charges should be indicated by the contractor. In the case of local contractors, the goods are to be delivered at our stores free of charge.
- 5.1 In respect of tenders on Ex-works basis, in case the tenderer has not mentioned in the offer packing, forwarding and transportation charges for safe delivery up to Purchaser's site, 2% of the price quoted towards packing (in respect of both local and outstation firms), 1% of the basic price quoted towards safe delivery charges in respect of local tenderer and 3% of the basic price quoted towards safe delivery charges in respect of outstation firm will be added for comparison of offers on safe door delivery at Purchaser's site.
- 5.2 Prices are required to be quoted according to the units indicated in the tender form/Enquiry. When Quotations are given in terms of units other than those specified in the tender form, relationship between the two sets of units must be furnished
6. Tender should be free from Correction and Erasures. Corrections, if any, must be attested. All amounts shall be indicated both in words as well as in figures. Where there is difference between amounts quoted in words and figures, amount quoted in words shall prevail. Unsigned quotations will summarily be rejected. If there is a discrepancy between the unit price and total price, unit price shall prevail.
7. IPR shall be under no obligation to accept the lowest or any tender and reserves the right of acceptance of the whole or any part of the tender or portion of the quantity offered and the tenderers shall supply the same at the rate quoted.
8. **Goods & Services Tax (GST):** The details of Taxes/GST and other levies legally applicable and intended to be claimed should be clearly indicated in the tender. Where this is not done, no claim on these accounts would be admissible later.
 - a) **GST for Goods (IGST/CGST/SGST TAX BENEFITS):**

IPR is entitled to avail tax benefit as per the following notifications issued by Ministry of Finance, Department of Revenue, Government of India:

(1) No: 47/2017-INTEGRATED TAX (RATE) DATED 14/11/17 for IGST

(2) No: 45/2017-CENTRAL TAX (RATE) DATED 14/11/17 for CGST

And,

IPR is entitled to avail tax benefit as per the following notifications issued by Finance Department, Government of Gujarat:

(1) No. 45/2017-STATE TAX (RATE) DATED 15/11/17 for SGST

As per above notifications IPR will bear only 5% IGST for procurement of goods from outside Gujarat & 2.5% CGST and 2.5% SGST (total 5%) for procurement of goods within Gujarat. Vendors are required to charge tax as per these notifications while quoting/supplying the goods. Deviations, (if any) should be clearly mentioned in the quotation/offer.

Please specify the HSN codes while quoting.
 - b) **GST for Services:**

As applicable. **Specify the SAC codes wherever services are involved.**
9. **Delivery Date:** Delivery period is essence of the Contract. Contractor must indicate the firm delivery date by which the goods will be dispatched or delivered by them from the date of our order. Delivery period shall be clearly indicated against each item separately.
10. **Price/ Purchase Preference:** Purchase/Price preference to industries will be given as per the policy of the Government of India in force at the time of evaluation provided their offer is in compliance with the conditions of the policy.



प्लाज्मा अनुसंधान संस्थान

(भाट, इन्दौरा पल के पास, गांधीनगर 382428 - , गजरात) भारत

Institute for Plasma Research

Bhat, Near Indira Bridge, Gandhinagar – 382428, Gujarat (INDIA)

Phone: +91-79-23962000 Fax: +91-79-23962277 Website: www.ipr.res.in



11. **Liquidated Damages:** The successful Vendor/Bidder should pay liquidated damages @ ½% (half percent) of the total work order value for the delay of each week in the scheduled date of completion of the work envisaged in the Work Order subject to a maximum of 5% (Five percent) of the total Work Order value.
12. **Inspection:** Goods on its arrival at IPR will be inspected by Stores, and his decision in the matter will be final. However, where the items are required to be inspected at the Contractors Premises, Contractor has to give advance notice regarding readiness of the Goods to enable us to depute our representative for inspection.
13. **Payment:** Payment will be arranged for accepted goods only within 30 days from the date of receipt of goods at IPR and bills in our accounts section, completed in all respects.
14. No correspondence will be entertained within 30 days from the date of receipt of good and bills, whichever is later.
15. **Guarantee:** The Stores offered should be guaranteed for a minimum period of twelve months, from that date of acceptance, against defective Goods, design, workmanship, operation or manufacture. For defects noticed and communicated during the Guarantee period, replacement/rectification should be arranged free of cost within a reasonable period of such notifications. In case where our specifications call for a guarantee period more than 12 months specifically, then such a period shall apply.
16. **Performance Bank Guarantee:** If demanded by IPR, the successful bidder will have to furnish Performance Bank Guarantee for 10% of the order value (basic price) from a Nationalized/Scheduled Bank/State Bank of India, valid throughout the Guarantee/Warranty period. The scheduled banks approved by IPR are Axis Bank, HDFC Bank, ICICI Bank and IDBI Bank. Bank Guarantees submitted other than from banks approved by IPR will not be accepted.
17. **Security Deposit:** If demanded the successful Bidder will have to furnish to the Purchaser an interest free security deposit for 10% (Ten percent) of the order value in the form of Bank Guarantee of an equivalent amount from a nationalized/ scheduled Bank/State Bank of India within 15 days from the date of work order and the said Guarantee should be valid till the goods are accepted by IPR. The scheduled banks approved by IPR are Axis Bank, HDFC Bank, ICICI Bank and IDBI Bank. Bank Guarantees submitted other than from banks approved by IPR will not be accepted. The Security deposit shall be forfeited in case the selected Bidder does not start the work within the time limit specified or fail to complete the work within the stipulated delivery period or fail to comply with any of the terms and conditions in the work order. On successful completion of scope of work and its acceptance by IPR, Contractor should send a letter requesting return of the original BG.
18. The Contractor shall at all times indemnify the purchase against all claims which may be made in respect of the stores for infringement of any right protected by Patent Registration of design or Trade Mark and shall take all risk of accidents or damage, which may cause failure of supply from whatever cause arising and the entire responsibility for sufficiency of all means used by him for the fulfilment of the contract.
19. **Free Issue Material (FIM):** Successful tenderer will have to arrange insurance showing beneficiary as “Institute for Plasma Research” at their risk and cost towards adequate security for the materials/property provided/issued by the Purchaser as Free Issue Material for the due execution of the contract.
20. The Director, IPR reserves the right to accept or reject any quotations fully or partly or to cancel the enquiry without assigning any reason.
21. **Jurisdiction:** The contract shall be governed by the Laws of India for the time being in force. The Courts of Gandhinagar only shall have jurisdiction to deal with and decide any legal or dispute arising out of this Contract.

(This need to be printed in Bidders letter head)

1. Please quote with complete technical details along with technical compliance sheet.
2. Quotation should be submitted in the format given below, else IPR shall not consider the offer by the vendor.

NAME OF PARTY : _____

ENQUIRY NO: _____

QUOTATION No. & DATE : _____

Currency of Quotation: **Indian Rupees**

Sr. No.	Item Description	HSN/SAC Code	Quantity	Unit Rate (Basic)	Packaging & forwarding (P&F)	Applicable GST	Rate (incl P&F and GST)	Total Value
			a	b	c	d	e = b + c + d	f = a * e
1								
2								
3								
4								
5								
6								

Sr. No.	Particular	Remarks
I.	Ex-works / FOR Destination	
II.	Freight	
III.	Insurance	
IV.	Delivery Period	
V.	Payment (IPR terms will apply)	
VI.	Guarantee / Warrantee	
VII.	Validity Period	
VIII.	Discount (if any)	
IX.	Remarks	

Place: Authority Signatory

Date: Company Seal

Note:

1. Bidder should submit the copy of GSTIN / ARN Certificate along with the offer
2. Bidder should specify the SUPPLY and SERVICE rates/ charges separately wherever applicable