



GOVERNMENT OF INDIA  
DEPARTMENT OF ATOMIC ENERGY  
BHABHA ATOMIC RESEARCH CENTRE  
VISAKHAPATNAM



Computational Analysis Division

Ref: CAD/HEDM/WO/IND/21-22/28

Date: 25/03/2022

**Subject: Notice inviting tender for;**

**"Fabrication and supply of vacuum chamber with view ports & stand along with the supply of vacuum accessories" (See Annexure-I).**

1. Quotations are invited for minor fabrication job as per details described below.
2. **Scope of work:** See details in Annexure-I.
3. **General guidelines for submitting tender**
  - You shall send your offer in a sealed envelope indicating delivery period, price inclusive of taxes and other relevant information by speed post to:

Head,  
CAD, Computational Analysis Division  
Bhabha Atomic Research Centre  
Village: Maduturu (Sub: P.O.)  
Near Nagavaram Junction,  
Gajuwaka-Yellamanchilli Highway  
Atchutapuram, Visakhapatnam  
Andhra Pradesh- 531011

(Kind Attention: Rahulnath P.P., SO/D,CAD, 0891-283-2149/ 8985875318)

- Quotation shall reach us on/or before **14/04/2022 by Speed Post/Courier/ Only.**
- On top left corner of the envelope please indicate  
Quotation for- **"Fabrication and supply of vacuum chamber with view ports"** And due date 14/04/2022
- Overwriting, scratching etc. must be avoided in the quotation. Rewriting the whole figure shall carry out any alteration in the figure. The authorized person from the firm shall countersign such figure.
- The delivery period mentioned in the quotation shall be strictly adhered to. If the contractor fails to supply and secure extension of delivery date before effecting delivery of the supply against the contract, acceptance of such item by the purchaser will in no way prejudice the right of the purchaser to levy liquidated damage nor will it be entitled to the contractor for payment of statutory levies that comes into force after the expiry of the delivery date.
- Minimum Guarantee/**Warranty period** of the material and workmanship shall be **One Year**.
- **Supplier shall mention clearly the PAN /TAN no. on quotation.**
- **GST number shall be clearly mentioned on Quotation.**

All the charges and taxes shall be mentioned clearly.

**Please note that BARC being an R&D institution, GST rates are as follows**

- For Intra-state Supply of Goods: @ 2.5% SGST + 2.5% CGST
- For Inter-state Supply of Goods: @ 5.0% IGST
- GST exemption certificate shall be issued to the supplier.

(This is as per Office Order No. BARC/GST/12/2017 dt. 27.12.2017)

- You may contact us for any clarification before **14/04/2022** (Shri. Rahulnath P.P., 0891-2832149,8985875318, [rahulnath@barc.gov.in](mailto:rahulnath@barc.gov.in))

**4. Rates:**

As per Scope of Work.

**5. Place of Delivery/Work:**

*Address: PEB-04, CAD, Bhabha Atomic Research Centre, Near Nagavaram Junction, Gajuwaka-Yellamanchilli Highway, Maduturu PO, Visakhapatnam, Andhra Pradesh- 531011.*

**5. PAYMENT TERMS:**

1. Part payment/Advance or against delivery cannot be made.
2. Payment will be made only after satisfactory completion of work and on production of (along with Delivery Challan):
  - i. Bill/Invoice containing Location of supply, separate tax components along with PAN and GSTN numbers.
  - ii. Advance Stamped Receipt.
  - iii. Bank Account No, Bank and Branch name with IFSC code.
  - iv. Undertaking stating that GST has been promptly deposited with the authorities
3. It may be noted that:
  - i. Income tax @2% will be deducted from your bill.
  - ii. TDS (under GST) will be deducted as applicable from your bill of taxable goods and/or services, where the total value of such supply exceeds 2.50lakh.
  - iii. Declaration confirming filing of Income Tax Return from immediate two preceding years, in accordance with Section 206 AB of the Income Tax Act 1961, has to be submitted in the prescribed proforma along with necessary acknowledgements in support of declaration. In case the aforesaid declaration is not submitted, TDS/TCS shall be deducted at higher rates as instructed under the provisions of Income Tax Act.

**6. CONFIDENTIALITY CLAUSE:**

No, party shall disclose any information to any third party, concerning the matters under this contract generally. In particular, any information identified as "Proprietary" in nature by the disclosing party shall be kept strictly confidential by the receiving party and shall not be disclosed to any third party without the prior written consent of the original disclosing party.

This clause shall apply to the sub-contractors, consultants, advisers or the employees engaged by a party with equal force.

"Restricted information "categories under section 18 of the Atomic Energy Act, 1962 and "Official Secrets" under section 5 of the official secrets act, 1923.

Any contravention of the above-mentioned provisions by any contractor, sub-contractor, consultant, adviser or the employees of a contractor will invite penal consequences under the aforesaid legislation.

Prohibition against use of BARC's name without permission for publicity purposes. The contractor or sub-contractor, consultant, adviser or the employees engaged by the contractor shall not use BARC's name for any publicity purpose through any public medial like press, radio, T.V. or Internet without the prior written approval of BARC.



(Rahulnath P.P.)

SO/D, CAD

Phone: 0891-2832149,

Email: [rahulnath@barc.gov.in](mailto:rahulnath@barc.gov.in)



### Scope of Work

## Fabrication and supply of vacuum chamber with view ports & stand along with the supply of vacuum accessories

### Scope of supply

1. Vacuum chamber with view ports and electrical feed through ports.
2. Accessories including blank flanges, gaskets, clamps, fasteners etc.

### Note:

1. Vacuum port and flange dimensions are **indicative**.
2. All ports and flanges are to be manufactured as per **ISO standards**.
3. GTAW/TAG Welding has to be used for joining ports to chamber.
4. Fabrication and supply of blank flanges for each port are in the supplier's scope (Drawings not attached).
5. The vendor has to **provide complete 2D/3D drawing** after discussion with the indenter upon release of work order. Fabrication has to be done only after **receiving approval** from the indenter.
6. **Leak testing** has to be done at the vendor's site. Pressure of  $10^{-4}$  mBar has to be obtained at a leak rate of at least  $10^{-7}$  mBar-litre/second.
7. **Electroplating** has to be done for each component.
8. Pre-dispatch inspection would be done at vendor's site. Items should be dispatched only after **clearance is issued** by the indenter.
9. **Duration of work order** includes the time taken for drawing approval, fabrication time and time for pre-dispatch inspection.
10. **Surface roughness** has to be brought below 10microns.

### Features of vacuum chamber:

1. Material of chamber should be SS304.
2. The chamber is rectangular in cross-section. Overall dimension approximately 1100mmx900mmx450mm.
3. Long rectangular side view ports of 1000x150mm on front and back side.
4. 02nos. of 150CF ports on the left side and 01no. of 150CF port on right side.
5. 01no. of ISO-KF25 port on right side for attaching vacuum gauge components.
6. The bottom of chamber is having 24nos. of ISO-KF40 ports arranged in 2 rows of 12nos. each. These are the electrical feed through ports.
7. Top of chamber is covered with SS plain sheet and clamped by claw clamps. Handles may be provided for easy handling of sheet.
8. Blank flanges for each port have to be fabricated as per standards.
9. Metal gaskets and O-rings are to be supplied as per standards.

### Fabrication work details:

1. Inside volume of chamber is 1220(L)x856(W)x462(H).
2. Base plate has to be of 20mm thickness.(Drg.No.:01)
3. Top extended plate has to be of 16mm thickness. (Drg.No.:01).
4. Side plates have to be of 12mm thickness. (Drg.No.:01)



5. There are 2nos. of 150CF ports on the left side (Drg.No.:01) and 01no. of 150CF port on the right side (Drg.No.:02). The lengths of each port are 180mm. The ports are at a height of 246mm from the inner base.
6. ISO-KF25 port on the right side has a length of 50mm (Drg.No.:03). This is to be located along the same horizontal line as of 250CF port (Drg.No.:02).
7. Base of chamber has to **longitudinal groves** of depth 2mm and width 80mm running over a length of 1170mm (Drg.No.:05).
8. At the bottom of chamber there are 12nos. of ISO-KF40 ports arranged along two rows. The length of port is 40mm. Each row is distanced at 327.50mm from center of chamber. Each port is at 100mm distance from each other (Drg.No.:05). M6 tap holes (04nos. each) are to be provided around each port as mentioned in the drawing.
9. **Top cover made of SS034**, 25mm thick has to be of approximate base area 1380mmx1006mm. Handles may be provided for easy usage of this sheet, as there is frequent requirement of removing the top plate (In addition to handle vacuum suction handle has to be supplied as mentioned in the accessory list). This has to be clamped to the chamber by using suitable claw clamps **hinged** to the chamber. (Drg.No.:06). Viton O-ring gasket of suitable dimension has to be used. **Quantity: 01No.**
10. Side viewing ports are of dimension 1000mmx150mm with 60mm extensions on 4 sides. Through holes of 10.5mm diameter are to be made on extensions to hold the viewing plate. Details of bolting holes are provided in the drawing. (Drg.No.:03 & 07).
11. Acrylic see through plate has to be used to enclose side ports on either side of chamber. (Drg.No.:03 & 07). SS bolts of sufficient length has to be used for holding the plate on to the chamber. Viton O-ring gasket of suitable dimension has to be used. **Quantity: 03Nos.**
12. Blank flanges are to be fabricated in accordance with standard ports dimensions. These are to be attached to chamber by using aluminium gaskets for CF flanges and center-ring o-ring arrangement for KF ports.
13. A stand has to be made of MS material to place the vessel. It will have 06Nos. of adjustable legs with rubber bush as base. Each leg must have load capacity of at least 250kg. See drawing No.08,09 and 10 for details.

**14. Accessories to be supplied are listed below;**

Sl.No.	Item	Quantity
01	ISO KF40 SS Blank	24Nos.
02	ISO KF40 Centering(SS) with Viton O-ring	24 Set
03	ISO KF40 Aluminium clamps	24 Nos.
04	ISO KF25 Blank	02Nos.
05	ISO KF25 Centering(SS) with Viton O-ring	02 Set
06	ISO KF25 Aluminium clamps	02 Nos.
07	150CF SS Blank	04Nos.

08	150CF Al-Gasket	06Nos.
09	Rectangular viton O-ring for toper cover	02Nos.
10	Claw clamps for top flange. (This has to be hinged to the chamber)	15Nos.
11	Rectangular O-ring for side flange	03Nos
12	Vacuum suction handle(150kg load capacity)-For handling the top cover both acrylic and SS.	02Nos.
13	SS Bolts, Nuts, washers etc. (For all ports and flanges)	01 Set

**GENERAL REQUIREMENTS:**


- a) The vendors are encouraged to hold prior discussions with the indenter for any clarifications.
- b) **The vendor should be having experience in fabrication of vacuum vessel/components. Reference for the same must be submitted by vendor along with quotation.**
- c) Pre-dispatch inspection would be done at vendor's site. Items should be dispatched only after **clearance is issued** by the indenter.
- d) Finished products should be delivered to the address given below.

**Address:**

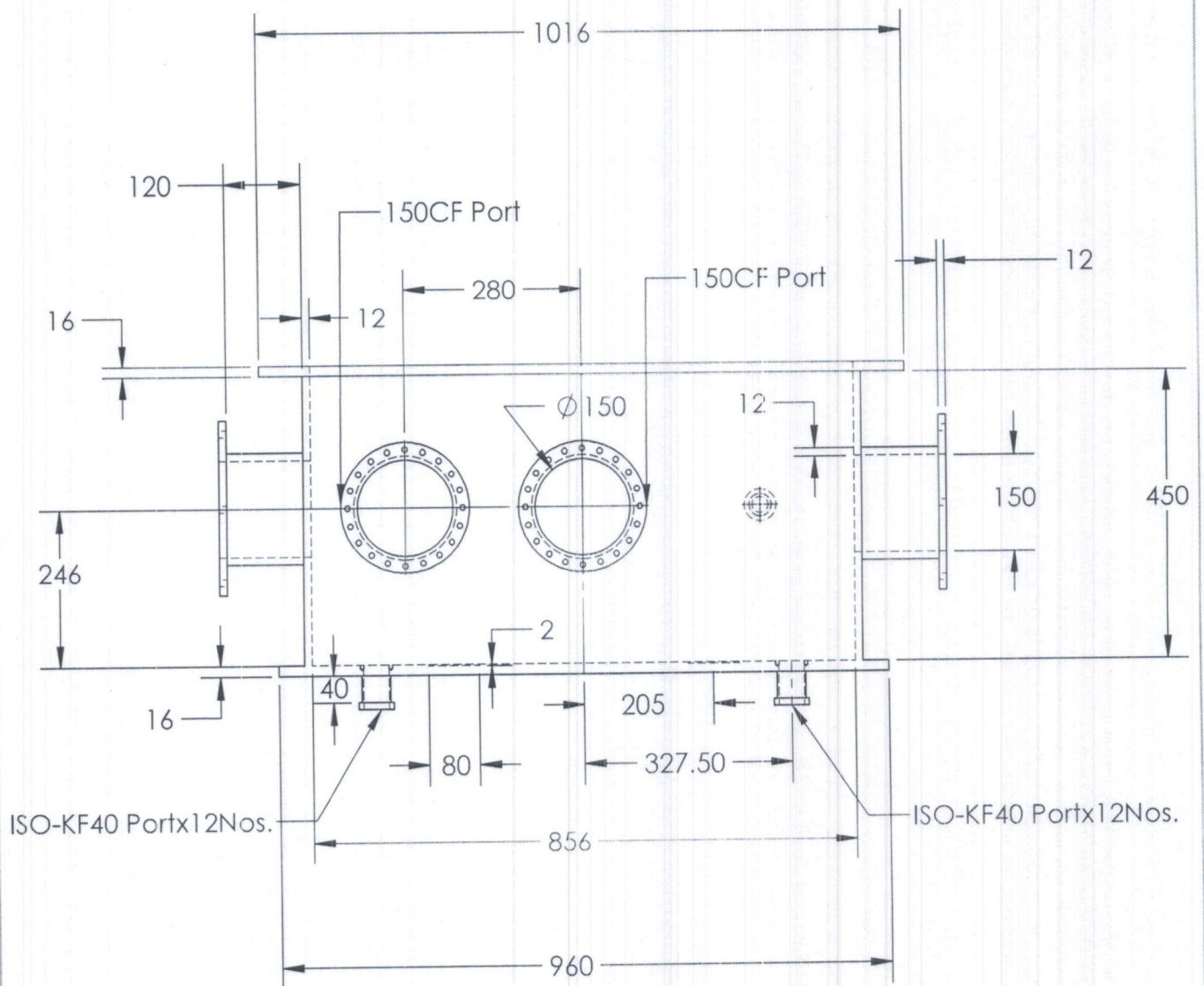
Stores Officer,  
Bhabha Atomic Research Center,  
Near Nagavaram Junction,  
Nagavaram-Atchutapuram Highway  
Visakhapatnam, Andhra Pradesh- 531011

- e) The cost of transportation/delivery if any should be mentioned in the quotation.
- f) Single order will be placed for all the above items and no partial work is permitted.
- g) Minimum Guarantee/**Warranty period** of the raw material and workmanship shall be **One Year**.
- h) **Contact Persons:**

- a) **Shri. Rahulnath P.P.**  
Computational Analysis Division, BARC  
Contact details: [rahulnath@barc.gov.in](mailto:rahulnath@barc.gov.in)  
Phone: 0891-2832149, 8985875318

  
(Rahulnath P.P.)  
SO/D, CAD





## Vacuum Chamber\_Left Side View

DRG. No.:01

All dimensions are in mm

Quantity:01Nos.

SCALE:1:10 Material:SS304

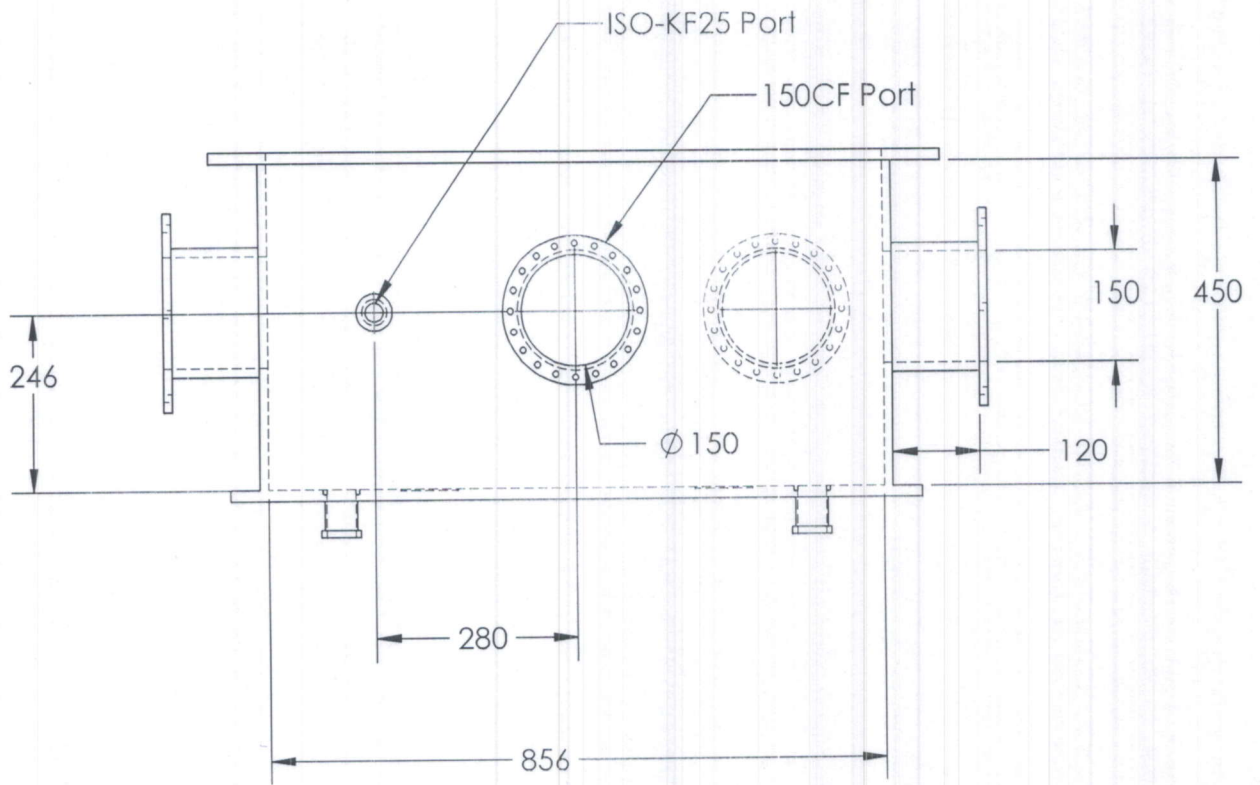
DATE:25/04/2022

MF:21-22/28

NAME & Sign.:Rahulnath

*[Signature]*





## Vacuum Chamber\_Right Side View

DRG. No.:02

All dimensions are in mm

Quantity:01Nos.

SCALE:1:10

Material:SS304

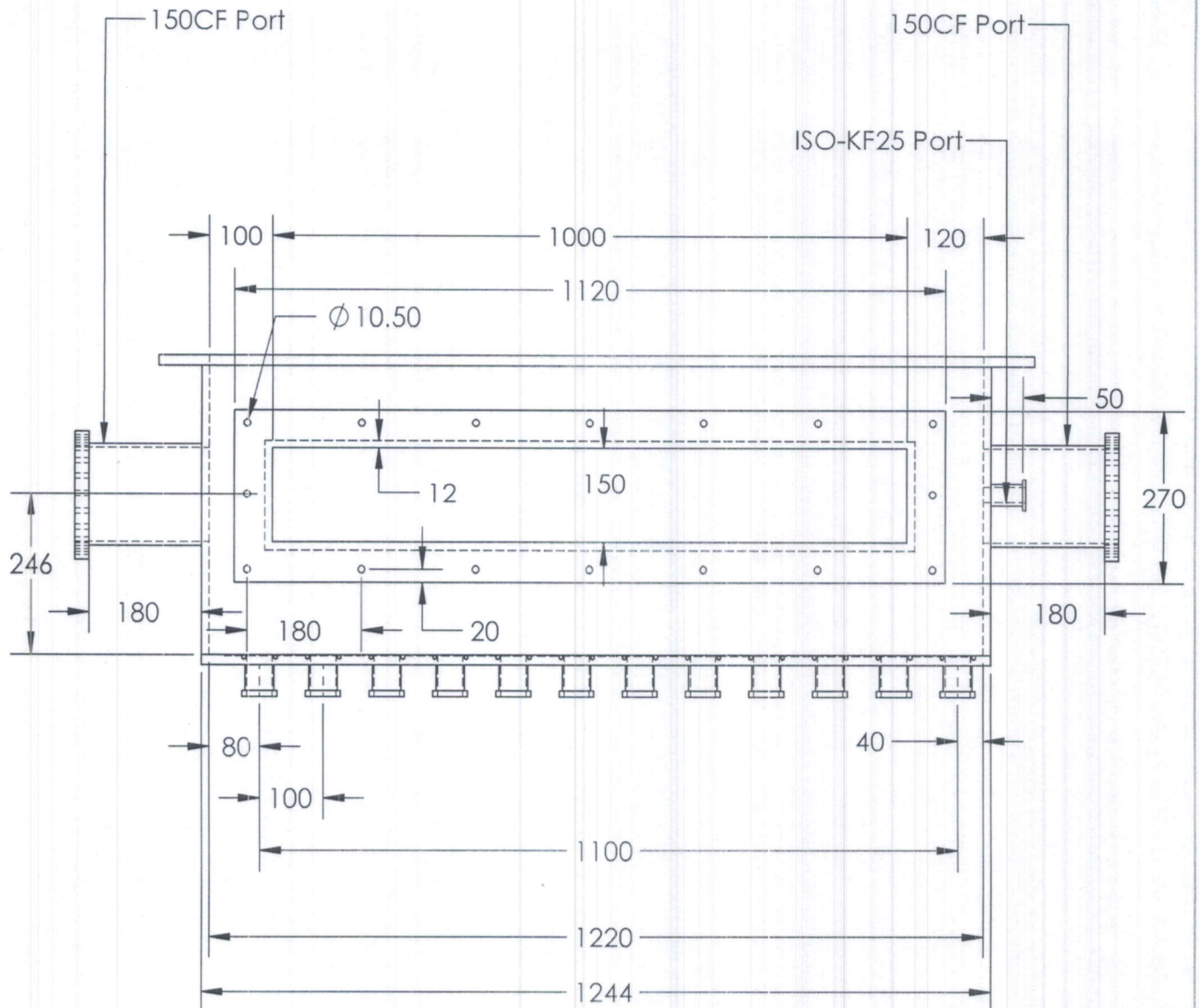
DATE:25/03/2022

MF:21-22/28

NAME & Sign.:Rahulnath

*[Signature]*





## Vacuum Chamber\_Front View

DRG. No.:03

All dimensions are in mm

Quantity:01Nos.

SCALE:1:10

Material:SS304

DATE:25/03/2022

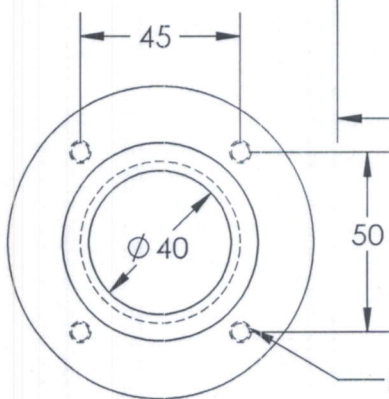
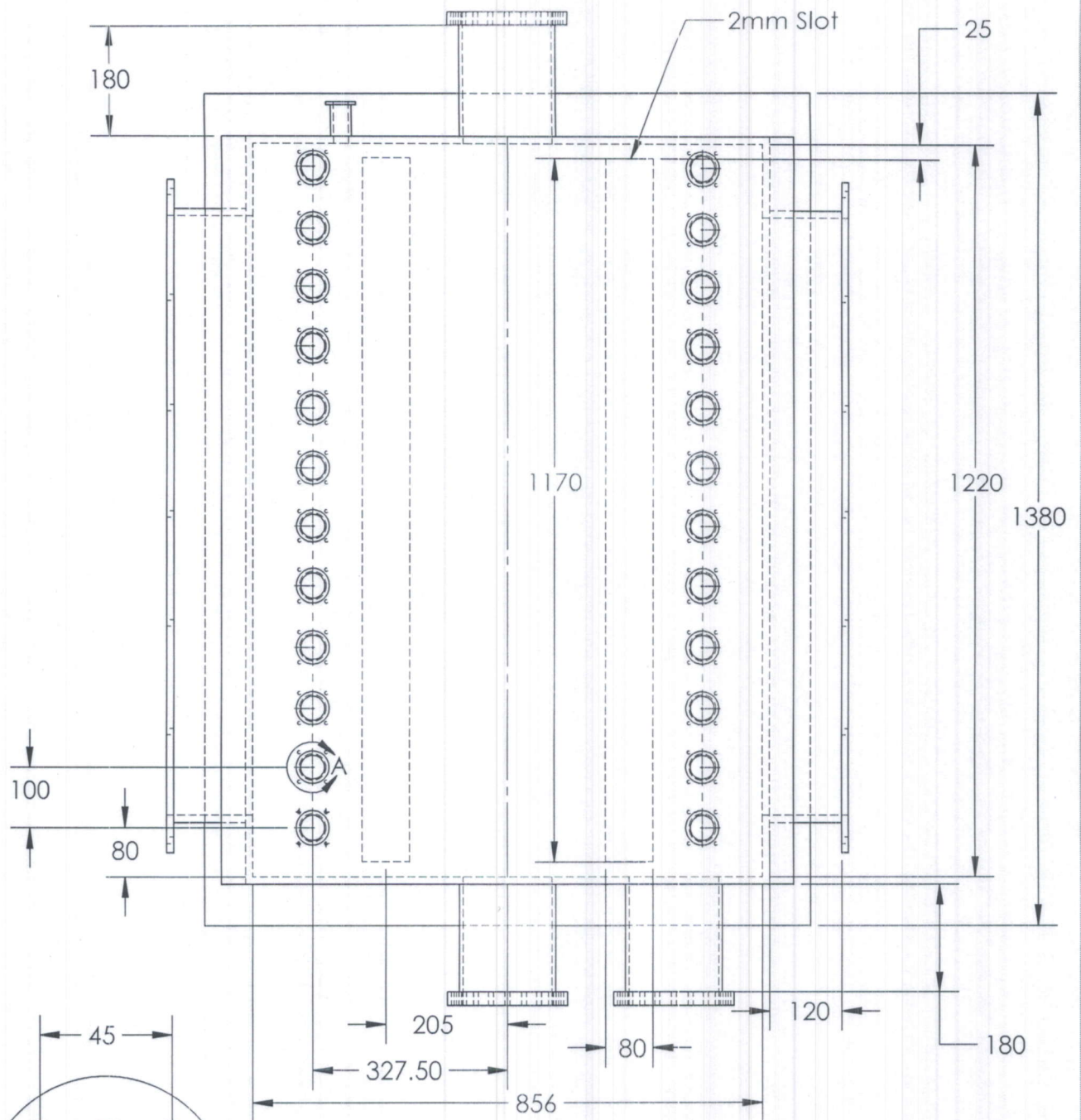
MF:21-22/28

NAME & Sign.:Rahulnath



*[Handwritten signature]*


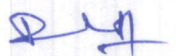


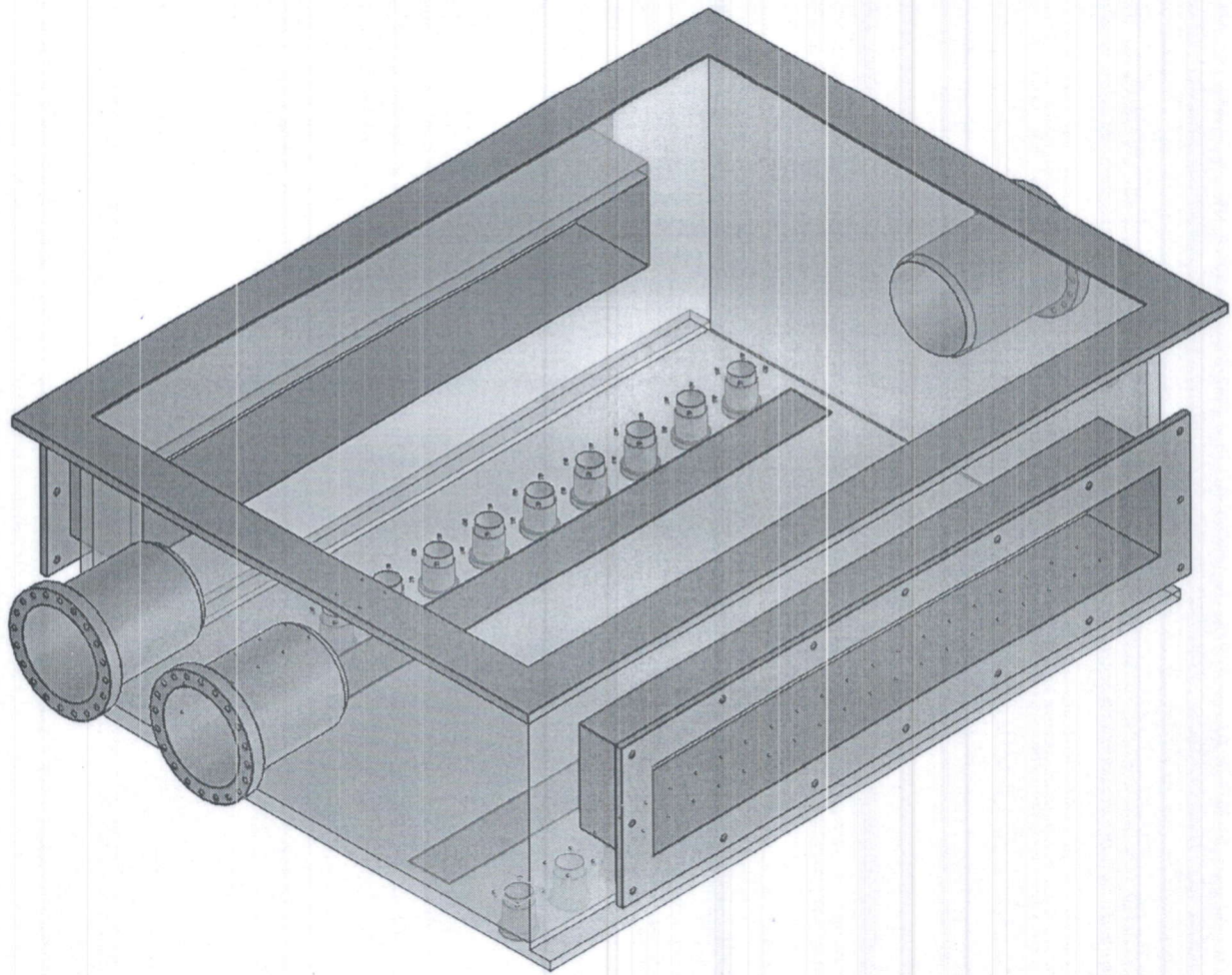


M6x1.0 Tap Holes 04 Nos.


DETAIL A  
SCALE 1 : 2

## Vacuum Chamber\_Top View

DRG. No.:04	All dimensions are in mm		
Quantity:01Nos.	SCALE:1:10	Material:SS304	
DATE:25/03/2022	MF:21-22/28	NAME & Sign.:Rahulnath 	

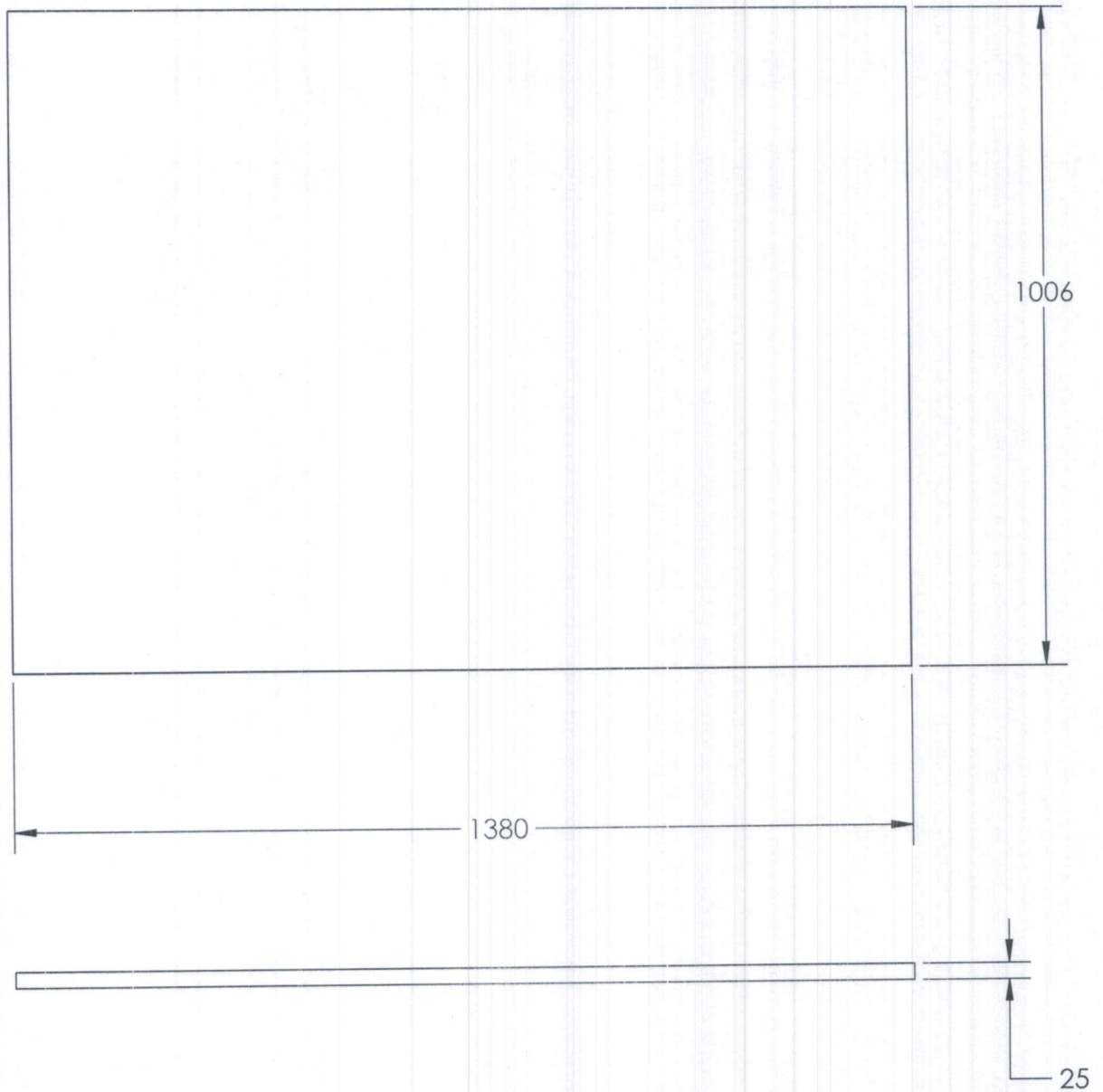


## Vacuum Chamber\_Isometric View

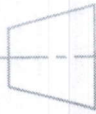
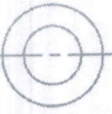

DRG. No.:05	All dimensions are in mm		
Quantity:01Nos.	SCALE:1:10	Material:SS304	
DATE:25/03/2022	MF:21-22/28	NAME & Sign.:Rahulnath	

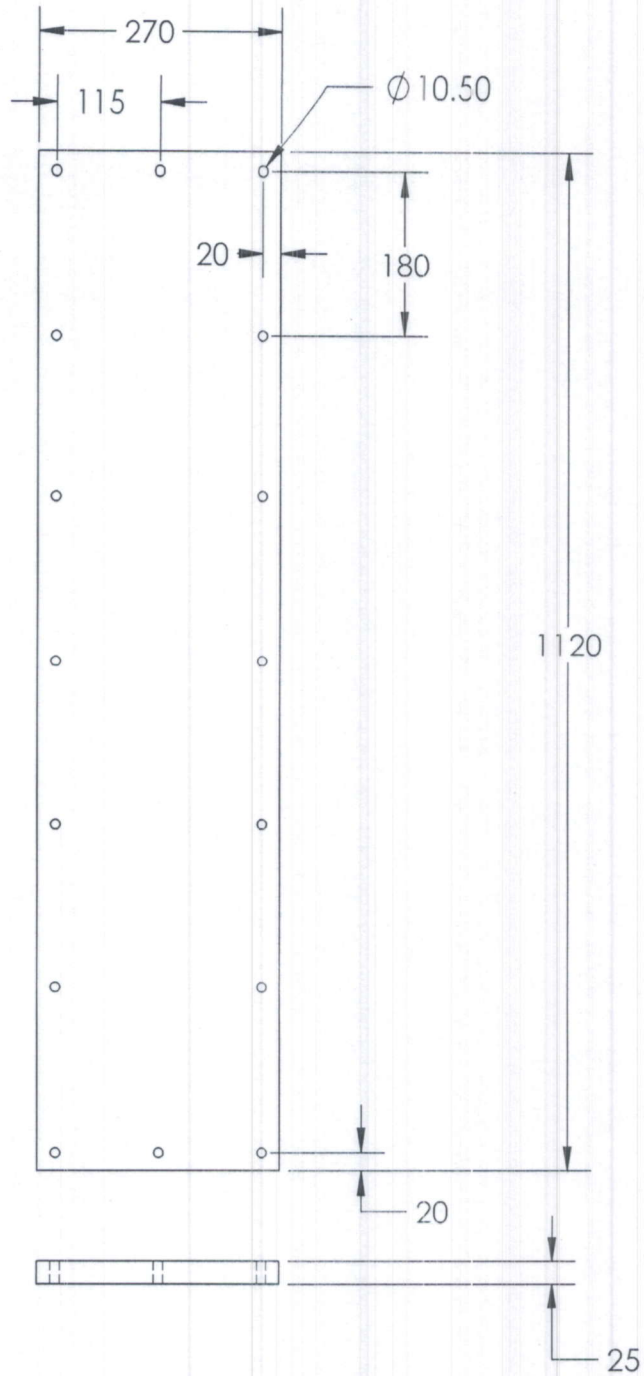
*Rahulnath*





## Vacuum Chamber\_Top Cover SS

DRG. No.:06	All dimensions are in mm		 
Quantity:01No.	SCALE:1:5	Material:SS304	
DATE:25/03/2022	MF:21-22/28	NAME & Sign.:Rahulnath	



## Vacuum Chamber\_Side Cover Acrylic

DRG. No.:07

All dimensions are in mm

Quantity:03Nos.

SCALE:1: 8

Material:Acrylic

DATE:25/03/2022

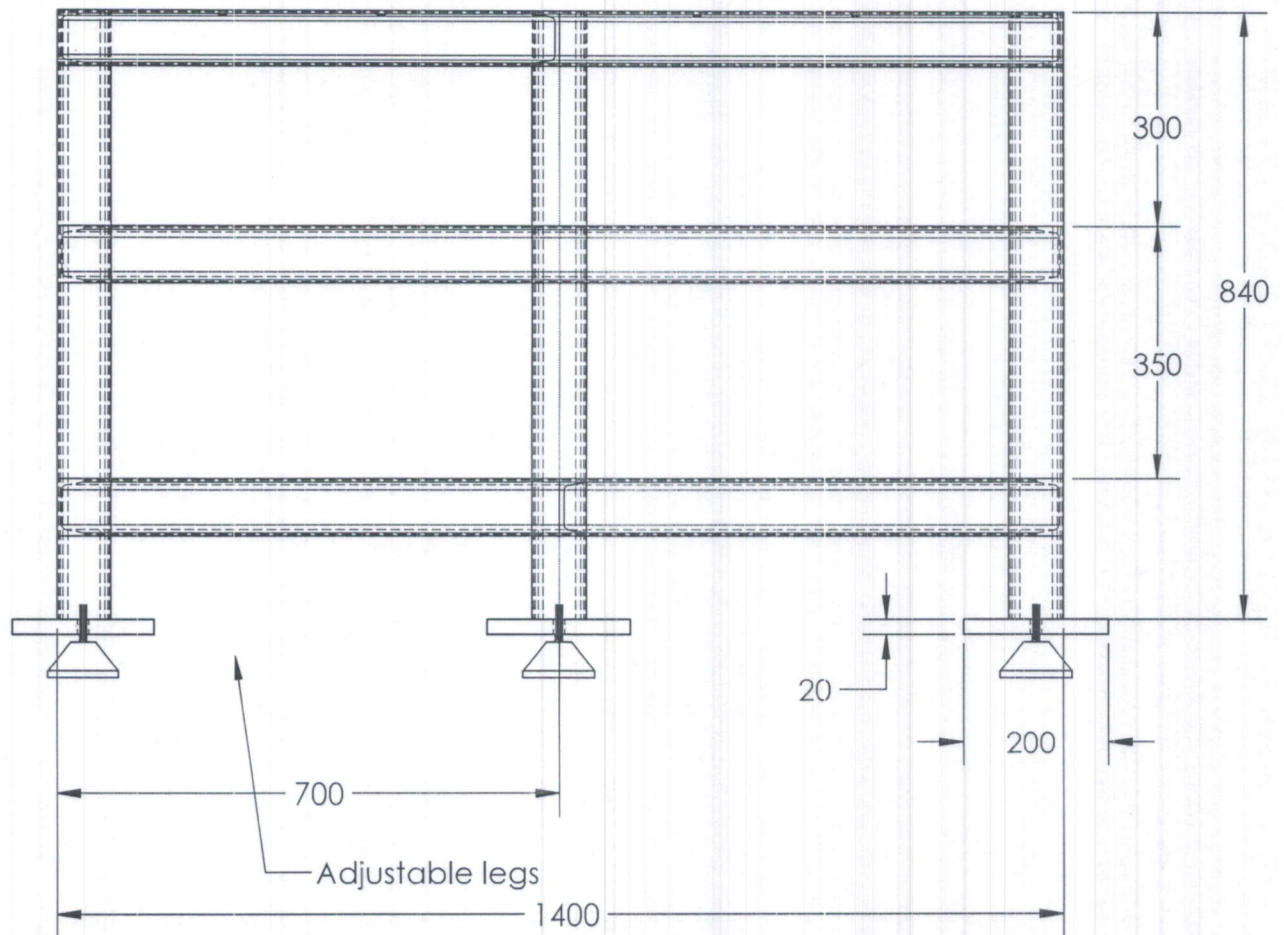
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NAME & Sign.:Rahulnath

*[Signature]*




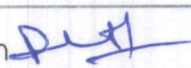


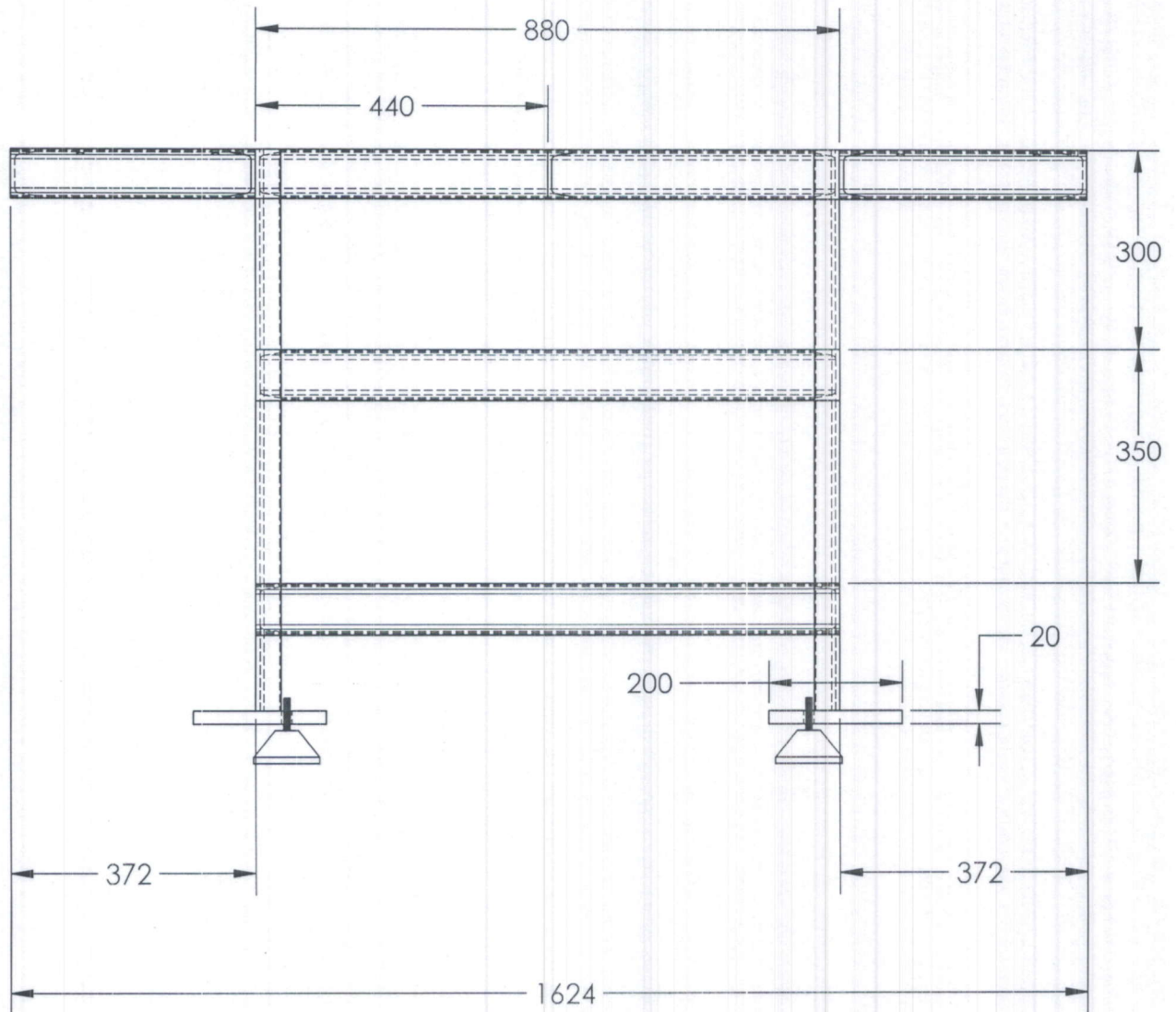


Note:

1. All components are MS C-Channel 75x40x40x5mm
2. All Parts are joined by welding
3. The Disc(MS) is fo Dimension 200x200x20mm
4. Adjustable legs(6Nos.) are rubber base with M16 Stud.
5. Load capacity of Adjustable legs=500kg

## Vacuum Chamber\_Stand\_Front View

DRG. No.:08	All dimensions are in mm		
Quantity:01Nos.	SCALE:1:10	Material:MS	
DATE:25/03/2022	MF:21-22/28	NAME & Sign.:Rahulnath	



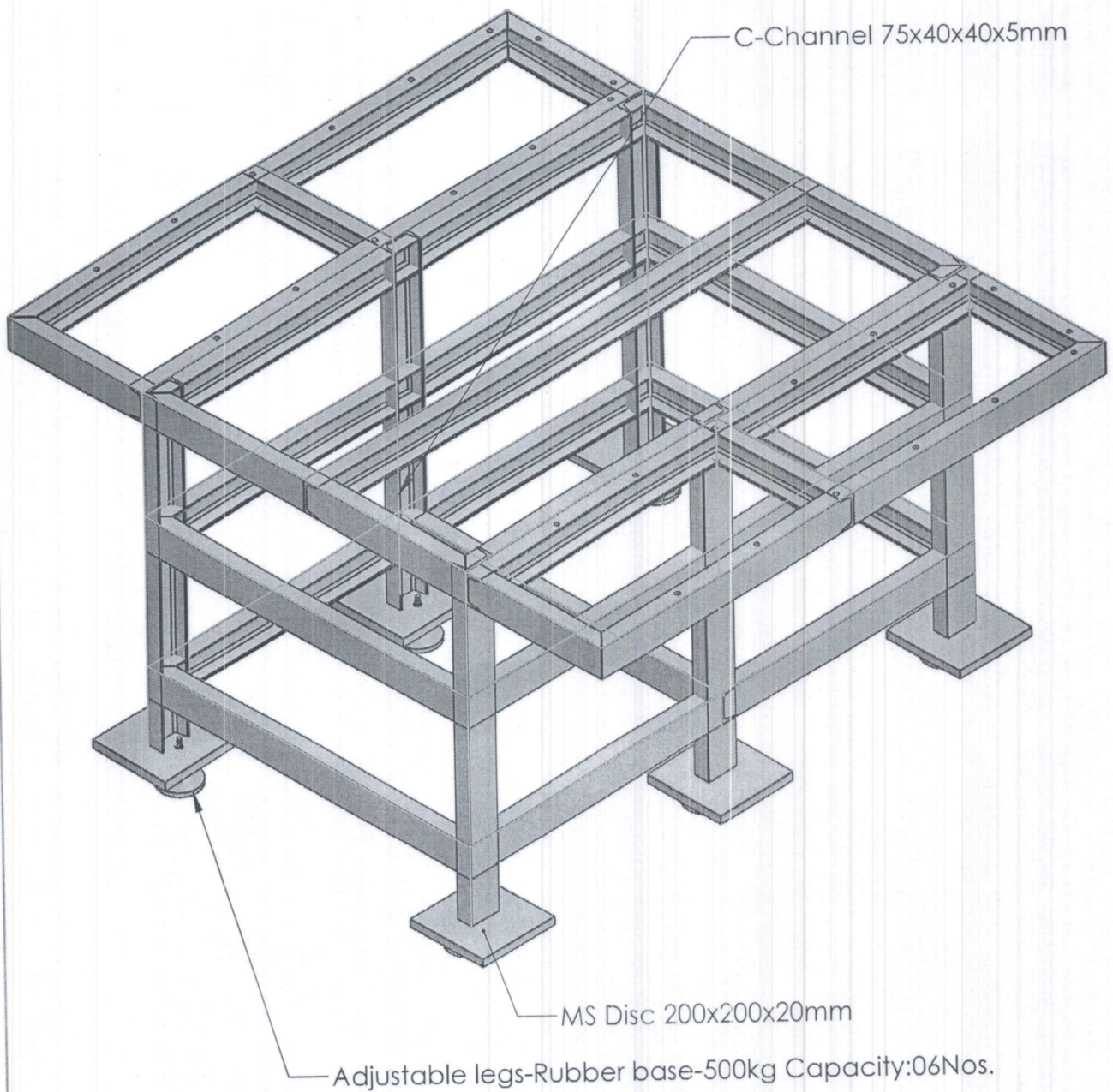
Note:

1. All components are MS C-Channel 75x40x40x5mm
2. All Parts are joined by welding
3. The Disc(MS) is of Dimension 200x200x20mm
4. Adjustable legs(6Nos.) are rubber base with M16 Stud.
5. Load capacity of Adjustable legs=500kg

## Vacuum Chamber\_Stand\_Side View

DRG. No.:09	All dimensions are in mm		
Quantity:01Nos.	SCALE:1:10	Material:MS	
DATE:25/03/2022	MF:21-22/28	NAME & Sign.:Rahulnath	





## Vacuum Chamber\_Stand\_isometric View

DRG. No.:10

All dimensions are in mm

Quantity:01Nos.

SCALE:1:12

Material:MS

DATE:25/03/2022

MF:21-22/28

NAME & Sign.:Rahulnath

*Rahulnath*

