

TENDER FORM

प्लाज्मा अनुसंधान संस्थान

(भारत सरकार के परमाणु ऊर्जा विभाग का सहायता प्राप्त संस्थान)

इंदीरा ब्रिज के पास, भाट, गांधीनगर - 382428, भारत

दूरभाष: 079-23962020/23962021, फ़ैक्स: 079-23962277

निमंत्रण निविदा और निविदाकारों को निर्देश करने के लिए

Invitation to Tender and Instructions to Tenderers

The Purchase Officer, Institute for Plasma Research invites, online tenders IN **TWO PART (INR QUOTE ONLY)** for supply of stores as detailed in the Purchaser's Tender documents. The conditions of contract and instructions to tenderers which will govern the contract pursuant to tender are given below.

If you are in a position to quote for the supply in accordance with the requirements stated in the attached Tender Form please submit your quotation **online. The quote should be in INR only.**

Tender submitted by **fax/cable/telegram or any mode other than online will NOT be considered at all** and all such tenders will be rejected without any notice to the tenderer.

Yours faithfully,

Purchase Officer-II

For and on behalf of Director, IPR
Institute for Plasma Research

Encl: as above.

INSTRUCTIONS FOR ONLINE SUBMISSION

- 1) It is mandatory for all the applicants to have **class-III digital signature certificate** from any of the licensed Certifying Applicant to participate in e-tendering.
- 2) In order to participate in online e-tendering process, it is mandatory for the applicants to have **user ID & password** to get access to the website www.tenderwizard.com/DAE. The applicants have to get registered their firm / company with the service provider, M/s ITI Limited for user ID & password. The registration shall be done by paying an annual registration fees to M/s ITI Limited and completing other formalities as mentioned in the website, www.tenderwizard.com/DAE. Validity of online registration is for one year from the date of its issuance and may be renewed by paying the applicable amount. For assistance/clarifications please contact Mr. Sunil K Patel at mobile 09624981992, e-mail: twhelpdesk426@gmail.com or nodalofficer.et@ipr.res.in or All India Help line No: 91-80-40482000/[18004255048](tel:18004255048), e-mail: daehelpdesk@tenderwizard.co.in.
- 3) The applicants, who have already obtained such valid user ID and password from M/s ITI Limited, for any other tender of DAE, need not obtain fresh user ID and password for the purpose of participation in the present tender.
- 4) The services for e-tendering in IPR/DAE is provided by M/s ITI Ltd., Tender wizard Help Desk Centre, # 24, 1st Floor, Sudha Complex, Near Havanoor Circle, 3rd Stage, 4th Block, Basaveshwaranagar, Bangalore - 560079, Ph:91-80-40482000/[18004255048](tel:18004255048), Telefax: 91-80-40482114, Email: daehelpdesk@tenderwizard.co.in.
- 5) The quotations shall be submitted online in the prescribed format before the date and time as mentioned in tender document. No other mode of submission is acceptable.
- 6) On successful e-payment of tender processing fees, the applicants can download the tender documents (including Excel sheets, if any) from the e-tendering portal.
- 7) Submission of the offer document after the due date and time shall not be permitted. Time being displayed on e-Tendering portal shall be final and binding on the applicant.
- 8) Applicants are advised to submit their documents well before the due date. IPR shall not be responsible for any delay in submission of documents for any reason including server and technical problems.
- 9) **Applicants are advised to fill all the mandatory fields (coloured cells) of the excel files of the Tender. If applicant keeps any mandatory cell blank, System will not allow to close/save the file.**
- 10) In case of any problem with the submission of the offer documents, the applicant may have the assistance of helpdesk or use the help manual given on the said website or mobile and e-mail mentioned elsewhere.

<p>प्लाज़्मा अनुसंधान संस्थान इंदीरा ब्रिज के पास, भाट, गांधीनगर - 382428 गुजरात राज्य दूरभाष: 079 23962020, 23962021 फैक्स: 079 23962277</p>	<p>INSTITUTE FOR PLASMA RESEARCH NEAR INDIRA BRIDGE, BHAT, GANDHINAGAR 382 428 GUJARAT STATE Phone: 079 23962020, 23962021 Fax: 079 23962277</p>
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निविदा सूचना TENDER NOTICE NO: IPR/TN/PUR/TPT/ET/19-20/17

दिनांकित DATED 15-7-2019

निम्नलिखित के लिए प्रतिष्ठित और योग्य पार्टियों से ई-निविदा विधि के माध्यम से दो भाग में ऑनलाइन निविदा आमंत्रित की जाती है।

Online tender is invited in **TWO PART** through e-tendering mode from reputed and eligible parties for the following.

मद का विवरण Item Description	Manufacturing, testing and supply of Grids for Twin Source Extraction System as per the specifications mentioned in the tender documents
निविदा प्रक्रिया शुल्क Tender Processing Fee	Tender Processing Fee of Rs.4,720.00 should be paid through electronic mode to M/s ITI Limited.
बयाना राशि जमा EMD	Rs.1,97,400.00 (Copy of Demand Draft to be uploaded with the quotation, Original DD should be sent to IPR on or before the specified closing date and time)
निविदा दस्तावेज वेबसाइट पर देखने और डाउनलोड करने के लिए उपलब्ध है Tender document available for view and downloading on website	09.00 hrs. on 16-7-2019 to 12.55 hrs. on 28-8-2019
निविदा दस्तावेज के संबंध में स्पष्टीकरण Clarifications regarding Tender document	09.00 hrs. on 16-7-2019 to 16.00 hrs. on 16-8-2019
निविदा ऑनलाइन जमा करने की अंतिम तिथि Closing of online submission of tenders	28-8-2019 at 13.00 hrs.
भाग-I के ऑनलाइन खोलने का समय और तिथि (तकनीकी बोली) Time and Date of online Opening of PART-I (Technical Bid)	28-8-2019 at 14.30 hrs.
भाग-II के ऑनलाइन खोलने का समय और तिथि (मूल्य बोली) Time and Date of online Opening of PART-II (Price Bid)	Will be declared later on

आवेदक निविदा दस्तावेज के बारे में वेबसाइट www.tenderwizard.com/DAE पर 16-8-2019 (16:00 बजे) तक अपने प्रश्नों को अपलोड करके स्पष्टीकरण (बोली-पूर्व) मांग सकते हैं। स्पष्टीकरण उसी वेब पोर्टल www.tenderwizard.com/DAE पर 20-8-2019 (17:30 बजे) तक अपलोड किए जाएंगे।

The applicant can seek clarifications (pre-bid) regarding the tender document up to 16-8-2019 (16:00 Hrs) by uploading their queries on website www.tenderwizard.com/DAE . The clarifications will be uploaded on the same web portal www.tenderwizard.com/DAE by 20-8-2019 (17:30 Hrs).

विस्तृत निविदा सूचना, योग्यता मानदंड और निविदा दस्तावेज के साथ वेबसाइट www.tenderwizard.com/DAE पर निःशुल्क देखने और डाउनलोड करने के लिए उपलब्ध है। ई-निविदा प्रक्रिया में भाग लेने के लिए, उपर्युक्त ई-निविदा पोर्टल पर रजिस्टर करना अनिवार्य है और डिजिटल हस्ताक्षर प्रमाणपत्र (श्रेणी-III) होना आवश्यक है। बोलीदाता नए रजिस्ट्रेशन/टेन्डरिंग में सहायता के लिए पञ्जी हेल्पडेस्क से daehelpdesk@tenderwizard.co.in पर संपर्क कर सकते हैं, फोन नंबर: (80)-40482000/ 9624981992/18004255048

Detailed tender notice along with Eligibility criteria and Tender Document is available on website www.tenderwizard.com/DAE for free view and downloading. For participating in the e-tendering process, it is mandatory to get registered on the above e-tender portal and required to have Digital Signature Certificate (Class -III). For new registration/ tendering help, bidders may contact DAE Helpdesk at daehelpdesk@tenderwizard.co.in Phone No: (80)-40482000/ 9624981992/ 18004255048

इस निविदा सूचना की एक प्रति संस्थान की वेबसाइट www.ipr.res.in//purchasetenders.html पर भी उपलब्ध है। अधिक जानकारी के लिए, कृपया संपर्क करें: 079 23962020/2021, फ़ैक्स: 079 23962277।

A copy of this tender notice is also available on the Institute's website www.ipr.res.in//purchasetenders.html. For further information, please contact: 079 23962020/2021, Fax: 079 23962277.

TWO-PART TENDER SECTION – A

Invitation to Tender and Tendering Conditions

1.0 INVITATION TO TENDER

1.1 Institute for Plasma Research (IPR) invites online tenders for supply of Plant, Machinery, Equipment/Components to the specifications detailed in Section "C" to this tender document. The conditions of contract/purchase order which will govern the contract pursuant to the tender are as contained in Section "B" of this tender document. If you are in a position to quote for supply in accordance with the technical specifications indicated in Section "C" to this tender document and as per the conditions stipulated in this Section and Section B, please upload your offer in a manner and method specified below.

2.0 MANNER AND METHOD FOR SUBMISSION OF TENDERS

2.1 All tenderers in response to this invitation shall be submitted through online mode only. Tender submitted by **fax/cable/telegram or any mode other than online will NOT be considered at all** and all such tenders will be rejected without any notice to the tenderer.

2.1.1 **Part-I (Techno-commercial):** This part of the tender shall include/contain documents related to eligibility criteria, all technical details, technical specifications, drawings and also the commercial terms and conditions of contract for the supplies to be made and the services to be rendered **EXCLUDING ANY PRICE DETAILS THEREOF.**

Proof for fulfillment of eligibility criteria mentioned in Annexure-A should be uploaded along with the tender. If the tender is submitted without valid documents, we shall not consider your offer. Tenders received without proof of eligibility criteria will be rejected. The offers which meets the eligibility criteria will only be considered for evaluation.

2.1.2 **Part-II (Price):** This part should contain only the prices of the stores offered for the services to be rendered. Part-II (Price) should be furnished in accordance with the format provided by the Purchaser at Section "D" of this tender document

2.1.3 If tenderer includes prices of any nature in Part-I (Techno-commercial) of the tender such offers are liable for rejection without any notice to the tenderers.

3.0 EARNEST MONEY DEPOSIT (EMD)

3.1 The Tenderer shall submit, as part of its bid, interest free Earnest Money Deposit (EMD) for an amount as specified in the Tender Notice. In the case of foreign bidders, the EMD shall be submitted either by the principal or by the Indian agent and in the case of indigenous bidders;

the EMD shall be submitted by the manufacturer or their specifically authorized dealer/bidder. EMD shall be submitted by way of Demand Draft from **SBI/nationalized banks or any one of the scheduled banks mentioned in the bracket (Axis Bank, HDFC Bank, ICICI Bank and IDBI Bank)** issued in favour of "**Institute for Plasma Research**" and payable at **Ahmedabad**. **Tender received without EMD will be rejected at the discretion of IPR.**

(Copy of Demand Draft to be uploaded with the quotation, Original DD should be sent to IPR on or before the specified closing date and time)

- 3.2 The EMD of unsuccessful Tenderer will be discharged/returned after finalizing award of the Contract/placement of Purchase order.
- 3.3 The successful Tenderers EMD shall be discharged upon the Bidder submitting the Security Deposit as specified in the contract/purchase order, without any interest.
- 3.4 **Exemption from payment of EMD:** The firms registered with DGS&D, NSIC, DPS or Micro & Small Enterprises (MSEs) which are actual producers/manufacturers of tendered items are exempted from payment of EMD provided valid registration certificate is uploaded along with the offer. In the case of foreign bidders, payment of EMD is exempted if they submit their bid directly or through their Indian agent in **foreign currency** against the tender document bought by them, so that the order can be placed directly on their Principals.
- 3.5 **The EMD may be forfeited:**
 - 3.5.1 If a Tenderer withdraws or amends or modifies or impairs or derogates its bid during the period of bid validity specified by the Bidder on the Bid Form; or
 - 3.5.2 In case of a successful tenderer, if the tenderer fails to furnish order acceptance within 15 days of the order or fails to submit the Security Deposit within 21 days from the date of contract/order.

4.0 LATE/DELAYED TENDERS

- 4.1 Uploading of the offer document after the due date and time shall not be permitted. Time being displayed on e-Tendering portal shall be final and binding on the applicant.

5.0 OPENING OF TENDERS

- 5.1 Unless otherwise pre-opened or postponed with advance intimation to the tenderers, tender will be opened in two stages on the date and time indicated on e-Tendering portal.
- 5.2 Part-I (Techno-commercial) of the tender will be opened at the first stage on the due date and time indicated for opening on the e-Tendering portal while the Part-II (Price) will be opened at the second stage after completion of the evaluation of the Techno-Commercial Part (Part-I) of the tender.
- 5.3 While all the tenderers who uploaded tenders within the due date and time will be permitted to participate in the opening of Part-I (Techno-Commercial) of the tender on the due date and time indicated on e-Tendering portal, opening of the Part-II (Price) of the tender can be attended to only by such of those tenderers whose Part-I (Techno-Commercial) of the tenders are found to be technical suitable/

acceptable to the Purchaser and to whom intimation thereof is given by the Purchaser by Email/letter or through e-Tendering portal.

- 5.4 The tenderers whose Techno-commercial part (Part-I) are found suitable/acceptable to the Purchaser, will be given seven days advance intimation by the Purchaser to enable such tenderers to depute their representative to participate in the opening of the Part-II (Price) of the tender. The technically unqualified tenderers will neither be given any intimation about the date and time of opening of Part-II (Price) of the tender nor will they be permitted to participate in the opening of the same. **Part-II (Price) of the technically disqualified tenderers will not be opened.**

6.0 AUTHORITY LETTER

- 6.1 The tenderers who wish to participate in the opening of the tenders may depute their representatives to IPR on the respective due date and time as indicated in the tender notice with an authority letter addressed to the Purchase Officer which should be produced to the officers who are opening the tenders, on demand to prove the bonafides of the representative who participates in the opening of the tender. In case the representative of the tenderer fails to produce such an authority letter on behalf of the tenderer, he will be debarred from participating in the opening of the tenders.

- 6.2 The tenderers representative, who reaches the venue of the tender opening late, i.e. after the starting time specified for opening of the tenders, may not be allowed to take part in the tender opening. It should be noted that only one representative of each tenderer will be permitted to participate in the tender opening.

7.0 EVALUATION OF TENDER

- 7.1 Evaluation of tender shall be based on all inclusive landed cost.

8.0 PURCHASER'S RIGHTS TO REJECT QUOTATION

- 8.1 The Purchaser reserves the right to reject any quotation without assigning any reason thereof.

9.0 TECHNICAL CLARIFICATIONS

- 9.1 After opening of Part-I (Techno-commercial) of the tender, if it becomes necessary for IPR to seek clarifications from the tenderers, the same will be sought for from the tenderers.

10.0 DATE FOR OPENING OF PART-II (PRICE):

After completion of technical evaluation, Part-II (Price) of only technically qualified tenderers shall be opened. The date and time of opening of Part-II (Price) shall be intimated only to the technically qualified tenderers. Whose Part-I offers have been found suitable will only be permitted to participate in the opening of the Part-II (Price) of the tender.

11.0 HOLIDAYS

If the date (s) specified for receipt and opening of the tenders is/are declared as holidays abruptly by the competent authority due to any administrative reasons, then the date(s) for opening of tenders will get postponed automatically to the next working day. As for instance, if the due date for receipt of tender and its opening falls on 3rd of a particular month and if the 3rd day of the month is declared as a holiday, then the

opening date of tender will stand automatically postponed to 4th day of the month at the same time. However, due date for submission of tender online will remain same as mentioned in the tender notice.

12.0 VALIDITY OF OFFERS

Offers shall be kept valid for acceptance for a period of 120 (One hundred twenty) days from the date of opening of Part-II (Price) of the tender. Offers with shorter validity period will be liable for rejection.

13.0 CATALOGUES/TECHNICAL LITERATURE

Vendor shall upload all necessary catalogues/drawings technical literature data as are considered essential for full and correct evaluation of the offers shall invariably accompany the Part-I (Techno-Commercial) of the tender. The quotations are liable to be ignored if this condition is not complied with.

14.0 TERMS AND CONDITIONS OF THE CONTRACT

It must be clearly understood that any contract concluded pursuant to this invitation to tender shall be governed by the General Conditions of the Contract as contained in Section "B" of this tender document. Tenderers must therefore, take special care to go through these general conditions of contract and in exceptional cases if any deviations are proposed, these must be clearly indicated in the Part-I of the tender as a separate annexure instead of merely enclosing their printed conditions of Sale. Tenders made subject to counter conditions or far too many deviations from the general conditions of contract, i.e. Section "B" of this tender document are liable to be ignored. It should also be realised that failure to bring out deviations from the General Conditions of Contract contained in Section "B" of this tender document will imply that the tenderer is willing to execute the contract as per the Purchaser's terms and conditions of contract.

15.0 TENDERING CONDITIONS FOR BIDS

- 15.1 The prices quoted must be FIRM and preference will be given to such tenders. In exceptional cases (e.g. items involving substantial use of raw materials susceptible to sharp fluctuations in prices) if prices quoted subject to variation it shall be on the basis of a standard 'Price Variation Formula'. The basis for calculation shall be very clearly stated. The responsibility for furnishing the documentary evidence for price variation lies with the vendor. Here again preference will be given to the tenders with a specific ceiling on escalation.
- 15.2 Prices quoted by the tenderer should include all charges involved for direct and safe-delivery of the stores to the consignee/place of delivery indicated in the tender document. If a tenderer so desires, separate lump sum charges for safe-delivery of the stores to the consignee/purchaser's site, could be furnished. However, the purchaser reserves the right to call for break-up. The purchaser will neither undertake responsibility for transit insurance nor pay for it separately.
- 15.3 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.

- 15.4 The stores shall neither be despatched under 'owner's risk' nor consigned to 'self', but only to the consignee's name and address indicated in the Purchase order. Non-adherence to this condition shall make the contractor liable to bear all consequential penalties/expenses such as demurrage, wharf age, etc. which the Purchaser may incur.
- 15.5 The consignee will, as soon as possible, but not later than 45 days from the date of arrival of stores at destination notify the contractor of any loss or damage to the stores that may have occurred during transit to enable the contractor to repair/rectify the defects/damages or replace the goods as is appropriate, free of all charges. In case it is desired by the contractor for returning of the material to them all expenses towards transportation etc. will be borne by the supplier and also will furnish bank guarantee towards the cost of material.
- 15.6 In case an Indian supplier/Agent furnishes an offer for supply of outrightly imported stores, the price of such stores shall be quoted in Indian Rupees for delivery to the consignee's premises exclusive of import duties and on firm price basis.
- 15.6 **Conditional Discount:** In case the tenderer offers any conditional discount with regard to acceptance of their offer within a specific payment terms, delivery, quantity etc. the purchaser will not take into consideration such conditional discount while evaluating their offer.

16.0 SPARES AND ACCESSORIES

- 16.1 Tenders for plant/machinery/equipment/component shall also indicate prices for essential accessories, optional accessories and spares necessary for satisfactory operation of the plant/machinery/equipment.
 - 16.1.1 for a period of two years and
 - 16.1.2 for a period of five years
- 16.2 Prices for accessories and spares shall be itemized. Tenders where only lumpsum prices are indicated are liable to be ignored. Particular care must be taken to list out each item of spare and quantity recommended and also the individual price for these items. These details should be included only in Part-II (Price) of the tender. However, a list of spares and accessories without Price should be included in Part-I (Techno-Commercial) of the tender.

17.0 QUANTITY

The purchaser reserves the right to accept tenders for any quantity of his choice and the tenderer shall be bound to accept a contract for any quantity. The Purchaser also reserves the right to accept or reject lowest or any tender in full or in part without assigning any reasons.

18.0 STATUTORY LEVIES SUCH AS CUSTOMS DUTY, GOODS AND SERVICE TAX

18.1 CUSTOMS DUTY

- 18.1.1 The Purchaser is entitled for assessment of customs duty at the concessional rate as per Customs Notification No. 51/96-Custom dated 23.7.1996 issued by the Department of Revenue, Ministry of Finance, as amended from time to time, in respect of purchases made for the Research Institutions under the Department of Atomic Energy and the Purchaser will obtain the requisite

- certificate from the appropriate authority.
- 18.1.2 In case an Indian vendor/agent submits an offer for supply of outrightly imported stores in Indian Rupees, they should quote price for free and safe delivery of stores at destination.
- 18.1.3 Wherever, against a requirement, both indigenous as well as imported offers are received, the offers for imported stores will be evaluated on the basis of the total landed cost after loading the custom duty and other levies as may be applicable from time to time for taking purchase decision.
- 18.1.4 High Seas sale will not be considered.

18.2 **FLUCTUATION IN THE CUSTOMS DUTY**

- 18.2.1 Unless otherwise specifically agreed to in terms of the Contract, the purchaser shall not be liable for any claim on account of fresh imposition and /or increase in Customs Duty on raw materials and/or components used directly in the manufacture of the contracted stores, taking place during the pendency of the contract.

- 18.3 **Offers from Indian Agents on behalf of foreign suppliers:** In case the tender is submitted by an Indian supplier/Indian agent on behalf of their foreign supplier/ principals, following documents should be submitted with the tender, failing which, their offer is liable to be ignored.

- 18.3.1 Photocopy of the Agency Agreement between the Principals and the Indian Agent showing the percentage or the quantum of agency commission payable and a Letter of Authority from the Principals authorizing the Indian Agents to submit the tender on their behalf.
- 18.3.2 The type and nature of after sales services to be rendered by the Indian Agent.
- 18.3.3 Both Indian Agent and Principal/OEM cannot bid simultaneously for the same item/product in the same tender.
- 18.3.4 The Indian Agents are allowed to quote on behalf of only one foreign Principal/ Supplier against this tender.
- 18.3.5 Copy of Registration Certificate with DGS&D or DPS.

18.4 **GOODS AND SERVICE TAX**

- 18.4.1 GOODS AND SERVICE TAX where legally leviable as per relevant HSN code will be admitted and reimbursed at the rate applicable during original delivery date.
- 18.4.2 GOODS AND SERVICE TAX intended to be claimed should be distinctly shown separately along with the price quoted. Where this is not done, no claim for GOODS AND SERVICE TAX will be admitted at any later stage and on any ground whatsoever.
- 18.4.3 The Purchaser is entitled for assessment of GST at the Concessional rate as per Notifications issued by the Government, as amended from time to time, in respect of purchases made for the Research and Development applications under the Department of Atomic Energy and other R&D units.
- 18.4.4 **GST for R&D Unit:** Goods and Service Tax (GST) wherever applicable will be paid extra at actual during the delivery period stipulated in the Purchase order. In terms of notifications issued by the Central Government and State Governments, R&D units of Department of Atomic Energy are entitled for IGST @ 5% or CGST @ 2.5% and SGST @ 2.5% as applicable for stores covered under the Purchase Order.

- 18.4.5 **GST for Services:** As applicable. Specify the SAC codes wherever services are involved.
- 18.4.6 It would be the responsibility of the contractor to ensure that relevant certificate is obtained from the Purchaser before effecting the delivery of goods ordered failing which the excess tax paid by the contractor shall not be reimbursed by the Purchaser.
- 18.4.7 When GOODS AND SERVICE TAX is claimed as extra by the vendor in general and on packing charges in particular, the following certificates should be submitted by the vendor to the Paying Authority on the bills itself.
- 18.4.8 Certified that the goods and packing charges on which GOODS AND SERVICE TAX has been charged have not been exempted under the Central Sales Tax or the State Sales Tax Act or the rules made there-under and the amount charged on account of GST on these goods and packing charges are not more than what is payable under the provision of relevant Act or the rules there-under.
- 18.4.9 Certified further that we have actually paid GOODS AND SERVICE TAX and are being assessed to GST on packing charges and also that where there are statutory exemption under the Relevant Act/Law of the State Government concerned, we have availed ourselves of it and certified non-availability of such a provision for GST on packing charges wherever claimed.
- 18.4.10 Certified further in respect of amount claimed into the bill no claim is pending for refund/or admissible. Certified that in the event of our getting refund in whole or in part of the element of GOODS AND SERVICE TAX on packing charges claimed from Government, we shall pass on the benefit to the Purchaser by remitting to Government the amount equivalent to the amount of refund obtained by us.
- 18.4.11 Further certified that we abide by the all the provisions of Acts of Governemnt and rules made thereunder especially regarding anti-profiteering provisions.
- 18.4.12 Certified further that we (our Branch or agent) _____
 (address) are registered as dealers in the State of _____
 under Local Regn. No. _____ and in the State of _____
 under Central Regn. No. _____ for the
 purpose of State/Central Tax.
 (Stamp & Signature of the Vendor)
- 18.4.13 The vendor shall solely be responsible for declaration of Goods and Service Tax made in his invoice and shall indemnify the purchaser from any claim or its liability from concerned authorities at any stage.
- 18.4.14 Certificate with each bill to the effect that no refund has been obtained in respect of the reimbursement of GST made to vendor during three months immediately preceding the date of the claim covered by the relevant bill.
- 18.4.15 AN UNDERTAKING to the effect that in case any refund of GST is granted to the vendor by concerned authorities in respect of stores supplied under the contract, they shall pass on the credit to the purchaser immediately alongwith a certificate from their Director/Manager/Proprietor/ Accountant to the effect that the credit so passed on relates to the GST originally paid for the stores

supplied under the contract. In case of their failure to do so within 10 days of the issue of the refund orders to them by the Authorities, the purchaser would be empowered to deduct a sum equivalent to the amount refunded by the authorities without any further reference to the vendor, from any of their outstanding bills against this or any other pending Government Contracts and that no dispute on this account would be raised by the vendor.

18.4.16 Statutory Deductions, as applicable shall be made from the supplier's bill.

18.5 **DEDUCTION OF TAX AT SOURCE (TDS)**

As per Government of India rules, it is mandatory that income tax shall be deducted at source at applicable rates as per relevant act, rules and notifications issued by the government from time to time.

18.5.1 **In case of Indigenous Vendors** (Indian Suppliers who provide indigenous products and services, Indian subsidiaries with permanent establishment in India who supply imported goods and services and paid in Indian currency only): Tax deducted at source will be applicable under Section 194-C for carrying out any work (including supply of labour for carrying out any work) in pursuance of contract as per Income Tax Act 1961. In case of technical or professional services, TDS will be applicable as per under Section 194-J of Income Tax Act 1961.

18.5.2 **In case of Foreign Vendors** (Foreign Suppliers who provide goods from abroad paid in foreign currency and providing technical services by Indian subsidiary paid in Indian currency): The TDS is applicable where services are rendered in India directly or through their Indian counter part against foreign Purchase order / Contract as per the provision of under Section 195 of Income Tax act of India. Wherever DTAA (Double Taxation Avoidance Agreement) agreement exists between India and the supplier country the provisions of the agreement shall be applicable. For getting benefit of DTAA (Double Taxation Avoidance Agreement), the following documents must be submitted, otherwise full TDS will be deducted.

- a) No Permanent Establishment in India certificate
- b) Tax Residency Certificate (TRC) issued by Tax authorities of their country
- c) Form 10F if TRC does not contain required details
- d) PAN (Permanent Account Number) details issued by Indian Income Tax Authority

Important Note:

- a) Where bifurcation is inappropriate and unacceptable for supply of material and providing services the purchase order / contract will be treated as **Composite Contract** and TDS will be deducted on whole contract / purchase order value as per applicable rate.
- b) TDS or any other leviable taxes or duties, if applicable, shall be deducted recovered from the Supplier's bill and necessary certificate will be issued to the supplier.

- c) Details on relevant sections of Income Tax Act and DTAA treaties can be obtained from [https://www.incometaxindia.gov.in/ Pages/acts/income-tax-act.aspx](https://www.incometaxindia.gov.in/Pages/acts/income-tax-act.aspx).

19.0 FLUCTUATION IN STATUTORY LEVIES

Unless otherwise specifically agreed to in terms of the Contract, the purchaser shall not be liable for any claim on account of fresh imposition and/or increase in statutory levies on raw materials and/or components used directly in the manufacture of the contracted stores, taking place during the pendency of the contract. However, any reduction in statutory levies on these raw materials and/or components must be passed on to the Purchaser.

20.0 SAMPLES/PROTOTYPES

If any called for shall be submitted free of all charges by the Tenderer and the Purchaser shall not be responsible for any loss or damage thereof for any reason whatsoever. In the event of non-acceptance of the tender, the tenderer will have to make arrangements to remove/collect the sample/prototypes at his own expenses.

21.0 QUANTITIES

Quantities indicated are approximate only and one or more of the items of the stores tendered, or a portion of any one or more of the items of such stores may be accepted and the tenderer notwithstanding that his Tender has not been accepted in whole shall be bound to supply contracted quantity to the Purchaser.

22.0 SUBMISSION OF DRAWINGS

The tenderer shall furnish all drawings pertaining to the plant/machinery/ equipment/component to the Purchaser along with the tender for correct understanding and appreciation of the tender in quadruplicate. Besides, tenderers should also furnish general arrangement, schematic and such other drawings prescribed by the Purchaser within 4 weeks from the date of receipt of a Purchase Order for approval. Such drawings should be furnished along with Part-I (Techno-Commercial) of the tender. Tenderer's drawing will form part of the purchase order/contract only after these are approved by the Purchaser.

23.0 INSTALLATION AND COMMISSIONING

- 23.1 Wherever, the purchaser's invitation to tender calls for installation and commissioning or supervision of installation and commissioning of the instrument/equipment by the tenderer, the tenderer must clearly and separately quote the prices for the supply of the stores and the charges and the terms for installation and commissioning or supervision of installation and commissioning, as the case may be. The charges towards installation and commissioning should not be included in the price of the stores.
- 23.2 In respect of contracts involving installation and commissioning by vendors including overseas vendors where identifiable charges for the same has been quoted by the vendor, he shall bear the Income-tax liability as per the rates prevailing at the time of undertaking the job in accordance with the Income-tax Act in force in India.

23.3 Wherever, the scope of the contract includes installation and commissioning, it shall be the sole responsibility of the contractor to undertake the installation and commissioning as and when called for, by the Purchaser.

24.0 INSPECTION

24.1 The Contractor shall be responsible for and perform all inspection and testing required in accordance with the contract/purchase order and specifications included therewith.

24.2 The Purchaser may at his option depute his representative for inspection of the stores to be supplied under the contract or authorize and nominate a Quality Surveillance Agency of his choice for the purpose hereinafter called, in either case, the inspection.

24.3 The supplier shall give notice of readiness for inspection to the Purchaser so that the Inspector can be present at the requisite time. In such an event delivery shall not be effected until an authorization or shipping release is obtained from the Purchaser.

24.4 The contractor shall allow reasonable facility and free access to his work/factory and records to the inspector for the purpose of inspection or for ascertaining the progress of delivery under the contract.

25.0 FACTORY REGISTRATION/SHOP & ESTABLISHMENT CERTIFICATE

The tenderers shall upload the copy of the Factory Registration/License or Shop & Establishment Certificate as applicable, along with the tender, failing which the tenders are liable for rejection.

26.0 PRODUCTS WITH ISI MARK

26.1 Products with ISI mark will be preferred.

26.2 In respect of following categories of item, Purchaser will consider offers for products with ISI mark only:

- Fire Extinguisher
- Building Material
- PVC Pipes & fittings
- Agricultural Implements & sprayers
- Medical instruments such as syringes, needles, BP apparatus etc.

27.0 SHOP/FACTORY EVALUATION, QUALITY SURVEILLANCE /INSPECTION AND SUBMISSION OF PROGRESS REPORTS

27.1 The Purchaser or his technical authorities may at his option and prior to evaluation of the tender depute his Inspector or any quality surveillance Agency of his choice to the factory/workshop of the tenderer to assess and establish the manufacturing capability etc. of the tenderer. Similarly, the Purchaser may also depute his inspector/Quality Surveillance agency of his choice for inspection of the plant/machinery/equipment/component during the various stages of manufacture in such an event the tenderer/contractor shall:-

27.1.1 Allow reasonable facility and free access to his factory/work/ records to the Inspector for the purpose of inspection or for ascertaining the progress of manufacture and delivery.

27.1.2 Provide the drawings, toolings, gauges, instruments etc. required for carrying out the inspection work.

- 27.1.3 Produce an inspection plan to the Purchaser's satisfaction notifying him when check points on the plan are imminent.
- 27.1.4 Not supply or deliver the plant/machinery/equipment/ component unless and until a Shipping Release or an authorisation for despatch is obtained in a format provided by the Purchaser. Failure to comply with this instruction will not only result in withholding of the payment to the contractor/supplier, but also hold the tenderer/contractor liable for payment of compensation to the Purchaser due to delay in clearance of the Equipment/plant/machinery/ component from the carriers.

28.0 INSTRUCTION MANUAL

In respect of plant/ machinery/ equipment/ instrument/ apparatus, where instruction/ operation manual is normally necessary to enable the user to put the plant/machinery/equipment/instrument/ apparatus to proper use, the Contractor shall furnish such an instruction/operation manual specific to the stores being supplied along with the plant/machinery/equipment/instrument/apparatus. The Contractor shall clearly specify in the offer about his readiness to supply instruction/operation manual

29.0 PACKING

- 29.1 Tenderers shall note that packing for shipment shall be in accordance with the instructions outlined in this tender document, each package shall be limited to the size and weights that are permissible under the existing Air and Sea limitations. Even when no packing specification is included in the invitation to tender, it will be Supplier's responsibility to provide appropriate packing depending upon the nature of the supply and the transportation and handling hazards.
- 29.2 The equipment shall be so packed and protected as not to suffer deterioration, damage or breakage during shipment and storage in a tropical climate.
- 29.3 Each package shall be properly labeled to indicate the type and quantity of material it contains, the purchase order number, its dimensions and weight and any other necessary data to identify the equipment and relate it to contract.

30.0 DEVIATIONS TO PURCHASER'S SPECIFICATIONS AND CONDITIONS OF CONTRACT

- 30.1 If any deviation or substitution from the technical specifications contained in Section "C" to this tender document is involved, such details should be clearly indicated in Part-I (Techno-Commercial) and should be added as an annexure to Part-I (Techno-commercial) of the tender as otherwise it shall be an admission on the part of the tenderer that he will supply the equipment as specified by the Purchaser. Similarly, deviations to the Purchaser's General Conditions of Contract/Special Conditions of Contract contained in Section "B" of this tender document shall be indicated by the tenderer in another annexure to Part-I (Techno-commercial) of the tenderer.

30.2 Part-II (Price) should be furnished in accordance with the format provided by the Purchaser at Section “D” of this tender document.

31.0 DELIVERY

Tenderer should note that no tender will be considered by the Purchaser unless the Tenderer can meet the delivery schedule specified by the Purchaser. All equipments/machinery/plant/ component covered by this tender document should be supplied on or before _____ or _____ month from the date of approval of drawings or ____ month from the date of receipt of free issue materials. The prices quoted by the tenderer should include all charges involved for direct and safe delivery of the items by Road to the project site of the Purchaser. If a tenderer so desires/separate lumpsum charges for transportation and safe delivery to Purchaser’s site could be furnished. Purchaser will neither undertake responsibility for transit insurance nor pay for it separately. No other, delivery term will be accepted by the Purchaser.

32.0 ACCEPTANCE OF TENDERS

32.1 The purchaser shall be under no obligation to accept the lowest or any other tender and shall be entitled to accept or reject any tender in part or full without assigning any reasons whatsoever.

32.2 Acceptance of tenders by the Purchaser will be sent by fax, E-mail, letter etc. within the validity date of the tender and such a fax, letter etc. would then be followed by a formal purchase order/contract. The tenderer whose offer is accepted will proceed with the execution of the contract on the basis of such advance acceptance of tenders without waiting for a formal purchase order/contract, and will be responsible to seek and obtain whatever clarifications that are necessary from the Purchaser to proceed with the manufacture without waiting for a formal purchase order/contract and delivery period will be reckoned from the date of the Letter of Intent.

33.0 SETTLEMENT OF COMMERCIAL TERMS AND CONDITIONS OF CONTRACT

In case the commercial terms and conditions of sale/contract stipulated in Part-I (Techno-commercial) of the tender submitted by the tenderer are at variance with the Purchaser’s General Conditions of all Contracts/Special Conditions of Contract stipulated in Section “B” of this tender document, the Purchase Officer will settle the commercial terms and conditions of contract with the tenderers chosen for award of the contract by holding discussions with them OR by sending Fax/Letter/E-mail etc. In case the concerned tenderer to whom an intimation thereof is given does not respond/fail to respond to communication sent by the Purchaser within the date specified, his tender is liable for rejection at the discretion of Director, IPR and no complaints whatsoever will be entertained from the tenderer for rejection of this tender. The tenderers should not discuss with the technical authorities/user department any of the commercial terms and conditions of contract and any agreement/understanding reached between the tenderer and the technical authorities will not be valid and binding.

34.0 **COMPLIANCE WITH THE SECURITY REQUIREMENTS OF THE PURCHASER**

The Contractor shall strictly comply with the Security Rules and Regulations of the Purchaser in force and shall complete the required formalities including verification from Police and any other authority and obtain necessary prior permission for entry into the Purchasers premises, wherever authorized by the Purchaser.

35.0 **PAST PERFORMANCE**

In case the past performance of the tenderer is not found to be satisfactory with regard to quality, delivery, warranty obligation and non-fulfillment of terms and conditions of the contract, their offer is liable to be rejected by the purchaser.

36.0 **CAPACITY & FINANCIAL STANDING**

In case it is found that the tenderer does not possess the requisite infrastructure, capacity, capability and their financial standing is not satisfactory, such tender is liable to be rejected by the Purchaser.

37.0 **CONFIDENTIALITY**

Drawings, specifications, prototypes, samples or any other correspondence/details/information provided by the Purchaser relating to the tender or the contract shall be kept confidential by the contractor, and should not be disclosed or passed on to any other person/firm without the prior written consent of the purchaser. This clause shall apply to the sub-contractors, consultants, advisers or the employees engaged by the Contractor.

38.0 **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 the contractor, sub-contractor, consultant, adviser or the employees of the contractor will invite penal consequences under the aforesaid legislation.

39.0 **PROHIBITION AGAINST USE OF THE NAME OF ANY INSTITUTION OF DEPARTMENT OF ATOMIC ENERGY WITHOUT PERMISSION FOR PUBLICITY PURPOSES**

The Contractor or sub-contractor, consultant, adviser or the employees engaged by the contractor shall not use the name of any Institution of Department of Atomic Energy for any publicity purpose through any public media like Press, Radio, TV or Internet without the prior written approval of the Purchaser.

40.0 **FREE ISSUE MATERIAL** *(This clause shall apply only to contracts for supply of fabricated equipment with purchaser's Free Issue Materials (FIM)).*

40.1 Wherever contracts envisage supply of Free Issue Material (FIM) by the Purchaser to the contractor, such Free Issue Material shall be safeguarded by an insurance policy to be provided by the Contractor at his own cost for the full value of such materials and the insurance policy shall cover, the following risks specifically and shall be valid for six months beyond the contractual delivery date.

- **Risk to be covered:** Any loss or damage to the Purchaser's material due to fire, theft, riot, burglary, strike, civil commotion, terrorist act, natural calamities etc. and any loss or damage arising out of any other causes such as other materials falling on purchaser's materials.
- **Insured by:** (Name of the Contractor)
- **Beneficiary:** Institute for Plasma Research, Near Indira Bridge, Bhat, Gandhinagar-382428.
- **Amount for which insurance policy to be furnished:** The amount will be indicated in the respective contract.

Free Issue Material (FIM) will be issued to the Contractor only after receipt of the Insurance Policy from the Contractor. The contractor shall arrange collection of the FIM from the Purchaser's premises and safe transportation of the same to his premises at his risk and cost.

Notwithstanding the insurance cover taken out by the Contractor as above, the contractor shall indemnify the purchaser and keep the Purchaser indemnified to the extent of the value of free issue materials to be issued till such time the entire contract is executed and proper account for the FIM is rendered and the left over/surplus and scrap items are returned to the Purchaser. The contractor shall not utilize the Purchaser's free issue materials for any job other than the one contracted out in this case and also not indulge in any act, commission or negligence which will cause/result in any loss/damage to the Purchaser and in which case, the Contractor shall be liable to the Purchaser to pay compensation to the full extent of damage/loss. The Contractor shall be responsible for the safety of the free issue materials after these are received by them and all through the period during which the materials remain in their possession/control/ custody. The free issue materials on receipt at the Contractor's works shall be inspected by them for ensuring safe and correct receipt of the material. The Contractor shall report the discrepancies, if any, to the Purchaser within 5 days from the date of receipt of the material. The Contractor shall take all necessary precautions against any loss, deterioration, damage or destruction of the FIM from whatever cause arising whilst the said materials remain in their possession/custody or control. The FIM shall be inspected periodically at regular intervals by the Purchaser for ensuring safe preservation and storage. The contractor shall also not mix up the FIM with any other goods and shall render true and proper account of the materials actually used and return balance remaining unused material on hand and scrap along with final product and if it is not possible within a period of one month from the date of delivery of the final product covered by this purchase order. The Contractor shall also indemnify the Purchaser to compensate the difference in cost between the actual cost of the FIM lost/damaged and the claim settled to the Purchaser by the insurance company. The decision of the Director, Institute for Plasma Research, as to whether the Contractor has caused any loss, destruction, damage or deterioration of the FIM while in his possession, custody or control from

whatever cause arising and also on the quantum of damage suffered by the government, shall be final and binding upon the Contractor.

41.0 EXPORT LICENCE/EXPORT PERMISSION

41.1 It is entirely the responsibility of the vendors who are quoting for materials of foreign origin to ensure obtaining export permission/licence/authorisation as required from the respective Government before arranging shipment. This Department would not accept post supply inspection by any agency/authority of any foreign country. It is, therefore, necessary that the vendors offering materials from foreign countries shall have thorough knowledge of export contract regulations in vogue in those countries.

41.2 The vendors shall indemnify the purchaser against any consequences in respect of any end-use declaration they/their overseas Principals may furnish to the government/government agencies of the country of origin of the materials, while seeking export permission/licence. Post supply inspection, contrary to the terms and conditions of purchaser's contract shall be deemed to be null and void.

42.0 END USE CERTIFICATE

42.1 Whenever an End-use Certificate is desired by the vendor, the same shall be clearly mentioned in the quotation and the purchaser shall provide an Enduser Certificate as per the format given below. The Purchaser will not provide any other document/declaration in this regard.

END USER STATEMENT:

"We hereby certify that the item/s i.e. _____, being procured from M/s _____ against our Purchase Order No. _____ dated _____ will be used for _____. We also certify that the item/s will not be used in designing, developing, fabricating or testing of any chemical, biological, nuclear, or weapons of mass destruction or activities related to it. It is further certified that we will not re-export the Item/s prior to obtaining permission from the concerned authorities as may be required".

43.0 COUNTRY OF ORIGIN

43.1 Wherever the tenders are for imported stores, the Country of Origin of the stores must be clearly specified in the quotation.

44.0 LIABILITY

44.1 Vendors shall be liable for any damage to the purchaser or any third party out of any patent or latent defect in the goods supplied by him or sub-standard services rendered by him.

45.0 RIGHT TO REJECT QUOTATION

45.1 The Purchaser reserves the right to reject any quotation, which is not in conformity with the above instructions.

45.2 The Purchaser also reserve the right to reject any quotation without assigning any reason whatsoever.

46.0 **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.

47.0 **PERMANENT ACCOUNT NUMBER (PAN)**

47.1 Vendors are required to upload a true copy of the PAN Card/Letter issued by the Income-tax Department, failing which the tenders are liable to be rejected.

48.0 MSE bidders should declare their UAM (Udyog Aadhar Memorandum) number on CPPP portal to avail benefits as per Public Procurement Policy for MSE's order 2012.

49.0 The bidder shall not be under a declaration of ineligibility for corrupt or fraudulent practices or blacklisted with any of the Government Agencies.

Any additional conditions attached to this Invitation to Tender shall also form part of the contract conditions.

SECTION 'B'

**GENERAL CONDITIONS OF
CONTRACT**

**INSTITUTE FOR PLASMA RESESARCH
PURCHASE SECTION**

**GENERAL CONDITIONS OF ALL
CONTRACT**

&

**SPECIAL CONDITIONS OF CONTRACT
GOVERNING SUPPLIES OF
PLANT AND MACNHINERY**

GENERAL CONDITIONS OF CONTRACT

1. DEFINITIONS

- 1.1 The term 'PURCHASER' means the Institute for Plasma Research or its successors or assigns.
- 1.2 The term 'PARTICULARS' means the following:
 - 1.2.1 Specification
 - 1.2.2 Drawing
 - 1.2.3 Sealed pattern denoting a pattern sealed and signed by the Inspector
 - 1.2.4 Proprietary make denoting the produce of an individual firm
 - 1.2.5 Any other details governing the construction manufacture and/or supply as existing for the contract.
- 1.3 The term 'CONTRACTOR' or 'SUPPLIER' means, firm or company with whom or with which the order for the supply of stores is placed and shall be deemed to include the Contractors/Successors (approved by the Purchaser), representatives, heirs, executors and administrators unless excluded by the contract.
- 1.4 The term 'CONTRACT' or 'PURCHASE ORDER' means and comprises of a Letter or Email or ink signed or digitally signed document conveying acceptance of Contractor's offer and invitation to tender, tender containing offer, advance acceptance of offer, general and special conditions of contract specified in the acceptance of offer and any subsequent amendments/alterations thereto made on the basis of mutual agreement.
- 1.5 The term 'STORES' or 'MATERIAL' means, the goods specified in the contract/purchase order which the contractor has agreed to supply under the contract.
- 1.6 The term 'SUB-CONTRACTOR' or 'SUB-SUPPLIER' means any contractor or supplier engaged by the contractor or the supplier with the prior approval of the Purchaser in relation to the contract/purchase order.
- 1.7 The term 'INSPECTOR' or 'QUALITY SURVEYOR' means any person nominated and deputed by the purchaser or their appointed Consultants or Quality Surveillance Agency or any other person from time to time authorized by the Purchaser to act as his representative for the purpose of inspection of stores under the contract/purchase order.

2. AUTHORITY OF PERSON SIGNING THE CONTRACT ON BEHALF OF THE CONTRACTOR

The person signing the contract or the purchase order or any other document in respect of the contract or purchase order on behalf of the contractor shall be deemed to warrant that he has the authority to bind the contractor.

3. SUBLETTING OF CONTRACT OR BILLS OR ANY BENEFIT ACCRUING THEREFROM

- 3.1 The Contractor shall not sublet, transfer or assign the Contract or any part thereof or bills or any other benefits, accruing therefrom or under the contract without the prior written consent of the Purchaser (All Sub-contractors are required to be appraised and approved by the Purchaser before placement of orders by the Contractor/Supplier). However, such consent shall not be unreasonably withheld by the Purchaser, if such stores are not normally manufactured by the Contractor, such assignment or subletting shall not relieve the Contractor from any contractual obligation or responsibility under the Contract.
- 3.2 Any breach of this condition shall entitle the Purchaser to cancel the Contract or any part thereof and to purchase from other sources at the risk and cost of the Contractor and shall recover from the Contractor damages arising from such cancellations.
- 3.3 In case the Contractor sublets, transfers or assigns any part of the Contract with the prior written consent of the Purchaser, all payments to the Sub-Contractor shall be the responsibility of the Contractor and any requests from such sub-Contractor shall not be entertained by the Purchaser.

4. SECURITY DEPOSIT

- 4.1 On acceptance of tender, the Contractor shall at the option of the Purchaser and within the period specified by him, submit a Bank Guarantee from SBI or any one of the nationalized banks or reputed private banks, viz. AXIS Bank, ICICI Bank, IDBI Bank and HDFC Bank towards Security Deposit not exceeding 10% (ten percent) of the tendered value of the contract/purchase order valid till at least 2 months beyond the acceptance date of the material, as the Purchaser shall specify.
- 4.2 If the Contractor is called upon by the Purchaser to submit Security Deposit and the contractor fails to provide the same within the period specified such failure shall constitute a breach of the Contract and the Purchaser shall be entitled to make other arrangements for the repurchase of the stores contracted for at the risk and expenses of the Contractor in terms of clause 9.2.4 hereof and/or recover from the Contractor damages arising from such cancellation. No claim shall lie against the purchaser either in respect of interest if any due on Security Deposit or depreciation in value.
- 4.3 Offers wherein contractors declined to submit Security Deposit are liable to be rejected.

5. DRAWINGS & SPECIFICATIONS

- 5.1 The drawings and specifications are intended to be complementary and to provide for an comprise everything necessary for the completion of supply. Any material shown on the drawing even if not particularly described in specifications or vice versa is to be supplied by the Contractor as if it were both shown and specified.

- 5.2 Should any discrepancy be noted in the drawings and/or specifications and should any interpretation of the same be required, the matter shall be referred to the Purchaser for clarification which shall be binding upon the contractor. Otherwise, the contractor shall assume responsibility for the interpretation of the drawings and specifications including interpretation by his sub-contractors.
- 5.3 Should any difference or dispute arise with regard to the true intent and meaning of drawings or specification or should any portion of the same be obscure or capable of more than one interpretation, the same shall be decided by the Purchaser whose decision shall be final.
- 5.4 All lettering on the drawings is to be considered as part of the specification and contract. In all cases figured dimensions are to be followed rather than those indicated by scale. Large scale drawings will take precedence over small scale drawings.
- 5.5 The contractor's drawings shall, when approved by the Purchaser, be deemed to be included in the list of drawings which form part of the contract. The Contractor shall not proceed with fabrication until all drawings associated therewith have been duly approved by the Purchaser.
- 5.6 The Contractor shall be responsible for and shall pay for any alterations of the stores and shall indemnify the Purchaser for any consequential expenditure incurred by the Purchaser due to any discrepancies, errors, omissions in the drawings or other particulars supplied by him whether such drawings or specifications have been approved by the Purchaser or not, provided that such discrepancies, errors or omissions be not due to inaccurate information or specifications furnished to the contractor on behalf of the Purchaser.
- 5.7 **General Warranty**
- 5.7.1 The stores supplied by the contractor under the contract shall be of best quality and workmanship. The contractor shall supply the stores in accordance with the contract specifications unless any deviation has been expressly specified in the contract and any amendments agreed thereto.
- 5.7.2 The contractor's offer to supply stores in accordance with the tender specifications shall be deemed to be in admission on his part that he has fully acquainted himself with the details thereof and no claim shall lie against the Purchaser on the ground that the contractor did not examine or acquaint himself fully with the tender specifications.
- 5.8 **Contractor's Liability for Defective Stores**
- 5.8.1 For a period of twelve months after the stores have been accepted by Purchaser the Contractor shall be responsible for any defects that may be discovered therein notwithstanding that such defects could have been discovered at the time of inspection or any defects therein are found to have developed under proper use, arising from faulty materials, design or workmanship and the Contractor shall remedy all such defects as aforesaid at his own cost provided he is called upon within a period of 14 months from the date of acceptance thereof to do

so, by the Purchaser who shall state in writing in what respect the goods are faulty and further if in the opinion of the Purchaser the defects are of such a nature that it is necessary to replace or renew any defective stores, such replacement or renewal shall be made by the Contractor without any extra costs to the Purchaser, provided notice informing the Contractor of the defect is given by the Purchaser within the said period of 14 months. The decision of the Purchaser notwithstanding any prior approval or acceptance of the Inspector as to whether or not the stores delivered are defective or any defect has developed within the said period of twelve months or as to whether the nature of defects renewal or replacement shall be final conclusive and binding on the Contractor.

6. ALTERATIONS

- 6.1 The Purchaser may, from time to time, make changes in the drawings specifications and issue additional instructions without altering the purchase order in any manner provided that no changes shall have been ordered which materially alter the character and scope of the supply under the contract.
- 6.2 It shall be lawful for the parties to the contract to alter by mutual consent at any time and from time to time the drawings and specifications and as from the dates specified by him stores to be supplied shall be in accordance with such altered drawings and specifications provided that if any such alterations involve increase or decrease in the cost of or in the period required for production, a revision of the contract price and/or the period prescribed for delivery shall be made by mutual agreement in respect of the stores to which the alteration applies. In all other respects, the contract shall remain unaltered.

7. SAMPLES

- 7.1 Samples submitted for any reason shall be supplied without charge and freight paid without any obligation of the Purchaser as regards safe custody or safe-return thereof. All samples submitted must be clearly labelled with the Contractor's name and address and tender number. If the Contractor submits the sample with his tender the same shall not govern the standard of supply except when it has been specifically stated in the Purchase Order that it is accepted instead of any sealed pattern. Should certified samples be lent to the Contractor by the Purchaser, the Contractor is responsible for the return in perfect order of all certified samples with the labels intact.

8. PACKING

- 8.1 The contractor shall be held responsible for the stores being sufficiently and properly packed for transport by rail, road, sea or air so as to ensure their being free from any loss or damages on arrival at their destination. The packing and marking of packages shall be done by and at the expenses of the Contractor. Each package shall contain a Packing

Note quoting Purchase Order number and date and showing its contents in detail.

- 8.2 Unless otherwise provided in the contract all containers (including packing cases, boxes, tins, drums and wrappings) in which the stores are supplied by the contractor shall be considered as property of the Purchaser and their cost as having been included in the contract price.

9. DELIVERY:

9.1 TIME FOR AND DATE OF DELIVERY, THE ESSENCE OF THE CONTRACT:

The time for and the date of delivery of the stores stipulated in the purchase order/contract shall be deemed to be of the essence of the contract and delivery must be completed not later than the date/dates stipulated.

9.2 EXTENSION OF DELIVERY SCHEDULE

- 9.2.1 If any delay in delivery shall have arisen from any cause such as strike, Lock-outs, fire, accidents, riot or the like which the purchaser may admit as reasonable ground for grant of extension of delivery schedule, the purchaser will allow such additional period for the purpose as he may consider necessary taking the circumstances into consideration.
- 9.2.2 If the contractor fails to deliver the stores or any instalment or part thereof within the period fixed for such delivery or such additional period allowed by the purchaser in accordance with foregoing paragraphs or any time before the expiry of such period repudiates the contract, the Purchaser may without prejudice to the rights of the purchaser.
- 9.2.3 Recover from the contractor as Liquidated Damages and not by way of penalty as detailed under clause No.222 given herein below for any stores which the contractor has failed to deliver within the period fixed for delivery in the contract or such additional period as mentioned in paragraph 9.2.1. during which the delivery of such stores, may be in arrears where delivery thereof is accepted after expiry of the aforesaid period. (For the purpose of computing the damages for delayed supplies under the clause, the cost of the entire plant/machinery/equipment/instrument will be taken into consideration if the plant/machinery/equipment/instrument cannot be put to the intended use for want of delayed portion of supply).
- 9.2.4 Purchase or authorise the purchase elsewhere without notice to the contractor, on account and at the risk of the contractor of the stores not so delivered or others of a similar description (where stores exactly complying with the contract specification are not in the opinion of the Purchaser, which opinion shall be final, readily procurable) without cancelling the contract in respect of the portion instrument not yet due of delivery, OR
- 9.2.5 Cancel the contract or portion thereof and if so desired purchase or authorise purchase of the stores not so delivered or others of a similar description (where stores exactly complying with the contract specification are not in the opinion of the Purchaser, which opinion shall be final, readily procurable) at the risk and cost of the contractor, if the contractor had defaulted in the performance of the original contract, the purchaser shall have the right to ignore his offer in response to risk purchase enquiry even though the lowest.

- 9.2.6 Where action is taken under sub-clause 9.2.4 or sub-clause 9.2.5 above the contractor shall be liable for any loss which the purchaser may sustain on that account provided that the repurchase, or if there is an agreement to repurchase then such agreement, is made within a reasonable period from the date of such failure, depending upon the nature / merit of the purchase and in case of repudiation of the contract before the expiry of the aforesaid period of delivery, shall not be entitled to any gain on such purchase and the manner and method of such purchase shall be in the entire discretion of the Purchaser. It shall not be necessary for the purchaser to serve a notice of such purchase on the contractor.

10. INSPECTION

- 10.1 The contractor shall be responsible for and perform all inspection and testing required in accordance with the contract/purchase order and specifications included herewith.
- 10.2 The Purchaser may at his option depute his representative for Inspection of the stores to be supplied under the contract or authorize and nominate a Quality Surveillance Agency of his choice for the purpose hereinafter called, in either case, the inspection.
- 10.3 The contractor shall give notice of readiness for inspection to the Inspector (deputed under clause 10.2 above) so that the Inspector can be present at the requisite time. In such an event delivery shall not be effected until an authorization or shipping release is obtained from the Purchaser's Inspector.
- 10.4 The contractor shall allow reasonable facility and free access to his work/factory and records to the inspector for the purpose of inspection or for ascertaining the progress of delivery under the contract.

11. RECTIFICATION AND REPLACEMENT OF DEFECTIVE STORES

- 11.1 If the inspector find that the contractor has executed any unsound or imperfect work, the inspector shall notify such defects to the contractor and the contractor on receiving the details of such defects or deficiency, shall at his own expenses, within seven days or otherwise within such time as may be mutually agreed upon as reasonably necessary, proceed to alter, reconstruct or remanufacture the stores to the requisite standard and specifications as called for by the tender specification.

12. INSPECTION AND REJECTION

- 12.1 **Inspection and Rejection:** The stores shall be tendered by the Contractor for inspection at such places as may be specified by the Inspector, at the Contractor's own risk, expenses and costs and shall lie at such places of inspection at the risk of the Contractor and the stores will be subject to inspection and test as may be considered necessary by the inspector and his decision as regards rejection of goods shall be final and binding on the Contractor. If any goods are rejected as aforesaid, then without prejudice to the foregoing provision, the Purchaser shall be at liberty to
- 12.1.1 Allow the Contractor to re submit without prejudice to the Purchaser's right to claim and recover Liquidated damages as provided in clause 9.2.3 hereof, stores in replacement of those rejected within a time specified by the Purchaser (which time shall be essence of the contract), the contractor bearing the

- cost of freight for such replacement without being entitled to any extra payment, or
- 12.1.2 Buy the quantity of stores rejected or others of a similar nature elsewhere at the risk and cost of the Contractor in accordance with the provisions contained in second paragraph of clause 9.2.4 thereof without effecting the Contractor's liability as regards the supply of any further consignments due under the Contract, or
- 12.1.3 Terminate the Contract and recover from the Contractor the loss Purchaser thereby incurred
- 12.2 **Removal of rejection:** Any stores submitted for inspection and rejected by the Inspector must be removed by the Contractor within fourteen days from the date of receipt of intimation of rejection, provided that in the case of dangerous infected or perishable stores, the Inspector (whose decision shall be final) shall notify the Contractor to remove such stores within 48 hours of receipt of intimation of rejection and it shall be the duty of the Contractor to remove them accordingly. Such rejected stores shall lie at the Contractor's risk from the time of such rejection and if not removed within the aforementioned time, the Purchaser shall have the right either to return the rejected stores to the Contractor at the Contractor's risk by such mode of transport as Purchaser may select or to dispose off or segregate such stores as he thinks fit at the Contractor's risk and on his accounts and to appropriate such portion of the proceeds as may be necessary to cover any loss or expenses incurred by the Purchaser in connection with the said sale. Freight to destination of stores rejected after examination at destination shall be recoverable from the Contractor at the Tariff Rate.
- 12.3 **Test Certificate and Guarantees:** Test Certificate Guarantees, if required by the Inspector shall be obtained and furnished by the Contractor free of costs.

13. RECOVERY OF SUMS DUE

- 13.1 Whenever any claim for payment of, whether liquidated or not, moneys arises out of or under this contract against the Contractor the Purchaser shall be entitled to recover sum by appropriating, in part or whole, by encashing the Bank Guarantee submitted towards Security deposit by the Contractor, if a Security Deposit is taken against the Contract. In the event of the security being insufficient or no Security Deposit has been taken from the Contractor then the balance or the total sum or which at any time hereafter may become due to the Contractor under this or any other contract with the Purchaser, should this sum be not sufficient to cover the full amount recoverable, the Contractor shall pay to the Purchaser on demand the remaining balance due. Similarly, if the Purchaser has or makes any claim, 'whether liquidated or not against the Contractor under any other contract with the Purchaser the payment of all moneys payable under the contract to the contractor including the security deposit shall be withheld till such claims of the Purchaser are finally adjudicated upon and paid by the Contractor.
- 13.2 All demurrage, wharfage and allied expenses incurred by the Purchaser, if any, due to delayed clearance of Stores in view of non receipt, incomplete or delayed receipt of documents by the Purchaser, shall be recovered from the payment due to the Contractor.

14. BAR/PERT CHART

- 14.1 The contractor at the discretion of the Purchaser shall submit the BAR/PERT chart indicating various activities from the date of purchase order to handing over of the stores.

15. PERFORMANCE BANK GUARANTEE

- 15.1 In the event of acceptance of the offer in respect of plant, machinery, equipment, instrument, etc. the tenderer will be required to submit a performance bank guarantee for 10% of the total value of the stores inclusive of all statutory levies and other charges admitted in the contract, from SBI/any nationalized bank or private sector banks, namely, ICICI Bank, IDBI Bank, HDFC Bank and AXIS Bank, on a non-judicial stamp paper of appropriate value valid till 2 months beyond the expiry date of warranty period as per the Purchaser's format towards satisfactory performance of the plant, machinery, equipment, instrument, etc. during the warranty period. In case of bids in currency other than INR performance bank guarantee shall be furnished from any bank of international repute.
- 15.2 In case of non-submission of performance bank guarantee by the Contractor, an amount equivalent to 10% of the total value of the stores and other charges admitted in the contract will be retained by the purchaser till the expiry of the warranty period of the stores.
- 15.3 Offers of the tenders who are not agreeable to furnish performance bank guarantee or retaining of an equivalent amount by the purchaser as per clause No.15.1 and 15.2 above, are likely to be rejected.

16. PERMIT AND LICENCES

- 16.1 The contractor shall secure and pay all licenses and permit at his end which he may be required to comply with all laws ordinances and regulations of the public authorities in connection with the performance of his obligations under the contract. The contractor shall be responsible for all damages and shall indemnify and save the purchaser harmless from against all claims for damages and liability which may arise out of the failure of the contractors to secure and pay for any such licenses and permits or to comply fully which any and all applicable laws ordinances and regulations.

17. PATENTS & PATENT RIGHTS INDEMNIFICATION

- 17.1 The Contractor shall indemnify and keep indemnified the Purchaser from and against any and all claims, actions, costs, charges and expenses arising from or for infringement of patent rights, copy right or other protected rights, of any design plans, diagrams, drawings in respect of the stores supplied by the contractors or any of the manufacturing methods or process adopted by contractor for the stores supplied under the contract.
- 17.2 In the event of any claim being made or action being taken against the purchaser in respect of the matter referred to clause 17.1 above, the contractor shall promptly be notified thereof and he shall at his own expense, conduct all negotiations for the settlement of the same and any litigation that may arise therefrom.
- 17.3 In the event of any designs, drawing, plans or diagrams or any manufacturing methods or process furnished by the contractor constituting infringement of patent or any other protected rights and use thereof is restrained, the contractor shall procure for Purchaser, at

no cost to the latter, the rights to continue using the same or to the extent it is possible to replace the same so as to avoid such infringement and subject to approval by the Purchaser or modify them so that they become non-infringing, but such modifications shall otherwise be to the entire satisfaction of the Purchaser.

- 17.4 The provision of the clause remains effective and binding upon the Contractor even after the completion, expiration or termination of the contract.

18. LAW GOVERNING THE CONTRACT

- 18.1 This Contract shall be governed by the laws of India for the time being in force. The marking of all stores supplied must comply with the requirements of India Acts relating to Merchandise Marks and all the rules made under such Acts.

19. JURISDICTION

- 19.1 The Courts within the local limits (i.e. Gandhinagar) of whose jurisdiction the place from which the purchase order is issued is situation only shall, subject to Arbitration Clause, have jurisdiction to deal with and decide any matter out of this Purchase Order/Contract.

20. SETTLEMENT OF DISPUTES

- 20.1 The Purchaser and the Contractor shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the Contract.
- 20.2 If the parties have failed to resolve their dispute or difference by such mutual consultation, then either the Purchaser or the Supplier may give notice to the other party of its intention to commence arbitration, as hereinafter provided, as to the matter in dispute, and no arbitration in respect of this matter may be commenced unless such notice is given. Any dispute or difference in respect of which a notice of intention to commence arbitration has been given in accordance with this Clause shall be finally settled by arbitration. Arbitration may be commenced prior to or after delivery of the Goods under the Contract.

21. ARBITRATION

- 21.1.1 In the event of any dispute or difference arising out or of in connection with any of the terms and conditions of the Purchase Order/Contract, the matter shall be referred to the Director, IPR for settlement. In case the parties to the Purchase Order are not in a position to settle the dispute mutually, the matter shall be referred to a Sole Arbitrator to be appointed in accordance with the Arbitration & Reconciliation Act, 1996 & Arbitration and Conciliation (Amendment) Act, 2015 as amended time to time.

22. LIQUIDATED DAMAGES

- 22.1 As per Standard Terms & conditions, the Purchaser reserves the right to levy the Liquidated Damages, for delay in supply beyond the contractual delivery date at the rate of half percent (0.5 percent) of the total Contract price (Basic price) for each calendar week of delay. The total liquidated damages shall not exceed five percent (5%) of the contract price (Basic price). Stores/Goods will be deemed to have been delivered only when all its component parts are also delivered. If certain

components are not delivered in time, the Stores/Goods will be considered as delayed until such time as the missing parts are delivered.

- 22.2 Where the Contract entered into is a composite one with supply cum erection and installation/commissioning activities and the completion of erection and installation/commissioning is delayed irrespective of the fact that whether supply of material has been made within the original delivery period, the contract is to be considered as a whole and Liquidated Damages will be recovered on the total contract value.

23. EXERCISING THE RIGHTS AND POWERS OF THE PURCHASER

- 23.1 All the rights, discretions and powers of the Purchase under the contract shall be exercisable by and all notices on behalf of the Purchaser shall be given by the Purchase Officer and any reference to the opinion of the Purchaser in the terms and conditions contained in these General Conditions of all Contracts shall mean and be construed as reference to the opinion of any of the persons mentioned in this clause.

24. TRAINING

- 24.1 The successful tenderer shall, if required by the Purchaser, provide facilities for the practical training of Purchaser's engineering or technical personnel for their active association on the manufacturing process throughout the manufacturing period of the Contract/stores, number of such personnel to be mutually agreed upon. If demanded by the Purchaser, such training shall be conducted at Purchaser's site by the Contractor free of charge. The duration of training shall be mutually decided upon by the Purchaser and the Contractor.

25. RISK PURCHASE

- 25.1 In the event supplier fails to fulfill the contractual obligations as per the terms and conditions of the Contract, the Purchaser has an option of completing the Contract at the risk and expenses of the Contractor. While initiating risk purchase at the risk and expenses of the supplier, the Purchaser must satisfy himself that the supplier has failed to deliver and he has been given all the opportunities as per the Contract to execute the Contract and also adequate and proper notice. Wherever risk purchase is resorted to, the supplier is liable to pay the additional amount spent by the government, if any as compared to contracted amount. All the factors including the method of recovering such amount should also be considered while taking a decision to invoke the risk purchase.

26. LIEN IN RESPECT OF CLAIMS IN OTHER CONTRACTS

- 26.1 Any sum of money due and payable to the Contractor under any contract may be withheld or retained by way of lien by the purchaser or any other person or persons contracting through the Director, IPR against any claim of the Purchaser or such other person or persons in respect of payment of a sum of money arising out of or under any other contract made by the contractor with the Purchaser or with other such person or persons.
- 26.2 It is an agreed term of the contract that the sum of money so withheld or retained under this clause by the Purchaser will be kept withheld or retained as such by purchaser till this claim arising out of in the same

contract or any other contract is either mutually settled or determined by the arbitrator, and that the contractor shall have no claim for interest or damages whatsoever on this account or on any other ground in respect of any sum of money withheld or retained under this clause and duly notified as such to the contractor.

SPECIAL CONDITIONS OF CONTRACT GOVERNING SUPPLIES OF PLANT AND MACHINERY

In addition to the General Conditions of Contract hereinbefore set out the following special conditions shall apply to contracts for the supply of Plant and Machinery and manufactured equipment. These Special Conditions where they differ from the General Conditions shall over-ride the later.

27. DEFINITION OF PLANT

27.1 The word "PLANT" wherever, appears in these "Special Conditions of Contract governing supplies of Plants and Machinery" shall mean all machinery, plants, equipment or parts thereof or what the Contractor agrees to supply under contract as specified in the Purchase Order.

28. MISTAKES IN DRAWING

28.1 The Contractor shall be responsible for and shall pay for an alterations of the works due to any discrepancies, errors or omissions in the drawings or other particulars supplied by him whether such drawings or particulars have been approved by the Purchaser or not.

29. RESPONSIBILITY FOR COMPLETENESS

29.1 All fittings or accessories which may not be specifically mentioned in the specification but for which are usual or necessary, are to be provided by the Contractor without extra charge and the plant must be complete in all respects.

30. REJECTION OF DEFECTIVE PLANT

30.1 If the completed plant or any portion thereof before it is finally accepted is found to be defective or fails to fulfill the requirements of the contract, the Purchaser shall give the Contractor notice setting forth with the details of such defects or failure and the contractor shall forthwith rectify the defective plant or alter the same to make comply with the requirement of the contract. Should the contractors fail to do so within a reasonable time the Purchaser may reject and replace at the cost of the Contractor, the whole or any portion of the Plant as the case may be, which is defective or fails to fulfill the requirement of the contract. Such replacement shall be carried out by the Purchaser within a reasonable time and at reasonable price and where reasonably possible to the same specifications and under competitive conditions. The Contractor shall be liable to pay to the Purchaser the extra cost, if any, of such replacement delivered and or erected as provided for in the contract such extra cost being the difference between the price paid by the Purchaser under the provisions above mentioned for such replacement and the contract price for them. Contractor shall refund to Purchaser any sum paid by the Purchaser to the Contractor in respect of such defective plant.

31. INSPECTION AND FINAL TESTS

31.1 All tests necessary to ensure that the plant complies with the particulars and guarantees shall be carried out at such place or places as may be determined by the inspector. Should, however, it be necessary for the final tests as to performance or guarantees to be held over until the Plant is erected at site they shall be carried out within

one month of completion of erection.

32. TRANSPORT AND RESPONSIBILITY FOR BREAKAGES EN-ROUTE

- 32.1 Unless otherwise specified the Purchaser will take delivery of the plant from the place named in the purchase order but the contractor will be responsible for any damage which may be caused to the Plant during transit to the site of erection thereof.

33. ERECTION AND COMMISSIONING

- 33.1 In all cases where contracts provide for supervision of erection and commissioning or for test at the Purchaser's premises the Purchaser except where otherwise specified, shall provide free of charge, such labour, materials, fuels, stores, apparatus and instruments as may be required from time to time and as may reasonably be demanded by the contractor to carryout efficiently such supervision of erection and commissioning and for the requisite test. In case of contracts requiring electricity for the completion of erection, commissioning and testing at site, such electricity shall be supplied free to the contractor.
- 33.2 Action by the Purchaser under the clause shall not relieve the contractor of his warranty obligations under the contract.

34. WARRANTY

- 34.1 The contractor warrants that stores to be supplied under the contract shall be free from all defects and faults in materials, workmanship and manufacture and shall be of the highest grade and consistent with the established and generally accepted standards for stores of the types under the contract in full conformity with the specifications, drawings or samples, if any and shall if operable, operate properly. This warranty shall expire (except in respect of complaints notified to the contractor prior to such date) twelve months after the date of receipt of the last lot of stores under the contract at the ultimate destination stipulated in the contract.
- 34.2 For a period of twelve calendar months after the plant/machinery/equipment/instruments has been put into operation (or a suitable mutually agreed longer period to be reckoned from the date of last major shipment depending upon the nature of the plant/machinery/equipment/instrument) the Contractor shall be responsible for any defects that may develop under conditions provided for the contract and under proper use, arising from the faulty materials, design or workmanship in the plant or from faulty erection of the plant by the Contractor, but otherwise and shall rectify such defects at his own cost when called upon to do so by the Purchaser who shall state in writing such defects.
- 34.3 If it becomes necessary for the Contractor to replace or renew any defective portions of the plant for purpose of rectification under this clause, the provisions of this clause shall apply to the portions of the plant so replaced or renewed under the expiration of six months from the date of such replacement or renewal or until the end of the above mentioned period of twelve months whichever may be the later. If any defects not rectified within reasonable time, the purchaser may proceed to get the work done at contractor's risk and expenses but without prejudice to any other rights which the Purchaser may have against the Contractor in respect of such defects as provided in clause 9.2.4 or 9.2.5.

- 34.4 All inspections adjustments, replacements or renewals carried out Contractor during the warranty period shall be subject to the same conditions as in the contract.
- 34.5 Contractor shall, spare parts of equipment before going out of production, give adequate advance notice to the purchaser so that the latter may order requirement of spares in one lot if so desires.
- 34.6 The contractor shall further guarantee that if spare parts go out of production, will make available blue prints, drawings of spare parts and specifications of material at no cost to the Purchaser, if and when required in connection with the equipment to enable Purchaser to fabricate or procure spare parts from other sources.
- 34.7 The provision of this clause shall remain effective and binding upon the Contractor even after the completion or expiration of the contract and till the plant/machinery/equipment supplied under the contract is in use by the Purchaser.

35. MODE OF PAYMENT

- 35.1 Unless otherwise agreed to in writing between the Purchaser and the Contractor, payment for the delivery of the material will be made as follows.
- Within 30 days from the date of final acceptance and on receipt of Performance Bank guarantee for 10% of the contract value amount from SBI/nationalized banks or any one of the scheduled banks mentioned in the bracket (Axis Bank, HDFC Bank, ICICI Bank and IDBI Bank) valid through out the guarantee period mentioned in the contract/purchase order.**
- 35.1.1 In case any of the vendors seek advance or progressive payment prior to delivery of the material, such requests can be considered only in exceptional cases of large value items, in which case the vendor will be required to furnish a bank guarantee for an equivalent amount of the advance/progressive payment sought for, valid till the execution of the contract. The bank guarantee shall be got executed as per the Purchaser's format from the State Bank of India (SBI)/nationalized banks or any one of the scheduled banks mentioned in the bracket (Axis Bank, HDFC Bank, ICICI Bank and IDBI Bank).
- 35.1.2 Besides, the offers of the vendors seeking advance/progressive payment will be evaluated by loading 12% interest charges per annum on the amount of advance desired up to the delivery period quoted.
- 35.1.3 In case any of the vendors seek pro-rata payment for the stores to be supplied they should clearly mention in their offer the maximum number of installments of supply. However, such installment delivery and pro-rata payment will be considered only in respect of contract involving large value and sizeable quantity of the item and the maximum number of installments shall be normally restricted to four. Acceptance or otherwise of this condition is reserved by the purchaser.
- 35.1.4 **Bank Charges:** All bank charges to be borne by the Contractor/Supplier.
- 35.1.5 No correspondence will be entertained within 30 days from the date of receipt of material and bills, whichever is later.
- 35.1.6 **Interest for delay in supply beyond the contractual delivery date:** Wherever advance payments are sought for by the contractor and

admitted in the contract, against Bank Guarantee for equivalent amount, in the event of any delay in supply beyond the contractual delivery date for reasons attributable to the contractor, interest charges @ 12% shall be levied for the period beyond the contractual delivery date, on the amount of balance advance payment to be adjusted.

36. DELAY IN ERECTION

36.1 Wherever erection of a plant or machinery is the responsibility of the Contractor as a term of the contract and in case the Contractor fails to carry out the erection as and when called upon as to do within the period specified by the Purchaser, the Purchaser shall have right to get the erection done through any source of his choice. In such an event, the contractor shall be liable to bear any additional expenditure that the Purchaser may incur towards erection. The Contractor shall, however, not be entitled to any gain due to such an action by the Purchaser.

SECTION 'C'

**TECHNICAL SPECIFICATIONS
OF
STORES AND DRAWINGS**

Please refer tender document

SECTION 'D'

FORMAT FOR SUBMISSION OF PART-II (PRICE)

Please refer tender document

TENDER FORM
INSTITUTE FOR PLASMA RESEARCH
(An Aided Institute of
Department of Atomic Energy, Government of India)
Near Indira Bridge; Bhat; Gandhinagar-382428; India

Following terms are replaced in our Form for Tender No.IPR/TN/PUR/TPT/ET/19-20/17 dated 15/7/2019.

- 1) Sr.No.3.1 (Section-A) under heading “Earnest Money Deposit (EMD)” of Form No.IPR-LP-ET-02.V5 (Terms and Conditions) is replaced with the following:
The Tenderer shall submit, as part of its bid, interest free Earnest Money Deposit (EMD) for an amount as specified in the Tender Notice. EMD shall be submitted by way of Demand Draft from **SBI/nationalized banks or any one of the scheduled banks mentioned in the bracket (Axis Bank, HDFC Bank, ICICI Bank and IDBI Bank)** issued in favour of **"Institute for Plasma Research"** and payable at **Ahmedabad. Tender received without EMD will be rejected at the discretion of IPR.**

(Copy of Demand Draft to be uploaded with the quotation, Original DD should be sent to IPR on or before the specified closing date and time)

- 2) Sr.No.3.4 (Section-A) under heading “Earnest Money Deposit (EMD)” of Form No.IPR-LP-ET-02.V5 (Terms and Conditions) is replaced with the following:
Exemption from payment of EMD: The firms registered with DGS&D, NSIC, DPS or Micro & Small Enterprises (MSEs) which are actual producers/manufacturers of tendered items are exempted from payment of EMD provided valid registration certificate is uploaded along with the offer.

- 3) Sr.No.18 (Section-A) under heading “Statutory Levies such as Customs Duty, Goods and Service Tax” of Form No.IPR-LP-ET-02.V5 (Terms and Conditions) is replaced with the following:
Clause Nos.18.1, 18.2, 18.3, 18.5.2 and its sub-clauses deleted from Form No: IPR-LP-ET-02.V5.

- 4) Sr.No.31 (Section-A) under heading “Delivery” of Form No.IPR-LP-ET-02.V5 (Terms and Conditions) is replaced with the following:

Delivery: All equipments/machinery/plant/component covered by this tender document should be supplied as per the Delivery schedule given under clause No.6 of Section-C. The prices quoted by the tenderer should include all charges involved for direct and safe delivery of the items by Road to the project site of the Purchaser. If a tenderer so desires/separate lumpsum charges for transportation and safe delivery to Purchaser’s site could be furnished. Purchaser will neither undertake responsibility for transit insurance nor pay for it separately. No other, delivery term will be accepted by the Purchaser

- 5) Sr. No. 35 (Section-B) under heading Mode of Payment of “General Conditions of Contract” of Form No.IPR-LP-ET-02.V5 (Terms and Conditions) is replaced with the following:

Payment: Unless otherwise agreed to in writing between the Purchaser and the Contractor, payment for the delivery of the tendered items, will be made as follows.

- (a) 10% of the order value will be paid as advance against submission of Bank Guarantee for equivalent amount from SBI/nationalized banks or any one of the scheduled banks mentioned in the bracket (Axis Bank, HDFC Bank, ICICI Bank and IDBI Bank) valid till delivery of the entire material and on receipt of proforma invoice triplicate.
- (b) 10% of the order value will be paid against approval of drawings and on receipt of proforma invoice in triplicate.
- (c) 10% of the order value will be paid against procurement of raw material and on submission of invoices of raw material procured for this project.
- (d) 60% of invoice value will be paid against delivery of materials at IPR site, its verification by IPR representative and on receipt of Proforma Invoice in triplicate.
- (e) 10% within 30 days from the date of acceptance and on receipt of Performance Bank Guarantee for 10% of the order value from SBI/nationalized banks or any one of the scheduled banks mentioned in the bracket (Axis Bank, HDFC Bank, ICICI Bank and IDBI Bank) valid throughout the warranty period and on receipt of final invoice.

Following terms is **added to** our Form No. IPR-LP-ET-02.V5 for Tender No. No.IPR/TN/ PUR/TPT/18-19/17 dated 15/7/2019.

- a) **TDS as per CGST Act:** As per the provisions mentioned under Section No. 51 of the CGST Act 2017, TDS @ 2% (IGST 2% or CGST 1% and SGST 1%) will be deducted while making payment to the suppliers where total value of the purchase order/contracts/work orders exceeds Rs.2.5 Lakhs. Necessary TDS Certificate will be issued to the supplier after TDS deduction.

IMPORTANT NOTE:

[1] QUOTATIONS ARE INVITED IN INDIAN CURRENCY ONLY

[2] QUOTATIONS RECEIVED OTHER THAN "INR" QUOTE SHALL SUMMARILY BE REJECTED.

Technical Specification

Manufacturing, Testing and Supply of
Grids for Twin Source Extraction System

Dispatch Site



Institute for Plasma Research

Near India Bridge, Bhat Village, District Gandhinagar, Gujarat

1.0.Introduction

The tender document explains the manufacturing, and testing requirement of grids for Twin Source extraction system to be used for Negative Ion beam extraction activities Planned under TWIN source experimental test facility at IPR.

TWIN Source & Extraction system- System Description

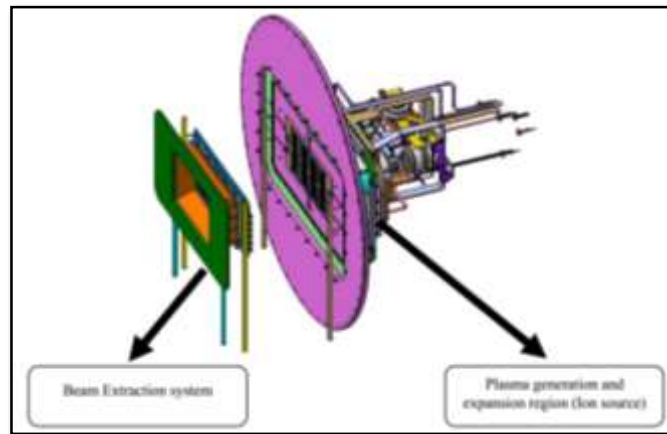


Figure 1: TWIN Source experiments

Twin source is a two driver based RF ion source to be used for extraction and acceleration of negative ion beams under TWIN source experimental test facility at IPR. The extraction system of Twin source consist of three grid system Plasma grid(PG), Extraction grid(EG) and Ground grid(GG). The negative ion beam would be extracted at voltage of 9.6 kV and would be further accelerated with potential up to 50kV. The beam current would be up to 8A. All the three grids would be high heat flux receiving components and hence would be actively cooled with water. Water channels are embedded inside each grids.

1.1.Plasma Grid: Surface of Plasma Grid would be used for negative ion formation. It is made of pure copper alloy OFC. It has a dimension of 800x390x9.25 mm³. It has 160 no. of apertures. Apertures are to be machined in particular manner as shown in figure for the purpose of providing larger surface area for negative ion formation. The upfront side of plasma grid would be Molybdenum coated up to 3 microns. During operation the upfront side of plasma grid would be covered with a mono layer of Caesium (scope not covered under this tender) to reduce work function of the surface. The plasma grid would be operated at 150⁰ C. The operating temperature would be achieved either by circulating hot water through embedded water channels or by using heating elements (heating element excluded from current scope of work). Only provision for placing heating element wires has been provided with current configuration.

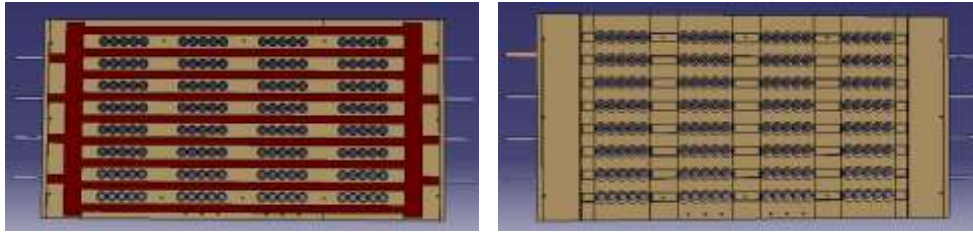
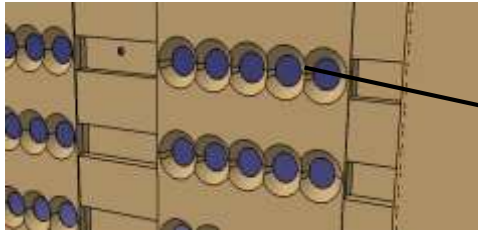
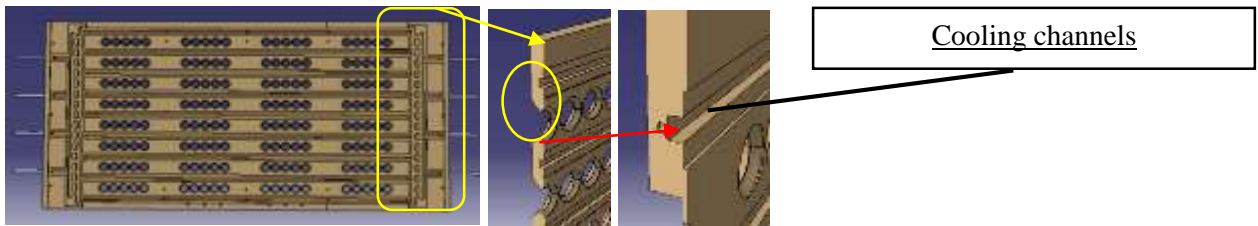


Figure 2: Plasma Grid Front & Back views



Total 160(40x4) no. of apertures
40 degree/45 degree- Chamfer on upstream/downstream side of apertures

Figure 3: Aperture details



Cooling channels

Figure 4: Provision of cooling/heating channels

1.2.Extraction Grid: Extraction grid would be used for extraction of negative ion beams at a potential of 9-10kV. It is also made of OFC. It has a typical dimension of 958 x 395 x11 mm³. Extraction grid would be receiving high heat flux in the range of 10-20 MW/m². Hence active cooling provision has been provided within extraction grid with water as cooling medium. Cooling channels are embedded within extraction grid on the upfront side (as shown in figure). The downstream side contains permanent magnets placed along the full length of grid placed vertically adjacent to each aperture rows.

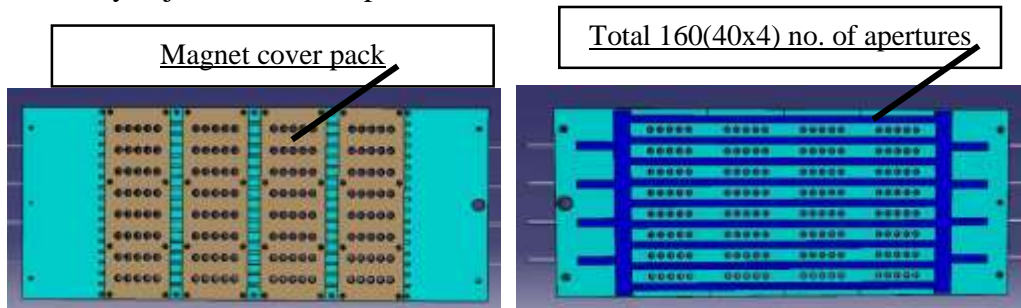


Figure 5: Extraction grid front and back view

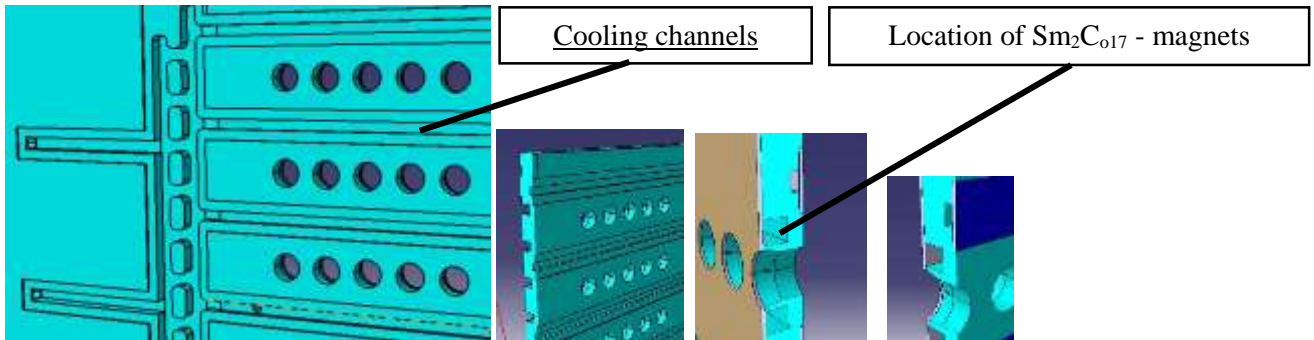


Figure 6: EG Aperture details

1.3.Ground Grid: Ground grid would be used for acceleration of extracted negative ion beams up to a potential of 50kV. It is also made of pure copper alloy OFC/Cu-Cr-Zr. It has a typical dimension of 800 x 395 x mm³. Ground grid would receive moderate heat flux hence active cooling provided similar to extraction grid as shown in figure.

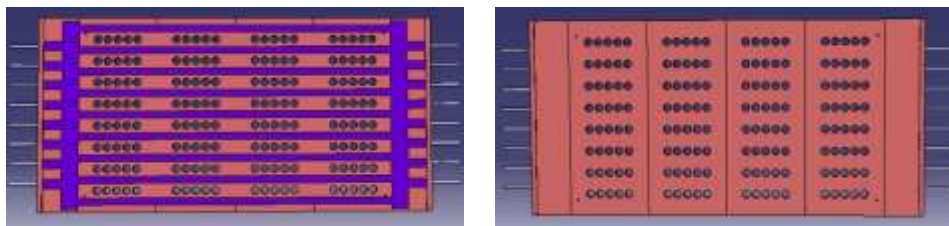


Figure 7: PG front and back view

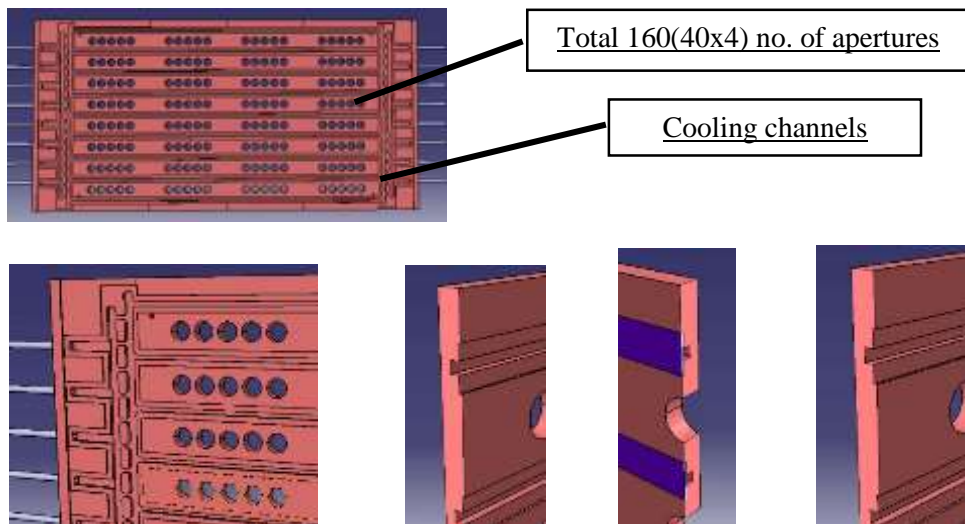


Figure 8: GG Aperture details

List of components as Deliverables:

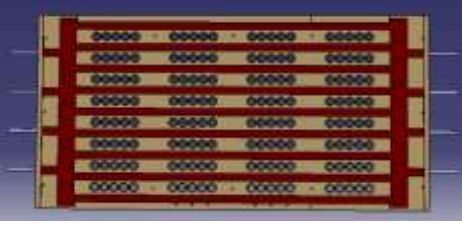
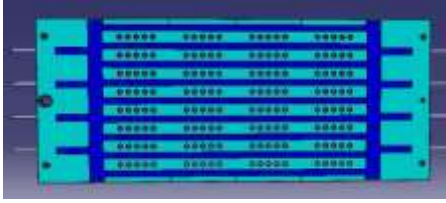
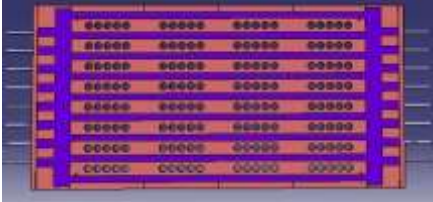
<p style="text-align: center;"><u>Plasma Grid</u></p> <p><i>Dimensions: (800X395X9.25), in mm</i> <i>Manufacturing Options: Machining and Vacuum Brazing/EBW</i> <i>Material: SS 304L pipe-seamless & OFC-Cu plate</i></p>	 <p style="text-align: center;">Quantity: 01 Nos. Reference Drawing No:TS-PG-00-00</p>
<p style="text-align: center;"><u>Extraction Grid</u></p> <p><i>Dimensions: (958X395X11), in mm</i> <i>Manufacturing Options: Machining and Vacuum Brazing/EBW/</i> <i>Material: SS 304L pipe-seamless & OFC-Cu plate</i></p>	 <p style="text-align: center;">Quantity: 01 Nos. Reference Drawing No:TS-EG-00-00</p>
<p style="text-align: center;"><u>Ground Grid</u></p> <p><i>Dimensions: (800X395X8), in mm</i> <i>Manufacturing Options: Machining and Vacuum Brazing/EBW/</i> <i>Material: SS 304L pipe-seamless & OFC-Cu plate</i></p>	 <p style="text-align: center;">Quantity: 01 Nos. Reference Drawing No:TS-GG-00-00</p>

Table 1: List of Deliverables

Note- Hardware, systems, sub-systems required during factory acceptance test of the Components conforming to the requirements mentioned in this tender document also comes under vendor's scope.

2.0. Detailed Scope of Work

IPR provides the vendor with the Engineering drawings. Vendor should follow the design inputs from IPR and check its manufacturing feasibility, material specifications and then proceed for manufacturing as per following detailed scope of work:

- a. Review of Engineering design with a feasibility assessment on manufacturing and testing requirements, suggest changes if required. Any such changes will only be accepted by IPR with written approval. Vendor may require attending the follow up meeting with IPR for design review. During review of engineering drawing, Vendor must scrutinize the drawings provided by IPR for any discrepancy or lack of information. Information will also be provided with 3D model in .stp/.3dxml file.
- b. Preparation of manufacturing drawings and all subsidiary drawings for all the three grids.

- c. Preparation of manufacturing inspection plan (MIP) and quality assurance plan (QAP) as per the described format by IPR for the three grids. Vendor may suggest alternate MIP and QAP format as per their regular practices, which may be accepted or reject by IPR.
- d. Procurements of all necessary materials, items and equipment with test certificates.
- e. Development and manufacturing of tools, jigs, fixtures and other accessories required for manufacturing of various components.
- f. Manufacturing of all components (three grid assembly) according to approved fabrication drawings and assembly procedures.
- g. Testing & Inspection of the materials, parts, components & assembly at appropriate Stages as per approved MIP.
- h. Factory acceptance tests as per approved MIP plan.
- i. Preparation of as built drawings after the final manufacturing.
- j. Packaging, insurance and delivery of components to IPR Site with appropriate Unloading instructions at IPR site. Final payment would be released only after successful completion of site acceptance test (excluded from vendor's scope) which may be witnessed by Vendor's representative.

3.0.List of deliverables

A. List of deliverable components/Hardwares:

Table 2: List of components to be delivered

<i>Item Description</i>	<i>Quantity</i>	<i>Reference drawing Number</i>
Plasma Grid	01 nos.	TS-PG-00-00
Extraction grid	01 nos.	TS-EG-00-00
Acceleration grid	01 nos.	TS-GG-00-00

Note : Bolt , washers, orings or any tools required for assembly of components while ensuring structural and vacuum integrity of components(as applicable)during factory acceptance test also comes under vendor's scope.

List of Documents to be delivered*:

Table 3: List of documents to be delivered

Before start of manufacturing	Vendor's approved and dully stamped manufacturing drawings- <i>For approval from IPR</i> Vendor's Approved and dully stamped MIP and quality assurance plan- <i>For approval from IPR</i> Details of suppliers/sub-suppliers & Purchase order copy (if any)
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	Material test certificates- <i>For approval from IPR</i> WPS, PQR and Shop Weld Plan - <i>For approval from IPR</i>
During manufacturing	Stage by inspection reports – Includes dimensional inspections reports, weld test reports, vacuum leak test reports & pressure test reports
Before Dispatch	Final acceptance test reports/PDI reports- <i>For approval from IPR</i> As built drawings RT films and NDT reports(as applicable) - <i>For approval from IPR</i>

*appropriate stages of documents to be delivered has been provided in section

4.0.General Remarks & Technical Conditions

- ASME rules are applicable for fabrication processes.
- Vendor is required to deliver the components, sub-assemblies and final assembly mentioned under engineering with dimensional accuracy and satisfying the test criteria.
- All materials components, fabrication procedures must be compatible to their use in a high vacuum (10^{-06} mbar) and high voltage environment (up to 50k V). Hence, the sharp corners & edges must be avoided in all the cases.
- In case, some work is to be outsourced to any sub-contractor, same should be brought in notice to IPR and a formal acceptance should be taken.

5.0.Information required with bid proposal

- The vendor is required to comment on each and every clause of this document. If the vendor is unable to accept a clause in whole or part, this fact shall be recorded with full explanation. The vendor may also wish to comment on any clause, even if that clause is fully accepted.
- A list of proposed deviations from the specification shall be submitted (if any).
- Outline time schedule in the form of bar chart.

6.0.Delivery Schedule

The delivery schedule shall be reckoned from the date of release of purchase order as per following manner:

Release of Purchase order	T_0 (in months)
Review of engineering drawing, Submission of manufacturing drawing, manufacturing inspection plan (MIP) & QAP for three grids.	T_1 (in months)= $T_0 + 2$ months

Approval of manufacturing drawing from IPR	$T_{2(\text{in months})} = T_1 + 0.5 \text{ month}$
Procurement, fabrication, testing assembly	$T_{3(\text{in months})} = T_2 + 8\text{months}$
Final acceptance(PDI)	$T_{4(\text{in months})} = T_3 + 0.5 \text{ month}$
Cleaning, packaging and shipment to IPR	$T_{5(\text{in months})} = T_4 + 1 \text{ month}$
Total Duration (from date of release of purchase order)	12 months

7.0.Engineering Drawing & 3D CAD Model

Engineering drawing and 3D model (.stp file) would be supplied by IPR along with tender document. Vendor needs to review the engineering drawing and 3d model in detail prior to bid submission. Vendor may suggest minor modifications with feasibility assessment over achievable dimensional accuracy and tolerances during bid submission which may be accepted or rejected by IPR. However, any dimensional changes in the approved drawings or specifications are not permitted during the execution of project. List of engineering drawings supplied with this tender document are listed below:

Table 4: List of drawings supplied by IPR

<i>Components description</i>	<i>Drawing Number</i>
TS Plasma Grid Assy	TS-PG-00-00
TS Plasma grid seg-1	TS-PG-00-01
TS PG Segment Assy	TS-PG-00-02
TS PG Seg Apperture	TS-PG-00-03
TS PG Segment & Cooling Pipe Assy	TS-PG-01-00
TS PG PIPE With Collar	TS-PG-01-01
TS PG Cooling Pipe 1	TS-PG-01-02
TS PG Cooling Pipe 2	TS-PG-01-03
TS PG Seg Plate-1	TS-PG-00-04
TS PG Seg Plate 2	TS-PG-00-05
TS PG Heat Element Plate	TS-PG-00-06
TS PG Cooling Channel Plate	TS-PG-00-07
TS Extractor Grid Assy	TS-EG-00-00
TS Extractor Grid Seg 1	TS-EG-00-01
TS EG Segment Assy	TS-EG-00-02
TS EG Seg Aperture	TS-EG-00-03
TS EG Segment & Cooling Pipe Assy	TS-EG-01-00
TS EG Pipe with Collar	TS-EG-01-01
TS EG Cooling Pipe 1	TS-EG-01-02
TS EG Magnet Cover Plate	TS-EG-00-04
TS EG Kerb	TS-EG-00-05
TS EG Magnet	TS-EG-00-06
TS EG Magnet Pattern	TS-EG-00-07
TS EG Cooling channel Path	TS-EG-00-08
TS Grounded Grid Assy	TS-GG-00-00

TS Grounded Grid Seg-1	TS-GG-00-01
TS GG Segment Assy	TS-GG-00-02
TS GG Seg Apperture	TS-GG-00-03
TS GG Pipe with Collar	TS-GG-00-04
TS GG Cooling Pipe 1	TS-GG-00-05
TS GG Cooling Channel Plate	TS-GG-00-06

Note for engineering drawing

1. Since this project is under design & development phase, it is likely to have some modifications or minor dimensional change (that would not merely effect manufacturing processes or cost) in the drawings submitted with this tender document. IPR would submit its final version of engineering Drawings after the award of contract including such minor dimensional changes.
2. Vendor is required to scrutinize the engineering drawings submitted with the tender document and should bring out any discrepancy/missing information to IPR during bid submission and must be clarified immediately prior or after award of contract during the review phase of engineering drawing. Any modification must not be allowed after approval of manufacturing drawing.

8.0. Manufacturing

8.1. Manufacturing Drawing and Documents: Supplier shall submit the manufacturing drawings to IPR for approval before start of manufacturing. IPR will approve the same. Drawings for jigs, fixtures and tooling shall be prepared by supplier and submitted to IPR for information. Supplier shall prepare Manufacturing drawings for all sub components, sub-assemblies & final assembly indicating required details like Bill of material, Weld /Braze joint design, welding/brazing process, dimensional tolerance, examination details, classification of component, surface finish etc. All other manufacturing and quality assurance documents such as quality assurance plan, manufacturing procedure, welding procedure, weld data sheet, assembly procedures, packing procedure, inspection and testing procedures etc. shall be prepared by the supplier and submitted to IPR for approval before taking up the manufacturing.

8.2. Manufacturing of embedded cooling channels: Cooling channels for all the three grids shall be manufactured either by vacuum brazing or EBW processes. The required dimensions of cooling cross-section/grooves shall be milled/cut out first across the length of grid plates as per the pattern shown in figure below. In the next step a similar super-imposing pattern should be cut out on 1 mm thick copper sheet. This cut out pattern on 1 mm thick copper sheet would be placed over the pre-milled grooves provided earlier on the grid plates. Finally, these two (Pre-milled grid plates & 1mm thick copper plate cut out in pattern) would be permanently joined either by vacuum brazing or EBW. For application of vacuum brazing / EBW the standard rule and practices shall be followed as per applicable codes. The final joint shall be free from all kind of defects and must be tested as per asked specification for the acceptance.

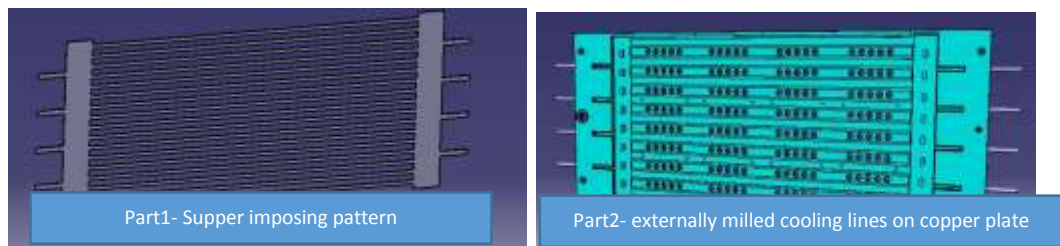


Figure 9: Pre brazing conditions

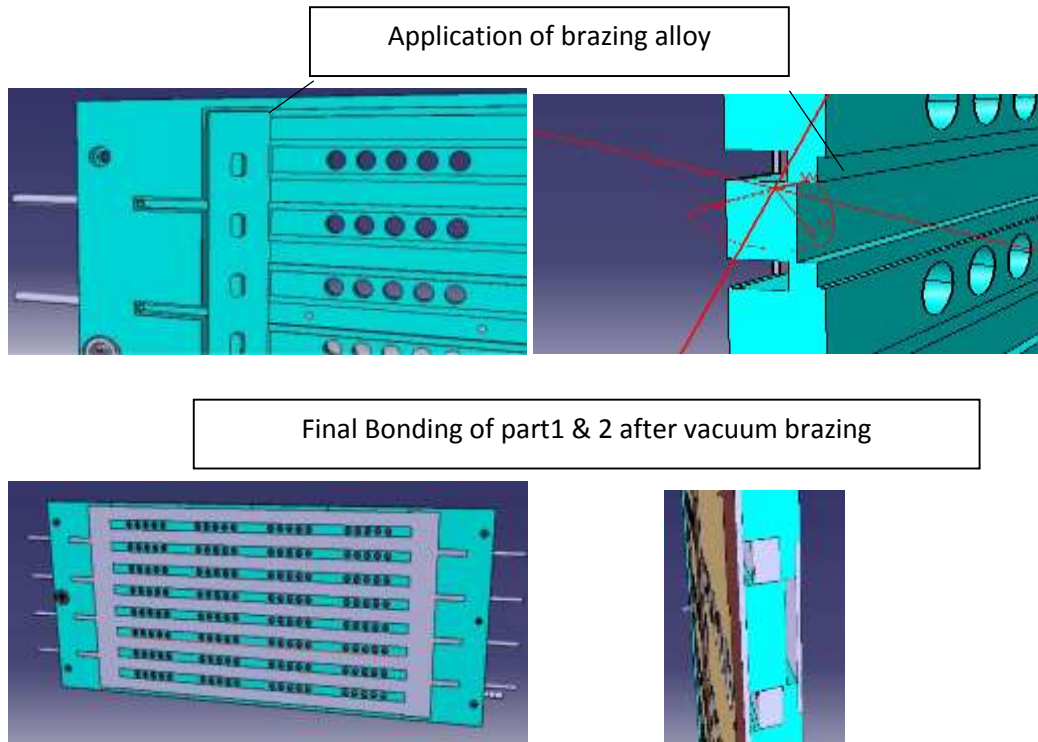


Figure 10: Final Product after vacuum brazing

8.3.Tolerances: The finished product must achieve the desired tolerance values of 50 microns as per approved manufacturing drawings. Required manufacturing tolerances are displayed on the engineering drawings supplied by IPR with tender documents. Required tolerance include the cumulative value of machining tolerances, manufacturing tolerances and deviations due to handling. Final product would be checked for dimensional accuracy, flatness and positional accuracy against the requirements mentioned in the approved manufacturing drawings and any deviation from the same must be liable for rejection by purchaser.

8.4.Hold Point for manufacturing: Successful manufacturing and testing of plasma grid (PG) shall be a hold point. Vendor must start and complete the manufacturing and testing of Plasma Grid (PG) at first. Once the acceptance test for plasma grid is successful and approved by IPR, Vendor shall proceed for manufacturing of other two grids simultaneously.

8.5.Welding and Brazing Specification:

Welding and brazing requirements are applicable as per ASME rule section IX.

Welding:

- a. Suggested Welding procedure is EBW welding.
- b. Welding shall be done on the job, strictly following the approved welding procedures. Vendor need to suggest the welding procedure and specification which shall be approved by IPR prior to manufacturing.
- c. The Supplier shall prepare written procedures for distortion control for each typical joint giving the sequence of assembly, sequence of welding; heat input to weld etc. The Supplier shall submit the same to the IPR before taking up manufacturing. The same shall be displayed in the Supplier's shop during welding.
- d. *Weld Plan:* The Supplier shall submit a Weld Plan to IPR for approval prior to start fabrication. *Weld Plan shall include weld joint mapping identifying all the welds by proper numbering system, applicable WPS, Process used, type of joint with sketch, NDT requirements and welds requiring production proof samples.* The weld plan is a drawing which cross references of each welded joint to a supporting weld procedure specification (WPS). Weld Plan, in conjunction with the following documents shall be submitted to IPR before start of welding activity:
 - i. Welding Procedure Specification
 - ii. Procedure Qualification Record
 - iii. Welder Qualification Record
- e. *Welding coupon/Test Piece:* Number and dimension of test piece/weld coupons shall be produced as per relevant codes and standard. The weld coupon must be examined with destructive and non-destructive testing methods.
- f. *Qualification for weld coupons:* During destructive examination (bend, tensile, metallography) fracture shall be observed at parent material for acceptance. The tensile strength of the test specimen shall not be less than the corresponding specified minimum value for the parent metal unless otherwise specified prior to testing. For dissimilar parent metal joints the tensile strength shall not be less than the minimum value specified for the parent material having the lowest tensile strength. Tensile test shall be done at a temperature defined in Parent material specification. The bend test specimen shall have no pen defects exceeding 2mm measured in any direction on the convex surface after bending. Non-destructive examination (RT & UT) shall be qualified as per sec VIII, Div-1 of ASME.
- a. *Acceptance test for Production weld on actual components:* 100 % volumetric examination (Radiographic testing, Ultrasonic testing (if applicable) & Visual examination) shall be done on the welded joints. It would be followed with high pressure test on cooling channel filled with dry nitrogen/ helium at a pressure

of at least 15 bar for a holding time of 30 mins. The pressure test must not result in any leakage or permanent deformation.

- g. *Production Proof Sample:* Welds where radiography is not feasible, must be covered by production proof sampling (PPS). Each PPS will only represent a specific type of weld and must use the same material, thickness and set –up as the production weld. A PPS must be welded during the same shift as the production welds and by the same welder otherwise it would not be representative of the production welding. If more than one welder welds the production welds, each welder must perform PPS. PPS's are required for each shift of production welding to represent the welds performed on that shift. PPS shall be sectioned and macro examined in four places (including one stop /start area). Photographs of the macros giving the date the PPS was welded, the welder's identity and identifying the production welds it is covering must be included in the final documentation package. As the PPS is a representative sample, rejection of the macros will result in rejection of all welds represented by those PPS.
- h. *Leak testing of weld joints:* All vacuum sealing weld joints shall be 100% leak tested. Acceptance criteria for local leak tightness (by vacuum method) is less than 5×10^{-09} mbar-lit/sec. Acceptance criteria for global leak tightness (by over pressure pressure method- helium at 10 bar) is less than 1×10^{-07} mbar-lit/sec.
- i. The build-up of internal stresses shall be avoided as far as possible.
- j. The selected welding technique shall produce a clean, pore free weld with minimal oxidation.

Brazing:

- b. Brazing shall be carried out in a vacuum atmosphere.
- c. Brazing filler materials must be Cu-Silver eutectic alloy like BvAg8 for SS-Cu/Cu-Cu joints.
- d. Braze joint should be lap joint that ensure minimum tensile strength equivalent to that of parent material.
- e. The joint clearance should be in range of 40-50 microns at the brazing temperature.
- f. *Braze Joint assembly fixture:* To hold brazing assembly in proper position with correct alignment during brazing for capillary action to work, brazing joint assembly fixture should be used. Fixture should be designed for least mass and least contact. Material used for fixture must be poor heat conductor like Stainless steel, ceramics and Inconel.
- g. *Pre-cleaning of braze surface:* All the braze surface must be cleaned with mechanical and chemical cleaning methods to ensure proper wetting and capillary movement of molten filler alloy. Polished surface/highly finished surface must be avoided for brazing application.
- h. *Production proof sample/braze Coupon/test piece:* Each brazing cycle must be accompanied with production proof samples. Number and size of production proof sample may be decided on the basis of required qualification tests as per relevant codes and standards. However it may also be decided as per mutual

agreement in between IPR and supplier in case appropriate information are not available.

- i. *Qualification test for production proof sample/braze coupons/test pieces:* Braze coupons must be tested for destructive testing like: Peel testing, transverse tensile and shear testing and metallographic examination. Tensile testing must ensure minimum tensile strength equivalent to parent material.
- j. *Acceptance test for production braze joints on actual component:* Production braze joint must be visually examined for any flaws, voids or irregularities. It would be followed with high pressure test on cooling channel filled with dry nitrogen/ helium at a pressure of at least 15 bar for a holding time of 30 mins. The pressure test must not result in any leakage or permanent deformation.
- k. *Leak testing of braze joints:* All vacuum sealing braze joints shall be 100% leak tested. Acceptance criteria for local leak tightness (by vacuum method) is less than 5×10^{-09} mbar-lit/sec. Acceptance criteria for global leak tightness (by over pressure pressure method- helium at 10 bar) is less than 1×10^{-07} mbar-lit/sec.
- k. The use of LPT shall be prohibited on braze joints.

8.6. Molybdenum coating:

A thin layer (3 microns) of pure molybdenum shall be foreseen on plasma facing side of Plasma Grid(PG). Porosity of coating layer shall be less than 5 %.

Suggested Techniques: DC Magnetron sputtering / PVD

Layer thickness and uniformity: 3 µm on at least 90% of the area

Surface Roughness: Roughness (Ra) shall be less than 6 µm, if not differently specified.

Qualification Test:

<i>Test description</i>	<i>Location</i>	<i>Acceptance criteria</i>
Visual Examination	On production surface	No voids, porosity , irregularities
IPA Wipe off test- Surface should be wiped off with Isopropyl wetted cotton cloth	On production surface	IPA Wipe off test must not result in removal of coated surface in multiple attempts.
Tape test/ Adhesion test	On substrate/ coupon/Production proof sample	Proposal to be submitted by vendor in MIP, which would be approved by IPR.

9.0.Manufacturing general requirements:

- a. The raw material, subassemblies and finished components shall be covered with polythene sheets to avoid contamination during storage.
- b. The pipes shall be fitted with end plugs in addition to covering by polythene sheets.
- c. Cleaning after manufacturing.

- d. Assembling of parts and sub-systems keeping as much as possible the clean conditions reached after vacuum baking.
- e. Marking shall not result in contamination of the material, significant strain hardening or sharp discontinuities.
- f. Marking shall be carried out in areas of minimum /no loading. No marking is permitted in areas of stress concentrations or in weld heat affected zones.
- g. Marking shall not affect interpretations of NDE results.
- h. Marking with ink stamps, indelible ink, paint and adhesive taps which are not vacuum compatible are not allowed.
- i. Cutting can be done either machining, grinding, shearing or plasma cuttings.

10.0. Material Specification

Material used for construction of High Vacuum components should be of listed (as below) specification. Suppliers have to submit the test certificates for each of the raw material used for construction and the traceability of same is to be ensured at each level of fabrication work. All material shall be free from all the kinds of defects like cracks, fissures, pits, lamination or any other defects which would make it incompatible with a high voltage and ultra- high vacuum environment.

- a. *Oxygen-Free Copper(OFC)*: This shall be oxygen free, extra low phosphorus with specifications: ASTM Designation No like ASTM B 152/B152M-13, ASTM F68-10 (Cu UNS no. C10100).

Hardness condition	Tempered: H01 ¼ Hard
Cu (%), inclusive	99.95
Oxygen content (ppm)	0.0005%
Phosphorous content (%)	0.001-0.005
Sulphur content (ppm)	0.0015%
Other contents (ppm)	< 20
Tensile strength (MPa)	200-250 MPa
Shear Strength	180 MPa
Hardness	95 BHN (max.)
Elasticity (Modulus)	115 GPa

The material must be free from oxygen and de-oxidizing agents such as phosphorus. It must be free from surface imperfections, any form of porosity, inclusions of abrasive materials and particulate matter. The material must be chemically compatible with demineralized water.

- b. *Stainless steel*: This shall be a type of chromium-nickel 18-10 with the following specifications

ASTM grade	304L (A312)- Seamless Piping
C %	0.020
Mn%	1.5-1.55

S%	0.003
P%	0.033
Si%	0.27
Ni%	9.05
Cr%	18.05
N%	0.071
Tensile strength (N/mm ²)	>500
0.2% Proof stress (N/mm ²)/ Yield strength	>170
Modulus of Elasticity(GPa)	193-200
Shear Modulus(GPa)	>80
Poisson's Ratio	0.30
Elongation on 50 mm	30%
Hardness range	130 < HB < 180
Relative magnetic permeability in 200 Oersted field	< /=1.05

- c. *Water Coupling/ Connector*: Dockweiler water coupling shall be provided as tube end-connection. Detailed reference of the parts is to be provided in engineering drawing supplied with this tender.
- d. *Samarium Cobalt Magnets (Sm₂Co₁₇)*: Magnets should have following physical & magnetic properties. Magnetization should be parallel to axis of aperture. Magnet size should be typically 6x5.5x20 mm³ and must be supplied with Nickel coating.

Density(g/cm ³)	8.3-8.5
Compression Strength(MPa)	650-800
Electrical Resistivity(micro-ohm-cm)	80-90
Tensile Strength(MPa)	35-40
Young's Modulus(GPa)	120
Flexural Strength(MPa)	110
Poisson's Ratio	0.27
Operating Temperature	250 ⁰ C
Curie temperature(⁰ C)	800-850
Magnetic Strength B _r (KGauss)	11-12

11.0. Inspection and Testing

- The Supplier shall submit an Inspection procedure for Dimensional inspection, Nondestructive examination, Pressure Testing, Leak Testing, electrical tests and any other test required by drawing / Specification for IPR's approval.
- The Supplier shall maintain record of all inspection and testing which shall be made freely available to the purchaser or their authorized representative.
- The Supplier shall prepare & submit Manufacturing Inspection Plan giving the stage of inspection indicating witness, review & hold points by the IPR representative to IPR for approval.
- The NDT personnel employed by the Supplier shall be qualified as per ISO 9712, EN 473 or ASNT Level II.

- e. Acceptance of any component by IPR does not absolve the vendor from the responsibility of the dimensional compatibility of the components.
- f. The following test and inspection procedure shall apply to components during manufacturing and to finished components before they are assembled to form the ion source:

Test Description	Components	Acceptance Criteria/Reference Document
Visual Inspection	Plasma Grid, Extraction grid& Accelerator grid	Free from all kinds of surface defects.
Dimensional Inspection- Using coordinate measuring machine (CMM)/ Faro Arm/any 3d profile measuring techniques	Plasma Grid, Extraction grid& Accelerator grid	Approved manufacturing
Geometrical Tolerances- Flatness & Positional accuracy USING coordinate measuring machine (CMM)/ coordinate measuring machine (CMM)/ Faro Arm/any 3d profile measuring techniques	Plasma Grid, Extraction grid& Accelerator grid	Approved manufacturing
Surface Roughness- By Stylus probe method	Plasma Grid, Extraction grid& Accelerator grid	Approved manufacturing
Pressure test – Cooling channel must be pressurized with dry nitrogen/helium for: 1. At least 15 bar pressure @ room temperature condition for all the three grids 2. At least 15 bar pressure @ 150 ⁰ C for Plasma Grid 3. At least 15 bar pressure @ 100 ⁰ C for Extraction Grid and Ground grid.	Cooling channels of Plasma Grid, Extraction grid& Accelerator grid	Shall observe no deformation, fracture or leakage.
MSLD –Leak testing shall be performed at room temperature and elevated temperature of 100-150 ⁰ C for all the three grid. Leak	Cooling channels of Plasma Grid, Extraction grid& Accelerator grid	Leak Rate of less than or equal to : a. 5x10 ⁻⁰⁹ mbar-lit/sec- For Local leak rate.

<p>testing must be performed by following two methods:</p> <ol style="list-style-type: none"> 1. <u>Local Leak testing</u> (Vacuum method): Cooling channel must be evacuated to pressure below 10^{-03} mbar using MSLD. After background is stabilised at less than 5×10^{-09} mbar-lit/sec, helium should be sprayed near all the brazing joints and vacuum sealing area. 2. <u>Integrated leak test(Over-pressure method)</u>: Grid should be placed inside a vacuum chamber. Chamber should be evacuated to pressure below 10^{-03} mbar. A calibrated MSLD must be connected in backing line of the pumping system. Once background leak rate is stabilised at less than 5×10^{-09} mbar-lit/sec, helium must be purged to cooling lines of grid at pressure of at least 10 bar. 		<p>b. 1×10^{-07} mbar-lit/sec –For integrated leak rate.</p>
<p>NDE –Examination – Radiographic</p>	<p>All weld joints</p>	<p>100% as per ASME sec VIII, Div. I, UW52.</p>

The components shall conform to this specification unless a deviation is approved in the form of a written change to the specification from IPR, this document with addenda, amendments and revisions in effect on the date of the purchase contract shall apply. Further Modifications if any would be subject to mutual agreement between the vendor and IPR. In the event components fail to satisfy the test requirements, the

vendor shall document the failure and submit a proposal to IPR for correcting any faults or failures. Written approval from IPR shall be required before any corrective Action is taken.

12.0. Acceptance test

12.1. Factory Acceptance Test: The Supplier is responsible for checking that all items conform to the contractual requirements as set out in the contracts between the Supplier and IPR. The Supplier shall ensure that the items are in line with regulatory requirements and documentation. The Supplier shall make all components and parts available for Factory Acceptance Tests at the Supplier's site for IPR.

Factory Acceptance Test aims and criteria are to check:

- Compliance with the Technical Requirements specified in this Technical Specification and enclosed appendixes, attachments and drawings.
- Successful completion of all the tests described in this Technical Specification
 1. Visual Inspection
 2. Dimensional tests
 3. Weld Qualification
 4. Production welds inspections and tests
 5. Pressure tests
 6. Flow Test
 7. He leak rate tests

Only after positive results of the Factory Acceptance Tests satisfying the conformance with the requirements as set out in the contract, the transport and delivery of manufactured items will be released by IPR. Acceptance of the tests results and certificates does not relieve the Supplier of the responsibility for compliance with all the contractual requirements. If any of the Factory Acceptance Tests prescribed in the present specification reveals a defect or a fault of the components, the Supplier shall perform a timely and effective repair or shall guarantee the replacement the faulty deliverable free of charge, managing the repair or replacement by means of a proper non conformity management procedure.

12.2. Site Acceptance test:

After delivery and unloading of components (under vendor's scope) to Site, IPR will inspects every component and check the physical state and condition of the packing for possible damage during transportation (to be witnessed by Vendor's representative as well).

Final Site Acceptance Test include

- Checks of the physical state and condition of the packing for possible damage during transportation (To be witnessed by Vendor's representative).

- Unpacking and checks of the component cleaning and conservation (To be witnessed by Vendor's representative).
- Successful completion of all the tests as per below, which may or may not be witnessed by vendor's representative:

- 1. Visual Inspection**
- 2. Dimensional tests**
- 3. Helium leak test**

If any of the Site Acceptance Tests prescribed in the present specification reveals a defect due to a fault or damage during transport or unloading, the Supplier shall perform an urgent and effective repair or shall guarantee the replacement of the faulty component free of charge, managing the repair or replacement by means of a proper non conformity management procedure.

13.0. Inspection measuring equipment

All inspection measuring equipment (mechanical, electrical, thermal, physical etc.) used for inspection and testing shall be maintained and calibrated. Calibration must be traceable. Documentation and recording of all checking, calibration, quarantine and repair, traceability, certification, including a "Recall system" to warn of future calibration periods.

14.0. Personnel Qualification:

The vendor shall be responsible for assuring that non-destructive examination personnel have been qualified and certified prior to performing and evaluating examination.

15.0. Packaging , Transportation and unloading at IPR site:

- a. The Supply of components shall be delivered with proper protection systems in order to minimize the risk of damage and distortions.
- b. Protection elements are to be designed and manufactured to protect the assemblies and all other components during transport and storage against weather effects, mechanical damage and destruction of cleanliness and finish machining achieved by specific surface treatment.
- c. Components and its sub-assemblies shall be transported with all the necessary precautions to guarantee full protection of all the surfaces prepared and cleaned to be vacuum compatible.
- d. Particular care shall be given for packing and fixing of fragile components as the electrical insulating elements, requiring proper special protections against damage during transportation.
- e. Material shall be used to insure a low humidity during shipment and storage.

During storage and transport all the components and assemblies suitably cleaned before transportation shall be packed in new, clean, sealed polythene bags or sealed

aluminium foils. On the packaging all references to the contents and other information shall be clearly shown in English language, including at least:

- Contents description;
- Dimensions;
- Weight;
- Centre of gravity;
- Lifting Points.

The complete assembly and sub-assembly of components should be delivered to IPR, Gandhinagar. Unloading at IPR site also comes under Vendor's scope.

16.0. Documentation

The components relevant to procurement deliverables shall be supplied with all the manufacturing documentation required to satisfy reviews, validations, testing and verifications. These documents shall be transmitted to IPR in appropriate time before the associated milestone. All the other documents related to the design, fabrication and testing (internal procedures, QA controls etc.) are to be kept available to IPR throughout the manufacture of the components.

Table 1: Documents to be supplied before starting of Manufacturing

Document to be supplied	Provider	Milestone
Procurement specification and technical contracts between IPR and Supplier	IPR	With Tender
<i>3D Model and 2D Engineering Design Drawings</i>	IPR	With Tender
Initial follow-up documents (Quality Plan and Manufacturing & Inspection Plan)	Supplier	Within two months after signature of the Contract award
Manufacturing Plan	Supplier	BS
Deviation Request (if Applicable)	Supplier	BS
Material documentation (incl. Procurement specification, material certificates, test and examination results)	Supplier	BS
List of Supplier's sub-contractors	Supplier	BS
Manufacturing drawings and components part list	Supplier	BS
Components identification and marking procedure	Supplier	BS
Materials (base and filler) identification and marking procedure	Supplier	BS

Document to be supplied	Provider	Milestone
WPS, PQR and Weld Plan / Brazing specification Procedure and Braze plan	Supplier	BS
NDT procedures	Supplier	BS
Pressure Testing Procedures	Supplier	BS
He Leak Testing Procedures	Supplier	BS
Detailed Schedule including manufacturing activities and documents completion dates	Supplier	BS

BS= Before start of Manufacturing

Table 2: Documents to be submitted during manufacturing

Documents to be supplied	Provider	Milestone
Welding /Brazing data package	Supplier	Before start of welding
Welders and operators qualification including supporting certificates (As applicable for welding/Brazing)	Supplier	Before start of welding
NDT/Pressure test/Flow test/Leak test reports	Supplier	During manufacturing or Testing
Non Conformance Report (If applicable)	Supplier	During manufacturing or Testing

Table 3: Documents to be supplied before final acceptance in the factory

Documents to be supplied	Provider	Milestone
Inspection reports (dimensional checking, visual inspection, results of leak rate tests (including size and location of leaks found), Pressure Testing, NDTs , cleaning report,, etc.) ,	Supplier	AC
End of Manufacturing Report (Release Note) including as-built drawings. As built Manufacturing Drawings .	Supplier	EF

Release for procurement transport and delivery	IPR	EF
--	-----	----

AC= After completing of activity

EF = End of the factory acceptance

17.0. Notification, Authorization to proceed, witness and Hold Point

IPR shall monitor the production activity of the supplier and possible sub-contractors in accordance with an approved Manufacturing and Inspection Plan.

This monitoring shall include Notification Points (NP), Witness Points (W), Authorization-To-Proceed Points (ATPP) and Hold Points (HP) at critical steps in the Supplier’s manufacturing plans.

A Notification Point is a milestone where the Supplier is required to notify IPR, about specific operation or deliverable. A Notification Point is meant to give the opportunity to IPR to witness a critical manufacturing operation at the Supplier’s or sub-contractor’s premises.

A Witness Point is a milestone where the Supplier is required to notify IPR, about specific operation or deliverable. A Witness Point indicates a mandatory inspection to witness a critical manufacturing operation at the Supplier’s or sub-contractor’s premises.

An Authorization-To-Proceed Point is a milestone where the Supplier is required to notify IPR, about specific operation or deliverable. The Supplier must wait for an authorization from IPR before proceeding to the next operation or to the next action on the specific deliverable. IPR shall allow the Authorization To Proceed on the basis of clearly identified Quality Control data and Acceptance test results. In case of authorization from IPR , the Supplier shall proceed to the next operation or to the next action on the specific deliverable. In case of rejection, the Supplier shall prepare the recovery plan and submit to IPR for approval and shall only be authorized to proceed after confirmation from IPR. An Authorization-To-Proceed Point shall only affect the specific operation or the specific deliverable it is associated with and shall not interfere with the execution of other operations or of the production of other deliverables.

A Hold Point is a milestone where the Supplier is required to notify IPR, about specific operation or deliverable. The Supplier must stop the associated processes until a Hold Point Clearance is issued. The Hold Point Clearance shall be issued on the basis of clearly identified Quality Control and data and acceptance test results. In case of rejection, Supplier shall prepare the recovery plan and submit to IPR for approval and shall only be authorized to proceed after confirmation from IPR.

Activity	IPR	Comment
Approval of Procurement follow-up documentation (like Quality Plan , Manufacturing and Inspection Plan (MIP), Manufacturing drawings ,Manufacturing and Inspection & Testing Procedures etc)	H	
List of Supplier's sub- contractors	H	
Kick off Meeting with Supplier	H	
Raw Material receipt inspection	NP	
Jigs & Tooling design and manufacturing of all three rgids.	ATPP	Supplier to provide details of Jigs & Fixture to be used.
Marking And Cutting of Material	ATPP	
Machining and Drilling of parts	ATPP	
Dimensional inspection of Parts	H	
Welding/Brazing Qualification (Procedure & Welders)	H	
Special Fixture for Assembly	N	
Visual & Dimensional inspection of Component	H	
Non Destructive Testing of welds	H	
Static Pressure testing of component	H	
He Leak testing of component	H	
Cleaning ,baking and outgassing of component	H	
Packing & Transportation	H	
Factory Acceptance Tests	H	
Preparation of End of Manufacturing report/As built manufacturing drawing	H	
Shipment clearance by IPR	H	
Site Acceptance Tests	H	

18.0. Manufacturing & Inspection Plan (MIP):

- Sample format of manufacturing inspection plan(MIP) has been provided by IPR as per annexure- B.
- Vendor needs to prepare a detailed format of MIP based on the guidelines provided by IPR in annexure- B
- For the various phases of test, manufacturing and inspection, MIP should be signed accordingly by both the parties (as applicable).
- The draft MIP should be submitted to IPR with manufacturing drawing for approval to IPR.
- The approved MIP may be kept updating manually accordingly during various phases of Project execution as per need or on the basis of accepted DR or NC. However each revision should be approved and dully signed by IPR representatives.
- Original Copy of Final updated MIP after completion of project should be submitted to IPR dully signed and approved. Vendor shall retain one copy of the same.

*Annexure- A***Bid Format:**

This part describes the information required by the bidder at the time of bid submitting the bids. Bidder will enclose the technical bid in this format in Part – A of bid. Bidder shall submit two set of documents in support of the information provided in this Annexure:

I. Information about the Bidder:

Sr. No.	Requirements	Bidder's Response
1	Bidder's Profile: Over all profile and organization structure	
2	Bidder's Sub suppliers: Probable List of bidder's sub suppliers.	

II. Bidder's Experience:

Sr. No.	Requirements	Bidder's Response
1	Manufacturing Experience: Bidder's experience in manufacturing equipment's with complex shapes and high dimensional accuracy, use of stainless steel, Cu & its alloy, Nonferrous alloys – Any one example can be submitted.	
2	Bidder's experience in manufacturing of components having vacuum applications.	

III. Other Required Infrastructure:

Sr. No.	Requirements	Bidder's Response
1	Sources for purchase of raw materials like Cu plates, pipes, welding consumables, braze filler alloy etc.	
2	Details of proposed procedure for inspection and testing's of components at controlled temperature and the facilities available in this regards	
3	Ultrasonic testing, Radiography and other NDE facilities with bidder or his sub supplier with detailed specifications	

IV. Quality System Assurance:

Sr. No.	Requirements	Bidder's Response
1	<p>Quality system (a) Details of ISO 9001:2008 certifications along with valid certificate.</p>	
2	<p>Quality Assurance (a) Bidder's proposed methodology to carry out dimensional inspection. The specific emphasis should be on the large quantity and profile measurement of plates. The bidder shall confirm and give details of qualified operators, equipment and facilities for the following testing and non-destructive examination (NDE)</p> <p>a. Radiographic Examination b. Ultrasonic Examination c. Helium Leak testing d. Vacuum testing</p> <p>In case of any of facility mentioned is not available with the bidder, the name of sub supplier where or by whom the work is proposed to be done shall be given.</p> <p>The capability of carrying out the above testing and inspection as per the requirement of this specification has to be confirmed by submission of appropriate methodology.</p>	

V. Codes and Standards:

Sr. No.	Requirements	Bidder's Response
1	<p>Codes and standards Experience (a) Bidder's experience in using ASME/ISO/EN for manufacturing, material and inspection and testing vacuum equipment. Give details with projects.</p>	

VI. High Vacuum Components technical compliance sheet:

Sr. No.	Scope of Supply	Bidder's confirmation
1.	Procurement of all the materials required for the job including those for qualifications (welding/brazing) and for production test coupons (if required) etc, as per the specification and manufacture, assembly, inspection, testing, surface treatment, packing.	
2.	Preparation of manufacturing drawing, MIP&QAP and getting approval on the same by IPR.	
3.	Design and manufacture (with supplier's material) jigs, fixtures and tooling required for manufacture, handling assembly, inspection and testing of grids	
4.	Manufacturing of all the three grids as per approved manufacturing drawing.	
5.	Carry out inspection and testing's at various stages before / after / during manufacturing as asked by the various sections and annexures of this specification and drawing.	
6.	Loading, safe delivery, transportation, handling, unloading at identified location at IPR site.	
7.	The issuance of "Inspection Release Note" / "Shipping Release" / "Dispatch Clearance" from the purchaser or his authorized representative shall be considered as "Factory acceptance test"	

VII. Bidder's deviations(if any) from technical specifications, terms and conditions, if other than specified in part-A and associated appendices:

Bidder may specify his deviation from technical specifications, terms and conditions, if other than specified in Part-A & its appendices. However these changes will become applicable on technical merit after discussion with purchaser and acceptance of the same by purchaser.

- I. Any additional information bidder wants to give in support of his bid.
- II. Delivery schedule along with project execution milestone chart.
- III. Confirmation letter from bidder:

MANUFACTURING AND INSPECTION PLAN			
Document Number:		Revision Number:	
IPR PO Number:		Title of Item:	
Name of Customer:		Supplier:	
Prepared by supplier:		IPR Acceptance:	Code*
Name & signature:		Name & signature	HP: Hold Point ATPP: Authorization to Proceed Point NP: Notification Point W: Witness of Operation S1: 100% Inspection, S2: Random Inspection R: Review Report
Position:		Position:	
Date:		Date:	

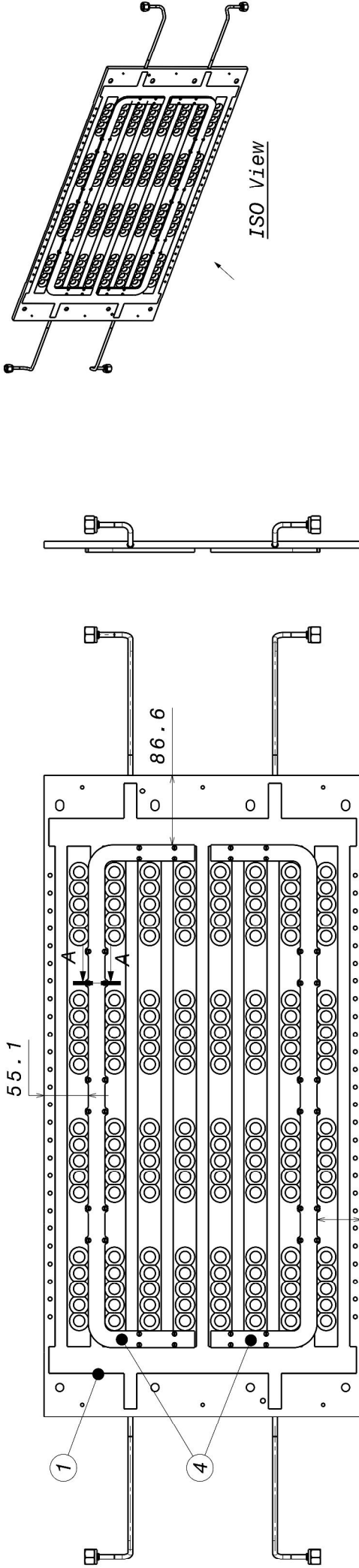
Annexure-B

Components ¹ (Like Drawing, manufacturing, inspection tests etc)/List of Operations	Type of Check Applicable procedures, codes, acceptance, instructions, etc.				Inspection Point (Inspection Body)				Records (report, non-conformance number, etc)	Observation(s)/Remarks
	Type of Check ²	Ref Codes ³ /Standards/documents	Acceptance Norms ⁴	Verifying Documents ⁵	Supplier		IPR			
					Code(*)	Name & Signature	Code(*)	Name & Signature		

FOR Vendor :			FOR Vendor:			FOR Vendor:			FOR IPR:		
Prepared BY:			Verified By:			Approved By:			Approved By:		

- 1: Components may include Design/drawing approval, raw materials, and welding procedures, weld test coupons, in process inspection, weld quality, leak testing, final inspection etc.
- 2: Type of Check may include Design verification, visual inspections, dimension checks, review of test certificates, WPS/PQR/WPQR, deflection, leak rate etc.
- 3: Ref codes/standards/documents may include ASME/ISO/ASTM/approved drawings/documents etc.
- 4: Acceptance norms may include ASME Sec VIII, DIV-1,2 / ASME Sec-IX, ASTM SA240/SA578, AWS etc.
- 5: Verifying Documents may include approved drawings, approved QAP, Test certificates, WPS/PQR/WPQR, leak test reports, inspection and test reports etc.

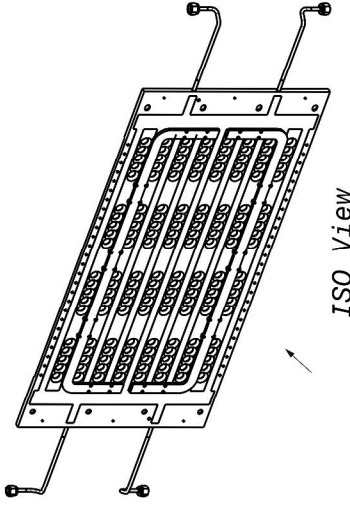
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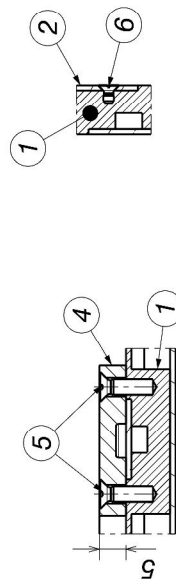
Front view



Right view

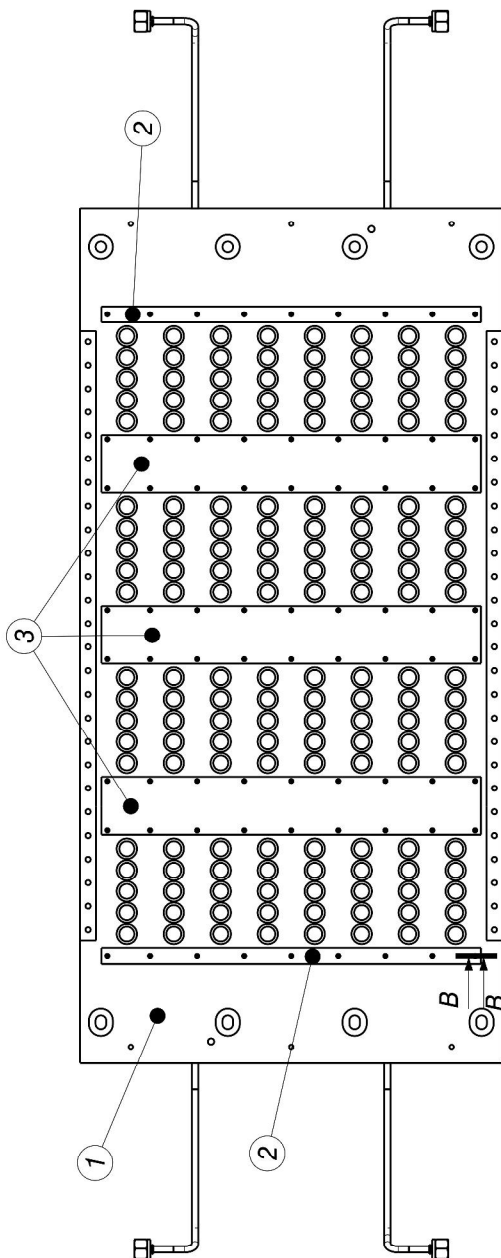


ISO View




Section A-A
Scale: 1:1

Section B-B
Scale: 1:1



Rear view

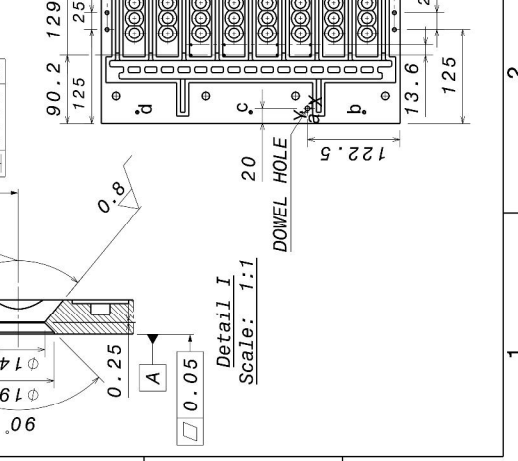
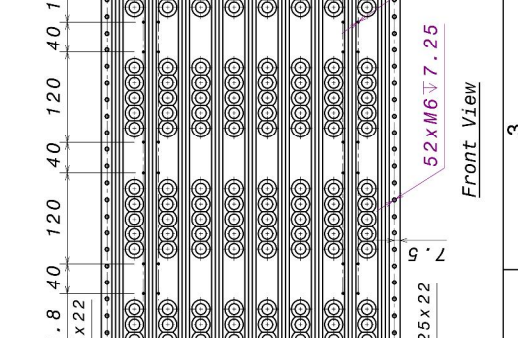
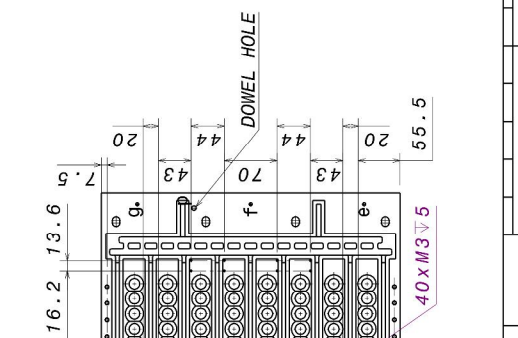
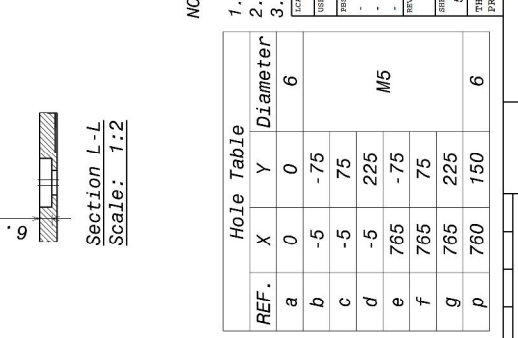
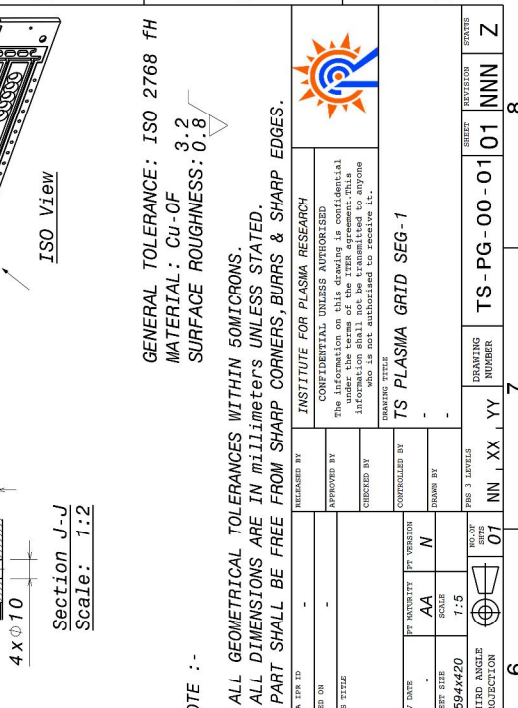
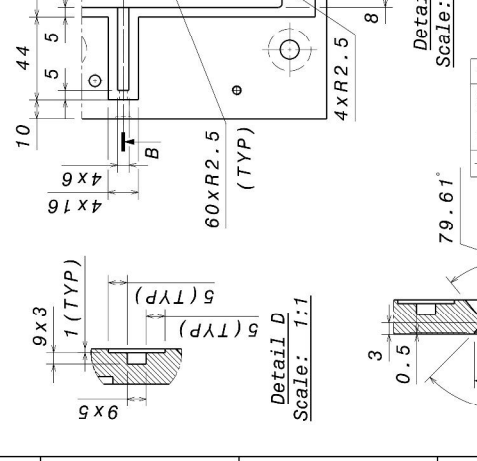
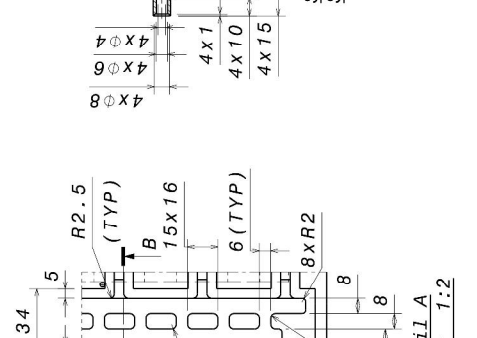
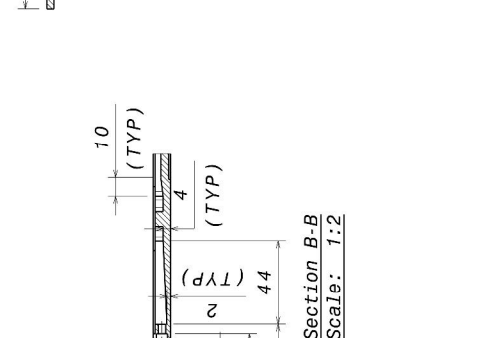
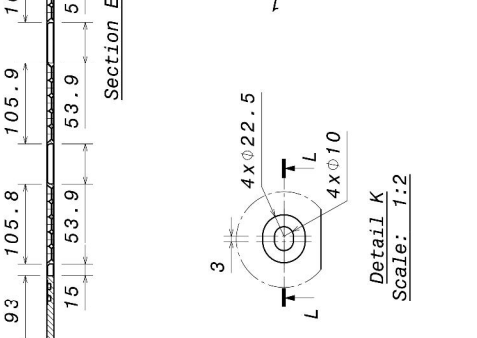
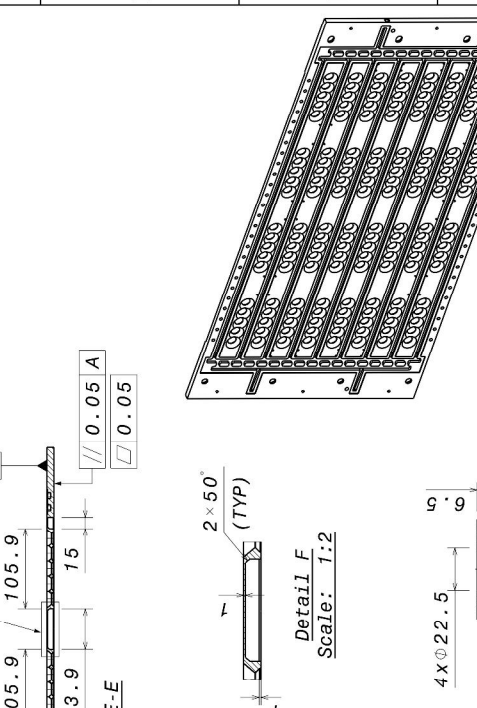
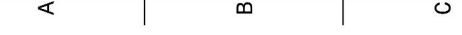
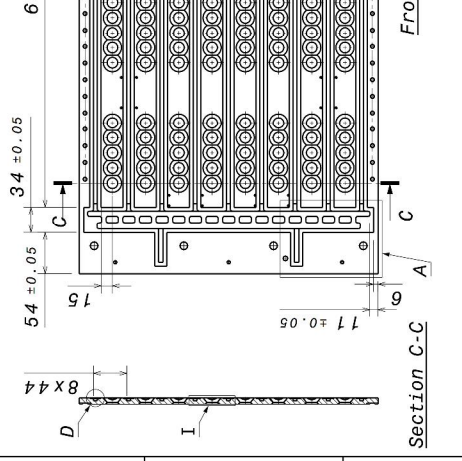
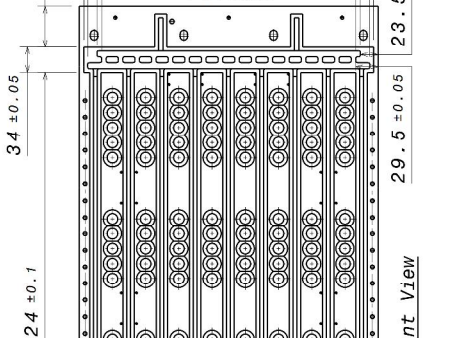
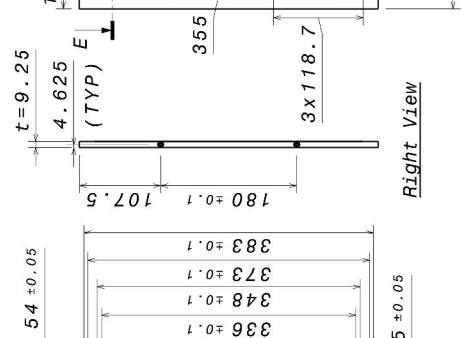
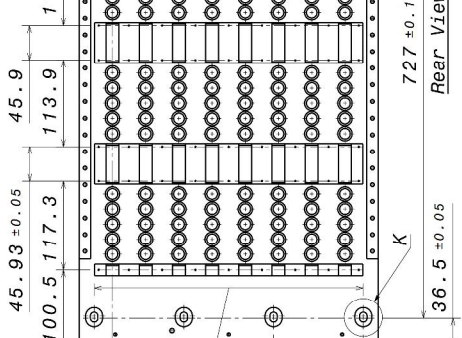
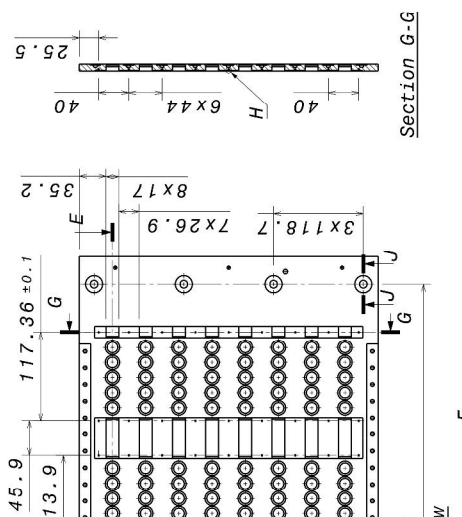
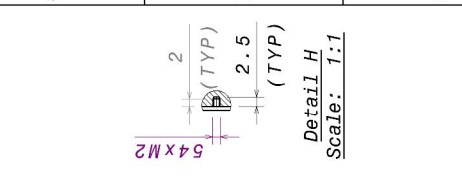
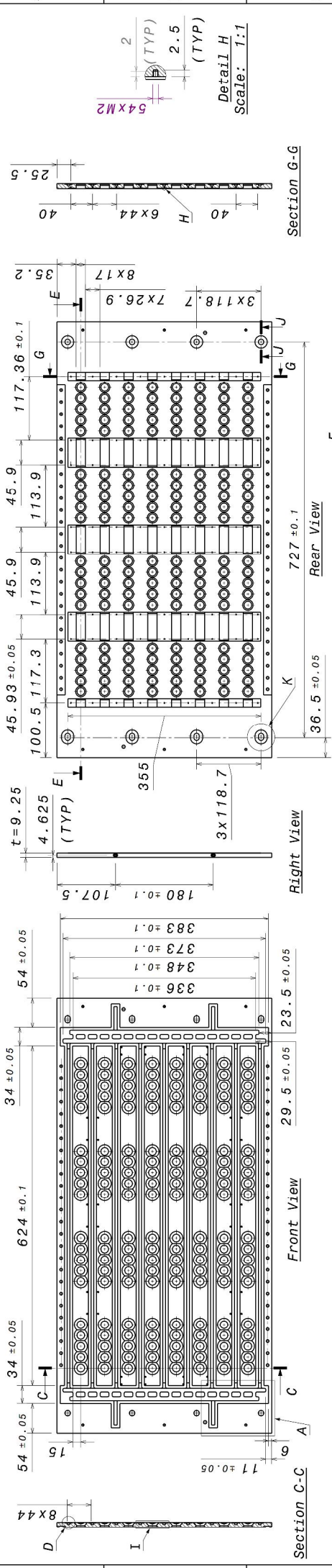
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5	IS02009 M3X10 CSK SLOTTED SCREW	40	STD		
4	TS PG HEAT ELEMENT PLT	2	Part	SS304L	
3	TS PG SEG PLATE 2	3	Part	SS304L	
2	TS PG SEG PLATE 1	2	Part	SS304L	
1	TS PG SEGMENT & COOLING PIPE ASSY	1	ASSY		

LCA IPR ID		-		RELEASED BY	INSTITUTE FOR PLASMA RESEARCH							
USED ON		-		APPROVED BY	CONFIDENTIAL UNLESS AUTHORISED The information on this drawing is confidential. This information shall not be transmitted to anyone who is not authorised to receive it.							
PBS TITLE		-		CHECKED BY	DRAWING TITLE		TS PLASMA GRID ASSY					
REV DATE	18-01-19	PT MATURITY	AA	CONTROLLED BY	-							
SHEET SIZE	420X297	SCALE	1:5	DRAWN BY	-							
THIRD ANGLE PROJECTION		NO. OF SHEETS	01	PBS 3 LEVELS								
				NN	XX	YY	DRAWING NUMBER	TS-PG-00-00	01	SHEET REVISION	NNN	Z

GENERAL TOLERANCE: ISO 2768 FH

NOTE :-
 1. ALL DIMENSIONS ARE IN millimeters UNLESS STATED.
 2. PART SHALL BE FREE FROM SHARP CORNERS, BURRS & SHARP EDGES.

1 2 3 6 7 8



GENERAL TOLERANCE: ISO 2768 fH
 MATERIAL: CU-OF
 SURFACE ROUGHNESS: 0.8

NOTE :-
 1. ALL GEOMETRICAL TOLERANCES WITHIN 50MICRONS.
 2. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS STATED.
 3. PART SHALL BE FREE FROM SHARP CORNERS, BURRS & SHARP EDGES.

REF.	X	Y	Diameter
a	0	0	6
b	-5	-75	
c	-5	75	
d	-5	225	M5
e	765	-75	
f	765	75	
g	765	225	
p	760	150	6

REV	DATE	BY	CHKD	APPD	PT	VERSION
AA					N	

PROJ	NO	DATE	SCALE
5944420			1:5

PROJ	NO	DATE	SCALE
5944420			1:5

PROJ	NO	DATE	SCALE
5944420			1:5



INSTITUTE FOR PLASMA RESEARCH
 CONFIDENTIAL UNLESS AUTHORIZED
 The information on this drawing is confidential
 Information shall not be transmitted to anyone
 who is not authorized to receive it.

DESIGNED BY
 CHECKED BY
 APPROVED BY
 RELEASED BY

7S PLASMA GRID SEG-1

TS-PG-00-01

01 INNN Z

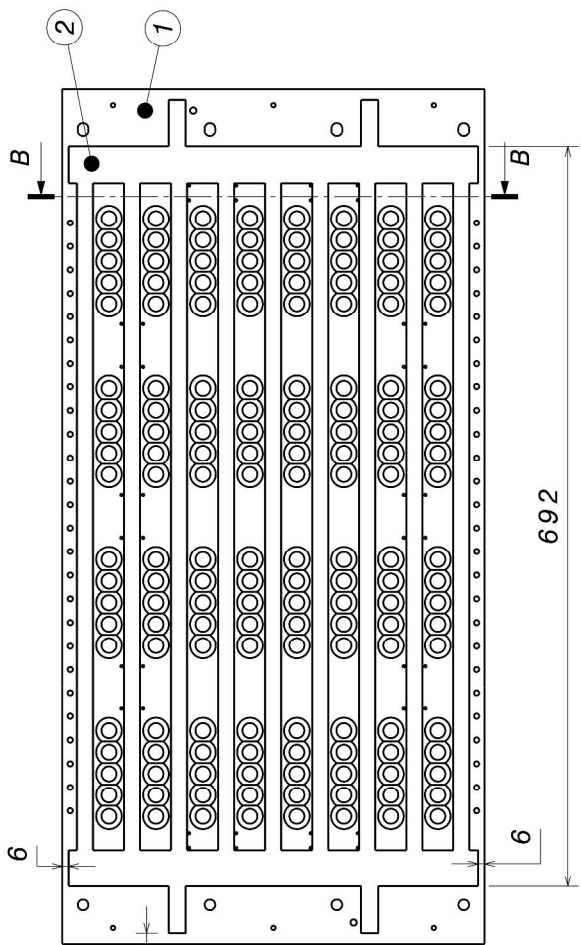
A

B

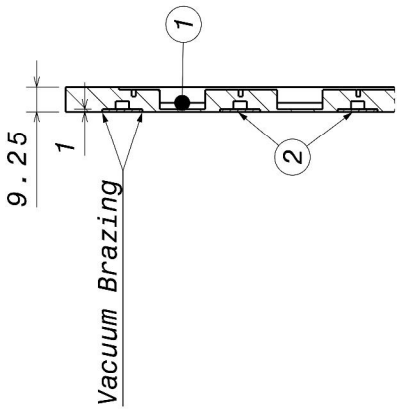
C

D

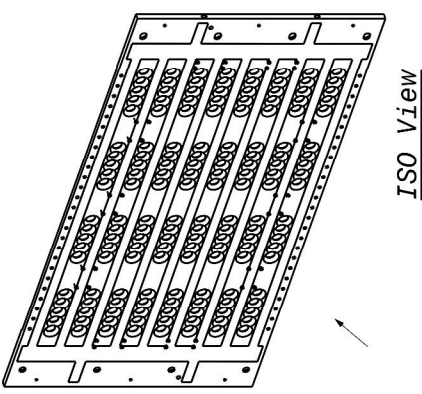
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Front view



Detail C
Scale: 1:2



ISO View



Section B-B

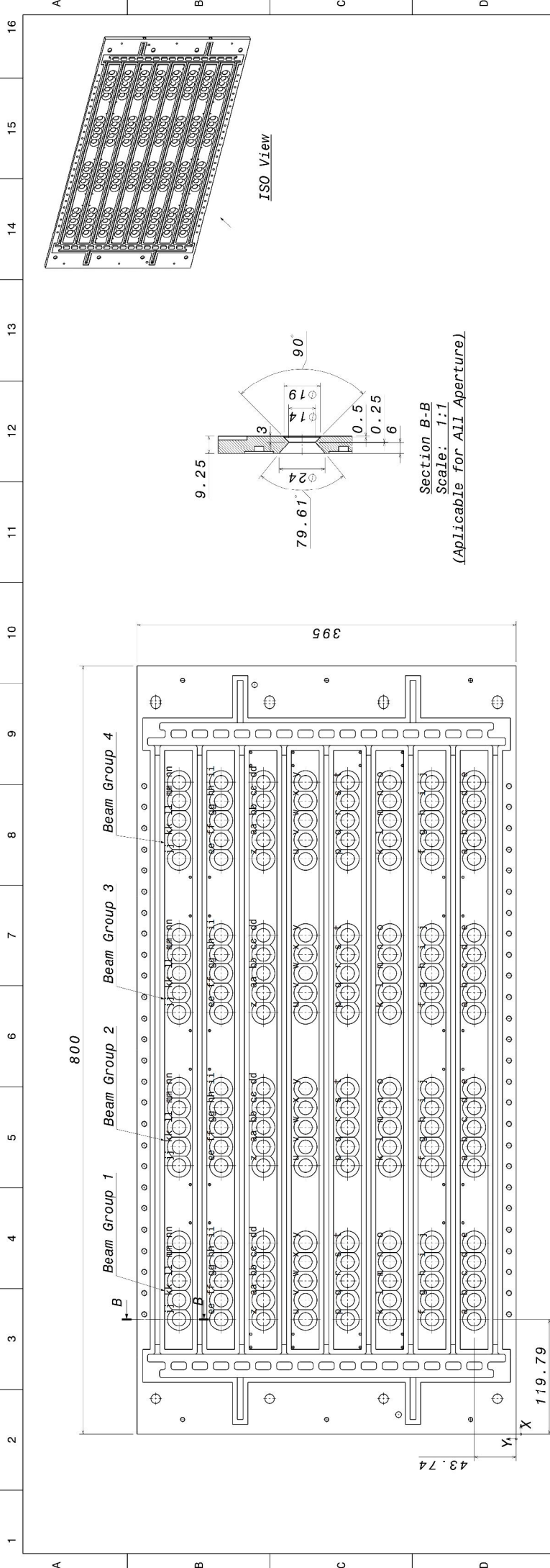
GENERAL TOLERANCE: ISO 2768 FH
 SURFACE ROUGHNESS: 3.2
 0.8

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1	TS PLASMA GRID SEG-1	1	Part	OF-Cu	TS-PG-00-01
Sr.No	Part Name	Qty	Type	Material	Drawing No.

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USED ON	#PART: 0609H/0604R-362428				
PBS TITLE	CONFIDENTIAL UNLESS AUTHORISED				
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420X297	1:5			TS-PG-00-02	01 NNN
THIRD ANGLE PROJECTION	NO. OF SHEETS				
	01				
				NN	XX
				YY	ZZ
				6	7
					8



NOTE :-
 1. ALL DIMENSIONS ARE IN millimeters UNLESS STATED.
 2. PART SHALL BE FREE FROM SHARP CORNERS, BURRS & SHARP EDGES.



Section B-B
Scale: 1:1
(Applicable for All Aperture)

BEAM GROUP NO. 1				BEAM GROUP NO. 2				BEAM GROUP NO. 3				BEAM GROUP NO. 4			
REF.	X	Y	Dia.	REF.	X	Y	Dia.	REF.	X	Y	Dia.	REF.	X	Y	Dia.
a	119.79	43.74	14	a	279.58	219.45	14	a	439.37	219.45	14	a	599.15	43.74	14
b	139.76	43.74	14	b	299.54	219.45	14	b	459.33	219.45	14	b	619.12	43.74	14
c	159.72	43.74	14	c	319.51	219.45	14	c	479.3	219.45	14	c	639.08	43.74	14
d	179.68	43.74	14	d	339.47	219.45	14	d	499.26	219.45	14	d	659.05	43.74	14
e	199.65	43.74	14	e	359.44	219.45	14	e	519.23	219.45	14	e	679.01	43.74	14
f	119.79	87.67	14	f	279.58	263.39	14	f	439.37	263.39	14	f	599.15	87.67	14
g	139.76	87.67	14	g	299.54	263.39	14	g	459.33	263.39	14	g	619.12	87.67	14
h	159.72	87.67	14	h	319.51	263.39	14	h	479.3	263.39	14	h	639.08	87.67	14
i	179.68	87.67	14	i	339.47	263.39	14	i	499.26	263.39	14	i	659.05	87.67	14
j	199.65	87.67	14	j	359.44	263.39	14	j	519.23	263.39	14	j	679.01	87.67	14
k	119.79	131.61	14	k	279.58	307.33	14	k	439.37	307.33	14	k	599.15	131.61	14
l	139.76	131.61	14	l	299.54	307.33	14	l	459.33	307.33	14	l	619.12	131.61	14
m	159.72	131.61	14	m	319.51	307.33	14	m	479.3	307.33	14	m	639.08	131.61	14
n	179.68	131.61	14	n	339.47	307.33	14	n	499.26	307.33	14	n	659.05	131.61	14
o	199.65	131.61	14	o	359.44	307.33	14	o	519.23	307.33	14	o	679.01	131.61	14
p	119.79	175.55	14	p	279.58	351.26	14	p	439.37	351.26	14	p	599.15	175.55	14
q	139.76	175.55	14	q	299.54	351.26	14	q	459.33	351.26	14	q	619.12	175.55	14
r	159.72	175.55	14	r	319.51	351.26	14	r	479.3	351.26	14	r	639.08	175.55	14
s	179.68	175.55	14	s	339.47	351.26	14	s	499.26	351.26	14	s	659.05	175.55	14
t	199.65	175.55	14	t	359.44	351.26	14	t	519.23	351.26	14	t	679.01	175.55	14

INSTITUTE FOR PLASMA RESEARCH
MMT, GANDHINAGAR, BHARUCH

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It is to be used only for the project for which it is prepared.
Anyone who is not authorized to possess it.

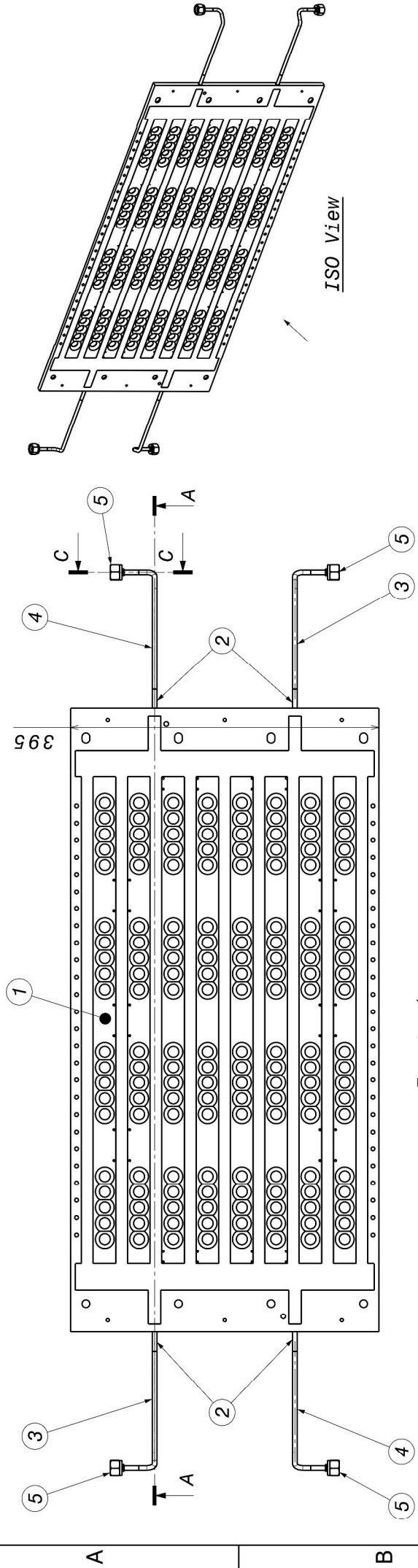
ISSUED ON: 10/01/2018
JOB TITLE: TS PG SEG APERTURE
DRAWN BY: -
CHECKED BY: -
APPROVED BY: -
REVISIONS: -

PER 3 LIVES: NN XX YY
DATE: TS-PG-00-03
SHEET: 01
REVISION: NN Z

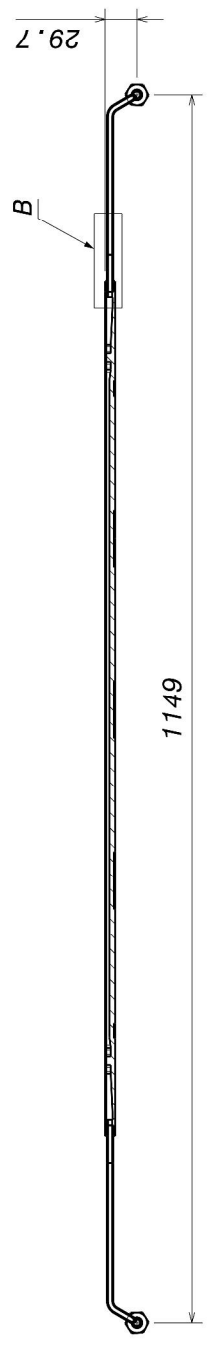
GENERAL TOLERANCE: ISO 2768 FH
MATERIAL: OF-CU

NOTE :-
1. ALL DIMENSIONS ARE IN millimeters UNLESS STATED.
2. PART SHALL BE FREE FROM SHARP CORNERS, BURRS & SHARP EDGES.

1 2 3 4 5 6 7 8



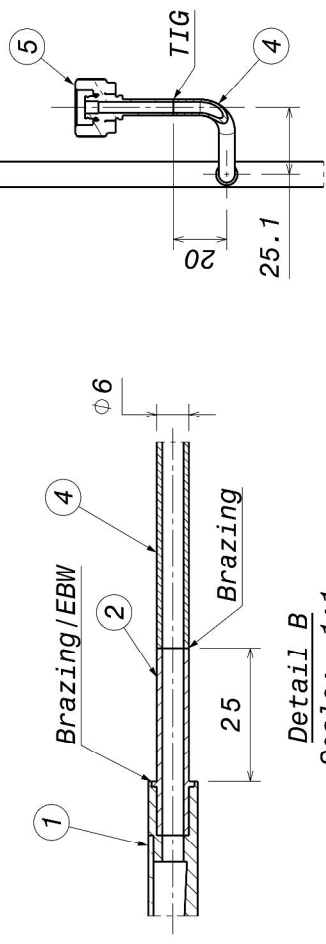
Front view



Section A-A

GENERAL TOLERANCE: ISO 2768 FH
SURFACE ROUGHNESS:

Sr.No	Part Name	Qty	Type	Material	Drawing No.
5	DOCKWELAR PIPE FITTINGS	4	STD		
4	TS PG PIPE 2	2	Part	SS304L	TS-PG-01-03
3	TS PG PIPE 1	2	Part	SS304L	TS-PG-01-02
2	TS PG PIPE WITH COLLAR	4	Part	OF-Cu	TS-PG-01-01
1	TS PG SEGMENT ASSY	1	ASSY		TS-PG-00-02



Detail B
Scale: 1:1

Section C-C
Scale: 1:2



INSTITUTE FOR PLASMA RESEARCH
#MAT. 06/01/06/04-362428

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REV DATE	18-01-19	PT MATURITY	AA	PT VERSION	N	NO. OF SHEETS	01
SHEET SIZE	420x297	SCALE	1:5	TS PG SEGMENT & COOLING PIPE ASSY			
DRAWING TITLE							
TS PG SEGMENT & COOLING PIPE ASSY							
DRAWING NUMBER							
TS-PG-01-00-01							
DRAWING NUMBER							
TS-PG-01-00-01							
REVISION							
NN XX YY							
STATUS							
Z							

NOTE :-

- 1. ALL DIMENSIONS ARE IN millimeters UNLESS STATED.
- 2. PART SHALL BE FREE FROM SHARP CORNERS, BURRS & SHARP EDGES.

1 2 3 4 5 6 7 8

1

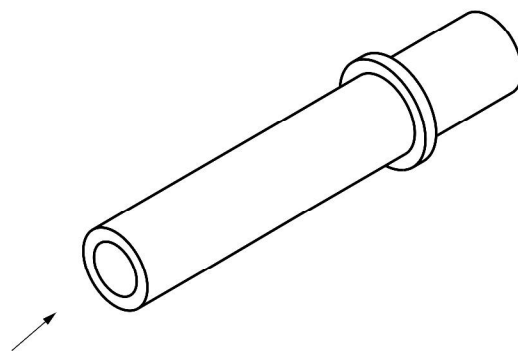
2

3

4

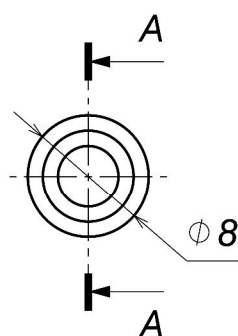
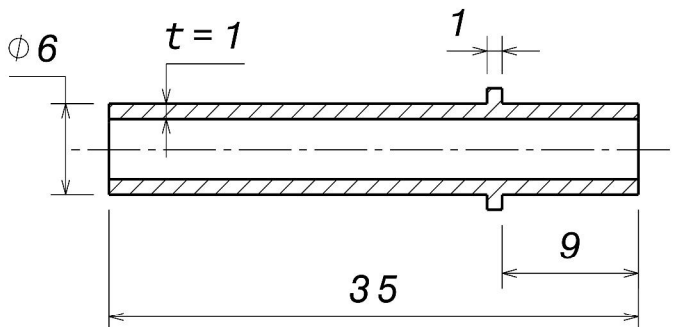
A

A

ISO View

B

B

Front viewSection A-A

C

C

GENERAL TOLERANCE: ISO 2768 mK
 MATERIAL: OF-Cu
 SURFACE ROUGHNESS: $\sqrt{\text{Rz 6.3}}$
 QUANTITY: 4

NOTE :-

1. ALL DIMENSIONS ARE IN millimeters UNLESS STATED.
2. PART SHALL BE FREE FROM SHARP CORNERS, BURRS & SHARP EDGES.

LCA IPR ID -			RELEASED BY INSTITUTE FOR PLASMA RESEARCH BHAT, GANDHINAGAR-382428	
USED ON -			APPROVED BY CONFIDENTIAL UNLESS AUTHORISED The information on this drawing is confidential. This information shall not be transmitted to anyone who is not authorised to receive it.	
PBS TITLE -			CHECKED BY	
REV DATE -			CONTROLLED BY DRAWING TITLE TS PG PIPE WITH COLLAR	
PT MATURITY AA	PT VERSION N	DRAWN BY -		
SHEET SIZE 297x210	SCALE 2:1	DRAWING NUMBER TS-PG-01-01		
THIRD ANGLE PROJECTION 	NO. OF SHTS 01	PBS 3 LEVELS NN, XX, YY	SHEET 01	REVISION NNN
				STATUS Z

1

4

1

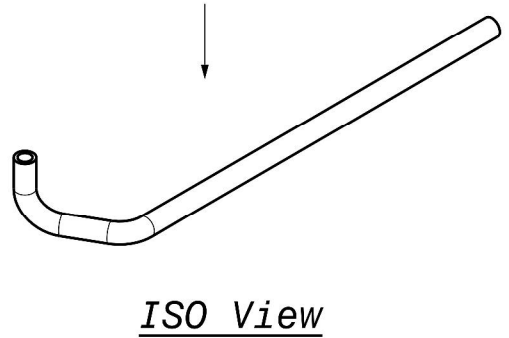
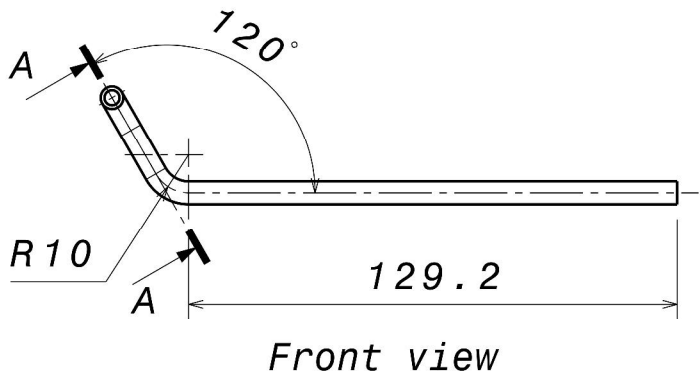
2

3

4

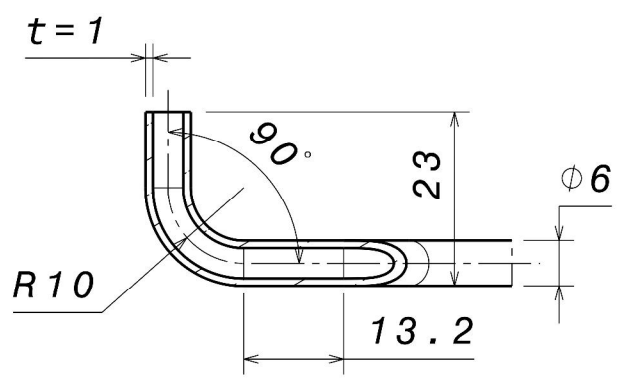
A

A



B

B




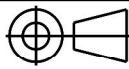
C

C

GENERAL TOLERANCE: ISO 2768 mK
MATERIAL: SS304L
SURFACE ROUGHNESS: $\sqrt{Rz 6.3}$
QUANTITY: 2

NOTE :-

- 1. ALL DIMENSIONS ARE IN millimeters UNLESS STATED.
- 2. PART SHALL BE FREE FROM SHARP CORNERS, BURRS & SHARP EDGES.

LCA IPR ID		-		RELEASED BY	INSTITUTE FOR PLASMA RESEARCH <small>BHAT, GANDHINAGAR-382428</small>													
USED ON		-		APPROVED BY	CONFIDENTIAL UNLESS AUTHORISED The information on this drawing is confidential. This information shall not be transmitted to anyone who is not authorised to receive it.													
PBS TITLE		-		CHECKED BY	DRAWING TITLE													
REV DATE		PT MATURITY	PT VERSION	CONTROLLED BY	TS PG COOLING PIPE 1													
SHEET SIZE		SCALE		DRAWN BY	-			<table border="1"> <tr> <td>PBS 3 LEVELS</td> <td>DRAWING NUMBER</td> <td>SHEET</td> <td>REVISION</td> <td>STATUS</td> </tr> <tr> <td>NN, XX, YY</td> <td>TS-PG-01-02</td> <td>01</td> <td>NNN</td> <td>Z</td> </tr> </table>	PBS 3 LEVELS	DRAWING NUMBER	SHEET	REVISION	STATUS	NN, XX, YY	TS-PG-01-02	01	NNN	Z
PBS 3 LEVELS	DRAWING NUMBER	SHEET	REVISION	STATUS														
NN, XX, YY	TS-PG-01-02	01	NNN	Z														
THIRD ANGLE PROJECTION		NO. OF SHTS	01															

1

4

D

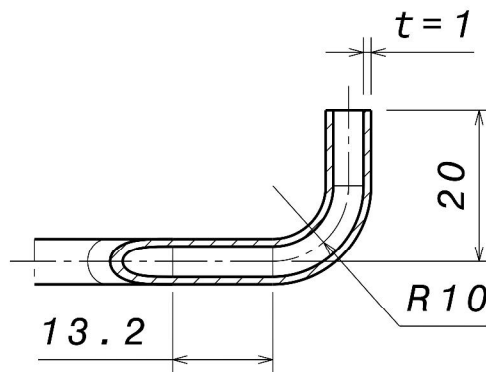
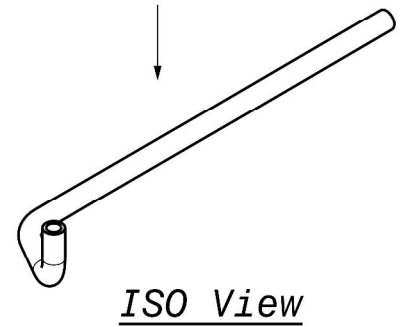
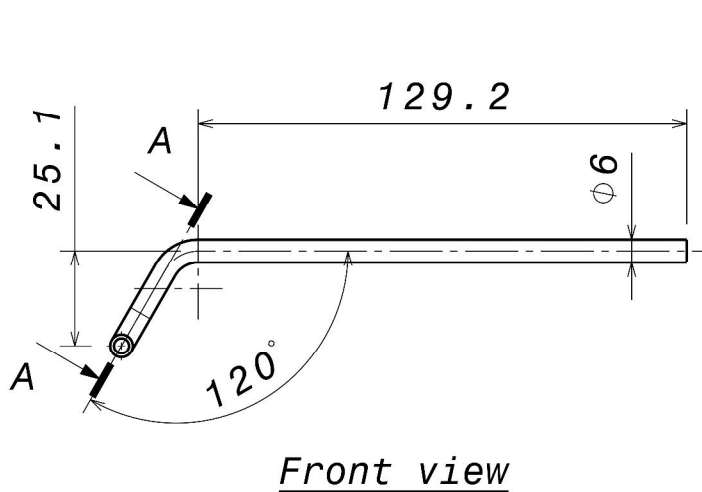
D

1

2

3


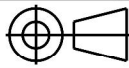
4



GENERAL TOLERANCE: ISO 2768 mK
MATERIAL: SS304L
SURFACE ROUGHNESS: $\sqrt{Rz 6.3}$
QUANTITY: 2

NOTE :-

1. ALL DIMENSIONS ARE IN millimeters UNLESS STATED.
2. PART SHALL BE FREE FROM SHARP CORNERS, BURRS & SHARP EDGES.

LCA IPR ID		-		RELEASED BY	INSTITUTE FOR PLASMA RESEARCH BHAT, GANDHINAGAR-382428		
USED ON		-		APPROVED BY	CONFIDENTIAL UNLESS AUTHORISED The information on this drawing is confidential. This information shall not be transmitted to anyone who is not authorised to receive it.		
PBS TITLE		-		CHECKED BY	DRAWING TITLE		
REV DATE		PT MATURITY	PT VERSION	CONTROLLED BY	TS PG COOLING PIPE 2		
-		AA	N	DRAWN BY	-		D
SHEET SIZE		SCALE		PBS 3 LEVELS		DRAWING NUMBER	SHEET
297x210		1:2		NN, XX, YY		TS-PG-01-03	01
THIRD ANGLE PROJECTION		NO. OF SHTS		DRAWING NUMBER		SHEET	REVISION
		01		TS-PG-01-03		01	NNN
1						4	

1

4

1

2

3

4

A

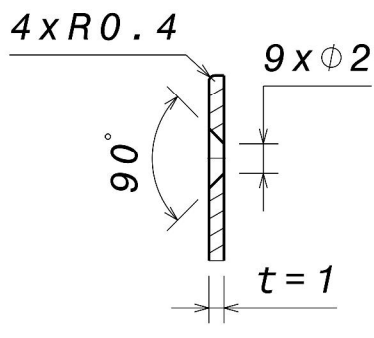
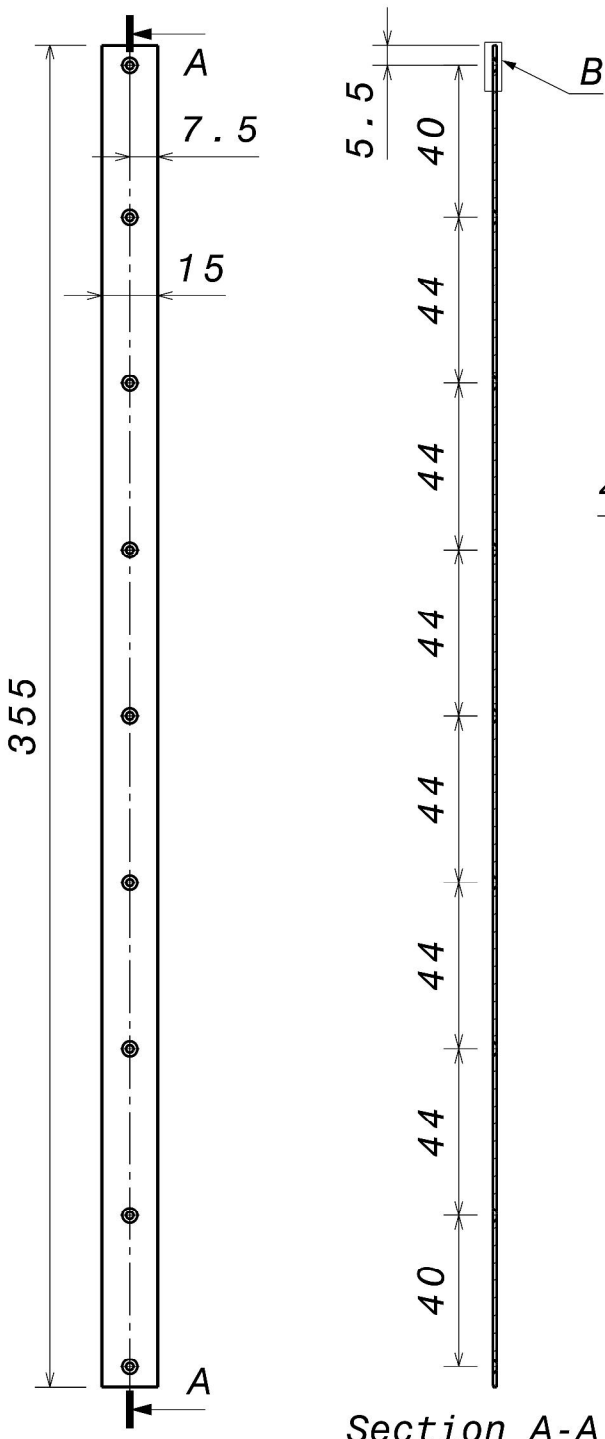
A

B

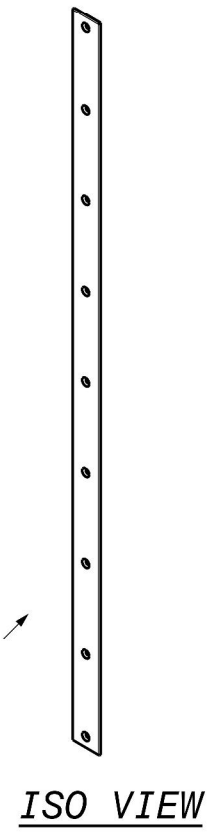
B

C

C



Detail B
Scale: 2:1





ISO VIEW

Section A-A

GENERAL TOLERANCE: ISO 2768 mK
 MATERIAL: SS304L
 SURFACE ROUGHNESS: $\sqrt{Rz 6.3}$
 QUANTITY: 2

NOTE :-

1. ALL DIMENSIONS ARE IN millimeters UNLESS STATED.
2. PART SHALL BE FREE FROM SHARP CORNERS, BURRS & SHARP EDGES.

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PBS TITLE		-		CHECKED BY	DRAWING TITLE			
REV DATE	PT MATURITY	PT VERSION	CONTROLLED BY					TS PG SEG PLATE 1
-	AA	N	DRAWN BY					-
SHEET SIZE		SCALE		PBS 3 LEVELS				SHEET
297x210		1:2		NN, XX, YY				01
THIRD ANGLE PROJECTION				NO. OF SHTS		DRAWING NUMBER		STATUS
		01		TS-PG-00-04		01		NNN Z

1

4

D

1

2

3

4

A

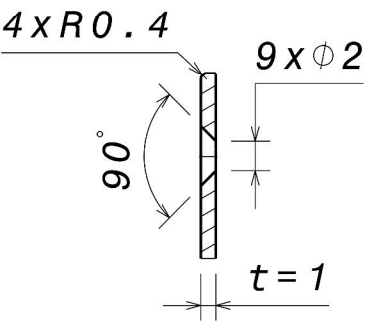
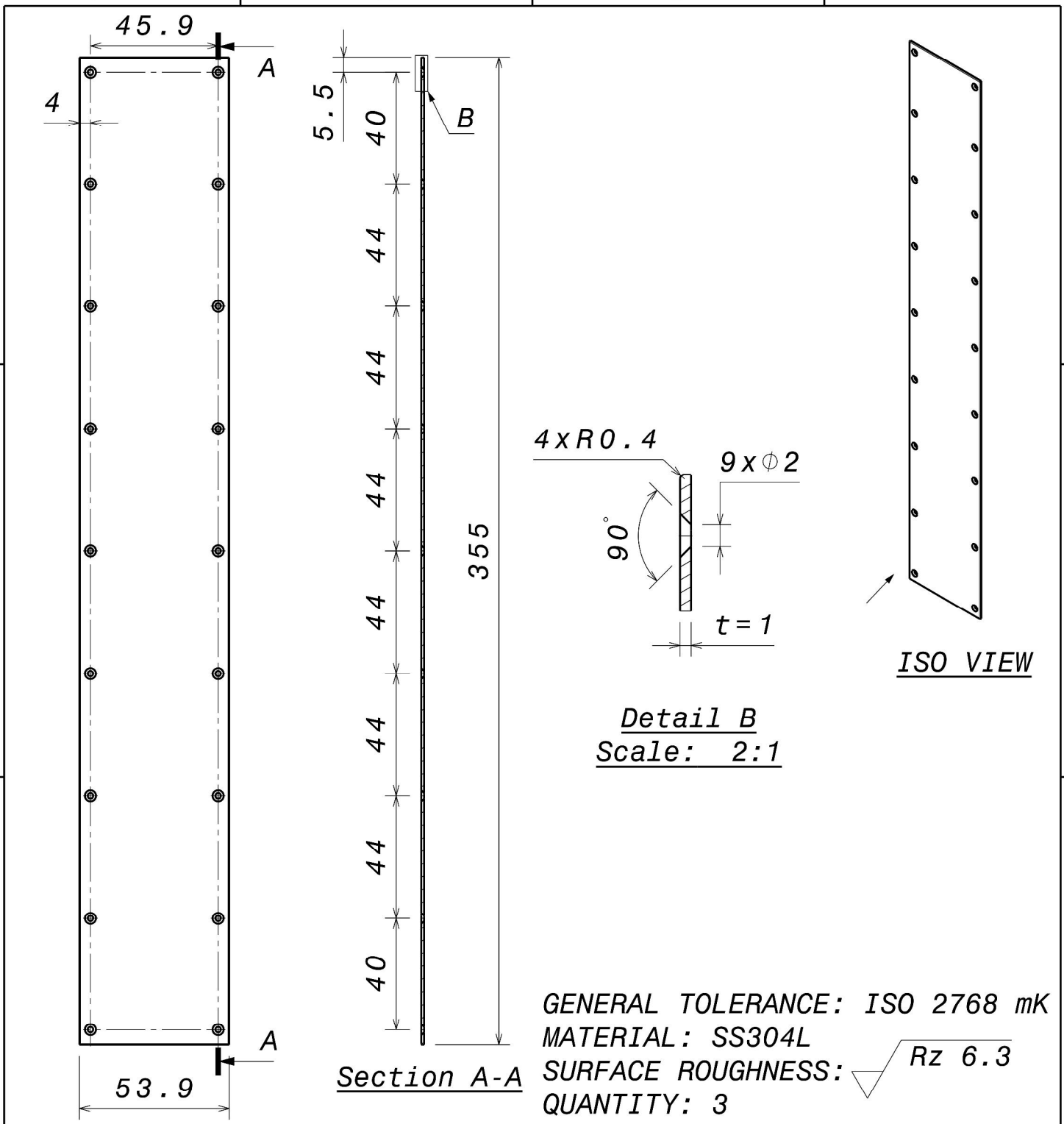
B

C

A

B

C



Detail B
Scale: 2:1


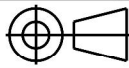
ISO VIEW

Section A-A

GENERAL TOLERANCE: ISO 2768 mK
 MATERIAL: SS304L
 SURFACE ROUGHNESS: $\sqrt{Rz 6.3}$
 QUANTITY: 3

NOTE :-

1. ALL DIMENSIONS ARE IN millimeters UNLESS STATED.
2. PART SHALL BE FREE FROM SHARP CORNERS, BURRS & SHARP EDGES.

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USED ON		-		APPROVED BY	CONFIDENTIAL UNLESS AUTHORISED		
PBS TITLE		-		CHECKED BY	The information on this drawing is confidential. This information shall not be transmitted to anyone who is not authorised to receive it.		
REV DATE		PT MATURITY	PT VERSION	CONTROLLED BY	DRAWING TITLE		
-	-	AA	N	-	TS PG SEG PLATE 2		
SHEET SIZE		SCALE		DRAWN BY		-	
297x210		1:2		-		-	
THIRD ANGLE PROJECTION		NO. OF SHTS	01	PBS 3 LEVELS	DRAWING NUMBER	TS-PG-00-05	SHEET
1				NN, XX, YY			01
							REVISION
							NNN
							STATUS
							Z
							4

A

A

B

B

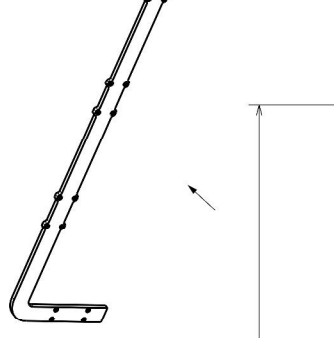
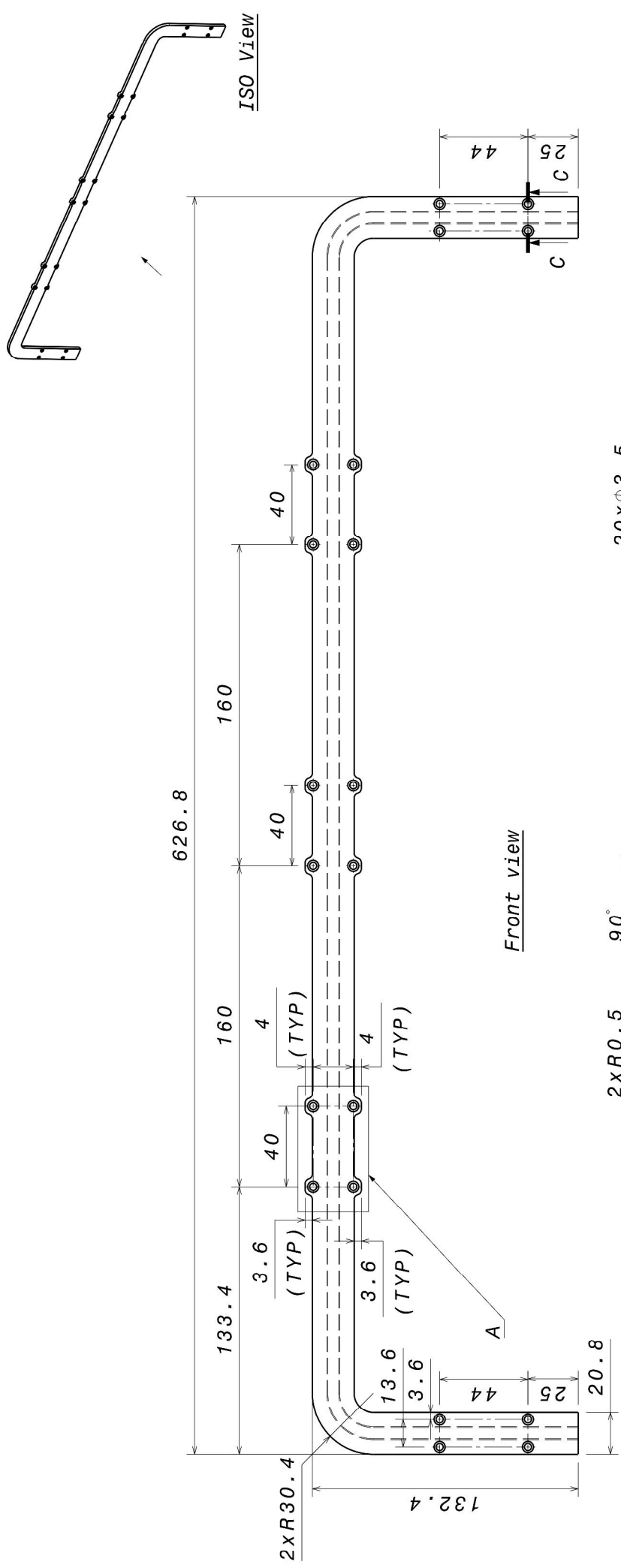
C

C

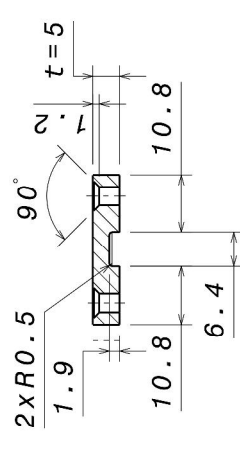
D

D

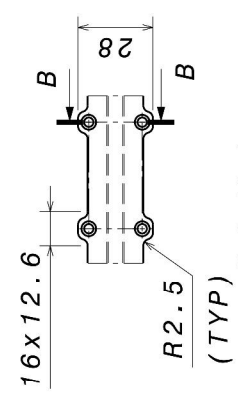
1 2 3 4 5 6 7 8



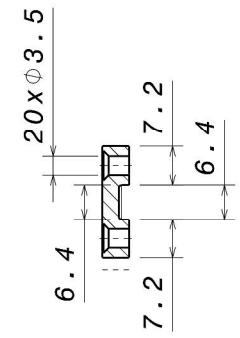
Front view



Section B-B
Scale: 1:1



Detail A



Section C-C
Scale: 1:1

GENERAL TOLERANCE: ISO 2768 mK
 MATERIAL: SS304L
 SURFACE ROUGHNESS: RZ 6.3
 QUANTITY: 2

LCA IPR ID	-	RELEASED BY	INSTITUTE FOR PLASMA RESEARCH
USED ON	-	APPROVED BY	CONFIDENTIAL UNLESS AUTHORISED
PBS TITLE		CHECKED BY	The information on this drawing is confidential. This information shall not be transmitted to anyone who is not authorised to receive it.
REV DATE	18-01-19	CONTROLLED BY	DRAWING TITLE
SHEET SIZE	420x297	DRAWN BY	TS PG HEAT ELEMENT PLT
THIRD ANGLE PROJECTION			
PT MATURITY	AA	PBS 3 LEVELS	
PT VERSION	N	NN	XX
SCALE	1:2	YY	ZZ
NO. OF SHEETS	01	DRAWING NUMBER	
		TS-PG-00-06	
		SHEET REVISION	
		01 NNN	
		STATUS	
		Z	



NOTE :-

1. ALL DIMENSIONS ARE IN millimeters UNLESS STATED.
2. PART SHALL BE FREE FROM SHARP CORNERS, BURRS & SHARP EDGES.

1

2

3

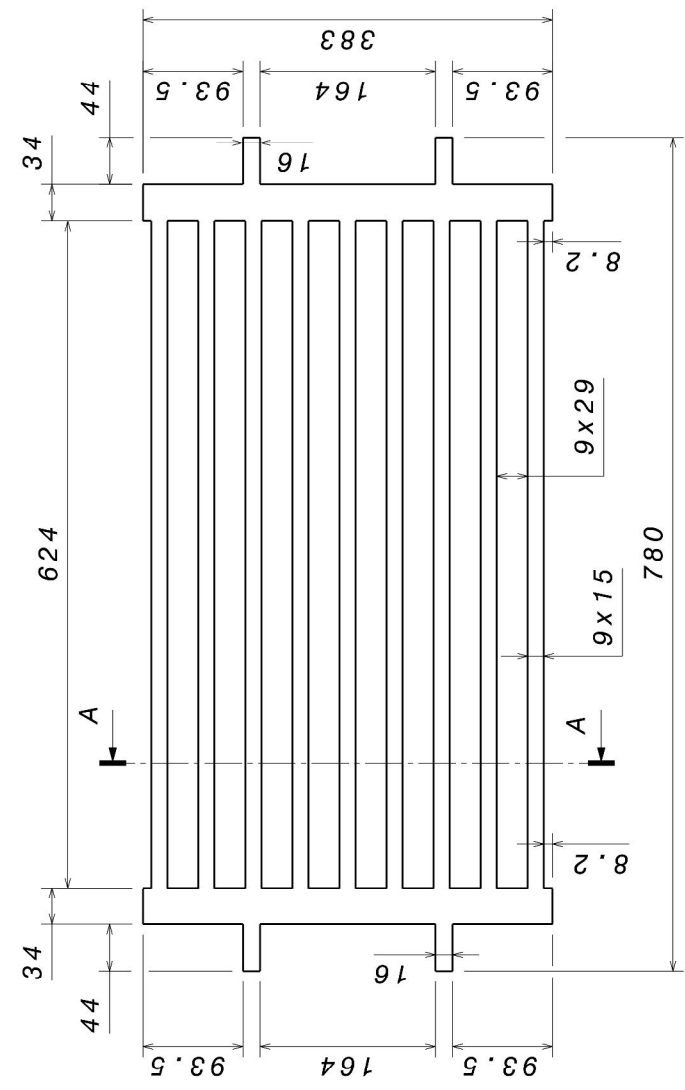
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5

6

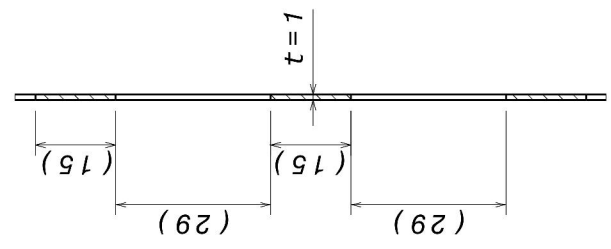
7

8

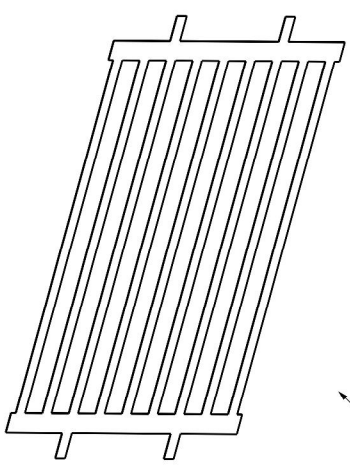


Section A-A

Front view



Detail B
Scale: 1:1




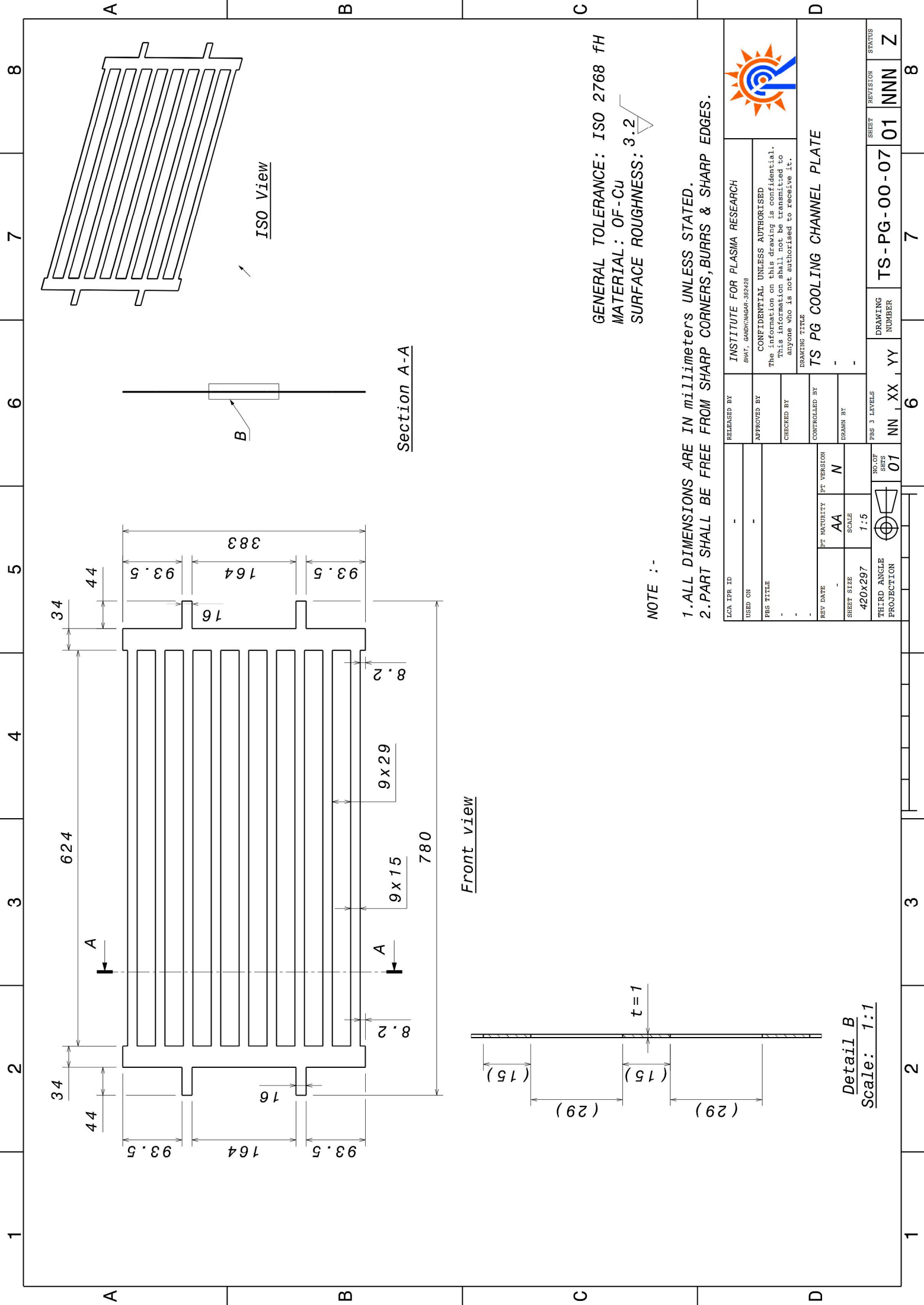
ISO View

GENERAL TOLERANCE: ISO 2768 fH
 MATERIAL: OF-Cu
 SURFACE ROUGHNESS: 3.2

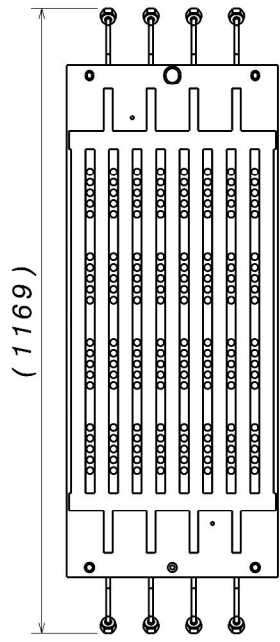
NOTE :-

1. ALL DIMENSIONS ARE IN millimeters UNLESS STATED.
2. PART SHALL BE FREE FROM SHARP CORNERS, BURRS & SHARP EDGES.

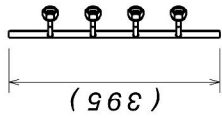
LCA IPR ID	-	RELEASED BY	INSTITUTE FOR PLASMA RESEARCH		
USED ON	-	APPROVED BY	CONFIDENTIAL UNLESS AUTHORISED		
PBS TITLE		CHECKED BY	The information on this drawing is confidential. This information shall not be transmitted to anyone who is not authorised to receive it.		
REV DATE		CONTROLLED BY	DRAWING TITLE		
SHEET SIZE	420x297	PT MATURITY	AA	TS PG COOLING CHANNEL PLATE	
THIRD ANGLE PROJECTION		SCALE	1:5		
		NO. OF SHS	01		
		PBS 3 LEVELS	NN XX YY	DRAWING NUMBER	TS-PG-00-07 01
				SHEET REVISION	NNN Z
				STATUS	Z



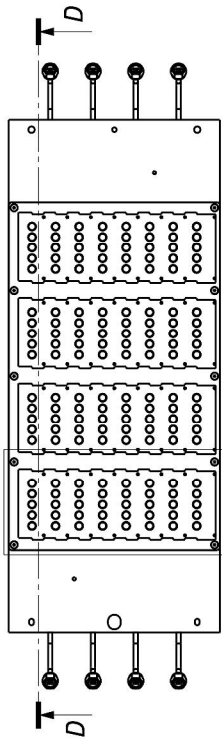
1 2 3 4 5 6 7 8



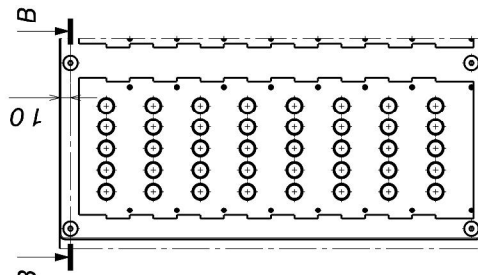
Front view



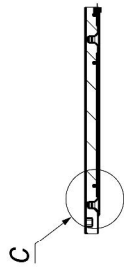
Right view



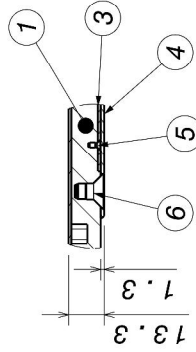
Rear view



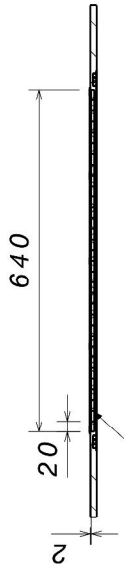
Detail A
Scale: 1:5



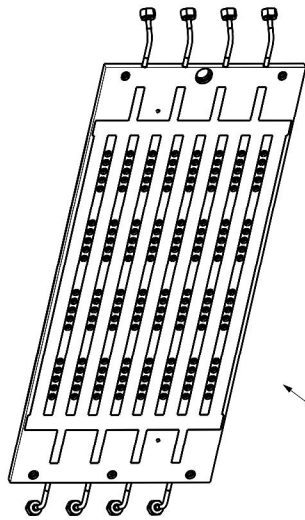
Section B-B
Scale: 1:5



Detail C
Scale: 1:2



Section D-D
Scale: 1:10



ISO View

6	ISO10642	M6x10 COUNTERSUNK HEAD SCREW	10	STD
5	ISO2009	M2x4 CSK SLOTTED SCREW	72	STD
4	TS EG KERB		1	Part OF-Cu
3	TS EG SEG MAGNET COVER PLATE		4	Part SS304L
2	TS EG MAGNETS PATTERN		1	ASSY Sm2Co17
1	TS EG SEGMENT & COOLING PIPE ASSY		1	ASSY

Sr.No	Part Name		Qty	Type	Material	Drawing No.
	INSTITUTE FOR PLASMA RESEARCH					
LCA IPR ID	#MAT. GADH/MPAR-36249					
USED ON	CONFIDENTIAL UNLESS AUTHORISED					
PBS TITLE	The information on this drawing is confidential. This information shall not be transmitted to anyone who is not authorised to receive it.					
REV DATE	PT MATURITY	PT VERSION	DRAWING TITLE			
18-01-19	AA	N	TS EXTRACTOR GRID ASSY			
SHEET SIZE	SCALE	NO. OF SHS	DRAWN BY			
420X297	1:10	01	PBS 3 LEVELS			
THIRD ANGLE PROJECTION	NO. OF SHS		DRAWING NUMBER		STATUS	
		01	TS-EG-00-00 01		NNN Z	



GENERAL TOLERANCE: ISO 2768 FH
SURFACE ROUGHNESS: 3.2
0.8

NOTE :-

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS STATED.
2. PART SHALL BE FREE FROM SHARP CORNERS, BURRS & SHARP EDGES.

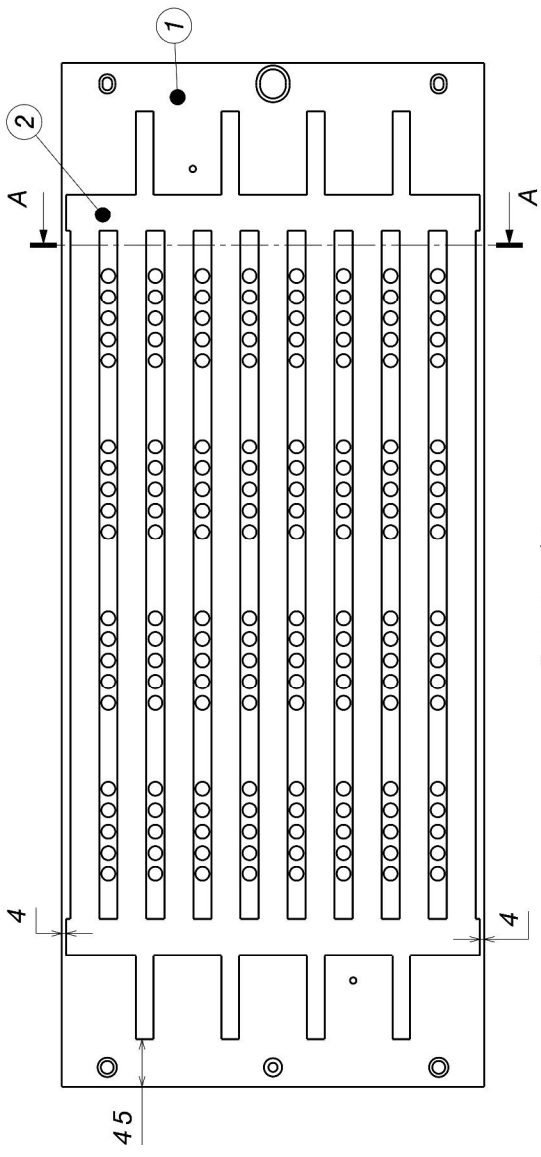
1 2 3 4 5 6 7 8

A

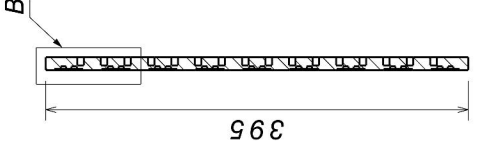
B

C

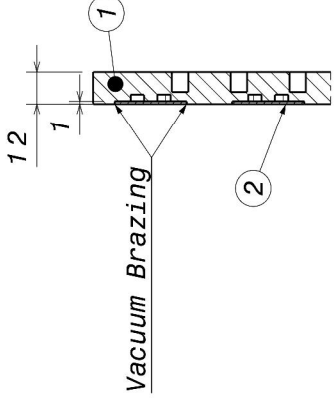
D



Front view

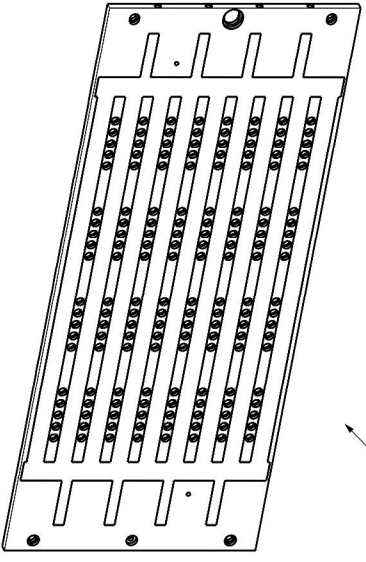


Section A-A



Vacuum Brazing

Detail B
Scale: 1:2



ISO View

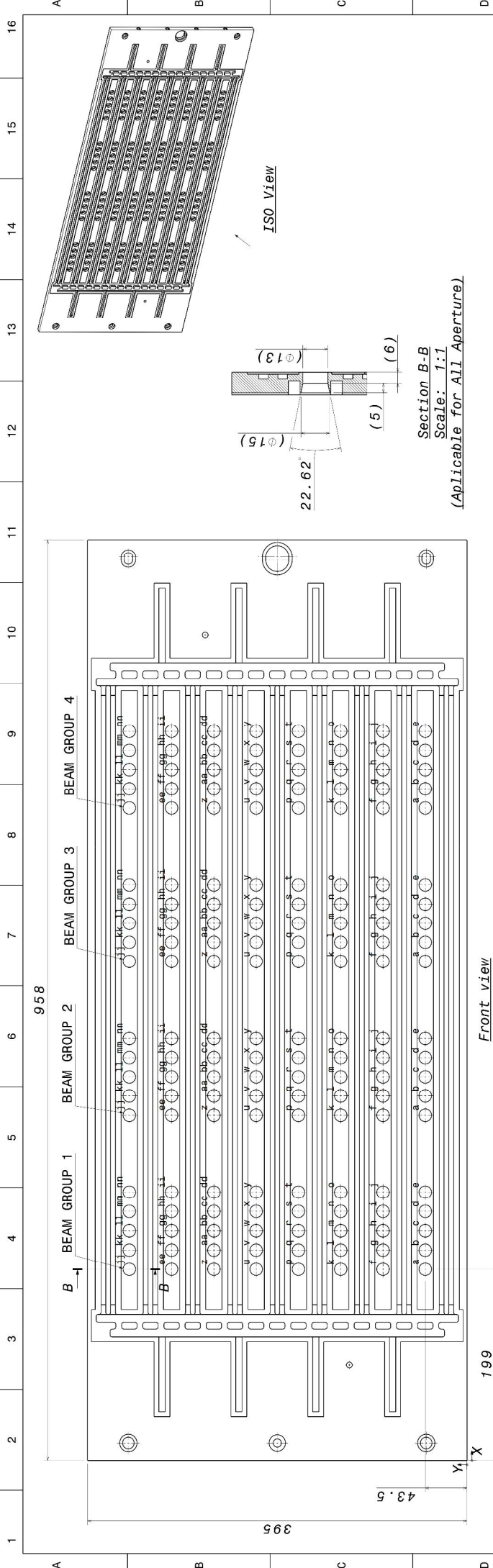
GENERAL TOLERANCE: ISO 2768 FH

2	TS EG COOLING CHANNEL PLATE	1	Part	OF-Cu	TS-EG-00-08	
1	TS EXTRACTOR GRID SEG-1	1	Part	OF-Cu	TS-EG-00-01	
Sr.No	Part Name	Qty	Type	Material	Drawing No.	Revision
LCA IPR ID	-					
RELEASED BY	INSTITUTE FOR PLASMA RESEARCH					
USED ON	#MAT. GADH/MDAR-362428					
PBS TITLE	CONFIDENTIAL UNLESS AUTHORISED					
	The information on this drawing is confidential. This information shall not be transmitted to anyone who is not authorised to receive it.					
	DRAWING TITLE					
	TS_EG_SEGMENT_ASSY					
REV DATE	PT MATURITY	PT VERSION				
18-01-19	AA	N				
SHEET SIZE	SCALE					
420X297	1:5					
THIRD ANGLE PROJECTION	NO. OF SHEETS					
	01					
PBS 3 LEVELS		DRAWING NUMBER		STATUS		
NN	XX	YY	TS-EG-00-02	01	NNN Z	
NN		XX		YY		

NOTE :-
 1. ALL DIMENSIONS ARE IN millimeters UNLESS STATED.
 2. PART SHALL BE FREE FROM SHARP CORNERS, BURRS & SHARP EDGES.

1 2 3 4 5 6 7 8

1 2 3 4 5 6 7 8



BEAM GROUP NO. 1			BEAM GROUP NO. 2			BEAM GROUP NO. 3			BEAM GROUP NO. 4		
REF.	X	Y	REF.	X	Y	REF.	X	Y	REF.	X	Y
a	199	43.5	a	359	43.5	a	519	219.5	a	679	43.5
b	219	43.5	b	379	43.5	b	539	219.5	b	699	43.5
c	239	43.5	c	399	43.5	c	559	219.5	c	719	43.5
d	259	43.5	d	419	43.5	d	579	219.5	d	739	43.5
e	279	43.5	e	439	43.5	e	599	219.5	e	759	43.5
f	199	87.5	f	359	87.5	f	519	263.5	f	679	87.5
g	219	87.5	g	379	87.5	g	539	263.5	g	699	87.5
h	239	87.5	h	399	87.5	h	559	263.5	h	719	87.5
i	259	87.5	i	419	87.5	i	579	263.5	i	739	87.5
j	279	87.5	j	439	87.5	j	599	263.5	j	759	87.5
k	199	131.5	k	359	131.5	k	519	307.5	k	679	131.5
l	219	131.5	l	379	131.5	l	539	307.5	l	699	131.5
m	239	131.5	m	399	131.5	m	559	307.5	m	719	131.5
n	259	131.5	n	419	131.5	n	579	307.5	n	739	131.5
o	279	131.5	o	439	131.5	o	599	307.5	o	759	131.5
p	199	175.5	p	359	175.5	p	519	351.5	p	679	175.5
q	219	175.5	q	379	175.5	q	539	351.5	q	699	175.5
r	239	175.5	r	399	175.5	r	559	351.5	r	719	175.5
s	259	175.5	s	419	175.5	s	579	351.5	s	739	175.5
t	279	175.5	t	439	175.5	t	599	351.5	t	759	175.5

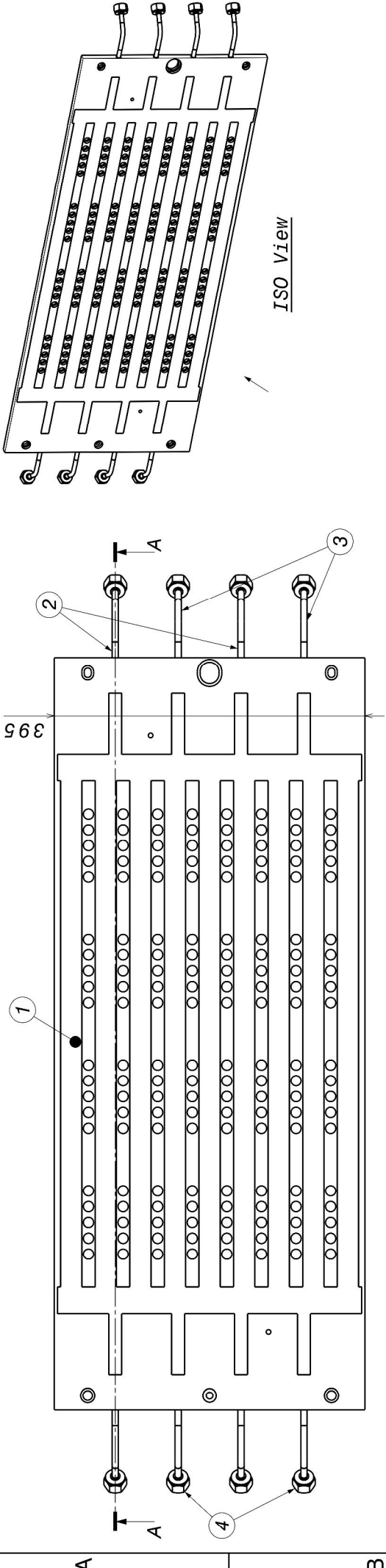
INSTITUTE FOR PLASMA RESEARCH
MM7, GANDHIMARG, BHAVESAR

REVISION HISTORY

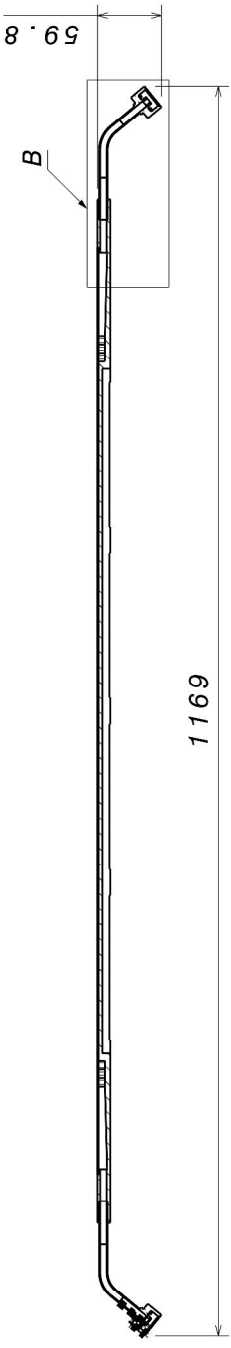
NO.	DATE	BY	REASON
01	11/11/2023	MM7	INITIAL DESIGN

GENERAL TOLERANCE: ISO 2768 FH
MATERIAL: OF-CU

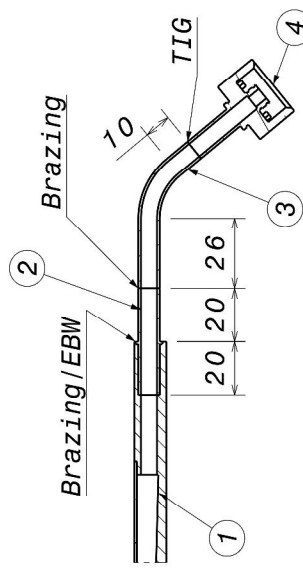
NOTE :-
1. ALL DIMENSIONS ARE IN millimeters UNLESS STATED.
2. PART SHALL BE FREE FROM SHARP CORNERS, BURRS & SHARP EDGES.



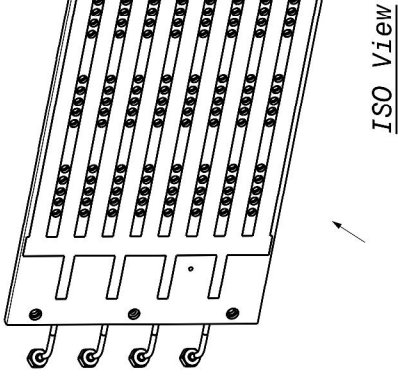
Front view



Section A-A



Detail B
Scale: 1:2



ISO View

GENERAL TOLERANCE: ISO 2768 FH
SURFACE ROUGHNESS: 3.2
0.8

Sr.No	Part Name	Qty	Type	Material	Drawing No.
4	DOCKWELAR PIPE FITTINGS	8	STD		
3	TS EG PIPE 1	8	Part	SS304L	TS-EG-01-02
2	TS EG PIPE WITH COLLAR	8	Part	OF-Cu	TS-EG-01-01
1	TS EG SEGMENT ASSY	1	ASSY		TS-EG-00-02

LCA IPR ID	-	RELEASED BY	INSTITUTE FOR PLASMA RESEARCH
USED ON	-	APPROVED BY	#MAT. 06/01/06/04-362428
PBS TITLE		CHECKED BY	CONFIDENTIAL UNLESS AUTHORISED The information on this drawing is confidential. This information shall not be transmitted to anyone who is not authorised to receive it.
REV DATE	18-01-19	CONTROLLED BY	DRAWING TITLE
SHEET SIZE	420X297	DRAWN BY	TS EG SEGMENT & COOLING PIPE ASSY
PT MATURITY	AA		
SCALE	1:5		
NO. OF SHEETS	01		
THIRD ANGLE PROJECTION			
DRAWING NUMBER	TS-EG-01-00	DRAWING NUMBER	TS-EG-01-00
SHEET REVISION	01	SHEET REVISION	NNN
STATUS	Z	STATUS	Z



NOTE :-
1. ALL DIMENSIONS ARE IN millimeters UNLESS STATED.
2. PART SHALL BE FREE FROM SHARP CORNERS, BURRS & SHARP EDGES.

1

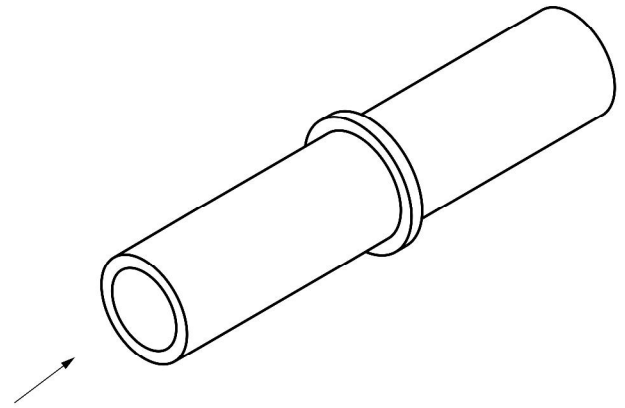
2

3

4

A

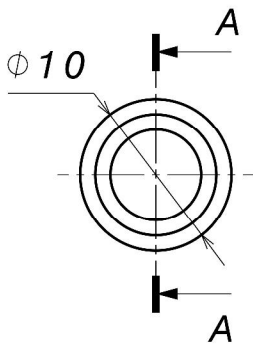
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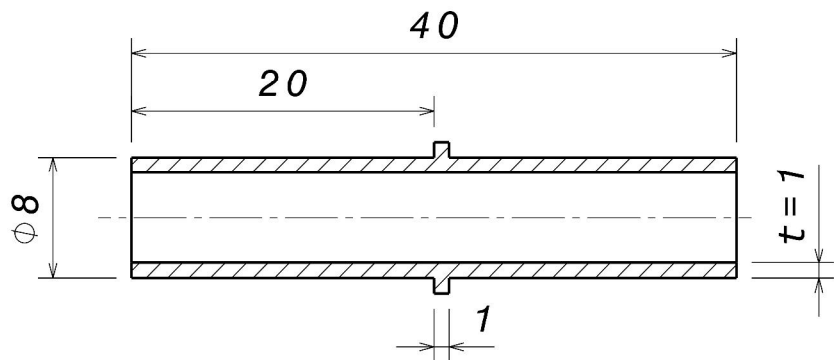
ISO View

B

B



Front view



Section A-A


C

C

GENERAL TOLERANCE: ISO 2768 mK
 MATERIAL: OF-Cu
 SURFACE ROUGHNESS: $\sqrt{Rz 6.3}$
 QUANTITY: 8

NOTE :-

1. ALL DIMENSIONS ARE IN millimeters UNLESS STATED.
2. PART SHALL BE FREE FROM SHARP CORNERS, BURRS & SHARP EDGES.

LCA IPR ID		-		RELEASED BY	INSTITUTE FOR PLASMA RESEARCH BHAT, GANDHINAGAR-382428				
USED ON		-		APPROVED BY	CONFIDENTIAL UNLESS AUTHORISED The information on this drawing is confidential. This information shall not be transmitted to anyone who is not authorised to receive it.				
PBS TITLE		-		CHECKED BY	DRAWING TITLE				
REV DATE	PT MATURITY	PT VERSION	CONTROLLED BY					TS EG PIPE WITH COLLAR - -	
-	AA	N	DRAWN BY						
SHEET SIZE		SCALE		PBS 3 LEVELS		DRAWING NUMBER	SHEET	REVISION	STATUS
297x210		2:1		NN, XX, YY		TS-EG-01-01	01	NNN	Z

D

D

1

4

1

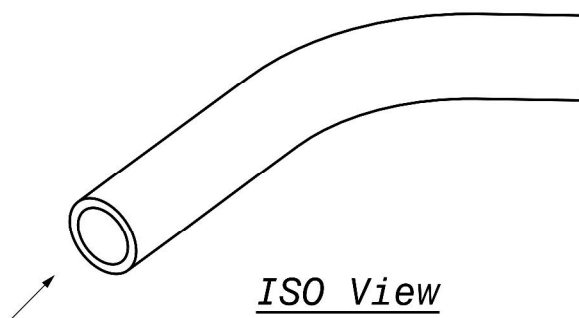
2

3

4

A

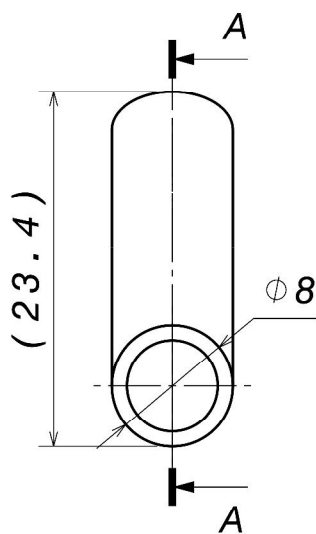
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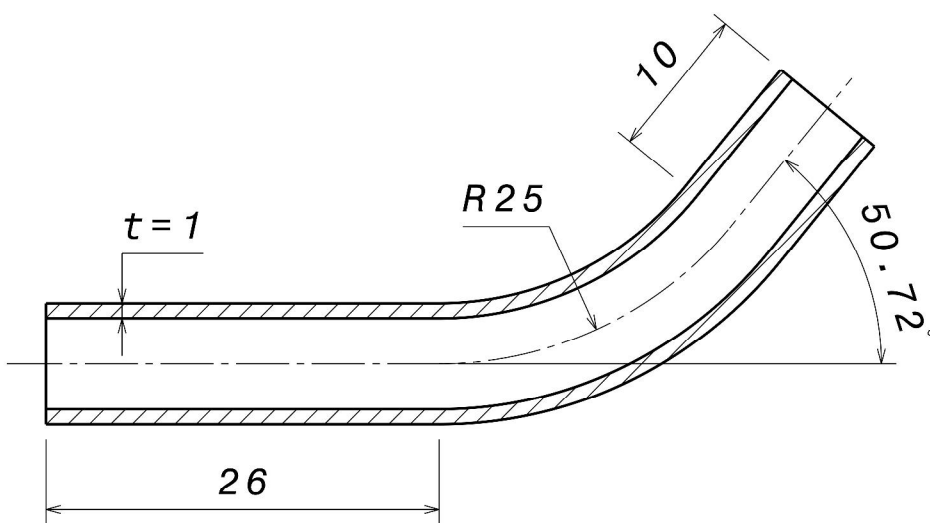
ISO View

B

B



Front view



Section A-A

C

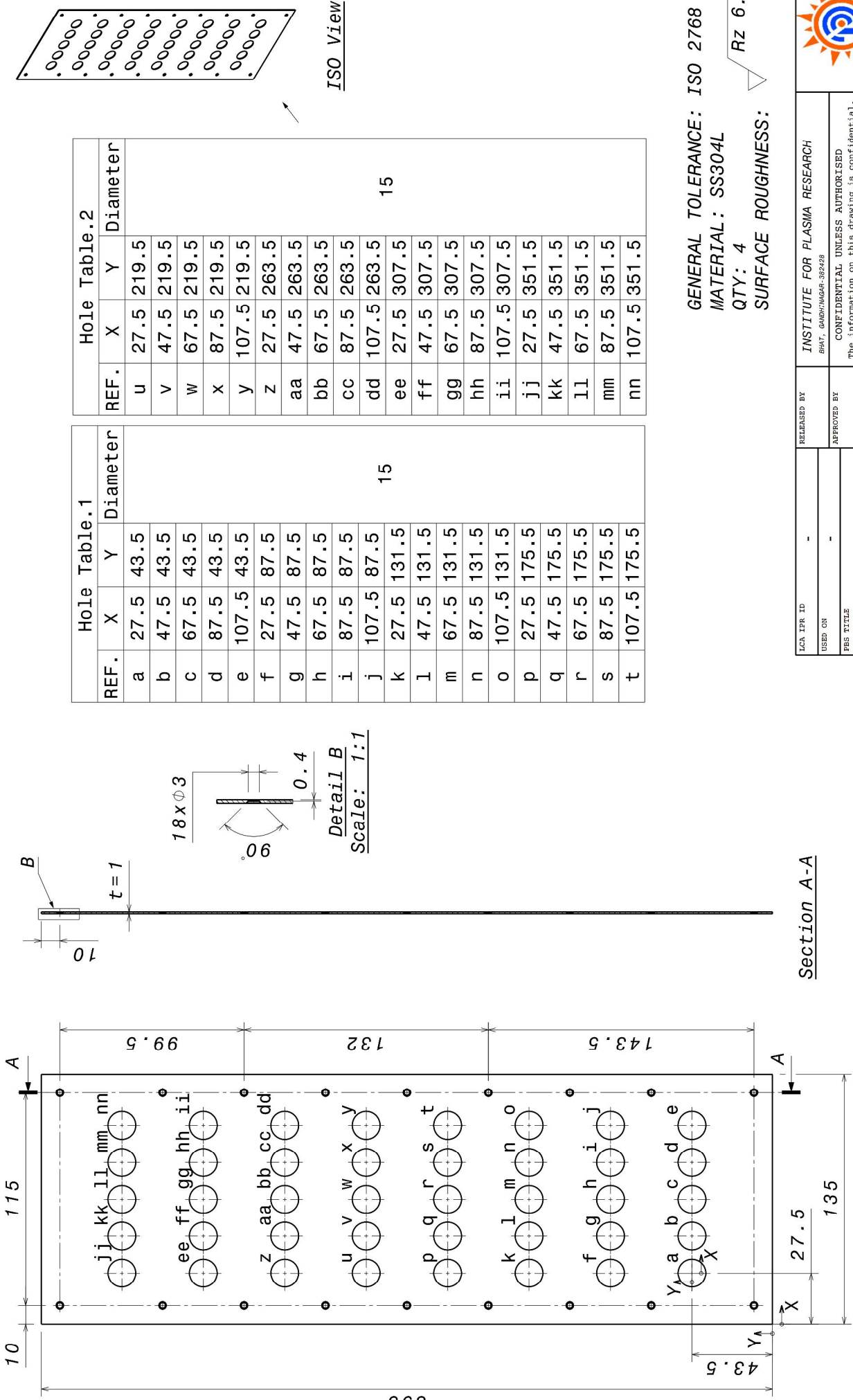
C

GENERAL TOLERANCE: ISO 2768 mK
 MATERIAL: SS304L
 SURFACE ROUGHNESS: $\sqrt{Rz 6.3}$
 QUANTITY: 8

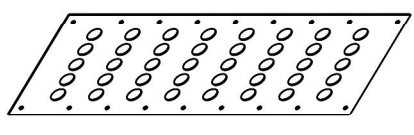
NOTE :-

1. ALL DIMENSIONS ARE IN millimeters UNLESS STATED.
2. PART SHALL BE FREE FROM SHARP CORNERS, BURRS & SHARP EDGES.

LCA IPR ID		-		RELEASED BY	INSTITUTE FOR PLASMA RESEARCH BHAT, GANDHINAGAR-382428			
USED ON		-		APPROVED BY	CONFIDENTIAL UNLESS AUTHORISED The information on this drawing is confidential. This information shall not be transmitted to anyone who is not authorised to receive it.			
PBS TITLE		-		CHECKED BY	DRAWING TITLE			
REV DATE	PT MATURITY	PT VERSION	CONTROLLED BY					TS EG COOLING PIPE 1
-	AA	N	DRAWN BY					-
SHEET SIZE	SCALE	PBS 3 LEVELS					DRAWING NUMBER	SHEET
297x210	2:1	NO. OF SHTS					TS-EG-01-02	01
THIRD ANGLE PROJECTION		NO. OF SHTS	01	NN	XX	YY	STATUS	
							1	
							4	



Hole Table.1			Hole Table.2				
REF.	X	Y	Diameter	REF.	X	Y	Diameter
a	27.5	43.5	18	u	27.5	219.5	18
b	47.5	43.5	18	v	47.5	219.5	18
c	67.5	43.5	18	w	67.5	219.5	18
d	87.5	43.5	18	x	87.5	219.5	18
e	107.5	43.5	18	y	107.5	219.5	18
f	27.5	87.5	18	z	27.5	263.5	18
g	47.5	87.5	18	aa	47.5	263.5	18
h	67.5	87.5	18	bb	67.5	263.5	18
i	87.5	87.5	18	cc	87.5	263.5	18
j	107.5	87.5	18	dd	107.5	263.5	18
k	27.5	131.5	18	ee	27.5	307.5	18
l	47.5	131.5	18	ff	47.5	307.5	18
m	67.5	131.5	18	gg	67.5	307.5	18
n	87.5	131.5	18	hh	87.5	307.5	18
o	107.5	131.5	18	ii	107.5	307.5	18
p	27.5	175.5	18	jj	27.5	351.5	18
q	47.5	175.5	18	kk	47.5	351.5	18
r	67.5	175.5	18	ll	67.5	351.5	18
s	87.5	175.5	18	mm	87.5	351.5	18
t	107.5	175.5	18	nn	107.5	351.5	18



ISO View

GENERAL TOLERANCE: ISO 2768 FH
 MATERIAL: SS304L
 QTY: 4
 SURFACE ROUGHNESS: Rz 6.3

LCA IPR ID		-		RELEASED BY	INSTITUTE FOR PLASMA RESEARCH	
USED ON		-		APPROVED BY	CONFIDENTIAL UNLESS AUTHORISED	
PBS TITLE		-		The information on this drawing is confidential. This information shall not be transmitted to anyone who is not authorised to receive it.		
REV DATE		-		CHECKED BY	DRAWING TITLE	
REV DATE		-		CONTROLLED BY	TS EG SEG MAGNET COVER PLATE	
REV DATE		-		DRAWN BY	-	
REV DATE		-		PBS 3 LEVELS		
PT MATURITY	AA	PT VERSION	N	DRAWING NUMBER	TS-EG-00-04 01	
SHEET SIZE	420X297	SCALE	1:2	SHEET	NNN Z	
THIRD ANGLE PROJECTION	NO. OF SHEETS		01	REVISION	01 NNN Z	

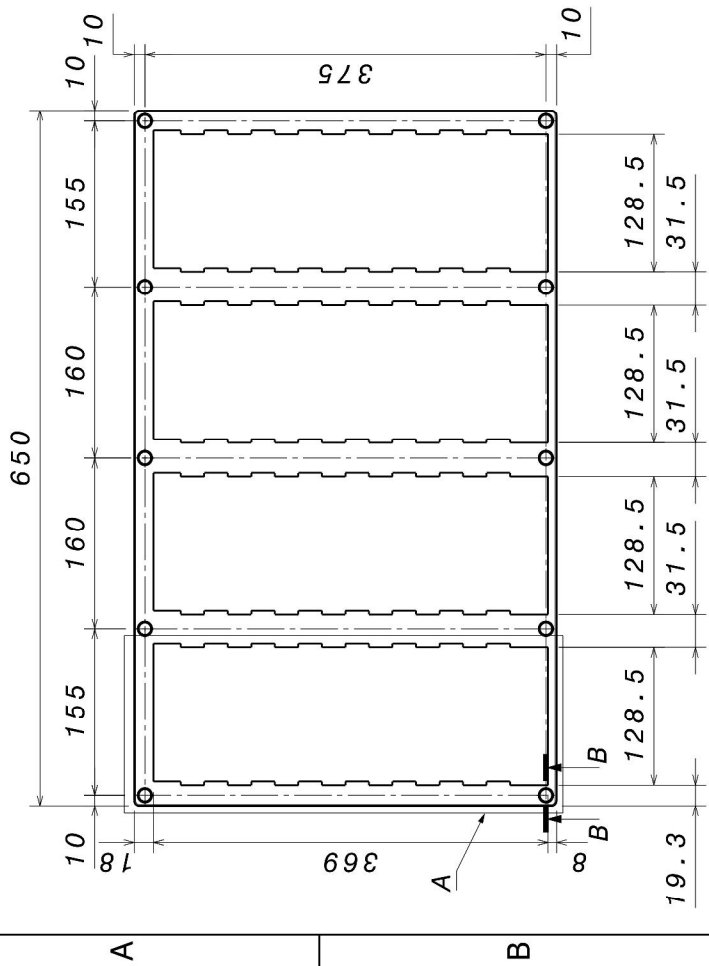
Section A-A

Front view

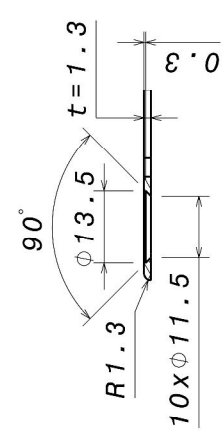
NOTE :-

1. ALL DIMENSIONS ARE IN millimeters UNLESS STATED.
2. PART SHALL BE FREE FROM SHARP CORNERS, BURRS & SHARP EDGES.

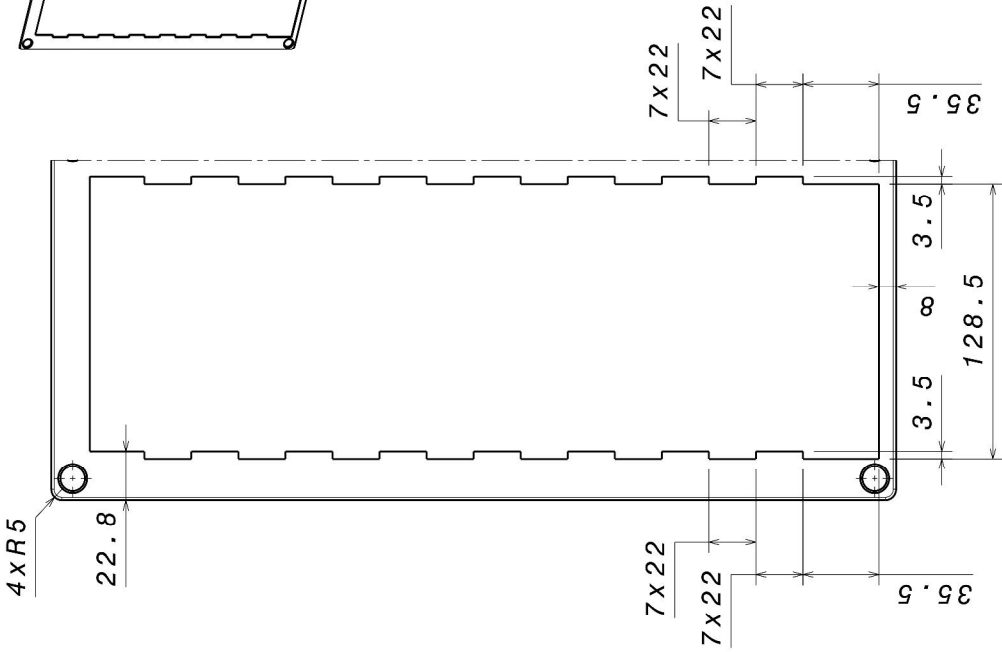
1 2 3 4 5 6 7 8



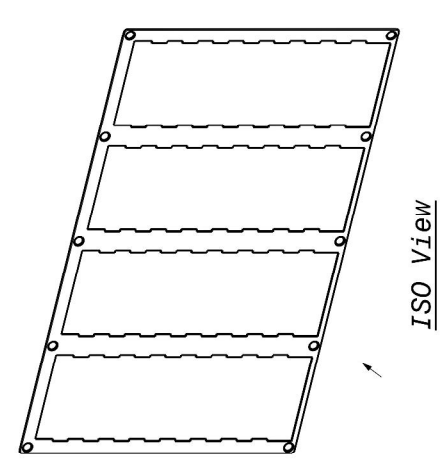
Front view



Section B-B
Scale: 1:1



Detail A
Scale: 2:5



ISO View

GENERAL TOLERANCE: ISO 2768 FH
MATERIAL: OF-Cu
SURFACE ROUGHNESS: $Rz\ 6.3$

LCA IPR ID	-	RELEASED BY	INSTITUTE FOR PLASMA RESEARCH
USED ON	-	APPROVED BY	CONFIDENTIAL UNLESS AUTHORISED
PBS TITLE		CHECKED BY	The information on this drawing is confidential. This information shall not be transmitted to anyone who is not authorised to receive it.
REV DATE	18-01-19	CONTROLLED BY	DRAWING TITLE
SHEET SIZE	420x297	DRAWN BY	TS EG KERB
PT MATURITY	AA		
PT VERSION	N		
SCALE	1:5		
THIRD ANGLE PROJECTION			
NO. OF SHEETS	01		
		PBS 3 LEVELS	
		NN	XX YY
		DRAWING NUMBER	TS-EG-00-05
		SHEET	01
		REVISION	NNN
		STATUS	Z



NOTE :-

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS STATED.
2. PART SHALL BE FREE FROM SHARP CORNERS, BURRS & SHARP EDGES.

1 2 3 4 5 6 7 8

1

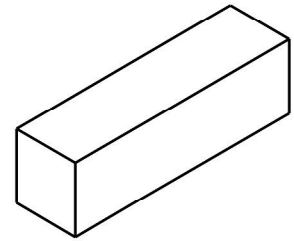
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3

4

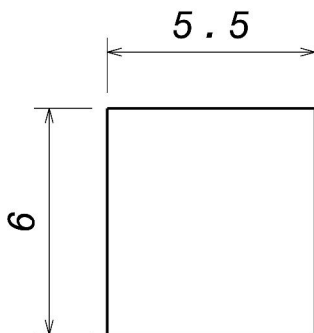
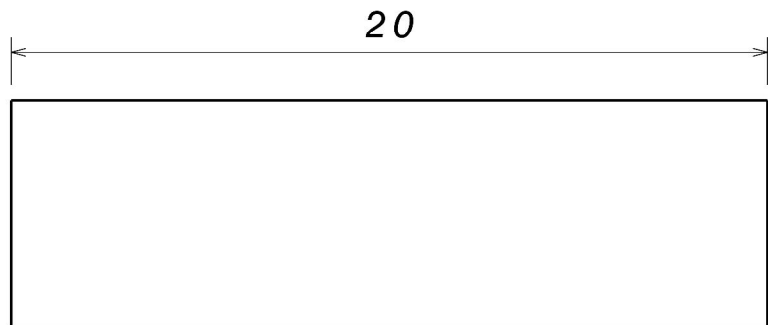
A

A

ISO View

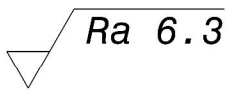
B

B

Front viewRight view



C

C

GENERAL TOLERANCE: ISO 2768 mK
 MATERIAL: Sm₂Co₁₇
 SURFACE ROUGHNESS:  Ra 6.3
 QUANTITY: 512

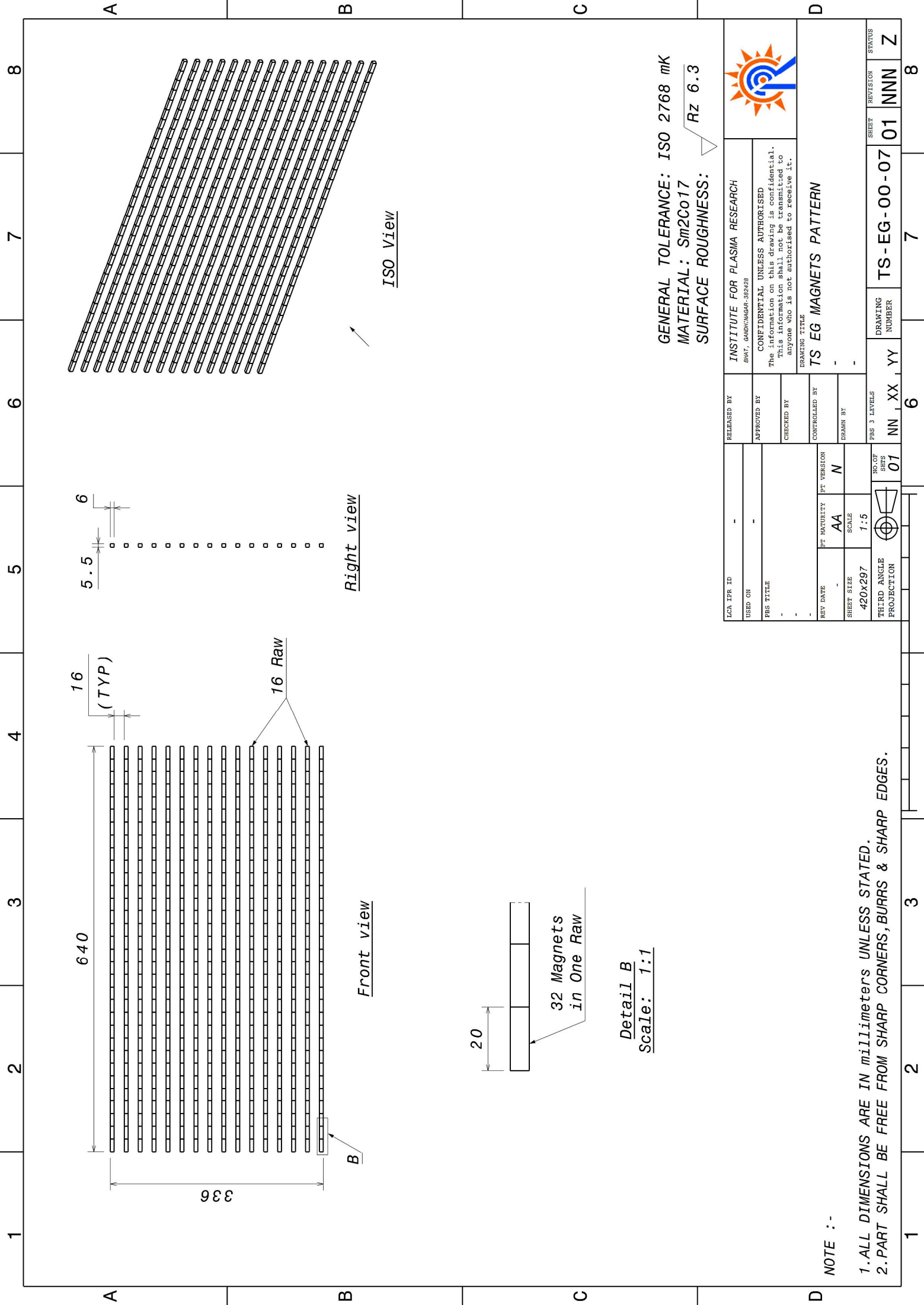
NOTE :-

1. ALL DIMENSIONS ARE IN millimeters UNLESS STATED.
2. PART SHALL BE FREE FROM SHARP CORNERS, BURRS & SHARP EDGES.

LCA IPR ID			-		RELEASED BY	INSTITUTE FOR PLASMA RESEARCH <small>BHAT, GANDHINAGAR-382428</small>							
USED ON			-		APPROVED BY	CONFIDENTIAL UNLESS AUTHORISED The information on this drawing is confidential. This information shall not be transmitted to anyone who is not authorised to receive it.							
PBS TITLE			-		CHECKED BY	-							
-			-		CONTROLLED BY	DRAWING TITLE TS EG MAGNET							
REV DATE	PT MATURITY	PT VERSION	-		AA	N	-						
SHEET SIZE	SCALE	-		-		-			DRAWN BY	-			
297x210	5:1	-		-		-			-				
THIRD ANGLE PROJECTION		NO. OF SHTS	01	PBS 3 LEVELS	NN, XX, YY	DRAWING NUMBER	TS-EG-00-06	SHEET	01	REVISION	NNN	STATUS	Z

1

4



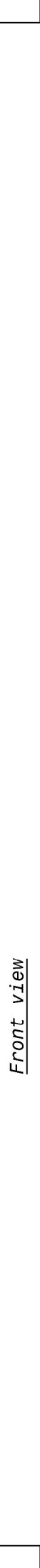
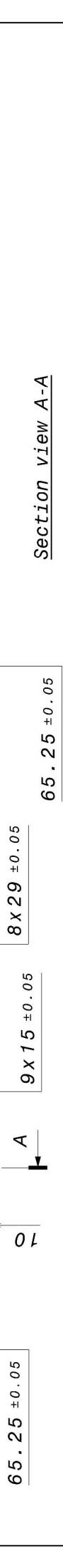
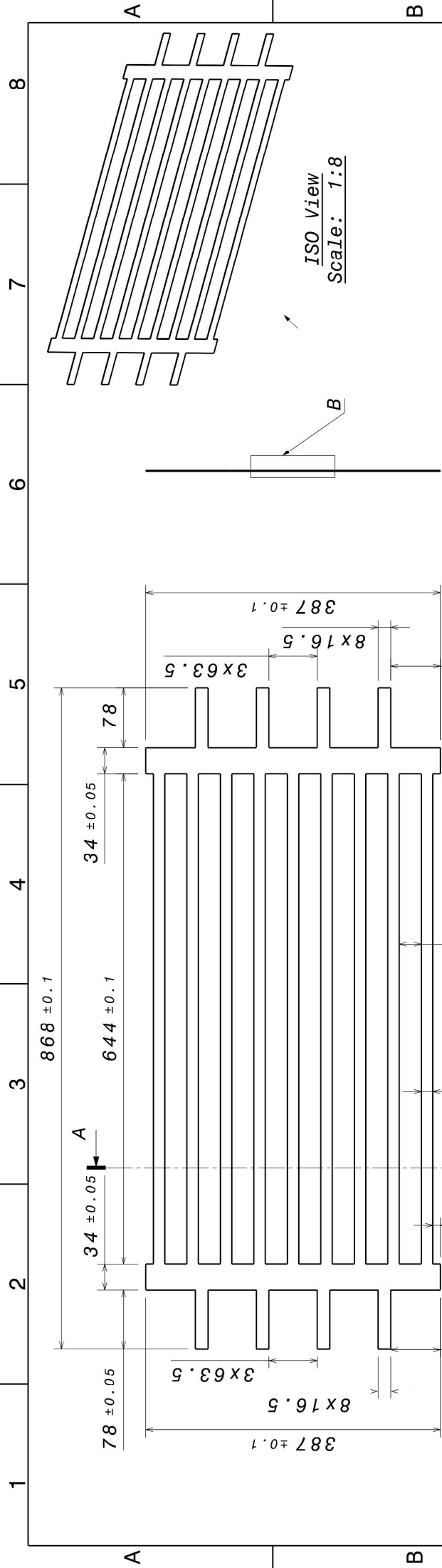
GENERAL TOLERANCE: ISO 2768 mK
 MATERIAL: Sm2Co17
 SURFACE ROUGHNESS: Rz 6.3



LCA IPR ID	-	RELEASED BY	INSTITUTE FOR PLASMA RESEARCH
USED ON	-	APPROVED BY	CONFIDENTIAL UNLESS AUTHORISED
PBS TITLE		CHECKED BY	The information on this drawing is confidential. This information shall not be transmitted to anyone who is not authorised to receive it.
REV DATE		CONTROLLED BY	DRAWING TITLE
SHEET SIZE	420X297	DRAWN BY	TS EG MAGNETS PATTERN
THIRD ANGLE PROJECTION			
PT MATURITY	AA	PBS 3 LEVELS	NN XX YY
PT VERSION	N		
SCALE	1:5		
NO. OF SHEETS	01		
		DRAWING NUMBER	TS-EG-00-07
		SHEET	01
		REVISION	NNN
		STATUS	Z

NOTE :-



1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS STATED.
2. PART SHALL BE FREE FROM SHARP CORNERS, BURRS & SHARP EDGES.

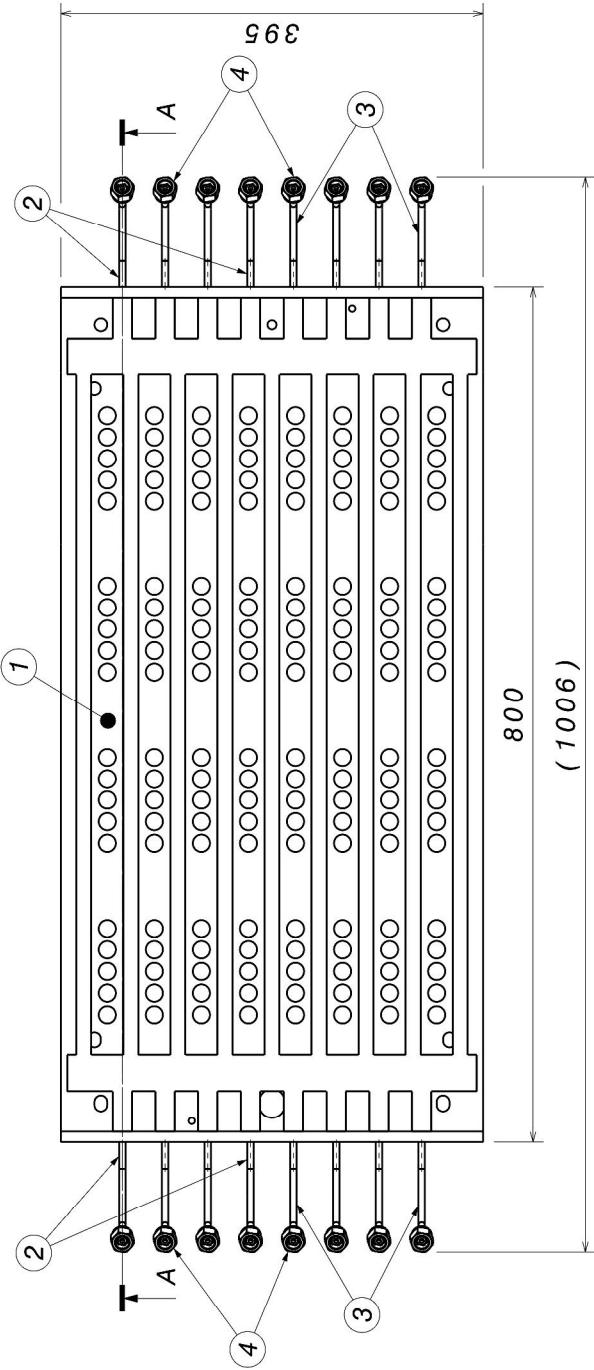


GENERAL TOLERANCE: ISO 2768 FH
MATERIAL: OF-Cu
SURFACE ROUGHNESS: 3.2

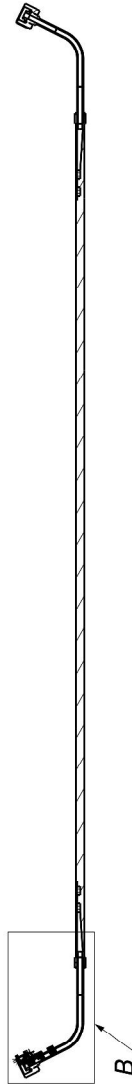
NOTE :-

1. ALL DIMENSIONS ARE IN millimeters UNLESS STATED.
 2. PART SHALL BE FREE FROM SHARP CORNERS, BURRS & SHARP EDGES.

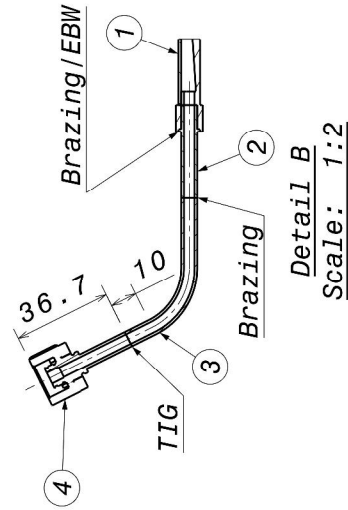
LCA IPR ID		-		RELEASED BY	INSTITUTE FOR PLASMA RESEARCH		
USED ON		-		APPROVED BY	CONFIDENTIAL UNLESS AUTHORISED		
PBS TITLE		-		CHECKED BY	The information on this drawing is confidential. This information shall not be transmitted to anyone who is not authorised to receive it.		
REV DATE		-		CONTROLLED BY	DRAWING TITLE		
REV DATE		-		PT MATURITY	TS EG COOLING CHANNEL PLATE		
SHEET SIZE		420X297		SCALE	-		
THIRD ANGLE PROJECTION				NO. OF SHEETS	01		
PT VERSION		N		PBS 3 LEVELS	-		
DRAWN BY		-		DRAWING NUMBER	TS-EG-00-08 01		
NO. OF SHEETS		01		REVISION	NNN Z		
STATUS		-		SHEET	01		
-		-		STATUS	Z		



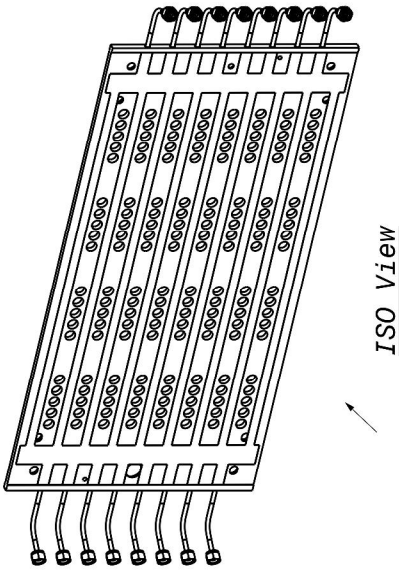
Front view



Section A-A



Detail B
Scale: 1:2



ISO View

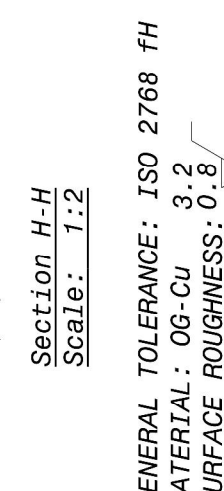
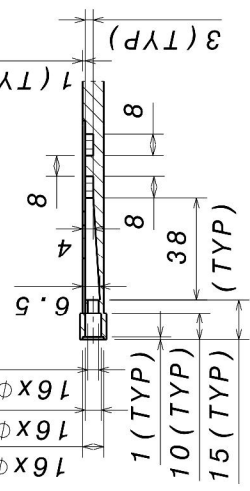
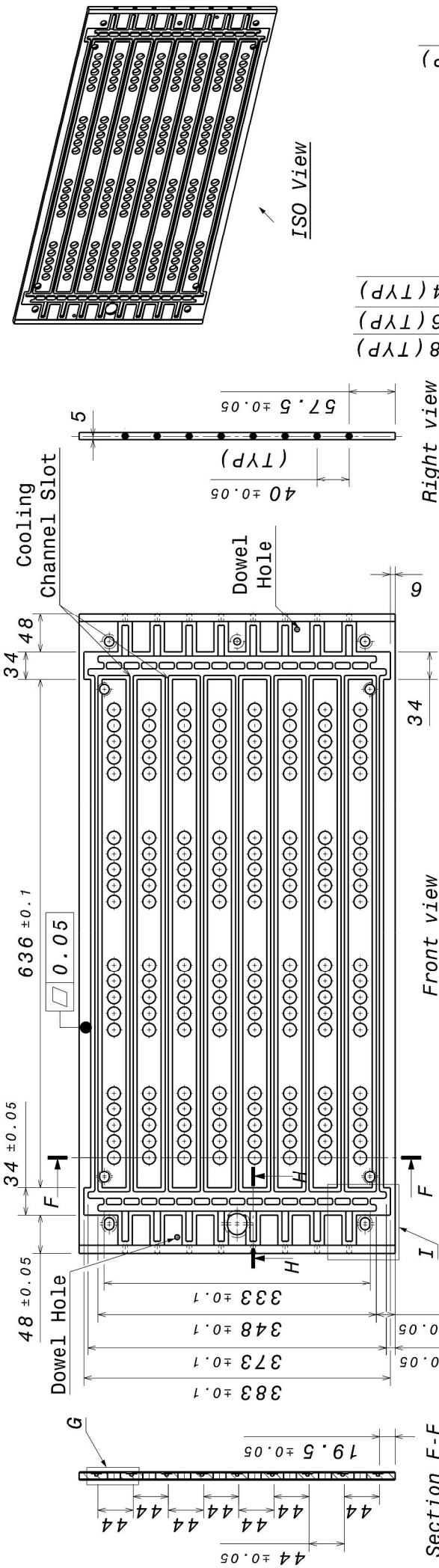
GENERAL TOLERANCE: ISO 2768 FH

Sr.No	Part Name	Qty	Type	Material	Drawing No.
4	DOCKWELAR PIPE FITTINGS	16	Part	STD	
3	TS GG PIPE 1	16	Part	SS304L	TS-GG-00-05
2	TS GG PIPE WITH COLLAR	16	Part	OF-Cu	TS-GG-00-04
1	TS GG SEGMENT ASSY	1	Assy	-	TS-GG-00-02

LCA IPR ID	-	RELEASED BY	INSTITUTE FOR PLASMA RESEARCH
USED ON	-	APPROVED BY	#MAT, GADH/PMGR-362428
PBS TITLE		CHECKED BY	CONFIDENTIAL UNLESS AUTHORISED The information on this drawing is confidential. This information shall not be transmitted to anyone who is not authorised to receive it.
REV DATE	18-01-19	CONTROLLED BY	DRAWING TITLE
SHEET SIZE	420X297	DRAWN BY	TS GROUNDED GRID ASSY
PT MATURITY	AA		
SCALE	1:5		
THIRD ANGLE PROJECTION			
NO. OF SHEETS	01		



NOTE :-
1. ALL DIMENSIONS ARE IN millimeters UNLESS STATED.
2. PART SHALL BE FREE FROM SHARP CORNERS, BURRS & SHARP EDGES.



NOTE :-
 1. ALL DIMENSIONS ARE IN millimeters UNLESS STATED.
 2. PART SHALL BE FREE FROM SHARP CORNERS, BURRS & SHARP EDGES.

GENERAL TOLERANCE: ISO 2768 FH
 MATERIAL: OG-Cu 3.2
 SURFACE ROUGHNESS: 0.8

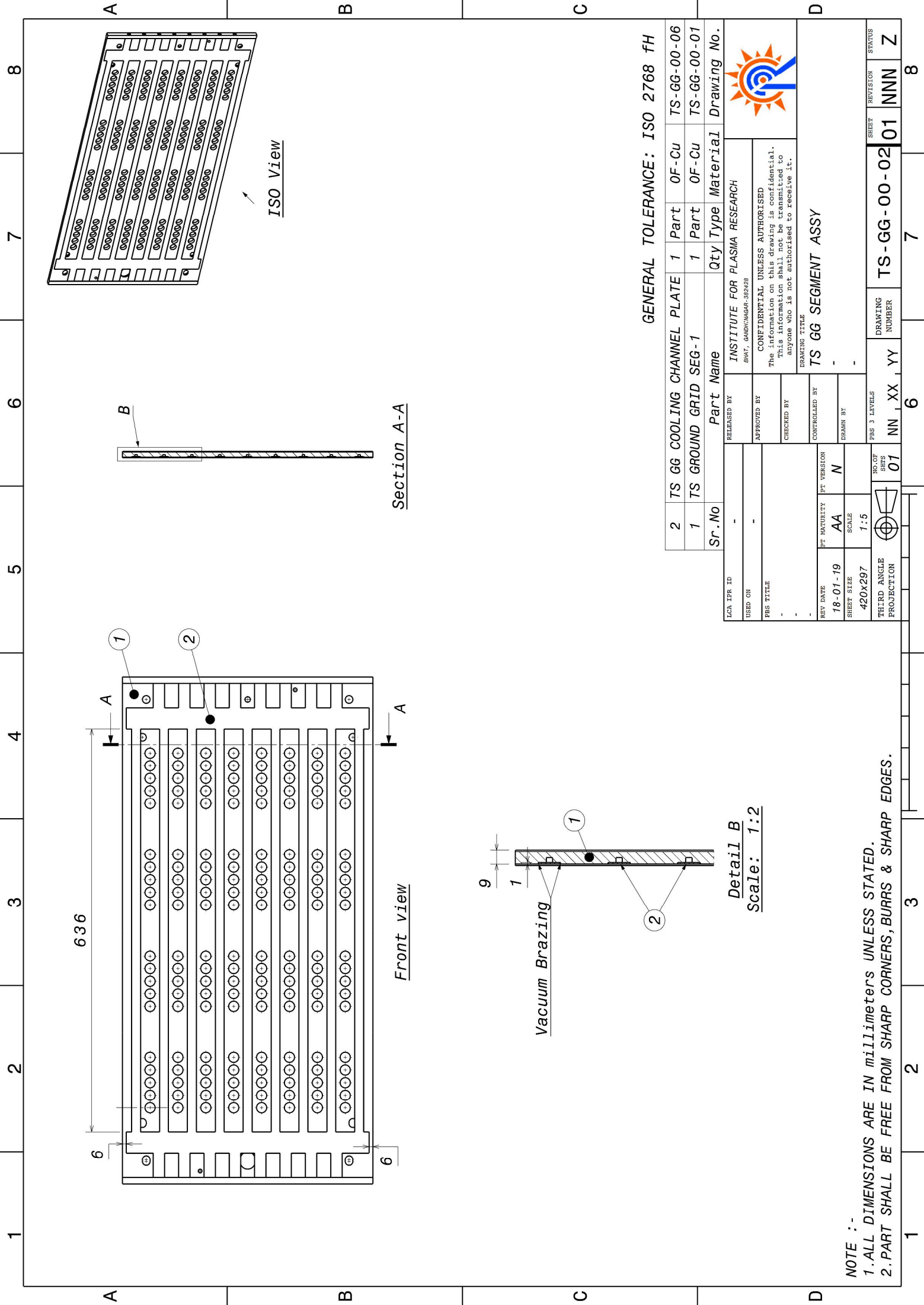
Section H-H
 Scale: 1:2

Section F-F
 Scale: 1:2

Detail A
 Scale: 1:2

Detail G
 Scale: 1:2

LCA IPR ID		-	
USED ON	-		
PBS TITLE	-		
REV DATE	18-01-19	PT MATURITY	AA
SHEET SIZE	420x297	SCALE	1:5
THIRD ANGLE PROJECTION			NO. OF SHES
			01
RELEASED BY	INSTITUTE FOR PLASMA RESEARCH		
APPROVED BY	CONFIDENTIAL UNLESS AUTHORISED		
CHECKED BY	The information on this drawing is confidential. This information shall not be transmitted to anyone who is not authorised to receive it.		
CONTROLLED BY	DRAWING TITLE		
DRAWN BY	TS GROUNDED GRID SEG-1		
PBS 3 LEVELS		NN	XX
DRAWING NUMBER		TS-GG-00-01	01
SHEET		NNN	Z
STATUS			



636

Front view

Section A-A

ISO View

Vacuum Brazing

Detail B
Scale: 1:2

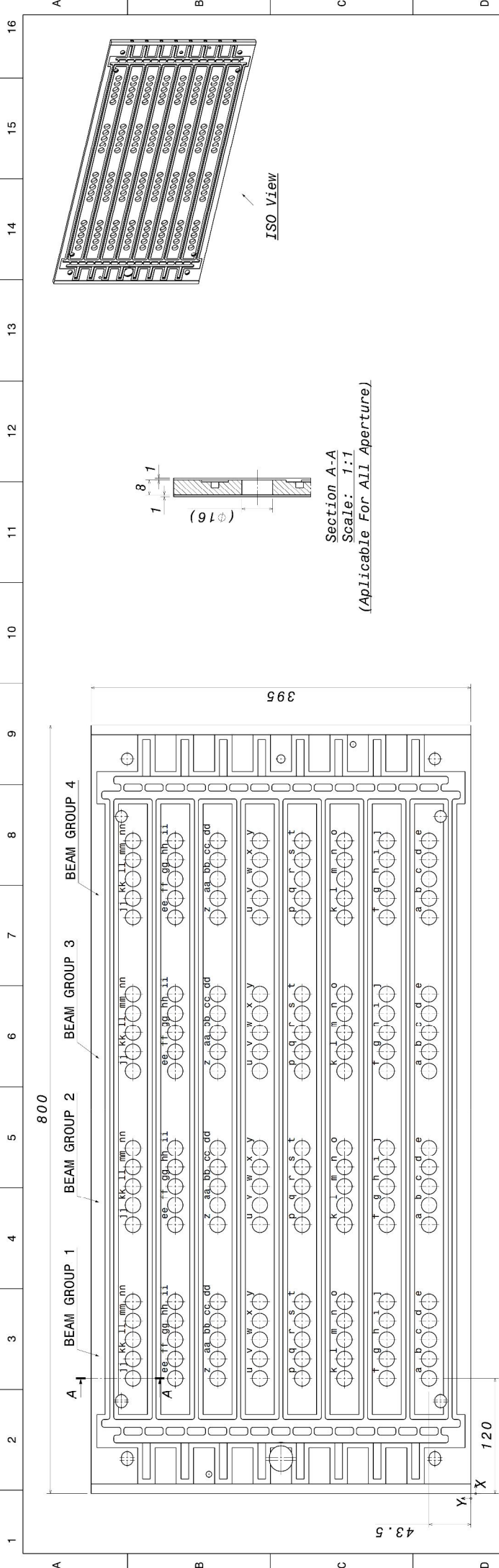
GENERAL TOLERANCE: ISO 2768 FH

2	TS GG COOLING CHANNEL PLATE	1	Part	OF-Cu	TS-GG-00-06
1	TS GROUND GRID SEG-1	1	Part	OF-Cu	TS-GG-00-01
Sr.No	Part Name	Qty	Type	Material	Drawing No.

LCA IPR ID	INSTITUTE FOR PLASMA RESEARCH				
USED ON	#MAT. GADH/MDAR-362428				
PBS TITLE	CONFIDENTIAL UNLESS AUTHORISED				
	The information on this drawing is confidential. This information shall not be transmitted to anyone who is not authorised to receive it.				
	DRAWING TITLE				
REV DATE	18-01-19	PT MATURITY	AA	PT VERSION	N
SHEET SIZE	420X297	SCALE	1:5		
THIRD ANGLE PROJECTION		NO. OF SHEETS	01		
RELEASED BY	-				
APPROVED BY	-				
CHECKED BY	-				
CONTROLLED BY	-				
DRAWN BY	-				
PBS 3 LEVELS					
DRAWING NUMBER		TS-GG-00-02	01	NN XX YY	
DRAWING NUMBER		TS-GG-00-02	01	NNN Z	
SHEET		01	REVISION		STATUS
SHEET		01	NNN		Z



NOTE :-
1. ALL DIMENSIONS ARE IN millimeters UNLESS STATED.
2. PART SHALL BE FREE FROM SHARP CORNERS, BURRS & SHARP EDGES.



Section A-A
Scale: 1:1
(Applicable For All Aperture)

ISO View

BEAM GROUP NO. 1			BEAM GROUP NO. 2			BEAM GROUP NO. 3			BEAM GROUP NO. 4		
REF.	X	Y	REF.	X	Y	REF.	X	Y	REF.	X	Y
a	120	43.5	a	280	219.5	a	440	43.5	a	600	43.5
b	140	43.5	b	300	219.5	b	460	43.5	b	620	43.5
c	160	219.5	c	320	219.5	c	480	43.5	c	640	219.5
d	180	43.5	d	340	219.5	d	500	43.5	d	660	43.5
e	200	43.5	e	360	219.5	e	520	43.5	e	680	219.5
f	120	87.5	f	280	263.5	f	440	87.5	f	600	87.5
g	140	87.5	g	300	263.5	g	460	87.5	g	620	87.5
h	160	87.5	h	320	263.5	h	480	87.5	h	640	87.5
i	180	87.5	i	340	263.5	i	500	87.5	i	660	87.5
j	200	87.5	j	360	263.5	j	520	87.5	j	680	87.5
k	120	131.5	k	280	307.5	k	440	131.5	k	600	131.5
l	140	131.5	l	300	307.5	l	460	131.5	l	620	131.5
m	160	131.5	m	320	307.5	m	480	131.5	m	640	131.5
n	180	131.5	n	340	307.5	n	500	131.5	n	660	131.5
o	200	131.5	o	360	307.5	o	520	131.5	o	680	131.5
p	120	175.5	p	280	175.5	p	440	175.5	p	600	175.5
q	140	175.5	q	300	175.5	q	460	175.5	q	620	175.5
r	160	175.5	r	320	175.5	r	480	175.5	r	640	175.5
s	180	175.5	s	340	175.5	s	500	175.5	s	660	175.5
t	200	175.5	t	360	175.5	t	520	175.5	t	680	175.5

INSTITUTE FOR PLASMA RESEARCH
MMT, GANDHIMARG, JALGAON

REVISION HISTORY

NO.	DATE	REVISION
01		ISSUED FOR PRODUCTION

TS GG SEG APERTURE

GENERAL TOLERANCE: ISO 2768 FH

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS STATED.
2. PART SHALL BE FREE FROM SHARP CORNERS, BURRS & SHARP EDGES.

1

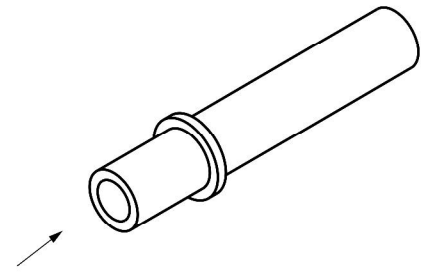
2

3

4

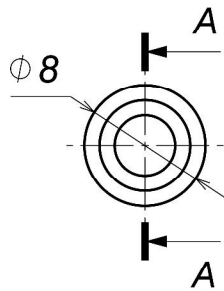
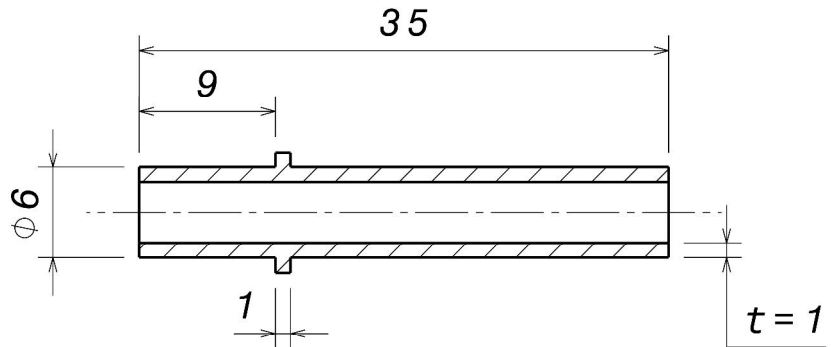
A

A

ISO View

B

B

Front viewSection A-A

C

C

GENERAL TOLERANCE: ISO 2768 mK
 MATERIAL: OF-Cu
 SURFACE ROUGHNESS: $\sqrt{\text{Rz 6.3}}$
 QUANTITY: 16

NOTE :-

1. ALL DIMENSIONS ARE IN millimeters UNLESS STATED.
2. PART SHALL BE FREE FROM SHARP CORNERS, BURRS & SHARP EDGES.

LCA IPR ID			-		RELEASED BY	INSTITUTE FOR PLASMA RESEARCH BHAT, GANDHINAGAR-382428			
USED ON			-		APPROVED BY	CONFIDENTIAL UNLESS AUTHORISED The information on this drawing is confidential. This information shall not be transmitted to anyone who is not authorised to receive it.			
PBS TITLE			-		CHECKED BY	DRAWING TITLE			
REV DATE			PT MATURITY	PT VERSION	CONTROLLED BY	TS GG PIPE WITH COLLAR			
SHEET SIZE			SCALE		DRAWN BY	-			
297x210			2:1		-				
THIRD ANGLE PROJECTION		NO. OF SHTS	PBS 3 LEVELS		DRAWING NUMBER	SHEET	REVISION	STATUS	
		01	NN, XX, YY		TS-GG-00-04	01	NNN	Z	

1

4

D

D

1

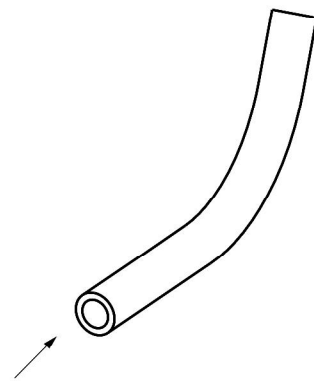
2

3

4

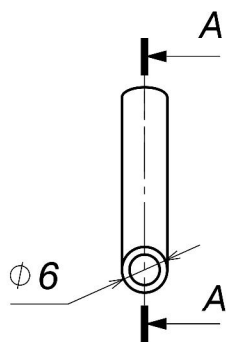
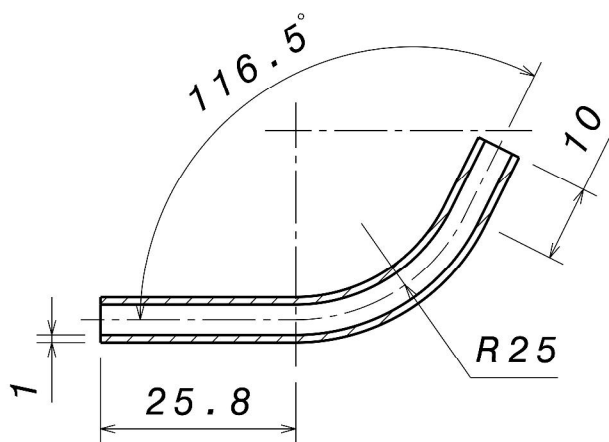
A

A

ISO View

B

B

Front viewSection A-A

C

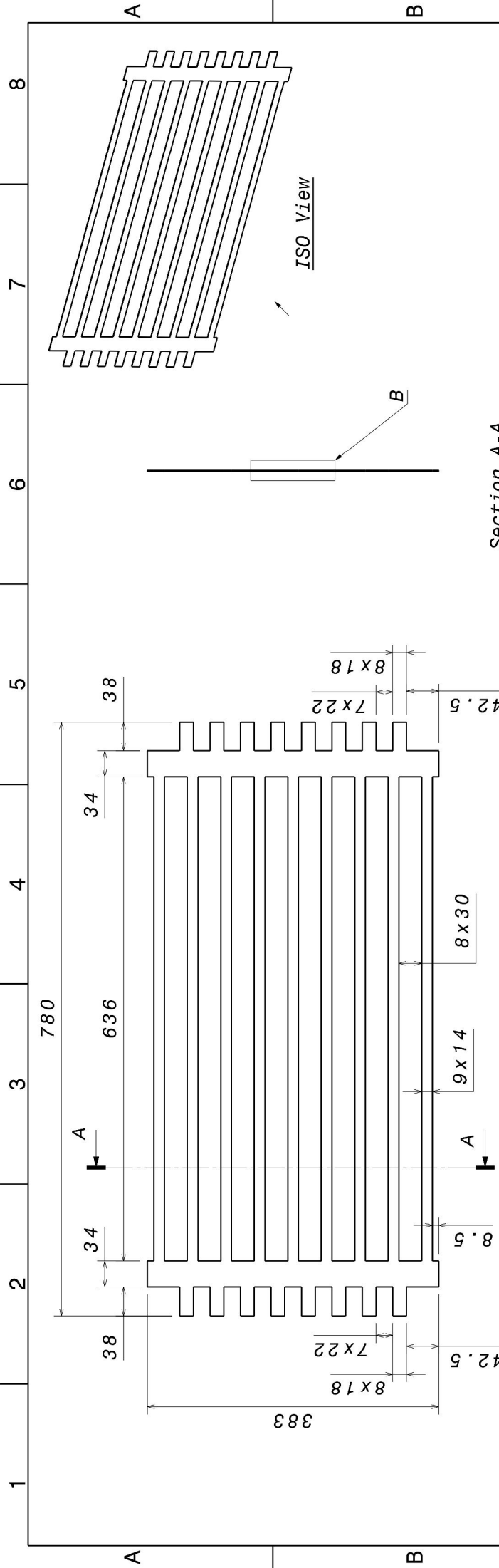
C

GENERAL TOLERANCE: ISO 2768 mK
 MATERIAL: SS304L
 SURFACE ROUGHNESS: $\sqrt{R1\ 6.3}$
 QUANTITY: 16

NOTE :-

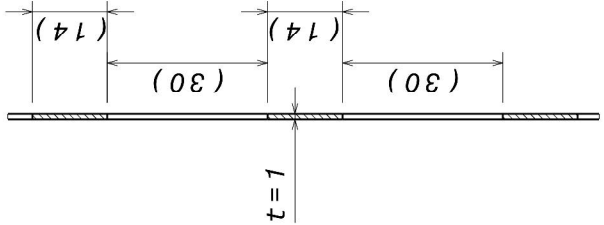
1. ALL DIMENSIONS ARE IN millimeters UNLESS STATED.
2. PART SHALL BE FREE FROM SHARP CORNERS, BURRS & SHARP EDGES.

LCA IPR ID			-		RELEASED BY	INSTITUTE FOR PLASMA RESEARCH BHAT, GANDHINAGAR-382428				
USED ON			-		APPROVED BY	CONFIDENTIAL UNLESS AUTHORISED The information on this drawing is confidential. This information shall not be transmitted to anyone who is not authorised to receive it.				
PBS TITLE			-		CHECKED BY	DRAWING TITLE				
-			-		CONTROLLED BY	TS GG COOLING PIPE 1				
REV DATE	PT MATURITY	PT VERSION	-		DRAWN BY	-				
-	AA	N	-		-					
SHEET SIZE	SCALE		-		-					
297x210	1:1		-		-					
THIRD ANGLE PROJECTION		NO. OF SHTS	01		PBS 3 LEVELS	DRAWING NUMBER	TS-GG-00-05	SHEET	REVISION	STATUS
1					NN, XX, YY		01	NNN	Z	4



Section A-A

Front view



Detail B
Scale: 1:1

GENERAL TOLERANCE: ISO 2768 FH
MATERIAL: OF-Cu
SURFACE ROUGHNESS: 3.2

NOTE :-

- 1. ALL DIMENSIONS ARE IN millimeters UNLESS STATED.
- 2. PART SHALL BE FREE FROM SHARP CORNERS, BURRS & SHARP EDGES.

LCA IPR ID	-	RELEASED BY	INSTITUTE FOR PLASMA RESEARCH
USED ON	-	APPROVED BY	CONFIDENTIAL UNLESS AUTHORISED
PBS TITLE		CHECKED BY	The information on this drawing is confidential. This information shall not be transmitted to anyone who is not authorised to receive it.
REV DATE		CONTROLLED BY	DRAWING TITLE
SHEET SIZE	420x297	DRAWN BY	TS GG COOLING CHANNEL PLATE
THIRD ANGLE PROJECTION			
PT MATURITY	AA	PBS 3 LEVELS	NN XX YY
PT VERSION	N		
SCALE	1:5		
NO. OF SHS	01	DRAWING NUMBER	TS-GG-00-06 01
		SHEET REVISION	NNN Z
		STATUS	Z



Institute for Plasma Research
(An Autonomous Institute of Dept. of Atomic Energy)
Bhat, Gandhinagar

TERMS & CONDITIONS

ITEM DESCRIPTION	Manufacturing, testing and supply of Grids for Twin Source Extraction System as per the specifications mentioned in the tender documents	
Sl. No.	PARTICULARS	REMARKS
I	Name of the Supplier	
II	IPR Enquity NO & Date	IPR/TP/TN/PUR/ET/19-20/17 DATED 15/7/2019
III	Vendor Offer No & Date	
IV	Postal address	
V	Contact with STD code	
VI	Fax with STD code	
VII	Name of Contact person	
VIII	Mobile No.	
IX	e-mail ID	
X	Currency of offer/quotation	
	SCANNED COPY OF THE BELOW MENTIONED DOCUMENTS NEED TO UPLOAD AT www.tenderwizard.com/DAE AT THE TIME OF PARTICIPATION OF TENDER WITHIN THE PERIOD OF SUBMISSION.	"YES" OR "NO"
1	Certificates:	
	i) Registration Certificate if Any, with DGS&D/NSIC/MSME	
	ii) PAN (Permanent Account Number) Registration	
	iii) Certificates of Registration for Sales Tax/ VAT/ WCT or Service Tax	
	iv) Authorization certificate/ Agency Agreement from Manufacturer (if not manufacturer)	
	Commercial Terms for Quoted items (Please Provide Commercial terms and conditions in the below form)	
2	Price Shall be firm and fixed through out the currency of contract, in the event of placement of purchase order.	
3	Please select the CURRENCY OF OFFER / QUOTATION first	
4	Have you offered Packing and forwarding charges in the price bid (if applicable)?	
5	Goods and Services Tax: Have you specified HSN / SAC Code for Goods and Services Tax in Price Bid?	
6	Have you offered Freight charges in the price bid?	
7	Have you offered Insurance charges in the price bid?	
8	Delivery period (as per Sr. No.31 of Section-A of Form No. IPR_LP_ET_02.V5 (Terms and Conditions) attached with the tender/enquiry). (Also refer document named "Deferred_terms_IPR_LP_ET_02.V5" for amended delivery terms)	
9	Have you offered Installation and commissioning charges?	
10	Liquidated Damages:- as per Sr. No. 22 of Section B of Form No IPR-LP-ET-02.V5 (Terms and Conditions) attached with the tender/enquiry	
11	Terms of Payment:- as per Sr. No.35 of Section B of Form No. IPR_LP_ET_02.V5 (Terms and Conditions) attached with the tender/enquiry. (Also refer document named "Deferred_terms_IPR_LP_ET_02.V5" for amended payment terms)	
12	Guaranty / Warranty:-as per Sr. No. 34 of Section B of Form No. IPR_LP_ET_02.V5 (Terms and Conditions) attached with the tender/enquiry	
13	Validity of offer/quotation:- 120 days from the date of opening of tender	
	QUESTIONNAIRE TO BE FILLED BY BIDDER IN AND SENT ALONG WITH OFFER DULY SIGNED	
14	In the event of a purchase order/contract vendor has to provide Security Deposit in the form of Bank Guarantee for 10% of contract/ order value from SBI/nationalized banks or any one of the scheduled banks mentioned in the bracket (Axis Bank, HDFC Bank, ICICI Bank and IDBI Bank) valid till final acceptance of the supplied goods at IPR, wherever applicable shall be submitted .	
15	In the event of a purchase order/contract Performance Bank Gurantee for 10% of the contract/order value from SBI/nationalized banks or any one of the scheduled banks mentioned in the bracket (Axis Bank, HDFC Bank, ICICI Bank and IDBI Bank) valid throughout the guarantee period, wherever applicable shall be submitted.	

16	I/We hereby offer to supply the stores detailed in the schedule hereto at the price given in the said schedule and agree to hold this offer open till expiry of quotation. I/We shall be bound to supply the stores hereby offered upon issue of purchase order communicating the acceptance thereof on or before the expiry of the last mentioned date. You will be at liberty to accept any one or more of the items of stores tendered for or portion of any or more of the items of such stores and I/We notwithstanding that the offer in the tender has not been accepted in whole shall be bound to supply to you- such item or items and such portion or portions of one or more of the items as may be specified in the said Purchase Order communicating the acceptance.	
17	I/we have understood the General Conditions of all Contracts and special conditions of contract governing supplies of plant and machinery in the Form No.IPR_LP_ET_02.V5, included in the General Conditions of all Contracts and special conditions of contract governing of plant and machinery applicable to contracts placed by the Institute for Plasma Research and the instructions to Tenderer annexed to the invitation to tender Form and have thoroughly examined the specification / drawing and / or pattern quoted or referred to in the Schedule hereto and am/are fully aware of the nature of the stores required any my/our offer is to supply stores strictly in accordance with subject tender to the terms and conditions stipulated in your above Form No. IPR_LP_ET_02.V5 and also contained in the Purchase Order Communicating acceptance of this Tender.	
18	Whether All Documents Related to tender Viewed?	
19	Vendor should upload the complete technical details (Tehnical specifications with product data sheet	
20	In case of two part tender whether unpriced quotation has been uploaded (Failing which offer will not be considered for technical evaluation)	
21	Free Issue Material: 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, wherever applicable.	

Institute for Plasma Research
(An Autonomous Institute of Dept. of Atomic Energy)
Bhat, Gandhinagar

Eligibility Criteria (Annexure-A)

ITEM DESCRIPTION	Manufacturing, testing and supply of Grids for Twin Source Extraction System as per the specifications mentioned in the tender documents		
Sl. No.	PARTICULARS	REMARKS	
I	Name of the Vendor		
II	IPR Enquity NO & Date	IPR/TN/PUR/TPT/ET/19-20/17 DATED 15-7-2019	
III	Vendor Offer No & Date		
Sr. No.	Criteria	Documents required to upload	Status of Documents (Uploaded/ Not-Uploaded in e-Tender Portal)
1	Bidder must have registered manufacturing site in India	Bidder should submit company profile and registration certificate	
2	Bidder must have experience of the following : a. Precision manufacturing of copper (Pure copper or its alloy) for a tolerance value of 0.1 % of the actual dimension. b. Vacuum brazing techniques/EBW welding techniques for similar and dissimilar materials joining like SS &Cu. c. Molybdenum coating of thickness in the range of 3 microns.	Bidder should submit at least copy of one un-priced purchase order of any Public/ Private enterprise or a MoU signed with Government R&D organisation with completion/acceptance certificate. Execution of the required job could be in single or different orders. Purchase order or MoU shall be supplemented	
3	Bidder must have the quality management system adopted as per ISO 9001-2008	Bidder should submit copy of valid Quality Certificates	
4	The average annual turnover for the last 3 years (i.e. 2015-16 to 2017-18) should be INR 2,50,00,000=00 (INR Two Crore fifty Lakhs)	Bidder should submit Audited balance sheet and Profit & Loss Account for the past 3 financial years (i.e. 2014-15 to 2017-18) as a proof	

Note:

The response to tender without submission of proof of above points will summarily be rejected without further communication
The bidder shall not be under a declaration of ineligibility for corrupt or fraudulent practices or blacklisted with any of the Government agencies
Original documents shall be produced for verifications, if required.

PRICE SCHEDULE (SECTION-D)

IPR Enquiry NO & Date : **IPR/TN/PUR/TPT/ET/19-20/17 DATED 15/7/2019**

From

NAME OF THE CONTRACTOR :

Offer no & date:

Sl.No	Item Description	Tendered Quantity	Unit of Measurement (UOM)	Rate in INR				Packing and Forwarding Charges Per Unit (In percentage)		Freight Charges Per Unit (In percentage)		Insurance per unit (In percentage)		Remarks
				HSN Code (*1)	Basic Unit Rate	Discount (in amount)	Basic Unit rate after discount	(in %) Only	Amount	(in %) Only	Amount	(in %) Only	Amount	
1	Manufacturing, testing and supply of Plasma Grid Assembly as per the scope mentioned in the tender specification	1	No.				0.00		0.00		0.00		0.00	
2	Manufacturing, testing and supply of Extrction Grid assembly as per scope mentioned in the tender specification	1	No.				0.00		0.00		0.00		0.00	
3	Manufacturing, testing and supply of Ground Grid assembly as per scope mentioned in the tender specification	1	No.				0.00		0.00		0.00		0.00	
4	Other items (if any)								0.00					
a	Optional Item/ Accessories						0.00		0.00		0.00		0.00	
b	Optional Item/ Accessories						0.00		0.00		0.00		0.00	
c	Optional Item/ Accessories						0.00		0.00		0.00		0.00	
d	Optional Item/ Accessories						0.00		0.00		0.00		0.00	
e	Optional Item/ Accessories						0.00		0.00		0.00		0.00	

Place of delivery **IPR Gandhinagar**

NOTES:

- (a) If freight is not shown seperately it will be treated as "FREE DELIVERY" (applicable for INR Quote)
- (b) Detailed specifications and scope of work are as per Attached Annexure
- (c) If the rate cells are left blank, it will be treates as "0" (ZERO)
- (e) Kindly enable the Macros if you receive the "Security Warning" message. (Click on options in "Security Warning" and select "Enable this content")

- IMPORTANT NOTES:**
- 1) Custom Duty Exemption certificate will not be issued to any bidder under any circumstances.
 - 2) Prices in this bid format alone are acceptable
 - 3) GST (IGST, CGST, SGST or any form) should not be included in the basic cost (Unit Rate Column) for either goods or services
 - 4) Evaluated total cost on the basis of bid prices will be calculated by Purchaser after bid opening
 - (*1) HSN/SAC Code: For indigenous goods/services, to be filled by the bidder

- 1) QUOTATIONS ARE INVITED IN INDIAN CURRENCY ONLY.
- 2) QUOTATIONS RECEIVED OTHER THAN "INR" QUOTE SHALL SUMMARILY BE REJECTED.

(This need to be printed in Tenderer's letter head)

To
The Purchase Officer
Institute for Plasma Research
Near Indira Bridge
Bhat
Gandhinagar-382428 (INDIA)

Ref: Tender Notice No.IPR/TN/PUR/TPT/ET/19-20/17 dated 15/7/2019

Dear Sir,

I/We have gone through the tendering conditions pertaining to the Two Part Tender and General Conditions of Contracts and Special Conditions of Contracts contained in Section "B" of Form No: IPR-LP-ET-02.V5. I/We hereby agree to supply the stores conforming to the tender specifications and also agree to abide by your General Conditions of all Contracts and Special Conditions of Contract contained in Section "B" of the Tender document.

- You will be at liberty to accept any one or more of the items of stores offered by us and I/We shall be bound to supply you the stores as may be specified in the Purchase Order/Contract.
- I/We hereby agree to keep the price valid for your acceptance for a period of 120 days from the date of opening of Tender (Part-I) of the tender.
- Deviations to technical specifications of the tender documents are detailed in Annexure-A of the tender form while deviations proposed to the General/Special Conditions of Contract are detailed in Annexure "B" to this tender.
- I/We are also uploaded all the leaflets/catalogue, etc. pertaining to the stores offered.

Yours faithfully
Stamp and Signature of the Tenderer