Government of India
Bhabha Atomic Research Centre
Electromagnetic Applications & Instrumentation Division

Ref No: EmA&ID/2021/SSR/42/~~12653~~ 12653 Date: 3/11/2021

----------To whom so ever it may concern----------

Sub: Fabrication, machining and supply of OFHC high thermal conductivity thermalisation plates

Dear Sir/Madam,

1. Quotations are invited for fabrication, machining and supply of OFHC high thermal conductivity thermalisation plates conforming to technical specifications EmA&ID/EMAS/SCM/21/42 dated 2.11.2021.
2. Bidder shall quote for purchase of raw materials, machining, welding, water jet cutting, conforming to tender technical specification.
3. Taxes and Excise Duties shall be quoted separately. Form AF / H whichever is applicable shall be provided, if required.

   The quotation must reach The Head, Electromagnetic Application & Instrumentation Division by 19.11.2021 and must be sent in a sealed envelope super scribed with the reference number & the due date given above only through India Ordinary Post/Speed Post.
4. The address on the envelop should read: The Head,
   Electromagnetic Application & Instrumentation Division,
   RCnD Bldg., North Site
   BARC, Trombay,
   Mumbai - 400 085.
   (Kind Attn: S.Sundar Rajan, SO/G)
5. The bidder shall complete the job within 2 months from the date of firm work order issued to the bidder.
6. Head, Electromagnetic Application & Instrumentation Division reserves the rights to accept / reject any or all quotations without assigning any reason.
7. Quotation must also indicate the validity of offer. Quotation must also indicate the GST No and PAN number of the supplier.
8. The quotation has to be signed by authorized person with company seal.
9. Payment will be made by EFT only after satisfactory completion of work on production of bill, delivery challan and advance stamped receipt. Income tax as applicable will be collected at the time of payment.
10. In case of any technical clarifications, the supplier may kindly contact the indenting officer through Email only. (Email ID:sundara@barc.gov.in)

Encl.: Technical Specification Sheet no: EmA&ID/EMAS/SCM/21/42 dated 2.11.2021

S.Sundar Rajan.
S.Sundar Rajan
SO/G,EmA&ID

Specification for Minor Fabrication Enquiry: EmA&ID/2021/SSR/42/12653 dated: 3.11.2021

Specification no.	Revision no.	Date of Issue	No of pages
EmA&ID/EMAS/SCM/21/42	01	2.11.2021	6

Fabrication, machining and supply of OFHC high thermal conductivity thermalisation plates

1.0 SCOPE

Tender is invited for Fabrication, machining and supply of OFHC high thermal conductivity thermalisation plates. In this specification the supplier shall be referred to as the "supplier" and Bhabha Atomic research Centre shall be referred to as the "purchaser".

Supplier shall arrange for all other required raw material/ facilities for the proposed job. Supplier shall quote in lump sum for the fabrication, testing, qualification and supply of the system as per the tender specification document. The brief description of contents of the tender specification document is as described below.

Para 2.0 gives the details of deliverables.

Para 3.0 gives the general description and construction details.

Para 4.0 gives the job execution requirements.

Para 5.0 gives the inspection and testing requirements.

Para 6.0 gives the documentation requirements.

Para 7.0 gives the bidders qualification requirements

Para 8.0 gives the quality assurance requirements.

Para 9.0 gives the packaging and safe delivery requirements.

Para 10.0 gives the delivery schedule requirements.

Para 11.0 gives the confidentiality clause.

2.0 DETAILS OF DELIVERABLES/SCOPE OF SUPPLY

The scope of supply is tabulated in table below

S.No	Component	Nos
1.	Fabrication, machining and supply of OFHC high thermal conductivity thermalisation plates (Plate-01 , Plate-02 and Plate-03)	1 Set

3.0 GENERAL DESCRIPTION AND DEVELOPMENT DETAILS

3.1.1 Thermalisation plates as attached in the annexure-01 has to be machined, surface coated and supplied. All the plates have to be coated with anti-rust metallic coating of high thermal conductivity of 50um.

3.1.2 The surface finish of the enclosure flanges shall be better than 0.25u and a parallelism of better than 0.01mm shall be maintained.

4.0 Job execution requirements

4.1 After placement of firm order, the bidder shall carry out the engineering drawing of the enclosures and submit the same to BARC for approval. Detailed QA/QC document, inspection and test report format document shall also be submitted for approval.

4.2 The thermal shield shall be annealed after brazing/welding to achieve high thermal conductivity.

5.0 Inspection and testing requirements

5.1 Before dispatch of the system to purchaser premises, the supplier shall carry out CMM inspection of the enclosure along with material test certificate. The annealing cycle of the thermal shield shall be provided. In case of any modifications required to match the performance requirements shall be carried out.

5.2 After dispatch of the system to BARC, the system shall be integrated with the system and tested for its performance.

5.3 QA/QC documents: The supplier shall develop detailed QA/QC document of various fabrication process, inspection and testing requirements. The minimum required documentation is listed below. The QA/QC document shall be mutually agreed upon and signed by authorized persons of the supplier and purchaser.

5.4 Material certification: The supplier shall provide material certification/documents including technical specification of the heaters and its temperature control unit which will be used in the soldering system.

6.0 Documentation requirements

6.1 Technical documentation to be furnished within one month from date of award of the contract

6.1.1 Detailed engineering drawing of the system along with its BOM.

6.1.2 The Bidder shall submit a quality assurance (QA) plan to the buyer for acceptance.

7.0 Bidders qualification requirements

7.1 The supplier shall be evaluated on the basis of the following criteria

7.1.1 The supplier shall provide handling experience of development of vacuum system and related cryogenic system for more than 3 years.

7.1.2 Supplier shall list the jobs, which they want to sub-contract. They shall also produce the list of sub-contractors and their infrastructures and facilities.

8.0 Quality assurance requirements

8.1 Quality surveillance and expediting, relating to all the aspects of the contract will be carried out by the buyer or his authorized representative for which purpose the Bidder and his subcontractor shall

8.1.1 Allow access at all reasonable times during manufacture, assembly and testing to the premises in which the work is being carried out.

8.1.2 Furnish the latest drawings and/or tooling, gauges, instruments, testing equipment etc. required for inspecting the jobs. Prints of all the latest required drawings and approved procedures shall be made available for inspection and retention, if so desired.

8.1.3 Produce an inspection plan to the buyer's satisfaction and notify when checkpoints on the plan are imminent so that the buyer's representative may be present, if it is so desired.

8.2 The Bidder shall be responsible for the inspection of the components that is subcontracted by him.

8.3 Waiving of quality surveillance by the buyer's or acceptance of the items by the buyer or his authorized agent, shall not relieve the Bidder from the responsibility for supplying the items in accordance with specification requirements of this document and purchase order.

9.0 Packaging and safe delivery requirements

9.1 Each component shall be marked with Bidder's identification as well as the identification indicated in drawing in such a way that the markings can be conveniently read and cannot get destroyed during handling, cleaning, etc.

9.2 Bidder shall make necessary arrangements for all components using a suitable PVC cover or molded thermocol. Proper care should be taken while handling the component during fabrication, inspection, testing and packing. Acceptance of the test setup will be made only after the vacuum integrity is tested at buyer's premises.

9.3 After completion of all testing and identifying the components, the components shall be packed suitably for shipment, so that no damage occurs in transit. The buyer shall subject the packing procedure to prior approval. At least one copy of packing list shall be kept in the package for quick and easy verification.

9.4 The Bidder shall be responsible for proper and safe delivery. The Bidder shall provide support for the installation of the test setup inside buyer's premises.

9.5 The delivery of the setup shall be made at BARC, Trombay, Mumbai, 400085.

10.0 Delivery schedule requirements

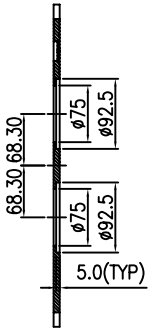
10.1 The delivery of the system with its relevant technical documentation is expected within 4 months from date of placement of purchase order.

11.0 CONFIDENTIALITY CLAUSE

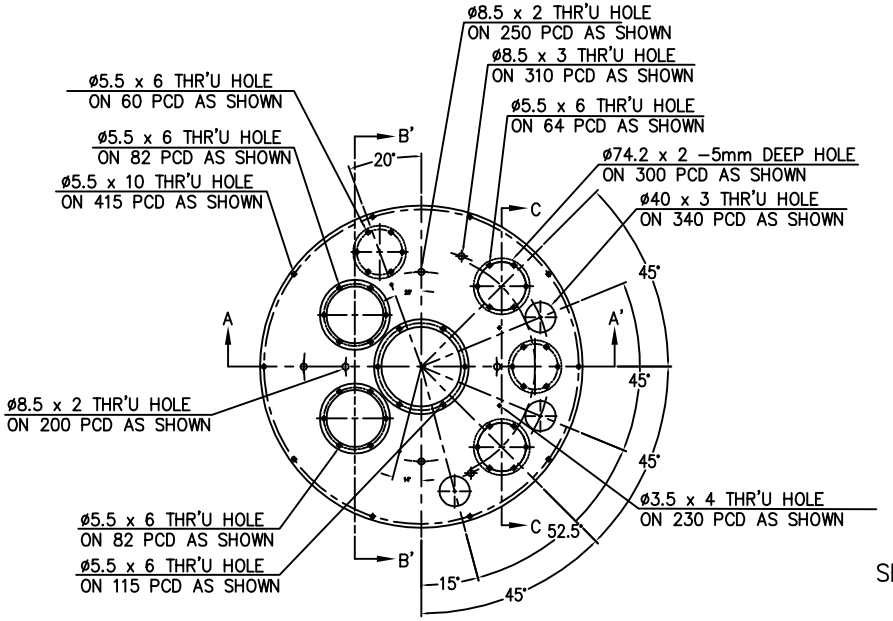
11.1 No party shall disclose any information to any third party concerning the matters under this Contract generally. In particular, any information identified as "Proprietary" in nature by disclosing party shall be kept strictly confidential by the receiving party and shall not be disclosed to any third party without the prior written consent of the original disclosing party. This clause shall apply to sub-contractors, consultants, advisors or the employees engaged by a party with equal force.

12.2. "Restricted information" categories under section 18 of the Atomic Energy Act, 1962 and "Official secrets" under section 5 of the Official Secrets Act, 1923: Any contravention of the above mentioned provisions by any contractor / sub-contractor, consultant, advisor or the employees of the contractor will invite penal consequences under the aforesaid legislation.

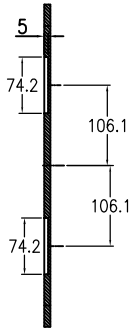
12.3. Prohibition against the use of BARC's name without permission for publicity purpose. The contractor or sub-contractors, consultants, advisors or the employees engaged by a party shall not use BARC's name for publicity purpose through any public media like: press, radio, TV or Internet without any prior approval of BARC (wide circular ref.: 2/Misc-9/Lgl/2001/92 date 30/04/2001).



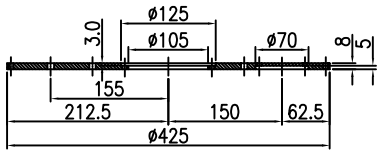
L. H. SIDE VIEW
SECTIONAL– B–B'



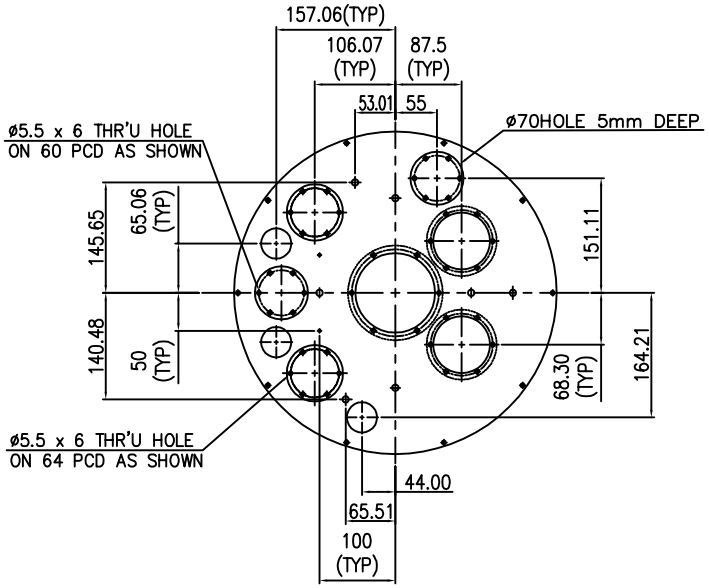
FRONT VIEW



SECTION–C–C'



BOTTOM VIEW
SECTION–A–A'

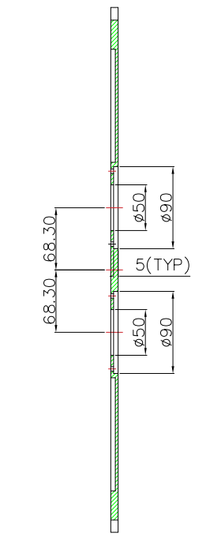


REAR VIEW

NOTES:

1) MACHINING TOL AS PER IS:2102 (MED)
   a) MACHINE ALL OVER.
   b SURFACE FINISH TO BE $\sqrt{3.2}$ OR BETTER
   c) REMOVE ALL BURRS.
   d) REMOVE ALL EXTERNAL SHARP CORNERS AND EDGES BY CHAMF TO $\frac{0.15}{0.40} \times 45°$
   e) ROUND ALL INTERNAL SHARP CORNERS AND EDGES TO R= $\frac{0.15}{0.40}$
2) DO NOT SCALE THE DRAWING.

MATL : OFHC COPPER
QTY : 01 NO.



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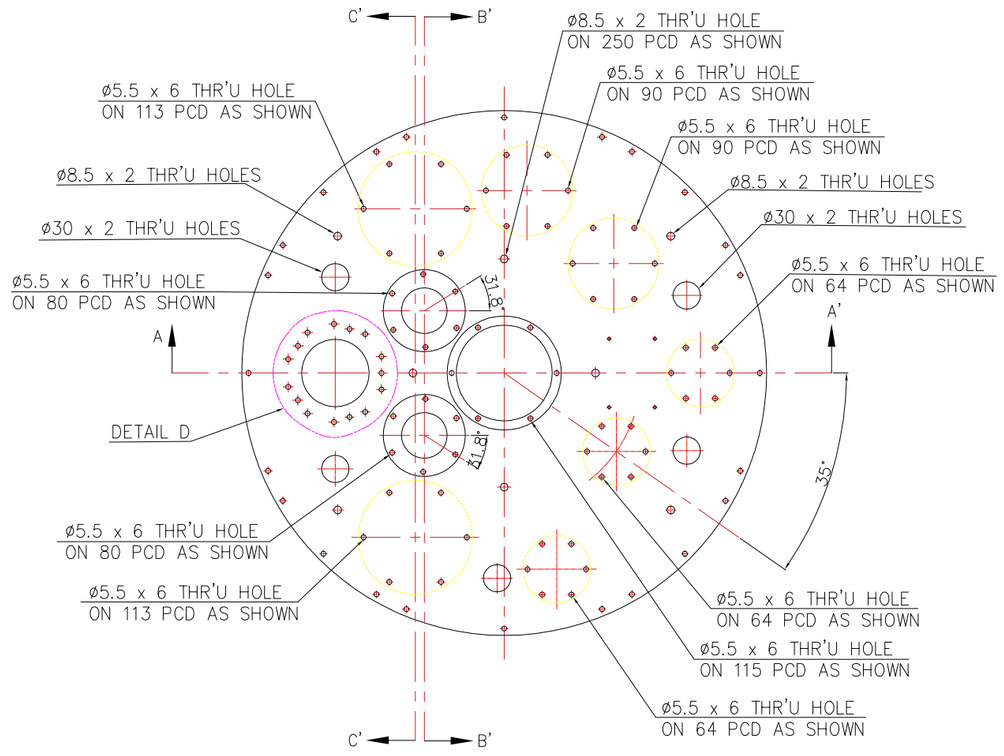
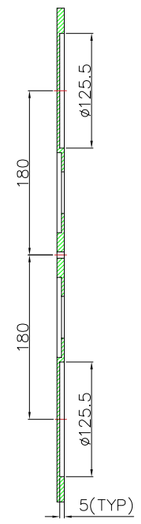
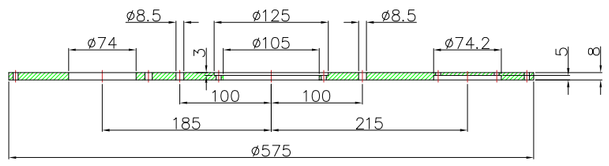


FRONT VIEW



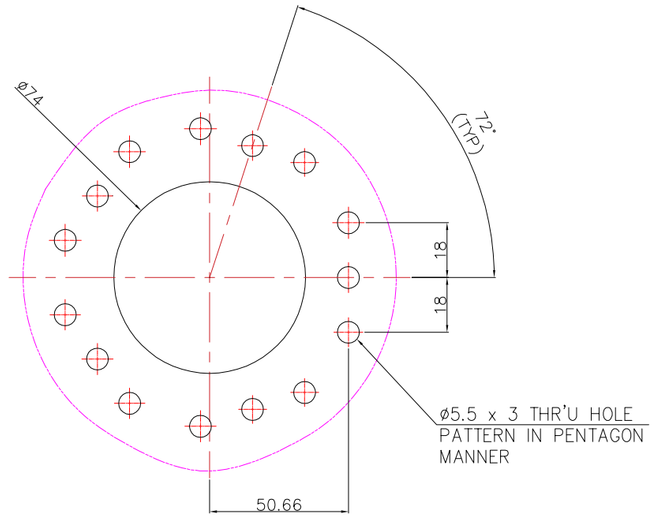
SECTION–C–C'



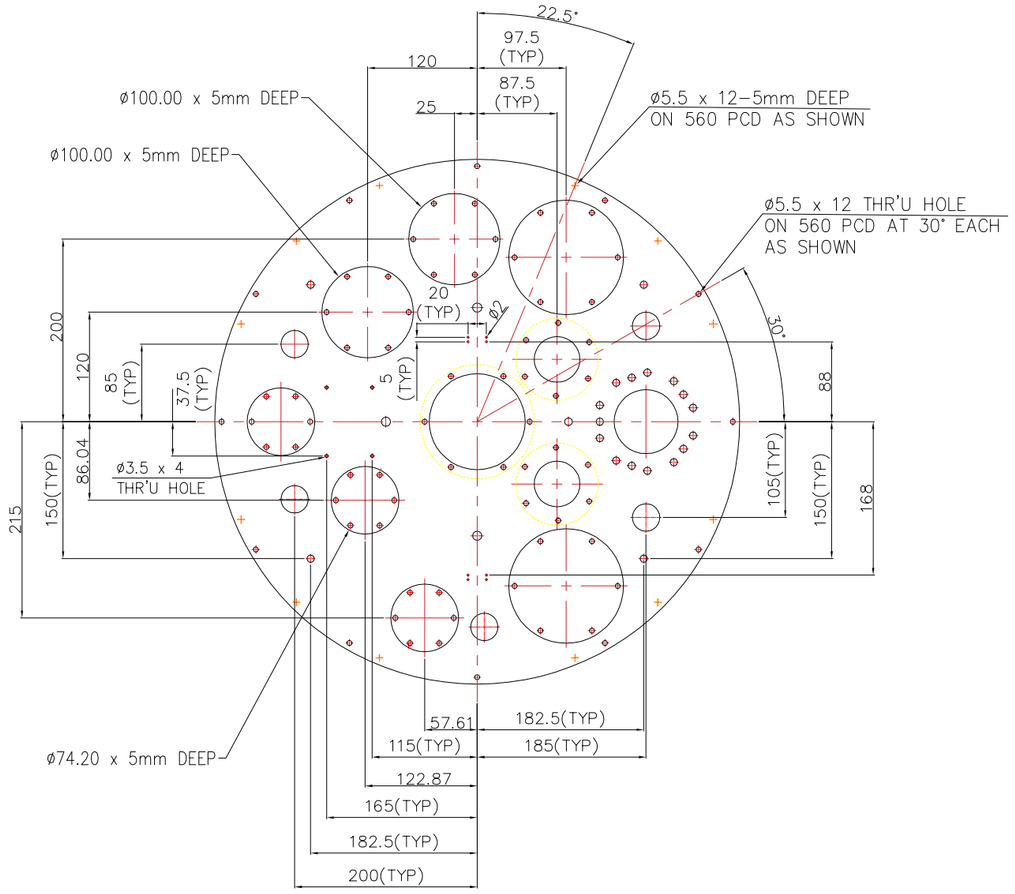
BOTTOM VIEW
SECTION–A–A'

NOTES:

1) MACHINING TOL. AS PER IS: 2102 (MED)
   a) MACHINE ALL OVER.
   b) SURFACE FINISH TO BE $\sqrt{3.2}$ OR BETTER
   c) REMOVE ALL BURRS.
   d) REMOVE ALL EXTERNAL SHARP CORNERS AND EDGES BY CHAMF. TO $\begin{matrix}0.15\\0.40\end{matrix}$ x45°
   e) ROUND ALL INTERNAL SHARP CORNERS AND EDGES TO R= $\begin{matrix}0.15\\0.40\end{matrix}$
2) DO NOT SCALE THE DRAWING.



DETAIL D



REAR VIEW

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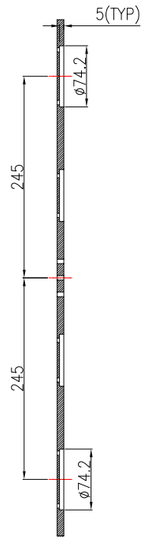
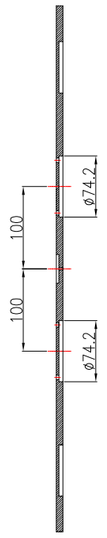
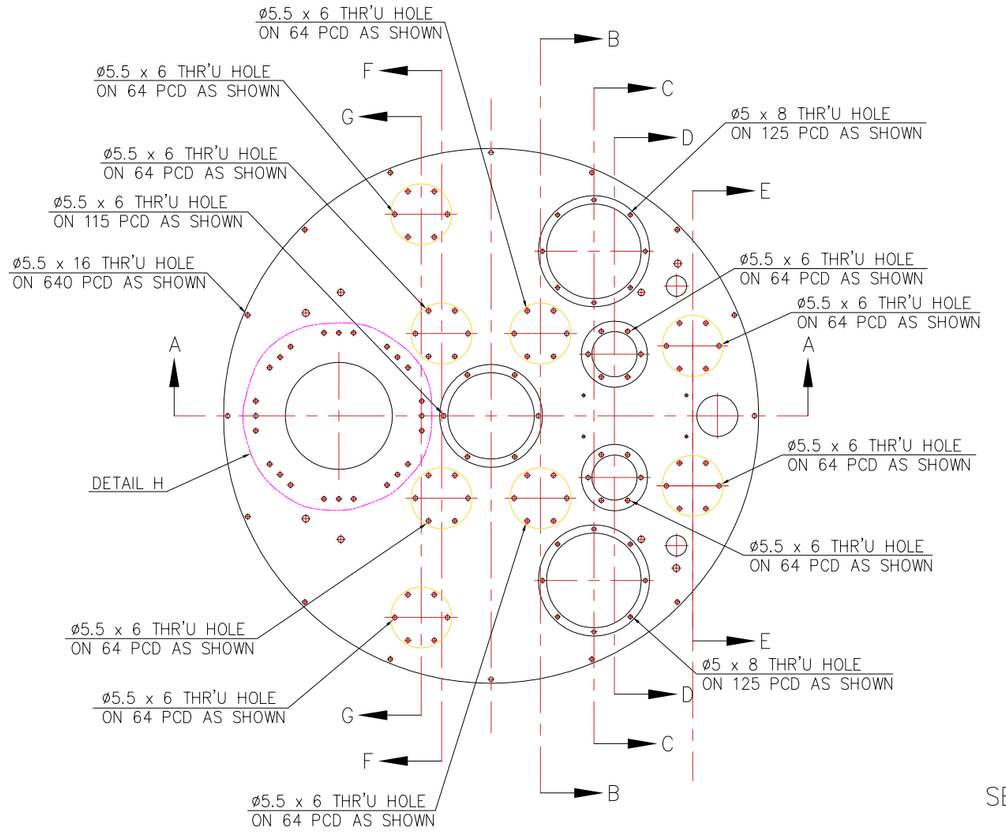
QTY : 01 NO.



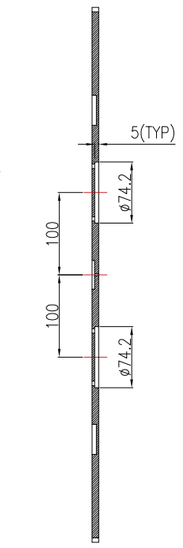
SECTION G–G



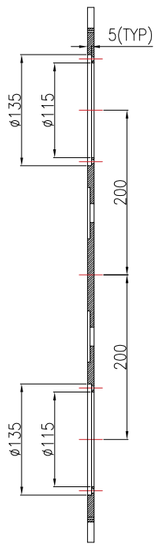
SECTION F–F



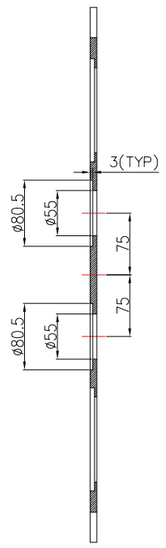
FRONT VIEW



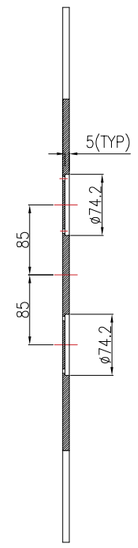
SECTION B–B



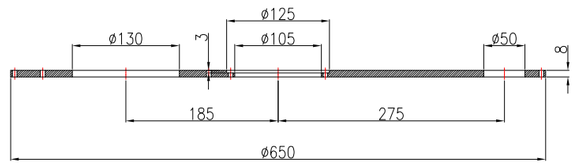
SECTION C–C



SECTION D–D

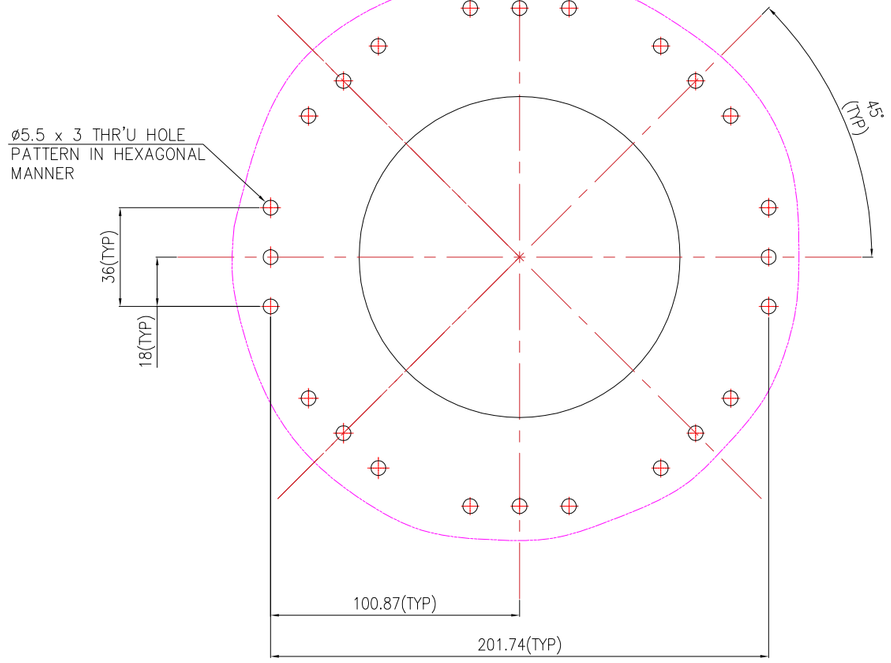


SECTION E–E

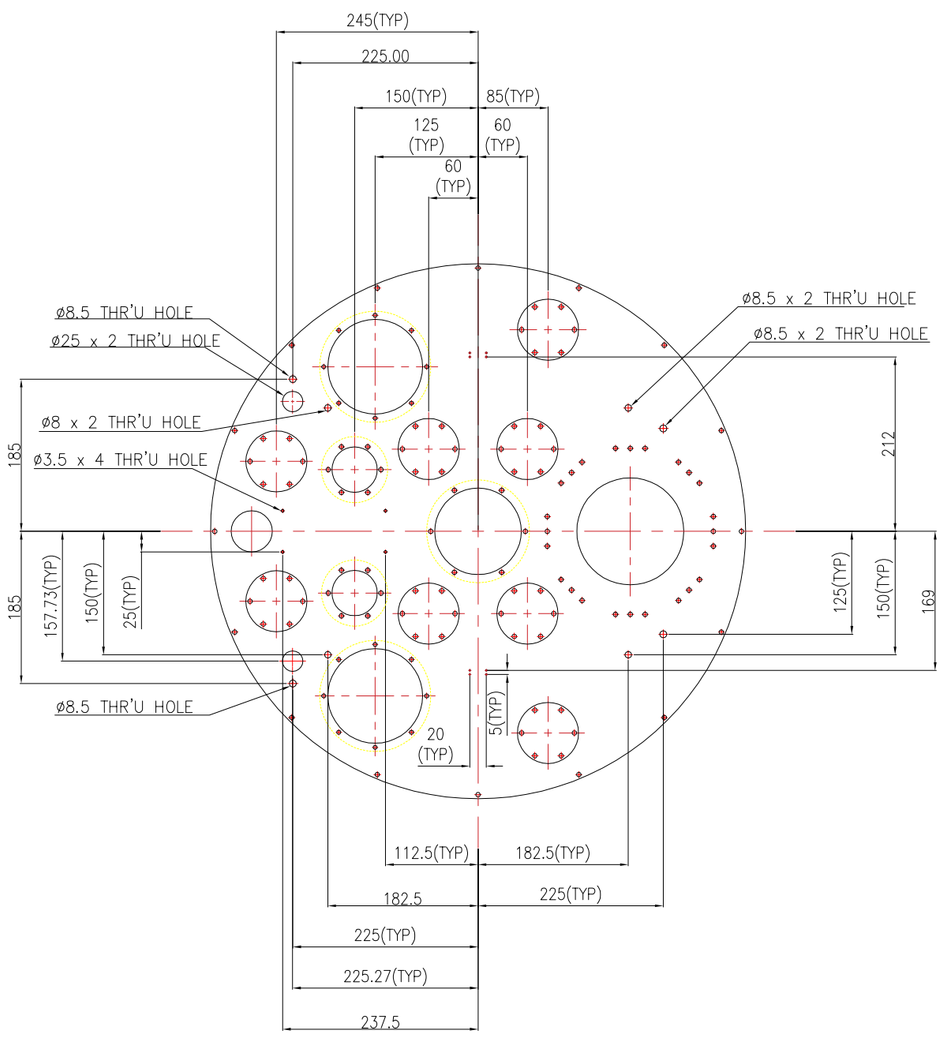


BOTTOM VIEW

SECTION A–A



DETAIL H



REAR VIEW

NOTES:

1) MACHINING TOL. AS PER IS: 2102 (MED)
   a) MACHINE ALL OVER.
   b) SURFACE FINISH TO BE $\sqrt{3.2}$ OR BETTER
   c) REMOVE ALL BURRS.
   d) REMOVE ALL EXTERNAL SHARP CORNERS AND EDGES BY CHAMF. TO $\frac{0.15}{0.40}$ x45°
   e) ROUND ALL INTERNAL SHARP CORNERS AND EDGES TO R= $\frac{0.15}{0.40}$
2) DO NOT SCALE THE DRAWING.

MATL : OFHC FLANGE
QTY : 01 NO.