



**NATIONAL INSTITUTE OF TECHNOLOGY
ROURKELA – 769 008, ODISHA**

Advertised Tender Enquiry

Department: Mechanical Engineering

Tender Notice No: NITR/PW/ME/2019/109

Date: 03/04/2019

To

Important Dates

**Through
CPP Portal
(e-procurement)**

Event	Date	Time
Pre-bid Conference	10/04/2019	11:00 AM
Last Date of submission of bid	24/04/2019	11:00 AM
Opening date of Techno-commercial bid	25/04/2019	11:00 AM

Dear Sir,

We intend to purchase fabricated components for helium turboexpander sets consist of bearing unit, warm end unit, cold end unit and die sets as specified in the supplied documents . For the same we invite quotations in accordance with the terms and conditions detailed overleaf.

Table 1 shows the details of no of sets to be purchased for each unit of turboexpander, whereas table 2 shows parts of different units separately. All materials should be purchases by you, so it should be included in the quotation.

For any technical query contact to

Head, Department of Mechanical Engineering
Attention: Prof. Suraj Kumar Behera
National Institute of Technology
Rourkela – 769 008, Odisha
Phone: 0661 – 2462508
Email: beherask@nitrkl.ac.in

Yours sincerely,

Name: Prof. Suraj Kumar Behera
(PIC)

Encl:

- 1) Schedule of requirement, specifications, dates etc.**
- 2) Bid document containing detail terms and conditions.**

1. Schedule of requirements

Table1: Details of No of sets to be purchased.

Item No.	Description	Quantity
1	Fabricated and Assembled Helium Turboexpander and its Associated Parts.	01 Set

*One set of turboexpander consist of turbine, compressor, shaft, housing and dies for fabricating bumps. The part name, material and quantity is given in table 2. The assembled drawings are given in Annexure.

Table2: All parts of helium turboexpander and its associated parts

01 : Turbine and compressor

SI No	Drawing No	Part Name	Material	Quantity
1	TEX_B_02	Turbine	Al Alloy	1+1
2	TEX_B_03	Compressor	Al Alloy	1+1

02 : Shaft and housing

SI No	Drawing No	Part Name	Material	Quantity
3	TEX_B_01	Shaft	K-Monel 500	1+1
4	TEX_B_04	Diffuser Upper	Brass	1+1
5	TEX_B_05	Locating Rim for Nozzle	SS304	1+1
6	TEX_B_06_1	Nozzle Shroud(for Diffuser)	SS304	1+1
7	TEX_B_06_2	Nozzle Shroud(Without Diffuser)	SS304	1+1
8	TEX_B_07	Nozzle Plate	SS304	1+1
9	TEX_B_08	Seal	Teflon	1+1
10	TEX_C_01	Cold End Base	SS304	1
11	TEX_C_02	Cold End Outlet	SS304	1
12	TEX_C_03	Cold End Inlet	SS304	1
13	TEX_C_04	Diffuser Lower	Brass	1
14	TEX_W_01	Compressor Side Diffuser	SS304	1
15	TEX_W_02	Housing Over Compressor Diffuser	Brass	1
16	TEX_W_03	Housing Over Compressor Inlet	SS304	1
17	TEX_W_04	Compressor Inlet Controller	SS304	1

03: Gas Foil Bearings

SI No	Drawing No	Part Name	Material	Quantity
18	TEX_B_09	Lower Journal Bearing	SS304	1+1
19	TEX_B_10	Spacer between Journal Bearings	SS304	1+1
20	TEX_B_11	Upper Journal Bearing	SS304	1+1
21	TEX_B_12	Lower Thrust Bearings	SS304	1+1
22	TEX_B_13	Upper Thrust Bearings	SS304	1+1

03: Dies set for thrust and journal bumps

SI No	Drawing No	Part name	Material	quantity
Thrust Die				
23	Die_T_01	Thrust Die: Ring 01	SS303	01
24	Die_T_01	Thrust Die: Ring 02	SS303	01
25	Die_T_02	Thrust Die: Ring 03	SS303	01
26	Die_T_02	Thrust Die: Ring 04	SS303	01
27	Die_T_03	Thrust Die: Base 01(same as Thrust punch base 01)	SS303	02
28	Die_T_03	Thrust Die: Base 02(same as Thrust punch base 02)	SS303	02
29	Die_T_04	Thrust Die: Central pin	SS303	01
30	Die_T_04	Thrust Die: Alignment pin	SS303	06
Thrust Punch				
31	Punch_T_01	Thrust Punch: Ring 01	SS303	01
32	Punch_T_01	Thrust Punch: Ring 02	SS303	01
33	Punch_T_02	Thrust Punch: Ring 03	SS303	01
34	Punch_T_02	Thrust Punch: Ring 04	SS303	01

2. Specifications and allied Technical Details

Assembled figure of the helium turboexpander and its associated parts is given in Annexure. The part drawings will be provided to the bidders on their request by emails with minor variations in dimensions (less than five percentages). The final drawings will be given to the successful bidder with exact dimensions.

3. Format of Quotation (tick appropriate box)

It is a two-part bid with separate techno-commercial and price bids.

4. The Bid should be submitted through <https://eprocure.gov.in/eprocure/app>

5. Quotations/Bid should be valid for a period of **90 days** from the date of opening of techno-commercial bid.

6. Some important dates:

i.	Pre-bid Conference:	Date: 10/04/2019	Time: 11:00 AM
ii.	Last date for submission of bid	Date: 24/04/2019	Time: 11:00 AM
iii.	Opening date of techno-commercial bid	Date: 25/04/2019	Time: 11:00 AM

7. **Warranty:** Warranty must be **01 year** onsite which should be clearly mentioned along with the quotation

8. **GST** should be charge according to applicable rates (if applicable).

9. **Bid Security and Tender Cost:** Bid Security in shape of Banker's cheque/DD (Demand Draft) for **INR 16,000/- (Rupees Sixteen Thousand Only)** and Tender Cost (Non- refundable) in the form of DD for **INR 1000/- (Rupees One thousand Only)** in favour of **Director, NIT Rourkela Payable at Rourkela** from any Scheduled Commercial Bank except Co-operative and Gramin bank. And Banker's cheque/DD for the Bid-Security should remain valid for a period of 45 days beyond the bid validity period. Bid security amount of unsuccessful bidders should be return to them at the earliest and latest on or before the 30th days after the award of the contract. **EMD (Earnest Money deposit) and Tender Cost** should reach physically through speed post/ register post/courier, containing in an envelope & superscripted with subject, tender reference number addressing to **Registrar, NIT Rourkela- 769008, Odisha on or before 25/04/2019 at 11:00 AM.**

10: **Performance Security:** Not Applicable.

11. A Pre-bid conference will be held in the **HOD Office, Department of Mechanical Engineering NIT, Rourkela at 11:00 AM** for clarifying issues and clearing doubts, if any, about the specification & other allied technical details. The prospective bidders may attend the pre-bid conference at the appointed date, time and place.

12. Please go through the enclosed "bid document" carefully for other bidding instructions.

13. Please send you quotation through <https://eprocure.gov.in/eprocure/app>

14. For technical details, you may contact

Prof. Suraj Kumar Behera
National Institute of Technology, Rourkela – 769 008, Odisha
Phone: 0661 – 2462508
Mail: beherask@nitrkl.ac.in or suraj.behera@gmail.com

Email:

NB: Please furnish your Dealership Certificate (must) and Proprietary Nature Certificate (If applicable)



NATIONAL INSTITUTE OF TECHNOLOGY ROURKELA – 769 008, ODISHA

BID DOCUMENT

1. Instructions to the bidders

- 1.1 Bids are invited on behalf of the Director, National Institute of Technology (NIT), Rourkela – 769 008, Orissa, from the intending bidders for supply of the goods/stores/ equipment for the Institute as detailed in the enquiry letter.
- 1.2 The bidders should quote their offer/rates in **BOQ** in clear terms without ambiguity.
- 1.3 In case of any discrepancy between the rates in figures and that in words, the rate in words will be accepted as correct.
- 1.4 The last date for receipt of the bid is marked in the tender document.
- 1.5 The Bid should be uploaded in <https://eprocure.gov.in/eprocure/app>. Please follow the guideline of the site.
- 1.6 If a prospective bidder requires any clarification in regard to the bidding documents, he may make a request the concerned officer or faculty member at least 15 days before the deadline for receipt of bids.
- 1.7 Bids received after the deadline of receipt indicated in Para1.4 above shall not be taken in to consideration.
- 1.8 Each bidder shall submit only one bid. A bidder, who submits more than one bid, shall be disqualified and considered nonresponsive.
- 1.9 The bids may be submitted in two parts, viz., technical bid and financial bid.
- 1.10 The bidder has to sign in full at all pages of the scanned part of the bidding document. No over-writing in those pages are acceptable.
- 1.11 The bidder should quote for the “Fabricated and Assembled Helium Turboexpander and its Associated Parts” and selection process will be based on both quality and cost.

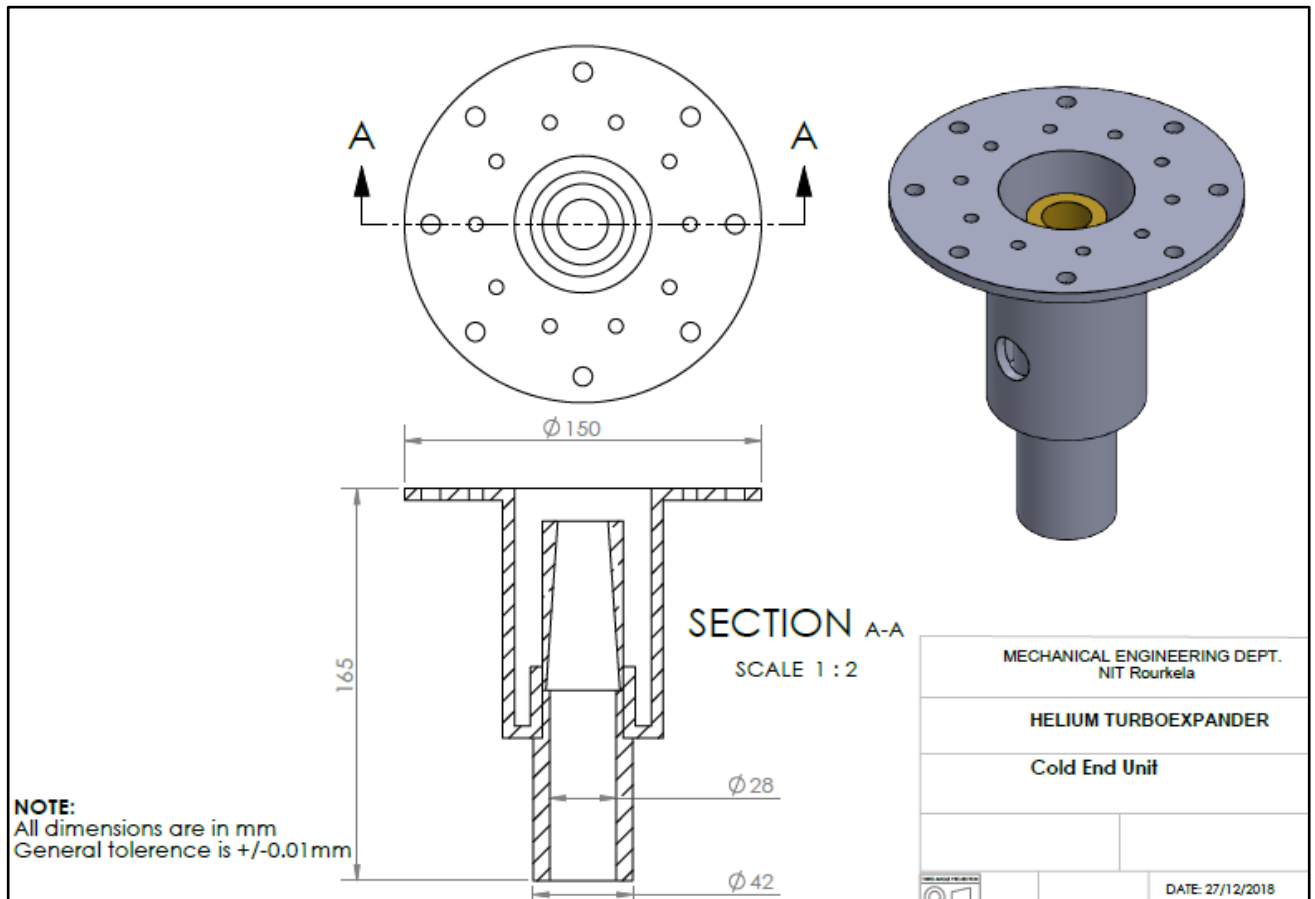
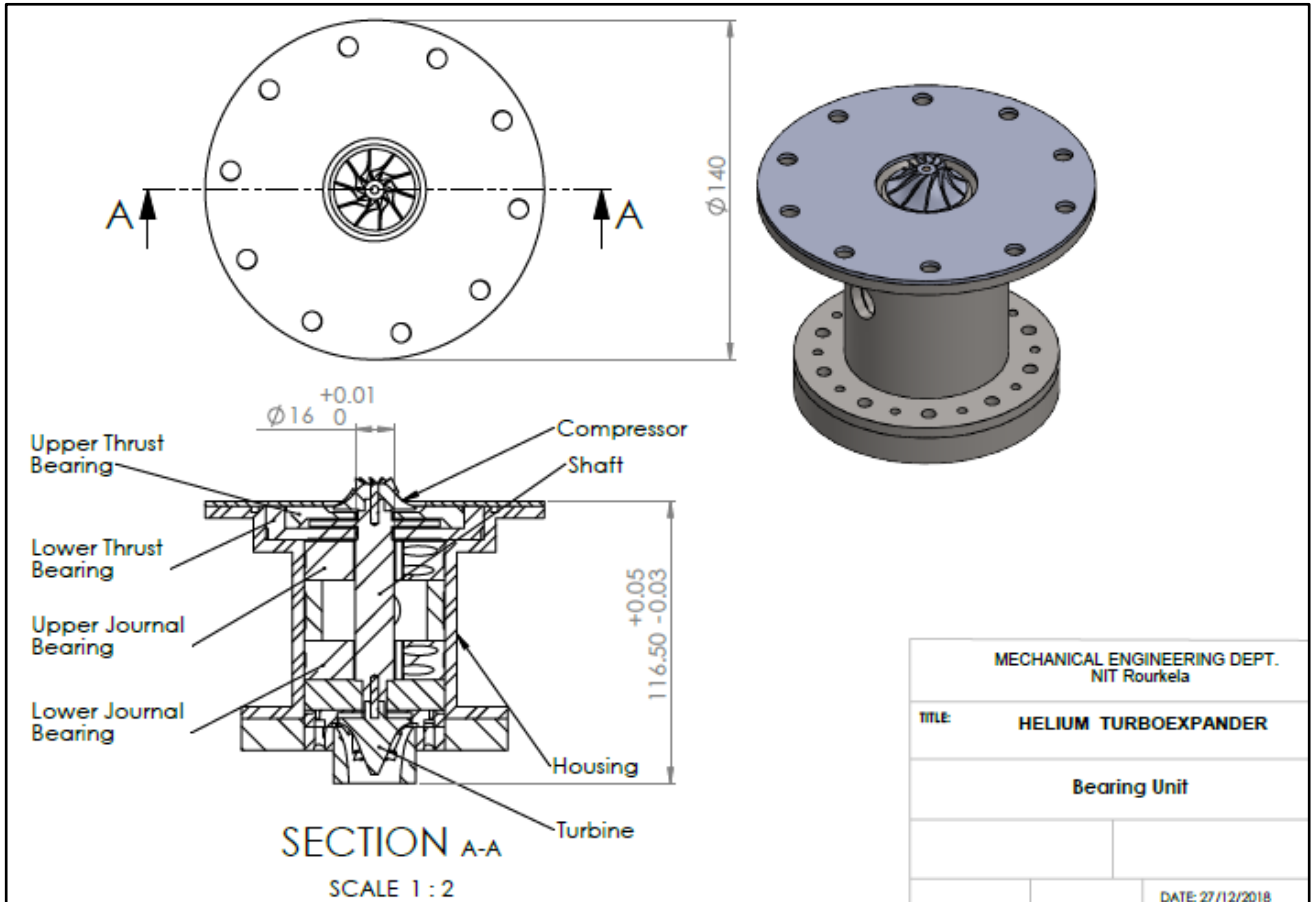
2. Terms Conditions of the bid

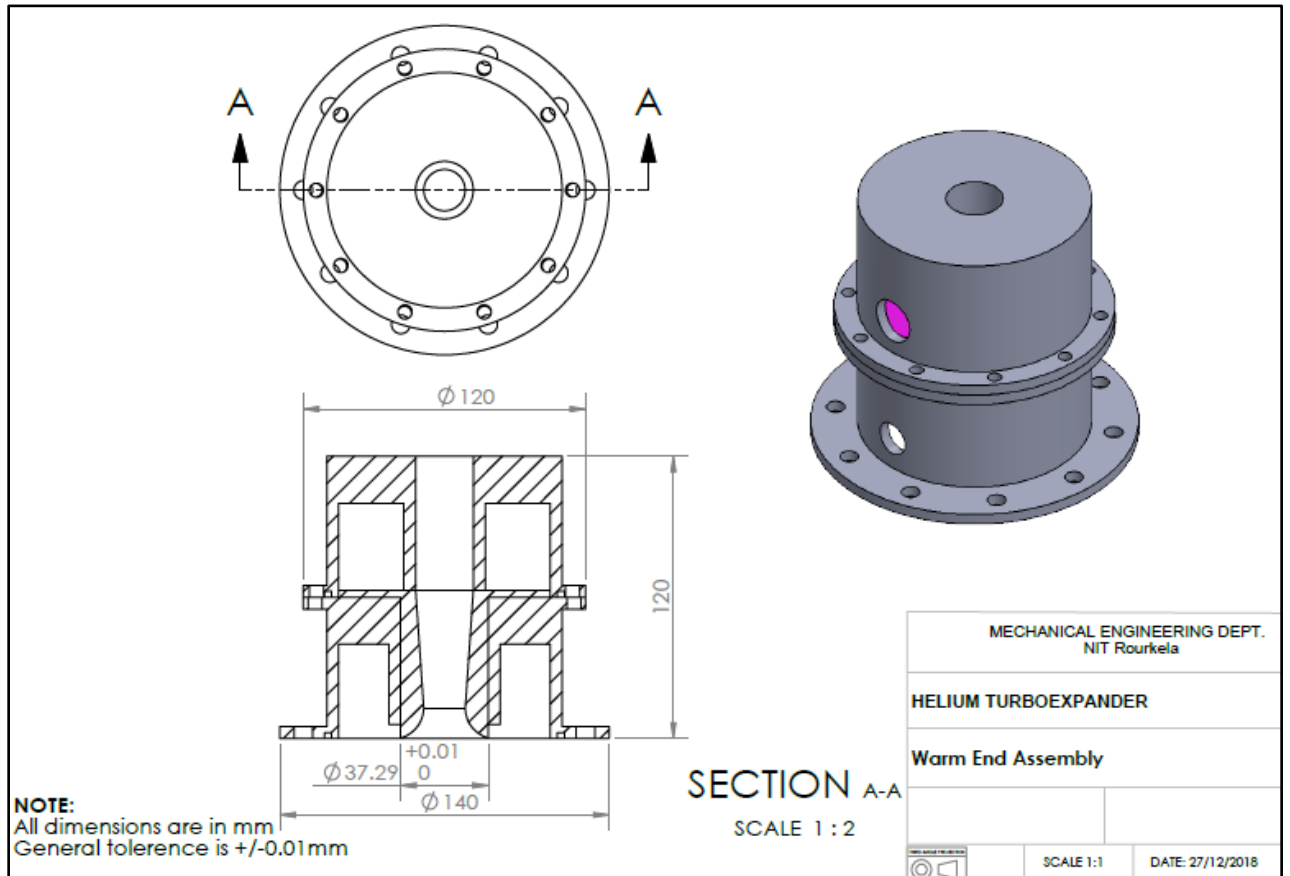
- 2.1 The rates quoted should preferably be net, inclusive of all taxes and duties, packing, forwarding, freight, Insurance and all other incidental charges. In case these charges are quoted extra in addition to the quoted rates, the amount thereof or Ad Valorem rate must be specified. Packing, forwarding, freight etc., when quotes separately are reimbursable at actuals. If external agencies are employed, their receipts must be enclosed with the invoice.
- 2.2 Duties and Taxes are to be quoted separately. Ad Valorem rates thereof should be clearly indicated with reference to the relevant Acts and Rules.

It may be noted that the Institute is availing custom duty exemption in terms of notification no 51/96- Customs dt. 23.07.1996, Notification no. - 47/2017- Integrated Tax (Rate) dt. 14.11.2017 and Notification No- 45/2017- Central tax (Rate) dt. 14.11.2017[vid Registration No.: TU/V/RG-CDE (227)/2016, dated: 13.11.2018]

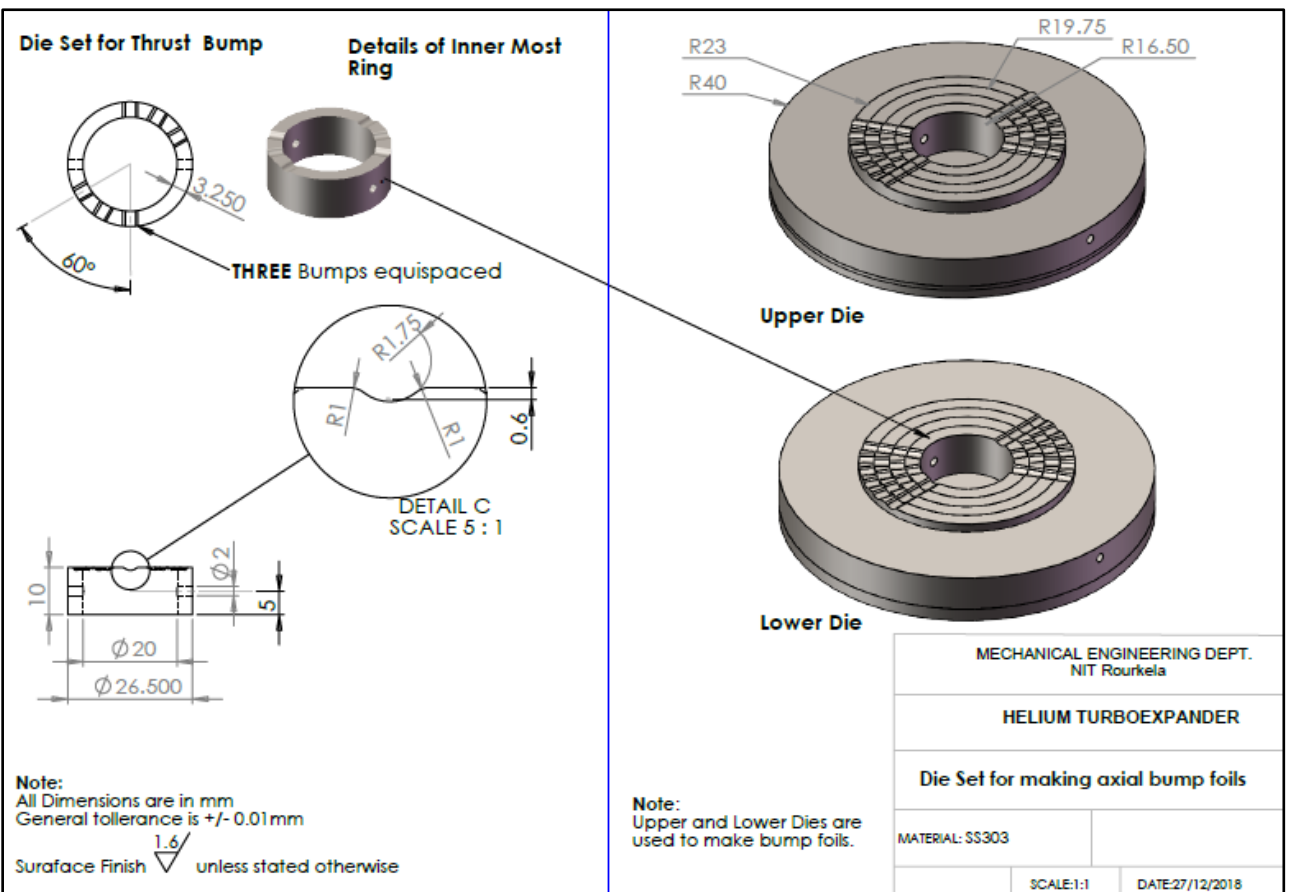
- 2.3 The goods are required to be delivered at the indenting Department of NIT, Rourkela, and must be reached within **180 days** from the date of placement of the supply of order under the risk and arrangement of the bidder and offers with delivery beyond the above period shall be treated as unresponsive. In case the delivery time is higher, the same must be mentioned clearly in the quotation.
- 2.4 The bid should remain valid for a period of **90 days** from the date of opening. In case your offer has a different validity period that should be clearly mentioned in the quotation.
- 2.5 Conditional discount, if any, offered by the bidder shall not be considered at the time of evaluation.
- 2.6 The goods offered should strictly conform to the specification and technical details.
- 2.7 The Institute may like to conduct pre-dispatch inspection of goods, where applicable.
- 2.8 Period of guarantee/warranty, where applicable, should be specified in the bid.
- 2.9 If the successful bidder, on receipt of the supply order, fails to execute the order within the stipulated period, in full or part, it will be open to the Director, NIT Rourkela to recover liquidated damage from the firm at the rate of 1 percent of the value of undelivered goods per month or part thereof, subject to a maximum of 5 percent of the value of undelivered goods. Alternatively, it will also be opened to the Director, to arrange procurement of the required goods from any other source at the risk and expenses of the bidder.
- 2.10 The successful bidder may be required to execute a contract, where applicable.
- 2.11 **The bidder has to furnish up to date Income Tax Clearance Certificate along with the bid.**
- 2.12 Payment (100 percent) will be made by Account Payee Cheque/Bank Draft, within 30 days from the date of receipt of the goods in good condition or receipt of the bill, commissioning of the equipment, where applicable, whichever is later/latest.
- 2.13 In case of Advance payment, the payment will be made on either in Foreign Demand Draft or Wire Transfer only. The proforma invoice copy need to be sent for advance payment
- 2.14 In the event of any dispute arising out of the bid or from the resultant contract, the decision of the Director, NIT, Rourkela shall be final
- 2.15 The bid document/resultant contract will be interpreted under Indian Laws.

* * * * *





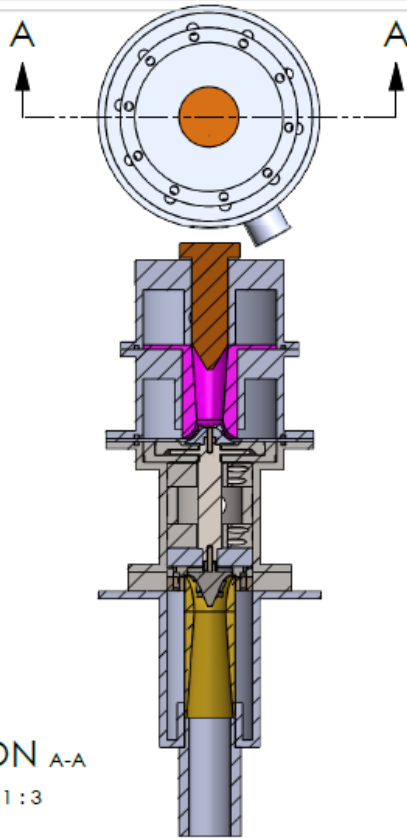
NOTE:
All dimensions are in mm
General tolerance is +/-0.01mm



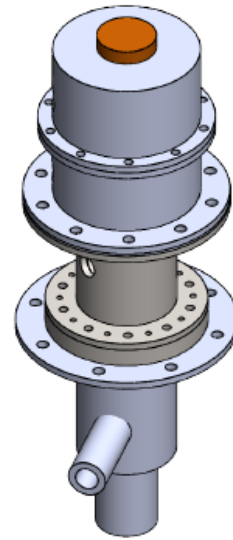
Note:
All Dimensions are in mm
General tolerance is +/- 0.01 mm

Surface Finish $\sqrt{1.6}$ unless stated otherwise

Note:
Upper and Lower Dies are used to make bump foils.



SECTION A-A
SCALE 1 : 3



MECHANICAL ENGINEERING DEPT.
NIT Rourkela

HELIUM TURBOEXPANDER

Full Assembly of Bearing and Static Unit



DATE: 27/12/2018