

भारत सरकार
अन्तरिक्ष विभाग
सतीश धवन अन्तरिक्ष केन्द्र
शार
श्रीहरिकोटा रेंज डा.घ.524 124,
नेल्लूर जिल्ला, आंध्र, भारत
टेलिफोन: +91-8623-245060 (10 जं)
फेक्स: +91-8623-225160



Government of India
Department of Space
Satish Dhawan Space Centre
SHAR
Sriharikota Range P.O. 524 121,
Nellore Dist., A.P., India
Telephones : +91-8623-245060 (10 Lines)
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निविदा सूचना सं. NOTICE INVITING TENDER
No. SDSC SHAR/Sr.HPS/PT/SMPC-U1/01/2025-2026

भारत के राष्ट्रपति की ओर से वरि. प्रधान, क्रय एवं भंडार, सतीश धवन अंतरिक्ष केन्द्र श्रीहरिकोटा निम्नलिखित वस्तुओं के लिए **ऑनलाइन निविदाएं** आमंत्रित करते हैं /On behalf of the President of India, Sr. Head, Purchase & Stores, SDSC SHAR, Sriharikota invites **online quotations** for the following:

क्र.सं. SINo	संदर्भ सं. Ref. No.	विवरण Description	मात्रा Qty.
01	SDSC SHAR/SMPC-U1 Purchase/SH202500006701 E-Procurement (Public Tender - Two Part basis)	In-Situ Machine Tool(ISM) for machining rubber lined submerged sub-assembly and SS1 hardware segments	1 No.

निविदा जमा करने की प्रारंभिक तिथि (ऑनलाइन)/Bid Submission Start Date (online) : 27-06-2025, 17:00 hrs.
निविदा स्पष्टीकरण की अंतिम तिथि (ऑनलाइन)/Bid clarification Due date(online) : 18-07-2025, 14:00 hrs.
निविदा जमा करने की अंतिम तिथि (ऑनलाइन)/Bid submission due date (online) : 28-07-2025, 14:00 hrs.
निविदाएं खोलने की तिथि (ऑनलाइन)/Bid opening date(online) : 28-07-2025, 14:05 hrs.
मूल्य निविदाएं खोलने की तिथि (ऑनलाइन)/Price Bid opening date(online) : 18-08-2025, 14:00 hrs.

निविदाकार के लिए निर्देश Instructions to Tenderers:

ईजीपीएस के माध्यम से भेजी गई निविदाओं पर निविदा शुल्क तथा बयाना जमा राशि लागू नहीं होगी।
Tender fee and EMD not applicable for tenders submitted through EGPS

- कार्य के सम्पूर्ण विवरण/जानकारी तथा नियम व शर्तों इत्यादि के लिए संलग्न अनुलग्नक को देखें। / For full details/scope of work and terms and conditions etc., please see the enclosed annexures.
- इच्छुक निविदाकार इसरो के ई-क्रय वेबसाइट <https://eproc.isro.gov.in> से ई-निविदा डाउनलोड कर सकते हैं तथा अपनी निविदा (बोली) को ई-क्रय पोर्टल पर ऑनलाइन जमा कर सकते हैं। Interested tenderers can download the e-tender from ISRO e-procurement website <https://eproc.isro.gov.in> and submit the offer online in the e-procurement portal.
- निविदा दस्तावेज इसरो की वेबसाइट www.isro.gov.in, इसरो ई-क्रय वेबसाइट <https://eproc.isro.gov.in> तथा सतीश धवन अंतरिक्ष केन्द्र शार की वेबसाइट www.shar.gov.in पर भी उपलब्ध हैं। इन्हें डाउनलोड करके अपनी निविदा (बोली) को ई-क्रय पोर्टल पर ऑनलाइन जमा किया जाना चाहिए। /Tender documents are also available on ISRO website www.isro.gov.in, ISRO e-procurement website <https://eproc.isro.gov.in> and SDSC SHAR, Sriharikota website www.shar.gov.in. The same can be downloaded and offer shall be submitted online in the e-procurement portal.
- आखिरी समय पर होने वाली भीड़-भाड़ कम करने के लिए निविदाकार अपनी निविदा (बोली) ऊपर विनिर्दिष्ट समय के अंदर ही जमा कर दें। नए विक्रेता के रूप में अनुमोदन के लिए आवेदन / अनुरोध पत्र ई-मेल द्वारा निविदा दस्तावेज में अंकित निविदा संख्या का उल्लेख करते हुए ऑनलाइन जमा करें। / Tenderers shall submit their offers within the given time as specified above and last moment rush for bid submission shall be avoided. Request for new vendor approval shall be submitted online and the same shall be intimated by mail (mentioned in the tender document) referring the tender number.
- वरि. प्रधान क्रय एवं भंडार, सतीश धवन अंतरिक्ष केन्द्र श्रीहरिकोटा के पास किसी भी या सभी निविदाओं को स्वीकार / अस्वीकार करने का अधिकार है। / Sr. Head, Purchase and Stores, SDSC-SHAR, Sriharikota reserves the right to accept or reject any/or all the quotations.


वरि. प्रधान क्रय एवं भंडार
Sr. HEAD, PURCHASE AND STORES
सतीश धवन अंतरिक्ष केन्द्र, श्रीहरिकोटा

Satish Dhawan Space Centre, Sriharikota
दिनांक DT: 27.06.2025

**GOVERNMENT OF INDIA
DEPARTMENT OF SPACE
SATISH DHAWAN SPACE CENTRE SHAR SRIHARIKOTA (SDSC SHAR)
NELLORE**

**Tender for In-Situ Machine Tool (ISM) for machining rubber lined
submerged sub-assembly and SS1 hardware segments**

Bids to be submitted online

**Tender No.: SDSC SHAR/SMPC-U1 PURCHASE/SH202500006701 dated 27-06-
2025**

A. Tender Details

Tender No :	SDSC SHAR/SMPC-U1 PURCHASE/SH202500006701
Tender Date :	27-06-2025
Tender Classification:	GOODS
Purchase Entity :	SMPC-U1 PURCHASE
Centre :	SATISH DHAWAN SPACE CENTRE SHAR SRIHARIKOTA (SDSC SHAR)

In-Situ Machine Tool (ISM) for machining rubber lined submerged sub-assembly and SS1 hardware segments

In-Situ Machine Tool (ISM) for machining rubber lined submerged sub-assembly and SS1 hardware segments

(GeM Non-Availability Report ID: GEM/GARPTS/12062025/M72QYWTH504U)

NOTE: BEING A TWO PART TENDER, WE REQUEST YOU NOT TO DISCLOSE/INDICATE ANY OF THE PRICE VALUE WHILE SEEKING/PROVIDING CLARIFICATION. IN CASE IF YOU DISCLOSE ANY OF THE PRICE AMOUNT, YOUR OFFER WILL BE REJECTED. AS PER CLAUSE 3.3 OF TENDER DOCUMENT ANNEXED, BIDS SHALL BE SUBMITTED IN TWO PARTS. PART-1 : TECHNO COMMERCIAL PART OF THE BID & PART -2: PRICE PART OF THE BID. BIDDERS SHALL NOT DISCLOSE ANY PRICES IN PART-1 BID AND IF INDICATED, THE OFFERS WILL BE REJECTED.

A.1 Tender Schedule

Bid Submission Start Date :	27-06-2025 17:30
Bid Clarification Due Date :	18-07-2025 14:00
Bid Submission Due Date :	28-07-2025 14:00
Bid Opening Date :	28-07-2025 14:05
Price Bid Opening Date :	11-08-2025 14:00

B. Tender Attachments

NA

Instructions To Vendors

1. Tender- Two part Instructions

1. This requirement can be quoted only through online e-procurement mode using ISRO portal <https://eproc.isro.gov.in>. No manual tender will be considered.
2. The vendors have to get themselves registered in above site to download the tender details. To register in above ISRO portal (<https://eproc.isro.gov.in>) the vendors need to have digital certificate. The digital certificate can be obtained from any digital certifying authority like M/s (n)Code solutions; M/s Tata Consultancy Ltd., M/s Satyam Information System etc.
3. The parties are advised to download the tender and submit the bid online at least two days prior to tender closing date to avoid last minute network problem. The due date shall not be extended due to network or computer related problems.
4. Tender fee is not applicable.
5. This being a two part tender i.e. Technical & Commercial Part and Price Part, the tenderer should not attach any documents containing Pricing information along with Technical & Commercial Bid. Normally we do not open PART-II (Price bid), if PART-I (Technical Offer) does not meet with our technical specification requirements. Price bid opening date mentioned in the tender document/ Schedule is tentative only. However, price bid opening will be made only after satisfactory completion of Part-I technical bid evaluation and with prior intimation to vendors.
6. Our Tender Enquiry contains technical requirements and specification. The detailed technical specification of your offer should be covered in the technical part. The Technical documents need to be attached online as a single PDF file without any prior information. The tender attachments containing Price details will be treated as unsolicited offers and rejected.
7. The quote should indicate quantity wise unit rate separately which have to be filled online. The Prices are to be mentioned both in figures as well as in words. The taxes, duties etc. are to be calculated and indicated in the column provided in online forms explicitly.
8. Bidders are expected to comply with the technical & commercial and other terms and conditions given in vendor specified terms of this tender. In case of any deviation, the reasons thereof should be clearly specified in the vendor specified terms column.
9. The vendors have to compulsorily submit the compliance statement online otherwise their offer will not be considered for further evaluation. Before entering the compliance statement, vendors are advised to refer the detailed specification provided in the Technical Write-up/ Drawings document. The specification offered by the vendors may also be indicated in the compliance statement wherever necessary.
10. The Technical Specification / Drawing / Product Catalogues / Works carried by vendor / Make offered etc. as a single PDF file without any financial details has to be uploaded online mode by the

vendor. This being TWO PART TENDER the PDF document uploaded should not contain any commercial/pricing details. If the attached PDF contains any pricing detail the offer will be treated as unsolicited and will be summarily rejected.

11. Original Equipment Manufacturer (OEM) or their representative can submit bid. Indian agents while quoting on behalf of their principals are requested to attach necessary authorization letter from their Principals in their bid.

12. Instructions on Indian Agent (if any):- Bidders are required to provide the following information in respect of their authorized Indian Agent, if any, alongwith technical bid as the same is mandatory as is required for consideration of the bid. Name, Address, Telephone no. , fax no., email of the Indian Agent including the contact person.

13. A letter from the OEM in the current date certifying that the said Indian Agent is their authorized Indian Agent and also indicating the responsibilities/role of the Indian Agent under the proposed purchase. Remuneration/service charges payable to the Indian Agent under the proposed purchase.

14. The offer should be valid for a minimum period of 120 days from the date of tender opening or as specified in the tender document.

15. Due date & time: Sufficient time has been allotted for Bid submission. Vendors are requested to complete Bid submission well in advance. Last minute requests for due date extension citing server problems etc. will not be entertained. Bids will not be entertained after the due date and time.

17. The vendors may contact +91471 2565454/4574/2527/3753/3289 or eproc@vssc.gov.in for any technical assistance in bid submission.

18. Once the offer is submitted in on line mode by the vendor and bid submission period is over, vendor will not be able to provide revised offer.

19. Request for the extension of the due date will not be considered.

20. Tender which are not prepared in terms of these instructions are liable to be rejected.

21. Based on the response to the e-Public Tender Notice, SDSC SHAR reserves the right to change any milestone date of the tendering activity.

22. SDSC SHAR reserves the right to verify all claims made by the bidder.

23. Tender Opening : The Technical and Commercial Bid [Part-I] will be opened on the specified day mentioned in the schedule and in case any further clarification/ discussion are required, such clarification/discussion shall be called for before opening the Price Bid.

24. The exact date and time of opening of price bid of successful tenderers will be intimated later.

25. Tenderers can participate in the said tender opening to know the details on for which, the representative of the firm shall be duly authorized by Competent Authority. Against proper authorization only such representatives shall be allowed to attend the tender opening. Tenderer Presence is not mandatory to consider the Quote for evaluation.

26. SDSC SHAR, SRIHARIKOTA reserves the right to accept or reject any/or all the tenders in part or full without assigning any reasons thereof.

2. STANDARD TERMS & CONDITIONS

1. Tele No.08623-225174/226377

e-Mail ID : hps@shar.gov.in, manas@shar.gov.in, anilhr@shar.gov.in

1. Instruction to Indigenous Suppliers:

a) Payment Terms shall be as specified in RFP. If not specifically mentioned Our Normal payment term is 100% within 30 days after receipt and acceptance of the item at our site. Please confirm acceptance in your quotation.

b) GST/IGST: Please specify GST percentage, if any, in your offer. Please mention HSN/SAC code in your offer and Our GST No. is. 37AAAGS1366J1Z1.

c) Purchase / Price preference to MSEs

Purchase/Price preference will be applicable to the product reservation admissible to the Micro and Small Enterprises. Purchase/Price Preference shall be extended to the MSEs under the Public Procurement Policy for MSEs formulated under the Micro, Small and Medium Enterprises Development Act, 2006. The participating MSEs in a tender, quoting price within the band of L-1 + 15% may also be allowed to supply a portion of the requirement by bringing down their price to the L-1 price, in a situation where L-1 price is from someone other than an MSE. Such MSEs may be allowed to supply up to 25% of the total tendered value. In case of more than one such eligible MSE, the supply will be shared equally.

Micro & Small Enterprises which have technical capability to deliver the goods & Services as per prescribed technical & quality specifications and may not be able to meet the qualification criterion relating to prior experience-prior turnover may be relaxed as per guidelines issued by Ministry of MSMEs & as amended from time to time.

Interested vendors shall specifically claim the benefit with supporting documents.

d) Purchase / Price preference to Make-in-India Products:

Preference shall be given to Class 1 local supplier as defined in public procurement (Preference to Make in India), Order 2017 as amended from time to time and its subsequent Orders/Notifications issued by concerned Nodal Ministry for specific Goods/Products. The minimum local content to qualify as a Class 1 local supplier is denoted in the bid document 50%. If the bidder wants to avail the Purchase preference, the bidder must upload a certificate from the OEM regarding the percentage of the local content and the details of locations at which the local value addition is made along with their bid, failing which no purchase preference shall be granted. In case the bid value is more than Rs. 10 Crore, the declaration relating to percentage of local content shall be certified by the statutory auditor or cost auditor, if the OEM is a company and by a practicing cost accountant or chartered accountant for OEMs other than companies as per the Public Procurement (preference to Make-in-India) order 2017 dated 04.06.2020. In case Buyer has selected Purchase preference to Micro and Small Enterprises clause in the bid, the same will get precedence over this clause.

2. Instruction to Foreign Suppliers:

- a) Payment Terms shall be as specified in RFP. If not specifically mentioned Our normal payment term is SIGHT DRAFT, Please confirm acceptance in your offer, if you insist for L/C, and all bank charges shall be to your account. Confirm acceptance.
- b) Please specify whether any export clearance is required in case of an order on you.
- c) Warranty/Guarantee applicable for the item shall be mentioned in your offer
- d) Special Certification for packing Material : as per Plant Quarantine (Regulation of Control into India) Order 2003, Articles packed with packing material of plant origin viz., hay, straw, wood shavings, wood chips, saw dust, wood waste, wooden pallets, Dunn age Mats, wooden packages, coir pith, pear or sphagnum moss etc., will be allowed entry by Customs only with a Phytosanitary Certificate. In case if a Purchase Order, if you propose to us any of the above material for packing such a certificate issued by your local Plant Quarantine Authority shall be furnished.
- e) Confirm whether any Export License is required and for which End User Certificate is to be provided by us, in case of an Order on you. (Enclose format for EUC, if applicable)
- f) Either Indian Agent on behalf of the foreign principals or the foreign principal directly can quote against this order, but not both. In either case an Indian agent cannot represent more than one principal against the same tender.
- g) In case the quote is in INR we prefer to execute the same on HSS Basis and for which Concessional Customs duty as per Notification no.50/2017 Customs dated 30.06.2017, Serial No.539(A) as amended by Notification no.05/2018 dated 25.01.2018. In case the quote is on Indian Rupee (Outside High Sea Sale), the price shall include taxes and duties if any. We shall not able to provide any duty or IGST tax exemption/concession certificates. If the item quote is of USA make, please quote for all-inclusive price since we prefer to get the item on FOR destination basis.
- h) Any bidder from a country which shares a land border with India will be eligible to bid in any procurement whether of goods, services (including consultancy services and non-consultancy services) or works (including turnkey projects) only if the bidder is registered with Competent Authority as specified in Office Memorandum no.F.No.6/18/2019-PPD, Ministry of Finance, Department of Expenditure, Public Procurement Division dated 23rd July 2020. All the conditions mentioned in the above OM is applicable for this tender.

Common terms to Indigenous and foreign suppliers:

3.Warranty

You shall provide applicable warranty for the items offered by you without fail. For the applicable period you shall provide necessary warranty certificate.

4.Performance Bank Guarantee

Towards the performance of the systems during the warranty period you shall submit a performance bank guarantee equivalent to 3% of the order value to cover the warranty period. This PBG shall be interest free and the same shall be returned to you on successful completion of all contractual obligations. The said PBG shall have a further claim period of 2 months.

5. Security Deposit

On acceptance of the order, you shall submit an interest free amount equivalent to 3% of the total contract/order value towards security deposit. This security deposit is collected towards the performance of the Contract. The said Security Deposit shall be submitted either in the form of Bank Guarantee/Demand Draft/FDR receipts duly endorsed in the name of the centre. The Security Deposit will be returned to you on successful completion of the Contractual obligations; failing which it shall be forfeited/adjusted.

6. Offer Validity : - In case of single part tender - the validity of offers/tenders should be 90 days. In case of two part tender - 120 days from the date of opening of Part-I bid and 60 days from the date of opening of Part-II bid. Tenders shorter than offer validity mentioned above will not be considered for evaluation.

7. Liquidated Damages:

If you fail to deliver the ordered items satisfactorily within the time specified or any extension thereof, Liquidated Damage @ 0.5% (zero point five percent) of the order value or part thereof the un-delivered items for each calendar weeks of delay shall be recovered from your bill. However total Liquidated Damage shall not exceed 10% (ten percent) of the order value.

FORCE MAJEURE:

Should a part or whole work covered under this contract be delayed in delivery/completion of work due to reasons of Force majeure which shall include legal lockouts, strikes, riots, civil commotion, fire, accidents, quarantines, epidemic, acts of God & War, stoppage of deliveries by the Government, freight embargoes etc; the delivery period/completion of work referred to in this Contract shall be extended by a period not in excess of duration of such Force Majeure. The occurrence shall be notified by either party within reasonable time.

8. Offers received through post, courier, fax or email will not be considered.

9. Technical and commercial bid (Part-I) shall not contain any price details. Optional accessories or other price details, if any shall be uploaded in Supporting documents related to Price Bid, to be opened along with Price Bid.

10. In respect of FIM being issued, the fabricator shall submit Bank Guarantee for equivalent sum compulsorily. In case, submission of Bank Guarantee is not possible, the reasons there for shall be clearly mentioned. However, for such cases the fabricators at their cost shall secure such FIM through Insurance Policy with Director, SDSC SHAR as beneficiary. In case of PSU and Government Organization, Indemnity Bond in lieu of Bank Guarantee is acceptable. Balance FIM/Scrap, if any shall be returned along with the supply of the items. Please confirm acceptance in your quotation.

11. SDSC SHAR shall have the right to place part order among the parties for the items for which they are the lowest.

12. Arbitration:

In the event of any dispute/s, difference/s or claim/s arising out of or relating to the interpretation and application of the Contract, such dispute/s or difference/s or claim/s shall be settled amicably by mutual consultations of the good Offices of the respective Parties and recognizing their mutual interests attempt to reach a solution satisfactory to both the parties. If such a resolution is not possible, within 30

days from the date of receipt of written notice of the existence of such dispute/s, then the unresolved dispute/s or difference/s or claim/s shall be referred to the Sole Arbitrator appointed by the Parties by mutual consent in accordance with the rules and procedures of Arbitration and Conciliation Act 1996 as amended from time to time. The arbitration shall be conducted in Bengaluru in the Arbitration and Conciliation Centre Bengaluru (Domestic and International) as per its rules and regulations. The expenses for the Arbitration shall be shared equally or as may be determined by the Arbitrator. The considered and written decision of the Arbitrator shall be final and binding between the Parties. The applicable language for Arbitration shall be English only.

Work under the Contract shall be continued by the CONTRACTOR during the pendency of arbitration proceedings, without prejudice to a final adjustment in accordance with the decision of the Arbitrator unless otherwise directed in writing by the DEPARTMENT or unless the matter is such that the works cannot be possibly continued until the decision (whether final or interim) of the Arbitrator is obtained.

3. General Instructions to Vendor

1. Instructions to tenderers

TeleNo.08623-225174/226377

Fax No.08623-225170/22-5028

e-Mail ID : hps@shar.gov.in, nair_binu@shar.gov.in, akdas@shar.gov.in

1. Interested tenderers may, at their option, login to <https://eproc.isro.gov.in> and submit your offers.

2. TENDER FEE IS NOT APPLICABLE.

3. EARNEST MONEY DEPOSIT IS NOT APPLICABLE IF NOT MENTIONED IN THE RFP SPECIFICATION.

4. Indian agents while quoting on behalf of their principals are requested to attach Principals original quote, necessary authorization letter from their Principals, copy of agency agreement etc. in their bid.

5. TWO PART BIDS: In case of Two part tender, price details shall not be uploaded in the Technical & Commercial Bids (Part I), failing to which the bid will be treated as INVALID.

6. VALIDITY OF OFFER: - In case of single part tender - the validity of offers/tenders should be 90 days. In case of two part tender - 120 days from the date of opening of Part-I bid and 60 days from the date of opening of Part-II bid. Tenders shorter than offer validity mentioned above will not be considered for evaluation.

7. Due date & time: Sufficient time has been allotted for Bid submission. Vendors are requested to complete Bid submission well in advance. Last minute requests for due date extension citing server problems etc. will not be entertained. Bids will not be entertained after the due date and time.

7 (A). Request for the extension of the due date will not be considered.

8.

(a) Bid Opening for Public Tender: In case of Public Tender-Two Part Tenders: Technical and Commercial Bids will be opened on the first day specified for Tender opening. Interested vendors can attend the tender opening session to know the bidding details (Bidders presence is not mandatory to consider the quote for evaluation). Price Bid opening of the selected vendors will be scheduled later and it will be intimated to the selected Bidder (s).

(b) For Limited Tender: Bidders participation is not allowed.

9. Prices are required to be quoted according to the units indicated.

10. Preference will be given to those tenderers offering supplies from ready stocks and on the basis of FOR destination delivery at site.

11. (a) All available technical literature, catalogues and other data in support of the specifications and detail of the items should be furnished as attachments.

(b) Samples, if called for, should be submitted free of all charges by the tenderer and the Purchaser shall not be responsible for any loss or damage thereof due to any reason whatsoever. In the event of non-acceptance of tender, the tenderer will have to remove the samples at his own expense.

(c) Approximate net and gross weight of the items offered shall be indicated in your offer. If dimensions details are available the same should be indicated in your offer.

(d) Specifications: Stores offered should strictly conform to our specifications. Deviations, if any, should be clearly indicated by the tenderer in their quotation. The tenderer should also indicate the Make/Type number of the stores offered and provide catalogues, technical literature and samples wherever necessary. Test certificates wherever necessary should be attached. Whenever options are called for in our specifications, the tenderer should address all such options. Wherever specifically mentioned by us the tenderer could suggest changes to specifications with appropriate response for the same.

12. The purchaser shall be under no obligation to accept the lowest or any tender and reserves the right of acceptance of the whole or any part of the tender or portion of quantity offered and the tenderers shall supply the same at the rates quoted.

13. All amounts shall be indicated both in words as well as in figures. Where there is difference between amounts quoted in words and figures, amount quoted in words shall prevail.

14. The tenderer will be required to furnish a document containing the name of his bankers as well as the latest income-tax clearance certificate duly counter signed by the Income-tax Officer of the Circle concerned under the Seal of his office, if required by the Purchaser.

15. The Purchaser reserves the right to place order on the successful tenderers for additional quantity up to 25% of the quantity offered by them at the rates quoted.

16. Sr. Head, Purchase and Stores, SDSC SHAR SRIHARIKOTA reserves the right to accept or reject any bid in part or full without assigning any reason thereof.

17. Any bidder from a country which shares a land border with India will be eligible to bid in any procurement whether of goods, services (including consultancy services and non-consultancy services) or works (including turnkey projects) only if the bidder is registered with Competent Authority as specified in Office Memorandum no.F.No.6/18/2019-PPD, Ministry of Finance, Department of Expenditure, Public Procurement Division dated 23rd July 2020. All the conditions mentioned in the above OM is applicable for this tender.

18. Micro and Small Enterprises [MSEs]

a). In order to avail the benefits extended by Government of India to the Micro and Small Enterprises [MSEs] in respect of Goods and Services as per provision of the policy, MSEs registered with District Industries Centre [DIC] or Khadi and Village Industries Commission [KVIC] or Khadi and Village Industries Board [KVIB] or Coir Board or National Small Industries Commission [NSIC] or Directorate of Handicrafts and Handlooms or Udyog Aadhar Memorandum, or any other Body specified by Ministry of MSME have to submit a copy of Valid Certificate with self-attestation along with the Technocommercial bid. No Certificate claiming exemption will be entertained after Tender due date.

b). MSEs are entitled for [i] issue of Tender documents Free of Cost [ii] Exemption of Earnest Money Deposit [EMD]. However, Performance Security is mandatory for Goods and Services.

c). If the Tenderer[s] is/are SC/ST/Woman entrepreneur owned MSEs, specific mention for the same should be there in the valid certificate submitted by the tenderer.

d). Tenderers claiming MSME benefit shall furnish copy of UAM No. as uploaded on CPP portal to avail benefit.

19. Public Procurement [Preference to Make in India]:

Public Procurement (Preference to Make in India) order 2017- revision issued by Government of India, Department of Promotion of Industry and Internal Trade [DPIIT] Public Procurement [preference to Make in India] vide Order No P-45021/2/2017-PP(BE II) dated 16/09/2020 or as amended thereafter. The Tenders submitted are subjected these orders.

Bidders are required to submit necessary certificates & documents as detailed in the above referred

GOI Order in support of their claim to avail benefit against this order. The bidders who claim Purchase Preference under Make in India Policy shall fulfill all requirements of tender document applicable for Indigenous Manufacturer. FAILURE TO SUBMIT THE REQUIRED DOCUMENTS MAY RENDER A TENDER UNACCEPTABLE.

Local Content means the amount of value added in India which shall, unless otherwise prescribed by the Nodal Ministry, be the total value of the item procured (excluding net domestic indirect taxes) minus the value of imported content in the item (including all customs duties) as a proportion of the total value, in percent.

Local Supplier: Class-I Local Supplier means a supplier whose product offered for procurement has local content equal to or more than 50%. Class-II Local Supplier means a supplier whose product offered for procurement has local content more than 20% but less than 50%. Non-Local Supplier means a supplier whose product

Margin of Purchase Preference: For being eligible for purchase preference under this clause, the Margin of purchase preference shall be 20% (i.e. L1 + 20% band). Preference: Purchase Preference shall be given to Class-I Local Supplier only in the manner specified here under:

(a) In the procurement of Goods which are divisible in nature:

i. If L1 is from a Class-I local supplier, the contract for full quantity will be awarded to L1.

ii. If L1 is not a Class-I local supplier, 50% of the order quantity shall be awarded to L1. Thereafter, the lowest bidder among the Class-I local supplier will be invited to match the L1 price for the remaining 50% quantity subject to the Class-I local supplier(s) quoted price falling within the margin of purchase preference, and contract for that quantity shall be awarded to such Class-I local supplier subject to matching the L1 price. In case such lowest eligible Class-I local supplier fails to match the L1 price or accepts less than the offered quantity, the next higher Class-I local supplier within the margin of purchase preference shall be invited to match the L1 price for remaining quantity and so on, and contract shall be awarded accordingly. In case some quantity is still left uncovered on Class-I local supplier, then such balance quantity may also be ordered on the L1 bidder

(b) In the procurement of Goods which are not divisible in nature:

i. If L1 is Class-I local supplier, the contract for full quantity will be awarded to L1

ii. If L1 is not Class-I local supplier, the lowest bidder among the Class-I local supplier will be invited to match the L1 price subject to the Class-I local supplier(s) quoted price falling within the margin of purchase preference, and the contract shall be awarded to such local supplier subject to matching the L1 price.

iii. In case such lowest eligible Class-I local supplier fails to match the L1, the Class-I local supplier with the next higher bid within the margin of purchase preference shall be invited to match the L1 price and

so on and contract shall be awarded accordingly. In case none of the local suppliers within the margin of purchase preference matches the L1 price, then the contract may be awarded to the L1 bidder

(c) Class-II local supplier will not get purchase preference

Verification of local content:

- i. The Class-I local supplier / Class-II local supplier at the time of bidding shall be required to indicate percentage of Local Content and provide self-certification that the items offered meet the local content required for Class-I local supplier/ Class-II local supplier and shall give the details of the location(s) at which the local value addition is made .
- ii. False declarations will attract banning of business of the bidder or its successor(s) for a minimum period of three years along with any other penal action as may be deemed fit including rejection of the offer, forfeiture of all dues including EMD/ Security Deposit / banning of the firm.
- iii. A supplier who has been debarred by any procuring entity for violation of this order shall not be eligible for preference for procurement for the duration of debarment. It will be the bidders responsibility to provide self-certification, clearly stating that the bidder is not serving debarment from any procuring entity for the tendered item at the time of tendering.

4. Additional Instructions to tenderers

1. This requirement can be quoted only through online e-procurement mode using ISRO portal <https://eproc.isro.gov.in>. No manual tender will be considered.
2. The parties are advised to download the tender and submit the bid on online at least two days prior to tender closing date to avoid last minute network problem. The due date shall not be extended due to network or computer related problems.
3. Tender fee is not applicable.
4. Our Tender Enquiry contains technical requirements and specification. The detailed technical specification of your offer along with price details shall be provided.
5. The quote should indicate quantity wise unit rate separately which have to be filled online. The Prices are to be mentioned both in figures as well as in words. The taxes, duties etc. are to be calculated and indicated in the column provided in online forms explicitly.
6. Bidders are expected to comply with the technical & commercial and other terms and conditions

given in vendor specified terms of this tender. In case of any deviation, the reasons thereof should be clearly specified in the vendor specified terms column.

7. The vendors have to compulsorily submit the compliance statement online otherwise their offer will not be considered for further evaluation. Before entering the compliance statement, vendors are advised to refer the detailed specification provided in the Technical Writeup/ Drawings document. The specification offered by the vendors may also be indicated in the compliance statement wherever necessary.

8. The Technical Specification / Drawing / Product Catalogues / Works carried by vendor / Make offered etc. as a single PDF file has to be uploaded online mode by the vendor.

9. Original Equipment Manufacturer (OEM) or their representative can submit bid. Indian agents while quoting on behalf of their principals are requested to attach necessary authorization letter from their Principals in their bid.

10. Instructions on Indian Agent (if any):- Bidders are required to provide the following information in respect of their authorised Indian Agent, if any, alongwith technical bid as the same is mandatory as is required for consideration of the bid. Name, Address, Telephone no. , fax no., email of the Indian Agent including the contact person.

11. A letter from the OEM in the current date certifying that the said Indian Agent is their authorized Indian Agent and also indicating the responsibilities/role of the Indian Agent under the proposed purchase. Remuneration/service charges payable to the Indian Agent under the proposed purchase.

12. The offer should be valid for a minimum period of 90 days from the date of tender opening.

13. Due date & time: Sufficient time has been allotted for Bid submission. Vendors are requested to complete Bid submission well in advance. Last minute requests for due date extension citing server problems etc. will not be entertained. Bids will not be entertained after the due date and time.

15. The vendors may contact +91471 2565454/4574/2527/3753/3289 or eproc@vssc.gov.in for any technical assistance in bid submission.

16. Once the offer is submitted in on line mode by the vendor and Bid Sealing is done by SDSC SHAR, vendor will not be able to provide revised offer.

17. Request for the extension of the due date will not be considered.

18. Tender which is not prepared in terms of these instructions are liable to be rejected.

19. SDSC SHAR reserves the right to change any milestone date of the tendering activity.

20. SDSC SHAR reserves the right to verify all claims made by the bidder.

21. Tender Opening: Tenders will be opened on the specified day mentioned in the schedule.

22. Tenderers cannot participate in tender opening.

23. SDSC SHAR, SRIHARIKOTA reserves the right to accept or reject any/or all the tenders in part or full without assigning any reasons thereof.

C. Bid Templates

C.1 Technical Bid - In-Situ Machine Tool (ISM) for machining rubber lined submerged sub-assembly and SS1 hardware segments

1. Design, Configuration, Fabrication and Supply of Portable CNC In-situ Machine as per terms and conditions of the Annexure -

Document : Tender document (RFP)

Common Specifications (Applicable for all items)

Sl No	Specification	Value	Compliance	Offered Specification	Remark
1	Confirm that the entire scope of work as given in the tender specification is considered for quoting the price. All deviations shall be brought out separately. In the absence of deviations list, it will be presumed that all the specification given is adhered to.	YES/NO	Yes / No / Explain		

2	Scope of work includes Configuration, design, detailed engineering, manufacture, supply, installation, testing and commissioning of In-Situ Machine (ISM) for machining rubber lined submerged sub-assembly and SS1 hardware segments.	YES/NO	Yes / No / Explain		
3	Bidder shall submit security deposit, within 15 days of Order Acknowledgement, for 3% of the total order value. Security Deposit shall be obtained through Bank Guarantee or fixed deposit receipt from any of the Scheduled Banks executed on non-judicial stamp paper of appropriate value, and shall be valid for a period of sixty days beyond the date for completion of the Purchase Order	YES/NO	Yes / No / Explain		

4	PBG at 3% of the value of the Purchase Order shall be submitted through bank guarantee from any of the Scheduled Banks executed on non-judicial stamp paper of appropriate value, and shall be valid for a period of sixty days beyond the date for completion of warranty period.	YES/NO	Yes / No / Explain		
5	Offer shall be valid for Four months from the due date for submission of the Bid.	YES/NO	Yes / No / Explain		
6	In case Bid does not fully comply with the requirement of Proposal document and the bidder stipulates deviations to the clauses of the proposal, which are unacceptable to the Department, the Bid will be rejected.	YES/NO	Yes / No / Explain		
7	All the deviations are listed in Deviation table.	YES/NO	Yes / No / Explain		
8	Other than the deviation listed in the deviation table, all other specifications mentioned in the tender are confirmed	YES/NO	Yes / No / Explain		

9	Bidder shall adhere to the major milestones listed in the tender document.	YES/NO	Yes / No / Explain		
10	The item shall be guaranteed against any manufacturing defects for a period of 12 months from the date of commissioning and acceptance. In case of spares supplies made during this contract period.	YES/NO	Yes / No / Explain		
11	Party shall confirm the understanding of the following. The In-situ machine is intended to use in two varieties of ways to meet the machining requirements.	YES/NO	Yes / No / Explain		
12	i. Conventional way: The job to be machined is placed on the fixed in-situ machine base and machining activity is performed.	YES/NO	Yes / No / Explain		
13	This condition is looking like a standard double column machine (Fig.5). (Targeted jobs are submerged sub-assemblies i.e., Fig.1 to Fig.4 mentioned below).	YES/NO	Yes / No / Explain		

14	<p>ii. In-Situ way: The machine shall be placed on a SS1 Segment hardware handling ring and machining will be performed. This condition is looking like a machine is on the job i.e., in-situ in position (Refer Fig.6).</p>	YES/NO	Yes / No / Explain		
15	<p>Party shall confirm the following. The proposed In-situ machine shall be designed to meet the metal cutting loads which are generated during metal machining (Specific cutting resistance 250 kg /mm² approximately and Maximum depth of cut considered 10 mm shall be considered during design).</p>	YES/NO	Yes / No / Explain		
16	<p>Party shall confirm the understanding of the material to be cut with following mechanical properties. (Elastomeric material) Tensile strength 100-250 Ksc, Hardness 65-75 Shore A, density is 1.7 to 2.0 gm/cc and elongation is 600% to 1000% (Minimum).</p>	YES/NO	Yes / No / Explain		

17	Party shall confirm the understand of the general description given at section 4.3	YES/NO	Yes / No / Explain		
18	Party shall confirm the understand of the parameters & configuration of the machine at section 4.4	YES/NO	Yes / No / Explain		
19	Confirmation of selection of CNC control system as Siemens Sinumerik-1 model & make	YES/NO	Yes / No / Explain		
20	Confirmation of supply of post processing CAM software	YES/NO	Yes / No / Explain		
21	Confirmation of touch probe and its associate software for in-process and post machining inspection	YES/NO	Yes / No / Explain		
22	Confirm:Select ion of various brough components as per the section point no.6 (List of suggested vendors and makes)	YES/NO	Yes / No / Explain		
23	Confirm the party has fully understand the annexures listed from 1 to 7 and compliance to the conditions	YES/NO	Yes / No / Explain		
24	Confirmation of agreeing to the delivery schedule at section 2.14.2	YES/NO	Yes / No / Explain		

25	Section:2, Confirm:General Terms and Condition	YES/NO	Yes / No / Explain		
26	Section:2.14, Confirm:Delivery schedule	YES/NO	Yes / No / Explain		
27	Section:3, Confirm:On-line bidding	YES/NO	Yes / No / Explain		
28	Section:3.5, Confirm:Documents to be supplied in this order	YES/NO	Yes / No / Explain		
29	Section:4, Confirm: Scope of work	YES/NO	Yes / No / Explain		
30	Section:4.2, Confirm:specification of In-Situ machine for machining polymer material.	YES/NO	Yes / No / Explain		
31	Section:4.2, Confirm:Machine shall have a provision of automatic cutting tools changer with magazine	YES/NO	Yes / No / Explain		
32	Section:4.2 & 4.3, Confirm:Shall have automatic elastomer chip holding & cutting system (Chip puller) to fragment and dispose the lengthy chips which are generated in the elastomer machining.	YES/NO	Yes / No / Explain		

33	Section:4.3 Confirm:Machi ne spindle (Power ranging less than 10 kw. However, value will be fixed during detailed design) auto cutting tool changing provision from magazine and able to deliver minimum 6000 RPM speed. It shall have concise	YES/NO	Yes / No / Explain		
34	Section:4.3 Confirm:Suppl y of post processor and part-program generating software (CAM) software: The party shall supply latest CAM software suitable to generate part programs and to carry out machining simulation suitable for the in-situ machine.	YES/NO	Yes / No / Explain		
35	Section:4.3,Co nfirm: In- processing measuring system (Touch probe): The party shall supply latest touch probe system to carry out in- process and post- machining inspection suitable to present machine and along with associated software.	YES/NO	Yes / No / Explain		

36	Section:4.5Confirm General condition of supply		-		
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Supporting Documents required from Vendor

1. As mentioned in Bid Qualification Criteria

2. Furnish UDYAM Registration Certificate

3. MII Local Content Declaration

4. Land Border Declaration as per Rule 144(xi) of GFR

5. Compliance statement to the tender document duly signed and stamped by vendor without mentioning price

6. Authorization Certificate from OEM (if any) duly mentioning that OEM will extend support during the warranty period

5 additional documents can be uploaded by the vendor

C.2 Commercial Terms / Bid

Sl. No.	Description	Compliance	Vendor Terms
1	As per the tender document	Yes / No / Explain	
2	<p>GST AND OTHER COSTS, IF ANY: As per the Notification No. 6/2018-Central Tax (Rate) dt:25.01.2018 A(ix) S.No.243A as amended by Notification No.24/2018-Central Tax (Rate) Dt: 31.12.2018 b(viii) S.No.243B issued by Ministry of Finance (Dept. of Revenue) & Government of Andhra Pradesh, Revenue (Commercial Taxes-II) Department, G.O.MS.No. 93 Dated: 19-02-2018 A(ix) S.No.243A and as per the Notification No. 7/2018-Integrated Tax (Rate) dt:25.01.2018 A(ix) S.No.243A as amended by Notification No.25/2018-Integrated Tax (Rate) Dt: 31.12.2018 b(viii) S.No.243B issued by Ministry of Finance (Dept. of Revenue), SDSC SHAR is eligible to avail GST/IGST @5% for the procurements related to Scientific and technical instruments, apparatus, equipment, accessories, parts, components, spares, tools, mock ups and modules, raw material and consumables required for launch vehicles and satellites and payload. we will issue only End User Certificate for availing GST/IGST @5%. Hence, kindly confirm your acceptance and submit your price quotation accordingly.</p>	Yes / No / Explain	

3	<p>CUSTOMS DUTY: a) For imported items, Customs duty is "Nil" and IGST @ 5% is applicable as per Notification No. 50/2017 Customs Dtd. 30/06/2017, Sl.No.539(A) as amended vide Notification No.05/2018 dt.25.01.2018 and vide Notification No.05/2025 dt.01.02.2025. Customs Duty Concession Certificate is required for claiming "Nil" Customs duty which will be issued by Buyer against submission of FE Invoice, Airway Bill/Bill of Lading.</p> <p>b) Indicate whether any import components are involved and requirement of Customs Duty Concession Certificate.</p> <p>c) In case quoted items are fully imported and if there is no local value addition in India then applicable tax will be IGST @ 5% only. Separate IGST on imported components will not be paid extra. IGST which is already paid at the time of import should be taken as Input Tax Credit by the bidders.</p> <p>d) Indicate whether your quoted unit price is inclusive of IGST@5% or extra.</p>	Yes / No / Explain	
4	<p>DELIVERY SCHEDULE: Items shall be delivered within 18months from the date of release of Purchase Order. (Detailed delivery schedule as per clause 2.14 of tender document annexed) Please confirm your acceptance.</p>	Yes / No / Explain	
5	<p>DELIVERY TERM: FOR-SRIHARIKOTA</p>	Yes / No / Explain	
6	<p>PAYMENT TERM: 100% payment will be made through PFMS within 30 days of receipt and acceptance of the ordered items at our site in good condition. (As per clause 2.13.1 of tender document annexed)</p>	Yes / No / Explain	
7	<p>WARRANTY: The offered items shall have warranty for a period of Twelve Months from the date of Installation, Commissioning and acceptance against any manufacturing defects/ bad workmanship. If any defects are noticed during the above period, the same should be rectified/ replaced at FREE OF COST. (As per clause 2.12 of tender document annexed)</p>	Yes / No / Explain	

8	LIQUIDATED DAMAGES: In case of delay in completion of total scope of work beyond the stipulated delivery period, LD will be levied @0.5% of the PO value per week or part of on undelivered portion as pre-estimated damages subject to a maximum of 10% of the Order value.((As per clause 2.8 of tender document annexed)	Yes / No / Explain	
9	SECURITY DEPOSIT: Security Deposit shall be submitted for 3% of order value (or as notified by Govt.of India/ISRO from time to time) in single installment through Insurance surety bonds/Account Payee Demand Draft/Bankers Cheque/Fixed Deposit receipts or Bank Guarantee(including e-Bank Guarantee) from a commercial bank executed on Rs.200/- non-judicial stamp paper or payment online in an acceptable form within 14 days after receipt of Purchase order valid till completion of the Delivery period plus 60 days claim period. This security deposit shall not carry any interest and shall be returned to you only after successful completion of total scope of work. In case of Poor performance/non-performance of the contractual obligation security deposit shall be forfeited. In case of non-submission of Security Deposit within the stipulated period, this order shall be liable to be cancelled. (As per clause 2.10 of tender document annexed)	Yes / No / Explain	

10	<p>PERFORMANCE BANK GUARANTEE (PBG): A Bank Guarantee for 3% of the order value (or as notified by Govt. Of India/ISRO from time to time) shall be provided towards the performance of the system. PBG may be furnished in the form of Insurance Security Bonds, Account Payee Demand Draft, Fixed Deposit Receipt from a commercial Bank, Bank Guarantee (including e-Bank Guarantee) from a Commercial bank executed on Rs.200/- non-judicial stamp paper or online payment in an acceptable form valid till the successful completion of warranty period plus 60 days. This will not carry any interest and shall be returned to you after successful completion of warranty period against your request. In case of nonperformance/ poor performance the Bank Guarantee shall be forfeited.(As per clause 2.9 of tender document annexed)</p>	Yes / No / Explain	
11	<p>COMBINED BANK GUARANTEE: In case, if You are unable to provide two separate BGs, i.e., one for SD and one for PBG, You can submit a combined BG for SD & PBG for 3% of the Order value valid till the completion of total contractual obligation (i.e. Delivery period plus Warranty period plus 60 days). Please confirm.(As per clause 2.10.2 of tender document annexed)</p>	Yes / No / Explain	
12	<p>INSURANCE: Being a Govt. Of India Dept., Insurance is not required at our cost. Please ensure the safe delivery of the ordered item with proper transport worthy pack.</p>	Yes / No / Explain	
13	<p>Items supplied shall be of the Make specified. Offers other than these makes will not be considered. Please mention the offered make.</p>	Yes / No / Explain	
14	<p>Compliance to the Technical specifications, Terms and conditions and Annexures shall be mentioned.</p>	Yes / No / Explain	
15	<p>All the supporting documents sought in the tender document shall be furnished.</p>	Yes / No / Explain	

16	<p>Purchase preference to Micro and Small Enterprises (MSEs): Purchase preference will be given to MSEs as defined in Public Procurement Policy for Micro and Small Enterprises (MSEs) Order, 2012 dated 23.03.2012 issued by Ministry of Micro, Small and Medium Enterprises and its subsequent Orders/Notifications issued by concerned Ministry. If the bidder wants to avail the Purchase preference, the bidder must be the manufacturer of the offered product in case of bid for supply of goods. Traders are excluded from the purview of Public Procurement Policy for Micro and Small Enterprises. In respect of bid for Services, the bidder must be the Service provider of the offered Service. Relevant documentary evidence in this regard shall be uploaded along with the bid in respect of the offered product or service. If L-1 is not an MSE and MSE Seller (s) has/have quoted price within L-1 plus 15% (Selected by Buyer) of margin of purchase preference/price band defined in relevant policy, such Seller shall be given opportunity to match L-1 price and contract will be awarded for 25% (selected by Buyer) percentage of total QUANTITY. Please specify whether you belong to MSE or not. If YES, supporting documents shall be uploaded.</p>	Yes / No / Explain	
17	<p>Make-In-India (MII) Clause: For this procurement, provisions contained in Public Procurement (Preference to Make in India), Order 2017 issued by Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce & Industries vide letter No. P-45021/2/2017-PP(BE-II) dated 16.09.2020 & directives related shall be followed. Accordingly, you are requested to indicate the percentage of local content in the material, clearly mentioning the details of location(s) at which value addition is made in line with clause 9 to O.M dated 16.09.2020 referred above. It may be noted that Local Content shall not include services such as Transportation, Insurance, Installation, Commissioning, Training and after sales service support like AMC/CMC etc.</p>	Yes / No / Explain	

18	The bidder shall provide compliance to Order No. F.No.6/18/2019 PPD dated 23.07.2020 and amendments thereof by Ministry of Finance, Department of Expenditure, Public Procurement Division regarding restrictions on procurement from a bidder of a country which shares a land border with India and comply to all the provisions of the Order. In this regard, you shall certify that the bidder entity is not from such a country or, is from such a country, has been registered with the Competent Authority.	Yes / No / Explain	
19	Do you have Unique GeM Seller ID? If YES, provide details. If NO, As per Office Memorandum No 6/9/2020-PPD dated 24/08/2020 of Department of Expenditure, it is mandatory for sellers providing Goods and Services to Central Government Organizations to be registered on GeM and obtain a Unique GeM Seller ID, at the time of Placement of Order/acceptance of contract. Tenderer shall ensure the same.	Yes / No / Explain	
20	FORCE MAJEURE: If at any time during the continuance of the order the performance in whole or part by either party of any obligation under this order shall be prevented or delayed by reasons of any war, hostility, acts of public enemy, civil commotion, sabotage, fire, floods, lightening, epidemic, quarantine restrictions, strikes, go-slow, lockout or acts of God, notice of which is given either party to the other within 21 days from the date of occurrence thereof, neither party shall be reasons of such eventually be entitled to terminate this order nor shall either party have any claim for damages against the other in respect of such non-performance or delay in performance.	Yes / No / Explain	

21	<p>ARBITRATION: In the event of any question, dispute of difference arising under these conditions or any conditions contained in the Purchase Order, (except as to any matters the decision of which is specially provided for by these conditions) the same shall be referred to the sole arbitration of the Director SDSC SHAR Office or some other person appointed by him, it will be no objection that the arbitrator is a Government Servant that he had to deal with matter to which the contract relates or that in the course of his duties as Government Servant he had expressed views on all or any of the matters in disputes or difference. The award of the arbitrator shall be final and binding on the parties of this contract.</p> <p>(A) If the arbitrator be the head of the purchase office.</p> <p>(a) In the event of his being transferred or vacating his office by resignation or otherwise, it shall be lawful for his successor-in office either to proceed with the reference himself, or to appoint another person as arbitrator, or.</p> <p>(b) In the event of his being unwilling or unable to act for any reason, it shall be lawful for the Head of the Purchase Office to appoint another person as arbitrator: or</p> <p>(B) If the arbitrator be a person appointed by the Head of the Purchase Office in the event of his dying, neglecting or refusing to act, or resigning or being unable to act, for any reason, it shall be lawful for the Head of the Purchase Office either to proceed with the reference himself or to appoint another person as arbitrator in place of the outgoing arbitrator.</p> <p>(C) Subject as aforesaid, the Indian Arbitration and Conciliation Act, 1996 and the rules there under and any statutory modifications thereof for the time being in force shall be deemed to apply to the arbitration proceedings under this Clause. The arbitrator shall have the power to the extent with the consent of the Purchaser and the Contractor the time making and publishing the award.</p> <p>(D) The venue of arbitration shall be place as the purchaser in his absolute discretion may</p>	Yes / No / Explain	
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	<p>determine. Work under the purchase order shall, if reasonably possible, continue during arbitration Proceedings.</p> <p>(E) In case order is concluded on the public-Sector Undertakings, the following Arbitration Clause will be applicable.</p> <p>(a) In the event of any dispute or differences relating to the interpretation and application of the provisions of contracts, such dispute or difference shall be referred by either bidder to the Arbitration of one of the Arbitrator in the Department of Public Enterprises to be nominated by the Secretary to the Government of India in-charge of the Bureau of Public Enterprises. The Indian Arbitration and Conciliation Act, 1996 shall not be applicable to the Arbitration under this clause.</p> <p>(c) The award of the arbitrator shall be binding upon the parties to the dispute provided; however, any bidder aggrieved by such award may make a further reference for setting aside or revision of the award to the Law Secretary, Department of Legal Affairs, Ministry of Law & Justice, Government of India.</p> <p>Upon such Additional Secretary when so authorized by the Law Secretary whose decision shall bind the parties finally and conclusively.</p> <p>(d) The parties to the dispute will share equally the cost of arbitration as intimated by the arbitrator.</p> <p>. As per clause 2.7 of tender document annexed)</p>		
22	Vendors may note the Guidelines on Debarment of Firms vide O.M No. F.1/20/2018-PPD dated 02.11.2021 in line with rule no.151 & 175 (Code of Integrity) of GFR (General Financial Rules)	Yes / No / Explain	
23	Please furnish Contact details i.e. valid E-mail id, Mobile no/ Landline no. etc. for further communication.	Yes / No / Explain	
24	Please send your queries through clarification provision only. However, bidder may also send a copy to smpcu1-purchase@shar.gov.in duly quoting tender number. Contact No.08623-22-6377.	Yes / No / Explain	
25	Remarks, if any	Yes / No / Explain	

26	Country of origin for the quoted items if any	Yes / No / Explain	
27	Percentage of local content for the quoted items if any.	Yes / No / Explain	
28	OTHERS: BEING A TWO PART TENDER, WE REQUEST YOU NOT TO DISCLOSE/INDICATE ANY OF THE PRICE VALUE WHILE SEEKING/PROVIDING CLARIFICATION. IN CASE IF YOU DISCLOSE ANY OF THE PRICE AMOUNT, YOUR OFFER WILL BE REJECTED.	Yes / No / Explain	
29	VALIDITY OF OFFER: - In case of single part tender - the validity of offers/tenders should be 90 days. In case of two part tender - 120 days from the date of opening of Part-I bid and 60 days from the date of opening of Part-II bid. Tenders shorter than offer validity mentioned above will not be considered for evaluation.	Yes / No / Explain	
30	Acceptance for submission of Bank Guarantee for a value of Rs.4.5 lakhs approximately towards the cost of rubber lined component and SS1 segment hardware handling ring issued as FIM by Department (as detailed in clause 2.1.19 to 2.1.22 and Annexure-5 of tender document) annexed	Yes / No / Explain	

C.3 Price Bid

Sl. No.	Item	Quantity	Unit Price	Currency	Total Price	Remark
1	Design, Configuration , Fabrication and Supply of Portable CNC In-situ Machine as per terms and conditions of the Annexure -	1.00 Nos.		-		

Common charges (Applicable for all items)

Additional Charges, if any (P&F, Freight etc.)	
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Tender document
for
Configuration, design, detailed engineering,
manufacture, supply, installation, testing and
commissioning

of

**In-Situ Machine (ISM) for machining rubber
lined submerged sub-assembly and SS1
hardware segments**



Propellant Machining
SOLID MOTOR PROPELLANT COMPLEX (SMPC)
Satish Dhawan Space Centre SHAR

Indian Space Research Organization

Sriharikota

June - 2025

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1 Scope of the Tender

1.1 Introduction

- 1.1.1** SDSC SHAR is planning to realize portable computer numerical portable insulation machine for machining submerged sub-assemblies and SS1 segment hardwares under SMPC Unit-1.
- 1.1.2** Scope of work includes Configuration, design, detailed engineering, manufacture, supply, installation, testing and commissioning of IN-SITU MACHINE (ISM) for machining submerged sub-assembly and SS1 segment hardware at Solid motor Propellant complex (SMPC) Unit-1, SDSC SHAR.
- 1.1.3** Bidder shall in a position to carry out the maintenance services based on the need raised by department, if available or party may source it based on the need.

2 General Terms and Conditions

2.1 Instruction to Bidders

- 2.1.1** The bidders shall visit the SDSC SHAR site to seek any other technical requirement of the tender other than mentioned in the tender document or any other necessary clarification on the scope of the tender prior to the bidding. The bidders are requested to visit the site as soon as possible from the tender publishing date for understanding of the technical requirements prior to the bid. Party can discuss technical details and scope of the work, if there are any clarifications required w.r.t scope of tender
- 2.1.2** One set of proposal document is issued. Bidder shall sign and stamp each page of proposal as a token of his acceptance & submit along with his offer. Document shall be scanned and uploaded in e-procurement portal.
- 2.1.3** Proposal documents shall remain the property of Department and if obtained by one intending Bidder shall not be utilized by another without the consent of the Department.
- 2.1.4** The proposal shall be completely filled in all respects and shall be submitted together with requisite information. Any offer incomplete in any particulars is liable for rejection.
- 2.1.5** Bidders shall set their quotations in firm figures and without qualifications or variations or additions in the terms of the Proposal documents. Proposal containing qualifying expressions such as "subject to minimum acceptance" or "subject to prior sale" or any other qualifying expressions or incorporating terms and conditions at variance with the terms and conditions incorporated in the Proposal documents are liable for rejection.
- 2.1.6** Cost quoted shall be firm and fixed.

- 2.1.7** Price shall be quoted in Indian National Rupee only.
- 2.1.8** Successful Bidder shall have a team and required resources in meeting the design, manufacture and install In-situ machines.
- 2.1.9** Bidder should award any part of the work under the scope of this tender to any sub vendor only after obtaining necessary approval from the department. Bidder shall submit relevant information as required by the department to evaluate the capabilities of sub vendor. Department has every right to accept or reject the proposal submitted. Approval of the department is no way relieves the bidder from his responsibility and the bidder is wholly responsible for execution of work as per the specifications, terms, and conditions mentioned in this document.
- 2.1.10** If bidder is planning to subcontract any part of this tender, then the bidder shall indicate clearly such of those works planned to offload to his sub-vendor in their offer. The bidder shall submit the details of such sub-vendors along with their credentials.
- 2.1.11** Department has every right to visit the bidder's or his sub-contractor's site to evaluate the capabilities in fulfilling the tender requirements.
- 2.1.12** Department has every right to reject the bids, those who are not fulfilling the tender requirements upon verification of documents / inspection by the department authorized inspector.
- 2.1.13** Satish Dhawan Space Centre – SHAR (SDSC-SHAR), Sriharikota is declared as prohibited place under official secrets act 1923. Hence during execution of site works necessary security requirements enforced by the department from time to time shall be followed strictly.
- 2.1.14** During the Erection & testing at site in Sriharikota, the Bidder has to make his own arrangements for boarding, lodging and transportation of his men and materials. However, subjected to availability, hostel accommodation may be provided by the Department (SDSC SHAR) on chargeable basis.
- 2.1.15** Before starting the erection works (at SDSC SHAR), the bidder shall provide insurance as per workman compensation act to all his personnel working at site in Sriharikota against accidents. Insurance for the same shall be borne by the bidder.
- 2.1.16** Quote shall be based on FOR Sriharikota.
- 2.1.17** All Taxes and duties applicable shall be indicated clearly in quotation.
- 2.1.18** Transportation & Transit Insurance are fully in the scope of

Bidder and the same shall be borne by the bidder.

2.1.19 The department scope of supply (test piece) and bidders responsibility

2.1.20 Supply of rubber lined component (Test specimen) to the party is in the scope of department (Specimen size approximately 1.5 m in diameter, and weighing 300 kg approx.). However, collecting it from SDSC SHAR Sriharikota site and bringing it back to SDSC SHAR is in the scope of bidder.

2.1.21 Supply of SS1 segment hardware handling ring (Refer Annexure-7) to the party for interface verification and trials at party's site is in the scope of department (Diameter 2.5 m and Weight 2.6 ton approx). However, collecting it from SDSC SHAR Sriharikota site and bringing it back to the SDSC SHAR site is in the scope of bidder.

2.1.22 Towards point no.2.1.20&2.1.21 above appropriate bank grantee-BG (Value 4.5 lakh approx.) shall be submitted by the bidder before collecting these items for testing and BG shall be valid up to the return of above mentioned items to SHAR site

2.2 GST: GST @5% is applicable as per the Notification No. 6/2018-Central Tax (Rate)=dt:25.01.2018 A(ix) S.No.243A as amended by Notification No.24/2018- Central Tax (Rate) Dt: 31.12.2018 b(viii) S.No.243B & as per the Notification No. 7/2018-Integrated Tax (Rate) dt:25.01.2018 A(ix) S.No.243A as amended by Notification No.25/2018-Integrated Tax (Rate) Dt: 31.12.2018 b(viii) S.No.243B issued by Ministry of Finance (Dept. of Revenue), for the procurements related to Scientific and technical instruments, apparatus, equipment, accessories, parts, components, spares, tools, mock ups and modules, raw material and consumables required for launch vehicles and satellites and payload. End Use Certificate shall be issued

2.3 Income Tax: Income tax at the prevailing rate as applicable and if applicable from time to time shall be deducted from the supplier's bills as per Income Tax Act and a certificate issued (TDS Certificate).

2.4 Customs Duty:

a) For imported items, Customs duty is "Nil" and IGST @ 5% is applicable as per Notification No. 50/2017 Customs Dtd. 30/06/2017, Sl.No.539(A) as amended vide Notification No.05/2018 dt.25.01.2018 and vide Notification No.05/2025 dt.01.02.2025. Customs Duty Concession Certificate is required for claiming "Nil" Customs duty which will be issued by Buyer against submission of FE Invoice, Airway Bill/Bill of Lading.

b) Indicate whether any import components are involved and requirement of

Customs Duty Concession Certificate.

c) In case quoted items are fully imported and if there is no local value addition in India then applicable tax will be IGST @ 5% only. Separate IGST on imported components will not be paid extra. IGST which is already paid at the time of import should be taken as Input Tax Credit by the bidders.

d) Indicate whether your quoted unit price is inclusive of IGST@5% or extra.

2.4.1 In case tenderers offering items considering reduced rate of customs duty exemption, they should also indicate the bill of materials and price, separately, with Customs Duty component and terms and conditions thereto in the price bid only.

2.4.2 Publicity Related To Tenders:Advertisements, press release or other specialized publicity documents, which are related to or reveal the existence of a tender and are intended by the Bidder for public distribution and/or the press, broadcasting, or television, shall be cleared/approved by the Department.

2.4.3 The Department may direct the Bidder to withhold such publicity or to require modifications to the publicity material. The Bidder shall comply with such direction.

2.5 Validity of Offer

2.5.1 Bid shall remain valid for acceptance for a **period of Four months** from the due date of submission of the Bid.

2.5.2 The Bidder shall not be entitled during the said period to revoke or cancel his Bid or to vary the Bid except and to the extent required by Department in writing.

2.5.3 Bid shall be revalidated for extended period as required by Department in writing.

2.5.4 In such cases, unless otherwise specified, it is understood that validity is sought and provided without varying either the quoted price or any other terms and conditions of Bid finalized till that time.

2.6 Cost of Bidding

2.6.1 All direct and indirect costs associated with the preparation and submission of Bid (including clarification meetings and site visit, if any), shall be to Bidder's account and the Department (SDSC SHAR) will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the Bid process.

2.7 Arbitration

2.7.1 In the event of any question, dispute of difference arising under

these conditions or any conditions contained in the Purchase Order, (except as to any matters the decision of which is specially provided for by these conditions) the same shall be referred to the sole arbitration of the Director SDSC SHAR Office or some other person appointed by him, it will be no objection that the arbitrator is a Government Servant that he had to deal with matter to which the contract relates or that in the course of his duties as Government Servant he had expressed views on all or any of the matters in disputes or difference. The award of the arbitrator shall be final and binding on the parties of this contract.

2.7.2 If the arbitrator be the head of the purchase office.

- (a) In the event of his being transferred or vacating his office by resignation or otherwise, it shall be lawful for his successor-in office either to proceed with the reference himself, or to appoint another person as arbitrator, or.
- (b) In the event of his being unwilling or unable to act for any reason, it shall be lawful for the Head of the Purchase Office to appoint another person as arbitrator: or

2.7.3 If the arbitrator be a person appointed by the Head of the Purchase Office in the event of his dying, neglecting or refusing to act, or resigning or being unable to act, for any reason, it shall be lawful for the Head of the Purchase Office either to proceed with the reference himself or to appoint another person as arbitrator in place of the outgoing arbitrator.

2.7.4 Subject as aforesaid, the Indian Arbitration and Conciliation Act, 1996 and the rules there under and any statutory modifications thereof for the time being in force shall be deemed to apply to the arbitration proceedings under this Clause. The arbitrator shall have the power to the extent with the consent of the Purchaser and the Contractor the time making and publishing the award.

2.7.5 The venue of arbitration shall be place as the purchaser in his absolute discretion may determine. Work under the purchase order shall, if reasonably possible, continue during arbitration Proceedings.

2.7.6 In case order is concluded on the public-Sector Undertakings, the following Arbitration Clause will be applicable.

- (a) In the event of any dispute or differences relating to the interpretation and application of the provisions of contracts, such dispute or difference shall be referred by either bidder to the Arbitration of one of the Arbitrator in the Department of Public Enterprises to be nominated by the Secretary to the Government of India in-charge of the Bureau of Public Enterprises.

- (b) The Indian Arbitration and Conciliation Act, 1996 shall not be applicable to the Arbitration under this clause.
- (c) The award of the arbitrator shall be binding upon the parties to the dispute provided; however, any bidder aggrieved by such award may make a further reference for setting aside or revision of the award to the Law Secretary, Department of Legal Affairs, Ministry of Law & Justice, Government of India. Upon such Additional Secretary when so authorized by the Law Secretary whose decision shall bind the parties finally and conclusively.
- (d) The parties to the dispute will share equally the cost of arbitration as intimated by the arbitrator.

2.8 Liquidated Damage

2.8.1 Time is the essence of this order. If the bidder's defined scope of work is not made by the end of delivery period, liquidated damages will be levied @ 0.5% of the value of undelivered portion per week or part thereof, subject to a maximum of 10% of total contract value.

2.9 Performance Bank Guarantee

2.9.1 PBG at 3% of the value of the Purchase Order shall be submitted through bank guarantee from any of the Scheduled Banks executed on non-judicial stamp paper of appropriate value, and shall be valid for a period of sixty days beyond the date for completion of warranty period.

2.10 Security Deposit

2.10.1 Bidder shall submit security deposit, within 15 days of Order Acknowledgement, for 3% of the total order value. Security Deposit shall be obtained through Bank Guarantee or fixed deposit receipt from any of the Scheduled Banks executed on non-judicial stamp paper of appropriate value, and shall be valid for a period of sixty days beyond the date for completion of the Purchase Order.

2.10.2 There option available to submit Combined BG towards PBG & SD with the prior approval.

2.10.3 In case the bidder fails to furnish the security deposit within the specified date or extended due date, the Purchase Order/Contract shall be cancelled and an appropriate penal action will be taken.

2.10.4 Central PSUs/PSEs/Autonomous Bodies/MSEs shall be exempted from the payment of Security Deposit, and instead, an Indemnity Bond shall be submitted by them in lieu of the Security Deposit.

2.11 Force Majeure

2.11.1 Should a part or whole work covered under this agreement be delayed due to reasons of Force Majeure which shall include legal lockouts, strikes, riots, civil commotion, fire accident, quarantines, epidemic, acts of God and Government, fright embargoes, the completion period for work, plant or equipment referred to in this agreement be extended by a period not in excess of the duration of such Force Majeure. The occurrence shall be notified by the bidder within reasonable time not exceeding 30 days

2.12 Warranty: Minimum of 12 months from installation & commissioning and acceptance of whole equipment.

2.13 Payment Terms

2.13.1 The following are our payment terms

S No	Milestone	Payment terms
1	Design, fabrication testing, supply and installation and acceptance at SDSC SHAR	In general, our payment terms will be 100% within 30 days after receipt, commissioning and acceptance.

2.13.2 Wherever advance payment is requested, maximum of 30% will be provided upon furnishing Bank Guarantee from any Nationalized Bank/Scheduled Bank should be furnished. In case of advance payments, if the party is not supplying the material within the delivery schedule, interest will be levied as per the Bank Lending Rate plus 2% penal interest. This is in addition to LD clause.

2.13.3 "In case of any delay attributable to the contractor/supplier in effecting the supply after the prescribed delivery date. Interest at MCLR of SBI will be charged for the period beyond the specified delivery date, on the amount of balance advance payment."

2.13.4 Interest will be loaded for advance payments/stage payments as per the lending rate of Bank and will be added to the landed cost for comparison purpose. In case of different milestone payments submitted by the parties, a standard and transparent methodology like Net Present Value (NPV) will be adopted for evaluating the offers.

2.13.5 MODE OF PAYMENT

Bidders can submit the banker details and payments can be made through NEFT/RTGS/ECS through PFMS.

2.14 Delivery

2.14.1 Delivery schedule is essence for this contract. Bidder shall adhere to the delivery date mentioned in this tender for individual and same shall be confirmed along with the offer. In case Bidder is unable to meet the delivery schedule, the offer is liable for rejection.

2.14.2 Delivery schedule shall be as given below:-

Sl. No.	Item Description	Delivery date from the date of award of Purchase Order
1.	Placement of PO	T
2.	Kick off meeting	T+10 days
3.	Finalization of configuration and submission of Machine layout, GA drawings (including CAD and 3D models), detailed machine strokes for review and acceptance.	T+ 2 month
4.	Finalization of machine configuration to suit purchaser applications and safety recommendations and submission of preliminary design document (Shall contain detailed technical specifications and engineering analysis) for review and acceptance.	T+4 months
5.	Submission of detailed design calculations of major machine elements and subsystems with respect to mechanical, structural, electrical, electronics and finalized configuration of CNC control systems and SCADA system and specification of brought out items for review and acceptance.	T+ 5 month
6.	Submission of final drawings (including CAD and 3D models), along with quality assurance plan (QAP) and manufacturing process plan (MPP) for review and	T+ 6 month

Sl. No.	Item Description	Delivery date from the date of award of Purchase Order
	acceptance.	
7.	Completion of order placement for all bought out components (P.O. copies shall be submitted for review and acceptance)	T+ 7 month
8.	Pre-delivery inspection of the machine.	T + 15 months
9.	Receipt of machine at SDSC SHAR	T + 16 months
10.	Erection Testing & Commissioning and Handing over the machine.	T + 18months

2.15 Packing & Forwarding

2.15.1 The tenderer will be held responsible for the stores being sufficiently and properly packed for transport by rail, road, sea or air, to withstand transit hazards and ensure safe arrival at the destination. The packing and Marking of packages shall be done by and at the expenses of the Contractor.

2.16 Exclusion of Tenders

The following tenders shall be summarily rejected from the procurement process

2.16.1 Tenders of bidders who have been removed from the vendor list or banned/debarred from having business dealings.

2.16.2 The tenders which materially depart from the requirements specified in the tender document or which contain false information.

3 On-line bids shall consist of the following: -

3.1 Part – I Technical

3.1.1 Technical part shall comprise the following documents/information. All the documents shall be scanned and uploaded in the SDSC SHAR e-procurement portal.

3.1.2 Submission of bid letter along with one set of proposal document duly signed and stamped as token of acceptance. Scanned copy shall be uploaded in the ISRO e-procurement portal.

3.1.3 Power of attorney in favour of authorized signatory of the bid/proposal documents.

3.1.4 Latest income tax clearance certificate.

- 3.1.5** Latest solvency certificate from a scheduled bank as detailed in bid qualification criteria.
- 3.1.6** List of projects in hand & completed during last five financial year indicating the name of client with contact details.
- 3.1.7** Any other relevant document, bidder desires to submit.
- 3.1.8** Confirmation w.r.t bid qualification criteria as per **Annexure-1**.
- 3.1.9** Compliance statement as per **Annexure-2**.
- 3.1.10** Deviations, if any, w.r.t technical and commercial terms & conditions shall be clearly brought out under deviation list **Annexure-4**. If deviations are not listed separately, it will be presumed that you are adhering to all the specification and terms & conditions given in this document.

Note: All the above documents shall be uploaded in the ISRO e-procurement portal.

3.2 Part – II Priced Commercial Bid

- 3.2.1** Bidder shall submit the bid Format as per **Annexure-3** along with Techno – Commercial Bid by mentioning prices against each item. The same shall be uploaded along with Price bid.
- 3.2.2** Priced commercial bid shall contain schedule of prices and shall be filled and upload to ISRO e-procurement portal. No deviations, terms and conditions, assumptions, discounts etc. shall be stipulated in price bid. Department will not take cognizance of any such statement and may at their discretion reject such bids.

3.3 Bid Submission

- 3.3.1** Bid shall be submitted in two parts
 - Part -1 Techno-Commercial Part of the Bid
 - Part-2 Price Part of the Bid
- 3.3.2** Offers should be submitted On-line using standard digital signature of class-3 with encryption/decryption options.
- 3.3.3** The tenders authorized online on or before the open authorization date and time will only be considered as valid tenders.
- 3.3.4** Prices shall be mentioned in the space/column provided in the ISRO e-procurement portal only for such purpose.
- 3.3.5** Physical copy of the bid will be accepted only in case if the file size is bigger and not possible to upload the same. In such case, the hard copy shall be submitted within due date. Documents received after due date will not be considered.

- 3.3.6** All risks in transit shall be exclusively borne by the contractor and the purchaser shall pay only for such items as are actually received in good condition in accordance with the purchase order.
- 3.3.7** Bids duly filled in by the Bidder should invariably be submitted as stipulated in the e-procurement portal.
- 3.3.8** Department may open Part – I of the bid on the due date of opening at convenience. Price Bid (Part-II) of the bid of the technically and commercially acceptable bids shall be opened at a later date.
- 3.3.9** Department reserves the right to reject any or all the Bids without assigning any reasons thereof.

3.4 Bid Evaluation

- 3.4.1** The bidder shall provide all the relevant data/information/details required for evaluating the bid technical and commercially in the specific formats enclosed with the tender. Apart from this, Bidder is free to add any other relevant information.
- 3.4.2** During evaluation, Department may request Bidder for any clarification on the bid/ additional documents/ information required. Bidder shall submit all clarifications/ additional documents/ information requested in original. If not submitted within the stipulated time department has right to reject such bids.
- 3.4.3** Techno-commercial discussion shall be arranged with Bidder, if needed. Bidder shall depute his authorized representatives for attending discussions.
- 3.4.4** The complete scope of work is defined in the Proposal document. Those Bidders who undertake total responsibility for the complete scope of work as defined in the Proposal document will only be considered.
- 3.4.5** In case Bid does not fully comply with the requirement of Proposal document and the bidder stipulates deviations to the clauses of the proposal, which are unacceptable to the Department, the Bid will be rejected.
- 3.4.6** Performance of Bidder on similar nature of works executed/ under execution shall be taken into consideration before selecting the Bidder for opening his price bid.
- 3.4.7** The time schedule for completion is given in the Proposal document. Bidder is required to confirm the completion period unconditionally.
- 3.4.8** Department shall not be obliged to furnish any information /

clarification to unsuccessful bidder as regard non acceptance of their Bids.

3.5 Documents to be supplied in this order at each stage:

a) Bidding-stage:

- 1) Submission of bid letter along with one set of proposal document duly signed and stamped as token of acceptance.
- 2) Compliance statement
- 3) Technical & Price bids
- 4) Latest income tax clearance certificate.
- 5) Latest solvency certificate from a scheduled bank as detailed in bid qualification criteria.
- 6) List of projects in hand & completed during last five financial year indicating the name of client with contact details.
- 7) Any other relevant document, bidder desires to submit
- 8) Preliminary conceptual drawing shall be submitted for review.
- 9) GA drawing of proposed In-situ machine and control system, machine layout.

b) Post bid stage:

- 1) Final machine configuration along with all the relevant technical details for review and acceptance.
- 2) Preliminary design report (Complete stress and strain analysis) for review and acceptance.
- 3) Detailed design report of the elements in the machine
- 4) Complete configuration and detailed design of electrical, electronic and CNC and PLC of the machine for review and approval.
- 5) Quality assurance plan (QAP) and manufacturing process plan (MPP) for review and acceptance.
- 6) Order placement for all bought out components (P.O. copies shall be submitted for review and acceptance)
- 7) 3D model and AutoCAD drawing of complete machine and its sub-assemblies in editable form.
- 8) Geometrical and positional test chart
- 9) Stage inspection documents
- 10) Final inspection documents along with all the test reports (ascertain function, accuracy, material confirmation, mechanical properties, any other relevant information)
- 11) Procedure to Assembly & dis-assembly of the machine
- 12) Programing and basic operational documents of machine
- 13) Mechanical, hydraulic, electrical & electronic maintenance documents of machine and sub-systems.
- 14) Factory acceptance test (FAT) procedures for control system like, bill of material, functional checks, compliance to

specification, software test, alarm fault code testing and machining trials.

- 15) Site acceptance test (SAT) procedure for control system like, bill of material, functional checks, compliance to specification, software test, alarm fault code testing and machining trials

PDI Stage:

- 1) Scope verification document and list of brought out components
- 2) Report of all the dimensional and evaluation and evaluation of technical parameters.
- 3) Evaluation of Geometrical and positional accuracies of the integrated machine
- 4) Performance trial inspection report
- 5) Cutting trial data inspection report

Commissioning stage:

- 1) All the test reports mentioned above shall be submitted once again as mentioned in PDI stage for evaluating after the erection and commissioning.

4 Scope of work

4.1 Design, manufacture, supply and installation of In-Situ machine

Scope of work includes Configuration, design, detailed engineering, manufacture, supply, installation, testing and commissioning of IN-SITU MACHINE (ISM) for machining submerged sub-assemblies and SS1 segment hardware at Solid motor Propellant complex (SMPC) Unit-1, SDSC SHAR

Table 1 List of Items to be supplied

Sl. No.	Item Description	Qty.	UOM
1	Configuration, design, detailed engineering, manufacture, supply, installation, testing and commissioning of IN-SITU MACHINE (ISM) for machining submerged sub-	01	NOS

Sl. No.	Item Description	Qty.	UOM
	assemblies and SS1 hardware segments		

4.2 specification of In-Situ machine for machining polymer material.

The development of In-situ machine as a part of this purchase order is a technology demonstrator under R&D(TD) program of the SDSC SHAR center. This Item is being realized one of its kind and first time in the center with the know how knowledge of the machining facilities and literature review.

a) Type of machine

The vendor shall design, develop, manufacture, install and commission In-Situ machine CNC machine for machining of visco-elastic rubber materials at SDSC SHAR, Sriharikota. The machine should be modular type design which can be handled and used in assembled condition. The servo motors and other equipment used shall be of ingress protection with minimum IP65 rating or better to meet the safety requirements. Suitable spindle extensions or arbors shall be selected and one spare set also shall be considered for supply.

The In-situ machine is intended to use in two varieties of ways to meet the machining requirements.

i. **Conventional way:** The job to be machined is placed on the fixed in-situ machine base and machining activity is performed. This condition is looking like a standard double column machine (Fig.5). (Targeted jobs are submerged sub-assemblies i.e., Fig.1 to Fig.4 mentioned below).

ii. **In-Situ way:** The machine shall be placed on a SS1 Segment hardware handling ring and machining will be performed. This condition is looking like a machine is on the job i.e., in-situ in position (Refer Fig.6).

Typical cutting tools being used for the insulation machining is indicated below (refer fig.7 to fig.10)

The machine shall be designed such that the entire machine is sitting either on the fixed base plate (Conventional way of machining) or on the interface adaptor between SS1 handling ring and machine (In-situ way of machining). The orientation of the machining is in upright direction.

All the elements are designed and fabricated such that it should have a rigidity, flexibility and quickly in adopting to the requirements with minimum weight.

The sub-assemblies are made such that they are integrated, compact and can be assembled and dis-assembled quickly. Machine should have very good squareness, perpendicularity, balanced center of gravity in entire of its operations and in any position and geometrical accuracies to deliver highest positional tolerance.

All the mating components shall have locating pins with markings, easily accessible and shall have close tolerance during assembly. The bolted joints are selected such that they should have sufficient self-locking torque and should not be loosened because of cutting load or excitation. Where ever it is possible it shall be locked with hydraulic / electrical actuators in addition to the bolted joints.

The proposed In-situ machine shall be designed to meet the metal cutting loads which are generated during metal machining (Specific cutting resistance 250 kg /mm² approximately and Maximum depth of cut considered 10 mm shall be considered during design). The present application is indented for machining jobs which are rubber (elastomeric material) lined metal components. The Following are the approximate sizes of jobs (Fig.1 to Fig.5 given below). The dimensions mentioned are in mm. the approximate weight of the job is 1 ton.

The following are the mechanical properties of the rubber (Elastomeric material) Tensile strength 100-250 Ksc, Hardness 65-75 Shore A, density is 1.7 to 2.0 gm/cc and elongation is 600% to 1000% (Minimum).

Since the machine is intended to machine rubbery materials, the following points shall be considered while designing the machine 1) It generate lengthy machined chips. 2) Machining process generates rubber dust and the dust particles are ranging from few microns to few mm. 3) The coolant shall be used as compressed air (5ksc approx. and flow rate 2.5 m³/hr) during machining near the cutting zone. 4) The recommended spindle speed is around minimum 6000 RPM. This demand for high RPM spindles with concise unit. 5) Cutting tools shall be used as standard or custom-made tools (Carbide tipped brazed tools) for meeting various geometries on the components to be machined.

The machine shall have following special features to mitigate some of the points given above 1) In-built automatic elastomer machined chip holding & cutting mechanism during machining to dispose lengthy chips and 2) Spindle shall be (minimum 6000 rpm) selected such that it does not need any external coolant system.

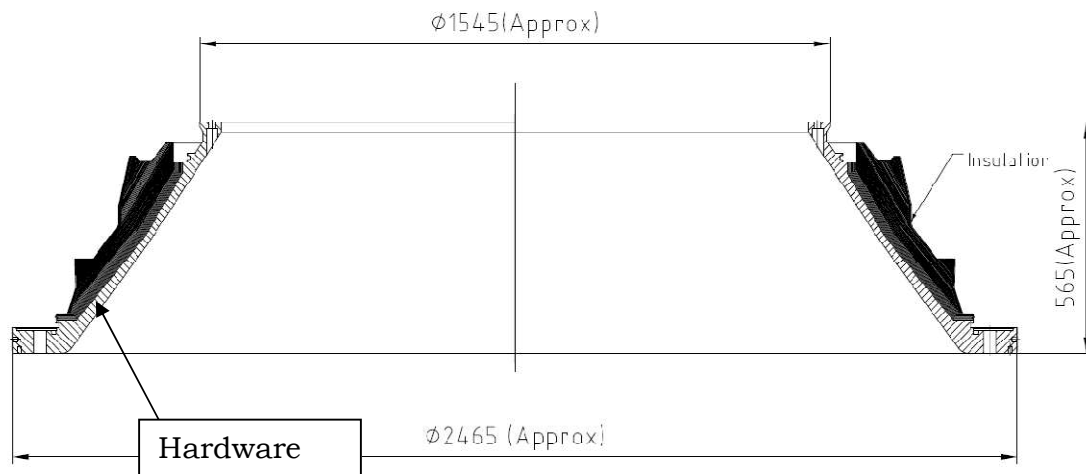


Fig.1 Submerged sub-assembly-T1

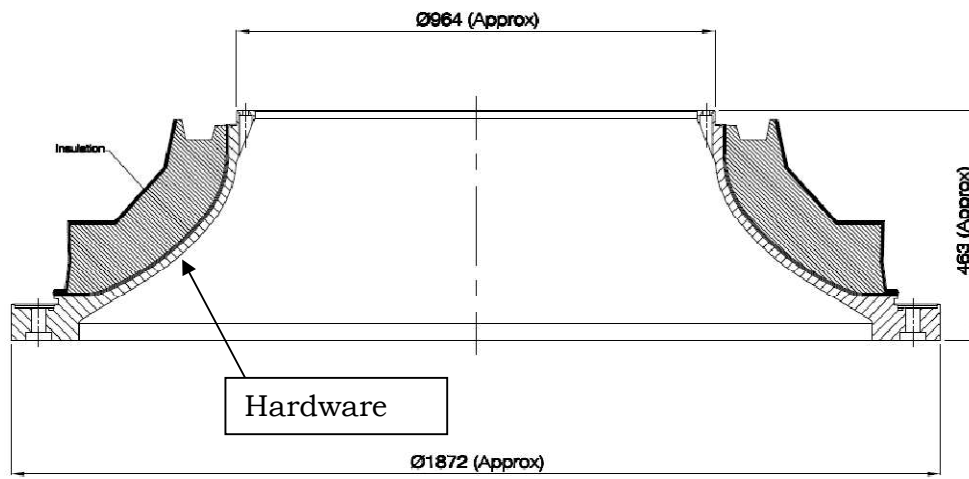


Fig.2 Submerged sub-assembly-T2

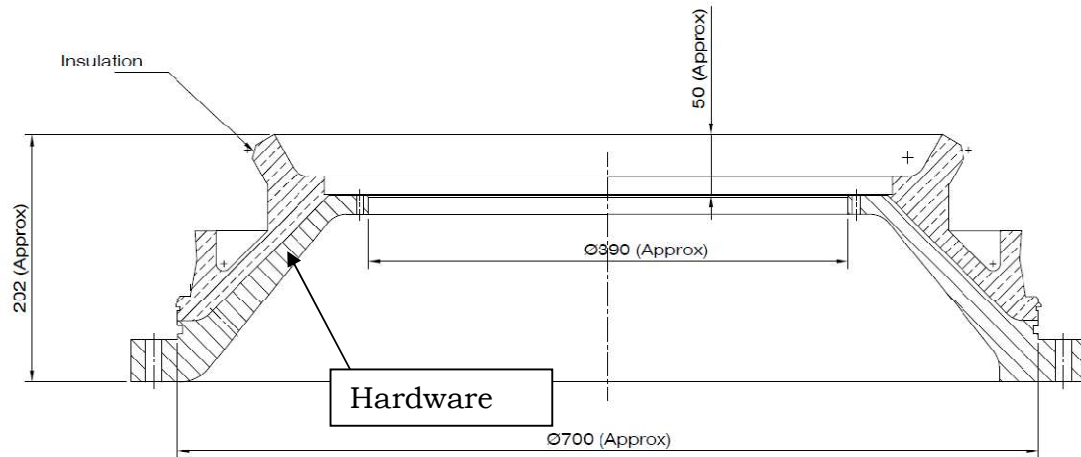


Fig.3 Submerged sub-assembly-T3

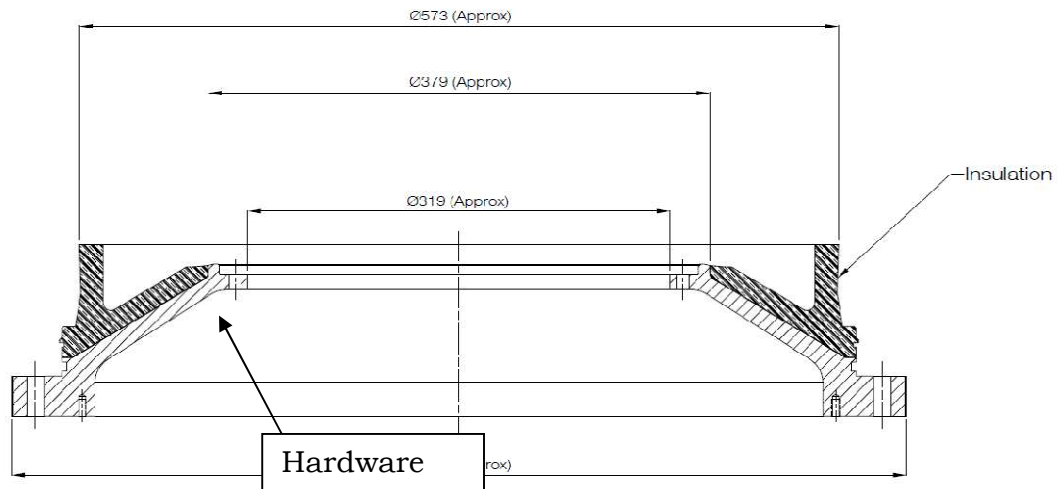
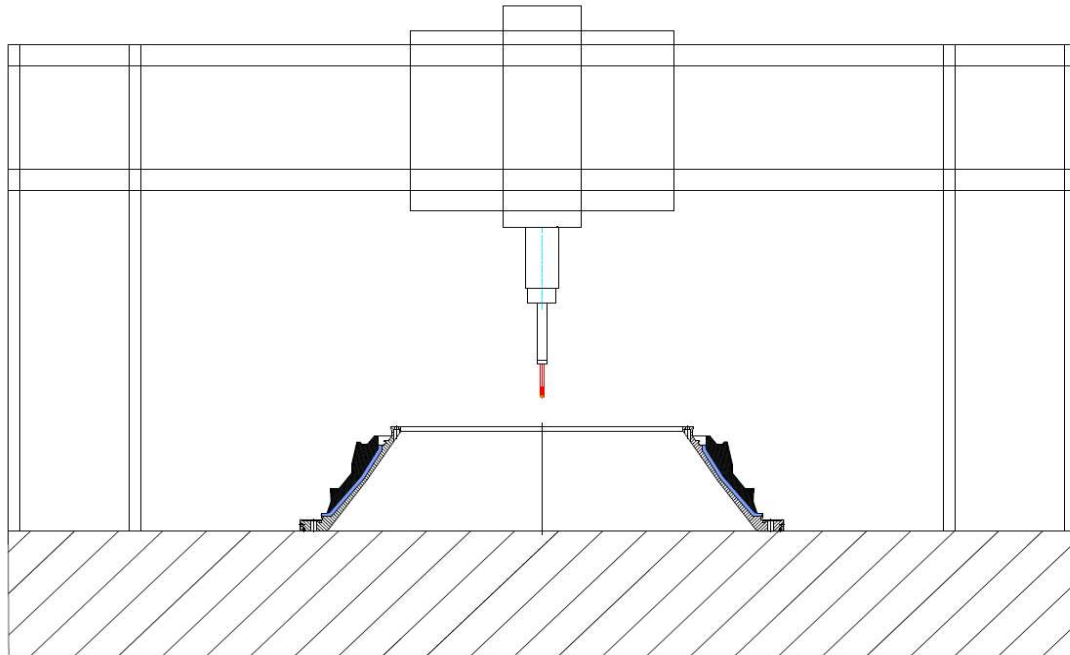


Fig.4 Submerged sub-assembly-T4



**Fig.5 In-situ machine with submerged sub-assembly (SSA) -
Conventional way**

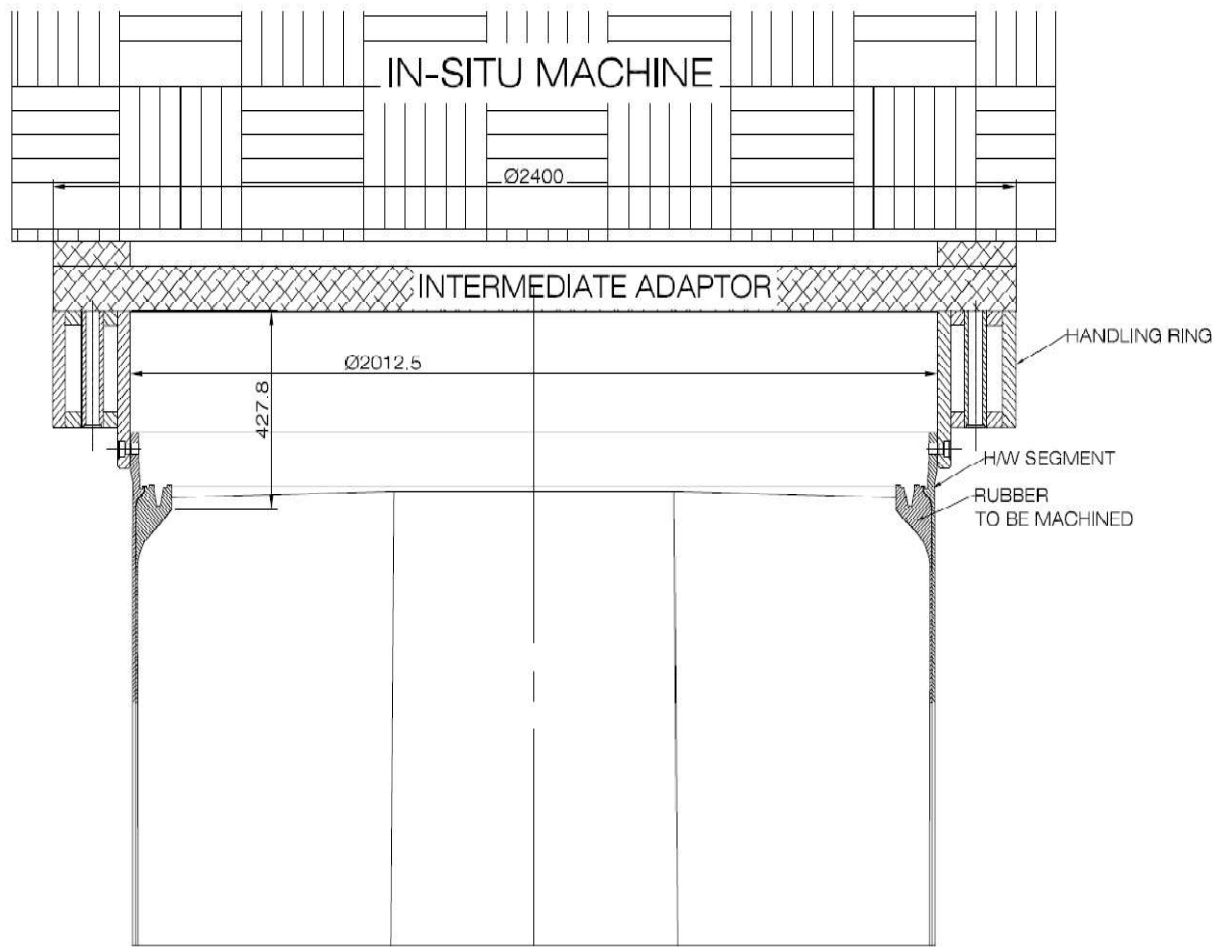


Fig.6 In-situ machine with SS1 segment hardware with handling ring - In-situ way

Typical tools shall be considered during design of the machine:

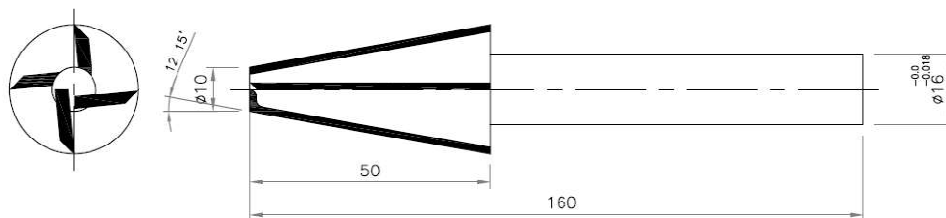


Fig.7 Positive Taper profile (Carbide brazed) end mill

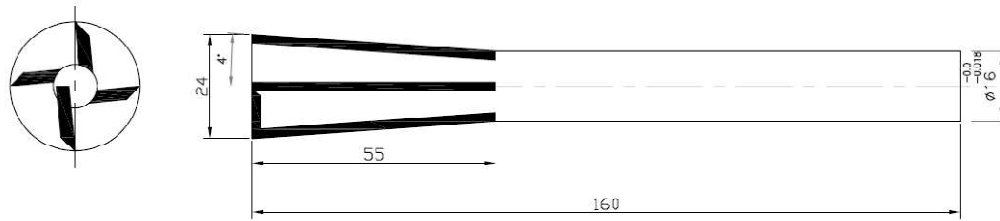


Fig.8 Reverse Taper profile (Carbide brazed) end mill



Fig.9 Straight (Carbide brazed) end mill

Ø150 X 3 X 32

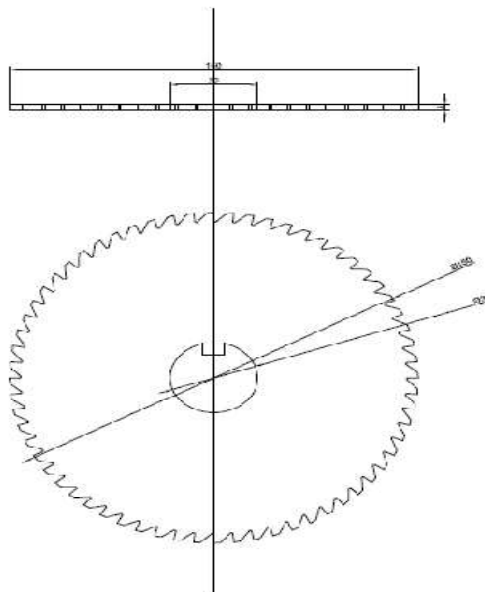


Fig.10 Side & face cutter (HSS)

4.3 General description of the In-situ machine:

The proposed machine shall consist of three linear axes simultaneous command & controlled and interpolated with contour control capability. The circular geometric feature shall be achieved by simultaneous interpolation of the axes. However, the machine should be of modular type which can be handled as a single unit and adoptable.

The following minimum feature or configuration and it is only for guidance. The party shall have their own design meeting the job machining requirements. (Party shall configure, design and generating drawings & CAD models of the machine and shall be presented for review and acceptance and then only proceed with fabrication)

- Design should take care of quick and precise dis-assembly and assembly of entire machine (Time is the essence and it should happen within shortest possible time i.e. 1-2 hrs.). Shall have sufficient rigidity to the machine and its elements.
- The machine structure shall be light in weight and should be able to deliver highest rigidity to maintain commendable positional accuracy. (Detailed design of structural members and stress & strains and deflection estimation in accordance with applicable standards for CNC machine building shall be presented for review and acceptance)
- Machine can be easily dismantled and use it for different height jobs by adding interface adopter (In-situ way). The indicative size of one such job Fig.6 (SS1 segment hardware) and handling ring detailed drawing is attached in the **Annexure-7**. The bidder is expected to consider the size and interface details during design stage and generate configuration drawings accordingly for review and acceptance. Party shall supply required interface adopter for carrying out SS1 segment hardware insulation machining.
- The machining range (Maximum diameter) is 2600 mm (SS1 segment hardware) and 2800 mm (Submerged sub-assemblies) the (minimum diameter) is 400 mm in both the cases. The depth of the job to be machined is 800 mm from the base of the spindle approximately. However, it is finalized during detailed design stage.
- The base frame shall have a provision for clamping the jobs which are placed at desired location based on the machining requirement. The clamping shall be done through both manual and automatic means (hydraulic or electrical actuators).
- The intermediate adopter weight shall be optimized and it shall be least possible weight.
- The entire in-situ machine (Other than base frame in conventional way) weight shall be least possible and designed such that it should not cross 8 tons.

- The machine shall have a provision to align itself based on the job reference surface through touch probe or dial gauge. These aligned points shall be adjusted through motorized by using NC & PLC controlled in both positive and negative directions. Jacks shall be selected such that the alignment of jack height at adjusting points shall be controlled precisely in order to meet job alignment accuracies of 20 microns.
- Shall have a provision to align the machine axially and radially about maximum error of ± 5 mm (minimum) (i.e., total range is 10 mm) at jacking locations. The least possible movement of jack to the accuracy of ≈ 20 μ m or based on the standard actuator's accuracies availability in the market.
- The alignment shall be done through NC & PLC based system and with a provision of manual override. One machine is aligned there shall be a provision to fix it firmly and shall not be altered unless through an authorization (By interlock and push button selection) to do so.
- The entire activity of placing machine on job or vice versa and alignment shall be within least possible time. Assembly and dis-assembly shall be done through easy locating devices and locking systems.
- The sub-assemblies or fragments shall be judiciously done and entire axes feed length shall be in single unit or structure to control positional accuracies.
- Machine shall have a provision of automatic cutting tools changer with magazine (Minimum magazine capacity is around 18 cutting tools (This number can be finalized during detailed design stage). The typical tool sizes that are in use at our plant is as follows for tool magazine design purpose.: 1) Cylindrical Tool diameter range is 10 mm to 250 mm and thickness 12 mm and length is around 100 mm 2) Form (Taper) tool bottom dia 10mm and top dia is 40mm, Shank dia 16 mm and shank length ranging from 100-160 mm)
- Machine spindle (Power ranging less than 10 kw. However, value will be fixed during detailed design) is selected such that it provides auto cutting tool changing provision from magazine and able to deliver minimum 6000 RPM speed. It shall have concise design without spindle coolant system requirement. If spindle cooling is mandatory for the spindle technical specification shall be presented for review and acceptance.

- All the feed drive is powered through servo motor. However, value will be fixed based on the design) and ball screw arrangement with absolute encoders like any other standard CNC machine.
- Shall have a dust tight design for guideways, motors, encoders and other machine elements shall confirm to the IP65 or better protection.
- The feed drives slide lubrication shall operate with near dry lubrication.
- Shall have **automatic elastomer chip holding & cutting system** (Chip puller) to fragment and dispose the lengthy chips which are generated in the elastomer machining. Chip puller shall be integrated item with the machine. The approximate machined chip sizes ranges from few microns to 10mm in width, and Πd m in length (Where d is the diameter where machining is taking place). Chip puller, design shall be presented for the review and acceptance.
- The pressurized air (5ksc approx. and flow rate 2.5 m³/hr.) is being used as cutting fluid, provision should be made to integrate the external air compressor line with the machine and have cooling pipe near the cutting point.
- The provision shall be made at the spindle housing to connect external pressurized coolant air lines to cool the cutting point.
- All the power and data cables and hoses or metal tubes used for various applications should be concealed within the machine and able to connect to the external devices if required in quick connect type (Plug and play).
- All the axes shall have direct drive through suitable gear box or toothed belt drive system or any other efficient drive mechanism.
- Portable control console and data motoring shall be equipped and placed on the machine itself and shall have well designed place to operate.
- To ensure proper limits and interlocks for feed axis and apart from standard CNC control system.

- Entire machine shall be transportable safely from one place to the other. Necessary handling provision along with guard / enclosure.
- The procedure of welding and selection of the process during fabrication shall be followed as detailed in Annexure-6
- **Control system:** Shall have Make: **Siemens Sinumerik-1 (Model)** capable of programming three axes simultaneous motion and with standard milling, boring and facing machining operations. Shall have an automatic error compensation of feeding drives through control system.
- The recommended makes of various brought out components shall be as per table given in point no.6 below.
- The machine frame structures, fasteners, ball screws, couplings bearings, motors, cables, seamless tubing selection shall be in accordance with or confirming the relevant Indian standards and relevant documents shall be submitted.
- Party has to submit all the configuration, part drawings and fabrication drawing for review and acceptance.
- **Chip cutting and disposal system:** The party shall supply suitable chip holding, cutting and disposal during elastomer machining suitable to this machine.
- **Supply of post processor and part-program generating software (CAM) software:** The party shall supply latest CAM software suitable to generate part programs and to carry out machining simulation suitable for the in-situ machine. Necessary job profiles for post-processing will be shared during the course of detailed design and fabrication of in-situ machine.
- **In-processing measuring system (Touch probe):** The party shall supply latest touch probe system to carry out in-process and post-machining inspection suitable to present machine and along with associated software. To run the software latest suitable laptop shall be supplied. Necessary job profiles for dimensional inspection will be offered during the course of detailed testing and commissioning of in-situ machine at SDSC SHAR.

4.4 Parameters & configuration of the machine

S. No	Description	Parameters
1.	Mounting Type based job type	1) Conventional way (Submerged sub-assemblies) (Machining diameter is

		2800 mm) 2) In-Situ way (SS1 segment hardware) (Machining diameter is 2600 mm)
2.	Machining range (X axis)	0-2800 mm and (Servo motor drive through CNC control - auto, programmable and manual). The size of the machine shall be arrived based on this dimension.
3.	Machining range (Y axis)	0-2800 mm (Servo motor drive through CNC control - auto, programmable and manual. The size of the machine shall be arrived based on this dimension
4.	Machining depth (Z axis)	The height of component (submerged sub-assemblies) or depth in case of SS1 segment hardware shall be considered 800 mm. shall be finalized during detailed design stage The size of the machine shall be arrived based on this dimension
5.	Linear axis rapid and feed	0 to 3000 mm/min and 1000 mm/min
6.	Rotary axis	0-180 deg. / min
7.	Basic machine configuration	It is envisaged the basic machine configuration as three linear axes (Refer Fig.5&6).
8.	Milling spindle	Shall be selected such that have concise design without coolant system and capable of delivering minimum 6000 rpm (Power ranging less than 10 kw. However, value will be fixed based on the design). It shall have a provision to change the tool automatically from the tool magazine.
9.	Default home position	Centre of the job or any appropriate place in the machine coordinates
10.	Input power	Electrical three phase 415 volts and 50 Hz.

11.	Control system	Siemens controller: Sinumerik-1system with standard milling, boring and facing machining operations along with error compensation capability.
12.	Machining operations	Face milling Boring Spot facing
13.	Essential features and safety provisions	<ul style="list-style-type: none"> • Programable and CNC based operations • Precision and preloaded feed movements • HMI with digital readouts of all essential parameters • Cover guard for all moving parts and bearings. • Bellow or telescopic covers for linear screws • Emergency stop actuator • Software and hardware interlocks for end limits and other essential operations. • Physical limit switches for all the axes.
14.	Torque rating of servo motors	<p>Torque rating of servomotors shall be suitably selected to meet the peak machining demand at highest cutting force (Torque required for Machining and moving self-weight all the associated structures. However, the torque ratings shall be finalized during detailed design stage and approval shall be taken from the purchaser, before proceed with).</p> <p>Whenever motors are selected, please</p>

		ensure motor shall not draw more than 80 % of rated current at peak demand.
15.	Torque rating of actuators	Torque rating of actuators shall be suitably selected to meet the peak demand.
Required accuracies of the machine (as per ISO 230- 1&2 or VDI/DGQ 2441)		
Sl. No.	Description	Parameter
Linear axes		
1.	Positional error	200 μm
2.	Positional repeatability	50 μm
3.	Backlash	50 μm
Milling Spindle		
1.	Spindle Nose Radial Runout	30 μm
2.	Spindle Nose Axial Runout	30 μm

A. Operating Modes & MMI

Operating mode shall be Automatic, Jog, Teach in, MDA, program selection via directory. The CNC system offered shall include the following features:

1. Single block operation.
2. Optional block skip
3. Machine lock
4. Dry run
5. Back lash compensation
6. Sequence number display
7. Sequence number search
8. Program number search
9. Block search
10. Manual feed override
11. Decimal point programming

12. Acceleration with jerk limitation
13. Advanced detection of contour violation.
14. Configurable number of intermediate blocks with tool radius compensation.
15. Tool radius compensation with approach and exit strategies.
16. Tool length compensation
17. Lead screw error compensation
18. Dimension input metric or inch
19. Program generation parallel to machining
20. Milling cycles
21. Feed rate by direct programming
22. Absolute and incremental dimension programming
23. Buffer storage and dwell
24. Absolute, increment and machine reference position display
25. Suitable NC user memory for part programs, tool offsets and zero offsets etc.
26. Safety routines permanently active for measuring circuits, over temperature battery, voltage, memory, limit switch, EPROM, fan monitoring.
27. Working area limitation.
28. Software limit switch
29. Contour monitoring
30. Spindle monitoring
31. Diagnostic function from interface, PLC, and NC with plain text displays on screen.
32. Emergency stop
33. Alarm indications for various fault messages and interlocks.
34. Ethernet interface

35. USB drive.

Note: However, this is not exhaustive list. Offered CNC system should have latest available technologies to aid the operation and programming of the machine or vendor may propose minimum essential features to the portable insulation machine during detailed design stage.

4.5 General condition of supply

- 4.5.1** All surfaces of steel to be painted shall be cleaned thoroughly to remove loose mill scale, rust, grease, dirt and other foreign matter and shall be sand/grit blasted to SA 2 ½ surface quality.
- 4.5.2** Surfaces that may become inaccessible after fabrication shall be prepared and painted when accessible, with two coats Epoxy Primer.
- 4.5.3** All the machined surfaces shall be applied with anti-corrosive varnish.
- 4.5.4** Any intermediate cleaning required between successive coats of paint shall also be carried out as per manufacturer's specifications and guidelines.
- 4.5.5** Only power source and air supply are in department scope rest is in the scope of bidder.
- 4.5.6** Length of power connecting cable up to 30 m shall be considered.
- 4.5.7** Machine shall be free from all the vibrations, when it is in operation with no load and load and noise level shall be not more than 80db

5 Transportation: The bidder shall deliver the fabricated items to SMPC UNIT-1 (SPROB) stores/SDSC SHAR.

6. LIST OF SUGGESTED VENDORS FOR BOUGHT OUT ITEMS:

S.No.	Item	Preferable makes
Hydraulic items		
1.	Hydraulic system components, pumps and fittings	YUKEN / Eaton-Vicker / Parker / Bosch Rexroth
2.	Pressure Gauge	FIBIC / WIKA / Baumer
3.	Hoses	Gates / Parker / Rexroth
Mechanical Items		
1.	Bearing	SKF / FAG / NSK

2.	Gears	SHANTI / Elecon/OEM/ Siemens
4.	Ball screw and LM guide ways	THK / INA / Tsubaki / Rexroth / Schenburger/ PMI
5.	High Frequency Spindle	GMN/ GAMFIOR –SKF / SMZ Italia and any other equivalent makes with technical details shall be presented for review and acceptance.
Electrical items		
1.	Cables	FRLS with XLPE insulation (as per IS: 7098) suitable for LT insulation class 1100 V. Make: HAVELL/POLYCAB/FINOLEX/LAPP/INCAB/CCI/RPG/TORRENT/GLOSTER/UNIVERSAL/HVPL/RALLISON Sub Systems
Other items		
1.	Post processing and Part-program generating CAM software	Master CAM, Pro-e
2.	Measuring system (Touch probe)	Renishaw
3.	Laptop or computers	Dell, HP

Note:

All the brought-out components technical specification shall be presented for review and acceptance.

If bidder select any other make mentioned above, such items specification and technical merit shall be presented for review and approval.

7 .List of Annexure

Sl. No.	Description
Annexure-1	Bid Qualification data for bid consideration
Annexure-2	Compliance Statement
Annexure-3	Price Bid Format
Annexure-4	Deviations
Annexure-5	Acceptance criteria and supply conditions
Annexure-6	Quality Assurance Plan for Structures fabrication and machine

Annexure-7	SS1 motor handling ring drawing
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Annexure-1

Bid Qualification Criteria for portable insulation machine for SSA

Bidders who are qualifying/meeting following Technical and Financial capabilities are eligible to participate in the bid for **In-Situ Machine (ISM) for machining rubber lined submerged sub-assembly and SS1 hardware segments**. Bidder shall furnish all the details with documentary proof and submit the same along with quotation. Bids of the parties which are not meeting the following criteria will not be considered for evaluation and will be rejected without seeking any further clarifications. Bidder shall furnish the details of their resources in factory like manpower, machinery, quality system etc., for department to assess their capability.

S No	Criteria / Requirement	Reply / Eligibility from M/s....
Technical Qualification Requirements: The bidder should meet the following technical qualifying requirements and shall submit relevant certificates/data to establish his credentials along with the technical bid.		
1.	The Bidder should be an organization shall have at-least 3 years' prior experience in Supply of CNC based machines with capability of design, manufacture and installation.	
2.	Bidder should have designed, manufacture and installed minimum 3 CNC machines during last five years.	
3.	Bidder shall have qualified team to undertake design, manufacture, and installation experience in the area of CNC machines. (List may be enclosed with qualification and experience of man power)	
4.	The bidder shall have in-house infrastructure of design, fabrication and testing of CNC machines.	
5.	Bidder may engage sub-vendors for the part of the work. In such case details of sub-vendor, experience to manufacture CNC machines shall be submitted for evaluation and acceptance along with the bid.	

6.	The extent of outsourcing to the sub-vendors shall be other than the design of the machine elements (viz. mechanical, electrical, electronics and hydraulics)	
7.	The Sub vendor should be an organization shall have at-least 3 years' prior experience in Supply of services for building CNC based machines	
Financial Qualification Requirements: The bidder should also meet the following financial qualification requirements:		
8.	The Bidder should have average annual turnover of not less than a value of Rs. 1 Crore during last three financial years.	
9.	The Bidder should be an organization shall have at-least 3 years' prior experience in design, manufacture and supply of CNC based machines During last five years Party shall have executed, Single order worth Rs. 120 Lakhs or Two orders each worth Rs. 60 Lakhs ➤ Enclose list of works executed with details and PO copy.	
10.	Bidder should have a Solvency – Rs. 60 Lakhs for their company	
11.	IT/ TDS certificate shall be submitted for the last three financial years.	

1. Important notes:

- 1.1 Please note that the “BID” without above mentioned documents/information in support of the eligibility criteria will be summarily rejected.
- 1.2 Department has every right to visit the bidder's or his sub-contractor's site to evaluate the capabilities in fulfilling the tender requirements.
- 1.3 Department has every right to reject the bids, those who are not fulfilling the tender requirements upon verification of documents / inspection by the department authorized inspector.

2. Bid Selection Procedure and Process of Pre-Qualification

Step - 1	The bidders are requested to visit the site as soon as possible from the tender publishing date for understanding of the technical requirements prior to the bid, if required.
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	Party can discuss scope of the work, if there are any clarifications required.
Step - 2	Technical Bids will be opened and scrutinized for meeting all technical specification and supply conditions.
Step - 3	Short listing based on documents submitted, satisfying all the eligibility criteria given above by the Bidder along with their Bid / application. (Non-submission of any document as given in above list within stipulated time leads to rejection of Bid)
Step - 4	Subsequently Bidder's competency, their technical achievements and financial status will be evaluated suitable for this project. Feedbacks from Bidder's clients will be verified.

ISRO-SHAR reserves right to verify the information/data furnished by Bidder. If the same is found as fault or with any deviation the bid will be rejected.

Only those Bidders who are found suitable & meeting all above qualification Criteria/requirements will be finally qualified for opening the Price Bids for evaluation. Price details shall be given in price bid only and shall not be disclosed in any other place.

Annexure-2

Compliance Statement Form

S No.	Description	Bidder's compliance Yes/No
General Terms		
1.	Confirm that the entire scope of work as given in the tender specification is considered for quoting the price. All deviations shall be brought out separately. In the absence of deviations list, it will be presumed that all the specification given is adhered to.	
2.	Scope of work includes Configuration, design, detailed engineering, manufacture, supply, installation, testing and commissioning of In-Situ Machine (ISM) for machining rubber lined submerged sub-assembly and SS1 hardware segments.	
3.	Bidder shall submit security deposit, within 15 days of Order Acknowledgement, for 3% of the total order value. Security Deposit shall be obtained through Bank Guarantee or fixed deposit receipt from any of the Scheduled Banks executed on non-judicial stamp paper of appropriate value, and shall be valid for a period of sixty days beyond the date for completion of the Purchase Order	
4.	Time is the essence of this order. If the bidder's defined scope of work is not made by the end of delivery period, liquidated damages will be levied @ 0.5% of the value of undelivered portion per week or part thereof, subject to a maximum of 10% of total contract value.	

S No.	Description	Bidder's compliance Yes/No
5.	Wherever advance payment is requested, maximum of 30% will be provided upon furnishing Bank Guarantee from any Nationalized Bank/Scheduled Bank. In case of advance payments, if the party is not supplying the material within the delivery schedule, interest will be levied as per the Bank Lending Rate plus 2% penal interest. This is in addition to LD clause.	
6.	PBG at 3% of the value of the Purchase Order shall be submitted through bank guarantee from any of the Scheduled Banks executed on non-judicial stamp paper of appropriate value, and shall be valid for a period of sixty days beyond the date for completion of warranty period.	
7.	Offer shall be valid for Four months from the due date for submission of the Bid.	
8.	In case Bid does not fully comply with the requirement of Proposal document and the bidder stipulates deviations to the clauses of the proposal, which are unacceptable to the Department, the Bid will be rejected.	
9.	All the deviations are listed in Deviation table.	
10.	Other than the deviation listed in the deviation table, all other specifications mentioned in the tender are confirmed	
11.	Bidder shall adhere to the major milestones listed in the tender document.	
12.	The item shall be guaranteed against any manufacturing defects for a period of 12 months from the date of commissioning and acceptance. In case of spares supplies made during this contract period.	
13.	<p>Party shall confirm the understanding of the following. The In-situ machine is intended to use in two varieties of ways to meet the machining requirements.</p> <p>iii. Conventional way: The job to be machined is placed on the fixed in-</p>	

	<p>situ machine base and machining activity is performed.</p> <p>This condition is looking like a standard double column machine (Fig.5). (Targeted jobs are submerged sub-assemblies i.e., Fig.1 to Fig.4 mentioned below).</p> <p>iv. In-Situ way: The machine shall be placed on a SS1 Segment hardware handling ring and machining will be performed. This condition is looking like a machine is on the job i.e., in-situ in position (Refer Fig.6).</p>	
14.	Party shall confirm the following. The proposed In-situ machine shall be designed to meet the metal cutting loads which are generated during metal machining (Specific cutting resistance 250 kg /mm ² approximately and Maximum depth of cut considered 10 mm shall be considered during design).	
15.	Party shall confirm the following. The following are the mechanical properties of the rubber (Elastomeric material) Tensile strength 100-250 Ksc, Hardness 65-75 Shore A, density is 1.7 to 2.0 gm/cc and elongation is 600% to 1000% (Minimum).	
16.	Party shall confirm the understand of the general description given at section 4.3	
17.	Party shall confirm the understand of the parameters & configuration of the machine at section 4.4	
18.	Confirmation of selection of CNC control system as make: Siemens, model: Sinumerik-1	
19.	Confirmation of supply of post processing CAM software	
20.	Confirmation of touch probe and its associate software for in-process and post machining inspection	
21.	Selection of various brought out components as per the section point no.6 (List of suggested vendors and makes)	
22.	Confirm the party has fully understand the annexure listed from 1 to 7	
23.	Confirmation of agreeing to the delivery schedule at section 2.14.2	

24.	Section:2, General Terms and Condition	
25.	Section:2.14, Delivery schedule	
26.	Section:3, On-line bidding	
27.	Section:3.5, Documents to be supplied in this order	
28.	Section:4, Scope of work	
29.	Section:4.2, specification of In-Situ machine for machining polymer material.	
30.	Section:4.2, Machine shall have a provision of automatic cutting tools changer with magazine	
31.	Section:4.2 & 4.3, Shall have automatic elastomer chip holding & cutting system (Chip puller) to fragment and dispose the lengthy chips which are generated in the elastomer machining.	
32.	Section:4.3 Machine spindle (Power ranging less than 10 kw. However, value will be fixed during detailed design) is selected such that it provides auto cutting tool changing provision from magazine and able to deliver minimum 6000 RPM speed. It shall have concise design without spindle coolant system requirement. If spindle cooling is mandatory for the spindle technical specification shall be presented for review and acceptance	
33.	Section:4.3 Supply of post processor and part-program generating software (CAM) software: The party shall supply latest CAM software suitable to generate part programs and to carry out machining simulation suitable for the in-situ machine. Necessary job profiles for post-processing will be shared during the course of detailed design and fabrication of in-situ machine.	
34.	Section:4.3 In-processing measuring system (Touch probe): The party shall supply latest touch probe system to carry out in-process and post-machining inspection suitable to present machine and along with associated software. To run the software latest suitable laptop shall be supplied. Necessary job profiles for dimensional inspection will be offered during the course of detailed testing and	

	commissioning of in-situ machine at SDSC SHAR.	
35.	Section:4.5 General condition of supply	



Annexure-3

Price Bid Format

Tender No. & Date:

Bidder's Quotation No. & Date:

Note:

"DON'T DISCLOSE ANY PRICE RELATED TO OFFER PRODUCT IN TECHNICAL BID STAGE OTHERWISE YOUR OFFER MAY BE TREATED AS UNRESPONSIVE AND SHALL BE IGNORED".

1. Bidder shall submit the Priced Format by mentioning prices against each item. The same shall be uploaded along with **Price bid**.
2. The price bid should be submitted only as per the given below format. No row shall be left blank. Indicate "NA" in case the item is "not applicable".
3. Price shall be submitted in-line covering all the below components. Any un-filled price bid is likely to get rejected.
4. Bidder shall submit following Priced Bid Format: -

Sl. No.	Item Description	Qty.	UOM	Unit cost (Rs.)	GST (%)	Total cost (Rs.)
1	Configuration, design, detailed engineering, manufacture, supply, installation, testing and commissioning of In-situ machine (ISM) for machining submerged sub-	1	nos			



Sl. No.	Item Description	Qty.	UOM	Unit cost (Rs.)	GST (%)	Total cost (Rs.)
	assembly and SS1 segment hardware.					

Date:

Signature & Office Seal of the bidder

Annexure-4

Deviations Table

S.No	Tender Specifications	Deviations	Reason for deviation

Annexure-5

Acceptance criteria and supply conditions

1. **Pre – delivery and post erection Inspection:** The machine shall be inspected by the Bidder in the presence of Purchaser representative or their authorized representative prior to dispatch. Necessary calibrated and certified inspection equipment/instruments like straight edge, granite Square/cylinder Square, precision dial gauges, spirit level, slip gauges, laser interferometer and any other inspection required shall be arranged by the Bidder.

The inspection and acceptance shall include the following.

- a) Measurement of geometrical accuracies of the machine based upon relevant sections of **ISO 230-1**.
 - b) Measurement of positional accuracies and repeatability for each of the driving axis by **laser interferometer** or any other equivalent equipment by OEM / authorized agency as per relevant sections of **ISO 230-2 or VDI / DGQ 3441**.
2. Bidder should submit major and minor design calculations during detailed design stage for review / record. However, proving functionality of the various machine elements, machining demonstration in accordance with the stipulated accuracies is completely within the scope of Bidder.
 3. Supply of rubber lined component (Test specimen) to the party is in the scope of department (Specimen size approximately 1.5 m in diameter, and weighing 300 kg approx.). However, collecting it from SDSC SHAR Sriharikota and bringing it back to SDSC SHAR is in the scope of bidder.
 4. Supply of SS1 segment hardware handling ring (Refer Annexure-7) to the party for interface verification and trials at party's site is in the scope of department (Diameter 2.5 m and Weight 2.6 ton

approx). However, collecting it from SDSC SHAR Sriharikota and bringing it back to the SDSC SHAR site is in the scope of bidder.

5. Towards point no.3&4 above appropriate bank grantee-BG (Value 4.5 lakh approx.) shall be submitted by the bidder before collecting these items for testing.
6. Test specimen of suitable metal material (Cast iron or free cutting steel) shall be in the scope of bidder.
7. The entire test as per above standards shall be carried out at bidders site and rubber lined trial hardware shall be machined and demonstrated at factory site during pre-delivery inspection.

Annexure-6

Quality Assurance Plan

Sl No	Characteristics/ type of checks	Quantum of check	Reference document	Acceptance norms	Formats of record	Party	SHAR	Remarks
1	2	3	4	5	6	7	8	9
Raw Material Identification stage								
1.	Visual & dimensional	100%	Drawing	Drawing	Material inspection report		R	
2.	Manufacturers TC verification with material specification/ drawings.	100%	ASME sec II-part A/ IS 2062	ASME sec II-part A/ IS 2062			R	
3.	Chemical properties Mechanical properties		Drawing	Drawing	MTC			
4.	UT for plate thickness 20mm and above	100%	ASTM A 435	ASTM A 435	UT report		R	
5.	Identification mark verification and transfer of identification						R	
Welding procedure qualification stage								
7.	Verification of WPS and WPQR	100%	WPS & WPQR	ASME SEC IX	WPS & WPQR		R	
8.	Marking and cutting Dimensions and bevel preparation	100%	DRAWING	DRAWING	---		R	



Sl No	Characteristics/ type of checks	Quantum of check	Reference document	Acceptance norms	Formats of record	Party	SHAR	Remarks
1	2	3	4	5	6	7	8	9
9.	Fit-up inspection - Dimensions bevel details mismatch	100%	DRAWING	DRAWING	Fit up		R	
10.	DPT on root and final pass	100%	ASME Sec -5, Art - 6	ASME SEC VIII, App 8	DPT report		R	
11.	PT on back grinding	100%	ASME Sec -5, Art - 6	ASME SEC VIII, App 8	DPT report		R	
12	Stage inspection of base structure						W	
Surface Perpetration & Painting stage								
14.	Visual Paint thickness measurement		Drawing Specification	Drawing Specification	Panting report		R	
Final Certification								
15.	Hard Stamping Document Verification, final inspection	100%	Drawing Specification	Drawing Specification	Inspection n release note		W	
Electrical & electronic items								
	All electrical brough out components	100%	Technical specification s and sizes	As per approved design document			W	
	All electronic components	100%	Technical specification s and sizes	As per approved design document			W	
	Software packages	100%	Technical	As per			W	



			specification s and sizes	approved design document				
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Manufacturer Quality Records

1. Manufacturer certificate
2. Material traceability summary sheet
3. Material test certificate
4. NDT Examination Reports
5. Final Dimensional Reports
6. Heat treatment chart
7. Hard stamp rub-off details

Note

1. Bidder shall confirm the broad guidelines mentioned in QAP. However, this is only indicative. Detailed QAP shall be submitted by the bidder after placement of order based on the finalized fabrication process plan.
2. All NDT procedure shall be submitted for approval
3. Material of construction as per approved drawings
4. All requirements specified/approved drawings/specifications and applicable codes shall be fully complied.

Legends

H - Hold R - Review W - Witness MTC - Material test certificate TC - Test certificate UT - Ultrasonic Test MPI - Magnetic particle test DPT - Dye penetrant test

Welding

1 General

- a) All joints shall be welded unless noted otherwise on the drawings.
- b) Welding shall be in accordance with IS: 816, AWS D1.1 as appropriate.

2 Preparation for Welding

a) Edge Preparation

Edge preparation/bevelling of fusion faces for welding shall be done strictly as per the dimensions shown in the drawings. In case, the same are not indicated, edges shall be prepared (depending on the type of weld indicated in the drawing) as per the details given in IS: 9595. Bevelling of fusion faces shall be got checked and approved by the Engineer-in-Charge. The tolerances on limits of gap, root face & included angle shall be as stipulated in IS: 9595.

b) Cleaning

Welding edges and the adjacent areas of the members (extending up to 20mm) shall be thoroughly cleaned of all oil, grease, scale and rust and made completely dry. Gaps between the members to be welded shall be kept free from all foreign matter.

3 Welding Processes

- Welding of materials under this specification shall be carried out using the following process.
 - ✓ Shielded Metal arc welding (SMAW)
- The welding procedure adopted and consumables used shall be specifically approved by the Engineer-in-Charge. A combination of different welding processes or a combination of electrodes of different classes/makes may be employed for a particular joint only after qualifying the welding procedures to be adopted and obtaining the approval of the Engineer-in-Charge. Welding procedure shall cover the following:
 - i) Type and size of electrodes



- ii) Position of welding
- iii) Current and arc voltage
- iv) Length of run per electrode
- v) Number of run in multipass welds and arrangement
- vi) Preparation of the parts
- vii) Welding sequence
- viii) Pre-or post heating

4 Approval & Testing of Welding Procedures

The Contractor shall carry out procedure tests in accordance with ASME Section IX to demonstrate by means of a specimen weld of adequate length on steel representative of that to be used, that he can make welds with the welding procedure to be used for the work to the complete satisfaction of the Engineer-in-Charge. The test weld shall include weld details from the actual construction and it shall be welded in a manner simulating the most unfavourable instances of fit-up, electrode condition etc., which are anticipated to occur on the particular fabrication. Where material analysis is available, the welding procedure shall be carried out on material with the highest carbon equivalent values.

After welding, but before the relevant tests given ASME Section IX are carried out, the test weld shall be held as long as possible at room temperature, but in any case, not less than 72 hours, and shall then be examined for cracking. The examination procedure shall be sufficiently rigorous to be capable of revealing significant defects in both parent metal and weld metal.

After establishing the welding method, the Contractor shall finally submit to the Engineer-in-Charge for his approval the welding procedure specification in standard format given ASME Section IX before starting the fabrication.

5 Sequence of Welding

- a) As far as practicable, all welds shall be made in a sequence that will balance the applied heat of welding while the welding progresses.



- b) The direction of the general progression in welding on a member shall be from points where the parts are relatively fixed in position with respect to each other towards points where they have a greater relative freedom of movement.
- c) All splices in each component part of a cover-plated beam or built-up member shall be made before the component part is welded to other component parts of the member.
- d) Joints expected to have significant shrinkage shall be welded before joints expected to have lesser shrinkage.
- e) Welding shall be carried continuously to completion with correct number of runs.
- f) The Contractor shall choose the welding sequence after carefully studying each case such as to minimize distortion and shrinkage.
- g) The welding seams shall be left to cool slowly. The CONTRACTOR shall not be allowed to cool the welds quickly by any other method.
- h) For multipass welding, before welding the following layer the formerly welded layer shall be cleaned metal bright by light and wire brushing.

6 Welding Technique

- a) After the fusion faces are carefully aligned and set with proper gaps, the root pass of butt joints shall be executed properly so as to achieve full penetration with complete fusion of the root edges
- b) On completion of each run all slag and spatters shall be removed and the weld and the adjacent base metal shall be cleaned by wire brushing and light chipping. Visible defects such as cracks, cavities and other deposition faults, if any, shall be removed to sound metal before depositing subsequent run of weld.
- c) All full penetration butt welds shall be completed by chipping/gouging to sound metal and then depositing a sealing run of weld metal on the back of the joints. Where butt welding is practicable from one side only, suitable backing steel strip shall be used and joint shall be arranged in such a way as to ensure that complete fusion of all the parts is readily obtained.
- d) While welding is in progress care shall be taken to avoid any kind of movement of the components, shocks, vibrations to prevent occurrence of weld cracks.
- e) Any deviation desired from the recommended welding technique and electrodes shall be adopted only after obtaining written approval of the Engineer-in-Charge.



7 Inspection & Testing of Welds

The method of inspection shall be according to IS: 822: 1970 and extent of inspection and testing shall be in accordance with the relevant applicable standard or, in the absence of such a standard, as specified by the Engineer-in-Charge. Welds shall not be painted or otherwise obscured until they have been inspected, approved and accepted.

The Engineer-in-Charge or his representative shall have access to the Contractor's work at all reasonable times and the Contractor shall provide him with all facilities necessary for inspection during all stages of fabrication and erection with, but not limited to, the following objectives.

- i) To check the conformity with the relevant standards and suitability of various welding equipment's and their performance
- ii) To witness/approve the welding procedure qualification.
- iii) To witness/approve the welder's performance qualification.
- iv) To check whether shop/field welding being executed is in conformity with the relevant specifications and codes of practice.

Inspection and testing of all fabricated structures shall be carried out by the Contractor by any, or, a combination of all the following methods as directed by the Engineer-in-Charge and no separate payment shall be made, unless otherwise mentioned, for inspection and testing of welds/fabricated structures

A) Visual Inspection

- a) All finished welds (i.e. 100 percent) shall be visually inspected for identification of the following types of weld defects & faults.
- b) Weld defects occurring at the surface such as blow holes, exposed porosity, unfused welds etc.
- c) Surface cracks in the weld metal or in the parent metal adjacent to it.
- d) Damages to the parent metal such as undercuts, burning, overheating etc.
- e) Profile defects such as excessive convexity or concavity, overlapping, unequal leg lengths, excessive reinforcement, incompletely filled grooves, excessive penetration beads, root grooves etc.
- f) Distortion due to welding i.e., local shrinkage, camber, bowing, twisting, rotation, wariness etc.



- g) Linear eccentric, angular and rotational misalignment of parts.
- h) Dimensional errors.

B) Dye Penetration Examination

- a) 100% DP test for root and final welds shall be carried out by the bidder by employing approved testing procedure in accordance with Art-6 Section – V ASME.
- b) After load test, DP test shall be carried out by bidder at all weld regions.
- c) After DP test, tests certificates shall be provided by the bidder.

C) Radiographic Examination

Where ever radiographic tests are directed, the tests shall be carried out by employing approved testing procedure in accordance with Art-2 Section – V ASME BPVC.

8 Thermal stress relieving

- i. Where ever Thermal stress relieving is directed, It shall be decided based on the thickness and as per ASME Sec VII Div 1 As a guide line following cycle shall be min considered
- ii. Bidder shall submit the Stress relieving cycle for review accordance with Art-2 Section – V ASME BPVC.
- iii. Natural gas fired/Oil fired/electric furnace shall only be used.
- iv. Baffles shall be used to avoid deposit of residues on the job.
- v. Entire job shall be heated at once.
- vi. Local heating using induction coil is not acceptable.
- vii. Temperature recorders shall be used during SR and data shall be submitted for review.
- viii. Job temperature shall be monitored and recorded using laser based temperature measurement instrument.



- ix. Temperature Chart shall be submitted for review during inspection.
- x. Pre heat and inter-pass temperature shall be maintained as required on either side of point of welding as per the following guidelines. However, the actual pre and inter pass temperature must be calculated based on material specification and thickness.

Thickness of part at point of welding	Minimum pre-heat and inter-pass	
	Low-hydrogen welding electrode	Other than low hydrogen welding electrode
Material	IS:2062 - 1992	
Up to 20 mm	Room temperature	Room temperature to 20°C
20-40 mm	20-65°C	65°C

9 Shop floor Inspection

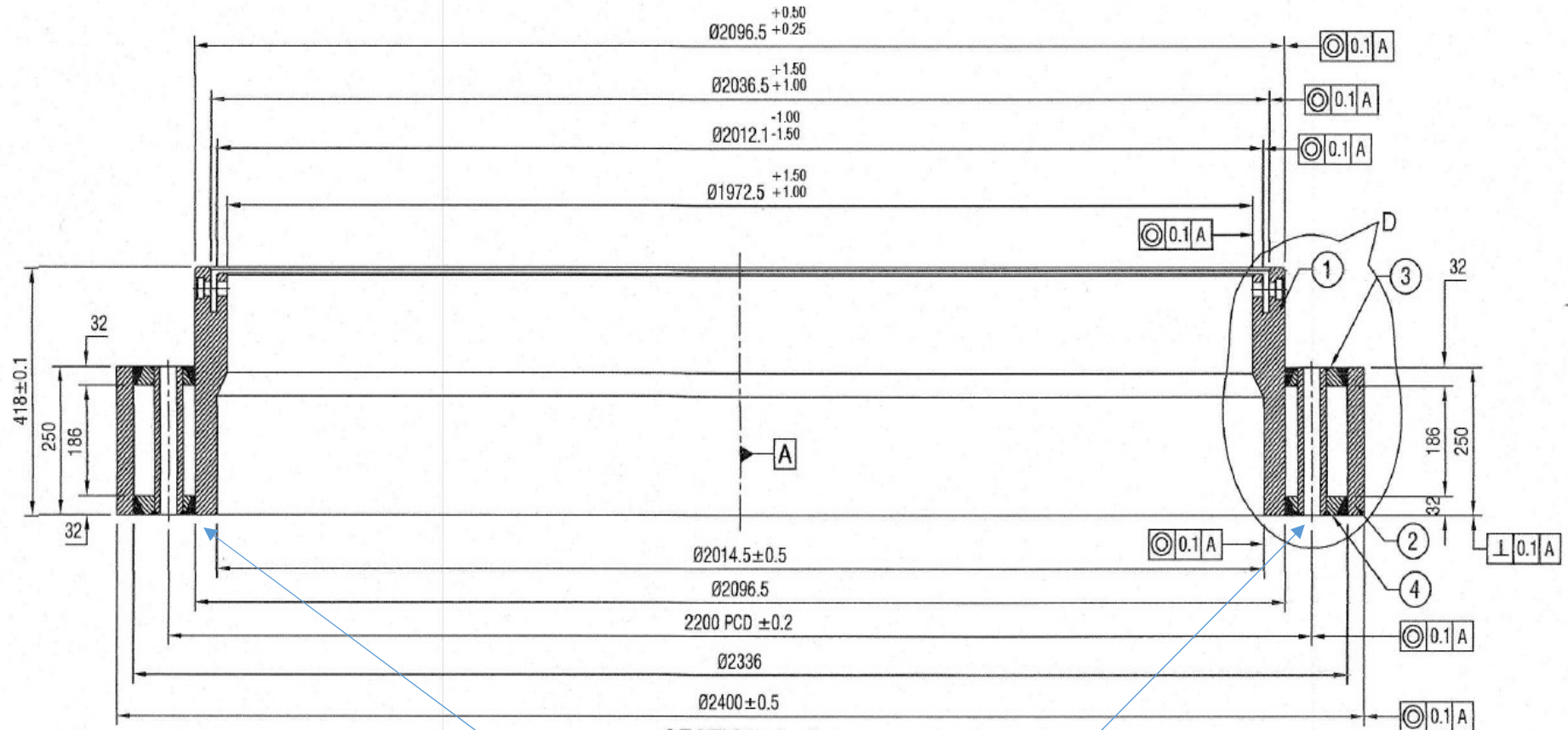
- i. All steel raw materials shall be offered for inspection along with necessary material & mechanical test reports, UT inspection reports, and heat number marks.
- ii. All the welds shall be tested by liquid penetration test as per Art-6 Section – V ASME .
- iii. Length of members shall be selected so that no butt welds are required in main load members.
- iv. All pins if any shall be inspected ultrasonically and qualified.
- v. Fabrication sequence shall be planned in a manner to facilitate radiography of all butt welds.



- vi. Dimensions shown in the drawing are final acceptance dimensions. Allowances for machining and thinning due to fabrication process shall be added to arrive at material sizes.
- vii. Tackles shall be offered for inspection after completion of making holes & boring operations before painting.
- viii. Fully finished and painted tackles will be inspected by department engineers at shop floor before dispatch.

Annexure-7

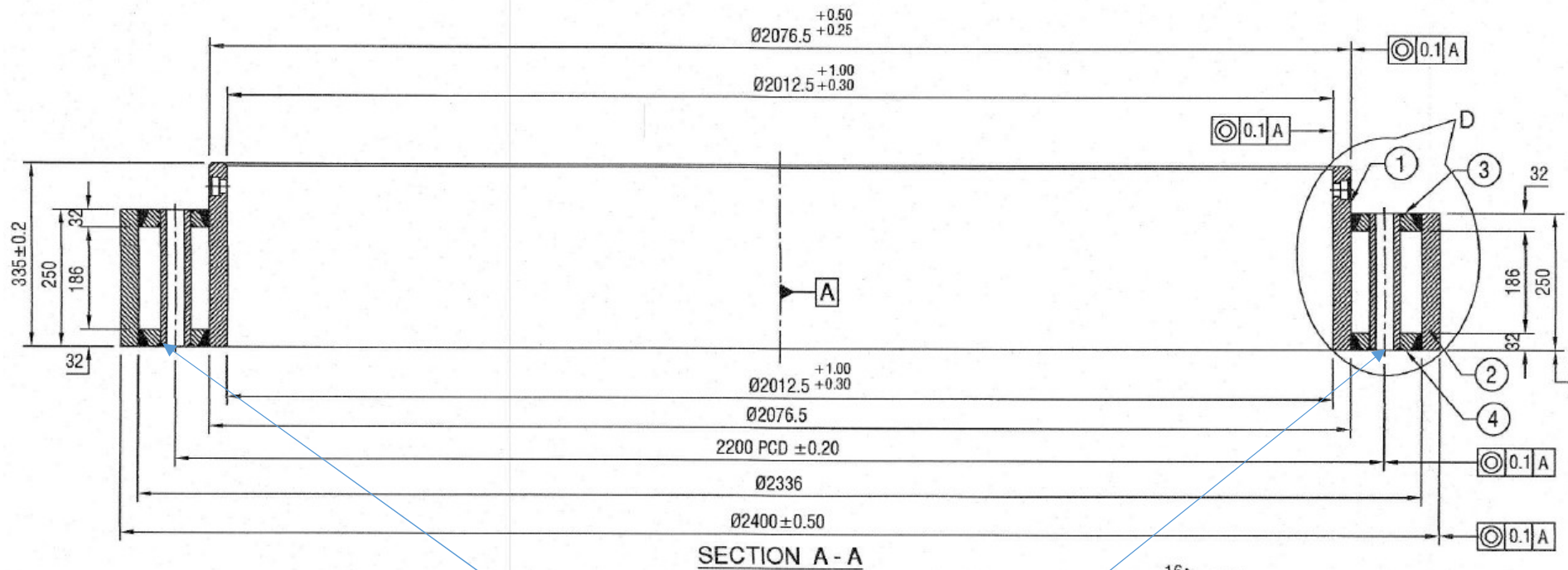
Groove side handling ring elevation view (Plan view is given below)



In-situ machine mating interface to be considered

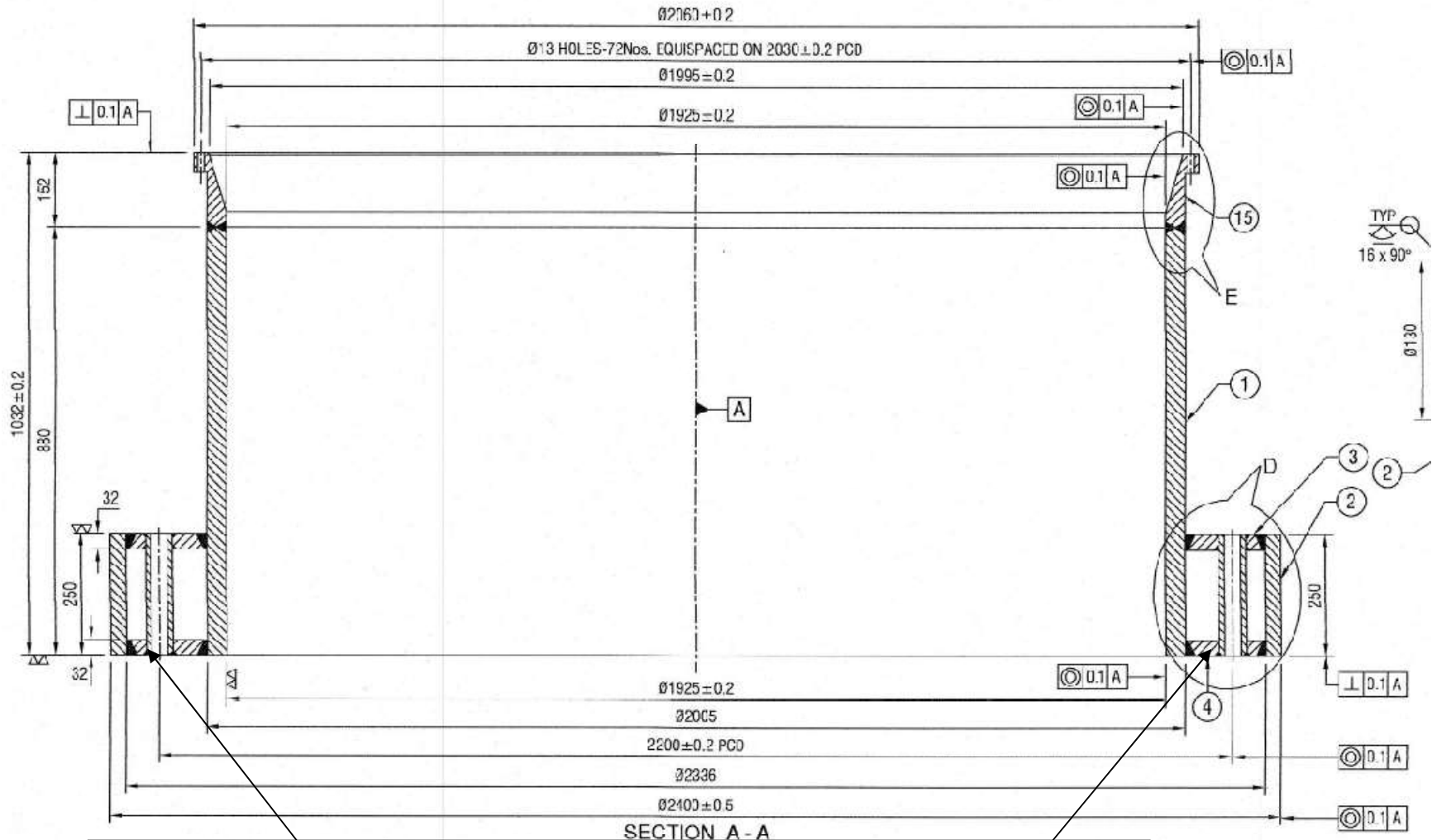


Tongue side handling ring elevation view (Plan view is given below)

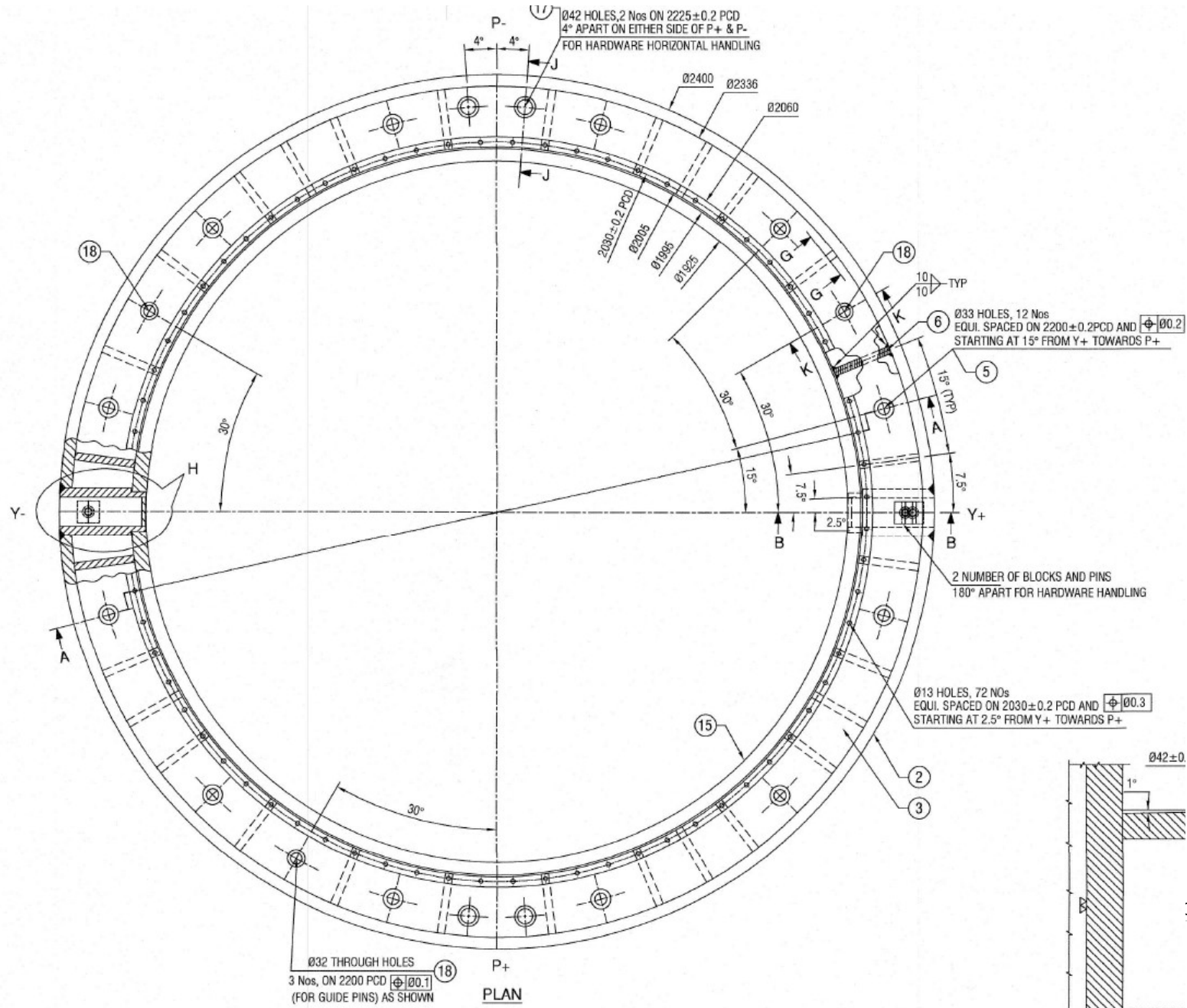




HE dome side handling ring elevation view (Plan view is given below)



In-situ machine mating interface to be considered



Ø2060±0.2



