

 एच.ई.सी. ISO 9001:2015	<p style="text-align: center;"><b>HEAVY MACHINE TOOLS PLANT</b>  <b>HEAVY ENGINEERING CORPORATION LIMITED</b>  (A Govt. of India Enterprise)  Ranchi – 834 004 (INDIA)</p>
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**Tender Enquiry No. HTP/PUR/172807/LC140NHD/SC/22-034 Dtd. 27/08/22**

### **OPEN TENDER**

**Sub : E-tendering with E-price bids for Supply of Servo Drive & CNC Package.**

Open Tenders are invited on line through website. Tenders are to be submitted strictly as per guidelines furnished in the website of <http://etenders.gov.in> here under:

### **INSTRUCTION TO BIDDERS (ITB)**

#### **1.0 Tender Summary :**

Tender Ref No.	<b>HTP/PUR/172807/LC140NHD/SC/22-034 Dtd. 27/08/2022</b>	
Item details	Servo Drive & CNC Package	
Cost of Tender documents/Tender Fee (MSME/SSI/NSIC for exemption)	Rs.1500/=	
Cost of EMD (MSME/SSI/NSIC for exemption)	Rs.3,00,000/=	
Mode of Tender	E tender with e price bid	
Type of tender	Two Bid System	
Last date and time for on-line submission of tender	16/09/22	UPTO 13 Hrs (IST)
Due date and time for on line opening of tender Part 1 only	17/09/22	AT 15 Hrs (IST)
(Under unforeseen circumstances and if the due date falls on holiday, the tender will be opened on the next full working day at same time)		

*Bidders are requested to submit their most competitive offer through e-procurement mode only. Offer submitted through offline mode will not be considered. For more information please visit our website <https://etenders.gov.in/eprocure/app>.*

*Prospective Tenderers are advised to get register themselves only on at NIC e-tender portal i.e. <https://etenders.gov.in/eprocure/app>, obtain 'User ID' & 'Password' and go through the 'Self Help files' available in the Home Page after log in to the portal <http://etenders.gov.in>. They should also obtain Class III Digital Signature Certificate (DSC) in parallel which is essentially required for submission of their application. Detailed instructions for online bid submission is mentioned below. No registration fee would be charged from the bidders.*

Bidders are required to upload the bid along with all supporting documents including priced part (BoQ) only on the e-tendering website (<https://etenders.gov.in/eprocure/app>), on or before the due date and time for submission of bid.

NOTE : HEC reserves the right to extend / change the schedule of any activity by intimating the bidders through a notification on the e-tender portal.

## 2.0 Contents of tender documents :

1	Techno-Commercial Terms and Conditions of NIT (Part 1)	Annexure "A" & Annexure 'B'
2	Template for Price Bid/BOQ format for online submission by the bidder (Part 2)	BOQENQ034.xls

## 3.0 Requirements for Vendors :

- A) P.C. connected with internet.
- B) Registration with Service provider portal <https://etenders.gov.in>
- C) The vendor should possess a Class III Digital Signature certificate (Mandatory). (Bids will not be recorded without Digital Signature Certificate)
- D) In case of any clarification please contact toll free no available at the site of e.tender.gov.in.
- E) Registration / Enrollment of Bidder on e- tender Portal of HEC: In order to submit the bid, the bidders have to get themselves registered online on the e-tender portal of HEC Ltd with valid Digital Signature Certificate (DSC) issued from any agency authorized by CCA and which can be traced upto the chain of trust to the Root Certificate of CCA. The online Registration of the Bidders on the portal will be free of cost and one time activity only. The registration should be in the name of the bidder, whereas DSC holder may be either bidder himself or his duly authorized person.

4.0 For **registration**, Submission procedure and method of correspondence etc. Please visit our website: <https://www.hecltd.com> / <https://etenders.gov.in> and click on the relevant link for help.

## 5.0 Help for participating in e-tender:

The detailed method for participating in the e-procurement are available in the website <https://www.hecltd.com> or <https://etenders.gov.in> The bidders have to Log on to official website and then click on the specified links to start participating in the e-procurement process.

Bidders are also free to communicate with the contact person of the service provider to get all clarifications regarding the mode of the e-procurement process.

NB :

- (I) Please note that there is no provision to take out the list of parties downloading the tender document from the above referred web site. As such, tenderers are requested to see the website once again before due date of tender opening to ensure that they have not missed any corrigendum uploaded against the said tender after downloading the tender document. The responsibility of downloading the related corrigenda, if any, will be that of the downloading parties.
- (II) No separate intimation in respect of corrigendum to this NIT (if any) will be sent to tenderers who have downloaded the documents from website. Please see websites i.e. <http://www.hecltd.com> or <http://www.etenders.gov.in>

6.0 The offer should be submitted (uploaded) strictly as per the terms and conditions and Procedures laid down in the website <https://etenders.gov.in> tender document failing which the offer is liable for rejection.

Bidders should download the complete NIT including the Annexure and read carefully before filling the details and uploading the documents.

- 7.0 The offers with any deviations to the NIT Terms and conditions shall be liable for rejection.
- 8.0 The bidder must upload all the documents required as per the terms of NIT. (Any other document uploaded which is not required as per the terms of the NIT shall not be considered.)
- 9.0 It may please be noted that E-tendering or e-procurement fall under the purview of the Information Technology Act 2000 and Information Technology (Amendment) Act 2008 and other relevant acts and subsequent amendments if any).
- 10.0 There will be no physical sale of the tender documents.

#### 11.0 **PREPARATION OF TENDER DOCUMENTS :**

Tender is to be submitted in two bid system in the following manner and shall be submitted through electronic mode only:

- a) Techno-commercial bid (Part 1) – The offer is to be scanned and uploaded in our portal consisting technical details.

The commercial terms and conditions (as per Annexure B). The format shall be downloaded and the same file duly filled by the bidder is to be uploaded while submitting the offer.

- b) Price-Bid/BOQ (Part 2) : This part of the offer should contain price portion. The format of Price Bid/BOQ which in excel format shall be downloaded by the bidder and rate offered by the bidder shall be filled in the excel file and uploaded the same excel file of e tendering system while submitting the offer.

The price bid/BOQ which is incomplete and not submitted as per the instructions given will be liable for rejection.

Note:

Bidders are requested to upload all the attachments/documents in one single PDF File in Other Important Documents (OID) or as indicated in the online instructions. For Example if more than one document is to be uploaded in support of Eligibility criteria or proveness criteria or any other requirement then bidder must prepare one single PDF file of all the related documents and then upload in the system in OID

#### **Bid Opening Process is as below:-**

Tender opening date will be as per given dates. If any clarification is needed from the bidder about the deficiency in his uploaded documents, he will be asked to provide it through Short fall documents folder in e-tendering portal. The bidder shall upload the requisite clarification / documents within time specified by HEC, failing which tender will be liable for rejection.

#### 12.0 **Please read carefully before you quote :-**

Last date of submission of Tender Document	: by 1:00 PM (IST) on 31.08.22
Due date of tender opening (Part 1 only)	: at 3:00 PM (IST) on 01.09.22

1. Items to be supplied as per the provided specifications.
2. It should be quoted on **FOR HMTF Store**.
3. **Validity** – Minimum 90 days from the date of opening of tender.
4. Order will be under L.D. clause.
5. Price Bid (Part 2) :- Price bid to be uploaded as per BOQ of NIT.
6. Commercial Terms and condition in Annexure-B to be submitted/uploaded along with Technical (Part 1) bid.

- 13.0 **Disclaimer Clause:-** The Company (Heavy Engineering Corporation Ltd.) nor the service provider ([www.etenders.gov.in](http://www.etenders.gov.in)) is responsible for any failure of submission of bids due to failure of internet or other connectivity problems or reasons thereof.

## Annexure A

### SCOPE OF SUPPLY :-

Sl	Material Code	Description	MAKE	Qty.in Sets.
1	-	SERVO DRIVE AND CNC PACKAGE SYSTEM WITH COMMISSIONING, TESTING & TRAINING	SIEMENS	01
<b>(DETAILS AS PER ANNEXURE-“E”)</b>				

### **IMPORTANT NOTES TO THE BIDDER:**

1.	Offer should clearly mention the <u>make</u> (one or multiple), that bidder wish to supply, from the mentioned makes in the tender and their <u>respective type numbers</u> for all the items <b>(mandatory)</b> .
2.	Wherever ratings/type number are not specified, bidder must indicate the same along with respective type number and make in the offer <b>(mandatory)</b> .
3.	Point wise reply has to be provided to all the points in the <u>ANNEXURE-F</u> <b>(mandatory)</b> .
4.	Complete offer including BOM has to be submitted only on the letterhead of the bidder. <b>(mandatory)</b> .
5.	Bidder can contact/visit M/s HEC Limited for any technical queries/clarification or to understand the application of Centre Lathe machine.
6.	If offer is incomplete, offers are liable to be rejected.

### **ANNEXURE-“F”**

Sl. No	Points to be confirmed/replied by bidder	Bidder comments
1.	Any equipment, rating of the equipment, type number of the equipment has to be modified / newly incorporated in the <b><u>BOM</u></b> for the successful Interfacing/commissioning of the Drive & CNC package with <b><u>CNC Centre Lathe Machine</u></b> according to the specifications in tender has to be incorporated in the submitted offer by the bidder.	
2.	Any items related to Drive & CNC package, if required additionally at the time of interfacing, wiring, commissioning and testing of the same with <b><u>CNC Centre Lathe Machine</u></b> w.r.t specifications in tender have to be supplied by the bidder at free of cost.	
3.	If the specified documentation in BOM is not available in hard copies, Soft copies of the documentation have to be printed, book bound and have to be supplied as per approved BOM.	
4.	Successful bidder has to provide the training schedule within one month of the placement of the order and training has to be arranged as per the schedule approved by M/s HEC Limited as per the availability of trainees. Travelling, boarding and lodging of trainees of M/s HEC Limited will be in the scope of M/s HEC Limited.	

5.	Schematic Drawing, PLC, CNC Program, HMI screens creation according to the functional requirement of CNC Centre Lathe Machine have to be developed by bidder in coordination with M/s HEC LIMITED. Successful bidder has to provide details of a single point contact, technically capable for the same, along with the communication regarding acceptance of purchase order.	
6.	Bidder should confirm that quoted offer complies all the technical specifications mentioned in the tender enquiry.	

**Note :** For any clarification including drawing etc. please give an email on [purhmtp@hecltd.com](mailto:purhmtp@hecltd.com)

### **Commercial terms and conditions:**

- Offers to be submitted on FOR HMTTP Stores basis. The rate quoted shall be inclusive of all packing & forwarding, freight and transit insurance charges.
- The Price quoted by the tenderer should be exclusive of GST. The rate and nature of GST applicable should be shown separately GST will be paid to the seller at the rate at which it is liable to be assessed or has actually been assessed on the date of supply provided the transaction of sale is legally liable to GST and within the delivery period.
- The rates quoted must be firm and the offers made must remain open for acceptance for three months from the date of opening of the tender.
- Quotations erased or over written are likely to be rejected unless all corrections are authenticated with the tenderer's signature.
- Delivery** – Within 12 **weeks** from the date of order placement.
- Payment Term:** 100% payment with 100% GST through RTGS/Cheque will be made within 60 days of the receipt of supplies at destination duly inspected, against submission of PBG of 10% order value valid till guarantee period.

**“The payment shall be made within 60 days of the receipt and acceptance of supplies at the destination. The rate of interest to be loaded on the firm for the payment term offered other than as specified in NIT for calculating landed cost to decide L-1 status will be 1% per month i.e. 12% per annum (Maximum)”**

- Delivery Time/Period:** The time for and the date of delivery of the Stores stipulated in the acceptance of tender shall be deemed to be the essence of the contract and delivery must be completed not later than the dates specified therein.  
 Otherwise:
  - LD Clause** - The purchaser to recover from the contractor a sum of 0.5 % per week (completed week) of the price of the stores (up to maximum 10 %) as liquidated damages, which the contractor has failed to deliver as aforesaid or,
  - The purchaser may procure the undelivered stores / similar items from elsewhere, without notice to the contractor at the risk of the contractor without canceling the contract in respect of the consignment not yet due for delivery or,
  - to cancel the contract or a portion thereof.
- Security Deposit (SD)–** Successful bidder has to deposit Security Deposit to the extent of 5% of total Purchase Order value within 21 days from P.O. date and it should remain valid for a period of 60 days beyond the date of completion of all contractual obligations of the supplier.  
  
 Security Deposit may be furnished in the following forms :-
  - Demand Draft on any of the Nationalized Banks in favor HEC Ltd. Ranchi.
  - Bank Guarantee from any Nationalized Bank (**BG Format Annexure C**)
  - Electronic Money Transfer in case of e-tendering.
- Performance bank guarantee (BG format Annexure D)** – The successful bidder has to submit the performance bank guarantee of 10% of order value valid till guarantee period after supply of the material (in case order placed on the firm).

10. **Guarantee – The stores supplied shall be guaranteed for a period of 12 months from commissioning or 18 months from date of supply whichever is earlier.**
11. **Inspection Clause:** - Material shall be inspected at firm's works by I/c IQC or his representative. However, HEC reserve the right to inspect the material after receipt of material at HMTF Stores and if it found NOT CONFORMING to our specification at any stage, then the material shall be rejected and firm have to replace it at no extra cost.  
Supplies will be subject to Inspection by our Inspection wing / or inspection Agencies prescribed by us.
12. **Risk Purchase Clause:** – If the material is not supplied within the stipulated period then material can be procured at the risk & cost of the firm without giving any notice to the firm.
13. Full particulars i.e. specification, literature and / or drawing wherever applicable has to be submitted along with the quotation. The 'Brand' and 'Make' name must be indicated.
14. Order placed as a result of this tender will be subject to the Corporation's General Terms and Conditions of contract which can be down loaded from our website ([www.hecltd.com](http://www.hecltd.com)).
15. The final quantity may vary at the time of finalization of tender, however the proper clarification / confirmation shall be taken from the firms.
16. The Corporation does not pledge itself to accept the lowest or any tender and reserves to itself the right of accepting the whole or any part of tender or portion of the quantity offered and you shall supply the same at the rate quoted.
17. Corporation reserves the right to call for and examine at any time the books of accounts and other documents and papers of the firm for the purpose of ascertaining whether any excess payments has been made or the firm likely to be received / received undue benefit out of execution of the particular contract.
18. Tenderers registered with National Small Industries Corporation/ Small Scale Industries/ Micro, Small scale Industry (MSE) or DGS&D for the tendered item will be exempted from submission of EMD. The tenderer should enclose an authenticated copy / notarized copy of their valid registration certificate with NSIC, DGS&D for grant of exemption.  
**In case Bidder is covered under MSME criteria, it is mandatory to quote UAM no in Bid Documents.**  
**HEC is registered on TReDS governed by RBI Guidelines and our registration no is HE0000320.**  
**All MSME firms are advised to register on RXIL (Receivable exchange of India-Mumbai).**
19. There is no obligation on our part to accept delayed / late tenders. Tenders received after the due date of opening are liable to be summarily rejected.
20. **GOVERNMENT OF INDIA NOT A PARTY TO THE AGREEMENT**  
It is expressly understood and agreed by and between =====.( Name of foreign party / firm ) and M/s Heavy Engineering Corporation Ltd .( for short "HEC") that HEC is entering into this agreement solely on its own behalf and not on behalf of any other person or entity. In particular it is understood and agreed that Government of India is not a party to this agreement and has no liabilities, obligations or rights hereunder. It is expressly understood and agreed that HEC is an independent legal entity with power and authority to enter into contracts Solely on its own behalf under the applicable laws of India and general principals of contract law. The Company expressly agrees, acknowledges and understand that HEC is not an agent, representative or delegate of Government of India.  
It is further understood and agreed that Government of India is not and shall not be liable for any acts, omissions, commissions, breaches or other wrongs arising out of the contract. Accordingly Corporation (HEC) hereby expressly waives , releases and foregoes any and all actions or claims including cross claims, impleader claims or counter claims against the Government of India arising out of this contract and covenants not to sue the Government of India as to any manner, claim, cause or action or thing whatsoever, arising out of or under this agreement.

21. **Arbitration Clause:-**

The parties to this contract at the first instance shall endeavour to settle by mutual discussion all the questions of disputes or differences arising out of, or relating thereto, or in connection with this contract and in the event of failure of settlement, the aggrieved party shall refer the unresolved dispute(s) or difference(s) to the Chairman-cum-Managing Director of the company (HEC Limited) for adjudication by a sole Arbitrator to be appointed by him (CMD of HEC Ltd) who (sole Arbitrator) shall adjudicate the matter in question in accordance with the arbitration and conciliation Act, 1996 (For short "Act") and publish the award. The parties shall have no objection if the sole Arbitrator so appointed is an employee or Ex-employee of HEC Ltd. If the sole Arbitrator for any reason, whatsoever, becomes unable to proceed with the arbitration, the Chairman-cum-Managing Director of the company shall appoint his successor arbitrator who may proceed with the reference from the stage it was left by his predecessor subject to provision of the Act. The venue of arbitration proceeding shall be at Ranchi in the state of Jharkhand, INDIA alone.

Jurisdiction Of court: For any or all types of disputes arising out of the contract, the jurisdiction of court shall be at Ranchi in the State of Jharkhand (INDIA) alone.

22. **General conditions of the contract** :Unless otherwise specified in the Terms & Conditions above, this order shall be governed by General conditions of contract of purchase of HEC Ltd, which is available in the web site of HEC.([www.hecltd.com](http://www.hecltd.com))

**Special .Note:**

While submitting tender pl. mention your Registration No. with HEC as a registered vendor with valid paper.

If not pl. get registered your firm with HEC Limited immediately.

Please indicate whether your firm covered under MSES/MSES owned SC/ST or covered under SSI separately in Techno-commercial bid.

Please submit the form of Terms & Conditions duly filled in and signed by the tenderer along with your offer in technical bid.

## Annexure B

### Terms & Conditions:

SI No		HMTP/HEC Requirement	Bidders confirmation
1	Price Terms (F.O.R. HMTP) Inclusive of P & F charges, Freight and Insurance charges upto HMTP Stores Ranchi (NIT clause NO:1)	FOR HMTP Stores	
2	GST	To be quoted separately indicating HSN no of material and GSTN of firm	
3	Payment Terms (NIT clause NO:6)	Within 60 days after receipt of material at HMTP Stores	
4	Validity of offer	3 months.	
5	Price variation clause	Not applicable	
6	Delivery Schedule (NIT clause NO:5)	12 weeks from PO date.	
7	L D Clause (NIT clause NO:7)	To be accepted	
8	Inspection (NIT clause NO:11)	To be accepted	
9	Test Certificate and Guarantee Certificate	To be provided by manufacturer.	
10	Guarantee (NIT clause NO:10)	12 months from the date of commissioning or 18 months from the date of supply whichever is earlier	
11	EMD	<b>Rs. 3,00,000/=</b>	
12	Tender Fee	<b>Rs. 1,500/=</b>	
13	Security Deposit (NIT clause NO:8)	5% of Basic value	
14	PBG (NIT clause NO:9)	10% of order value valid till guarantee period.	
15	UDYAM CERTIFICATE if registered under MSME	To be mentioned by bidder if applicable	
16	Acceptance of Risk Purchase clause (NIT clause NO:12)	To be accepted	
17	General conditions of the contract (NIT clause No 22)	To be accepted	
18	Other Terms and Condition of NIT	To be accepted	

### NOTE :-

1. Please indicate whether your firm is covered under MSEs/MSEs owned SC/ST or covered under SSI separately in Tech. Bid.
2. Terms & Conditions duly filled in and to be submitted along with Tech – Bid of offer otherwise your offer may not be evaluated.

( Somnath Chowdhury )  
Sr.Manager/Purchase  
Heavy Machine Tools Plant  
Heavy Engineering Corporation Limited



## **Annexure- C**

### **Format for BANK GUARANTEE FOR SECURITY DEPOSIT**

*( to be issued by any Nationalized bank preferably State bank of India negotiable at their counters in Ranchi )*

TO,  
M/S HEAVY ENGINEERING CORPORATION LIMITED  
PLANT PLAZA ROAD, DHURWA, RANCHI – 4

Dear sir,

In consideration of your agreeing to accept the security deposit of rs. ....'amount'..... furnishable to you by m/s ..... 'firms name'..... (hereinafter referred to as contractor) in terms of the contract no. ....'hec's purchase order no'.....for supply of ..... 'details of items'.....(hereinafter referred to as the 'contract' ) in the form of a bank guarantee in the manner hereinafter contained we.....'bank details'..... branch, having registered office at ..... 'place'..... do hereby covenant and agree with you as follows:

1. We hereby undertake to indemnify you up to a sum of rs. ....'amount'.....(rupees ..... 'amount in words'.....) against any loss or damage caused to or suffered by you or that may caused to or suffered by you by reason of any breach or breaches on the part of the contractor of any of the terms and conditions contained in the said contract and in the event the contractor shall make any default or defaults in carrying out any of the works under the said contract or otherwise in the observance and performance of any of the terms and conditions relating thereto in accordance with the true intent and meaning thereof, we shall forthwith on demand and without any protest or demur pay to you such sum or sums not exceeding in total the said sum of rs. ....'amount'.....(rupees ..... 'amount in words'.....) as may be claimed by you as your losses and / or damages, costs, charges or expenses by reason of such default or defaults on the part of the contractor.
2. Notwithstanding anything to the contrary contained in this guarantee your decision as to whether the contractor has made any such default or defaults and the amount or amounts to which you are entitled by reasons thereof will be binding on us and we shall not be entitled to ask you to establish your claim or claims or damages or losses suffered by you but will pay the amount demanded by you under this guarantee forthwith on your demand without any protest or demur.
3. This guarantee shall continue and hold good until it is released by you on the application by the contractor after expiry of the related warranty period of the said contract and after the contractor have discharged all their obligations under the said contract and produced a certificate of due completion of the work under the said contract and submitted a 'no demand certificate' provided always that this guarantee shall in no event remain in force after the date of ...'date'..... without prejudice to your claim or claims arisen and demanded from or otherwise notified to us in writing before the expiry of six months from the said date which will be enforceable against us notwithstanding that the same is or are enforced after the said date.
4. We ..... 'bank name'....., further undertake to extend the validity of this beyond the period prescribed in clause 3 or as extended from time to time, for such further period as may be required in writing before the expiry of this and upon such extension(s), all terms and conditions of this shall remain in full force till the expiry of this extended period(s).
5. You will have the fullest liberty without affecting this guarantee from time to time to vary any of the terms and conditions of the said contract or extend the time of performance of the contractor or to postpone for any time or from time to time any of your rights or powers against the contractor and either to enforce or forebear to enforce any of the terms and conditions of the said contract and we shall not be released from our liability under this guarantee by the exercise of your liberty with reference to matters aforesaid or by reason of any time being given to the contractor or any other forbearance , act or omission on your part or

any indulgence by you to the contractor or by any other variation or modification of the said contract or any other act, matter or things whatsoever, which, under the law relating to sureties, would but for the provisions hereof, have the effect or so releasing us from our liability hereunder provided always that nothing herein contained will enlarge our liability hereunder beyond the limit of rs. ....'amount'.....(rupees .....*'amount in words'*.....) as aforesaid or extend the period of the guarantee beyond the said date of ...'date'.... unless expressly agreed to by us in writing in terms of clause 4 hereof.

6. This guarantee shall not in any way be affected by your taking or varying or giving up any securities from the contractor or any other person, firm or company on its behalf or by the winding up, dissolution, insolvency or death as the case may be of the contractor.
7. In order to give full effect to the guarantee herein contained, you shall be entitled to act as if we are your principal debtors in respect of all your claims against the contractor hereby guaranteed by us as aforesaid and we hereby expressly waive all our rights of suretyship and other rights, if any, which are in any way inconsistent with any of the provisions of this guarantee.
8. Subject to the maximum limit of our liability as aforesaid this guarantee will cover all your claim or claims against the contractor from time to time arising out of or in relation to the said contract and in respect of which your claim in writing is lodged on us before expiry of six months from the date of expiry of this guarantee.
9. Any notice by way of demand or otherwise hereunder shall be in writing and may be sent by special courier, speed post or telefax to us at our local address as aforesaid.
10. This guarantee and the powers & provisions herein contained are in addition to and not by way of limitation of or substitution for any other guarantee or guarantees heretofore given to you by us whether jointly with others or alone and now existing uncanceled and that this guarantee is not intended to and shall not revoke or limit such guarantee or guarantees.
11. This guarantee shall not be affected by any change in the constitution of the contractor or us nor shall it be affected by any change in your constitution or by any amalgamation or absorption thereof or therewith but will ensure for the benefit of and be available to and enforceable by the absorbing or amalgamated company or concern.
12. This guarantee is irrevocable during the period of its currency and shall not be revoked without your previous consent in writing.
13. We further agree and undertake to pay you the amount demanded by you in writing irrespective of any dispute or controversy between you and the contractor or any reference to arbitration of the said dispute / controversy pending or a civil suit filed by the contractor in respect of the dispute or controversy.
14. Notwithstanding anything contained herein above our liability under this guarantee is restricted to rs. ....'amount'.....(rupees .....*'amount in words'*.....) and this guarantee shall remain in force until .....*'date'*.... unless a written claim is lodged on us for payment under this guarantee within six months from the date of expiry of this guarantee i.e. on or before ...*'date'* + *'6 month'*..... all your rights under this guarantee shall be forfeited and we shall be deemed to have released and discharged from all liabilities thereunder. irrespective of whether or not the original guarantee is returned to us.
15. We have power to issue this guarantee in your favour under the memorandum and articles of association of the bank and the undersigned has full power to execute this guarantee under the power of attorney granted to them by the bank. FOR AND ON BEHALF OF

*'name of bank'*  
*'signature with seal'*

## **Annexure- D**

### **FORMAT OF PERFORMANCE BANK GUARANTEE**

**(TO BE STAMPED IN ACCORDANCE WITH STAMP ACT & TO BE ISSUED BY ANY NATIONALISED /SCHEDULED BANK AUTHORISED BY RBI TO ISSUE A BANK GUARANTEE)**

Name of Equipment: ----- Guarantee NO-----

Purchase Order No.:----- dated: ----- Date:-----

Validity -----

Claim period-----

To:

M/s Heavy Engineering Corporation Ltd.

Heavy Machine Building Plant

Ranchi-834004 Jharkhand

In consideration of your having placed an order bearing Purchase Order No.-----dated:----- with-----

------(hereinafter referred to as Supplier) for the supply of-----

------(hereinafter referred to as the-----

We ----- do hereby agree with you irrevocably that, should the machinery and equipment fail to give the guarantee performance and achieve the efficiency as stipulated in the Purchase Order within the period of guarantee or should the material and/or workmanship of the machinery and equipment supplied or any part thereof be found defective and/or fully, as per the purchase order, we undertake to pay without any demur merely on demand a sum of Rs. -----

-----being 20% of the value of Rs. -----for the supply of -----

Your decision whether the supplier have made any such defaults and the amount to which you are entitled by reasons thereof shall be conclusive and bind on us, subject to maximum of Rs. -----

----- as aforesaid.

We-----further guarantee that the machinery and equipment manufactured and supplied by the supplier shall be new, of good quality materials and of the first class workmanship as specified in the Purchase order and should the machinery and equipment supplied or any part thereof be found defective and that should the defect as pointed out in inspection note be not made good and/or in case of failure within guarantee period same shall be replaced on free of cost or repaired on free of cost to the entire satisfaction of Heavy Engineering Corporation Ltd.

We -----agree that the guarantee herein contained shall remain in full force and effect till the machinery and equipment give the desired performance and it shall continue to be enforceable till your dues have been fully paid and claims satisfied or discharged subject to a period not later than----- . In the event of any extension granted for commissioning/dispatch suitable extension shall be given on your request.

We-----, further agree that any neglect, omission or forbearance or indulgence in enforcing any claim as per the terms and conditions of your purchase order or performance guarantee or any of them or any extension of the time granted for the performance or payment of penalty under the guarantee or any dispute between the supplier and yourselves as regard performance of machinery and equipment supplied or issued related to your Purchase order, shall not effect in any way our liability under this guarantee until the full payment, but in any case, shall not extend beyond-----.

This guarantee is in addition and not substitution for guarantee given to you by the seller or by their bankers on their behalf.

We----- lastly undertake not to revoke this bank guarantee during its currency except with the previous consent of the corporation in writing.

Notwithstanding anything to contrary stated above, our liability under this guarantee will be restricted to Rs.----- and shall remain in force up to -----, unless a demand or claim under this guarantee is made from the date i.e. on or before-----all your rights under the said guarantee shall be forfeited and we shall be released and discharged from all liabilities thereunder.Dated at ----- day of ----- Seal of the Bank

**TECHNICAL SPECIFICATIONS: -**

1. Package should include 1 No. AC Spindle motor for spindle rotation, 2 No's AC Servo motor for X1, Z1 axes movement on carriage-1, 2 No's AC Servo motor for X2, Z2 axes movement on carriage-2 and 3 No's AC Servo motor for steady rest movement (W1, W2 & W3) for CNC Centre Lathe Machine as per the specifications mentioned below.

**AC SPINDLE MOTOR FOR SPINDLE:**

Compact induction motor 1500 RPM, 100 kW, 600 Nm, 188A, w/o brake, 3AC, 400V, 50Hz, forced ventilation, Direction of air flow DE to NDE, Degree of protection IP55, with Inbuilt Incremental encoder (1 VPP 2048 PPR/Drive Cliq/Equivalent), Design IM B3, shaft with fitted key full-key balancing, Terminal box (above), cable entry on the right, signal connection D-end.

**AC SERVO MOTOR FOR X1 & X2 FEED AXES:**

Synchronous Servo Motor, Static Torque=30Nm (100K), 1500rpm, naturally cooled, frame size IMB5, Power connector rotatable, with inbuilt multi-turn absolute Encoder (ENDAT 2048 PPR/Drive cliq/Equivalent), signal connector rotatable, shaft with fitted key, w/o Holding Brake, Degree of protection IP 64, shaft diameter-38mm, shaft height-100mm.

**AC SERVO MOTOR FOR Z1 & Z2 FEED AXES:**

Synchronous Servo Motor, Static Torque=90Nm (100K), 1500rpm, naturally cooled, frame size IMB5, Power connector rotatable, with inbuilt multi-turn absolute Encoder (ENDAT 2048 PPR/Drive Cliq/Equivalent), signal connector rotatable, shaft with fitted key, w/o Holding Brake, Degree of protection IP 64, shaft diameter-48mm, shaft height-132mm.

**AC SERVO MOTOR FOR STEADY REST (W1, W2 & W3) AXES:**

Synchronous Servo Motor, Static Torque=20Nm (100K), 2000rpm, naturally cooled, frame size IMB5, Power connector rotatable, with inbuilt multi-turn absolute Encoder (ENDAT 2048 PPR/Drive cliq/Equivalent), signal connector rotatable, shaft with fitted key, w/o Holding Brake, Degree of protection IP 64, shaft diameter-32mm, shaft height-80mm.

2. The package offered should also include the complete hardware and software with license to control the quoted motors along with start – up tool, interconnecting cables, mounting and other accessories, training and documentation to suit the operational requirement of CNC Centre Lathe Machine.
3. The equipment and components offered by the supplier should confirm to 'BIS' or equivalent international specifications so as to suit the Indian standards with various working environments.
4. All equipment's supplied must be suitable for power supply 415 +/-6+% V AC, 3 Phase, 50+/-3% Hz and for atmospheric conditions of 50 Deg. Max temperature, 90% Humidity, Height <4000 above MSL.
5. The package offered by the supplier shall be industry 4.0 compatible.
6. To ensure that chuck/faceplate is stationary for work loading and to facilitate instant stoppage of spindle in case of power shutdown, Regenerative-braking system in the AC spindle motor shall be provided. The main drive shall have the features of gradual acceleration, deceleration and braking.
7. The package offered should facilitate the following machine operations: Both rough and finish outside diameter as well as inside diameter turning (Plain turning, Step turning, Taper turning & Contour turning), Facing, threading, Chamfering, Centre drilling.

## **TECHNICAL SPECIFICATIONS: -**

8. The package offered should facilitate the following machine operations: Both rough and finish outside diameter as well as inside diameter turning (Plain turning, Step turning, Taper turning & Contour turning), Facing, threading, Chamfering, Centre drilling.
9. The package offered shall be suitable for round the clock continuous operation at full load. It shall be suitable for the climatic conditions with 50 Deg. Ambient temperature and 100% humidity.
10. The package offered shall be suitable for interfacing with 2 No's dual probe systems for tool offset and measurement of tool dimensions, 1 No. dual probe system for job dimensions and package should include the required accessories for the same. Probe system details will be given upon request.
11. A super dynamic high torque AC motor shall be offered for infinitely variable spindle speeds with constant surface speed programming.
12. For infinitely variable feed drive, super dynamic AC servomotor should be offered for both the axes (X & Z) to ensure exact positioning and accuracy.
13. The package quoted should be suitable in such a way that both the carriages shall be able to work independently & simultaneously (Two different programs should run on two different operator panels mounted on the two carriages simultaneously).
14. The package shall be suitable for indexing 2 No's '4-position head type programmable turret' each one mounted on both of the carriages automatically through CNC program. Turret details will be given upon request.
15. Position feedback for X1, X2 and spindle axes will be taken through external rotary encoders and the necessary software provisions, cables and accessories have to be provided in the package. External encoder details will be given up on request.
16. Thermal sensor device should be present in the offered drive motors.
17. Package offered should consists of I/O units such that they are capable of interfacing at least 288 digital inputs, 192 digital outputs, 2 Analog Inputs and 2 Analog Outputs from the field.
18. The positioning of all the steady rest on machine bed should be controlled through independent electric drives and can be done through programme and also through push buttons on steady rest. The offered package should be suitable for the same.
19. 1 No. Laptop with Laser colour printer preloaded with all the software's with license and machine parameters along with all the interface cables for communication with CNC, PLC and Drives systems. Licensed copy of system/operating system software should also be provided with the laptop.
20. Make of elements:
  - AC Variable Motor Drive - Siemens/Telemecanique (France Fanuc/ABB)
  - PLC - Siemens S7-300 or S7-400
  - Motors - Siemens
  - Laptop - Siemens/Dell/HP
  - Laser colour printer - HP/Canon/Epson/Brother
  - Control system (CNC) - Siemens Sinumerik 840D sl / Fanuc 30i model A /  
Fanuc 31i model A5

## **TECHNICAL SPECIFICATIONS: -**

21. The control system offered in the package should have the following specifications:

- Latest version of complete package of SINUMERIK 840Dsl or latest version of FANUC 30i model A OR Fanuc 31i model A5 with latest PCU, drives & other auxiliary Units, devices etc.
- System shall have storage facility of hard disk of at least capacity 2 GB.
- 19" control panel with flat color LCD display.
- 19" keyboard interface.
- 1 Serial RS232C/V.24, suitable software for data uploading/downloading and cable for data uploading /downloading.
- 1 Electronic hand wheel for each carriage separately, each electronic hand wheel cable shall be of flexible type & made up of reinforced steel for both the carriages.
- Program transfer via USB port
- The single optical fiber edge/MPI/Profibus cable shall be used to connect the control unit with NC operator's panel on machine or with input/output unit at a distance of 200 mm approx. The Feedback device shall be direct reading type, suitably protected from dirty shop floor environment.
- The machine control software, for carrying out interactive part programming shall be provided with color graphics capable of programming, storing, recall and execute its own automatic cycle, family program etc.
- The system shall be capable of editing full program without limitation and to carry out editing the program in the background while the machine is executing the other program.
- The control system is capable of storing instructions on job setting/tool setting etc. in the machine. Retrieving and editing facilities of the same at appropriate time shall also be provided as a help of the operator.
- The control system shall be provided with permanently active check routines. In case any error is detected, the sequence of operation shall be interrupted and the fault shall be diagnosed and stored in the memory as an alarm indicator. These alarms & errors should be displayed on the control display and shall be elaborated in the maintenance manual.
- Two axes control with X & Z axes.
- Simultaneous control of axes for positioning
- Interpolation, Linear Interpolation, Circular Interpolation
- Least Input Increment: 0.001 mm Pulse
- Manual Data Input: 19" control panel with flat color LCD display with 19" keyboard interface.
- Absolute & Incremental Programming.
- Automatic Acceleration & Retardation with jerk limitation.
- Decimal Point programming
- Rapid Traverse
- Feed- Speed rate Override: 0 - 100% (10% step)

## **TECHNICAL SPECIFICATIONS: -**

- Override Cancel
- Dry running of the Program
- Single Block execution facilities
- Sequence number searching & program number searching
- Reference Point Return (Manual/Auto)
- Self-Diagnosis
- Backlash Compensation
- Tool Offset
- Canned Cycle
- Part Program Storage & editing
- Door Interlocking of NC Panel
- Pitch Error Compensation
- Machine lock on each axis
- Auxiliary Function Lock
- Non-volatile Memory
- In-process Measurement
- Insertion of Chamfer & radii.
- Thread Cutting -- Lead Linearly increasing, Lead Linearly decreasing, Constant & variable pitch
- Oriented Spindle Stop
- Optional stop
- Program locking by password.
- Contour definition programming, graphic aided.
- Hand wheel override facility
- Operating modes: JOG, MDI & AUTOMATIC
- Preset (set actual value) and Repos (repositioning to contour via operation/semi-automatic)
- Tool Retraction Facility
- Polar co-ordinates
- Dimensions: metric and inch
- Spindle speed limitation
- Should have all the measuring cycles for tool measuring probes and Job measuring probe.

<b>Sl. No.</b>	<b>D e s c r i p t i o n</b>	<b>T y p e N o</b>	<b>Qty.</b>
1.	<b>DRIVE PACKAGE</b>		
1.1	<b>NUMERICAL CONTROL UNIT (NCU)</b> SINUMERIK 840DsI NCU 710.3B PN with PLC 317-3 PN/DP incl. dual fan/battery module and battery.	6FC5371-0AA30-0AB0	1 No. + 1 No. (EXTRA)
1.2	<b>CNC SOFTWARE, 4.94 or Latest, CF WITH LICENSE</b> SINUMERIK 840DE sI CNC SOFTWARE 31-3 export 6 languages: DE, EN, FR, SP, IT, ZH-CHS SOFTWARE 4.94 or Latest on CF CARD with license.	6FC5851-1YG46-4YA0	1 No.
1.3	<b>CNC SOFTWARE, CD/DVD</b> SINUMERIK 840DE sI CNC SOFTWARE 31-3 EXPORT and SINUMERIK OPERATE, 6 languages (DE, EN, FR, SP, IT, ZH-CHS) SOFTWARE 4.94 or Latest on DVD, without license.	6FC5851-1YC46-4YA8	1 No.
1.4	<b>CONTROLLABLE INTERPOLATION AXIS EXTENSION</b> SINUMERIK 840D sI additionally 1 AXIS/SPINDLE SOFTWARE option delivery of a license.	6FC5800-0AA00-0YB0	2 No's.
1.5	<b>CONTROLLABLE POSITION AXIS EXTENSION</b> SINUMERIK 840D sI additionally 1 POSITIONING AXIS HELP SPINDLE SOFTWARE option delivery of a license.	6FC5800-0AB00-0YB0	3 No's.
1.6	<b>CONTROLLABLE CHANNELS EXTENSION</b> SINUMERIK 840D sI additionally 1 MACHINING CHANNEL SOFTWARE option delivery of a license.	6FC5800-0AC10-0YB0	1 No.
1.7	<b>CONTROLLABLE MODE GROUPS EXTENSION</b> SINUMERIK 840D sI additionally 1 MODE GROUP (BAG) SOFTWARE option delivery of a license.	6FC5800-0AC00-0YB0	1 No.
1.8	<b>SINUMERIK PCU-BASE SOFTWARE /IPC(P86)</b> SINUMERIK 840D sI SINUMERIK PCU basic software/IPC for SIMATIC IPC software option delivery of an electronic license (PDF).	6FC5800-0AP86-0YH0	1 No.
1.9	<b>SINUMERIK OPERATE OPTION (P88)</b> SINUMERIK 840D sI SINUMERIK Operate/PCU software option delivery of an electronic license.	6FC5800-0AP88-0YH0	1 No.
1.10	<b>SHOPTURN OPTION (P17)</b> SINUMERIK 840D sI SHOPTURN SOFTWARE option delivery of license.	6FC5800-0AP17-0YH0	1 No.
1.11	<b>TRANSMIT AND PERIPHERAL SURFACE TRANSFORMATION OPTION (M27)</b> SINUMERIK 828D/840D sI Transmit and Peripheral Surface Transformation software option delivery of an electronic license.	6FC5800-0AM27-0YH0	1 No.
1.12	<b>EXTENDED STOP AND RETRACT OPTION (M61)</b> SINUMERIK 828D/840D sI extended stop and retract ESR (NC-controlled + drive-autonomous from software 4.X) software option delivery of an electronic license.	6FC5800-0AM61-0YH0	1 No.



<b>Sl. No.</b>	<b>Description</b>	<b>Type No</b>	<b>Qty.</b>
1.13	<b>MEASURING CYCLES OPTION (P28)</b> SINUMERIK 840D sl measuring cycles software option delivery of an electronic license.	6FC5800-0AP28-0YH0	1 No.
1.14	<b>SINUCOM COMMISSIONING SOFTWARE</b> SINUMERIK 840D sl SINUCOM commissioning/ service tools on CD-ROM, current software version single license.	6FC5250-0AY00-0AG0	1 No.
1.15	<b>SINUMERIK SIMATIC STEP7 SOFTWARE</b> SINUMERIK SIMATIC S7, STEP7 current software version on CD-ROM single license for SINUMERIK hardware.	6FC5252-0AY00-0AG0	2 No's.
1.16	<b>SIMATIC IPC 427E, STANDARD PERF, WIN10</b> SIMATIC IPC427E (Micro box PC), HD graphic onboard, 4x USB V3.0 (high current), PCIE (optional), Celeron G3902E, 3x Gbit Ethernet (IE/PN), working memory 8GB, 1x PCIe (x4), Windows 10 IoT Enterprise 2016 LTSB (64Bit) f. Celeron, i3/i5, Internal mass storage: 240 GB Solid-State Drive SATA, 24 V DC industrial power supply.	6AG4141-1AB17-0FA0	1 No. + 1 No. (EXTRA)
1.17	<b>MOUNTING KIT FOR IPC427E</b> SIMATIC IPC, Mounting kit standard mounting rail for Micro box IPC427E.	6ES7648-1AA21-0YM0	1 No.
1.18	<b>ETHERNET SWITCH</b> SCALANCE XB005 unmanaged Industrial Ethernet Switch for 10/100 Mbit/s, for setting up small star and line topologies, LED diagnostics, IP20, 24 V AC/DC power supply, with 5x 10/100 Mbit/s twisted pair ports with RJ45 socket.	6GK5005-0BA00-1AB2	2 No's.
1.19	<b>OPERATOR PANEL, OP019</b> SINUMERIK operator panel front OP 019, 19" TFT (1280X1024) with capacitive keys.	6FC5303-0AF13-0AA0	2 No's + 1 No. (EXTRA)
1.20	<b>MOUNTING BRACKET FOR TCU</b> SINUMERIK 810D/840D mounting bracket for mounting TCU behind the op panel front 1 set = 2 brackets.	6FC5248-0AF20-2AA0	2 No's
1.21	<b>THIN CLIENT UNIT, TCU30.3</b> SINUMERIK 840D sl TCU 30.3 (Thin Client Unit) for SINUMERIK.	6FC5312-0DA00-1AA1	2 No's.
1.22	<b>MACHINE CONTROL PANEL, MCP483C PN</b> SINUMERIK Machine Control Panel MCP 483C PN PROFINET / Industrial Ethernet, width 19", mechanical keys, 22 mm Emergency Stop.	6FC5303-0AF22-0AA1	2 No's + 1 No. (EXTRA)
1.23	<b>TRANSPARENT SQUARE KEY COVER</b> SINUMERIK key covers Square, 90xclear for inserting of inscription labels	6FC5248-0AF21-0AA0	1 No.
1.24	<b>KEY BOARD KB 483C</b> SINUMERIK CNC FULL KEYBOARD KB 483C, width 19 mechanical keys incl. 1.5 M cable.	6FC5203-0AF20-0AA1	2 No's.

<b>Sl. No.</b>	<b>Description</b>	<b>Type No</b>	<b>Qty.</b>
1.25	<b>MINI HANDHELD UNIT, SPIRAL CABLE</b> Mini Handheld Unit for SINUMERIK with coiled cable 3.5 m, 2 chan. emergency stop, 2 chan. enabling button 3-step with metal connector handwheel w. magnetic latching.	6FX2007-1AD03	2 No's.
1.26	<b>CONNECTION KIT FOR MINI HHU</b> Connection kit for Mini Handheld Unit, prefabricated for MST with IE, metal version, with closing-connector.	6FX2006-1BG11	2 No's.
1.27	<b>HOLDER FOR MINI HHU</b> Holder for Mini Handheld Unit 6FX2007-1AD03.	6FX2006-1BG70	2 No's
1.28	<b>I/O MODULE PP72/48 D PN</b> SINUMERIK I/O MODULE PP 72/48D PN 72, I Digital 48 O Digital, DC 24 V, 0.25 A	6FC5311-0AA00-0AA0	3 No's + 3 No's (EXTRA)
1.29	<b>I/O MODULE PP72/48 D PN 2/2 A</b> SINUMERIK I/O MODULE PP 72/48D 2/2A PN 72 I Digital 48 O Digital, DC 24 V, 0.25 A Analog: 2 I (+/- 10V, +/- 20 mA, PT100) 2O (+/- 10 V, +/- 20 mA).	6FC5311-0AA00-1AA0	1 No. + 1 No. (EXTRA)
1.30	<b>CABLE FROM NCU TO I/O MODULE &amp; BETWEEN I/O MODULES</b> Preassembled Signal Cable (SINAMICS Drive CLiQ) to I/O Module from NCU or I/O module with Connectors at both ends (IP20/IP20), Length (M)= 50.	6FX2002-1DC00-1FA0	3 No's
1.31	<b>CONTROL UNIT (CU)</b> SINAMICS Control Unit CU320-2 PN without Compact Flash Card.	6SL3040-1MA01-0AA0	1 No.
1.32	<b>COMPACT FLASH CARD</b> SINAMICS S120 Compact Flash Card Basic with required system software of latest version.	6SL3054-0FC30-1BA0	1 No.
1.33	<b>BASIC OPERATOR PANEL (BOP)</b> BOP for interfacing with Control Unit CU320-2 PN.	6SL3055-0AA00-4BA0	1 No.
1.34	<b>TERMINAL MODULE, TM31</b> SINAMICS Terminal Module TM31 add on board for SINAMICS with digital and analog in- and outputs IP20 for cap rail mounting.	6SL3055-0AA00-3AA1	2 No's.
1.35	<b>ACTIVE INTERFACE MODULE,120 kW (AIM)</b> SINAMICS S120 Active Interface Module for 120kW Active Line Module Input: 3AC 380-480V, 50/60Hz.	6SL3100-0BE31-2AB0	1 No.
1.36	<b>GLAND PLATES FOR AIM</b> SINAMICS Shield Connection Sheet for Active Interface Modules 80 kW and 120 kW.	6SL3163-1AM00-0AA0	1 No.
1.37	<b>ACTIVE LINE MODULE,120 kW (ALM)</b> SINAMICS S120 Active Line Module Input: 3AC 380-480V, 50/60Hz Output: DC 600V, 200A, 120kW Frame size: Book size internal air-cooling incl. DRIVE-CLIQ cable.	6SL3130-7TE31-2AA3	1 No. + 1 No. (EXTRA)

Sl. No.	Description	Type No	Qty.
1.38	<b>SMART LINE MODULE,36 kW (SLM)</b> SINAMICS S120 Smart Line Module Input: 3AC 380-480V, 50/60HZ Output: DC 600V, 60A, 36kW frame size: Book size internal air-cooling incl. DRIVE-CLIQ cable.	6SL3130-6TE23-6AA3	1 No.
1.39	<b>GLAND PLATES FOR SLM</b> SINAMICS Shield Connection Sheet for 150 mm Line/Motor Modules internal air cooling.	6SL3162-1AF00-0AA1	1 No.
1.40	<b>LINE CHOKE,36 kW</b> SINAMICS Line Reactor for 36 KW Smart Line Module Input: 3-PH 380-480 V, 50/60 HZ.	6SL3000-0CE23-6AA0	1 No.
1.41	<b>AC SPINDLE MOTOR FOR SPINDLE AXIS,110kW</b> SIMOTICS M Compact induction motor 1500rpm, 95kW, 605Nm, 200 A, 340V 1750rpm, 110 kW, 600Nm, 198A, 395V 2000rpm, 124kW, 592Nm, 196A, 460 V ,Forced ventilation, Direction of air flow DE-->NDE, Degree of protection IP55, Incremental encoder 22-bit with commutation position (encoder IC22DQ) with DRIVE-CLIQ interface, Design IM B3, shaft with fitted key full-key balancing, Bearing: Standard Vibration severity grade R/A, Shaft & Flange Accuracy GR. R, Terminal box (above), cable entry on the right, signal connection D-end.	1PH8224-1DF00-1BA1	1 No.
1.42	<b>MOTOR MODULE FOR SPINDLE, 200A (MMS)</b> SINAMICS S120 Single Motor Module Input: DC 600V Output: 3AC 400V, 200A Output: at 8 kHz / 140A Frame Size: Book size internal air-cooling incl. DRIVE-CLIQ cable.	6SL3120-1TE32-0AA4	1 No. + 1 No. (EXTRA)
1.43	<b>GLAND PLATE FOR ALM &amp; MMS</b> SINAMICS Shield Connection Sheet for 300 mm Line/Motor Modules.	6SL3162-1AH00-0AA0	2 No's.
1.44	<b>SIGNAL CABLE FOR SPINDLE MOTOR ENCODER</b> Preassembled Signal Cable (DRIVE-CLIQ, MOTION CONNECT 500, Fixed Mounting) to Spindle Motor Encoder from MMS with connector at both ends [RJ45 IP20] / [RJ45 IP67], Length(M)-15.	6FX5002-2DC10-1BF0	1 No.
1.45	<b>AC SERVO MOTOR FOR X1 &amp; X2 AXES,30 Nm</b> SIMOTICS S Synchronous Motor 1FT7, M0=30Nm (100K) NN=1500rpm, PN=4.08kW, naturally cooled, frame size IM B5 (IM V1, IM V3), recessed flange (more compact), Power connector rotatable, Absolute Encoder 24 Bits + 12 Bits multi turn with DRIVE-CLIQ Interface (ENCODER AM-24-DQI), connector rotatable, shaft with fitted key; w/o Holding Brake, Acc. tolerance N, Vibration severity Grade A, Degree of protection IP 64.	1FT7102-5AB70-1CA0	2 No's.

<b>Sl. No.</b>	<b>Description</b>	<b>Type No</b>	<b>Qty.</b>
1.46	<b>MOTOR MODULE FOR X1 &amp; X2 AXES, 18 A (MMX1, MMX2)</b> SINAMICS S120 Single Motor Module Input: DC 600V Output: 3AC 400V, 18A Frame Size: Book size D-type internal air-cooling incl. DRIVE-CLIQ cable.	6SL3120-1TE21-8AD0	2 No's
1.47	<b>POWER CABLE FOR X1 &amp; X2 AXES SERVO MOTOR</b> Preassembled Power Cable (MOTION-CONNECT 800PLUS, Trailing type) to X1 & X2 axes servo motors from MMX with connector at both ends, Length(M)-50.	6FX8002-5CN26-1FA0	2 No's
1.48	<b>SIGNAL CABLE FOR X1 &amp; X2 AXES SERVO MOTOR ENCODER</b> Preassembled Signal Cable (DRIVE-CLIQ, MOTION CONNECT 800PLUS, Trailing type) to X1 & X2 Axis Motor Encoders from MMX with connector at both ends [RJ45 IP20] / [RJ45 IP67], Length(M)-50.	6FX8002-2DC10-1FA0	2 No's.
1.49	<b>SENSOR MODULE CABINET FOR SPINDLE, X1 &amp; X2 AXIS EXTERNAL ENCODERS (SMC20_SP, SMC20_X1 &amp; SMC20_X2)</b> SINAMICS S120 Sensor Module SMC20 Board for evaluation of incremental encoder: Sin/Cos 1Vpp.	6SL3055-0AA00-5BA3	3 No's. + 1 No. (EXTRA)
1.50	<b>DRIVE CLIQ CABLE FOR SMC20_SP FROM MMS, SMC20_X1 &amp; SMC20_X2 FROM MMX</b> Preassembled Signal Cables (DRIVE-CLIQ, MOTION CONNECT 500, Fixed Mounting) to SMC20_SP from MMS & to SMC20_X1 & SMC20_X2 from MMX with connector at both ends [RJ45 IP20] / [RJ45 IP20], Length(M)-1.45.	6SL3060-4AF10-0AA0	3 No's
1.51	<b>SIGNAL CABLE FOR SPINDLE EXTERNAL ENCODER</b> Preassembled Signal Cable (DRIVE-CLIQ, MOTION CONNECT 500, Fixed Mounting) to Spindle External Incremental Rotary Encoder from SMC20_SP with connector at both ends [RJ45 IP20] / [RJ45 IP67], Length(M)-15.	6FX5002-2CG00-1BF0	1 No. + 1 No. (EXTRA)
1.52	<b>SIGNAL CABLE FOR X1 &amp; X2 AXES EXTERNAL ENCODER</b> Preassembled Signal Cable (DRIVE-CLIQ, MOTION CONNECT 800, Fixed Mounting) to X1 & X2 Axis External Absolute Rotary Encoder from SMC20_X1 & SMC20_X2 respectively with connector at both ends [RJ45 IP20] / [RJ45 IP67], Length(M)-50.	6FX8002-2CH00-1FA0	2 No's. + 1 No. (EXTRA)

Sl. No.	Description	Type No	Qty.
1.53	<b>AC SERVO MOTOR FOR Z1 &amp; Z2 AXES,90 Nm.</b> SIMOTICS S Synchronous motor, 1FT7, M0=90Nm (100K), NN=1500rpm, PN=10.5kW, naturally cooled, Power connector rotatable, Frame size IM B5, Conventional flange (1FT6/1FK7 compatible), Absolute Encoder 24 bits + 12-bit multiturn with DRIVE-CLIQ interface (ENCODER AM24DQI), shaft with fitted key, w/o holding brake, acc. tolerance N, vibration severity grade A, Degree of protection IP 64.	1FT7132-5AB71-1CA0	2 No's.
1.54	<b>MOTOR MODULE FOR Z1 &amp; Z2 AXES, 24 A (MMZ1, MMZ2)</b> SINAMICS S120 Single Motor Module Input: DC 600V Output: 3AC 400V, 24A Frame Size: Book size D-type internal air-cooling incl. DRIVE-CLIQ cable.	6SL3120-1TE22-4AD0	2 No's + 1 No. (EXTRA)
1.55	<b>POWER CABLE FOR Z1 &amp; Z2 AXES SERVO MOTOR</b> Preassembled Power Cable (MOTION-CONNECT 800PLUS, Trailing type) to Z1 & Z2 axes servo motors from MMZ1 & MMZ2 respectively with connector at both ends, Length(M)-50.	6FX8002-5CN46-1FA0	2 No's.
1.56	<b>SIGNAL CABLE FOR Z1 &amp; Z2 AXES SERVO MOTOR ENCODER</b> Preassembled Signal Cable (DRIVE-CLIQ, MOTION CONNECT 800PLUS, Trailing type) to Z1 & Z2 Axis Motor Encoders from MMZ1 & MMZ2 respectively with connector at both ends [RJ45 IP20] / [RJ45 IP67], Length(M)-50.	6FX8002-2DC10-1FA0	2 No's.
1.57	<b>AC SERVO MOTOR FOR W1, W2 &amp; W3 AXES,20 Nm</b> SIMOTICS S Synchronous Motor 1FT7, M0=20Nm (100K) NN=2000rpm, PN=3.54kW, naturally cooled, frame size IM B5 (IM V1, IM V3), recessed flange (more compact), Power connector rotatable, Absolute Encoder 22 Bits multi turn with DRIVE-CLIQ Interface (ENCODER AM-22-DQ), connector rotatable, shaft with fitted key; w/o Holding Brake, Acc. tolerance N, Vibration severity Grade A, Degree of protection IP 64.	1FT7084-5AC70-1FA0	3 No's.
1.58	<b>MOTOR MODULE FOR W1, W2 &amp; W3 AXES, 9A (MMW1, MMW2, MMW3)</b> SINAMICS S120 Single Motor Module Input: DC 600V Output: 3AC 400V, 9A Frame Size: Book size D-type internal air-cooling incl. DRIVE-CLIQ cable.	6SL3120-1TE21-0AD0	3 No's. + 1 No. (EXTRA)
1.59	<b>POWER CABLE FOR W1, W2 &amp; W3 AXES SERVO MOTOR</b> Preassembled Power Cable (MOTION-CONNECT 800PLUS, Trailing type) to W1, W2 & W3 axes servo motors from MMW1, MMW2 & MMW3 respectively with connector at both ends, Length(M)-50.	6FX8002-5CN06-1FA0	3 No's.

<b>Sl. No.</b>	<b>Description</b>	<b>Type No</b>	<b>Qty.</b>
1.60	<b>SIGNAL CABLE FOR W1, W2 &amp; W3 AXES SERVO MOTOR</b> Preassembled Signal Cable (DRIVE-CLiQ, MOTION CONNECT 800PLUS, Trailing type) W1, W2 & W3 axes motor encoders from MMW1, MMW2 & MMW3 respectively with connector at both ends [RJ45 IP20] / [RJ45 IP67], Length(M)-50.	6FX8002-2DC10-1FA0	3 No's.
1.61	<b>DRIVE-CLiQ CABLE, 0.16 Meter</b> DRIVE-CLiQ cable (in fixed lengths, fixed mounting) with connector at both ends [RJ45 IP20]/ [RJ45 IP20], Length(M)-0.16	6SL3060-4AD00-0AA0	1 No.
1.62	<b>DRIVE-CLiQ CABLE, 0.21 Meter</b> DRIVE-CLiQ cable (in fixed lengths, fixed mounting) with connector at both ends [RJ45 IP20]/ [RJ45 IP20], Length(M)-0.21	6SL3060-4AF00-0AA0	2 No's.
1.63	<b>DRIVE-CLiQ CABLE, 0.26 Meter</b> DRIVE-CLiQ cable (in fixed lengths, fixed mounting) with connector at both ends [RJ45 IP20]/ [RJ45 IP20], Length(M)-0.26	6SL3060-4AH00-0AA0	1 No.
1.64	<b>DRIVE-CLiQ CABLE, 0.31 Meter</b> DRIVE-CLiQ cable (in fixed lengths, fixed mounting) with connector at both ends [RJ45 IP20]/ [RJ45 IP20], Length(M)-0.31	6SL3060-4AK00-0AA0	1 No.
1.65	<b>DRIVE-CLiQ CABLE, 0.41 Meter</b> DRIVE-CLiQ cable (in fixed lengths, fixed mounting) with connector at both ends [RJ45 IP20]/ [RJ45 IP20], Length(M)-0.31	6SL3060-4AP00-0AA0	1 No.
1.66	<b>DRIVE-CLiQ CABLE, 0.60 Meter</b> DRIVE-CLiQ cable (in fixed lengths, fixed mounting) with connector at both ends [RJ45 IP20]/ [RJ45 IP20], Length(M)-0.60	6SL3060-4AU00-0AA0	5 No's.
1.67	<b>DRIVE-CLiQ CABLE, 0.95 Meter</b> DRIVE-CLiQ cable (in fixed lengths, fixed mounting) with connector at both ends [RJ45 IP20]/ [RJ45 IP20], Length(M)-0.95	6SL3060-4AA10-0AA0	3 No's.
1.68	<b>DRIVE-CLiQ CABLE, 1.2 Meter</b> DRIVE-CLiQ cable (in fixed lengths, fixed mounting) with connector at both ends [RJ45 IP20]/ [RJ45 IP20], Length(M)-1.2	6SL3060-4AW00-0AA0	2 No's.
1.69	<b>DRIVE-CLiQ CABLE, 2.8 Meter</b> DRIVE-CLiQ cable (in fixed lengths, fixed mounting) with connector at both ends [RJ45 IP20]/ [RJ45 IP20], Length(M)-2.80	6SL3060-4AJ20-0AA0	1 No.

<b>Sl. No.</b>	<b>Description</b>	<b>Type No</b>	<b>Qty.</b>
1.70	<b>IE FC TP Standard Cable GP 2 x 2 (Type A),110 Meter</b> Industrial Ethernet FC TP Standard cable, GP 2x2 (PROFINET Type A), TP installation cable for connection to IE FC RJ45 2x2, for universal use, 4-core, shielded CAT 5E, Length(M)-50	6XV1840-2AH10	50
1.71	<b>IE FC TP Trailing Cable 2 x 2 (Type C), 100 Meter</b> Industrial Ethernet FC TP Trailing Cable, 2x2 (PROFINET Type C), TP installation cable for Connection to FC outlet RJ45, for cable carrier applications, 4-core, shielded CAT5, Length(M)-120	6XV1840-3AH10	120
1.72	<b>IE FC RJ45 PLUG 180</b> Industrial Ethernet Fast Connect RJ45 plug 180 2x 2, RJ45 plug-in connector (10/100 Mbit/s) with rugged metal enclosure and FC connection system, for IE FC Cable 2x 2; 180° cable outlet. 1 pack = 10 units	6GK1901-1BB10-2AB0	4 No's
1.73	<b>IE FC RJ45 PLUG 90</b> Industrial Ethernet Fast Connect RJ45 plug 90 2x 2, RJ45 plug-in connector (10/100 Mbit/s) with rugged metal enclosure and FC connection system, for IE FC Cable 2x 2; 90° cable outlet 1 pack = 10 units	6GK1901-1BB20-2AB0	1 No.
1.74	<b>IE FC RJ45 PLUG 145</b> Industrial Ethernet Fast Connect RJ45 plug 145 2x 2, RJ45 plug-in connector (10/100 Mbit/s) with rugged metal enclosure and FC connection system, for IE FC Cable 2x 2; 145° cable outlet 1 pack = 10 units	6GK1901-1BB30-0AB0	1 No.
1.75	<b>IE FC STRIPPING TOOL</b> Preadjusted stripping tool for fast stripping of Industrial Ethernet FC cables	6GK1 901-1GA00	1 No.
1.76	<b>LAPTOP/PG FOR CNC &amp; DRIVES COMMUNICATION</b> Laptop preloaded with all software's along with all the interface cables for the communication of CNC, PLC & Drive systems and should have minimum following system requirements:  i5-8400H (2.5 to 4.2 GHz; 4 kernels + hyper-threading; 8 MB Smart Cache) processor or better, 15.6" display, Full HD (1920x 1080), WLAN 802.11ac & Bluetooth V5.0, DVD +/-RW, UHD Graphics 630 or Equivalent, 16 GB DDR4 SD-RAM, 1 TB SSD, Power adapter with Indian standard plug, Windows 10, 64-bit (Licensed copy of OS have to be provided with Laptop), MS OFFICE and Adobe Reader software's and all other required drivers, 2 No's Gigabit Ethernet (10 / 100 / 1000 MBit) / PROFINET Interface, 2 No's USB 3.0 Type A Interface, 2No's USB 3.1 Gen2 Type A / Type C Interface.  Make- SIEMENS/DELL/HP		1 Set

Sl. No.	Description	Type No	Qty.
1.77	<b>LASER COLOUR PRINTER</b> Standard reputed Laser colour printer compatible with the supplied Laptop/PG along with user manual and printer driver. Make- EPSON/HP/CANON/BROTHER		1 Set
1.78	<b>COMMUNICATION CABLES FROM LAPTOP/PG TO NCU, CU, IPC &amp; OP COMMUNICATION.</b>  All the communication cables required to communicate NCU, CU, IPC & OP with LAPTOP/PG for programming, download/upload back-up Etc.,		1 Set
*2	<b>DOCUMENTATION (HARD COPY)</b>		
2.1	SINUMERIK 840Dsl Universal Operating Manual, English,06/2019 Edition or Latest	A5E44903533B AB	5 Sets
2.2	SINUMERIK 840Dsl Turning Operating Manual, English,06/2019 Edition or Latest	A5E44903486B AB	5 Sets
2.3	SINUMERIK 840Dsl SHOPTURN operation & programming manual, English,01/2008 Edition or Latest	6FC5398-5AP10-2LA0	5 Sets
2.4	SINUMERIK 840Dsl HMI-Advanced Operating Manual, English,01/2008 Edition or Latest	6FC5398-2AP10-3NA0	5 Sets
2.5	SINUMERIK 840Dsl Smart Operation System Manual, English,08/2018 Edition or Latest	6FC5397-7FP40-0BA1	5 Sets
2.6	SINUMERIK 840Dsl SINAMICS S120 Alarms Diagnostics Manual, English,06/2019 Edition or Latest	A5E40869531B AC	5 Sets
2.7	SINUMERIK 840Dsl ISO Turning Programming Manual, English,06/2019 Edition or Latest	A5E47432465B AA	5 Sets
2.8	SINUMERIK 840Dsl Measuring Cycles Programming Manual, English,06/2019 Edition or Latest	A5E44904897B AB	5 Sets
2.9	SINUMERIK 840Dsl NCU 7x0.3B PN Equipment Manual, English,10/2020 Edition or Latest	6FC5397-1EP40-6BA1	5 Sets
2.10	SINUMERIK 840Dsl Commissioning CNC: NC, PLC, Drive Commissioning Manual, English,06/2019 Edition or Latest	A5E44860208B AB	5 Sets
2.11	SINUMERIK 840Dsl CNC: SHOPTURN Commissioning Manual, English,01/2008 Edition or Latest	6FC5397-5AP10-2BA0	5 Sets
2.12	SINUMERIK 840Dsl SINAMICS S120 Machine Data & Parameters List Manual, English,06/2019 Edition or Latest	A5E40870388B AC	5 Sets
2.13	SINUMERIK 840Dsl NC Variables List Manual, English,06/2019 Edition or Latest	A5E40870419B AC	5 Sets
2.14	SINUMERIK 840Dsl System Variables List Manual, English,06/2019 Edition or Latest	A5E40870469B AC	5 Sets



Sl. No.	Description	Type No	Qty.
3	<b>DOCUMENTATION (SOFT COPY)</b> All relevant documentation/ manual collection regarding the selection, programming, commissioning, operating and maintenance of the above CNC and DRIVE package has to be provided in a Pen drive.	(6FC5398-0AC10-1YA6) /Latest and all other relevant documents and manuals in pen drive.	3 No's
4	<b>TRAINING</b> Training for two persons has to be imparted at siemens training center by M/S SIEMENS Ltd. trainer (5 days (minimum) full time) on the following topics: <ul style="list-style-type: none"> <li>Configuring, Operating, Commissioning, NC Programming, PLC Programming &amp; Maintenance of SINUMERIK 840Dsl &amp; SINAMICS S120 system.</li> <li>Installation, Configuring &amp; Commissioning of IPC427E.</li> <li>Basic PLC programming for start-up and M codes creation.</li> <li>Establishing Communication between NCU and CU.</li> <li>Measuring Cycles Programming &amp; Configuring of Tool and Job Measuring Probes for Lathe Machine.</li> <li>PLC Programming to configure ATC/Turret with CNC.</li> <li>Knowledge of various HMI screen development functions like Create &amp; Run my HMI/3GL, Create&amp; Run my HMI/WinCC, Create&amp; Run my HMI/PRO, Run My Screens</li> <li>Extra HMI screens development &amp; configuration using Run my screens.</li> <li>Extra HMI screens development configuration using Create&amp; Run my HMI/WinCC.</li> <li>I/O Module PP 72/48 PN Installation, Configuring and PLC programming using the I/O from the PP72/48 PN I/O Module.</li> <li>Installation &amp; Commissioning of 1FT7 &amp; 1 PH8 Motors through ALM and SINAMICS S120 Motor modules by using SINUCOM, STARTDRIVE &amp; TIA PORTAL /Equivalent software's.</li> <li>Knowledge &amp; Application of various Functions/Options present in SINUMERIK 840Dsl system.</li> <li>ESR (DRIVE-AUTONOMOUS) Function and its application.</li> <li>TRANSMIT AND PERIPHERAL SURFACE TRANSFORMATION Function and its application.</li> <li>Knowledge, Application &amp; usage of SINUMERIK OPERATE &amp; SHOP TURN Software.</li> </ul> <p><b><u>Note: No. of days required for covering all the topics &amp; topics covered day wise has to be mentioned in the submitted offer</u></b></p>		
5	<b>COMMISSIONING</b> Commissioning and testing of complete CNC & DRIVE package in CNC Center Lathe Machine on no load and full load condition at hmtp and customer's premises (MSF, ISHAPORE).		



### **Supply Pre Qualifying Criteria.**

#### **Bidder's Scope :**

- i) The Bidder/Supplier/Party should be either OEM or their valid authorised Industrial channel Partner/Manufacturer/Ancillary/Dealer towards either exclusively for this tender or open to all tenders for which valid documents is to be produced at the time of submission of offer.
- ii) The Bidder/Supplier/Party shall furnish the detail catalogue of the product for which technical specification is required.
- iii) The Bidder/Supplier/Party should submit the similar product supply proof either supplied to Government, CPSE's, State PSU or any other reputed firm/agencies in the last five years.
- iv) The Bidder/Supplier/Party should submit at least one satisfactory report of a similar product received from Government, CPSE's, State PSU or any other reputed firm/agencies in the last five years.
- v) At the time of delivery of material the successful bidder should submit 03 sets of drawing as well as instruction manual.
- vi) Pre-dispatch inspection call to be provided. In case of pre-dispatch Inspection waiver the same has to be carried out at the destination jointly within one week from receipt of material.
- vii) At the time of delivery of consignment the bidder should submit the OEM product test certificate OR Govt. approved Laboratory Test Certificate.
- viii) The Bidder/supplier/party should have satisfactorily supplied the same or similar product as mentioned below during the last seven years ending previous day of the last date of submission of the bill.
  - a) Three similar supplied items average costing not less than the amount equal to 40% of the estimated cost of last 5 years to any Govt./State Govt./Semi Govt./Institution/ Reputed Firm.  
OR
  - b) Two similar supplied items average costing not less than the amount equal to 50% of the estimated cost of last 5 years to any Govt./State Govt./Semi Govt./Institution/ Reputed Firm.  
OR
  - c) One similar supplied item average costing not less than the amount to 80% of the estimated cost of last 5 years to any Govt./State Govt./Semi Govt./Institution/ Reputed Firm.
  - d) Definition of "similar item" should be clearly defined.
- ix) Average annual financial turnover during the last 5 years ending 31<sup>st</sup> March of the previous financial year, should be atleast 30% of the estimated cost.
- x) The bidder/supplier/party should have average solvency of approx 38%.
- xi) The bidder/supplier/party should provide net worth certificate of the Organization duly issued by certified Chartered Accountant (CA).
- xii) The bidder/supplier/party should have valid MSME/SSI/NSIC as applicable .
- xiii) The bidder/supplier/party should have valid registration of GST or any other valid statutory document.
- xiv) The bidder/supplier/party can submit the offer item wise.
- xv) The Organization reserves the right to reject any prospective application without assigning any reason and to restrict the list of qualified bidder/supplier/party to any number deemed suitable by it, if too many bids are received satisfying the laid down criterion.
- xvi) After awarding LOI/PO , within a week time , the respective drawing has to be provided to the organization for checking/correction/vetting & subsequent approval as applicable .
- xvii) The bidder/supplier/party not to disclose drawings to any other agency without prior approval from the concerned department/authority.
- xviii) The organization shall never compromise with the quality and for which genuineness of material certificate shall be produced (ie. raw material test certificate and its source) etc as applicable .

- xix) No deviation is permissible without prior approval.
- xx) The bid submitted shall become invalid if :
- 1) The bidder/supplier/party is found ineligible.
  - 2) The bidder/supplier/party does not deposit original EMD to the office of I/C-(MM).
  - 3) The bidder/supplier/party does not attach/upload/enclose all the documents **(including GST registration)** as stipulated in the bid document **including the scan copy of the EMD .**
  - 4) The copy of above documents (Sl.No. (i) to (xviii) of PQC) and the duly signed Pre-Qualification document along with earnest money deposit receipt shall not be uploaded.
- xxi) Canvassing whether directly or indirectly, in connection with bidders is strictly prohibited and the bids submitted by the contractors who resort to canvassing will be liable for rejection.
- xxii) No PQC document will be generated after Tender closing date.
- xxiii) If any PQC document is found ingenuine at the time of verification, the corresponding bid will not be entertained for consideration, rather, action may be taken as per Company Act.
- xxiv) List of Documents to be scanned and uploaded within the period of bid submission:
- 1) Enlistment Order of the Contractor in appropriate class/category if any
  - 2) Demand Draft/ Pay Order or Banker's Cheque / Deposit at call Receipt/  
Bank Guarantee of any scheduled Bank against EMD (All drawn in favour of the Heavy Engineering Corporation Ltd., Ranchi).
  - 3) Photocopy/scan copy of original EMD /MSME certificate of valid class & category has to be submitted in hard copy. (EMD exemption is allowed for the MSME registered firms (as on last date of submission of bid) having valid registration of the required class of work.
  - 4) Certificate of Incorporation.
  - 5) Certificate of Registration of GST/TDS and any other statutory documents.
  - 6) Any other document as required during analysis of tender about the short comings.