

Annexure-I

SECIFICATIONS FOR EOI OF PROPOSED CNC TURN MILL CENTRE

(Specification Number: **TXM/5ATMC/2023-24-04**)

PURPOSE: Traction Division of BHEL Bhopal requires 1 Nos of 5- Axis High Speed and High Precision CNC Turn Mill Center for Machining of Vande Bharat Components of Traction Motor. The Prospective vendors to provide latest, economical and productive solution, prevalent in the market.


MATERIAL OF THE COMPONENT TO BE MACHINED: Carbon Steel (IS AA19512 OR IS AA10122), Alloy Steel SG Iron (IS AA19721).


MACHINE TYPE: 5-Axis High Speed and High Precision CNC Turn Mill Center


TECHNICAL AND PRE-QUALIFICATION REQUIREMENT (PQR)

Clause No.	Description	Requirement
(A) TECHNICAL REQUIREMENT		
1	5 Axis High Speed and High precision CNC Turn Mill Centre with Main Spindle, Sub Spindle and Steady Rest with controlled axis for continuous positioning and simultaneous machining with accessories. The Machine should be designed for performing 5 axis continuous positioning and simultaneous machining operation Turning, Boring, facing, Milling, Deep hole Drilling, Threading, Grooving operation on high precision tool gauges, jigs & fixtures in soft condition as well as in Hard Condition upto 60 HRC in Single setting .	
1.1	A universal head for Turning, Boring, Milling	Vendor to Confirm and provide detail
1.2	Distances between centre should be 2000mm or more	Vendor to Confirm and provide detail
1.3	Maximum Turning length should be 1800mm or more	Vendor to Confirm and provide detail
1.4	Maximum Turning Diameter should be 600mm or more	Vendor to Confirm and provide detail
1.5	Weight Carrying Capacity of main spindle and sub-spindle should be 500 Kg (each) or more	Vendor to Confirm and provide detail
1.6	Machine should have interpolation turning i.e. circle interpolation of universal head in X and Y Axis.	Vendor to Confirm and provide detail


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1.7	Machine should have tool diameter and length measuring system with the machine for all tools required. For Turning, Boring, facing, Milling, Deep hole drilling, Threading, Grooving operation.	Vendor to Confirm and provide detail
1.8	Machine should have in process Measurement facility	Vendor to Confirm and provide detail
1.9	Machine should have Coolant system, both specific(through spindle) and splash type with suitable chilling, recirculation of coolant and filtration system.	Vendor to Confirm and provide detail
1.10	Machine should have proper Lubrication system	Vendor to Confirm and provide detail
1.11	Machine should have latest version of CNC control system (Seimens/fanuc only)	Vendor to Confirm and provide detail
1.12	Machine should have Automatic Tool Changer with capacity of 40 nos tools or more	Vendor to Confirm and provide detail
1.13	Machine should have Dialogue Guided programming	Vendor to Confirm and provide detail
1.14	Machine should have integrated filtration System for small chips >5micron	Vendor to Confirm and provide detail
1.15	Sub spindle should be able to travel for picking up components from the main spindle without disturbing concentricity.	Vendor to Confirm and provide detail
1.16	Complete Machining of components without process interruptions on offered machine with Sub spindle. Tailstock function for the sub spindle including suitable switch	Vendor to Confirm and provide detail
1.17	Machine must be offered in tooled up condition for component. Relevant drawings shall be shared with the perspective vendors in person (visit of the vendors to understand our requirement is advised)	Vendor to Confirm and provide detail
1.18	Machine shall be able to operate in 3 shift continuous basis.	Vendor to confirm
2	<u>CONSTRUCTIONAL DETAILS</u>	
2.1	Machine configuration : Vendor to specify the configuration of the machine	Vendor to specify
2.2	Whether the main assemblies / sub-assemblies of the machine are made of Cast Iron/ Polymer concrete/ suitable material.	Vendor to specify
2.3	Vendor to submit complete technical specifications / details of the major assemblies / sub-assemblies of the machine such	Vendor to specify

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	as constructional details and accuracy. Any special attachment, tooling and other relevant/necessary data pertaining to the machine also to be specified.	
2.4	Details of CNC/PLC/Drives/Motors offered (Acceptable makes Siemens / Fanuc).	Vendor to specify
(B) PRE-QUALIFICATION REQUIREMENT (PQR) : Vendor must submit complete information against Clause No.3 . Offers not meeting this clause would not be considered.		
3	QUALIFYING CONDITIONS :	
3.1	The supplier/ vendor should be either an Original Equipment Manufacturer (OEM) or an authorized Dealer of the OEM for the offered machine . Along with the offer, dealers have to submit a valid certificate of Authorization from OEM for quoting the machine . Vendor should submit proof of the same.	Vendor to confirm
3.2	The OEM or the authorized dealer of the OEM must have supplied at least ONE machine of the OEM make of same or higher capabilities suitable to machine jobs as specified in Clause 1.1 to 1.5 in the past 10 years (as on the date of opening of Tender).	Vendor to confirm
3.3	Copy of Purchase Order (PO) in the name of OEM or the authorized dealer of the OEM for machine as per clause 3.2 is to be submitted along with the offer. The type, make and model of the machine should be clearly mentioned in the PO copy. Vendor should submit proof of the same.	Vendor to confirm
(C) OTHER QUALIFICATION REQUIREMENTS (TO BE NECESSARILY SUBMITTED AT THE TIME OF FINAL TENDERING)		
4.1	Authorized Dealer of the OEM shall be required to submit the declaration for support from OEM for Erection & Commissioning, after sales service & necessary spares support for minimum of 10 years from the date of commissioning . In addition to the above, a back-to-back guarantee from OEM for performance of the machine is also required.	Vendor to note

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4.2	<p>The machine referred in Clause 3.2 should be working satisfactorily for more than one year after commissioning (on the date of opening of Tender).</p> <p>Note: Vendor to indicate clearly the Purchase Order (PO) Number, PO Date and Date of Commissioning of the machine on the performance certificate or submit relevant document such as PO copy and commissioning certificate for correlation of above.</p>	Vendor to note
4.3	<p>Vendors should necessarily furnish following details about the companies where they have supplied the machine for which they are submitting the documents in order to fulfil qualifying criteria as mentioned in clause 3:</p> <p>A) Name of the customer/company. B) Complete postal address. C) Broad parameters of the machine and application. D) Name & designation of contact person. E) Phone, Mobile & E-mail address of the contact person.</p>	Vendor to note
4.4	<p>Financial PQC:</p> <p>Vendor should have minimum average turnover of Rs.800 lakhs for the last 3 consecutive years ending March 2023.</p> <p>Vendor to submit Profit & Loss Account Statement of last three consecutive years ending march 2023 as documentary evidence for the same.</p> <p>For Micro & Small Enterprises (MSE) & Start-Up Vendors who are OEM, no Financial PQR criteria is required. However, if they are quoting as authorised dealer of OEM then either OEM or the concerned MSE & Start-up vendor should necessarily qualify the financial PQC as mentioned above.</p>	Vendor to note
4.5	<p>Bidder shall not be under a" Declaration of Ineligibility for corrupt or fraudulent practices or blacklisted with any of the State, Central Government/Public Enterprises"</p>	Vendor to confirm
(D) MAKE IN INDIA (MII) CONTENT		

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5	Vendor to mention the Make In India content (Value addition in India) of the offered machine in percentage (%). Details to be submitted.	Vendor to specify
(E) MISCELLANEOUS		
6.1	Potential vendors can visit to BHEL works on prior appointment for any clarification & discussion about our requirement.	Vendor to note
6.2	BHEL reserves the right to verify information provided by the Vendor at their referred customer's works including machining accuracies (For the machine mentioned in qualifying criteria). It shall be the responsibility of the vendor to facilitate the visit of BHEL's team at their referred customer works. In case the information provided by vendor is found to be false / incorrect, the offer shall be rejected.	Vendor to note
6.3	BHEL reserves the right to assess the OEM or the authorized Dealer of the OEM, with respect to their technical and financial capability (As per the information provided in clauses 3.1 to 3.3).	Vendor to note

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