

**SECIFICATIONS FOR EOI OF PROPOSED CNC VERTICAL BORING MACHINE**

(Specification Number: **TEX/EOI/CNC-V. BORING/2021/01**)

**PURPOSE:** Turning of Hydro generator and Industrial Electrical Motors components.

**MATERIAL OF THE COMPONENT TO BE MACHINED:** Alloy Steel, Forged steel, Stainless steel AISI 304 /405 & Mild steel; Material Hardness: Upto 250 HB.

**DRAWING REFERENCES:** The machine should be capable of performing machining operations as per the sketches attached in Annexure-2.

**MACHINE TYPE: CNC Vertical Boring Machine**

**TECHNICAL AND PRE-QUALIFICATION REQUIREMENT (PQR)**

Clause No.	Description	Requirement
<b>(A) TECHNICAL REQUIREMENT</b>		
1	<b><u>JOB DIMENSIONS</u></b>	
1.1	Maximum Turning Diameter of the Job	4443 mm
1.2	Maximum Height of the Job	3250 mm
1.3	Minimum Diameter of the Job	340 mm
1.4	Maximum Weight of the Job	36 Tons
1.5	Presence of machining operations with intermittent Cuts	YES
2	<b><u>DETAILS OF ACCURACIES REQUIRED TO BE ACHIEVED ON THE MACHINED COMPONENTS</u></b>	
2.1	Runout	0.05 mm
2.2	Concentricity	0.02 mm
2.3	Perpendicularity	0.03 mm
2.4	Parallelism	0.05 mm
2.5	Dimensional tolerance on diameter (Approximate 460 mm)	0.021 mm

3	<b><u>SURFACE FINISH REQUIRED ON THE JOB</u></b>	
3.1	Surface finish required on the job using Grinding operation	0.4 RA
3.2	Surface finish required on the job without Grinding operation	1.6 RA
4	<b><u>CONSTRUCTIONAL DETAILS</u></b>	
4.1	<b>Machine configuration :</b> Vendor to specify the configuration of the machine ( <b>Single column</b> Or <b>Double column</b> construction)	Vendor to specify
4.2	Whether the main assemblies / sub-assemblies of the machine are made of <b>Cast Iron</b> .	Vendor to specify
4.3	Vendor to submit complete technical specifications / details of the major assemblies / sub-assemblies of the machine such as constructional details and accuracy. Any special attachment, tooling and other relevant/necessary data pertaining to the machine also to be specified.	Vendor to specify
4.4	Details of CNC/PLC/Drives/Motors offered (Acceptable makes Siemens / Fanuc).	Vendor to specify
<b>(B) PRE-QUALIFICATION REQUIREMENT (PQR) :</b> Vendor must submit complete information against <b>Clause No.5</b> . Offers not meeting this clause would not be considered.		
5	<b>QUALIFYING CONDITIONS :</b>	
5.1	The supplier/ <b>vendor</b> should be either an Original Equipment Manufacturer (OEM) or an authorized Dealer of the OEM for the offered <b>machine</b> . Along with the offer, dealers have to submit a valid certificate of Authorization from OEM for quoting the <b>machine</b> . Vendor should submit proof of the same.	Vendor to confirm
5.2	The OEM or the authorized dealer of the OEM must have supplied <b>at least ONE machine</b> of the OEM make of same or higher capabilities suitable to machine jobs as specified in Clause 1 & accuracies <b>as per</b> Clause 2 in the past 10 years (on the date of opening of Tender).	Vendor to confirm
5.3	Copy of Purchase Order (PO) in the name of OEM or the authorized dealer of the OEM for machine as per <b>clause 5.2</b> is to be submitted along with the offer. The type, make and	Vendor to confirm

	model of the machine should be clearly mentioned in the PO copy. Vendor should submit proof of the same.	
<b>(C) OTHER QUALIFICATION REQUIREMENTS (TO BE NECESSARILY SUBMITTED AT THE TIME OF FINAL TENDERING)</b>		
6.1	Authorized Dealer of the OEM shall be required to submit the <b>declaration for support</b> from OEM for Erection & Commissioning, after sales service & necessary spares support for <b>minimum of 5 years from the date of commissioning</b> . In addition to the above, a back-to-back guarantee from OEM for performance of the machine is also required.	Vendor to note
6.2	<p>The machine referred in <b>Clause 5.2</b> should be working satisfactorily for more than one year after commissioning (on the date of opening of Tender).</p> <p>The Performance Certificate submitted should be recently issued (i.e. its date of issue should not be more than <b>1 year</b> old from the tender opening date) from the customers regarding satisfactory performance of the machine supplied to them vide the Purchase Order as per <b>clause 5.3</b>.</p> <p><b>Note:</b> Vendor to indicate clearly the Purchase Order (PO) Number, PO Date and Date of Commissioning of the machine on the performance certificate.</p>	Vendor to note
6.3	<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 <b>clause 5</b>:</p> <ul style="list-style-type: none"> <li>A) Name of the customer/company.</li> <li>B) Complete postal address.</li> <li>C) Broad parameters of the machine and application.</li> <li>D) Name &amp; designation of contact person.</li> <li>E) Phone, Mobile &amp; E-mail address of the contact person.</li> </ul>	Vendor to note

6.4	<p><b><u>Financial PQC:</u></b></p> <p>Vendor should have minimum average turnover of Rs.400 lakhs for the last 3 consecutive years ending March 2021.</p> <p>Vendor to submit Profit &amp; Loss Account Statement of last three consecutive years ending march 2021 as documentary evidence for the same.</p> <p>For Micro &amp; Small Enterprises (MSE) &amp; Start-Up Vendors <b>who are OEM</b>, no Financial <b>PQR</b> criteria is required. <b>However, if they are quoting as authorised dealer of OEM then either OEM or the concerned MSE &amp; Start-up vendor should necessarily qualify the financial PQC as mentioned above.</b></p>	Vendor to note
<b>(D) MAKE IN INDIA (MII) CONTENT</b>		
7	Vendor to mention the Make In India content (Value addition in India) of the offered machine in percentage (%). <b>Details to be submitted.</b>	Vendor to specify
<b>(E) MISCELLANEOUS</b>		
8.1	<p>The sample sketches (Annexure 2) (i) Upper Bracket (ii) Thrust collar and runner disc assembly (iii) Stator frame assly (iv) Combined stator frame welding and machining (v) AME/SK/41379 (vi) Sketch for top shaft machining (vii) Sketch for bottom bracket centre assly ( m/c) are enclosed for the purpose of clarity of requirement to potential bidders.</p> <p>These sketches are for the purpose of explanation of extreme machining dimensions only.</p> <p>These sketches are confidential in nature and must not be used directly or indirectly in any way detrimental to the interest of BHEL.</p>	Vendor to note
8.2	Potential vendors can visit to BHEL works on prior appointment for any clarification & discussion about our requirement.	Vendor to note
8.3	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 note

	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, <b>the offer shall be rejected.</b>	
8.4	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 <b>clauses 5.1 to 5.3</b> ).	Vendor to note