

**Expression of Interest (EOI) - Conventional External Grinding Machine**

**EOI-2022-23/03 Date 04.11.2022**

PURPOSE: Traction division of BHEL-Bhopal requires Conventional External Grinding machine for the External grinding of motor shafts in general and 6FRA motor shafts in particular. The finish machine drawing for the shaft is attached for greater understanding and for providing latest, economical and productive solution, prevalent in the market.

The general machining parameters as per our past experience and requirements are tabulated below. The dimensions are indicative in nature, vendor is free to provide better solutions to address the machining issues. Productivity and quality shall be the sole guiding light for selection of the machine.


In the light of above and with reference to the following technical details we express our intent to buy a Conventional External grinding machine, to solve our specific problem. It shall enable us to seek the solutions available in current market scenario.

S.No	Technical Head	Remarks
01	Bed-1500mm(Clear)	Vendor to Confirm
02	Bed Swivel: +/-15 degree	Vendor to Confirm
03	Job Requirements : Holding dia max -250mm,Min-50mm	Vendor to Confirm
04	Both ends MT-5	Vendor to Confirm
05	Wheel dia -Suitable	Vendor to Specify
06	Maximum Weight of the job -250Kg	Vendor to Confirm
07	Tailstock Hydraulic	Vendor to Confirm
08	Dressing, multiple point dresser	Vendor to Confirm
09	Spindle bearing based meeting our accuracy levels.	Vendor to Confirm
10	Steady rest ,roller bearing type,02 number	Vendor to Confirm
11	Two types of Four jaw independent chuck ,suiting the jobs and offered machine , chuck size	Vendor to Confirm
12	Taper and runout under 5 micron	Vendor to Confirm
13	Surface finish: Up to 0.4 Ra $\mu$ m / N5 as per IS:3073	Vendor to Confirm
14	Tolerance on diameters: +/- 0.0025mm	Vendor to Confirm
15	Vendor shall provide PLC and HMI/SCADA based system	Vendor to Confirm
16	Work Piece Material: Carbon Steel, Alloy Steel, Stainless Steel, etc. (Hardness and other characteristic are as under) Work piece material: ABB 6FRA Shaft is Chrome Molybdenum steel conform to DIN EN 10083-1, grade 30CrNiMo8 (material No.1.6580), Hardness value range is 270 to 320HBS.	Vendor to Note
17	This machine is to be used for external grinding of shafts, Shafts made of Forged steel.	Vendor to Note
18	For External grinding, provision of attaching the centre on the chuck or on spindle.	Vendor to Confirm

  
(R.K.Gupta)

Convenor

**DTC Members:**

  
(Manoranjan Thakur)

Mgr/TXM

  
(Pushpendra Singh)

Dy.Mgr/EMX

  
(Jayant Hirwane)

Dy.Mgr/ELX

  
(Prakash Yadav)


Dy.Mgr./FNX

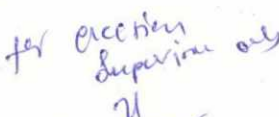
  
(Rishikant Singh)

Dy.Mgr/TXM

  
(Harsh Maurya)

Dy.Mgr/FCX

  
(Rahul Chaudhry)  
mgr/TME

  
(Amit Kachhawa)

Mgr/CMX

**Table -2 Pre-Qualifying Conditions (PQC)**

S No.	Pre-Qualifying Conditions	Remarks
01	The vendor must be either an Original Equipment Manufacturer (OEM) or its Authorised Agent for offered equipment. The product 's ultimate guarantee shall wrest with the OEM and not its authorised agent.	Vendor to comply
02	However, such Indian machine tool vendors(OEMs) who do not meet specified qualifying conditions can quote if they have running collaborations/joint ventures/joint working arrangements for manufacture of Conventional/CNC External Grinding Machine (cylindrical, noncircular, centreless and eccentric grinding), CNC/Conventional universal grinding machine of same or higher sizes (for accommodation of job size Length 1500mm, OD dia 250 mm). With foreign machine tool manufacturers who meets specified qualifying conditions, such Indian machine tool vendors (OEMs) shall have to submit from their Foreign partner a back to back guarantee for satisfactory performance of the offered machine and the JV documents /Collaboration Certificate or letter.in compliance to all specified tender requirements.	Vendor to confirm and furnish details
03	The OEM, Indian machine tool vendors (OEMs must have supplied at least One Conventional/CNC External Grinding machine of type -(cylindrical, noncircular, centreless and eccentric grinding/Universal grinding CNC/Conventional of same or higher size (for accommodation of job size Length 1500mm, OD dia 250 mm) in past 7 years (from the date of opening of EOI) & such machine is presently working satisfactorily for more than one year after commissioning (on date of opening of EOI). 1) Successful commissioning certificates for the machines to be furnished by the party. 2) Performance certificate/feedback from the customers regarding satisfactory performance of machine supplied to them. 3) Copy of purchase order to be submitted along with offer 4) The item, type, make and model number should be clearly mentioned in the PO copy. 5) BHEL reserve the right on their own discretion to cross examine/verification of above documents submitted by the vendors, physical assessment also at the place where machine is installed. The vendor shall make necessary arrangement for gate passes and coordinate all the technical queries related to the enquiry.	Vendor to comply
04	Make In India content to be specified by the supplier in terms of %.	Vendor to specify
05	Two shaft drawings 1439418001 and 04454564051 are attached for getting fair idea about the nature of machining expected.	Vendor to note

**NOTE:**

- 1) Component Drawing is for purpose of clarity/ understanding of machining requirement only. Drawings are intellectual property of BHEL and are confidential in nature, it cannot be reproduced or redistributed for any other purpose to potential bidders.
- 2) Potential Vendors are advised and encouraged to visit BHEL's shop floor for any clarification, discussion & to have more idea about our machining requirement.
- 3) Vendor to submit complete technical specification such as machine configuration (spindle, traverse, feeds & drive system), constructional details, accuracy, any special attachment, tooling and any other relevant/ necessary data pertaining to machine.
- 4) Vendor to submit details of operation & control system, features etc
- 5) Vendor to submit tentative layout drawing and Approximate gross weight of complete machine during budgetary stage itself. The information shall be used for budgeting and civil estimate for easy approval from the authority.
- 6) After placement of order, Vendor shall submit the GA Drawings along with necessary reports for getting BHEL'S approval. Vendor shall also submit details civil foundation drawing, mentioning the details of concrete and reinforcement for construction. BHEL shall construct complete foundation. Vendor should arrange equipment required for the testing of foundation, if required by the vendor. The vendor shall also indicate detailed specifications of grouting compound and Grouting procedure, etc.
- 7) Offers of only those vendors who qualifies PQC as mentioned in **Table-2** will be evaluated.

**DTC Members:**

(Manoranjan Thakur)

Mgr/TXM

(Rishikant Singh)

Dy.Mgr/TXM

(Pushpendra Singh)

Dy.Mgr/EMX

(Harsh Maurya)

Dy.Mgr/FCX

(Jayant Hirwane)

Dy.Mgr/ELX

(Rahul chaudhry)

Mgr/TME

(Prakash Yadav)

Dy.Mgr./FNX

(Amit Kachhwaha)

Mgr/CMX

Convenor

for action supervision  
only