



Bharat Heavy Electricals Limited

(High Pressure Boiler Plant)

Tiruchirappalli – 620014, TAMIL NADU, INDIA

MATERIALS MANAGEMENT / CAPITAL EQUIPMENT

An ISO 9001
Company

ENQUIRY	Phone: +91 431 257 76 53
NOTICE INVITING TENDER	Fax : +91 431 252 00 31
	Email : skaruna@bheltry.co.in
	Web : www.bhel.com

TWO PART BID	Enquiry Number: 2621400025	Enquiry Date: 08.05.2014	Due date for submission of quotation: 06.06.2014
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You are requested to quote the Enquiry number date and due date in all your correspondences. This is only a request for quotation and not an order.
Please note that under any circumstances both delayed offer and late offers will not be considered. Hence vendors are requested to ensure that the offer is reaching physically our office before 14.00 hrs on the Date of tender opening.

S. No	Description	Qty
10	Portable Tube I.D Boring Machine as per the Technical Specification, General Guidelines Instructions & Compliance Form for Commercial Conditions applicable (to be downloaded from web site www.bhel.com or http://tenders.gov.in)	02 Nos.

Important points to be taken care during submission of offer:-

1. Compliance Form No. TRY/IND 06 as applicable to the vendor to be filled in and enclosed along with the offer failing which, their offer will not be considered for evaluation.
2. EMD for this Tender will be Rs. 1,00,000/-.

All updates, amendments, corrigenda etc (if any) will be posted only on the above websites from time to time, as and when required, until tender is opened. There will be no publication of such updates, amendments corrigenda etc. Through newspapers or any other media. BHEL commercial terms & conditions with Price Bid and Bank Guarantee formats can be downloaded from BHEL web site <http://www.bhel.com> or from the Government tender website <http://tenders.gov.in> (public sector units) Bharat Heavy Electricals Limited page) under Enquiry reference above .

<p>Tenders should reach us before 14:00 hours on the due date. Tenders will be opened at 14:30 hours on the due date Tenders would be opened in presence of the tenderers who have submitted their offers and who may like to be present</p>	<p>Yours faithfully, For BHARAT HEAVY ELECTRICALS LIMITED</p> <p>Engineer / MM / Capital Equipment</p>
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PORTABLE TUBE ID BORING MACHINE

PART - A

S.No	BHEL Specification	Vendor's Offer
1.0	QUALIFYING CRITERIA	
1.1	The BIDDER / VENDOR (OEM) should have at least FIVE Years of Continuous Experience in the Design, Manufacture & Supply of Special Purpose / Custom Built Electrically operated portable small boring machines for metal working.	
1.2	Number of Electrically operated Portable small boring machines manufactured and supplied by the BIDDER / VENDOR in the last five years.	
1.3	Only those vendors (OEMs), who have supplied and commissioned at least TWO numbers of Electrically operated portable small boring machines , during the last five years and such supplied machine is presently working satisfactorily for at least one year after commissioning (as on original date of Tender opening) should quote. Vendor has to provide supporting document to establish this.	
1.4	Weight and Power of the supplied machines referred in 1.3 should be about 100 Kgs and above 1000 watts respectively. Vendor to provide supporting document.	
1.5	Vendor has to submit proof or Performance feedback from their customers, for supply and commissioning one Electrically operated portable small boring machine referred in 1.3 and 1.4 above. Performance feedback is preferred. For obtaining the Performance feedback, a suggestive format is provided at the end of Part A.	
1.6	BHEL reserves the right to verify the information provided by vendor. In case the information provided by vendor is found to be false/ incorrect, the offer shall be rejected.	

2.0	INFORMATION TO BE PROVIDED BY VENDOR	
2.1	The BIDDER / VENDOR to furnish Reference List of Customers (Limited to a maximum of ten Customers to whom latest supplies were effected), with full address, details of contact person, where Special Purpose / Custom Built Electrically operated portable small boring machines (for metal working) have been supplied in the past.	
2.2	Details of Special Purpose / Custom Built Electrically operated portable small boring machines for metal working supplied to other BHEL units, if any. (Year of commissioning, Application, Type)	
2.3	Details on SERVICE-AFTER-SALES set-up in India including the Address of Agents / Service Centres in India.	
2.4	Any Additional Data to supplement the manufacturing capability of the BIDDER for the subject equipment.	

Suggestive Format of Performance Certificate:

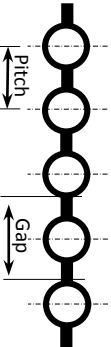
The performance certificate should be produced **on Customer's Letter Head**.

PERFORMANCE CERTIFICATE

1	Supplier of the machine	
2	Make & Model of the M/C	
3	Month & Year of Commissioning	
4	Application for which M/C is used	
5	a. Minimum Boring dia in mm b. Maximum stroke of Boring in mm c. Weight of the machine d. Output power of machine in KW	
6	Performance of the Machine (Strike off whichever is not applicable)	Satisfactory / Not Satisfactory
7	After sales service (Strike off whichever is not applicable)	Satisfactory / Not Satisfactory
8	Any Other remarks	
Date:		Signature & Seal of the Authority Issuing the Performance Certificate

SPECIFICATION FOR PORTABLE TUBE ID BORING MACHINE

PART - B

S.No	Description	BHEL Specification	Vendors Offer
1.0	Application	<p>Long tubes of about 15 metre length is welded to form Boiler wall panels to a width of about 2.5 metres. These panels are formed by welding tubes and flat fins alternatively as shown in 2.1 below. The panel ends are trimmed to maintain length by abrasive cutting operation. After cutting, existing inside dia 16.1 mm / 16.3 mm of these tubes are to be enlarged by drilling / boring to 20 mm diameter for a depth of 80 mm from the face of the tubes. A suitable Electrically operated portable Tube ID Boring machine is required for this operation. The panels will be placed on steel structural stands at a height of about 1 metre from shop floor level while boring. One hole will be bored at a time.</p>	Vendor to Confirm
2.0 Job Details			
2.1	Job Configuration	<p>Tubes welded into flat panels with fins between tubes.</p> 	Vendor to Confirm
2.2	Tube OD x Thickness	<p>a. 38.1 mm x 11 mm (Tube ID = 16.1 mm) b. 41.3 mm x 12.5 mm (Tube ID = 16.3 mm)</p>	
2.3	Pitch between tube centres	<p>a. 50.8 mm for 38.1mm tube dia b. 52 or 54 mm for 41.3 tube dia</p>	
2.4	Gap	Minimum Gap shall be assumed as 61 mm (38.1+ 2x 11.5 mm)	
2.5	Machining required	<p>The above tube's ID has to be bored to Diameter 20 mm for a depth of 80 mm from face of the tubes.</p>	
2.6	Tube Material:	<p>Carbon Steel: SA 192, SA 209 Gr T1, SA 210 Gr A1/ Gr. C (ASTM) Alloy Steel: SA 213 Gr.T2, T11, T12, T22, T91,T92 (ASTM)</p>	

S.No	Description	BHEL Specification	Vendor's Offer
2.7	Tube End Condition	The tube ends may be harder due to alloying elements present in the tube and heat generated by abrasive cutting.	Vendor to confirm
3.0	Cutting Tools & Tool Holders		
3.1	Cutting Tool	Suitable type of boring tool and Tool holder shall be designed and supplied by the vendor for drilling / boring to a diameter 20 mm and depth not less than 80 mm from the face of tube. Boring Tools: 20 Nos Tool holder : 2 Nos	Vendor to confirm
3.2	Cutting speed and finish	The machine shall be offered with suitable cutting speed for the application specified. The finish obtained by boring shall be very smooth in the order of 3.2 microns	Vendor to specify

4.0	Machine Configuration & Parameters:		
4.1	Machine Type	Portable and Electrically operated.	Vendor to Confirm
4.2	Power supply	230 V +/- 10%, 50 Hz +/-3 Hz, Single Phase AC Supply, through a 3-Wire System (3rd wire for protective earthing).	
4.3	Power Cable	15 meters long input power cable with suitable end connector for 3-Pin Socket (Indian standard).	
4.4	Construction	The Machine shall be of compact design, portable and rigid. Proper materials shall be used for manufacturing critical parts of the machine such as gears, spindle, clamps, wearing parts etc. and they shall have the required hardness and finish for better performance. Vendor to provide details of the offered machine and parts.	Vendor to describe
4.5	Electric Motor Power	Not less than 1200W. Compact sleek motors should be used.	Vendor to Confirm
4.6	Spindle Torque	Sufficient torque shall be available at the spindle for the specified application.	Vendor to specify

BHEL Specification			Vendor's Offer
S.No	Description		
4.7	Tool Feed (manual)	Manual smooth tool feeding shall be effected through a lead screw rod and nut, Hand Wheel / handle without reverse load / Back force. The operator should be able to give feed effortlessly.	Vendor to Confirm
4.8	Spindle Stroke	The machine shall be designed with sufficient spindle stroke / toll holder travel in order to attain the required bore depth of 80 mm. Spindle should be wobble free at maximum stroke position during metal cutting.	Vendor to Confirm
4.9	Tool Holder load speed	Around 125 to 175 RPM. Vendor to specify the right speed at no load and at load for the considered motor power.	Vendor to specify
5.0	Hook for suspension	A suitable Lifting Hook shall be provided on top of the machine such that the machine is in equilibrium for handling / operation. This hook will be used for loading the machine in the plane of the panel and after clamping the machine is to be held only by clamps and not through hook support.	Vendor to Confirm
5.1	Machine Weight	The total weight of the machine assembly including motor, guide ways/ guide rods, clamping system, manual feed system etc. shall not exceed 50 Kg.	Vendor to Confirm
5.2	Machine Clamping	Clamping of the Machine shall be on Outside surface of Tube by mechanical arrangement with a locking lever. The clamping force shall be sufficient and rigid enough to hold the tube without slipping while machining. Vendor to specify the clamping force and length of the V clamps.	Vendor to Confirm
5.3	Tube Centring	Upon clamping, the tube centre line has to be coaxial with the spindle centre line.	Vendor to Confirm
5.4	Machine Spindle	The spindle shall be Hardened and Ground. Vendor to confirm and specify the spindle material and hardness.	
5.5	Bearings	SKF / INA FAG/ IKO/ TIMKEN/ NTN	Vendor to Confirm
5.6	Noise level	Not more than 85 dB, at 1 Metre away from the work spot.	

S.No	Description	BHEL Specification	Vendor's Offer
6.0	SPARES	Complete List of Spares to be LISTED ITEMWISE with quantity along with offer.	Vendor to Confirm
7.0	GUARANTEE	The equipment shall be guaranteed for a minimum of twelve months from the date of commissioning or eighteen months from the date of dispatch.	Vendor to Confirm
8.0	MANUALS		
8.1	No of Copies	2 (Two) for Each Machine	Vendor to Confirm
8.2	Language	English	Vendor to Confirm
8.3	O & M Manual Details :	Manual shall contain BLOW-UP details on assembly / dismantling, part numbers with part description for Maintenance, Safety Instructions while using, and Operating Sequence for using the equipment.	Vendor to Confirm
9.0	General:		
9.1	Technical Details	General arrangement drawing of the machine with part description and technical details of the bought out items etc. are to be provided along with the offer.	Vendor to confirm
9.2	Cost Details	Price break-up shall be given in sealed cover separately for the machine, accessories, cutting tools and tool holders, spares, etc.	Vendor to Confirm
9.3	Inspection/Testing	The equipment shall be inspected and tested by BHEL Engineers with vendor's material for performance evaluation prior to dispatch. Vendor's Test Certificate shall be submitted to BHEL prior to Pre dispatch Inspection.	Vendor to Confirm
9.4	Commissioning	The machine shall be considered as commissioned only upon proving out boring of at least five tube ends for 80 mm depth with 3.2 microns finish at BHEL works. The tube material will be provided by BHEL.	Vendor to Confirm
9.5	Catalogue	The offer shall be accompanied with ORIGINAL Catalogue of the offered equipment.	Vendor to Confirm