



An ISO 9001
Company

Bharat Heavy Electricals Limited

(High Pressure Boiler Plant)

Tiruchirapalli – 620014, TAMIL NADU, INDIA

CAPITAL EQUIPMENT / MATERIALS MANAGEMENT

ENQUIRY

NOTICE INVITING TENDER

Phone: +91 431 257 7421/7297

Email : vkaruna@bhel.in

: hari.r@bhel.in

Web : www.bhel.com

TWO PART BID

Tender to be submitted in two Parts

Enquiry
Number:

2631900052

Enquiry
Date:

04.11.2019

Due date for submission
of quotation:

29.11.2019

You are requested to quote the Enquiry number date and due date in all your correspondence. 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 should reach physically on or before 14.00 Hrs(IST) on the Date of tender opening. Tenders received after 14.00Hrs (IST) will not be considered for evaluation.

Item	Description	Quantity	(Indigenous Vendors) Matl. Will be Delivered to
10	"Universal Length Measuring Machine" as per the technical specification & commercial conditions applicable(To be downloaded from web site www.bhel.com/tender/tender_home.php or https://eprocure.gov.in/epublish/app)	1.00 No.	FOR, BHEL,Stores, High Pressure Boiler Plant, Tiruchirappalli - 620014

Important points to be taken care during submission of offer

- 1) Material shall be delivered to (By Indigenous vendors): As stated above.
- 2) Delivery required 3 Months from the date of purchase order.
- 3) Erection & Commissioning period required 1 Month from the date of intimation by BHEL to vendor for deputation of their Engineers for E&C.
- 4) EMD for this Tender will be ₹ 1,00,000.00
- 5) Compliance Forms. TRY/IND/02A to be filled and enclosed along with the offer failing which, the offer will not be considered for evaluation.
- 6) All updates, amendments, corrigenda, etc., (if any), for each tender will be posted only on the above websites from time to time, as and when required, until each tender is opened. There will be no publication of such updates, amendments, corrigenda, etc., through newspapers or any other media.

BHEL's General guidelines / instructions (refer MM / CE / GENL / GENL / 001-EMD) including bank guarantee formats and list of consortium banks, commercial terms check-list can be downloaded from BHEL web site www.bhel.com/tender/tender_home.php or from the Government tender website <https://eprocure.gov.in/epublish/app> under Enquiry reference 2631900052.

Tenders should be submitted before 14.00Hrs (IST) 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.

Yours faithfully,
For BHARAT HEAVY ELECTRICALS LIMITED

V. Karunakaran
4/11/19
DGM / Capital Equipment / MM

V. KARUNAKARAN
Dy. General Manager
Capital Equipment / MM
BHEL / Tiruchirappalli - 620 014

UNIVERSAL LENGTH MEASURING MACHINE, Qty. 1 no.

PART - A

S.No	BHEL Specification	Bidder's Offer
1.0	QUALIFYING CRITERIA	
1.1	Bidder / OEM must have manufactured, supplied and commissioned at least five UNIVERSAL LENGTH MEASURING MACHINE are eligible to quote.	
1.2	Bidder has to submit at least ONE Performance Certificate from their customer (end user), for satisfactory performance of One UNIVERSAL LENGTH MEASURING MACHINE meeting the following conditions: a) The Equipment must have been supplied within the last five years as on the first date of tender opening. b) The Equipment must have performed satisfactorily for at least 1 year during this period. For obtaining the Performance certificate, a suggestive format is provided at the end of part-A.	
1.3	PO document for the above mentioned supplied equipment to be enclosed	
1.4	BHEL reserves the right to verify the information provided by the Bidder. In case the information provided is found to be false/ incorrect, the offer is liable for rejection.	

2.0	INFORMATION TO BE PROVIDED BY BIDDER	
2.1	Bidder shall provide contact details(phone no & email id) including the address of his Agents / Service Centres in India	
2.2	Details of UNIVERSAL LENGTH MEASURING MACHINE supplied to other BHEL units if any	
2.3	The BIDDER to furnish Reference List of Customers(max 10 customers) including Contact details(phone no & email id).	

SECTION 3

The BIDDER to note:

S. No.	PARTICULARS	Bidder's offer
3.1	The BIDDER shall submit the offer in Two Parts – 1. Technical [with PART A & PART B] & 2. Commercial and Price Bid.	
3.2	The Bidder's offer against each clause in PART A & B of the offer should be filled by the BIDDER compulsorily with complete details.	
3.3	The BIDDER shall assure a continuous support for Spares and Service for Five Years, from the date of commissioning of the equipment at BHEL Works.	
3.4	The Technical Offer shall be supported by Product Catalogue and Data Sheets in original and complete technical details / literature on the quoted model of equipment.	
3.5	The Commercial Offer (given with the Technical Offer) shall contain the Scope of Supply and the Un-Priced Part of the Price-Bid, for confirmation.	

Suggestive Format of Performance Certificate:

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

PERFORMANCE CERTIFICATE

- | | | |
|----|--|---------------------------------|
| 1 | Description of the equipment | |
| 2 | Make & Model of the equipment | |
| 3 | Date, Month & Year of Commissioning | |
| 4 | Motorized type
(Strike off whichever is not applicable) | YES / NO |
| 5 | External measuring range of the equipment | |
| 6 | Internal measuring range of the equipment | |
| 7 | Application for which the equipment is used | |
| 8 | Performance of the equipment
(Strike off whichever is not applicable) | Satisfactory / Not Satisfactory |
| 9 | Service support after sales
(Strike off whichever is not applicable) | Satisfactory / Not Satisfactory |
| 10 | Any Other remarks | |
| 11 | This performance certificate was issued on: (DD/MM/YYYY) | |

Signature & Seal of the Authority
Issuing the Performance Certificate

Contact details of issuing authority

Name & Designation:

Office No/ Mobile no:

Email ID:

UNIVERSAL LENGTH MEASURING MACHINE, Qty. 1 no.

Part B - TECHNICAL SPECIFICATION

SL. NO	DESCRIPTION	BHEL REQUIREMENT	Supplier OFFER
Purpose			
1.1	Areas of application in BHEL/Trichy & Equipment Requirements	The equipment is required for the Calibration of Thread gauges, taper gauges and measuring instruments for both internal and external measurements: 1. Plain Gauges: Plain Plug Gauge (External plain- 0 to 600 mm), Plain Ring Gauge (3 to 500 mm), Plain Taper Ring (up to 200 mm), plain Taper Plug gauge (up to 400 mm), 2. Thread gauges: External- 0 to 500 mm (all types of thread like Metric, Unified, ACME, TRAPEZOIDAL, BSP with standard pitch must be measureable), Internal- 3 to 450 mm (all types of thread like Metric, Unified, ACME, TRAPEZOIDAL, BSP with standard pitch must be measureable). 3. Taper Thread Gauges: External- up to 250 mm & Internal- 3 to 100 mm 4. Measuring Instruments: Dial indicators, bore gauges, internal mic 3 point- up to 100 mm, External micrometer, internal micrometer 2 point- up to 600 mm.	
Application method			
2.1	Application Method	The ram in the measuring head of the machine is made in contact with the gauge /instrument on the work table , the ram is made to move to and fro and the digital readout in the machine PC provides the actual movement which gives the measurement result .	
Machine Configuration			
3.1	Equipment Weight	Bidder to specify	
3.2	Equipment size (h x w x d)	Bidder to specify	
3.3	Instruments for which equipment has to cater	As mentioned in Sl. No. 1.1 above	
3.4	Working principle	Abbe comparator principle	
3.5	Calibration Range	600 mm measurement for external measurement & upto 450 mm for internal measurement .	
3.6	Operating Environment and Power supply	The equipment shall function with electrical input of 230 V $\pm$ 10V %, 50 Hz $\pm$ 3Hz, 3 Wire System (Line, neutral & Protective Earth) single phase power supply and temperature of 20 $\pm$ 1 ° c and humidity of 50 $\pm$ 10 % RH. Any stabilizer if required is in supplier scope	
3.7	Resolution of equipment	0.1 micron or better	
3.8	Repeatability	0.2 micron or better	
3.9	Accuracy at 20°C	minimum of 0.7 micron or better	
3.9	Working Table	The working table shall have movement in steps of 0.1 micron and shall have upward movement of 100 mm or better and shall	

SL. NO	DESCRIPTION	BHEL REQUIREMENT	Supplier OFFER
		withstand weight upto 25 kg. The work table shall be adjusted in all directions (Vertical, Horizontal, Work Top rotation and tilting) .	
3.10	Units of measurement	All readings shall be displayed in mm	
3.11	Measuring Force	0-10 N (Selectable)	
3.12	Battery type	Supplier to provide rechargeable type batteries if any. Suitable adapter to be provided. If the batteries are to be charged externally, Supplier to provide details	
4.0 USER INTERFACE			
4.1	PC	The machine shall be supplied with PC of windows 10 with backup CD of windows 10. The PC shall be of at least 4GB ram with 500 GB memory. suitable UPS to be provided along with the machine PC.	
4.2	Display	Digital Read Out of the ram movement to be provided in the machine PC .	
4.3	Software	Supplier to preinstall the latest gauge and instrument measuring software in the m/c PC. Also the license key to be provided during commissioning of the PC .Supplier to provide the software backup .	
4.4	Language	English	
4.5	Connectivity	PC shall have USB port or RS232 port to import data for report generation.	
5.0 ACCESSORIES			
5.1	List of Mandatory accessories to be quoted along with offer Description along with usage details to be enclosed along with offer	The accessories for calibration of 1. Plain Gauges: Plain Plug Gauge (External plain- 0 to 600 mm), Plain Ring Gauge (3 to 500 mm), Plain Taper Ring (up to 200 mm), plain Taper Plug gauge (up to 400 mm), 2. All types of Measuring anvils & standard Thread measuring wires, Centre table for calibration of Thread plug gauges of 0 to 600 mm (all types of thread like Metric, Unified, ACME, TRAPEZOIDAL, BSP with standard pitch must be measureable) 3. All Accessories for calibration of internal threads including T-probe, Flexible dual arm (small and large), stylus for T-probe, stylus for Flexible dual arm and other required Accessories. The Accessories to be supplied shall be such that internal thread upto 450 mm and all the standard TPI (1 to 16) for ACME threads as per ASME B1.5 and pitch of 0.6 mm to 6 mm (Metric, unified, Trapezoidal, TW & BSP) can be calibrated, (Note: T-probe and Flexible arms must accommodate measurement of standard ACME internal threads as per ASME B1.5 i.e. from 1 TPI to 16 TPI, for that suitable ruby stylus / spheres to be supplied and if flexible arms are Spring loaded , then arm movement to be upto 12 mm). In addition Two sets of setting blocks (60° ,55°) and one set of Hardened stylus of	

SL. NO	DESCRIPTION	BHEL REQUIREMENT	Supplier OFFER
		sizes (0.8 ,1.35 ,1.8 ,2.3 ,2.6 ,3.1, 3.2 ,4.1 , 5.2 & 6.5 mm) shall be supplied . 4. Taper Thread Gauges: External- up to 250 mm & Internal (BSPT, NPT, NPTF) - 3 to 100 mm 5. Accessories for Three-point internal mic up to 100 mm 6. Maintenance Tool kit. Each Accessory kit shall be provided as kit in wooden/durable plastic carry box.	
5.2	Levelling screws or shock absorbers	The equipment will be placed on a surface with almost rough flat surface. Necessary shock absorbers/levelling screws etc to keep the equipment in proper horizontal position is in supplier scope and the same shall be ensured during commissioning.	
5.3	Additional Accessory (to be quoted separately as optional)	The supplier shall provide 1. Accessory for calibration of External micrometer & two-point internal micrometre- up to 600 mm. 2. Master setting ring gauges of 50 mm, 100 mm, 150 mm, 200 mm and 250 mm. 3. Flexible dual arm (small and large), such that internal thread upto 450 mm and all the standard TPI (1 to 16) for ACME threads as per ASME B1.5 and pitch of 0.6 mm to 6 mm (Metric, unified, Trapezoidal, TW & BSP) can be calibrated, (if arms are Spring loaded, then arm movement to be upto 12 mm).	
6.0 Spares:			
6.1	List of spares to be provided along with offer	Supplier to specify the list of recommended spares with details if any .	
7.0	Operator manual	Supplier to provide Operator manual- two hard copies and One soft copy along with equipment	
8.0	Packing list	Bidder to specify in detail as a list, the items that will be offered. (Including accessories, spares, transit case etc.). Further The machine shall be packed and delivered at BHEL premises in such a way that there is no damage to the original condition	
9.0 Installation & Prove Out			
9.1	Installation & performance prove out at BHEL	Supplier to install and prove out the equipment performance at BHEL- Trichy. Onsite calibration by Laser Interferometry shall be performed and Certificate shall be issued within 15 days of commissioning of the equipment. Necessary masters to be arranged by the supplier for calibration on returnable basis. The supplier to demonstrate the full function of the equipment by carrying-out tests at lower range, middle range and at the maximum range. Further the calibration of all the items in s.no 1.1 to be demonstrated and Accuracy to be proved.	

SL. NO	DESCRIPTION	BHEL REQUIREMENT	Supplier OFFER
		Note: All fixtures / clamps to prove the calibration as stated above is in Supplier scope. The supplier has to provide all the clamps and fixtures necessary for the calibration of gauges / instruments stated in S.no 5.1 & 5.3 .	
9.2	Inspection certificate / Calibration Certificate	Inspection report / Test report shall be accompanied along with the equipment supply, Further the universal Length Machine shall be calibrated to its maximum range starting from lowest range / zero at BHEL Premises and a calibration certificate having traceability to National/International standards. The calibration certificate shall have reading at various check points around 50 mm interval.	
10.0 Training			
10.1	Training on operation & maintenance for BHEL staff at BHEL-Trichy	Supplier to provide training at BHEL-Trichy at the time of commissioning. Training on operation of machine and application for all instruments shall be given at BHEL works	
11.0 Guarantee			
11.1	Guarantee	12 months from the date of commissioning OR 18 months from the date of dispatch whichever is earlier	