An ISO 9001 Company

Bharat Heavy Electricals Limited

(High Pressure Boiler Plant)
Tiruchirappalli – 620014, TAMIL NADU, INDIA
CAPITAL EQUIPMENT / MATERIALS MANAGEMENT

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

TWO PART BID Tender to be submitted in two Parts	**Enquiry Number:** **2621300024**	**Enquiry Date:** **30.08.2013**	**Due date for submission of quotation:** **30.09.2013**

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 is reaching physically our office before 14.00 hrs on the Date of tender opening.

Item	Description	Quantity
10	**Portable Universal Drilling Machine** Sets as per the technical specification & commercial conditions applicable (to be downloaded from web site www.bhel.com or http://tenders.gov.in)	**2 Nos.**

Important points to be taken care during submission of offer

1. The rate of EMD for this Tender will be (INR) : 1,50,000/-
2. The Vendor shall offer against the following requirement of BHEL :-

Delivery Period for Supply Portion	**06 Months**
Duration for Completion of Erection & Commissioning (i.e. Delivery for Service Portion)	**10 days**

In case of deviation the offer will be commercially loaded as indicated in the checklist.

3. The Checklist for Acceptance of Commercial Terms & Conditions to be filled and enclosed along with the offer failing which, the offer will not be considered for evaluation.
4. 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/001-EMD) including bank guarantee formats and list of consortium banks, commercial terms check-list 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 above Enquiry reference.

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	Yours faithfully, For **BHARAT HEAVY ELECTRICALS LIMITED** Sr. Manager / Capital Equipment / MM

PORTABLE UNIVERSAL DRILLING MACHINE

PART - A

Sl No	Requirements	Vendor's Response
1.0	**QUALIFYING CRITERIA**	
1.1	The BIDDER / VENDOR (OEM) shall have a minimum of TEN Years of Continuous Experience in the Design, Manufacture & Supply of "**Portable Universal Drilling Machine**". Vendor may indicate the actual no. of years of experience in the field	
1.2	Only those vendors (**OEMs**), who have manufactured, supplied and commissioned at least one **PORTABLE UNIVERSAL DRILLING MACHINE** having all the following features**:** **1. Spindle power of 3.5 kW or more,** **2. Drilling capacity of minimum 50mm on steel and** **3. Drilling spindle axis of 2000mm or more from column face** in the past ten years are only eligible to quote. Such supplied machine should at present be working satisfactorily for at least one year after its commissioning (as on the date of opening of this Tender). The name and contact addresses of the customers to whom the machine has been supplied has to be furnished with details.	
1.3	Vendor has to submit at least one Performance Certificate from their customers, for satisfactory performance of **Portable Universal Drilling Machine as given in under clause 1.2 above**, for a minimum period of one year (as on date of opening tender). For obtaining the Performance certificate, a suggestive format is provided.	
1.4	BHEL reserves the right to verify the above information provided by vendor. In case the information provided 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, with complete address, details of contact person, where PORTABLE UNIVERSAL DRILLING MACHINES have been supplied in the past.	
2.2	Specify details of PORTABLE UNIVERSAL DRILLING MACHINES supplied to other units of BHEL, if any (Year of commissioning, Drilling Capacity, Arm Travel & Column travel etc.)	
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	Machine Details a) Drilling Capacity (mm) b) Arm Travel (mm) c) Column Travel (mm)	:	
5	Performance of the Machine (Strike off whichever is not applicable)	:	Satisfactory / Good / Average / Not Satisfactory
6	After sales service (Strike off whichever is not applicable)	:	Satisfactory / Good / Average / Not Satisfactory
7	Any Other remarks	:	

Date:

Signature & Seal of the Authority
Issuing the Performance Certificate

PART - B: Technical Specification

Note:-

1. The Column **"Vendor's offer with Technical details & Remarks"** of this format shall be filled in by the Vendor and submitted along with the offer. Inadequate / incomplete, ambiguous or unsustainable information against any of the clauses of the specifications / requirements shall be treated as non-compliance.
2. The offer and all documents enclosed with offer should be in **English language** only.

Name & Address of the Supplier:	Name & Address of the Indian agent:
Telephone no.:	Telephone no.:
Fax no.:	Fax no.:
e-mail:	e-mail:

Scope: - Supply, Erection & Commissioning of **PORTABLE UNIVERSAL DRILLING MACHINE** for BHEL complying with the specification as below.

Sl no	Technical Specification		Vendor's offer with Technical details &Remarks
1.0	**Purpose & Work Piece Material**		
1.1	**Purpose:** This machine is required to do all the drilling machine operations like Drilling, Reaming, and Tapping etc. on large and heavy assemblies / fabricated structures in all positions (Horizontal, vertical, inclined etc.)	Vendor to confirm	
1.2	**Work Piece Material:** Carbon Steel, Alloy Steel. Stainless steel & Cast Iron Hardness 20 - 32 HRC	Vendor to confirm	

Sl no	Technical Specification		Vendor's offer with Technical details &Remarks
2.0	**Specification**		
2.1	**Machine Configuration:** The Drilling Head shall be mounted on the Arm and rotates 360° about the arm axis & turns Upwards and Downwards by ± 90°. The arm shall move horizontally & vertically on the column and also swivel 360°about the Column. The Column shall also move on the bed horizontally to reach the required position.	Vendor to confirm	
2.2	**Construction:** The Bed, Slide, Column Arm and Drilling Head shall be made of Cast Iron. Necessary lifting hook shall be provided for easy and safemovement. Suitable locking arrangement shall be provided on the base.	Vendor to confirm	
2.3	**Capacity**		
2.3.1	Drilling Capacity in Steel(600 MPA TS) – Direct Drilling Diameter	Minimum 50 mm	
2.3.2	Drilling Capacity in Grey Cast Iron	Vendor to specify	
2.3.3	Tapping Capacity in Steel	M 48 x 3 or more	
2.4	**Spindle**		
2.4.1	Spindle Diameter	Vendor to specify	
2.4.2	Spindle Stroke	340 mm or more	
2.4.3	Spindle Taper	Morse Taper 5	
2.4.4	Main Motor Power	3.5 kW or more	
2.5	**Speed and feed**		
2.5.1	Spindle Speed range	16 to 800 RPM	
2.5.2	Number of Speed steps	Vendor to specify	
2.5.3	Feed range(0.05-0.5mm/rev)	Vendor to specify	
2.5.4	Number of feed steps	Vendor to specify	

Sl no	Technical Specification		Vendor's offer with Technical details &Remarks
2.6	**Traverses**		
2.6.1	Vertical displacement of Arm along column axis	1250 mm or more	
2.6.2	Horizontal displacement of Arm perpendicular to column axis	850 mm or more	
2.6.3	Column displacement along bed	1200 mm or more	
2.6.4	Drill head rotation about arm axis	360°	
2.6.5	Arm rotation about column axis	360°	
2.6.6	Drill head movement (upwards & downwards)	± 90°	
2.7	**Distances**		
2.7.1	Max distance of spindle axis to column surface (when Spindle is vertical)	2000 mm	
2.7.2	Min distance of spindle axis to column surface (when Spindle is vertical)	Vendor to specify	
2.7.3	Max distance of spindle face to floor level (when Spindle is vertical)	1500 mm or more	
2.7.4	Min distance of spindle face to floor level (when Spindle is vertical)	Vendor to specify	
2.7.5	Max distance of spindle axis to floor level (when Spindle is horizontal)	2700 mm	
2.7.6	Min distance of spindle axis to floor level (when Spindle is horizontal)	Vendor to specify	
2.8	**Bearings:** Make of all bearings shall be SKF/FAG/NTN/TIMKEN/IKO only	Vendor to specify	
3.0	**Operation and Control System**		
3.1	The machine shall be operated through pendent push buttons. All switches (ON, OFF, direction selection, emergency switches etc.) shall be available in the pendent.	Vendor to specify	

Sl no	Technical Specification		Vendor's offer with Technical details &Remarks
4.0	First filling of all required Oils & Greases etc. to be supplied by vendor. Indigenous (Indian) source or Indian equivalent and specifications of oils/ greases are also to be provided by the vendor.	Vendor to confirm	
5.0	**Lubrication**		
5.1	Lubrication shall be of life-time-lubricated type wherever possible. Other lubrication points shall be of automatic type. Details shall be submitted along with Lubrication chart.	Vendor to confirm	
5.2	Centralized auto lubrication shall be offered with metering cartridges and necessary electrical interlock.	Vendor to confirm	
6.0	**Electrical**		
6.1	The power supply available in BHEL is **415 V ± 10%, 50 Hz ± 3 Hz, 3 Phase AC (3 wire system without neutral)**. The supplier shall provide Power Cable of 15 m length with suitable plug top and flexible cable protection cover and properly earthed.	Vendor to confirm	
6.2	All electrical & electronic control cabinets & panels should be dust and vermin proof	Vendor to confirm	
6.3	All electrical components in the cabinets should be mounted on **DIN Rail**	Vendor to confirm	
6.4	All electrical / electronic components should have compatibility with Indian equivalents	Vendor to confirm	
6.5	Motors shall conform to IEC or Indian Standards and shall be of **Energy efficient class EFF1**. Preferred make of Motors: ABB, SIEMENS, HINDUSTAN, BHARAT BIJLEE, KEC, CROMPTON GREAVES	Vendor to confirm	
6.6	All cables and cable trays required for the machine should be included in the offer.	Vendor to confirm	

Sl no	Technical Specification		Vendor's offer with Technical details &Remarks
6.7	Vendor should ensure that the machine and its peripherals are properly earthed.	Vendor to confirm	
6.8	The electrical components used shall be from reputed international make such as All electrical items shall be of from SEW / ROCKWELL Allen Bradley/ Telemechanique / Delta or reputed makes acceptable to BHEL and shall be in accordance with **DIN/IEC Standards**.	Vendor to confirm	
7.0	**Safety Arrangements**: Following safety features in addition to other standard safety features should be provided on the machine:		
7.1	Machine should have adequate and reliable safety interlocks (Both electrical and mechanical) / devices to avoid damage to the machine, work piece and the operator due to malfunctioning or mistakes.	Vendor to confirm	
7.2	A detailed list of safety alarms / indications provided on machine should be submitted by the supplier.	Vendor to confirm	
7.3	Emergency Switches at suitable locations as per International Norms should be provided.	Vendor to confirm	
8.0	**Environmental Performance of the Machine:** The Machine shall conform to following factors related to environment safety:		
8.1	Maximum noise level shall be **85 dB** (A) at normal load condition, 1 m away from the machine with correction factor for back ground noise, if necessary.	Vendor to confirm	
8.2	If any safety / environmental protection enclosure is required it should be built in the machine by the vendor.	Vendor to confirm	
8.3	**Paint:** Machine and its accessories to be coated with Polyurethane Paint Colour shade : RAL 6011 (Apple/Reseda Green)	Vendor to confirm	

Sl no	Technical Specification		Vendor's offer with Technical details &Remarks
9.0	**Tools for Erection, Operation & Maintenance**		
9.1	Special tools and equipment required for erection of the machine shall be brought by the vendor. Necessary tools like Torque Wrench, Spanners, Keys, grease guns etc. for operation and maintenance of the machine should be supplied by the vendor. List of such tools should be submitted with the offer.	Vendor to confirm	
10.0	**Essential Accessories: Tooling**		
10.1	Reduction Sleeves MT5 to MT3 / MT5 to MT4 / MT3 to MT1 / MT3 to MT2 – One Set/machine	Vendor to offer	
10.2	Extension Sockets MT5 to MT5 / MT4 to MT4 / MT3 to MT3 / - One Set/machine	Vendor to offer	
10.3	Tapping Attachment with collets- M6 to M24 - One Set/machine	Vendor to offer	
10.4	Tapping Attachment with collets- M24 to M48 - One Set/machine	Vendor to offer	
11.0	**Spares**		
11.1	Itemized breakup list of mechanical, hydraulic, electrical and electronic spares used in the machine in sufficient quantity as per recommendation of Vendor for 2 years of trouble free operation on three shifts continuous running basis shall be offered by vendor. Item wise price list to be provided.	Vendor to specify	
11.2	**Mechanical & Hydraulic Spares:** All types of Valves, Pressure Switches, Transducers, Flow Switches, Filters, Seals, O-rings, Hydraulic Hoses of each type, Clutch plate assembly used in the machine, Spindle drive pinion used in the machine etc.	Vendor to specify	

Sl no	Technical Specification		Vendor's offer with Technical details &Remarks
11.3	**Electrical & Electronic Spares**: All types of Relays, Contactors, Proximity Switches, Limit switches, Push Buttons, Indicating Lamps, Semiconductor Fuses, Special Fuses, Circuit Breakers, Main Power Switch, Electromagnetic brake coils, Motors used in the machine etc.	Vendor to specify	
11.4	All types of spares for total machine and accessories should be available for at least 10 years after supply of the machine. If the machine or control is likely to become obsolete in this period, the vendor should inform BHEL sufficiently in advance and provide drawings of parts / details of spares & suppliers to enable BHEL to procure these in advance, if required.	Vendor to specify	
11.5	The complete list of spares for machine and accessories, along with specification / type / model, name & address of the spares supplier along with documentation, to be supplied with the machine.	Vendor to confirm	
11.6	Vendor to supply 2 Sets of Electronic cards and PCBs of each type, Modules of PLCs, Display Boards if any used in the machine as essential spares.	Vendor to specify	

Sl no	Technical Specification		Vendor's offer with Technical details &Remarks
12.0	**Documentation**: Three sets of following documents (Hard copies) in **English** language should be supplied along with the machine	Vendor to confirm	
12.1	Operating manuals of Machine	Vendor to confirm	
12.2	Detailed Maintenance manual of machine with all drawings of machine assemblies/sub-assemblies/parts including Electrical / Pneumatic/ Coolant / Hydraulic circuit diagrams and all Assembly/ Sub Assembly Drawings shall be supplied with the parts list detailed Bill of materials (make, model, specification, rating)	Vendor to confirm	
12.3	Catalogues, O&M Manuals of all bought out items including drawings, wherever applicable should be provided by the vendor.	Vendor to confirm	
12.4	Detailed specification of all rubber items and hydraulic/lube fittings	Vendor to confirm	
12.5	Complete Master List of parts used in the machine shall be submitted by the vendor	Vendor to confirm	
12.6	One additional set of all the above documentation on CD ROM	Vendor to confirm	
13.0	**Drawing approval**		
13.1	The supplier should get mechanical and electrical drawings approval from BHEL before starting the manufacturing of machine. The drawings should contain all main and sub assembly drawings with detailed bill of materials.	Vendor to accept	
13.2	All the required drawings for approval have to be submitted by the supplier within one month from the date of receipt of Purchase order.	Vendor to accept	
14.0	**Geometrical Accuracies**		
14.1	The machine shall be tested for Geometrical Accuracy as per relevant **ISO Standard or Equivalent Standard** at supplier works and at BHEL.	Vendor to confirm	

Sl No	Technical Specification		Vendor's offer with Technical details &Remarks
15.0	**Pre-dispatch Inspection at Vendor's works and Machine Acceptance (Tests/Activities to be Performed & Demonstrated by the Vendor)**	Vendor to confirm	
15.1.0	Tests/Activities to be carried out at Vendor's works on the machine before dispatch		
15.1.1	The vendor shall inform the various standards (testing, measurements, motors, workmanship) applicable for this machine acceptance. Standards shall be Indian / International.	Vendor to furnish	
15.1.2	Motor's data sheet	Vendor to submit	
15.1.3	Internal routine test report	Vendor to submit	
15.1.4	Quality plan for final factory inspection to BHEL review.	Vendor to submit	
15.1.5	The machine should be tested for its full capacity at supplier works. Test piece shall be arranged by the supplier only. Geometrical accuracy test to be carried out at suppliers work as per the relevant ISO or equivalent chart submitted by the supplier.	Vendor to accept	
15.1.6	The machine shall be offered for inspection by BHEL officials at suppliers work before despatch. Activities mentioned in clause 15.1.1 to 15.1.5 to be offered by the supplier to BHEL officials at the time of inspection. One set of documentation mentioned in clause 12.0 to be provided to the BHEL official at the time of Inspection	Vendor to accept	

Sl No	Technical Specification		Vendor's offer with Technical details &Remarks
15.2	**Training**		
15.2.1	BHEL Persons should be trained at supplier's works for 2 days in the following areas:	Vendor to agree	
15.2.2	Electrical & Electronic maintenance for machine & other supplied equipment wherever applicable.	Vendor to agree	
15.2.3	Mechanical & Hydraulic maintenance of the machine & other supplied equipment.	Vendor to agree	
15.2.4	Operation of the machine & other supplied equipment.	Vendor to agree	
15.2.5	Air-fare, boarding & lodging for the trainees shall be borne by BHEL	Vendor to note	
15.2.6	Competent, English speaking experts shall be arranged by the vendor during training for satisfactory & effective training of BHEL personnel.	Vendor to agree	
15.2.7	Vendor to quote for training duration on a per man day basis.	Vendor to note	
16.0	**Erection & Commissioning**		
16.1	Supplier to take full responsibility for carrying out the erection, start up, testing of machine. Its control & all types of other supplied equipment, machining of test pieces etc. Service requirement like power, air & water shall be provided by BHEL at only one point as indicated by the supplier in their layout drawings. Other requirements like EOT crane inside the shop floor area shall be provided by BHEL subject to availability. Details of these requirements should be informed by the vendor in advance. Mobile crane assistance if any required to be arranged by supplier.	Vendor to note	

Sl No	Technical Specification		Vendor's offer with Technical details &Remarks
16.2	Tools Tackles and other necessary equipments required to carry out above activities should be brought by the supplier.	Vendor to note	
16.3	Commissioning spares, required for commissioning of the machine within stipulated time, shall be brought by the supplier on returnable basis	Vendor to note	
16.4	Any portion of the machine, accessories and other supplied items where if paint has rubbed or peeled off during transit or erection should be repainted and merged with the original surrounding paint by the vendor, for this purpose. The vendor should supply sufficient quantity of touch-up paint of various colours of paints used.	Vendor to note	
16.5	Schedule of Erection and Commissioning shall be submitted with the offer.	Vendor to submit	
16.6	Charges, duration, terms & conditions for E&C should be furnished in detail along with the offer	Vendor to submit	
16.7	**Tests/Activities to be carried out at BHEL works by the supplier while commissioning the machine**		
16.7.1	The machine should be tested for its full capacity at BHEL works by the supplier. BHEL will supply the trial components for testing at BHEL.	Vendor to accept	
16.7.2	Demonstration by the supplier of all features of the machine & accessories if any to the satisfaction of BHEL for efficient and effective use of the machine. Geometrical accuracy test to be carried out at BHEL works as per the relevant ISO or equivalent chart submitted by the supplier.	Vendor to accept	
16.7.3	Training for operators and maintenance personnel with respect to operation and maintenance of the machine for min. period of 2 days to be provided by the supplier at BHEL after commissioning the machine.	Vendor to accept	

Sl No	Technical Specification		Vendor's offer with Technical details &Remarks
17.0	**Packing:** Sea worthy & rigid packing for all items of complete machine & accessories to avoid any damage/loss in transit. When machine is despatched, all small loose items shall be suitably packed in boxes	Vendor to accept	
18.0	**Guarantee:** The equipment shall be guaranteed for a minimum period of 12 months from the date of commissioning or 18 months from the date of dispatch.	Vendor to accept	
19.0	**General**		
19.1	Machine Model	Vendor to furnish	
19.2	Total connected load (kVA)	Vendor to furnish	
19.3	Floor area required (Length × Width × Height) for complete machine & accessories.	Vendor to furnish	
19.4	Painting of Machine / Electrical Panels as per per clause 8.3	Vendor to note	
19.5	Total weight of the machine	Vendor to furnish	
19.6	Weight of heaviest part of the machine	Vendor to furnish	
19.7	Weight of the heaviest assembly / sub-assembly of the Machine	Vendor to furnish	
19.8	Dimensions of largest part/ sub-assembly/ assembly of the machine	Vendor to furnish	
19.9	Detailed catalogues, sketch/ photographs of the m/c and accessories/attachments should be submitted with the offer.	Vendor to submit	
19.10	Hydraulic Pneumatic & oil piping should be preferably metallic except places where flexible piping is essential. All the pipes required for the same shall be included in the standard scope of the machine.	Vendor to note	