



Bharat Heavy Electricals Limited

(High Pressure Boiler Plant)

Tiruchirappalli – 620014, TAMIL NADU, INDIA

An ISO 9001
Company

CAPITAL EQUIPMENT / MATERIALS MANAGEMENT

ENQUIRY	Phone: +91 431 257 76 83 Fax : +91 431 252 07 19 Email : ramado@bheltry.co.in Web : www.bhel.com
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	Enquiry Number:	Enquiry Date:	Due date for submission of quotation:
	2720800014	21.10.2008	24.11.2008

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

Item	Description	Quantity	Delivery (Item required at BHEL on)
10	Radial Drilling Machine – Dia 65 as per the technical specification & commercial conditions applicable (to be downloaded from web site www.bhel.com or http://tenders.gov.in)	1 No.	31.08.2009

Note: Offer should be Foreign Bidders: CFR Mumbai Port

Indigenous Vendors:
FOR, BHEL, Stores
Industrial Valves Plant
433, Industrial Complex
Goindwal – 143 423
District: Tarn Taran (Punjab), India

BHEL commercial terms & conditions with Price Bid and Bank Guarantee formats along with technical specifications 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 “2720800014”.

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 / MM / Capital Equipment
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PART A**RADIAL DRILLING MACHINE****SECTION – I : QUALIFYING CRITERIA**

The BIDDER has to compulsorily meet the following requirements to get qualified for considering the technical offer for the RADIAL DRILLING MACHINE.

S. No.	REQUIREMENTS	Vendor's Response
1	<p>Only those vendors (OEMs), who have supplied and commissioned at least one RADIAL DRILLING MACHINE with</p> <p>1. Spindle power of 3 KW or more,</p> <p>2. Drilling capacity of minimum 50 mm on steel and</p> <p>3. Drilling radius from column center 2000 mm or more</p> <p>in the past ten years and such machine should be working satisfactorily for a minimum period of one year after commissioning, as on the date of opening of this Tender are eligible to quote.</p> <p><i>(However, if such machine is already supplied to BHEL, then that machine should be working satisfactorily for a minimum period of six months after commissioning, as on the date of opening of this Tender.)</i></p>	
The vendor should submit the following information where similar machine has been supplied, for qualification of this offer.		
1.1	Name and postal address of the customer or company where similar machine is installed.	
1.2	Name and designation of the contact person of the customer.	
1.3	Phone, FAX no and email address of the contact person of the customer.	
1.4	Month and Year of commissioning of the machine.	
1.5	Parameters of machine supplied, viz. Spindle power, Drilling capacity and the application for which the machine is supplied.	

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1.6	Along with the Technical offer, the Vendor should submit one Performance certificate from the customer for the satisfactory performance of the machine supplied to them. For obtaining the Performance certificate, a suggestive format is provided in SECTION – IV .	
2.0	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.	

SECTION – I I

The BIDDER / VENDOR is requested to provide the following information:

S. No.	REQUIREMENTS	Vendor's Response
3.0	The BIDDER/VENDOR to furnish Reference List of Customers, with full address, details of contact person, where RADIAL DRILLING MACHINES have been supplied in the past.	
4.0	Details of RADIAL DRILLING MACHINES supplied to other BHEL units, if any. (Year of commissioning, Spindle power and Drilling capacity).	
5.0	Details on SERVICE-AFTER-SALES Set-Up in India including the Address of Agents / Service Centers in South India.	
6.0	Any Additional Data to supplement the manufacturing capability of the BIDDER for the subject equipment.	

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SECTION – III

The BIDDER to note:

S. No.	PARTICULARS	Vendor's Response
7.0	The BIDDER / VENDOR shall submit the offer in TWO PARTS. 1. Technical Offer [with PART A & PART B] and Commercial offer. 2. Price Bid.	
8.0	The Technical Offer shall contain a comparative statement of Technical Specifications demanded by BHEL and Offer Details submitted by the Bidder , against each clause. A just 'CONFIRMED' or 'COMPLIED' or 'YES' or 'NO-DEVIATION' or similar words in the technical comparative statement may lead to disqualification of the Technical Offer.	
9.0	The Technical Offer shall be supported by product Catalogues & Data Sheets and also technical details of Bought-Out-Items with copies of Product Catalogue to the extent possible.	
10.0	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.	

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SECTION – IV

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) Spindle Power (cont. rating) b) Drilling Capacity on steel c) Max Drilling radius d) Spindle Taper		
6. Performance of the Equipment (Tick whichever is applicable)		Best in the market	
		Satisfactory	
		Good	
		Average	
		Not Satisfactory	
7. Any Other remarks			
<div style="display: flex; justify-content: space-between;"> <div>Date:</div> <div>Signature & Seal of the Authority Issuing the Performance Certificate</div> </div>			

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PART- B

TECHNICAL SPECIFICATION FOR RADIAL DRILLING MACHINE – Dia 65

Clause No	PARTICULARS AND BHEL SPECIFICATION	BIDDER'S OFFER With Technical Details																									
1.0.0	<p>PURPOSE: This machine is intended for the following operations in the manufacture of valve components.</p> <p>Drilling Tapping Spot facing (Internal & External) Reaming and Key way milling.</p> <p>WORKPIECE MATERIAL SPECIFICATION AND SIZE: The work piece material is either Steel Casting or Steel Forging.</p> <table><tr><th>Material</th><th>Description</th><th>ASTM Specification</th><th>Hardness</th></tr><tr><td rowspan="4">Steel Casting</td><td rowspan="2">Carbon Steel</td><td>A216 WCB, WCC</td><td>185 BHN</td></tr><tr><td>A352 LCB, LCC</td><td>225 BHN</td></tr><tr><td>Alloy Steel</td><td>A 217 WC5, WC6, WC9, C12A</td><td>210 BHN</td></tr><tr><td>Stainless Steel</td><td>A351 CF3M, CF8, CF8C and CF8M</td><td>230 BHN</td></tr><tr><td rowspan="3">Steel Forging</td><td>Carbon Steel</td><td>SA 105</td><td>185 BHN</td></tr><tr><td rowspan="2">Alloy Steel</td><td>SA 182 F22 Class 3</td><td>210 BHN</td></tr><tr><td>SA 182 F91</td><td>225 BHN</td></tr></table> <p>Maximum Job envelope LxBxH= 1200 mm x1000 mm x 900 mm Maximum Job Weight= 2000 Kg</p>	Material	Description	ASTM Specification	Hardness	Steel Casting	Carbon Steel	A216 WCB, WCC	185 BHN	A352 LCB, LCC	225 BHN	Alloy Steel	A 217 WC5, WC6, WC9, C12A	210 BHN	Stainless Steel	A351 CF3M, CF8, CF8C and CF8M	230 BHN	Steel Forging	Carbon Steel	SA 105	185 BHN	Alloy Steel	SA 182 F22 Class 3	210 BHN	SA 182 F91	225 BHN	
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Clause No	PARTICULARS AND BHEL SPECIFICATION		BIDDER'S OFFER With Technical Details
2.0.0	MACHINE CONFIGURATION:	Vendor to confirm	
	The machine shall have a vertical column mounted on the base plate. The horizontal arm shall move up and down the column and can be rotated / locked at any position. The drilling head shall move towards or away from the column and can be locked at any position. The spindle shall be housed in the drilling head and can be moved up and down.		
2.1.0	CAPACITY AND DRILLING HEAD		
2.1.1	Drilling capacity in steel	50 mm	
2.1.2	Drilling capacity in solid cast iron	60 mm	
2.1.3	Tapping capacity in steel	M56 x 2.5	
2.1.4	Power of spindle motor	Min 3.5 kW	
2.1.5	Taper in spindle	MT 5	
2.1.6	Spindle stroke	325 mm	
2.1.7	Power of Arm motor	Min 3 kW	
2.1.8	Power of Coolant pump motor	Vendor to specify	
2.1.9	Number of spindle speeds	Vendor to specify	
2.1.10	Spindle speed range	40-1800 rpm	
2.1.11	No of feeds	Vendor to specify	
2.1.12	Spindle feed range Min / Max	0.125 to 1.25 mm/rev	
2.1.13	Auto depth control mechanism for spindle stroke.	Vendor to specify	
2.1.14	Quill diameter	Vendor to specify	
2.1.15	Mode of pre selection of feed and speed	Vendor to specify	
2.1.16	Power for other systems like elevating motor, locking motor, coolant pump, lubrication system etc. to be indicated separately.	Vendor to specify	

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Clause No	PARTICULARS AND BHEL SPECIFICATION:		BIDDER'S OFFER With Technical Details
2.2.0	ARM		
2.2.1	Maximum drilling Radius	2350mm	
2.2.2	Minimum drilling Radius	550 mm	
2.2.3	Drill head traverse	1800 mm	
2.2.4	Base Plate to spindle—Maximum	1645 mm	
2.2.5	Base Plate to spindle—Minimum	380 mm	
2.2.6	Vertical Travel of arm on the column	940 mm	
2.2.7	Swing of the arm around the column	Vendor to specify	
2.2.8	Powered swing of Arm on the column	Vendor to specify	
2.2.9	Arm dimensions	Vendor to specify	
2.2.10	Centralized and independent clamping mechanism of arm on column. Vendor to submit details	Vendor to specify	
2.3.0	COLUMN		
2.3.1	Column dimensions	Vendor to specify	
	Column sleeve diameter min 380 mm	Vendor to specify	
2.4.0	MACHINE GUID WAYS		
2.4.1	Width of Arm guide ways min 250 mm	Vendor to specify	
2.4.2	Hardness of guide ways	Vendor to specify	
2.5.0	BED OR BASE PLATE		
2.5.1	Dimensions of the base plate	Vendor to specify	
2.5.2	Size of T-slots	Vendor to specify	
2.5.3	T-slots pitch (as per DIN standard)	Vendor to specify	

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Clause No	PARTICULARS AND BHEL SPECIFICATION:		BIDDER'S OFFER With Technical Details
2.6.0	CONSTRUCTION:		
2.6.1	Vendor has to furnish constructional details of the machine including explanatory drawings, of various components/assemblies like Column, bed, Arm, Drilling unit, spindle etc.	Vendor to furnish	
2.6.2	Video images on CD / Hard copy of literature with photographs & drawings explaining the technical features shall be enclosed with the offer	Vendor to furnish	
2.6.3	Make and rating of motors for a) Spindle b) Arm Elevation and c) Coolant Pump should be furnished	Vendor to furnish	
2.7.0	OPERATION AND CONTROL SYSTEM:		
2.7.1	OPERATOR'S PANEL: Operator's panel mounted on the drill head shall be provided. All switches on the Operator's panel should be within reach of operator for convenient, efficient & safe operation. All indications should also be conveniently placed accordingly. No separate switch box is needed.	Vendor to confirm	
2.8.0	MACHINE LIGHTS:		
2.8.1	Machine Lights to be provided as built in with Headstock for sufficient illumination of complete working area for clear visibility.	Vendor to confirm	
2.8.2	All light fittings, consumables, adapters / receptacles should have compatibility with Indian equivalents	Vendor to confirm	

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Clause No	PARTICULARS AND BHEL SPECIFICATION:		BIDDER'S OFFER With Technical Details
2.9.0	ELECTRICAL SYSTEM:		
2.9.1	AC Power Supply of 415V $\pm 10\%$, 50HZ ± 1.5 HZ, (3 Phase 3 wire system with out neutral) will be provided by BHEL at a single point near the machine, as per layout recommended by Vendor. All types of cables, connections, circuit breakers etc. required for connecting BHEL's power supply point to different parts of the machine / control cabinets, shall be the responsibility of vendor.	Vendor to confirm	
2.9.2	Tropicalization: All electrical equipment shall be tropicalized	Vendor to confirm	
2.9.3	All electrical controls & systems should be dust and vermin proof	Vendor to confirm	
2.9.4	All electrical components in the cabinets should be mounted on DIN Rail	Vendor to confirm	
2.9.5	All electrical panels should be provided with fluorescent lamps for sufficient illumination and power receptacles of 220Volts, 5/15 Amp AC. All adapters/receptacles should have compatibility with Indian equivalents.	Vendor to confirm	
2.9.6	Motors shall be from M/s Siemens / NGEF / KEC / ABB. If outside INDIA make shell conform to IEC.	Vendor to confirm	
2.9.7	All cables moving with traversing axes should be installed in Caterpillar/ Drag chain. Additionally, all the cable trays required for laying cables should be included in the offer.		
2.9.8	Vendor should ensure the proper earthing for the machine and its accessories.	Vendor to confirm	

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Clause No	PARTICULARS AND BHEL SPECIFICATION:		BIDDER'S OFFER With Technical Details
2.10.0	SAFETY ARRANGEMENTS: Following safety features in addition to other standard safety features should be provided on the machine:	Vendor to confirm	
2.10.1	Machine should have adequate and reliable safety interlocks / devices to avoid damage to the machine, work piece and the operator due to the malfunctioning or mistakes.	Vendor to confirm	
2.10.2	All the pipes, cables etc. on the machine should be well supported and protected.	Vendor to confirm	
2.10.3	All the rotating parts used on machine should be statically & dynamically balanced to avoid undue vibrations.	Vendor to confirm	
2.10.4	Emergency Switches at suitable locations as per International norms are to be provided.	Vendor to confirm	
2.10.5	Oil & water pipe lines should not run with electrical cable.	Vendor to confirm	
2.11.0	ENVIRONMENTAL PERFORMANCE OF THE MACHINE: The Machine shall conform to following factors related to environment	Vendor to confirm	
2.11.1	Noise level shall not exceed 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	
2.12.2	If any safety / environmental protection enclosure is required it should be built in the machine by the vendor.	Vendor to confirm	
2.11.3	Paint of the machine should be oil / coolant resistant	Vendor to confirm	

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	and should not peel off and mix up with coolant.		
Clause No	PARTICULARS AND BHEL SPECIFICATION:		BIDDER'S OFFER With Technical Details
3.0	LEVELING & ANCHORING SYSTEM		
3.1	Complete anchoring system including foundation bolts; anchoring materials, fixators, leveling shoes etc shall be supplied by the vendor.	Vendor to confirm	
3.2	Utility tools like drifts , cotter pins of all sizes (2 sets)	Vendor to confirm	
4.0	TOOLS FOR OPERATION & MAINTENANCE		
4.1	Necessary tools like Torque Wrench, Spanners, Keys, grease guns etc for operation and maintenance of the machine should be supplied. List of such tools should be submitted with offer	Vendor to confirm	
4.2	Test mandrel for checking spindle run-out & alignment should be supplied	Vendor to confirm	
5.0	SPARES:		
5.1	<p>The Vendor shall recommend and submit list of spares required for the machine for two years of trouble free operation on three shifts /day basis under two headings as</p> <p>a) Mechanical & hydraulic spares: The list may generally include all types of pumps, Valves, pressure switches / transducers, filters, seals etc.</p> <p>b) Electrical & electronic spares: The list may generally include all types of Relays, Contactors, Proximity Switches, Push Buttons, Indicating Lamps,</p>	Vendor to furnish	

	<p>Semiconductor Fuses, Special Fuses, Circuit Breakers, Main Power Switch etc.</p> <p>c) Un-priced list of spares with quantities, specified in a & b above, should be submitted with this technical offer.</p> <p>d) Unit Price of each item figuring in c shall be submitted in a sealed cover with the commercial bid.</p>		
Clause No	PARTICULARS AND BHEL SPECIFICATION:	BIDDER'S OFFER With Technical Details	
5.2	All types of spares should be available for at least ten years after supply of the machine. Incase the machine or control is likely to become obsolete within ten years period, the vendor should inform BHEL to procure the spares in advance.	Vendor to confirm	
5.3	Vendor to confirm that complete list of spares for machine and accessories, along with specification / type / model, and name & address of the spare supplier shall be furnished along with documentation to be supplied with the machine.	Vendor to furnish	
6.0	ACCESSORIES		
6.1	Cast iron Box Table (1 No) with three T-Slots (in mm)	1000Lx750Bx500H	
6.2	Tilting Table (1 No)	725Lx500Bx600H	
6.3	Centralized Automatic Lubrication system with metal cover.	Supplier to specify	
6.4	Power locking of sleeve on column	Supplier to specify	
6.5	Safety interlock for feed mechanism to prevent overloading.	Supplier to specify	

Clause No	PARTICULARS AND BHEL SPECIFICATION:		BIDDER'S OFFER With Technical Details
6.6	Flood Coolant System for wet drilling	Supplier to specify	
7.0	SPECIAL POINTS:		
7.1	Machine configuration shall be such that drilling head; arm, column and base shall be sturdy enough to withstand all types of reactionary forces developed.	Supplier to specify	
7.2	For drill head movement in the arm, hardened guide-ways with linear motion bearings preferred.	Supplier to specify	
7.3	Dial collar on headstock having good quality of chromium plating.	Supplier to confirm	
7.4	All locking mechanisms shall be smooth and trouble free to operate.	Supplier to confirm	
7.5	Flexible metal hose for coolant is preferable at headstock.	Supplier to specify	
7.6	Efficient lubrication system is to be introduced to avoid oil leakage from spindle during higher strokes.	Supplier to confirm	
7.7	First fill of oil is in supplier's scope.	Supplier to confirm	
8.0	GENERAL POINTS:		
8.1	The offer shall clearly indicate the list of standard accessories that will be supplied along with the machine	Supplier to confirm and enlist	
8.2	Accessories other than those specified shall be quoted separately as optional items.	Supplier to specify	
8.3	All controls and operating systems shall be located in a centralized convenient place for easy operation.	Supplier to confirm	
8.4	All hydraulic elements shall be of Vickers/Rexroth make	Supplier to confirm	

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Clause No	PARTICULARS AND BHEL SPECIFICATION:		BIDDER'S OFFER With Technical Details
8.5	All motors shall be from M/s Siemens/NGEF/KEC/ ABB. Or any other makes acceptable to BHEL and confirming to IEC standard.	Supplier to confirm	
8.6	All electrical devices like contactors, relays and limit switches, push buttons etc. shall be from Siemens / L&T/ Alstom/ Cuttler Hammer / Telemecanique.	Supplier to confirm	
8.7	All components/devices/terminals are to be incorporated with ferrules. (Numbered)	Supplier to confirm	
9.0	DOCUMENTATION:		
9.1	Three sets of following documents (Hard copies) in English language should be supplied along with the machine	Vendor to confirm	
9.2	Detailed Operation and Maintenance manual of machine with all drawings of machine assemblies/sub-assemblies/parts including Electrical / Pneumatic/ Coolant / Hydraulic circuit diagrams.	Vendor to confirm	
9.3	Catalogues, O&M Manuals and drawings of all bought out items, bearings wherever applicable.	Vendor to confirm	
9.4	Electronic and electrical interconnecting drawings (i.e. Between machine, control panel and drives). Hard copy: 3 Nos	Vendor to confirm	
9.5	Hydraulic and Electrical circuits with BOM	Vendor to confirm	
9.6	Detailed specification of all rubber items and hydraulic/lube fittings	Vendor to confirm	
9.7	The vendor shall submit complete Master List of parts used in the machine.	Vendor to confirm	
9.8	One additional set of all the above documentation on CD ROM.	Vendor to confirm	

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Clause No	PARTICULARS AND BHEL SPECIFICATION:	BIDDER'S OFFER With Technical Details
10.0	FOUNDATION:	
10.1	BHEL shall construct complete foundation for the machine. Vendor shall furnish the foundation details in advance.	Vendor to confirm
11.0	ERECTION & COMMISSIONING	
11.1	<p>1. Vendor to take full responsibility for the erection & commissioning including workmen, start up, testing of machine, it's control system & all other supplied equipment, machining of test pieces etc.</p> <p>2. The vendor shall bring Crane, special tools and equipment required for erection of the machine</p> <p>3. Service requirement like power, air & water shall be provided by BHEL at only one point to be indicated by Vendor in their foundation/layout drawings.</p>	Vendor to confirm
11.2	The supplier shall arrange commissioning spares, required for commissioning of the machine.	Vendor to confirm
11.3	Portion, if any, of the machine, accessories and other supplied items where paint has rubbed off or peeled 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.	Vendor to confirm
11.4	Schedule of Erection and Commissioning shall be submitted with the offer.	Vendor to confirm

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Clause No	PARTICULARS AND BHEL SPECIFICATION:		BIDDER'S OFFER With Technical Details
11.5	Duration, terms & conditions for E&C should be furnished with this technical offer in detail. Charges for the same shall be submitted with the commercial bid.	Vendor to confirm	
12.0.0	ACCURACY TESTS		
12.1.0	GEOMETRICAL ACCURACIES		
12.1.1	Geometrical Accuracy Tests shall be in accordance with IS: 2199, ISO 2423 standard or equivalent applicable standard. Detailed Test Charts for the same, clearly showing the accuracies to be achieved on the machine, shall also be submitted with the offer.	Vendor to confirm	
12.1.2	All the above accuracies to be demonstrated to BHEL engineers during pre-acceptance tests at Suppliers works and after Commissioning at BHEL Works.	Vendor to confirm	
13.0	AMBIENT CONDITIONS & THERMAL STABILITY		
13.1	Power Supply : AC 415 V \pm 10% Frequency : 50 Hz \pm 3HZ Phases : 3 phase 3 wire system Compressed air supply: 60-70 psi Ambient Temperature: max 50 °C (in a year) Relative Humidity = 85% (Vendor to confirm that machine is suitable for above conditions)	Vendor to confirm	

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Clause No	PARTICULARS AND BHEL SPECIFICATION:		BIDDER'S OFFER With Technical Details
13.2	Weather conditions are tropical. Atmosphere may be dust laden during some part of the year. Machine will be installed in the normal shop floor condition. (Vendor to confirm that machine is suitable for above and to furnish details provided on the machine for the same.	Vendor to confirm	
13.3	Thermal Stability of the machine shall be good enough to withstand the specified ambient conditions in order to meet the accuracy requirements of BHEL components.	Vendor to confirm	
13.4	The machine, including attachments and accessories, should be suitable for operating 24 hrs. a day and 7 days a week throughout. Vendor to ensure and confirm the same.	Vendor to confirm	
14.0	MACHINE ACCEPTANCE: (Tests/Activities to be Performed by Vendor)	Should be accepted & confirmed by Vendor	
14.1.0	Tests/Activities should be carried out at supplier's works on the machine before dispatch:	Vendor to confirm	
14.1.1	Geometrical Accuracy Tests as per test chart.	Vendor to confirm	
14.1.2	The machine should be tested for continuous running of 48 hrs. If any break down occurs during this test, the test should be repeated for 48 hrs from that time.	Vendor to confirm	
14.1.3	1. Full load test to demonstrate the maximum power & drilling capacity: The capacity and capability of the machine is to be demonstrated on a test piece (vendor's supply) on which drilling and tapping shall be proved with vendor tools.	Vendor to confirm	

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Clause No	PARTICULARS AND BHEL SPECIFICATION:		BIDDER'S OFFER With Technical Details
14.2.0	Test to be carried out at BHEL works while commissioning the machine:	Vendor to confirm	
14.2.1	Geometrical Accuracy Tests as per test chart.	Vendor to confirm	
14.2.2	1. Full load test to demonstrate the maximum power & drilling capacity: The capacity and capability of the machine is to be demonstrated on a test piece (vendor's supply) on which drilling and tapping shall be proved. Tooling will be supplied by BHEL. 2. Drilling and Reaming of hole to 42 H7 shall be demonstrated.	Vendor to confirm	
14.2.3	The machine should be tested for continuous running of 48 hrs. If any break down occurs during this test, the test should be repeated for 48 hrs from that time.	Vendor to confirm	
14.2.4	Training of BHEL machine operators in operation and maintenance of complete machine & accessories etc by the supplier's experts / engineers during their stay at BHEL works	Vendor to confirm	
15.0	PACKING		
15.1	Sea worthy & rigid packing for all items of complete machine, all Accessories and other supplied items to avoid any damage/loss in transit. When machine is dispatched in containers, all small loose items shall be suitably packed in boxes	Vendor to confirm	
16.0	GUARANTEE		
16.1	12 months from the date of acceptance of the machine.	Vendor to confirm	

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17.0	GENERAL: The vendor should submit the following information:		
17.1	Machine Model	Vendor to specify	
17.2	Total connected load (KVA):	Vendor to specify	
17.3	Floor area required (Length, Width, Height) for complete machine & accessories	Vendor to specify	
17.4	Painting of Machine/ Electrical Panels: RAL 6011 Apple Green (Polyurethane Paint)	Vendor to specify	
17.5	Total weight of the machine	Vendor to specify	