



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

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Email : skaruna@bheltry.co.in

Web : www.bhel.com

TWO PART BID

Tender to be submitted in two Parts

**Enquiry
Number:**

2851300039

**Enquiry
Date:**

09.12.2013

**Due date for submission
of quotation:**

25.01.2014

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	Delivery Required	Delivery Terms Required
10	CNC Guillotine Type Hydraulic Shearing Machine as per the technical specification & commercial conditions applicable (to be downloaded from web site www.bhel.com or http://tenders.gov.in)	01 No.	6 months from the date of Purchase Order	F.O.R, BHEL Stores, POWER EQUIPMENT FABRICATION PLANT, BHARAT HEAVY ELECTRICALS LIMITED, Mundipar- 441804, Sakoli Taluk, Bhandara District, Maharashtra.

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 Compliance Form for Commercial Terms & Conditions to be filled and enclosed along with the offer failing which, the offer will not be considered for evaluation.

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**

Engineer/ Capital Equipment / MM

CNC HYDRAULIC SHEARINGMACHINE (Capacity –25mm)

PART - A

SECTION- 1: Qualifying Criteria

The BIDDER has to compulsorily meet the Qualifying Criteria indicated in **Section 1** to get qualified. Otherwise the technical offer will not be considered.

S NO.	REQUIREMENTS	VENDOR'S RESPONSE
1.1	The BIDDER / VENDOR (OEM) shall have a minimum of TEN Years of Continuous Experience in the Design, Manufacture & Supply of “ CNC GUILLOTIN TYPE HYDRAULIC SHEARING MACHINE ”. Vendor shall indicate the actual no. of years of experience in the field	
1.0	<p>Only those vendors (OEMs) should quote, who have commissioned in the past (10) years (on the original date of opening of Tender) at least ONE ‘CNC GUILLOTIN TYPE HYDRAULIC SHEARING MACHINE’ of capacity to shear 16mm thick steel plates or higher and 3000mm length or higher, with minimum 42kg/mm² YS and all controls through CNC.</p> <p>EITHER (i) in at least one country other than the country of origin to establish vendor's (OEM's) global business activity OR (ii) in India ; and the referred machine is presently working satisfactorily for more than one year after commissioning (on the original date of opening of Tender). The name and contact addresses of the customers to whom the machine has been supplied has to be furnished with details.</p> <p>BHEL reserves the right to accept or reject the OEMs based on the assessment of their technical and financial capability.</p>	
1.3	Vendor has to submit at least ONE PERFORMANCE CERTIFICATE from their customers in India or from the customers to whom the machine was supplied outside the country of origin, for satisfactory performance of the machine as given under Clause 1.2 above, for a minimum period of one year (on the original date of opening of Tender). (Original Certificate or through E-mail directly from the customer). The original performance certificate may be returned after verification by BHEL, if required. For obtaining the Performance certificate, a suggestive format is provided.	

S NO.	REQUIREMENTS	VENDOR'S RESPONSE
1.4	BHEL reserves the right to verify the information provided by the Vendor for the referred machine at their referred customer's works. It shall be the responsibility of the vendor to facilitate the visit of BHEL's team at their referred customer works .The Travel and Boarding expenses for BHEL Personnel shall be borne by BHEL. In case the information provided by vendor is found to be false/ incorrect, the offer shall be rejected.	

SECTION - 2:

The BIDDER / VENDOR are requested to provide the following information:-

S NO.	REQUIREMENTS	VENDOR'S RESPONSE
2.1	The BIDDER / VENDOR to furnish Reference List of Customers, with complete address, details of contact person, where CNC Guillotine shearing machine have been supplied in the past.	
2.2	Specify details of CNC Guillotine shearing machines supplied to other units of BHEL, if any (Year of commissioning with details 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.	

SECTION – 3:

The BIDDER to note:

S NO.	REQUIREMENTS	VENDOR'S RESPONSE
3.1	The BIDDER / VENDOR shall submit the offer in TWO parts. 1. Technical Offer [with PART A & PART B] 2. Commercial Offer and Price bid.	
3.2	The Technical Offer shall contain complete details against all clauses of Technical Specifications given by BHEL.	
3.3	The Technical Offer shall be supported by copies of product Catalogues, Data Sheets and technical details of Bought- Out- Items	
3.4	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 should be produced on **Customer's Letter Head** and submitted along with the offer.

PERFORMANCE CERTIFICATE

1.0	Machine Supplied by(Manufacturer's name)	
2.0	Make & Model number of the Machine	
3.0	Month & Year of Commissioning	
4.0	Application for which m/c is used	
5.0	Machine Details	
5.1	Max. plate length possible to cut in mm	
5.2	Max. thickness of plate which can be sheared	
5.3	Yield strength of plate material	
5.4	Machine control system	
5.5	Is the machine design is Guillotine shear?	
5.6	Is the machine CNC controlled?	
5.7	Is the machine Hydraulically operated?	
5.8	Accuracy of back gauge	
6.0	Performance of the Machine (Please tick the appropriate option)	Not Satisfactory
		Average
		Good
		Satisfactory
7.0	Service after sales (Please tick the appropriate option)	Not Satisfactory
		Average
		Good
		Satisfactory
8.0	Other remarks (if any)	
Date:		Signature & Seal of the Authority Issuing the Performance Certificate

PART - B: Technical Specification

Note:-

1. The Column "Vendor's offer with Technical details" in this specification 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.

3. Name & Address of the Supplier:

Name & Address of the Indian agent(if any)

Telephone no.:

Fax no.:

e-mail:

SCOPE: SUPPLY, ERECTION & COMMISSIONING OF CNC GUILLOTINE TYPE HYDRAULIC SHEARING MACHINE-01 no.

SNO	DESCRIPTION FOR BHEL REQUIREMENT	SPECIFIED /	OFFERED	DEVIATIONS	REMARKS
1.0	PURPOSE & WORKPIECE MATERIAL:				
1.1	Purpose: Shearing of plates upto 25mm thick carbon steel	Vendor to Confirm			
2.0	TECHNICAL REQUIREMENTS:				
2.1	MACHINE CONFIGURATION				
2.1.1	Clean and burr free shearing of 1mm to 25mm thick MS of 42 Kg/sq. mm yield strength	Vendor to confirm and specify (C&S)			
2.1.2	Job cutting length: min. 3.0M wide plate, extra length will be acceptable	Vendor to (C&S)			
2.1.3	Throat: min. 250mm all sides. Distance between side frames about 3.2M	Vendor to (C&S)			
2.1.4	Backgauge stroke length, min. 1250mm	Vendor to (C&S)			
2.1.5	Back Gauge accuracy: min. 0.1 mm	Vendor to (C&S)			
2.1.6	Backgauge shall be operated on heavy duty Ball screws driven by AC servo motors and fitted with absolute position encoders. The encoders shall be strongly protected from damage.	Vendor to (C&S)			
2.1.7	Backgauge structure shall be made from all steel. Backgauge should have features of chaining retraction and step repetition, manual axis movement and power down memorization.	Vendor to (C&S)			
2.1.8	Strokes per min: 10-12, depending on stroke travel	Vendor to (C&S)			

SCOPE: SUPPLY, ERECTION & COMMISSIONING OF CNC GUILLOTINE TYPE HYDRAULIC SHEARING MACHINE-01 no.					
SNO	DESCRIPTION FOR BHEL REQUIREMENT	SPECIFIED /	OFFERED	DEVIATIONS	REMARKS
2.1.9	Blade stroke should be adjustable to enable reduction and increase in number of blade stroke/min as per requirement	Vendor to (C&S)			
2.1.10	Cutting angle adjustment: 0.5 - 3 degrees	Vendor to (C&S)			
2.1.11	Working Height :840-875 mm	Vendor to (C&S)			
2.1.12	1 No. heavy duty squaring and supporting arm of min. length 2500 mm shall be fitted at the left hand side of the machine bed . The size of supporting arm shall be of casting/forging/plate of around 450mm in width with ample cross section to ensure mechanical stability. It shall have T slot at inner side to hold 3 nos. heavy duty manually adjustable sheet/plate stoppers, movable over full length of the arm, a wide stainless steel scale fitted on it with zero reference from blade cutting edge (adjustable). Vertical support at other end of the arm for its holding which can be grouted to floor. The arm shall be fitted with ball transfer unit having balls of around 32mm diameter for the easy movement of the plates. The distance between balls shall be around 400mm. The squaring piece shall be preferably of cross section 70 x 70 mm, fitted over the supporting arm with ample screws and dowel pins.	Vendor to (C&S)			
2.1.13	2 No. additional supporting arms of length about 2500 mm, bed width 150-200 mm with ample cross section, fitted with same ball sockets at the pitch of min. 400 mm shall be provided. One arm at the middle and another at RHS end of machine. Both arms shall have same size T slots for movable manually adjustable sheet stoppers, gauges, verticle supports and shall be fitted with the machine bed using similar hardware.	Vendor to (C&S)			
2.1.14	Table size: Length -equal to machine width; width - 750 mm (approx.); Height: 840-875 mm (approx), thickness to meet mechanical stability during operation, Front shall have additional thickness for the provision of T slots for fixing front arms. Rear part shall be sufficiently thick to accommodate the blades of sizes 30 x 125 x 3250 mm. Shall have same ball transfer units fitted at the same pitch as of arms. The bed shall have preferably provision like T slots for the clamping of C clamps to hold cutting templates.	Vendor to (C&S)			
2.1.15	Blades: The blade size shall be preferably of size 30 x 125 x 3250mm with all 4 side cutting edges. Both the ram and bed blades shall be interchangeable. Individual pad type design for blade clearance adjustment not acceptable. Joseph Rhode Guillotine shear concept of blade fitting and adjustment required.	Vendor to (C&S)			
2.1.16	Ample full length shims of different thicknesses shall be supplied with blades.	Vendor to (C&S)			

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SNO	DESCRIPTION FOR BHEL REQUIREMENT	SPECIFIED /	OFFERED	DEVIATIONS	REMARKS
2.1.17	Blades: 3 sets (1 set along with machine and 2 separately to be provided) for cutting thickness as specified in clause 2.1.14. Drawing of blade shall be provided with the machine.	Vendor to (C&S)			
2.1.18	Blade material and hardness shall ensure long lasting life and cutting edge.	Vendor to (C&S)			
2.1.19	The blade tightening bolts shall be of 10.9 Gr. or better of reputed make like Unbrako or Sundram	Vendor to (C&S)			
2.1.20	Plate holders or hold downs system:	Vendor to (C&S)			
2.1.21	Plunger base dia. shall be min. 50mm. for plate holding. The plunger base shall be smooth so that no marking shall be left on the plate.	Vendor to (C&S)			
2.1.22	14-15 nos. plungers shall be fitted and shall also be removable. The hydraulic line shall be such that can be approached for easy maintenance work. The hydraulic lines and all its fittings shall be leak proof and well protected from any possible damage during working.	Vendor to (C&S)			
2.1.23	The plate holding plungers shall exert ample force to the job to completely restrict its movement on the bed during cutting operation.	Vendor to (C&S)			
2.1.24	Overload Protection: Machine should stop in case of overload due to wrong setting / operation	Vendor to (C&S)			
2.1.25	General Assembly Drawing with Technical Specifications to be attached with offer. Vendor shall also supply the OGA drawing of the machine with the offer according to the requirement of this specification.	Vendor to (C&S)			
2.1.26	Dedicated CNC system for hydraulic guillotine shearing application	Vendor to (C&S)			
2.1.27	Provision of light beam showing cutting line (Shadow light).	Vendor to (C&S)			
3.0	OPERATION AND CONTROL SYSTEM:	Vendor to (C&S)			
3.1	Shear control system with application for:	Vendor to (C&S)			
3.1.1	Back gauge control	Vendor to (C&S)			
3.1.2	Programmable auto changing back gauge after completion of each stroke.	Vendor to (C&S)			
3.1.3	Cutting length adjustment	Vendor to (C&S)			
3.1.4	Blade clearance control	Vendor to (C&S)			
3.1.5	Blade gap adjustment	Vendor to (C&S)			
3.1.6	Stroke limitation	Vendor to (C&S)			
3.1.7	Rake angle adjustment,	Vendor to (C&S)			

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3.1.8	All measurements shall be in Metric system only	Vendor to (C&S)			
3.2	Preferably pictorial colour display of all functions, features and parameters with soft key operation shall be offered.	Vendor to (C&S)			
4	CONSTRUCTION:	Vendor to (C&S)			
4.1	The frame should be monolithic structure which should be fixed and does not show any mechanical change in dimensions during operation. Both the side walls, front plate, back plate, bed, ram plate, ram guide mechanism etc shall be such designed to ensure that they safely bear the load of shearing and hold down forces with ample factor of safety, ensuring no mechanical change in any worsed condition during maximum capacity utilisation.	Vendor to (C&S)			
4.2	Vendor to furnish details of material, hardness & constructional details, including explanatory drawings, of various components/assemblies like side walls, front plate, ram plate, table, guideways/slides, hydraulic and lubrication system, backgauge system, feedback system etc. of the machine.	Vendor to (C&S)			
4.3	Vendor to furnish details of material, hardness & constructional details like thickness etc of structure and bed along with the offer.	Vendor to (C&S)			
4.4	Make of CNC controller: Delem or Cyblec (latest version)	Vendor to (C&S)			
4.5	Make of Main Motor: Siemens / ABB / Crompton	Vendor to (C&S)			
4.6	Make of Drives / Motors: Siemens / Schneider / Panasonic / Yasakawa / Baumuller make only	Vendor to (C&S)			
4.7	Make of PLC: Siemens / Telemehanique	Vendor to (C&S)			
4.8	Measuring System: Measuring system should be of Heidenhain / Siemens make should be provided.	Vendor to (C&S)			
4.9	Make of all bearings: Rollix France/SKF / INA/ NRB / FAG / TIMKEN make.	Vendor to (C&S)			
4.10	The hydraulic system shall be of Bosch Rexroth /Vickers / Yuken.	Vendor to (C&S)			
4.11	Video images on CD including hard copy explaining the technical features / Literature with photographs, drawings explaining the technical features should be enclosed with the offer	Vendor to (C&S)			
4.12	Hydraulic, Pneumatic & oil pipings should be metallic except places where flexible pipings are essential. All the pipes required for the same shall be included in the standard scope of the machine.	Vendor to (C&S)			
5	MACHINE LIGHTS: All light fittings, consumables, adapters/receptacles should have compatibility with Indian / International equivalents.	Vendor to Confirm			
6	ELECTRICAL :				

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SNO	DESCRIPTION FOR BHEL REQUIREMENT	SPECIFIED /	OFFERED	DEVIATIONS	REMARKS
6.1	415V ± 10%, 50HZ ± 3 HZ, 3 Phase AC (3 wire system with out neutral) Power Supply Voltage 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. Requirement of grounding/earthing with required material details is to be informed by vendor well in advance so that same could be incorporated during construction of foundation.	Vendor to Confirm			
6.2	Tropicalisation: All electrical / electronic equipment shall be tropicalized	Vendor to Confirm			
6.3	All electrical control gear should be housed in a lockable steel enclosure to IP55 protection standard which is mounted on the machine. A 3 phase door interlocked circuit breaker shall be provided for the connection of incoming power.	Vendor to Confirm			
6.4	All electrical & electronic control cabinets & panels should be dust and vermin proof	Vendor to Confirm			
6.5	All electrical and electronic panels including operator's panel 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			
6.6	Vendor should ensure the proper earthing for the machine and its peripherals.	Vendor to Confirm			
7	SAFETY ARRANGEMENTS: Following safety features in addition to other standard safety features should be provided on the machine:	Vendor to Confirm			
7.1	A removable safety guard to be provided before the plate hold down plungers.	Vendor to Confirm			
7.2	Machine should have adequate and reliable safety interlocks / devices to avoid damage to the machine, workpiece and the operator due to the malfunctioning or mistakes. Machine functions should be continuously monitored and alarm / warning indications through lights/ alarm number with messages (on display and panels) should be available.	Vendor to Confirm			
7.3	The electrical control circuits should be so arranged that in the event of power failure or interruption the press cannot inadvertently restart or make any uncontrolled movements.	Vendor to Confirm			
7.4	Emergency stop buttons of the turn to release type should be positioned on both sides of the machine in addition to one on the control desk and the integrity of the emergency system is continually monitored in compliance with recognised safety standards.	Vendor to Confirm			
7.5	A detailed list of all alarms / indications provided on machine should be submitted by the supplier.	Vendor to Confirm			

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SNO	DESCRIPTION FOR BHEL REQUIREMENT	SPECIFIED /	OFFERED	DEVIATIONS	REMARKS
7.6	All the pipes, cables etc. on the machine should be well supported and protected. These should not create any hindrance to machine operator's movement for effective use of machine.	Vendor to Confirm			
7.7	All the rotating parts used on machine should be statically & dynamically balanced to avoid undue vibrations.	Vendor to Confirm			
7.8	Emergency Switches at suitable locations as per International Norms should be provided.	Vendor to Confirm			
8	ENVIRONMENTAL PERFORMANCE OF THE MACHINE : The Machine shall conform to following factors related to environment :				
8.1	If any safety / environmental protection enclosure is required it should be built in the machine by the vendor.	Vendor to Confirm			
8.2	Paint of the machine should be oil resistant and should not peel off and mix up with coolant.	Vendor to Confirm			
9	LEVELING & ANCHORING SYSTEM: Complete anchoring system including foundation bolts, anchoring materials, fixates, levelling shoes etc should be supplied	Vendor to Confirm			
10	TOOLS FOR ERECTION, OPERATION & MAINTENANCE: 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. List of such tools should be submitted with offer	Vendor to Confirm			
11	SPARES:				
11.1	Itemised breakup of mechanical, hydraulic, electrical and electronic spares used on the machine in sufficient quantity as per recommendation of Vendor for 2 years of trouble free operation on three shifts continuous running basis should be offered by vendor. The list to include following, in addition to other recommended spares: (Unit Price of each item of spare should be offered)	Vendor to Confirm			
11.1.1	Mechanical & Hydraulic Spares: All types of Pumps, Valves, Pressure Switches, Transducers, Flow Switches, Filters, Seals, O-rings, Hydraulic Hoses etc. Set of blades four in number for both Stainless steel and Mild steel sheets.	Vendor to Confirm			
11.1.2	Electrical /Electronic / Spares: All types of Relays, Contactors, Proximity Switches, Push Buttons, Indicating Lamps, Semiconductor Fuses, Special Fuses, Circuit Breakers, Main Power Switch, Encoders, e, Operator's panel with Display Unit, PLC, Motors for Feed Drives.	Vendor to Confirm			

SCOPE: SUPPLY, ERECTION & COMMISSIONING OF CNC GUILLOTINE TYPE HYDRAULIC SHEARING MACHINE-01 no.

SNO	DESCRIPTION FOR BHEL REQUIREMENT	SPECIFIED /	OFFERED	DEVIATIONS	REMARKS
11.2	All types of spares for total machine and accessories should be available for at least ten years after supply of the machine. If 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 Confirm			
11.3	Recommended set of spares for all attachments are to be offered with details.	Vendor to Confirm			
11.4	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 Confirm			
12	DOCUMENTATION : Five 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 system	Vendor to Confirm			
12.2	Detailed Maintenance manual of machine with all drawings of machine assemblies/sub assemblies/parts including Electrical / Pneumatic/ Hydraulic circuit diagrams. All Assembly/ Sub Assembly Drawings shall be supplied with the part list also	Vendor to Confirm			
12.3	CNC operation and maintenance manual.	Vendor to Confirm			
12.4	Catalogues, O&M Manuals of all bought out items including drawings, trouble shooting chart etc. wherever applicable.	Vendor to Confirm			
12.6	PLC program print-outs with comments in English.	Vendor to Confirm			
12.7	Complete Master List of parts used in the machine shall be submitted by the vendor.	Vendor to Confirm			
12.8	One additional set of all the above documentation on CD ROM, wherever possible.	Vendor to Confirm			
13	TRAINING				
13.1	BHEL Persons should be trained at supplier's Works for mutually agreed period in the area of (a) Technology, Use of all Features, Systems & supplied accessories etc. (b) Electrical & Electronic maintenance for machine & other supplied equipments (c) Mechanical & Hydraulic maintenance of the machine & other supplied equipments (d) Operation of the machine & other supplied equipments.	Vendor to Confirm			
13.2	Air-fare, boarding & lodging for the trainees shall be borne by BHEL.	Vendor to Confirm			
13.3	Competent, English speaking experts shall be arranged by the vendor during training for satisfactory & effective training of BHEL personnel.	Vendor to Confirm			
13.4	Vendor to quote for training on man / week basis	Vendor to Confirm			

SCOPE: SUPPLY, ERECTION & COMMISSIONING OF CNC GUILLOTINE TYPE HYDRAULIC SHEARING MACHINE-01 no.

SNO	DESCRIPTION FOR BHEL REQUIREMENT	SPECIFIED /	OFFERED	DEVIATIONS	REMARKS
13.5	Vendor should commit to organize training of Electronics Engineer and Programmer at the CNC System Manufacturer's works for advanced features and specialised training if so required by BHEL.	Vendor to Confirm			
14 FOUNDATION :					
14.1	Vendor shall submit the preliminary layout drawing for getting BHEL's approval within one month from the date of Letter of Intent (LOI) / P.O. whichever is earlier. Soil condition data will be furnished by BHEL along with the approval. Complete Foundation Design including details of reinforcement and Final Layout drawings shall be submitted by the supplier within three months after getting BHEL's approval. The layout should consist of all requirements pertaining to complete machine including space requirement for Voltage Stabilizer, Isolation Transformer (if any), Air compressor (if any), & any other accessories. BHEL shall construct complete foundation for the machine under supervision of supplier and at supplier's responsibility. Vendor should arrange equipments 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. for foundation bolts	Vendor to Confirm			
15.0 ERECTION & COMMISSIONING					
15.1	Supplier to take full responsibility for carrying out the erection, start up, testing of machine, it's 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 to be indicated by supplier in their foundation/layout drawings. All material handling, erection, commissioning etc shall be done by the machine supplier. Details of these requirements should be informed by vendor in advance.	Vendor to Confirm			
15.2	Successful proving of BHEL components by the supplier shall be considered as part of commissioning. All tests, as mentioned at clause 17 (Machine Acceptance) shall form part of the commissioning activity.	Vendor to Confirm			
15.3	Commissioning spares, required for commissioning of the machine within stipulated time, shall be brought by the supplier on returnable basis.	Vendor to Confirm			
15.5	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 of various colours of paint used.	Vendor to Confirm			
15.6	Schedule of Erection and Commissioning shall be submitted with the offer.	Vendor to (C&S)			
15.7	Charges, duration, terms & conditions for E&C should be furnished in detail separately by vendor along with offer.	Vendor to (C&S)			
16 AMBIENT CONDITIONS & THERMAL STABILITY :					

SCOPE: SUPPLY, ERECTION & COMMISSIONING OF CNC GUILLOTINE TYPE HYDRAULIC SHEARING MACHINE-01 no.

SNO	DESCRIPTION FOR BHEL REQUIREMENT	SPECIFIED /	OFFERED	DEVIATIONS	REMARKS
16.1	Total machine including CNC system and all supplied items should work trouble free and efficiently under following operating conditions and should give specified accuracies, Power Supply: Voltage: 415 V ±10% Frequency: 50 Hz ± 3% No. of phases = 3 Ambient Conditions: Temperature = 5 to 50 degree Celsius Relative Humidity = 95% max. (Vendor to confirm that machine is suitable for above and details of provisions on the machine for the same are to be furnished by Vendor)	Vendor to Confirm			
16.2	Weather conditions are tropical, Atmosphere may be dust laden during some part of the year. Machine shall be kept in the normal shop floor condition. Max. temperature variation is up to 25 deg Celsius in 24 hours. (Vendor to confirm that machine is suitable for above and details of provisions on the machine for the same are to be furnished by Vendor)	Vendor to Confirm			
16.3	Thermal Stability of the complete machine keeping in view specified Ambient Conditions and accuracy requirements of BHEL components and trouble free operation of the machine should be ensured by vendor.	Vendor to Confirm			
16.4	The machine, including attachments and accessories, should be suitable for 24 hrs. continuous operation to its full capacity. Vendor to ensure and confirm the same.	Vendor to Confirm			
17.0	MACHINE ACCEPTANCE: (Tests/Activities should be Performed by Vendor)	Vendor to accept &			
17.1	Tests/Activities should be carried out at supplier's works on the machine before dispatch and demonstrated to pre-dispatch inspection team of BHEL:	Vendor to Confirm			
17.1.1	One mild / alloy Steel Plate of 437 N/sq. mm yield point and 20 mm thick will be cut at suppliers work. The Vendor has to arrange for plate along with document mentioning Yield strength of plate.	Vendor to Confirm			
17.1.1	Dimensional accuracy of the manufactured component as per BHEL drawing.	Vendor to Confirm			
17.1.2	Demonstration of all features of the machine, control system & accessories	Vendor to Confirm			
17.2	Tests/Activities should be carried out at BHEL works while commissioning the machine :				
17.2.1	Full load test to demonstrate the maximum power & cutting capacity of the machine. Required plates shall be supplied by BHEL	Vendor to Confirm			
17.2.3	Dimensional accuracy as per BHEL drawing submitted and agreed with vendor.	Vendor to Confirm			
17.2.4	Demonstration of all features of the machine, control system & accessories to the satisfaction of BHEL for efficient and effective use of the machine	Vendor to Confirm			

SCOPE: SUPPLY, ERECTION & COMMISSIONING OF CNC GUILLOTINE TYPE HYDRAULIC SHEARING MACHINE-01 no.					
SNO	DESCRIPTION FOR BHEL REQUIREMENT	SPECIFIED /	OFFERED	DEVIATIONS	REMARKS
17.2.5	Two weeks supervision of independent operation of machine by BHEL after job prove out	Vendor to Confirm			
17.2.6	Training of BHEL machine operators in operation of complete machine & accessories etc by the supplier's experts / engineers during their stay at BHEL works	Vendor to Confirm			
17.2.7	Demonstration by actual use of all supplied attachments and accessories to their full capacity.	Vendor to Confirm			
18.0	PACKING: Sea worthy & rigid packing for all items of complete machine, electronic	Vendor to Confirm			
19.0	GUARANTEE: 24 months from the date of acceptance of the machine.	Vendor to Confirm			
20.0	GENERAL :				
20.1	Machine Model	Vendor to Specify			
20.2	Total connected load (KVA):	Vendor to Specify			
20.3	Floor area required (Length, Width, Height) for complete machine & accessories	Vendor to Specify			
20.4	Painting of Machine / Electrical Panels : RAL 6011 Apple Green (Polyurethane Paint)	Vendor to Confirm			
20.5	Total weight of the machine	Vendor to Specify			
20.6	Weight of heaviest part of machine	Vendor to Specify			
20.7	Weight of the heaviest assembly / sub-assembly of the Machine	Vendor to Specify			
20.8	Detailed catalogues , sketch/ photographs/video clippings of the m/c and accessories/ attachments should be submitted with the offer.	Vendor to Specify			