

BHRAT HEAVY ELECTRICAL LIMITED JHANSI

Enquiry No. :	
Due Date :	
Machine No.	MT-1/1/1518
Specification no.	6216
Qty	1no

Note:-

1. The 'Offered' Column and where applicable, the 'Deviations' & 'Remarks' Column 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.
3. Vendor(OEM) must submit complete information against clause no. 23. The offer meeting this clause would only be processed.

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 500 Ton PRESS BRAKE MACHINE complying with specification as below.				
S No. Description - BHEL's Requirement		Specified	Offered	Deviations
1 Application :-		Vendor to offer		
2 Type:-		Vendor to offer		
3 Technical specification :-				
3.1 Job requirement / capacity		Vendor to confirm and submit		
3.1.1 Maximum sheet thickness- 32 mm (thick) of MS with UTS between 42-59 kg/mm2				
3.1.2 Vendor to provide capacity in Tonnage, considering minimum inside bending radius. Vendor to provide calculation for Tonnage & bending chart.		Vendor to submit		
3.1.3 Capacity of Press - 500 MT (minimum)		Vendor to submit		
3.2 Maximum bending length -3200 mm		Vendor to confirm		
3.4 Distance between housing		Vendor to specify		

S No.	Description - BHEL's Requirement	Specified	Offered	Deviations	Remarks
3.5	Adjustable Ram Stroke -300 mm	Vendor to confirm			
3.6	Throat Gap -500 mm	Vendor to confirm			
3.7	Table width -	Vendor to specify			
3.8	Speed	Vendor to confirm			
3.8.1	Approach speed -100 m/sec(Approx)	Vendor to confirm			
3.8.2	Return speed - 90 mm/sec (Approx)	Vendor to confirm			
3.8.3	Working speed- 8-10 mm/sec(Approx)	Vendor to confirm			
3.9	Stroke length/stroke adjustment	Vendor to specify			
3.1	Motor Power	Vendor to submit			
3.10.1	Vendor to specify with necessary calculation to ensure required tonnage capacity	Vendor to submit			
3.11	Size & weight of the machine	Vendor to submit			
3.12	Oil tank capacity	Vendor to submit			
3.12.1	Vendor to specify w.r.t. tonnage capacity	Vendor to submit			
3.13	Accuracies	Vendor to confirm			
	X-axis - ± 1 mm	Vendor to confirm			
	R-axis - ± 1 mm	Vendor to confirm			
	Z-axis - ± 1 mm	Vendor to confirm			
3.14	Back gauge range (To be quoted as Optional)	Vendor to confirm			
	X-axis - 1000 mm	Vendor to confirm			
	R-axis - 200 mm	Vendor to confirm			
	Z-axis - 150 mm (minimum) to full range	Vendor to confirm			
	Suitable gauging to measure dimensions in above mentioned accuracies (To be quoted as optional)	Vendor to confirm			
3.15	be quoted as optional)	Vendor to note			
3.16	Input power supply	Vendor to note			
3.16.1	415 v +/- 10% variation 3 phase, 50 hz + 3% variation	Vendor to note			
3.17	Working condition				
3.17.1	Ambient temperature 0 to 50 deg C	Vendor to confirm/offer			
3.17.2	Relative humidity upto 95% in rainy season.				
4	TECHNICAL FEATURE:-				
4.1	Construction	Vendor to confirm			
4.1.1	Rigid and compact suitable for tough working condition at Fabrication				
4.1.2	Mono-lithic construction to ensure precision and machine's lasting reliability and efficiency	Vendor to confirm			

S No.	Description - BHEL's Requirement	Specified	Offered	Deviations	Remarks
4.2	Special feature				
4.2.1	Programming and storage of parameter for representative use.	Vendor to confirm			
4.2.2	Control panel with display screen.	Vendor to confirm			
4.2.3	Automatic Centralized lubrication system	Vendor to confirm			
4.3	INSTALLATION:- Block diagrams for layout details, foundation details, electrical cable sections, weight of assemblies to assess working space requirements & handling during erection.				
4.3.1		Vendor to confirm			
4.4	Air conditioning /ventilation Cabinets housing, drive controllers & operator's pendant are to be equipped with proper air conditioning mechanism/ air ventilation considering the working conditions	Vendor to confirm			
4.4.1					
5	STANDARD ACCESSORIES AND TOOLINGS:-				
5.1	All standard toolings /hand tools for easy operation.	Vendor to confirm			
5.2	tool clamping system for dies and punches.	Vendor to specify			
5.3	Adjustable front sheet support attachments.	Vendor to confirm			
5.4	In- built safety devices for both hydraulic and electrical system	Vendor to confirm			
6	OPTIONAL ACCESSORIES:-				
6.1	Handling facility for components during bending covering the total span (Jib crane / hoists)	Vendor to confirm			
6.2	Provision to operate in manual mode for punch movement by a convenient hand wheel on the programmer.	Vendor to confirm			
6.3	Adjustable intermediate clamps for top beam to facilitate folds on plate with very high side edge and making of box type jobs.	Vendor to confirm			
6.4	Provision of sheet follower to allow processing of medium and large size sheets with one operator. This helps in eliminating sagging / counter folding in large jobs of sheet metals.	Vendor to confirm			
6.5	Universal type hardened , ground and sectioned dies and punches for bending radius 2 mm and above like Multi V- Block, Straight Punch, Semi- gooseneck punch for 30deg, 45 deg , 60 deg and 90 deg bending angle. Vendor to quote itemwise price of tools. Vendor to specify bending radius too.	Vendor to confirm and quote			
7	SPARES				

S No.	Description - BHEL's Requirement	Specified	Offered	Deviations	Remarks
	Recommended mechanical /hydraulic /electrical / electric spares / toolings for minimum 2 years of smooth operation of the machine with individual identification no. and price including the following :				
7.1	Mechanical & Hydraulic Spares: Switches, Transducers, Flow Switches, Filters, Seals, O-rings, Hydraulic Hoses etc.				
7.2	Electrical /Electronics: Switches, Push Buttons, Indicating Lamps, Semiconductor Fuses, Special Fuses, Circuit Breakers, Main Power Switch, etc.				
8	TRAINING				
8.1	BHEL Persons should be trained at supplier's Works for mutually agreed period in the area of (a) Electrical, Electronic maintenance for machine & other supplied equipments (b) Mechanical & Hydraulic maintenance of the machine & other supplied equipments (c) Operation of the machine & other supplied equipments.	Vendor to confirm Vendor to confirm Vendor to confirm			
8.2	Fare, boarding & lodging for the trainees shall be borne by BHEL.	Vendor to confirm			
8.3	Competent, English speaking experts shall be arranged by the vendor during training for satisfactory & effective training of BHEL personnel.	Vendor to quote			
8.4	Vendor to quote for training on per man-day basis				
9	DOCUMENTS / INSTRUCTION MANUALS: Five sets of documents to be provided as below:-	Vendor to confirm			
9.1	Installation / commissioning manual.	Vendor to confirm			
9.2	Functions of all major components / accessories with assembly	Vendor to confirm			
9.3	Interface description.	Vendor to confirm			
9.4	Programming manual.	Vendor to confirm			
9.5	Electrical schematic diagram.	Vendor to confirm			
9.6	Wiring diagram	Vendor to confirm			
9.7	Hydraulic & details assembly diagrams of machine.	Vendor to confirm			
9.8	Lubrication chart with oil /grease grades.	Vendor to confirm			
9.9	PLC ladder diagram & PLC programming manual alongwith cross reference list.	Vendor to confirm			
10	Circuit diagram of PCB's used in the machine.	Vendor to confirm			

S No. Description - BHEL's Requirement		Specified	Offered	Deviations	Remarks
10.1	Machine operation /maintenance manual.	Vendor to confirm			
10.2	Details spare part list for mechanical / electrical/ electronics with identification.	Vendor to confirm			
10	ELECTRICAL : 415V + 10% / -10%, 50HZ +/-3 HZ. 3 Phase AC (4 wire system with 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			
10.1.	Tropicalisation: All electrical / electronic equipment shall be tropicalized				
11	All electrical & electronic control cabinets & panels should be dust and vermin proof	Vendor to confirm			
11.1	All electrical components in the cabinets should be mounted on DIN Rail	Vendor to confirm			
11.2	All electrical and electronic panels including operator's panel should be provided with Compact Fluorescent Lamps for sufficient illumination and power receptacles of 220Vvolts, 5/15 Amp AC. All adapters/receptacles should have compatibility with Indian equivalents.	Vendor to confirm			
11.3	Motors shall conform to IEC or Indian Standards and shall be reputed make	Vendor to confirm			
11.4	All cables and cable trays required for the machine should be included in the offer.	Vendor to confirm			
11.5	Vendor should ensure the proper earthing for the machine and its peripherals.	Vendor to confirm			
11.6	The electrical components used shall be from reputed international makes such as Siemens / Telemecanique / Merlin Gerin / GE/ ABB and shall be accordance with DIN/IEC Standards.	Vendor to confirm			
11.7	SAFETY ARRANGEMENTS: Following safety features in addition to other standard safety features should be provided on the machine:				
12					
12.1	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. Details shall be submitted in the technical bid.	Vendor to confirm			

S No.	Description - BH&L's Requirement	Specified	Offered	Deviations	Remarks
12.2	In case of overloads due to wrong manoeuvres / malfunctions the machine should stop to avoid damage to machine and man.	Vendor to confirm			
12.3	Detailed list of safety alarms / indications provided on the machine shall be submitted along with the offer.	Vendor to confirm			
12.4	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			
12.5	Emergency Switches at suitable locations as per International Norms should be provided.	Vendor to confirm			
12.6	Necessary protection shall be provided in the Hydraulic power pack to prevent from over loading.				
13	ENVIRONMENTAL PERFORMANCE OF THE MACHINE : The Machine shall conform to following factors related to environment : (a) Maximum noise level shall be 85 dB(A) at normal load condition, 1 meter away from the machine with correction factor for back ground noise, if necessary. This will be measured as per international standards like DIN 45635-16. Supplier to demonstrate compliance to noise level, if so required.	Vendor to confirm			
	(b) If any safety / environmental protection enclosure is required it should be built in the machine by the vendor.	Vendor to confirm			
	(c) Paint of the machine should be oil / coolant resistant and should not peel off and mix up with coolant.				
14	LEVELING & ANCHORING SYSTEM Complete anchoring system including foundation bolts, anchoring materials, leveling shoes etc should be supplied	Vendor to confirm			
14.1	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			
15.1					
16	FOUNDATION				

S No.	Description - BHEL's Requirement	Specified	Offered	Deviations	Remarks
	Vendor shall submit the foundations layout drawings giving load points, static/ dynamic loading for BHEL's approval within one month from the date of Letter of Intent (LOI) or Purchase Order, whichever is earlier.	Vendor to confirm			
16.1	Foundation of the machine will be designed by the supplier.	Vendor to confirm			
16.2	Construction of foundation will be carried out by BHEL under the supervision of supplier/ supplier representative.	Vendor to confirm			
16.3					
17	ERECTION & COMMISSIONING				
17.1	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. Other requirements like crane and helping personnel shall also be provided by BHEL. Details of these requirements should be informed by vendor in advance.	Vendor to confirm			
17.2	Successful working of full capacity of the machine by the supplier shall be considered as part of commissioning. All tests, as mentioned at clause 18 activity.	Vendor to confirm			
17.3	Tools, Tackles, instruments and other necessary equipments required to carry out all above activities should be brought by the supplier.	Vendor to confirm			
17.4	Commissioning spares, required for commissioning of the machine within stipulated time, shall be brought by the supplier on returnable basis.	Vendor to confirm			
17.5	All Cover Plates required for the machine and its peripherals including pits, if any, shall be supplied and installed by the vendor.	Vendor to confirm			
17.6	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			
17.7	Schedule of Erection and Commissioning shall be submitted with the offer.	Vendor to confirm			
17.8	Charges, duration, terms & conditions for E&C should be furnished in detail separately by vendor along with offer.	Vendor to confirm			

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18	MACHINE ACCEPTANCE: (Tests/Activities should be Performed by Vendor) Tests/Activities should be carried out at supplier's works on the machine before dispatch :	Vendor to confirm			
18.1	The machine should be tested for all functions at supplier works before dispatch.	Vendor to confirm			
18.1.1	Demonstration of all features of the machine, control system & accessories.	Vendor to confirm			
18.1.2	Tests/Activities should be carried out at BHEL works while commissioning the machine :	Vendor to confirm			
18.2	Full load test to demonstrate the maximum power & bending capacity of the machine at BHEL works.	Vendor to confirm			
18.2.1	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			
18.2.2	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			
18.2.3	Demonstration by actual use of all supplied attachments and accessories to their full capacity for actual jobs.	Vendor to confirm			
18.2.4					
19	PACKING: Sea worthy & rigid packing for all items of complete machine with all Accessories and other supplied items to avoid any damage/loss in transit. When machine is despatched in containers, all small loose items shall be suitably packed in boxes.	Vendor to confirm			
19.1					
20	GUARANTEE : 24 months from the date of acceptance of the machine at BHEL works.	Vendor to confirm			
20.1					
21	GENERAL :	Vendor to submit			
21.1	Machine Model	Vendor to submit			
21.2	Total connected load (KVA): Floor area required (Length, Width, Height) for complete machine & accessories	Vendor to submit			
21.3	Painting of Machine / Electrical Panels : RAL 6011 Apple Green (Polyurethane Paint)	Vendor to submit			
21.4	Total weight of the machine	Vendor to submit			
21.5	Weight of the heaviest part of machine	Vendor to submit			
21.6	Weight of the heaviest assembly / sub-assembly of the Machine	Vendor to submit			
21.7					

S No.	Description - BHEL's Requirement	Specified	Offered	Deviations	Remarks
21.8	Dimensions of largest part/ sub-assembly/ assembly of the machine	Vendor to submit			
21.9	Vendor to submit, along with offer, reference list of customers where similar machines have been supplied mentioned broad specifications of the supplied machine i.e. Model, capacity, CNC System etc	Vendor to submit			
21.1	Detailed catalogues, sketch/photographs of the m/c and accessories/ attachments should be submitted with the offer.	Vendor to submit			
21.11	Hydraulic, Pneumatic & oil pipings should be preferably 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 confirm			
22	Technical condition:-				
22.1	All wires are to be properly numbered/ marked in control cabinet /	Vendor to confirm			
22.2	All machine elements e.g. solenoids, switches must have identification tags.	Vendor to confirm			
22.3	All cabinet must have power point and tube lights.	Vendor to confirm			
22.4	Machine Light to be offered to provide sufficient illumination of working area.	Vendor to confirm			
22.5	Complete Erection, Installation, Commissioning & trial job proving is the responsibility of vendor at BHEL works.	Vendor to confirm			
22.6	Guarantee for 2 year trouble free operation and prompt after sales service during & after guarantee period.	Vendor to confirm			
23	QUALIFYING CONDITION:-				
23.1	Only those vendors(OEMs), who have supplied and commissioned at least one hydraulic press of same type, same or higher capacity for similar applications in the past ten years (on the date of opening of tender) and such machine is presently working satisfactorily for more than one year after commissioning (on the date of opening of tender) , should quote. The following information should be submitted by the vendor about the companies where similar machines have been supplied. This is required from all the vendors for qualification of their offer.	Vendor to Specify			
23.1.1	Name of the customer / company where similar machine is installed.	Vendor to Specify			
23.1.2	Complete postal address of the customer.	Vendor to Specify			
23.1.3	Month & Year of commissioning.	Vendor to Specify			
23.1.4	Application for which the machine is supplied.	Vendor to Specify			
23.1.5	Name and designation of the contact person of the customer.	Vendor to Specify			

S No.	Description - BHEL's Requirement	Specified	Offered	Deviations	Remarks
23.1.6	Phone, FAX no. and email address of the contact person of the customer.	Vendor to Specify			
23.1.7	Performance certificate from the customers regarding satisfactory	Vendor to Specify			
23.1.8	Performance of machine supplied to them in original.				
23.1.9	BHEL reserves the right to verify information provided by vendor. In case the information provided by vendor is found to be false/incorrect, the offer shall be rejected.	Vendor to confirm			

<p><i>Report 13/4/11</i></p> <p>B K .Manjhi Sr.Mgr.(Fab)</p>		<p><i>Arjun Singh</i></p> <p>Arjun Singh Mgr. (WE&S)</p>	
<p><i>R N Jha</i></p> <p>R N Jha 13.4.2011 AGM (Fab)</p>		<p><i>S.J. Chakraborty</i></p> <p>S.J. Chakraborty Sr. DGM (WTFT)</p>	