

	<b>BHARAT HEAVY ELECTRICALS LIMITED, RUDRAPUR</b>	BHEL Enquiry No.	14E0056
		Due Date	24/06/2014
		Supplier's Offer Ref:	
		Supplier's Offer Date:	
<b>[Techno-Commercial Bid – PART1]</b>			

**Specification cum Compliance Certificate for HYDRAULIC HOLE PUNCHING PRESS MACHINE**

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
2. The offer and all documents enclosed with offer should be in English language only.

Name & Address of the supplier (OEM):	Name & Address of the Indian Agent:
Telephone No.	Telephone No.
Fax No.	Fax No.
e-mail:	e-mail:
<p>Scope: Supply, Erection and Commissioning of <u>HYDRAULIC HOLE PUNCHING PRESS MACHINE</u> complying with the following Techno-commercial terms &amp; conditions.</p>	
<p><b>Offer is to be submitted in <u>TWO-PART</u> bids [Techno-commercial bid(Part-1) + Price bid(Part-2)] in separate sealed envelopes, in turn both envelopes placed together in a third sealed envelope.</b></p>	
<ul style="list-style-type: none"> <li>• <b><u>Pre-Qualification Criterion:</u> Bidder must have successfully completed installation and commissioning of at least one similar machine in any unit of BHEL or otherwise successful installation and commissioning of at least TWO similar machines in other PSUs, Railways and Govt. bodies in <u>last five years (2009-2014)</u>.</b></li> <li>• <b>Offers of bidders not satisfying pre-qualification criterion are liable for rejection.</b></li> </ul>	
<ul style="list-style-type: none"> <li>• <b>Does your Firm fulfill the above-mentioned Pre-Qualification Criterion? (YES/NO)</b></li> </ul>	

S No.	Description - BHEL's Requirement	Specified	Offered	Deviations	Remarks
<b>1.0</b>	<b>PURPOSE &amp; WORK PIECE MATERIAL:</b>				
1.1	Purpose: Punching Aluminium Alloy plate up to 25 mm thickness and Copper plates up to 12 mm thickness.	<b>Full Punching</b>			
1.2	Work Piece Material:	<b>Aluminium Alloy (Tensile strength 35kgf/mm<sup>2</sup>) &amp; Copper</b>			
<b>2.0</b>	<b>SPECIFICATION:</b>				
	<b>MACHINE CONFIGURATION: Hydraulic Down Stroking hole punching press machine capacity 75 tons, with Double acting hydraulic Cylinder, Bed Length approx. 4000 mm &amp; rollers to rest and guide the plate.</b>	Vendor to Confirm			
<b>2.1</b>	<b>TECHNICAL SPECIFICATIONS:</b>				
2.1.1	Pressing Capacity	75 Tons			
2.1.2	Stroke Length	150mm			
2.1.3	Throat	300mm			
2.1.4	Oil Cylinder Capacity	800 liters (min.)			
2.1.5	Working Pressure	Vendor to specify			
2.1.6	Speed of the RAM (approx)				
	a) Approach Speed	75 mm/sec (min.)			
	b) Pressing Speed	10 mm/sec (min.)			
	c) Return Speed	150 mm/sec (min.)			
<b>2.2</b>	<b>CAPACITY &amp; SIZE:</b>				
2.2.1	Max Plate thickness (Aluminium alloy tensile strength 35kgf/mm <sup>2</sup> )	25 mm			
2.2.2	Various Plate Specification				
2.2.3	Thickness	10 – 25 mm			
2.2.4	Width	80 – 250 mm			
2.2.5	Length	350 – 1500 mm			
2.2.6	Motor Power	15 HP (min.)			
2.2.7	Weight of the machine (Vendor to specify)	8 MT (min.)			
2.2.8	Working Height from floor level suitable for above job	Vendor to specify			
<b>2.3</b>	<b>CONSTRUCTION:</b>				
2.3.1	Vendor to furnish details of material, hardness & constructional details, including explanatory drawings, of various components like Columns, frame, plate clamping & adjusting system, Lubricating system, etc. of the machine.	Vendor to Confirm			

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2.3.2	Technical features/Literature with photographs, drawings explaining the technical features should be enclosed with the offer.	Vendor to Confirm			
2.3.3	The frame should be fabricated by ultrasonically tested quality plates of suitable thickness to withstand load & longer working life of the press.	Vendor to Confirm			
2.3.4	The frame should be stress relieved after welding & then machined to get required accuracies like parallelism & perpendicularity between pillar, bed, moving plane etc.	Vendor to Confirm			
2.3.5	The frame should be designed to achieve maximum rigidity to retain dimensional accuracy & long working life in continuous rated duty.	Vendor to Confirm			
2.3.6	Precision machined & hardened guides to offer exceptional accuracy & alignment to reduce wear.	Vendor to Confirm			
<b>3.0</b>	<b>OPERATION AND CONTROL SYSTEM:</b>				
<b>3.1</b>	<b>CONTROL PANEL:</b>				
3.1.1	Operator Pendant should be provided with all the controls relevant for operator functions like, on/off cycle start/stop, inching etc.	Vendor to Confirm			
3.1.2	Machine shall be provided with main switch with key and signal light.	Vendor to Confirm			
<b>4.0</b>	<b>MANUAL CONTROL:</b>				
4.1	Movable electrically operated foot switch along with hand switch shall be provided.	Vendor to Confirm			
<b>5.0</b>	<b>HYDRAULIC SYSTEM: Details should be submitted by the vendor:</b>				
5.1	Filtration System	Vendor to Confirm			
5.2	Failure indication	Vendor to Confirm			
5.3	Hydraulic Oil Cooling system of capacity 800 liters (min.) to maintain the oil temperature not exceeding 40 deg C, if required, complete details should be submitted.	Vendor to Confirm			
5.4	Hydraulic pump capacity (flow/pressure)	Vendor to Confirm			
<b>6.0</b>	<b>First filling of all required Oils &amp; Grease etc.</b> 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			
6.1	Lubrication shall be life time lubricated wherever possible. Other lubrication points shall be of automatic type. Details shall be submitted.	Vendor to Confirm			

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<b>7.0</b>	<b>ELECTRICAL:</b>				
7.1	415V+10% / -10% , 50 HZ +/- 3 HZ, 3 Phase AC (3 wire system without 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 responsibility of the 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			
<b>8.0</b>	<b>TROPICALISATION:</b>				
8.1	All Electricals / electronic equipment shall be tropicalized.	Vendor to Confirm			
8.2	All electrical components in the cabinet should be mounted systematically.	Vendor to Confirm			
8.3	Motors shall conform to IEC or Indian Standards.	Vendor to Confirm			
8.4	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			
<b>9.0</b>	<b>SAFETY ARRANGEMENTS:</b>				
	Following safety features in addition to other standard safety features should be provided on the machine	Vendor to Confirm			
9.1	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			
9.2	Electrically interlocked finger guard.	Vendor to Confirm			
9.3	Photo-electric/laser finger guard if required.	Vendor to Confirm			
9.4	Punching operation control through hand and foot combination switch if required.	Vendor to Confirm			
9.5	In case of overloads due to wrong maneuvers /malfunctions the machine should stop to avoid damage to machine and man.	Vendor to Confirm			
9.6	All the pipes, cables etc. on the machine should well supported and protected. These should not create any hindrance to machine operator's movement for effective use of machine.	Vendor to Confirm			
9.7	Emergency switch at suitable location as per International Norms should be provided.	Vendor to Confirm			
9.8	Necessary protection shall be provided in the Hydraulic power pack to prevent from over loading.	Vendor to Confirm			

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<b>10.0</b>	<b>ENVIRONMENTAL PERFORMANCE OF THE MACHINE:</b>				
	The machine shall conform to following factors related to environment:				
	(a) Maximum noise & v (b) maximum fume level shall be as per the national/international norms. This will be measured as per international standards like DIN 45635-16. Supplier to mention the requirement of acoustic chamber/enclosure separately and demonstrate compliance to fume & 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.	Vendor to Confirm			
<b>11.0</b>	<b>LEVELING &amp; ANCHORING SYSTEM:</b>				
11.1	Complete anchoring system including foundation bolts, anchoring materials, leveling shoes etc should be supplied.	Vendor to Confirm			
<b>12.0</b>	<b>TOOLS FOR ERECTION, OPERATION &amp; MAINTENANCE:</b>				
12.1	Special tools and equipments 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			
<b>13.0</b>	<b>SPARES:</b>				
13.1	Item wised breakup of (1) standard-mechanical, hydraulic, electrical and electronic accessories & spares ( <b>included in Basic machine cost</b> ), (2) Essential -spares/accessories required for the Purpose and (3) Optional in sufficient quantity as per recommendation of Vendor for 5 years (After initial 24 month's Guarantee period) of trouble free operation on three shifts continuous running basis should be offered by vendor. 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. The list to include following, in addition to other recommended spares: <b>(Unit Price of each item of spare should be offered in the price bid)</b>	Vendor to agree			
	<b>a) Mechanical &amp; Hydraulic Spares</b> : all type of pumps, valves, pressure switches , transformers, flow switches, filters, Seals, O-rings, Hydraulic House etc.	Vendor to note			
	<b>b) Electrical / Electronics:</b> all type of Relays, conductors, Proximity switches Push Buttons, Indicating Lamps, Semiconductor Fuses, Special Fuses, Circuit Breaker, Main Power Switch , etc.	Vendor to confirm			

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<b>14.0</b>	<b>DOCUMENTATION :</b> Three sets of following documents (Hard copies) in <b>English language</b> . Should be supplied along with the machine. Only originals shall be Supplied. Photocopies will not be accepted.	Vendor to Furnish			
14.1	Operating manuals of Machine.				
14.2	Programming manuals of the machine	Vendor to Furnish			
14.3	Detailed Maintenance manual of machine with all drawings of machine assemblies / sub-assemblies / parts including Electricals / Pneumatic / Hydraulic circuit diagrams. All Assembly / Sub-assembly Drawings including ladder drawing shall be supplied with the parts list.	Vendor to Furnish			
14.4	Catalogues, O & M Manuals of all bought out items including drawings, wherever applicable.	Vendor to Furnish			
<b>15.0</b>	<b>TRAINING</b>				
15.1	BHEL persons should be trained at BHEL's works for mutually agreed period in the area of: (a) Electrical, Electronic maintenance of machine & other supplied equipments.  (b) Mechanical and Hydraulic maintenance of machine & other supplied equipments.  (c) Operations of machine & other supplied equipments.	Vendor to confirm			
15.2	Competent experts shall be arranged by the vendor during training for satisfactory & effective training of BHEL personnel.	Vendor to confirm			
15.3	Vendor to quote for training on per diem basis, if required	Vendor to confirm			
<b>16.0</b>	<b>FOUNDATION :</b>				
16.1	Foundation Shall Submit the layout drawing within one month from the date of latter of indent (LOI) / P.O. layout should contain layout of the machine and land points including details viz. static/ dynamic load details etc. the layout should consist of all requirements pertaining to complete machine including space requirements for voltage transformer stabilizer isolated transformer, air compressor chip bin & any other accessories foundation of the machine under BHEL shall construct complete foundation for the machine under supervision of supplier and at suppliers responsibility supplier should arrange equipments required for the tasting of foundation if required. The vendor shall also indicting derailed specification of grounding compound and grounding procedure etc for bolts of the machine.	Vendor to Furnish			

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<b>17.0</b>	<b>ERECTION &amp; COMMISSIONING</b>				
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.				
17.3	Tools, Tackles, instruments and other necessary equipments required to carry out all above activities should be brought by the supplier.	Vendor to agree			
17.4	Commissioning spares, required for commissioning of the machine within stipulated time, shall be brought by the supplier on returnable basis.	Vendor to agree			
17.5	All cover plates required for machine and its peripherals including pits .if any shall be supplied and installed by the vendor.	Vendor to agree			
17.6	Charges, duration, terms & conditions for E&C should be furnished in detail separately by vendor along with offer	Vendor to agree			
<b>18.0</b>	<b>TESTING STANDARD &amp; PROCEDURE</b>				
18.1	Repeatability of setting of the beveling angle	Vendor to confirm			
18.2	Repeatability of settings	Vendor to confirm			
<b>19.0</b>	<b>MACHINE ACCEPTANCE : (TESTS / ACTIVITIES SHOULD BE PERFORMED BY VENDOR)</b>	Vendor to confirm			
<b>19.1</b>	<b>Tests / Activities should be carried out at supplier's Works on the machine before dispatch:</b>	Vendor to confirm			
19.1.1	The machine should be tested for full load test at supplier works before dispatch.	Vendor to confirm			
19.1.2	Demonstration of all features of the machine, control system & accessories.	Vendor to confirm			
<b>19.2</b>	<b>Tests /Activities Should be carried out at BHEL works while commissioning the machine:</b>	Vendor to confirm			
19.2.1	Full load test to demonstrate the maximum power & punching capacity of the machine at BHEL works.	Vendor to confirm			
19.2.2	Machine should be qualify on actual job at min & max size	Vendor to confirm			
19.2.3	Demonstration of all feature of the machine control system & accessories to the satisfaction of BHEL for efficient and effective use of the machine	Vendor to confirm			
19.2.4	Training of BHEL machine operator in the operation of complete machine & accessories etc by supplier's export / engineering during their stay at BHEL works	Vendor to confirm			

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19.2.5	Demonstration by actual use of all supplied attachment and accessories to their full capacity for actual jobs.	Vendor to confirm			
<b>20.0</b>	<b>PACKING:</b>				
20.1	Rigid packing for all item of complete machine with all accessories and other supplied item to avoid any damage / loss in transit. when machine is dispatched in containers , all small loose item shall be suitably packing in boxes:	Vendor to confirm			
<b>21.0</b>	<b>GUARANTEE :</b>				
11.1	Guarantee for 24 months from the date of acceptance of the machine at BHEL works. During this Guarantee period at least 2 visits per year and/or whenever called by BHEL (within 24 hours of call) by the service engineer of the supplier to be made & the parts, items, spares Etc needing replacement to be replaced by the supplier free of cost. <b>In support a Performance Bank Guarantee of 10% of Basic Value of P.O. valid for 24 months from the date of commissioning will have to be furnished by supplier.</b>	Vendor to furnish			
<b>22.0</b>	<b>GENERAL :</b>				
22.1	Machine Model	Vendor to furnish			
22.2	Total connected load (KVA):	Vendor to furnish			
22.3	Flore area required (length, Width, Height ) for complete machine & accessories	Vendor to furnish			
22.4	Detailed catalogues, sketch/photographs of the machine and accessories/ attachments should be submitted with the offer.	Vendor to confirm			
22.5	Panting of machine/ electrical panels : RAL 6011 apple green (polyurethane paint)	Vendor to confirm			
22.6	Total weight of machine (8MT min)	Vendor to confirm			
22.7	Hydraulic pneumatic & Oil piping should be preferably meatallic except places where flexible piping are essential all the pipes required for the same shall be included in the standard scope of the machine .	Vendor to confirm			
22.8	Formula for calculating required force to punching Aluminum plates to be finished by the vendor.	Vendor to confirm			
<b>23.0</b>	<b>DELIVERY TERM:</b> Delivery term is to be on FOR-BHEL Rudrapur basis.	Vendor to confirm			
<b>24.0</b>	<b>DELIVERY PERIOD:</b> Within 06 months from the date of Purchase order.	Vendor to confirm			
<b>25.0</b>	<b>VALIDITY:</b> Offer validity to be for 90 days from the date of Techno-commercial bid opening.	Vendor to confirm			

S No.	Description - BHEL's Requirement	Specified	Offered	Deviations	Remarks
26.0	<b>PAYMENT TERM:</b> BHEL standard payment term is "90% after receipt, subject to acceptance at our end within 45 days". Remaining 10% will be given after erection and successful commissioning within 45 days of submission of invoice. Any deviation to our payment term will be loaded @ (SBI prime lending rate on the date of Techno-commercial bid opening + 6)% annual interest for comparison.	Vendor to confirm			
27.0	<b>LD CLAUSE:</b> In case of delayed delivery, penalty at 0.5% per week, maximum up to 10% will be deducted.	Vendor to confirm			
28.0	<b>RISK PURCHASE CLAUSE:</b> If the Seller fails to deliver the goods within the stipulated delivery time mentioned in Purchase order, BHEL shall be entitled to terminate the contract and to purchase elsewhere at the risk and cost of the seller either the whole or any part of the goods, the best and the nearest available substitute therefore. The seller shall be liable for any loss i.e. any additional expenditure incurred, which the purchaser has to sustain by reason of such risk purchase	Vendor to confirm			

<b>Supplier Name</b>	
Name of Authorized Person:	
Designation:	
Address:	
Phone Nos / Fax Nos:	
Signature/Seal:	