

	<u>BHARAT HEAVY ELECTRICALS LIMITED</u>			Enquiry No. :	
	<u>UNIT'S ADDRESS</u>			Due Date :	
	<u>UNIT'S PHONE NOS.</u>			Supplier Qtn. No.:	
	<u>CONTACT PERSON'S NAME/DESIGN./PHONE NO./E-MAIL (FROM PURCHASE DEPTT.)</u>			Date :	
<p align="center"><u>SPECIFICATION CUM COMPLIANCE CERTIFICATION FOR</u></p> <p align="center"><u>COIL ASSEMBLY PLATFORM FOR TRM DIVISION</u></p>					
<p>NOTE :-</p> <p>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.</p> <p>2. The offer and all documents enclosed with offer should be in English language only.</p>					
ADDRESS OF THE SUPPLIER :			ADDRESS OF THE INDIAN AGENTS :		
TELEPHONE NOS.:			TELEPHONE NOS.:		
FAX NOS.:			FAX NOS.:		
E-MAIL ADDRESS :			E-MAIL ADDRESS :		
<p>SCOPE : SUPPLY, ERECTION & COMMISSIONING OF COIL ASSEMBLY PLATFORM COMPLYING WITH SPECIFICATION AS GIVEN BELOW:</p>					

S. NO.	DESCRIPTION FOR BHEL REQUIREMENT	SPECIFIED / CONFIRMED BY	OFFERED	DEVIATIONS	REMARKS
1.0	<u>PURPOSE & WORKPIECE MATERIAL</u>				
1.1	The coil assembly platform shall be used for preparation and reassembly of transformer winding coils. It is a special purpose platform & consists of square shape framed steel structure having corner column supports and sliding platform moving vertically up-down. The structure shall be raised and lowered on the columns to the required height by an electric motor, gear box and chain & sprocket arrangements.	VENDOR TO CONFIRM			
2.0	<u>SPECIFICATION</u>	VENDOR TO CONFIRM			
2.1	MACHINE CONFIGURATION :- It is a special purpose platform consisting of a square shape framed steel structure having corner column supports and sliding platform. The structure shall be raised and lowered on the columns to the required height by and electric motor, gear box and chain & sprocket arrangements. It shall be capable of locking in any vertical position by a mechanical locking arrangement operated by a remote control. The platform, shall have an adjustable central opening to suit the diameter of the coil where people will work on the preassembly of the coil, the opening shall be motorized by a motor & chain drive arrangement. It shall be like a sliding aperture operated by a motor & gear box. One telescopic ladder shall be provided at a suitable place for easy approach to the operator to climb up at any height of the platform. Its top working platform shall be m.s. chequered plate on which operator shall work. The platform shall be of self stabilised type and can be put in operation after placing on concrete floor. The column base of platform will have provision for grouting. A pendant control shall be provided on the platform for various operations of the platform from any point on the platform. Interlocking on operations for raising / lowering and opening / closing shall be provided to avoid two different operations being carried out at a time.	VENDOR TO CONFIRM			
2.2	<u>SLIDING PLATFORM</u>	VENDOR TO CONFIRM			
2.2.1	Overall size of platform (L X W X H).	6.0 mtr. x 6.0 mtr. x 6.0mtr.			
2.2.2	Size of working platform.	5.2 mtr. X 5.2 mtr.			
2.2.3	Height of platform (adjustable).	Min. 800 mm & Max. 3500 mm			

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2.2.4	Central opening.	Min. 1000 mm & Max. 3500 mm			
2.2.5	Carrying capacity.	1000 kg.			
2.2.6	Railing height.	900 mm			
2.2.7	Speed of vertical movement.	1000 mm / min.			
2.2.8	Speed of opening / closing.	2000 mm /min.			
2.2.9	Vertical movement of platform.	chain & sprocket drive with 3 phase 5kw Ac motor & worm reduction gear box.			
2.2.10	Horizontal adjustment of sliding platform.	chain & sprocket drive with 3 phase 5kw Ac motor & worm reduction gear box.			
2.2.11	Motor Bharat bijlee / ABB / CG make for vertical & horizontal movement shall of 3 phase & suitable KW rating.	VENDOR TO SPECIFY			
2.2.12	Steel ladder telescope type.	1 No.			
2.2.13	Operation of platform.	Pendant type with push Button			
2.2.14	Voltage of pendant control.	110 V, AC			
2.2.15	Gear box of Elecon/ Radicon/NAW make.	VENDOR TO CONFIRM			
2.3	ELECTRICAL SYSTEM :	VENDOR TO CONFIRM			
2.3.1	415V +/- 10%, 50 HZ +/- 1.5 HZ, 3 Phase AC (3 wire system with out neutral) Power Supply Source 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 ,step down transformer(for control 220 V supply) etc. required for connecting BHEL's power supply point to different parts of the platform /control pendant shall be the responsibility of vendor.	VENDOR TO CONFIRM			

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2.3.2	CONTROL PANEL : -A floor mounted sheet metal control panel to be provided complete with MCCB for incoming Power Supply, all contactors, relays, starters, timer, single phasing preventer, MCCBS & HRC fuses, step down transformer for control voltage etc. It should have indicating lamps for Power Supply, Status monitoring .	VENDOR TO CONFIRM			
2.3.3	Tropicalisation: All electrical / electronic equipment shall be tropicalized.	VENDOR TO CONFIRM			
2.3.4	All electrical & electronic control cabinets & panels should be dust and vermin proof.	VENDOR TO CONFIRM			
2.3.5	All electrical components in the cabinets should be mounted on DIN Rail.	VENDOR TO CONFIRM			
2.3.6	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			
2.3.7	Motors shall conform to IEC or Indian Standards.	VENDOR TO CONFIRM			
2.3.8	All cables moving with traversing axes should be installed in Caterpillar/ Drag chain. Additionally, all the cable trays required for laying of cables should be included in the offer.	VENDOR TO CONFIRM			
2.3.9	Vendor should ensure the proper earthing of the platform.	VENDOR TO CONFIRM			
2.4	SAFETY ARRANGEMENTS:	VENDOR TO CONFIRM			
2.4.1	Following safety features in addition to other standard safety features should be provided on the machine:	VENDOR TO CONFIRM			
2.4.2	Platform should have adequate and reliable safety interlocks / devices to avoid damage to the platform, workpiece and the operator due to the malfunctioning or mistakes.	VENDOR TO CONFIRM			
2.4.3	All the pipes, cables etc. on the machine should be well supported and protected.	VENDOR TO CONFIRM			
2.4.4	All the rotating parts used on machine should be provided with suitable guard.	VENDOR TO CONFIRM			
2.4.5	Emergency Switches at suitable locations should be provided.	VENDOR TO CONFIRM			

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3.0	PNEUMATIC SYSTEM	VENDOR TO CONFIRM			
3.1	COMPRESSED AIR POINTS:	VENDOR TO CONFIRM			
3.1.1	Compressed Air Point with manual ON / OFF Valve and flexible pipe of suitable length for work piece cleaning. FRL, automatic drain trap valve condensate receiver for pneumatic system to operate machine at 4 bar pressure.	VENDOR TO CONFIRM			
4.0	LEVELING & ANCHORING SYSTEM	VENDOR TO CONFIRM			
4.1	Complete anchoring system including foundation bolts, anchoring materials, fixators, leveling shoes etc shall be supplied for the Machine.	VENDOR TO CONFIRM			
5.0	TOOLS FOR ERECTION, OPERATION & MAINTENANCE :	VENDOR TO CONFIRM			
5.1	Special tools and equipment required for erection of the machine shall be brought by the vendor.	VENDOR TO CONFIRM			
6.0	SPARES:	VENDOR TO CONFIRM			
6.1	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			
	a) Mechanical Spares: All types of Valves, All types of pressure switches , All types of filters, All types of seals.	VENDOR TO CONFIRM			
	b) Electrical Spares: All types of Relays, Contactors, Push Buttons, Indicating Lamps, MCCB'S/MCB'S, Main Power Switch.	VENDOR TO CONFIRM			
6.2	All types of spares for total machine and accessories should be available for atleast 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			
6.3	Recommended set of spares for all attachments are to be offered with details.	VENDOR TO CONFIRM			

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7.0	DOCUMENTATION : Five sets of following documents (Hard copies) in English language should be supplied along with the machine.	VENDOR TO CONFIRM			
7.1	Operating manuals of Machine .	VENDOR TO CONFIRM			
7.2	Detailed Maintenance manual of machine with all drawings of machine assemblies/sub-assemblies/parts including Electrical / Pneumatic circuit diagrams. All Assembly/ Sub Assembly Drawings shall be supplied with the part list also.	VENDOR TO CONFIRM			
7.3	Catalogues, O&M Manuals of all bought out items including drawings,wherever applicable.	VENDOR TO CONFIRM			
7.4	Detailed specification of all rubber items and hydraulic/lube fittings	VENDOR TO CONFIRM			
8.0	FOUNDATION:	VENDOR TO CONFIRM			
8.1	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. The vendor shall also indicate detailed specifications of grouting compound and grouting procedure etc. for foundation bolts of the machine.	VENDOR TO CONFIRM			
9.0	ERECTION & COMMISSIONING	VENDOR TO CONFIRM			
9.1	Supplier to take full responsibility for carrying out the erection, start up, testing of machine, its control system & 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			
9.2	Successful proving of BHEL components by the supplier shall be considered as part of commissioning. All tests, as mentioned at clause 13 (Machine Acceptance) shall form part of the commissioning activity.	VENDOR TO CONFIRM			
9.3	Schedule of Erection and Commissioning shall be submitted with the offer.	VENDOR TO CONFIRM			
9.4	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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10.0	ACCURACY TESTS:	VENDOR TO CONFIRM			
10.1	GEOMETRICAL ACCURACIES :	VENDOR TO CONFIRM			
10.1.1	Geometrical Accuracy Tests shall be in accordance with standard or equivalent applicable Test Charts for the same, clearly showing the accuracies to be achieved on the machine, shall also be submitted with the offer.	VENDOR TO SPECIFY			
10.1.2	All the above accuracies to be demonstrated to BHEL engineers during pre-acceptance tests at Suppliers works and during Erection & Commissioning at BHEL Works.	VENDOR TO CONFIRM			
11.0	AMBIENT CONDITIONS & THERMAL STABILITY :	VENDOR TO CONFIRM			
11.1	Total machine including 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 +/- 1.5 HZ No. of phases = 3, no neutral Ambient Conditions: Temperature = 5 to 50 degree celsius Relative Humidity = 95% max.	VENDOR TO CONFIRM			
11.2	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			
11.3	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 that machine is suitable for above and details of provisions on the machine for the same should be furnished by Vendor).	Required			
11.4	The machine, including attachments and accessories, should be suitable for 8 hrs. continuous operation to its full capacity .	VENDOR TO CONFIRM			

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12.0	PROVEOUT OF BHEL COMPONENTS :	VENDOR TO CONFIRM			
12.1	Complete prove out of equipment shall be done by Vendor at BHEL works to the specified design accuracy. Material for the proveout equipment shall be provided by BHEL. Vendor shall be fully responsible for proveout of equipment as per drawing and other requirements specified by BHEL to the full satisfaction of BHEL. Clarifications, if any required by vendor, regarding accuracy requirements of equipment, whether specified or not, should be discussed and cleared by vendor during initial technical discussions.	VENDOR TO CONFIRM			
12.2	Vendor shall be responsible for any deviation/rejection in proveout of equipment due to malfunctioning of the machine. The cost of such deviation / rejection, if any, shall be refunded by the vendor to BHEL.	VENDOR TO CONFIRM			
13.0	MACHINE ACCEPTANCE: (Tests/Activities to be Performed by Vendor)	VENDOR TO CONFIRM			
13.1	Tests/Activities should be carried out at supplier's works on the machine before dispatch :	VENDOR TO CONFIRM			
13.1.1	Geometrical Accuracy Tests as per test chart.	VENDOR TO SPECIFY			
13.1.2	Demonstration of all features of the machine and all Accessories.	VENDOR TO CONFIRM			
13.2	Test to be carried out at BHEL works while commissioning the machine :	VENDOR TO CONFIRM			
13.2.1	Geometrical Accuracy Tests as per test chart.	VENDOR TO SPECIFY			
13.2.2	Full load test to demonstrate the maximum power & operating capacity of the machine.	VENDOR TO CONFIRM			
13.2.3	The machine should be tested for continuous running of 8 hrs.	VENDOR TO CONFIRM			
13.2.4	Demonstration of all features of the machine & all accessories to the satisfaction of BHEL for their efficient and effective use.	VENDOR TO CONFIRM			
13.2.5	Demonstration by actual use of all supplied attachments and accessories to their full capacity.	VENDOR TO CONFIRM			
13.2.6	Job prove out - actual job trial shall be taken for one week to prove out the machine.	VENDOR TO CONFIRM			

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14.0	PACKING:	VENDOR TO CONFIRM			
14.1	Standard & rigid packing for all items of complete machine 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			
15.0	GUARANTEE :	VENDOR TO CONFIRM			
15.1	24 months from the date of acceptance of the machine.	VENDOR TO CONFIRM			
16.0	GENERAL : The vendor should submit the following information:				
16.1	Total connected load (KVA):	VENDOR TO SPECIFY			
16.2	Floor area required (Length, Width, Height) for complete machine & accessories.	VENDOR TO SPECIFY			
16.3	Painting of Machine/ Electrical Panels: RAL 6011 Apple Green (Polyurethane Paint).	VENDOR TO SPECIFY			
16.4	Total weight of the machine.	VENDOR TO SPECIFY			
16.5	Weight of heaviest part of machine.	VENDOR TO SPECIFY			
16.6	Weight of the heaviest assembly/ subassembly of the Machine.	VENDOR TO SPECIFY			
16.7	Dimensions of largest part/ subassembly/ assembly of the machine.	VENDOR TO SPECIFY			
16.8	Vendor to submit, along with offer, the reference list of customers where similar machines have been supplied.	VENDOR TO SPECIFY			

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17.0	QUALIFYING CONDITIONS :	VENDOR TO CONFIRM			
17.1	Only those vendors, who have supplied and commissioned at least one such coil assembly platform of size , Central opening Diameter 3200 mm, Vertical Travel 3000 mm or higher sizes for similar applications in the past ten years and such machine is presently working satisfactorily for more than one year (more than six months if supplied to BHEL) after commissioning , should quote. The following information is to 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 CONFIRM			
	1. Name of the customer / company where similar machine is installed.	VENDOR TO SPECIFY			
	2. Complete postal address of the customer.	VENDOR TO SPECIFY			
	3. Year of commissioning.	VENDOR TO SPECIFY			
	4. Application for which the machine is supplied with details of accuracies achieved on the job.	VENDOR TO SPECIFY			
	5. Name and designation of the contact person of the customer.	VENDOR TO SPECIFY			
	6. Phone, FAX no. and email address of the contact person of the customer.	VENDOR TO SPECIFY			
	7. Performance certificate from the customers regarding satisfactory performance of machine supplied to them.	VENDOR TO CONFIRM			
	8.BHEL reserves thr right to verify information submitted by vendor.In case the information is found to be false / incorrect , the offer shall be rejected.	VENDOR TO CONFIRM			