

BHARAT HEAVY ELECTRICALS LIMITED
JHANSI

COIL ASSY. PLATFORM

SKETCH NO.- BHEL/JHS/WE&S/1455/SK-0001

ALL DIMENSIONS ARE IN MM

SCALE - N.T.S.

BHARAT HEAVY ELECTRICALS LIMITED
UNIT: JHANSI
(WORK. ENGG. & SERVICES DEPTT.)

SCHEME : PHASE-II
EQUIPMENT : COIL ASSEMBLY PLATFORMS
ITEM NO : MT- 1/4/1455 TO 62
LOCATION : TRACTION SHOP (BAY-6)
QUANTITY : 8 NOS
SPECIFICATION NO. : 6204

Technical Specification :-

SI NO	DESCRIPTION FOR BHEL REQUIREMENT (Specification for Coil Assy platform)		
1.0	PURPOSE & WORKPIECE MATERIAL		
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 a 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.		Vender to Confirm
2.0	SPECIFICATION:- (for coil assy platform)		
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 an 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. The all four sliding platforms shall be able to move towards and away from the central opening. 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. The railing at one side of the platform should be collapsible/ foldable so that the coils can be taken out easily by crane due to crane lift limitations of 8 meters. (sketch is enclosed for this platform)		Vender to Confirm
2.2	SLIDING PLATFORM		
2.2.1	Overall size of platform (L X W X H)	6.0 mtr x 6.0 mtr x 5.0 mtr.	Vender to Confirm
2.2.2	Size of working platform	5.2 mtr x 5.2 mtr	Vender to Confirm
2.2.3	Height of platform (adjustable)	Min. 800 mm & Max. 3500 mm	Vender to Confirm
2.2.4	Central Opening	Min. 1000 mm & Max. 3800 mm	Vender to Confirm
2.2.5	Carrying Capacity	1000 kgs.	Vender to Confirm
2.2.6	Railing height	900mm	Vender to Confirm

2.2.7	Speed of vertical movement	1000mm / min	Vender to Confirm
2.2.8	Speed of opening / closing	2000mm / min.	Vender to Confirm
2.2.9	Vertical movement of platform	chain & sprocket drive with 3 phase 5 kw Ac motor & worm reduction gear box.	Vender to Confirm
2.2.10	Horizontal adjustment of sliding platform (Sliding platforms should be moveable towards and away from central opening)	chain & sprocket drive with 3 phase 5 kw Ac motor & worm reduction gear box.	Vender to Confirm
2.2.11	Motor Bharat bijlee/ABB/ CG make for vertical & horizontal movement shall of 3 phase & suitable KW rating.		Vender to Confirm
2.2.12	Steel Ladder telescope type	1 No.	Vender to Confirm
2.2.13	operation of platform	Pendant type with push Button	Vender to Confirm
2.2.14	Voltage of pendant control	110 V, AC	Vender to Confirm
2.3	ELECTRICAL SYSTEM :		
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 pendent shall be the responsibility of vendor.		Vender to Confirm
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 .		Vender to Confirm
2.3.3	Tropicalisation: All electrical / electronic equipment shall be tropicalized		Vender to Confirm
2.3.4	All electrical & electronic control cabinets & panels should be dust and vermin proof		Vender to Confirm
2.3.5	All electrical components in the cabinets should be mounted on DIN Rail		Vender 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.		Vender to Confirm
2.3.7	Motors shall conform to IEC or Indian Standards		Vender 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.		Vender to Confirm
2.3.9	Vendor should ensure the proper earthing of the platform.		Vender to Confirm
2.4	SAFETY ARRANGEMENTS:		
2.4.1	Following safety features in addition to other standard safety features should be provided on the machine:		Vender to Confirm
2.4.2	Platform should have adequate and reliable safety interlocks / devices to avoid damage to the platform, work piece and the operator due to the malfunctioning or mistakes.		Vender to Confirm
2.4.3	All the pipes, cables etc. on the machine should be well supported and protected.		Vender to Confirm
2.4.4	All the rotating parts used on machine should be provided with suitable guard .		Vender to Confirm
2.4.5	Emergency Switches at suitable locations should be provided.		Vender to Confirm
3.0	PNEUMATIC SYSTEM		
3.1	COMPRESSED AIR POINTS:		
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.		Vender to Confirm
4.0	LEVELING & ANCHORING SYSTEM		
4.1	Complete anchoring system including foundation bolts, anchoring materials, fixators, leveling shoes etc shall be supplied for the Machine.		Vender to Confirm

5.0	TOOLS & MENPOWER FOR ERECTION, OPERATION & MAINTENANCE :	
5.1	Special tools and equipment required for erection of the machine shall be brought by the vendor. All tool tackles with manpower shall be in supplier's scope. Supplier to take full responsibility of erection	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
7.0 DOCUMENTATION :		vendor to confirm
	Five sets of following documents (Hard copies) in English language should be supplied along with the machine	
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, it's 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 12 (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
10.0 AMBIENT CONDITIONS & THERMAL STABILITY :		vendor to confirm
10.1	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

10.2	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
10.3	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
10.4	The machine, including attachments and accessories, should be suitable for 8 hrs. continuous operation to its full capacity .	vendor to confirm
11.0	PROVEOUT OF BHEL COMPONENTS :	vendor to confirm
11.1	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
11.2	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
12.0	MACHINE ACCEPTANCE: (Tests/Activities TO be Performed by Vendor)	vendor to confirm
12.1	Tests/Activities should be carried out at supplier's works on the machine before dispatch :	vendor to confirm
12.1.1	Demonstration of all features of the machine and all Accessories.	vendor to confirm
12.2	Test to be carried out at BHEL works while commissioning the machine :	vendor to confirm
12.2.1	Full load test to demonstrate the maximum power & operating capacity of the machine.	vendor to confirm
12.2.2	The machine should be tested for continuous running of 8 hrs.	vendor to confirm
12.2.3	Demonstration of all features of the machine & all accessories to the satisfaction of BHEL for their efficient and effective use. -	vendor to confirm
12.2.4	Demonstration by actual use of all supplied attachments and accessories to their full capacity.	vendor to confirm
12.2.5	Job prove out - actual job trial shall be taken for one week to prove out the machine..	vendor to confirm
13.0	PACKING:	vendor to confirm
13.1	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
14.0	GUARANTEE :	vendor to confirm
14.1	24 months from the date of acceptance of the machine irrespective of supply, erection & commissioning	vendor to confirm
15.0	GENERAL : The vendor should submit the following information:	required
15.1	Total connected load (KVA):	vendor to specify
15.2	Floor area required (Length, Width, Height) for complete machine & accessories	vendor to specify
15.3	Painting of Machine/ Electrical Panels: Verdigris Green to IS 5/1961	vendor to specify
15.4	Total weight of the machine	vendor to specify
15.5	Weight of heaviest part of machine	vendor to specify
15.6	Weight of the heaviest assembly/ subassembly of the Machine	vendor to specify
15.7	Dimensions of largest part/ subassembly/ assembly of the machine	vendor to specify
15.8	Vendor to submit, along with offer, the reference list of customers where similar machines have been supplied.	vendor to specify

5

16.0 MANDATORY DOCUMENTS REQUIRED TO BE SUBMITTED WITH THE OFFER-

1. Dimensioned outline general arrangement drawing and O & M manual.
2. Details of safety devices / guards provided.
3. Electrical schematic diagram.
4. Total electrical load.
5. Quotation with item wise prices of spares for two years of normal working.
6. Details of standard & optional accessories offered.
7. Catalogues / leaflets of machine offered
8. Make & details of the motors & gears.
9. Charges for the Erection & commissioning of the machine at BHEL Jhansi should be quoted in offer separately.

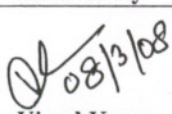
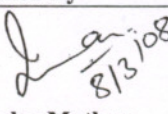
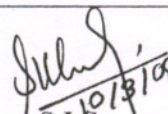
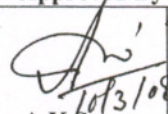
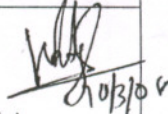
17.0 GENERAL CONDITIONS-

1. The machine should be painted with one coat of red oxide primer & two coats of finishing paint before dispatch. Colour of the finishing paint should be verdigris Green to IS 5/1961.
2. Machine will be inspected & tried by our engineer prior to dispatch. Provision is to be made for deputation of commissioning engineer for erection & commissioning of the machine at BHEL, Jhansi. All tools tackles & manpower shall be in suppliers scope. All civil work shall be done by BHEL based on foundation drawing to be submitted by supplier.
3. The performance of the machine should be demonstrated by the supplier after its successful commissioning at our works. Training to our operators should be given by supplier's representative.
4. Make of bought out items- Bought out items of following make are to be provided & mentioned in offer..
 - (a) Motor- Siemens/ Alstom / GEC/ABB/Crompton make
 - (b) Gear box- Greaves / Relicon / Shanti make
 - (c) Bearings NBC / SKF Make

18.0 QUALIFYING CONDITIONS-

Only those vender, who have supplied and commissioned 1 No. of such platforms in the past ten years and have documentary support to indicate that these installations are working satisfactorily for more than one year (more than six month if supplied to BHEL) after commissioning should quote. The following information's are to be submitted by the vender about the companies where similar platforms have been supplied. This is required from all venders for qualifications of their offers.

1. Name of the customer/ company where similar platforms is installed
2. Complete postal address of the customer
3. Year of commissioning
4. Name and designation of the contact person of the customer
5. Phone, Fax No. and e-mail address of the contact person of the customer
6. Performance certificate from the customer regarding satisfactory performance of the platforms supplied to them

Drafted By	Checked By	Approved By		
 Vinod Kevre Dy.Mgr(WEX)	 Inder Mathur Mgr(WEX)	 S.J.C. DGM(WEX)	 A.K.S. AGM(FW)	 V.K.A. AGM(TRM/TRP)