

BHARAT HEAVY ELECTRICAL LIMITED, JHANSI

Specification No		
Item No		7185
Location		ME-3/3/2731
Quantity		BOGIE SHOP ONE

SPECIFICATION CUM COMPLIANCE CERTIFICATE OF INDUCTION HEATER FOR CARDIUM COMPOUND

- Note :**
1. **VENDOR** must submit complete information against clause No-17.0 (Qualifying Condition). The offer meeting this clause would only be processed
 2. The "Specified/to be confirmed by vender" Column and where applicable, the "Deviations" Column of the formate shall be filled in by the Vendor and submitted along with the offer. Technical details also submitted with the offer. Inadequate/Incomplete, Ambiguous, of unsustainable information against any of the clauses of hte specification / requirement shall be treated as non-compliance.
 3. The offer and all documents elclosed with offer should be in English language only.

SCOPE:
DESIGN, MANUFACTURING, SUPPLY, ERECTION & COMMISSIONING OF INDUCTION HEATER FOR CARDIUM COMPOUND
AS PER SPECIFICATION BELOW

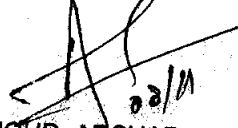
S.NO.	DESCRIPTION FOR BHEL REQUIREMENT	SPECIFIED / TO BE CONFIRMED BY VENDER	TO BE OFFERED	DEVIATIONS
1.0	PORPOSE & WORK PIECE MATERIAL:			
1.1	Induction heating system is required to heat CARDIUM COMPOUND	Vendor to confirm		
1.2	The device shall be worked on electro- magnetic induction principle.	Vendor to confirm		
2.0	SPECIFICATION			
2.1	PARAMETER			
2.2	Heating temp. Min. : 30° C	Vendor to confirm		
2.3	Heating temp. Max. : 250° C	Vendor to confirm		
2.4	Heating time Max. : 120 minutes FOR 210 Ltr. to achieve Max.Temp.(250° C)	Vendor to confirm		
2.5	Supply voltage : 415 Volt 2/ 3 Phase 50 HZ A.C. Supply	Vendor to confirm		
3.0	FEATURES			
3.1	The equipment to be self contained unit	Vendor to confirm		
3.2	The main frame of the equipment shall be heavy, rigidly reinforced welded steel construction.	Vendor to confirm		
3.3	The equipment should be streamlined in appearance with maximum resistance to mechanical deflection.	Vendor to confirm		
3.4	The whole equipment shall be mounted on four wheeled trolley of which two to be fixed type and two of caster wheel type to help easy movement on the shop floor.	Vendor to confirm		
3.5	Necessary eye bolts shall be provided for the lifting the whole unit.	Vendor to confirm		
3.6	The overall design must be compact, easy to operate by a single person and easy to maintain.	Vendor to confirm		
3.7	The equipment has an automatic in-built demagnetising device of sufficient strength.	Vendor to confirm		
3.8	Demagnetising the objects shall be provided, since the steel components become magnetic during induction heating.	Vendor to confirm		
3.9	Equipment shall also be used only for demagnetising.	Vendor to confirm		
3.10	The system shall have suitable moveable heat resistive trolley for loading and unloading the container (DRUM) of cadium compound capacity of 210 ltr	VENDOR TO CONFIRM		

1	Drawing of trolley must be submitted with offer. Dimension of cadmium container (DRUM) as follows, a) dia - 600 mm b) length (Height)- 900 mm	Vendor to submit		
2	Details of drain out system / procedure of taken out melted / heated cadmium compound from drum.	Vendor to specify		
3	Digital temperature indicator cum controlled with Cr/ Al thermocouple cable and socket.	Vendor to confirm		
4	Suitable control panel with thyristorised power controller ramping system for soft start and auto ramping.	Vendor to confirm		
5	10 meter long adequate cross section cable shall be provided.	Vendor to confirm		
	OPERATION			
	The equipment shall operate on two different modes	Vendor to confirm		
	MODE - 1 : Temperature mode	Vendor to confirm		
	MODE-2 : Time mode	Vendor to confirm		
	Each operating mode shall be controlled through electronic circuits using solid state devices.	Vendor to confirm		
	In temperature mode, the required level of temperature shall be set using feather touch control key on temp. controller based panel. When the preselected temperature is reached the heating cycle stops and demagnetising cycle comes on. Digital temperature display unit shall be provided for temperature .	Vendor to confirm		
	In time mode the heating time shall be set between 0-120 minutes and by adjusting time on the microcontroller based panel. When the pre-selected time is reached, heating cycle stop and demagnetizing cycle comes on. Digital time display unit shall be provided for display time.	Vendor to confirm		
	METERING			
	Meter for indicating, in-put/Output voltage and current shall be provided	Vendor to confirm		
	SAFETY			
	The equipment shall be fully safe in operation with all safety measure.	Vendor to confirm		
	The unit shall be incorporates an auto- ramping cycle to avoid current surge due to sudden switching of full power.	Vendor to confirm		
	After heating and demagnetising cycle is over , an auto alarm shall be provided.	Vendor to confirm		
	PROTECTION			
	Over current, over voltage and any other for the protection of system/ equipment are to be included as well as suitably interlocked for the safe operation.	Vendor to confirm		
	Necessary guards and protection covers are to be provided to protect the equipment.	Vendor to confirm		
	ACCESSORIES AND TOOLKITS			
	The induction heating system shall be supplied complete with all standard accessories and tool kit. list required.	VENDOR TO CONFIRM & SUBMIT		
	ELECTRICAL SUPPLY AND CONTROLS			
	The equipment shall be suitable for the operation on 415 Volts, 2/3 Phase, 50HZ A.C. Supply. The necessary transformer for step down to lower voltage for the controls etc, fuses/MCB, terminal connectors are to be provided.	Vendor to confirm		
	The necessary cable and connection from control panel to various items of the equipment, isolator for control panel for incoming supply are also to be included in the supply and details to be furnished along with offer.	Vendor to confirm		
	Single point 415 Volt 3phase 50Hz A.C. Supply will be provided by BHEL.	Vendor to confirm		

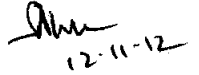
9.4	The connection shall be made through copper criming type lugs.	Vendor to confirm		
9.5	Control panel wiring shall be made by 2.5 sq. mm copper conductor PVC insulated wire with numbered ferrules.	Vendor to confirm		
9.6	All controls and electrical & electronics circuits are to be grouped together and located in control panel.	Vendor to confirm		
10.0	PAINTING			
10.1	Two coats of red oxide metal primer and finished with two coats of synthetic enamel paint of verdigris green paint.	Vendor to confirm		
11.0	DOCUMENTATION :			
11.1	During participation in technical Bid.			
11.1.1	G.A. Drawing.	VENDOR TO SUBMIT		
11.2	After Receipt of Order: (For approval)			
11.2.1	Three set of GA drawing	Vendor to confirm		
11.2.2	Three sets of electrical schematic and control circuit diagram	Vendor to confirm		
11.2.3	Q.A. Plan	Vendor to confirm		
11.3	With the supply			
11.3.1	Three sets of operation manual	VENDOR TO SUBMIT		
11.3.2	Three sets of maintenance manual of induction heater. Spares - part list concerned drawing of spares.	Vendor to confirm		
11.4	Catalogues, O&M Manuals of all bought out items including drawings- 3 set	Vendor to confirm		
12.0	DETAILS TO BE SUBMITTED WITH THE OFFER			
12.1	Dimensioned outline general arrangement drawing	VENDOR TO SUBMIT		
12.2	Technical literature	VENDOR TO SUBMIT		
12.3	Make, type, capacity & write -up on digital temperature controller & indicator used.	VENDOR TO SUBMIT		
12.4	Details of safety devices incorporated.	VENDOR TO SUBMIT		
12.5	Details of thyristorised control panel.	VENDOR TO SUBMIT		
12.6	Schematic diagram of control panel	VENDOR TO SUBMIT		
12.7	Temperature rise/hours	VENDOR TO SPECIFY		
12.8	List of standard accessories supplied with the equipment.	VENDOR TO SPECIFY		
12.9	Any special tools required for maintenance of the equipment item wise price details:	VENDOR TO SPECIFY		
12.10	Total electrical load	VENDOR TO SPECIFY		
12.11	Total weight of the equipment.	VENDOR TO SPECIFY		
12.12	Total space required	VENDOR TO SPECIFY		
12.13	Erection and commissioning charges with Time duration	VENDOR TO SPECIFY		
12.14	Requirement of power, water, air etc with details like quantity and pressure.	VENDOR TO SPECIFY		
13.00	TRAINING			
13.1	Training to our operator, maintenance staff to be done at the time of commissioning of the equipment. (NOT LESS THAN THREE DAYS)	Vendor to confirm		
14.0	GUARANTEE:			
14.1	24 Months form the date of acceptance of the equipment.	Vendor to confirm		
15.0	MACHINE ACCEPTANCE (Tests/Activities to be performed & demonstrated by Vendor)			
15.1	Tests/Activities to be carried out at vendor's works on the machine before dispatch during Pre-Dispatch Inspection (PDI) by BHEL :	Vendor to confirm		
15.2	Tests/Activities to be carried out at BHEL works while commissioning the machine.	Vendor to confirm		
15.2.1	Demonstration of specification point No. 4.0 (both mode)	Vendor to confirm		
15.2.2	Full load test to be demonstrate	Vendor to confirm		


15.2.3	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		
15.2.4	Demonstration by actual use of all supplied accessories to their full capacity for required applications.	Vendor to confirm		
16.0	GENERAL			
16.1	The equipment is to be inspected & tested by our representative prior to dispatch.	Vendor to confirm		
16.2	Complete erection and commissioning to be done by the supplier.	Vendor to confirm		
17.0	QUALIFYING CONDITION			
17.1	Only those vendors, who have supplied and installed at least five no of induction heating system in last five year should quote. P.O. COPY & INSTALLATION/COMPLETION REPORTD report must be submitted.	VENDOR TO SUBMIT		
18.0	BHEL reserves the 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		

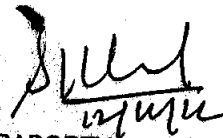

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AGM (LMM/LMP)


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AGM (WE&S)