

	BHARAT HEAVY ELECTRICAL LIMITED		Enquiry No. :		
	Ramachandrapuram:: Hyderabad-32		Due Date :		
	FAX NO: 040-2318 6173		Supplier Qtn. No.:		
			Date :		
<u>TECHNICAL SPECIFICATION FOR LINING VIBRATOR FOR CORELESS INDUCTION FURNACE-1SET</u>					
1. Vendor must submit complete information against clause no. 11. The offer meeting this clause would only be further processed.					
2. The offer and all documents enclosed with offer should be in English language only.					
3. Incomplete offers, offers with ambiguous information are liable for rejection, without any intimation.					
NAME & ADDRESS OF THE SUPPLIER :			NAME & ADDRESS OF THE INDIAN AGENT :		
TELEPHONE NOS.:			TELEPHONE NOS.:		
FAX NOS.:			FAX NOS.:		
E-MAIL ADDRESS :			E-MAIL ADDRESS :		
SCOPE: SUPPLY, COMMISSIONING OF LINING VIBRATOR FOR CORELESS INDUCTION FURNACE					
SNO	DESCRIPTION FOR BHEL REQUIREMENT		Vendor to specify/Confirm	DEVIATIONS	REMARKS
1	PURPOSE & WORKPIECE MATERIAL				
1.1	The lining vibrating system is required for relining of Four different sizes of coreless induction Furnaces of below mentioned Capacities .		Vendor to confirm		
1.2	Supplier has to ensure the supply of the set of lining vibrator system set if any such that it should cater to the ramming of bottom,slant and side of all the sizes of the furnaces which are mentioned below i.e a single set must cater to all the furnaces.		Vendor to confirm		
1.3	DETAILS OF FURNACE AND FORMER				
1.3.1.	Dimensions of 2.5T Induction Furnace(As per Drawing No:2-04-119, Rev:04):-				
1.3.1.a	Top dia of the Former in mm	685	Vendor to confirm		
1.3.1.b	Bottom dia of the Former in mm	432	Vendor to confirm		
1.3.1.c	Total Height of the Former in mm	1320	Vendor to confirm		
1.3.1.d	Slant Height of the Former from the Bottom portion	231	Vendor to confirm		
1.3.1.e	Linning depth from the Former Bottom portion	165	Vendor to confirm		
1.3.2	Dimensions of 5T ABB Make Induction Furnace(As per Drawing No:204577,Rev:02):-				
1.3.2.a	Top dia of the Former in mm	780	Vendor to confirm		
1.3.2.b	Bottom dia of the Former in mm	630	Vendor to confirm		
1.3.2.c	Total Height of the Former in mm	1810	Vendor to confirm		
1.3.2.d	Slant Height of the Former from the Bottom portion	400	Vendor to confirm		
1.3.2.e	Linning depth from the Former Bottom portion	275	Vendor to confirm		
1.3.3	Dimensions of 5T Megatherm Make Induction Furnace(As per Drawing No:304896,Rev:00):-				
1.3.3.a	Top dia of the Former in mm	825	Vendor to confirm		
1.3.3.b	Bottom dia of the Former in mm	637	Vendor to confirm		
1.3.3.c	Total Height of the Former in mm	1560	Vendor to confirm		
1.3.3.d	Slant Height of the Former from the Bottom portion	520	Vendor to confirm		
1.3.3.e	Linning depth from the Former Bottom portion	240	Vendor to confirm		
1.3.4	Dimensions of 20T Induction Furnace(As per Drawing No:2-04-852, Rev: 03):-				
1.3.4.a	Top dia of the Former in mm	1460	Vendor to confirm		
1.3.4.b	Bottom dia of the Former in mm	1143	Vendor to confirm		
1.3.4.c	Total Height of the Former in mm	2570	Vendor to confirm		
1.3.4.d	Slant Height of the Former from the Bottom portion	445	Vendor to confirm		
1.3.4.e	Linning depth from the Former Bottom portion	343	Vendor to confirm		

2	SCOPE INCLUSIONS				
2.1	Supplier shall supply the lining vibrator set for the above mentioned furnaces and set must contain following equipments/accessories to carry out ramming in above furnace . Moreover if any other accessories required for working of Lining vibratr is in the vendor scope.		Vendor to confirm		
2.1.a	Bottom jolter plate(Base Plate):-This equipment is required to vibrate the lining material filled in at the bottom of the furnace former.The base shall be fitted with vibrator and have provision to connect air supply(in case of pneumatic system).		Vendor to confirm		
2.1.b	Minimum three arm jolting machines required for relining of the sides of the former.		Vendor to confirm		
2.1.c	Hoist and Hook for Holding and Rotating both vibrators (Bottom Plate & Three Arm Side Jolting Machine) with the help of chain(5meters) and stand for supporting both the vibrators when they are in running condition..		Vendor to confirm		
2.1 .d	Portable Electrical Panel for switching on & off the vibrator.(In case of electrical vibrator)		Vendor to confirm		
3	TECHNICAL DETAILS;				
3.1	Type of induction furnace and capacity:Vibration system will be used for Electric coreless induction melting furnaces as mentioned above.		Vendor to confirm		
3.2	Overall dimensions of the former:Sketch is enclosed		Vendor to confirm		
3.3	The lining vibrator system(Bottom & side wall) to be operated from the furnace deck using control stand & must have provision for using with the help of crane.		Vendor to confirm		
3.4	The supplied lining vibration system shall ensure uniform desired lining Density throught out the shell.		Vendor to confirm		
3.5	The supplied lining vibration system shall ensure uniform desired lining thickness throught out the former.		Vendor to confirm		
3.6	Complete contact between former & lining vibrator system throughout the lining operation		Vendor to confirm		
3.7	Automatic adjustment of Legs/arms/contact item with the former for concentrated vibration in tapered section to reduce " elephants foot" erosion.		Vendor to confirm		
	Bottom Plate Vibrator:-				
3.7.a	Make/Model No:		Vendor to specify		
3.7.b	Material Construction:		Vendor to specify		
3.7.c	Dia of bottom plate vibrator		Vendor to specify		
3.7.d	Make and rating of the Motor		Vendor to specify		
3.7.e	No of vibratory motors used for ramming purpose.		Vendor to specify		
3.7.f	The vibrator motors are to be designed to suit the electric supply of 415V +/- 10%,50HZ or pneumatic system designed to work at a compressed air pressure between 5 to 6 bar.		Vendor to confirm		
3.7.g	Type of control method used :Electrical/Pneumatic		Vendor to specify		
3.7.h	The vibration system should be designed in such a way to complete the vibration with in 30 minutes from the start of operation.		Vendor to confirm		
3.7.i	Suitable accessories shall be supplied along with vibrator for lifting, rotating,resting/mounting during running /standstill along with hoist.		Vendor to confirm		

3.8	Furnace Silde wall Vibrator:-		Vendor to specify		
3.8.a	Make/Model No:		Vendor to specify		
3.8.b	Material Construction:		Vendor to specify		
3.8.c	Type of control method used :Electrical / pneumatic		Vendor to specify		
3.8.d	No of vibration units used & provide details.		Vendor to specify		
3.8.e	No of arms used for ramming purpose.		Vendor to specify		
3.8.f	Minimum & Maximum Stretch of the vibration unit arms.		Vendor to specify		
3.8.g	The vibrator motors are to be designed to suit the electric supply of 415V +/- 10%,50HZ or pneumatic system designed to work at a compressed air pressure between 5 to 6 bar.		Vendor to specify		
3.8.h	In case of pneumatic vibrator, system to be designed to work at a compressed air pressure between 5 to 6 bar pressure.		Vendor to specify		
3.8.i	The vibration system should be designed in to complete the vibration with in 30 minutes from the start of operation.		Vendor to confirm		
3.8.j	Suitable accessories shall be supplied along with vibratory system for lifting, rotating,resting/mounting during running /standstill along with hoist.		Vendor to confirm		
4	OTHER REQUIRERMENTS:				
4.1	Supplier shall specify the accuracy of the equipment.		Vendor to confirm		
4.2	Supplier shall furnish 3 sets of operating instruction and maintenance manuals, electrical drawings and PCB drawing etc with component values.		Vendor to confirm		
4.3	For items like chains, hoist are to be calibrated and calibration test certificate of item shall be furnished along with equipment.		Vendor to confirm		
4.4	The items shall be guaranteed for satisfactory performance, for a period of 1 year from the date of commissioning.		Vendor to confirm		
4.5	All related safety aspects to be considered in case of designining ,manufacturing & before depatch of the material.		Vendor to confirm		
4.6	The vibration noise level should be kept minimum at it shall not exceed 80db.		Vendor to confirm		
5	SPARES				
5.1	Itemized breakup of mechanical,electrical and electronic spares used in the vibrator in sufficient quantity as per recommendation of Vendor for 2 years of trouble free operation on three shifts continuous running basis shall be offered by vendor.		Vendor to confirm		
6	DOCUMENTATION :				
6.1	Five sets of following documents (Hard copies) in English language should be supplied along with the bottom plate & side wall vibrator		Vendor to confirm		
6.2	Operating and maintenance manuals of bottom plate & side wall vibrator and all supplied accessories to be supplied along with the equipment		Vendor to confirm		
6.3	Complete Master List of parts and spares used in the vibrators (with identifications, make, model, rating , price) shall be submitted by the vendor.		Vendor to confirm		

7	ERECTION & COMMISSIONING : Test to be carried out by Vendor at BHEL works while commissioning the Lining Vibrator		Vendor to confirm		
7.1	Supplier's engineer shall commission the vibrators at BHEL and demonstrate its operating and maintenance features, to our technical personnel.		Vendor to confirm		
8	PACKING:				
8.1	Rigid packing for all items of complete lining vibratory system.		Vendor to confirm		
9	GUARANTEE :				
9.1	As per BHEL term and conditions.		Vendor to confirm		
10	CALIBRATION :				
10.1	Supplier to provide calibration for the equipment.Period one year from the date of comissioning.		Vendor to confirm		
11	REFERENCE LIST / QUALIFYING CONDITIONS				
11.1	Only those vendors, who have supplied and commissioned atleast one of same or higher sizes for similar applications in the past ten years and such machine is working satisfactorily for more than one year, after commissioning 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 submit		
11.2	Name of the customer / company where similar machine is installed.		Vendor to specify		
11.3	Complete postal address of the customer including phone number and e-mail.		Vendor to specify		
11.4	Name and designation of the contact person of the customer,phone number and e-mail.		Vendor to specify		
11.5	Application for which the machine is supplied .		Vendor to specify		