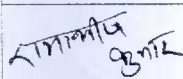
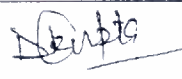




CENTRAL FOUNDRY FORGE PLANT
BHARAT HEAVY ELECTRICALS LIMITED

SPECIFICATION FOR DEGASSING MACHINE FOR ALUMINIUM MELT
SPECIFICATION NO. FT/SP/73 REV 01

Sl. No.	Details	Requirement from Vendor	Vendor's Response Yes (OK) /No
Vendor must confirm/specify details as demanded against each clause of this specification. Inadequate / incomplete, ambiguous, or unsustainable information against any of the clauses of the specifications/requirements shall be treated as non-compliance. In case of response is "NO" against any clause the justification of that may be provided separately mentioning the clause number with its detail however non acceptance generally will be considered as noncompliance and hence offer may be rejected.			
1.0	<u>OBJECTIVE:</u>		
1.1	Degassing Machine shall be used for removing hydrogen from Aluminium alloy liquid metal.	Vendor to confirm	
1.2	Degassing Machine must be capable of removing dissolved hydrogen from Aluminium alloy liquid metal in melting or holding furnaces of capacity 100 to 300 kg.	Vendor to take note and confirm	
2.0	<u>PRE-QUALIFICATION CRITERIA:</u>		
2.1	The vendor should have supplied equipment as specified in Clause 1.1 & Clause 1.2. Proof of supply of at least 3 numbers of equipment in last 5 years (year ending tender opening date) to be submitted along with offer.	To be submitted: Purchase orders or invoice copies of supplies, preferably with performance certificate from its customer.	
3.0	<u>SCOPE OF SUPPLY:</u> Scope of supply includes design, manufacturing, supply and commissioning of the Degassing Machine at CFFP/BHEL Haridwar. The technical and general requirements of the Degassing Machine are given below.		

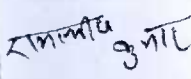
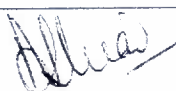
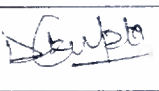
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3.1	Equipment should be mounted on suitable trolley with parking brakes. The trolley should have facility to hold nitrogen gas cylinders and all the electrical and electronics parts should be encased in a dust free control panel. The display panels should also be mounted onto the machine.	Vendor to take note and confirm	
3.2	Arm rotation: through 180 deg with locking arrangement is to be provided.	Vendor to take note and confirm	
3.3	Electric Motor for rotation of SiC Morganite rotor through SS adapter and sleeve: Flame proof, 0.5 HP or above	Vendor to take note and confirm	
3.4	Rotor speed should be adjustable.	Vendor to take note and confirm	
3.5	Nitrogen gas flow arrangement should be equipped with solenoid valves, pressure switch, LM guide, rotary valve for impeller gas supply, panel mounted gas regulator	Vendor to take note and confirm	
3.6	Digital gas Flow meter and pressure switch to be provided.	Vendor to take note and confirm	
3.7	Digital spindle RPM metre to be provided	Vendor to take note and confirm	
3.8	Timer for Rotation – Equipment should have facility for setting time for rotation and degassing from 1 minute to 60 minutes. Digital display of the same to be provided.	Vendor to take note and confirm	
3.9	The equipment should have a Buffle plate arrangement with up and down movement for mixing metal.	Vendor to take note and confirm	
3.10	Auto feeder for granules /cover flux should be provided	Vendor to take note and	

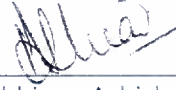
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Sl. No.	Details	Requirement from Vendor	Vendor's Response Yes (OK) / No
		confirm	
3.11	Additional Five sets of SiC Morganite Rotor and Sleeve is to be provided with machine.	Vendor to take note and confirm	
3.12	Auto and Manual Mode available	Vendor to take note and confirm	
3.13	Finish : Equipment should be suitably painted.	Vendor to take note and confirm	
4.0	<u>MATERIAL OF CONSTRUCTION:</u>		
4.1	The material of the equipment should be sturdy and amenable to work in industrial environment.	Vendor to take note and confirm	
5.0	<u>GENERAL REQUIREMENTS:</u>		
5.1	On placement of order and before start of manufacturing, Vendor to submit detailed drawing showing dimensions & Material of Construction etc. Vendor to get approval from CFFP/BHEL for drawings and materials to be used before manufacturing of equipment.	Vendor to take note and confirm	
5.2	The power supply available at CFFP works is 415V $\pm$ 10% AC, 50 Hz and the machine should be amenable for operation with the above power supply	Vendor to take note and confirm	
5.3	All Motors should conform to IEC or Indian Standards.	Vendor to confirm	
5.4	The equipment should be workable under conditions of heavy fumes and dust associated with foundry. Ambient temperature	Vendor to take note and confirm	

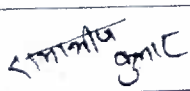
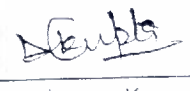
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Sl. No.	Details	Requirement from Vendor	Vendor's Response Yes (OK) / No
	may vary from 3 to 50 °C with relative humidity 95% RH max.		
5.5	Vendor should ensure proper earthing for the equipment and its peripherals/accessories	Vendor to take note and confirm	
5.6	The equipment should work with sound level below 80 db	Vendor to confirm	
5.7	System should be safe electrically or otherwise and must have visible and audible warning as applicable on occurrence of any fault and/or approaching threshold of critical parameter	Vendor to confirm	
5.8	Vendor has to ensure actual performance of the equipment by running the equipment for at least 3 heats.		
5.9	The supplier shall give guarantee for trouble free operation of the equipment for a period of eighteen months from the date of commissioning	Vendor to take note and confirm	
5.10	Vendor should train BHEL personnel inside BHEL premises itself for general operation and maintenance parameters.	Vendor to take note and confirm	
6.0	PACKING		
6.1	The equipment should be supplied in suitable packing to avoid any damage during handling, transit and storage.	Vendor to take note and confirm	
7.0	DETAILS TO BE SUBMITTED ALONG WITH OFFER		
	Following details to be submitted along with offer.		
7.1	• Power consumption for running of equipment to be	Vendor to specify	

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Sl. No.	Details	Requirement from Vendor	Vendor's Response Yes (OK) /No
	specified by vendor		
7.2	GA drawing showing overall dimension, material and layout of equipment.	Vendor to take note and submit	
7.3	List of spares, if any, required for trouble-free operations for 2 years to be submitted.	Vendor to take note and submit	
8.0	<u>DOCUMENTS TO BE SUPPLIED ALONGWITH EQUIPMENT</u>		
	Five sets of following documents shall be supplied alongwith equipment:	Vendor to take note and confirm	
8.1	Operation and maintenance manual.	Vendor to take note and confirm	
8.2	Assembly drawings	Vendor to take note and confirm	
8.3	Details of all bought out items with their specification, addresses of Vendors.	Vendor to take note and confirm	
8.4	Test certificate and guarantee certificate for the equipment as a whole and test certificate of individual bought out components.	Vendor to take note and confirm	
9.0	<u>INSPECTION</u>		
9.1	BHEL reserves the right to inspect equipment at site before dispatch. The supplier shall be given prior intimation in such case. However inspection at BHEL shall be final. The supplier shall offer BHEL representative all reasonable test facilities without charge to satisfy the latter that the equipment is being furnished in accordance with this specification.	Vendor to take note and confirm	

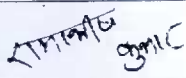
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Sl. No.	Details	Requirement from Vendor	Vendor's Response Yes (OK) /No
9.2	The equipment shall be tested at CFFP, BHEL and will be binding on supplier. If the equipment received at CFFP is not found in accordance with the requirements, it shall be rejected.	Vendor to take note and confirm	

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