

 BHARAT HEAVY ELECTRICALS LIMITED Heavy Power Equipment Plant Hyderabad – 502032, INDIA Phones: Fax No.s : 040-23021910 & 23021954 E-Mail :					
TENDER DOCUMENTS TO BE FILLED BY THE SUPPLIER FOR SUPPLY OF CRANE SUSPENDED 15 TON LIP POURING LADLE					
ADDRESS OF THE SUPPLIER:					
TELEPHONE NO.S :					
FAX NO.S :					
E MAIL ADDRESS :					
Sl. No.	DESCRIPTION OF BHEL REQUIRIMENT	BHEL SPEC.	Specified/To be Confirmed	OFFERED	REMARKS
1	PURPOSE				
	a)Lip pouring ladle of 15 Ton capacity is required to handle molten G.I and to carry out pouring operations in Foundry.		Vendor to Confirm		
	b)Collection of liquid metal from furnace and carrying it to the moulding area for pouring of liquid metal to the moulds.		Vendor to Confirm		
2	TECHINICAL DETAILS				
2.1	Liquid metal Holding Capacity of ladle	15 Ton	Vendor to Confirm		
2.2	Quantity required	1 No.	Vendor to Confirm		
2.3	Type of Ladle	Lip pouring Tapered shell body ladle with integrated Gear Box Assembly	Vendor to specify		
2.4	DIMENSIONS				
	Supplier has to get the type and dimensions of the ladle approved by M/s BHEL after placement of Order and adopt the necessary changes if any. The tentative dimensional details of the ladle can be as follows		Vendor to confirm		
2.4.1	Shell Dimensions				
	Top Dia:	1900 mm	Vendor to Specify		
	Bottom Dia	1700 mm	Vendor to Specify		
2.4.2	Plate or Shell Thickness				
	Side	16 mm	Vendor to Specify		
	Bottom	20 mm	Vendor to Specify		
2.4.3	Refractory Lining Thickness				
	Side	150 mm	Vendor to Specify		
	Bottom	180 mm	Vendor to Specify		
2.4.4	Top Clearance for slag Portion	280 mm	Vendor to Specify		
3	FEATURES :				
3.1	DOUBLE LIP				
3.1.1	Lip to be provided on both sides of the ladle for pouring either left or right as per mold requirement/location.		Vendor to Confirm		
3.1.2	Lip pouring ladle shall be supplied with integrated gear mechanism with hand wheel for tilting the ladle, trunions, trunion shaft, heat shield, Crane hook eye / shackle for lifting with EOT crane lop, legs, refractory lining ring, locking lever etc.		Vendor to Confirm		
3.1.3	Gear Box Assembly Details:		Vendor to Confirm		
	It should be robustly and accurately designed.		Vendor to Confirm		
	Gear Box Tilting Arrangement:	Worm & Worm Wheel	Vendor to Confirm		
	Body	Steel	Vendor to Confirm		
	Worm Wheel	Phosphorous Bronze	Vendor to Confirm		
	Worm Shaft	EN-8 Bar	Vendor to Confirm		
	Bevel Gears	EN-8 Bar	Vendor to Confirm		
3.1.4	Crane Hook Eye				
	Hook should be in single Piece design		Vendor to Confirm		
	Standard Test to be done so as to avoid cracks/damage to the Crane hook eye during usage of ladle.		Vendor to Confirm		
	Provision for adjustment to balance the ladle		Vendor to specify		
3.1.5	Heat/Splash				
	Ladle should be furnished with a heat shield fixed to the underside of the bail to aid in deflecting heat away from the crane hook eye and hoist hook"		Vendor to Confirm		

	SPLASH Guard to be provided over the rotating parts of gear box which are exposed outside atmosphere.		Vendor to Confirm		
3.1.6	Handle Wheel It should be sufficiently large for easy tilting of ladle		Vendor to Confirm		
3.1.7	Locking Arrangement Lock should be provided to avoid tilting while transporting the liquid metal.		Vendor to Confirm		
3.1.8	Safety Bidder should ensure to design & manufacture the ladle with relevant standard norms and condition. Bidder should ensure to provide all safety interlocks such as Safety Locks for Both Arms, Secondary Locking Assembly fitted to the Gearbox Handle which is intended to be used to lock the gearbox when the ladle is being moved with the shell in partly rotated position. Bidder should ensure to use all hardware and fasteners are of High tensile materials.		Vendor to Confirm		
3.1.9	Features: The Lip pouring ladle -15 ton capacity for G.I should have a robust gear box for easy manual tilting of ladle. The trunnion shaft should be welded integral to the ladle shell through trunnion pads and be mounted on ball bearings. Ladles should be fabricated from heavy steel plates and should be provided with stiffener rings to avoid any distortion of shell. Ladles should be designed to have proper stability when empty in all positions.Proper lock shall be provided to avoid tilting of ladle when the liquid metal is filled in the ladle.Lips shall be provided on both side of the ladle . Ladle to remain stable at all the angles and should not move forward or backward due to its own weight and weight of the metal.		Vendor to Specify		
3.10	Control: The lip pouring ladle should be capable of operating smoothly on regular basis in melting area. It must work at low maintenance level. There should be easy accessibility for periodic greasing of the gear box		Vendor to Specify		
3.11	Spares Spares for two years trouble free operation with item wise unit price i)Bevel Gear ii)Bevel pinion iii)Worm Wheel iv)Worm Shaft		Vendor to Confirm		
3.12	Refractory Details A)Side Brick Drawing B)Bottom Brick Drawing C)Specification of refractory brick & Motor		Vendor to confirm		
3.13	Refractory Spares One Set(optional & to be quoted Seperately) A) Side Bricks B) Bottom Bricks C)Any other material if required for lining Purpose.		Vendor to Confirm		
4	DOCUMENTATION:				
4.1	Supplier shall furnish constructional details of the Ladle. i.e. General arrangement drawing, volume to weight calculations for molten steel along with the quotation and also the gear box design details along with drawings.		Vendor to Confirm		
4.2	Supplier shall furnish detailed dimensional sketches of ladle,refractory materials etc.		Vendor to Confirm		
4.3	Three sets of each of the following documents to be furnished along with the Ladle Operation Manual Maintenance Manual Spare Parts List	3 sets 3 sets 3 sets	Vendor to Confirm		
4.4	List of customers for similar type of ladle shall be furnished along with the offer.		Vendor to Confirm		
5	PRE INSPECTION : M/s BHEL Engineers will inspect the Ladle at suppliers works before dispatch and hence to be intimated sufficiently in advance to avoid delivery delays.		Vendor to Confirm		

5.1	TEST CERTIFICATE: Test certificate for Body,Gear Box,Hook and also for Welding procedure if adopted during manufacturing process.		Vendor to Confirm		
6	GUARANTEE : The geared Lip pouring Ladle shall be guaranteed for a period of one year from date of commissioning.		Vendor to Confirm		
7	SPECIAL REMARKS:				
7.1	Vendor shall submit technical offer and price offer separately in two sealed covers		Vendor to Confirm		
7.2	They shall be original equipment manufacturers		Vendor to Confirm		
7.3	They shall be in line of manufacturing of similar lip pouring ladles with capacities greater than or equal to 5 Ton and up to 20 Ton for not less than 10 years.		Vendor to Confirm		
7.4	a) The above points are indicative, but not exhaustive. Hence any other essential accessories / parts that need to be incorporated to ensure safe operation with robust mechanism having all features for the ease of the operators to be considered and provided. b) Cost of refractories has to be mentioned separately in the price bid.		Vendor to Confirm		