

स्टील फाउंड्री
सेन्ट्रल फाउंड्री फोर्ज प्लान्ट
भारत हेवी इलेक्ट्रिकल्स लिमिटेड

SPECIFICATION FOR PORTABLE CIRCULAR TYPE ELECTRO-MAGNET FOR LIFTING STEEL SCRAP
SPECIFICATION NO. FT/SP/70 REV 00

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	OBJECTIVE:		
1.1	This specification governs the requirement of compact, electrically operated portable Circular type Electro magnet for lifting Steel scrap containing mixture of bend rods of dia 8 mm to 20 mm. , metal scrap , cubes of Steel (50 mm to 200 mm side)	Vendor to confirm	
1.2	The Scrap Lifting Circular Type Electro Magnet shall be used in Foundry condition to lift and load steel scrap containing MS rods, MS chills, metal spillover etc with help of EOT crane.	Vendor to take note and confirm	
2.0	PRE-QUALIFICATION CRITERIA:		
2.1	Offer shall be considered from original manufactures of Electro Magnets.	Vendor to provide certificate of incorporation.	
2.2	The manufacturer should have supplied equipments as specified in Clause 1.1 of the capacity 5 KW or above. Proof of supply of at least 2 numbers of equipment in last seven years (year ending tender opening date) to be submitted along with offer.	To be submitted: Purchase orders copies of supplies, preferably with performance certificate	

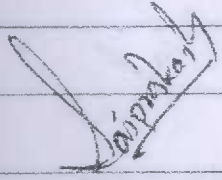
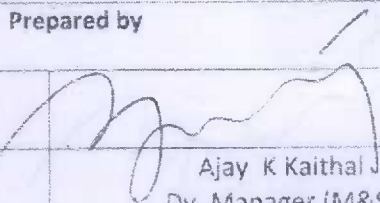
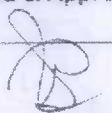
Prepared by		Checked & Approved by
Jai Prakash Singh Manager (SF)	Ajay K Kaithai Dy. Manager (M&S)	Tushar Dave DGM (FT & PS)



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3.0	SCOPE OF SUPPLY : Scope of supply includes design, manufacturing, supply and commissioning of the Scrap lifting Circular Electro magnet at CFFP/BHEL Haridwar. The technical and general requirements of the Scrap Lifting Circular Type Electro Magnet are given below.		
3.1	Complete Lifting Magnet With Following Accessories - Scrap Lifting Circular Electro Magnet - At least 1 Mtr Long Lifting Chain, Three Legged, Alloy Steel Chain, Grade 80, Capacity 20 Ton with Master Ring Oval Type.	Vendor to take note and confirm	
3.2	Magnet Power Pack (Control Panel) With Following Features. Panel is to be fabricated from M.S. Sheet 14 / 16 SWG Floor Mounted arrangement which should be comprising of. i) Step Down Air Cooled Transformer 3 Phase. ii) Bridge Rectifier – 6 Diodes (Selenium or Silicon) iii) Contactor (Siemens/ L&T make) iv) ON-OFF / Main Switch v) 3 phase Indicating Lamps vi) D C Ammeter vii) AC Voltmeter viii) Contactors (Siemens/ L&T make) for lift & drop ix) Snubber & Filter Circuit arrangement. x) Auto Drop Facility Circuit. xi) Duty cycle Timer/controller basically monitors the on / off time of the lifting magnet. xii) Protection: HRC Fuses on AC & DC side to protect the equipment xiii) Resistance: Wire Wound dropping & discharge resistances.	Vendor to take note and confirm	
3.3	Transformer Specifications : Air Cooled Transformer: 3 Phase	Vendor to take note and	

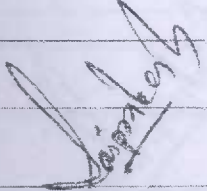
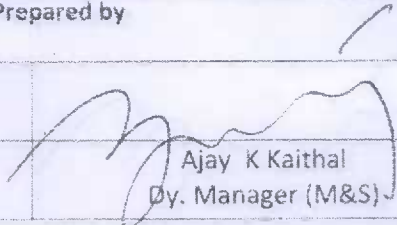
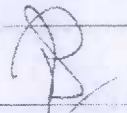
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Sl. No.	Details	Requirement from Vendor	Vendor's Response Yes (OK) /No
	- AC INPUT VOLTAGE: 380 / 415 + 5%, - OUTPUT VOLTAGE: 220 V DC with Suitable of 1.25% Taping - FREQUENCY: 50 Hz - RECTIFIER: 3 Phase bridge of silicon diodes - PROTECTION: Fuses on AC & DC side to protect the equipment.	confirm	
3.4	Master Controller: - Two Position Control Switch with LIFT – OFF/ DROP - Position and suitable to operate the control panel as mentioned above.	Vendor to take note and confirm	
3.5	Cable Reeling Drum with trailing cable. - TYPE OF CRD: Cable Reeling Drum Sprocket Type - TYPE: Spring loaded or sprocket driven type, fabricated from M.S. Sheet with Two Bearings and 3 Rings of slip- ring . - HEIGHT TO LIFT: The CRD should accommodate 15 mtrs. of cable - MOUNTING: The CRD should be floor mounting type and is to be mounted on top of crane. - SIZE OF CABLE: 2 Core 16 Sq mm TRS rubber sheathed copper cable. - SLIPRING RATING: 100 Amp.	Vendor to take note and confirm	
3.6	6. Quick cable Connector for magnet attachment. Type: Bayonet type with locking arrangement. A set comprises two female & two male sprocket driven type /Spring loaded contacts sheathed in high density rubber. The two ends of the entry & exit are protected by rubber dividers to prevent cable tearing.	Vendor to take note and confirm	

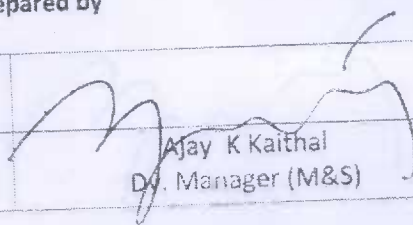
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3.7	Scrap lifting Circular Electro magnet should be in ready to use condition. CFFP BHEL Hardwar shall only provide 415V power supply.	Vendor to take note and confirm	
3.8	The supplier shall give guarantee for trouble free operation of the equipment for a period of twelve months from the date of commissioning.	Vendor to take note and confirm	
3.9	Vendor has to ensure actual performance of the equipment by lifting 10 MT of above said scrap and its loading in bins or on Tipper/Dumper	Vendor to take note and confirm	
4.0	TECHNICAL REQUIREMENTS:		
4.1	Diameter of the Magnet = 800 mm to 950 mm.	Vendor to take note and confirm	
4.2	Winding of the coil Double Fiber Glass covered Cu/ Aluminum Strip.	Vendor to take note and confirm	
4.3	Class of insulation "H" insulation	Vendor to take note and confirm	
4.4	Duty Cycle 75% in 10 min.	Vendor to take note and confirm	
4.5	Power rating 8 KW	Vendor to take note and confirm	
4.6	Sealing : Vacuum	Vendor to take note and	

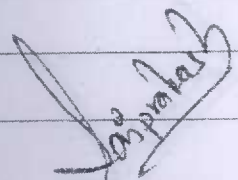
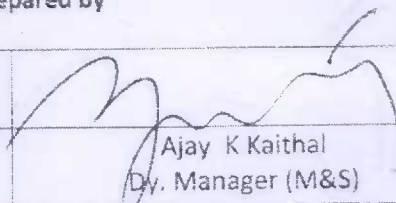
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Sl. No.	Details	Requirement from Vendor	Vendor's Response Yes (OK) /No
		confirm	
4.7	Impregnation : vacuum Pressure	Vendor to take note and confirm	
4.8	Working Voltage 220 V DC	Vendor to take note and confirm	
4.9	Winding : Al or Cu	Vendor to take note and confirm	
4.10	Power Supply Requirement : 415 V , 3 Phase 50 Hz AC only	Vendor to take note and confirm	
4.11	Bottom Bumping plate non-magnetic , wear resistant SS plate-304	Vendor to take note and confirm	
4.12	Lifting Capacity SOLID SLAB : 9000 Kgs. HEAVY MELTING SCRAP(58kgs/cft) : 300 - 400 Kgs. SHREDDED SCRAP (35 Kgs/cft) : 200 - 300 Kgs	Vendor to take note and confirm	
5.0	GENERAL REQUIREMENTS:		
5.1	Scrap Lifting Circular Type Electro Magnet should be of portable nature with proper lifting arrangements and it should be used using EOT cranes for scrap handling/lifting/loading.	Vendor to take note and confirm	
5.2	The equipment should be workable under conditions of heavy fumes & dust associated with steel foundry.	Vendor to take note and confirm	

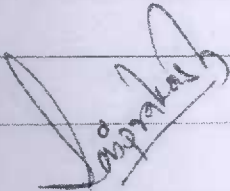
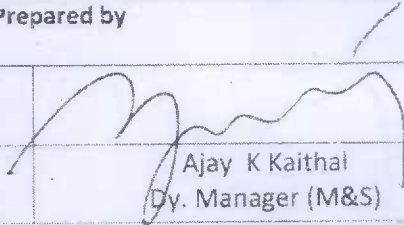
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6.0	PACKING		
6.1	The equipment should be supplied in suitable packing to avoid any damage during handling, transit and storage.	Vendor to take note and confirm	
7.0	DETAILS TO BE SUBMITTED ALONG WITH OFFER		
	Following details to be submitted along with offer.		
7.1	Applicable drawings and calculation/chart of performance parameters.	Vendor to take note and submit	
7.2	List of spares required for trouble-free operations for 2 years to be submitted.	Vendor to take note and submit	
8.0	DOCUMENTS TO BE SUPPLIED ALONGWITH EQUIPMENT		
	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, Electrical circuit diagram showing the placement of components/parts alongwith make, rating and specification.	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	Vendor to take	

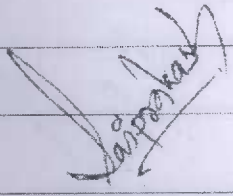
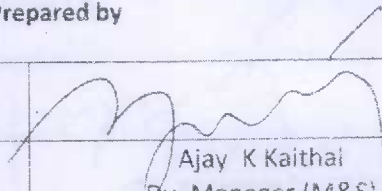
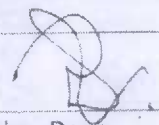
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Sl. No.	Details	Requirement from Vendor	Vendor's Response Yes (OK) / No
	equipment as a whole and test certificate of individual bought out components.	note and confirm	
9.0	INSPECTION		
9.1	BHEL reserves the right to inspect equipment at site before 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	
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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SPECIFICATION FOR PORTABLE CIRCULAR TYPE ELECTRO-MAGNET FOR LIFTING STEEL SCRAP
SPECIFICATION NO. FT/SP/70 REV 00

Note:

This specification governs the requirement of compact, electrically operated portable Circular type Electro magnet with capacity defined in Clause no. 4.12 for lifting Steel scrap. Scope of supply includes design, manufacturing, supply and commissioning of the equipment at CFFP/BHEL Haridwar thus requirements of clause no. 4.2, 4.5 and 4.9 are only given to collect information of design parameters.

Vender is permitted to modify "Winding material" (Cu or Al) and "Power rating" related parameters as per suitability of design to meet the objective of product.

Signature
3/2/17

Signature
23/06/17

Signature
3/2/17