



Bharat Heavy Electricals Limited

(High Pressure Boiler Plant)

Tiruchirappalli – 620014, TAMIL NADU, INDIA

CAPITAL EQUIPMENT / MATERIALS MANAGEMENT

An ISO 9001
Company

ENQUIRY	Phone: +91 431 257 79 38 Fax : +91 431 252 00 31 Email : tvenkat@bheltry.co.in Web : www.bhel.com
NOTICE INVITING TENDER	

TWO PART BID	Enquiry Number:	Enquiry Date:	Due date for submission of quotation:
Tender to be submitted in two Parts	2631300104	04.09.2013	09.10.2013

You are requested to quote the Enquiry number date and due date in all your correspondence. This is only a request for quotation and not an order.

Please note that under any circumstances both delayed offer and late offers will not be considered. Hence vendors are requested to ensure that the offer is reaching physically our office before 14.00 hrs on the Date of tender opening.

Item	Description	Quantity
10	Tube to tubesheet Welding Head to ESAB Power source as per the technical specification & commercial conditions applicable (to be downloaded from web site www.bhel.com or http://tenders.gov.in)	1.00 No

Important points to be taken care during submission of offer

1. Delivery required 4 months from the date of purchase order.
2. Erection & Commissioning period required 2 Weeks from the date of intimation by BHEL to vendor for deputation of their Engineers for E&C.
3. EMD for this Tender will be (INR) : 40,000.00
4. Checklist No. **TRY/IMP/03 & TRY/IND/03A** to be filled and enclosed along with the offer failing which, the offer will not be considered for evaluation.
5. All updates, amendments, corrigenda, etc., (if any), for each tender will be posted only on the above websites from time to time, as and when required, until each tender is opened. There will be no publication of such updates, amendments, corrigenda, etc., through newspapers or any other media.

BHEL's General guidelines / instructions (refer **MM / CE / GENL / 001 - EMD**) including bank guarantee formats and list of consortium banks, commercial terms check-list can be downloaded from BHEL web site <http://www.bhel.com> or from the Government tender website <http://tenders.gov.in> (public sector units > Bharat Heavy Electricals Limited page) under Enquiry reference "**2631300104**".

Tenders should reach us before 14:00 hours on the due date
Tenders will be opened at 14:30 hours on the due date
Tenders would be opened in presence of the tenderers who have submitted their offers and who may like to be present

Yours faithfully,
For **BHARAT HEAVY ELECTRICALS LIMITED**

Sr. Manager / Capital Equipment / MM

Tube to Tubesheet Welding Head Compatible to Powersource ESAB make Aristo™ Mech Tig4000i

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Part –A (Qualifying Criteria)**SECTION – I**

The BIDDER is expected to give complete details against each clause in the table given below, with additional sheets those may be attached (giving clear reference number) to furnish and cover the requisite details / documents.

Sl. No.	PARTICULARS	BIDDER'S RESPONSE
1	BIDDER to provide the Profile of their Company	
2	The Bidder (OEM) shall have a minimum of Five Years of Continuous Experience in the field of Design, Manufacture and Supply of <u>Welding Head for Tube to Tube-sheet weld.</u>	
3	List of customers to whom Tube to Tube-sheet Welding Headwere supplied, installed and commissioned till date.	
4	Details on SERVICE-AFTER-SALES Set-Up in India including the Addresses of Agents / Service Centres in India.	
5	Any Additional Data to supplement the manufacturing capability of the BIDDER for the subject equipment.	

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Part –A (Qualifying Criteria)

SECTION – II: The BIDDER has to compulsorily meet the following requirements to get qualified for submitting an offer for the “Electric Tube Expansion System”.

Sl. No.	REQUIREMENTS	BIDDER'S RESPONSE
1	Only those Bidders (OEMs) should quote, who have supplied and commissioned at least threenumbers of Tube to Tube-sheet Welding Head, in the past three years (on the date of opening of Tender) and such equipment should presently be working satisfactorily for more than one year after commissioning (on the date of opening of Tender).	
	The Bidder should submit following information where the Tube to Tubesheet Welding Headshave been supplied:	
1.1	Name and postal address of the customer or company where similar equipment is installed.	
1.2	Name and designation of the contact person of the customers.	
1.3	Phone, FAX no and email address of the contact person of the customers.	
1.4	Month and Year of commissioning of the equipment.	
1.5	Application for which the equipment are supplied	
2	Along with the Technical offer, the Bidder should submit the <u>Performance certificates from any one of the customer for the satisfactory performance of the equipment supplied as per clause 1.0 above</u> (For obtaining the Performance certificate, a suggestive format is provided in SECTION – IV).	
3	Offers of only those Bidders who meet the above Qualifying Criteria will be considered for further evaluation.	
4	BHEL reserves the right to verify the information provided by Bidder. In case the information provided by Bidder is found to be false/ incorrect, the offer shall be rejected.	

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Part –A (Qualifying Criteria)**SECTION – III**

The BIDDER has to comply with the following, for accepting the Technical Offer for scrutiny by the Purchaser:

S. No.	REQUIREMENTS	BIDDER's COMPLIANCE
1	The BIDDER shall submit the offer in TWO PARTS-Technical[with PART A & PART B] & Commercial and Price Bid.	
2	The offer shall contain a comparative statement of Technical Specifications given by BHEL and the offered details submitted by the Bidder, against each clause. Merely stating 'CONFIRMED' or 'COMPLIES' or 'YES' or 'NO-DEVIATION' or similar words wherever 'Bidder to Specify' details in the technical comparative statement may lead to disqualification of the Technical Offer.	
3	The Technical Offer shall be supported by product Catalogues & Data Sheets and also technical details of Bought-Out-Items with copies of Product Catalogue to the extent possible.	
4	The Commercial Offer (given with the Technical Offer) shall contain the Scope of Supply and the Un-Priced Part of the Price-Bid, for confirmation of the inclusion of all the accessories, tooling's, attachments, auxiliary parts, spares, consumables, etc. with the main and basic equipment, to meet the technical specification requirements.	
5	BIDDER has to indicate the Country of Origin for the supply of equipment.	

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Part –A (Qualifying Criteria)**SECTION – IV****PERFORMANCE CERTIFICATE**
(On Customer's Letter Head)

1. Supplier of the "Tube to Tubesheet Welding Head" :
2. Make & Model of the "Tube to Tubesheet Welding Head" :
3. Month & Year of Commissioning :
4. Application for which the "Tube to Tubesheet Welding Head" is used :
5. Size of the tube for which the "Tube to Tubesheet Welding Head" is used :
6. Performance of the equipment : Satisfactory / Good / Average /
(Strike off whichever is not applicable) Not Satisfactory
7. After Sales Service : Satisfactory / Good / Average /
Not Satisfactory
8. Any other remarks :

Date:

Signature & Seal of the Authority
issuing the Performance Certificate

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Part –B

Clause	PARTICULARS AND BHEL SPECIFICATION	BIDDERS OFFER With Technical Details
	<u>Purpose:</u> A welding head is required to perform welding of Tube ends with Tube sheet in heat exchangers. It should be compatible to use with the existing “ ESAB make Aristo™MechTig 4000I ” and should also able to communicate with the Power Source for executing the weld program cycles. The welding head design shall be suitable for welding the tube end joints detailed in the reference sketches enclosed.	Vendor to confirm
2.0	<u>Specification of existing Power Source& Program Control Unit:</u> <u>Power Source:</u> Make : ESAB Model : Aristo™Mech Tig4000i Type : Micro-processor controlled, Programmable, Inverter type - with inbuilt water-cooling system & digital display Input Supply : 400/415V, 3-Phase, ± 10% (50Hz) Setting Range : 4-300A Voltage Range : 5 to 30 V DC (250A to 400A) Duty Cycle : @35% - 300A/24V @60% - 240A/19.6V @ 100% 200A/18 V Water Cooler : Cool Midi Cooling Capacity : 1600Lit/Min at 40°C. <u>Program Control Unit:</u> Make : ESAB Model : Aristo™MechControl 2	Vendor to confirm
2.0	<u>Job Details:</u> (Refer the Design Drawings (specifically for the PATTERN 3) given in the ANNEXURE-1,2 and 3)	Vendor to note
2.1	<u>Weld Orientation:</u> All (Vertical & Horizontal) Position.	Vendor to note
2.2	<u>Tubesheet Hole PitchPattern:</u> Triangular or Square.	Vendor to note
2.3	<u>Tube O.D.Size:</u> 12 mm to 60 mm	Vendor to note

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Tube to Tubesheet Welding Head Compatible to Powersource ESAB make Aristo™Mech Tig4000i

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Part –B

Clause	PARTICULARS AND BHEL SPECIFICATION		BIDDERS OFFER With Technical Details
3.0	Scope of Supply: Welding head– 1 NO. and Spares– 1 set	Vendor to confirm	
3.1.0	Welding Head: Compatible to use with the “ESAB make Aristo™Mech Tig4000i” Power source	Vendor to confirm	
3.1.1	Electrode tilting Angle: ± 30 Degrees. (Electrode Adjustment).	Vendor to confirm	
3.1.1	Electrode Diameter: 1.6 mm to 2.4 mm	Vendor to confirm	
3.1.2	Head Rotation Speed: 0.2 to 4.4 rpm	Vendor to confirm	
3.1.3	Minimum number of revolutions : 1.4 revolutions	Vendor to confirm	
3.1.4	Filler Wire Size: 0.6 mm and 0.8 mm	Vendor to confirm	
3.1.5	Wire Feed Speed: 0 to 900 mm/minute	Vendor to confirm	
3.1.6	Wire Spool Weight: 500 grams	Vendor to confirm	
3.1.7	Cooling: Water cooled torch	Vendor to confirm	
3.1.8	Current Rating: 180 Amps @ 60% on continuous current, 200 Amps @ 60% on pulsed current.	Vendor to confirm	
3.1.9	Torch/Wire Nozzle Adjustment: 3 – Axis adjustment	Vendor to confirm	
3.1.10	AVC Control: To be provided with Arc Voltage Control	Vendor to confirm	
3.1.11	AVC Stroke: 12 MM	Vendor to confirm	

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Part –B

Clause	PARTICULARS AND BHEL SPECIFICATION		BIDDERS OFFER With Technical Details
3.1.12	Torch Work-piece Distance Adjustment: Very fine control (movement) through an electronic drive.	Vendor to confirm	
3.1.13	Wire Spool & Feeder Location: Wire Spool & Wire Feeder shall be integrated into the welding head and should be rotatable along with the welding head.	Vendor to confirm	
3.1.14	Head Body cooling: Water cooled.	Vendor to confirm	
3.1.15	Length of Cables & Hoses: Cable and Hose assembly shall be 8 meters (minimum) long (effective from the power source outlet) with a protective sheathing for shop floor application.	Vendor to confirm	
3.1.16	Cable & Hose Connection(IMPORTANT): The power and control cable connection to the welding head shall be from the backside, I.e. along the axis of torch rotation, to avoid fouling of cable bundle when doing welding of tube-end joints on the periphery of the tubesheet provided with Extension Ring (as shown in the drawing given in ANNEXURE -1). It should be compatible for mounting with “ ESAB make Aristo™MechTig 4000I Power Supply ” with inbuilt water cooling system.	Vendor to confirm	
3.2.0	<u>Spares</u>		
3.2.1	Inter-connecting cables & hoses: The length of inter-connecting cables and hoses shall suit to the system configuration described vide cl. 3.1.15 &16 – 1 set	Vendor to submit	
3.2.2	Welding Head: Un-priced item wise list of all necessary O&M spares & consumables (such as wire spool holder, Wire feed motor, Wire conduit, Liners, wire feed rolls of dia 0.6mm & dia 0.8mm etc) required for trouble free operation for two years – three shifts basis – is to be offered along with this offer. Priced list is to be submitted with the commercial offer.	Vendor to submit	

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Part –B

Clause	PARTICULARS AND BHEL SPECIFICATION		BIDDERS OFFER With Technical Details
4.0	Documentation : Following mentioned documents are to be supplied along with the offer for technical evaluation:Catalogueof the welding head GA drawing of the welding head List and makes of bought-out items	Vendor to submit	
5.0	Delivery Period : Minimum possible delivery period	Vendor to specify	
6.0	Commissioning &Performance prove out at BHEL works: Integration with the existing power Source and Program Controller and successful demonstration of quality welding on mock up blocks is in the scope of the vendor.		
7.0	Documentation: 3 sets of the following documents shall be furnished during inspection and supply:	Vendor to confirm	
7.1	GA drawing: Exploded view / Cross section assembly. Make of Bought out items with Part no/Specification	Vendor to confirm	
7.2	The operator instruction manual	Vendor to confirm	
7.3	Maintenance instruction manual	Vendor to confirm	
7.4	Guarantee / warranty cards of all bought-outs	Vendor to confirm	
8.0	Packing : The “welding head”, accessories,sparesetc shall be packed rigidly to avoid any transit damage and dispatched	Vendor to confirm	
9.0	GUARANTEE: 12 months from the date of acceptance of the “Welding Head” at BHEL or 18 months from the date of dispatch whichever is earlier	Vendor to confirm	
10.0	Check List : Please ensure that the following documents aresubmitted along with this “Technical offer”		
10.1	Filled Up “Part-A” of Technical specification	Vendor to confirm	
10.2	“Performance Certificate” as specified in Section IV of Part-A	Vendor to confirm	
10.3	Item wise list of spares (refer Cl. 3.2.1 & 3.2.2)	Vendor to confirm	
10.4	List of documents (Refer Cl. 4.0)	Vendor to confirm	

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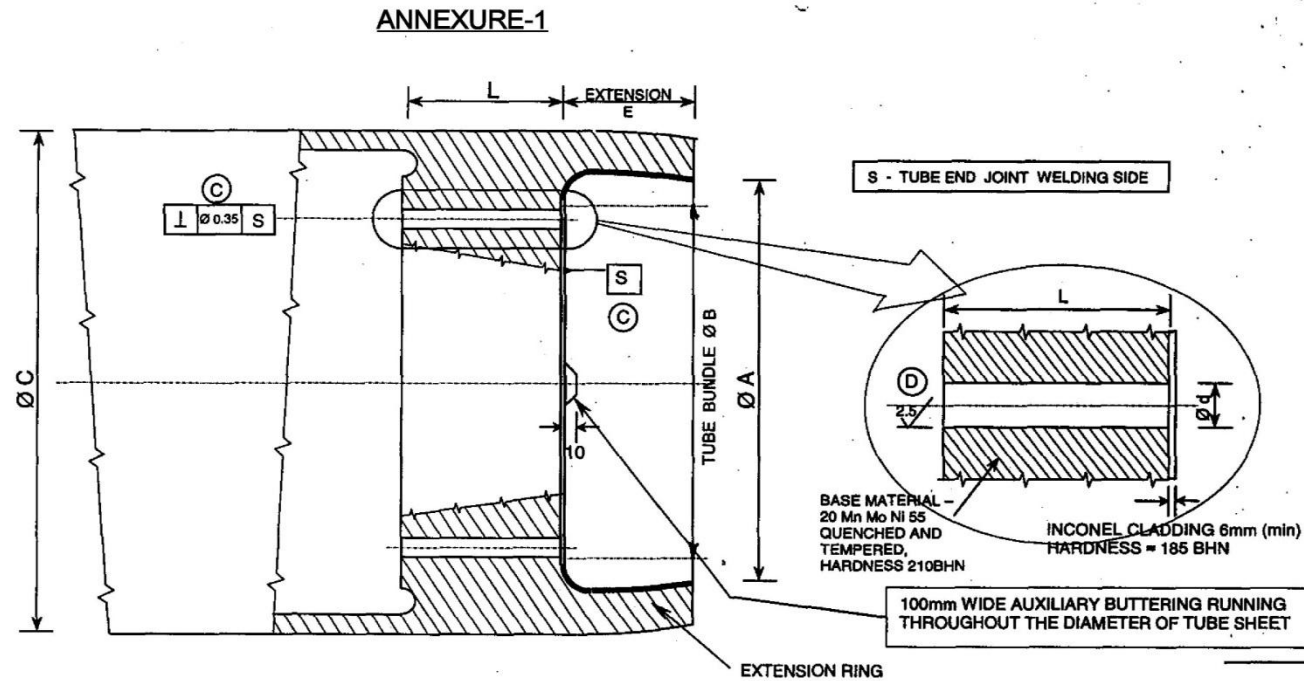
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Part -B

Clause	PARTICULARS AND BHEL SPECIFICATION	BIDDERS OFFER With Technical Details
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Ø A Approach diameter	Ø B TubeBundle diameter	Ø d Hole Dia	L Length of hole	Ø C Shell diameter	E Extended Length
2325 ©	2036	19.22 ^{+0.13} ₋₀	420 ©	2570	260 (A)

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Part -B

Clause	PARTICULARS AND BHEL SPECIFICATION	BIDDERS OFFER With Technical Details
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