



An ISO 9001
Company

Bharat Heavy Electricals Limited

(High Pressure Boiler Plant)

Tiruchirappalli – 620014, TAMIL NADU, INDIA

CAPITAL EQUIPMENT / MATERIALS MANAGEMENT

ENQUIRY	Phone: +91 431 257 7740 / 7653 Email : skaruna@bheltry.co.in , ajay@bheltry.co.in , prince@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	2601700039	06.07.2017	05.08.2017

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	(Indigenous Vendors) Matl. Will be delivered to
10	Hydraulically operated in-situ pipe edge preparation machine as per the technical specification & commercial conditions applicable (to be downloaded from web site www.bhel.com or http://tenders.gov.in)	01 no.	FOR, BHEL, stores, High Pressure Boiler Plant, Tiruchirappalli - 620014

Important points to be taken care during submission of offer

1. Material shall be delivered to (by Indigenous vendors): as stated above.
2. By Foreign vendors: CFR Chennai Seaport / Airport
3. Delivery period required is 5 months from the date of P.O.
4. Commissioning and performance prove out shall be done at BHEL Trichy by the supplier
5. Time period required for commissioning and performance prove out shall be 3 weeks from the date of intimation by BHEL
6. EMD for this tender Rs. 1,50,000/-
7. Compliance Form No: TRY/IMP/02 & TRY/IND/02A to be filled and enclosed along with the offer failing which, the offer will not be considered for evaluation.
8. 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), compliance form and technical specification 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.

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**

Prince Devasi
PRINCE DEVASI

Sr Engineer / Capital Equipment / MM

TECHNICAL SPECIFICATIONS FOR HYDRAULICALLY OPERATED IN-SITU PIPE EDGE PREPARATION MACHINE

PART- A

QUALIFYING CRITERIA FOR THE DESIGN & SUPPLY OF PIPE BEVELLING MACHINE

SECTION – I

The BIDDER/OEM (Original Equipment Manufacturer) is expected to give complete details against each clause in the table given below and wherever necessary an additional sheet may be attached (giving clear reference number) to cover the required details, asked for .

S.No.	PARTICULARS	BIDDER's RESPONSE
1	Number of Years of Experience, the BIDDER/OEM has in the field of design, manufacture and supply of 'Hydraulically Operated In-situ Pipe Edge Preparation Machines' for applications meant for pressure piping fabrication, involving high wall thickness & super alloy seamless pipes carrying fluids at high temperature & pressure (Complete Company Profile to be Furnished).	
2	YEAR of LAUNCH of the MODEL quoted against this BHEL TENDER / ENQUIRY	
3	BIDDER to indicate the Country of Origin for the supply of the offered 'Hydraulically Operated In-situ Pipe Edge Preparation Machine'.	
4	Number of 'Hydraulically Operated In-situ Pipe Edge Preparation Machines' supplied to Large Power Piping / Pressure Piping / Process Piping Industries or Heavy Fabrication Industries till date and the technical details on such systems, to ascertain the bidder's competency.	
5	Details on International Standards followed in Design, Manufacture & Testing of subject models of 'Hydraulically Operated In-situ Pipe Edge Preparation Machines' – copies of the relevant standards /codes (viz.,IEC/EN/ISO) are to be compulsorily furnished with the TECHNICAL BID.	
6	The Machine Manufacturing Firm/OEM should have an ISO 9001:2008 certificate issued by internationally reputed QMS auditing organization. Copy of the Certificate to be produced.	

SECTION – II

The BIDDER / OEM has to compulsorily meet the following requirements to get qualified for submitting an offer for the 'Hydraulically Operated In-situ Pipe Edge Preparation Machine':

S.No.	PARTICULARS	BIDDER's RESPONSE
7	The BIDDER / OEM shall have a minimum of TEN Years of Experience in the Design, Manufacturing and Supplying of 'Hydraulically Operated In-situ Pipe Edge Preparation Machines'. Proof to be furnished.	
8	Number of "Hydraulically Operated In-situ Pipe Edge Preparation Machines" supplied, till date in the Quoted Model to Heavy Piping Fabrication Industries – To furnish the list of those customers with contact details for reference.	

S.No.	PARTICULARS	BIDDER's RESPONSE
9	BIDDER / OEM has to provide Performance Certificate with full contact details of CONTACT PERSON, who are the End Users of the Quoted or Near to Quoted Model of “Hydraulically Operated In-situ Pipe Edge Preparation Machines” – (in the suggestive format as given in the ANNEXURE-A on Page No.3).	
10	Details on SERVICE-AFTER-SALES Set-Up in India including the Address of Agents / Service Centres, for providing technical assistance / spares supply.	
11	BHEL reserves the right to verify the information / data provided by the BIDDER / OEM. In case the information provided by BIDDER / OEM is found to be false / incorrect, the offer shall be summarily rejected.	
12	If warranted, the BIDDER/OEM need to arrange for a demonstration of the subject equipment at BHEL Works (with BHEL supplied pipes) with a notice period of TWO weeks, for ascertaining the capability & suitability of the offered equipment.	

SECTION – III

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

S.No.	PARTICULARS	VENDOR's COMPLIANCE
13	The BIDDER / OEM shall submit the offer in TWO PARTS - Technical [with PART A & PART B] & Commercial Terms and Price Bid.	
14	The Offer shall contain a comparative statement of Technical Specifications given by BHEL and the Offer Details submitted by the BIDDER / OEM, against each clause. A just 'CONFIRMED' or 'COMPLIES' or 'YES' or 'NO-DEVIATION' or similar words in the technical offer may lead to disqualification of the Technical Offer	
15	The BIDDER / OEM shall assure a continuous support for SPARES and SERVICE for TEN Years, from the date of commissioning of the equipment at BHEL Works. This will be an undertaking by the OEM at the time of release of Purchase Order on the successful bidder.	
16	The Technical Offer shall be supported by Product Catalogue and Data Sheets in ORIGINAL and complete technical details/literature on the Quoted Model of 'Hydraulically Operated In-situ Pipe Edge Preparation Machines'	
17	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 for the scope of supply – with UNIT RATE.	
18	The expected delivery period (including the time for Pre-Dispatch Inspection clearance by BHEL) for the 'Mobile Fume Extraction System / Units' is not more than 20 weeks from the date of issue of BHEL Purchase Order.	

ANNEXURE-A**PERFORMANCE CERTIFICATE**

The Performance of the subject model 'Hydraulically Operated In-situ Pipe Edge Preparation Machines' should be certified by the customer of the OEM/BIDDER on Customer's Letter Head, in the following format & submitted along with the TECHNICAL OFFER positively [or can be sent directly to BHEL Purchase Dept. by the user].

- 1.0 Name of the Machine Supplier (OEM) :
- 2.0 MODEL/MAKE, Serial No. of 'Hydraulically Operated
In-situ Pipe Edge Preparation Machines' :
- 3.0 Month & Year of Commissioning of the Equipment :
- 4.0 Details on the Application/Use of the subject machine :
- 5.0 Performance of the subject equipment stated above : Very Good /
Satisfactory /
Not Good
- 6.0 Availability of the subject equipment stated above : Good / Poor
- 7.0 Service After Sales support given by the OEM /
Indian Representative, including spares supply : Satisfactory /
Not Satisfactory
- 8.0 Special Remarks / Recommendations :

Date:

Signature & Seal of the Authority
Issuing the Performance Certificate

PART - B

**TECHNICAL SPECIFICATIONS FOR THE HYDRAULICALLY OPERATED
IN-SITU PIPE EDGE PREPARATION MACHINE**

S. No.	PARTICULARS	SPECIFICATIONS/DESCRIPTION	VENDOR'S OFFER [with Complete Technical Details]
1.0	MACHINE CONFIGURATION	The offered equipment shall have the following elements : a) Electrically run Hydraulic Power-pack provided with inter cooler and remote control / pendant unit(s) b) Split frame type pipe OD (outer diameter) clamping unit integrated hydraulically operated metal cutting head to match the range of pipe outer diameters c) Tool holders to secure the cutting tools suiting to the profiles of the pipe edge preparation styles d) Set of cutting tools for Facing, Counter-boring and Bevelling Operations e) Interconnection Hoses with quick fix end couplings	[BIDDER has to necessarily quote all the standards and codes adopted for the design & construction of these sub-systems, including operational safety measures. Relevant sections of the Codes shall form part of the OFFER. Otherwise, the offer will get rejected.]
2.0	JOB DETAILS		
2.1	Pipe OD Range	400 mm to 700 mm	
2.2	Pipe Wall Thickness	25 mm to 110 mm	
2.3	Pipe Materials	Carbon & Alloy Steels, Stainless/Duplex Steels, Nickel Alloys, High Chrome Steels, Titanium, etc.	
2.4	Edge Preparation Styles	Cutting, Facing, Single / Double Bevel, 'U' & 'J' Groove, Counter-boring, ID Bevelling, etc. [NOTE : The generally used edge preparation styles in BHEL are given in the enclosed ANNEXURE-1 and ANNEXURE-2 for reference and confirm the suitability of the offered equipment]	

S. No.	PARTICULARS	SPECIFICATIONS/DESCRIPTION	VENDOR'S OFFER [with Complete Technical Details]
3.0	HYDRAULIC POWER-PACK		
3.1	Operation Mode	Through Electrical Power , Input Power Supply details are given under the following Specifications Clause No.5.0	
3.2	Design and Equipment Safety Codes	Bidder to specify to specify the relevant internationally accepted codes adopted for the design / construction and operational safety of the offered equipment.	
3.3	Electrical Power Rating	Bidder to specify (Not less than 15 HP - to suit the BHEL job requirements)	
3.4	Electrical Control Panel	The electrical control panel with display meters shall be provided and mounted on the oil tank at a suitable location	
3.5	Remote Control Unit	In addition to the provisions in the Control Panel, the Remote Control Unit shall have the machine operating provisions and with an extension cable length of minimum and site usage	
3.6	Emergency Stop	The Control Panel and Remote Pendant should have EMERGENCY STOP Buttons.	
3.7	Hydraulic Oil Pressure	Bidder to specify the Operating Pressure Range	
3.8	Pressure Gauge	Pressure Gauge / Meter shall be provided for indicating working oil pressure, with a suitable pressure range	
3.9	Hydraulic Oil Tank Capacity	Bidder to specify (not less than 200 Litres)	
3.10	Hydraulic Oil Specifications	Bidder to specify the Internationally used selection chart	
3.11	Type of Hydraulic Oil Pump	Gear Type	
3.12	Hydraulic Oil Flow Rate	Bidder to specify (not less than 40 litres/minute)	

S. No.	PARTICULARS	SPECIFICATIONS/DESCRIPTION	VENDOR'S OFFER [with Complete Technical Details]
3.13	Hydraulic Oil Inter Cooler	Bidder to furnish technical details (to ensure that temperature of the Oil in the Hydraulic Power Tank does not exceed 60 Deg. C at any time)	
3.14	Oil Level Gauge & Oil Drain Valve	A transparent and visually seen oil level gauge and an contaminated oil drain valve shall be provided at right locations in the power-pack oil tank	
3.15	Inter-connecting Hydraulic Hose : two options	The Hydraulic Hose interconnecting the Hydraulic Power-Pack and the Bevelling Head shall be flexible and of lengths 3 mtrs. and 5 mtrs. – totally two sets to suit the various site conditions. Bidder to provide hose and end-couplings specifications and safety standards/codes adopted.	
3.16	Transportability	a) The hydraulic power-pack shall be movable by hand on the shop floor with a skid mounted frame provided with swivelling type rubber lined castor wheels and pushing handles. b) For lifting by an over-head crane the Hydraulic Power-Pack shall be provided with lifting hooks. c) For keeping output hydraulic hoses & remote control unit along with the power-pack when not in operation, there shall be wound hose holding hooks/lugs in the hydraulic tank framework.	

S. No.	PARTICULARS	SPECIFICATIONS/DESCRIPTION	VENDOR'S OFFER [with Complete Technical Details]
4.0	PIPE CLAMPING & METAL CUTTING HEAD		
4.1	Clamping Unit Construction	a. The unit shall be portable in nature and very rigid / rugged in construction b. It shall be of split frame type with two segments c. It shall be handled by a single operator and fixed on the pipe outer-diameter d. Bidder to specify the weight of the total assembly and if the weight exceeds 25 kgs., a provision shall be given for handling with an electrically operated lifting device e. Bidder to furnish details on the construction and the material used for impact resistance and corrosion resistance, also for operator safety. f. To indicate whether one unit or multiple units will cover the pipe diameter range indicated under the above Clause No. 2.0 and BIDDER to furnish details g. Pipe clamping jaws details for various OD range of pipes and the type of clamping onto pipe OD	
4.2	Machining / Metal Cutting Head Assembly	a. Number of units forming part of the machining / metal cutting head and BIDDER to furnish details. b. To furnish details on how the metal cutting tools are positioned and the mode of giving feed to the tools c. Details on the hydraulic motor operating the cutting / machining head d. Speed of rotation with selection for an effective speed of metal cutting, to suit the various listed pipe material specifications – details to be provided	

S. No.	PARTICULARS	SPECIFICATIONS/DESCRIPTION	VENDOR'S OFFER [with Complete Technical Details]
4.2	Machining / Metal Cutting Head Assembly	e. Shall be suitable for fitting at any point along the pipelines for pipe slicing and edge preparation at ends f. Radial tool feed rate per revolution achievable to be furnished g. Tool Box Stroke to cover the pipe sizes indicated under the above Clause No. 2.0 and the BIDDER to furnish details	
4.3	Cutting Tools	1. BIDDER to confirm that the Tool Holders fitted with suitable cutting tools / inserts (HSS Tool Tips or TiN Coated inserts) will cover all the bevelling styles indicated by the EP sketches given in the ANNEXURE – 1 and ANNEXURE - 2. 2. BIDDER to list down with PART Number for various cutting tools / inserts those required to cover the EP styles indicated under ANNEXURE – 1 and ANNEXURE - 2.	
5.0	ELECTRICAL & ELECTRONIC SYSTEMS		
5.1	415 V with a voltage fluctuation of +/- 10%, 50HZ with a fluctuation of +/-2%, 3 Phase AC (3 wire system without neutral) power supply will be provided by BHEL at a single point near the machine	Bidder to Confirm	
5.2	Tropicalization : All electrical / electronic equipment shall be tropicalized.	Bidder to Confirm	
5.3	Control circuit voltage shall not exceed 24V DC	Bidder to Confirm	
5.4	Bidder should ensure the proper earthing for the machine	Bidder to Confirm	
5.5	All electrical & electronic control panels should be dust proof and shall have IP 54 protection	Bidder to Confirm	

S. No	SPECIFICATIONS / DESCRIPTION		VENDOR'S OFFER / CONFIRMATION [with Complete Technical Details]
5.6	Motors and drives shall be of Fanuc / Siemens / Allen Bradley / ABB / Indramat / SEW or any other reputed makes acceptable to BHEL conforming to IS / IEC Standards (Bidder should indicate make and type in the offer- Energy Efficient Motor)	Bidder to Confirm	
5.7	All electrical items shall be from SEW / ROCKWELL Allen Bradley/ Telemecanique/Siemens/L&T/ABB or reputed makes acceptable to BHEL.	Bidder to Confirm	
6.0	MACHINE SPARES		
6.1	List of spares with itemized break-up of mechanical, hydraulic, electrical and electronic spares used in the machine in sufficient quantity as per recommendation of Bidder for 2 years of trouble free operation on three shifts continuous running basis shall be furnished by Bidder along with offer. The list is to include following, in addition to other recommended spares: (Unit Price for each item of spare shall be offered)	Bidder to Confirm	
6.2	Mechanical, Hydraulic Spares: All types of Pumps, Valves, Pressure Switches, Transducers, Flow Switches, Filters, Seals, O-rings, Quick Fix End Couplings, Hydraulic Hoses, etc.	Bidder to Confirm	
6.3	Electrical / Electronic Spares: All types of Relays, Contactors, Push Buttons, Indicating Lamps, Special Fuses, Circuit Breakers, Main Power Switch, Control Cards etc.	Bidder to Confirm	
6.4	A set of Service Tools for Operation and Maintenance of the equipment shall e quoted may be quoted.	Bidder to Confirm	
6.5	Bidder to Confirm that complete list of spares for machine and accessories, along with item part no / specification / type / model, and name & address of the spare supplier shall be furnished along with documentation to be supplied with the machine	Bidder to Confirm	

S. No	SPECIFICATIONS / DESCRIPTION		VENDOR'S OFFER / CONFIRMATION [with Complete Technical Details]
7.0	DOCUMENTATION		
7.1	The following documents in English language should be supplied along with the machine: Hard Copies - 3 Sets Bidder to Confirm In CD form - 1 Set - GA Drawing of the complete EDM - GA Drawing of Individual Mechanisms - Operating Manuals of Machine - Maintenance Manuals with all drawings of machine sub-assemblies with parts list - Electrical circuit diagrams with bill of materials - Hydraulic circuit diagrams with bill of materials - Preventive Maintenance check list for Electrical and Mechanical System - Trouble shooting chart for Main and all sub systems - Catalogues, O&M manuals for all bought out items used in the machine. - Complete list of spares for machine, along with item part no /specification / type / model and make & address of the sub-vendors.		
8.0	MACHINE PRE-DISPATCH INSPECTION & ACCEPTANCE AT SUPPLIER'S WORKS		
8.1	Complete Pipe Bevelling Machine with all sub-systems and accessories shall be assembled and offered for inspection by BHEL Engineers at supplier's works.	Bidder to Confirm	
8.2	All systems of the machine have to be operated and demonstrated to the BHEL Engineers in proper working condition.	Bidder to Confirm	
8.3	Supplier has to establish parameters for carrying out the edge preparation of alloy steel pipes with typical EP styles, as part of the performance prove-out at Supplier's Works.	Bidder to Confirm	
9.0	PROVE-OUT AND ACCEPTANCE AT BHEL WORKS		
9.1	After the machine assembly is completed and energizing the machine at BHEL works, all systems of the machine have to be operated and demonstrated in proper working condition.	Bidder to Confirm	

S. No	SPECIFICATIONS / DESCRIPTION		VENDOR'S OFFER / CONFIRMATION [with Complete Technical Details]
9.2	Supplier has to carry out the machine performance prove-out at BHEL Works also on the following components (in addition to the trial jobs for machine stabilisation) – one number in each type given below : AA, Pipe Size : OD - 458 mm ; Wall Thickness – 108 mm Pipe Material : Alloy 617 (M) – Nickel Alloy EP Style : As per ANNEXURE – 2 Operations : Cutting, Facing, Bevelling, ID Boring BB, Pipe Size : ID - 610 mm ; Wall Thickness – 40 mm Pipe Material : Alloy 617 (M) – Nickel Alloy EP Style : As per ANNEXURE – 1 [Figure X, Xa] Operations : Cutting, Facing, OD Bevelling, ID Boring	Bidder to Confirm	
9.3	The scope of supply shall include the toolings required for the performance prove-out of jobs listed under the above technical specification Clause No. 9.2 (sufficient number tool bits / inserts are to be offered by the BIDDER, with unit rate)	Bidder to List the toolings and the operations proposed	
10.0	TRAINING:		
10.1	The supplier shall train One BHEL Engineer in Operation and Maintenance (Mechanical, Electrical/ Electronics) of the Machine for a minimum period of TWO working days at supplier's works after the pre-dispatch inspection.	Bidder to Confirm	
10.2	Airfare, board & lodging for the BHEL Engineer who will be visiting supplier's works for pre-dispatch inspection and training, will be borne by BHEL.	Bidder to Note	
10.3	The Supplier shall impart training to BHEL's Staff on Machine Operation and Maintenance (Mechanical & Electrical) during commissioning of the Machine at BHEL Works for THREE working days.	Bidder to Confirm	

S. No	SPECIFICATIONS / DESCRIPTION		VENDOR'S OFFER / CONFIRMATION [with Complete Technical Details]
11.0	THERMAL STABILITY FOR AMBIENT CONDITIONS & ENVIRONMENTAL PERFORMANCE OF THE MACHINE		
11.1	The machine shall be suitable for an ambient temperature of +48 deg C and relative humidity of 85% respectively, but both do not occur at the same time / simultaneously.	Bidder to Confirm	
11.2	The Bidder should ensure trouble free operation of the machine with Thermal Stability of the complete machine and accuracy requirements of BHEL components, keeping in view of ambient conditions as mentioned above.	Bidder to Confirm	
11.3	The machine, including sub-systems, attachments and accessories, should be suitable for continuous operation on three shifts a day.	Bidder to Confirm	
11.4	If any safety / environmental protection enclosure is required it shall be built in the machine by the Bidder.	Bidder to Confirm	
11.5	Maximum noise level shall be 80 dB (A) at normal load condition.	Bidder to Confirm	
12.0	MACHINE PACKING		
12.1	Sea worthy & rigid packing for all items of complete machine, all accessories and other supplied items to avoid any damage/loss in transit. When machine is dispatched in containers, all small loose items shall be suitably packed in boxes	Bidder to Confirm	
13.0	GUARANTEE:		
13.1	Performance Guarantee to be given for 12 months from the date of commissioning OR 18 months from the date of dispatch whichever is earlier, for the total machine or any sub-systems, components forming part of the machine for rendering the prescribed performance / rating values.	Bidder to Confirm	
14.0	GENERAL:		
14.1	Machine Model No.	Bidder to Specify	
14.2	Total connected load (kVA):	Bidder to Specify	
14.3	Total weight of the machine (approx)	Bidder to Specify	

ENCLOSURE : ANNEXURE -1 and ANNEXURE -2

ANNEXURE - 2: Sketch for Weld Groove Design

