



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 79 38 Fax : +91 431 252 07 19 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	2620900235	28.10.2009	30.11.2009

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	Shot Blasting Station for Pipes as per the technical specification & commercial conditions applicable (to be downloaded from web site www.bhel.com or http://tenders.gov.in)	1 No.

Important points to be taken care during submission of offer

1. Delivery required 8 months from the date of purchase order.
2. Grace period of 3 months beyond the above delivery period will be considered.
3. Checklist to be filled and enclosed along with the offer failing which, the offer will not be considered for evaluation.
4. 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/GT/001) 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 "2620900235".

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

Manager / Capital Equipment / MM

PART A
SHOT BLASTING STATION FOR PIPES

SECTION – I : QUALIFYING CRITERIA

The BIDDER has to compulsorily meet the following requirements to get qualified for considering the technical offer :

S. No.	REQUIREMENTS	VENDOR's RESPONSE
1	<p>Only those vendors (OEMs), who have supplied and commissioned at least ONE PNEUMATIC SHOT BLASTING STATION WITH SHOT BLASTING CHAMBER in the past ten years (from the date of opening of Tender) and such station is presently working satisfactorily for more than one year after commissioning (from the date of opening of Tender) should quote.</p> <p>However, if such shot blasting station had already been supplied to BHEL, then that station should be presently working satisfactorily for more than six months after its commissioning and acceptance (from the date of opening of Tender).</p>	
The vendor should submit following information where similar machine has been supplied for qualification of their offer.		
1.1	Name and postal address of the customer or company where similar shot blasting station is installed.	
1.2	Name and designation of the contact person of the customer.	
1.3	Phone, FAX no and email address of the contact person of the customer.	
1.4	Month and Year of commissioning of the shot blasting station.	
1.5	Application for which the shot blasting station is supplied	
1.6	Performance certificate from the customer regarding satisfactory performance of shot blasting station supplied to them.	
1.7	BHEL reserves the right to verify the information provided by vendor. In case the information provided by vendor is found to be false/ incorrect, the offer shall be rejected.	
2.0	<p>DELIVERY - The bidder shall quote the best possible delivery. However the delivery shall not exceed 8 months with an additional grace period of 3 months. The additional grace period will attract a penalty which is explained in the commercial terms of the enquiry. The delivery period shall be reckoned from date of purchase order to despatch from the vendor works.</p>	

SECTION – I I

The BIDDER / VENDOR is requested to provide the following information:

S. No.	REQUIREMENTS	VENDOR's RESPONSE
3.0	The BIDDER/VENDOR to furnish Reference List of Customers, with full address, details of contact person, where PNEUMATIC SHOT BLASTING STATIONS have been supplied in the past.	
4.0	Details of PNEUMATIC SHOT BLASTING STATIONS supplied to other BHEL units, if any. (Year of commissioning, Spindle size of machine, Spindle motor power)	
5.0	Details on SERVICE-AFTER-SALES Set-Up in India including the Address of Agents / Service Centers in South India.	
6.0	Any Additional Data to supplement the manufacturing capability of the BIDDER for the subject equipment.	

SECTION – III

The BIDDER to note:

S. No.	PARTICULARS	VENDOR'S RESPONSE
7.0	The BIDDER / VENDOR shall submit the offer in TWO PARTS. 1. Technical Offer [with PART A & PART B] & commercial offer 2. Price Bid.	
8.0	The Technical Offer shall contain a comparative statement of Technical Specifications demanded by BHEL and Offer Details submitted by the Bidder , against each clause. A just 'CONFIRMED' or 'COMPLIED' or 'YES' or 'NO-DEVIATION' or similar words in the technical comparative statement may lead to disqualification of the Technical Offer.	
9.0	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.	
10.0	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.	
11.0	For obtaining the performance certificate from the customer, a suggestive format is provided in SECTION – IV	

SECTION – IV

The performance certificate should be produced **on Customer's Letter Head.**

PERFORMANCE CERTIFICATE

1. Supplier of the machine		
2. Make & Model of the M/C		
3. Month & Year of Commissioning		
4. Application for which M/C is used		
5	a) Shot Blasting Chamber Size. b) Make, Model No. & Capacity of the portable abrasive blaster	
6. Performance of the shot blasting station (Strike off whichever is not applicable)		Satisfactory / Good / Average / Not Satisfactory
7. Any Other remarks		
<div style="display: flex; justify-content: space-between; align-items: flex-end; padding-top: 20px;"> <div>Date:</div> <div>Signature & Seal of the Authority Issuing the Performance Certificate</div> </div>		

TECHNICAL SPECIFICATION FOR SHOT BLASTING STATION FOR PIPES & HEADERS

PART B

I. The facility is required for surface cleaning of the outside surfaces of straight pipes, bent pipes & headers of carbon steel & alloy steel. The surface cleaning of these components is to remove

- i) the rust preventive coatings & paint
- ii) scales due to heat treatment ,**particularly scales formed due to normalizing and tempering of bends of P91 material.**
- iii) scales due to process of hot forming

The surface finish required is SA 2 ½ as per Swedish Standards.

II. A manual shot blasting facility is envisaged. The shot blasting station shall comprise of the following ;

- a. Shot blasting chamber
- b. Pneumatic shot blasting system
- c. Dust extraction system
- d. Operator protective equipments

III.

The jobs will be loaded on dip trolleys. Dip trolleys will be in the scope of BHEL(T).

The rails for dip trolleys will be in the scope of BHEL (T)

IV.

The shot reclaiming & recycling is envisaged as a manual system.

Clause No.	BHEL SPECIFICATION		VENDOR'S OFFER / COMMENTS
1.0	Component details		
1.1	Component materials specification : A) CARBON STEEL: SA 106 Gr.B /Gr C (ASTM), AP15L Gr B (ASTM) B) ALLOY STEEL: SA 335 P11, P12, P22, P91, SA 312 TP304H, SA 312 TP316 L		
1.2	Component sizes : Outside Diameter : From Ø 88.9 to 1400 Length (Max.): 10,000 mm Weight (max) : 20,000 Kgs Radius of bend (Max) : 6400 mm applicable for bent pipes		
2.0	BLASTING CHAMBER		
2.1	Blast chamber size (Length, width and height) shall be adequate to accommodate the maximum size of component. The width shall not be less than 6500 mm and the length shall not be less than 15000 mm.	Vendor to indicate the size of the chamber in the offer	
2.2	Blast chamber shall have entry / exit for the job on one side only	Vendor to confirm	
2.3	At the entry / exit, there shall be two rows of rubber curtains, spaced about 1500 mm apart to contain stray shots and dust	Vendor to confirm	
2.4	The blast chamber shall be fabricated out of MS plate, minimum 6 mm thick.	Vendor to confirm and specify thickness of plates.	

Clause No.	BHEL SPECIFICATION		VENDOR'S OFFER / COMMENTS
2.5	The interior of the blast chamber shall be lined with one layer of abrasion resistant rubber, of min. 6 mm thick.	Vendor to furnish specification and size of rubber proposed to be used	
2.6	The blast chamber shall be provided with lighting. The light fittings shall be suitable for blast chamber applications.	Vendor to confirm & furnish details like lighting arrangement, no. of light fittings, ...	
2.7	DUST EXTRACTION SYSTEM		
2.7.1	The blast chamber shall be provided with dust extraction, filter, dust collection and chimney system.	Vendor to confirm & provide details of dust extraction system offered.	
2.7.2	Filter media of dust extraction system shall be cartridge type	Vendor to confirm & provide details of filter media	
2.7.3	Cleaning of filters shall be by reverse air flow	Vendor to confirm	
2.7.4	Cleaning cycle shall be timer controlled	Vendor to confirm	
2.7.5	Filter clog indication shall be by Differential pressure gauge with alarm indication	Vendor to confirm	
2.7.6	Cleaning Cycle Sensing to initiate cleaning cycle shall be by Differential Pressure	Vendor to confirm	

Clause No.	BHEL SPECIFICATION		VENDOR'S OFFER / COMMENTS
2.7.7	Respirable Particulate Matter (RPM or RSPM) Emission at Chimney Outlet - Should not exceed 100 mg / Nm ³ for particle size less than 5 microns.	Vendor to confirm & provide literature of the filter manf. Regarding emission	
2.7.8	The blast chamber should be provided with a chimney 5 meters taller than the blast chamber height	Vendor to confirm	
2.7.9	Exhaust Fan of suitable capacity	Vendor to confirm & submit calculations.	
2.7.10	Dust collection system, fan and drive shall be weather proof as they are proposed to be located out-door.	Vendor to confirm and furnish details	
2.7.11	<p>Scope of Supply of the dust collection system shall include the following :</p> <ul style="list-style-type: none"> a. Dust hopper with arrangement for dust removal. b. Suction ducting from shot blasting chamber to dust collector. c. Ducting from dust collector to exhaust fan. d. Suitable bellows to be provided to prevent vibration. e. Chimney with Supporting Structures. f. Supporting structures wherever necessary 	Vendor to confirm	

Clause No.	BHEL SPECIFICATION		VENDOR'S OFFER / COMMENTS
3.0	Pneumatic portable abrasive blaster with remote control. – 2 Sets. Vendor to specify the model no. and furnish details	Vendor to confirm & furnish details	
3.1	Pneumatically operated portable abrasive blaster with remote control shall be fitted with i. 10 Mtr long blast hose ii. Tungsten carbide lined blast nozzle with 10mm orifice iii. Air filter iv. Pressure gauge v. Automatic exhaust valve vi. Abrasive control valve vii. Abrasive tank of capacity around 250 to 300 liters.	Vendor to confirm & specify	
3.2	The following shall also be offered : i. Air blaster (operator) helmet – 2 Nos. ii. Helmet hose – 2 Nos. iii. Helmet air conditioner – 2 Nos. iv. Helmet air breather – 2 Nos. v. Operator gum-boots – 2 pairs vi. Operator rubber hand gloves – 2 pairs vii. Operator suit – 2 Nos.	Vendor to confirm	

Clause No.	BHEL SPECIFICATION		VENDOR'S OFFER / COMMENTS
4.0	First filling of all required Oils & Grease etc. Should be supplied by vendor.	Vendor to confirm	
5.0	First fill of shots should be supplied by the vendor	Vendor to confirm & provide the specification of shots to be used	
6.0	PNEUMATIC CIRCUITS:		
6.1	All pneumatic components including cylinders shall be of FESTO or any other make acceptable to BHEL.	Vendor to confirm & provide the makes of pneumatic elements	
6.2	BHEL will terminate the shop compressed air supply at the hand wheel valve to be provided by the supplier. - The compressed air will be at a pressure of 60 to 70 psi only. All pneumatic systems on the machine, dust collector etc shall be designed to operate efficiently at this air pressure. Refrigerated air drier for removing moisture of the pneumatic air to be provided by the vendor.	Vendor to confirm	
7.0	ELECTRICAL INSTALLATION:		
7.1	AC 415V \pm 10%, 50HZ \pm 3 Hz, 3 Phase- 3 wire (no neutral) power supply will be provided by BHEL at one point near the machine, as per layout recommended by the Vendor.	Vendor to confirm	

Clause No.	BHEL SPECIFICATION		VENDOR'S OFFER / COMMENTS
7.2	Tropicalization: All electrical / electronic equipment shall be tropicalized.	Vendor to confirm	
7.3	All electrical/electronic control cabinets & panels shall be dust & vermin proof and shall have IP 54 protection.	Vendor to confirm	
7.4	<p>a. All electrical and electronic panels including operator's panel should be provided with fluorescent lamps for sufficient illumination and power receptacles of 220 Volts, 5/15 Amp. AC.</p> <p>b. All adapters /receptacles should have compatibility with Indian equivalents.</p>	Vendor to confirm	
7.5	Control circuit voltage shall be 24 V DC	Vendor to confirm	
7.6	Motors shall be energy efficient and shall be any of the following make: M/S Siemens / Crompton Greaves / KEC / ABB or other makes conforming to IEC standards.	Vendor to confirm	
7.7	Wiring: All electrics shall be wired using PVC sheathed cable running in conduits to common terminal block	Vendor to confirm	
7.8	External wiring from / to exhaust fan etc shall be by means of armoured multi-core copper cables. All current carrying conductors shall be of copper.	Vendor to confirm	

Clause No.	BHEL SPECIFICATION		VENDOR'S OFFER / COMMENTS
7.9	Vendor shall ensure proper earthing	Vendor to confirm	
8.0	SPARES		
8.1	Vendor shall list the set of recommended operating spares for a. The dust extraction system b. The pneumatic abrasive blaster	Vendor to furnish list	
9.0	PRE DESPATCH INSPECTION AT VENDOR'S WORKS - Since the Shot Blasting Station cannot be inspected in the assembled condition, the supplier has to offer the complete quantum of materials, semi-finished/finished machine components, sub-assemblies, bought-out items, spares, consumables, etc. required to build the shot blasting station in total, along with one set of O&M documentation for inspection to BHEL Engineers, at supplier's works, prior to despatch.	Vendor to confirm	

Clause No.	BHEL SPECIFICATION		VENDOR'S OFFER / COMMENTS
10.0	<p>Documentation</p> <p>The following documents shall be supplied along with the offer :</p> <ul style="list-style-type: none"> a. GA drawing of the blasting chamber b. Catalogue of the pneumatic abrasive blaster c. Makes of bought-outs d. Catalogues of the filter e. Catalogue of the exhaust fan <p>Three sets of the following shall be supplied along with the machine:</p> <ul style="list-style-type: none"> a. Operating manual for the portable pneumatic abrasive blaster b. Operating instructions of the dust extraction system c. Maintenance manual of all the systems offered 	Vendor to confirm	

Clause No.	BHEL SPECIFICATION	VENDOR'S OFFER / COMMENTS
11.0	Civil works for the equipment - Vendor shall submit the preliminary layout drawing for getting BHEL's approval within one month from the date of PO. Vendor shall submit complete foundation details including static and dynamic loads within three months after getting BHEL's approval. The layout should consist of all requirements pertaining to complete equipment including space requirement for any other accessories. BHEL shall construct complete foundation for the equipment.	Vendor to confirm
12.0	ERECTION & COMMISSIONING:	
12.1	<ul style="list-style-type: none"> a. Vendor to take full responsibility for the erection & commissioning including workmen, testing of the machine. b. Service requirement like power, air & water shall be provided by BHEL at only one point to be indicated by Vendor in their foundation/layout drawings. c. Crane, lifting tackles to be arranged by vendor d. Welding sets, gas required for cutting shall be arranged by vendor. e. Welding electrodes will be supplied by BHEL, free of cost. Vendor to indicate the quantum of welding and the quantum of welding electrodes that will be required. 	

Clause No.	BHEL SPECIFICATION		VENDOR'S OFFER / COMMENTS
12.2	The Vendor should bring tools, Tackles, instruments and other necessary equipments that are required to carry out all the above activities.	Vendor to confirm	
12.3	The supplier shall arrange commissioning spares required for commissioning of the machine	Vendor to confirm	
12.4	Schedule of Erection and Commissioning shall be submitted with offer.	Vendor to confirm	
12.5	Duration, terms & conditions for E&C should be furnished with this technical offer in detail. Charges for the same shall be submitted with the price bid.	Vendor to confirm	
13.0	LEVELING & ANCHORING SYSTEM		
13.1	Complete anchoring system including foundation bolts, anchoring materials, fixators, leveling shoes. etc should be supplied.	Vendor to confirm	
14.0	PERFROMANCE PROVE-OUT:		
14.1	The trouble free operation of all the systems forming part of the total blasting station, shall be demonstrated successfully after the commissioning activity.	Vendor to confirm	
14.2	The supplier should carry out the performance prove-out of five jobs with the BHEL supplied components after commissioning of the shot blasting equipment to the specified surface finish.	Vendor to confirm	

Clause No.	BHEL SPECIFICATION		VENDOR'S OFFER / COMMENTS
15.0	TRAINING The supplier has to impart comprehensive training to BHEL Staff - on the OPERATION, TROUBLE SHOOTING and MAINTENANCE of the Shot Blasting Station - for a minimum period of 5 Working Days after the successful completion of the commissioning and performance prove-out of the shot blasting station.	Vendor to confirm	
16.0	PERFORMANCE GUARANTEE Performance Guarantee for a minimum period of 12 months from the date of commissioning at BHEL OR 18 months from the date of dispatch (for the machine, including sub-systems and bought-out items)	Vendor to confirm	
17.0	GENERAL POINTS:		
17.1	Total Connected Load (in kVA)	Vendor to Indicate	
17.2	Floor area required (Length, Width, Height) for complete equipment & accessories	Vendor to Indicate	
17.3	Painting of Equipment / Electrical Panels using RAL 6011 Resada Green Colour paint	Vendor to confirm	
17.4	Layout drawing of the equipment to be submitted to BHEL for approval before manufacturing.	Vendor to confirm	