



An ISO 9001
Company

Bharat Heavy Electricals Limited

(High Pressure Boiler Plant)

Tiruchirappalli – 620014, TAMIL NADU, INDIA

CAPITAL EQUIPMENT / MATERIALS MANAGEMENT

ENQUIRY

NOTICE INVITING TENDER

Phone: +91 431 257 7421
Email : vkarna@bhel.in
Web : www.bhel.com

TWO PART BID	Enquiry Number:	Enquiry Date:	Due date for submission of quotation:
Tender to be submitted in two Parts	2742000005	15.02.2020	09.03.2020
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 hr on the Date of tender opening.			

Item	Description	Quantity	(Indigenous Vendors) Matl. will be Delivered to
10	DOUBLE COLUMN BAND SAW MACHINE as per the technical specification and commercial conditions applicable (to be downloaded from web site (http://www.bhel.com) http://www.bhel.com/tender/tender_home.php or https://eprocure.gov.in/epublish/app)	1 No.	FOR, BHEL Stores, PPPU, Thirumayam- 622 507

Important points to be taken care during submission of offer

1. Material shall be delivered to: Indigenous Vendors: As stated above.
2. Delivery required 2 Month including PDI from the date of purchase order.
3. Erection & Commissioning period required 3 Week
4. EMD for this Tender will be (not less than): NIL
5. Compliance Form Nos.: TRY/IND/08 to be filled and enclosed along with the offer failing which, the offer will not be considered for evaluation.
6. 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 – NO 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>) http://www.bhel.com/tender/tender_home.php or from the Government tender website <https://eprocure.gov.in/epublish/app> under above Enquiry reference.

(This is not an E-tender, please submit your offer in hard copies)

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**

V. Karunakaran 15/02/2020.
DGM / Capital Equipment / MM

V. KARUNAKARAN
Dy. General Manager
Capital Equipment / MM
BHEL / Tiruchirappalli - 620 014

Technical Specification for
Double column band saw machine for pipes upto 300 mm OD
Part – A

Technical specification

Description of the product

Double column band saw machine for pipes upto 300 mm Outer Diameter

S.No	BHEL Specification	Vendor's Offer
1.0	QUALIFYING CRITERIA	
1.1	Only those vendors (OEMs), who have Manufactured, supplied and commissioned at least ONE Fully automatic Double column band saw machine for pipes upto 300 mm OD or above, in the last Ten years [as on date of this tender opening(first date of this tender opening) should quote.	
1.2	Vendor has to submit at least ONE Performance Certificate from their customer, for satisfactory performance of Double column band saw machine specified in Clause 1.1 above supplied to them such equipment is working satisfactorily for a minimum period of one year [as on date of this tender opening (first date)]. For obtaining the Performance certificate, a suggestive format is provided at the end of part-A.	
1.3	BHEL reserves the right to verify the information provided by the Vendor. In case the information provided by vendor is found to be false/ incorrect, the offer shall be rejected.	

2.0	INFORMATION TO BE PROVIDED BY VENDOR	
2.1	Vendor shall provide contact details (phone no & email id) including the address of his Agents / Service Centres in India.	
2.2	Details of Double column band saw machine supplied to BHEL units, if any. (Year of commissioning, Application, Type)	
2.3	Number of Double column band saw machine for pipes upto 300 mm OD supplied and commissioned till date (to quote the equipment supplied during the last three years only)	
2.4	The BIDDER/VENDOR to furnish Reference List of Customers (max 10 customers) including Contact details (phone no & email id).	

Suggestive Format of Performance Certificate:

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 | Whether PLC controlled
(Strike off whichever is not applicable) | Yes / No |
| 6 | Performance of the Machine
(Strike off whichever is not applicable) | Satisfactory / Not Satisfactory |
| 7 | After sales service
(Strike off whichever is not applicable) | Satisfactory / Not Satisfactory |
| 8 | Any Other remarks | |

Performance certificate issued date:

Signature & Seal of the Authority
Issuing the Performance
Certificate

Contact details of issuing authority
Name & Designation:
Office No/ Mobile no:
Email ID:

PART B

TECHNICAL SPECIFICATIONS for Double column band saw machine for pipes up to 300 mm OD

1.0 PURPOSE /APPLICATION:

The equipment is intended for sizing of plates, pipes, pipe bends, tube bundles, forged and rolled bars in square-cut condition into small and varying lengths. A material infeed stand, variable vice pressure and roller conveyor also shall form part of the supply.

2.0 JOB DETAILS:

2.1 Raw-material is in the form of seamless steel pipes and ERW pipes with protective coating on the outside surface. And forged rods and hot-rolled bars in the form of bundles are also earmarked for cutting / sizing in the proposed band-saw machine.

2.2.0 MATERIAL SPECIFICATION:

2.2.1 SA 234 WPB, WPC, WP 12 and WP 22

(As per ASTM Standards for hot-formed & normalised forgings)

2.2.2 SA 105, SA 106 Gr. B/Gr. C, SA 210 Gr. A1/C, SA 515 Gr.70

2.2.3 SA 182 F12/F22, SA 209 T1, SA 213 T11/T22/T91

SA 335 Gr. P11/P12/P22/P91, SA 387 Gr.12/22

SA 335 Gr. P 23 / P 92 and Super 304 H

2.2.4 SA 240 TP 304, SA 312 TP 304, SA 312 TP 316

(Sl. No. 2.2.2 to 2.2.4 As per ASTM Standards)

2.2.5 API 5L X42, API 5L Gr. B

2.3.0 MATERIAL SIZES:

2.3.1 Job Outer Diameter Range

(for Circular Jobs)

: up to 300 mm

2.3.2 Wall Thickness Range

(for Pipes or Hollow Jobs)

: 3mm to 120 mm

2.3.3 Size of Tube Bundles

: 300 mm x 300 mm

Tube Diameter Range

: 31.8 mm to 76.1 mm

2.3.4	Size of Rod Bundles	:	300 mm x 300 mm
	Rod Diameter Range	:	25.4 mm to 300 mm
2.3.5	Minimum Job Length (at In-feed side)	:	250 mm
2.3.6	Job with Maximum Weight	:	6,000 kg.
2.3.7	Material hardness	:	120BHN to 350BHN

Tolerance for Clamping device:

For Cutting Bend Pipes of outer diameter 300mm, 30mm clearance needed for job setting on the machine and vice.

3.0 MACHINE SPECIFICATIONS:

The offered equipment shall be a high production fully-automatic stock feed band-saw designed and built to the highest standards of quality and performance. The in-feed unit shall be powered stock feed system for work-pieces weighing up to 6,000 kg. (6 MT).

Sl.No.	PARAMETERS	SPECIFICATIONS	OFFER
3.1.0	BANDSAW MACHINE :		
3.1.1	Type	Horizontal Cut-Off Band saw	
3.1.2	Cutting Capacity at 90 ° - SOLID	300 mm (for pipe outer diameter – 300mm wall thickness – 120 mm)	
3.1.3	Cutting Saw Speed Range	15 to 100 metres. /min.	
3.1.4	Cutting Accuracy	Allowable Limit – Taper 1 mm for 300mm	
3.1.5	Band Saw Drive Motor Power	Minimum 3.0 HP.	
3.1.6	Band Saw Dimensions	Bidder to Specify	
3.1.7	Band Wheel Diameter	Bidder to Specify	
3.1.8	Coolant Flow Rate	Bidder to Specify	
3.1.9	Coolant Pump Motor Capacity	Minimum 0.16 HP	
3.1.10	Coolant Tank Capacity & Dimensions	Minimum 60 Litres	
3.1.11	Hydraulic Motor Capacity	Minimum 1 HP	
3.1.12	Hydraulic Oil Tank Capacity	Minimum 50 litres	
3.1.13	Total Power requirement in kVA	Bidder to Specify	

3.2.0	WORK HOLDING DEVICE :		
3.2.1	Work Holding Type	Right Angle & Hydraulically Clamped	
3.2.2	Infeed & Outfeed System	Powered	
3.2.3	Infeed & Outfeed Conveyor Length Powered	1000 mm (minimum)	
3.2.4	Speed and Feed Setting.	Bidder to provide a CHART showing the recommended speed & feed for the band-saw, for each type of material listed under Clause No. 2.2.0	
3.3.0	DESIGN & CONSTRUCTIONAL FEATURES :		
3.3.1	Double column, horizontal feed frame, guidance by two large-section solid chromium plated columns and maintenance free sleeve bearings	Bidder to give details	
3.3.2	Sturdy Base / Heavy Bed to provide rigid base to band-saw machine parts/components	Bidder to give details	
3.3.3	Mechanism and arrangement for accurate band/blade guidance	Bidder to give details	
3.3.4	Provision to protect the saw band from overloading.	Bidder to give details	
3.3.5	An electric motor driven brush on either side of the blade for blade cleaning (to remove the chips from the gullets of the blade teeth)	Bidder to give details	
3.3.6	Band-saw Feed to stop automatically once the saw band stops	Bidder to give details	
3.3.7	The Fixed Discharge Tables shall also have the arrangement for collection of spill-over coolant (flowing from pipes/jobs) during the cutting and return to main coolant collection tank.	Bidder to give details, elaborating the features	
3.3.8	The method of changing the saw band/blade should be easy and quick.	Bidder to give details	

3.3.9	The equipment shall have a centralised Operator Control Panel so that all cutting parameters can be set from one position.	Bidder to give details	
3.3.11	Saw frame lift and lowering with safety switch	Bidder to give details	
3.3.12	Indicators on the Main Machine Panel to display the blade speed & the blade cutting force, Clamping pressure etc.,	Bidder to give details	
3.3.13	A fluorescent machine lamp with protective cover to be provided for cutting area visibility.	Bidder to give details	
3.3.14	List of band saw blades to suit the various sizes (diameter and thickness) of the job, shall be indicated through a chart.	Bidder to give details	
3.3.15	Lifting Hooks	Details on the provision of Lifting Hooks (by EOT Cranes) for the Main Machine Unit and Sub-Assemblies	
3.4.0	SAFETY FEATURES :		
3.4.1	Emergency stop button to stop the machine immediately, if the saw blade breaks or any slip during operation, due to jamming of blade into the work-piece.	Bidder to give details	
3.4.2	The machine is to be equipped with saw blade safety covers, which covers the blade except for the actual cutting area.	Bidder to give details	

4.0 ELECTRICAL POINTS:

Sl.No.	DESCRIPTION	SPECIFICATIONS	OFFER
4.1.0	415V +/- 10%, 50Hz, 3 Phase AC (3 wire system without neutral) Power Supply Source will be provided by BHEL at a single point near the machine (as per layout recommended by vendor). All types of cables, connections, circuit breakers etc. required for connecting	Bidder to confirm	

	BHEL's power supply point to different parts of the machine/control cabinets, shall be the responsibility of vendor.		
4.2.0	All electrical control panels and cabinets shall be dust and vermin proof.	Bidder to confirm	
4.3.0	All electrical components in the cabinets shall be mounted on DIN rails.	Bidder to confirm	
4.4.0	The electrical panels shall be provided with LED/CFL lamps of 230V with sufficient illumination, 5/15A AC switched socket shall be provided.	Bidder to confirm	
4.5.0	Makes of motors shall be Siemens/ ABB/ Crompton Greaves/Bharat Bijlee/ Hindustan/ Kirloskar/ Marathon or any other reputed make acceptable to BHEL. The motors shall conform to 'IE3 or above' energy efficiency class.	Bidder to specify	
4.6.0	All electrical control and switch gear shall be of reputed makes like Siemens/ L&T/ BCH/ Telemecanique or any other reputed make acceptable to BHEL.	Bidder to specify	
4.7.0	Electrical VFDs used shall be of reputed makes like ABB/ Schneider/ Siemens/ Mitsubishi/ Toshiba/ Parker/ Yaskawa or any other reputed make acceptable to BHEL.	Bidder to specify	
4.8.0	PLC used shall be of makes SEW/ Siemens/ Allen Bradley/ Messung or any other reputed makes acceptable to BHEL.	Bidder to specify	
4.9.0	All feedback systems & field sensors such as proximities, limit switches, pressure switches etc shall be of heavy duty application and shall be wired with flexible PVC insulated cables.	Bidder to confirm	
4.10.0	All cables shall be properly routed through cable ducts and shall be provided with ferrules for termination and easy tracing of wiring. Suitable legends shall be available for all electrical components within the panel and other controls/ indications on the operator panel for easy identification.	Bidder to confirm	

5.0 INSPECTION & MACHINE ACCEPTANCE:

Sl.No.	DESCRIPTION	OFFER
5.1.0	The Machine shall be offered for inspection and performance prove-out trials, for the design capabilities of the machine, at Vendor's Works by BHEL Engineers, before dispatch.	
5.2.0	The Bidder shall train BHEL Personnel in Operation and Maintenance (Mechanical and Electrical / Electronics) of the Machine at Vendor's works. The prove-out trials (at Vendor's Works and at BHEL Works) shall be for the job sizes given at the time of technical discussions / order release.	
5.3.0	The Bidder shall depute his engineer(s) for supervising the erection and commissioning of the machine at BHEL Works. Service requirement like power, air & water shall be provided by BHEL at only one point to be indicated by BIDDER in their layout drawings.	

6.0 DOCUMENTATION:

Sl. No.	DESCRIPTION	OFFER
6.1.0	THREE sets of following documents (Hard copies) in English language should be supplied along with the machine	
6.1.1	Detailed Operation and Maintenance manual of machine with all drawings of machine assemblies / sub-assemblies /parts including Electrical / Coolant / Hydraulic circuit diagrams. All Assembly/ Sub Assembly Drawings shall be supplied with the part list with component specification / BOM also. Component drawings for all wearing parts to be provided.	
6.1.2	Catalogues, O&M Manuals and drawings of all bought out items, bearings wherever applicable.	
6.1.3	Electronic and electrical interconnecting drawings (i.e. Between machine, control panel and drives).	
6.1.4	Hydraulic, coolant, lubrication and Electrical circuits with Bill Of Materials	
6.2.0	Detailed specification of all rubber items and hydraulic/lube fittings (Hyd. Cylinder seals 'O' ring and Hyd. Hose dimension are to be given. Manual should have all bearing details).	
6.3.0	The vendor shall submit complete Master List of parts used in the machine.	
6.4.0	One additional set of all the above documentation on pen drive/CD.	

7.0 FOUNDATION:

Sl. No.	DESCRIPTION	OFFER
7.1.0	BHEL shall construct complete foundation for the machine. Vendor shall furnish the foundation details.	Bidder to confirm

8.0 SCOPE OF SUPPLY:

[The Un-Priced Commercial Offer shall contain the following details]

S. No.	DESCRIPTION	OFFER
8.1.0	Basic Band-saw Machine along with material support stand (powered rollers), variable vice pressure and other standard accessories	
8.2.0	Hydraulic Power Pack and Connected Circuitry with Tank	
8.3.0	Electrically run Flood Coolant Circulation System and Tank	
8.4.0	Complete Set of Work Holding Devices suitable for the listed sizes of Pipes given under Clause No. 2.3.0	
8.5.0	Remote Control & Optional Accessories as recommended by the Bidder	
8.6.0	Inter-connecting Cables (with Plug-In connectors) and Hoses (with Quick-Fix couplings)	
8.7.0	Complete range of Band-saw Blades in packs of five numbers for the sizes of jobs specified in ANNEXURES	
8.8.0	Set of Operating and Maintenance Tools	
8.9.0	Inspection and Performance Prove-Out at Vendor's Works	
8.10.0	Training in Operation & Maintenance of the total system for BHEL Personnel	
8.11.0	Complete set of Documents as per Clause 6.0	
8.12.0	Erection & Commissioning at BHEL Works and Machine Prove-out Trials for various sizes of jobs	