



## Bharat Heavy Electricals Limited

(High Pressure Boiler Plant)

Tiruchirappalli – 620014, TAMIL NADU, INDIA

CAPITAL PURCHASE / MATERIALS MANAGEMENT / MANUFACTURING

An ISO 9001  
Company

<b>ENQUIRY</b>	Phone: +91 431 257 79 38 Fax : +91 431 252 07 19 Email : <a href="mailto:tvenkat@bheltry.co.in">tvenkat@bheltry.co.in</a> Web : <a href="http://www.bhel.com">www.bhel.com</a>
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	<b>Enquiry Number:</b> <b>2620700031</b>	<b>Enquiry Date:</b> <b>10.07.2007</b>	<b>Due date for submission of quotation:</b> <b>05.09.2007</b>
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Your are requested to quote the Enquiry number date and due date in all your correspondences. This is only a request for quotation and not an order

Item	Description	Quantity	Delivery Schedule
10	Tube Squeezing and Sizing Press as per the technical specification & commercial conditions applicable (to be downloaded from web site <a href="http://www.bhel.com">www.bhel.com</a> or <a href="http://tenders.gov.in">http://tenders.gov.in</a> )	4 Nos.	30.03.2008

**BHEL commercial terms & conditions with Price Bid and Bank Guarantee formats along with technical specifications 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 “2620700031”.**

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 Purchase / MM / Manufacturing
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**PART A****SECTION – I: QUALIFYING CRITERIA**

The Bidder / Vendor (OEM) has to compulsorily meet the following requirements to get qualified for consideration of the technical offer for the Tube Squeezing & Sizing Press.

<b>S. No.</b>	<b>REQUIREMENTS</b>	<b>VENDOR's COMMENTS</b>
<b>1</b>	The Bidder / Vendor (OEM) shall have a minimum of TEN Years of Continuous Experience in the field of Design, Manufacture and Supply of Tube Squeezing & Sizing press.	
<b>2</b>	Only those vendors (OEMs), who have supplied and commissioned at least ONE Tube Bending/ Tube Forming Press and the same is presently working satisfactorily for more than one year after commissioning (on the date of opening of Tender), should quote. However, if such a press has been supplied to BHEL, then it should be presently working satisfactorily for more than six months (on the date of opening of Tender) after its commissioning and acceptance in BHEL  Performance certificate from the customers regarding satisfactory performance of <b>Tube Bending / Tube Forming press</b> supplied to them in attached format to be enclosed along with technical offer.	
<b>3.0</b>	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.	

**SECTION – II**

The Bidder / Vendors are requested to provide the following details

<b>S. No.</b>	<b>PARTICULARS</b>	<b>VENDOR's RESPONSE</b>
4.0	Number of Years of Experience of the Bidder / Vendor in the field of design, manufacture, supply, erection & commissioning of Tube Bending / Tube Forming Presses.	
5.0	Number of Tube Bending / Tube Forming Presses supplied, installed and commissioned till date (with details on machine type / model, configuration, customer and quantity)	
<b>6.0</b>	Details on International Standards / Design Process Codes followed in Design and Manufacture of the Equipment.	

<b>7.0</b>	Details on SERVICE-AFTER-SALES Set-Up in India including the Addresses of Agents / Service Centers in India and competency & Experience of the Local Service Agency are to be provided.	
<b>8.0</b>	Any Additional Data to supplement the manufacturing capability of the BIDDER for the subject equipment.	

### **SECTION – III**

Bidder / Vendor to note the following

<b>S.No.</b>	<b>REQUIREMENTS</b>	<b>VENDOR's COMPLIANCE</b>
<b>9.0</b>	The BIDDER / VENDOR shall submit the offer in TWO PARTS -Technical [ <b>with PART A &amp; PART B</b> ] & Commercial and Price Bid.	
<b>10.0</b>	The Offer shall contain a comparative statement of Technical Specifications given by BHEL and the Offer Details submitted by the Bidder, against each clause. A mere 'CONFIRMED' or 'COMPLIES' or 'YES' or 'NO-DEVIATION' or similar words in the technical comparative statement (without any supporting technical write-ups, photos and datasheets) may lead to disqualification of the Technical Offer.	
<b>11.0</b>	The Technical Offer shall be supported by Product Catalogue and Data Sheets in ORIGINAL and complete technical details of 'Bought-Out-Items' with copies of Product Catalogue and Selection Criteria	
<b>12.0</b>	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	
<b>13.0</b>	BIDDER has to indicate the Country of Origin for the supply of equipment.	

**PERFORMANCE CERTIFICATE**

(On Customer's Letter Head)

1. Supplier of the machine :
  
2. Make & Model of the Equipment :
  
3. Month & Year of Commissioning :
  
4. Application :
  
5. Sizes / Specification of Jobs Performed in the machine : Squeezing and Sizing of 180° pre-bends
  
6. Performance of the Machine : Best in the market /  
(Strike off whichever is not applicable) Satisfactory /  
Good /  
Average /  
Not Satisfactory
  
7. Any other remarks:

Date:

Signature & Seal of the Authority  
Issuing the Performance Certificate

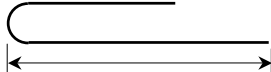
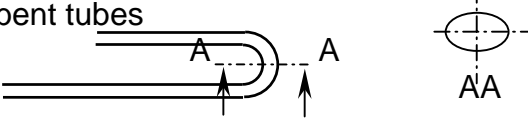
**PART B**

**TECHNICAL SPECIFICATIONS FOR TUBE SQUEEZING & SIZING PRESS**

S. No.	PARTICULARS & BHEL SPECIFICATIONS	Bidder's OFFER [With Complete Technical Details]																														
<b>1.0</b>	<b>APPLICATION</b>																															
1.1	A) The machine is meant for Squeezing and Sizing of 180° pre-bent seamless steel tubes, which are used for Boiler Applications. B) The Squeezing and Sizing operation shall be done by Hydraulic means. C) Tube heating shall be of Induction Heating type with an induction heater(BHEL Scope). D) Squeezing and sizing to be done in the same machine without changing the position of the tube between the two operations.																															
<b>2.0</b>	<b>TUBE OUTER DIAMETER AND THICKNESS:</b> All are OD (Outer Diameter) Controlled tubes with thickness tolerance of Max.+22 %																															
2.1	<table border="1" data-bbox="674 914 1272 1230"> <thead> <tr> <th rowspan="2">S.No</th> <th rowspan="2">OD, mm</th> <th colspan="2">THICKNESS, mm</th> </tr> <tr> <th>Minimum</th> <th>Maximum</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>31.8</td> <td>3.2</td> <td>5.0</td> </tr> <tr> <td>2</td> <td>38.1</td> <td>4.0</td> <td>5.3</td> </tr> <tr> <td>3</td> <td>44.5</td> <td>4.5</td> <td>10.0</td> </tr> <tr> <td>4</td> <td>47.63</td> <td>5.0</td> <td>10.0</td> </tr> <tr> <td>5</td> <td>51.0</td> <td>5.0</td> <td>8.0</td> </tr> <tr> <td>6</td> <td>63.5</td> <td>6.3</td> <td>8.0</td> </tr> </tbody> </table>	S.No	OD, mm	THICKNESS, mm		Minimum	Maximum	1	31.8	3.2	5.0	2	38.1	4.0	5.3	3	44.5	4.5	10.0	4	47.63	5.0	10.0	5	51.0	5.0	8.0	6	63.5	6.3	8.0	
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<b>3.0</b>	<b>TUBE MATERIAL SPECIFICATIONS:</b>																																																							
3.1	<p>a. Carbon Steel: SA192, SA210 Gr.A1, SA210 Gr.C</p> <p>b. Alloy Steel: SA209 T1, SA213 T11, SA213T22, T23, SA213T91, T92</p> <p>c. Stainless Steel : SA 213 TP304H, SA 213 TP321H, SA 213 TP347H</p>																																																							
<b>4.0</b>	<b>TUBE PRE-BEND RADII AND SQUEEZED BEND RADII:</b>																																																							
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S. No.	PARTICULARS & BHEL SPECIFICATIONS		Bidder's OFFER [With Complete Technical Details]
5.0	<b>TOLERANCES FOR BENDS</b>		
5.1	<b>VISUAL DEFECTS</b>		
5.1.1	It shall be free from harmful surface visual defects, such as scoring marks, wrinkles, tool marks and depressions, etc		
5.2	<b>PERCENTAGE OVALITY</b>		
5.2.1	% Ovality = $\{(Max.OD - Min.OD) / Original OD\} \times 100$	To be Less than 15%	
5.3	<b>PERCENTAGE THINNING</b>		
5.3.1	% Thinning = $\{(t_{nom} - t_{min}) / t_{nom}\} \times 100$ where, $t_{nom}$ —Nominal wall thickness of tube $t_{min}$ —Minimum wall thickness after squeezing	Maximum allowed Thinning is 12.5%	
5.4	<b>FLATNESS</b>		
5.4.1	Squeezed bend operation	10 mm (Maximum)	
5.5	<b>ALLOWED PITCH DISTANCE VARIATION</b>		
5.6	<b>FLOW AREA</b>		
		80% (Minimum)	

S. No.	PARTICULARS & BHEL SPECIFICATIONS		Bidder's OFFER [With Complete Technical Details]
<b>6.0</b>	<b>OPERATING PARAMETERS:</b>		
6.1	Tube Diameter	Minimum: 31.8 mm Maximum: 63.5mm	
6.2	Tube Wall Thickness	As given in the table (Sl.No. 2.0)	
6.3	Squeezed Bend Radius	Minimum: 22.5mm Maximum: 63.5mm	
6.4	R/d ratio of squeezed bends	0.7 and above	
6.5	Length over Pre-bend 	Minimum: 1200mm Maximum: 12000mm	
6.6	Temperature at which squeezing will be done	600 deg C to 1150 deg C	
6.7	Ovality of pre-bent tubes 	Negative Ovality is induced in the pre-bending stage to facilitate squeezing.	
<b>6.8</b>	<b>PRODUCTIVITY</b>		
6.8.1	No.of bends per shift in OD 51 x 8mm / Alloy Steel Tubes for batch production jobs with Radius 35.7mm	200 bends in one 8 hour shift minimum	

S. No.	PARTICULARS & BHEL SPECIFICATIONS	Bidder's OFFER [With Complete Technical Details]
<b>7.0</b>	<b>MACHINE PARAMETERS</b>	
7.1	Squeezing and Sizing operations to be done in the same machine in the same position of the tube. The machine shall have and upper die, a lower die & job table side die. The side dies are used for squeezing and the upper and lower dies are used for sizing.	Vendor to confirm
7.2	Squeezing and Sizing operations shall be through Hydraulic means.	Vendor to confirm
7.3	Vendor to furnish details of the provision for easy removal job from the die after squeezing and sizing operation is completed.	Vendor to specify
7.4	Machine construction and its mechanism shall be explained by the vendor. A general arrangement drawing shall also be provided with the offer.	Vendor to specify
7.5	Daylight - The maximum clear space between the upper and lower die in mm	Vendor to specify
7.6	Stroke length of the upper die in mm	Vendor to specify
7.7	Maximum clear space between the squeezing dies in mm	Vendor to specify
7.8	Stroke length of the side dies in mm	Vendor to specify
7.9	Height of Lower Surface of Bent Tube as loaded on the machine has to be 1000 to 1200mm above the floor level.	Vendor to specify
7.10	The heating of pre-bent tubes before squeezing will be done by Induction heating device, which will be positioned in a convenient location, to facilitate easy loading of tube into the press.	Vendor to specify

S. No.	PARTICULARS & BHEL SPECIFICATIONS	Bidder's OFFER [With Complete Technical Details]	
7.11	<b>HYDRAULICS</b>		
7.11.1	<b>Load for squeezing:</b> The maximum load required for Squeezing the tube sizes & materials as mentioned in the specification.	Vendor to specify	
7.11.2	<b>Load for sizing:</b> The maximum load required for Sizing the tube sizes & materials as mentioned in the specification.	Vendor to specify	
7.11.3	<b>Max. Pressure:</b> Maximum operating pressure in the Hydraulic system to be specified by the vendor for the maximum load of Squeezing / Sizing operations.	Vendor to specify	
7.11.4	<b>Hydraulic Power Pack:</b> Vendor to provide details in the offer, on Rating / Specification of Hydraulic Power-Pack.	Vendor to specify	
7.11.5	<b>Hydraulic Circuits:</b> Hydraulics forming part of the machine and associated equipment shall be connected with steel tubes of sufficient capacity and wherever metallic tubing is not possible, reinforced synthetic rubber hoses of reputed makes shall be used.	Vendor to confirm	
7.11.6	Hydraulic power pack and Oil tank shall be separate from the Machine and positioned behind the machine conveniently to attend to any maintenance problems	Vendor to confirm	
7.11.7	The cylinders, hydraulic heavy pressure joints are to be ensured with welded nipple joints.	Vendor to confirm	

S. No.	PARTICULARS & BHEL SPECIFICATIONS	Bidder's OFFER [With Complete Technical Details]
7.11.8	Clamping provisions are to be made properly for dampening and arresting vibrations induced from the machine to the hydraulic joints.	Vendor to confirm
7.11.9	The proposed hydraulic hoses and the joints are to be of metric size with male swivel nut and female adaptor on the cylinder ends with leak proof. Ferrule joints shall not be provided in the hydraulic system.	Vendor to Specify
7.11.10	All hydraulic pumps for the power packs should be loaded only during requirement and to be unloaded condition during idle running.	Vendor to confirm
7.11.11	All hydraulic power pack return oil from cylinders, relief valves, hydro motors and other hydraulic valves are to be routed through a common return line to the oil tank.	Vendor to confirm
7.11.12	<b>Hydraulic Power Pack - Protection Controls:</b> Hydraulic Power pack shall have suitable means and measures for Temperature Control, High & Low Pressure Control, Flow control, Oil Level Sensing, etc.	Vendor to Specify
7.11.13	Hydraulic circuits shall be designed with minimum number of control valves and to suit oil of ISO VG 46 or 68 only. Also minimum number of check-points to be provided wherever pressure is required to be read for setting and trouble shooting. Minimesse Pressure Gauge - 1 No with Connecting Hose to be provided.	Vendor to confirm

S. No.	PARTICULARS & BHEL SPECIFICATIONS	Bidder's OFFER [With Complete Technical Details]
7.11.14	A centrifuge unit for oil, dust and moisture separation has to be offered as an optional item.	Vendor to Specify
7.11.15	The sub vendor and bought out items of hydraulic unit internal components, item wise details for procurement of spares such as oil seals, 'O' rings, all rubber items, cylinders, piston and piston rings, bearings, bushes, etc shall be provided.	Vendor to Specify
7.11.16	Hydraulic circuit diagram to be provided with the offer.	Vendor to Specify
7.11.17	Initial Hydraulic oil filling to be done by supplier	Vendor to confirm
7.11.18	<b>Hydraulic Oil chiller</b>	
7.11.18.1	A refrigerated oil chiller for the hydraulic oil cooling shall be provided.	Vendor to confirm
7.11.18.2	Suitable flow sensors are to be provided to have an interlock with the machine operation.	Vendor to confirm
7.11.18.3	The details of the Oil Chiller to be furnished in the offer like the type, Flow, Pressure, Oil tank capacity, Temperature etc	Vendor to Specify
7.11.18.4	The temperature of the hydraulic oil in the tank shall be maintained not exceeding 40 deg C	Vendor to confirm
7.11.18.5	Lubricator, Regulator, Filter and hand wheel valve shall be fitted at the centralized location for any pneumatic circuits.	Vendor to confirm
7.12	<b>Lubrication</b>	
7.12.1	Centralized Automatic Lubrication system with a provision for adjusting the timer shall be provided for the machine.	Vendor to Specify

S. No.	PARTICULARS & BHEL SPECIFICATIONS	Bidder's OFFER [With Complete Technical Details]
7.13	<b>ELECTRICAL:</b>	
7.13.1	<b>Wiring:</b> All electrical motors, limit switches etc, on the machine shall be Wired using PVC sheathed cable running in conduits to cable ducts to common terminal block. External wiring from / to control panel, control desk, external motors etc shall be by means of screened multi-core cables.	Vendor to confirm
7.13.2	<b>Electric Panel</b>	
7.13.2.1	Electrical panel shall be Box type self-standing with locking arrangement to be provided.	Vendor to confirm
7.13.2.2	Electrical Panel Air-Conditioner to be provided.	Vendor to confirm
7.13.2.3	All Ammeters, Voltmeters shall be located on the panel.	Vendor to confirm
7.13.2.4	Machine panel shall be adequately illuminated for maintenance purpose.	Vendor to confirm
7.13.3	<b>Operator console</b>	
7.13.3.1	The pendant type operator console shall be provided at a convenient height for easy operation	Vendor to confirm
7.13.3.2	Operator console shall contain push buttons, indication lamps, selector switches etc.	Vendor to confirm
7.13.3.3	A foot pedal switch / Hand-held Portable pendant to be provided for squeezing and sizing operations.	Vendor to specify

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7.13.4	All electrics shall be tropicalised & shall have IP 54 protection	Vendor to confirm
7.13.5	Machine lighting: Suitable for the operator to work with job.	Vendor to confirm
7.13.6	Control voltage: The control voltage shall be 24 Volts	Vendor to confirm
7.13.7	Type of drives used for motors to be indicated.	Vendor to specify
<b>7.13.8</b>	<b>Input Power Supply</b>	
7.13.8.1	The electrical power input shall be $415 \pm 10\%$ V, $50 \pm 3\%$ Hz, 3 Phase AC supply through a 3 Wire System. No neutral conductor.	Vendor to confirm
7.13.8.2	BHEL provides this supply at one point only and the supplier has to provide of all other electrical distribution network required for the SQUEEZING AND SIZING Press.	Vendor to confirm
7.13.9	<b>Power Requirement:</b> Vendor to indicate the total tentative power requirement (including that for all the accessories and attachments) in kVA with the offer.	Vendor to specify
7.14	Compressed air supply will be at 4 to 5 Kg/cm <sup>2</sup> for any pneumatic circuits in the machine.	Vendor to confirm
<b>7.15</b>	<b>COMPONENTS USED:</b>	
7.15.1	All motors shall be from reputed makers like SIEMENS, ABB, Allen Bradley conforming to IEC Standards.	Vendor to Specify

S. No.	PARTICULARS & BHEL SPECIFICATIONS	Bidder's OFFER [With Complete Technical Details]
7.15.2	All hydraulic elements shall be of VICKERS / REXROTH, DENISONS make.	Vendor to Specify
7.15.3	All hydraulic hoses shall be preferably of GATES make.	Vendor to Specify
7.15.4	All electrical items shall be of reputed make like SEW / ROCKWELL Allen Bradley/ Telemecanique / Delta	Vendor to Specify
7.15.5	All components/devices/terminals are to be incorporated with ferrules.	Vendor to confirm
7.16	<b>Machine Maintenance:</b> The machine configuration and element arrangement should have easy accessibility, higher rigidity, self-aligning /fitting, locking & piloting arrangement of machine components and modules.	Vendor to confirm
<b>8.0</b>	<b>TOOLINGS</b>	
8.1	List of tooling (Squeezing and Sizing dies etc) for all the sizes mentioned in specification and any optional tooling should be listed and quoted item wise separately.	Vendor to specify
8.2	Supplier to list the service tools and quantity for each.	Vendor to specify
<b>9.0</b>	<b>Ambient Atmospheric Conditions</b>	
9.1	The Squeezing and sizing Machine with all Sub-Systems shall be suitable for operation in an ambient temperature of 25 to 50°C and with a Relative Humidity of 45% to 90%.	Vendor to confirm
9.2	The entire Equipment shall be TROPICALISED in Design and Construction.	Vendor to confirm

S. No.	PARTICULARS & BHEL SPECIFICATIONS		Bidder's OFFER [With Complete Technical Details]
<b>10.0</b>	<b>SAFETY</b>		
10.1	The vendor shall specify all Safety features provided in the machine.	Vendor to Specify	
<b>11.0</b>	<b>PAINTING</b>		
11.1	The heavier machine parts are to be heat-treated after fabrication (including castings and forgings) and shot blasted for surface preparation prior to painting.	Vendor to confirm	
11.2	One coat of Primer with 25 μ of DFT (Dry Film Thickness) and 48 hours of curing after painting.	Vendor to confirm	
11.3	Two coats of Enamel Paint (Colour – Apple Green) each with 25 μ of DFT and intermittent curing of minimum 16 hours.	Vendor to confirm	
<b>12.0</b>	<b>GENERAL POINTS</b>		
12.1	Make and Model of the machine to be mentioned. Detailed catalogs of the machine to be sent with the offer.		
12.2	Complete description of all systems & sub-systems shall form part of the technical bid.		
12.3	A schematic diagram showing the layout of the machine & associated systems with salient dimensions shall be submitted along with the offer.		
12.4	The operating sequence of the machine with broad outline of various operations involved should be furnished with the offer.		
12.5	Standards for Design, Manufacture and testing of the machine shall be in accordance with internationally accepted standards.		
12.6	Approximate weight of the Machine & Sub-Systems.		

S. No.	PARTICULARS & BHEL SPECIFICATIONS	Bidder's OFFER [With Complete Technical Details]
13.0	<b>SPARES (to be recommended by the vendor)</b>	
13.1	Itemized breakup of mechanical, hydraulic, electrical and electronic spares used on the machine in sufficient quantity as per recommendation of Vendor for 2 years of trouble free operation on three shifts continuous running basis should be offered by vendor. The list to include following, in addition to other recommended spares: <b>(Unit Price of each item of spare should be offered)</b>	
13.2	<b>a) Mechanical &amp; Hydraulic Spares:</b> All types of Pumps, Valves, Pressure Switches, Transducers, Flow Switches, Filters, Seals, O-rings, Hydraulic Hoses etc.	
13.3	<b>b) Electrical /Electronic Spares:</b> All types of Relays, Contactors, Proximity Switches, Push Buttons, Indicating Lamps, Semiconductor Fuses, Special Fuses, Circuit Breakers, Main Power Switch, Encoders etc.	
13.4	All types of spares for total machine and accessories should be available for at least ten years after supply of the machine. If machine or control is likely to become obsolete in this period, the vendor should inform BHEL sufficiently in advance and provide drawings of parts / details of spares & suppliers to enable BHEL to procure these in advance, if required	
13.5	Recommended set of spares for all attachments are to be offered with details.	
13.6	Vendor 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	

S. No.	PARTICULARS & BHEL SPECIFICATIONS	Bidder's OFFER [With Complete Technical Details]
<b>13.7</b>	<b>Essential Spares</b>	
13.7.1	Mechanical & Hydraulic spares: 1. Spares for mechanical wearing components due to linear movements & rotation - 4 Nos each 2. Spares for hydraulics Power Pack, Sealing rings, Hydraulic valve 'O' rings, O rings etc - 4 Nos each	
13.7.2	Electrical & Electronics: - 1. Field sensors, such as encoders, optical sensors, proximity switch, limit switches, push buttons, indicating lamps etc. - 4 Nos each	
<b>14.0</b>	<b>MACHINE DOCUMENTATION</b>	
<b>14.1</b>	<b>O &amp; M MANUALS</b>	
14.1.1	a. Six Copies of the Operation & Maintenance Manual to be given in Hard Bound Paper Copies with three copies in CD form (SOFT COPY) b. One Hard Copy of O & M Manual shall be submitted at the time of INSPECTION of the SQUEEZING AND SIZING Machine by BHEL Officials, at the Supplier's Works. c. The following documents and details [given under the Clause Sl. No. 19.2.0] shall form part of the Operation & Maintenance Manual	

S. No.	PARTICULARS & BHEL SPECIFICATIONS	Bidder's OFFER [With Complete Technical Details]
<b>14.2</b>	<b>Documents and Technical Details</b>	
14.2.1	a) GA Drawing of the squeezing and sizing machine. b) GA Drawing of Individual Mechanisms. c) Sub-Assembly Drawings (without dimensions) for sub-systems for maintenance purpose. d) Electrical Wiring Drawings – Power & Control Circuits e) Pneumatic/Hydraulic Circuit Diagram in hard & soft copy. f) PLC (if used) Ladder Diagrams (Hard and Soft Copy) with Flash Memory Card. g) Alarm Log, Error Code, Error Messages & Remedies and On-Line Fault Diagnostics to be provided h) PLC (if used) of Allen Bradley, Siemens, Fanuc is only required. i) Fault diagnostics and remedies and on line sequence of operations should be displayed. j) Specifications/Ratings of All Bought-Out-Items. I. Warranty / Guarantee Card for all Bought-Out-Items. II. Trouble Shooting Chart for Main and all Sub-Systems.	
<b>15.0</b>	<b>MACHINE INSPECTION &amp; ACCEPTANCE</b>	
<b>15.1</b>	<b>INSPECTION</b>	
15.1.1	The Machine shall be offered for inspection and performance trials to test the design capabilities of the machine, by BHEL Engineers before Dispatch at Supplier's works.	

S. No.	PARTICULARS & BHEL SPECIFICATIONS	Bidder's OFFER [With Complete Technical Details]
<b>15.2</b>	<b>ACCEPTANCE CRITERIA</b>	
15.2.1	All the features of the machines shall be operated and shown and to work as given in the specification, at supplier's works during inspection and during commissioning at BHEL works. However the number of squeezing and sizing operations for acceptance will be finalized during technical discussion. Supplier to arrange for heating of pre-bent tubes before squeezing operation to the required temperature at the supplier's works.	
15.2.2	The prove-out trials shall be for the Tube sizes, bend pattern given by BHEL during the technical discussions or at the time of releasing the Purchase Order. The bends have to pass the quality tests of all parameters (like Ovality, thinning, pitch distance and flow area etc) as mentioned in the specification.	
15.2.3	The production output of the machine shall be proved out by the commissioning Engineer at BHEL works for the Production rate mentioned in the specification (as per Clause 6.9.1)	
15.2.4	Bending on all thin walled Tubes (as per our specification) for which toolings are ordered shall be proved out during commissioning.	
<b>16.0</b>	<b>ERECTION &amp; COMMISSIONING</b>	
16.1	The supplier shall depute his engineer(s) for supervising the erection and commissioning of the machine at BHEL works and prove-out trials	
<b>17.0</b>	<b>TRAINING</b>	
17.1	The supplier shall train Two BHEL's Engineers in Operation and Maintenance of the Machine at supplier's works for a period of 5 working days. (Quote should be on man days basis)	
17.2	The supplier shall impart training to BHEL's Machine Operators and Maintenance crew in Operation and Maintenance (Mechanical, Electrical/ Electronics and CNC System) after the commissioning of the Machine at BHEL works for not less than 10 working days.	

<b>S. No.</b>	<b>PARTICULARS &amp; BHEL SPECIFICATIONS</b>	<b>Bidder's OFFER [With Complete Technical Details]</b>
17.3	<p><b>The training shall include specialized coaching in</b></p> <ul style="list-style-type: none"> <li>a. Safety</li> <li>b. Operation of the machine</li> <li>c. Trouble-Shooting,</li> <li>d. Any special features of the machine</li> <li>e. Electrical / Mechanical / Electronics systems</li> </ul>	
<b>18.0</b>	<b>GUARANTEE</b>	
18.1	Equipment has to be guaranteed for its performance, for a minimum of 24 months from the date of commissioning.	



An ISO 9001 Company

Bharat Heavy Electricals Limited  
(High Pressure Boiler Plant)  
Tiruchirappalli-620014, Tamil Nadu, India  
CAPITAL PURCHASE/MM/MANUFACTURING

## **COMMERCIAL TERMS AND CONDITIONS FOR SUBMISSION OF OFFER**

### **1.0 QUOTATIONS**

Bidders shall submit the offer in **TWO INNER ENVELOPES** as indicated below which shall be sealed in one outer envelope.

**Envelope I** This sealed envelope should contain all the copies of technical bid together with un-priced commercial bid. This envelope should be clearly marked **“Part I - Technical and Un-priced commercial bid”**, indicating Tender No., Due Date and Address & Reference of the Bidder.

**Envelope II** This sealed envelope should contain **price details**. This envelope should be clearly marked **“Part II - Price bid”**, indicating Tender No., Due Date and Address & Reference of the Bidder.

Both the envelopes (Part I & II) shall be put in one cover, duly sealed, superscribing as Part I and Part II of Tender No., due date of opening and the address and reference of the Bidder.

The above offer should reach this office on or before the due date by 14.00 Hrs (IST). Late offers will not be considered.

Tender should not be addressed to any Individual's name but only by designation to:

**Sr. DGM / CAPITAL PURCHASE / MM / MANUFACTURING  
Building 24, 3<sup>rd</sup> Floor  
BHARAT HEAVY ELECTRICALS LIMITED  
HIGH PRESSURE BOILER PLANT  
TIRUCHIRAPALLI - 620 014  
TAMIL NADU, INDIA**

Tenders should be free from **CORRECTION AND ERASURES**, Corrections if any, must be attested. All amounts shall be indicated both in words as well as in figures. Where there is difference between amount quoted in words and figures, amount quoted in words shall prevail.

Offers should be in **ENGLISH** and accompanied by detailed technical literature, catalogue and detailed dimensional drawings in **ENGLISH** or otherwise, the offers will not be considered.

### **2.0 PART I (TECHNICAL & UN-PRICED COMMERCIAL BID)**

#### **2.1 Technical**

This part shall include / indicate the following:

2.1.1. Offer should contain complete scope of supply with all technical details, specifications, delivery and other commercial terms and conditions.

2.1.2. Point by point confirmation for the Technical Specification enclosed is to be provided. If there are any deviations, the same should be clearly specified. Offers received without confirmation to our specification will be rejected.

- 2.1.3. List of customers to whom same or similar equipment have been supplied along with performance certificates to be enclosed.
- 2.1.4. Relevant catalogues to be attached
- 2.1.5. List of spares parts (with part numbers) for two years operation and maintenance should be attached.
- 2.1.6. Information on shipping weight and cubage (length, width & height) to be provided.
- 2.1.7. In case of foreign bidder offer, the Principal's technical offer only should be enclosed.**

## **2.2 Un-Priced Commercial**

This part shall include / indicate the following:

- 2.2.1. Port of shipment / Station of despatch
- 2.2.2. Terms of payment
- 2.2.3. FOB/FCA price along with freight charges upto Chennai port (for foreign bidders). Ex-Works/FOR Dispatch station price along with freight charges upto BHEL, Tiruchy (for Indian bidders)
- 2.2.4. Taxes, Service tax & duties including cess applicable.
- 2.2.5. Delivery Schedule
- 2.2.6. Filled-in check list to be enclosed
- 2.2.7. Offer validity
- 2.2.8. Country of origin
- 2.2.9. Percentage of agency commission if any along with a copy of Agency agreement. The FOB/FCA/CFR prices quoted shall include the agency commission.
- 2.2.10. A copy of "Un-Priced Part II" i.e., a copy of the Price Bid **without the price details** to be enclosed.

## **3.0 PART II (PRICE- BID)**

This part should contain the schedule of price particulars and to be co-related to the technical details provided in Part I.

## **4.0 OPENING OF TENDERS**

The Part I - Technical & Un-priced commercial bid alone would be opened on the Tender opening date.

The Part II - Price bid of Technically suitable Bidders alone would be opened. The Technically suitable Bidders would be informed about the Price Bid opening date. Clarifications if any required by BHEL for Technical evaluation / commercial evaluation would be sought from Bidders before opening of Part II - price bid.

## **5.0 GENERAL**

5.1. Incomplete offers will not be considered.

5.2. **Fixed price:** Prices quoted by the bidder shall be fixed and not subject to any escalation whatsoever during the period of bid validity and execution of the Purchase Order. A bid submitted with an adjustable price will be treated as non - responsive and rejected. Prices shall be written in words and figures. In the event of difference, the price in words shall be valid and binding. Unit prices shall be considered correct in the event of any discrepancy with regard to total price.

5.3. **Bid currency:** Indian bidders should submit the prices only in Indian Rupees. Foreign bidders may submit their bid in their home currency, which should be clearly indicated in the un-priced commercial bid as well as in the price bid.

5.4. **Terms of Delivery:** Bidders are required to quote their best delivery period. Foreign Bidders should submit their offer for net **FOB / FCA - Nearest Sea Port / Air Port as well as CFR / Chennai Seaport / Airport**. Freight charges upto Chennai port to be indicated separately. Indian Bidders should submit their offer for **FOR Despatching station as well as FOR BHEL, Tiruchy basis**. Freight charges from works to BHEL, Tiruchy to be indicated separately. Delivery from the date of Letter of Intent to be mentioned in the offer.

5.5. **Taxes and Duties :** All Taxes and Duties payable as extra to the quoted price should be specifically stated in offers along with CST & TIN No / Tariff No. etc., failing which the purchaser will not be liable for payment of such Taxes and Duties. Our TIN No. 33243560005, TNGST No. 3560005, CST. No. 239383 Dt. 11-06-1991 & BHEL ECC No. AAACB4146PXM012, Assessment circle Tiruverambur

5.6. **Validity :** The offers for main equipment and spares shall be kept open for acceptance for a period of **120 days (one hundred and twenty days)** from the date of opening of the tender (Part I).

5.7. **Terms of Payment :**

5.7.1. **Indian Bidders**

5.7.1.1. The preferred payment terms are indicated below:

5.7.1.2. 100% payment, within 45 to 90 days, after commissioning & acceptance of equipment at BHEL, Tiruchy, against submission of 10% Performance Bank Guarantee.

or

5.7.1.3. 80% payment against documents through bank within 45 to 90 days, (after pre-despatch inspection by BHEL engineers) and balance 20% payment after commissioning & acceptance of the equipment within 45 to 90 days, against submission of 10% Performance Bank Guarantee.

5.7.2. **Foreign Bidders**

An Irrevocable Letter of Credit shall be established for 80% of FOB/FCA/CFR (excluding Indian Agent's commission) 2 months prior to shipment and valid for 3 months for negotiation against shipment. Letter of Credit shall be opened through a branch of State Bank of India in the country where order shall be placed. In case, in the country where order is placed, State Bank of India is not there, Letter of Credit will be opened through our bankers or as permitted by Government of India. Letter of Credit will not be confirmed by foreign banker. Balance 20% of FOB/FCA/CFR value shall be paid through sight draft on commissioning & acceptance of the equipment at BHEL, Tiruchy against submission of 10% Performance Bank Guarantee. All bank charges outside India are to supplier's account. Lump sum erection and commissioning charges, if any, shall be payable after satisfactory erection and commissioning of the equipment by sight draft against certificate issued by the competent authority.

5.7.3 **Common to both Indian & Foreign Bidders**

Erection & Commissioning (E&C) charges will be released after deduction of Income Tax as per the Govt. of India rules. The TDS certificate will be issued by BHEL. Applicable service tax on E&C charges will be payable extra. The liability of depositing the same to the Govt. will be of the supplier.

5.8. **DUNS** number (allotted by M/s DUN & Bradstreet) shall be mentioned in your offer.

5.9. **Guarantee:** The equipment shall be guaranteed for a period of **24 months** from the date of commissioning and acceptance.

5.10. **Contract Execution Bank Guarantee (CEBG):** The successful tenderer shall furnish a Bank Guarantee, from an Indian Bank approved by BHEL in the format enclosed, for 5% of the Letter of Intent value (FOR Dispatching station value – Excluding taxes, duties, freight &

insurance – for Indian bidders) & (FOB/FCA value – Excluding freight & insurance – for foreign bidders) confirming that the order will be executed as per the terms and conditions and this should be **valid till final dispatch date (LR/GR/BL/AWB) with additional 2 months claim period.** Purchase Order & Letter of Credit will be processed only after receipt of CEBG. The CEBG is to be furnished within 3 weeks from the date of Letter of Intent.

**5.11. Performance Bank Guarantee (PBG):** The supplier shall furnish a Bank Guarantee, from an Indian Bank approved by BHEL in the format enclosed, for 10% of the Purchase Order value (FOR Dispatching station value – Excluding taxes, duties, freight & insurance – for Indian bidders) & (FOB/FCA value – Excluding freight & insurance – for foreign bidders) **valid for period of 24 months** from the date of commissioning & acceptance of the equipment at BHEL, Tiruchirappalli, with additional claim period of 2 months.

The CEBG & PBG shall be obtained from any one of the following banks that is a member bank in our consortium of banks.

1) State Bank of India, 2) State Bank of Hyderabad, 3) State Bank of Travancore, 4) Canara Bank, 5) Bank of Baroda, 6) Punjab National Bank, 7) Deutsche Bank AG, 8) HDFC Bank Ltd, 9) Standard Chartered Bank, 10) CITI Bank N.A., 11) ABN AMRO Bank N.V. 12) ICICI Bank Ltd. 13) IDBI Ltd. 14) The Hongkong and Shanghai Banking Corporation Ltd. or any Nationalised Bank

**5.12. Liquidated damages:** Delivery of the goods specified in the purchase order should be made within the time prescribed. Failure to dispatch the materials in the time as per the delivery quoted in our Purchase Order would make the supplier liable to an un-conditional penalty at the rate of **1/2% of the value of goods for each week of delay subject to a maximum of 15%** of the Purchase Order value.

**5.13. Risk purchase:** If the supplier fails to deliver the goods within the delivery specified in the Purchase Order, BHEL will be entitled to terminate the contract and to purchase elsewhere at the risk and cost of the seller either the whole of the goods or any part which the supplier has failed to deliver or despatch within the delivery period mentioned in the Purchase Order.

**5.14. Indian Agent & Agency commission:** An Indian Agent can represent only one Foreign Manufacturer against a particular Tender. The FOB/FCA/CFR price quoted by the Foreign bidder shall include the agency commission however, the agency commission component payable to their Indian Agents shall be shown separately in the Offer. This will be paid by BHEL in Indian Rupees, on satisfactory commissioning & acceptance of the equipment. Copies of current Agency Agreement / Authorization Letter in respect of Agency Commission shall be furnished along with offer. For calculation of Rupee equivalent of Agency Commission, exchange rate as prevailing on the date of Purchase Order will be taken.

**5.15. Short shipment / Warranty replacement:** In case of any short shipment in the main equipment / spares, customs duty levied on such supplies, shall be borne by the supplier. Any warranty replacement during the warrantee period shall be on FOR, BHEL, Tiruchirappalli, basis.

**5.16. Inspection & Testing:** All goods shall be subject to inspection by BHEL or its authorized representatives at supplier's works or at BHEL stores. The supplier will not charge for the facilities provided for inspection of goods. In case of machine tools, the machine would be inspected and proved at supplier's works prior to dispatch however; final

inspection and acceptance of the machine will be carried after installation of the machine at BHEL, Tiruchirappalli.

**5.17. Operating and Maintenance manuals:** The Bidders shall clearly mention in their offer that Operating Maintenance Manuals as called for in the Technical Specification , in the required number of copies will be provided.

**5.18. Cenvat & VAT credit :** (for Indian Bidders only) The quotation must indicate Tariff item number and rate of Excise Duty applicable. The original Excise Duty Gate Pass will be required to be furnished in case charged to us. If the bidder is availing Cenvat credit for his input materials, the effect of proforma credit should be passed on to the purchaser.

**5.19. Packing:** The Supplier shall arrange for packing suitably in all respects considering the peculiarity of the material involved for normal transport by sea / air / rail / road and suitably protected against effect of tropical salt laden atmosphere in the event of shipment being delayed at ports.

**5.20. Salient points of HSE** (Health Safety & Environment) that are to be considered while submission of offer are:

- 5.20.1 Consumption benchmarks related to output shall be provided wherever applicable for key input resources (energy/fuel/chemicals)
- 5.20.2 Competency requirements for operation, maintenance and calibration, if any, shall be communicated
- 5.20.3 If any hazardous chemicals as per MSIHC (Manufacturing, Storage and import of Hazardous Chemicals) Rules 1989/94/2000 are used, the MSDS shall be provided, along with On site & Off site emergency plan (as applicable)
- 5.20.4 The noise level at operator level shall be within 90 dBA
- 5.20.5 OH&S (Occupational Health and Safety) control measures for safe working of machine as applicable shall be specified.
- 5.20.6 The machine / equipment shall be fitted with guard for rolling and moving parts and shall comply with applicable OH&S legislations and Factories Act 1948
- 5.20.7 The supplier shall submit the layout drawing of operating controls, displays etc. and operating instructions to enable ergonomics evaluation and approval
- 5.20.8 The recommended PPE (Personal Protective Equipment) for the equipment shall be furnished
- 5.20.9 Alarm system (both visual and audible) and Automatic switch off of the equipment shall be provided for any intrusion, overloading, short circuiting or any malfunctioning of the equipment
- 5.20.10 Details of all hazardous / harmful substances discharged as by-products / wastes during operations of the machine / equipment, such as fumes, gases, dust particles, aerosols UV./IR (Ultra violet / infra red) radiations, etc. shall be furnished, along with their concentrations and their TLV, (Threshold Limit Value).
- 5.20.11 Appropriate pollution control measures shall be proposed to keep the emissions from the machinery / processes within the prescribed limit as stated in Environment Protection Rules 1986.
- 5.20.12 All furnaces, process units, DG sets, paint booths, shot blasting chambers, etc shall be provided with stack(s) of sufficient height as per guidelines laid down in the Environment Protection Rules 1986.
- 5.20.13 Wherever industry specific standards are not available for control of pollutants, general emission standards shall be used
- 5.20.14 Chemicals banned due to their negative impact on the environment shall not be used in the process
- 5.20.15 Fuels with sulphur content less than 0.05% shall be proposed

- 5.20.16 Details regarding nature of waste generated and appropriate disposal practices available shall be provided, along with the operation procedure of the plant / process.
- 5.20.17 Hazardous chemicals and flammable substances shall be transported only through authorized transporters and all safety practices as laid down in applicable legislative requirements such as Central Motor Vehicle Rules, Manufacture, Storage and Import of Hazardous Chemical 1989, etc. shall be followed
- 5.20.18 Primary materials used in the equipment shall be specified and they shall be eco – friendly
- 5.21. Evaluation of offers shall be on the basis of delivered cost (Net cash outflow to BHEL).
- 5.22. BHEL also reserve its right to allow to the Public Sector Enterprises ordering and price preference facilities as admissible under the existing policy.
- 5.23. BHEL reserves its right to reject a tender due to unsatisfactory past performance in the execution of a contract at another project / unit.
- 5.24. BHEL shall be at liberty to reject or accept any tender, part or in full, at their own discretion and any such action is not liable for any question or claim against BHEL.
- 5.25. **BHEL reserves the right to go for a Reverse Auction (RA)** instead of Opening the submitted sealed bid, which will be decided after technical evaluation. Information and general terms and conditions governing RA are given below.

#### GENERAL TERMS AND CONDITIONS OF RA

Against this enquiry for the subject item/system with detailed scope of supply as per enquiry specifications, BHEL may resort to “REVERSE AUCTION PROCEDURE” i.e., ON LINE BIDDING ON INTERNET.

1. For the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.
2. BHEL will engage the services of a service provider who will provide all necessary training and assistance before commencement of on line bidding on internet.
3. BHEL will inform the vendor in writing in case of reverse auction, the details of Service Provider to enable them to contact & get trained.
4. Business rules like event date, time, Start price, bid decrement, extensions etc. also will be communicated through service provider for compliance.
5. Vendors have to fax the Compliance form in the prescribed format (provided by Service provider) before start of Reverse auction. Without this, the vendor will not be eligible to Participate in the event.
6. BHEL will provide the calculation sheet (e.g., EXCEL sheet) which will help to arrive at “Total Cost to BHEL” like Packing & forwarding charges, Taxes and Duties, Freight charges, Insurance, Service Tax for Services and loading factors (for non-compliance to BHEL standard Commercial terms & conditions) for each of the vendor to enable them to fill-in the price and keep it ready for keying in during the Auction.

7. Reverse auction will be conducted on scheduled date & time.
8. At the end of Reverse Auction event, the lowest bidder value will be known on the network.
9. The lowest bidder has to Fax the duly signed Filled-in prescribed format as provided on case-to-case basis to BHEL through Service provider within 24 hours of Auction without fail.
10. Any variation between the on-line bid value and the signed document will be considered as sabotaging the tender process and will invite disqualification of vendor to conduct business with BHEL as per prevailing procedure.
11. In case BHEL decides not to go for Reverse Auction procedure for this tender enquiry, the Price bids and price impacts, if any, already submitted and available with BHEL shall be opened as per BHEL's standard practice.

**Check List**

Bidder's acceptance to BHEL's Standard Commercial Terms &amp; Conditions

**Applicable for Indian bidders**

(to be submitted along with the offer – please do not change the format)

<b>BHEL Tender No. &amp; Date:</b>	<b>Bidder's Confirmation / response</b>
Technical confirmation to BHEL's Specification	Furnished / Not Furnished
Prices have been quoted on "FIRM PRICE" basis only.	Yes / No
Validity of offer (we require a minimum period of 120 days from the date of Tender opening – <b>please specify</b> )	
Delivery period from the date of Letter of Intent ( <b>please specify</b> ).	
Liquidated damages (we require acceptance to @ ½% per week subject to a maximum of 15% - <b>please specify</b> ).	
Risk Purchase as per clause 5.12	Acceptable / Not Acceptable
Payment terms ( <b>Please specify</b> ) {Preferred terms are:- 100% payment, within 45 to 90 days, after commissioning & acceptance of equipment at BHEL, Tiruchy, against submission of 10% Performance Bank Guarantee as per clause 5.7.1.2 or 80% payment against documents through bank within 45 to 90 days, (after pre-despatch inspection by BHEL engineers) and balance 20% payment after commissioning & acceptance of the equipment within 45 to 90 days, against submission of 10% Performance Bank Guarantee as per clause 5.7.1.3}	
Contract Execution Bank Guarantee (CEBG) as per clause 5.10	Will be provided / Will not be provided
Performance Bank Guarantee (PBG) as per clause 5.11	Will be provided / Will not be provided
Guarantee (we require for a minimum period of 24 months from the date of commissioning & acceptance – <b>please specify</b> )	
Approximate Net weight of the total consignment ( <b>please specify</b> )	
Approximate Gross weight of the total consignment ( <b>please specify</b> )	

**Signature & Office Seal of the bidder**

**Check List**

Bidder's acceptance to BHEL's Standard Commercial Terms &amp; Conditions

**Applicable for Foreign bidders**

(to be submitted along with the offer – please do not change the format)

<b>BHEL Tender No. &amp; Date:</b>	<b>Bidder's Confirmation / response</b>
Technical confirmation to BHEL's Specification	Furnished / Not Furnished
Prices have been quoted on "FIRM PRICE" basis only.	Yes / No
Validity of offer (we require a minimum period of 120 days from the date of Tender opening – <b>please specify</b> )	
Currency in which quoted ( <b>Please specify</b> )	
Port of loading ( <b>Please specify</b> )	
Country of origin ( <b>Please specify</b> )	
Delivery period from the date of Letter of Intent ( <b>please specify</b> ).	
Liquidated damages (we require acceptance to @ ½% per week subject to a maximum of 15% - <b>please specify</b> ).	
Risk Purchase as per clause 5.12	Acceptable / Not Acceptable
Payment terms ( <b>Please specify</b> ) {Preferred terms are:- An Irrevocable Letter of Credit shall be established for 80% of FOB/FCA/CFR (excluding Indian Agent's commission) 2 months prior to shipment and valid for 3 months for negotiation against shipment. Letter of Credit shall be opened through a branch of State Bank of India in the country where order shall be placed. In case, in the country where order is placed, State Bank of India is not there, Letter of Credit will be opened through our bankers or as permitted by Government of India. Letter of Credit will not be confirmed by foreign banker. Balance 20% of FOB/FCA/CFR value shall be paid through sight draft on commissioning & acceptance of the equipment at BHEL, Tiruchy against submission of 10% Performance Bank Guarantee. All bank charges outside India are to supplier's account. Lump sum erection and commissioning charges, if any, shall be payable after satisfactory erection and commissioning of the equipment by sight draft against certificate issued by the competent authority. as per clause 5.7.2}	
Agency commission	Applicable / Not Applicable
Contract Execution Bank Guarantee (CEBG) as per clause 5.10	Will be provided / Will not be provided
Performance Bank Guarantee (PBG) as per clause 5.11	Will be provided / Will not be provided
Guarantee (we require for a minimum period of 24 months from the date of commissioning & acceptance – <b>please specify</b> )	
Approximate Net weight of the total consignment ( <b>please specify</b> )	
Approximate Gross weight of the total consignment ( <b>please specify</b> )	

**Signature & Office Seal of the bidder**

**Formats for execution of Bank Guarantees:**

**Note:- The Bank Guarantee bonds (BG) are to be submitted on non-judicial stamp paper of Rs. 100/- and should be only from any one of the below mentioned Banks,**

**(1) State Bank of India, 2) State Bank of Hyderabad, 3) State Bank of Travancore, 4) Canara Bank, 5) Bank of Baroda, 6) Punjab National Bank, 7) Deutsche Bank AG, 8) HDFC Bank Ltd, 9) Standard Chartered Bank, 10) CITI Bank N.A., 11) ABN AMRO Bank N.V. 12) ICICI Bank Ltd. 13) IDBI Ltd. 14) The Hongkong and Shanghai Banking Corporation Ltd. or any Nationalised Bank)**

**A. CONTRACT EXECUTION BANK GUARANTEE**

**This** deed of guarantee made this ..... day of ..... 200.. by the ..... in favour of **Bharat Heavy Electricals Limited, Tiruchirapalli** having its registered Office at New Delhi with its Unit Office at Tiruchirapalli (Hereafter called the first party) where as M/s..... having its registered office at ..... (hereafter called the contractor) have entered in to contract with the first party for the supply of ..... vide Letter of Intent No ..... dated .....

**And** whereas the contractor M/s ..... have approached the ..... for a guarantee and at their request and in consideration of the arrangement arrived at between the contractor and the BHEL Tiruchirappalli the said ..... has agreed to give such guarantee as herein after mentioned to the aforesaid first party.

**Now** therefore, these present witness that we the ..... do hereby undertake to the first party a sum of Rs ..... (Rupees ..... only) without demur/on demand being made by the said first party and to keep the first party indemnified to the extent of Rs ..... (Rupees ..... only) by virtue of this guarantee against any breach in execution of contract without giving prior information to the party of the same (the decision in this respect being solely the discretion of the first party). We further undertake to pay ..... the aforesaid amount in the lump sum on demand without demur or such part thereof as the first party may demand from time to time, irrespective of the fact whether the said contractor admits or denies such claim or questions its correctness in any court tribunal of arbitration proceedings or before any authority.

**The** aforesaid guarantee will remain in full force and we shall be liable under the same irrespective of any concession for time being granted by the said first party to contractor M/s ..... in or for fulfilling the said agreement between the contractor M/s ..... and the first party and the guarantee will remain in full force till ..... irrespective of any change of terms, conditions or stipulation or any variations in the terms of said agreement irrespective of whether notice of such change or variation is given to us or not and claim to receive such notice of any change and/or variation of the terms and/or conditions of the said agreement is hereby specifically waived by us.

**Further** we shall not be released from this guarantee by any forbearance or the exercise or non exercise of any of the power or rights under the said agreement by the said first party against the contractor irrespective of whether notice of such forbearance enforcement or non-enforcement of any power or rights, modifications or changes made in the said agreement or concessions shown to contractor M/s ..... by the first party is given to us or not.

**The guarantee** herein contained shall not be determined or affected by the liquidation of winding up or insolvency of or change in the constitution of the contractor M./s ..... but shall in all respects and for all purposes binding and operative until all payments of all moneys dues or that may hereafter becomes due to the said first party is paid in respect of any liability or obligation for the contractor under this guarantee subject to however that the first party shall have no right under this guarantee after expiry of six months from the date of completion of the contract unless this guarantee is extended by mutual agreement.

**And** lastly we ..... undertake not to revoke this guarantee during its currency except with the previous consent of the first party in writing. The ..... hereby declares that it has power to issue this guarantee under the Company's memorandum and article of association and the undersigned has full power to do so on its behalf under the power of attorney dated ..... granted to him by the proper authorities of the Company.

**Notwithstanding** anything contained here in before, our liability under this guarantee is restricted to Rs ..... (Rupees ..... only). Our guarantee shall remain in force till ..... unless a claim in writing is presented to us and if unpaid a suit or action to enforce such claim is filed against within 6 months from the date, all your rights under this guarantee shall be forfeited and we shall be released and discharged from all liability there under.

**Dated** ..... the ..... by its constituted attorney.

## **B. PERFORMANCE BANK GUARANTEE**

1. In accordance of M/s Bharat Heavy Electricals Limited (A Government of India undertaking, a Company incorporated under the Companies Act 1956 having its Registered Office at 'BHEL House", SIRI Fort, New Delhi 110 049) through its High Pressure Boiler Plant Division located at Tiruverumbur, Tiruchirappalli 620014 (hereinafter called "the Company") having entered into a contract with ..... hereinafter called "the said contractor" which term includes 'suppliers' for the purpose of this Bond and under the terms and conditions of the Contract No: ..... dated ..... between BHEL, Tiruchirappalli and as per the contract, the contractor/supplier is to furnish a Performance Bank Guarantee for Rs ..... for the due performance of the equipment to be supplied under the above referred contract and for the fulfilment of all the terms and conditions of the contract. We ..... (indicate the name of the Bank) (herein after referred to as the Bank) at the request of ..... (contractor(s)) do hereby undertake to pay the Company an amount not exceeding Rs ..... against any loss or damage caused to or suffered or would be caused to or suffered by the Company by reason of any breach by the said contractor (s) of any of the terms and conditions contained in the said agreement.
2. We ..... (indicate the name of the Bank with full address), do hereby undertake to pay the amounts due and payable under this guarantee without any demur, merely on a demand from the Company stating that the amount claimed is due by way of loss or damage caused to or would be caused to or suffered by the Company by reason of breach by the said Contractor(s) of any of the terms and

conditions contained in the said Agreement or by the reason of the contractor(s) 'failure to perform' the said Agreement. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs .....

3. We undertake to pay unconditionally to the Company any money so demanded notwithstanding any dispute(s) raised by the Contractor in any suit, or proceedings pending before any Court or Tribunal or Arbitration or before any other authority relating thereto our liability under this present being absolute and unequivocal. The payment under this guarantee would not wait till the disputes have been decided by any Court or Tribunal or in the arbitration proceedings or by any other authority. The payment so made by us under this Bond shall be a valid discharge of liability for payment there under and the Contractor (s) shall have no claim against us for making such payment.
4. We ..... (indicate the name of Bank), further agree that the guarantee herein contained shall remain in full force and effect during the period that would betaken for the performance of the said Agreement and that it shall continue to be enforceable till all the dues of the Company under or by virtue of the said Agreement have been fully paid and its claim satisfied or discharged or till ..... Office/Department/Division of the Company certifies that the terms and conditions of the said Agreement have been fully and properly carried out by the said Contractor(s) and accordingly discharges this guarantee.
5. (i) Unless a demand or claim under this guarantee is made on us in writing on or before the ..... we shall be discharged from all the liability under this guarantee thereafter. But where such claim or demand has been preferred by the Company with the Bank before the expiry of the said date, the claim shall be enforceable notwithstanding the fact that the said enforcement is effected after the said date.  
  
(ii) For the purpose of this clause, any letter making demand on the Bank by M/s BHEL will be dispatched by Registered Post with Ack. Due or by Telegram or by any Electronic media addressed to the above mentioned address of the Bank shall be deemed to be the claim/demand in writing referred to above irrespective of the fact as to whether and when the said letter reaches the Bank, as also any letter containing the said demand or claim is lodged with the Bank personally.
6. We ..... (indicate the name of the Bank), further agree with the Company that the Company shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said agreement or to extend time of performance by the said Contractor(s) from time to time or to postpone for any time of from time to time any of the powers exercisable by the Company against the said Contractor (s) and to forbear or enforce any of the terms and conditions relating to the said Agreement and we shall not be relieved from our liability by any reason of any such variation or extension being granted to the said contractor(s) or for any forbearance, act or omission on the part of the Company or any indulgence by the Company to the said Contractor(s) or by any such matter or thing whatsoever which under the law relating would, but for this provision, have effect of not so relieving us.
7. This guarantee will not be discharged due to the change in the constitution of the Bank or the Contractor(s)

8. It shall not be necessary for the Company to proceed against the contractor before proceeding against the guarantor–Bank and the guarantee herein contained shall be enforceable against them notwithstanding any security, which the Company may have obtained or obtain from the Contractor shall, at the time when proceedings are taken against the guarantor hereunder be outstanding or unrealised.
9. Any claim or dispute arising under the terms of this document shall only be enforced or settled in the Courts at Tiruchirappalli.
10. The guarantor hereby declare that it has power to execute this guarantee and the executant has full powers to do so on its behalf under the proper authority granted to him/them by the guarantor
11. We ..... (indicate the name of Bank) lastly undertake not to revoke this guarantee during its currency except with the previous consent of the Company in writing.

In witness whereof we ..... (indicate the name of Bank) have hereunto set out Bank Seal the ..... Day ..... month 200.