



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 76 53

Email : skaruna@bheltry.co.in

spsy@bheltry.co.in

Web : www.bhel.com

TWO PART BID

Tender to be submitted in two Parts

Enquiry
Number:

2601700028

Enquiry
Date:

26.06.2017

Due date for submission
of quotation:

18.07.2017

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

Please note that under any circumstances both delayed offer and late offers will not be considered. Hence vendors are requested to ensure that the offer should reach physically on or before 14.00 Hrs(IST) on the Date of tender opening. Tenders received after 14.00Hrs (IST) will not be considered for evaluation.

Item	Description	Quantity	(Indigenous Vendors) Matl. Will be Delivered to
10	Spring Load Testing Machine With Recording Unit as per the technical specification & commercial conditions applicable (To be downloaded from web site www.bhel.com or http://tenders.gov.in)	1.00 No.	FOR, BHEL, Stores, High Pressure Boiler Plant, Trichirappalli - 620014

Important points to be taken care during submission of offer

- 1) Material shall be delivered to (By Indigenous vendors): As stated above.
- 2) By Foreign Vendors: CFR Chennai Seaport / Airport
- 3) Delivery required 3 months from the date of purchase order.
- 4) Erection & Commissioning period required 2 Weeks from the date of intimation by BHEL to vendor for deputation of their Engineers for E&C.
- 5) EMD for this Tender will be (INR) : 1,50,000.00
- 6) Compliance Forms. TRY/IMP/02 & TRY/IND/02A to be filled and enclosed along with the offer failing which, the offer will not be considered for evaluation.
- 7) 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 / GENL / 001 - EMD) including bank guarantee formats and list of consortium banks, commercial terms check-list can be downloaded from BHEL web site <http://www.bhel.com> or from the Government tender website <http://tenders.gov.in> (public sector units > Bharat Heavy Electricals Limited page) under Enquiry reference .

Tenders should be submitted before 14.00Hrs (IST) on the due date
Tenders will be opened online 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

DGM / Capital Equipment / MM

S.PARTHASARATHY
MANAGER
CAPITAL EQUIPMENT / MM
BHEL, TRICHY-620014.

SPRING LOAD TESTING MACHINE WITH CHART RECORDING UNIT

Part A		
S. No	BHEL SPECIFICATION	BIDDER / VENDOR'S OFFER
1.0	Qualifying Criteria: The BIDDER has to compulsorily meet the Qualifying criteria to get qualified otherwise the technical offer will not be considered.	
1.1	BIDDER / VENDOR to provide the Profile of their Company	
1.2	The BIDDER / VENDOR (OEM) shall have a minimum of five Years of Continuous Experience in the field of Design, Manufacture and Supply of COMPRESSION TYPE SPRING LOAD TESTING MACHINE WITH CHART RECORDING UNIT. Vendor may indicate the actual number of years of experience in the field.	
1.3	Only those vendors (OEMs), who have supplied and commissioned at least 1 number of COMPRESSION TYPE SPRING LOAD TESTING MACHINE WITH CHART RECORDING UNIT similar to the item specified under Part B, in the last 5 years (as on original date of opening of Tender) and is presently working satisfactorily should quote.	
1.4	Vendor has to submit at least one Performance Certificate from their customers, for satisfactory performance of COMPRESSION TYPE SPRING LOAD TESTING MACHINE WITH CHART RECORDING UNIT quoted at S No 1.3 above, for a minimum period of one year (as on original date of opening tender). For obtaining the Performance Certificate, a suggestive format is provided at the end of Part A.	
1.5	BHEL reserves the right to verify the information provided by the vendor. In case the information provided by the vendor is found to be false / incorrect, the offer shall be rejected.	
1.6	Details on SERVICE-AFTER-SALES set-up in India, Contact details (Name, Phone number, email ID) including the Address of Agents / Service centers in India to be provided.	
2.0	Information to be provided by Vendor	
2.1	Year of launch of the model quoted against this enquiry	
2.2	Number of COMPRESSION TYPE SPRING LOAD TESTING MACHINE WITH CHART RECORDING UNIT supplied and commissioned till date (Latest 10 entries be furnished).	
2.3	The BIDDER / VENDOR to furnish Reference list of customers viz. Name and address of the customers or companies where the quoted model of equipment is installed, month / year of commissioning and application of the equipment supplied.	
2.4	The BIDDER shall give details about supply of similar equipment to BHEL units if any with Make, Model and Year of Supply & Commissioning etc.	
2.5	BIDDER has to indicate the Country of Origin for the supply of equipment.	

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2.6	Any Additional Data to supplement the manufacturing capability of the BIDDER for the subject equipment.	
3.0	Vendor to note the following:	
3.1	The BIDDER shall submit the offer in Two Parts – 1. Technical [with PART A & PART B] & 2. Commercial and Price Bid.	
3.2	The VENDOR's RESPONSE against each clause in PART A & B of the offer should be filled compulsorily with complete details.	
3.3	The BIDDER shall assure a continuous support for Spares and Service for Ten Years, from the date of commissioning of the equipment at BHEL Works.	
3.4	The Technical Offer shall be supported by Product Catalogue and Data Sheets and complete technical details / literature on the quoted model.	

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

Suggestive Format of Performance Certificate:

(On Customer's letter head)
PERFORMANCE CERTIFICATE

1 Supplier / Maker of the COMPRESSION TYPE SPRING LOAD TESTING
MACHINE WITH CHART RECORDING UNIT :

2 Make & Model of the COMPRESSION TYPE SPRING LOAD TESTING
MACHINE WITH CHART RECORDING UNIT:

3 Month & Year of Commissioning :

4 Performance of the COMPRESSION TYPE SPRING LOAD TESTING
MACHINE WITH CHART RECORDING UNIT: Satisfactory / Not Satisfactory
(Strike off whichever is not applicable)

5 After sales service : Satisfactory / Not
Satisfactory
(Strike off whichever is not applicable)

6 Any Other remarks :

Date:

Signature & Seal of the Authority
Issuing the Performance
Certificate

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Part B:			
SI No	Specification	Requirement	Vendors Offer
1	Instrument Description	The Spring load testing machine is meant for compression load testing of coil springs.	
2	Job Details	• Max Spring Dia 450 mm (outside diameter) • Max Height of spring 800 mm • Material of the spring: special spring steels • Maximum weight of the spring 350 Kg • Minimum Spring Dia & height, load to decide stroke of the cylinder. To be added	
3	Principle of operation	The testing machine should be working on Hydraulic type of loading with electric controls. The maximum loading capacity should be 600KN	
4	Main components of the equipment	• Rigid body with four column • Solid Ram/head with necessary accessories -Hydraulic type • Electric control operator pendent with suitable software • Chart/Recorder-paper type plotting load applied and the compression/displacement • Strong Base for keeping the valve and for testing with the load • Lubrication facilities • Ram travel limit controller (up and down movement) • Job loading height 750mm (floor to m/c job loading base) • Digital and Mechanical display of Ram movement wrt base reference.	
5	Basic Features of the equipment:		
6	Body	Rigid body having strong columns with Solid head on top and the base for holding the spring. Must with stand 600 KN force	
7	Head/Ram	• The head/Ram must be capable of loading the spring to the required force. The force can be programmable by the operator. • Gap between base and Ram- Must be sufficient to load 800 mm long springs with sufficient allowance. • Ram stroke- 500 mm	
8	Operator pendent	Operator pendent must consist the following: • Display unit with software for setting the load, displacement (load selector option) .1-200KN and 1-600KN • Chart recorder plotting load vs displacement • Emergency switches • R,Y,B indicators for 3 phase	

SPRING LOAD TESTING MACHINE WITH CHART RECORDING UNIT

9	Main parameters:		
9.1	Travel resolution	1mm	
9.2	Head speed	Vendor to specify	
9.3	Speed resolution	1mm	
9.4	Loading or measuring accuracy	±1%	
9.5	Load range	1 KN to 200 KN & 1 KN to 600 KN with selector switch	
9.6	Load resolution	0.1KN	
10	Chart Recording unit		
10.1	Function	The function of the chart recording unit is to plot Load vs Displacement	
10.2	Units	- Loading units to be in kN. Provision for conversion load unit to N, Kg, to be available. - Displacement unit to be in mm	
10.3	Chart Features	- Paper recorder type - Colour printer - Chart size-Vendor to specify	
11.0	Sensor for measurement	High precision electronic sensors to be provided for measuring the displacement and applied loads	
12.0	Safety Features	- Software with password locking protection to be provided - Alarm lamp with audio - Structural safety guard with necessary interlocks for the safe operation.	
13.0	Power supply	BHEL will provide 415V ±10%, 3 Phase, 3 Wire System (R, B, Y) without neutral	
14.0	Environment: Temperature up to 50°C; Humidity up to 90% but both upper limits do not occur simultaneously		
15.0	Hydraulic system features:	The hydraulic system shall be designed in accordance with ISO 4413:1998	Bidder to confirm
15.1		Installation of complete hydraulic systems shall be according to IS 10481: 1983 'Guide for applications and installation of oil hydraulic systems'.	Bidder to confirm
15.2		The supplier shall design an energy saving hydraulic circuit.	Bidder to specify
15.3		The system shall be designed and constructed so that components are located where they are accessible and can be safely adjusted and serviced. Hydraulic components including piping shall be accessible and fitted so as not to interfere with adjustment or maintenance. Particular attention shall be given to the location of systems and components that need regular maintenance.	Bidder to specify
15.4		Hydraulic pumps & Valves – Make: Rexroth/Vickers/Parker only acceptable.	
15.5		Hydraulic pumps and motors shall be mounted so that they are accessible for easy maintenance. Recommended not to mount directly on oil tank.	Bidder to confirm

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15.6		Cylinder bore to be honed to a surface finish not less than 20 micron inch, Piston rod should be hard chrome plated to 40 micron thick(MIN) and 55 HRC min hardness. The supplier should produce test certificate for the hardness and chrome plating thickness from an authorized certifying agency. Preferably Make: Rexroth/Vickers/Parker. Bidder to specify. Accordingly cylinder/Materials to be selected. Bidder to specify.	
15.7		Latest standard wear resistant sealing arrangement with bearing guide strip to work in titling condition of the cylinder shall be used. Only standard makes of seals like Parker/Merkel/Bushak&shamban/Hunger/Hallite/James Walker/Simrit Freudenberg Are Acceptable.	
15.8		Valve types shall be selected to take into account correct function, leak tightness, and resistance against foreseeable mechanical and environmental influence. Surface mounted and/or cartridge valves are preferred wherever practicable. Recommended not to mount on the oil tank. Recommended for usage of manifolds / surface mounted valves construction in a separate tray.	
15.9		Removal: Irrespective of the valve connection method used, removal of the valve shall not require the removal of any associated piping or connectors. Associated piping or connectors may be loosened to provide removal clearance.	
15.10		Hydraulic fluids The oil to be used shall be of standard ISO viscosity grades SS 68 / 150 centi-stokes at 40 deg c. the grade of oil and capacity of tank should be painted on the tank near the oil filling point.	
15.11		The hydraulic power pack shall be provided with minimum number of pipes / pipe joints and as far as possible usage of manifolds / stacked valves construction is preferred.	
15.12		Steel tubes should conform to the specifications stated in ISO 10763.	
15.13	Hydraulic oil and lubrication	First fill of hydraulic oil and lubrication is in supplier scope at BHEL & at PDI.	
15.14		Any actuator required to maintain its position or to adopt a specific position for safety in the event of a control system failure shall be controlled by a valve that is either spring biased or detent located to a safe position.	
15.15		Fluid loss Means shall be provided to prevent the system fluid from draining back into the reservoir when the system is switched off 'if such drainage could cause a hazard. When a fluid spill would constitute a fire hazard, the system should be designed to shut down automatically if piping or another component ruptures.	
15.16		THE POWER PACK SHALL HAVE STAND BY PUMP AND MOTOR.	

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15.17		Pressure measuring minimess check points (preferably with ¼" bsp stud end) to be provided, wherever required for quick pressure measuring and pressure setting while trouble shooting. one set of handheld minimess pressure gauge (glycerin filled) of suitable range with minimess hose (1 to 1.5m length) also has to be supplied along with the power pack. Fixed pressure gauges (Minimum 1 No – 6" dial) provided in the system should be of glycerin filled type and should have suitable gauge isolators. Suitable oil clog indicator & air breathers to be fixed in the circuit.	
15.18		Temperature sensing A Digital temperature sensing device should be installed in the reservoir.	
15.19		1 No of Direct type Oil chiller refrigerated type of suitable capacity (not less than 0.5 Ton) to be supplied along with scope of supply with suitable pipe lines/hose connections. Make: Werner finely/Advance/Rittal Makes.	
15.20		Anodized/electroplated hydraulic circuit drawing to be fixed in the reservoir/oil tank suitably for maintenance troubleshooting.	
15.21		Operating Spares: (To be supplied along with scope of supply) 1. Complete seal kit for the hydraulic cylinders– Qty: 2 sets. 2. Hydraulic hoses - Qty: 1 set (1 set consists of one number in each type). 3. Hydraulic valves - Qty: 1 set (1 set consists of one number in each type). 4. Motor Pump drive coupling - Qty: 1 set	
15.22		Safety Interlocks Where a system has more than one interrelated automatically and/or manually controlled device and where failure of any of these devices could cause a hazard, p protective interlocks or other safety means shall be provided. Where practicable, these interlocks should interrupt all operations, provided that such interruption does not of itself cause a hazard or damage.	
15.23		Filters shall be located in pressure, return and/or auxiliary circulation lines as necessary to achieve the cleanliness levels required by the system.	
15.24		The pipelines to be painted with standard colours as per the colour coding accepted internationally for hydraulic systems. The power pack shall be painted in apple green colour. To be mentioned by the offerer.	
15.25		The reservoir shall be designed to provide adequate structural integrity under the following conditions: a) filled to maximum capacity with the system fluid; b) subjected to positive and negative pressures caused by the withdrawal or return of fluid at rates required by the system under all foreseeable conditions.	

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15.26		suitable vibro-mounts, compensators (flexible bellows), delivery hose between pump and valve block, polypropylene pipe & hose clamps, etc are to be provided to minimize the vibration induced and transmitted to the hydraulic joints. Hydraulic tank shall have proper clamping arrangement for fixing the tank in the ground with required anchoring bolts.	
15.27		Surface treatment shall be such that: a) all interior surfaces are thoroughly cleaned and all moisture, dirt, chips, flux, scale, slag, fibrous materials and any other contaminants removed; b) any interior finishes are compatible with the fluid used in the system and the environmental atmosphere and shall be applied as recommended by the supplier of the finish. When such finishes are not used, ferrous interior surfaces should be coated with a rust inhibitor compatible with the fluid; c) exterior finishes are compatible with the fluid ,	
15.28		The reservoir should be constructed in such a manner that handling by a fork lift or slings and crane can be carried out without causing permanent distortion. The lifting points should be identified.	
15.29		Fluid level indicators a) shall be permanently marked with system "high" and "low" levels; b) should have additional marks as appropriate to specific systems; c) shall be fitted at each filling point so that they are clearly visible when filling.	
15.30		Filling points should be fitted with sealed and captive covers to prevent the ingress of contaminants when closed.	
16.0	Spares and accessories	Supplier to list down the required spares and accessories recommended by them for 1 year trouble free operation. 1. Load cell / pressure transducer – 1 Nos 2. Sensors – 1 Set of each type 3. Contactor and push button – 2 set of each type 4. Measuring sensors - 1 Set of each type	
17.0	Equipment Layout Plan	Proper layout plan for erection and installation of equipment with set off dimensions to be furnished in case of ordering BHEL will provide the foundation as per the requirement. All anchoring material like bolts, etc is in supplier scope	
18.0	Documentation	Operation and Maintenance manual-3 Hard copies and one soft copy in pen drive.	
19.0	Pre dispatch inspection	The equipment shall be offered for inspection by BHEL prior to dispatch at Vendor's works.	

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20.0	System commissioning	Leveling, anchoring bolts with chemicals, mounting and commissioning of the equipment over the foundation is in supplier scope	
21.0	Prove out	Supplier to prove out the equipment at BHEL works by taking five compression tests on coil springs provided by BHEL. Equipment Test certificate to be provided to BHEL which is mandatory for statutory approval.	
22.0	Training	Training for BHEL persons at the time of commissioning to be provided	
23.0	Guarantee	12 Months from date of commissioning or 18 months from the date of dispatch whichever is earlier	