



Bharat Heavy Electricals Limited

(High Pressure Boiler Plant)

Tiruchirappalli – 620014, TAMIL NADU, INDIA

An ISO 9001
Company

CAPITAL PURCHASE / MATERIALS MANAGEMENT / MANUFACTURING

ENQUIRY	Phone: +91 431 257 79 38 Fax : +91 431 252 07 19 Email : tvenkat@bheltry.co.in Web : www.bhel.com
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	Enquiry Number:	Enquiry Date:	Due date for submission of quotation:
	2620700080	18.08.2007	20.09.2007

You 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 (Item required at BHEL on)
10	Electronic Lorry Weigh Bridge – 80 T Capacity as per the technical specification & commercial conditions applicable (to be downloaded from web site www.bhel.com or http://tenders.gov.in)	1 No.	15.02.2008

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 “2620700080”.

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

PART A.**QUALIFYING CRITERIA FOR THE SUPPLY OF
ELECTRONIC LORRY WEIGH BRIDGE - 80 Ton CAPACITY****SECTION – I : COMPANY PROFILE**

The BIDDER has to provide the details pertaining to each clause in the table given below to understand the profile of the BIDDER's COMPANY.

S.No.	PARTICULARS	VENDOR's RESPONSE
1.0	Number of Years of Experience of the BIDDER / VENDOR in the field of Design, Manufacture & Supply of Electronic Lorry/Trailer Weigh Bridges.	
2.0	Details on the Codes/Standards adopted for the Design and Manufacture of Weigh-Bridges	

SECTION – II : QUALIFYING CRITERIA

The BIDDER / VENDOR has to meet the following requirements to get qualified for submitting an offer for the Electronic Lorry Weigh Bridge :

[Additional Sheets shall be attached with the OFFER, to provide requisite details]

S.No.	REQUIREMENTS	VENDOR's RESPONSE
3.0	The BIDDER / VENDOR shall have minimum FIVE Years of Experience of in the Field of Design, Manufacture & Supply of Electronic Lorry Weigh Bridges	
4.0	The BIDDER / VENDOR might have supplied atleast Five numbers of the Electronic Lorry Weigh-Bridges of Capacity 60 Tons and ABOVE in the LAST FIVE YEARS	
5.0	Performance Certificate in the enclosed FORMAT for a period, not less than one year, from CUSTOMERS and Reference List of Customers with full contact details (E-mail id, Fax Number, Name of Contact Person), who are the End Users of the Electronic Weigh-Bridges of Capacity 60 Ton and ABOVE	
6.0	BHEL reserves the right to verify the information provided by vendor. In case, it is found to be false/ incorrect, the offer shall get rejected.	
7.0	Details on SERVICE-AFTER-SALES Set-Up in TRICHY and CHENNAI Regions including the Addresses of Agents / Service Centres , to be furnished .	

SECTION – III : BID / OFFER FORMATS

The BIDDER / VENDOR has to note the following :

S.No.	REQUIREMENTS	VENDOR's COMPLIANCE
8.0	The BIDDER shall submit the offer in TWO PARTS - Technical [with PART A & PART B] & Commercial and Price Bid.	
9.0	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 just 'YES' or 'CONFIRMED' or 'NO-DEVIATION' or 'COMPLIES' or 'ACCEPTED' or similar words in the technical comparative statement may lead to disqualification of the Technical Offer.	
10.0	The Technical Offer shall be supported by Product Catalogue (of similar capacity weigh-bridges supplied earlier) in ORIGINAL and complete technical details of 'LOAD - CELLS' proposed to be built into the offered weigh bridges.	
11.0	The Commercial Offer shall contain the Scope of Supply and the Un-Priced Part of the Price-Bid, for confirmation of the inclusion of all the accessories, auxiliary parts, service tools, spares, consumables, etc., meet the technical specification requirements.	
12.0	Earlier performance/field experience (including service support) if any, with BHEL for the VENDOR's Equipment, will be a reckoning factor for the technical qualification of the OFFER.	

PERFORMANCE CERTIFICATE – [SAMPLE FORMAT]

(On Customer's Letter Head)

1. Supplier of the WEIGH – BRIDGE :

2. Make & Model of the Equipment :

3. Month & Year of Commissioning :

4. a. Equipment Serial Number :
 b. Weighing Capacity :
 c. Platform Size :

5. Performance of the Machine : Best in the market /
 (with reasons for recommendation) Satisfactory /
 Good /
 Average /
 Not Satisfactory

6. Service Support (including Calibration) : Not OK /
 Good / Satisfactory
 Excellent

Date:

Signature & Seal of the Authority
Issuing the Performance Certificate

PART B

TECHNICAL SPECIFICATIONS FOR
ELECTRONIC LORRY WEIGH BRIDGE [80 Ton CAPACITY]

1.0 PURPOSE :

This proposed weigh bridge is indented for weighing Lorries, Tractor-Trailers, Multi-Axle Trailers with or with-out load. Most of the cases, the trailers will be loaded with raw-materials projecting over the vehicle's loading platform, and with finished goods, it will be an ODC Consignment.

TECHNICAL SPECIFICATIONS :**2.0 CONFIGURATION**

S.No.	PARTICULARS	SPECIFICATIONS	VENDOR's OFFER [with Technical Details]
2.1	Type	Surface Mounted Type	
2.2	Ramp Height	Bidder to Specify	
2.3	Weighing Capacity	80 Metric Tonnes [80,000 kgs.]	
2.4	Platform Size	18 M x 3 M	
2.5	Mechanism / Principle	Electronic with Load Cells	
2.6	No. of Load Cells	Bidder to Specify	
2.7	Weight Indication	Digital Indication System	

3.0 BASIC DESIGN & CONSTRUCTIONAL FEATURES

S.No.	DESCRIPTION / PARTICULARS	VENDOR's OFFER [with Technical Details]
3.1	The basic design shall be suitable for electronic measuring system using digital load cells and digital indication system.	
3.2	The weigh-bridge shall be free motion strut mounted type construction.	
3.3	For a better and balanced weighing, there shall be a minimum of eight load cells, supporting the platform.	
3.4	The platform structure shall be fabricated type with welded rolled steel sections and plates of reputed make like SAIL, JINDAL, TISCO, etc. Bidder has to submit the details on the platform construction (with out-line drawings) with the offer.	

S.No.	DESCRIPTION / PARTICULARS	VENDOR's OFFER [with Technical Details]
3.5	The platform plates are to be provided with "anti-skid ribbing" or made of checkered plates.	
3.6	Bolt-on type side railing with brackets are to be provided for the platform.	
3.7	Stoppers or bumpers are to be provided in longitudinal and transverse directions.	
3.8	The design of the weigh bridge shall be such that the access to the all the load-cells are possible with minimum strain.	
3.9	The ramp design shall be such that the height does not exceed 450 mm and pit formation (if required) for an optimum depth can be accommodated. Design details to be provided.	
3.10	The fabricated platform structures are to be shot blasted prior to painting and finished with primer and epoxy coats of required dry film thickness (DFT). Bidder to give details on paints applied and DFT.	
3.11	The measuring accuracy shall be as per Class-III Accuracy and abided by Indian Weights & Measures Act.	
3.12	The weigh bridge indicator cum display system shall be compatible to get connected to a PC, for taking print-outs, data entry to hard disk of the PC and giving connectivity to external IT network system through suitable and reliable communication cables and ports.	

4.0 LOAD CELL DETAILS

S.No.	PARTICULARS	SPECIFICATIONS	VENDOR's COMPLIANCE
4.1	Capacity of Single Load Cell	Bidder to Specify [not to be less than 25 Tonnes]	
4.2	Accuracy Level	In the order of 4000 Divisions (minimum)	
4.3	Electrical Input Supply [Minimum & Maximum]	Bidder to Specify	
4.4	External Communication	Bidder to Specify	
4.5	Output Resolution	Bidder to Specify	
4.6	Output Update Rate	In the order of 10 readings per second	
4.7	Repeatability	Bidder to Specify	
4.8	Overload Rating (Safe)	Bidder to Specify [not to be less than 180% of rated capacity]	

S.No.	PARTICULARS	SPECIFICATIONS	VENDOR's COMPLIANCE
4.9	Overload Rating (Ultimate)	Bidder to Specify [not to be less than 300% of rated capacity]	
4.10	Sensitivity in mV/V	2.0±0.1%	
4.11	Operating Temperature Range	5° C to 55° C	
4.12	Temperature Effect on Sensitivity	Bidder to Specify	
4.13	Temperature Effect on Zero Balance	Bidder to Specify	
4.14	Protection Class	IP 66/IP 67	
4.15	Citation (for Test Certificate)	OIML R60	
4.16	Creep (30 Min.)	Bidder to Specify	
4.17	Features : Load Cells to have the features listed in the right side column	<ul style="list-style-type: none"> • Shall be unaffected by 'off-centre' loads • Canister design to be strong enough to withstand wear, tear and accidental damage due to harsh usage • Shall be hermetically sealed to protect against moisture ingress • Shall be provided with automatic diagnostics • Shall withstand hostile conditions due to extreme temperatures, lightning, wind, shock and vibration • Shall be provided with over-load protection • Shall be provided with 'low-torque' anti-rotation load button • Shall be provided with water-proof connectors 	

5.0 DIGITAL INDICATION SYSTEM

S.No.	PARTICULARS	SPECIFICATIONS	VENDOR's OFFER
5.1	Processor	Micro-Controller based [Bidder to specify make and model]	
5.2	Processor Clock	Around 11MHz	

S.No.	PARTICULARS	SPECIFICATIONS	VENDOR's OFFER
5.3	Real Time Clock	On Board Battery Backed	
5.4	Memory	128 k (minimum) for data storage with battery back-up capable of storing 1500 weighment records	
5.5	Power Supply	Liner Mode Power Supply	
5.6	Input Voltage	230 V AC, 50 Hz	
5.7	Protection	a. Fuse of suitable rating for Input AC Mains b. Input Line Filter fro EMI and RFI Suppressions c. Spike Suppressors for input transits d. high voltage protectors e. resistance to dirt and moisture f. splash proof key-board g. housing protected to IP 40	
5.8	Power Consumption	Bidder to specify	
5.9	A/D Converter	Bidder to furnish details	
5.10	Load-Cell Excitation	Bidder to furnish details	
5.11	Repeatability	± 0.01 %of Full Scale	
5.12	Display	A suitable Illuminated Display (with Backlight) for displaying numerals as well as alphabets, at any time.	
5.13	Key Board Port	For connecting a standard IBM PC at 1010-key compatible key0-baord	
5.14	Printer Port	Compatible for connecting dot matrix / laser printer for printing of weighment records and reports	
5.15	Serial Port / Ether- net	RS-232 Serial Port for computer interfacing or driving remote display and provision of Ethernet to Net Connectivity	

S.No.	PARTICULARS	SPECIFICATIONS	VENDOR's OFFER
5.16	Remote Display	Remote Display port to connect to red LED seven segment display to indicate weight on the platform	
5.17	Features	<ul style="list-style-type: none"> Configurable Decimal points Anti-flicker display of weight Configurable Zero tracking Over & Under Range Indication 	
5.18	Reading Capacity of Display unit	Upto 100 Tons [i.e. 20 Tons above the rated capacity of the weigh bridge]	

6.0 LIGHTING SYSTEM

S.No.	DESCRIPTION / PARTICULARS	VENDOR's OFFER [with Technical Details]
6.1	A fluorescent lamp with drip proof protective cover to be provided for maintenance (under the platform)	
6.2	A spot light with sufficiently long cable shall also be provided for 24V AC supply.	

7.0 UN-INTERRUPTED POWER SUPPLY UNIT [U P S]

S.No.	DESCRIPTION / PARTICULARS	VENDOR's OFFER [with Technical Details]
7.1	Reputed make UPS of suitable rating with maintenance free dry batteries shall be provided for operations lasting over three continuous hours.	
7.2	Make. : APC (preferred)	
7.3	Model & Rating	
7.4	Spares Package for the UPS for 2 years working also shall be offered.	
7.5	Catalogue of the UPS shall be submitted with the Technical Offer.	

8.0 IMPORTANT POINTS

S.No.	DESCRIPTION / PARTICULARS	VENDOR's OFFER [with Technical Details]
8.1	230V $\pm 10\%$, 50Hz ± 1.5 Hz, Single Phase AC (3 wire system) Power Supply Source will be provided by BHEL at a single point near the weighing machine, as per layout recommended by Vendor. All types of cables, connections, circuit breakers etc. required for connecting BHEL's power supply point to different parts of the machine/control cabinets, shall be the responsibility of vendor.	
8.2	All electrical equipment shall be Tropicalized and shall have IP 54 degree of protection	
8.3	All electrical control cabinets & panels should be dust and vermin proof	
8.4	Vendor should ensure the proper earthing for the machine and its accessories.	
8.5	GUARANTEE : The equipment has to be guaranteed for its performance, for a minimum period of 24 months from the date of commissioning at BHEL Works.	

9.0 ENVIRONMENTAL PERFORMANCE OF THE MACHINE

S.No.	DESCRIPTION / PARTICULARS	VENDOR's COMPLIANCE
9.1	The machine shall be suitable for an ambient temperature of +55 ° C and relative humidity of 95 % respectively, but both do not occur simultaneously.	
9.2	If any safety / environmental protection enclosure is required it shall be built in the weighing machine by the vendor.	
9.3	Paint of the machine shall be weather resistant and shall not peel off due to weathering.	
9.4	Weather conditions are tropical, Atmosphere may be dust laden during some part of the year.	
9.5	Thermal Stability of the complete machine keeping in view specified Ambient Conditions and accuracy requirements of BHEL and vendor should ensure trouble free operation of the weighing machine.	

10.0 MACHINE SPARES

S.No.	DESCRIPTION / PARTICULARS	VENDOR's OFFER [with Technical Details]
10.1	Itemised break-up of mechanical and electrical 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. One number of Load Cell shall be quoted as a spare unit. (Unit Price of each item of spare shall be offered)	
10.2	Electrical: All types of Relays/Contactors/Push Buttons, Indicating Lamps/Fuses, PCBs shall be quoted.	
10.3	All types of spares for total machine and accessories should be available for at least ten years after supply of the weighing machine.	

11.0 DOCUMENTATION

S.No.	DESCRIPTION / PARTICULARS	VENDOR's OFFER [with Technical Details]
11.1	THREE sets of following documents (Hard Copies) in English language shall be supplied along with machine	
11.2	Operating Manuals of Weighing Machine with that for Indicator System	
11.3	Programming Manuals for the Weighing Machine	
11.4	Detailed Maintenance Manual of machine with all drawings of machine assemblies/sub-assemblies/parts including Electrical / Mechanical diagrams.	
11.5	Complete back-up of hard disk on GHOST CD and clear written Instructions (3 copies) to take back-up and reloading of a new hard disk.	
11.6	Complete Software for AUTO CALIBRATION and SMART CALIBRATION (minor weigh correction by software) shall be provided by the vendor. In addition to Software for pre-start data entry for loading details, date & time, location, etc.	
11.7	One additional set of all the above documentation on CD ROM, wherever possible.	

12.0 MACHINE FOUNDATION

S.No.	DESCRIPTION / PARTICULARS	VENDOR's COMPLIANCE
12.1	Vendor shall submit the preliminary layout drawing for getting BHEL's approval within a fortnight from the date of Letter of Intent (LOI). Vendor shall submit complete foundation details including static and dynamic loads within a month after getting BHEL's approval. The layout should consist of all requirements pertaining to complete weighing machine including control room.	

13.0 INSPECTION & MACHINE ACCEPTANCE

S.No.	DESCRIPTION / PARTICULARS	VENDOR's OFFER [with Technical Details]
13.1	Bidder to give details on MACHINE INSPECTION Tests to be performed by Vendor at Vendor's works, on the machine, before dispatch	
13.1.1	Full load test to demonstrate the maximum capacity of the weighing machine. (if possible)	
13.1.2	Demonstration of all features of the weighing machine, indicator system & accessories	
13.2	Tests / Activities to be carried out at BHEL works while commissioning the machine:	
13.2.1	Accuracy, Repeatability, Safe Over-Load Testing, Communication Connectivity and tests recommended by the Vendor	
13.2.2	Full load test to demonstrate the maximum capacity of the weighing machine (if possible) .	
13.2.3	Demonstration of all features of the weighing machine, indicator system & accessories to the satisfaction of BHEL for effective use of the machine	

14.0 MACHINE ERECTION & COMMISSIONING

S.No.	DESCRIPTION / PARTICULARS	VENDOR's COMPLIANCE
14.1	Vendor to take full responsibility for supervision of the erection and commissioning. Service requirement like power shall be provided by BHEL at only one point to be indicated by Vendor in their foundation/layout drawings. Other requirements like crane and helping personnel shall also be provided by BHEL.	
14.2	Tools, Tackles, Test Mandrels, instruments and other necessary equipment required for erection & commissioning should be brought by the Vendor.	

S.No.	DESCRIPTION / PARTICULARS	VENDOR's COMPLIANCE
14.3	Commissioning spares, required for commissioning of the machine within stipulated time, shall be brought by the Vendor on returnable basis.	
14.4	Portion, if any, of the machine, accessories and other supplied items where paint has rubbed off or peeled during transit or erection should be repainted and merged with the original surrounding paint by the vendor. For this purpose, the Vendor should supply sufficient quantity of touch-up paint of various colours of paint used.	
14.5	Schedule of Erection and Commissioning shall be submitted with the offer.	
14.6	Charges, duration, terms & conditions for Erection & Commissioning should be furnished in detail separately by Vendor along with the Technical Offer.	
14.7	LEVELLING & ANCHORING SYSTEM : Complete anchoring system including foundation bolts, anchoring materials, fixtures, levelling shoes etc shall be supplied along with the Weighing Machine	
14.8	Final calibration (with validity for one year) and stamping of the WEIGH-BRIDGE by statutory authority shall be under the scope of the supplier.	