



Bharat Heavy Electricals Limited, Jhansi

Locomotive Planning Department

Tender Enquiry No: LMM/TW/8/01 dtd 07.06.18, Rev- 0



TENDER DOCUMENT

For

Tender Enquiry No. : LMM/TW/8/01 Dated 07.06.2018

“Piping of WAG – 9H Locomotives”

Contact Details :		
Amitesh Kumar Sr. Engr. (LMP) amitesh@bhel.in PH : 0510-2412687	Kunal Kishore Dy. Mgr. (LMP) kunal@bhel.in PH : 0510-2412513	Sachin Kumar Modi Dy. Mgr. (LMP) skmodi@bhel.in PH : 0510-2412388

Tender Due Date: 03/08/2018 at 13:15 Hrs

Tender Opening Date : 03/08/2018 at 14:00 Hrs

BHEL, PO: BHEL, Jhansi 284120 (UP)

We hereby accepted above (signature & seal of bidder)


Seal & Signature of BHEL contracting authority



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DETAILS OF TENDER DOCUMENT

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Nature of work: Piping of WAG-9H Locomotives

1. BHEL, Jhansi is in the process of finalizing the Works Contract for "Piping of WAG – 9H Locomotives"
2. The tender document has been detailed as follows:
 - a. Notice Inviting Tender (Schedule - A)
 - b. Work Specifications (Schedule - B)
 - c. Qualifying Requirements (Schedule - C)
 - d. Technical Bid Application (Schedule – D)
 - e. Price/ Rate Bid (JS-146)
 - f. General Terms and Condition

The duly filled in Technical and Price/ Rate bids (Schedule 'D' and JS-146 separately) along with the General Terms and Conditions with the signature of the bidder on all the pages and complete in all respects superscribed as "Quotation for Tender No. LMM/TW/8/01 DATED 07.06.18" should be submitted to BHEL in a sealed cover on or before 03/08/2018 (13.15 hours) by the bidder or his authorised agent /representative only. Offer from any other sources shall be considered unsolicited and shall be summarily rejected. The tender has to be dropped in the tender box available at the following address:

**To
Tender Box
CISF Control Room/Office
Administrative Building
Bharat Heavy Electricals Limited
Jhansi-284 120 (U.P.)**

- Note: (i) Dropping of tender in the Tender Box within schedule time and date is the responsibility of the bidder.
(ii) Technical bid and price bid should be submitted in separate sealed envelopes, in case the bids founds in one single envelope then the "bids" are liable to be rejected.
(iii) Incomplete offers are liable for rejection.

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Tender Documents

TENDER ENQUIRY NO: LMM/TW/8/01

DATE: 07.06.2018

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Sl. No.	Description	Document No.	Page No.
1.	Notice Inviting Tender	A	4
2.	Work Specifications/ Scope of Work	B	5-10
3.	Qualifying Requirements	C	11-12
4.	Technical Bid Application	D	13-14
5.	Price/ Rate Bid	JS-146	15
6.	General Terms & Conditions	JHS 2055B R00	16-29

Note : All the Forms and Annexures referred in General Terms and Conditions can be downloaded from the portal of 'Central Contract Cell' available under 'Supplier Information Portal' of BHEL, Jhansi at <https://www.bheljhs.co.in/apps/sip/index.php>.

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Schedule - A

NOTICE FOR INVITING TENDER

S. No	Particulars	Details
1	Brief Description of work	Piping of WAG – 9H Locomotives
2	Tender Evaluation Criteria	As per General Terms and Condition And Schedule B
3	Duration of Contract	15 months from the date of award.
4	Last date of receipt of the Tender	Upto 13:15 hrs on 03.08.18
5	Date of opening of Techno – Commercial Bid	14:00 hrs on 03.08.18
6	Address for submitting the Tender	(as on Page# 2)
7	Earnest Money Deposit (EMD)	Rs 1.44 lakhs (acceptable through Electronic Fund Transfer credited in BHEL account (before tender opening) <u>BHEL account details:</u> Bank Name:- SBI ; A/c No. :- 10670828866 ; IFS Code:- SBIN0003807 ; A/c Holder Name:- BHARAT HEAVY ELECTRICALS LIMITED
8	Cost of Tender	Rs 1000/- Plus GST (@18%) = Total Rs 1180/- <i>(Payable through Electronic Fund Transfer credited in BHEL account (A/C details mentioned above at S.No. 7) or through POS machine installed in Cash office of BHEL Jhansi.</i>
9	Validity of Offer	90 Days
10	Security Deposit	The total amount of Security Deposit will be 5% of the contract value. EMD of the successful tenderer shall be converted and adjusted towards the required amount of Security Deposit. Refer Schedule-C for more details.

The contractors may physically visit the work place before quoting their rates. For relevant details and updates please visit website "www.bhel.com" & www.bheljhs.co.in

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Schedule - B

WORK SPECIFICATION

1. SCOPE OF WORK:

- a. The work includes complete pipe layout of WAG-9H type 3-phase locomotives. This work includes the complete piping work of shell and bogie of WAG-9H loco including underframe, machine room, Panto, Converter, Filter cubicle, driver's cab and bogie piping work. Normal working pressure is 10 Kg/cm² and operating air pressure may be as high as 11.5 Kg/cm².
- b. The work has to be carried out in work premises of BHEL Jhansi.
- c. Loco Brake Equipment Interface (Header Bar), Air Dryer, Wiper, Horns, Valves, all Pipes, Pipe fittings, Filters, Cocks, Hoses, Clamps, etc. will be provided to the contractor by BHEL. The fitment of these equipments and pneumatic connection is in the scope of the contractor
- d. Party has to get cleared the pipe layout from BHEL, Jhansi Quality Control & from RDSO.

2. GENERAL CONDITION:

a. BHEL will provide the following infrastructure & material for the work: -

- i. Suitable place/ shed.
- ii. Required electric power connection.
- iii. Lifting facility like OHE crane for lifting and placement of shell on stools.
- iv. All Brake equipment, Air dryer, horn, Wiper, isolating cocks, brake valves, pressure switches, pipe and pneumatic fittings, brackets, hoses, clamps, saddle light stuff, plugs etc. required for pipe layout work.
- v. Gate pass for men/ material movement inside BHEL premises related to work.
- vi. Welding machine and gas cylinder.
- vii. Reservoir and compressor for testing of piping work or operation of tools if any
- viii. Cabling from main distributing to work for work process (not more than 200 meters).

b. The tenderer/ contractor will arrange the following: -

- i. Swaging Machine
- ii. Pipe Cutting Machine
- iii. Pipe Bending Machine.
- iv. Brazing Machine including consumables like Brazing electrodes.
- v. Testing racks(Pneumatic) for Leakage Test.
- vi. Storage and security of BHEL material & tools and plants.
- vii. Security of material

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3. CLIMATIC AND ENVIRONMENTAL CONDITION OF LOCOMOTIVES:

(a)	Max. Atmospheric Temperature	Under Sun 70 deg. Cel. In Shade 50 deg. Cel.
(b)	Humidity	100% saturation during rainy season.
(c)	Rainfall	Very heavy in certain areas
(d)	Atmosphere during hot weather	Extremely dusty
(e)	Coastal Area	Locomotive and equipment is designed to work in coastal areas in humid and salt laden atmosphere.
(f)	Vibration	Vibration as specified in the corresponding IEC publication unless otherwise specified.

4. GENERAL AND TECHNICAL DATA:

- Complete piping (shell and bogie) has to be done as per brake schematic Drg. No. SCH B 1684 and pipe layout drawings as mentioned in Annexure- 'B (ii)'. If bidder needs any drawings, it can be provided on receipt of intimation on amitesh@bhel.in, kunal@bhel.in & skmodi@bhel.in.
- All items required for completion of pipe layout shall be provided as per Annexure – 'B (i)'.

5. INSPECTION AND ACCEPTANCE:

The entire pipe layout must be tested individually as per Annexure – 'B (iii)' by the contractor. However, Underframe pipe layout, Machine room pipe layout (including Panto, Converter piping etc.), Cab pipe layout and Bogie pipe layout should be treated as separate units. Testing of these units should be done in assembled condition. All the pipe and pipe joints should be leak proof.

6. TESTING:

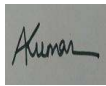
- Each unit should be offered for inspection at the work premises after completing the underframe pipe layout, machine room pipe layout, cab pipe layout and bogie pipe layout. These are to be witnessed by representatives of BHEL.

The pipe layout offered for inspection shall have the capability to withstand the following test: -

- Visual/ Dimensional Checking:** Pipe layout shall be as per brake schematic drawing and pipe layout drawings indicated in Annexure – 'B (ii)'. Overall finish, workmanship shall be of the highest quality.
- Pneumatic Pressure Test:** The assembly consisting of underframe pipe layout, machine room pipe layout, cab pipe layout and bogie pipe layout (including pipe and joints) are to be tested at a pressure of 11.5 Kg/cm² (Pneumatic Pressure) and to be held at that pressure for 15 minutes. No leakage is permitted.
- The **stage inspection** will be generally as per Annexure- 'B (iii)'. The work shall be as per CLW drawings mentioned in Annexure- 'B (ii)'.

- Party has to get cleared the pipe layout from BHEL, Jhansi Quality Control & from RDSO.

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- c. After completion of pipe layout, final testing of complete brake system shall be carried out by BHEL QC & witnessed by RDSO. Contractor to associate during final testing & inspection by RDSO. In case any defect is found in the pipe layout or leakage is found through pipe joints during inspection and testing, the same shall be rectified by the contractor free of cost.

7. MARKING AND PAINTING OF FINISHED PIPING WORK:

- a. For complete piping work, the name of the contractor and month/year of manufacture shall be marked in the manner jointly decided between BHEL and the firm.

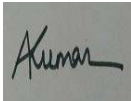
8. GUARANTEE/DEFECT LIABILITY:

- a. The contractor is required to guarantee for the satisfactorily performance of pipe layout and workmanship for a period of two (2) years after commissioning of loco at site-

9. **Measurement of Work** : Work will be measured in terms of ' **No. Loco**'. And respective bill will be cleared after clearance by RDSO/ BHEL - QC.

10. **LD/Penalty**: Supplier has to complete the piping work within 20 days from the date of offer of loco. Any delay will lead to penalty on supplier as per clause X.4 and X.5 of general terms and condition.

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ANNEXURE- 'B (i)'

(List of relevant specification applicable for E-70 Brake System provided by BHEL for piping work)

SL NO.	DESCRIPTION	SPEC/DRG NO.
1	E-70 Brake Control Equipments	CLW/MS/3/001, Alt-16
2	Twin-tower heatless regenerative type Air Dryer	MP-0.01.00.06 Alt-5
3	Wiper Assembly with water spraying system	CLW/MS/3/050 Alt-6
4	Stainless Steel Tube	CLW/MS/3/029, Alt-9
5	Copper Tube	CLW/MS/3/030, Alt-12
6	Nylon Tube	CLW/MS/3/079, Alt-5
7	Stainless Steel Pipe Fittings	CLW/MS/3/053, Alt-20
8	Brass Pipe Fitting	CLW/TS/99/CF/5, Alt-8
9	Copper Pipe Fitting	CLW/MS/3/067, Alt-4
10	Steel Pipe Fittings	CLW/MS/3/068, Alt-14
11	Clamps	CLW/MS/3/059, Alt-6
12	Plugs	CLW/MS/3/064, Alt-5
13	Flexible Hose Assembly	CLW/MS/3/033 Alt-5
14	P. P. Components	CLW/MS/3/065, Alt-10

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ANNEXURE- 'B (ii)'

(List of relevant Pipe Layout drawings with E-70 Brake System)

SL NO.	DESCRIPTION	DRG NO.
1	Shell Piping	
1.1	Underframe piping	
1.1.1	Underframe Pipe Layout for WAG-9H Loco (E-70 Brake System)	1209-07.129-081, Alt-1 (3 Sheets)
1.2	Machine Room Piping	
1.2.1	Pipe arrangement machine room for WAG-9H Loco (E-70 Brake System)	1209-07.032-121, Alt-1 (6 sheets)
1.2.2	Pneumatic connection for Pantograph cylinder and throttle valve.	1209-07.250-002, Alt-6 (1 Sheet)
1.2.3	Pneumatic piping convertor roof hatch	1209-07.150-006, Alt-0 (1 Sheet)
1.3	Cab Piping	
1.3.1	Pipe arrangement cab for WAG-9H Loco (E-70 Brake System)	1209-08.032-123, Alt-1 (4 Sheets)
2	Bogie Piping	
2.1	Pipe arrangement Co-Co Bogie for WAG-9H Loco	1209-12.017-028, Alt-0 (2 Sheets)

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Annexure-B (III)

(Testing scheme of component pipe lines of WAG-9H Loco with E-70 Brake System)

1. Line BC-1 to both cab.
2. Line BC-2 to both cab.
3. Line M to both cab.
4. Line W to both cab.
5. Line H to both cab.
6. Line O to Direct Brake Controller of Cab-1.
7. Line Y to Direct Brake Controller of Cab-2.
8. Line FP to gauge both cab.
9. Line C from Header Bar to back of Cab-1 upto underframe.
10. Line D from Header Bar to back of Cab-2 upto underframe.
11. Line E from Header Bar to back of Cab-1 upto underframe.
12. Line F from Header Bar to back of Cab-2 upto underframe.
13. Line T from Header Bar to Cab-1 upto unloader and Auto Drain Valve.
14. Line X from header Bar to underframe both end cock 1" MR equalizing pipe.
15. Line Y from header Bar to direct brake controller cab-2 end.
16. Line V from Header Bar to double check valve Both bogie.
17. Line L from Header Bar to Direct Brake Pipe in both cab.
18. Line O from Header Bar to underframe both end 1-1/4" (FP)
19. Line B from Header Bar to U/f both cab end angle cock.
20. Line W from Header Bar to U/f connecting MR.
21. Line W from Header Bar to both cab and pressure switch 35, 36, 37.
22. Line BC-1 Machine room to U/f Cab-1 & 2.
23. Line BC-2 Machine room to U/f Cab-1 & 2.
24. Line M from Header Bar to Flow meter gauge in both cab.
25. Line U from Header Bar to reservoir isolating cock 94.
26. Line J from Header Bar to Auxiliary reservoir 51.
27. Line K from Header bar to BP line.
28. Line H from Header bar to direct brake controller in both cabs.
29. Line A from Header bar to Auto Brake Line double check valve.
30. Line N from Header Bar to Parking Brake Line.
31. Line AA from Header bar to underframe both end 1.25" Angle Cock.
32. Assistant driver emergency line BP in both cab.
33. 3/8" BP gauge line in both cab.
34. Line S from Header bar to Panto-1.
35. Line R from Header Bar to Panto-2.
36. Line Q upto VCB.
37. Line BB from Header Bar to SR-2.
38. Line CC from Header Bar Filter cubicle.
39. Line DD from Header bar to SR-1.
40. All Bogie pipe lines.
41. Any other pipe line apart from above mentioned lines is also to be tested.

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Schedule - C

PRE-QUALIFYING REQUIREMENTS (PQR)

For eligibility of tender, the bidder should submit the following documents :

1. The documents required for legal entities under whose name & style contractor has participated in the tender are as follows:
 - (i) **Partnership Firm:** Partnership Deed registered at the office of Registrar of Firms.
 - (ii) **Company:** Certified copy of Memorandum of Association, Article of Association and Incorporation Certificate.
 - (iii) **Society:** Registration certificate issued by Registrar of Society.
 - (iv) **Sole Proprietorship Firm:** Undertaking on oath (Rs. 100 Stamp Paper) that Proprietor is solely responsible for all rights and liabilities while working under the name and style of Proprietorship firm namely (_____)
2. Copy of ESI registration certificate issued by ESI authority.
3. Copy of PAN of bidder.
4. Copy of GST certificate.
5. Self-Declaration on Stamp Paper of Rs. 100/- in line with Clause –'II (Q)' of General Terms and Conditions.
6. Blank Price Bid as per JS-146.
7. Copy of payment receipt of EMD and Tender cost.
8. **Financial Strength and Experience:**
 - 8.1 **Average Annual** Financial Turnover during the last 3 years, ending 31st March of 2018, should be at least **Rs 21.60 lakhs**. If all balance sheets/ Financial Statements are not available for all three years then the average shall be calculated by dividing the sum of turnover of submitted balance Sheet/ Certificate from CA/ Financial statement by three.
- 1.1 **Experience** of having successfully completed piping work (SS Tube & Copper Tube) of **5 nos of complete** WAG-9/WAG –9H Locomotives **or** complete piping in **5 nos Shell** of WAG-9/WAG-9H in Railway Shed/ CLW/ DLW/ CLW approved WAG – 9H/WAG-9 Shell Manufacturing Organization during last 7 years ending 31st May'18.

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8.2(a) **In case of experience in Government Organization/ PSU/ Semi- Government, following documents must be attached :**

- (i) Copy of Work order/ Purchase Order. (ii) Copy of Work Completion Certificate.

8.2.(b) **In case of experience in Private Sector, following documents must be attached :**

- (i) Copy of Work order/ Purchase Order. (ii) Copy of Work Completion Certificate.
(iii) TDS Certificate.

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Schedule - D

PROFORMA FOR SUBMITTING TECHNICAL BID FOR : "PIPING OF WAG-9H LOCOMOTIVES"

(A) Essential Documents Required

1. Name of the firm : _____
(Documents as per Clause-1 of Schedule-C to be attached)
2. Name of the Proprietor/ Partners : _____
3. Address and Contact Numbers : _____
4. Registration Number : _____
Copy of the Certificate : Enclosed / Not Enclosed
5. PAN Number : _____
Copy of PAN : Enclosed / Not Enclosed
6. GST Number : _____
(Attach Copy of the GST certificate)
7. Audited financial statement/ Balance Sheet/ CA Certificate as per tender : Enclosed / Not Enclosed
8. Experience Certificate : Enclosed / Not Enclosed
(Along with necessary enclosures as per tender to be submitted)
9. No. of Workers including Supervisors on the rolls of the firm : _____
10. Earnest Money Deposit : Rs. _____
 - a) EFT transaction no. : _____ Date _____
 - b) Bank Name & Branch : _____
11. Any other relevant information : _____
12. Tender Cost : Rs. _____

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- a) EFT transaction no. : _____ Date _____
b) Bank Name & Branch : _____
13. Validity of offer : _____
(at least 90 days from the date of tender Opening)
14. Blank Price bid format : Enclosed/ Not Enclosed
15. PF registration certificate (if exempted submit exemption proof)
PF registration code : _____
(Attach Copy of the PF registration)
16. ESI registration certificate: (if exempted submit exemption proof)
ESI registration : _____
(Attach Copy of ESI registration)
- (B) Desirable:**
17. Income Tax return last 3 yrs. : Enclosed / Not Enclosed
18. Acceptance of RA : Accepted/Not accepted
19. Labour License Number : _____
Copy of the License : Enclosed / Not Enclosed

We will fulfil all the obligations of the contractor and abide by the Terms & Conditions mentioned in the enquiry.

Signature with Name & Office Seal
Date:

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NOTE (1) : TECHNICAL BID AND PRICE BID SHOULD BE SUBMITTED IN SEPARATE SEALED ENVELOPS. IN CASE THE BIDS ARE FOUND IN ONE SINGAL ENVELOPE THEN THE "BIDS" ARE LIABLE TO BE REJECTED.

JS- 146

Price Bid Sheet For Works Contract					
Sl. No.	Description of Work	Unit of Measurement	Quantum of Work	Rate per Unit (in Rs.)	Amount (in Rs.)
(A)	(B)	(C)	(D)	(E)	(F=D*E)
1	Complete piping work of WAG – 9H Locomotive (Shell & Bogies) as described in Scope / Specification of work (Schedule – B of Tender Document)	No of Locos	20		
	TOTAL				
	Total price in words:				-

- i) **GST will be paid extra as applicable. Current rate of GST is 18%.**
- ii) **In case of credit is not available as denied by GST portal due to improper documentation or wrong uploading of data by bidder ,the same shall be recovered from bidder along with interest ,if any.**

(Signature and Seal of Contractor)

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We hereby accepted above (signature & seal of bidder)

Seal & Signature of BHEL contracting authority