



**Bharat Heavy Electricals Limited**  
**Heavy Equipment Repair Plant**  
Works Contract Management (WCM) Department  
TARNA, SHIVPUR, VARANASI-221003

**Tender Document**

**Name of Work:** - CLH ASSEMBLY (CLH-1182 to CLH-1195 & Multi-Cells incl. 7&9 Series CLH) WITHIN HERP PREMISES FOR A PERIOD OF 01 YEAR

**TENDER NO.:** BHEL/HERP/WCM/FY24/EM/CLH ASSY

**DATE.** 21/11/2024

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**Bharat Heavy Electricals Limited**  
**Heavy Equipment Repair Plant**  
Works Contract Management (WCM) Department  
TARNA, SHIVPUR, VARANASI-221003

**Notice Inviting Tender (NIT)**

**TENDER NO - BHEL/HERP/WCM/FY24/EM/CLH ASSY**

**DATE. 21/11/2024**

Tender is invited for '**CLH ASSEMBLY (CLH-1182 to CLH-1195 & Multi-Cells incl. 7&9 Series CLH) WITHIN HERP PREMISES FOR A PERIOD OF 01 YEAR**, as per details mentioned under:

<b>Last Date of submission of Tender</b>	<b>02/12/2024</b>	<b>Time :</b>	<b>14:00</b>
<b>Date and Time for opening of Technical Bid</b>	<b>02/12/2024</b>	<b>Time :</b>	<b>16:00</b>

Sl. No.	Name of work	Earnest Money Deposit (EMD)	Security Deposit (SD)	Period of contract	Cost of Tender Document	Reverse Auction
1.	CLH ASSEMBLY (CLH-1182 to CLH-1195 & Multi-Cells incl. 7&9 Series CLH) WITHIN HERP PREMISES FOR A PERIOD OF 01 YEAR	NIL	10% of the contract value	01 Year	NIL	Applicable

- All NIT/ Tender document/ Corrigenda / Addenda / Amendments / Time extensions etc. to the tender will be hosted on NIC portal (<https://eprocurebhel.co.in/>), Bidders should regularly visit above websites to keep themselves updated.
- **Bidder to note that this is an e-tender and bidders have to submit this through NIC portal (<https://eprocurebhel.co.in/>) site only. No hard copies of tender shall be accepted.**
- For wide publication NIT may also be hosted on <http://www.bhel.com> & <https://herp.bhel.com>
- Bidder is requested to contact undersigned for any query or clarification.

(Issued by)  
Atendr Kumar Pal  
Dy. Manager (WCM)  
Email: [atendrpal@bhel.in](mailto:atendrpal@bhel.in)  
Phone No. 0542-2720928

1. BHEL reserves the right to accept or reject any/ all application(s) without assigning any reason thereof.
2. If any document submitted by the bidder is found false at any stage, the bid/ work order will be cancelled immediately and the financial loss to BHEL if any in making alternative arrangement will be recovered from the contractor.



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**DIRECTIONS TO PARTIES FOR TENDERING**

1. Bidder to note that work will be awarded at lowest quoted Rates. All other details regarding the same will be as per BHEL Work Policy- 2016, General Condition of Contract (GCC) and SCC.
2. Party may visit the site for assessment of actual quantum or nature of work if they wish before quoting their rates.
3. **RA (Reverse Auction) will be conducted for this enquiry**
4. This is two part bid system and the bidder should submit separate Technical Bid & Price Bid as per details mentioned under:

**Details of Tender Document**

The Tender document has been detailed as follows:

**Part-I (TECHNO-COMMERCIAL BID)**

1. Notice Inviting Tender (NIT)
2. Details of Bid & Bidder
3. Scope of Work
4. Special Terms & Conditions
5. BOQ & Price Schedule
6. Pre-Qualification Requirement
7. No deviation certificate
8. General Condition of Contract (GCC)
9. Bidder's Declaration
10. CLH Assembly Procedure
11. CLH Drawings

**Part-II (PRICE BID)**

1. Price to be quoted on NIC Portal only.
5. Tenders shall be opened by authorized officers of BHEL at their office at the time and date as specified in the tender notice in the presence of bidders or their authorized representative who may be present.
6. A representative of bidder (only 01 per bidder) shall be permitted to be present at the time of opening of bid. However, ***the bidder should give prior intimation of the same & seek permission after giving details of its representative by contacting designated person as per details mentioned in NIT at least 02 days in advance.***
7. The successful Tenderer shall submit security deposit and must sign contract agreement within 15 days from the date of Letter of Award (LOA) given by Bharat Heavy Electricals Limited and further start the work under reference.
8. All expenses towards procurement of Stamp paper and preparation of contract agreement shall be in the scope of contractor.



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**Details of Bid & Bidder (To be filled by bidder)**

Sl. No.	Description	To be filled by bidder														
1	Bidder Offer No. & Date															
2	Legal Name of the bidder (as mentioned in GST registration)															
3	Address for Communication	<table border="1"><tr><td colspan="2">City -</td></tr><tr><td>State</td><td></td></tr><tr><td>PIN code:</td><td></td></tr><tr><td>Phone / Fax No.</td><td></td></tr><tr><td>Name of Contact Person</td><td></td></tr><tr><td>Mobile No.</td><td></td></tr><tr><td>Email ID</td><td></td></tr></table>	City -		State		PIN code:		Phone / Fax No.		Name of Contact Person		Mobile No.		Email ID	
City -																
State																
PIN code:																
Phone / Fax No.																
Name of Contact Person																
Mobile No.																
Email ID																
4	Type of firm	Individual / Proprietorship / Partnership / HUF / Association of Persons / Private Limited company / Public Limited company														
5	GST registration No.															
6	PAN No.															
7	UDYAM Registration No. (If available)															
8	Remark (If any)															

Certificates to be attached:

Copy of PAN, GST Registration Certificate., UDYAM Certificate (for MSEs).





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## Scope of Work

**Validity of Contract:** One Year from the date of Contract Agreement

**LOCATION OF WORK PLACE:** The Assembly of Constant Load Hangers (CLH) is to be carried out inside BHEL – HERP, Varanasi premises, Uttar Pradesh.

**Detailed Scope of Work:**

The scope of work requires completion of following sub-assemblies of constant load hangers (CLH)

- 1) **Load Tube Assembly:** Assemble load tube with bearing axles, bearings (bearing housing in case of CLH-1195), Distance Tubes, Washers, CIRCLIPS as per drawing.
- 2) **Disk Assembly:** Disk assemble with Dowel Bolt
- 3) **Cam Assembly:** Cam with cam tube (pinning is required with pin dowel sleeve where load is higher).

Now Main Assembly of single cell CLH will be done as per procedure **RV-PROC-004**

In Case of Multi-Cell CLH, Vendor has to first assemble the single cells as per the procedure **RV-PROC-004** and then follow the Multi-Cell Assembly Procedure **RV-PROC-005**. The same should be followed for 7 & 9 series Multi-Cell CLH.

The Rectification required after assembly has to be carried out by vendor. Vendor may follow procedure **RV-PROC-003** for reference purpose.

The Assembly Procedures **RV-PROC-004 & 005** and Rectification Procedure **RV-PROC-003** will be provided to vendor along with enquiry.

The Detailed Quantum of Work for the CLH assembly along with the quantity of different type of CLH Assembly will be as following

S. No.	Ref. No.	Unit Wt. (kg)	Estimated Assembly Time (in Min) per Unit	Qty. (Nos)	Estimated Rate per Unit (Rs./Unit)	Total Estimate (Rs.)
1	CLH-1182	268.312	84	77	363	27951
2	CLH-1192	346.237	84	59	363	21417
3	CLH-1183	371.435	84	69	363	25047
4	CLH-1193	486.936	84	107	363	38841
5	CLH-1184	518.644	105	114	454	51756
6	CLH-1194	686.243	105	84	454	38136
7	CLH-1185	744.283	140	48	605	29040
8	CLH-1195	865.109	140	210	605	127050
9	CLH-1196	823.222	140	55	1016	55880



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	1282					
<b>10</b>	CLH-1283	832.544	235.2	79	1016	80264
<b>11</b>	CLH-1284	1127.004	294	119	1271	151249
<b>12</b>	CLH-1285	1578.401	392	52	1694	88088
<b>13</b>	CLH-1292	803.678	235.2	32	1016	32512
<b>14</b>	CLH-1293	1089.61	235.2	1	1016	1016
<b>15</b>	CLH-1294	1488.52	294	4	1271	5084
<b>16</b>	CLH-1295	1847.052	392	23	1694	38962
<b>17</b>	CLH-1382	970.527	336	1	1452	1452
<b>18</b>	CLH-1383	1286.138	336	4	1452	5808
<b>19</b>	CLH-1384	1726.427	420	1	1816	1816
<b>20</b>	CLH-1385	2403.436	560	18	2420	43560
<b>21</b>	CLH-1392	1239.663	336	1	1452	1452
<b>22</b>	CLH-1393	1668.992	336	1	1452	1452
<b>23</b>	CLH-1394	2267.291	420	1	1816	1816
<b>24</b>	CLH-1395	2805.708	560	16	2420	38720
<b>25</b>	CLH-1482	1314.815	436.8	1	1888	1888
<b>26</b>	CLH-1483	1743.98	436.8	1	1888	1888
<b>27</b>	CLH-1484	2332.083	546	1	2361	2361
<b>28</b>	CLH-1485	3235.449	728	1	3146	3146
<b>29</b>	CLH-1492	1697.054	436.8	1	1888	1888
<b>30</b>	CLH-1493	2270.431	436.8	1	1888	1888
<b>31</b>	CLH-1494	2985.945	546	28	2361	66108
<b>32</b>	CLH-1495	3787.695	728	88	3146	276848
<b>33</b>	CLH-7182	337.892	105	1	454	454
<b>34</b>	CLH-7183	468.591	105	27	454	12258



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<b>35</b>	CLH-7184	656.868	131.25	4	568	2272
<b>36</b>	CLH-7185	910.095	175	1	756	756
<b>37</b>	CLH-7192	429.274	105	1	454	454
<b>38</b>	CLH-7193	595.693	105	1	454	454
<b>39</b>	CLH-7194	832.026	131.25	4	568	2272
<b>40</b>	CLH-7195	1043.978	175	8	756	6048
<b>41</b>	CLH-7282	721.176	235.2	2	1016	2032
<b>42</b>	CLH-7283	983.436	235.2	1	1016	1016
<b>43</b>	CLH-7284	1363.542	294	12	1271	15252
<b>44</b>	CLH-7285	1868.451	392	10	1694	16940
<b>45</b>	CLH-7292	919.981	235.2	1	1016	1016
<b>46</b>	CLH-7293	599.885	235.2	1	1016	1016
<b>47</b>	CLH-7294	1729.519	294	9	1271	11439
<b>48</b>	CLH-7295	2153.152	392	8	1694	13552
<b>49</b>	CLH-7382	1094.299	336	1	1452	1452
<b>50</b>	CLH-7383	1489.938	336	1	1452	1452
<b>51</b>	CLH-7384	2053.691	420	2	1816	3632
<b>52</b>	CLH-7385	2818.263	560	1	2420	2420
<b>53</b>	CLH-7392	1388.546	336	1	1452	1452
<b>54</b>	CLH-7393	1896.097	336	1	1452	1452
<b>55</b>	CLH-7394	2605.474	420	1	1816	1816
<b>56</b>	CLH-7395	3241.787	560	1	2420	2420
<b>57</b>	CLH-7482	1468.298	436.8	1	1888	1888
<b>58</b>	CLH-7483	2004.215	436.8	1	1888	1888
<b>59</b>	CLH-7484	2756.772	546	1	2361	2361
<b>60</b>	CLH-7485	3770.429	728	1	3146	3146



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<b>61</b>	CLH-7492	1875.855	436.8	1	1888	1888
<b>62</b>	CLH-7493	2552.32	436.8	1	1888	1888
<b>63</b>	CLH-7494	3415.938	546	1	2361	2361
<b>64</b>	CLH-7495	4350.157	728	1	3146	3146
<b>65</b>	CLH-9182	844.582	210	1	908	908
<b>66</b>	CLH-9183	1060.222	210	1	908	908
<b>67</b>	CLH-9184	1368.02	262.5	1	1135	1135
<b>68</b>	CLH-9192	1009.184	210	1	908	908
<b>69</b>	CLH-9193	1307.268	210	1	908	908
<b>70</b>	CLH-9195	2076.902	350	5	1513	7565
<b>TOTAL</b>				<b>1416</b>		<b>1398609</b>

Total no. of CLH Assembly (in Nos.)	<b>1416</b>
Total Estimated Cost of CLH Assembly Contract	<b>₹ 13,98,609</b>
Total Estimated Cost of Contract incl. 18% GST	<b>₹ 16,50,359</b>

**NOTE:**

The quantity indicated above for each variant is tentative and vary as per BHEL requirement. However, the total CLH quantity may vary up to + or – 20 % in totality after completion of Detailed Engineering. The total quantity indicated above is an estimate based on current order balance & next one-year projection of the scheduled GMS release from BHEL HPBP Trichy.



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**Special Terms & Conditions**

**1. Contractor Scope:**

- A. Vendor's scope includes Collection & Transportation of various assembly items like Case Assembly, Springs, Load Tube Assembly, Load Adjustment Assembly etc. to the Work Location and un-pack the same. After Assembly work completion the vendor scope also includes the handing over of excess / balance materials at HERP stores. Vendor has to dispose the packing materials at the location specified by BHEL. The Manpower for above work will be in the scope of vendor.
- B. The work is to be executed as per the latest approved Drawings for each PGMA, QAP, WPS, Specifications etc.
- C. The Assembled LHs shall strictly conform to the dimensions and tolerances indicated in the drawings. It must be ensured that correct dimensions and deviations, if any, are recorded properly and is made available to BHEL officials or their authorized agencies.
- D. All indirect materials, consumables like Grinding wheels, Conical Grinding Wheel, Safety gloves, Shoes, ear plugs etc. are in the scope of the Vendor.
- E. Qualified Engineers & Supervisors shall be deployed for proper co-ordination of the job. The welders should have qualified for welding of carbon steel and alloy steel/ BQ plate.
- F. Any modification work due to revision of the drawings during fabrication is to be carried out by the vendor without any additional cost.
- G. Contractors shall abide by all the rules and statutory/legal regulations in force from time to time as per the Factories Act. It is their responsibility to ensure the safety of their workmen and fulfilling the ESI, PF and other relevant statutory regulations.
- H. Though not mentioned specifically, any activity which is required for completion of the work is deemed to be included in the scope of work of bidders

**2. BHEL's SCOPE:**

**BHEL shall provide the following as free issue:**

- a) Supply of Drawings, GMS, Shipping List, QAP, WPS etc.
- b) All input material like Case Assembly, Springs, Load Tube Assembly, load adjustment assembly etc. will be provided by BHEL
- c) Pneumatic Impact Wrench's, Adopters, Hydraulic Jacks, Hexagonal Wrench's Hammers, CIRCLIP Plyers, Wire Rope Ceiling, jute Ropes etc.
- d) Electricity and Water will be provided free of cost at one point and further distribution to the work location is to be carried out by vendor.
- e) Material handling facility shall be provided by BHEL free of cost. (Man-Power for the same to be arranged by Vendor only)



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**3. CONTRACTOR'S RESPONSIBILITY:**

- a. To complete the assigned task apart from normal working hours, contractor will have to work in 'B' Shifts, Night Shifts (Night Shift Rules will be applicable) and on Holidays for which requisite permission will have to be taken by contractor.
- b. The work shall be supervised by the contractor or by his representative on day-to-day basis.
- c. Grinding Machine and other accessories will be arranged by the Contractor. Electrical connection for Welding & Grinding Work shall be provided by BHEL at free of cost.
- d. Contractor must obtain labor license from DLC, Varanasi within one month of award of contract, if more than 20 (twenty) workmen are engaged for Welding & Grinding work.
- e. The Contractor shall also furnish daily and Monthly report showing the number of employees engaged in various categories of work and a progress report of work as required by BHEL Engineers.
- f. After completion of assembly, the information related to CLH is to be filled in the prescribed format and the same shall be confirmed by BHEL official.
- g. Deployment of all skilled and un skilled manpower required for CLH assembly, testing and supervision of welding work.
- h. The work shall be executed under the usual conditions existing in work sites and in conjunction with numerous others operations at site. The bidder and his personnel shall co-operate with other personnel contractor coordinating his work with other and proceed in a manner that shall not delay or hinder the progress of work as a whole.
- i. The contractor shall not cause or permit any nuisance on work sites or anything, which may cause un-necessary disturbance or inconvenience to other workers.
- j. The contractor should ensure it before start of work that all engineers, supervisors and workmen engaged in the said work are fully insured by the contractor at their own risk & cost. Insurance copies are to be submitted before the start of work.
- k. If the contractor or his workmen or employees shall break, deface, injure or destroy any part of a building, road curb, fence, enclosure, water pipes, cable drains electric or telephone post or wire, trees or any other property or to any other part of erected component etc. the contractor shall make the same good at his own expense or in case of default, penal action as may be deemed fit may be taken by BHEL.
- l. The contractor shall have total responsibility for safety, quality & all the equipment's in his custody and quantity of material after it handed over and issued to you by BHEL.
- ~~m. The contractor shall be responsible for taking all safety precautions during the work. Workman engaged in painting should wear safety shoes, safety~~



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goggles/glasses and safety helmets at work places anywhere in HERP premises. Contractor should provide all the safely equipment/arrangement to their workman at his cost.

- n. Sometimes it may become necessary for the contractor to handle certain un-required components in order to take out the required materials. The contractor has to take this contingency also into account. No extra payment is payable for such contingency.
- o. The contractor has to arrange for dwelling of persons employed by him under this contract at his own cost.
- p. The contractor must ensure latest revision of drawing and testing parameters related input from HERP before start of the work. Before doing any work, contract must clear the scope from executing department.
- q. Contractor will have to give name of the team to be deployed for work during the contract with their qualification.
- r. The workers deployed by the supplier / contractor for this work should be full time employees governed by Supplier's / Contractor's service conditions.
- s. The Vendor has to get declared the completeness of CLH Assembly by BHEL officials.

**4. DELIVERY SCHEUDLE: -**

Job order given for Assembly of CLH will contain list of CLH of different variant type (Both Single Cells & Multi-Cells) along with respective quantities.

For each Job-Order provided by BHEL to the vendor, the delivery schedule will be calculated by an Online System and the same shall be mentioned in every job order. The same shall be treated as completion period for that Job-Order.

The time (in Min.) for each Variant will be as per table mentioned earlier in this document and the same shall be used for Due Date Calculation by Online System.

If Vendor fails to meet the Delivery Schedule Due Date as mentioned against the Job-Order, **LD will be applicable as per GCC.**

**Work-Out Example to Calculate the Due Date**

Here, following work-out example is given as following to show the calculation behind the Due-Date & LD Calculation taking a sample Job-Order

Sample Job Order Item Details are as following

Job Order No.: XXXXXXXX      DATE: XX/YY/ZZZZ		
S. No.	Ref. No. (CLH Variant)	Qty. (in Nos.)
1	CLH-1184	20
2	CLH-1195	15

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3	CLH-1283	15
4	CLH-1394	10
5	CLH-1495	15
6	CLH-7493	5
7	CLH-9192	5

The Calculation of Job Order Due Date will be as Following for the above Sample Job Order

S. No.	CLH-TYPE	Qty.	Per Unit Time of Assembly	Total Time In Min (T1)= (NxT)
		(in Nos.) (N)		
1	CLH-1184	20	105	2100
2	CLH-1195	15	140	2100
3	CLH-1283	15	235.2	3528
4	CLH-1394	8	420	3360
5	CLH-1495	10	728	7280
6	CLH-7493	10	436.8	4368
7	CLH-9192	5	210	1050
<b>Total Time in Min. for Assembly</b>				<b>23786</b>

S. No.	Description of Steps	Calculated Values by Online System	Remark
1	<b>Total Min for Job order (M)</b>	23786	
2	<b>Total Hours</b> $H = M/60$	396.4333333	1 Hour = 60 Min
3	<b>Per Day Working Hour</b>	7	As per Contract there will be one Group of fitter & Worker(s) working for assemblies of CLH. Working hours for 1 day will be 7 hours
4	<b>No. of Days (D)=H/7</b>	56.6	
5	<b>Total No. of Days for Job-Order Rounding off to Next higher Value</b>	57	Total Days will round off to next higher value.
6	<b>Stating Date (Filled By BHEL)</b>	01-11-2024	Starting date will be the date by which contractor shall start the work after receiving the input material by BHEL and the same will be filled by BHEL Executive in Online system before starting of Work.





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7	<b>Due Date = (Starting Date) + (Total No. of Days) - (1)</b>	27-12-2024	<i>Starting date will also be a working day hence 1 needs to be subtracted to get due date.</i>
8	<b>Case-1 : Completion Date (Filled By BHEL Executive in Online System)</b>	27-12-2024 or earlier date	<ul style="list-style-type: none"><li>• LD shall Not be Applicable</li><li>• Job Order Completion Date (Filled By BHEL)</li></ul>
9	<b>Case-2: Completion Date (Filled By BHEL Executive in Online System)</b>	27-12-2024 or later date	<ul style="list-style-type: none"><li>• LD shall be Applicable</li><li>• Job Order Completion Date (Filled By BHEL)</li></ul>

**5. INSPECTION:**

Item will be checked by BHEL personnel for completeness per required parameters.

**6. QUANTITY DISTRIBUTION: -**

There is no quantity distribution for this works contract however in case there are more than one L1 vendors (on Total Landed cost to BHEL basis) then the L1 vendor shall be selected as per GCC.

**7. PAYMENT TERMS:**

Payment to the contractor shall be made on completion of each job-order provided to contractor by executing department. More than one Job-Order may be clubbed in single bill. Rest All terms & conditions of the Payments shall be as per GCC.

**PVC is not Applicable for this contract.**



# Bharat Heavy Electricals Limited

## Heavy Equipment Repair Plant

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### BOQ & Price Schedule

<b>Important Instruction: -</b>					
1. Bidder is to quote their <b>premium/ discount (% Above, %below OR At par) over total cost of all items i.e. Rs. 16,50,359/ on NIC portal.</b>					
2. Lowest bidder shall be decided on overall cost by including premium/ discount. The Premium/Discount offered by L-1 Bidder shall be applied to estimated rate of each CLH variant type for payment.					
3. Each line item qty. may change as per BHEL Requirement. However total Qty. of CLH for the contract may vary by $\pm 20\%$ .					
<b>S. No.</b>	<b>Ref. No.</b>	<b>Qty. (Nos)</b>	<b>Rate per Unit (Rs)</b>	<b>Total (Rs.)</b>	<b>Remark</b>
1	CLH-1182	77	363	27951	Single Cell CLH
2	CLH-1192	59	363	21417	Single Cell CLH
3	CLH-1183	69	363	25047	Single Cell CLH
4	CLH-1193	107	363	38841	Single Cell CLH
5	CLH-1184	114	454	51756	Single Cell CLH
6	CLH-1194	84	454	38136	Single Cell CLH
7	CLH-1185	48	605	29040	Single Cell CLH
8	CLH-1195	210	605	127050	Single Cell CLH
9	CLH-1282	55	1016	55880	Multi Cell-CLH
10	CLH-1283	79	1016	80264	Multi Cell-CLH
11	CLH-1284	119	1271	151249	Multi Cell-CLH
12	CLH-1285	52	1694	88088	Multi Cell-CLH
13	CLH-1292	32	1016	32512	Multi Cell-CLH
14	CLH-1293	1	1016	1016	Multi Cell-CLH
15	CLH-1294	4	1271	5084	Multi Cell-CLH
16	CLH-1295	23	1694	38962	Multi Cell-CLH
17	CLH-1382	1	1452	1452	Multi Cell-CLH
18	CLH-1383	4	1452	5808	Multi Cell-CLH
19	CLH-1384	1	1816	1816	Multi Cell-CLH
20	CLH-1385	18	2420	43560	Multi Cell-CLH
21	CLH-1392	1	1452	1452	Multi Cell-CLH
22	CLH-1393	1	1452	1452	Multi Cell-CLH
23	CLH-1394	1	1816	1816	Multi Cell-CLH
24	CLH-1395	16	2420	38720	Multi Cell-CLH
25	CLH-1482	1	1888	1888	Multi Cell-CLH
26	CLH-1483	1	1888	1888	Multi Cell-CLH
27	CLH-1484	1	2361	2361	Multi Cell-CLH
28	CLH-1485	1	3146	3146	Multi Cell-CLH
29	CLH-1492	1	1888	1888	Multi Cell-CLH
30	CLH-1493	1	1888	1888	Multi Cell-CLH
31	CLH-1494	28	2361	66108	Multi Cell-CLH
32	CLH-1495	88	3146	276848	Multi Cell-CLH
33	CLH-7182	1	454	454	7 Series Single Cell CLH
34	CLH-7183	27	454	12258	7 Series Multi Cell CLH
35	CLH-7184	4	568	2272	7 Series Multi Cell CLH



# Bharat Heavy Electricals Limited

## Heavy Equipment Repair Plant

Works Contract Management (WCM) Department

TARNA, SHIVPUR, VARANASI-221003

36	CLH-7185	1	756	756	7 Series Multi Cell CLH
37	CLH-7192	1	454	454	7 Series Multi Cell CLH
38	CLH-7193	1	454	454	7 Series Multi Cell CLH
39	CLH-7194	4	568	2272	7 Series Multi Cell CLH
40	CLH-7195	8	756	6048	7 Series Multi Cell CLH
41	CLH-7282	2	1016	2032	7 Series Multi Cell CLH
42	CLH-7283	1	1016	1016	7 Series Multi Cell CLH
43	CLH-7284	12	1271	15252	7 Series Multi Cell CLH
44	CLH-7285	10	1694	16940	7 Series Multi Cell CLH
45	CLH-7292	1	1016	1016	7 Series Multi Cell CLH
46	CLH-7293	1	1016	1016	7 Series Multi Cell CLH
47	CLH-7294	9	1271	11439	7 Series Multi Cell CLH
48	CLH-7295	8	1694	13552	7 Series Multi Cell CLH
49	CLH-7382	1	1452	1452	7 Series Multi Cell CLH
50	CLH-7383	1	1452	1452	7 Series Multi Cell CLH
51	CLH-7384	2	1816	3632	7 Series Multi Cell CLH
52	CLH-7385	1	2420	2420	7 Series Multi Cell CLH
53	CLH-7392	1	1452	1452	7 Series Multi Cell CLH
54	CLH-7393	1	1452	1452	7 Series Multi Cell CLH
55	CLH-7394	1	1816	1816	7 Series Multi Cell CLH
56	CLH-7395	1	2420	2420	7 Series Multi Cell CLH
57	CLH-7482	1	1888	1888	7 Series Multi Cell CLH
58	CLH-7483	1	1888	1888	7 Series Multi Cell CLH
59	CLH-7484	1	2361	2361	7 Series Multi Cell CLH
60	CLH-7485	1	3146	3146	7 Series Multi Cell CLH
61	CLH-7492	1	1888	1888	7 Series Multi Cell CLH
62	CLH-7493	1	1888	1888	7 Series Multi Cell CLH
63	CLH-7494	1	2361	2361	7 Series Multi Cell CLH
64	CLH-7495	1	3146	3146	7 Series Multi Cell CLH
65	CLH-9182	1	908	908	9 Series Multi Cell CLH
66	CLH-9183	1	908	908	9 Series Multi Cell CLH
67	CLH-9184	1	1135	1135	9 Series Multi Cell CLH
68	CLH-9192	1	908	908	9 Series Multi Cell CLH
69	CLH-9193	1	908	908	9 Series Multi Cell CLH
70	CLH-9195	5	1513	7565	9 Series Multi Cell CLH
<b>TOTAL</b>		<b>1416</b>		<b>1398609</b>	

Total Estimate Cost of Contract (Rs.) Incl. 18% GST	<b>₹ 16,50,359</b>
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**Bharat Heavy Electricals Limited**  
**Heavy Equipment Repair Plant**  
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**Pre- Qualifying Requirement (PQR)**

<b>1.</b>	<b>EXPERIENCE:</b> <p>Contractor should have experience of having successfully completed fabrication/assembly works during last 7 years ending last day of month previous to the one in which applications are invited should be any of the following:</p> <p>Three completed similar works each costing not less than the amount equal to Rs 6.6/- lacs.</p> <p style="text-align: center;"><b>OR</b></p> <p>Two completed similar works each costing not less than the amount equal to Rs 8.25.0/- lacs.</p> <p style="text-align: center;"><b>OR</b></p> <p>One completed similar work costing not less than the amount equal to Rs 13.21/- lacs.</p> <p><b><u>Similar Works:</u></b></p> <p>Similar works include the experience working in metal items for its fabrication/assembly/erection/ in an Industrial/Construction Set-Up.</p> <p>Copy of such work orders and performance report/completion certificate/inspection clearance report/other equivalent document issued by customer for successful execution of the order is to be submitted.</p> <p>The value of work executed against a framework agreement shall be considered as one completed/executed order.</p> <p><b>Note-</b></p> <p>BHEL reserves the right to verify the contents of given certificate. Complete postal address, name of contact person, phone no. &amp; email address of issuing authority is to be submitted by the Bidder in Techno- commercial bid. In case BHEL intends to visit Bidder's customer, the same shall be facilitated by Bidder (expenditure of visit of BHEL official shall be borne by BHEL).</p>
<b>2.</b>	<b>FINANCIAL CAPABILITY</b> <p>Average Annual Financial turnover during the last 3 years ending 31<sup>st</sup> March of the previous financial year should be minimum Rs. 5.0 Lakhs.</p> <p>If Applicable, Audited Profit &amp; loss account and balance sheet to be submitted for FY 22-23,21-22 &amp; 20-21 else, CA certified Turnover Sheet of the FY 22-23,21-22 &amp; 20-21 to be submitted.</p> <p><b><i>Note: - All the CA certified/ audited documents should have UDIN No.</i></b></p>



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**No Deviation Certificate**

To,

Sr. Manager (Store and WCM)  
Bharat Heavy Electricals Ltd.  
Tarna, Shivpur  
Varanasi

**Sub: No deviation certificate for "CLH ASSEMBLY (CLH-1182 to CLH-1195 & Multi-Cells incl. 7&9 Series CLH) WITHIN HERP PREMISES FOR A PERIOD OF 01 YEAR"**

Sir,

This is to inform you that we have not taken any deviation from any of the Special Terms and Conditions for "**CLH ASSEMBLY (CLH-1182 to CLH-1195 & Multi-Cells incl. 7&9 Series CLH) WITHIN HERP PREMISES FOR A PERIOD OF 01 YEAR**" while quoting the rates. All terms & conditions mentioned in the Special Terms & conditions are acceptable to us except following:

- 1.
- 2.
- 3.

Thanking you,

Yours Sincerely



**Bharat Heavy Electricals Limited**  
**Heavy Equipment Repair Plant**  
Works Contract Management (WCM) Department  
TARNA, SHIVPUR, VARANASI-221003

***GENERAL CONDITIONS OF CONTRACT***  
***For***  
***WORKS/SERVICE CONTRACTS***



**BHARAT HEAVY ELECTRICALS LIMITED**  
**HEAVY EQUIPMENT REPAIR PLANT**  
**TARNA, SHIVPUR**  
**VARANASI-221003**



**Bharat Heavy Electricals Limited**  
**Heavy Equipment Repair Plant**  
Works Contract Management (WCM) Department  
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**CHAPTER I**

**1.0 DEFINITIONS**

In these general conditions of contract, the following terms shall have the meaning hereby assigned to them except where the context otherwise requires: -

- a) "CONTRACT" or "CONTRACT DOCUMENT" shall mean and include the Agreement of Work Order, the accepted appendices of Rates, Schedules, Quantities if any, General Conditions of Contract, Special Conditions of Contract, Instructions to the Tenderers, Drawings, Technical Specifications, the Special Specifications if any, the Tender documents, subsequent amendments mutually agreed upon and the Letter of Intent/Award/Acceptance issued by BHEL. Any conditions or terms stipulated by the contractor in the tender documents or subsequent letters shall not form part of the contract unless, specifically mentioned.
- b) "TENDER SPECIFICATION" or "TENDER" or "TENDER DOCUMENTS" shall mean and include General Conditions, Special Conditions, Price Bid, Rate Schedule, Technical Specifications, Appendices, Annexures, Corrigendum, Amendments, Forms, procedures, Site information, etc and drawings/documents pertaining to the work for which the tenderers are required to submit their offers.
- c) "WORK" means all Permanent and Temporary Works as described in the Scope of Work and BOQ in individual work order and /or accompanying drawings and specifications as may be issued from time to time to the contractor by the Engineer - Incharge in writing, including all modifications or additional works and obligations to be carried out either at the site or in factory, workshop or any other place as may be essentially required for the performance of the work.
- d) The "SITE" means the land and/ or other place on/into/ through which the work is to be executed under the contract or any adjacent land, part or structure which may be allotted to or used for the purpose of carrying out the contract.
- e) The "CONTRACTOR" means the individual firm or company whether incorporated or not, undertaking the work and shall include the legal personal representatives of such individuals or the person(s) composing the firm or company and the permitted assigns of such individuals or firm or company.
- f) "ENGINEER" or "ENGINEER IN CHARGE" shall mean an employee of BHEL as may be duly appointed and authorized by Competent Authority/Accepting Officer of BHEL to act as "Engineer" on his behalf for the purpose of the Contract, to perform the duty set forth in this General Conditions of Contract and other Contract documents.
- g) BHEL shall mean Bharat Heavy Electricals Limited, a company registered under Indian Companies Act 1956, with its Registered Office at BHEL HOUSE, SIRI FORT, NEW DELHI - 110 049, or its unit HEAVY EQUIPMENT REPAIR PLANT located at Tarna, Shivpur Varanasi, Uttar Pradesh -221003.
- h) "COMPETENT AUTHORITY" /" ACCEPTING OFFICER" shall mean Executive Director or General Manager (In charge) or General Manager-Head of Unit (HERP) or BHEL Officers who are empowered to act on behalf of the Executive Director or General Manager (In charge) or General Manager of BHEL.
- i) "DEFECT LIABILITY PERIOD" (DLP) in relation to a work means the specified period from the date of Completion Certificate up to the date of issue of Final Certificate during which the Contractor stands responsible for rectifying all defects that may appear in the works executed by the Contractor in pursuance of the Contract and includes warranties against manufacturing/fabrication/erection/construction defects covering all materials plants, equipment, components, and the like supplied by the Contractor, works executed against workmanship defects.





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- j) "Letter of Intent/Letter of Award (LoA)" means the formal letter of intent or letter of acceptance or letter of award issued by BHEL.
- k) "SCC" means 'Special Conditions of Contract forming part of this Contract / Agreement.
- l) "Bill of Quantity" shall mean subsequent to the placement of the Contract/Agreement/Purchase Order the successful bidder shall be required to furnish the detailed price break-up within a specified time frame. This detailed break-up of items and prices shall be considered as Bill of Quantities (BOQ).
- m) "Engineer" shall mean an Executive or Engineer in charge.
- n) "NIT" shall mean Notice Inviting Tender.
- o) "First Party" shall mean BHEL.



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**CHAPTER II**

**2.0 GENERAL INSTRUCTIONS TO THE TENDERERS**

**2.1 GENERAL INSTRUCTIONS**

The General Condition of Contract form part of the Tender Specifications. All pages of the tender documents shall be duly signed stamped and submitted along with the offer by the tenderers.

Tenderers are advised to study all the tender documents carefully. The contractor shall be deemed to have satisfied himself as to the nature of site, local facilities of access and all matters affecting the execution and completion of the work. No extra charges consequent on any misunderstanding in these respects or otherwise will be allowed by the First Party.

The contractor shall examine the quantum of work and shall satisfy himself before submitting his tender. He shall himself assess the requirement of materials, contingencies and other circumstance which may affect or influence his tender, no extra charges on any misunderstanding or otherwise shall be allowed.

The contractor shall be deemed to have satisfied himself before tendering as to correctness and sufficiency of his tender, the work and prices. This shall except as otherwise provided all obligation under the contracts all matters and things necessary for the proper completion and maintenance of the works.

**2.2 SUBMISSION OF TENDERS**

2.2.1. The tenderers must submit their tender as per instructions in NIT.

2.2.2. Tenders submitted by Post shall be sent by Post with due allowance for any postal/ courier delays. BHEL shall not be responsible for any postal delay.

2.2.3. Tenders shall be signed by a person authorised/empowered to do so. In case the tender is signed by an individual other than the sole proprietor, an attested copy of the power of attorney shall be submitted by bidder along with tenders with details mentioned under:

For proprietary firm	Proprietor's full name, address and place & nature of business.
For partnership firm	The names of all the partners and their addresses, A copy of the partnership deed/instrument of partnership duly certified by the Notary Public shall be enclosed.
For companies	Date and place of registration including date of commencement certificate in case of Public Companies (certified copies of Memorandum and articles of Association are also to be furnished. Nature of business carried on by the Company and the provisions of the Memorandum relating thereof.

2.2.5. Unless otherwise specified in NIT the bids shall be invited in two parts:

**PART I (Techno-Commercial bid)** - This shall consist of following documents:

- Signed & stamped copy of all pages of NIT.
- Technical specifications of the offer.



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- Duly filled, signed & stamped forms and documents in support of meeting the pre-qualifying requirement.
- Signed and stamped copy of Price Bid Format (without price).
- Documentary evidence like Cash Receipt, EFT/UPI receipt, DD, FDR, Banker's cheque / Pay order etc for proof of payment against Tender Document Cost and Earnest Money Deposit (EMD).

**PART II (Price Bid)** - This shall consist of price bid in format specified in NIT.

2.2.6 The Part-I (Techno-Commercial bid) and Part-II (Price Bid) shall be submitted by bidder as specified in NIT.

### 2.3 EVALUATION OF TENDERS

- Techno-Commercial bids submitted by the tenderer will be opened first and evaluated for fulfilling Pre Qualifying requirement and other conditions in NIT/ Tender documents
- The Techno-Commercial bids will be opened as per date & time mentioned in NIT.
- The Bidder or his authorised representative may be present at the time of opening of bid on the specified date after seeking written permission in this regard from Tender Inviting authority. Written permission shall be taken for this purpose prior to tender opening date. A copy of confirmation /acceptance must be produced in the office by the person attending the opening of bid else he shall be denied permission to attend the opening of bid.
- In case of unscheduled holiday on the closing/opening day of bid, the next working day will be treated as scheduled prescribed day of closing/opening of bid, the time notified remaining the same.

### 2.4 EARNEST MONEY DEPOSIT (EMD)

2.4.1 EMD amount will be as indicated in NIT. EMD shall not carry any interest.

2.4.2 The EMD may be accepted only in the following forms:

- Cash deposit as permissible under the extant Income Tax Act (before tender Opening).
- Electronic Fund Transfer credited in BHEL account (before tender opening)
- Banker's cheque/ Pay order/ Demand draft, in favour of BHEL (along with offer).
- Fixed deposit receipt (FDR) issued by any scheduled banks/ Public Finance Institutions as defined in Companies Act (FDR should be in the name of the **contractor, a/c BHEL Varanasi**).
- Insurance Surety Bonds

Account details of BHEL-HERP, Varanasi are as mentioned below:

EFT /RTGS Details	UPI Details
Bank Name: State Bank of India, IFSC Code: SBIN0000201, Account No: 011103264820, Branch Code: 0201, Address: State Bank of India, Main Branch Kachaheri, Varanasi.	Scan & Pay Using Any UPI App to UPI ID: bhel20@sbi MERCHANT NAME: BHARAT HEAVY ELECTRICALS LTD



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In addition to above, if the EMD amount is more than Rs Two Lakh, the amount in excess of Rs Two Lakh may also be accepted in the form of Bank Guarantee (BG) from scheduled bank. The Bank Guarantee in such cases shall be valid for at least six months. SFMS message must be included along with BG. ***Format of BG for EMD, List of scheduled banks and beneficiary bank account will be provided to bidders separately in case the EMD amount happens to be more than Rs Two Lakh.***

#### **2.4.3. FORFEITURE OF EMD**

EMD by the Tenderer will be forfeited as per NIT conditions, if:

- i) After opening the tender and within the offer validity period, the tenderer revokes his tender or makes any modification in his tender, which is not acceptable to BHEL.
- ii) The Contractor fails to deposit the required Security deposit or commence the work within the period as per LOI/ Contract.

EMD by the tenderer shall be withheld in case any action on the tenderer is envisaged under the provisions of extant "Guidelines on Suspension of business dealings with suppliers/ contractors" and forfeited/ released based on the action as determined under these guidelines.

- 2.4.4 EMD given by all unsuccessful tenderers shall be refunded normally within fifteen days of award of work. In case of expiry of offer validity period or any other circumstances, EMD can be released with due approval.
- 2.4.5 EMD of successful tenderer will be retained as part of Security Deposit.

## **2.5 SECURITY DEPOSIT (SD)**

2.5.1. The total amount of Security Deposit would be as mentioned in NIT. EMD of the successful tenderer shall be converted and adjusted towards the required amount of Security Deposit.

2.5.2. The balance amount to make up the required Security Deposit of the contract value may be accepted in the following forms:

- i) Cash (as permissible under the extant Income Tax Act)
- ii) Local cheques of Scheduled Banks (subject to realization)/ Pay Order/ Demand Draft/ Electronic Fund Transfer in favour of BHEL
- iii) Bank Guarantee from Scheduled Banks/ Public Financial Institutions as defined in the Companies Act. ***Format of BG for SD, List of scheduled banks and beneficiary bank account will be provided to bidders separately to successful bidder(s).***
- iv) Fixed Deposit Receipt issued by Scheduled Banks/ Public Financial Institutions as defined in the Companies Act (FDR should be in the name of the **Contractor, a/c BHEL, Varanasi**)
- v) Securities available from Indian Post offices such as National Savings Certificates, Kisan Vikas Patras etc. (held in the name of Contractor furnishing the security and duly endorsed/ hypothecated/ pledged, as applicable, in favour of BHEL)
- vi) Insurance Surety Bonds

~~(Note: BHEL will not be liable or responsible in any manner for the collection of~~  
NIT No. BHEL/HERP/WCM/EY24/EM/CLH/ASSY-24 of 89  
~~interest or renewal of the documents or in any other matter connected therewith)~~



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**2.5.3. COLLECTION OF SECURITY:**

- 2.5.3.1 At least 50% of the required Security Deposit, including the EMD, should be collected before start of the work. Balance of the Security Deposit can be collected by deducting 10% of the gross amount progressively from each of the running bills of the Contractor until the total amount of the required Security Deposit is collected.
- 2.5.3.2 If the value of work done at any time exceeds the contract value, the amount of Security Deposit shall be correspondingly enhanced and the additional Security Deposit shall be immediately deposited by the Contractor or recovered from payment/s due to the Contractor.
- 2.5.3.3 In case of delay in submission of performance security, enhanced performance security, which would include interest (Repo rate + 4%) for the delayed period, shall be submitted by the bidder.
- 2.5.3.4 The recoveries made from running bills (cash deduction towards balance SD amount) can be released against submission of equivalent Bank Guarantee in acceptable form, but only once, before completion of work, with the approval of the authority competent to award the work.
- 2.5.3.5 (Note: In case of (a) small value contracts not exceeding Rs. 20 lakhs or (b) SAS jobs, work can be started before the required Security Deposit is collected. However, payment can be released only after collection/ recovery of initial 50% Security Deposit).

**2.5.4 REFUND OF SECURITY DEPOSIT:**

- 2.5.4.1 After expiration of the Defect Liability period, provided always that the contractor shall first have been paid final bill and have rendered a "No Demand" certificate, the security deposit shall be refunded to the contractor as follows:  
100% shall be released after satisfactory completion of the Defect liability period of the work after verification/certification by Engineer-In-charge.
- 2.5.4.2 The Defect liability period of work shall be as per section 2.6.

**2.6 PERFORMANCE GUARANTEE FOR WORKMANSHIP/ DEFECT LIABILITY PERIOD**

Unless otherwise specified in Special Conditions of contract (SCC), the contractor shall be responsible for the quality of the workmanship and shall make good or remedy at his own expense within defect liability period, which shall be for a period of 12 months from date of completion of works or else as mentioned in special conditions for contract. During this period the contractor shall rectify free of cost all defects due to faulty erection, installation & commissioning detected during defect liability period. In the event of the contractor, failing to repair the defective works within the time specified by the Engineer, BHEL might proceed to undertake the repairs of such defective works at the contractor's risk and cost without prejudice to any other rights & recover the same from the Security deposit. Completion date of work shall be considered as provided in Form WAM 7 of Works Accounts Manual 2017.

**2.6.1 BANK GUARANTEES**

- 2.6.1.1 Wherever Bank Guarantees are to be furnished / submitted by the contractor, the following shall be complied with:

- Bank Guarantees shall be from scheduled Banks/ Public Financial Institutions as defined in the companies Act.

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NIT No. BHEL/HERP/WCM/FY24/EM/CLH/ASSY 25 of 89  
• The Bank Guarantees shall be as per prescribed format approved by BHEL.



**Bharat Heavy Electricals Limited**  
**Heavy Equipment Repair Plant**  
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- It is the responsibility of the bidder to get the Bank Guarantees revalidated/ extended for the required period (subject to a minimum period of 6 months), as per the advice of Engineer in charge.
  - BHEL shall not be liable for issue of any reminders regarding expiry of the Bank Guarantees.
  - In case of extension / further extensions of any Bank Guarantees are not required, the bidders shall ensure that the same is explicitly endorsed by the Head of Department and approved by the Head of unit.
- 2.6.1.2. In case the Bank Guarantees are not extended before the expiry date, BHEL reserves the right to invoke the same by informing the concerned Bank in writing, without any advance notice/communication to the concerned bidder
- 2.6.1.3. Bidders to note that any corrections to the Bank Guarantees shall be done by issuing Bank, only through an amendment in an appropriate non-judicial stamp paper.
- 2.6.1.4. The Original Bank Guarantee shall be sent directly by the Bank to BHEL under Registered Post (Acknowledgement Due), addressed to the head of contracting department.
- 2.6.1.5. The validity of Bank Guarantee towards security deposit shall initially be up to completion period plus defect liability period plus 3 months, and the same shall be further kept valid as per advice of Engineer in charge. Claim period will be 3 months more than validity period.
- 2.6.1.6. Further BHEL reserves the right of forfeiture of security deposit in addition to other claims & penalty in the event of contractor's failure to fulfil any of the contractual obligations or in the event of termination of contract as per terms & conditions of the contract. BHEL reserves the right to set off the security deposit against any claims of any contracts with BHEL.
- 2.6.1.7 Release of SD: 100% SD shall be released only after expiry of Defect liability period subject to satisfactory completion of work as per contract & submission of claim as per prescribed claim format.

**2.7 TENDOR COST:**

Bidders must deposit the Tender cost as mentioned in the NIT through EFT and submit proof of the same along with bid.

**2.8 VALIDITY OF OFFER:**

The validity of the offer shall be 90 days or else as specified in NIT.

**2.9 RIGHT OF BHEL TO REJECT TENDERS:**

- 2.9.1 The acceptance of tender will rest with BHEL which does not bind itself to accept the lowest tender or any tender and reserves to itself full rights for the following without assigning any reasons whatsoever: -
- a. To reject any or all of the tenders.
  - b. To split up the work amongst two or more tenderers as per NIT
  - c. To award the work in part if specified in NIT
  - d. In case of either of the contingencies stated in (b) and (c) above, the time for completion as stipulated in the tender shall be applicable.
- 2.9.2 Conditional tenders, unsolicited tenders, tenders which are incomplete or not in the form specified or defective or have been materially altered or not in accordance with the tender conditions, specifications etc., are liable to be rejected.



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- 2.9.3 Tenders are liable to be rejected in case of unsatisfactory performance of the tenderer with BHEL, or tenderer under suspension (hold/banning /delisted) by any unit / region / division of BHEL or tenderers who do not comply with the latest guidelines of Ministry/Commissions of Govt. of India. BHEL reserves the right to reject a bidder in case it is observed that they are overloaded and may not be in a position to execute this job as per the required schedule. The decision of BHEL will be final in this regard.
- 2.9.4 In the course of evaluation, if more than one bidder happens to occupy L-1 status, effective L-1 will be decided by soliciting discounts from the respective L-1 bidders. In case more than one bidders happen to occupy the L-1 status even after soliciting discount, the L-1 bidder shall be decided by a toss/draw of lots, in the presence of the respective bidder(s) or their representative(s). When the tender is on GEM portal, in case of multiple L1, effective L1 will be decided through system available on GEM portal. BHEL's decision in such situation shall be final and binding.





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**CHAPTER III**

**3.0 CONTRACT EXECUTION & PERFORMANCE**

**3.1. GENERAL INSTRUCTION TO CONTRACTOR FOR WORK EXECUTION**

- 3.1.1. The decision of BHEL regarding interpretation of any of terms and conditions set forth in the agreement shall be final and binding on the contractor.
- 3.1.2. In case of any discrepancy between the specification and / or the drawing, the Accepting Officer shall be the deciding authority as to which shall prevail and his decision shall be final and conclusive. If neither drawings nor specifications contain any minor details of construction, which are essential and reasonably & fairly intended for the satisfactory completion for the work in the opinion of the Accepting Officer, the decision of Accepting Officer shall be final and conclusive.
- 3.1.3. The contractor shall, at his own expense, supply all stores and material required for the contract other than those, which may be provided by BHEL at the rates detailed therein subject to availability at the place of issue indicated therein. All stores and materials to be supplied by the contractor shall be of the best quality as described in the specification and the contractor shall ensure that the stores and materials comply with the specifications.
- 3.1.4. The contractor shall not sub-contract any portion of the contract without the prior written approval of the Accepting Authority. Employment of piece rate workers shall not be deemed as sub-contracting.
- 3.1.5. Contractor shall decide the number of employees to be deployed for execution of the work awarded to him and he or his authorized representative will be solely entitled to dictate such workers about the manner of carrying out the work as per the prescribed specifications and quality plan. Contractor/ authorized supervisor of the contractor shall supervise the work allotted to him and to be carried out by his employees.
- 3.1.6. Contractor to ensure that the employees deployed in the premises of BHEL are physically and mentally fit and do not have any criminal record. Such employees should possess requisite skill, proficiency, qualification, experience etc.
- 3.1.7. Contractor will keep watch on his employees and he will be liable for any pilferage / loss to BHEL due to acts of omission and commission by his employees. Similarly, liability for any compensation to outsiders on account of any act of omission and commission by the employees deployed by the contractor shall lie exclusively with him.
- 3.1.8. The successful tenderer's responsibility under these contracts commences from the date of issue of the letter of intent (LOI) by BHEL. The tenderer shall submit unqualified acceptance to the letter of intent/ award within the period stipulated therein.
- 3.1.9. The successful tenderer shall be required to execute an agreement with BHEL in the prescribed format 'within time limit specified by BHEL in LOI/LOA (maximum 30 days)' and in any case before releasing the first running bill. The contract agreement shall be signed by a person duly authorized / empowered by the tender. The write-up for agreement will be provided by BHEL and cost of non-judicial stamp paper will be borne by contractor.
- 3.1.10. After signing the formal contract agreement, as above, BHEL shall issue work order to the party containing all salient features of the contract agreement required by both the parties.





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3.1.11. Contractor shall carry out operations hereunder with due diligence and shall maintain strict discipline and shall abide by and conform to all rules and regulations promulgated by BHEL. Should BHEL feel that the conduct of any of contractor/subcontractors employees is detrimental to Organization's interest & Safety, BHEL shall have the unqualified right to request for the removal of such employee either for incompetence, unreliability, misbehavior, security reasons etc. while on or off the job.

**3.2. WORK COMPLETION TIME**

- 3.2.1. Time is the essence of the contract and is specified in the Special Conditions of Contract of the Tender document
- 3.2.2. After issuance of LOI (through E-Mail/Fax/Courier), contractor shall report to the Manager of BHEL-HERP, Varanasi within 07 days and make Kick-of-Meeting (KOM) for discussing & finalizing start date of work, detailed completion program, mobilization of manpower & other resources and other related issues. Date of Start of Work shall be reckoned as 15 days after date of issue of LOI. However, the date of start of work may be reviewed and changed by Engineer In-charge of BHEL-HERP, Varanasi with recorded reasons in the KOM.
- 3.2.3. If the contractor fails to start the work within stipulated time as per LOI or as intimated by BHEL, then BHEL at its sole discretion will have the right to cancel the contract. The Earnest money and or Security Deposit with BHEL will stand forfeited without any further reference to him without prejudice to any and all of BHEL's other rights and remedies in this regard.
- 3.2.4. The contract shall be considered and closed upon completion of all contractual obligations and settlement of Final Bill or completion of Guarantee period whichever is later. Upon closing of contract, BHEL shall issue a completion certificate as per standard format, based on specific request of contractor.
- 3.2.5. The entire work shall be completed by the contractor within the time schedule or within such extended periods as may be allowed by BHEL.

**3.3. EXTENSION OF TIME FOR COMPLETION**

- 3.3.1. If the completion of work as detailed in the scope of work is delayed beyond the contract period, the contractor shall request for an extension of the contract and BHEL at its discretion may extend the contract.
- 3.3.2. Based on the progress review & performance evaluation, the works balance at the end of original contract period less the backlog attributable to the contractor shall be quantified, and the number of months of 'Time extension' required for completion of the same shall be jointly worked out. Within this period of 'Time extension', the contractor is bound to complete the portion of the backlog attributable to the contractor. Any further 'Time extension' at the end of the previous extension shall be worked out similarly.
- 3.3.3. However, if any 'Time Extension' is granted to the contractor to facilitate continuation of work and completion of contract, due to backlog attributable to the contractor alone, then it shall be without prejudice to the rights of BHEL to impose penalty/ LD for the delays attributable to the contractor, in addition to any other actions BHEL may wish to take at the risk & cost of contractor.
- 3.3.4. At the completion of progressive / milestone work / total work as certified by BHEL Engineer and upon total delay analysis, the portion of time extensions attributable to (i) Contractor, (ii) Force Majeure conditions and (iii) BHEL, shall be worked out and shall be considered to be exhausted in the same order. The total period of extensions shall be the sum of (i), (ii) and (iii) above and shall be equal to period between the scheduled date of completion and the actual date of completion of contract. LD shall



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be imposed / levied for the portion of time extensions attributable to contractor and recoverable from the dues payable to the contractor.

**3.4. PROGRESS MONITORING, MONTHLY REVIEW AND PERFORMANCE EVALUATION**

- 3.4.1. As soon as possible after awarding of work, the Engineer-In-charge and the contractor shall (if so required by the Engineer-In-charge) agree on major milestones/ Action Plan / time and progress chart for completion of the work within scheduled time. The chart in the work order shall have the completion date of the individual items thereof and/ or the contract or order as a whole. It shall indicate the forecast of the dates for commencement and completion of the various processes or sequences of the work, and shall be amended as may be required by agreement between Engineer-In-charge and contractor writing the limitations of time imposed in the tender document or order.
- 3.4.2. In the absence of any specific time and progress chart to be agreed to between the contractor and Engineer In charge, the contractor shall ensure and maintain, uninterrupted progress of the work such that the entire work shall be completed within the time imposed in the tender documents or order and the proportion of work that shall be completed up to any time in relation to the entire work to be done under the contract or order shall not be less than the proportion that the time elapsed bears to the total time of completion provided in the tender documents or order.
- 3.4.3. The contractor shall suspend the execution of the work or any part or parts thereof whenever called upon in writing by the Engineer-In-charge. The contractor will be allowed an extension of time for completion limited to not less than the period of suspension but no other claim in respect for compensation or otherwise whatsoever will be admitted. Time may also be extended to allow for alteration of work made by the deviation order as may be decided upon by the Engineer-In-charge in consultation with the contractor.
- 3.4.4 Unless otherwise specified in the Special conditions of contract, evaluation of Contractor Performance shall be carried out as per procedure for performance evaluation. These shall also be used for evaluation of bids for future tenders.

**3.5. QUANTITY VARIATION**

The quantities given in the contract are tentative and may change to any extent (both in plus side and minus side). The quoted rates for individual items shall remain firm irrespective of any variations in the individual quantities. No compensation becomes payable in case the variation of the final executed contract value unless specifically mentioned in NIT.

Increase in quantity by contractor / vendor will be done only after getting confirmation from BHEL / Site Engineer. Quantity variation of 30% in plus side will not require any approval provided there is no increase in contract price. If there is change in contract price, approval from competent authority is required

**3.6. Removed/Deleted**

**3.7. STRIKES & LOCKOUT**

- 3.7.1. The contractor will be fully responsible for all disputes and other issues connected with his labour.
- 3.7.2. In the event of the contractor's labour resorting to strike or the Contractor resorting ~~to lockout and if the strike or lockout declared is not settled within a period of one~~  
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month, BHEL shall have the right to get the work executed through any other agencies and the cost so incurred by BHEL shall be at risk & cost of the Contractor.

**3.8. DELAY AND EXTENSION OF TIME:**

3.8.1 The Contractor shall be entitled to extension of time in following cases:

**3.8.1.1 FORCE MAJEURE**

The following shall amount to Force Majeure: -

- 3.8.1.1.1 Acts of God, act of any Government, War, Sabotage, Riots, Civil Commotion, local combination of worker strike or lockout, Police Action, Revolution, Flood, serious loss or damage by Fire, Cyclones, Earthquake and epidemic and other similar causes over which the contractor has no control.
- 3.8.1.1.2 Non-availability of stores, which are responsibility of BHEL etc. the same shall be covered under force majeure.
- 3.8.1.1.3 Because of any other cause, which in the absolute discretion of the (Accepting officer of the contract) beyond the contractor control.

- 3.8.1.2. The Contractor's work held up for not being given possession of or access to the Site by BHEL.
- 3.8.1.3. Instruction of the Engineer-in-charge to suspend the Works and the Contractor not being in default as to reasons of suspension;
- 3.8.1.4 Any order of Court restraining the performance of the Contract in full or in any part thereof;
- 3.8.1.5 Any other event or occurrence which, according to BHEL is not due to the Contractor's failure or fault, and is beyond its control without BHEL being responsible for the same;
- 3.8.1.6 Acts or omissions of other Consultants in executing their works not forming part of the Contract.

3.8.2. Except as mentioned above, the Contractor shall not be entitled to any extension of time for any reason whatsoever including:

- 3.8.2.1. The Contractor shall not be entitled to any extension of time where the instructions or acts of BHEL are necessitated by or intended to cure any default of or breach of the terms of the Contract committed by the Contractor;
- 3.8.2.2. The Contractor shall also not be entitled to any extension of time where any delay is due to:
  - The failure of its Subcontractor, to commence or to carry out the part of the Works in due time; or
  - Non-availability, or shortage of Contractor's equipment, labour, utility services, Plant and Materials; or
  - Inclement weather conditions except in case of Force Majeure;

3.8.3. If the contractor suffers delay in the due execution of the contractual obligation due to delays caused by factors mentioned in Clause 3.8.1 above, the agreed time of completion of the job covered by this contract or the obligations of the contractor shall be extended by a period of time equal to period of delay, provided that on the occurrence of any such contingency, the contractor reports to BHEL in writing the causes of delay within 07 days of its occurrence and the contractor shall not be eligible for any compensations.

3.8.4 When in such case(s) the accepting officer (or higher Authority), on recommendation of the Engineer-In-charge, may make fair and reasonable extension, in the completion date of the individual items of work of the contract as a whole. Such



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extension, which will be communicated to the contractor by the Engineer- In-charge in writing, but shall nevertheless use constantly his best endeavor to prevent or make good the delay and shall do all that may be reasonable required to the satisfaction of the Engineer-In- charge to proceed with the work.

### **3.9. INSURANCE**

- 3.9.1. BHEL shall arrange for insuring the materials/properties of BHEL covering the risks during transit, storage, erection and commissioning.
- 3.9.2. It is the sole responsibility of the contractor to insure his materials, equipment, workers, etc. against accidents and injury while at work and to pay compensation, if any, to workers as per Workmen's compensation Act.
- 3.9.3. If due to negligence and or non-observation of safety and other precautions by the contractors, any accident/injury occurs to the property / labor belong to third party, the contractor shall have to pay necessary compensation and other expense, if so decided by the appropriate authorities.
- 3.9.4. The contractor will take necessary precautions and due care to protect the material, while in his custody from any damage/ loss due to theft or otherwise till the same is taken over by BHEL or customer.
- 3.9.5. For lodging / processing of insurance claim the contractor will submit necessary documents. BHEL will recover the loss including the deductible franchise from the contractor, in case the damage / loss is due to carelessness / negligence on the part of the contractor. In case of any theft of material under contractor's custody, matter shall be reported to police by the contractor immediately and copy of FIR and subsequently police investigation report shall be submitted to BHEL for taking up with insurance. However, this will not relieve the contractor of his contractual obligation for the material in his custody.
- 3.9.6 The contractor shall ensure that no damage is caused to any person/property of other parties working at site. If any such damage is caused, it is responsibility of the contractor to make good the losses or compensate for the same.

### **3.10 TEMPORARY WORKS**

- 3.10.1 All Temporary Works necessary for the proper execution of the Works shall be provided and maintained by the Contractor at its own cost and subject to the consent of the Engineer-in-Charge, shall be removed by the Contractor at its own expense when such Works are no longer required and in such manner as the Engineer-in-Charge shall direct. In case the Contractor fails to remove the Temporary Works on completion of the Works, the Engineer-in-charge is authorized to get such Temporary Works removed and recover the cost thereof from the Contractor or deduct such costs from the payments to be made to the Contractor.
- 3.10.2 The contractor shall keep the area of work clean and shall remove the debris etc. while executing day-to-day work. Upon completion of work, the contractor shall remove from the vicinity of work, all scrap, packing materials, rubbish, unused and other materials and deposit them in places specified by the Engineer. The contractor will also demolish all the hutments, sheds, offices, etc. constructed and used by him and shall clean the debris. In the event of his failure to do so, the same will be arranged to be done by the Engineer and the expenses recovered from the contractor.



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**CHAPTER-IV**  
**4.0 VALUATION AND PAYMENT**

**4.1. RECORDS AND MEASUREMENTS:**

- 4.1.1. All items having a financial value shall be entered in the BHEL Measurement book so that a complete record is obtained on all work performed under the contract.
- 4.1.2. Measurement shall be carried out as per unit mentioned in the bill of quality (price-bid).
- 4.1.3. The measurements shall be taken jointly by any person or persons duly authorized on the part of the BHEL and the contractor.
- 4.1.4. The Engineer-In-charge shall give reasonable notice in writing to the contractor for appointments for measurements.
- 4.1.5. The contractor shall without extra charge, provide assistance with appliance and other things necessary for measurements.
- 4.1.6. The contractor shall bear all the cost of measurement of his work.
- 4.1.7. Measurement shall be entered in the BHEL measurement book and signed and dated by both parties on the site on completion of measurement. If the contractor objects to any of the measurement recorded on behalf of BHEL in the Measurement Book or against the item or items objected to, and such note shall be signed and dated by both parties engaged in taking the measurements.
- 4.1.8. If as a result of such objection it becomes necessary to re-measure the work wholly or in part, the expense of such measurement shall be borne by the party requiring the measurement to be retaken provided that error found by this re-measurement amounts to less than 5% (five percent) of the value as recorded by the first measurement.
- 4.1.9. If the contractor's representative fails to attend when required, the Engineer-in-Charge shall have power to proceed by himself to take measurements, and in that case, these measurements shall be accepted by the contractor as final.

**4.2. RUNNING & FINAL BILLS:**

- 4.2.1. For progress running bills payment: As soon as possible after completion of each quarter of work (else at any period as specified in Special conditions for contract) to the satisfaction of the Engineer-in-charge, the contractor shall prepare & forward certified bills & work out the financial value. These will be entered in Measurement Book & signed by both parties. Payment shall be made after affecting the recoveries due from the contractor.
- 4.2.2. The contractor shall be entitled to be paid the final sum less the value of payments already made on account subject to certification to the final bill by the Engineer in Charge. No charge shall be allowed to the contractor on account of the preparation of the final bills.
- 4.2.3. Final bill shall be submitted as per prescribed format after completion of work as per scope and upon material reconciliation (if apply) along with the following –
  - No claim certificate by contractor on a non-judicial stamp paper or Indemnity bond as per prescribed format duly notarized indemnifying BHEL in respect of specified works contract against all claims & demand against third party liability including labour and government agencies.
  - Clearance certificates whichever applicable viz., clearance certificate from customer, various statutory authority like labour department, PF authority commercial tax dept. etc.



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4.2.4. BHEL, after receipt of the Bill/invoice complete in all respects, shall settle the final bill to contractor after deducting all dues to BHEL, within the stipulated days as per Clause 4.3.

**4.3. PAYMENT OF BILLS:**

The payment for bills will normally be **released within 30 days of submission of bills complete in all respects** with all documents. The Contractor should submit a duly filled EFT Mandate form certified through Bank for release of payment. It is the responsibility of the contractor to make his own arrangements for making timely payments towards labour wages, statutory payments, outstanding dues etc. and other dues in the meanwhile.

**4.4. RECOVERY FROM THE CONTRACTOR:**

4.4.1. Whenever under the contract any sum of money shall be recoverable from or payable to the contractor, the same may be deducted from any sum then due or which at any time thereafter may become due to the contractor under the contract or under any other contract with BHEL or from his security deposit, or he shall pay the claim on demand.

4.4.2. Recoveries arising out of Risk & Cost and LD or any other recoveries due from Contractor:

Following sequence shall be applicable for recoveries from contractor:

- a) Dues available in the form of Bills payable to contractor, SD, BGs against the same contract.
- b) Demand notice for deposit of balance recovery amount shall be sent to contractor, if funds are insufficient to effect complete recovery against dues indicated in (a) above.
- c) If contractor fails to deposit the balance amount to be recovered within the period as prescribed in demand notice, following action shall be taken for balance recovery.
- d) If recovery cannot be made out of dues payable to the contractor as above, balance amount to be recovered, shall be informed to other Regions/Units for making recovery from the Unpaid Bills/Running Bills/SD/BGs/Final Bills of contractor.

4.4.3 For civil contracts, recoveries on account of water supply charges shall be made at the rate of 0.1% of executed contract value unless exempted as per terms & conditions of contract.

4.4.4 Recoveries for tools, plant, and electricity shall be effected as per terms & conditions of the contract.

**4.5. TAXES AND OTHER DUTIES:**

4.5.1 All statutory taxes, cess, levies & duties shall be deducted from the payment, as per GST Act 2017 & other prevailing government rules.

**4.5.2. GST RELATED TERMS & CONDITIONS**

4.5.2.1 Bidder has to specify the following in their techno commercial bid (part I bid in case of two-part bid):

- a) Legal Name of the bidder as in GST registration, GST registration No., State, Place of business, category of registration under GST i.e. Registered dealer / Unregistered dealer/ dealer opted for Composition Scheme,





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- b) HSN (Harmonised System Nomenclature) / SAC (Service Accounting Code), description of Goods/Services and applicable IGST / CGST / SGST rate and any other statutory levy, if any, for each item of Goods or Services.
- 4.5.2.2 Unregistered Dealer: Since in case of unregistered dealer, GST will have to be paid by BHEL under reverse charge mechanism, the same shall be added to the quoted price for evaluation bid.
- 4.5.2.3 Dealer opting for Composition Scheme in case of registered dealer, who opt for composition scheme at the time of submission of bid, no GST will be payable to the bidder and also same will not be considered for evaluation of bid. Dealer has to declare in technical bid that no GST is shown separately in price bid. However, in case at the time of actual supply, the bidder charges GST at normal rate, the same shall be reimbursed subject to the availability of GST credit to BHEL. In case GST credit is not available to BHEL, no GST will be payable to the bidder.
- 4.5.2.4 Reimbursement of GST shall be made by BHEL HERP on matching of Contractor inputs as mentioned below at GST portal and after ensuring of availability of input credit to BHEL, HERP. Hence, Contractor has to ensure compliance as follows:
- a) Timely raising & submission of GST compliant Invoices
  - b) Timely receipt of Goods & Services
  - c) Timely and correct payment of applicable GST by supplier/contractor
  - d) Timely filing of return
  - e) Compliance of other applicable provisions on supplier/contractor:
- 4.5.2.5 Contractor has to also give consent to accept payment of tax after such matching in all cases where bills are submitted directly to BHEL-HERP or through bank or under LC or through any other mode.
- 4.5.2.6 In the event of any disallowance of input credit (including reversal of credit) or applicability of interest or arising of any other financial liability on BHEL-HERP due to any default of supplier/contractor under GST such as non/delayed receipt of Good/Services, delayed raising & submission of invoices, delayed payment of tax, non/wrong declaration of sale by Contractor in return etc. or any other reason not attributable to BHEL, such implication shall be to supplier's/contractor's account and will be deducted from bills.
- 4.5.2.7 In the event of any change in the status of the bidder after submission of the bid but before the supply/service, GST applicable at the time of supply/service or GST quoted in the bid, based on the registration status of the bidder, whichever is lower shall be payable.
- 4.5.2.8. Statutory Variation in Taxes & duties as applicable at the time of supply shall be payable. However, in the event of no change in law but bidder quoting certain tax structure in bid document which is lower than the applicable one, such amount shall be the maximum amount of tax that can be claimed by bidder.
- 4.5.2.9 In case of Liquidated damage (LD) recovery, GST is not applicable on LD.



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4.5.2.10. As per the extant GST rules, as of now it is not mandatory to file returns immediately and ITC has been allowed on self-declaration. In view of the changed scenario, the payment of GST shall have made to the contractors simultaneously with their work/services invoices. GST portion of invoice value will be paid only after fulfilling following conditions:

- (a) Payment of GST amount into Govt. Account by supplier against invoice raised to BHEL.
- (b) Filing of GST return within scheduled date.
- (c) Display of GST credit against BHEL GSTIN NO.09AAACB4146P2ZC on GSTN portal.

**4.6. INCOME TAX- IT:**

All statutory taxes & levies shall be deducted from the payment, as per prevailing government rules.

**4.7. MISCELLANEOUS CHARGES:**

Unless otherwise specified in the Special conditions of Contract, Electricity shall be provided by BHEL free of cost. All charges on account of octroi, terminal, Entry tax, royalty and/or other duties on materials obtained for the work (excluding materials provided by BHEL) shall be borne by the contractor.

**4.8. LIQUIDATED DAMAGE (LD)**

4.8.1. If the contractor fails to maintain the required progress of work which results in delay in the completion of the work as per the contractual completion period, BHEL shall have the right to impose Liquidated Damage/Penalty at the rate of 0.5% of the contract value, per week of delay or part thereof subject to a maximum of 10% of the contract value. For this purpose, the period of delay shall be the delay attributable to the Contractor for the completion of work as per contract.

4.8.2 LD against delay in executed work/supply in case of Termination of Contract LD against delay in executed work/supply shall be calculated in line with LD clause of the contract for the delay attributable to contractor/ supplier.

For this purpose, contract value shall be taken as Executed Value of work/supply for the purpose of limiting maximum LD value. Method for calculation of "LD against delay in executed work/supply" is given below.

- i. Let the time period from scheduled date of start of work till termination of contract excluding the period of Hold (if any) not attributable to contractor/ supplier= T1
- ii. Let the value of executed work/supply till the time of termination of contract= X
- iii. Let the Total Executable Value of work/supply for which inputs/fronts were made available to contractor/ supplier and were planned for execution till termination of contract = Y
- iv. Delay in executed work/supply attributable to contractor/supplier i.e. T2=  $(1 - X/Y) \times T1$
- v. LD shall be calculated in line with LD clause of the Contract for the delay attributable to contractor/ supplier taking "X" as Contract Value and "T2" as delay attributable to contractor/ supplier.





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Reason for the delay due to drawing, foundation, deputation of resources etc. will be documented properly for delay analysis and same to be submitted to finance for LD calculation, if applicable.

#### **4.9. Risk & Cost Amount against Balance Work**

Risk & Cost Clause, in line with Conditions of Contract may be invoked in any of the following cases:

1. Contractor/ supplier's poor progress of the work vis-à-vis execution timeline as stipulated in the Contract, backlog attributable to contractor/ supplier including unexecuted portion of work/ supply does not appear to be executable within balance available period (#) considering its performance of execution.
2. Withdrawal from or abandonment of the work by contractor before completion of the work as per contract.
3. Non-completion of work/ Non-supply by the Contractor/ supplier within scheduled completion/delivery period as per Contract or as extended from time to time, for the reason attributable to the contractor/ supplier.
4. Termination of Contract on account of any other reason (s) attributable to Contractor/ Supplier.
5. Assignment, transfer, subletting of Contract without BHEL's written permission resulting in termination of Contract or part thereof by BHEL.
6. Non-compliance to any contractual condition or any other default attributable to Contractor/ Supplier.

**Risk & Cost amount against balance work shall be calculated as follows:**

Risk & Cost Amount=  $[(A-B) + (A \times H/100)]$

Where A= Value of Balance scope of Work as per rates of new contract

B= Value of Balance scope of Work as per rates of old contract being paid to the contractor at the time of termination of contract i.e. inclusive of PVC, if any.

H = Overhead Factor to be taken as 5

7. The Supplier / Contractor shall on no account be entitled to any gain on such risk & cost purchase.

#### **4.10. No Interest payable to Contractor**

Notwithstanding anything to the contrary contained in any other document comprising in the Contract, no interest shall be payable by BHEL to Contractor on any moneys or balances including but not limited to the Security Deposit, EMD, Retention Money, RA Bills or the Final Bill, or any amount withheld and/or appropriated by BHEL etc., which becomes or as the case may be, is adjudged to be due from BHEL to Contractor whether under the Contract or otherwise.



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**CHAPTER- V**

**5.0 RESPONSIBILITIES OF THE CONTRACTOR IN RESPECT OF LAWS, EMPLOYMENT OF WORKERS ETC.**

5.1. The contractor should ensure compliance of labour laws, payment of wages, bonus, PF, ESIC, allowances for safety & hardship & other nonmonetary/ statutory benefits etc to labours employed by him either directly or through sub- contractors, in accordance with the provisions of:

- Contract Labour (R&A) Act 1970 and rules 1971.
- Payment of wages Act.
- Minimum Wages act 1948,
- Employees State Insurance Act 1948, Rules and regulations 1950.
- Employees Provident Fund Act 1952 and Pension Scheme 1995.
- Employees Compensation Act 1923.
- Maternity Benefit Act 1961.
- Equal Emolument Act 1976.
- Payment of Bonus Act 1963.
- Inter State Migrant Act.
- Building and Other Constructions Workers Act, 1996,

5.2. The contractor shall at all times indemnify BHEL HERP against all claims, damages or compensation under the provisions of above acts or any modifications thereof or any other law relating thereof and rules made thereunder from time to time or as consequence of any accident or injury to any workman or other persons in or about the works, whether in the employment of the contractor or not, save and except where such accident or injury has resulted from any act of the Corporation, its agents, or servants, and also against all costs, charges and expenses of any suit, action or preceding arising out of such accident or injury and against all sum or sums which may with the consent of the contractor be paid to compromise or compendia any such claim.

5.3 The Contractor in the event of engaging 20 or more workmen, shall obtain Independent license under the Contract labour (Regulation and Abolition) Act 1970 from the concerned authorities based on Form-V issued by the Principal Employer/Customer. In order to issue Form-V by Customer, Contractor shall fulfill all Statutory requirements like Insurance Policy, PF Code/PF Account number etc as per the requirement of BHEL/Customer.

5.4 BHEL shall recover the amount of compensation paid to victim(s) by BHEL towards loss of life/permanent disability due to an accident which is attributable to the negligence of contractor, agency or firm or any of its employees as per Employee's Compensation Act, 1923 & Guidelines for Settlement of Claims for Compensation on accidents applicable to the Department of Public Enterprises.

5.5 Contractor shall ensure payment of statutory prescribed minimum wages as applicable from time to time in the presence authorized representative of BHEL and maintain proper records of their timely disbursement. These records need to be preserved for a period of at least any 3 years and should be made available even after the contract is over for any verification by the statutory/BHEL authorities.

5.6. In case of the contractor employs Women as employee he will discharge his obligation under law in respect of such women workers as per Factory Act, Maternity Benefit Act and other laws of Uttar Pradesh.



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- 5.7. The contractor shall pay and bear all taxes, fees, license charges, Cess, duties, deposits, tolls, royalties, commission or other charges which may be leviable on account of his operations in executing the contract.
- 5.8 All safety rules and codes applied by the BHEL at site shall be observed by the contractor without exception. The contractor shall be responsible for the safety of the equipment/material and works to be performed by him and shall maintain all light, fencing guards, slings etc. or other protection necessary for the purpose. Contractor shall also take such additional precautions as may be indicated from time to time by the Engineer-in-charge with a view to prevent pilferage, accidents, fire hazards. Due precautions shall be taken against fire hazards and atmospheric conditions.
- 5.9. Suitable number of Clerical staff, watch and ward, store keepers to take care of equipment/materials and construction tools and tackles shall be posted at site by the contractor till the completion of work under this contract.
- 5.10. The contractor shall arrange for such personal protective equipment as are necessary for such type of work and carry out the requisite site tests of handling equipment, lifting tools, tackles etc. as per prescribed standards and practices.
- 5.11. Contractor has to ensure the implementation of Health, Safety and Environment (HSE) requirements as per directions given by BHEL. The contractor has to assist in HSE audit by BHEL and submit compliance Report. The contractor has to generate and submit record/reports as per HSE plan/activities as per instruction of BHEL.
- 5.12 The Contractor shall not deploy any person below the age of 18 years or above the age of 60 years.



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**CHAPTER- VI**

**6.0 RIGHTS OF BHEL FOR TERMINATION/CANCELLATION OF CONTRACT**

- 6.1. BHEL reserves the right to withdraw any portion of work and/or to restrict/alter quantum of work as indicated in the contract during the progress of work and get it done through other agencies to suit BHEL's commitment to its customer or in case BHEL decides to advance the date of completion due to other emergent reasons/ BHEL's obligation to its customer.
- 6.2. BHEL reserves the right to terminate the contract or withdraw portion of work and get it done through other agency, at the risk and cost of the contractor after due notice of a period of Two weeks by BHEL in any of the following cases:
- i). Contractor's poor progress of the work vis-à-vis execution timeline as stipulated in the Contract, backlog attributable to contractor including unexecuted portion of work does not appear to be executable within balance available period considering its performance of execution.
  - ii). Withdrawal from or abandonment of the work by contractor before completion of the work as per contract.
  - iii). Non-completion of work by the Contractor within scheduled completion period as per Contract or as extended from time to time, for the reasons attributable to the contractor.
  - iv). Termination of Contract on account of any other reason (s) attributable to Contractor.
  - v). Assignment, transfer, subletting of Contract without BHEL's written permission.
  - vi). Non-compliance to any contractual condition or any other default attributable to Contractor.
- 6.3. If at any time after the acceptance of the tender, BHEL shall for any reason whatsoever not require the whole or any part of the work, to be carried out, the Engineer-In-charge shall give notice in writing of the fact to the contractor, who shall have no claim to any payment of compensation or otherwise, howsoever on account of any profit or advantage which he might have derived from the execution of the work in full but which he did not derive in consequence of the foreclosing of the work.
- 6.4. The contractor shall be paid at contract rates for the full amount of the work executed including such additional work i.e., cleaning of site etc. as may be rendered necessary by the said foreclosing. He shall also be allowed a reasonable payment (as decided by the Accepting Officer) for any expenses sustained on account of labour and material collected but which could not be utilized on the work as verified by the Engineer-In-charge but the contractor shall not have any claim for compensation on account of any alterations having been made in the original specifications, drawings, designs and instructions involving and curtailment of the work as originally contemplated.



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**Chapter VII**

**7.0 MISCELLANEOUS PROVISIONS & OTHER ISSUES.**

**7.1 SETTLEMENT OF DISPUTES & ARBITRATION:**

- i. All questions/interpretations regarding subject matter of the contract shall be decided by the BHEL on the request of the vendor and the decision of the BHEL shall be final.
- ii. In case of dispute, steps shall be taken by the parties to the contract to settle the same through negotiations.
- iii. In case, dispute is not settled in negotiations, it shall be referred to conciliator appointed by the competent authority of the BHEL. The conciliation proceedings with respect to a dispute as defined in the BHEL Conciliation Scheme, 2018 and subsequent revisions can be initiated under the scheme at any stage whether before, during or even after the commencement of arbitration proceedings or litigation before courts. This conciliation scheme is available on our websites <https://herp.bhel.com> and [www.bhel.com](http://www.bhel.com).
- iv. In case dispute is not settled in conciliation proceedings, the same shall be referred to arbitration as per corporate guidelines of the BHEL and the arbitration proceeding shall be conducted as per provisions of the arbitration and conciliation act, 1996 read with corporate guideline as amended from time to time.
- vi. The vendor shall continue to perform the contract, pending settlement of dispute(s).

**7.2. LAWS GOVERNING THE CONTRACT:**

The Order/Contract shall be executed and governed by the laws of India and the courts of India alone shall have jurisdiction in respect of any matter arising under or in connection with the Order/Contract.

**7.3. ORDERS UNDER THE CONTRACT:**

All orders, notices etc. to be under the contract shall be in writing, typescript or printed and if sent by registered post to the address given in tender of the contractor, shall be deemed to have been on the date when in ordinary course they would have been delivered to him. The contractor shall carry out without delay all orders given to him.

**7.4. JURISDICTION OF COURT:**

All disputes or differences arising out of or in connections with the contract shall be subject to the exclusive jurisdiction of the court at Varanasi (U.P.) Only.

**7.5. CLOSING OF CONTRACTS**

The Contract shall be considered completed and closed upon completion of all contractual obligations and settlement of Final Bill or completion of Guarantee period whichever is later. Upon closing of Contract, BHEL shall issue a completion certificate as per standard format, based on specific request of Contractor.

**7.6. REVERSE AUCTION:**

BHEL reserves the right to go for Reverse Auction. The Business Rules for Reverse Auction shall be as per BHEL guidelines issued from time to time.

**7.7. SUSPENSION OF BUSINESS DEALINGS WITH CONTRACTORS:**

Guidelines for suspension of business dealings with suppliers/ contractors: the revised guidelines for suspension of business dealings are available on BHEL website at "[www.bhel.com](http://www.bhel.com)" on "supplier registration page". Respective bidders / suppliers may refer



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this before quoting as per their requirement. Action against the defaulted suppliers/ contractors' shall be taken as per these guidelines only.

**7.8 PUBLIC PROCUREMENT POLICY:**

As per the directives of government of India in form of public procurement (preference to make in India) order, 2017 and subsequent orders, BHEL will extend the purchase preference to Indian vendors over foreign suppliers for items identified by the respective nodal ministries from time to time. "for this procurement, public procurement (preference to make in India), order 2017 dated 15.06.2017, 28.05.2018, 29.05.2019 & 04.06.2020 and subsequent orders issued by the respective nodal ministry shall be applicable even if issued after issue of this NIT but before finalization of contract/ PO/ WO against this NIT. In the event of any nodal ministry prescribing higher or lower percentage of purchase preference and/ or local content in respect of this procurement, same shall be applicable."

**7.9 INTEGRITY PACT (IP):**

The revised Implementation Circular, IP document and the IP clause will be applicable for all tenders (covered under Purchase Policy/ Works Policy) above threshold value (presently Rs. 2 Cr.) floated on or after 01.04.2022 as per SS&P Ref: AA: SSP: IP Circular No. 32 of 2021-22 dated 28.02.2022 & Ref: AA: SSP: IP:22-23:01 Circular 12 of 2022-23 dated 26.07.2022.

**7.10 Conflict of interest among Bidders/Agents:**

A bidder shall not have conflict of interest with other bidders. Such conflict of interest can lead to anti-competitive practices to the detriment of procuring entity's interests. The bidder found to have a conflict of interest shall be disqualified. A bidder may be considered to have a conflict of interest with one or more parties in this bidding process, if

- a) They have controlling partner (s) in common; or
- b) They receive or have received any direct or indirect subsidy financial stake from any of them; or
- c) They have the same legal representative/agent for purposes of this bid; or
- d) They have relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the bid of another bidder; or
- e) Bidder participates in more than one bid in this bidding process. Participation by a bidder in more than one bid will result in the disqualification of all bids in which the parties are involved. However, this does not limit the inclusion of the components/ sub-assembly assemblies from one bidding manufacturer in more than one bid; or
- f) In cases of agents quoting in offshore procurements, on behalf of their principal manufacturers, one agent cannot represent two manufacturers or quote on their behalf in a particular tender enquiry. One manufacturer can also authorise only one agent/dealer. There can be only one bid from the following:
  - 1. The principal manufacturer directly or through one Indian agent on his behalf; and
  - 2. Indian/foreign agent on behalf of only one principal; or
- g) A bidder or any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the contract that is the subject of the bid; or
- h) In case of a holding company having more than one independently manufacturing units, or more than one unit having common business ownership/management, only one unit should quote. Similar restrictions would apply to closely related sister companies. Bidders must proactively declare such sister/ common business/ management units in same/ similar line of business.



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**7.11 Breach of contract, Remedies and Termination:**

In case of breach of contract, wherever the value of security instruments like performance bank guarantee available with BHEL against the said contract is at least 10% of the contract value, the same be encashed. In case the value of the security instruments available is less than 10% of the contract value, the balance amount be recovered from other financial remedies (i.e. available bills of the contractor, retention amount, etc. with BHEL) or legal remedies be pursued. The balance scope shall be got done independently without Risk & Cost of the failed supplier/ contractor.

Further, levy of liquidated damages, debarment, termination, de-scoping, short-closure, etc., shall be applied as per provisions of the contract.

**7.12 SPECIAL CONDITIONS FOR MICRO AND SMALL ENTERPRISES (MSEs):**

Special benefits as per govt rules will be provided to MSEs unless stated otherwise in Tender Document. Benefits will be passed on only in specific categories of services and only for specific categories of MSEs, which qualifies for exemption as per govt rules. Following conditions will be applicable for MSEs:

- i. MSE contractor can avail the intended benefits as per guidelines of Ministry of MSE only if they submit **Valid UDYAM certificate** along with Technical Bid.
- ii. To avail the benefit intended for MSEs, bidders must claim for such benefit. Without such claims, benefits will not be passed on to them.

**7.13 OTHER ISSUES:**

Value of Non-Judicial Stamp paper for Bank guarantee and for Contract agreement shall be not less than Rs.100 unless otherwise required under relevant statutes. All expenses towards procurement of Stamp paper and preparation of contract agreement shall be in the scope of contractor.

In case of any conflict between the General Conditions of Contract and special Conditions of contract, provisions specified in the Special conditions of contract shall prevail.

BHEL may not insist for signing of Contract Agreements in respect of low value and short time period.





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**Bidders Declaration**

I / we have read the terms and conditions of the tender document, our contractual obligations towards execution of the Contract as per the tender document, we know of all obligations to be performed by us under the contract, the financing cost, administrative expenses, Statutory liabilities, etc. and undertake to fulfil its entire requirement under the quoted rates.

Thanking you,

Yours Sincerely


Signature, seal and address of the party

NIT No. BHEL/HERP/WCM/FY24/EM/CLH ASSY 45 of 89

NIT No. BHEL/HERP/WCM/FY24/EM/CLH ASSY 46 of 89

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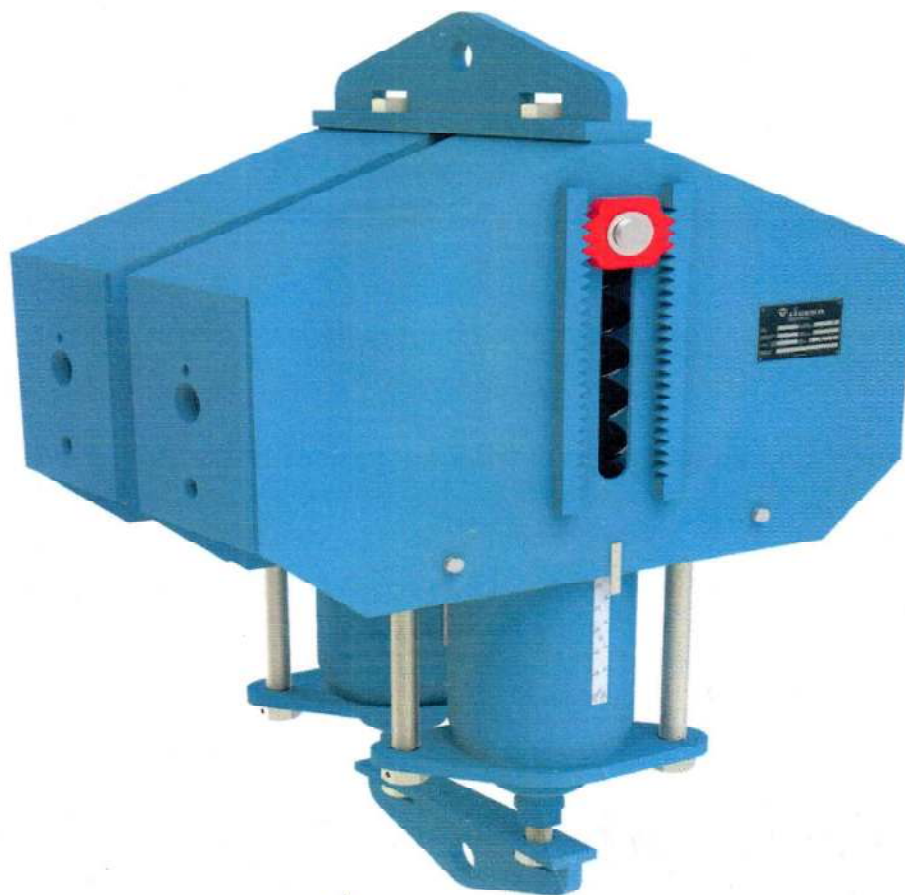
TD-106-1 Rev No. 5 Form No.		<b>PRODUCT PROCEDURE</b> <b>LOAD HANGERS</b> <b>HERP VARANASI</b>		Procedure No.	RVPROC-005
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**PROCEDURE FOR ASSEMBLY OF SUPPORT TYPE (6 & 7 SERIES), SINGLE CELL/ MULTICELL AND TRAPEZE TYPE (9 SERIES) CONSTANT LOAD HANGERS (CLH).**

This document covers the procedure to be followed for below assemblies: -


1. Multicell CLH
2. Single Cell Support Type CLH (61 & 71 Series)
3. Multicell Support Type CLH (72,73 & 74 Series)
4. Trapeze Type CLH (9 Series)

**1.Assembly procedure for Multicell CLH**




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Revisions:-	Prepared By	Approved By	Date:
Refer Record of Revisions	Amit Kumar	S K Tiwari	20-09-2019

TD-106-1 Rev No. 5	Form No.		<b>PRODUCT PROCEDURE</b> <b>LOAD HANGERS</b> <b>HERP VARANASI</b>		Procedure No.	RVPROC-005						
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COPYRIGHT AND CONFIDENTIAL The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED, It must not be used directly or indirectly in any way detrimental to the interest of the company.			<p>Single cell CLH to be checked for testing in accordance with below points before going for multicell assly-</p> <ul style="list-style-type: none"> <li>➤ Load at which multicell to be tested, is to be equally divided into single cell load.</li> <li>➤ Test each single cell CLH with above single cell load derived from multicell CLH load.</li> <li>➤ After single cell testing, place a rod in between USEP and case assly slot and remove the GTS while CLH is still hanging in testing stand. then bring down the single cell CLH (Ensure Same dia rod for all hangers for each multicell lot).</li> </ul> <p><u>After completing the above steps, following procedure to be followed for multicell assembly: -</u></p> <ul style="list-style-type: none"> <li>➤ Single cell CLH to be placed on ground horizontally and assembly to be done in lying position.</li> <li>➤ Multicell GTS (Guide and Travel Stop Bolt) to be put inside upper spring end plate (USEP) pipe.</li> <li>➤ take CLH of multicell set, match the GTS of multicell CLH with USEP pipe. assembly of CLH-1482 to clh-1495 is to be done then eye plate of transport lock assembly is to be inserted over multicell GTS. In the same way third and fourth CLH should be inserted in position, assembled as per drawing as applicable.</li> <li>➤ Assemble the rectangular side connecting plate with the help of threaded bolts and washer on both the side as per drawing.</li> </ul>									
			<table border="1"> <tr> <td data-bbox="162 1793 565 1850">Revisions:-</td> <td data-bbox="565 1793 899 1850">Prepared By</td> <td data-bbox="899 1793 1232 1850">Approved By</td> <td data-bbox="1232 1793 1479 1850">Date:</td> </tr> <tr> <td data-bbox="162 1850 565 1904">Refer Record of Revisions</td> <td data-bbox="565 1850 899 1904">Anil Kumar</td> <td data-bbox="899 1850 1232 1904">S K Tiwari</td> <td data-bbox="1232 1850 1479 1904">20-09-2019</td> </tr> </table>				Revisions:-	Prepared By	Approved By	Date:	Refer Record of Revisions	Anil Kumar
Revisions:-	Prepared By	Approved By	Date:									
Refer Record of Revisions	Anil Kumar	S K Tiwari	20-09-2019									



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<p style="text-align: center;">COPYRIGHT AND CONFIDENTIAL</p> <p>The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED. It must not be used directly or indirectly in any way detrimental to the interest of the company.</p>		<ul style="list-style-type: none"> <li>➤ Assemble upper load connecting assembly and then lower load connecting assembly as per drawing. Minor adjustment in hole alignment to be done by fitting. Ensure all the holes to be properly cleaned and deburred.</li> <li>➤ Assemble the washer, stud and nut in transport lock assembly (keep the nut in fully loose position) If applicable.</li> <li>➤ Now take multicell CLH to test stand for testing at given parameters as per RVPROC-001.</li> <li>➤ Fix the travel stop plate between serrated plates to lock the GTS from both the sides. now insert the distance bush, washers, circlips etc both the sides as per drawing at cold position.</li> <li>➤ now unload the assembly from test stand and put on ground in horizontal position and assemble the LA bolt connecting plate (hook type) to lock the load adjustment bolt both side as per drawing. This connecting plate (hook type) to also be locked by nuts of LA bolts as per drg.</li> <li>➤ Tight the nut of transport lock assembly completely.</li> </ul>			
		Revisions:-	Prepared By	Approved By	Date:
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## 2. ASSEMBLY PROCEDURE FOR SINGLE CELL SUPPORT TYPE (6 & 7 series) CLH.



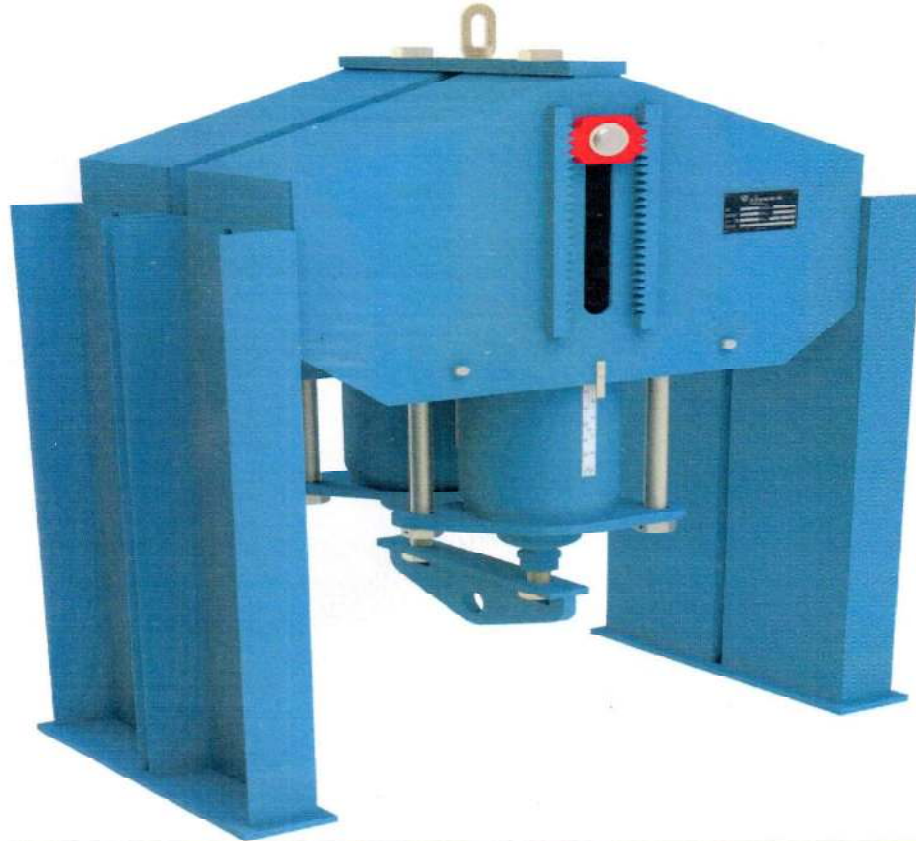
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- Tested single cell CLH (as per RVPROC-001) to be placed on ground horizontally and assembly to be done in lying position.
- Assemble the support assemblies with the help of bolts, washers, threaded bolt and nut on both the side as per drawing. Minor adjustment in hole alignment to be done by fitting. Ensure all the holes to be properly cleaned and deburred.
- Assemble the stepped stud, washer and eye nut (in top connection block) as per drawing.
- Assemble the dust covers and fasteners where applicable as per drawing.

Revisions:-	Prepared By	Approved By	Date:
Refer Record of Revisions	Amit Kumar	S K Tiwari	20-09-2019

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### 3. ASSEMBLY PROCEDURE FOR MULTICELL SUPPORT TYPE CLH (72, 73 & 74 SERIES)



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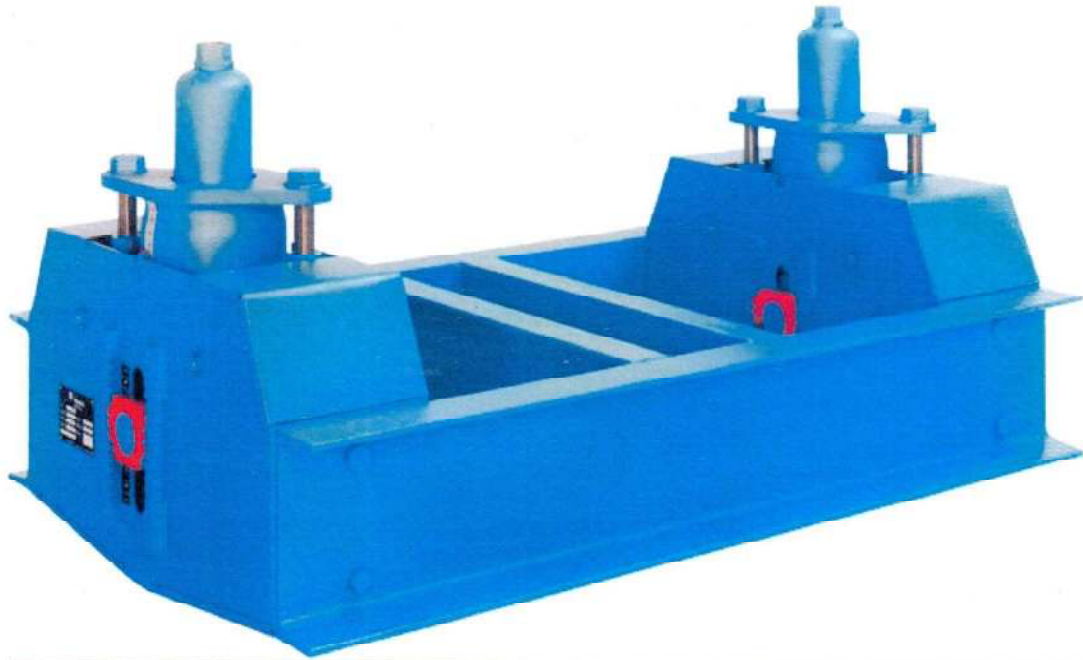
- Take a tested multicell (at given parameter) constant load hanger as per RVPROC-001 and put it on stand in horizontal position.
- dismantle the upper load connecting assembly and assemble support connecting plate as per drg.
- Dismantle one side connecting plate and assemble one side support assly.
- Dismantle other side connecting plate and assemble support assly.
- assemble the studs, washers and eye nuts as per drawing.
- Minor adjustment in hole alignment to be done by fitting. Ensure all the

Revisions:-	holes to be properly cleaned and deburred	Prepared By	Approved By	Date:
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#### 4. ASSEMBLY PROCEDURE FOR TRAPEZE TYPE CLH (9 SERIES).



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- Fabricated trapeze structure as per drg while tack welding the joints.
- Test (at given parameter) 02 nos of CLHs single cell CLH as per RCPROC-001.
- Assemble the tested CLH on one side and fasten both the end of load hanger with threaded bolt, nut, washer and bolt with trapeze structure as per drawing. and same to be done for another side assembly as per drawing.
- Complete welding of trapeze structure as per drg and ensure DP test of welded joints.
- Assemble dust cover and fasteners where applicable as per drawing.

Revisions:-	Prepared By	Approved By	Date:
Refer Record of Revisions	Amit Kumar	S K Tiwari	20-09-2019

TD-106-1 Rev No. 5	Form No.		<b>PRODUCT PROCEDURE</b> <b>LOAD HANGERS</b> <b>HERP VARANASI</b>	Procedure No.	RVPROC-005
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**RECORD OF REVISIONS**

REV. NO	DATE	REVISION DETAILS	REVISED	APPROVED

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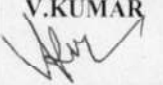
Revisions:-	Prepared By	Approved By	Date:
Refer Record of Revisions	Amit Kumar	S K Tiwari	20-09-2019

TD-106-1 Rev No. 5	Form No.		<b>PRODUCT PROCEDURE</b> <b>LOAD HANGERS</b> <b>HERP VARANASI</b>		Procedure No.	RVPROC-003
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<p style="writing-mode: vertical-rl; transform: rotate(180deg);"> <b>COPYRIGHT AND CONFIDENTIAL</b>            The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED.            It must not be used directly or indirectly in any way detrimental to the interest of the company.         </p>	<p align="center"><b><u>PROCEDURE FOR RECTIFICATION OF CONSTANT LOAD HANGERS (CLH) (LISEGA DESIGN)</u></b></p>					
	<p>This document covers the procedure to be followed for Rectification of Constant load Hanger (CLH) (Lisega Design) as per specific problem category.</p> <p>Following problems are being witnessed so far in CLH testing at HERP.</p> <p>A). Main Spring under Load (Load not adjusting).            B). Stell Ring rubbing with Case assy.            C). GTS Rubbing with Case assy slot.            D). Bearing Axle rubbing with Case Assy.            E). Guide Bush rubbing with Load Tube.            F). Cam Problem (Notch in Graph).            G). Dowel Bolt Jam.</p> <p><b>A). <u>Main Spring under Load (Load not adjusting).</u></b></p> <p>1.0 Retain both auxiliary springs at their position, while clamping with the help of fixture studs, nuts and hydraulic jacks.</p> <p>2.0 Take out under loaded previous assembled Main spring of CLH while dismantling Guide Tube, LA Bolts.</p> <p>3.0 Assemble correct main spring (duly cleared by QC) in Load Tube.</p> <p>4.0 Assemble Guide Tube, LA Bolts as per drawing.</p> <p>5.0 Release both auxiliary springs from stretched position, so that CAM comes in contact with Bearings. Ensure at least 80% contact of bearings on both Cam profiles and uniform gap between bearing Axle and Case assy. Use taper wedges to ensure the uniform gaps.</p> <p>6.0 Ensure alignment and uniform gaps of load tube &amp; Guide tube.</p> <p>7.0 Stell ring should be loose fitted (around 1-2 mm loose). Reduce thickness of stell ring by machining/grinding for maintaining the gap, if required.</p>					

<b>Revisions:</b>  <b>Refer to record of revisions:</b>	<b>Prepared:</b> S.K.Tiwari 	<b>Approved:</b> V.KUMAR 	<b>Date:</b> 28.10.16
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TD-106-1 Rev No 5 Form No		<b>PRODUCT PROCEDURE</b> <b>LOAD HANGERS</b> <b>HERP VARANASI</b>	Procedure No.	RVPROC-003
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**B). Stell Ring rubbing with Case Assy .**

1.0 Retain both auxiliary springs at their position, while clamping with the help of fixture studs, nuts and hydraulic jacks.

2.0 Take out GTS (Guide & Travel Stop Bolt) after removing circlips & washers.

3.0 Further Take out Load Tube Assembly while dismantling Guide Tube, LA Bolts.

4.0 Take out Stell Ring from Load Tube Assly.

5.0 Stell ring should be loose fitted (around 1-2 mm loose). Reduce thickness of stell ring by machining/grinding for maintaining the gap as required.

6.0 Assemble Guide Tube, LA Bolts as per drawing.

7.0 Release both auxiliary springs from stretched position, so that CAM comes in contact with Bearings. Ensure at least 80% contact of bearings on both Cam profiles and uniform gap between bearing Axle and Case assy. Use taper wedges to ensure the uniform gaps.

8.0 Ensure alignment and uniform gaps of load tube & Guide tube.

**C). GTS Rubbing with Case Assy.**

1.0 Mark the rubbing points of GTS with case assly slot during testing of CLH.

2.0 Retain both auxiliary springs at their position, while clamping with the help of fixture studs, nuts and hydraulic jacks.


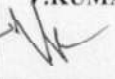
3.0 Take out GTS (Guide & Travel Stop Bolt) after removing circlips & washers.

4.0 Further Take out Load Tube Assembly while dismantling Guide Tube, LA Bolts.


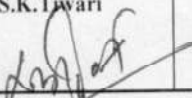

5.0 Gas cut the already marked area. Grind to make smooth the gas cut portion.

6.0 Re-assemble Load Tube, Guide Tube, LA Bolts, GTS as per drawing.

7.0 Release both auxiliary springs from stretched position, so that CAM comes in contact with Bearings. Ensure at least 80% contact of bearings on both Cam profiles and uniform gap between bearing Axle and Case assy. Use taper wedges to ensure the uniform gaps.


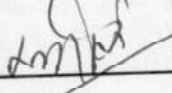

<b>Revisions:</b>  <b>Refer to record of revisions:</b>	Prepared: S.K. Tiwari 	Approved: V.KUMAR 	Date: 28.10.16

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TD-106-1 Rev No. 5	Form No.		<b>PRODUCT PROCEDURE</b> <b>LOAD HANGERS</b> <b>HERP VARANASI</b>	Procedure No.	RVPROC-003
				Rev No 00	
				Page 3 of 6	
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">           COPYRIGHT AND CONFIDENTIAL            The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED.            It must not be used directly or indirectly in any way detrimental to the interest of the company.         </p>		<p>8.0 Ensure alignment and uniform gaps of load tube &amp; Guide tube.</p> <p>9.0 Stell ring should be loose fitted (around 1-2 mm loose). Reduce thickness of stell ring by machining/grinding for maintaining the gap as required.</p> <p><b>D). <u>Bearing Axle rubbing with Case Assy.</u></b></p> <p>1.0 Retain both auxiliary springs at their position, while clamping with the help of fixture studs, nuts and hydraulic jacks.</p> <p>2.0 Take out GTS (Guide &amp; Travel Stop Bolt) after removing circlips &amp; washers.</p> <p>3.0 Further Take out Load Tube Assembly while dismantling Guide Tube, LA Bolts.</p> <p>4.0 Re-assemble Load Tube by using taper wedges to ensure the uniform gaps bearing axle &amp; case assly.</p> <p>5.0 Assemble Guide Tube, LA Bolts, GTS as per drawing.</p> <p>6.0 Release both auxiliary springs from stretched position, so that CAM comes in contact with Bearings. Ensure at least 80% contact of bearings on both Cam profiles and uniform gap between bearing Axle and Case assy. Use taper wedges to ensure the uniform gaps.</p> <p>7.0 Ensure alignment and uniform gaps of load tube &amp; Guide tube.</p> <p>8.0 Stell ring should be loose fitted (around 1-2 mm loose). Reduce thickness of stell ring by machining/grinding for maintaining the gap as required.</p> <p><b>E). <u>Guide Bush rubbing with Load Tube.</u></b></p> <p>1.0 Retain both auxiliary springs at their position, while clamping with the help of fixture studs, nuts and hydraulic jacks.</p> <p>2.0 Take out Guide Tube while removing LA Bolts.</p> <p>3.0 Take out main springs and Guide bush from Load Tube.</p> <p>4.0 Re-assemble Guide bush and main springs (while maintaining uniform gaps and proper seating of springs) with spring plate &amp; Guide bush.</p>			
		<b>Revisions:</b>  <b>Refer to record of revisions:</b>	<b>Prepared:</b> S.K.Tiwari 	<b>Approved:</b> V.KUMAR 	<b>Date:</b> 28.10.16



TD-106-1 Rev No. 5	Form No.		<b>PRODUCT PROCEDURE</b> <b>LOAD HANGERS</b> <b>HERP VARANASI</b>		Procedure No.	RVPROC-003
					Rev No 00	
					Page 4	of 6
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">           COPYRIGHT AND CONFIDENTIAL            The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED,            It must not be used directly or indirectly in any way detrimental to the interest of the company.         </p> <p>5.0 Assemble Guide Tube, LA Bolts, GTS as per drawing using taper wedges to ensure the uniform gaps.</p> <p>6.0 Release both auxiliary springs from stretched position, so that CAM comes in contact with Bearings. Ensure at least 80% contact of bearings on both Cam profiles and uniform gap between bearing Axle and Case assy. Use taper wedges to ensure the uniform gaps.</p> <p>7.0 Ensure alignment and uniform gaps of load tube &amp; Guide tube.</p> <p>8.0 Stell ring should be loose fitted (around 1-2 mm loose). Reduce thickness of stell ring by machining/grinding for maintaining the gap as required.</p> <p><b>F).Cam Problem (Notch in Graph).</b></p> <p>1.0 Retain both auxiliary springs at their position, while clamping with the help of fixture studs, nuts and hydraulic jacks.</p> <p>2.0 Take out Cam Assly. Remove Cam tube by press. Replace both the CAMs by new CAMs and press fit the Cam tube into CAMs.</p> <p>3.0 Re-Assemble CAM assly.</p> <p>4.0 Release both auxiliary springs from stretched position, so that CAM comes in contact with Bearings. Ensure at least 80% contact of bearings on both Cam profiles and uniform gap between bearing Axle and Case assy. Use taper wedges to ensure the uniform gaps.</p> <p>5.0 Ensure alignment and uniform gaps of load tube &amp; Guide tube.</p> <p>6.0 Stell ring should be loose fitted (around 1-2 mm loose). Reduce thickness of stell ring by machining/grinding for maintaining the gap as required.</p>						
<b>Revisions:</b>  <b>Refer to record of revisions:</b>			<b>Prepared:</b> SK.Tiwari 	<b>Approved:</b> V.KUMAR 	<b>Date:</b> 28.10.16	

TD-106-1 Rev No. 5	Form No.		<b>PRODUCT PROCEDURE</b> <b>LOAD HANGERS</b> <b>HERP VARANASI</b>		Procedure No.	RVPROC-003	
				Rev No 00			
				Page 5 of 6			
<p><b>G). Dowel Bolt Jam.</b></p> <p>1.0 Retain both auxiliary springs at their position, while clamping with the help of fixture studs, nuts and hydraulic jacks.</p> <p>2.0 Take out GTS (Guide &amp; Travel Stop Bolt) after removing circlips &amp; washers.</p> <p>3.0 Further Take out Load Tube Assembly while dismantling Guide Tube, LA Bolts. Also take out Cam Assly.</p> <p>4.0 . Now release both the auxiliary springs. Loose the dowel bolt and Dismantle the Disk (Machined) from auxiliary spring and tap it as required.</p> <p>5.0 Again tighten the dowel bolt and Re-Assemble Disk. Check for smooth rotation of dowel bolt in disc.</p> <p>6.0 Again retain both auxiliary springs at their position, while clamping with the help of fixture studs, nuts and hydraulic jacks.</p> <p>7.0 Re-assemble CAM assly , Load Tube, Guide Tube, LA Bolts, GTS as per drawing using taper wedges to ensure the uniform gaps.</p> <p>8.0 Release both auxiliary springs from stretched position, so that CAM comes in contact with Bearings. Ensure at least 80% contact of bearings on both Cam profiles and uniform gap between bearing Axle and Case assy. Use taper wedges to ensure the uniform gaps.</p> <p>9.0 Ensure alignment and uniform gaps of load tube &amp; Guide tube. Stell ring should be loose fitted (around 1-2 mm loose). Reduce thickness of stell ring by machining/grinding for maintaining the gap as required.</p>							
<b>Revisions:</b>  Refer to record of revisions:					Prepared: S.K.Tiwari 	Approved: V.KUMAR 	Date: 28.10.16

[illegible]



Receipt No : 684365/2024/HERP-ENGG&amp;MKT

FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN MILLIMETRES)

89966-666-08-C

NOTES:-  
ON SNIMVBU 01 ITEMS MARKED THUS \* ARE TO BE ELECTROPLATED WITH ZINC AND YELLOW CHROMATIZED FOR 10 TO 15  $\mu$  m.

ITEM NUMBER	DESCRIPTION	ITEM NO	MATERIAL CODE	UNIT WEIGHT	ITEM NO	MATERIAL CODE	UNIT WEIGHT
41	NAME PLATE PART II.	4-80-999-99386	SA 240 TYPE 304	0.020			
40	STELL RING	4-80-999-99387	08 NYLON-6	0.093			
39	POP RIVET #3x10	1-80-999-99056		0.001			
38	NOT APPLICABLE.						
37	NOT APPLICABLE.						
36	LOAD INDICATOR.	4-80-999-99384	15 011 104	0.013			
35	TRAVEL SCALE 150mm	4-80-999-99382	IS:1079 SL34	0.008			
34	NAME PLATE.	4-80-999-99213	SA 240 TYPE 304	0.080			
33	POP RIVET #3x15	1-80-999-99056		0.002			
32	POP RIVET #3x4	1-80-999-99056		0.001			
31	PIN SPLIT #6.3x40	41704 06040	41704 06040	0.011			
30	WASHER OD75/ID21	4-80-999-99467	15 011 182	0.098			
29	NOT APPLICABLE.						
* 28	WASHER MCD 36 OD66/ID37	41406 36000	41406 00036	0.082			
27	NOT APPLICABLE.						
26	CIRCLIP LIGHT A55	41902 05500	41902 00055	0.015			
25	CIRCLIP LIGHT A70	41902 07000	41902 00070	0.029			
* 24	HEX.NUT M36x4	4-80-999-99290	41319 40036	0.430			
* 23	WASHER MCD 72 OD125/ID74	41406 72000	41406 00072	0.626			
22	NOT APPLICABLE						
* 21	WASHER MCD24 OD44/ID26	41408 24000	41408 00024	0.031			
20	BEARING SHELL	4-80-999-99379	05 SUB DELY.	0.080			
* 19	HEX.NUT M24x3	41322 24000	41322 00024	0.110			
* 18	HEX.BOLT M20x2.5 L=40	41245 20040	41245 20040	0.180			
17	DISTANCE BUSH	4-80-999-99468	15 082 041	0.350			
16	MAIN SPRING.	2-80-999-99295	20 50 Gr.V4 DIN 17221	33.400			
15	AUXILIARY SPRING.	2-80-999-99295	06 50 Gr.V4 DIN 17221	10.200			
14	AXLE.	4-80-999-99461	15 024 258	1.100			
13	GUIDE AND TRAVEL STOP BOLT.	4-80-999-99462	15 024 382	8.350			
12	BEARING BOLT ASSEMBLY.	3-80-999-99482	09 SUB ASSY.	0.474			
11	GUIDE BUSHING.	4-80-999-99380	18 005 278	0.406			
10	LOAD ADJUSTMENT BOLT M36x4 L=240	3-80-999-99488	15 039 119	2.328			
09	DOWEL BOLT M24x3	4-80-999-99374	15 039 085	0.270			
08	TRAVEL STOP PLATE.	3-80-999-99557	15 011 026000	1.900			
07	NOT APPLICABLE.						
06	DUST COVER.	4-80-999-99552	15 011 078	1.285			
05	DISK. (MACHINED)	2-80-999-99297	15 942 199	3.910			
04	LOAD ADJUSTMENT ASSEMBLY.	3-80-999-99588	07 SA 515 Gr.70	18.304			
03	CASE ASSEMBLY.	3-80-999-99590		109.071			
02	LOAD TUBE ASSEMBLY.	2-80-999-99363		38.343			
01	CAM ASSEMBLY.	3-80-999-99585		7.535			

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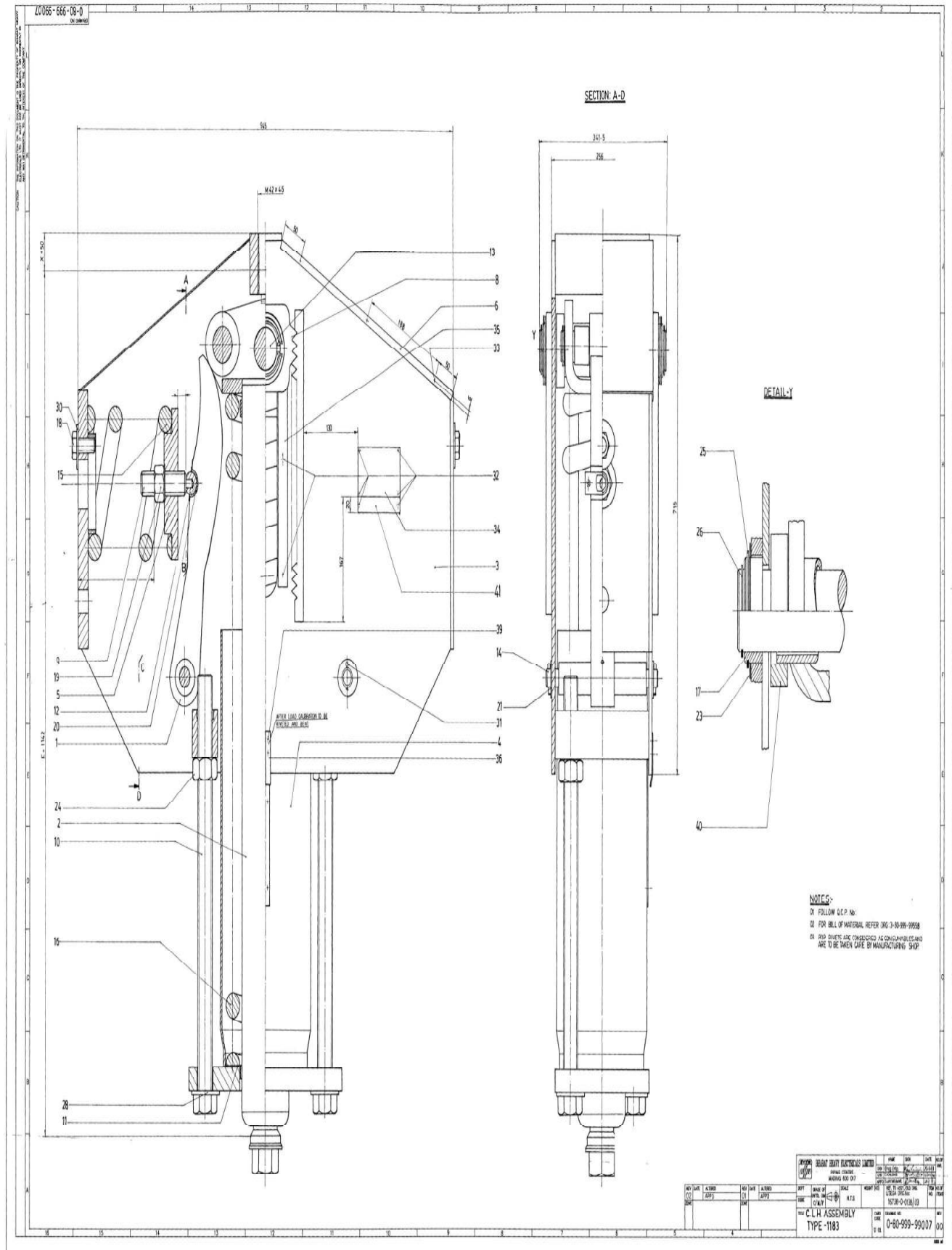
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Receipt No : 684365/2024/HERP-ENGG&amp;MKT



NIT No. BHEL/HERP/WCM/FY24/EM/CLH ASSY 63 of 89

Receipt No : 684365/2024/HERP-ENGG&amp;MKT

FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN MILLIMETRES)

99966-666-08-E

NOTES: -

ON SNMAYBO

01 ITEMS MARKED THUS \* ARE TO BE ELECTROPLATED WITH ZINC AND YELLOW CHROMATIZED FOR 10 TO 15  $\mu$  m.

CAUTION: The information on this document is the property of BHARAT HEAVY ELECTRICALS LTD. It must not be used directly or indirectly in any way detrimental to the interest of the company.

ITEM NO.	DESCRIPTION	DRAWING NUMBER	ITEM NO.	MATERIAL CODE	UNIT WEIGHT	ITEM NO.	MATERIAL SPECN	QUANTITY
41	NAML PLATE PART II.	4-80-999-99386	SA 240 TYPE 304	C	0.020			
40	STELL RING	4-80-999-99387	08 NYLON-6		0.093			
39	POP RIVLT #3x10	0-80-999-99007	-		0.001			
38	NOT APPLICABLE.				2			
37	NOT APPLICABLE.							
36	LOAD INDICATOR.	4-80-999-99384	15 011 104 IS:1079 SL34	C	0.013			
35	TRAVEL SCALE.	3-80-999-99486	ALUMINIUM		0.012			
34	NAML PLATE.	4-80-999-99213	SA 240 TYPE 304	C	0.080			
33	POP RIVET #3x15	0-80-999-99007	-		0.002			
32	POP RIVLT #3x4	0-80-999-99007	-		0.001			
31	PIN SPLIT #6.3x4L	41704 06340	41704 63040 IS:549		0.011			
30	WASHER 0075/1021	4-80-999-99467	15 011182 BMC 10	C	0.096			
29	NOT APPLICABLE.							
* 28	WASHER MCD 36 0066/1037	41406 36000	41406 00036 IS:2016		0.092			
27	NOT APPLICABLE.							
26	CIRCLIP LIGHT A56	41902 05600	41902 00086 IS:3075-A		0.016			
25	CIRCLIP LIGHT A70	41902 07000	41902 00070 IS:3075-A		0.029			
* 24	HLX.NUT M36x4	4-80-999-99290	41319 40036 SA 194 2H	C	0.430			
* 23	WASHER MCD 72 00125/1074	41406 72000	41406 00072 IS:2016		0.828			

22	NOT APPLICABLE							
* 21	WASHER MCD A27 0090/1028	41406 27000	41406 00027 IS:2016		0.042			
20	BEARING SHELL.	4-80-999-99379	05 SUB DELY.		0.060			
* 19	HEX.NUT M30x3.5	41322 30000	41322 00030 IS:1364		0.193			
* 18	HEX.BOLT M20x2.5;L=40	41245 20040	41245 20040 IS:1364		0.160			
17	DISTANCE BUSH	4-80-999-99468	15 082 041 SA 106 Gr.B	C	0.350			
16	MAIN SPRING.	2-80-999-99295	28 50 Cr.V4 DIN 17221		82.400			
15	AUXILIARY SPRING.	2-80-999-99295	09 50 Cr.V4 DIN 17221		17.000			
14	AXLE.	4-80-999-99461	15 024 256 SA 182 Gr.F6a(L13)	C	1.100			
13	GUIDE AND TRAVEL STOP BOLT.	4-80-999-99462	15 924 382 SA 276 TYPE 420	C	6.350			
12	BEARING BOLT ASSEMBLY.	3-80-999-99482	09 SUB ASSY.		0.474			
11	GUIDE BUSHING.	4-80-999-99380	16 005 276 BRASS		0.405			
10	LOAD ADJUSTMENT BOLT M36x 4; L=550	3-80-999-99488	15 039 119 SA 193 Gr.B7	P	4.805			
09	DOWEL BOLT M30x3.5	4-80-999-99374	15 039 087 SA 193 Gr.B7	P	0.470			
08	TRAVEL STOP PLATE.	3-80-999-99557	15 011 026 BMC 20	C	1.900			
07	NOT APPLICABLE.							
06	DUST COVER.	4-80-999-99460	15 011 076 IS:513 TYPE D	C	1.668			
05	DISK. (MACHINED)	2-80-999-99297	15 942 116 SA515 Gr.70	C	5.750			
04	LOAD ADJUSTMENT ASSEMBLY.	3-80-999-99526	-		24.368			
03	CASE ASSEMBLY.	3-80-999-99530	-		129.225			
02	LOAD TUBE ASSEMBLY.	2-80-999-99354	-		50.021			
01	CAM ASSEMBLY.	3-80-999-99528	-		13.835			



BHARAT HEAVY ELECTRICALS LIMITED

PIPING CENTRE  
MADRAS 600 017

NAME	SIGN	DATE	NO.OF VAR.
DRN M.C.SEKARAN.		14-01-84	
CHD C.KALIDAS.		12-01-84	
APPD S.JAYAKUMAR.		12-01-84	

REV	DATE	ALTERED	DEPT	GRADE OF	SCALE	WEIGHT (KG)	REF. TO ASSY./OLD DRG.	ITEM NO.	NO.OF ITEMS
01	02.03.75	APPROVED		C/M/F	N.T.S	371.435	16739-5-0138		

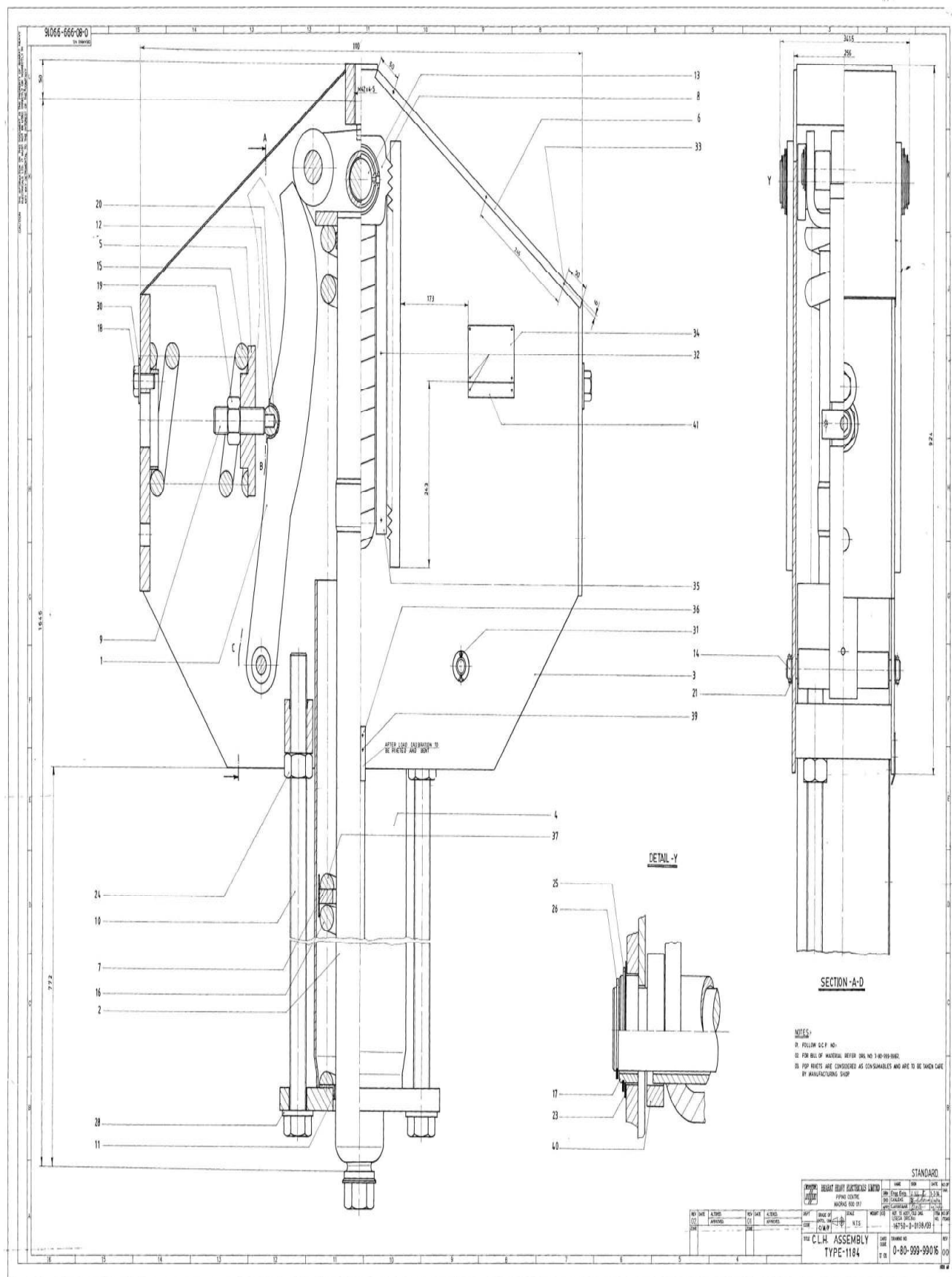
PRODUCT ATTEST MARK 'P' INDICATED INSTEAD OF 'C' FOR ITEM NOS 09 AND 10 AS PER STANDARD INSTRUCTION No 110 MATL.SPECN. CHANGED FROM SA194Gr.F6a TO SA194Gr.F6a C13 FOR ITEM No 14

TITLE BOM FOR CLH ASSEMBLY  
TYPE No:1183

CARD CODE U 01  
DRAWING NO. 3-80-999-99558 01  
REV

Size A3





NIT No. BHEL/HERP/WCM/FY24/EM/CLH ASSY 65 of 89

Receipt No : 684365/2024/HERP-ENGG&amp;MKT

FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN MILLIMETRES)

29966-666-08-E

ON 09/04/2024

**NOTES:-**

01 ITEMS MARKED THUS \* ARE TO BE ELECTROPLATED WITH ZINC AND YELLOW CHROMATIZED FOR 10 TO 15  $\mu$  m.

ITEM NO.	DESCRIPTION	DRAWING NUMBER	ITEM NO.	MATERIAL CODE	UNIT WEIGHT	ITEM NO.	MATERIAL CODE	UNIT WEIGHT
41	NAME PLATE PART II.	4-80-999-99386	SA 240 TYPE 304	C	0.020	1		
40	STELL. RING	4-80-999-99387	08 NYLON-6		0.093	2		
39	POP RIVET #3x10	0-80-999-99016	SUB DELY.		0.001	2		
38	NOT APPLICABLE.							
37	MAIN SPRING.-II	2-80-999-99295	28 50 Cr.V4 DIN 17221		62.400	1		
36	LOAD INDICATOR.	4-80-999-99384	15 011 104 IS:1079 SL34	C	0.013	1		
35	TRAVEL SCALE 450mm.	2-80-999-99301	ALUMINIUM		0.017	1		
34	NAME PLATE.	4-80-999-99213	SA 240 TYPE 304	C	0.080	1		
33	POP RIVET #3x15	0-80-999-99016	SUB DELY.		0.002	12		
32	POP RIVET #3x4	0-80-999-99016	SUB DELY.		0.001	9		
31	PIN SPLIT #6.3x40	41704 06040	41704 80040 IS:549		0.011	4		
30	WASHER 0075/1021	4-80-999-99467	01 15 011 182 IS:1079 Fe330	C	0.096	2		
29	NOT APPLICABLE.							
* 28	WASHER MCD 42 0078/1043	41406 42000	41406 00042 IS:2016		0.180	2		
27	NOT APPLICABLE.							
26	CIRCLIP LIGHT A55	41902 05500	41902 00055 IS:3075-A		0.015	2		
25	CIRCLIP LIGHT A70	41902 07000	41902 00070 IS:3075-A		0.029	2		
* 24	HEX.NUT M42x4.5	4-80-999-99290	41319 45042 SA 194 2H	C	0.810	2		
* 23	WASHER MCD 72 00125/1074	41406 72000	41406 00072 IS:2016		0.828	2		

ITEM NO.	DESCRIPTION	DRAWING NUMBER	ITEM NO.	MATERIAL CODE	UNIT WEIGHT
22	NOT APPLICABLE				
* 21	WASHER MCD A24 0044/1026	41408 24000	41408 00024 IS:2016-A		0.031
20	BEARING SHELL	4-80-999-99379	06 SUB DELY.		0.080
* 19	HEX.NUT M36x4	4-80-999-99290	41319 40036 SA 194 Gr.2H	C	0.430
* 18	HEX.BOLT M20x2.5 L=40	41245 20040	41245 20040 IS:1364		0.160
17	DISTANCE BUSH	4-80-999-99468	15 082 041 SA 106 Gr.B		0.350
16	MAIN SPRING.-I	2-80-999-99295	20 50 Cr.V4 DIN 17221		33.400
15	AUXILIARY SPRING.	2-80-999-99295	10 50 Cr.V4 DIN 17221		18.400
14	AXLE.	4-80-999-99461	15 024 256 SA 182 Gr.F60.113	C	1.100
13	GUIDE AND TRAVEL STOP BOLT.	4-80-999-99462	15 924 382 SA 276 TYPE 420	C	6.350
12	BEARING BOLT ASSEMBLY.	3-80-999-99482	11 SUB ASSY.		0.978
11	GUIDE BUSHING.	4-80-999-99380	08 16 005 276 BRASS		0.405
10	LOAD ADJUSTMENT BOLT M42x4.5 L=850	3-80-999-99488	31 15 039 120 SA 193 Gr.B7	P	9.920
09	DOWEL BOLT M36x4	4-80-999-99374	06 15 039 116 SA 193 Gr.B7	P	0.850
08	TRAVEL STOP PLATE.	3-80-999-99557	15 011 026 IS:2062 Fe410 A	C	1.900
07	SPRING PLATE ASSEMBLY.	3-80-999-99599	WELDMENT		2.860
06	DUST COVER.	4-80-999-99568	15 011 076 IS:513 TYPE D	C	2.067
05	DISK. (MACHINED)	2-80-999-99297	09 15 942 117 SA515 Gr.70	C	6.320
04	LOAD ADJUSTMENT ASSEMBLY.	3-80-999-99598	WELDMENT		31.548
03	CASE ASSEMBLY.	3-80-999-99602	WELDMENT		168.693
02	LOAD TUBE ASSEMBLY.	2-80-999-99365	SUB ASSY.		65.619
01	CAM ASSEMBLY.	3-80-999-99600	SUB ASSY.		29.115

**REVISIONS**

REV	DATE	ALTERED	APPROVED
01			

**DEPT** GRADE OF UNTOOL. DIM. CODE

**SCALE** N.T.S.

**WEIGHT (KG)** 518.644

**TITLE** BOM FOR CLH ASSEMBLY TYPE No:1184

**NAME** M.C.SEKARAN.

**SIGN** [Signature]

**DATE** 30-03-24

**NO. OF VAR.**

**REF. TO ASSY./OLD DRG.** LISEGA DRG.No: 16751-5-0138

**ITEM NO. OF NO. ITEMS**

**APPD** S.JAYAKUMAR

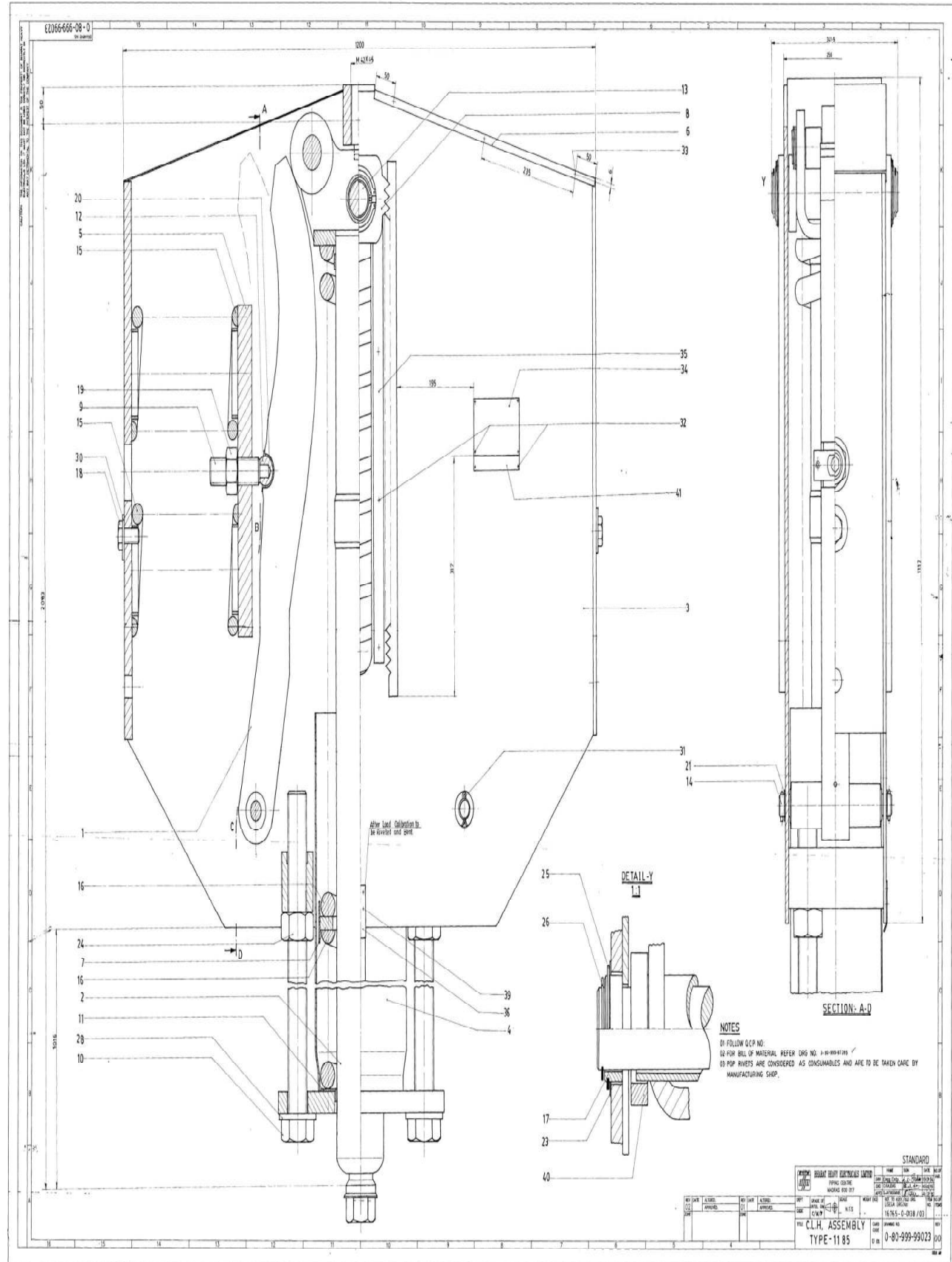
**DATE** 23/04/24

**CARD CODE** U 01

**DRAWING NO.** 3-80-999-9966200

**REV**

Receipt No : 684365/2024/HERP-ENGG&amp;MKT



NIT No. BHEL/HERP/WCM/FY24/EM/CLH ASSY 67 of 89

Receipt No : 684365/2024/HERP-ENGG&amp;MKT

FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN MILLIMETRES)

12

98246-666-08-8

ON ENHANCING

NOTES:-  
01 ITEMS MARKED THUS \* ARE TO BE ELECTROPLATED WITH ZINC AND YELLOW CHROMATIZED FOR 10 TO 15  $\mu$  m.

ITEM NUMBER	DESCRIPTION	STD	DRAWING NUMBER	ITEM NO	MATERIAL CODE	UNIT WEIGHT	REV	DATE	ALTERED	APPROVED	DEPT	GRADE OF UNTOOL DIM	SCALE	WEIGHT (KG)	REF. TO ASSY./OLD DRG. LISEGA DRG.No	ITEM NO.	NO. OF ITEMS
41	NAME PLATE PART II.	4-80-999-99386	SA 240 TYP. 304	C	0.020	1											
40	STELL RING	4-80-999-99387	08 NYLON-6		0.093	2											
39	POP RIVET #3x10	0-80-999-99023			0.001	2											
38	NOT APPLICABLE.																
37	NOT APPLICABLE.																
36	LOAD INDICATOR.	4-80-999-99384	15 011 104 IS:1079 St.34	C	0.013	1											
35	TRAVEL SCALE 600mm	1-80-999-99074	ALUMINIUM		0.021	1											
34	NAME PLATE.	4-80-999-99213	SA 240 TYPE 304	C	0.080	1											
33	POP RIVET #3x15	0-80-999-99023			0.002	12											
32	POP RIVET #3x4	0-80-999-99023			0.001	10											
31	PIN SPLIT #6.3x40	41704 06040	41704 60040 IS:549		0.014	4											
30	WASHER 0075/021	4-80-999-99467	15 011 182 01 IS:1079 Fe 330		0.096	2											
29	NOT APPLICABLE.																
* 28	WASHER MCD 48 0092/050	41406 48000	41406 00048 IS:2016		0.291	2											
27	NOT APPLICABLE.																
26	CIRCLIP LIGHT A55	41902 05500	41902 0X055 IS:3075-A		0.015	2											
25	CIRCLIP LIGHT A70	41902 07000	41902 0X070 IS:3075-A		0.029	2											
* 24	HEX.NUT M48x5	4-80-999-99290	41319 50048 03 SA 194 2H	C	1.240	2											
* 23	WASHER MCD 72 00125/074	41406 72000	41406 00072 IS:2016		0.626	2											
22	NOT APPLICABLE																
* 21	WASHER MCD 30 0056/031	41406 30000	41406 00030 IS:2016		0.054	4											
20	BEARING SHELL.	4-80-999-99379	06 SUB DELY.		0.080	2											
* 19	HEX.NUT M36x4	4-80-999-99290	41319 40036 01 SA 194 Gr.2H	C	0.430	2											
* 18	HEX.BOLT M20x2.5 L=40	41245 20040	41245 20040 IS:1384		0.160	2											
17	DISTANCE BUSH	4-80-999-99468	15 082 041 SA 106 Gr.B	C	0.350	2											
16	MAIN SPRING.	2-80-999-99295	28 50 Cr.V4 DIN 17221		62.400	2											
15	AUXILIARY SPRING.	2-80-999-99295	18 50 Cr.V4 DIN 17221		14.900	4											
14	AXLE.	4-80-999-99667	15 024 257 SA 182 Gr.F60CL3	C	1.589	2											
13	GUIDE AND TRAVEL STOP BOLT.	4-80-999-99462	15 924 382 SA 276 TYPE 420	C	6.350	1											
12	BEARING BOLT ASSEMBLY.	3-80-999-99482	11 SUB ASSY.		0.978	2											
11	GUIDE BUSHING.	4-80-999-99380	16 005 276 08 BRASS		0.405	1											
10	LOAD ADJUSTMENT BOLT M48x5 L=1110	3-80-999-99488	15 039 120 32 SA 193 Gr.B7	P	17.100	2											
09	DOWEL BOLT M36x4	4-80-999-99374	15 039 116 06 SA 193 Gr.B7	P	0.850	2											
08	TRAVEL STOP PLATE.	3-80-999-99557	15 011 026 IS:2082 Fe 410 A	C	1.900	2											
07	SPRING PLATE ASSEMBLY.	3-80-999-99599	WELDMENT		2.860	1											
06	DUST COVER.	4-80-999-99665	15 011 076 IS:513 TYPE D	C	1.990	2											
05	DISK ASSEMBLY.	3-80-999-99665	WELDMENT		21.420	2											
04	LOAD ADJUSTMENT ASSEMBLY.	3-80-999-97135	WELDMENT		38.175	1											
03	CASE ASSEMBLY.	3-80-999-97138	WELDMENT		242.189	1											
02	LOAD TUBE ASSEMBLY.	2-80-999-99376	SUB ASSY.		81.860	1											
01	CAM ASSEMBLY.	3-80-999-97136	SUB ASSY.		44.074	2											

CAUTION: The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED. It is to be used only for the purpose intended and is not to be distributed to the interest of the company.

REV 01 DATE 01/01/2024 APPROVED

DEPT PIPING CENTRE MADRAS 600 017

SCALE N.T.S

WEIGHT (KG) 744.283

REF. TO ASSY./OLD DRG. LISEGA DRG.No: 16766-5-0138

TITLE BOM FOR CLH ASSEMBLY TYPE No:1185

CARD CODE U 01

DRAWING NO. 3-80-999-9728500

REV

Size A3



(ALL DIMENSIONS ARE IN MILLIMETRES)

ITEM NO		ITEM NAME		ITEM CODE		ITEM QTY		ITEM UNIT		ITEM PRICE		ITEM TOTAL	
ITEM NO		ITEM NAME		ITEM CODE		ITEM QTY		ITEM UNIT		ITEM PRICE		ITEM TOTAL	
22		NOT APPLICABLE		41408 24000									
21		PUNCHED WASHER A24		41408 24000									
20		BEARING SHELL		4-80-999-99379									
19		HEX.NUT M24x3		41322 24000									
18		HEX.BOLT L=70		41218 24070									
17		DISTANCE BUSH		4-80-999-99481									
16		MAIN SPRING.		2-80-999-99295									
15		AUXILIARY SPRING.		3-80-999-99544									
14		AXLE.		4-80-999-99562									
13		GUIDE AND TRAVEL		4-80-999-99474									
12		BEARING BOLT		3-80-999-99482									
11		GUIDE BUSHING.		4-80-999-99380									
10		LOAD ADJUSTMENT		3-80-999-99488									
09		DOWEL BOLT M24x3		4-80-999-99374									
08		TRAVEL STOP PLATE.		3-80-999-99579									
07		NOT APPLICABLE.											
06		DUST COVER.		4-80-999-99560									
05		DISK. (MACHINED)		2-80-999-99297									
04		LOAD ADJUSTMENT		3-80-999-99592									
03		CASE ASSEMBLY.		3-80-999-99596									
02		LOAD TUBE ASSEMBLY.		2-80-999-99364									
01		CAM ASSEMBLY.		3-80-999-99594									
00													
ITEM NO		ITEM NAME		ITEM CODE		ITEM QTY		ITEM UNIT		ITEM PRICE		ITEM TOTAL	
41		NAME PLATE PART II.		4-80-999-99386									
40		STELL RING		4-80-999-99387									
39		POP RIVET 3x10		0-80-999-99011									
38		NOT APPLICABLE.											
37		NOT APPLICABLE.											
36		LOAD INDICATOR.		4-80-999-99384									
35		TRAVEL SCALE 150mm		4-80-999-99382									
34		NAME PLATE.		4-80-999-99213									
33		POP RIVET 3x15		0-80-999-99011									
32		POP RIVET 3x4		0-80-999-99011									
31		PIN SPLIT 6.3x40		41704 06040									
30		WASHER OD85/ID25		4-80-999-99467									
29		NOT APPLICABLE.											
28		WASHER MCD 42		41406 42000									
27		NOT APPLICABLE.											
26		CIRCLIP LIGHT A65		41902 06500									
25		CIRCLIP LIGHT A80		41902 08000									
24		HEX.NUT M42x4.5		4-80-999-99290									
23		WASHER MCD 80		41406 80000									





Receipt No : 684369/2024/HERP-ENGG&amp;MKT

FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN MILLIMETRES)

08966-666-08-C

NOTES:-

01 ITEMS MARKED THUS \* ARE TO BE ELECTROPLATED WITH ZINC AND YELLOW CHROMATIZED FOR 10 TO 15  $\mu$  m.

ITEM NUMBER	DESCRIPTION	STD	DRAWING NUMBER	ITEM NO	MATERIAL CODE	UNIT WEIGHT
				VAR NO	MATERIAL SPECN	QTY
41	NAME PLATE PART II.	4-80-999-99386	SA 240 TYPE 304	C	0.020	1
40	STELL RING	4-80-999-99387	09 NYLON-6		0.211	2
39	POP RIVET $\phi 3 \times 10$	0-80-999-99008	-		0.001	2
38	NOT APPLICABLE.					
37	NOT APPLICABLE.					
36	LOAD INDICATOR.	4-80-999-99384	15 011 104 IS:1079 St.34	C	0.013	1
35	TRAVEL SCALE.	3-80-999-99486	ALUMINIUM		0.012	1
34	NAME PLATE.	4-80-999-99213	SA 240 TYPE 304	C	0.080	1
33	POP RIVET $\phi 3 \times 15$	0-80-999-99008	-		0.002	12
32	POP RIVET $\phi 3 \times 4$	0-80-999-99008	-		0.001	9
31	PIN SPLIT $\phi 6.3 \times 40$	41704 06040	41704 60040 IS:549		0.011	4
30	WASHER MCD 085/1025	4-80-999-99467	15 011 182 BMC 10	02	0.122	2
29	NOT APPLICABLE.					
* 28	WASHER MCD 42 OD78/1043	41406 42000	41406 00042 IS:2018		0.183	2
27	NOT APPLICABLE.					
26	CIRCLIP LIGHT A65	41902 06500	41902 00085 IS:3075-A		0.026	2
25	CIRCLIP LIGHT A60	41902 08000	41902 00080 IS:3075-A		0.038	2
* 24	HEX.NUT M42x4.5	4-80-999-99290	41319 45042 SA 194 2H	02 C	0.810	2
* 23	WASHER MCD 80 OD140/1082	41406 80000	41406 00080 IS:2018		0.853	2

ITEM NUMBER	DESCRIPTION	STD	DRAWING NUMBER	ITEM NO	MATERIAL CODE	UNIT WEIGHT
				VAR NO	MATERIAL SPECN	QTY
22	NOT APPLICABLE					
* 21	WASHER MCD 30 OD98/1031	41406 30000	41406 00030 IS:2018		0.054	4
20	BEARING SHELL	4-80-999-99379	06 SUB DELY.		0.080	2
* 19	HEX.NUT M36x4	4-80-999-99290	41319 40036 SA 194 Gr.2H	C	0.430	2
* 18	HEX.BOLT M24x3 L=70	41218 24070	41218 24070 Gr 8.8		0.333	2
17	DISTANCE BUSH	4-80-999-99481	15 339 134 SA 105	C	0.506	2
16	MAIN SPRING.	2-80-999-99295	29 50 Gr.V4 DIN 17221		78.400	1
15	AUXILIARY SPRING.	2-80-999-99295	10 50 Gr.V4 DIN 17221		18.400	2
14	AXLE	4-80-999-99475	15 024 257 SA 182 Gr.F6a CL.3	C	1.700	2
13	GUIDE AND TRAVEL STOP BOLT.	4-80-999-99474	15 024 283 SA 182 Gr.F6a CL.3	C	9.818	1
12	BEARING BOLT ASSEMBLY.	3-80-999-99482	11 SUB ASSY.		0.978	2
11	GUIDE BUSHING.	4-80-999-99380	18 005 276 09 BRASS		0.514	1
10	LOAD ADJUSTMENT BOLT M42x4.5 L=550	3-80-999-99488	15 039 120 SA 183 Gr.B7	P	6.833	2
09	DOWEL BOLT M36x4	4-80-999-99374	15 039 116 SA 183 Gr.B7	P	0.850	2
08	TRAVEL STOP PLATE.	3-80-999-99579	15 942 113 SA 515 Gr.70	C	2.600	2
07	NOT APPLICABLE.					
06	DUST COVER.	4-80-999-99473	15 011 078 IS:513 TYPE D	C	2.084	2
05	DISK. (MACHINED)	2-80-999-99297	15 942 117 09 SAS15 Gr.70	C	6.320	2
04	LOAD ADJUSTMENT ASSEMBLY.	3-80-999-99532	-		34.448	1
03	CASE ASSEMBLY.	3-80-999-99536	-		169.579	1
02	LOAD TUBE ASSEMBLY.	2-80-999-99355	-		61.491	1
01	CAM ASSEMBLY.	3-80-999-99534	-		22.876	2



**BHARAT HEAVY ELECTRICALS LIMITED**  
PIPING CENTRE  
MADRAS 600 017

NAME	SIGN	DATE	NO. OF VAR.
DRN M.C.SEKARAN.		21-01-84	
CHD C.KALIDAS.		15-02-84	
APPD S.JAYAKUMAR.		11-02-84	

REV	DATE	ALTD	REV	DATE	ALTD
02	23-04-85	APPD	01	08-03-85	APPROVED
UNIT WT OF ITEM No 30 ALTD FROM 0.096 TO 0.122 TOTAL WT. ALTD FROM 486.884 TO 486.936					
PRODUCT ATTEST MARK 'P' INDICATED INSTEAD OF 'C' FOR ITEM Nos. 09 AND 10 AS PER STANDARD INSTRUCTION No 110 MATL. SPECN. CHANGED FROM SA182Gr.F6a CL.3 TO SA182Gr.F6a CL.3 FOR ITEM No 13 & 14.					

DEPT	GRADE OF UNTOOL DIM	SCALE	WEIGHT (KG)	REF. TO ASSY./OLD DRG.	ITEM NO. OF
CODE	C/M/T	N.T.S	486.936	17462-5-0139	ITEMS
TITLE <b>BOM FOR CLH ASSEMBLY</b> TYPE No: 1193				CARD CODE	REV
				U 01	3-80-999-99580 02

Size A3



Receipt No : 684369/2024/HERP-ENGG&amp;MKT

FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN MILLIMETRES)

**89966-666-08-8** **NOTES: -**  
 (ON ONMVB) 01 ITEMS MARKED THUS \* ARE TO BE ELECTROPLATED WITH ZINC AND YELLOW CHROMATIZED FOR 10 TO 15  $\mu$  m.

**CAUTION:** The information on this document is the property of BHARAT HEAVY ELECTRICALS LTD. It must not be used directly or indirectly in any way detrimental to the interests of the company.

ITEM NUMBER	DESCRIPTION	STD. NO.	DRAWING NUMBER	ITEM NO.	MATERIAL CODE	UNIT WEIGHT	ITEM NO.	MATERIAL SPECN	QTY
41	NAME PLATE PART II.	4-80-999-99386	-	-	0.020				
40	STELL RING	4-80-999-99387	09	NYLON-6	2				
39	POP RIVET #3x10	0-80-999-99017	-	-	0.001				
38	NOT APPLICABLE.		-	-	2				
37	MAIN SPRING-II	2-80-999-99295	21	50 Cr.V4 DIN 17221	48.300				
36	LOAD INDICATOR.	4-80-999-99384	-	15 011 104	0.013				
35	TRAVEL SCALE 450mm	2-80-999-99301	-	IS:1079 SL 34	0.017				
34	NAME PLATE.	4-80-999-99313	-	ALUMINIUM	0.080				
33	POP RIVET #3x15	0-80-999-99017	-	-	0.002				
32	POP RIVET #3x4	0-80-999-99017	-	-	0.001				
31	PIN SPLIT #6.3x40	41704 06040	-	41704 60040	0.011				
30	WASHER 0085/1125	4-80-999-99467	02	15 011 182	0.122				
29	NOT APPLICABLE.		-	IS:1079 Fe 330	2				
* 28	WASHER MOD 45 0092/050	41406 48000	-	41406 00048	0.291				
27	NOT APPLICABLE.		-	IS:2016	2				
26	CIRCLIP LIGHT A65	41902 06500	-	41902 00065	0.026				
25	CIRCLIP LIGHT A80	41902 08000	-	IS:3075-A	2				
* 24	HEX.NUT M48x5	4-80-999-99290	03	41319 50048	1.240				
* 23	WASHER MOD 80 00140/082	41406 80000	-	SA 194 2H	2				
			-	41406 00080	0.853				
			-	IS:2016	2				
22	NOT APPLICABLE		-	-					
* 21	WASHER MOD 30 0056/031	41406 30000	-	41406 00030	0.054				
20	BEARING SHELL.	4-80-999-99379	06	SUB DELY.	0.080				
* 19	HEX.NUT M36x4	4-80-999-99290	01	41319 40036	0.430				
* 18	HEX.BOLT M24x3 L=50	41245 24050	-	SA 194 Gr.2H	2				
17	DISTANCE BUSH	4-80-999-99481	-	41245 24050	0.257				
16	MAIN SPRING. -I	2-80-999-99295	29	15-1364	2				
15	AUXILIARY SPRING.	2-80-999-99295	11	15 339 134	0.506				
14	AXLE	4-80-999-99475	-	SA 105	2				
13	GUIDE AND TRAVEL STOP BOLT.	4-80-999-99474	-	50 Cr.V4 DIN 17221	78.400				
12	BEARING BOLT ASSEMBLY.	3-80-999-99482	11	15 024 257	1				
11	GUIDE BUSHING.	4-80-999-99380	09	SA 182 Gr.F6a(L3)	29.800				
10	LOAD ADJUSTMENT BOLT M48x5 L=930	3-80-999-99488	35	15 024 263	2				
09	DOWEL BOLT M36x4	4-80-999-99374	07	SA 182 Gr.F6a(L3)	9.818				
08	TRAVEL STOP PLATE.	3-80-999-99579	-	SUB ASSY.	0.978				
07	SPRING PLATE ASSEMBLY.	3-80-999-99603	-	16 005 276	0.514				
06	DUST COVER.	4-80-999-99576	-	BRASS	1				
05	DISK. (MACHINED)	2-80-999-99297	10	15 039 120	14.216				
04	LOAD ADJUSTMENT ASSEMBLY.	3-80-999-99605	-	SA 193 Gr.B7	2				
03	CASE ASSEMBLY.	3-80-999-99608	-	15 039 116	0.850				
02	LOAD TUBE ASSEMBLY.	2-80-999-99366	-	SA 193 Gr.B7	2				
01	CAM ASSEMBLY.	3-80-999-99606	-	15 942 113	2.600				
			-	SA 515 Gr.70	2				
			-	WELDMENT	3.551				
			-	15 011 076	2.553				
			-	IS:513 TYPE D	2				
			-	15 942 119	8.730				
			-	SA515 Gr.70	2				
			-	-	47.255				
			-	WELDMENT	1				
			-	-	208.015				
			-	WELDMENT	1				
			-	-	83.251				
			-	SUB ASSY.	1				
			-	-	38.776				
			-	SUB ASSY.	2				

**ITEM NUMBER** **DESCRIPTION** **DRAWING NUMBER** **ITEM NO.** **MATERIAL CODE** **UNIT WEIGHT** **ITEM NO.** **MATERIAL SPECN** **QTY**

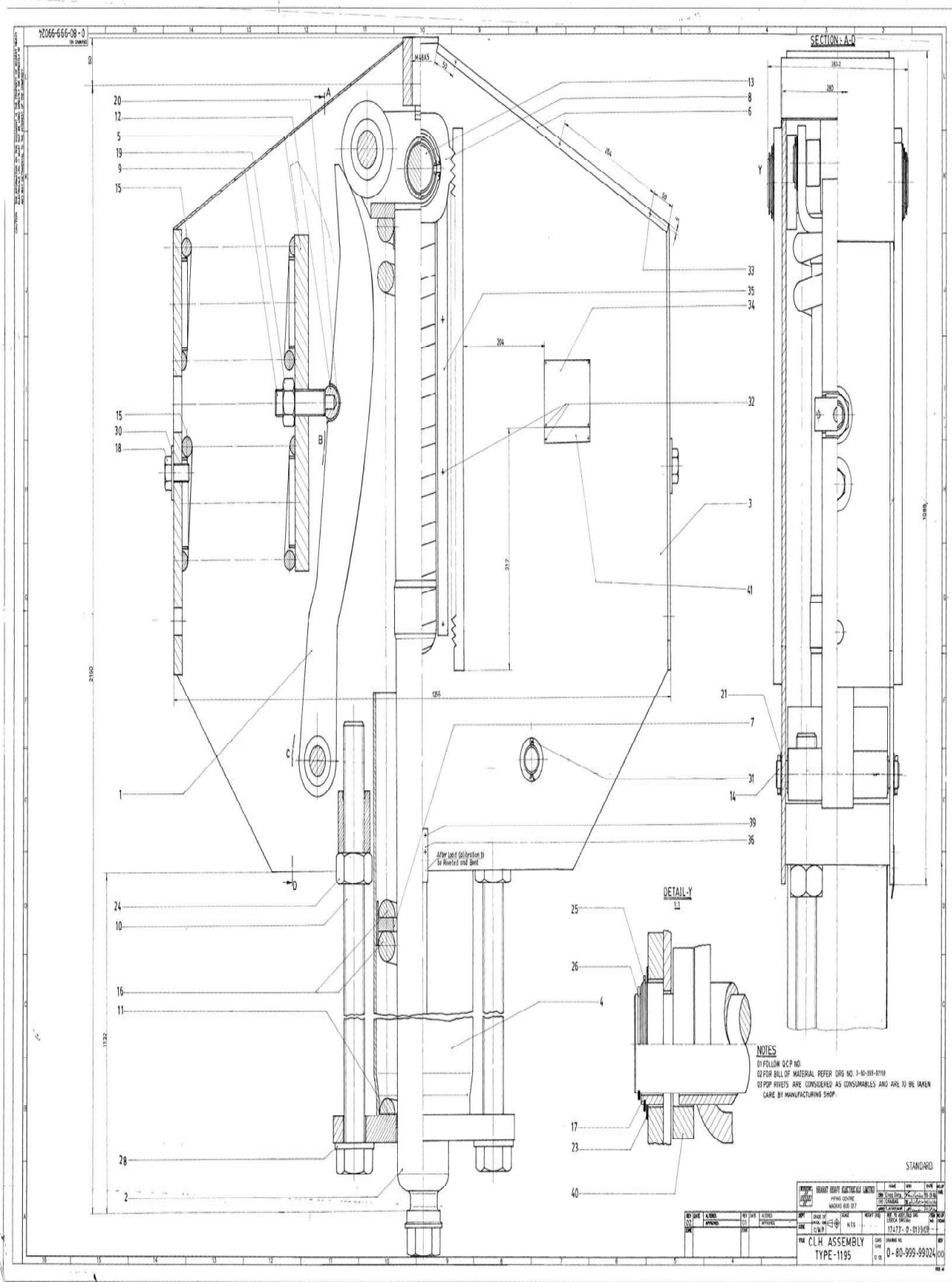
**REV** **DATE** **ALTERED** **APPROVED** **DEPT** **GRADE OF** **SCALE** **WEIGHT (KG)** **REF. TO ASSY./OLD DRG.** **ITEM NO. OF**

**01** **13/02/96** **APPROVED** **PIPE CENTRE** **UNITOL DIM** **N.T.S** **686-243** **USE OLD DRG. No.** **NO. OF**

**UNIT WT OF ITEM No 30** **ALTD FROM 0.036 To 0.122** **TOTAL WT ALTERED FROM** **686.131 To 686.243** **BOM FOR CLH** **ASSEMBLY** **TYPE No: 1184** **DRAWING NO.** **REV**

**3-80-999-99663/01**

Size A3



Receipt No : 684369/2024/HERP-ENGG&amp;MKT

FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN MILLIMETRES)

15

69146-666-08-C

NOTES:-  
01 ITEMS MARKED THUS \* ARE TO BE ELECTROPLATED WITH ZINC AND YELLOW CHROMATIZED FOR 10 TO 15  $\mu$  m.

CAUTION: The information on this document is the property of BHARAT HEAVY ELECTRICALS LTD. It must not be used directly or indirectly in any way detrimental to the interest of the company.

ITEM NO.	DESCRIPTION	DRAWING NUMBER	ITEM NO.	MATERIAL CODE	UNIT WEIGHT	ITEM NO.	DESCRIPTION	DRAWING NUMBER	ITEM NO.	MATERIAL CODE	UNIT WEIGHT
41	NAME PLATE PART II.	4-80-999-99386	-	SA 240 TYPE 304	0.020	22	NOT APPLICABLE	-	-	-	-
40	STELL RING	4-80-999-99387	09	NYLON-6	0.211	* 21	WASHER MCD 36 0088/1037	41406 36000	41406 00036	0.089	4
39	POP RIVET #3x10	0-80-999-99024	-	-	0.001	20	BEARING SHELL	4-80-999-99379	06	SUB DELY.	0.080
38	NOT APPLICABLE	-	-	-	2	* 19	HEX.NUT M36x4	4-80-999-99290	01	SA 194 Gr.2H	0.430
37	NOT APPLICABLE	-	-	-	2	* 18	HEX.BOLT M24x3 L=50	41245 24050	-	41245 24050	0.257
36	LOAD INDICATOR.	4-80-999-99384	15 011 104	IS:1079 SL.34	0.013	17	DISTANCE BUSH	4-80-999-99481	-	15 339 134	0.506
35	TRAVEL SCALE 600mm	1-80-999-99074	-	ALUMINIUM	0.021	16	MAIN SPRING.	2-80-999-99295	29	ISO Cr.V4 DIN 17221	78.400
34	NAME PLATE.	4-80-999-99213	-	SA 240 TYPE 304	0.080	15	AUXILIARY SPRING.	2-80-999-99295	18	ISO Cr.V4 DIN 17221	14.900
33	POP RIVET #3x15	0-80-999-99024	-	-	0.002	14	AXLE.	4-80-999-99658	-	15 024 258	2.383
32	POP RIVET #3x4	0-80-999-99024	-	-	0.001	13	GUIDE AND TRAVEL STOP BOLT.	4-80-999-99657	-	SA 182 Gr.F5a(1.3)	2
31	PIN SPLIT #8x50	41704 08050	41704 80050	IS:549	0.027	12	BEARING BOLT ASSEMBLY.	3-80-999-99482	12	SUB ASSY.	1.058
30	WASHER 0085/1025	4-80-999-99467	15 011 182	IS:1079 F# 330	0.122	11	GUIDE BUSHING.	4-80-999-99380	09	BRASS	0.514
29	NOT APPLICABLE.	-	-	-	2	10	LOAD ADJUSTMENT BOLT M52x5 L=1230	3-80-999-99488	36	SA 193 Gr.B7	21.768
* 28	WASHER MCD 52 0095/1054	41406 52000	41406 00052	IS:2016	0.330	09	DOWEL BOLT M36x4	4-80-999-99374	07	SA 193 Gr.B7	0.650
27	NOT APPLICABLE.	-	-	-	2	08	TRAVEL STOP PLATE.	3-80-999-99579	-	15 942 113	2.600
26	CIRCLIP LIGHT A65	41902 06500	41902 00065	IS:3075-A	0.026	07	SPRING PLATE ASSEMBLY.	3-80-999-99603	-	SA 515 Gr.70	3.551
25	CIRCLIP LIGHT A80	41902 08000	41902 00080	IS:3075-A	0.038	06	DUST COVER.	4-80-999-99654	-	WELDMENT	1
24	HEX.NUT M52x5	4-80-999-97412	-	SA 194 Gr.2H	1.550	05	DISK ASSEMBLY.	3-80-999-99665	-	15 011 076	2.382
* 23	WASHER MCD 80 00140/1082	41406 80000	41406 00080	IS:2016	0.953	04	LOAD ADJUSTMENT ASSEMBLY.	3-80-999-99669	-	IS:513 TYPE D	2
					2	03	CASE ASSEMBLY.	3-80-999-99668	-	WELDMENT	21.420
					2	02	LOAD TUBE ASSEMBLY.	2-80-999-99375	-	WELDMENT	2
					2	01	CAM ASSEMBLY.	3-80-999-99666	-	SUB ASSY.	54.811
					2				-	WELDMENT	279.939
					2				-	SUB ASSY.	1
					2				-	SUB ASSY.	97.496
					2				-	SUB ASSY.	1
					2				-	SUB ASSY.	43.958
					2				-	SUB ASSY.	2

ITEM NO. DESCRIPTION DRAWING NUMBER ITEM NO. MATERIAL CODE UNIT WEIGHT ITEM NO. DESCRIPTION DRAWING NUMBER ITEM NO. MATERIAL CODE UNIT WEIGHT

VAR NO. MATERIAL SPECN D1 QUANTITY

DEPT. GRADE OF UNTO. DIM SCALE WEIGHT (KG) REF. TO ASSY./OLD DRG. ITEM NO. OF

CODE C/M/T N.T.S 865.109 LIBEGA DRG.No: 17474-5-01.39 NO. (ITEMS)

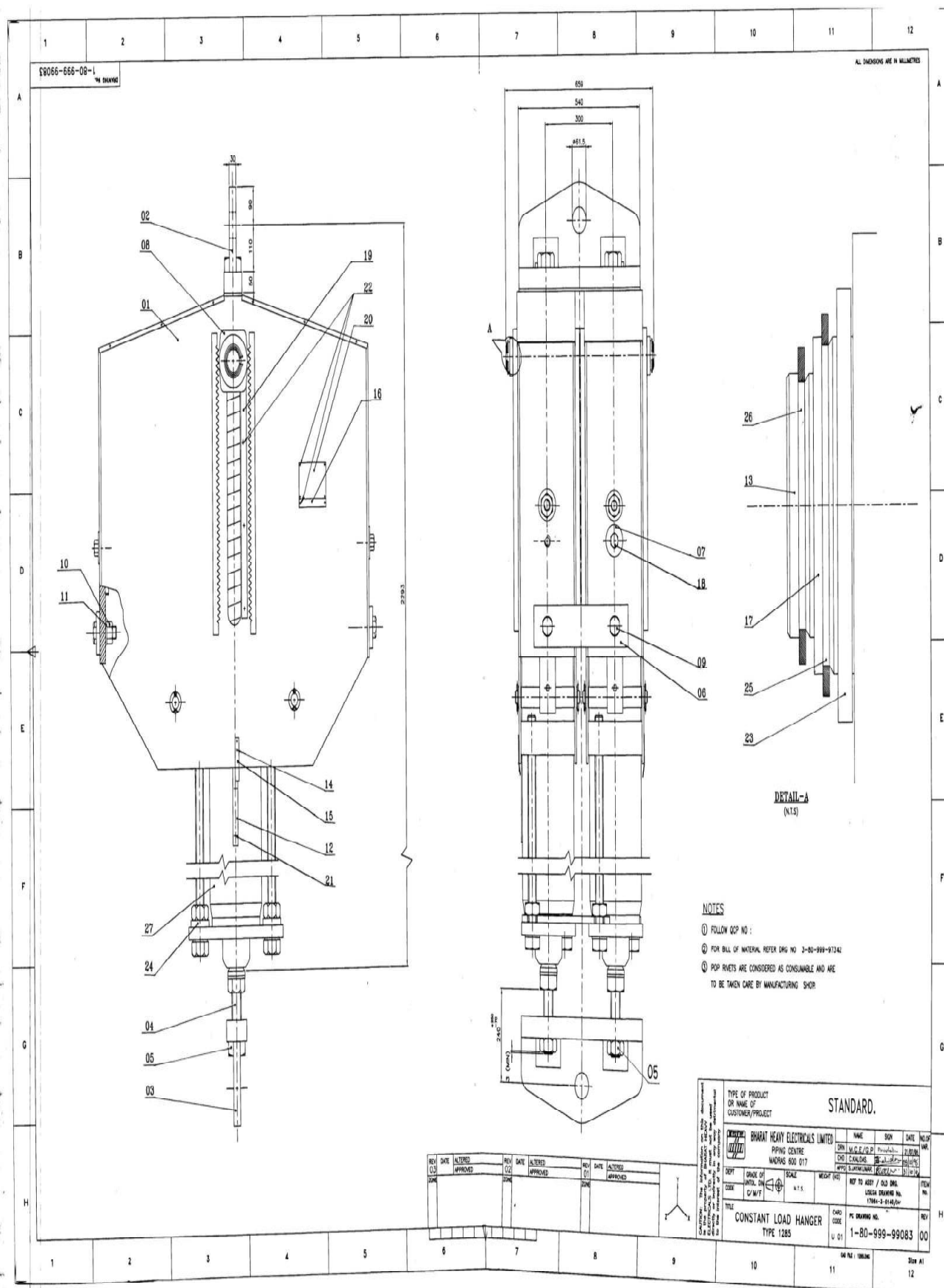
TITLE BOM FOR CLH ASSEMBLY TYPE No: 1195 CARD CODE DRAWING NO. REV

U 01 3-80-999-97159 00

Size A3

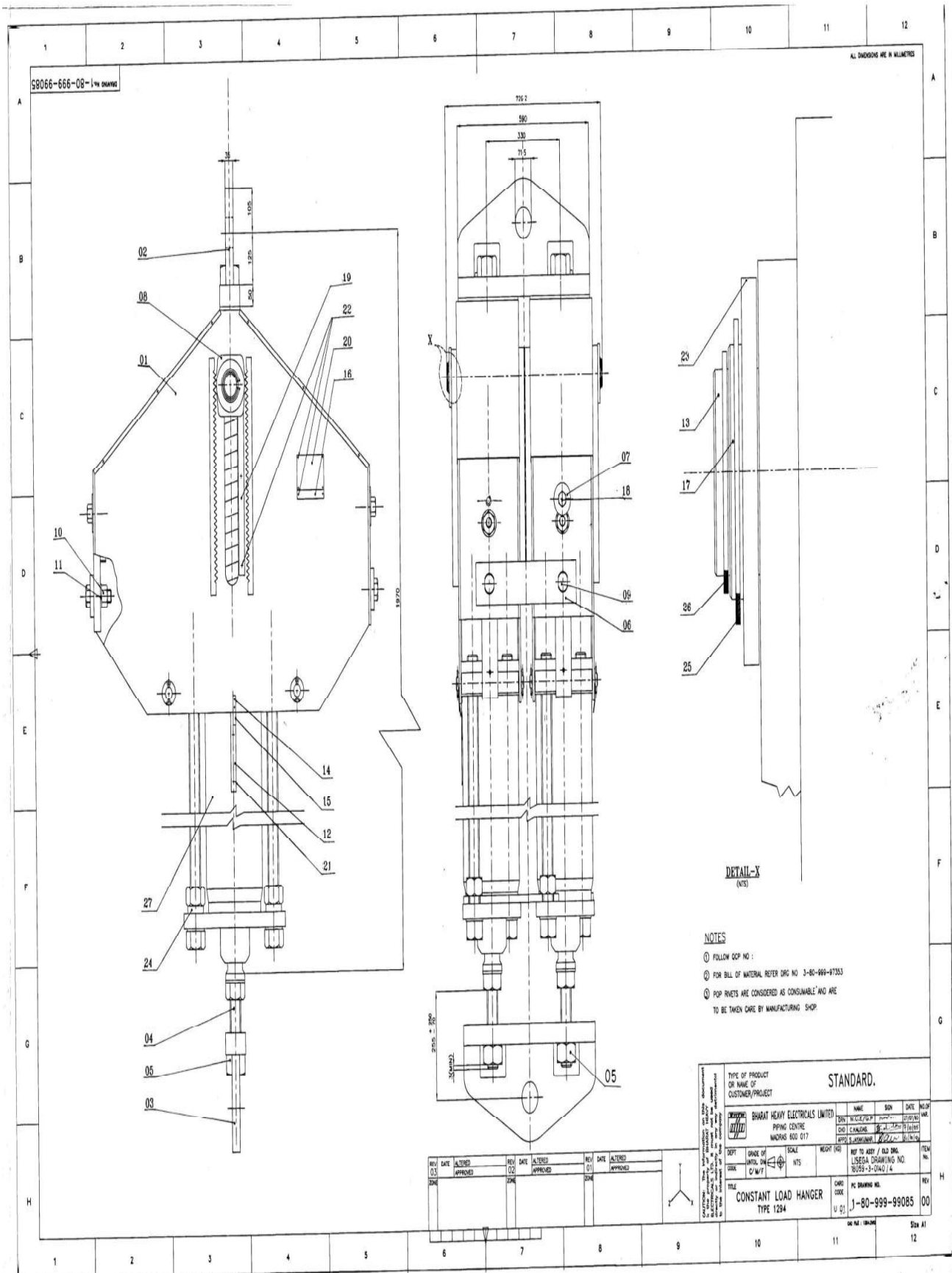


Receipt No : 684375/2024/HERP-ENGG&amp;MKT



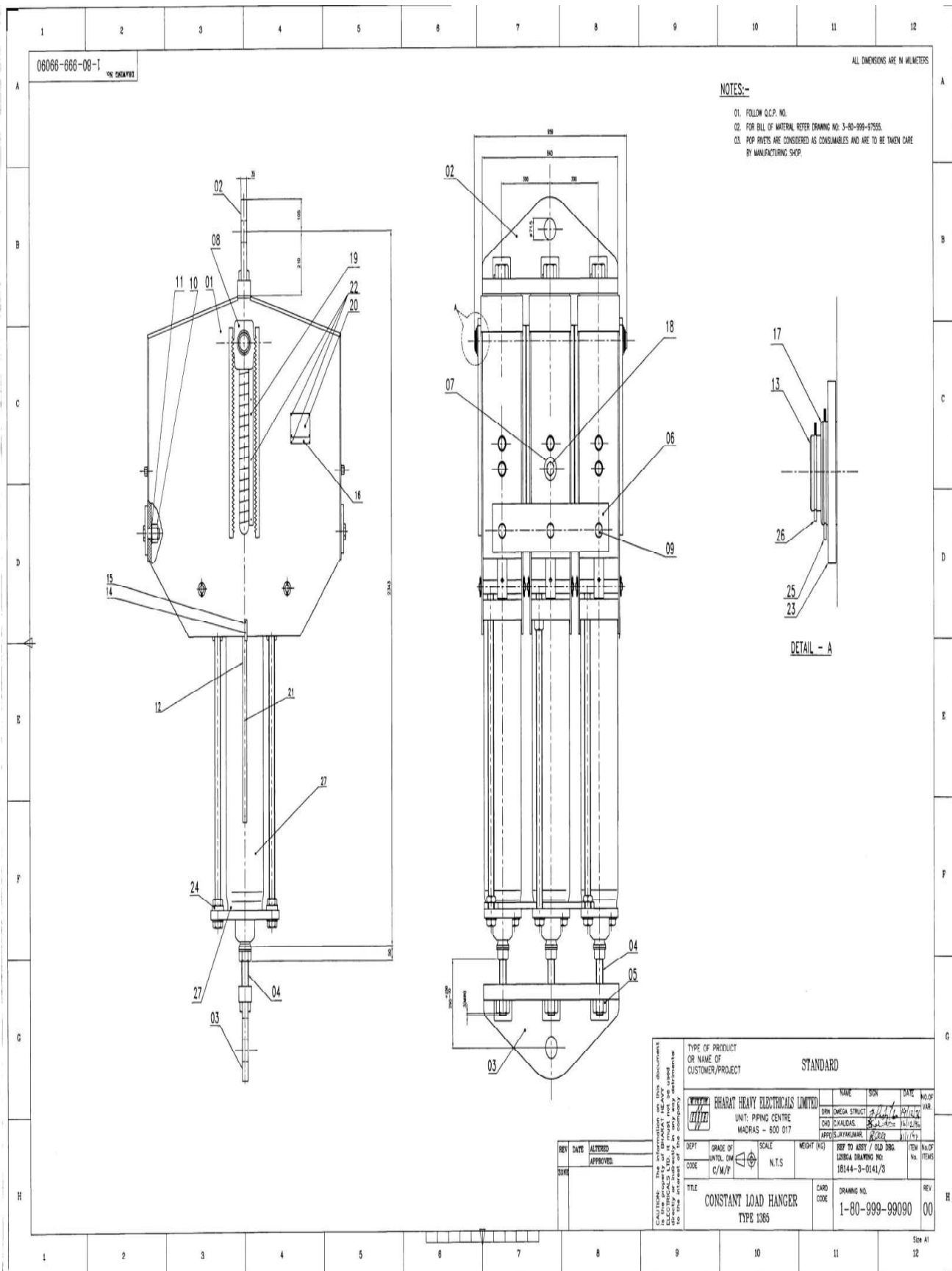
NIT No. BHEL/HERP/WCM/FY24/EM/CLH ASSY 77 of 89

Receipt No : 684375/2024/HERP-ENGG&amp;MKT



NIT No. BHEL/HERP/WCM/FY24/EM/CLH ASSY 78 of 89

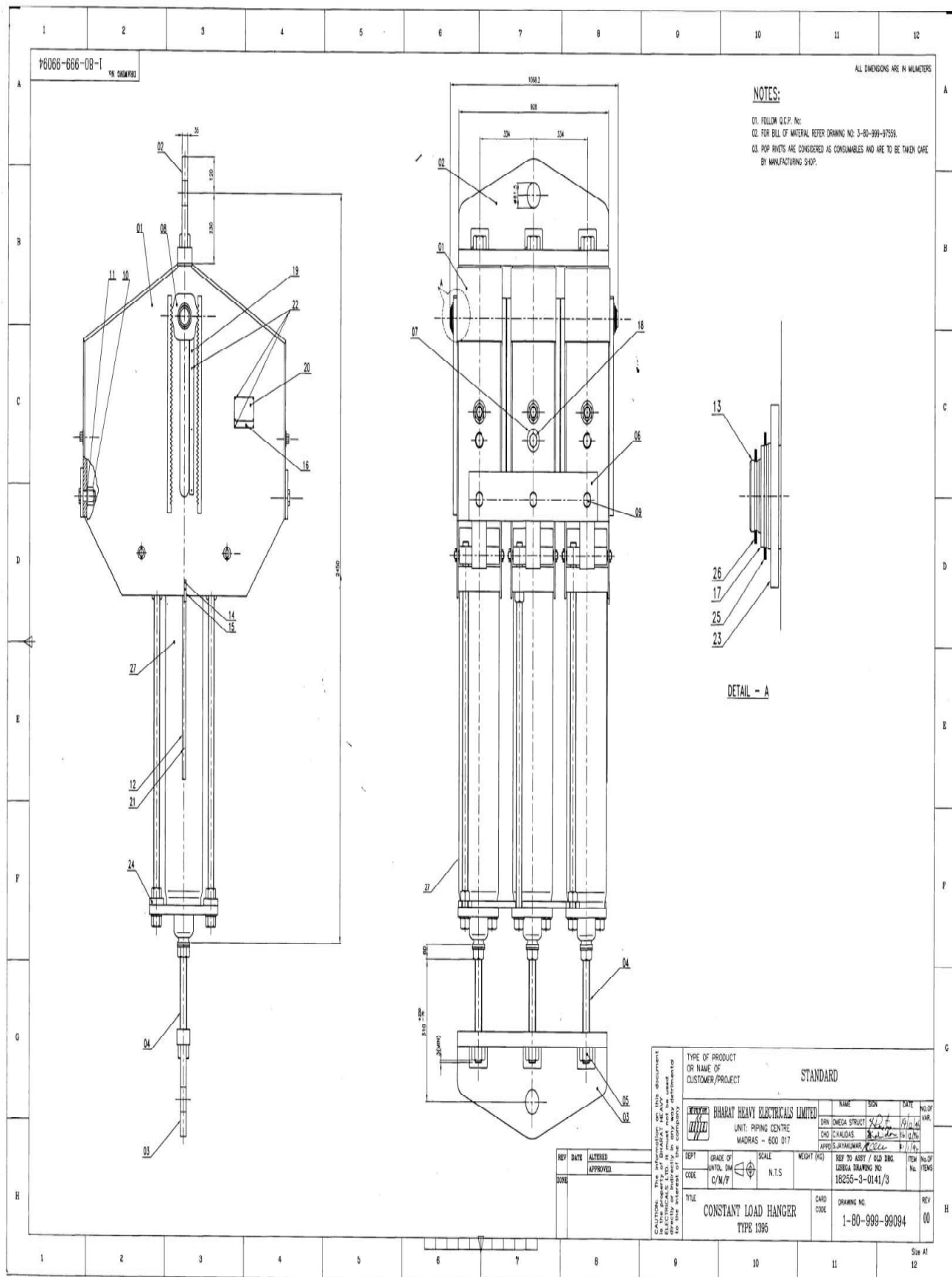








Receipt No : 684375/2024/HERP-ENGG&amp;MKT



NIT No. BHEL/HERP/WCM/FY24/EM/CLH ASSY 82 of 89







FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN MILLIMETRES)

DRAWING NO. 3-80-999-97410

CAUTION: The information on this document is the property of BHARAT HEAVY ELECTRICALS LTD. It must not be used directly or indirectly in any way detrimental to the interest of the company.

**NOTES:-**

01. FOLLOW Q.C.P. No.

02. ITEMS MARKED THIS '\*' ARE TO BE ELECTROPLATED WITH ZINC AND YELLOW CHROMATISED FOR 10 TO 15  $\mu$ m.

03. POP RIVETS ARE CONSIDERED AS CONSUMABLES AND ARE TO BE TAKEN CARE BY MANUFACTURING SHOP.

ITEM NO.	DESCRIPTION	DRAWING NUMBER	ITEM NO.	MATERIAL CODE	UNIT WEIGHT
08	WASHER OD 85 / ID 25	4-80-999-99467	15 011 182 0000	C	0.122
			IS 1079 Fe 330		1
07	EYE NUT EN-4 M24x3	3-80-999-99127	94 821 304	C	0.930
			-		1
06	STEPPED STUD M42x4.5/M24x3 L=155	3-80-999-97474	15 339 142 0000	C	0.898
			SA 105		1
*05	HEX NUT M30x3.5	41319 30000	41319 00030	C	0.231
			A194 Gr 2H		2
*04	WASHER MCD 30 OD 56/ID 31	41406 30000	41406 00030	C	0.053
			IS 2016		2
03	THREADED BOLT M30x3.5 L = 90	2-80-999-99342	15 024 261	C	0.707
			SA 182 Gr.F8c CL3		2
02	SUPPORT ASSEMBLY	3-80-999-97528	-		32.824
			WELDMENT		2
01	C.L.H. TYPE 1182	1-80-999-99056	-		288.312
			SUB ASSEMBLY		1

VARIANT NUMBER	DESCRIPTION	ITEM NO.	MATERIAL CODE	UNIT WEIGHT
		VAR NO.	MATERIAL SPECN	Q1 QUANTITY

STANDARD.

REV	DATE	ALTERED	DEPT	GRADE OF UNTOOL DIM	SCALE	WEIGHT (KG)	REF. TO ASSY/OLD DRG.	ITEM NO. OF ITEMS
01		APPROVED		C/M/P	N.T.S	337.892	48266-3-6158/0	00

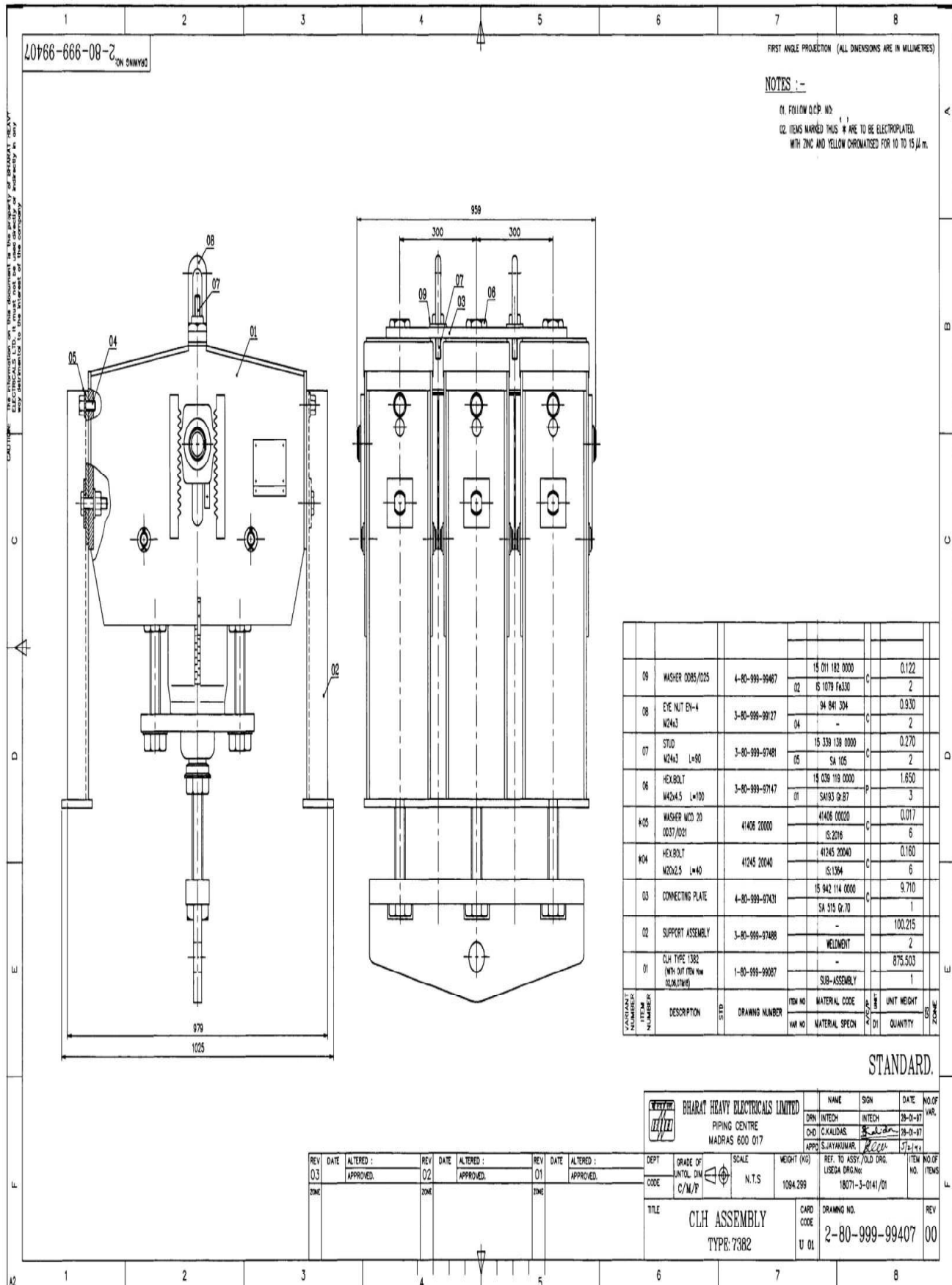
**C.L.H. ASSEMBLY  
(TYPE 7182)**

Size A3



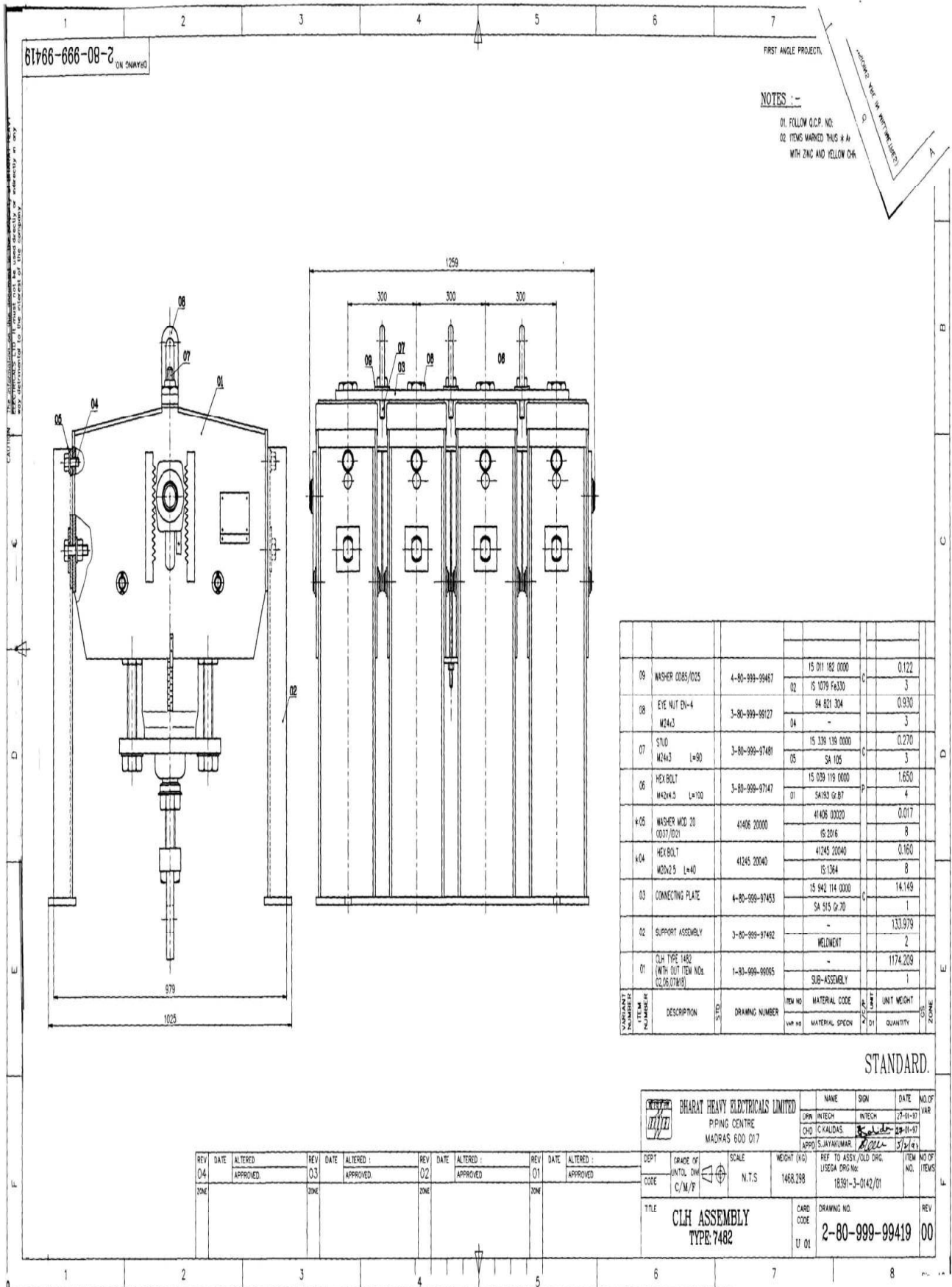


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NIT No. BHEL/HERP/WCM/FY24/EM/CLH ASSY 88 of 89

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NIT No. BHEL/HERP/WCM/FY24/EM/CLH ASSY 89 of 89