



**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/FY26/EM/CLH ASSY

**DATE.** 01/04/2026

1. Notice Inviting Tender	:	Page 2
2. Directions to Parties for Tendering.	:	Page 3
3. Details of Bid & Bidder	:	Page 4
4. Scope of Work	:	Page 5 to 8
5. Special Terms & Conditions	:	Page 9 to 13
6. BOQ and Price schedule	:	Page 14 to 15
7. Pre-Qualification Requirement	:	Page 16
8. No deviation Certificate	:	Page 17
9. General Conditions of Contract	:	Page 18 to 43
10. Bidder's declaration	:	Page 44
11. CLH Assembly Procedure	:	Page 45 to 60
12. CLH Drawings	:	Page 61 to 89



**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/FY26/EM/CLH ASSY**

**DATE. 01/04/2026**

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>11/04/2026</b>	<b>Time :</b>	<b>14:00</b>
<b>Date and Time for opening of Technical Bid</b>	<b>11/04/2026</b>	<b>Time :</b>	<b>16:00</b>

Sl. No.	Name of work	Earnest Money Deposit (EMD)	Security Deposit (SD)	Period of contract	Defect Liability Period	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. There is no tender cost for this enquiry.
- 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  
Manager (WCM)

Email: [atendrpal@bhel.in](mailto:atendrpal@bhel.in)

Phone No. 0542-2720928

- BHEL reserves the right to accept or reject any/ all application(s) without assigning any reason thereof.
- 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.



# Bharat Heavy Electricals Limited Heavy Equipment Repair Plant

Works Contract Management (WCM) Department  
TARNA, SHIVPUR, VARANASI-221003

## **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 Work Order/ 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.



**Bharat Heavy Electricals Limited**  
**Heavy Equipment Repair Plant**

Works Contract Management (WCM) Department  
TARNA, SHIVPUR, VARANASI-221003

**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	City -
		State
		PIN code:
		Phone / Fax No.
		Name of Contact Person
		Mobile No.
		Email ID
		4
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).



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

**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 (pining 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.	Estimated Assembly Time (in Min) per Unit	Qty. (Nos)	Estimated Rate per Unit (Rs./Unit)	Total Estimate (Rs.)
1	CLH-1182	84	150	279.53	41930
2	CLH-1192	84	150	279.53	41930
3	CLH-1183	84	150	279.53	41930
4	CLH-1193	84	150	279.53	41930
5	CLH-1184	105	150	349.61	52442
6	CLH-1194	105	150	349.61	52442
7	CLH-1185	140	150	465.9	69885
8	CLH-1195	140	400	465.9	186360
9	CLH-1282	235.2	100	782.39	78239
10	CLH-1283	235.2	120	782.39	93887
11	CLH-1284	294	150	978.86	146829
12	CLH-1285	392	80	1304.6	104368
13	CLH-1292	235.2	60	782.43	46946
14	CLH-1293	235.2	10	782.43	7824



# Bharat Heavy Electricals Limited Heavy Equipment Repair Plant

Works Contract Management (WCM) Department  
TARNA, SHIVPUR, VARANASI-221003

15	CLH-1294	294	10	978.86	9789
16	CLH-1295	392	55	1304.6	71753
17	CLH-1382	336	10	1118.14	11182
18	CLH-1383	336	10	1118.14	11182
19	CLH-1384	420	10	1398.45	13985
20	CLH-1385	560	35	1863.57	65225
21	CLH-1392	336	10	1118.14	11182
22	CLH-1393	336	10	1118.14	11182
23	CLH-1394	420	10	1398.45	13985
24	CLH-1395	560	55	1863.57	102497
25	CLH-1482	436.8	5	1453.9	7270
26	CLH-1483	436.8	5	1453.9	7270
27	CLH-1484	546	5	1818.14	9091
28	CLH-1485	728	5	2422.64	12114
29	CLH-1492	436.8	5	1453.9	7270
30	CLH-1493	436.8	5	1453.9	7270
31	CLH-1494	546	50	1818.14	90907
32	CLH-1495	728	100	2422.64	242264
33	CLH-7182	105	1	349.61	350
34	CLH-7183	105	25	349.61	8741
35	CLH-7184	131.25	5	437.4	2187
36	CLH-7185	175	1	582.17	583
37	CLH-7192	105	1	349.61	350
38	CLH-7193	105	1	349.61	350
39	CLH-7194	131.25	5	437.4	2187
40	CLH-7195	175	10	582.17	5822
41	CLH-7282	235.2	5	782.39	3912
42	CLH-7283	235.2	1	782.39	783
43	CLH-7284	294	60	978.76	58726
44	CLH-7285	392	10	1304.5	13045
45	CLH-7292	235.2	1	782.39	783
46	CLH-7293	235.2	1	782.39	783
47	CLH-7294	294	10	978.76	9788
48	CLH-7295	392	20	1304.5	26090
49	CLH-7382	336	1	1118.14	1119
50	CLH-7383	336	1	1118.14	1119
51	CLH-7384	420	2	1398.45	2797
52	CLH-7385	560	1	1863.57	1864
53	CLH-7392	336	1	1118.14	1119
54	CLH-7393	336	1	1118.14	1119
55	CLH-7394	420	1	1398.45	1399
56	CLH-7395	560	1	1863.57	1864
57	CLH-7482	436.8	1	1453.9	1454
58	CLH-7483	436.8	1	1453.9	1454



**Bharat Heavy Electricals Limited**  
**Heavy Equipment Repair Plant**

Works Contract Management (WCM) Department  
TARNA, SHIVPUR, VARANASI-221003

<b>59</b>	CLH-7484	546	1	1818.14	1819
<b>60</b>	CLH-7485	728	1	2422.64	2423
<b>61</b>	CLH-7492	436.8	1	1453.9	1454
<b>62</b>	CLH-7493	436.8	1	1453.9	1454
<b>63</b>	CLH-7494	546	1	1818.14	1819
<b>64</b>	CLH-7495	728	1	2422.64	2423
<b>65</b>	CLH-9165	210	15	699.23	10489
<b>66</b>	CLH-9173	210	5	699.23	3497
<b>67</b>	CLH-9175	262.5	20	1165.11	23303
<b>68</b>	CLH-9182	210	1	699.23	700
<b>69</b>	CLH-9183	210	1	699.23	700
<b>70</b>	CLH-9184	262.5	1	874.03	875
<b>71</b>	CLH-9192	210	1	699.23	700
<b>72</b>	CLH-9193	210	1	699.23	700
<b>73</b>	CLH-9195	350	5	1165.11	5826
		<b>TOTAL</b>	<b>2589</b>		<b>₹ 19,20,299</b>

Total no. of CLH Assembly (in Nos.)	<b>2589</b>
Total Estimated Cost of CLH Assembly Contract	<b>₹ 19,20,299</b>
Total Estimated Cost of Contract incl. 18% GST	<b>₹ 22,65,953</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.



# **Bharat Heavy Electricals Limited**

## **Heavy Equipment Repair Plant**

Works Contract Management (WCM) Department  
TARNA, SHIVPUR, VARANASI-221003

### **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)

#### **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.



# **Bharat Heavy Electricals Limited**

## **Heavy Equipment Repair Plant**

Works Contract Management (WCM) Department  
TARNA, SHIVPUR, VARANASI-221003

- 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 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.



**Bharat Heavy Electricals Limited**  
**Heavy Equipment Repair Plant**

Works Contract Management (WCM) Department  
TARNA, SHIVPUR, VARANASI-221003

- 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.

**Minimum Two groups including fitter & Worker(s) shall be deployed by contractor to execute the above mentioned allotted work.**

If Vendor fails to meet the Delivery Schedule Due Date as mentioned against the Job-Order, **LD will be applicable on job order value. LD value shall be 0.5% of Job Order Value per week or part thereof. The total cumulative LD value for all the delayed job orders of the contract shall maximum be up-to 10% of the total Contract Value.**

**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:

<b>Job Order No.: XXXXXXXX</b>		<b>DATE: XX/YY/ZZZZ</b>
S. No.	Ref. No. (CLH Variant)	Qty. (in Nos.)
1	CLH-1184	20
2	CLH-1195	15
3	CLH-1283	15



**Bharat Heavy Electricals Limited**  
**Heavy Equipment Repair Plant**

Works Contract Management (WCM) Department  
TARNA, SHIVPUR, VARANASI-221003

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 H = M/60</b>	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>	01-11-2026	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.



# Bharat Heavy Electricals Limited Heavy Equipment Repair Plant

Works Contract Management (WCM) Department  
TARNA, SHIVPUR, VARANASI-221003

7	<b>Due Date = (Starting Date) + (Total No. of Days) - (1)</b>	27-12-2026	Starting date will also be a working day hence 1 needs to be subtracted to get due date.
8	<b>Case-1 : Completion Date (Filled By BHEL Executive in Online System)</b>	27-12-2026 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>	27-12-2026 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>

**NOTE:** For each job order, the starting and completion date will be entered by BHEL executive.

If one job order is in progress and a new one is assigned to the vendor, the starting date of the new job order will begin on the next working day of the Due Date/Job Completion Date (Whichever is earlier) of the currently running job order.

**NOTE:** The CLH mentioned in contract shall be used in erection of BOILER & PIPING components at various sites under execution by BHEL. Any delay in supply of CLH to site, irrespective of the size, may results in slippage of milestones and heavy penalty on BHEL. Hence, completion of each job order on time is the essence of the contract

**Three (03) Consecutive Delayed Job Orders shall be counted as "One Delayed Incidence" on the part of contractor. And each delayed incidence shall be communicated to Contractor via mail/letter by BHEL. Three (03) such delayed incidences shall be considered as a ground for violation of the contract by the contractor and in such scenario BHEL may proceed for closure of contract.**

## **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

Works Contract Management (WCM) Department  
TARNA, SHIVPUR, VARANASI-221003

## 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. 22,65,953/ 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 $\pm 20\%$ .					
S. No.	Ref. No.	Qty. (Nos)	Estimated Rate per Unit (Rs./Unit)	Total Estimated Value (Rs.)	Remark
1	CLH-1182	150	279.53	41930	Single Cell CLH
2	CLH-1192	150	279.53	41930	Single Cell CLH
3	CLH-1183	150	279.53	41930	Single Cell CLH
4	CLH-1193	150	279.53	41930	Single Cell CLH
5	CLH-1184	150	349.61	52442	Single Cell CLH
6	CLH-1194	150	349.61	52442	Single Cell CLH
7	CLH-1185	150	465.9	69885	Single Cell CLH
8	CLH-1195	400	465.9	186360	Single Cell CLH
9	CLH-1282	100	782.39	78239	Multi Cell-CLH
10	CLH-1283	120	782.39	93887	Multi Cell-CLH
11	CLH-1284	150	978.86	146829	Multi Cell-CLH
12	CLH-1285	80	1304.6	104368	Multi Cell-CLH
13	CLH-1292	60	782.43	46946	Multi Cell-CLH
14	CLH-1293	10	782.43	7824	Multi Cell-CLH
15	CLH-1294	10	978.86	9789	Multi Cell-CLH
16	CLH-1295	55	1304.6	71753	Multi Cell-CLH
17	CLH-1382	10	1118.14	11182	Multi Cell-CLH
18	CLH-1383	10	1118.14	11182	Multi Cell-CLH
19	CLH-1384	10	1398.45	13985	Multi Cell-CLH
20	CLH-1385	35	1863.57	65225	Multi Cell-CLH
21	CLH-1392	10	1118.14	11182	Multi Cell-CLH
22	CLH-1393	10	1118.14	11182	Multi Cell-CLH
23	CLH-1394	10	1398.45	13985	Multi Cell-CLH
24	CLH-1395	55	1863.57	102497	Multi Cell-CLH
25	CLH-1482	5	1453.9	7270	Multi Cell-CLH
26	CLH-1483	5	1453.9	7270	Multi Cell-CLH
27	CLH-1484	5	1818.14	9091	Multi Cell-CLH
28	CLH-1485	5	2422.64	12114	Multi Cell-CLH
29	CLH-1492	5	1453.9	7270	Multi Cell-CLH
30	CLH-1493	5	1453.9	7270	Multi Cell-CLH
31	CLH-1494	50	1818.14	90907	Multi Cell-CLH
32	CLH-1495	100	2422.64	242264	Multi Cell-CLH
33	CLH-7182	1	349.61	350	7 Series Single Cell CLH



# Bharat Heavy Electricals Limited Heavy Equipment Repair Plant

Works Contract Management (WCM) Department  
TARNA, SHIVPUR, VARANASI-221003

34	CLH-7183	25	349.61	8741	7 Series Multi Cell CLH
35	CLH-7184	5	437.4	2187	7 Series Multi Cell CLH
36	CLH-7185	1	582.17	583	7 Series Multi Cell CLH
37	CLH-7192	1	349.61	350	7 Series Multi Cell CLH
38	CLH-7193	1	349.61	350	7 Series Multi Cell CLH
39	CLH-7194	5	437.4	2187	7 Series Multi Cell CLH
40	CLH-7195	10	582.17	5822	7 Series Multi Cell CLH
41	CLH-7282	5	782.39	3912	7 Series Multi Cell CLH
42	CLH-7283	1	782.39	783	7 Series Multi Cell CLH
43	CLH-7284	60	978.76	58726	7 Series Multi Cell CLH
44	CLH-7285	10	1304.5	13045	7 Series Multi Cell CLH
45	CLH-7292	1	782.39	783	7 Series Multi Cell CLH
46	CLH-7293	1	782.39	783	7 Series Multi Cell CLH
47	CLH-7294	10	978.76	9788	7 Series Multi Cell CLH
48	CLH-7295	20	1304.5	26090	7 Series Multi Cell CLH
49	CLH-7382	1	1118.14	1119	7 Series Multi Cell CLH
50	CLH-7383	1	1118.14	1119	7 Series Multi Cell CLH
51	CLH-7384	2	1398.45	2797	7 Series Multi Cell CLH
52	CLH-7385	1	1863.57	1864	7 Series Multi Cell CLH
53	CLH-7392	1	1118.14	1119	7 Series Multi Cell CLH
54	CLH-7393	1	1118.14	1119	7 Series Multi Cell CLH
55	CLH-7394	1	1398.45	1399	7 Series Multi Cell CLH
56	CLH-7395	1	1863.57	1864	7 Series Multi Cell CLH
57	CLH-7482	1	1453.9	1454	7 Series Multi Cell CLH
58	CLH-7483	1	1453.9	1454	7 Series Multi Cell CLH
59	CLH-7484	1	1818.14	1819	7 Series Multi Cell CLH
60	CLH-7485	1	2422.64	2423	7 Series Multi Cell CLH
61	CLH-7492	1	1453.9	1454	7 Series Multi Cell CLH
62	CLH-7493	1	1453.9	1454	7 Series Multi Cell CLH
63	CLH-7494	1	1818.14	1819	7 Series Multi Cell CLH
64	CLH-7495	1	2422.64	2423	7 Series Multi Cell CLH
65	CLH-9165	15	699.23	10489	9 Series Multi Cell CLH
66	CLH-9173	5	699.23	3497	9 Series Multi Cell CLH
67	CLH-9175	20	1165.11	23303	9 Series Multi Cell CLH
68	CLH-9182	1	699.23	700	9 Series Multi Cell CLH
69	CLH-9183	1	699.23	700	9 Series Multi Cell CLH
70	CLH-9184	1	874.03	875	9 Series Multi Cell CLH
71	CLH-9192	1	699.23	700	9 Series Multi Cell CLH
72	CLH-9193	1	699.23	700	9 Series Multi Cell CLH
73	CLH-9195	5	1165.11	5826	9 Series Multi Cell CLH
	<b>TOTAL</b>	<b>2589</b>		<b>1920299</b>	

Total Estimate of Contract (Rs.) Incl. 18% GST ₹ 22,65,953

I/ We hereby quote... **To be Quoted on NIC Portal**...% above/ at par/ %below on total cost for all items placed at Sl. No. - 1 to 73.



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

**Pre- Qualifying Requirement (PQR)**

<b>1.</b>	<p><b>EXPERIENCE:</b></p> <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/ executed similar works each costing not less than the amount equal to Rs 9.06/- Lakh (Including GST).</p> <p style="text-align: center;"><b>OR</b></p> <p>Two completed/ executed similar works each costing not less than the amount equal to Rs 11.32/- Lakh (Including GST).</p> <p style="text-align: center;"><b>OR</b></p> <p>One completed similar work costing not less than the amount equal to Rs 18.12/- Lakh (Including GST).</p> <p><b><u>Similar Works:</u></b></p> <p>Similar works include the experience working in metal items for its <b>fabrication/ assembly/ erection in an Industrial/ Construction Set up.</b></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><b>Remark-</b></p> <ol style="list-style-type: none"><li>1.The value of work executed against a framework agreement shall be considered as one completed/ executed order.</li><li>2.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).</li></ol>
<b>2.</b>	<p><b>FINANCIAL CAPABILITY</b></p> <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. 6.8 Lakhs.</p> <p>If Applicable, Audited Profit &amp; loss account and Balance sheet to be submitted for FY-2024-25, FY-2023-24 &amp; FY-2022-23, else CA certified TO Sheet of the FY-2024-25, FY-2023-24 &amp; FY-2022-23 to be submitted.</p> <p><b>Note -</b></p> <ol style="list-style-type: none"><li><b>1. All the CA certified/ audited documents should have UDIN.</b></li><li><b>2. In case the date of constitution / incorporation of the bidder's firm is less than 3-year-old, the average turnover in respect of the completed financial years after the date of constitution shall be taken into account for financial criteria</b></li></ol>

**Being this job as Works contract, there will be no exemption to MSEs & Start-ups for Turnover and Experience Criteria**



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

**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  
TARNA, SHIVPUR, VARANASI-221003

**INDEX**

<b>Clause</b>	<b>TITLE</b>
1.0	DEFINITIONS
2.0	GENERAL INSTRUCTIONS TO THE TENDERERS
2.1	GENERAL INSTRUCTIONS
2.2	SUBMISSION OF TENDERS
2.3	EVALUATION OF TENDERS
2.4	EARNEST MONEY DEPOSIT
2.5	SECURITY DEPOSIT
2.6	PERFORMANCE GUARANTEE FOR WORKMANSHIP/ DEFECT LIABILITY PERIOD
2.7	TENDOR COST
2.8	VALIDITY OF OFFER
2.9	RIGHT OF BHEL TO REJECT TENDERS
3.0	CONTRACT EXECUTION & PERFORMANCE
3.1	GENERAL INSTRUCTION TO CONTRACTOR FOR WORK EXECUTION
3.2	WORK COMPLETION TIME
3.3	EXTENSION OF TIME FOR COMPLETION
3.4	PROGRESS MONITORING, MONTHLY REVIEW AND PERFORMANCE EVALUATION
3.5	QUANTITY VARIATION
3.6	DELETED
3.7	STRIKES & LOCKOUT
3.8	DELAY AND EXTENSION OF TIME: FORCE MAJEURE
3.9	INSURANCE
3.10	TEMPORARY WORKS
4.0	VALUATION AND PAYMENT
4.1	RECORDS AND MEASUREMENTS
4.2	RUNNING & FINAL BILLS
4.3	PAYMENT OF BILLS
4.4	RECOVERY FROM THE CONTRACTOR:
4.5	TAXES AND OTHER DUTIES
4.6	INCOME TAX- IT
4.7	MISCELLANEOUS CHARGES
4.8	LIQUIDATED DAMAGE (LD)
4.9	RISK & COST AMOUNT AGAINST BALANCE WORK
4.10	NO INTEREST PAYABLE TO CONTRACTOR
5.0	RESPONSIBILITIES OF THE CONTRACTOR IN RESPECT OF LAWS, EMPLOYMENT OF WORKERS ETC.
6.0	RIGHTS OF BHEL FOR TERMINATION/CANCELLATION OF CONTRACT
7.0	MISCELLANEOUS PROVISIONS & OTHER ISSUES.
7.1	SETTLEMENT OF DISPUTES & ARBITRATION
7.2	LAWS GOVERNING THE CONTRACT
7.3	ORDERS UNDER THE CONTRACT
7.4	JURISDICTION OF COURT
7.5	CLOSING OF CONTRACTS
7.6	REVERSE AUCTION
7.7	SUSPENSION OF BUSINESS DEALINGS WITH CONTRACTORS
7.8	PUBLIC PROCUREMENT POLICY
7.9	INTEGRITY PACT (IP)
7.10	CONFLICT OF INTEREST AMONG BIDDERS/AGENTS
7.11	BREACH OF CONTRACT, REMEDIES AND TERMINATION
7.12	SPECIAL CONDITIONS FOR MICRO AND SMALL ENTERPRISES
7.13	OTHER ISSUES



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

**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.



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

- 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.



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

**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.



# Bharat Heavy Electricals Limited

## Heavy Equipment Repair Plant

Works Contract Management (WCM) Department

TARNA, SHIVPUR, VARANASI-221003

- 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



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

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 interest or renewal of the documents or in any other matter connected therewith)



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

**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.
  - The Bank Guarantees shall be as per prescribed format approved by BHEL.



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

- 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.



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

- 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.



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

**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 dully 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.



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

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



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

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



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

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



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

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.



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

**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.



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

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.

**Uploading the Invoices on BHEL SUVIDHA Portal**

Irrespective of the value of the invoice amount, the supplier/ contractor should necessarily upload the invoice details on BHEL SUVIDHA portal at <https://suvidha.bhel.in/suvidha/>, prior to despatch/raising invoice. All documents as per contract checklist, along with additional documents (if any), must be uploaded on the portal. It is mandatory that tax invoices with a net amount (including taxes) exceeding Rs five lakhs uploaded on the portal are digitally signed using a Class 3 Digital Signature Certificate (DSC) issued by a licensed Certifying Authority. Submission of invoice document in hard copy is allowed for invoices with a net amount (including taxes) equal to and up to Rs five lakhs in case the requirement for digitally signed invoice is not explicitly mentioned in the contract checklist.

**The Invoice will not be accepted in absence of the above**

**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.



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

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,
- 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



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

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.

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.



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

- 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.

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



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

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.



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

**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.



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

- 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.



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

**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.



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

**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" on "supplier registration page". Respective bidders / suppliers may refer



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

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.



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

**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.



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


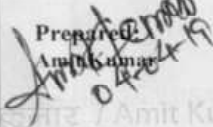

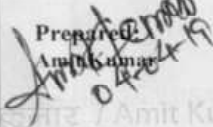

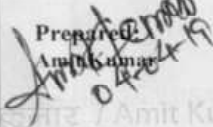

**Bidders Declaration**

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,


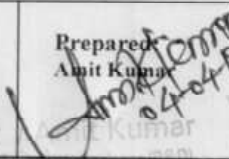
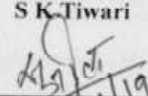
Yours Sincerely

Signature, seal and address of the party

ID-106-1 Rev No. 5 Form No.		<b>PRODUCT PROCEDURE</b> <b>LOAD HANGERS</b> <b>HERP VARANASI</b>	Procedure No.	RVPROC-004				
			Rev No 00					
			Page 1 of 2					
<p style="text-align: center;"><b><u>PROCEDURE FOR ASSEMBLY OF CONSTANT LOAD HANGERS (CLH) (LISEGA DESIGN)</u></b></p> <p>This document covers the procedure to be followed for assembly of Constant Load Hanger (CLH) (Liseiga Design).</p> <p><u>Before doing final assembly of a Constant Load Hanger, few sub-assemblies are to be done. The sub –assemblies are as follows: -</u></p> <ul style="list-style-type: none"> <li>➤ <b>Load Tube Assembly</b>-Assemble Load Tube with Bearings (along with Bearing Housing in case of CLH-1195), Bearing Axles, Distance Tubes, Circlips &amp; Washers.</li> <li>➤ <b>Disk Assembly</b>- Disk to be assembled Dowel Bolt.</li> <li>➤ <b>CAM Assembly</b>-Cam to be assembled with CAM Tube (spring dowel sleeve to be fitted as per requirement).</li> </ul> <p><u>After completing the above sub-assemblies, following procedure to be followed for main assembly: -</u></p> <ul style="list-style-type: none"> <li>➤ Case assembly to be placed on ground horizontally and assembly to be done in lying position.</li> <li>➤ Load tube to be inserted inside case assembly from upper connection block side to lower connection blocks.</li> <li>➤ GTS (Guide and Travel Stop Bolt) to be put inside upper spring end plate pipe.</li> <li>➤ Stell rings to be fitted with pipe in USEP (upper spring end plate).</li> <li>➤ GTS to be fitted while matching the front plate slot and USEP pipe.</li> <li>➤ Now insert the disk assembly and Auxiliary Springs inside the case assembly and place the free end of spring over centering ring at side plate.</li> </ul>								
<table border="0" style="width: 100%;"> <tr> <td data-bbox="180 1787 893 1942"> <b>Revisions:</b>   <b>Refer to record of revisions:</b> </td> <td data-bbox="893 1787 1120 1942" style="text-align: center;">           Prepared by:              04/04/19            अमित कुमार / Amit Kumar         </td> <td data-bbox="1120 1787 1299 1942" style="text-align: center;">           Approved:            S K Tiwari   </td> <td data-bbox="1299 1787 1479 1942" style="text-align: center;">           Date:            04/04/19         </td> </tr> </table>					<b>Revisions:</b>  <b>Refer to record of revisions:</b>	Prepared by:  04/04/19 अमित कुमार / Amit Kumar	Approved: S K Tiwari 	Date: 04/04/19
<b>Revisions:</b>  <b>Refer to record of revisions:</b>	Prepared by:  04/04/19 अमित कुमार / Amit Kumar	Approved: S K Tiwari 	Date: 04/04/19					

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.

भारत हेवी इलेक्ट्रिकल्स लिमिटेड  
 Bharat Heavy Electricals Ltd.  
 हर्ष, वाराणसी/HERP, Varanasi


TD-106-1 Rev No. 5	Form No.		<b>PRODUCT PROCEDURE</b> <b>LOAD HANGERS</b> <b>HERP VARANASI</b>	Procedure No.	RVPROC-004
				Rev No 00	
				Page 2 of 2	
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.		<ul style="list-style-type: none"> <li>➤ Both the auxiliary springs to be compressed and retained at their position, while clamping with the help of fixture studs, nuts and hydraulic jacks.</li> <li>➤ Assemble main spring (qty of springs as per drg) over Load Tube.</li> <li>➤ Assemble the guide bushing, guide tube and LA bolts with nuts and washers as per drg.</li> <li>➤ Now place the assembly in vertical position in a suitable fixture in such a way that top connection block should be on downward side.</li> <li>➤ Fit the bearing bolt with dowel bolt.</li> <li>➤ Now insert the CAM assembly with bearing shell and assemble the cam axle through cam tube as per drg. Place the washer and split pin as per drg.</li> <li>➤ Release both auxiliary springs from compressed position, so that CAM comes in contact with Bearings.</li> <li>➤ Ensure at least 80% contact of bearings on both Cam profiles and uniform gap between bearing Axle and Case assly. Use taper wedges to ensure the uniform gaps.</li> <li>➤ Ensure alignment and uniform gaps of load tube &amp; Guide tube.</li> <li>➤ 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.</li> <li>➤ Ensure placement of all the washers, circlips , split pins, dowel sleeve as per drg.</li> </ul>			
<b>Revisions:</b>  <b>Refer to record of revisions:</b>		Prepared: Amit Kumar 	Approved: S K Tiwari 	Date: 04/04/19	

TD-106-1 Rev No. 5 Form No.		<b>PRODUCT PROCEDURE LOAD HANGERS HERP VARANASI</b>	Procedure No.	RVPROC-001
			Rev No.	00
			Page	3 of 3

RECORD OF REVISIONS

REV. NO	DATE	REVISION DETAILS	REVISED	APPROVED

**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.

TD-106-1 Rev No. 5 Form No.		<b>PRODUCT PROCEDURE                  LOAD HANGERS                  HERP VARANASI</b>		Procedure No.	RVPROC-005
		Rev No. 00			
		Page 1 of 7			

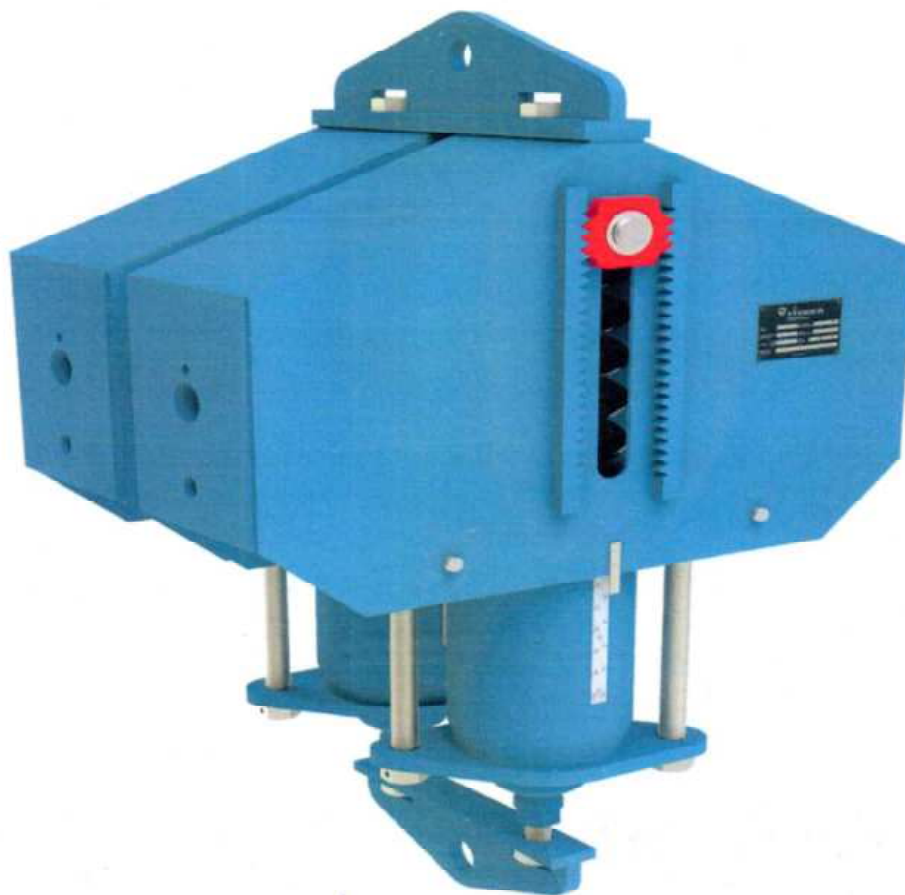
COPYRIGHT AND CONFIDENTIAL  
 The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED.  
 It must not be used directly or indirectly in any way detrimental to the interest of the company.

**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**



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
				Rev No. 00	
				Page 2	of 7
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 mulitcell 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>			
Revisions:-		Prepared By	Approved By	Date:	
Refer Record of Revisions		Anil 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
				Rev No.	00
				Page	3 of 7

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.

- 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.
- Assemble the washer, stud and nut in transport lock assembly (keep the nut in fully loose position) If applicable.
- Now take multicell CLH to test stand for testing at given parameters as per RVPROC-001.
- 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.
- 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.
- Tight the nut of transport lock assembly completely.

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
		Rev No. 00			
		Page 4 of 7			


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.

**2. ASSEMBLY PROCEDURE FOR SINGLE CELL SUPPORT TYPE (6 & 7 series) CLH.**



- 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

TD-106-1 Rev No. 5 Form No.		<b>PRODUCT PROCEDURE</b> <b>LOAD HANGERS</b> <b>HERP VARANASI</b>		Procedure No.	RVPROC-005
		Rev No. 00			
		Page 5 of 7			

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



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.

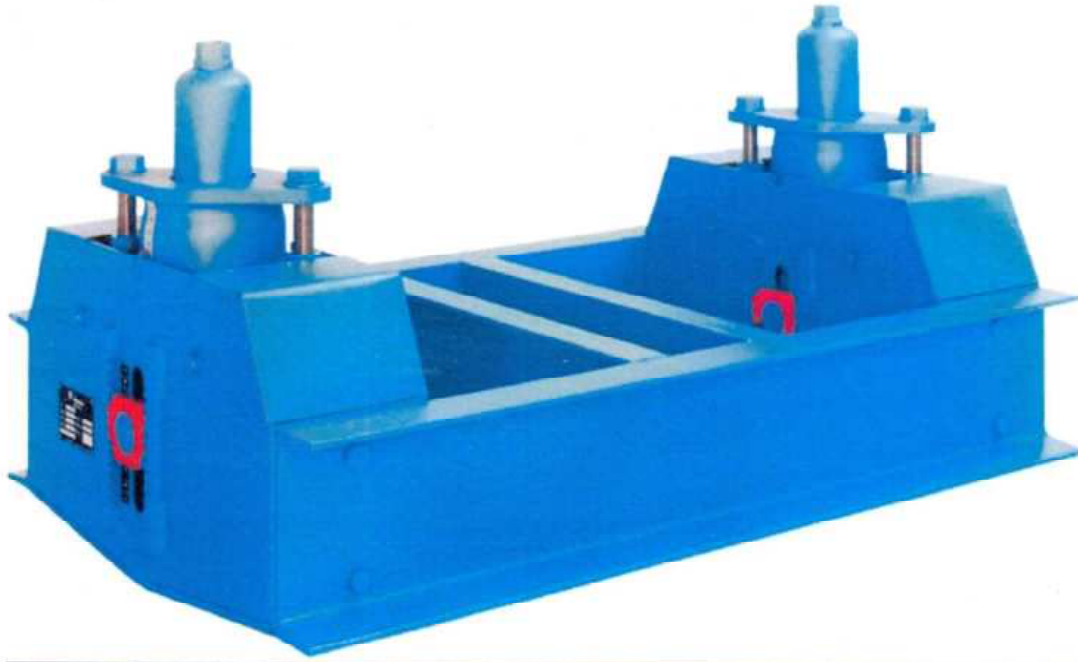
- Take a tested multicell (at given parameter) constant load hanger as per RVPROC-001 and put it on stand in horizontal position.
- dismantle the upper load connecting assembly and assemble support connecting plate as per drg.
- Dismantle one side connecting plate and assemble one side support assly.
- 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:
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
		Rev No. 00			
		Page 6 of 7			

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.

**4. ASSEMBLY PROCEDURE FOR TRAPEZE TYPE CLH (9 SERIES).**



- 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



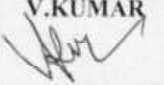
TD-106-1 Rev No. 5 Form No.		<b>PRODUCT PROCEDURE LOAD HANGERS HERP VARANASI</b>	Procedure No.	RVPROC-005
			Rev No. 00	
			Page 7 of 7	

**RECORD OF REVISIONS**


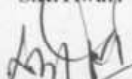
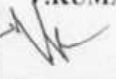
REV. NO	DATE	REVISION DETAILS	REVISED	APPROVED

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.




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
			Rev No 00	
			Page 1 of 6	
<b><u>PROCEDURE FOR RECTIFICATION OF CONSTANT LOAD HANGERS (CLH) (LISEGA DESIGN)</u></b>				
<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>		Prepared: S.K.Tiwari 	Approved: V.KUMAR 	Date: 28.10.16



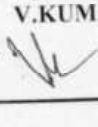
COPYRIGHT AND CONFIDENTIAL  
 The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED. It must not be used directly or indirectly in any way detrimental to the interest of the company.

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 2 of 6		
<b>B). Stell Ring rubbing with Case Assy .</b>						
<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 Take out Stell Ring from Load Tube Assy.</p> <p>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.</p> <p>6.0 Assemble Guide Tube, LA Bolts as per drawing.</p> <p>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.</p> <p>8.0 Ensure alignment and uniform gaps of load tube &amp; Guide tube.</p>						
<b>C). GTS Rubbing with Case Assy.</b>						
<p>1.0 Mark the rubbing points of GTS with case assly slot during testing of CLH.</p> <p>2.0 Retain both auxiliary springs at their position, while clamping with the help of fixture studs, nuts and hydraulic jacks.</p> <p>3.0 Take out GTS (Guide &amp; Travel Stop Bolt) after removing circlips &amp; washers.</p> <p>4.0 Further Take out Load Tube Assembly while dismantling Guide Tube, LA Bolts.</p> <p>5.0 Gas cut the already marked area. Grind to make smooth the gas cut portion.</p> <p>6.0 Re-assemble Load Tube, Guide Tube, LA Bolts, GTS as per drawing.</p> <p>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.</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		

 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.

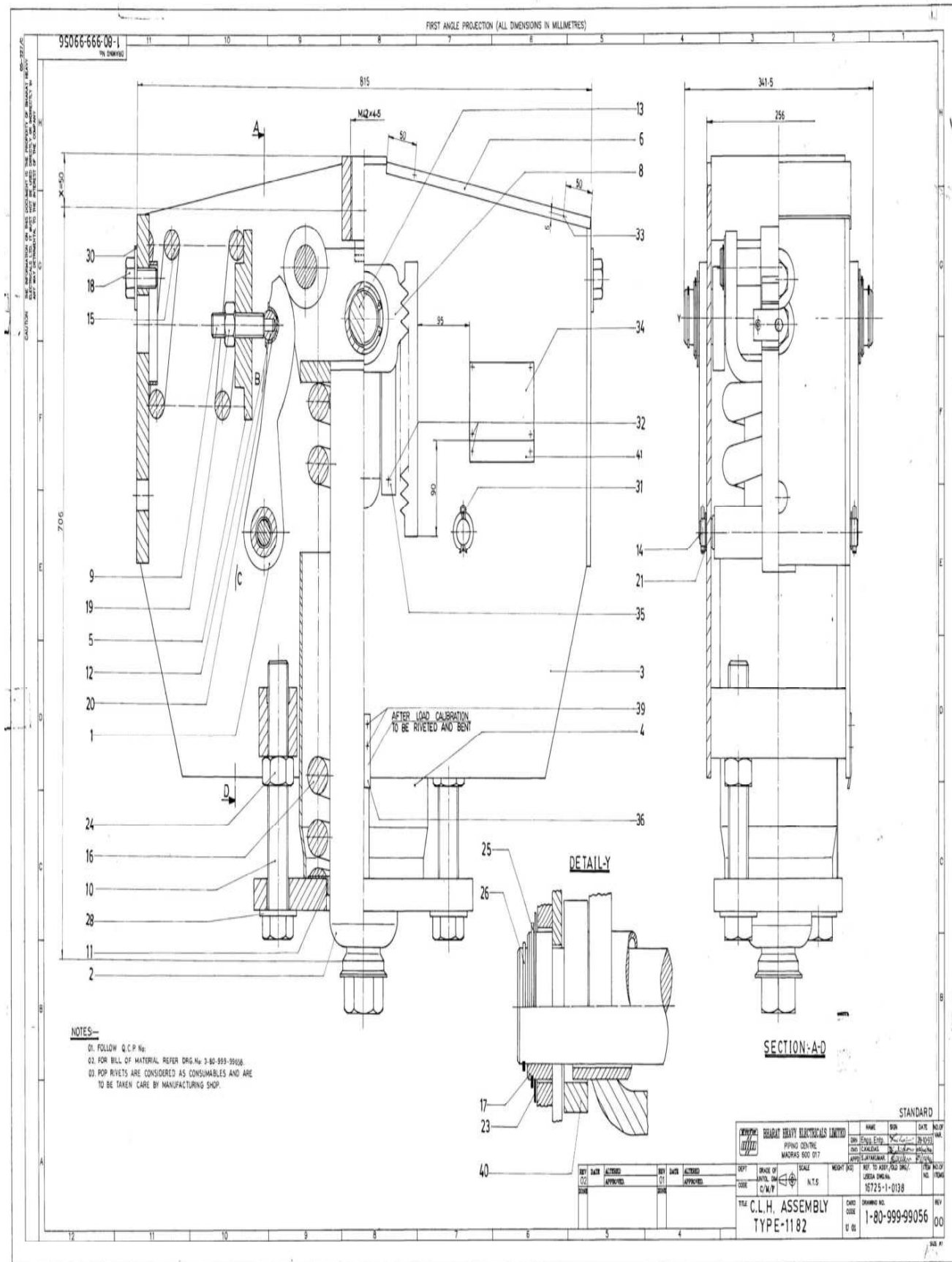
TD-106-1 Rev No. 5	Form No.		<b>PRODUCT PROCEDURE</b> <b>LOAD HANGERS</b> <b>HERP VARANASI</b>		Procedure No.	RVPROC-003	
				Rev No 00			
				Page 3	of 6		
<p style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: small;">           COPYRIGHT AND CONFIDENTIAL            The information 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			
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.		5.0 Assemble Guide Tube, LA Bolts, GTS as per drawing using taper wedges to ensure the uniform gaps.			
		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.			
		7.0 Ensure alignment and uniform gaps of load tube & Guide tube.			
		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.			
		<b>F). <u>Cam Problem (Notch in Graph).</u></b>			
		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 Cam Assly. Remove Cam tube by press. Replace both the CAMs by new CAMs and press fit the Cam tube into CAMs.			
		3.0 Re-Assemble CAM assly.			
		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.			
		5.0 Ensure alignment and uniform gaps of load tube & Guide tube.			
		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.			
		Revisions:	Prepared: SK.Tiwari	Approved: V.KUMAR	Date: 28.10.16
		Refer to record of revisions:			

TD-106-1 Rev No. 5	Form No. 	<p align="center"><b>PRODUCT PROCEDURE LOAD HANGERS HERP VARANASI</b></p>	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>				
<p><b>Revisions:</b></p> <p>Refer to record of revisions:</p>		<p>Prepared: S.K.Tiwari</p> 	<p>Approved: V.KUMAR</p> 	<p>Date: 28.10.16</p>

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.





FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN MILLIMETRES)

99966-666-00-C

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

ITEM NUMBER	DESCRIPTION	DRAWING NUMBER	ITEM NO	MATERIAL CODE	UNIT WEIGHT	ITEM NO	MATERIAL CODE	UNIT WEIGHT
VAR NO	MATERIAL SPECN	D1	QUANTITY	VAR NO	MATERIAL SPECN	D1	QUANTITY	
22	NOT APPLICABLE							
* 21	WASHER MCD2 L ODL/D26	41408 24000		41408 00024	0.031			
				IS: 2016 - A	4			
20	BEARING SHELL	4-80-999-99379			0.080			
			05	SUB DELY.	2			
* 19	HEX.NUT M24x3	41322 24000		41322 00024	0.110			
				IS: 1364	2			
* 18	HEX.BOLT M20x2.5 L=40	41245 20040		41245 20040	0.160			
				IS: 1364	2			
17	DISTANCE BUSH	4-80-999-99468		15 082 041	0.350			
				SA 108 Gr.B	2			
16	MAIN SPRING.	2-80-999-99295			33.400			
			20	50 Gr.V4 DIN 17221	1			
15	AUXILIARY SPRING.	2-80-999-99295			10.200			
			08	50 Gr.V4 DIN 17221	2			
14	AXLE.	4-80-999-99481		15 024 258	1.100			
				SA 182 Gr.Fact.13	2			
13	GUIDE AND TRAVEL STOP BOLT.	4-80-999-99482		15 024 382	6.360			
				SA 278 TYPE420	1			
12	BEARING BOLT ASSEMBLY.	3-80-999-99482			0.474			
			09	SUB ASSY.	2			
11	GUIDE BUSHING.	4-80-999-99380		18 005 278	0.406			
			08	BRASS	1			
10	LOAD ADJUSTMENT BOLT M36x4 L=240	3-80-999-99488		15 039 119	2.328			
			29	SA 183 Gr.B7	2			
09	DOWEL BOLT M24x3	4-80-999-99374		15 039 085	0.270			
			04	SA 183 Gr.B7	2			
08	TRAVEL STOP PLATE.	3-80-999-99557		15 011 0264000	1.900			
				IS: 2062 Fe 410 A	2			
07	NOT APPLICABLE.							
06	DUST COVER.	4-80-999-99552		15 011 078	1.286			
				IS: 513 TYPE D	2			
05	DISK. (MACHINED)	2-80-999-99297		15 942 199	3.910			
			07	SA 515 Gr.70	2			
04	LOAD ADJUSTMENT ASSEMBLY.	3-80-999-99588			18.304			
				WELDMENT	1			
03	CASE ASSEMBLY.	3-80-999-99590			108.071			
				WELDMENT	1			
02	LOAD TUBE ASSEMBLY.	2-80-999-99383			38.343			
				SUB ASSY.	1			
01	CAM ASSEMBLY.	3-80-999-99585			7.835			
				SUB ASSY.	2			
41	NAME PLATE PART II.	4-80-999-99386			0.020			
				SA 240 TYPE 304	1			
40	STELL RING	4-80-999-99387			0.093			
			08	NYLON-6	2			
39	POP RIVET #3x10	1-80-999-99056			0.001			
					2			
38	NOT APPLICABLE.							
37	NOT APPLICABLE.							
36	LOAD INDICATOR.	4-80-999-99384		15 011 104	0.013			
				IS: 1079 SL34	1			
35	TRAVEL SCALE 150mm	4-80-999-99382			0.006			
				ALUMINIUM	1			
34	NAME PLATE.	4-80-999-99213			0.080			
				SA 240 TYPE 304	1			
33	POP RIVET #3x15	1-80-999-99056			0.002			
					8			
32	POP RIVET #3x4	1-80-999-99056			0.001			
					8			
31	PIN SPLIT #6.3x40	41704 06040		41704 60040	0.011			
				IS: 549	4			
30	WASHER OD75/ID21	4-80-999-99467		15 011 182	0.096			
			01	IS: 1079 F8330	2			
29	NOT APPLICABLE.							
* 28	WASHER MCD 36 OD66/ID37	41406 36000		41406 00036	0.082			
				IS: 2016	2			
27	NOT APPLICABLE.							
26	CIRCLIP LIGHT A55	41902 05500		41902 00055	0.015			
				IS: 3075-A	2			
25	CIRCLIP LIGHT A70	41902 07000		41902 00070	0.029			
				IS: 3075-A	2			
* 24	HEX.NUT M36x4	4-80-999-99290		41319 40036	0.430			
			01	SA 184 2H	2			
* 23	WASHER MCD 72 OD125/ID74	41406 72000		41406 00072	0.826			
				IS: 2016	2			

**REVISIONS**

REV	DATE	APPROVED	DEPT	GRADE OF INTOL. DIM	SCALE	WEIGHT (KG)	REF. TO ASSY./OLD DRG.	ITEM NO.	NO. OF ITEMS
01	02-03-85	APPROVED: <i>[Signature]</i>		C/M/T	N.T.S	268.312	18726-5-0138		

PRODUCT ATTEST MARK 'P' INDICATED INSTEAD OF 'C' FOR ITEM NOS. 03 & 16 AS PER STANDARD INSTRUCTION NO 110 MATL. SPECN. CHANGED FROM SA 182 Gr. F8330 TO SA 182 Gr. F8330 FOR ITEM NO. 14

TITLE: **BOM FOR CLH ASSEMBLY**  
TYPE No: 1182

CARD CODE: U 01

DRAWING NO.: 3-80-999-99658 01

REV: 01

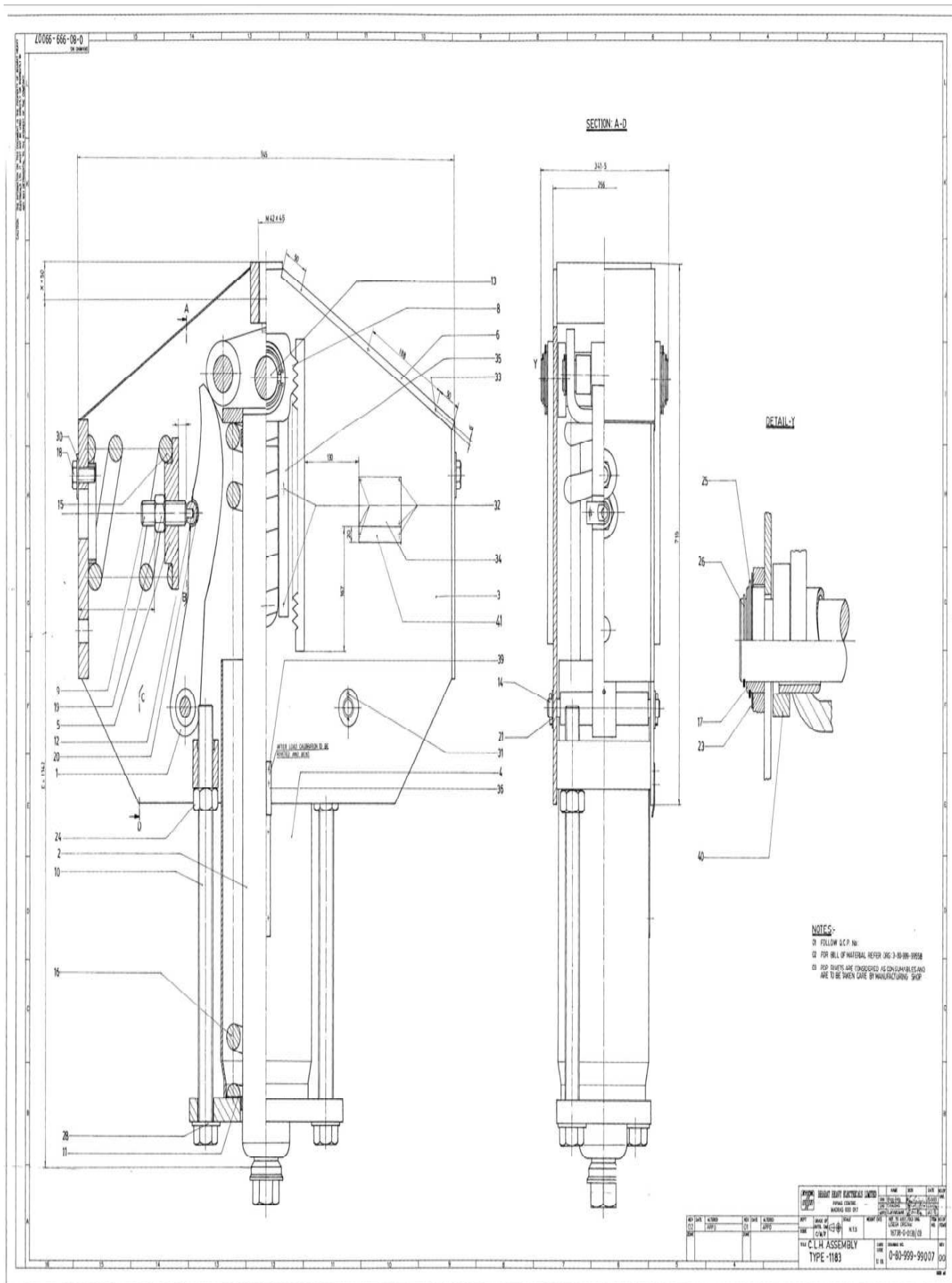
**APPROVED** *[Signature]* **DATE** 24-03-84

**DRN** M.C.SEXARAN

**CHKD** C.KALIDAS

**APPRD** S.JAYAKUMAR

Size A3



FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN MILLIMETRES)

89966-666-08-E

NOTES: -

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

ITEM NUMBER	DESCRIPTION	STD	DRAWING NUMBER	ITEM NO	MATERIAL CODE	UNIT WEIGHT	VAR NO	MATERIAL SPECN	QTY	UNIT	QUANTITY
22	NOT APPLICABLE										
* 21	WASHER MCD A27 0050/1028		41406 27000		41406 00027	0.042		IS: 2016	4		
20	BEARING SHELL.	4-80-999-99379		05	SUB DELY.	0.050			2		
* 19	HEX.NUT M30x3.5		41322 30000		41322 00030	0.193		IS:1364	2		
* 18	HEX.BOLT M20x2.5;L=40		41245 20040		41245 20040	0.160		IS:1364	2		
17	DISTANCE BUSH	4-80-999-99468			15 082 041	0.350		SA 106 Gr.B	2		
16	MAIN SPRING.	2-80-999-99295				62.400			1		
15	AUXILIARY SPRING.	2-80-999-99295		09	50 Cr.V4 DIN 17221	17.000			2		
14	AXLE.	4-80-999-99461			15 024 256	1.100		SA 182 Gr.F6g(L1)	2		
13	GUIDE AND TRAVEL STOP BOLT.	4-80-999-99462			15 924 382	6.350		SA 276 TYPE 420	1		
12	BEARING BOLT ASSEMBLY.	3-80-999-99482		09	SUB ASSY.	0.474			2		
11	GUIDE BUSHING.	4-80-999-99380		08	16 005 276 BRASS	0.405			1		
10	LOAD ADJUSTMENT BOLT M36x 4; L=550	3-80-999-99488		30	15 039 119 SA 193 Gr.B7	4.805			2		
09	DOWEL BOLT M30x3.5	4-80-999-99374		05	15 039 087 SA 193 Gr.B7	0.470			2		
08	TRAVEL STOP PLATE.	3-80-999-99557			15 011 026 BMC 20	1.900			2		
07	NOT APPLICABLE.										
06	DUST COVER.	4-80-999-99460			15 011 076 IS:513 TYPE D	1.668			2		
05	DISK. (MACHINED)	2-80-999-99297		08	15 942 116 SAS15 Gr.70	5.750			2		
04	LOAD ADJUSTMENT ASSEMBLY.	3-80-999-99526				24.368		WELDMENT	1		
03	CASE ASSEMBLY.	3-80-999-99530				129.225		WELDMENT	1		
02	LOAD TUBE ASSEMBLY.	2-80-999-99354				50.021		SUB ASSY.	1		
01	CAM ASSEMBLY.	3-80-999-99528				13.835		SUB ASSY.	2		

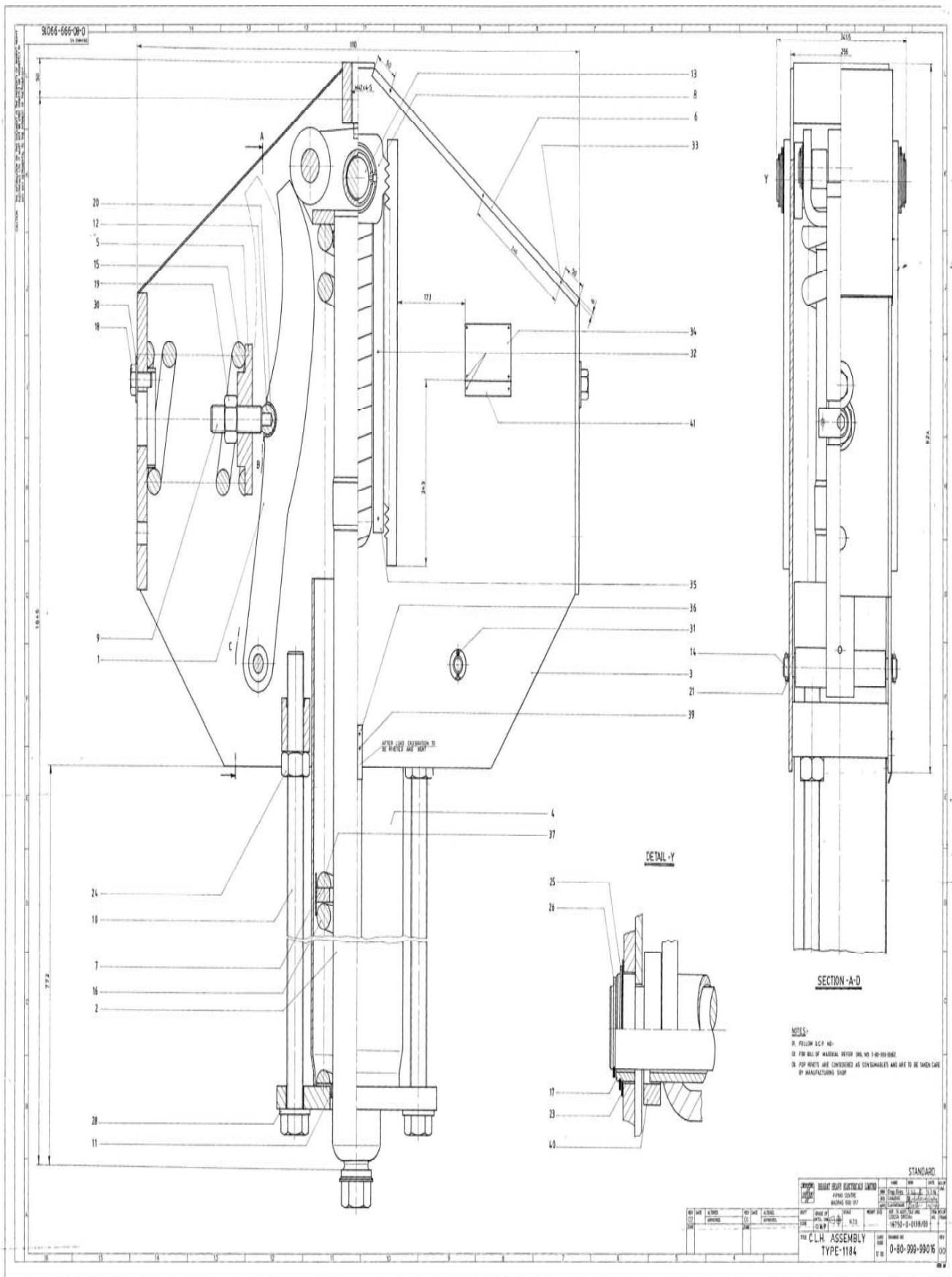
REV	DATE	ALTERED	APPROVED	DEPT	GRADE OF UNTO. DIM	SCALE	WEIGHT (KG)	REF. TO ASSY./OLD DRG.	ITEM NO.	NO. OF ITEMS
01	02-03-25		<i>[Signature]</i>		C/M/F	N.T.S	371.435	16739-5-0138		

PRODUCT ATTEST MARK 'P' INDICATED INSTEAD OF 'C' FOR ITEM NOS 09 AND 10 AS PER STANDARD INSTRUCTION No 110 MATL.SPECN. CHANGED FROM SA193Gr.B7 TO SA193Gr.B7 FOR ITEM No. 14	<b>BHARAT HEAVY ELECTRICALS LIMITED</b> PIPING CENTRE MADRAS 600 017
--	--

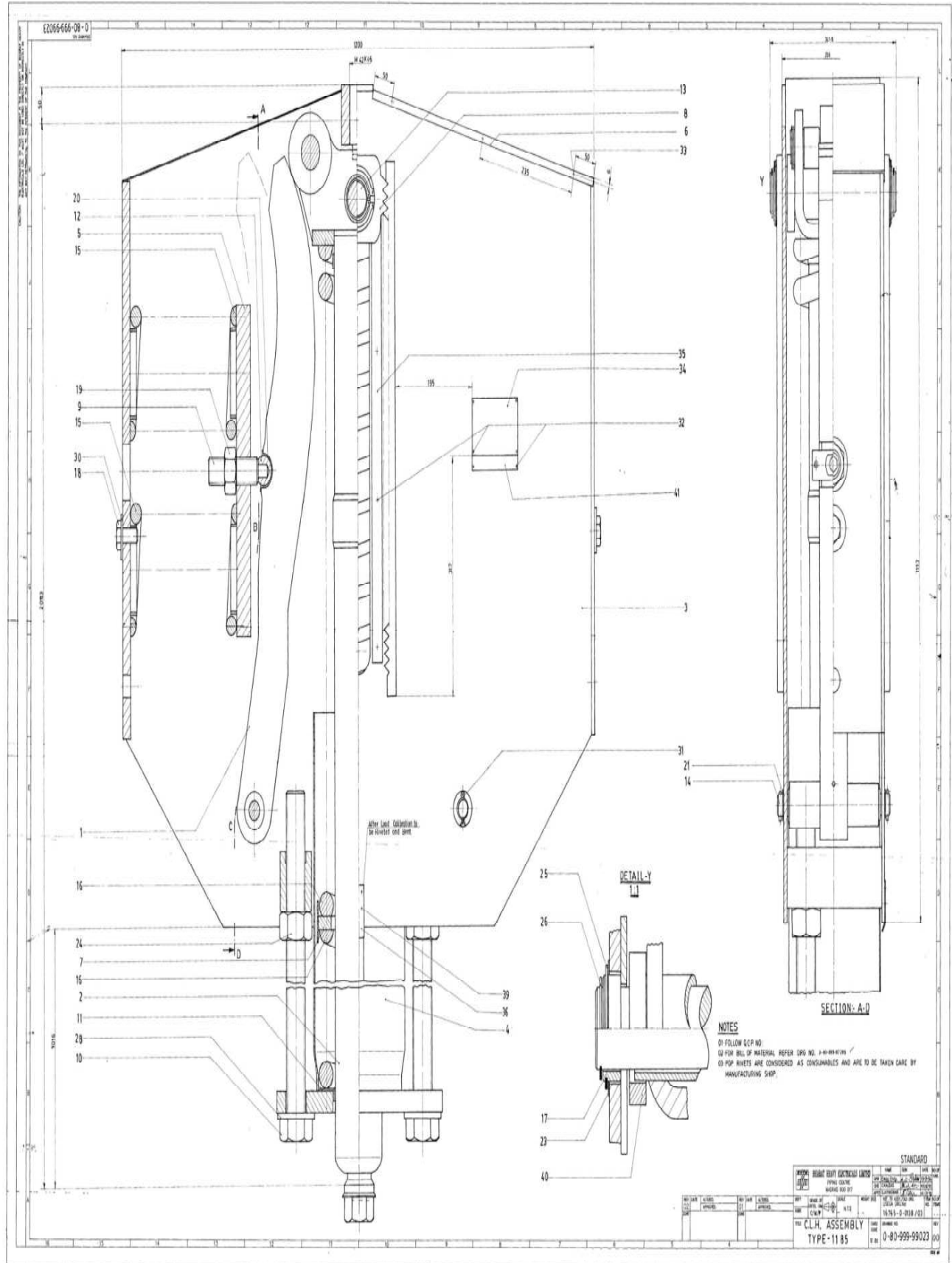
NAME: M.C.SEKARAN CHD: C.KALIDAS APPD: S.JAYAKUMAR	SIGN: <i>[Signature]</i> <i>[Signature]</i> <i>[Signature]</i>	DATE: 21-01-24 22-01-24 23-01-24
--	--	--

TITLE: <b>BOM FOR CLH ASSEMBLY</b> TYPE No: 1183	CARD CODE: U 01 DRAWING NO: 3-80-999-99558 01 REV: 01
---	---

Size A3







Receipt No : 684365/2024/HERP-ENG&MKT

FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN MILLIMETRES)

12

98246-666-08-3  
ON ONHWYD

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

ITEM NUMBER	DESCRIPTION	STD	DRAWING NUMBER	ITEM NO	MATERIAL CODE	UNIT WEIGHT	QTY
				VAR NO	MATERIAL SPECN	D1	QUANTITY
41	NAME PLATE PART II.		4-80-999-99386		SA 240 TYP. 304	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 SL34	0.013	1
35	TRAVEL SCALE 600mm		1-80-999-99074		ALUMINIUM	0.021	1
34	NAME PLATE.		4-80-999-99213		SA 240 TYP. 304	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	01	15 011 181 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 00055 IS:3075-A	0.015	2
25	CIRCLIP LIGHT A70		41902 07000		41902 00070 IS:3075-A	0.029	2
* 24	HEX.NUT M48x5		4-80-999-99290	03	41319 50048 SA 194 2H	1.240	2
* 23	WASHER MCD 72 00125/074		41406 72000		41406 00072 IS:2016	0.626	2

ITEM NUMBER	DESCRIPTION	STD	DRAWING NUMBER	ITEM NO	MATERIAL CODE	UNIT WEIGHT	QTY
				VAR NO	MATERIAL SPECN	D1	QUANTITY
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	01	41319 40038 SA 194 Gr.2H	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	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.F60.13	1.589	2
13	GUIDE AND TRAVEL STOP BOLT.		4-80-999-99462		15 924 382 SA 276 TYPE 420	6.350	1
12	BEARING BOLT ASSEMBLY.		3-80-999-99482	11	SUB ASSY.	0.978	2
11	GUIDE BUSHING.		4-80-999-99380	08	16 005 276 BRASS	0.405	1
10	LOAD ADJUSTMENT BOLT M48x5 L=1110		3-80-999-99486		15 039 120 SA 193 Gr.87	17.100	2
09	DOWEL BOLT M36x4		4-80-999-99374	06	15 039 116 SA 193 Gr.87	0.850	2
08	TRAVEL STOP PLATE.		3-80-999-99557		15 011 026 IS:2082 Fe 410 A	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	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

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

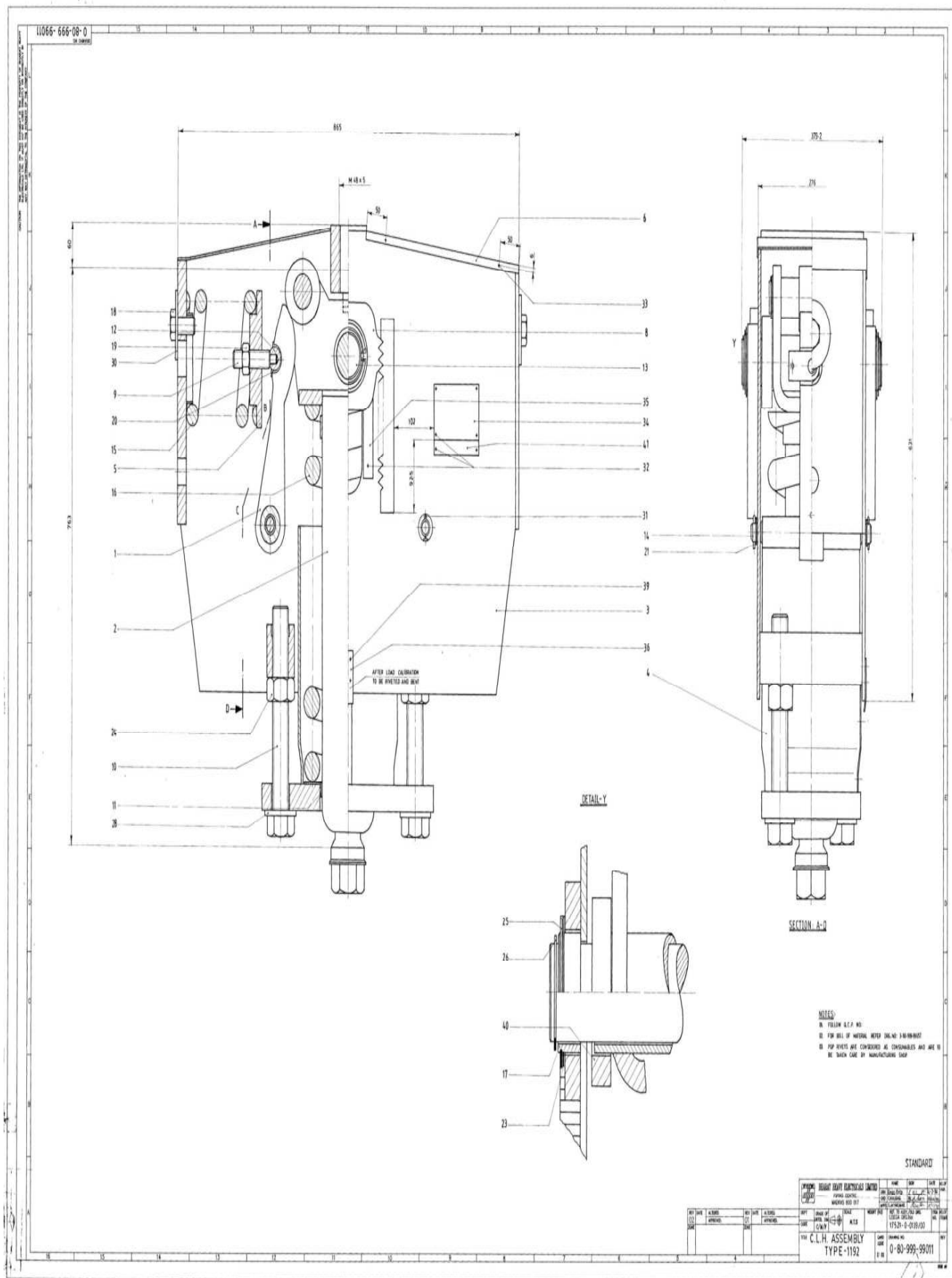
DRN: M.C. SEKARAN, 30-01-15  
CHD: C.KALIDAS, 03/02/15  
APPD: S.JAYAKUMAR, 24/8/16

NAME	SIGN	DATE	NO. OF VAR.
M.C. SEKARAN	<i>[Signature]</i>	30-01-15	
C.KALIDAS	<i>[Signature]</i>	03/02/15	
S.JAYAKUMAR	<i>[Signature]</i>	24/8/16	

REV	DATE	ALTERED	DEPT	GRADE OF UNTO. DIM	SCALE	WEIGHT (KG)	REF. TO ASSY./OLD DRG.	ITEM NO. OF ITEMS
01		APPROVED		C/M/P	N.T.S	744.283	USEGA DRG.No: 16766-5-0138	

TITLE	CARD CODE	DRAWING NO.	REV
BOM FOR CLH ASSEMBLY TYPE No: 1185	U 01	3-80-999-9728500	

Size A3



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

FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN MILLIMETRES)

**45966-666-08-E**  
ON ENVIRO  
**NOTES: -**  
01 ITEMS MARKED THIS \* ARE TO BE ELECTROPLATED WITH ZINC AND YELLOW CHROMATIZED FOR 10 TO 15 μ m.

ITEM NO	VAR NO	DESCRIPTION	DRAWING NUMBER	GRADE OF UNTOOL DIM C/M/R	SCALE	WEIGHT (KG)	DRN	APPD	NAME	SIGN	DATE	NO OF VAR.
22		NOT APPLICABLE	41408 24000						M.C.SEKARAN		28-03-94	4
* 21		PUNCHED WASHER A24 0044/ID28							C.KALIDAS		28-03-94	0.031
20		BEARING SHELL	4-80-999-99379						SUB DELY.			0.060
* 19		HEX NUT M24x3	41322 24000						IS:1384			0.110
* 18		HEX BOLT M24x3 L=70	41218 24070						Gr. 8.8			0.333
17		DISTANCE BUSH	4-80-999-99481						15 3.39 134 SA 105			0.506
16		MAIN SPRING	2-80-999-99295						50 Gr.V4 DIN 17221			46.300
15		AUXILIARY SPRING	3-80-999-99544						50 Gr.V4 DIN 17221			12.000
14		AXLE	4-80-999-99562						15 024 256 SA 182 Gr. FeALCL3			1.181
13		GUIDE AND TRAVEL STOP BOLT	4-80-999-99474						15 024 263 SA 182 Gr. FeALCL3			9.818
12		BEARING BOLT ASSEMBLY	3-80-999-99482						SUB ASSY.			0.474
11		GUIDE BUSHING	4-80-999-99380						16 005 276 BRASS			0.514
10		LOAD ADJUSTMENT BOLT M42x4.5 L=270	3-80-999-99488						15 038 120 SA 193 Gr.87			3.610
09		DOWEL BOLT M24x3	4-80-999-99374						15 039 095 SA 193 Gr.87			0.270
08		TRAVEL STOP PLATE	3-80-999-99579						15 942 113 SA 515 Gr.70			2.600
07		NOT APPLICABLE							15 011 078 IS:513 TYPE D			1.452
06		DUST COVER	4-80-999-99560						15 942 198 SA 515 Gr.70			3.910
05		DISK (MACHINED) ASSEMBLY	3-80-999-99592						WELDMENT			26.597
04		LOAD ADJUSTMENT ASSEMBLY	3-80-999-99596						WELDMENT			136.923
03		CASE ASSEMBLY	2-80-999-99364						SUB ASSY.			49.674
02		LOAD TUBE ASSEMBLY	3-80-999-99594						SUB ASSY.			9.235
01		CAM ASSEMBLY							MATERIAL SPECN			UNIT WEIGHT
		DESCRIPTION	DRAWING NUMBER						MATERIAL SPECN			QUANTITY

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

DEPT: GRADE OF UNTOOL DIM C/M/R  
SCALE: N.T.S.  
WEIGHT (KG): 346.237

TITLE: **BOM FOR CLH ASSEMBLY**  
TYPE NO: 1192

DRW NO: 3-80-999-99657 01

Size A3

ITEM NO	VAR NO	DESCRIPTION	DRAWING NUMBER	MATERIAL CODE	MATERIAL SPECN	UNIT WEIGHT	QUANTITY
41		NAME PLATE PART II	4-80-999-99386	SA 240 TYPE 304		0.020	
40		STELL RING	4-80-999-99387	NYLON-6		0.211	
39		POP RIVET #3x10	0-80-999-99011			0.001	
38		NOT APPLICABLE					
37		NOT APPLICABLE					
36		LOAD INDICATOR	4-80-999-99384	15 011 104 IS:1079 SL34		0.013	
35		TRAVEL SCALE 150mm	4-80-999-99382	ALUMINIUM		0.006	
34		NAME PLATE	4-80-999-99213	SA 240 TYPE 304		0.080	
33		POP RIVET #3x15	0-80-999-99011			0.002	
32		POP RIVET #3x4	0-80-999-99011			0.001	
31		PIN SPLIT #6.3x40	41704 06040	41704 60040 IS:549		0.011	
30		WASHER MCD 065/ID25	4-80-999-99467	15 011 182 IS:1079 Fa 310		0.122	
29		NOT APPLICABLE					
* 28		WASHER MCD 42 0078/ID43	41406 42000	41406 00942 IS:2016		0.183	
27		NOT APPLICABLE					
26		CIRCLIP LIGHT A65	41902 06500	41902 00065 IS:3076-A		0.026	
25		CIRCLIP LIGHT A80	41902 08000	41902 00080 IS:3076-A		0.038	
* 24		HEX-NUT M42x4.5	4-80-999-99290	41319 #5042 SA 184 2H		0.810	
* 23		WASHER MCD 60 00140/ID62	41406 80000	41406 00080 IS:2016		0.953	

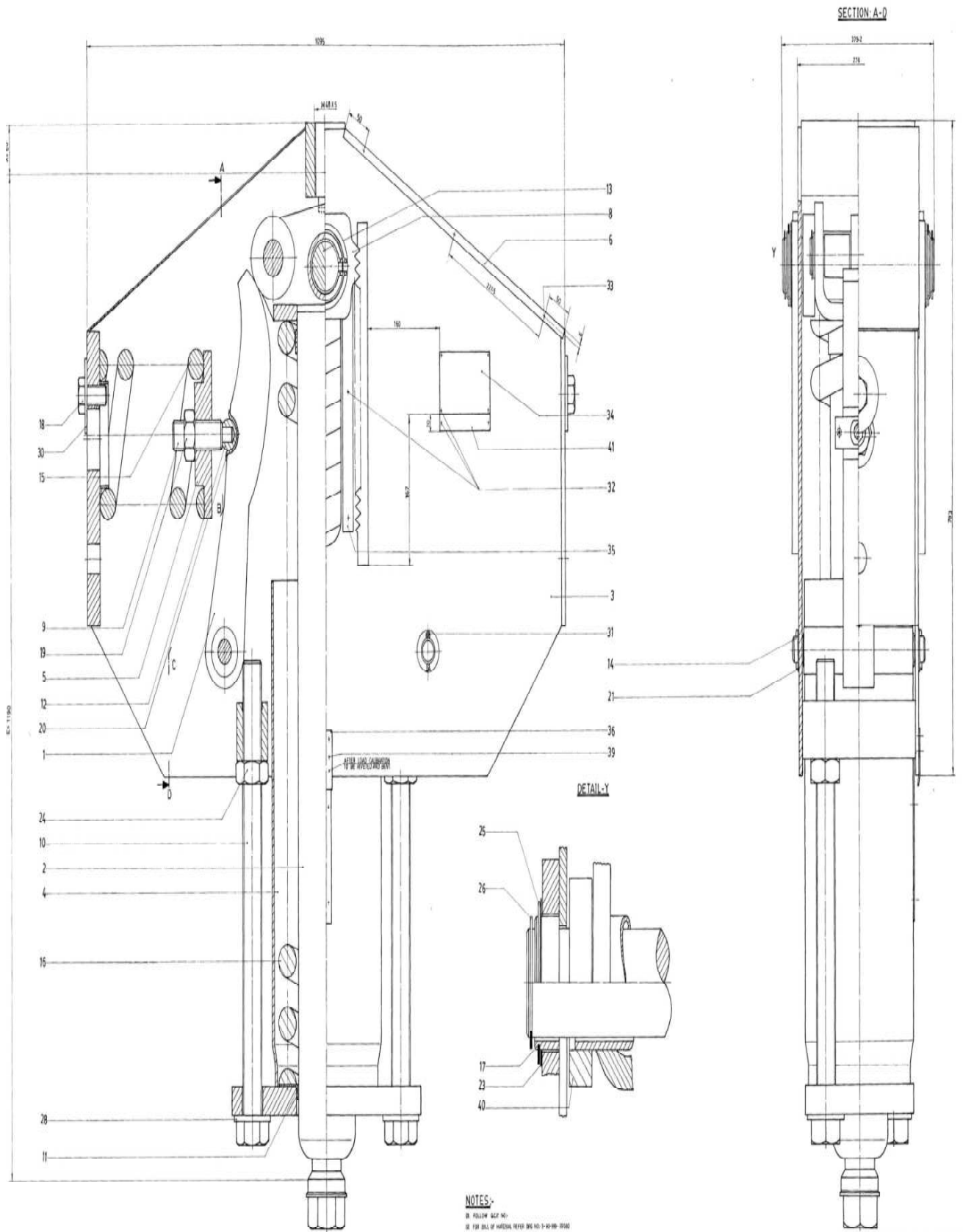
DEPT: GRADE OF UNTOOL DIM C/M/R  
SCALE: N.T.S.  
WEIGHT (KG): 346.237

TITLE: **BOM FOR CLH ASSEMBLY**  
TYPE NO: 1192

DRW NO: 3-80-999-99657 01

Size A3

80066566-08-0  
TR DRAWING



NOTES:-

- 1) FOLLOW ISIP 101
- 2) FOR BALL BEARING REFER ISIP TO 1-10-10-10-10
- 3) ALL PARTS ARE TO BE SUPPLIED AS COMPONENTS AND ARE TO BE TAKEN CARE BY MANUFACTURER.

REV	DATE	BY	CHKD	APPD	REASON	SCALE	PROJ. NO.	DRW. NO.	DATE
01	10/11/24	ATENDR KUMAR PAL							

PROJECT: BHARAT HEAVY ELECTRICALS LIMITED  
 DIVISION: PWDG CENTRE  
 WORK NO: 684369/2024/HERP-ENGG&MKT  
 DRAWING NO: 80066566-08-0  
 SHEET NO: 17451-1-0135  
 TITLE: CLH ASSEMBLY TYPE-1193  
 SCALE: 1:1  
 DATE: 10/11/24

FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN MILLIMETRES)

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.

08966-666-08-C  
ON ENVIAD

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

ITEM NUMBER	DESCRIPTION	STD	DRAWING NUMBER	ITEM NO	MATERIAL CODE	UNIT	UNIT WEIGHT
				VAR NO	MATERIAL SPECN	D1	QUANTITY
41	NAME PLATE PART II.		4-80-999-99386				0.020
					SA 240 TYPE 304	C	1
40	STELL RING		4-80-999-99387				0.211
				09	NYLON-6		2
39	POP RIVET Ø3x10		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				0.012
					ALUMINIUM		1
34	NAME PLATE.		4-80-999-99213			C	0.080
					SA 240 TYPE 304		1
33	POP RIVET Ø3x15		0-80-999-99008				0.002
							12
32	POP RIVET Ø3x4		0-80-999-99008				0.001
							9
31	PIN SPLIT Ø6.3x40		41704 06040		41704 60040 IS:549		0.011
							4
30	WASHER MCD 085/1025		4-80-999-99467		15 011 182 BMC 10		0.122
				02			2
29	NOT APPLICABLE.						
*	WASHER MCD 42 OD78/1043		41406 42000		41406 00042 IS:2018		0.183
							2
28	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
*	HEX.NUT M42x4.5		4-80-999-99290		41319 45042 SA 194 2H	C	0.810
				02			2
*	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	UNIT WEIGHT
				VAR NO	MATERIAL SPECN	D1	QUANTITY
22	NOT APPLICABLE						
*	WASHER MCD 30 OD98/1031		41406 30000		41406 00030 IS:2018		0.054
							4
20	BEARING SHELL		4-80-999-99379				0.080
				06	SUB DELY.		2
*	HEX.NUT M36x4		4-80-999-99290		41319 40036 SA 194 Gr.2H	C	0.430
				01			2
*	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				78.400
				29	50 Cr.V4 DIN 17221		1
15	AUXILIARY SPRING.		2-80-999-99295				18.400
				10	50 Cr.V4 DIN 17221		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				0.978
				11	SUB ASSY.		2
11	GUIDE BUSHING.		4-80-999-99380		16 005 276 BRASS		0.514
				09			1
10	LOAD ADJUSTMENT BOLT M42x4.5 L=550		3-80-999-99488		15 039 120 SA 193 Gr.B7	P	6.833
				34			2
09	DOWEL BOLT M36x4		4-80-999-99374		15 039 116 SA 193 Gr.B7	P	0.850
				07			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 SA515 Gr.70	C	6.320
				09			2
04	LOAD ADJUSTMENT ASSEMBLY.		3-80-999-99532				34.448
					WELDMENT		1
03	CASE ASSEMBLY.		3-80-999-99536				169.579
					WELDMENT		1
02	LOAD TUBE ASSEMBLY.		2-80-999-99355				61.491
					SUB ASSY.		1
01	CAM ASSEMBLY.		3-80-999-99534				22.876
					SUB ASSY.		2

BHARAT HEAVY ELECTRICALS LIMITED  
PIPING CENTRE  
MADRAS 600 017

NAME	SIGN	DATE	NO.OF VAR.
DRN M.C.SEKARAN		21-01-94	
CHD C.KALIDAS		15-02-94	
APPD S.WAYAKUMAR		11-02-94	

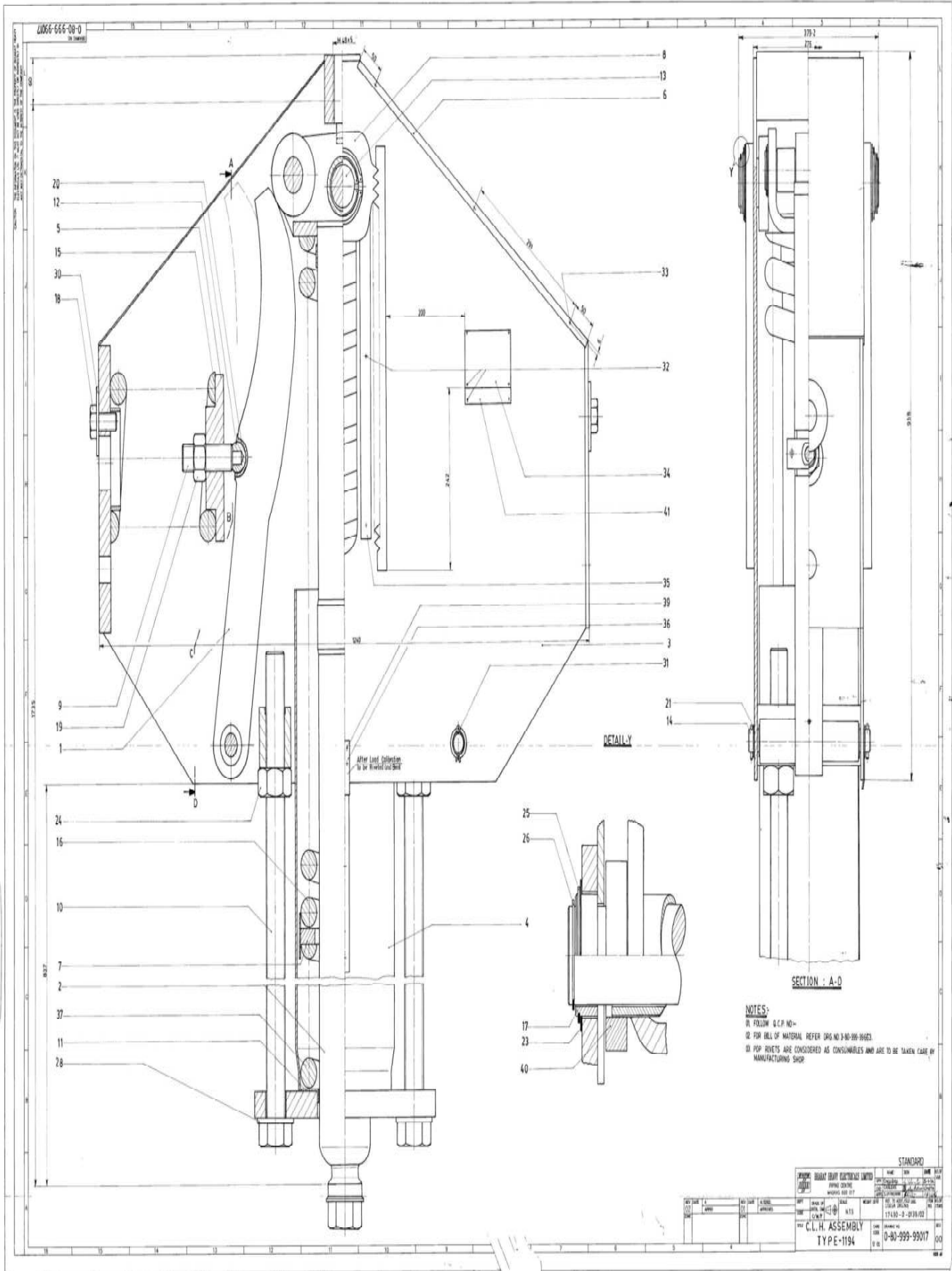
REV	DATE	ALTD	BY	DATE	ALTERED
02	03-04-96	APPD		01	02-03-95
					APPROVED

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 SA193Gr.B7 TO SA193Gr.F6a.Cl.3 FOR ITEM Nos 13 & 14.

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

Size A3



FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN MILLIMETRES)

89966-666-08-8  
(ON ONMVS)

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

ITEM NUMBER	DESCRIPTION	DWG. NO.	MATERIAL CODE	UNIT WEIGHT
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 SA 194 Gr.2H	0.430 2
* 18	HEX.BOLT M24x3 L=50	41245 24050	41245 24050 IS:1364	0.257 2
17	DISTANCE BUSH	4-80-999-99481	15 339 134 SA 105	0.506 2
16	MAIN SPRING -I	2-80-999-99295	29 50 Cr.V4 DIN 17221	78.400 1
15	AUXILIARY SPRING.	2-80-999-99295	11 50 Cr.V4 DIN 17221	29.800 2
14	AXLE	4-80-999-99475	15 024 257 SA 182 Gr.F6a(C3)	1.700 2
13	GUIDE AND TRAVEL STOP BOLT.	4-80-999-99474	15 024 263 SA 182 Gr.F6a(C3)	9.818 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 09 BRASS	0.514 1
10	LOAD ADJUSTMENT BOLT M48x5 L=930	3-80-999-99488	15 039 120 35 SA 183 Gr.B7	14.216 2
09	DOWEL BOLT M36x4	4-80-999-99374	15 039 116 07 SA 183 Gr.B7	0.850 2
08	TRAVEL STOP PLATE.	3-80-999-99579	15 942 113 SA 515 Gr.70	2.600 2
07	SPRING PLATE ASSEMBLY.	3-80-999-99603	- WELDMENT	3.551 1
06	DUST COVER.	4-80-999-99576	15 011 076 IS:513 TYPE D	2.553 2
05	DISK (MACHINED)	2-80-999-99297	15 942 119 10 SA515 Gr.70	8.730 2
04	LOAD ADJUSTMENT ASSEMBLY.	3-80-999-99605	- WELDMENT	47.255 1
03	CASE ASSEMBLY.	3-80-999-99608	- WELDMENT	208.015 1
02	LOAD TUBE ASSEMBLY.	2-80-999-99366	- SUB ASSY.	83.251 1
01	CAM ASSEMBLY.	3-80-999-99606	- SUB ASSY.	38.776 2

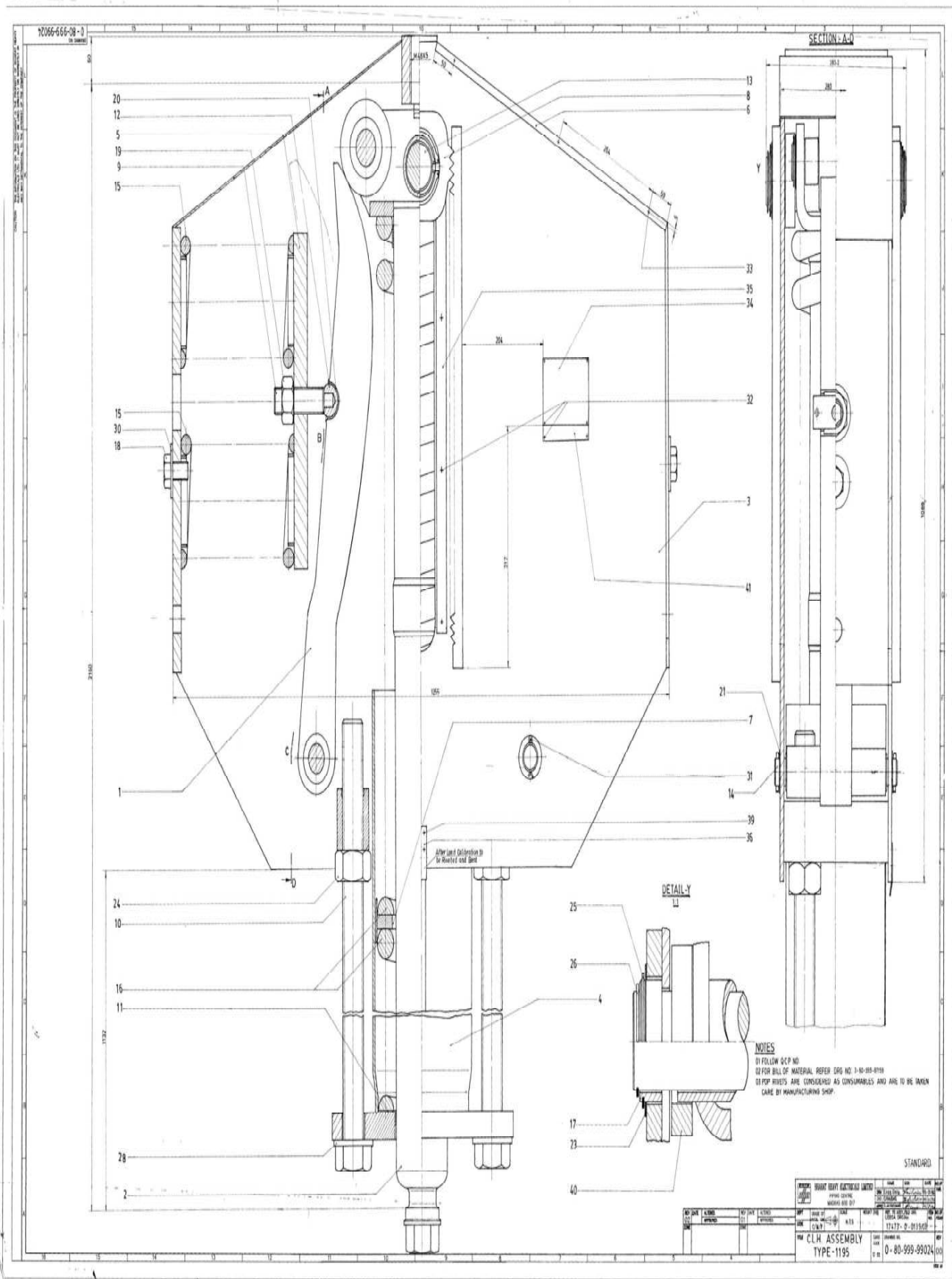
CAUTION: The information on this document is the property of BHARAT HEAVY ELECTRICALS LTD. It must not be used directly or indirectly in any way whatsoever by the customer or the company.

ITEM NO.	MATERIAL CODE	UNIT WEIGHT
21	50 Cr.V4 DIN 17221	1
36	15 011 104 IS:1079 St.34	0.013
35	ALUMINIUM	1
34	SA 240 TYPE 304	0.080
33	-	0.002
32	-	12
31	41704 60040 IS:549	0.011
30	15 011 182 IS:1079 Fe 330	0.122
28	41406 00048 IS:2016	0.291
26	41902 00065 IS:3075-A	0.026
25	41902 08000 IS:3075-A	0.038
24	41319 50048 SA 194 2H	1.240
23	41406 00080 IS:2016	0.853

ITEM NO.	MATERIAL SPECN	D1	QUANTITY
21	50 Cr.V4 DIN 17221		1
36	15 011 104 IS:1079 St.34		1
35	ALUMINIUM		1
34	SA 240 TYPE 304		1
33	-		1
32	-		12
31	41704 60040 IS:549		4
30	15 011 182 IS:1079 Fe 330		2
28	41406 00048 IS:2016		2
26	41902 00065 IS:3075-A		2
25	41902 08000 IS:3075-A		2
24	41319 50048 SA 194 2H		2
23	41406 00080 IS:2016		2

REV 01	DATE 02-08-96	ALTERED APPROVED: <i>[Signature]</i>	DEPT CODE	GRADE OF INTOL DIM C/M/P	SCALE N.T.S	WEIGHT (KG) 686.243	REF. TO ASSY./OLD DRG. LISEGA DRG.No: 17491-5-0139	ITEM NO. OF ITEMS
UNIT WT OF ITEM No 30 ALTD FROM 0.036 To 0.122 TOTAL WT ALTERED FROM 686.191 To 686.243				<b>BOM FOR CLH ASSEMBLY</b> TYPE No: 1194		CARD CODE U 01	DRAWING NO. 3-80-999-99663/01	REV

Size A3



FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN MILLIMETRES)

684369-666-08-C

ON 09/11/24

**NOTES:-**

01 ITEMS MARKED THIS \* ARE TO BE ELECTROPLATED WITH ZINC AND YELLOW CHROMATIZED FOR 10 TO 15 μ m.

15

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	-	-	0.020	17	DISTANCE BUSH	4-80-999-99481	-	-	-
40	STELL RING	4-80-999-99387	-	-	0.211	16	MAIN SPRING.	2-80-999-99295	-	-	78.400
39	POP RIVET #3x10	0-80-999-99024	-	-	0.001	15	AUXILIARY SPRING.	2-80-999-99295	-	-	14.900
38	NOT APPLICABLE.					14	AXLE.	4-80-999-99658	-	-	2.383
37	NOT APPLICABLE.					13	GUIDE AND TRAVEL STOP BOLT.	4-80-999-99657	-	-	8.920
36	LOAD INDICATOR.	4-80-999-99384	15 011 104	IS:1079 SL34	0.013	12	BEARING BOLT ASSEMBLY.	3-80-999-99482	-	-	1.058
35	TRAVEL SCALE 600mm	1-80-999-99074	-	ALUMINIUM	0.021	11	GUIDE BUSHING.	4-80-999-99380	-	-	0.514
34	NAME PLATE.	4-80-999-99213	-	SA 240 TYPE 304	0.080	10	LOAD ADJUSTMENT BOLT M5x5 L=1230	3-80-999-99488	-	-	21.768
33	POP RIVET #3x15	0-80-999-99024	-	-	0.002	09	DOWEL BOLT M36x4	4-80-999-99374	-	-	0.850
32	POP RIVET #3x4	0-80-999-99024	-	-	0.001	08	TRAVEL STOP PLATE.	3-80-999-99679	-	-	2.600
31	PIN SPLIT #8x50	41704 08050	41704 80050	IS:549	0.027	07	SPRING PLATE ASSEMBLY.	3-80-999-99603	-	-	3.551
30	WASHER 0085/1025	4-80-999-99467	15 011 182	IS:1079 F# 330	0.122	06	DUST COVER.	4-80-999-99654	-	-	2.382
29	NOT APPLICABLE.					05	DISK ASSEMBLY.	3-80-999-99665	-	-	21.420
* 28	WASHER MCD 52 0095/1054	41406 52000	41406 00052	IS:2016	0.330	04	LOAD ADJUSTMENT ASSEMBLY.	3-80-999-99668	-	-	54.811
27	NOT APPLICABLE.					03	CASE ASSEMBLY.	3-80-999-99668	-	-	279.939
26	CIRCLIP LIGHT A65	41902 06500	41902 00065	IS:3075-A	0.026	02	LOAD TUBE ASSEMBLY.	2-80-999-99375	-	-	97.496
25	CIRCLIP LIGHT A80	41902 08000	41902 00080	IS:3075-A	0.038	01	CAM ASSEMBLY.	3-80-999-99666	-	-	43.958
24	HEX.NUT M5x5	4-80-999-97412	-	SA 194 Gr.2H	1.550						
* 23	WASHER MCD 80 00140/1082	41406 80000	41406 00080	IS:2016	0.953						

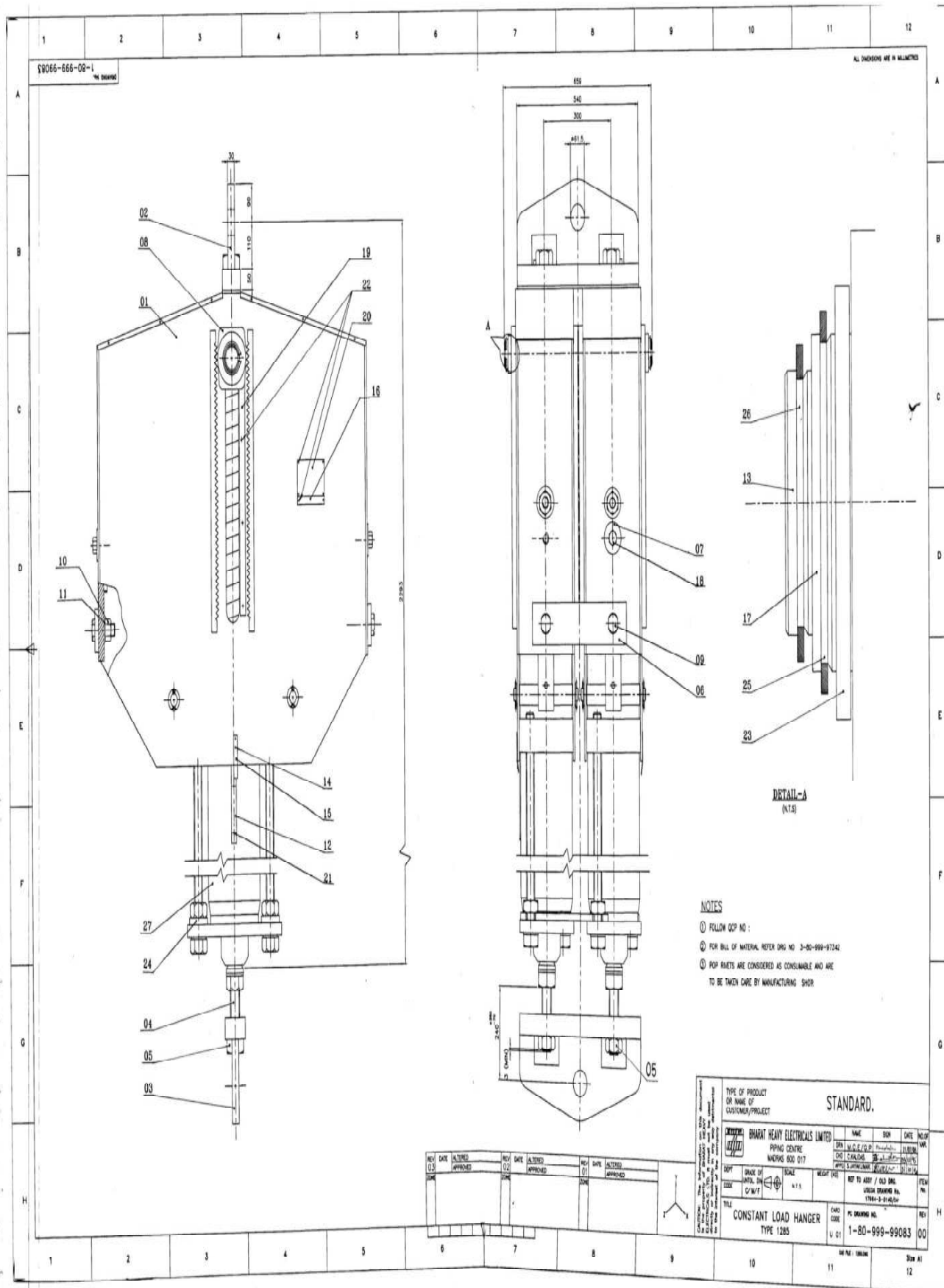
ITEM NO.	DESCRIPTION	DRAWING NUMBER	ITEM NO.	MATERIAL CODE	UNIT WEIGHT
22	NOT APPLICABLE				
* 21	WASHER MCD 36 0086/1037	41406 36000	41406 00036	IS:2016	0.089
20	BEARING SHELL.	4-80-999-99379	-	SUB DELY.	0.080
* 19	HEX.NUT M36x4	4-80-999-99290	41319 40036	SA 194 Gr.2H	0.430
* 18	HEX.BOLT M24x3 L=50	41245 24050	41245 24060	IS:1364	0.257

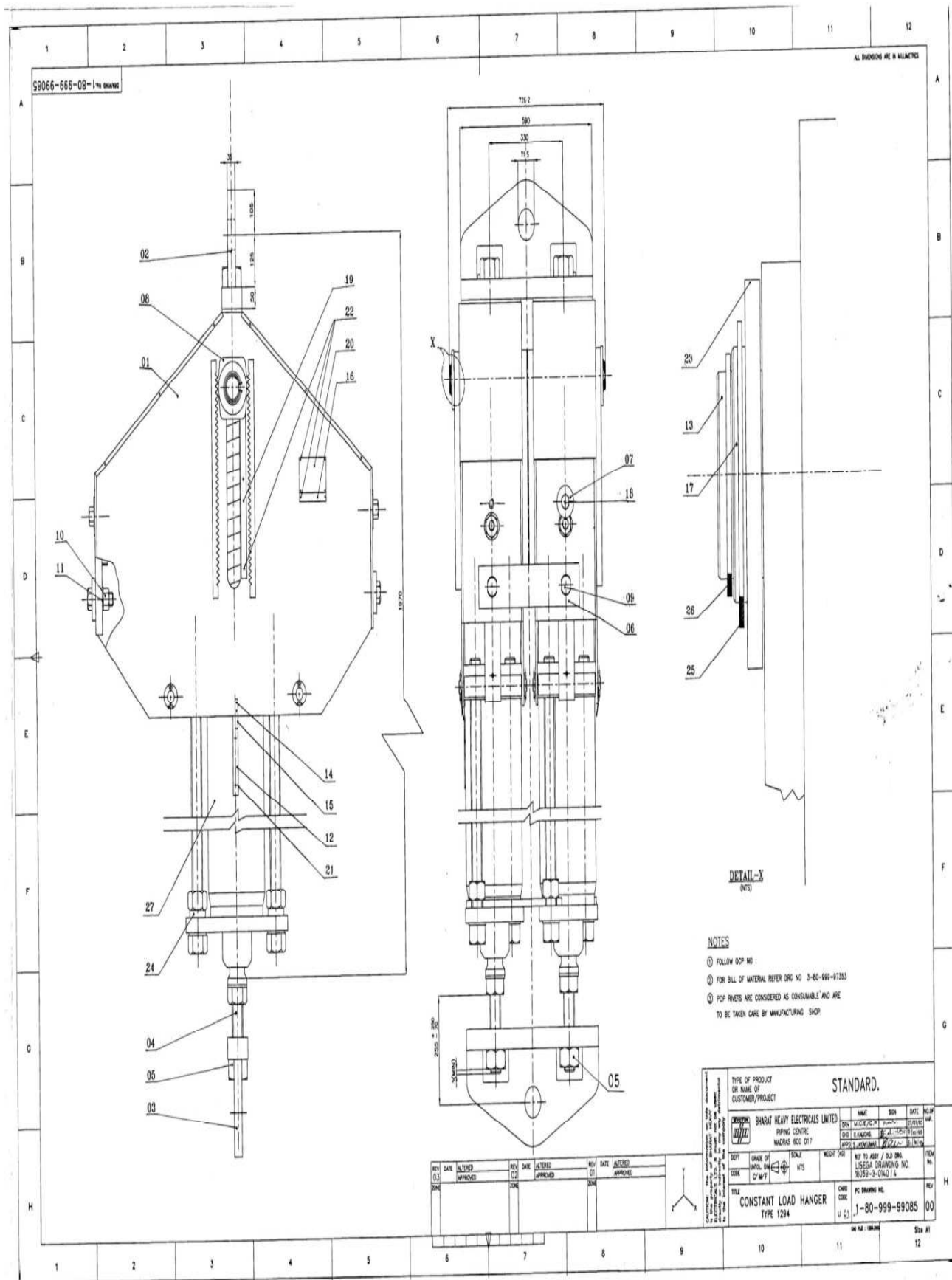
ITEM NO.	DESCRIPTION	DRAWING NUMBER	ITEM NO.	MATERIAL CODE	UNIT WEIGHT
17	DISTANCE BUSH	4-80-999-99481	15 339 134	SA 105	0.506
16	MAIN SPRING.	2-80-999-99295	29 150 Cr.V4 DIN 17221	-	2
15	AUXILIARY SPRING.	2-80-999-99295	18 150 Cr.V4 DIN 17221	-	4
14	AXLE.	4-80-999-99658	15 024 258	SA 182 Cr.F5g.(1.3)	2
13	GUIDE AND TRAVEL STOP BOLT.	4-80-999-99657	15 024 263	SA 182 Cr.F5g.(1.3)	1
12	BEARING BOLT ASSEMBLY.	3-80-999-99482	12	SUB ASSY.	2
11	GUIDE BUSHING.	4-80-999-99380	10 005 276	BRASS	1
10	LOAD ADJUSTMENT BOLT M5x5 L=1230	3-80-999-99488	15 039 358	SA 193 Gr.B7	2
09	DOWEL BOLT M36x4	4-80-999-99374	15 039 116	SA 193 Gr.B7	2
08	TRAVEL STOP PLATE.	3-80-999-99679	15 942 113	SA 515 Gr.70	2
07	SPRING PLATE ASSEMBLY.	3-80-999-99603	-	WELDMENT	1
06	DUST COVER.	4-80-999-99654	15 011 078	IS:513 TYPE D	2
05	DISK ASSEMBLY.	3-80-999-99665	-	WELDMENT	2
04	LOAD ADJUSTMENT ASSEMBLY.	3-80-999-99668	-	WELDMENT	1
03	CASE ASSEMBLY.	3-80-999-99668	-	WELDMENT	1
02	LOAD TUBE ASSEMBLY.	2-80-999-99375	-	SUB ASSY.	1
01	CAM ASSEMBLY.	3-80-999-99666	-	SUB ASSY.	2

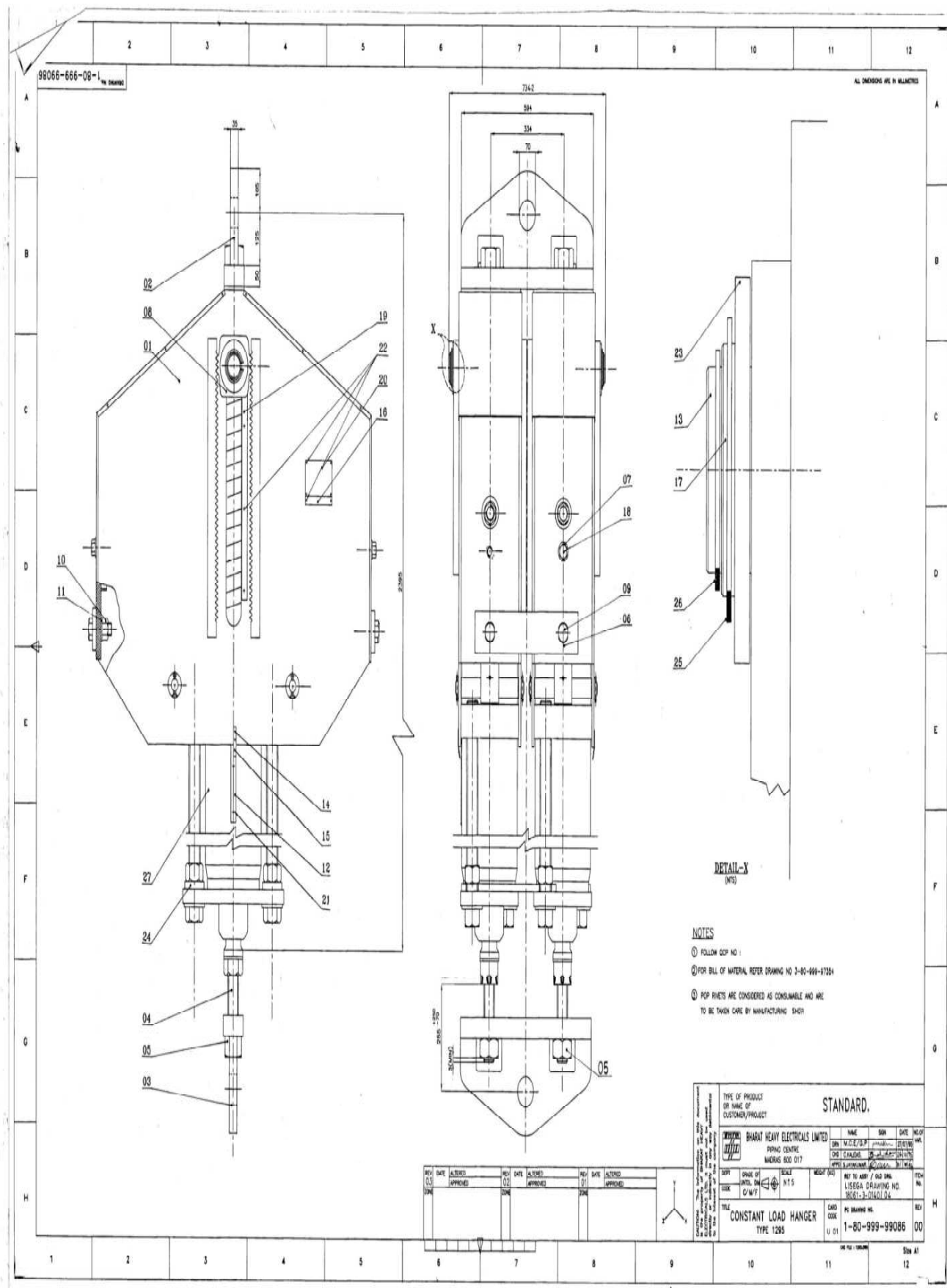
REV	DATE	ALTERED	DEPT	GRADE OF UNTOOL DIM	SCALE	WEIGHT (KG)	REF. TO ASSY./OLD DRG. LIBERA DRG.No.	ITEM NO. OF ITEMS
01		APPROVED		C/M/P	N.T.S	865.109	17474-5-0139	

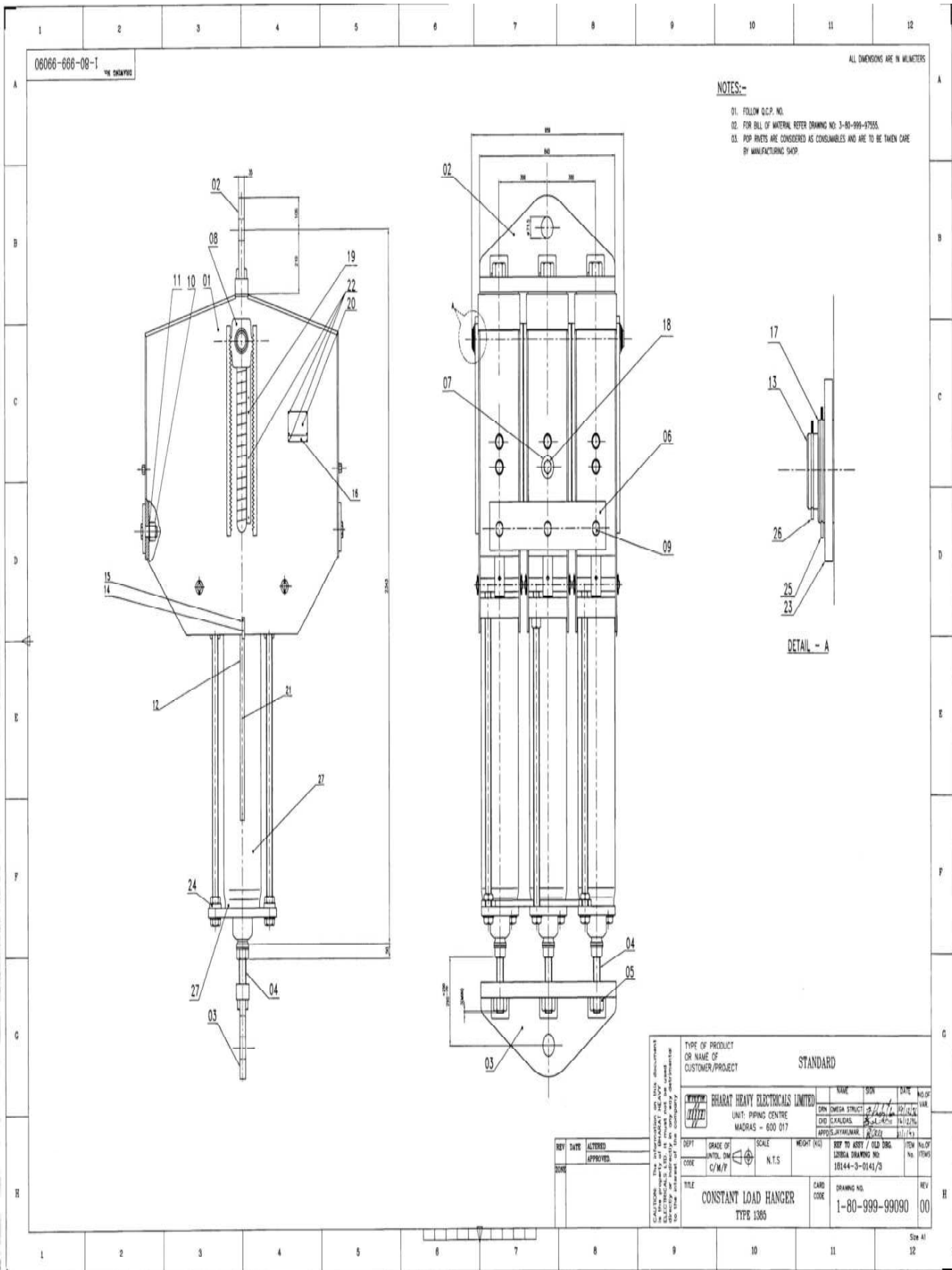
<p><b>BOM FOR CLH ASSEMBLY</b></p> <p>TYPE No: 1195</p>	<p>CARD CODE</p> <p>U 01</p> <p>DRAWING NO.</p> <p>3-80-999-97159 00</p>
---	--

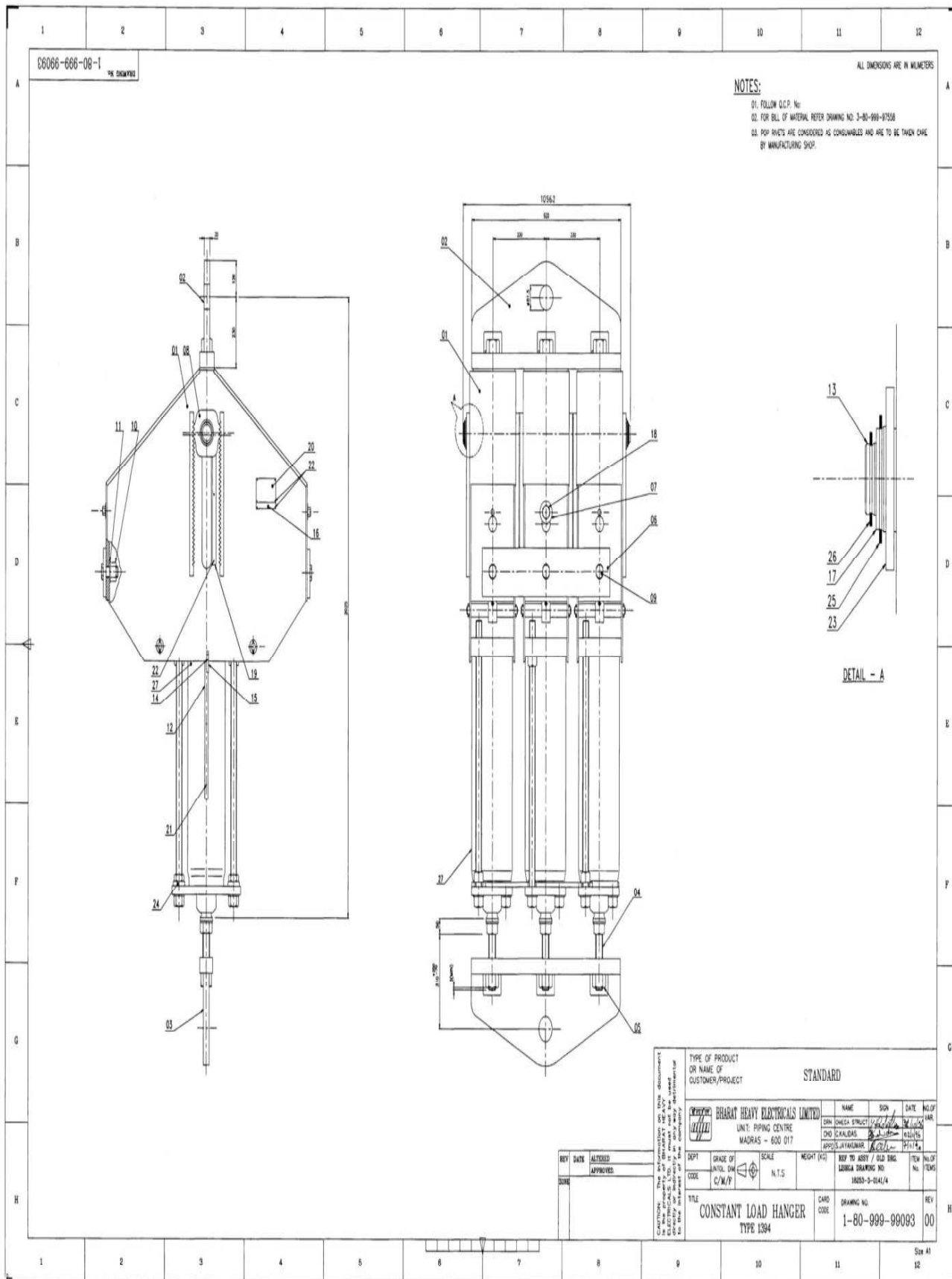
Size A3

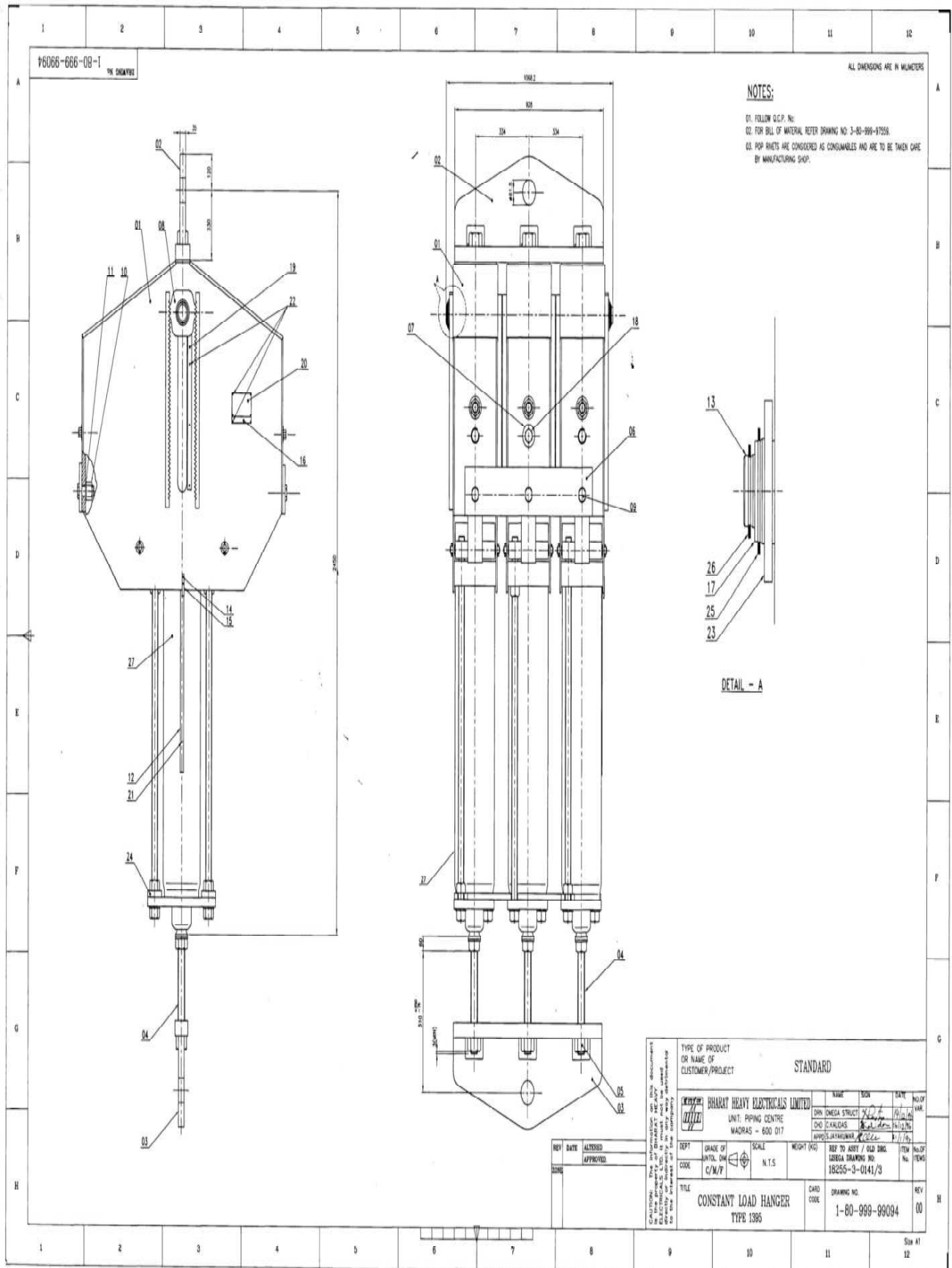


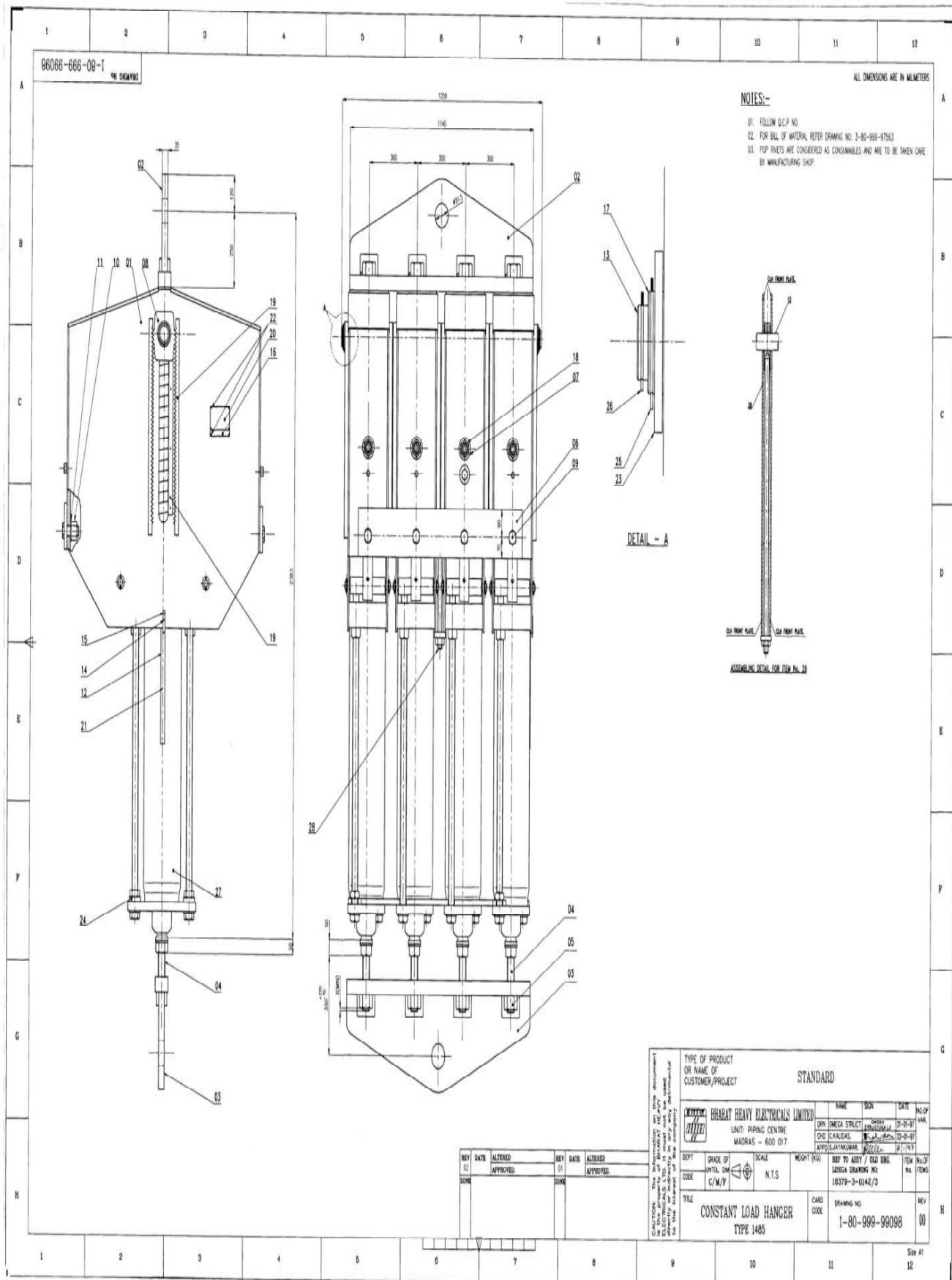


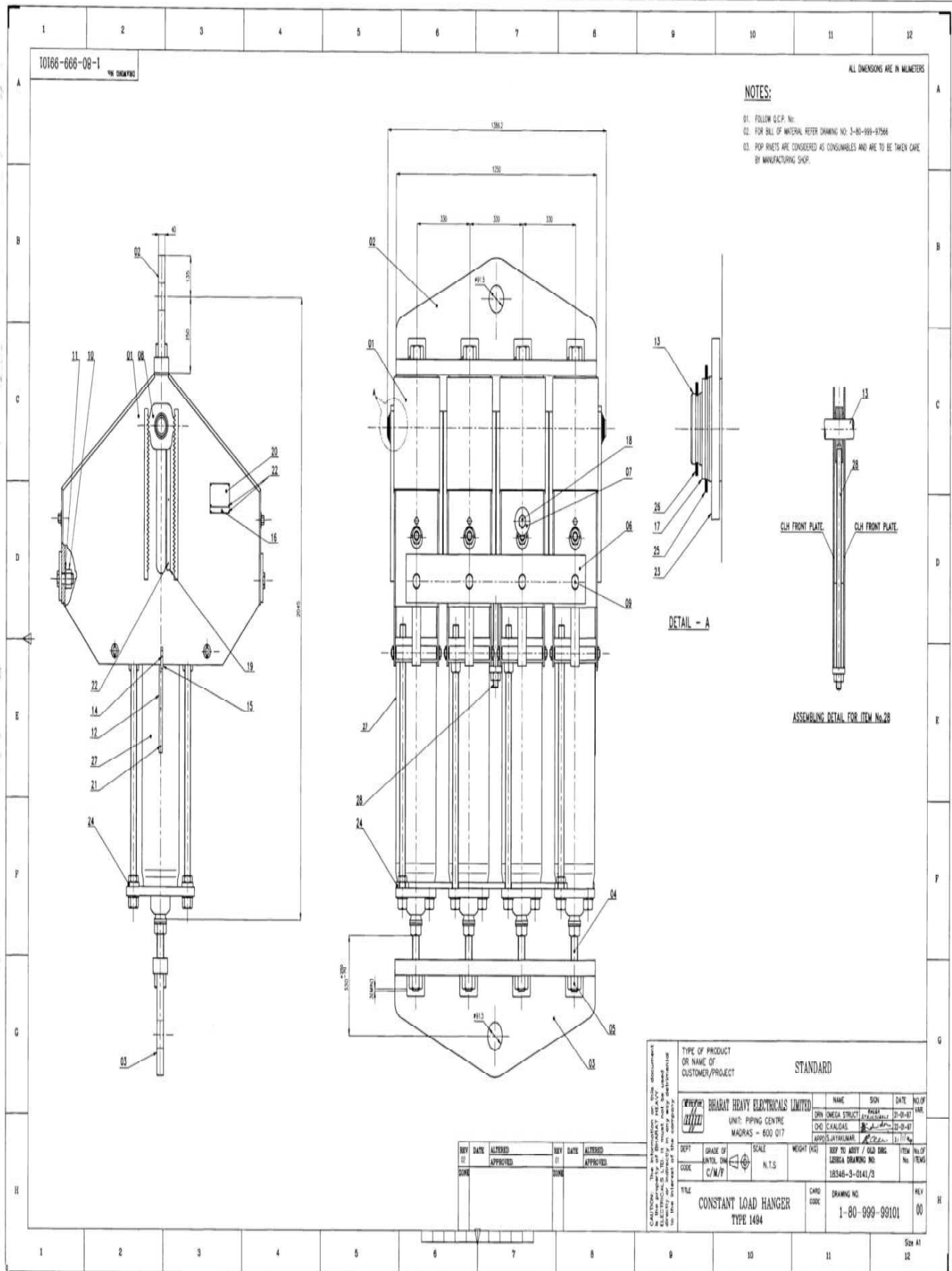


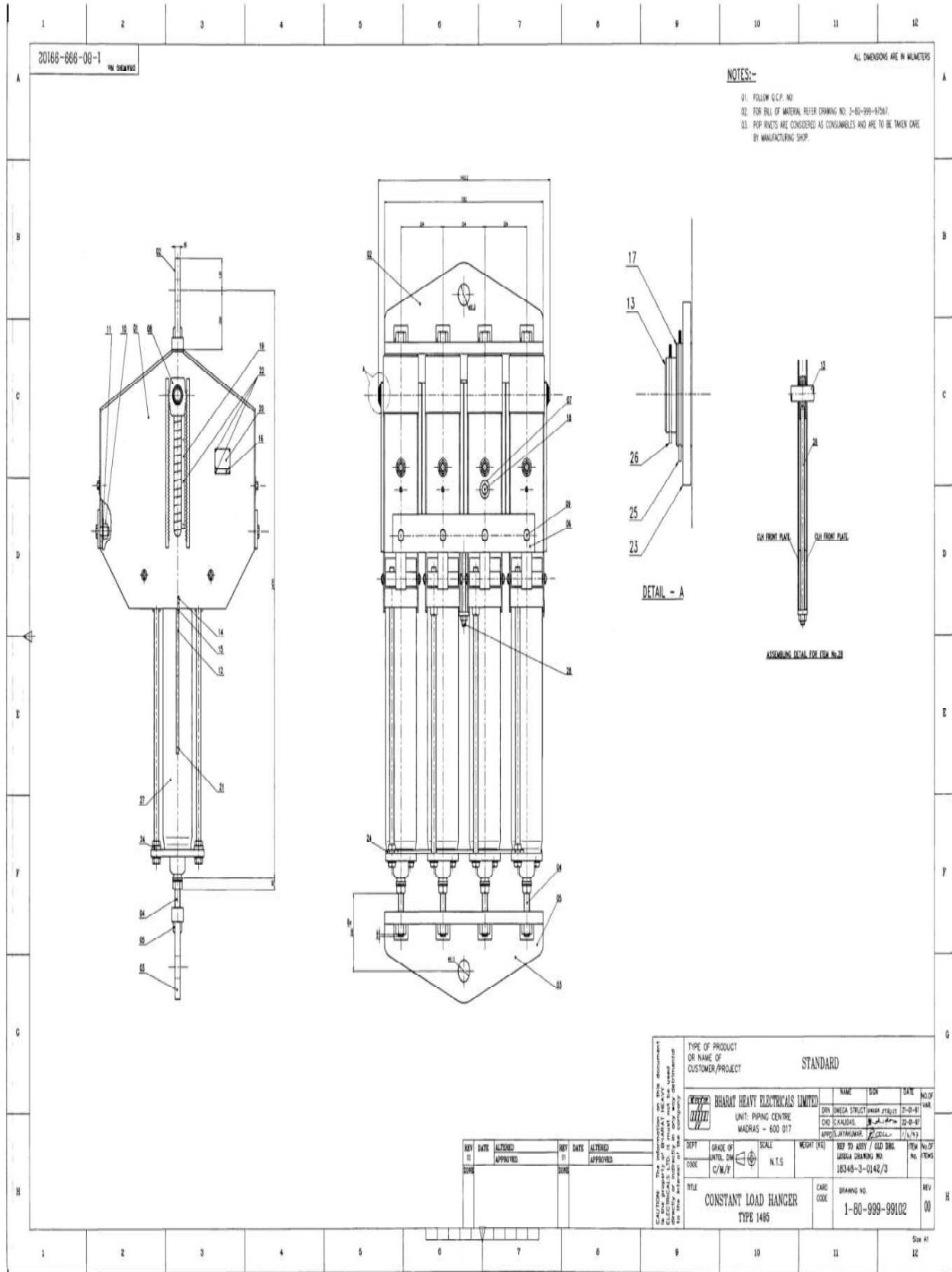












FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN MILLIMETRES)

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 whatsoever without the written permission of the company.

DRAWING NO. 3-80-999-97410

**NOTES:-**

01. FOLLOW Q.C.P. No.

02. ITEMS MARKED THIS '02' ARE TO BE ELECTROPLATED WITH ZINC AND YELLOW CHROMATISED FOR 10 TO 15 μm.

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

VARIANTE NUMBER	DESCRIPTION	SPEC	DRAWING NUMBER	ITEM NO	MATERIAL CODE	UNIT WEIGHT
				VAR NO	MATERIAL SPECN	QTY
08	WASHER OD 85 / ID 25	4-80-999-99467		15 011 182 0000	C	0.122
				02 IS 1079 Fe 330		1
07	EYE NUT EN-4 M24x3	3-80-999-99127		84 821 304	C	0.930
				04 -		1
06	STEPPED STUD M42x4.5/M24x3 L=155	3-80-999-97474		15 339 142 0000	C	0.898
				03 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
				07 SA 182 Gr.F6e CL3		2
02	SUPPORT ASSEMBLY	3-80-999-97528		-		32.824
				WELDMENT		2
01	C.L.H. TYPE 7182	1-80-999-99056		-		268.312
				SUB ASSEMBLY		1

**STANDARD.**

	<b>BHARAT HEAVY ELECTRICALS LIMITED</b>		NAME	SIGN	DATE	NO. OF
	PIPING CENTRE MADRAS 600 017		DRN	OMEGA STRUCT	15/11/24	VAR.
			CHK	C.KALIDAS	15/11/24	
		APPD	S.JAYAKUMAR	15/11/24		

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

TITLE	CARD CODE	DRAWING NO.	REV
C.L.H. ASSEMBLY (TYPE 7182)	U 01	3-80-999-97410	00

Size A3

