

TENDER ENQUIRY NO.: X/6620/2024/0136/F/1

SUB: - TERMS & CONDITIONS FOR FORMING OF PRE-FAB. M/C & FAB. ONLY OF AG COVER AND OTHER ITEMS WITH COMBINED MATERIAL

NIT-Notice Inviting Tender

Salient Details of Notice Inviting Tender (NIT)		
Sl. No.	Issue	Description
1.	Item details	As per Enquiry Annexure X/6620/2024/0136/F/1
2.	Issue of Tender Documents	From BHEL eProcurement website https://eprocurebhel.co.in/nicgep/app (Tender documents will be available for downloading from BHEL e-Procurement website till due date of submission)
3.	Due Date Of Offer Submission	Date: 13-06-2024 Time: 13:45 hrs https://eprocurebhel.co.in/nicgep/app Offer to be submitted in online only through e-procurement Portal. (Bidders are requested to visit website to view corrigendum/ addenda/ amendments/ extension/ modification etc. before submitting offer).
4.	Opening of Tender (Techno-Commercial Bid)	Date: 13-06-2024 Time: 14.00 Hrs Notes: <i>This tender being an e-tender, it shall be opened online only through the E-Procurement Portal. Participating bidders may witness the Opening online only.</i>
5.	Cost of Tender	INR 2000/- (If hard copy of tender document is required from BHEL otherwise not applicable.)
6.	EMD (Earnest Money Deposit)	NIL
7.	Schedule Of Pre-Bid Discussion	Not Applicable
8.	Integrity Pact & Details of Independent External Monitor (IEM)	Not Applicable
9.	Latest Updates	Latest updates on the important dates, Amendments, Correspondences, Corrigenda, Clarifications, Changes, Errata, Modifications, Revisions, etc to Tender Specifications will be hosted in BHEL e-tender portal https://eprocurebhel.co.in/nicgep/app and not in the newspapers. Bidders to keep themselves updated with all such information

Please submit your offer only for the above requirement subject to our **GENERAL INSTRUCTIONS AND STANDARD TERMS & CONDITIONS (Version: June-2021, Rev.06)**. Please visit our site www.hwr.bhel.com for General Instructions and Standard Terms & Conditions (GISTC) for Tender Enquiries. All the bidders/vendors must ensure compliance of these GISTC. GISTC can also be referred by login to B2B Portal for Registered Vendors.

Tender Fee & EMD (If Applicable) will be submitted in the form of Pay Order / Demand Draft (drawn in favor of 'BHEL HARIDWAR') only. It may be noted that if hard copy of any tender document is required, then the same may be collected against copy of Pay Order / Demand Draft of requisite tender fee (while original to be submitted with Part-I).

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If EMD is not submitted along with the offer, then the offer may not be considered.

For E-Payment, the RTGS details are mentioned as below:

Bank Details	SWIFT Details of bank
STATE BANK OF INDIA RANIPUR BRANCH, OPP: BHEL MAIN GATE, SECTOR-5, RANIPUR, HARIDWAR, UTTRAKHAND, INDIA PIN CODE : 249403	SWIFT NO.: SBININBB225 CC ACCOUNT NO.: 10667995458 IFSC CODE: SBIN0000586

As per notification reference no. NSIC/HO/GP/15(4)/2013-14 dated 07.07.2013 Micro & Small Enterprises (MSEs) are not required to submit Tender fees. A Valid MSE certificate such as Udyog Aadhar (UAN)/Udyam Certificate/NSIC/EM (Part-II) etc. issued from competent authority shall be submitted in support of Micro & Small Enterprises (MSEs).

“As per the OM No. F. No. 1(2)(1)/2016-MA dated. 09.02.2017 issued from the Office of Development Commissioner (Micro, Small & Medium Enterprises), “Traders and agents should not be allowed to avail the benefits extended under the PP Policy.”

Central / State – PSUs / Government departments are exempted from submission of EMD subject to approval by BHEL management.

BHEL will forfeit the EMD if, the successful bidder / vendor refuses to honor the order after award of the same on him and / or withdraws his bid and / or unilaterally changes the offer and / or any of its terms & conditions within the validity period.

INSTRUCTIONS TO BIDDERS FOR SUBMITTING OFFER

TECHNICAL QUALIFICATION: Technical Requirement, Pre-Qualifying Requirements/PQR to be submitted. It is the mandatory requirement. Offer of vendors not meeting these requirements may not be considered.

ESSENTIAL INSTRUCTIONS

The tender shall be **submitted in two parts** in separate cover as described below on or before the due date:

Part I (Cover-1) - Containing the following:

1. Techno -Commercial Bid
2. Tender Fee & EMD (Earnest Money Deposit) Or Valid certificate/Document towards exemption of Tender fee and/or EMD (applicable for Micro and small Enterprises, Central / State – PSUs / Government departments, PMD vendors etc.)

Part II (Cover-2) - Containing Price Bid in attached Format

Bidders against tender will necessarily have to obtain class – III DSCs. Procedure for application available on www.bhel.com.

E-Procurement Portal Inputs

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Procedure for Submission of Offer for E – Tender-Procedure for Submission of Tender is available in the “Bidder Manual for BHEL Bidders” at E-tender portal <https://eprocurebhel.co.in/nicgep/app> . Terms and conditions mentioned therein shall form integral part of the NIT and bidders shall abide by the same.

Hardware and Software requirements for participating in e-tender

Please refer the website for the minimum system requirements and setting document for Bidders under the link: <https://eprocurebhel.co.in/nicgep/app>

Digital Signature

To know the procedure for obtaining Digital Signature Certificate (DSC), suppliers who are not having the DSC are advised to visit our website [http://www.bhel.com/home.php/Tender Notifications/Sample Checklist](http://www.bhel.com/home.php/Tender%20Notifications/Sample%20Checklist).

NIC portal Helpdesk Contacts

For any technical related queries please call at 24 x 7 Help Desk Number

0120-4001 002

0120-4200 462

0120-4001 005

0120-6277 787

International bidders are requested to prefix 91 as country code

Email Support

Address: A) For any Issues or Clarifications relating to the published tenders, bidders are requested to contact the respective Tender Inviting Authority
Technical - support-eproc@nic.in

Note

Offers/tenders submitted in the E-tender portal shall only be considered for further evaluation. Offers sent by FAX / E-mail / any mode other than E-tender would not be entertained.

The Tenderers must submit their Tenders, as detailed below:

SPECIAL NOTE: All documents to be submitted should be uploaded in respective places in the E-Tender portal as per the list mentioned given in this NIT. BHEL shall not be responsible for incomplete documents.

**TERMS & CONDITIONS FOR PRE-FAB. M/C & FAB. ONLY OF AG COVER AND OTHER
ITEMS WITH COMBINED MATERIAL**

Online offers are invited through e-procurement portal <https://eprocurebhel.co.in/nicgep/app> from suppliers for the supply of the items.

The item name and drawing No. mentioned in the enquiry is for reference & will be available for ordering. A sample of Combined Bill of Materials and all reference drawings are also enclosed for having a general idea of the tender.

1. **SCOPE OF WORK:** -This enquiry is for pre-fabrication machining & fabrication of following items with Party & BHEL Material as per drg., QP & other specifications.

Sl. No.	Item Description	Drg. No.	Qty	Party material Weight /Piece (Kg)	BHEL Material Weight /Piece (Kg)	Total Weight/Piece (in kg.)	Total Weight (in Kg.)
1	a. AIR GUIDE COVER (WELDED)	0144040102800	4	1241.51	0.03	1241.54	4966.16
2	a. AIR GUIDE COVER (WELDED)	0144040103100	5	669.669	4.581	674.25	3371.25
	b. COVER (WELDED)	1144040102300	5	64.64	00	64.64	323.20
	c. COVER (WELDED)	1144040103900	5	63.78	0.86	64.64	323.20

TOTAL WT. 8983.81 Kg.

Remarks-

1. T.R. OF THE DRAWINGS ARE TO BE STRICLY FOLLOWED.
2. The rate (s) should be quoted in **Rupees/Piece**.
3. FOR DRG.NO.0144040102800: ITEMNO.6 WILL BE SUPPLIED BY BHEL AND REST ITEMS ARE IN VENDOR SCOPE.
4. FOR DRG.NO.0144040103100: ITEMNO.10,20,25,26,27 WILL BE SUPPLIED BY BHEL AND REST ITEMS ARE IN VENDOR SCOPE.
5. FOR DRG.NO.1144040103900: ITEMNO.7-1,7-2,7-3 WILL BE SUPPLIED BY BHEL AND REST ITEMS ARE IN VENDOR SCOPE.
6. ITEM NO.2 a, b & c SHALL BE ORDERED ON SAME VENDOR.
7. SHOT BLASTING & PAINTING IF REQUIRED WILL BE DONE BY BHEL.
8. SCOPE-PRE-FAB. M/C & FAB. ONLY.
9. Quality plan (if any) to be followed for Material induction and CHP.
10. Customer's seal (if Any on supplied Material) to be transferred.
11. All special tests viz., UT, RT, HYDRAULIC & KEROSENE etc. are to be performed as per drg. requirements.
12. Copies of the relevant certificates to be supplied to the receiving shop.
13. Cleaning of parts, removal of mill scale from components prior to assy will be in scope of vendor.

14. Final Assembly shall undergo cleaning to ensure that all parts are free from dents, mills, spatters.
15. Aesthetic appearance shall also be ensured and inspected before delivery to BHEL.
16. CHP Clearance may be obtained from NTPC/LLOYD/RITES/NPC at party's end.
17. Material Used should be procured from BHEL approved vendors only.
18. Supplier must furnish material test certificates for all the items.

2. VALIDITY: -

The validity of offers by vendors should be at least for a period of **90 days for this enquiry from the date of enquiry opening.**

3. SUBMISSION OF OFFERS: -

Open tender is hoisted on the <https://eprocurebhel.co.in/nicgep/app> and no hard copy of document is provided by BHEL, no tender fee shall be insisted upon from the bidders.

The offer is to be submitted in **two parts** on NIC portal only on website: <https://eprocurebhel.co.in/nicgep/app>

BHEL reserves the right to reject any or all the tenders either in full or part thereof without assigning any reasons thereof.

4. DELIVERY: -

F.O.R.: HEEP, BHEL Haridwar.

5. DELIVERY SCHEDULE: -

Sl. No.	Item Description	Drg. No.	Qty	REMARKS
1	a. AIR GUIDE COVER (WELDED)	0144040102800	4	45 DAYS FROM LAST BHEL MATERIAL SENT
2	a. AIR GUIDE COVER (WELDED)	0144040103100	5	45 DAYS FROM LAST BHEL MATERIAL SENT
	b. COVER (WELDED)	1144040102300	5	
	c. COVER (WELDED)	1144040103900	5	

Note: - In case the delivery offered by any vendor is more than above mentioned Delivery days from Last Material Sent from BHEL to Vendor, loading shall be done @ 0.5% per week on the rate quoted by the vendor.

- 6. Bank Guarantee/Indemnity Bond:** 10 % Bank Guarantee and 90 % Indemnity Bond for the value of materials to be given by vendor for free issue materials. Material value will be calculated on PPMIV/Challan value basis. On intimation from BHEL regarding BG & IB, the same shall be provided by the vendor (s) within 15 Days. If suitable BG and IB are not submitted to BHEL within 15 days of intimation, then the amount of days delayed beyond 15 days after intimation will be deducted from delivery days of that item and consequent PO amendment will be issued.

For Example: If intimation for requirement of BG & IB of an item of a PO is given to vendor on 01.04.2023 from BHEL, then vendor should mandatorily provide required BG and IB by 15.04.2023. In case, the vendor provides the same by 30.04.2023, then the difference of 15 days (between 30.04.2023 & 15.04.2023) will be deducted from delivery days of that item and consequent PO amendment will be issued.

7. INSPECTION: -

- The inspection will be carried out by BHEL/BHEL nominated inspection agency at Party's works. All facilities and equipment's, calibrated instruments and standard gauges required for inspection shall be provided by the vendor during inspection. In some cases, inspection by customer's representatives like NTPC/RITES etc. may also be carried out at Party's works and CHP clearance may be obtained. No additional charges will be paid on this account.
- The party is to follow system for material control, if applicable, as per BHEL Quality Control system.
- Identification marks shall be punched on each item by the vendor i.e. Purchase Order No., Drawing No., IR No. etc.
- Aesthetic appearance is to be maintained as per drg. requirement.

8. GUARANTEE CERTIFICATE: -

The vendor shall warrant that the supplied fabricated assemblies/items comply fully with the drawings and other technical conditions. If the fabrications/items are found defective owing to faulty workmanship/incomplete work within a period of eighteen (18) months from the date of dispatch, the vendor shall make good of it/replace the same free of cost. Alternatively, the rework/replacement charges will be recovered.

9. PAYMENT TERMS: -

- 9.1 90% after acceptance & final clearance of SRIV. 10% after FTS and final accountal of material.
- 9.2 No packing and forwarding charges will be paid extra.
- 9.3 In case of rejection, total cost of material will be recovered in case of BHEL Material and no labour cost will be paid.
- 9.4 For MSEs (covered under MSME Act) which are registered and periodically renewed with BHEL, the payment will be made within 45 days or as prescribed in the relevant act.
- 9.5 Detailed terms at clause 10.0 of GISTC Rev. 06, June 2021.

10. LD CLAUSE: -

@ 0.5% per week subject to max 10% for the delayed portion of supply. The entry date mentioned by CISF on the challan at BHEL material gate will be taken as material receipt date.

11. GST: -

As per clause 11.0 of GISTC (attached). At present GST rate applicable for this enquiry will be 18%. However, it will be as applicable as per Govt. guidelines/circulars.

12. QUALITY REQUIREMENTS: -

- a. All party material to be procured from BHEL HEEP Haridwar approved sources (attached Annexure C).
- b. Quality plan no. QP/QA/216467 rev 00 dated 11.05.2024 is attached, which is to be followed.
- c. Physical Inspection by BHEL / BHEL nominated inspection agency as per drawing and quality plan requirements.

13. REVERSE AUCTION: -

“BHEL shall be resorting to Reverse Auction (RA) (Guidelines as available on www.bhel.com) for this tender. RA shall be conducted among the techno-commercially qualified bidders.

Price bids of all techno-commercially qualified bidders shall be opened and same shall be considered for RA. In case any bidder(s) do(es) not participate in online Reverse Auction, their sealed envelope price bid along with applicable loading, if any, shall be considered for ranking.” For detailed terms and conditions of RA guidelines, kindly refer www.bhel.com.

14. EVALUATION OF BIDS:

All vendors will be assessed on total cost to BHEL basis that includes freight, taxes, ITC etc. Item wise evaluation will be applicable for this enquiry.

L1 Vendor must provide break up of Basic BM & PM rate (in Rs. / Piece) post RA in price confirmation sheet.

In the course of evaluation, in case more than one bidder happens to occupy the L1 status even after soliciting discounts, the L1 bidder shall be decided by toss/draw of lots, in the presence of respective L1 bidder(s) or their representative(s). Ranking will be done accordingly. BHEL's decision in such situation shall be final and binding.

15. TRANSPORTATION: -

Transportation of PPMIV material (raw material) will be in scope of BHEL and the freight will be borne by BHEL. However, the same will be loaded into the cost quoted by vendor in RA sheet. Vendor to deliver fabricated/machined/formed items to BHEL Haridwar at their own cost.

16. SCRAP: -

- Generated scrap is to be retained by the sub-contractor. This scrap is chargeable. The scrap rate will be calculated based on the monthly market scrap price Published in MSTC Bulletin/ JPC bulletin/any other document under category of scrap MELTING SCRAP/any other similar category. The calculated monthly price for charging scrap will be rounded off to two decimal places of Rupee. GST charges on scrap shall also be applicable.
- BHEL would recover the amount of GST and Trade Tax as applicable from the sub-contractor's account in lieu of scrap retained by them. The difference between raw material weight and finalized weight shall be considered for the calculation of scrap generation.
- A 3% invisible cutting allowance may be given on the finished weight.

17. RECTIFICATION: -

Any defect (noticed at Shop) arising out of the fabrication/machining/forming done by the Sub-Contractor, will have to be rectified or items replaced by the sub-contractor within 10 days at their own cost. Otherwise BHEL will be free to take necessary action as deemed fit and consequence/cost of the same will be to subcontractors-account.

18. Breach of Contract: In case of breach of contract, wherever the value of security instruments like performance bank guarantee available with BHEL against the said contract is atleast 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. Accordingly, recovery of an amount equivalent to 10% of the contract value may be made in case of breach of contract.”

19. DISTRIBUTION OF LOADS: -

Load will be placed on L1 vendor.

20. GENERAL INSTRUCTIONS: -

20.1 No further sub-contracting to third party or sister concern by the sub-contractor is allowed Without prior permission of BHEL. If found guilty, will be debarred.

20.2 BHEL reserves the right to suspend/cancel the PO/Enquiry unilaterally without any financial repercussions, if Sub-contractor's performance is not found to be satisfactory.

20.2.1 BHEL reserves the right to revise the drawing after placement of purchase order. The prices in the purchase order will be amended according to revised drawing.

20.3 Please refer general instructions and standard terms & conditions (GISTC) for bidding against tender enquiry (version June-2021, Rev:06) the bidder/vendor must ensure compliance of these GISTC (version June-2021, Rev:06). Please refer <https://hwr.bhel.com>.

20.4 MSE suppliers are exempted for submission of EMD & Tender Fee.

20.5 Central / State – PSUs / Government departments are exempted from submission of EMD subject to approval by BHEL management.

20.6 Documents submitted with the offer/bid by the bidder should be signed and stamped in each page by authorized representative of the bidder.

20.6.1 PQR required documents is to be submitted along with the Techno- Commercial offer (PART-I).

Note: - Offer shall be entertained only after submission of duly filled, signed and stamped PQR and relevant documents. Offers of the vendor(s) not submitting this may be ignored.

20.7 Vendor Contract clause regarding GST ITC and provision for E-invoices:

(i) E-invoicing under GST is being implemented w.e.f. 01.04.2022 for all the taxable persons having turnover more than Rs. 10 Cr. It has been specified by the Govt. that it is mandatory to mention a valid unique Invoice Reference No. (IRN) and QR code as generated from Govt. portal on a Tax Invoice. Based on such information, GST ITC as claimed by BHEL in GST Returns shall be matched with the corresponding details uploaded by supplier in E-invoicing System.

(ii) In case the vendor /contractor delays or fails to provide all the documents as per the Purchase order / Work Order at the time of submitting Tax invoice to BHEL, any subsequent financial loss to BHEL on account of vendor/contractor shall be to vendor's / contractor's account. BHEL has further right to take necessary steps to protect its interest at the time of release of payment. This further requires inclusion of IRN and QR code on tax invoice as announced by Govt. of India w.e.f. 01.10.2020.

20.8 In case of ordering against the tender, vendor should submit their invoices against goods and services immediately after supply of goods & services but not later than 30 days from the

invoice date. In case of delay, consequential losses like loss of input credit and non-availability of concessional forms etc. shall be to the vendor account.

20.9 The bidders against open tender will necessarily have to obtain class – III DSC (Digital signature).

Procedure for application is available on hwr.bhel.com.

20.10 Following MSE conditions shall be followed: -

UDYAM Certificate.

Detailed MSE conditions is at clause no. 23.0 of GISTC Rev. 06, June 2021.

* Govt. guidelines will supersede all clauses of this tender for MSE benefits to vendor(s).

MSE Suppliers can avail the intended benefits only if they submit along with the offer, attested copies of UDYAM Certificate.

Detailed MSE conditions is at clause no. 23.0 of GISTC Rev. 06, June 2021. * Govt. guidelines will supersede all clauses of this tender for MSE benefits to vendor(s).

20.11 BHEL will deal directly with the manufacturers / principal vendors and no correspondence with the agents will be entertained. The agents will not be permitted to visit / interact with BHEL on behalf of their principals. Subsequently also, no correspondence of any type will be made with any agent. (All individuals / companies - representing / Advisor / retainer ship basis or claimed to be part time employees for many OEMs / claiming to be channel or business partner for BHEL work / stockiest not registered specifically etc. are Agents). Communications with only those agents who have submitted agency agreement with their respective principal may be done. The suppliers or their authorized person may be allowed to attend the tender opening, if duly authorized by their principals, through a specific letter for a particular enquiry for specific price bid opening on that particular day. General authorization letter is not acceptable. However, in case of e-tender, vendor should see the tenders of others on the opening date only. Thereafter, the respective window will get closed.

20.12 "BHEL may load maximum penalty under LD clause, to the extent the same is not agreed by the vendor, for the purpose of comparative statement. Where deliveries quoted by the vendors are not suiting, BHEL may also ignore the offer of the vendor".

21. "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 who 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 authorize 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. "

- **Against vendor's replies, BHEL reserves the right to ask for more information/ documents / clarifications. Vendor's offer shall not be considered if vendor fails to furnish the document / information / clarifications as mentioned above or doesn't meet the acceptance criteria. Time period for technical/commercial clarification is 3 days.**
- Amendments/Corrigendum, if any, will be hosted on designated web site/ GePNIC Portal only. Other terms and conditions will be as per tender documents. Any vendor who is under hold (for the item)/ delisted/ banned with BHEL on date of opening of Part – 1 will not be allowed to quote for this tender. In case their offer is received, it may be out rightly rejected.
- In view of Covid-19 and present situation, the Tender Documents, Drawings, P.O copy etc. shall be sent by e-mails and shall not be sent in hard copies. Vendors to kindly note that the details sent by e-mail shall be considered for delivery against the finalized contract(s)/ P. O's placed.
- ****OFFERS SHALL BE ADMITTED THROUGH GePNIC PORTAL <https://eprocurebhel.co.in/nicgep/app> ONLY**

Annexure - A

PRE-FAB. M/C & FAB. ONLY OF AG COVER AND OTHER ITEMS WITH COMBINED MATERIAL

OpenTender Enquiry No.: X/6620/2024/0136/F/1

Sl. No.	Item Description/Drg No.	MATERIAL BY	Qty	Weight in Kg / piece	Quoted/Not Quoted (Tick the correct option)
1	a. AIR GUIDE COVER (WELDED)	0144040102800	4	1241.54	Quoted/Not Quoted
2	a. AIR GUIDE COVER (WELDED)	0144040103100	5	674.25	Quoted/Not Quoted
	b. COVER (WELDED)	1144040102300	5	64.64	
	c. COVER (WELDED)	1144040103900	5	64.64	

Authorized Signature:
(with date & seal of company)

Name of Supplier: -

Annexure - B

Make in India Certificate

Certificate In line with Government Public Procurement Order No. P-45021/2/2017-BE-II dt. 15.06.2017 & P-45021/2/2017-PP (BE-II) dated 28.05.2018, we hereby certify that we M/s

_____ (supplier name) are local supplier meeting the requirement of minimum local content (50%) as defined in above orders for the material against Enquiry No.

_____ Details of location at which local value addition will be made is as follows: _____

_____ We also understand, false declarations will be in breach of the Code of Integrity under Rule 175(1)(i)(h) of the General Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151 (iii) of the General Financial Rules along with such other actions as may be permissible under law.

Authorized Signature:

(with date & seal of company)

Name of Supplier: -

Annexure C**Approved party scope raw material supplier against items of enquiry**

PMD NO --SL024	
S. NO	VENDORS/SUPPLIERS
1	02851 SHAH BROTHERS ISPAT PVT. LTD. I0007021
2	06244 ARCELORMITTAL NIPPON STEEL I0002265
3	08166 STEEL AUTHORITY OF INDIA LTD I0000443
4	41307 JINDAL STEEL & POWER LTD. I0002230
5	41575 WELSPUN CORP LTD I0000006
6	70089 SUNLION PIPING ENGINEERING CO. F001742
7	72167 SALZGITTER MANNESMANN INTERNAT F001559
8	77007 DILLINGER INTERNATIONAL F000390
9	78004 STEEL FORCE ASIA NV-BEIGIUM F002684
10	78021 NLMK PLATES SALES SA F001330
11	90016 BURWILL RESOURCES LTD. F001060
12	90019 CUMIC STEEL LIMITED F001579
13	91021 DAEWOO INTERNATIONAL CORPORATI F000355
14	96026 SIJ ACRONI D.O.O. F001657
PMD NO --SL039	
S. NO	VENDORS/SUPPLIERS
1	02968 SANDOZ METALS (INDIA) I0000806
2	03598 ARCVAC FORGECAST PRIVATE LTD I0000654
3	04177 MAHAWAR IRON STORES PVT LTD I0005936
4	04191 SKYWAY STEEL INDUSTRIES I0013820
5	06068 STAR WIRE (INDIA) LTD. I0000670
6	08299 ALKA FORGINGS I0005653
7	09169 BHARAT HEAVY ELECTRICALS LTD. I0000185

8	16096 SAURABH METALS PVT. LTD. I0003271
9	19158 LAXCON STEELS LTD I0003509
10	20183 WELSPUN SPECIALTY SOLUTIONS I0002281
11	21050 ISMT LIMITED I0000327
12	21181 SAARLOHA ADVANCED MATERIALS I0001453
13	24025 RASHTRIYA ISPAT NIGAM LIMITED I0003241
14	40303 STEEL AUTHORITY OF INDIA LTD I0000443
15	41122 SUN FLAG IRON & STEEL CO. LTD. I0003923
16	41544 GORADIA SPECIAL STEEL LTD I0002883
PMD NO --SL050	
S. NO	VENDORS/SUPPLIERS
1	02968 SANDOZ METALS (INDIA) I0000806
2	04135 BHAWANI INDUSTRIES PRIVATE LTD I0002972
3	08166 STEEL AUTHORITY OF INDIA LTD I0000443
4	08360 K.L. STEELS (P) LIMITED I0003939
5	15017 RELIABLE SPONGE PVT LTD I0002966
6	17024 MAHAMAYA STEEL INDUSTRIES LTD I0002232
7	17025 NANDAN STEELS AND POWER LIMITE I0003747
8	17026 PRIME ISPAT LIMITED I0003943
9	17027 TOPWORTH STEELS & POWER PRIVAT I0000542
10	17029 MONNET ISPAT & ENERGY LIMITED I0003534
11	24025 RASHTRIYA ISPAT NIGAM LIMITED I0003241
12	41122 SUN FLAG IRON & STEEL CO. LTD. I0003923
13	41307 JINDAL STEEL & POWER LTD. I0002230
14	41353 P.R. ROLLING MILLS (P) LTD. I0006803
15	41642 SKS ISPAT & POWER LTD I0003954
PMD NO --TG077	
1	OMCO ENTERPRISES PRIVATE LIMIT
2	I.S. ENGINEERING WORKS
3	SHRI DURGA OIL & STEEL WORKS
4	AHSAN ALI ENGG. WORKS
5	GURU NANAK ENGG. WORKS
6	EXCEL ENGINEERING
7	WINDLASS ENGINEERS & SERVICES

8	BHARAT HEAVY ELECTRICALS LTD.
9	PRECIHOLE MACHINE TOOLS PVT.LT
10	KISAN MECHANICAL WORKS
11	RUBY ENTERPRISES
12	LPS BOSSARD PVT.LTD.
PMD NO --TG080	
1	I.S. ENGINEERING WORKS
2	AHSAN ALI ENGG. WORKS
3	GURU NANAK ENGG. WORKS
4	PRECIHOLE MACHINE TOOLS PVT.LT
PMD NO --SL014	
1	M J PATEL (INDIA) LTD.
2	SAINEST TUBES PVT LTD.
3	ANAND SEAMLESS TUBES PVT. LTD
4	HEAVY METAL & TUBES (INDIA) PV
5	ISMT LIMITED
6	MOKSHI INDUSTRIES PVT. LTD.
7	BHARAT HEAVY ELECTRICALS LTD.
8	MAHARASHTRA SEAMLESS LIMITED
9	JINDAL SAW LIMITED
10	INDUSTRIAL METAL CORPORATION
11	RATNADEEP METAL & TUBES LTD.
12	JIANGSU CHENGDE STEEL TUBE SHA
13	SHANDONG LIAOCHENG ZGL IMPORT
14	YANGZHOU CHENGDE STEEL PIPE CO
15	T P S TECHNITUBE
16	ARCELORMITTAL TUBULAR PRODUCTS
PMD NO --SL048	
1	STEEL AUTHORITY OF INDIA LTD
2	LALIT PROFILES & STEEL IND.LTD
3	SHYAM METALICS & ENERGY LTD
4	STEEL KRAFTS
5	SURYA ROSHANI LIMITED
6	ASIAN MILLS PRIVATE LIMITED

7	RAHIL METAL
8	INDUSTRIAL METAL CORPORATION

TERMS AND CONDITIONS FOR Enquiry No.X/6620/2024/0136/F/1

SL.	TERMS	VENDOR'S ACCEPTANCE/ REMARKS
1	Scope of Work: - Complete PRE-FAB. M/C & FAB. ONLY is to be carried out by the vendor as per Drawing/Standard, QP and Technical requirements (as per clause 1 of terms & conditions).	
2	Quotation is valid for a minimum period of 90 days from date of opening of enquiry. (as per clause no. 2.0 of Terms and Conditions)	
3	Submission of offers (as per clause no. 3.0 of Terms and Conditions)	
4	Quoted rates are on F.O.R. sub-contract store, HEEP, Haridwar basis.(as per clause no. 4.0 of Terms and Conditions)	
5	Delivery schedule 45 days as per clause 5.0 of T & C of enquiry.	
6	Bank Guarantee/Indemnity Bond: 10% BG & 90% Indemnity bond (as per clause 6.0 of T & C of enquiry)	
7	Inspection shall be done (as per clause no. 7.0 of Terms and Conditions of Enquiry)	
8	Guarantee Certificate shall be valid for 18 months . (as per clause no. 8.0 of Terms and Conditions of Enquiry)	
9	Payment 90% after acceptance & final clearance of SRIV. 10% after FTS and final account of material (as per clause no. 9.0 of Terms and Conditions of Enquiry).	
10	LD clause is applicable@0.5% per week or part thereof with a maximum limit of 10% of the delayed portion of the PO (as per clause no. 10.0 of Terms and Conditions of Enquiry).	
11	GST shall be applicable against documentary proof. Input Tax Credit shall be applicable and BHEL can claim benefit (as per clause no. 11.0 of Terms and Conditions of Enquiry).	
12	Quality Requirements (as per clause no. 12.0 of Terms and Conditions of Enquiry).	
13	We accept Reverse Auction(RA) clause as per standard policy of BHEL (as per clause no. 13.0 of Terms and Conditions of Enquiry).	
14	Evaluation of bids (as per clause no. 14.0 of Terms and Conditions of Enquiry).	
15	Transportation:Confirm acceptance of clause 15.0 of T & C. Manufactured items shall be despatched by BHEL approved transporter only and Insurance shall be borne by BHEL.	
16	Scrap : Confirm acceptance of Clause 16.0 of T & C of Enq.	
17	Rectification:Confirm acceptance of Clause 17.0 of T & C of Enq.	
18	We accept Breach of Contract As per clause 18 of T&C	
19	Distribution of Load: Accept the Clause 19 of T & C	
20	We have read clause no. 20 of terms and conditions of Enquiry and confirm to abide the same.(Clause 20.1 -20.12)	
21	Conflict of Interest:Confirm acceptance of Clause 21.0 of T & C of Enq.	
22	Duly Filled Annexure A (Unpriced- Quoted / Not Quoted)	
23	We have submitted Make in India certificate (duly filled and signed as per Annexure-B).	
24	We accept all terms and conditions of GISTC Rev. 06.	
25	Rates have been quoted in indian Rupees on per Piece basis.	
26	PQR : as per clause 20.6.1 of T&C of enquiry.(duly filled, signed and stamped PQR and relevant documents)	

I have read and agreed all the terms and conditions of enquiry in detail and agree.

Note: BHEL reserves the right to reject any or all the offers (on techno-commercial ground) without assigning any reason thereof.

(Vendor's signature with Stamp)

PQR

Guide Cover(Welded) Drg. No: 01440401028-00, 01440401031-00 ; Cover (Welded) Drg no: 11440401023-00,
11440401039-00

CLASSIFICATION REQUIREMENT

TECHNICAL REQUIREMENT

		Required	Vendor's Offer
01.00	Vendors should have experience of fabricating (cutting/bending/assembly/welding/pre-fabrication machining) and supplying of atleast 1 no. Air Guide Cover Fabricated assembly or equivalent having size 2000X1000mmX2000mm (LXBXH) and above and weight 1 Tons and above in last 7 years from the date of enquiry.	Vendor to Comply & submit suitable evidence	
01.02	Facilities Required: i) Lifting facility and capacity at vendor works should EOT crane 2 Tons and above. ii) Vendor must have levelled bed plate size : Length= 2,500mm and Breadth=2,500mm and above to fabricate the job (Note: Concrete floor not acceptable). (iii) Vendor must have suitable WPS/PQR and qualified welders for welding approved by Third Party and submit documentary evidence with offer. (iv) Vendor must have cutting facility to cut plate of thickness 10 mm and above. (v) Vendor must have rolling bending facility of plate thickness 10mm and above at width of 1000mm and above. (vi) Vendor must have drilling facility to drill holes of dia.30mm and above in plate thickness of 10mm and above	Vendor to Comply & submit suitable evidence including technical specifications, technical brochure, photographs etc. of the facilities.	
01.03	Vendor to furnish certificate against clause 01.01 from the customer / company or end user duly confirming that Air Guide Cover Fabricated assembly or equivalent having size 2000X1000mmX2000mm (LXBXH) and above and weight 1 Tons and above was supplied and used for Hydro Pump or turbine/power plant/capital goods/infrastructure application OR Vendor to submit documentary evidence as per clause 1.04.	Vendor to Comply & submit suitable documents	
01.04	Vendor to furnish name of customer/company with complete contact details and month /year of previous supply along with copy of PO, type of manufacturing facility used for fabrication (assembly/welding/pre-fabrication machining), supply documents, Payment details(invoice copy) and inspection documents of supplied Air Guide Cover Fabricated assembly or equivalent having size 2000X1000mmX2000mm (LXBXH) and above and weight 1 Tons and above.	Vendor to Comply & submit suitable documents	
01.05	All PQR documents are to be stamped and signed in original by Vendor. In case documents and official stamp is in language other than English, documents and details of official stamp are to be translated in English and duly certified by Government agency/approved agency of Government/Embassy.	Vendor to Comply & submit suitable documents	
01.06	BHEL reserves the right to verify the information provided by vendor. In case the information provided by vendor is found to be false/ incorrect, their offers shall be rejected.	Vendor to agree	

NOTE: PQR is not restrictive

[Signature]
09/05/2024
[Mand Intaraw]

[Signature]
09/05/2024
[Ravi Deshwal
Manager(FT)]

[Signature]
10/5/2024
DGM(B2/PT)

Manufacturer Name and Address		MANUFACTURING QUALITY PLAN								APPLICABILITIES TO			
BHEL Haridwar approved vendors/sub-contractors only		ITEM/ EQUIPM- ENTS	AIR GUIDE COVER (WELDED), COVER (WELDED) (ITEM NO. 1 TO 4 OF SIR)					Q.P. NO	QP/QA/216467				
								DATE	11.05.2024				
								REV. NO.	00	CONTRACTOR		BHEL (HEEP) HWR	
								PAGE NO.	1 of 2	Indent		Sir No. 2G20240005 dated 07.05.2024	
Sl. No.	COMPONENT OPERATION	CHARACTRISTIC CHECKED	CATEGORY	TYPE/ METHOD OF CHECKED	QUANT-UM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE DOCUMENT	FORMAT OF RECORD	D	AGENCY			REMARKS
										M	B	C	
1	2	3	4	5	6	7	8	9	10	11	12	13	14

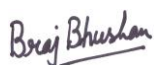
1	Material Receiving Inspection	Review of Supplier Test Certificate of Material for all the party materials	Major	Visual inspection	100 %	As per drg./ Standard	As per drg./ Standard	TC	√	P	V	-	All party material to be procured from BHEL, Haridwar approved sources with following condition: In all the cases a mill test certificate correlating with the component for verification of conformance of the material as per the requirement is essential.
2	IN PROCESS-INSPECTION												
2.1	WPS, PQR & WPQ Qualification	Scrutinizing	Major	Record check	100%	ASME SEC IX	ASME SEC IX	Test Report	-	P	V	-	BHEL /BHEL approved agency WPS/PQR/WPQ shall be used
2.2	Marking, Cutting & Edge Preparation	i) Marking	Major	Marking check	100 %	As per drg./ Standard	As per drg./ Standard	-	-	P	-	-	
		ii) Dimension	Major	Measurement	100%	As per drg./ Standard	As per drg./ Standard	-	-	P	-	-	
		iii) Edge preparation	Minor	Measurement	100%	As per drg./ Standard	As per drg./ Standard	-	-	P	-	-	
2.3	Welding Operation	i) Fit up	Major	Visual	100%	As per drg./ Standard	As per drg./ Standard	Obs. sheet	√	P	V	-	1) BHEL approved electrode shall be used during welding 2) Qualified welders by BHEL /BHEL approved agency in accordance with ASME Section IX will be deployed on the job.

Manufacturer/Subcontractor 	Legends: P Perform by; W Witness by; V Record review; C Customer; B BHEL/BHEL Representative; M Manufacturer/ sub-contractor; D: Documents with tick mark shall be submitted by vendor to BHEL. 	For BHEL Use  स्वाती जैन प्रबंधक गुणता आश्वासन  ब्रज भूषण त्रिपाठी वरिष्ठ प्रबंधक गुणता आश्वासन
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Manufacturer Name and Address		MANUFACTURING QUALITY PLAN								APPLICABILITIES TO			
BHEL Haridwar approved vendors/sub-contractors only		ITEM/ EQUIPM- ENTS	AIR GUIDE COVER (WELDED), COVER (WELDED) (ITEM NO. 1 TO 4 OF SIR)					Q.P. NO	QP/QA/216467				
								DATE	11.05.2024				
								REV. NO.	00	CONTRACTOR		BHEL (HEEP) HWR	
								PAGE NO.	2 of 2	Indent		Sir No. 2G20240005 dated 07.05.2024	
Sl. No.	COMPONENT OPERATION	CHARACTRISTIC CHECKED	CATEGORY	TYPE/ METHOD OF CHECKED	QUANT-UM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE DOCUMENT	FORMAT OF RECORD	D	AGENCY			REMARKS
										M	B	C	
1	2	3	4	5	6	7	8	9	10	11	12	13	14

		ii) Visual inspection of welds	Major	Visual	100%	As per drg./ Standard	As per drg./ Standard	Obs. sheet	√	P	V	-	
		iii) NDT, as applicable	Major	NDT	As per drg.	As per drg./ Standard	As per drg./ Standard	Report	√	P	W		
3	FINAL INSPECTION												
3.1		i) Verification of dimension & inspection	Major	Visual & measurement	100%	As per drg./ Standard	As per drg./ Standard	Obs. Sheet	√	P	W	-	
		ii) Completeness of Job, Documentation	Major	Visual	-	-	Drg./QP	Record	-	P	V	-	Item shall be dispatched to BHEL after acceptance by BHEL nominated agency after duly identifying by punching P.O. No., drg no. Plant Order No. and I.R. No.

Note: All requirements of P.O., drawing and standard shall be fulfilled.

Manufacturer/Subcontractor	Legends: P Perform by; W Witness by; V Record review; C Customer; B BHEL/BHEL Representative; M Manufacturer/ sub-contractor; D: Documents with tick mark shall be submitted by vendor to BHEL.	For BHEL Use  स्वाती जैन प्रबंधक गुणता आश्वासन  ब्रज भुषण त्रिपाठी वरिष्ठ प्रबंधक गुणता आश्वासन
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BILL OF MATERIAL

Printed
On:11.05.2024

BOM No: 01440401028 Var: 00 Revno: 2 Rev Date: 11.01.2020
Description: AIR GUIDE COVER (WELDED) Tot wt: 1241.54

Printed By:

Item No	Drawingno	Var	Mvar	Mat Code	Mat Spec	Weight
Qty(Total)	Description				Assy. Remarks	
Typ	Cat	Zone	Var/Matl. Description		GRP	Fab Wt
0			01440401028 00			1241.54
1(1)			AIR GUIDE COVER (WELDED)			
MF	DR		800MW B'LESS EXCITER		Y	1241.54
1			31440401141 00 00	AA1011808013	AA10108	145.6
1(1)			PLATE			
MF	DR					
2			31440401142 00 00	AA1011819074	AA10119	135.0
1(1)			PLATE			
MF	DR					
3			41440401052 00 00	AA1011808013	AA10108	40.0
2(2)			PLATE		CBOM91440401002	
MF	DR					
4			41440401047 00 00	AA1011819074	AA10119	105.9
2(2)			PLATE		CBOM91440401002	
MF	DR					
5			41440401046 00 00	AA1011819074	AA10119	102.4
1(1)			PLATE		CBOM91440401002	
MF	DR					
6				AA7151115024	AA7151115	0.005
6(6)			NUT HEX. A-8			
SI	DR		M8			
7			41440401302 00	HW1012808980	AA10108	3.8
3(3)			PROFILE		CUT TO SIZE	
MF	DR					
8				AA1011808013	AA10108	145.2
1(1)			PLATE 5X1874X1968			
MF	DR		ST-A(FE410 WA)PLATE			
9			41440401068 00 00	HW1012808980	AA10108	14.5
4(4)			PROFILE		CBOM91440401002	
MF	DR					
10			41440401304 00	HW1012808980	AA10108	7.8
7(7)			PROFILE		CUT TO SIZE	
MF	DR					
11			41440401352 00	HW1012808980	AA10108	13.8
2(2)			PROFILE		CUT TO SIZE	
MF	DR					
12			41440401305 00 00	AA1012508099	AA10108	10.8
2(2)			PROFILE		CUT TO SIZE	
MF	DR					
13			31440401143 00 00	AA1011808013	AA10108	144.7
1(1)			PLATE			
MF	DR					
14			41440401306 00	HW1012808980	AA10108	2.4
4(4)			PROFILE		CUT TO SIZE	
MF	DR					
15				AA1010308050	AA10108	0.8
8(8)			FLAT 50X8 , L=250			
MF	DR		ST-A(FE410 WA)FLAT			

ENGG

Initial Date

Worked By tguessm 23.06.2010
Checked By tguessm 28.06.2010
Approved By tgevk 21.07.2010



BILL OF MATERIAL

Printed
On:11.05.2024

BOM No: 01440401028 Var: 00 Revno: 2 Rev Date: 11.01.2020
Description: AIR GUIDE COVER (WELDED) Tot wt: 1241.54

Printed By:

Item No	Drawingno	Var	Mvar	Mat Code	Mat Spec	Weight
Qty(Total)	Description				Assy. Remarks	
Typ	Cat	Zone	Var/Matl. Description		GRP	Fab Wt
16			41440401062 00 00	AA1011819074	AA10119	1.0
6(6)			STRIP		CBOM91440401002	
MF	DR					
17			41440401303 00	HW1012808980	AA10108	3.9
4(4)			PROFILE		CUT TO SIZE	
MF	DR					
18			41440401061 00 00	AA1011819074	AA10119	0.5
2(2)			STRIP		CBOM91440401002	
MF	DR					
19			41440401307 00	HW1012808980	AA10108	2.4
4(4)			PROFILE		CUT TO SIZE	
MF	DR					

BOM - 01440401028 00

ENGG

Initial Date

Worked By tgesm 23.06.2010
Checked By tgesm 28.06.2010
Approved By tgevk 21.07.2010



BILL OF MATERIAL

Printed
On:11.05.2024

BOM No: 01440401031 Var: 00 Revno: 5 Rev Date: 18.05.2020
Description: AIR GUIDE COVER (WELDED) Tot wt: 674.07

Printed By:

Item No	Drawingno	Var	Mvar	Mat Code	Mat Spec	Weight
Qty(Total)	Description				Assy. Remarks	
Typ	Cat	Zone	Var/Matl. Description		GRP	Fab Wt
0			01440401031 00			674.07
1(1)			AIR GUIDE COVER (WELDED)			
MF	DR				N	674.25
1			41440401311 00 00	AA1011808099	AA10108	2.87
4(4)			SHEET			
MF	DR					
2			41440401351 00	AA1011808013	AA10108	1.255
9(9)			SHEET			
MF	DR					
3			41440401010 00 00	AA1011808030	AA10108	19.5
2(2)			SHEET		BOR 01440401003	
MF	DR					
4			31440401145 00 00	AA1011808099	AA10108	8.482
4(4)			SHEET			
MF	DR					
5			31440401010 00 00	AA1011808030	AA10108	62.642
1(1)			SHEET		BOR 01440401003	
MF	DR					
6			31440401147 00 00	AA1011808030	AA10108	26.031
1(1)			SHEET			
MF	DR					
7			41440401011 00 00	AA1011819074	AA10119	44.5
2(2)			SHEET		BOR 01440401003	
MF	DR					
8			41440401020 00 00	AA1011819074	AA10119	0.66
4(4)			LIFTING LUG		BOR 01440401003	
MF	DR					
9			31440401011 00 00	AA1010308580	AA10108	6.296
2(2)			FLAT		BOR 01440401003	
MF	DR					
10			41440401045 00 00	AA1020218070	AA10218	0.013
2(2)			STUD		BOR01440401003	
MF	DR					
11			21440401002 00			0.42
2(2)			FRAME		BOR 01440401003	
MF	DR				N	
12			41440401338 00 00	AA1011808013	AA10108	1.18
1(1)			SHEET			
MF	DR					
13				AA1010308084	AA10108	2.3
1(1)			FLAT 16X50X400			
MF	DR		ST-A(FE410 WA)FLAT			
14			41440401324 00 00	AA1011808030	AA10108	13.379
4(4)			SHEET			
MF	DR					
15			31440401015 00			18.04
1(1)			SUPPORT		BOR 01440401003	
MF	DR				N	

ENGG

Initial Date

Worked By tguessm 01.07.2010
Checked By tguessm 01.07.2010
Approved By tgevk 05.08.2010



BILL OF MATERIAL

Printed
On:11.05.2024

BOM No: 01440401031 Var: 00 Revno: 5 Rev Date: 18.05.2020
Description: AIR GUIDE COVER (WELDED) Tot wt: 674.07

Printed By:

Item No	Drawingno	Var	Mvar	Mat Code	Mat Spec	Weight
Qty(Total)	Description				Assy. Remarks	
Typ	Cat	Zone	Var/Matl. Description		GRP	Fab Wt
16			41440401012 00 00	AA1011819074	AA10119	32.0
4(4)			SHEET		BOR 01440401003	
MF	DR					
17			31440401012 00 00	AA1010308580	AA10108	3.125
4(4)			FLAT		BOR 01440401003	
MF	DR					
18				AA1011819171	AA10119	12.7
4(4)			STRIP 32X60X842			
MF	DR		ST-FE410 WB-PLATE			
19			41440401038 00 00	AA1011819171	AA10119	8.0
2(2)			STRIP		BOR 01440401003	
MF	DR					
20				HW1041046839	AA10446	1.017
1(1)			TUBE 33.7X2.6X510			
MF	DR		ST-BQ-A1-CDS-TUBE			
21			31440401144 00 00	AA1011808030	AA10108	24.353
1(1)			SHEET			
MF	DR					
22			31440401016 00			13.85
1(1)			SUPPORT		BOR 01440401003	
MF	DR				N	
23			31440401017 00 00	AA1011808056	AA10108	30.42
1(1)			SHEET		BOR 01440401003	
MF	DR					
24			41440401040 00 00	AA1011808056	AA10108	13.52
1(1)			SHEET		BOR 01440401003	
MF	DR					
25				AA7121123371	AA7121123	0.039
58(58)			SCRU HEX A- 8.8			
SI	DR		M12X35			
26				HW7169098024	HW7169098	0.005
58(58)			WASHER LOCK WITH LUG-ST			
SI	DR		13			
27				AA7151115040	AA7151115	0.017
58(58)			NUT HEX. A-8			
SI	DR		M12			
28			41440401312 00 00	AA1011715112	AA10115	0.71
2(2)			SHEET		TECHNOLOGICAL	
MF	DR					
29			31440401146 00 00	AA1011715112	AA10115	2.182
2(2)			SHEET		TECHNOLOGICAL	
MF	DR					
30			31440401070 00 00	AA1011819155	AA10119	2.39
1(1)			FLANGE		CBOM01440401011	
MF	DR					

ENGG

Initial Date

Worked By tguessm 01.07.2010
Checked By tguessm 01.07.2010
Approved By tgevk 05.08.2010



BILL OF MATERIAL

Printed
On:11.05.2024

BOM No: 11440401023 Var: 00 Revno: 1 Rev Date: 22.11.2002
Description: COVER(WELDED) Tot wt: 64.64

Printed By:

Item No	Drawingno	Var	Mvar	Mat Code	Mat Spec	Weight
Qty(Total)	Description				Assy. Remarks	
Typ	Cat	Zone	Var/Matl. Description		GRP	Fab Wt
0			11440401023 00			64.64
1(1)			COVER(WELDED)			
MF	DR				N	
1			31440401068 00 00	AA1012508056	AA10108	2.81
2(2)			ANGLE			
MF	DR					
2			41440401177 00 00	AA1011808056	AA10108	12.26
2(2)			SHEET			
MF	DR					
3			31440401069 00 00	AA1012508056	AA10108	5.57
1(1)			ANGLE			
MF	DR					
4			41440401178 00 00	AA1011808056	AA10108	24.36
1(1)			SEGMENT			
MF	DR					
5			31440401074 00 00	AA1011808013	AA10108	2.0
1(1)			PLATE			
MF	DR					
6			31440401075 00 00	AA1011808013	AA10108	1.0
2(2)			PLATE			
MF	DR					

BOM - 11440401023 00

ENGG

Initial	Date
tgevk	11.09.2001
tgevk	11.09.2001
tgekr	12.11.2001

Worked By
Checked By
Approved By



BILL OF MATERIAL

Printed
On:11.05.2024

BOM No: 11440401039 Var: 00 Revno: 2 Rev Date: 31.01.2015
Description: COVER (WELDED) Tot wt: 64.64

Printed By:

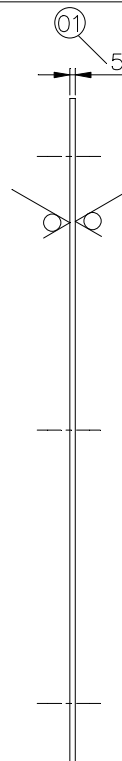
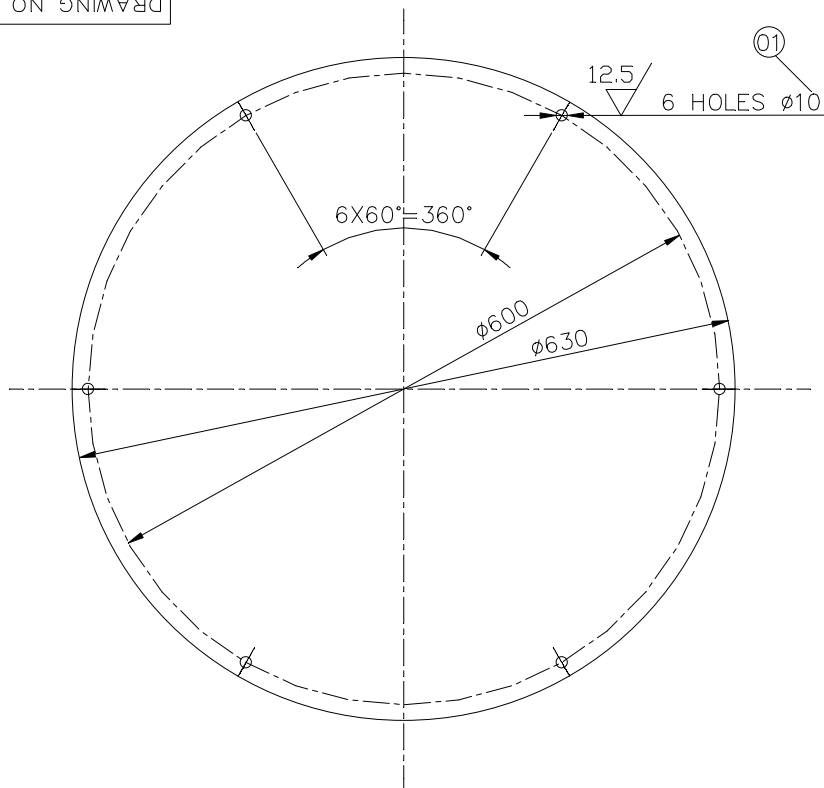
Item No	Drawingno	Var	Mvar	Mat Code	Mat Spec	Weight
Qty(Total)	Description				Assy. Remarks	
Typ	Cat	Zone	Var/Matl. Description		GRP	Fab Wt
0			11440401039 00			64.64
1(1)			COVER (WELDED)			
MF	DR				N	
1			31440401068 00 00	AA1012508056	AA10108	2.81
2(2)			ANGLE		CBOM01440401011	
MF	DR					
2			41440401177 00 00	AA1011808056	AA10108	12.26
2(2)			SHEET		CBOM01440401011	
MF	DR					
3			31440401069 00 00	AA1012508056	AA10108	5.57
1(1)			ANGLE		CBOM01440401011	
MF	DR					
4			41440401310 00 00	AA1011808056	AA10108	24.36
1(1)			PLATE			
MF	DR					
5			31440401074 00 00	AA1011808013	AA10108	2.0
1(1)			PLATE		CBOM01440401011	
MF	DR					
6			31440401075 00 00	AA1011808013	AA10108	1.0
2(2)			PLATE		CBOM01440401011	
MF	DR					
7			31440401150 00			0.86
1(1)			PIPE ASSY.			
MF	DR				N	

BOM - 11440401039 00

ENGG

Initial Date

Worked By tguessm 01.07.2010
Checked By tguessm 01.07.2010
Approved By tgevk 05.08.2010

DRAWING NO.
3144040114050
✓ THE REST

TECHNICAL REQUIREMENTS

1. IDENTIFICATION ACCORDING TO HW 0400397.

2-439043/A/KWU
REF. DRG NO.

SIGN & DATE

INVENTORY NO.

CBOM NO. 01440401033				STATUS OF DRG.											
AGREED DEPT.		NAME		SIGN		DATE									
WTX		AWTXTSC		AWTXTSC		28/08/2010									
GRADE OF UNTOL. DIM.: –															
M/CG– ~~V/C/M/P~~ AA 0230208															
WELDING– ~~A/B/C/D~~ –AA621104															
GAS CUTTING–'T3'AA0621101															
REV.		DATE		ALTERED		REV.		DATE		ALTERED		A.V.		–SD–	
01		27.12.13		CHECKED		SSM		–SD–							
CHANGES AS PER C/A NO. TGE–13–F0396															

TYPE OF PRODUCT OR NAME OF CUSTOMER/ PROJECT			B'LESS EXCITER FOR 800 MW TG				
 BHARAT HEAVY ELECTRICALS LTD. HARDWAR				NAME	SIGN	DATE	NO.OF VAR.
			DRN	STGEAV	STGEAV	19/08/2010	
			CHD	STGESSM	STGESSM	20/08/2010	
			APD	ATGEVK	ATGEVK	31/08/2010	73 / 74
DEPT. TGE		SCALE	WEIGHT(Kg.)	REF. TO ASSY. DRG.		ITEM NO.	NO.OF ITEMS
CODE 4133		1: 5		12.22	31440401139		
TITLE			1	3	DRAWING NO. 31440401140		7 / 22
PLATE					SHEET NO. 1		NO.OF SHEETS 1

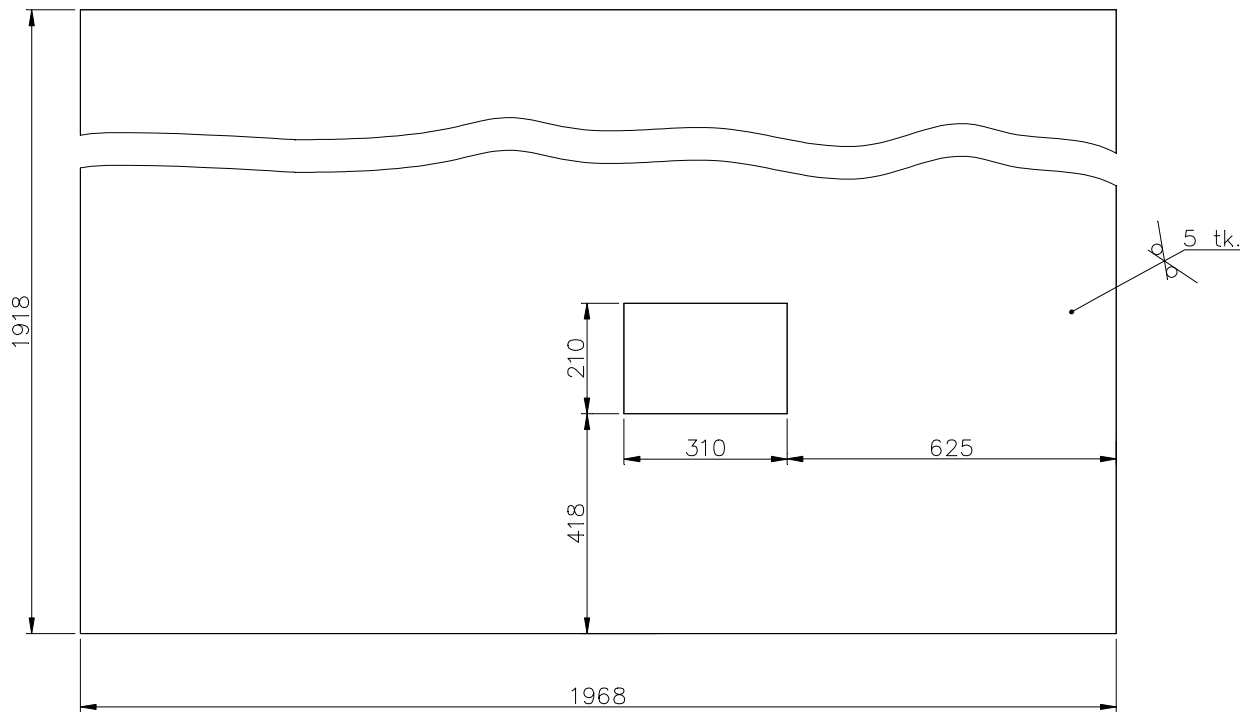
FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

FORM: DG-38(B)

DRAWING NO.
31440401141

50/ THE REST



TECHNICAL REQUIREMENTS

1. MARK IDENTIFICATION ACCORDING TO HW 0400397
2. ALLOWED TO BE MADE IN PARTS WITH WELD SEAM ∇ 5MM.

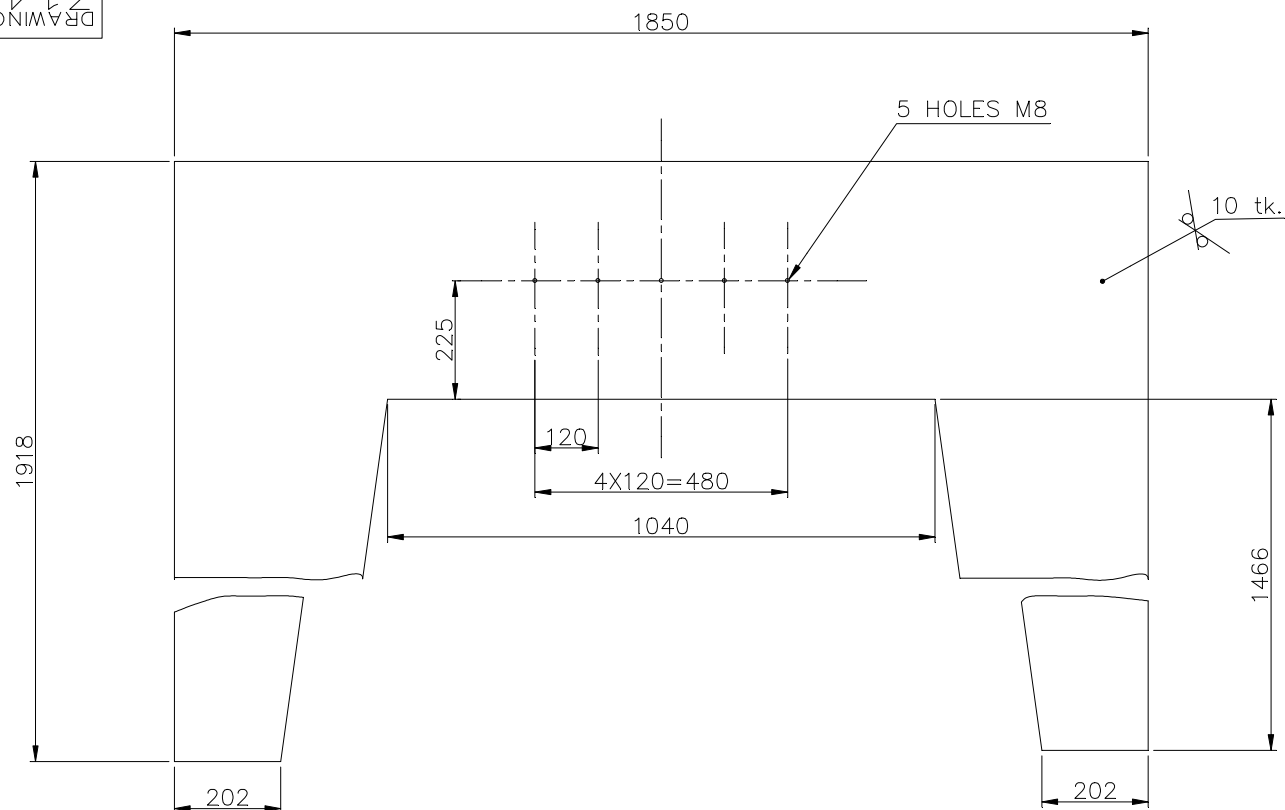
GRADE OF UNTOL. DIM.: -				CBOM NO. 01440401028		STATUS OF DRG.		TYPE OF PRODUCT OR NAME OF CUSTOMER/ PROJECT				B'LESS EXCITER FOR 800MW TG											
M/CG- V/C/M/F AA 0230208				WTX		AWTXTSC		AWTXTSC		24/07/2010													
WELDING-A/B/C/D-AA621104																							
GAS CUTTING-'T3'AA0621101																							
REV.		DATE		ALTERED		REV.		DATE		ALTERED		DEPT. TGE		SCALE		WEIGHT(Kg.)		REF. TO ASSY. DRG.		ITEM NO.		NO.OF ITEMS	
				CHECKED						CHECKED		CODE 4133		1:10		145.6		01440401028		001		73, 74	
												TITLE				DRAWING NO. 31440401141				7, 22, 23, 24			
																SHEET NO.1				NO.OF SHEETS 1			

FIRST ANGLE PROJECTION

DOC REV NO.: 0

(ALL DIMENSIONS ARE IN mm)

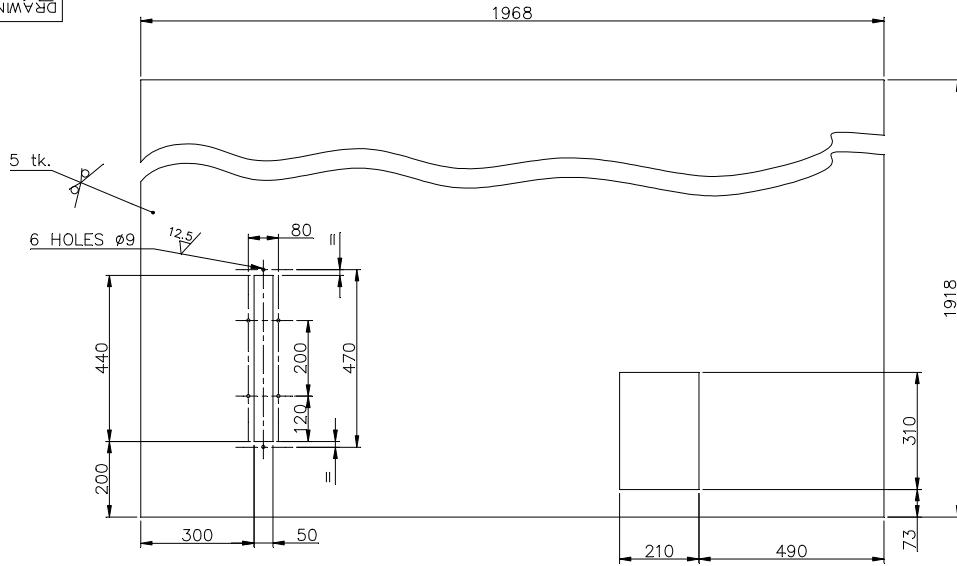
FORM: DG-38(B)

DRAWING NO.
3144040114250/
THE REST

TECHNICAL REQUIREMENTS

1. MARK IDENTIFICATION ACCORDING TO HW0400397

GRADE OF UNTOL. DIM.: -				CBOM NO. 01440401028		STATUS OF DRG.		TYPE OF PRODUCT OR NAME OF CUSTOMER/ PROJECT				B'LESS EXCITER FOR 800MW TG											
M/CG- V/C/M/F AA 0230208				WTX		AWTXTSC		AWTXTSC		24/07/2010													
WELDING-A/B/C/D-AA621104																							
GAS CUTTING-'T3'AA0621101																							
REV.		DATE		ALTERED		REV.		DATE		ALTERED		DEPT. TGE		SCALE		WEIGHT(Kg.)		REF. TO ASSY. DRG.		ITEM NO.		NO.OF VAR.	
				CHECKED						CHECKED		CODE 4133		1:10		135		01440401028		002		73, 74	
												TITLE		PLATE		1 3		DRAWING NO. 31440401142		7 22 23, 24		75, 77	
																		SHEET NO.1		NO.OF SHEETS 1		SIZE A3	

DRAWING NO.
3144040114350°
THE REST

TECHNICAL REQUIREMENTS

1. MARK IDENTIFICATION ACCORDING TO HW 0400397
2. ALLOWED TO BE MADE IN PARTS WITH WELD SEAM ∇ 5MM.

26-5605-11444/014
REF. DRG NO.

SIGN & DATE

INVENTORY NO.

CBOM NO.		STATUS OF DRG.	
01440401028			
AGREED	NAME	SIGN	DATE
WTX	AWT	XTSC	24/07/2010

GRADE OF UNTOL. DIM.: -

M/CG- V/C/M/F AA 0230208

WELDING-A/B/C/D-AA621104

GAS CUTTING-'T3'AA0621101

REV. DATE ALTERED

CHECKED

REV. DATE ALTERED

CHECKED

TYPE OF PRODUCT B'LESS EXCITER FOR
OR
NAME OF CUSTOMER/ PROJECT 800MW TGBHARAT HEAVY ELECTRICALS LTD.
HARDWAR

DEPT. TGE

CODE 4133



SCALE

1:10

WEIGHT(Kg.)

144.7

TITLE

PLATE

DRN	NAME	SIGN	DATE	NO.OF VAR.
CHD	STGEVK	STGEVK	23/07/2010	
APD	STGEVK	STGEVK	26/07/2010	73, 74
REF. TO ASSY. DRG.	REF. TO ASSY. DRG.	REF. TO ASSY. DRG.	REF. TO ASSY. DRG.	REF. TO ASSY. DRG.
ITEM NO.	ITEM NO.	ITEM NO.	ITEM NO.	ITEM NO.
013	013	013	013	013
75, 77	75, 77	75, 77	75, 77	75, 77

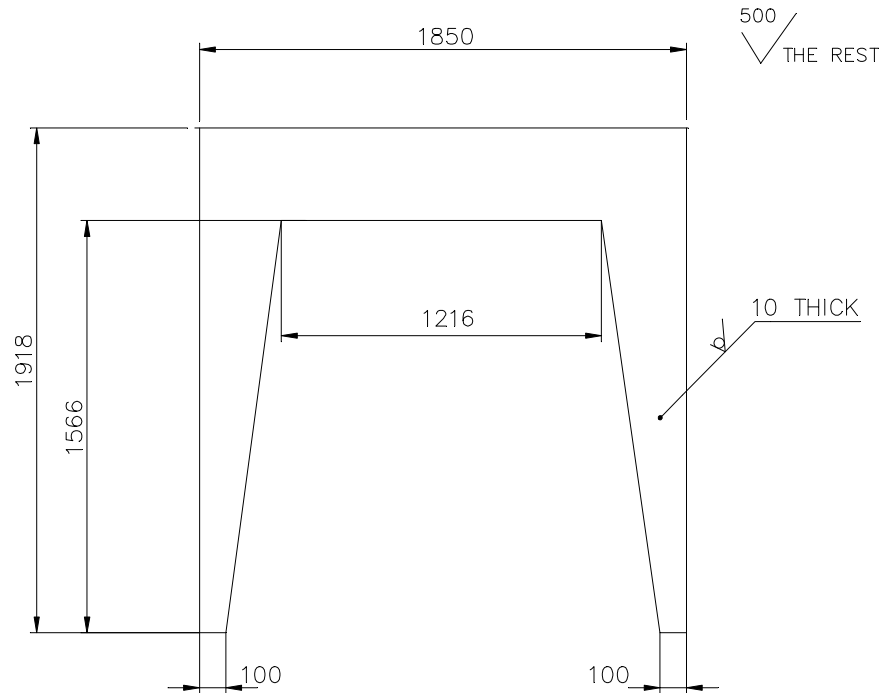
DRAWING NO.
31440401143

SHEET NO.1 NO.OF SHEETS 1

SIZE A3

FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN mm) FORM DG 39(B)

REV	DATE	ALTERED	REV	DATE	ALTERED	RM	-S/D-	CBOM No.		STATUS	
		CHECKED	01	15.11.13	CHECKED	SSM	-S/D-	91440401002		OF DRG	
			CHANGES ACCORDING TO CH. AD. NO.- TGE-13-F0359				AGREED	NAME	SIGN	DATE	
							DEPT.	WT	SKC	SD/-	5/02/83
GRADE OF UNTOL.DIM.M/CGC/M/F.AA0230208						WELDING A/B/C/D AA0621104		GAS CUTTING-T3 AA0621101			



TECHNICAL REQUIREMENTS

1- MARK IDENTIFICATION ACCORDING TO HW 0400.397.

01

SUPERSEDES THE OLD
DRG. UNDER THE SAME NO.
TGE-13-F0359



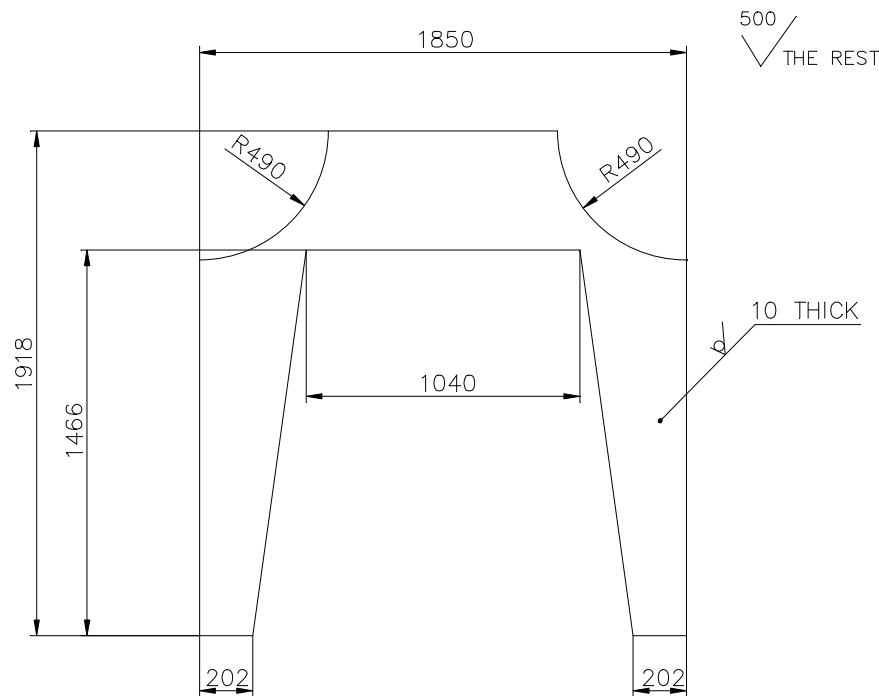
BHARAT HEAVY ELECTRICALS LTD
HARDWAR

	NAME	SIGN	DATE	NO. OF VAR
DRN	Y.C.GARG	SD/-	11/5/81	
CHD	SM/KNW	SD/-	26/2/83	
APD	N.P.GUPTA	SD/-	28/02/83	

INVENTORY No.	DEPT. TGE	SCALE	WEIGHT(Kg)	REF.TD ASSY.DRG.	ITEM No.	No OF ITEMS
	CODE 4133	1: 20	102.40	91440401002	005	-
TITLE				DRAWING No.		
PLATE				41440401046		
BRUSHLESS EXCITER FOR 500MW TG.				SHEET No. 1	No.OF SHEETS	1

FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN mm) FORM DG 39(B)

REV	DATE	ALTERED	REV	DATE	ALTERED	RM	-S/D-	CBOM No.			STATUS	
		CHECKED	01	15.11.13	CHECKED	SSM	-S/D-	91440401002			OF DRG	
			CHANGES ACCORDING TO CH. AD. NO.— TGE-13-F0359					AGREED	NAME	SIGN	DATE	
								DEPT.				
								WT	SKC	SD/-	5/02/83	
GRADE OF UNTO L DIM M / C/C / M / F AA0230208								WELDING A/B/C/D AA0621104				GAS CUTTING-T3 AA0621101

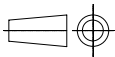


TECHNICAL REQUIREMENT

1— MARK IDENTIFICATION ACCORDING TO HW 0400.397.

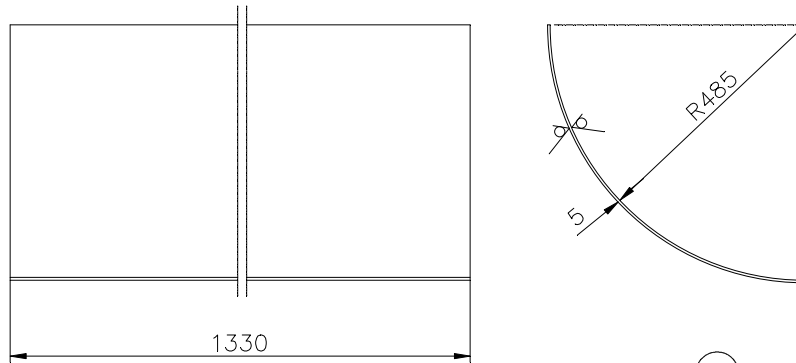
01

SUPERSEDES THE OLD
DRG. UNDER THE SAME NO.
TGE-13-F0359

SIGN & DATE	BHARAT HEAVY ELECTRICALS LTD HARDWAR				NAME		SIGN		DATE		NO. OF VAR				
					DRN Y.C.GARG		SD/-		12/5/81		00				
					CHD SM/KNW		SD/-		26/2/83						
					APD N.P.GUPTA		SD/-		28/02/83						
INVENTORY No.	DEPT. TGE			SCALE		WEIGHT(Kg)		REF. TO ASSY.DRG.				ITEM No.		No OF ITEMS —	
	CODE 4133			1: 20		105.90		91440401002				004			
	TITLE					DRAWING No.									
	PLATE					41440401047									
	BRUSHLESS EXCITER FOR 500MW TG.					SHEET No. 1					No. OF SHEETS 1				

FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN mm) FORM DG 39(B)

REV	DATE	ALTERED	REV	DATE	ALTERED RM	-S/D-	CBOM No.	STATUS
		CHECKED	01	15.11.13	CHECKED SSM	-S/D-	91440401002	OF DRG
			CHANGES ACCORDING TO			AGREED	NAME	SIGN
			CH. AD. NO.—			DEPT.	WT	SKC
			TGE-13-F0359				SD/-	5/02/83
GRADE OF UNTO			DIM/M/C/C/M/F			AA0230208		
			WELDING A/B/C/D			AA0621104		
			GAS CUTTING-T3			AA0621101		

500
✓
THE REST

01

SUPERSEDES THE OLD
DRG. UNDER THE SAME NO.
TGE-13-F0359

TECHNICAL REQUIREMENT

- 1- MARK IDENTIFICATION ACCORDING TO HW 0400397.
- 2- MEAN DEVELOPED LENGTH=766.

BHARAT HEAVY ELECTRICALS LTD
HARDWAR

	NAME	SIGN	DATE	NO. OF VAR
DRN	Y.C.GARG	SD/-	23/5/81	00
CHD	SM/KNW	SD/-	26/2/83	
APD	N.P.GUPTA	SD/-	28/02/83	

INVENTORY No.	DEPT. TGE	SCALE	WEIGHT(Kg)	REF.TD ASSY.DRG.	ITEM No.	No OF ITEMS
	CODE 4133	1:10	40.000	91440401002	003	—
TITLE				DRAWING No.		
PLATE				41440401052		
BRUSHLESS EXCITER FOR 500MW TG.				SHEET No. 1 No.OF SHEETS 1		

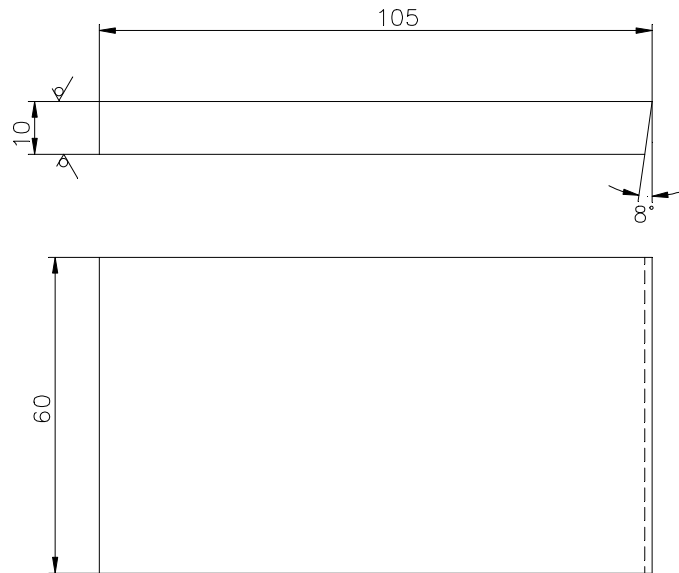
FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN mm) FORM DG 39(B)

REV	DATE	ALTERED	REV	DATE	ALTERED	RM	-S/D-	CBOM No.	STATUS
		CHECKED	01	15.11.13	CHECKED	SSM	-S/D-	91440401002	OF DRG
CHANGES ACCORDING TO			AGREED		NAME	SIGN	DATE		
			CH. AD. NO.-		WT	SKC	SD/-	15/02/83	
			TGE-13-F0359						

GRADE OF UNTO L	DIM M/C	GC/M/F	AA0230208	WELDING A/B/C/D	AA0621104	GAS CUTTING-T3	AA0621101
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500

✓ THE REST



TECHNICAL REQUIREMENT

1- MARK IDENTIFICATION ACCORDING TO HW 0400.397.

01

SUPERSEDES THE OLD
DRG. UNDER THE SAME NO.
TGE-13-F0359



BHARAT HEAVY ELECTRICALS LTD
HARDWAR

	NAME	SIGN	DATE	NO. OF VAR
DRN	Y.C.GARG	SD/-	31/5/81	
CHD	SM/KNW	SD/-	26/2/83	
APD	N.P.GUPTA	SD/-	28/02/83	00

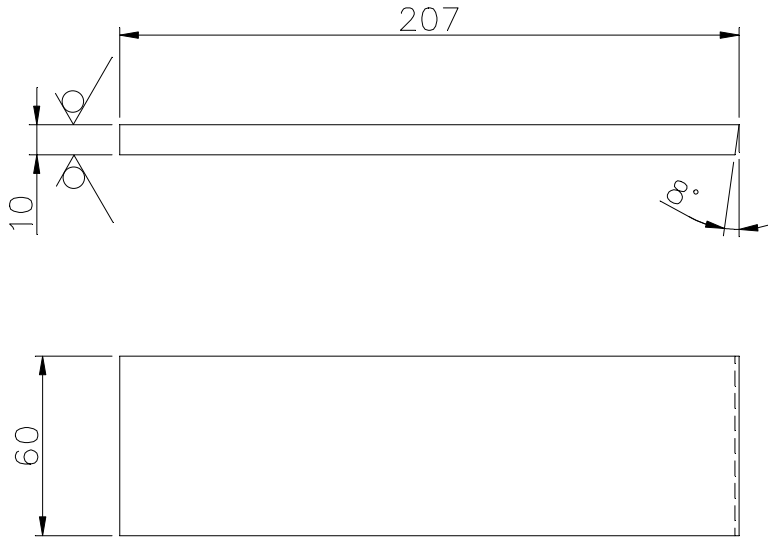
INVENTORY No.	DEPT. TGE	SCALE	WEIGHT(Kg)	REF. TO ASSY.DRG.	ITEM No.	No OF ITEMS
	CODE 4133	1:1	0.500	91440401002	018	-
TITLE				DRAWING No.		
STRIP				41440401061		
BRUSHLESS EXCITER FOR 500MW TG.				SHEET No. 1	No. OF SHEETS	1

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm) FORM DG 39(B)

REV	DATE	ALTERED	REV	DATE	ALTERED	P.A.	-S/D-	CBOM No.			STATUS
		CHECKED	01	10.12.13	CHECKED	SSM	-S/D-	9-144-04-01002			OF DRG
			CHANGES ACCORDING TO CH. AD. NO.- TGE-13-F0383					AGREED DEPT.	NAME	SIGN	DATE
								WT	S.K.K.	-SD-	26.2.83
GRADE OF UNTOL.DIM.M/CGC/M/F.AA0230208				WELDING A/B/C/D AA0621104				GAS CUTTING-T3 AA0621101			

500
✓ THE REST



TECHNICAL REQUIREMENT

1. MARK IDENTIFICATION ACCORDING TO HW0400397.

26-5605-86399a/KWU
REF.DRG.No. IT. 25

SIGN & DATE



BHARAT HEAVY ELECTRICALS LTD
HARDWAR

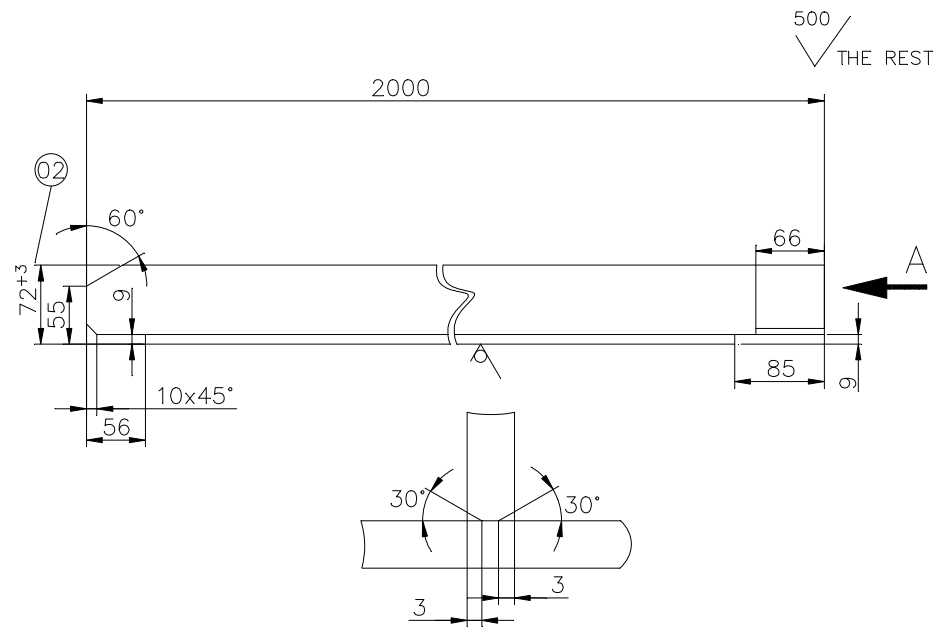
	NAME	SIGN	DATE	NO. OF VAR
DRN	Y.C.GARG	-SD-	31.5.81	
CHD	SM/KNW	-SD-	26.2.83	
APD	N.P.GUPTA	-SD-	28.2.83	

INVENTORY No.	DEPT. TGE		SCALE	WEIGHT(Kg)	REF.TO ASSY.DRG.	ITEM No.	No OF ITEMS
	CODE 4133		1: 2.5	1.000	9-144-04-01002	016	
	TITLE STRIP				DRAWING No. 4-144-04-01062		
	BRUSHLESS EXCITER FOR 500MW TG.				SHEET No. 1		No.OF SHEETS 1

01
SUPERSEDES THE OLD
DRG. UNDER THE SAME NO.
TGE-13-F0383

FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN mm) FORM DG 39(B)

REV	DATE	ALTERED	STG	EP	REV	DATE	ALTERED	RM	-S/D-	CBOM No.			STATUS
02	7.2.20	CHECKED	STG	EP	01	15.11.13	CHECKED	SSM	-S/D-	91440401002			OF DRG
CHANGES AS PER C/A NO TGE-20-F0028					CHANGES ACCORDING TO CH. AD. NO.- TGE-13-F0359					AGREED DEPT.	NAME	SIGN	DATE
										WT	SKC	SD/-	5/02/83
GRADE OF UNTO L DIM M / C C / M / F . AA0230208 WELDING A/B/C/D AA0621104 GAS CUTTING-T3 AA0621101													

VIEW-A
SCALE 1:1

TECHNICAL REQUIREMENT

1- MARK IDENTIFICATION ACCORDING TO HW 0400397.

01

SUPERSEDES THE OLD
DRG. UNDER THE SAME NO.
TGE-13-F0359

BHARAT HEAVY ELECTRICALS LTD
HARDWAR

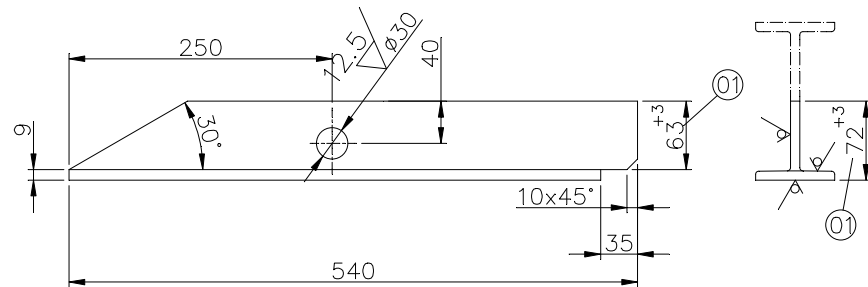
	NAME	SIGN	DATE	NO. OF VAR
DRN	Y.C.GARG	SD/-	06/6/81	00
CHD	SM/KNW	SD/-	26/2/83	
APD	N.P.GUPTA	SD/-	28/02/83	

INVENTORY No.	DEPT. TGE	SCALE	WEIGHT(Kg)	REF. TO ASSY.DRG.	ITEM No.	No OF ITEMS
CODE 4133		1:5	14.5	91440401002	009	-
TITLE				DRAWING No.		
PROFILE				41440401068		
BRUSHLESS EXCITER FOR 500MW TG.				SHEET No. 1 No. OF SHEETS 1		

FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN mm) FORM DG 39(B)

REV	DATE	ALTERED	REV	DATE	ALTERED	STGEPA	CBOM No.	STATUS
		CHECKED	01	7.2.20	CHECKED	STGERY	01440401028	DF DRG
			CHANGES AS PER C/A NO			AGREED	NAME	SIGN
			TGE-20-FO026			DEPT.	AWT	DATE
						WTX	AWT	24/07/2010

GRADE OF UNTO L.DIM/M/CGC/M/F.AA0230208 WELDING A/B/C/D AA0621104 GAS CUTTING-T3 AA0621101

50/
THE REST

TECHNICAL REQUIREMENTS

1. MARK IDENTIFICATION ACCORDING TO HW 0400397.

26-5605-114441/032
REF.DRG.No.

SIGN & DATE

BHARAT HEAVY ELECTRICALS LTD
HARDWAR

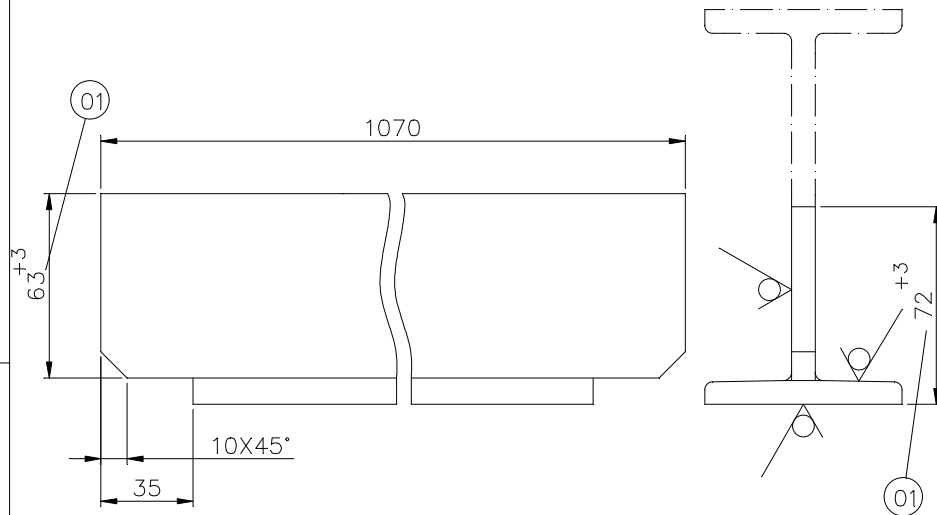
	NAME	SIGN	DATE	NO. OF VAR
DRN	STGEVK	STGEVK	23/07/2010	
CHD	STGESSM	STGESSM	23/07/2010	
APD	ATGEVK	ATGEVK	26/07/2010	

INVENTORY No.	DEPT.TGE	SCALE	WEIGHT(Kg)	REF.TO ASSY.DRG.	ITEM No.	No OF ITEMS
	CODE 4133	1:5	3.8	01440401028	007	
TITLE				DRAWING No.		
PROFILE				41440401302		
(B'LESS EXCITER FOR 800MW TG)				SHEET No.1	No.OF SHEETS1	

FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN mm) FORM DG 39(B)

REV	DATE	ALTERED CHECKED	REV	DATE	ALTERED CHECKED	STGEPA STGERY	CBOM No. 01440401028			STATUS OF DRG	
			01	7.2.20			AGREED DEPT.	NAME	SIGN	DATE	
					CHANGES AS PER C/A NO TGE-20-FO026		WTX	AWTXTSCA	AWTXTSCA	24/07/2010	
GRADE OF UNTOOL.DIM.M/CGC/M/F.AA0230208			WELDING A/B/C/D AA0621104			GAS CUTTING-T3 AA0621101					

50/ THE REST



TECHNICAL REQUIREMENTS

1. MARK IDENTIFICATION ACCORDING TO HW0400397

SIGN & DATE	BHARAT HEAVY ELECTRICALS LTD HARDWAR				NAME	SIGN	DATE	NO. OF VAR	
				DRN	STGEVK	STGEVK	23/07/2010		
				CHD	STGESSM	STGESSM	23/07/2010		
				APD	ATGEVK	ATGEVK	26/07/2010		
INVENTORY No.	DEPT.TGE		SCALE	WEIGHT(Kg)	REF.TD ASSY.DRG.			ITEM No.	No. OF ITEMS
	CODE 4133		1: 2	7.8	01440401028			010	
	TITLE				DRAWING No.				
	PROFILE				41440401304				
	(B'LESS EXCITER FOR 800MW TG)				SHEET No.1			No.OF SHEETS1	

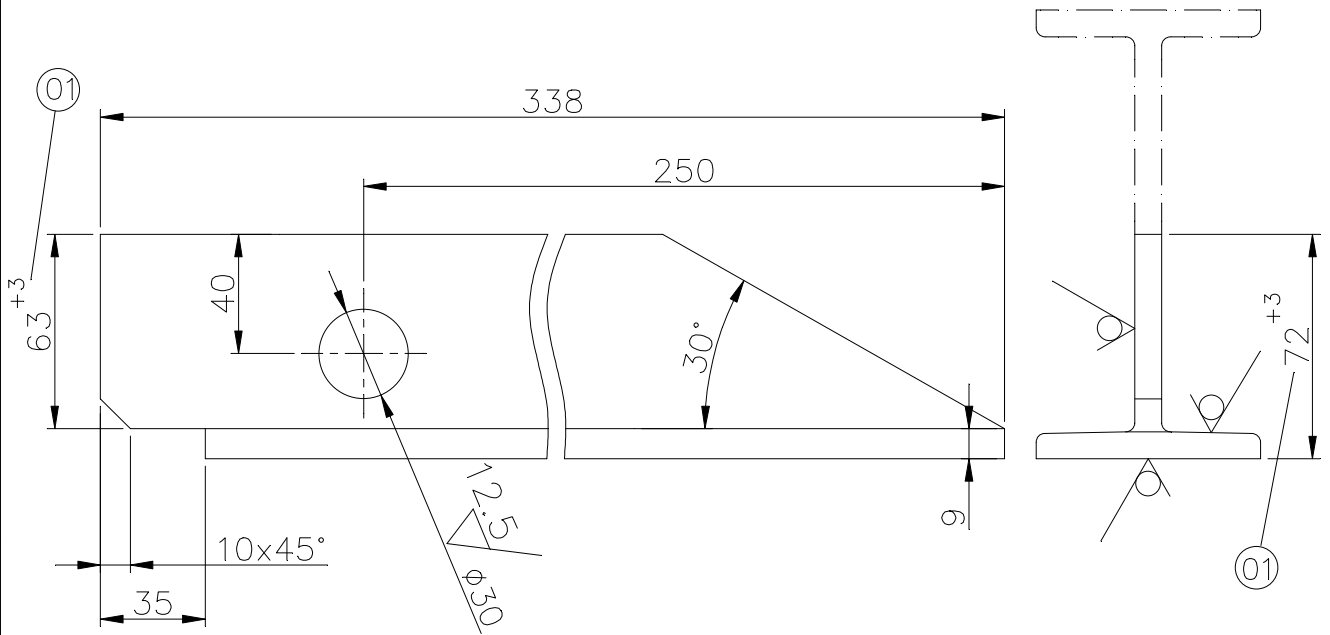
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FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm) FORM DG 39(B)

REV	DATE	ALTERED CHECKED	REV	DATE	ALTERED STGEPA CHECKED STGERY	CBOM No. 01440401028		STATUS OF DRG	
			01	7.2.20		AGREED DEPT. WTX	NAME AWTXTSC	SIGN AWTXTSC	DATE 24/07/2010
			CHANGES AS PER C/A NO TGE-20-FO026						
GRADE OF UNTOL.DIM.M/CGC/M/F.AA0230208			WELDING A/B/C/D AA0621104			GAS CUTTING-T3 AA0621101			

50/ THE REST



TECHNICAL REQUIREMENTS

- MARK IDENTIFICATION ACCORDING TO HW 0400397.

26-5605-114441/033
REF.DRG.No.

SIGN & DATE

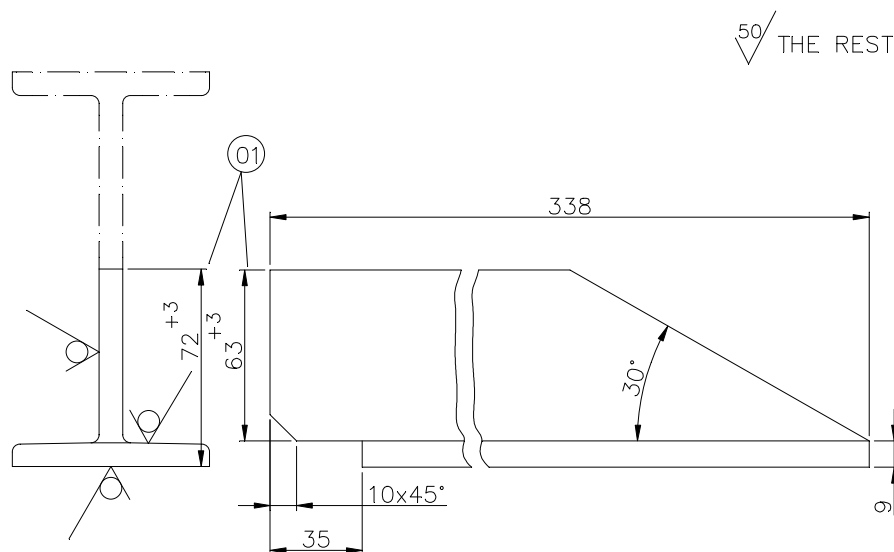
BHARAT HEAVY ELECTRICALS LTD
HARDWAR

	NAME	SIGN	DATE	NO. OF VAR
DRN	STGEVK	STGEVK	23/07/2010	
CHD	STGESSM	STGESSM	23/07/2010	
APD	ATGEVK	ATGEVK	26/07/2010	

INVENTORY No.	DEPT.TGE		SCALE	WEIGHT(Kg)	REF.TO ASSY.DRG.	ITEM No.	No OF ITEMS
	CODE 4133		1: 2.5	2.4	01440401028	014	
	TITLE PROFILE (B'LESS EXCITER FOR 800MW TG)				DRAWING No. 41440401306		
					SHEET No.1		No.OF SHEETS1

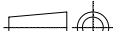
REV	DATE	ALTERED	REV	DATE	ALTERED	STGEPA	CBOM No.			STATUS
		CHECKED	01	7.2.20	CHECKED	STGERY	01440401028			OF DRG
			CHANGES AS PER C/A NO TGE-20-FO026				AGREED	NAME	SIGN	DATE
							DEPT.			
							WTX	AWTXTSC	AWTXTSC	24/07/2010
GRADE OF UNTOL.DIM.M/CGC/M/F.AA0230208			WELDING A/B/C/D AA0621104				GAS CUTTING-T3 AA0621101			

GRADE OF UNTOL.DIM.M/CGC/M/F.AA0230208	WELDING A/B/C/D AA0621104	GAS CUTTING-T3 AA0621101
--	---------------------------	--------------------------



TECHNICAL REQUIREMENTS

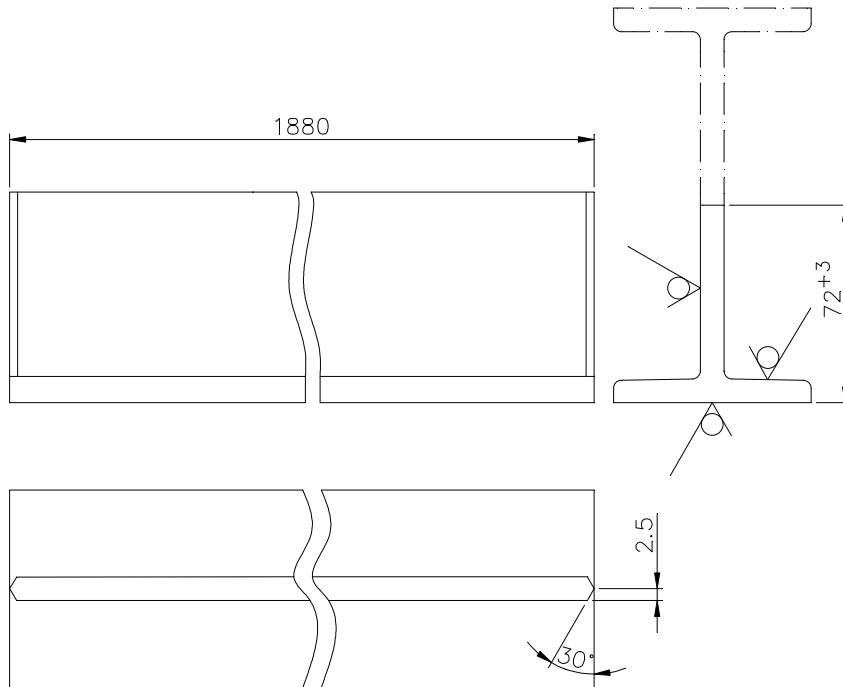
1. MARK IDENTIFICATION ACCORDING TO HW 0400397.

 BHARAT HEAVY ELECTRICALS LTD HARDWAR		NAME		SIGN	DATE	NO. OF VAR
		DRN	STGEVK	STGEVK	23/07/2010	
		CHD	STGESSM	STGESSM	23/07/2010	
		APD	ATGEVK	ATGEVK	26/07/2010	
DEPT.TGE		SCALE	WEIGHT(Kg)	REF.TD ASSY.DRG.	ITEM No.	No. OF ITEMS
CODE 4133		1: 2	2.4	01440401028	019	
TITLE PROFILE (B'LESS EXCITER FOR 800MW TG)				DRAWING No.		
				41440401307		
				SHEET No.1	No. OF SHEETS 1	

FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN mm) FORM DG 39(B)

REV	DATE	ALTERED CHECKED	REV	DATE	ALTERED CHECKED	CBOM No. 01440401028	STATUS OF DRG
						AGREED DEPT. WTX	NAME AWTXAS SIGN AWTXAS DATE 24/08/2021
GRADE OF UNTOOL DIM/M/CGE/M/F AA0230208						WELDING A/B/C/D AA0621104	GAS CUTTING-T3 AA0621101

50/ THE REST



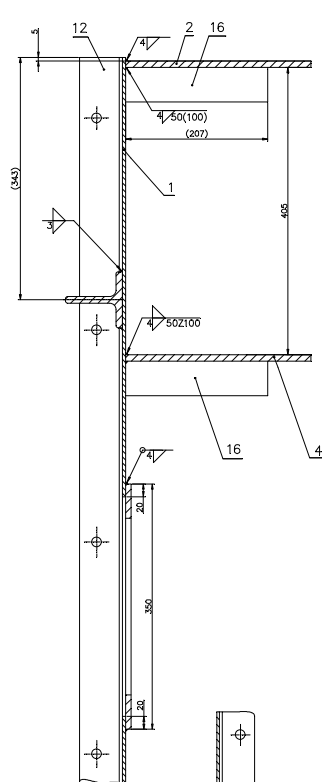
TECHNICAL REQUIREMENT:

1. MARK IDENTIFICATION ACCORDING TO HW0400397.

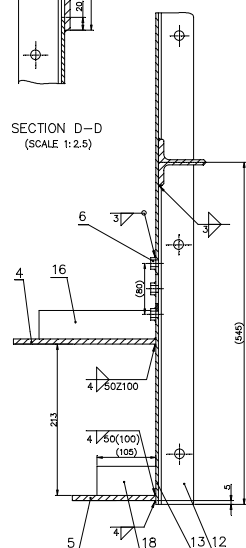
BHARAT HEAVY ELECTRICALS LTD
HARDWAR

	NAME	SIGN	DATE	NO. OF VAR
DRN	STGEPA	STGEPA	24/08/2021	
CHD	STGESSM	STGESSM	24/08/2021	
APD	STGESSM	STGESSM	24/08/2021	

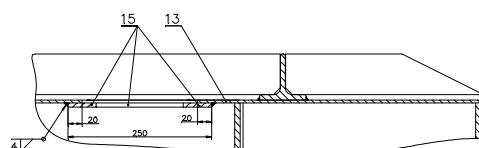
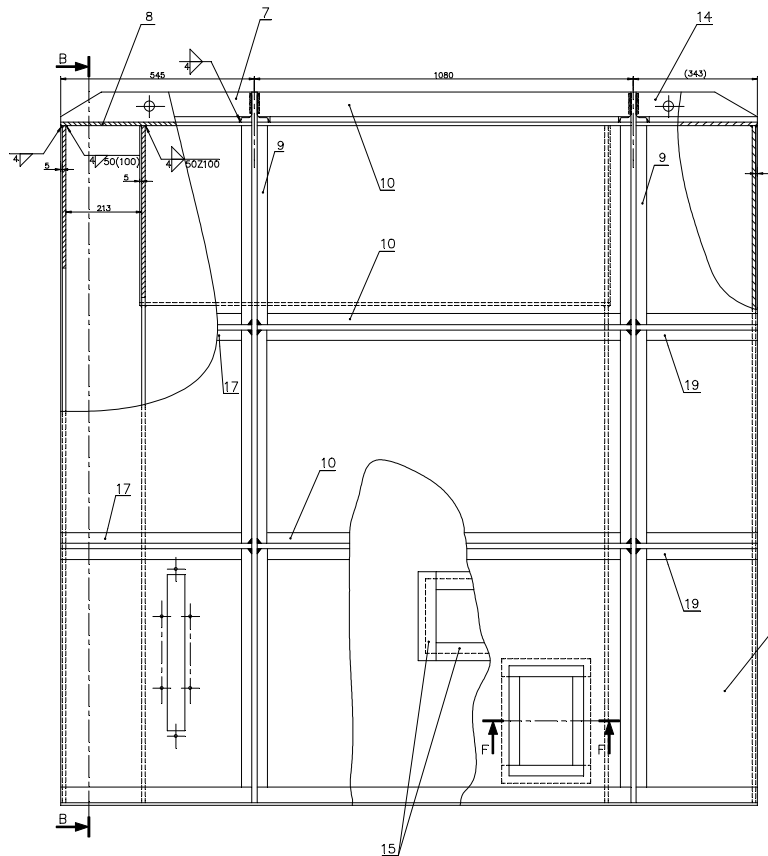
INVENTORY No.	DEPT.TGE	SCALE	WEIGHT(Kg)	REF.TD ASSY.DRG.	ITEM No.	No OF ITEMS
	CODE 4133	1:2	13.80	01440401028	011	
TITLE PROFILE (B'LESS EXCITER FOR 800MW TG)				DRAWING No. 41440401352		
				SHEET No.1	No.OF SHEETS1	



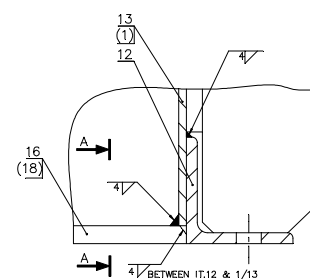
SECTION D-1
(SCALE 1:2.5)



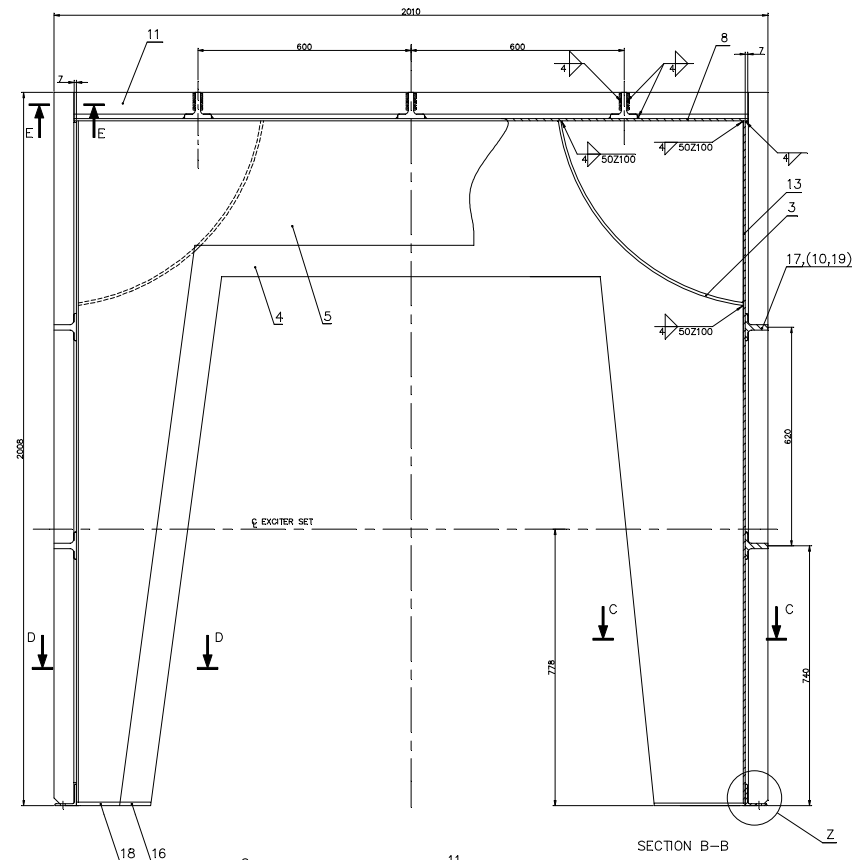
SECTION C-C
(SCALE 1:2.5)



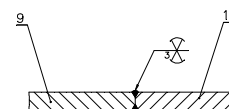
SECTION F-F
(SCALE 1:2.5)



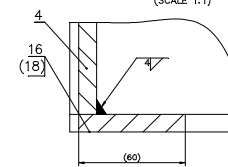
DETAIL-Z
(SCALE 1:1)



SECTION B-B



SECTION E-1
(SCALE 1:1)



SECTION A-A
(SCALE 1:1)

TECHNICAL REQUIREMENTS

1. MARK IDENTIFICATION ACCORDING TO HW0403937.
2. QUALITY GRADE OF WELDS, AS PER HW0620099 CK/CS. TEST SCORE ACCORDING TO HW0850912 CATEGORY OF SERVICE REQUIREMENTS 4.
3. MAINTAIN PEE parallel to HORIZONTAL AXIS AND ALL VERTICAL MEMBERS PERPENDICULAR TO HORIZONTAL AXIS. THIS IS ESSENTIAL TO GROUP FOUR FLOWING A CIRCLED ANGLE AROUND MAIN EXISTING OPERATOR AT 3000RPM, GENERATING HEAVY CURRENT FOR BOOMY TO ROTOR.
4. A SHAFT MOUNTED FAN BLOWS AIR INTO THE AIR GUIDE COVERS & HOT AIR IS DISCHARGED AT THE BOTTOM OF COVERS.
5. DIMENSIONS IN BRACKETS ARE FOR REFERENCE ONLY.
6. SURFACE TREATMENT ACCORDING TO TECHNOLOGICAL INSTRUCTION NO. 0912.015.

SYMBOL & SIZE OF SEAM	4	3	4
SEAM LENGTH M	85.500	0.740	0.250
WT. OF DEPOSITED METAL Kg.	5.370	0.500	0.150
TYPE OF ELECTRODE	E-7018		

[illegible]

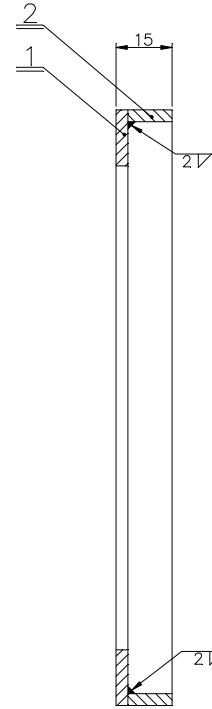
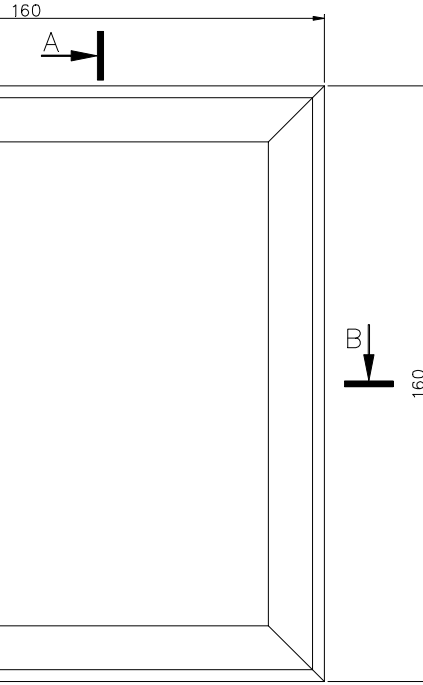
DRAWING NO.

21440401002

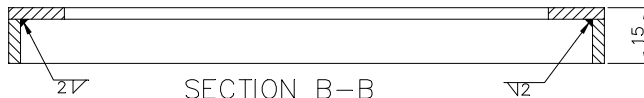
TACK WELD
ALL JOINTS2
1

B

A



SECTION A-A



SECTION B-B

01
SUPERSEDES

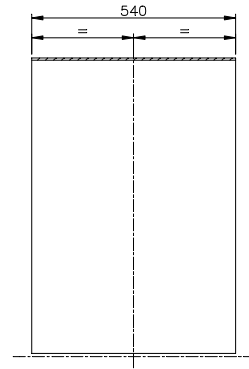
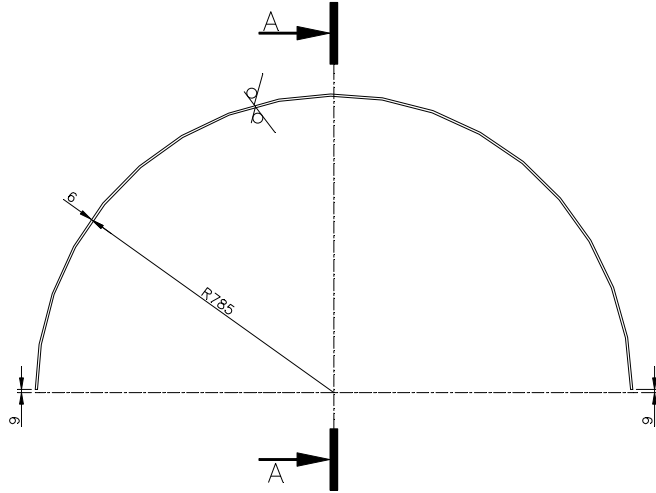
TECHNICAL REQUIREMENTS

1. CLASSIFICATION GROUPS ACCORDING TO HW0620099 : CK.
2. TEST SCOPE ACCORDING TO HW0850199: CATEGORY OF SERVICE REQUIREMENTS 4.
3. IDENTIFICATION ACCORDING TO HW0400397.

CBOM NO. 01440401003				STATUS OF DRG.							
AGREED DEPT.		NAME	SIGN	DATE							
WT		CHHABRA	-SD-	23.9.81							
						GRADE OF UNTOL. DIM.: -					
						M/CG- ~~V/C~~ /M/P AA 0230208					
						WELDING- ~~A/B/C/D~~ -AA0621104					
GAS CUTTING-'T3'AA0621101											
REV.	DATE	ALTERED		PA							
		CHECKED									
						REV. DATE ALTERED PA -SD- 01 26.02.22 CHECKED RM -SD-					
						CHANGES AS PER C/A NO. TGE-22-F0039					

TYPE OF PRODUCT OR
NAME OF CUSTOMER/ PROJECT
BRUSHLESS EXCITER FOR
500MW TG

 BHARAT HEAVY ELECTRICALS LTD. HARDWAR		NAME		SIGN	DATE	NO. OF VAR.	
		DRN		TNG	-SD-		25.4.81
		CHD		KSR/KNW	-SD-		22.9.81
		APD		NPG	-SD-		28.9.81
DEPT. TGE		SCALE		WEIGHT(Kg.)	REF. TO ASSY. DRG.	ITEM NO.	NO. OF ITEMS
CODE 4133				1:1	0.422	01440401001	011
TITLE				1	3	DRAWING NO. 21440401002	
FRAME						7 22 23 24	
				SHEET NO. 1		NO. OF SHEETS 1	

500/
THE RESTDRAWING NO.
31440401010

SECTION A-A

DEVELOPED LENGTH=2458

TECHNICAL REQUIREMENT: -

1. IDENTIFICATION ACCORDING TO HW0400397.

02
SUPERSEDES

26-5807-86456/100 (ITEM No.1)

REF. DRG NO.

SIGN & DATE

INVENTORY NO.

CBOM NO.		STATUS OF DRG.	
01440401003			
APPROVED	NAME	SIGN	DATE
WT	CHHABRA	-SD-	23.9.81

GRADE OF UNTOL. DIM.: -

M/CG- Y/q/M/AA 0230208

WELDING-A/B/C/D-AA0621104

GAS CUTTING-'T3'AA0621101

REV. DATE ALTERED
CHECKEDREV. DATE ALTERED P.A. -SD-
02 26.02.22 CHECKED RM -SD-CHANGES AS PER C/A
NO.
TGE-22-F0039TYPE OF PRODUCT OR
BRUSHLESS EXCITER FOR
500MW TG

NAME OF CUSTOMER/ PROJECT

BHARAT HEAVY ELECTRICALS LTD.
HARDWAR

DEPT. TGE

CODE 4133



SCALE

1:10

WEIGHT(Kg.)

62.642

NAME	SIGN	DATE	NO.OF VAR.
TNG	-SD-	18.4.81	-
KSR/KNW	-SD-	22.9.81	-
NPG	-SD-	28.9.81	73, 74

REF. TO ASSY. DRG.

01440401001

ITEM NO. 005

NO.OF ITEMS - 75, 77

TITLE

SHEET

DRAWING NO.

31440401010

SHEET NO. 1

NO.OF SHEETS 1

SIZE A3

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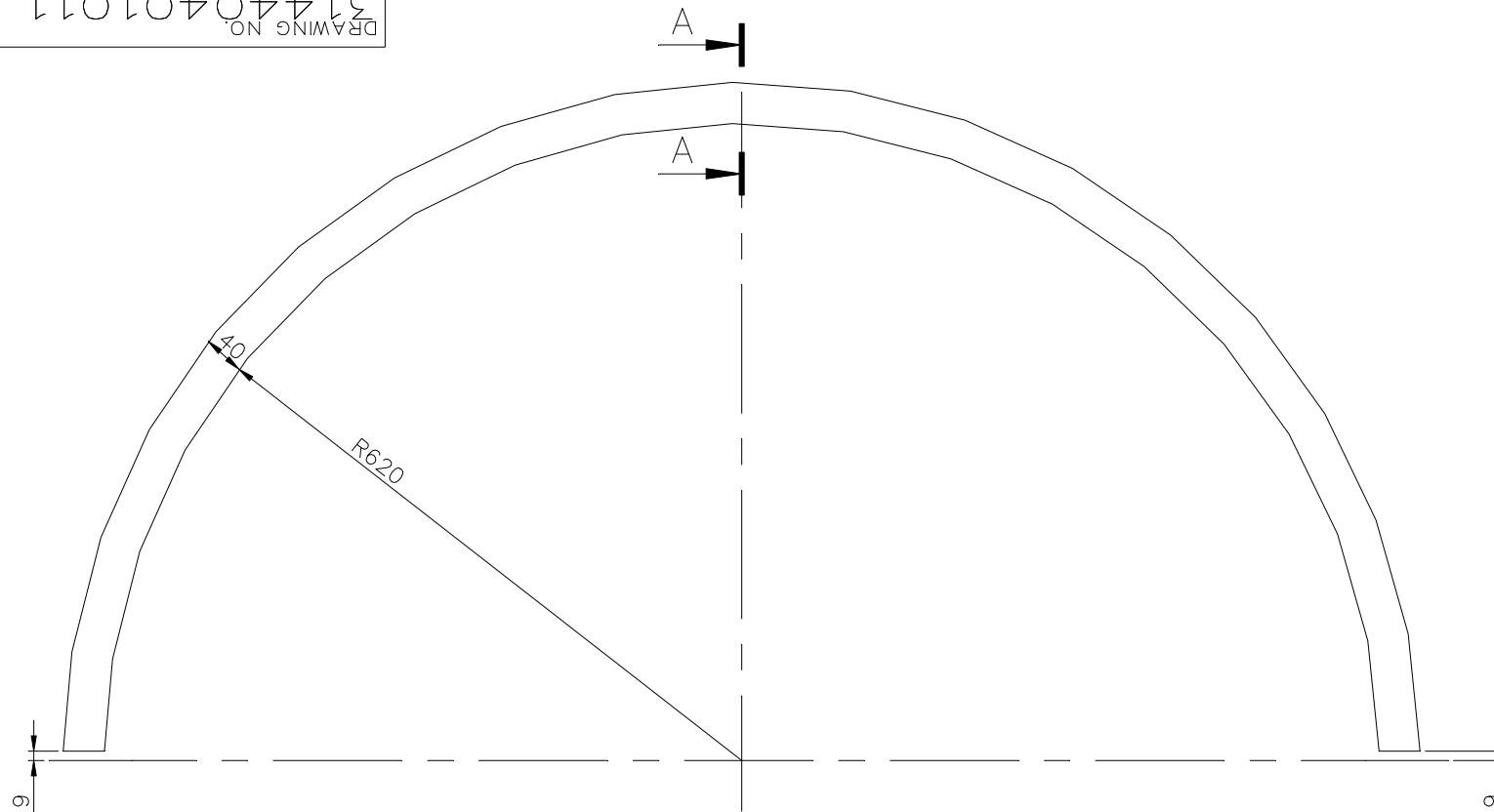
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OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY.

26-5607-86545a/KWU
(ITEM NO.19)
REF. DRG NO.

SIGN & DATE

INVENTORY NO.

DRAWING NO. 31440401011



DEVELOPED LENGTH=1993

SECTION A-A

SCALE 1:1

✓ ALL OVER

TECHNICAL REQUIREMENT: –

1. MARK IDENTIFICATION ACCORDING TO HW0400397.

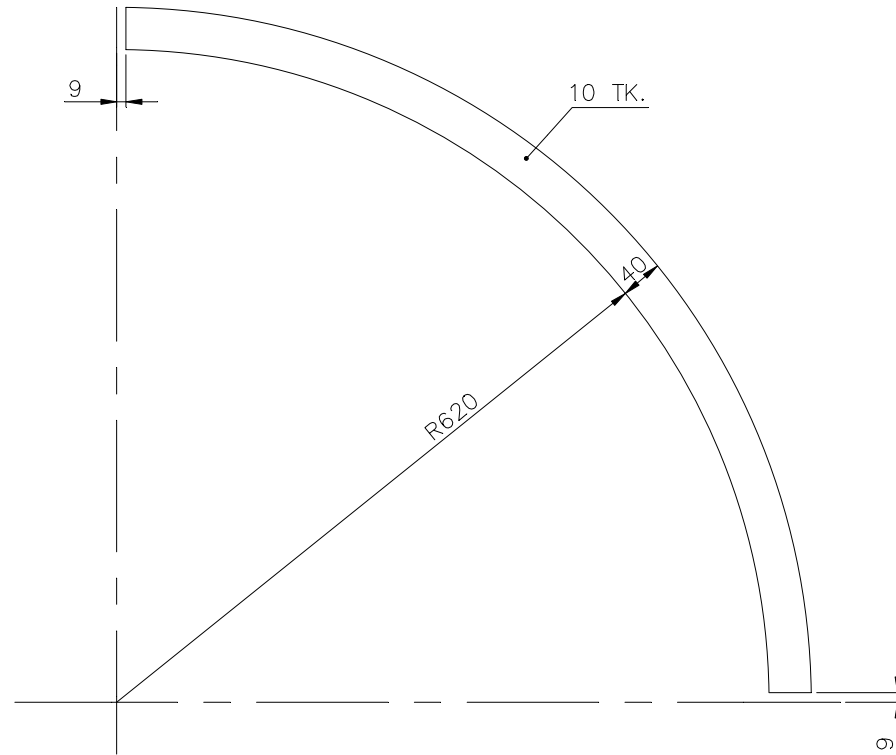
01
SUPERSEDES

		CBOM NO. 01440401003		CUSTOMER OF DRG.		TYPE OF PRODUCT OR NAME OF CUSTOMER/ PROJECT						B'LESS EXCITER FOR 500MW TG.					
GRADE OF UNTOL. DIM.: -		AGREED DEPT.		NAME		SIGN		DATE									
M/CG- ~~V/C/M/F~~ AA 0230208		WT		CHHABRA		-SD-		23.9.81									
WELDING-A/B/C/D-AA621104																	
GAS CUTTING-T3'AA0621101																	
REV. DATE		ALTERED CHECKED		REV. DATE		ALTERED PA -SD-		CHECKED RM -SD-									
				01		26.02.22											
										</							

SIZE A3

✓ ALL OVER

DRAWING NO. 31440401012



DEVELOPED LENGTH=988

TECHNICAL REQUIREMENTS: –

1. MARK IDENTIFICATION ACCORDING TO HW0400397.

01
SUPERSEDES

[illegible]

SIZE A3

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OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY.

26-5607-86545a/KWU
(ITEM NO.12)
REF. DRG NO.

SIGN & DATE

INVENTORY NO.

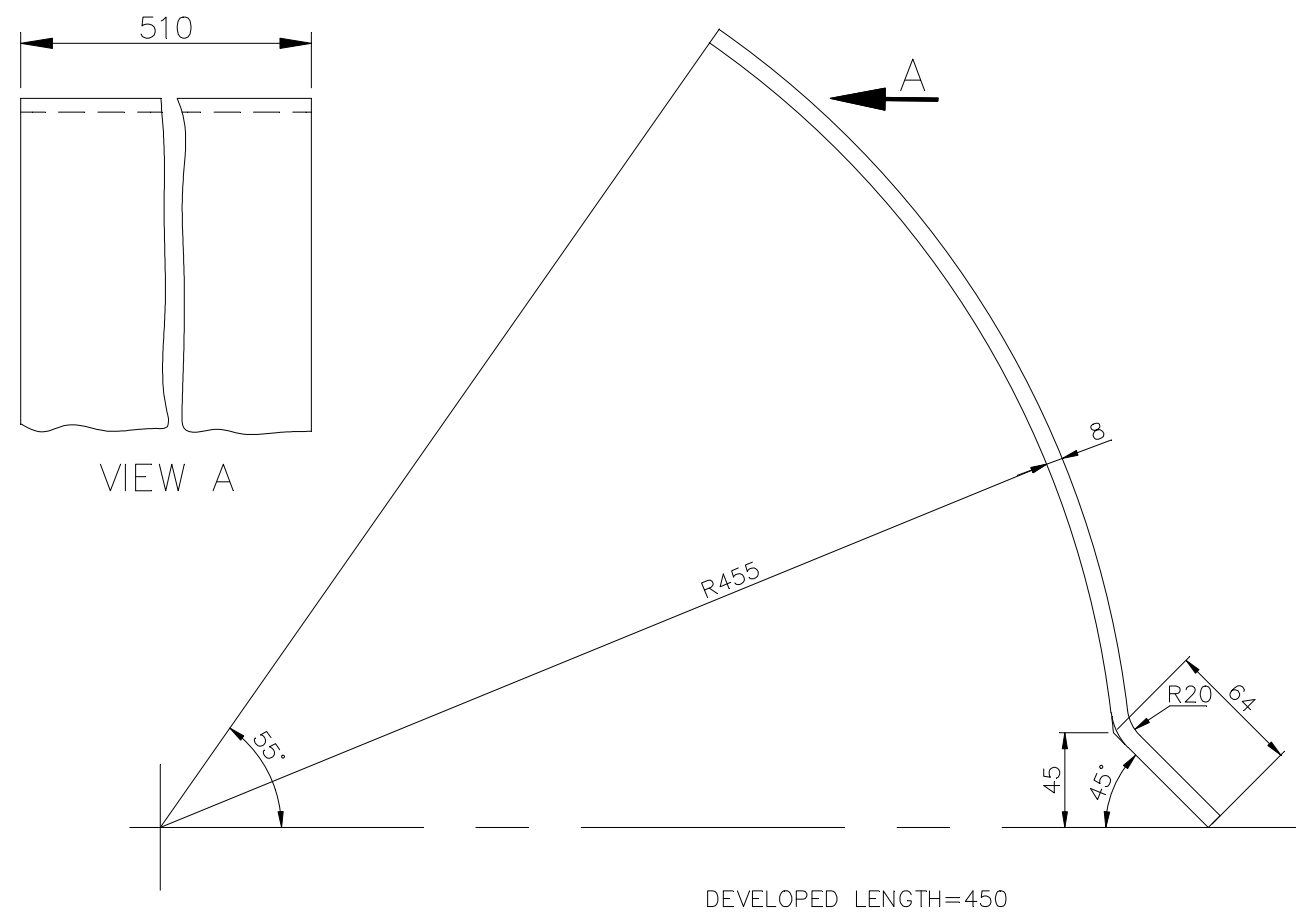
FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

FORM: DG-38(B)

500%
THE REST

DRAWING NO.
31440401014

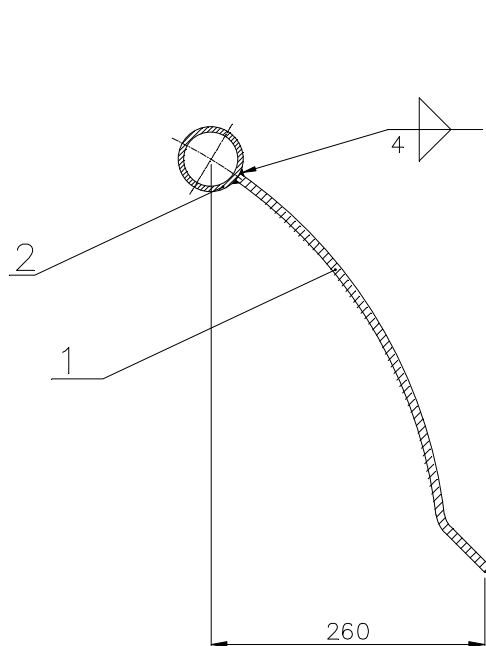


TECHNICAL REQUIREMENTS: —
1. MARK IDENTIFICATION ACCORDING TO HW0400397.

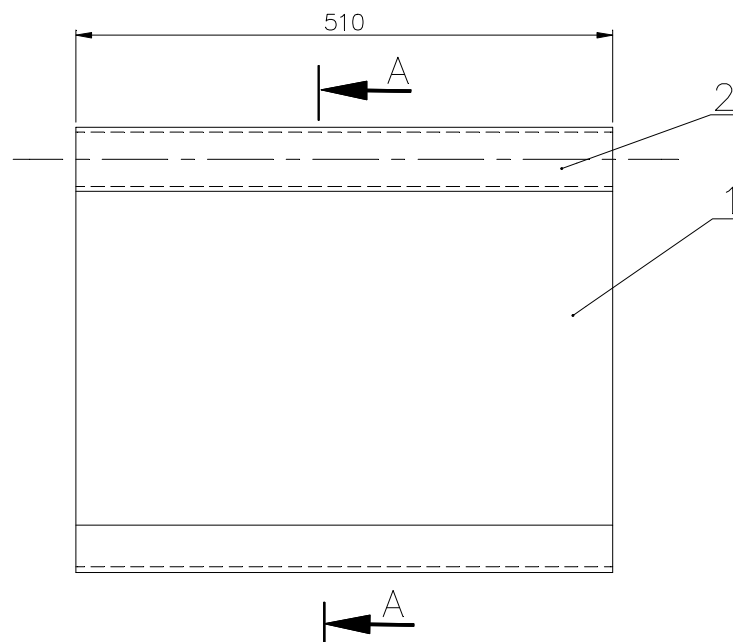
CBOM NO. 01440401003				STATUS OF DRG.	
AGREED DEPT.		NAME		SIGN	
WT		CHHABRA		-SD-	
GRADE OF UNTOL. DIM.: –					
M/CG– ~~V/C/M/V~~ AA 0230208					
WELDING– ~~A/B/C/D~~ –AA621104					
GAS CUTTING–‘T3’AA0621101					
REV.		DATE		ALTERED	
				CHECKED	
02		26.02.22		ALTERED PA –SD–	
				CHECKED RM –SD–	
CHANGES AS PER C/A NO. TGE–22–F0039					

TYPE OF PRODUCT OR NAME OF CUSTOMER/ PROJECT				B'LESS EXCITER FOR 500MW TG.			
BHARAT HEAVY ELECTRICALS LTD. HARDWAR				DRN	NAME	SIGN	DATE
				CHD	TNG	-SD-	18.4.81
				APD	KSR/KNW	-SD-	22.9.81
DEPT. TGE				WEIGHT(Kg.)			
CODE 4133				14.490			
TITLE				REF. TO ASSY. DRG.			
SHEET				31440401015			
				DRAWING NO.			
				31440401014			
SHEET NO.1				NO.OF SHEETS 1			

SIZE A3

DRAWING NO.
31440401015

SECTION A-A



SYMBOL & SIZE OF WELD SEAM	4
SEAM LENGTH IN METER	1.020
WT. OF DEPOSITED METAL IN KG.	0.096
TYPE OF ELECTRODE	E-42

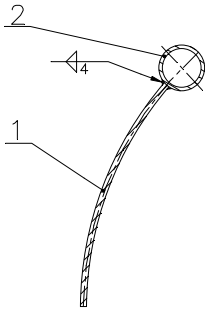
TECHNICAL REQUIREMENTS: -

1. CLASSIFICATION GROUPS ACCORDING TO HW0620099: CK.
2. TEST SCOPE ACCORDING TO HW0850199: CATEGORY OF SERVICE REQUIREMENTS 4.
3. MARK IDENTIFICATION ACCORDING TO HW0400397.

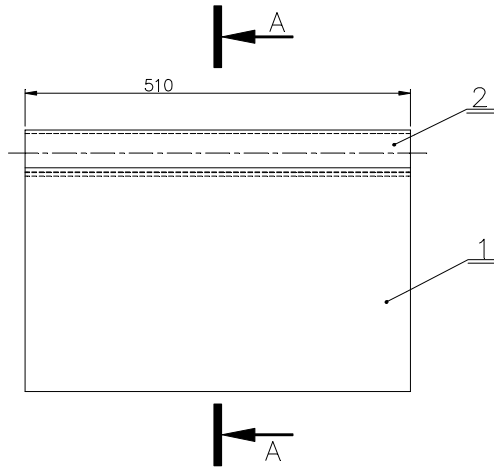
02
SUPERSEDES

				CBOM NO. 01440401003		STATUS OF DRG.	
				AGREED DEPT.	NAME	SIGN	DATE
GRADE OF UNTOL. DIM.: –				WT	CHHABRA	–SD–	23.9.81
M/CG– ~~Y/C/M/F~~ AA 0230208							
WELDING– ~~A/B/C/D~~ –AA621104							
GAS CUTTING–’T3’AA0621101							
REV.	DATE	ALTERED CHECKED		REV. 02	DATE 26.02.22	ALTERED PA CHECKED RM	–SD– –SD–
				CHANGES AS PER C/A NO. TGE–22–F0039			

TYPE OF PRODUCT OR NAME OF CUSTOMER/ PROJECT				B'LESS EXCITER FOR 500MW TG.			
 BHARAT HEAVY ELECTRICALS LTD. HARDWAR				DRN	NAME	SIGN	DATE
				CHD	TNG	-SD-	18.4.81
				APD	KSR/KNW	-SD-	22.9.81
DEPT. TGE				SCALE	WEIGHT(Kg.)	REF. TO ASSY. DRG.	
CODE 4133				1:5	18.036	01440401001	
TITLE				DRAWING NO.		ITEM NO.	
SUPPORT				31440401015		015	
SHEET NO.1				NO.OF SHEETS 1		NO.OF VAR.	
						73, 74	
						75, 77	

DRAWING NO.
31440401016

SECTION A-A



SYMBOL & SIZE OF WELD SEAM	4
SEAM LENGTH M.	1.020
WT. OF DEPOSITED METAL KG.	0.096
TYPE OF ELECTRODE	E-42

TECHNICAL REQUIREMENTS: -

1. CLASSIFICATION GROUPS ACCORDING TO HW0620099: CK.
2. TEST SCOPE ACCORDING TO HW0850199: CATEGORY OF SERVICE REQUIREMENTS 4.
3. IDENTIFICATION ACCORDING TO HW0400397.

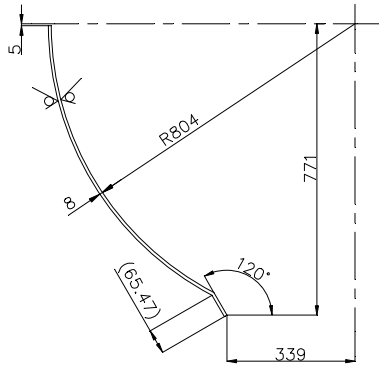
02
SUPERSEDES

CBOM NO. 01440401003		STATUS OF DRG.		TYPE OF PRODUCT OR NAME OF CUSTOMER/ PROJECT		BRUSHLESS EXCITER FOR 500MW TG			
AGREED DESIGN	NAME CHHABRA	SIGN -SD-	DATE 23.09.81	BHARAT HEAVY ELECTRICALS LTD. HARDWAR		DRN T.N.G.	SIGN -SD-	DATE 18.4.81	NO.OF VAR. -
GRADE OF UNTOL. DIM.: -				DEPT. TGE		SCALE	WEIGHT(Kg.)	REF. TO ASSY. DRG.	ITEM NO.
M/CG- ~~V/C/M/P~~ AA 0230208				CODE 4133		1:5	13.847	01440401001	022
WELDING- ~~A/B/C/D~~ -AA0621104				TITLE		SUPPORT		DRAWING NO. 31440401016	
GAS CUTTING-'T3'AA0621101				CHANGES AS PER C/A NO. TGE-22-F0039		1		7	
REV.	DATE	ALTERED	ALtered PA -SD-	DEPT. TGE		SCALE		REF. TO ASSY. DRG.	
02	26.02.22	CHECKED	CHECKED RM -SD-	CODE 4133		1:5		01440401001	
SHEET NO. 1				NO.OF SHEETS		1		NO.OF ITEMS -	

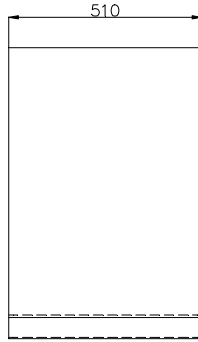
SIZE A3

DRAWING NO.
01440401017

500 THE REST



DEVELOPED LENGTH= 945



TECHNICAL REQUIREMENTS: -

1. MARK IDENTIFICATION ACCORDING TO HW0400397.

SUPERSEDES 02

26-5607-855450/KWU
(ITEM NO. 10)
REF. DRG NO.

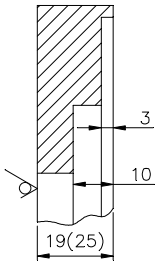
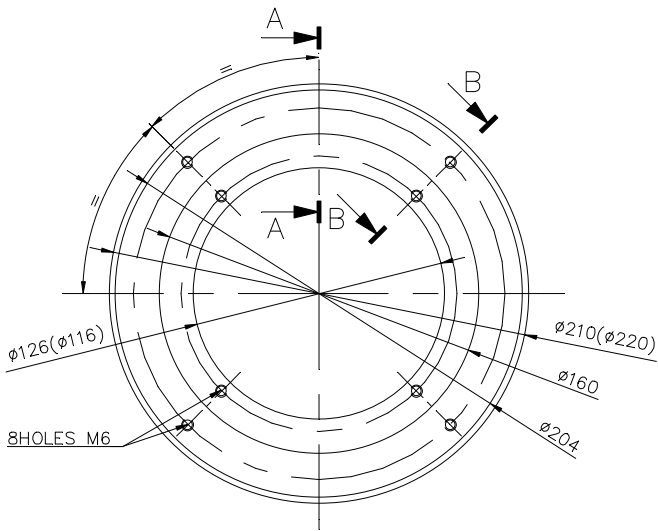
SIGN & DATE

INVENTORY NO.

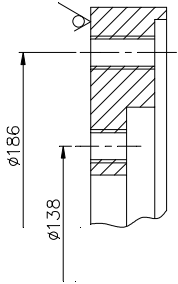
CBOM NO.				STATUS OF DRG.	
01440401003					
AGREED DEPT.	NAME		SIGN	DATE	
WT	CHHABRA		-SD-	23.9.81	
GRADE OF UNTOL. DIM.: -					
M/CG- <u>Y/e</u> /M/ <u>f</u> AA 0230208					
WELDING- <u>A</u> / <u>B</u> / <u>e</u> / <u>B</u> -AA621104					
GAS CUTTING-'T3'AA0621101					
REV.	DATE	ALTERED		PA	-SD-
		CHECKED <td>RM</td> <th>-SD-</th>		RM	-SD-
CHANGES AS PER C/A NO. TGE-22-F0039					

TYPE OF PRODUCT OR NAME OF CUSTOMER/ PROJECT					
B'LESS EXCITER FOR 500MW TG.					
 BHARAT HEAVY ELECTRICALS LTD. HARDWAR	DRN	TNG	-SD-	18.4.81	-
	CHD	KSR/KNW	-SD-	22.9.81	-
	APD	NPG	-SD-	28.9.81	73, 74
DEPT. TGE	SCALE	WEIGHT(Kg.)	REF. TO ASSY. DRG.		
CODE 4133	1:10	30.420	01440401001		
TITLE			DRAWING NO.		
SHEET			31440401017		
			SHEET NO.1 NO.OF SHEETS 1		

SIZE A3



SECTION AA
SCALE 1:1



SECTION BB
SCALE 1:1

TECHNICAL REQUIREMENTS

- 1. MARK IDENTIFICATION ACCORDING TO HW 0400397.
- 2. DIMENSIONS IN BRACKETS ARE BEFORE MACHINING.

01
SUPERSEDES THE OLD
DRG. UNDER THE SAME NO.
TGE-10-F0018

0-144-04-01011

B'LESS EXCITER FOR 500MW TG.

WT ROY -S/D- 21.5.90

TNG -S/D- 24.3.90
SM -S/D- 29.3.90
IC RAO -S/D- 16.6.90

01 16.1.10 VIJAY -S/D-
TNG -S/D-
CHANGES ACCORDING TO
CH.AD. NO.-
TGE-10-F0018

TGE
4133

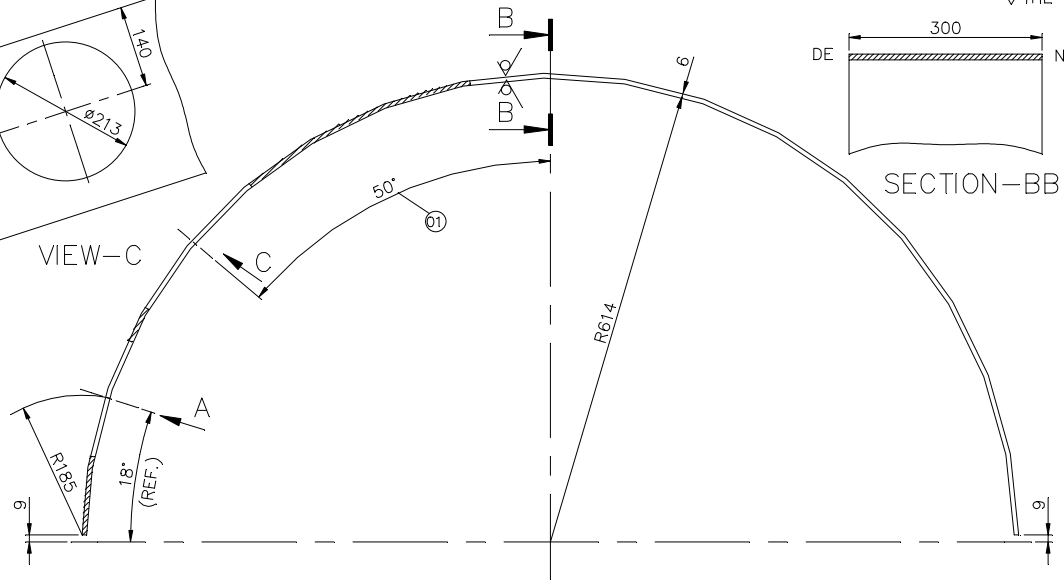
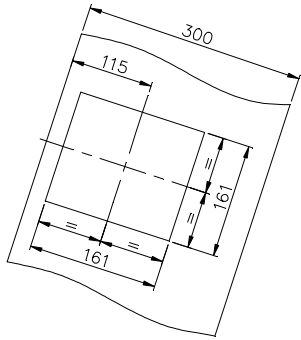
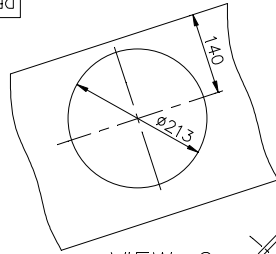
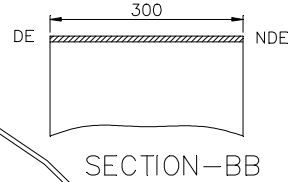
1:2 2.390

0-144-04-01013 030

FLANGE

3-144-04-01070 01

1 1

DRAWING NO.
31440401144500/
THE REST

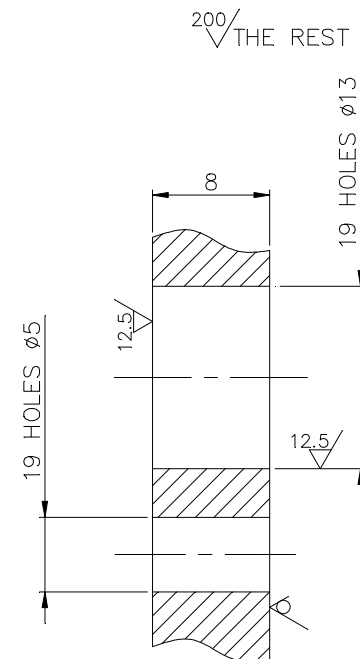
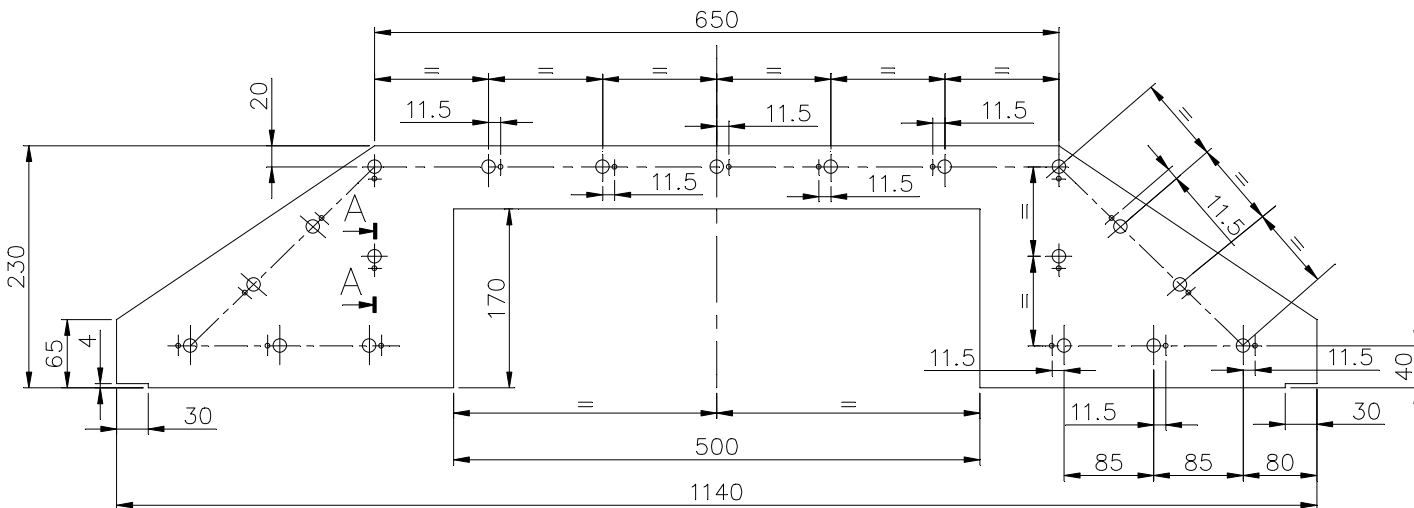
DEVELOPED LENGTH=1920

TECHNICAL REQUIREMENTS

1. MARK IDENTIFICATION ACCORDING TO HW 0400397.

CBOM NO. 01440401029		STATUS OF DRG.		TYPE OF PRODUCT OR NAME OF CUSTOMER/ PROJECT		B'LESS EXCITER FOR 800MW TG.														
AGREED WTX	NAME AWTXIS	SIGN AWTXIS	DATE 28/08/2010	BHARAT HEAVY ELECTRICALS LTD. HARDWAR		<table border="1"> <tr> <td>DRN</td> <td>STGEVK</td> <td>STGEVK</td> <td>DATE 05/08/2010</td> <td rowspan="3">NO.OF VAR.</td> </tr> <tr> <td>CHD</td> <td>STGEVSM</td> <td>STGEVSM</td> <td>05/08/2010</td> </tr> <tr> <td>APD</td> <td>ATGEVK</td> <td>ATGEVK</td> <td>01/10/2010</td> </tr> </table>		DRN	STGEVK	STGEVK	DATE 05/08/2010	NO.OF VAR.	CHD	STGEVSM	STGEVSM	05/08/2010	APD	ATGEVK	ATGEVK	01/10/2010
DRN	STGEVK	STGEVK	DATE 05/08/2010	NO.OF VAR.																
CHD	STGEVSM	STGEVSM	05/08/2010																	
APD	ATGEVK	ATGEVK	01/10/2010																	
GRADE OF UNTOL. DIM.: -				DEPT. TGE		SCALE														
M/CG- V/C/M/P AA 0230208				CODE 4133		WEIGHT(Kg.)														
WELDING-A/B/C/D-AA621104				TITLE		24.353														
GAS CUTTING-'T3'AA0621101				SHEET		REF. TO ASSY. DRG.														
REV.	DATE	ALTERED	REV. DATE	ALTERED	1:5		01440401031													
		CHECKED	01 7.3.17	ALtered P.ANAND -SD	24.353		021													
				CHANGE AS PER C/A NO. TGE-17-F0057.		DRAWING NO. 31440401144														
						SHEET NO.1 NO.OF SHEETS 1														

SIZE A3



SECTION-AA

TECHNICAL REQUIREMENTS

1. MARK IDENTIFICATION ACCORDING TO HW 0400397.

INVENTORY NO.	SIGN & DATE	26-5607-122988 b/kwu REF. DRG NO.
---------------	-------------	--------------------------------------

			CBOM NO. 01440401029		STATUS OF DRG.	
			AGREED DEPT.	NAME	SIGN	DATE
GRADE OF UNTOL. DIM.: –			WTX	AWTXIS	AWTXIS	28/08/2010
M/CG– ~~V/C~~ /M/ ~~F~~ AA 0230208						
WELDING– ~~A~~ / ~~B~~ / ~~C~~ / ~~D~~ –AA621104						
GAS CUTTING–'T3'AA0621101						
REV.	DATE	ALTERED CHECKED	REV.	DATE	ALTERED CHECKED	

TYPE OF PRODUCT OR NAME OF CUSTOMER/ PROJECT		B'LESS EXCITER FOR 800MW TG			
 BHARAT HEAVY ELECTRICALS LTD. HARDWAR	DRN	NAME STGEVK	SIGN STGEVK	DATE 05/08/2010	NO.OF VAR.
	CHD	STGEISM	STGEISM	05/08/2010	
	APD	ATGEVK	ATGEVK	01/10/2010	
DEPT. TGE	SCALE 1:5	WEIGHT(Kg.) 8.482	REF. TO ASSY. DRG. 01440401031		ITEM NO. 004
CODE 4133	TITLE SHEET		DRAWING NO. 31440401145		NO.OF ITEMS 73, 74 75, 77
		1	3	SHEET NO.1 NO.OF SHEETS 1	

FIRST ANGLE PROJECTION

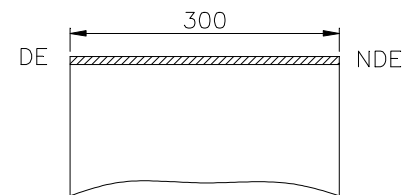
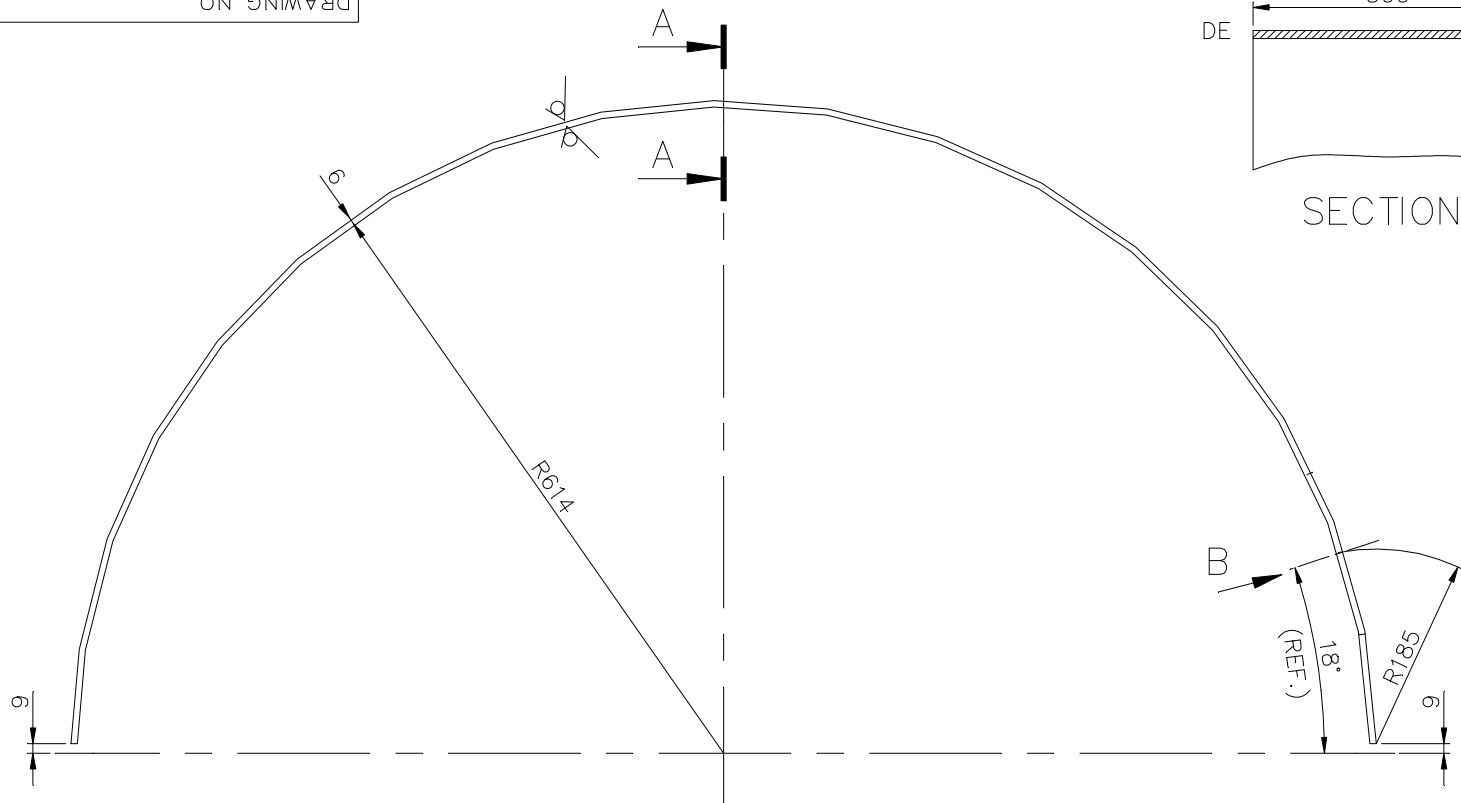
DOC REV NO.: 0

(ALL DIMENSIONS ARE IN mm)

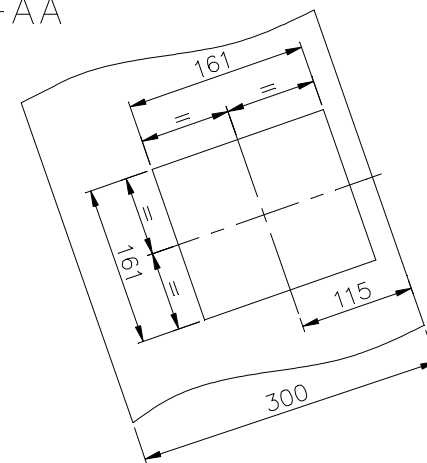
FORM: DG-38(B)

500%
THE REST

DRAWING NO.
31440401147



SECTION-AA



VIEW-B

DEVELOPED LENGTH=1920

TECHNICAL REQUIREMENTS

1. MARK IDENTIFICATION ACCORDING TO HW 0400397.

GRADE OF UNTOL. DIM.: -				CBOM NO. 01440401029		STATUS OF DRG.	
M/CG- ~~W/C/M/P~~ AA 0230208	WTX		AWTXIS	SIGN	DATE		
WELDING- ~~A/B/C/D~~ -AA621104							
GAS CUTTING-'T3'AA0621101							
REV.	DATE	ALTERED	REV.	DATE	ALTERED		
		CHECKED			CHECKED		

TYPE OF PRODUCT OR NAME OF CUSTOMER/ PROJECT				B'LESS EXCITER FOR 800MW TG.				
 BHARAT HEAVY ELECTRICALS LTD. HARDWAR					NAME	SIGN	DATE	NO.OF VAR.
				DRN	STGEVK	STGEVK	05/08/2010	
				CHD	STGESSM	STGESSM	05/08/2010	
				APD	ATGEVK	ATGEVK	01/10/2010	73, 74
DEPT. TGE		SCALE	WEIGHT(Kg.)	REF. TO ASSY. DRG.			ITEM NO.	NO.OF ITEMS
CODE 4133		1: 5	26.031	01440401031			006	
TITLE				1	3	DRAWING NO.		NO.OF ITEMS
SHEET						31440401147		
						SHEET NO.1		NO.OF SHEETS 1
						SIZE A3		22, 23, 24

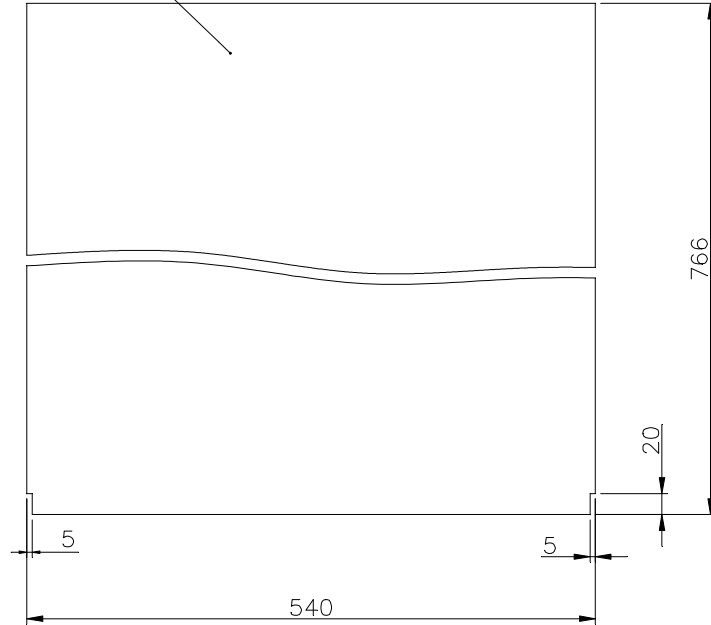
FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN mm) FORM DG 39(B)

REV	DATE	ALTERED	REV	DATE	ALTERED	PA -SD-	CBOM No.	STATUS
		CHECKED	01	26.02.22	CHECKED	DRM -SD-	01440401003	OF DRG
CHANGES AS PER C/A NO.			AGREED	NAME	SIGN	DATE		
TGE-22-F0039			DEPT.	CHHABRA	-SD-	3.9.81		
			WT					

GRADE OF UNTO L DIM M / CGC / M / F AA0230208 WELDING A7B/C/D AA0621104 GAS CUTTING-T3 AA0621101

6 THICK

500/ THE REST



TECHNICAL REQUIREMENT

1. MARK IDENTIFICATION ACCORDING TO HW0400397.

01

SUPERSEDES

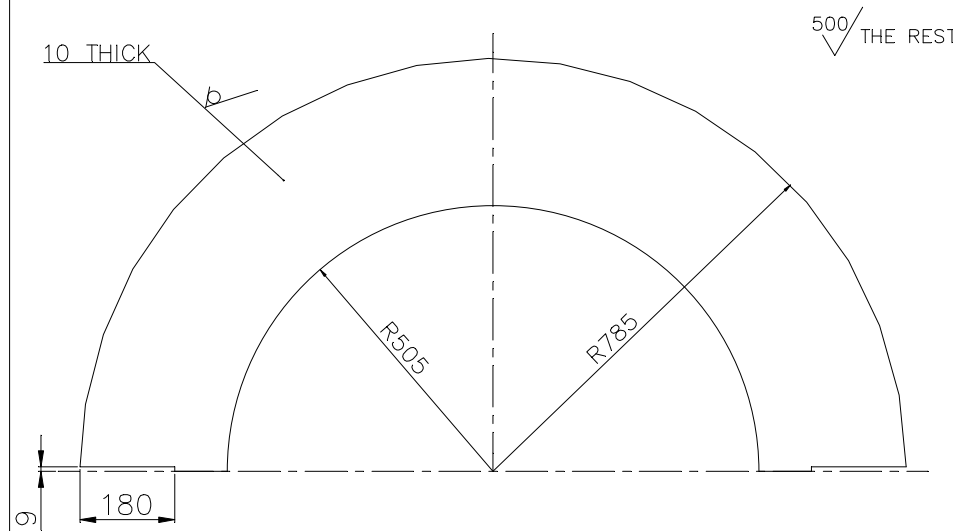
BHARAT HEAVY ELECTRICALS LTD
HARDWAR

	NAME	SIGN	DATE	NO. OF VAR
DRN	YC GARG	-SD-	29.1.81	-
CHD	KSR/KNW	-SD-	22.9.81	-
APD	NP GUPTA	-SD-	28.9.81	-

INVENTORY No.	SIGN & DATE		SCALE		WEIGHT(Kg)	REF. TO ASSY. DRG.		ITEM No.	No OF ITEMS
	DEPT. TGE	CODE	1:5			01440401001			
	4133				19.50			003	-
TITLE						DRAWING No.			
SHEET						41440401010			
(B'LESS EXCITER FOR 500MW TG)						SHEET No.1 No. OF SHEETS 1			

FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN mm) FORM DG 39(B)

REV	DATE	ALTERED	REV	DATE	ALTERED	PA -SD-	CBOM No.	STATUS	
		CHECKED	01	26.02.22	CHECKED	RM -SD-	01440401003	OF DRG	
			CHANGES AS PER C/A NO.				AGREED	NAME	SIGN
			TGE-22-F0039				DEPT.	CHHABRA	SD-
							WT		DATE
									3.9.81
GRADE OF UNTO			DIM.M/CG/M/F			AA0230208	WELDING A7B/C/D		AA0621104
							GAS CUTTING-T3		AA0621101



TECHNICAL REQUIREMENT: —

1. MARK IDENTIFICATION ACCORDING TO HW0400397.

01
SUPERSEDES



BHARAT HEAVY ELECTRICALS LTD
HARDWAR

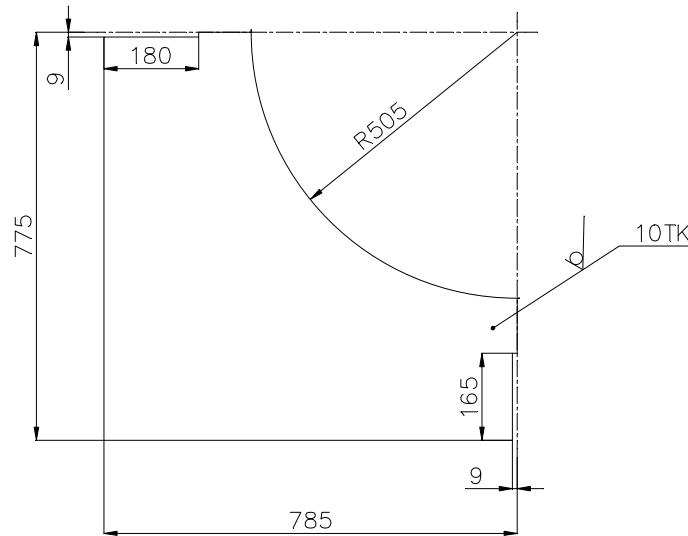
	NAME	SIGN	DATE	NO. OF VAR
DRN	YC GARG	-SD-	30.1.81	
CHD	KSR/KNW	-SD-	22.9.81	
APD	NP GUPTA	-SD-	28.9.81	

INVENTORY No.	DEPT.TGE	SCALE	WEIGHT(Kg)	REF.TD ASSY.DRG.	ITEM No.	No OF ITEMS
	CODE 4133	1:10	44.5	01440401001	007	—
TITLE				DRAWING No.		
SHEET				41440401011		
(B'LESS EXCITER FOR 500MW TG)				SHEET No.1 No.OF SHEETS1		

FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN mm) FORM DG 39(B)

REV	DATE	ALTERED	REV	DATE	ALTERED	PA -SD-	CBOM No.	STATUS
		CHECKED	01	26.02.22	CHECKED	RM -SD-	01440401003	OF DRG
CHANGES AS PER C/A NO.			AGREED	NAME	SIGN	DATE		
TGE-22-F0039			WT	CHHABRA	-SD-	23.9.81		
GRADE OF UNTO			DIM.M/CG/M/F		AA0230208		WELDING A7B/C/D	AA0621104
							GAS CUTTING-T3	AA0621101

500/ THE REST



TECHNICAL REQUIREMENTS: -

1. MARK IDENTIFICATION ACCORDING TO HW0400397.

SUPERSEDES

01

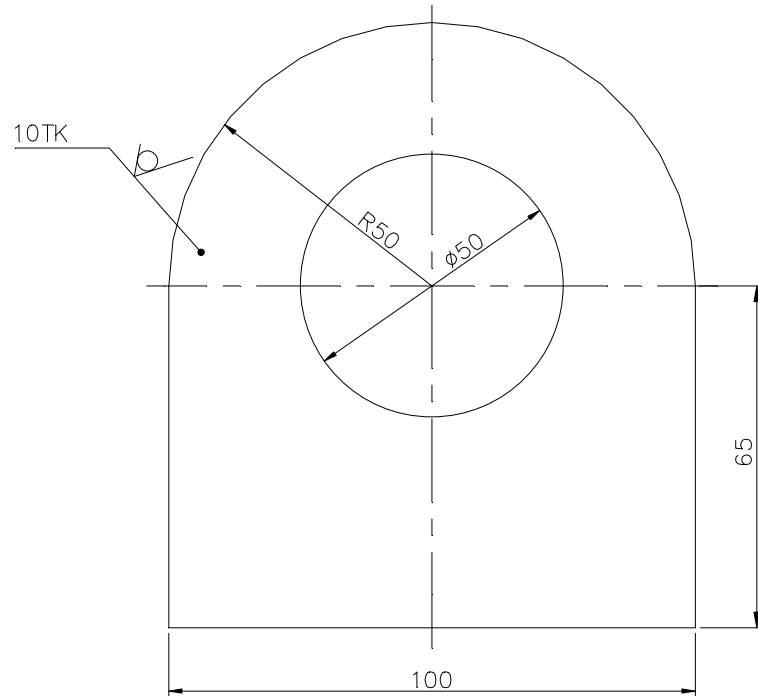
BHARAT HEAVY ELECTRICALS LTD
HARDWAR

	NAME	SIGN	DATE	NO. OF VAR
DRN	YC GARG	-SD-	6.2.81	
CHD	KSR/KNW	-SD-	22.9.81	
APD	NP GUPTA	-SD-	28.9.81	

INVENTORY No.	DEPT.TGE	SCALE	WEIGHT(Kg)	REF.TD ASSY.DRG.	ITEM No.	No OF ITEMS
	CODE 4133	1:10	32.00	01440401001	016	-
TITLE				DRAWING No.		
SHEET				41440401012		
(B'LESS EXCITER FOR 500MW TG)				SHEET No.1	No.OF SHEETS1	

FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN mm) FORM DG 39(B)

REV	DATE	ALTERED	REV	DATE	ALTERED	PA -SD-	CBOM No.	STATUS
		CHECKED	01	26.02.22	CHECKED	DRM -SD-	01440401003	OF DRG
CHANGES AS PER C/A NO. TGE-22-F0039			AGREED	NAME	SIGN	DATE		
			DEPT.	WT	CHHABRA	-SD-	23.9.81	
GRADE OF UNTOOL.DIM.M/CGG/M/F.AA0230208			WELDING A7B/C/D.AA0621104			GAS CUTTING-T3 AA0621101		

500
THE REST

TECHNICAL REQUIREMENT: -

1. MARK IDENTIFICATION ACCORDING TO HW0400397.

01
SUPERSEDES



BHARAT HEAVY ELECTRICALS LTD
HARDWAR

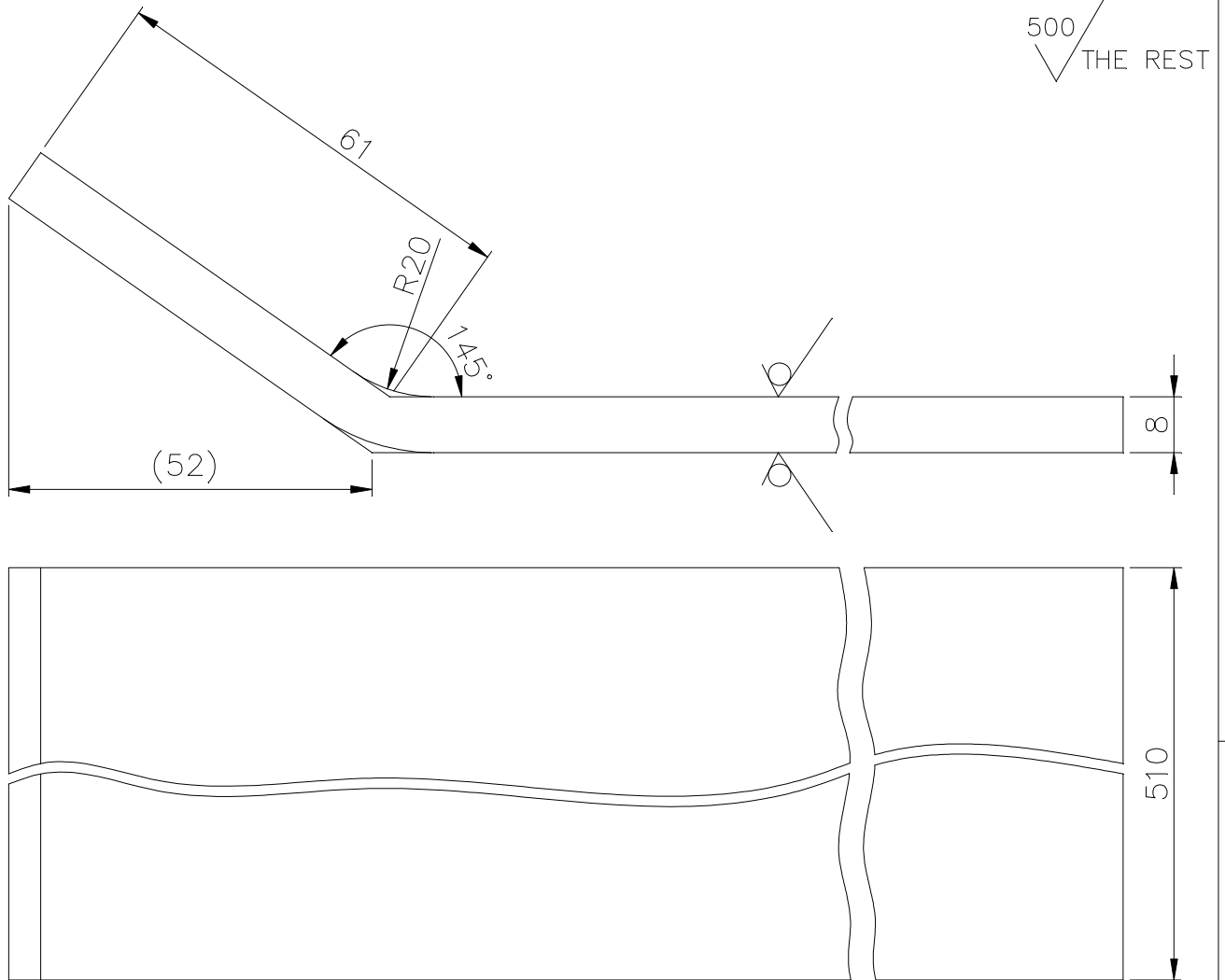
	NAME	SIGN	DATE	NO. OF VAR
DRN	YC GARG	-SD-	14.2.81	
CHD	KSR/KNW	-SD-	22.9.81	
APD	NPG	-SD-	28.9.81	

INVENTORY No.	DEPT.TGE	SCALE	WEIGHT(Kg)	REF.TO ASSY.DRG.	ITEM No.	No OF ITEMS
	CODE 4133	1:1	0.66	01440401001	008	-
TITLE LIFTING LUG (B'LESS EXCITER FOR 500MW TG)				DRAWING No. 41440401020		
				SHEET No.1 No.OF SHEETS1		

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm) FORM DG 39(B)

REV	DATE	ALTERED	REV	DATE	ALTERED	PA -SD-	CBOM No.		STATUS	
		CHECKED	02	26.02.22	CHECKED	DRM -SD-	01440401003			OF DRG
			CHANGES AS PER C/A NO. TGE-22-F0039				AGREED	NAME	SIGN	DATE
							DEPT.			
							WT	CHHABRA	-SD-	23.9.81
GRADE OF UNTOL.DIM.M/CGG/M/F.AA0230208			WELDING A/B/C/D AA0621104			GAS CUTTING-T3 AA0621101				

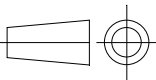


TECHNICAL REQUIREMENTS: -

1. MARK IDENTIFICATION ACCORDING TO HW0400397.

02
SUPERSEDES

DEVELOPED LENGTH=420

SIGN & DATE	DEVELOPED LENGTH=420									
	 BHARAT HEAVY ELECTRICALS LTD HARDWAR					NAME	SIGN	DATE	NO. OF VAR	
					DRN	TNG	— SD —	18.4.81	—	
					CHD	KSR /KNW	— SD —	22.9.81		
		APD	NPG	— SD —	28.9.81					
INVENTORY No.	DEPT.TGE		SCALE	WEIGHT(Kg)	REF.TO ASSY.DRG.			ITEM	No. OF ITEMS	
	CODE 4133		1: 1	13.520	01440401001			No. 024		
	TITLE				DRAWING No.					
	SHEET				41440401040					
	(B'LESS EXCITER FOR 500MW TG)				SHEET No.1				No.OF SHEETS1	

FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN mm) FORM DG 39(B)

REV	DATE	ALTERED	REV	DATE	ALTERED	PA -SD-	CBOM No.	STATUS
		CHECKED	01	26.02.22	CHECKED	DRM -SD-	01440401003	OF DRG
			CHANGES AS PER C/A NO.			AGREED	NAME	SIGN
			TGE-22-F0039			DEPT.	CHHABRA	DATE
						WT	-SD-	23.9.81
GRADE OF UNTO			DIM.M/CG/M/F.AA0230208			WELDING A7B/C/D	AA0621104	GAS CUTTING-T3 AA0621101

500
THE REST

160

11.85

(3.15)

45°

01

SUPERSEDES

TECHNICAL REQUIREMENT: —

1. MARK IDENTIFICATION ACCORDING TO HW0400397.

BHARAT HEAVY ELECTRICALS LTD
HARDWAR

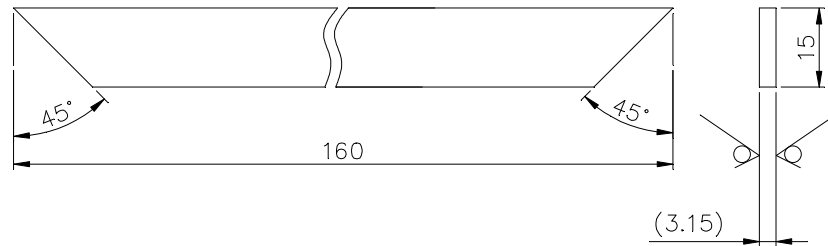
	NAME	SIGN	DATE	NO. OF VAR
DRN	TNG	—SD—	25.4.81	—
CHD	KSR/KNW	—SD—	22.9.81	—
APD	NPG	—SD—	28.9.81	—

INVENTORY No.	DEPT.TGE	SCALE	WEIGHT(Kg)	REF.TO ASSY.DRG.	ITEM No.	No OF ITEMS
	CODE 4133	1:2	0.047	21440401002	002	—
TITLE				DRAWING No.		
SHEET				41440401043		
(B'LESS EXCITER FOR 500MW TG)				SHEET No.1	No.OF SHEETS1	

FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN mm) FORM DG 39(B)

REV	DATE	ALTERED	REV	DATE	ALTERED	PA -SD-	CBOM No.	STATUS
		CHECKED	01	26.02.22	CHECKED	DRM -SD-	01440401003	OF DRG
CHANGES AS PER C/A NO.			AGREED	NAME	SIGN	DATE		
TGE-22-F0039			DEPT.	CHHABRA	-SD-	23.9.81		
			WT					

GRADE OF UNTO	DIM.M/CG	M/F	AA0230208	WELDING	A/B/C/D	AA0621104	GAS CUTTING-T3	AA0621101
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500
THE REST

TECHNICAL REQUIREMENT: —

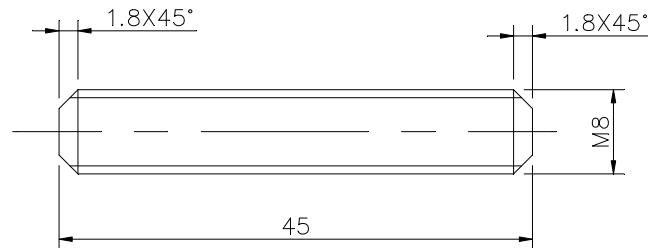
1. MARK IDENTIFICATION ACCORDING TO HW0400397.

01
SUPERSEDES

SIGN & DATE	बी एच ई एल BHEL BHARAT HEAVY ELECTRICALS LTD HARDWAR				NAME	SIGN	DATE	NO. OF VAR
	DRN	TNG	— SD —	25.4.81	—			
	CHD	KSR/KNW	— SD —	22.9.81				
	APD	NPG	— SD —	28.9.81				
INVENTORY No.	DEPT.TGE		SCALE	WEIGHT(Kg)	REF.TD ASSY.DRG.	ITEM No.	No OF ITEMS	
	CODE 4133		1:1	0.054	21440401002	001	—	
	TITLE				DRAWING No.			
	(B'LESS EXCITER FOR 500MW TG)				41440401044			
				SHEET No.1		No.OF SHEETS1		

FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN mm) FORM DG 39(B)

REV	DATE	ALTERED	REV	DATE	ALTERED	PA -SD-	CBOM No.	STATUS		
		CHECKED	01	26.02.22	CHECKED	DRM -SD-	01440401003	OF DRG		
			CHANGES AS PER C/A NO.				AGREED	NAME	SIGN	DATE
			TGE-22-F0039				WT	CHHABRA	-SD-	23.9.81
GRADE OF UNTOOL			DIM.M/CG/M/F			AA0230208	WELDING A/B/C/D		AA0621104	
							GAS CUTTING-T3		AA0621101	

12.5
ALL OVER

TECHNICAL REQUIREMENT

1. MARK IDENTIFICATION ACCORDING TO HW0400397.

01
SUPERSEDES

INVENTORY No.	DEPT.TGE		SCALE	WEIGHT(Kg)	REF.TD ASSY.DRG.	ITEM No.	No OF ITEMS
	CODE 4133						
TITLE					DRAWING No.		
STUD					41440401045		
(B'LESS EXCITER FOR 500MW TG)					SHEET No.1 No.OF SHEETS1		

BHARAT HEAVY ELECTRICALS LTD
HARDWAR

	NAME	SIGN	DATE	NO. OF VAR
DRN	TNG	-SD-	25.4.81	
CHD	KSR/KNW	-SD-	22.9.81	
APD	NPG	-SD-	28.9.81	-

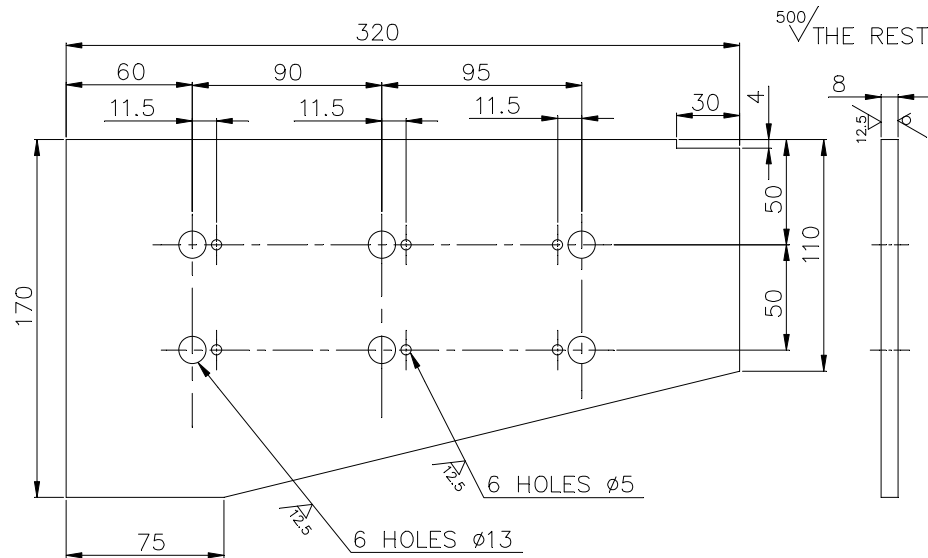
SIGN & DATE

26-5607-86545dK.W.U.
IT.45REF.DRG.No. (DIN976)

FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN mm) FORM DG 39(B)

REV	DATE	ALTERED	REV	DATE	ALTERED	CBOM No.		STATUS	
		CHECKED			CHECKED	01440401029		OF DRG	
						AGREED	NAME	SIGN	DATE
						DEPT.	AWTXIS	AWTXIS	28/08/2010
						WTX			

GRADE OF UNTO L DIM M / CGC / M / F. AA0230208 WELDING A / B / C / D AA0621104 GAS CUTTING - T3 AA0621101



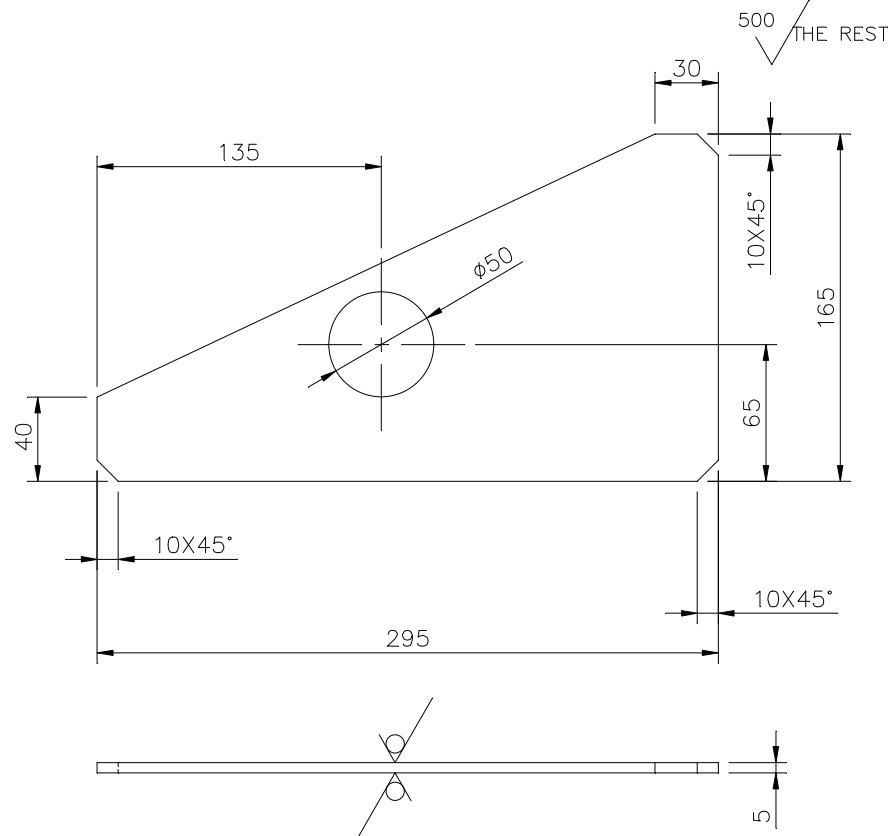
TECHNICAL REQUIREMENT :

1. MARK IDENTIFICATION ACCORDING TO HW 0400397.

SIGN & DATE	बीएसईएल BHEL BHARAT HEAVY ELECTRICALS LTD HARDWAR				DRN	NAME	SIGN	DATE	NO. OF VAR
	CHD	STGEVK	STGEVK	05/08/2010					
	APD	STGESSM	STGESSM	05/08/2010					
	APD	ATGEVK	ATGEVK	01/10/2010					
INVENTORY No.	DEPT.TGE		SCALE	WEIGHT(Kg)	REF.TD ASSY.DRG.		ITEM	No OF ITEMS	
	CODE 4133		1:2.5	2.87	01440401031		No.		
	TITLE				DRAWING No.		001		
	SHEET				41440401311				
(B'LESS EXCITER FOR 800MW TG)				SHEET No.1		No.OF SHEETS1			

FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN mm) FORM DG 39(B)

REV	DATE	ALTERED CHECKED	REV	DATE	ALTERED CHECKED	CBOM No. 01440401029	STATUS OF DRG
						AGREED DEPT. WTX	NAME SIGN DATE AWTXBLMAWTXBLM28/07/2020
GRADE OF UNTO L.DIM.M/CGC/M/F.AA0230208						WELDING A7B/C/D AA0621104	GAS CUTTING-T3 AA0621101



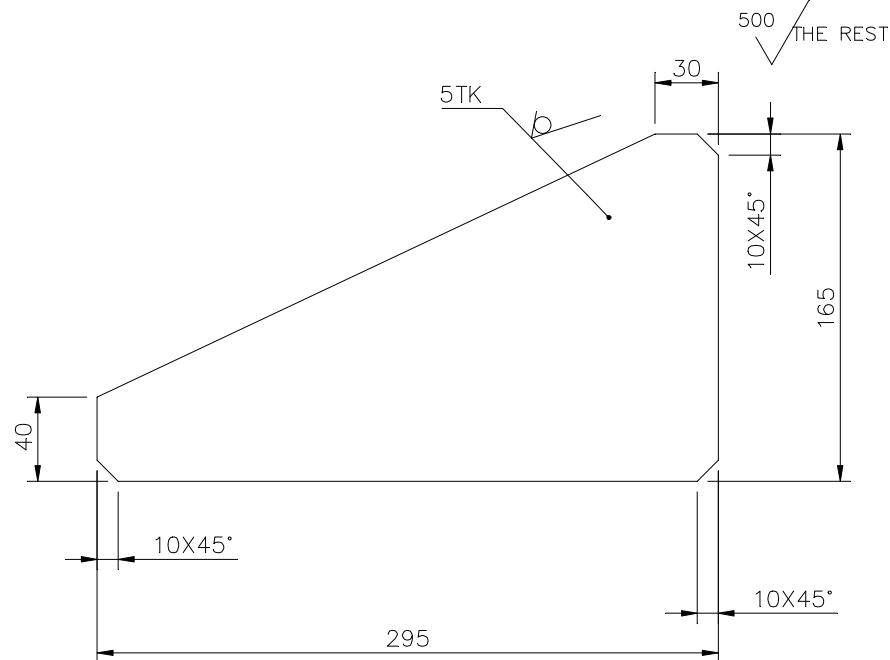
TECHNICAL REQUIREMENT

1. IDENTIFICATION ACCORDING TO HW0400397.

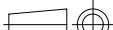
SIGN & DATA	BHARAT HEAVY ELECTRICALS LTD HARDWAR				NAME	SIGN	DATE	NO. OF VAR	
				DRN	STGEPA	STGEPA	07/03/2017		
				CHD	STGESSM	STGESSM	07/03/2017		
				APD	STGESSM	STGESSM	20/10/2020		
INVENTORY No.	DEPT.TGE		SCALE	WEIGHT(Kg)	REF.TD ASSY.DRG.			ITEM No.	No OF ITEMS
	CODE 4133		1:2.5	1.18	01440401031			012	
	TITLE				DRAWING No.			REV	
	SHEET				41440401338				
					SHEET No.1		No.OF SHEETS1		

BHARAT HEAVY ELECTRICALS LTD
HARDWAR

DRN	NAME	SIGN	DATE	NO. OF VAR
CHD	STGESSM	STGESSM	07/03/2017	
APD	STGESSM	STGESSM	20/10/2020	

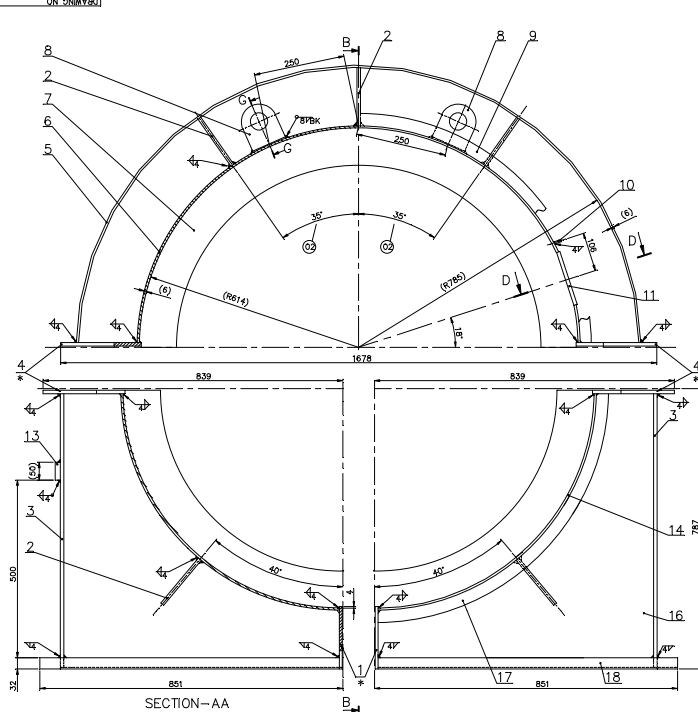


1. MARK IDENTIFICATION ACCORDING TO HW0400397.

 BHARAT HEAVY ELECTRICALS LTD HARDWAR				NAME STGEPA		SIGN STGEPA		DATE 18/05/2020		NO. OF VAR	
				CHD STGERY		STGERY		07/09/2020			
				APD STGESSM		STGESSM		20/10/2020			
DEPT.TGE				SCALE		WEIGHT(Kg)		REF.TD ASSY.DRG.			
CODE 4133				1: 2.5		1.255		01440401031			
TITLE						ITEM No. 002					
SHEET						DRAWING No.					
						41440401351					
						SHEET No.1		No. OF SHEETS1			

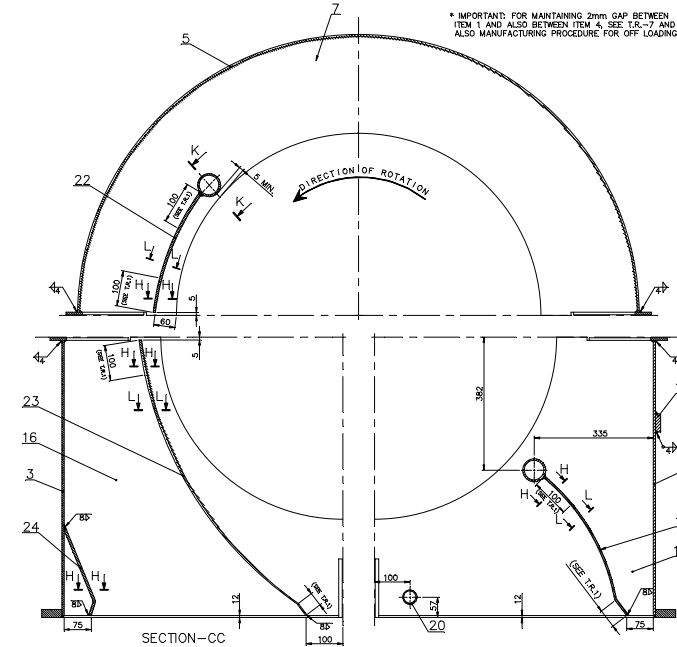
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01440401031

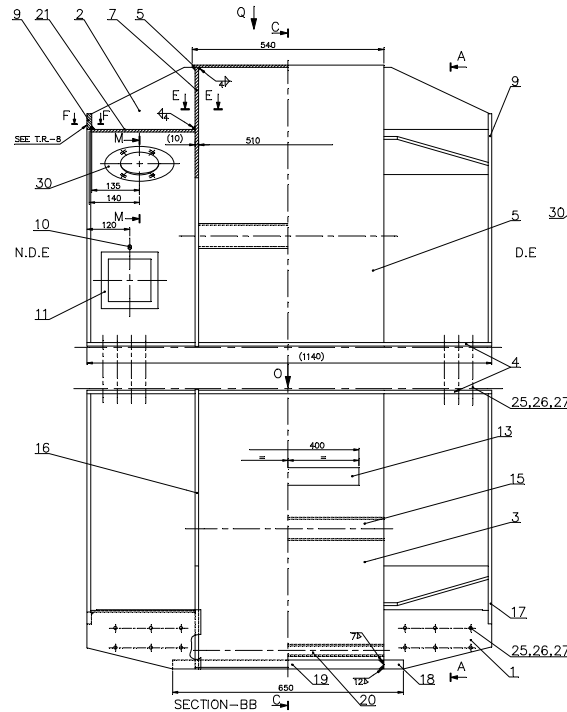


SECTION-AA

* IMPORTANT: FOR MAINTAINING 2mm GAP BETWEEN ITEM 1 AND ALSO BETWEEN ITEM 4, SEE T.R.-7 AND ALSO MANUFACTURING PROCEDURE FOR OFF LOADING.

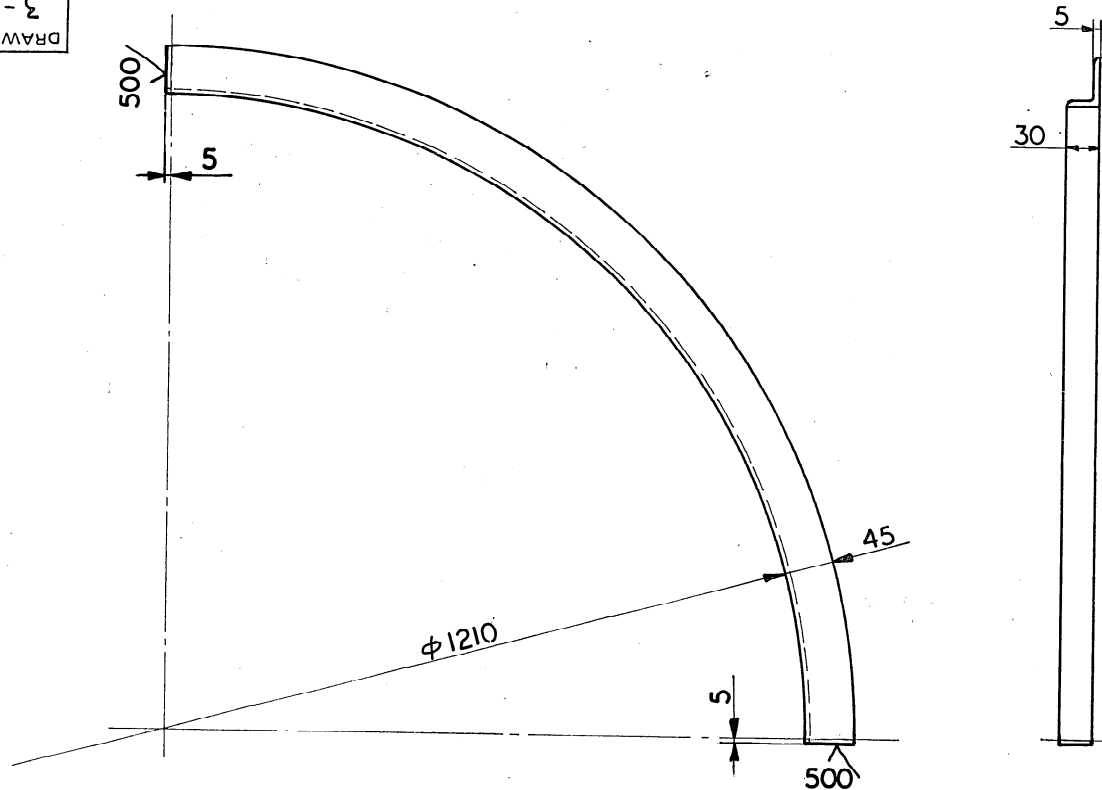


SECTION-CC



3-144-04-01068

DRAWING NO.



DEVELOPED LENGTH = 996

TECHNICAL REQUIREMENT

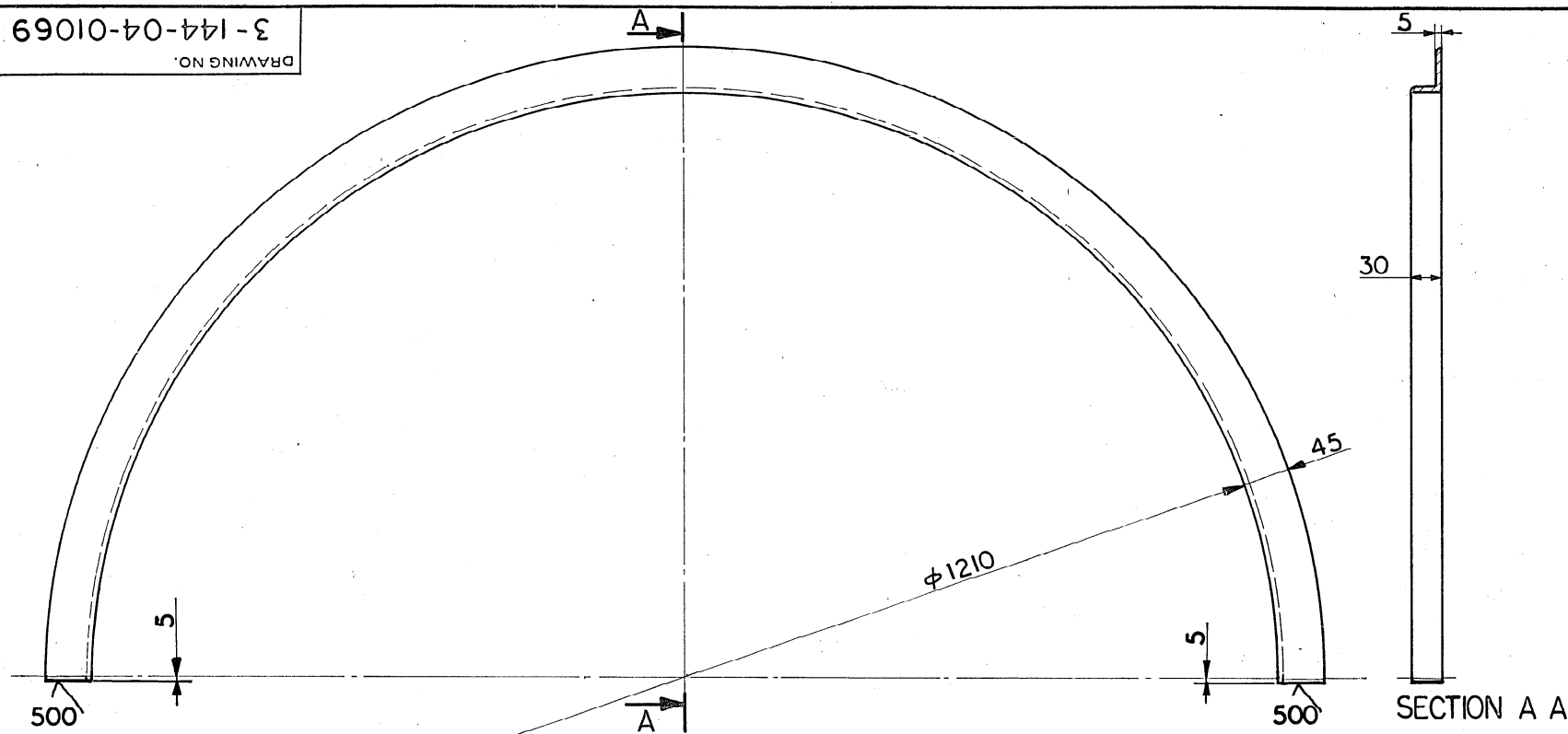
1. IDENTIFICATION ACCORDING TO HW 0400397.

VAR. 00		REMARKS		ITEM NO.	DESCRIPTION	STANDARD	DRAWING NO.	HW 012608964	2810					
59		64 65		75 25 27	29	58 59 60	77	32 33 46	54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72					
CARD TYPE-3					CARD TYPE-1					CARD TYPE-2				
GMS/GR. SP. NO. 0-144-04-01011					STATUS OF DRG.					TYPE OF PRODUCT OR BRUSHLESS EXCITER FOR 500MW TG.				
AGREED DEPT.					NAME					SIGN.				
WT					ROY					DATE				
21/5/90														
REV					DATE					ALTERED				
										CHECKED				
DEPT.					GRADE OF					SCALE				
T.G.E.					UNTOLD DIM					WEIGHT (Kg)				
CODE					4133					1:5				
TITLE					ANGLE					DRAWING NO.				
										3-144-04-01068				
SHEET NO.					NO. OF SHEETS:-					REV.				

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

3-144-04-01069

DRAWING NO.



✓ THE REST

SECTION A A

DEVELOPED LENGTH = 1982

TECHNICAL REQUIREMENT

I. IDENTIFICATION ACCORDING TO HW 0400397.

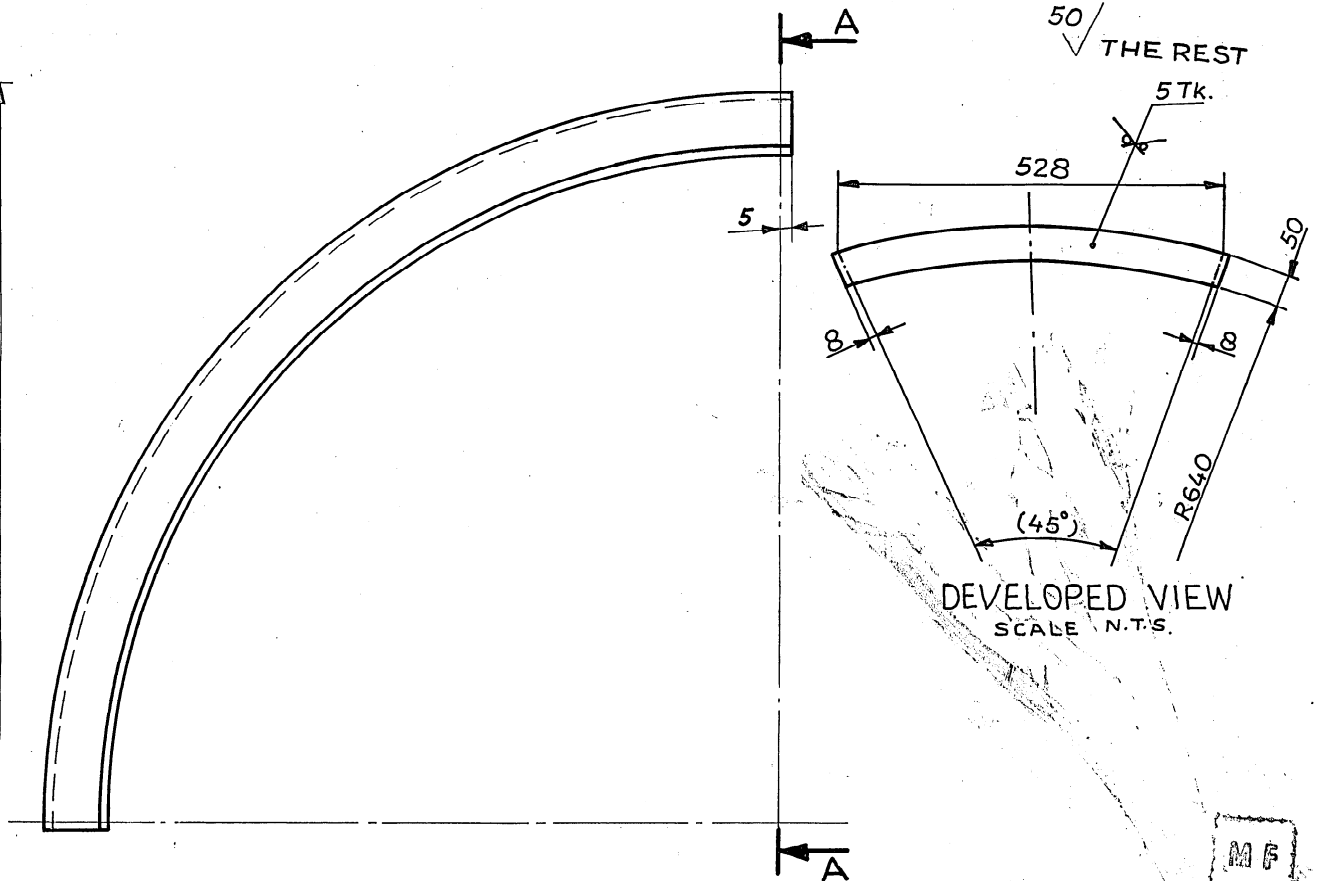
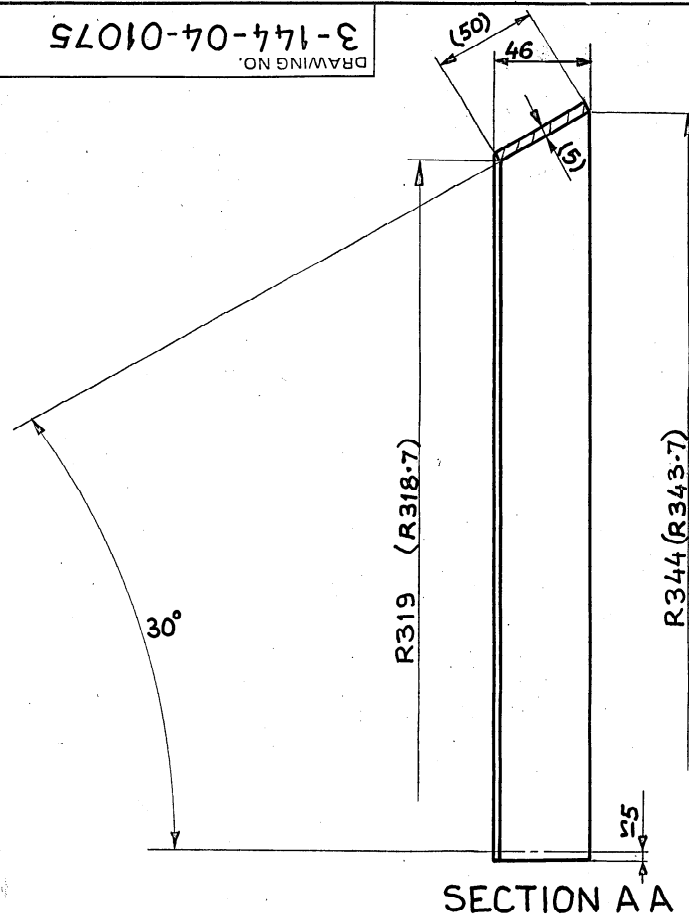
—		—		—		ANGLE		—		HW 1012608964		—		—		5 570	
VAR. 00		REMARKS		ITEM NO.		DESCRIPTION		DRAWING NO.		MATERIAL CODE		UNIT WT. (Kg.)		—		—	
59 04 65		75 25 27 29		58 59 60		67 72 73 74		68 69 70 71		65 66 67 68		69 70 71 72		73 74 75 76		77 78 79 80	
CARD TYPE-3		20 →		20 →		CARD TYPE-1		20 →		CARD TYPE-2		20 →		20 →		20 →	
GMS/GR. SP. NO.		STATUS OF DRG.		TYPE OF PRODUCT		OR		BRUSHLESS EXCITER FOR 500 MW TG.		NAME OF CUSTOMER/PROJECT		—		—		—	
0-144-04-01011		—		—		—		—		—		—		—		—	
AGREED DEPT.		NAME		SIGN.		DATE		—		—		—		—		—	
NT		Roy		[Signature]		21/5/90		—		—		—		—		—	
REV		DATE		ALTERED		CHECKED		—		—		—		—		—	
—		—		—		—		—		—		—		—		—	
DEPT. T.G.E.		GRADE OF UNTOIDIM		SCALE		WEIGHT (Kg)		REF. TO ASSY. DRG.		ITEM NO.		NO. OF ITEMS		—		—	
4133		C/M/F		1:5		5.570		1-144-04-01023		003		—		—		—	
TITLE		—		—		—		DRAWING NO.		—		—		—		—	
ANGLE		—		—		—		3-144-04-01069		—		—		—		—	
—		—		—		—		SHEET NO.		—		—		—		—	
—		—		—		—		NO. OF SHEETS		—		—		—		—	

SIZE A3

FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN mm)

26-5607-99390/KW (ITEM No. 68) Ref. Drg. No.	Sign & Date Inventory No.	3-144-04-01074 DRAWING NO.	976 30° R640 50 5TK. DEVELOPED VIEW SCALE N.T.S.		SECTION AA MF																								
TECHNICAL REQUIREMENTS 1. IDENTIFICATION ACCORDING TO HWO400397. 2. DIMENSIONS IN BRACKETS ARE THEORETICAL.																													
<table border="1"> <tr> <td colspan="2">VAR. 00</td> <td>REMARKS</td> <td>ITEM NO.</td> <td>DESCRIPTION</td> <td>DRAWING NO.</td> </tr> <tr> <td>59</td> <td>64</td> <td>65</td> <td>75</td> <td>25</td> <td>27</td> </tr> <tr> <td colspan="3">CARD TYPE-3</td> <td>28</td> <td colspan="2">CARD TYPE-1</td> </tr> </table>						VAR. 00		REMARKS	ITEM NO.	DESCRIPTION	DRAWING NO.	59	64	65	75	25	27	CARD TYPE-3			28	CARD TYPE-1							
VAR. 00		REMARKS	ITEM NO.	DESCRIPTION	DRAWING NO.																								
59	64	65	75	25	27																								
CARD TYPE-3			28	CARD TYPE-1																									
<table border="1"> <tr> <td colspan="2">GMS/CR. CP. NO.</td> <td colspan="2">STATUS OF DRG.</td> <td colspan="2">TYPE OF PRODUCT</td> </tr> <tr> <td colspan="2">0-144-04-01011</td> <td colspan="2"></td> <td colspan="2">OR BRUSHLESS EXCITER FOR 500 MW TG.</td> </tr> <tr> <td colspan="2">AGREED</td> <td>NAME</td> <td>SIGN.</td> <td>DATE</td> <td>NAME OF CUSTOMER/PROJECT</td> </tr> <tr> <td>WT</td> <td>Roy</td> <td>21</td> <td>5</td> <td>190</td> <td></td> </tr> </table>						GMS/CR. CP. NO.		STATUS OF DRG.		TYPE OF PRODUCT		0-144-04-01011				OR BRUSHLESS EXCITER FOR 500 MW TG.		AGREED		NAME	SIGN.	DATE	NAME OF CUSTOMER/PROJECT	WT	Roy	21	5	190	
GMS/CR. CP. NO.		STATUS OF DRG.		TYPE OF PRODUCT																									
0-144-04-01011				OR BRUSHLESS EXCITER FOR 500 MW TG.																									
AGREED		NAME	SIGN.	DATE	NAME OF CUSTOMER/PROJECT																								
WT	Roy	21	5	190																									
<table border="1"> <tr> <td colspan="2">DEPT. T.G.E.</td> <td>GRADE OF UNTO DIM</td> <td>SCALE</td> <td>WEIGHT (Kg)</td> <td>REF. TO ASSY. DRG.</td> </tr> <tr> <td colspan="2">CODE 4223</td> <td>Q/M/1</td> <td>1:2.5</td> <td>2.000</td> <td>1-144-04-01023</td> </tr> <tr> <td colspan="2">TITLE</td> <td colspan="2">PLATE</td> <td>CARD CODE</td> <td>3-144-04-01074</td> </tr> <tr> <td colspan="2">REV</td> <td>DATE</td> <td>ALTERED</td> <td>CHECKED</td> <td>SHEET NO. 1</td> </tr> </table>						DEPT. T.G.E.		GRADE OF UNTO DIM	SCALE	WEIGHT (Kg)	REF. TO ASSY. DRG.	CODE 4223		Q/M/1	1:2.5	2.000	1-144-04-01023	TITLE		PLATE		CARD CODE	3-144-04-01074	REV		DATE	ALTERED	CHECKED	SHEET NO. 1
DEPT. T.G.E.		GRADE OF UNTO DIM	SCALE	WEIGHT (Kg)	REF. TO ASSY. DRG.																								
CODE 4223		Q/M/1	1:2.5	2.000	1-144-04-01023																								
TITLE		PLATE		CARD CODE	3-144-04-01074																								
REV		DATE	ALTERED	CHECKED	SHEET NO. 1																								
<table border="1"> <tr> <td colspan="2">DRN. NAME T.N.G.</td> <td>SIGN. Date</td> <td>DATE 15.5.90</td> <td>NO. OF VAR.</td> </tr> <tr> <td colspan="2">CHD. S.M.</td> <td>S.M.</td> <td>15.5.90</td> <td></td> </tr> <tr> <td colspan="2">APPD. I.C. RAO</td> <td>I.C. RAO</td> <td>16.6.90</td> <td>73, 74</td> </tr> <tr> <td colspan="2">ITEM NO.</td> <td>005</td> <td>001</td> <td>751, 72</td> </tr> </table>						DRN. NAME T.N.G.		SIGN. Date	DATE 15.5.90	NO. OF VAR.	CHD. S.M.		S.M.	15.5.90		APPD. I.C. RAO		I.C. RAO	16.6.90	73, 74	ITEM NO.		005	001	751, 72				
DRN. NAME T.N.G.		SIGN. Date	DATE 15.5.90	NO. OF VAR.																									
CHD. S.M.		S.M.	15.5.90																										
APPD. I.C. RAO		I.C. RAO	16.6.90	73, 74																									
ITEM NO.		005	001	751, 72																									

SIZE A3

3-144-04-01075
DRAWING NO.

TECHNICAL REQUIREMENTS

1. IDENTIFICATION ACCORDING TO HWO400397.
2. DIMENSIONS IN BRACKETS ARE THEORITICAL.

VAR. 00	REMARKS	ITEM NO.	DESCRIPTION	DRAWING NO.	AA1011808013	1000
59	64 65	75 25 27	29	58 59 60	77 32 33 46	54 66
CARD TYPE-3			CARD TYPE-1			CARD TYPE-2

GMS/CR. SP. NO. 0-144-04-01011				STATUS OF DRG.
AGREED DEPT.	NAME	S/GN.	DATE	
WT	ROY	100	21/5/90	

TYPE OF PRODUCT

OR

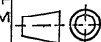
NAME OF CUSTOMER/PROJECT

BRUSHLESS EXCITER FOR 500 MWTG.

DRN.	NAME	SIGN.	DATE	NO. OF VAR.
CHD.	T.N.G.	100	15.5.90	
APPD.	S.M.	100	15.5.90	
	I.C. RAO	100	16.6.91	73 74

BHARAT HEAVY ELECTRICALS LTD.
RANIPUR - HARDWAR.

REV	DATE	ALTERED
		CHECKED

DEPT.
T.G.E.
CODE
4233GRADE OF
UNTOLDIM
Q/M/VSCALE
1:2.5WEIGHT (Kg)
1.000

REF. TO ASSY. DRG.

1-144-04-01023 006

ITEM NO.
NO. OF ITEMS
75 77

TITLE

PLATE

CARD CODE

DRAWING NO.

3-144-04-01075

REV.

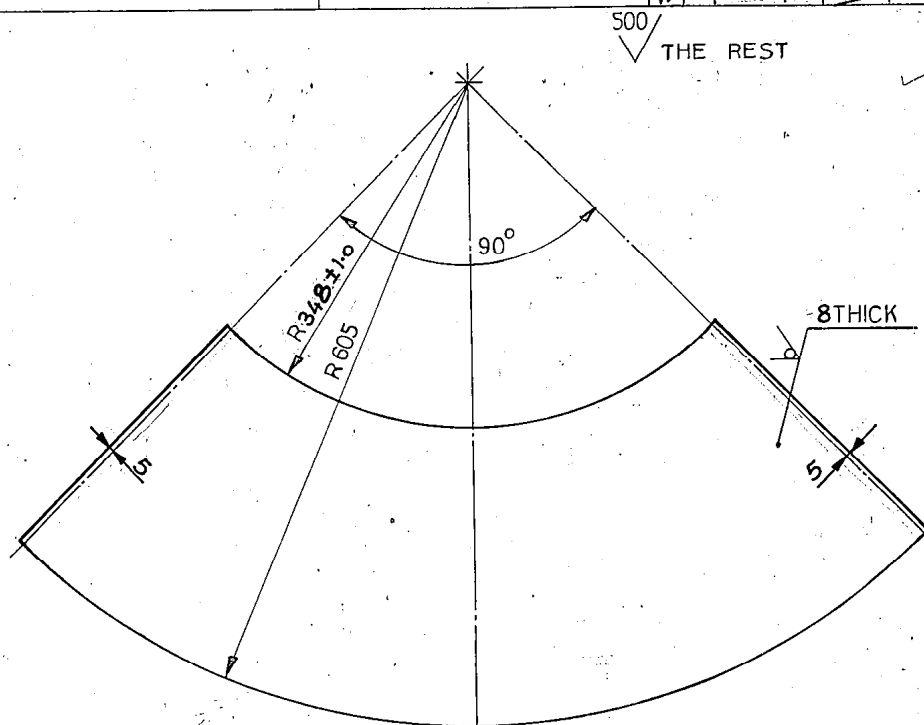
SHEET NO. 1

NO. OF SHEETS:- 1

SIZE A3

FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN mm)

REV	DATE	ALTERED	REV	DATE	ALTERED	GMS. NO.	STATUS OF DRG.
		CHECKED			CHECKED	0-144-04-01011	U
						AGREED DEPT.	NAME
						WT	ROY
						SIGN	DATE
							21/5/90



TECHNICAL REQUIREMENT

1. MARK IDENTIFICATION ACCORDING TO HW 04 00 397.



—	—	SHEET	—	—	AA1011808056	—	—	12/260
REMARKS.	ITEM NO.	DESCRIPTION	STD.	VAR.	MATERIAL CODE	A	C	UNIT WEIGHT
					MATERIAL SPECN			

CARD TYPE-3 → → → CARD TYPE-1 → → → CARD TYPE-2



BHARAT HEAVY ELECTRICALS LTD.

RANIPUR - HARDWAR.

DEPT TGE	CODE 4133	SCALE 1:5	WEIGHT (KG) 12.260	REF. TO ASSY. DRG. 1-144-04-01023	ITEM NO. 002
SHEET			DRAWN T.N.G.		
(BRUSHLESS EXCITER FOR 500 MW TG.)			CHECKED S.M.		
			APPROVED I.C. RAO		

Dimensions to be Controlled Within Limits as Shown.
Machining Tolerance ± 0.25 mm Unless Otherwise
GRADE OF UNTOOL
Shown Non-Machining Tolerance ± 0.1 mm ϕ / M / F

CARD
CODEDRAWING NO.
4-144-04-01177

SHEET NO.

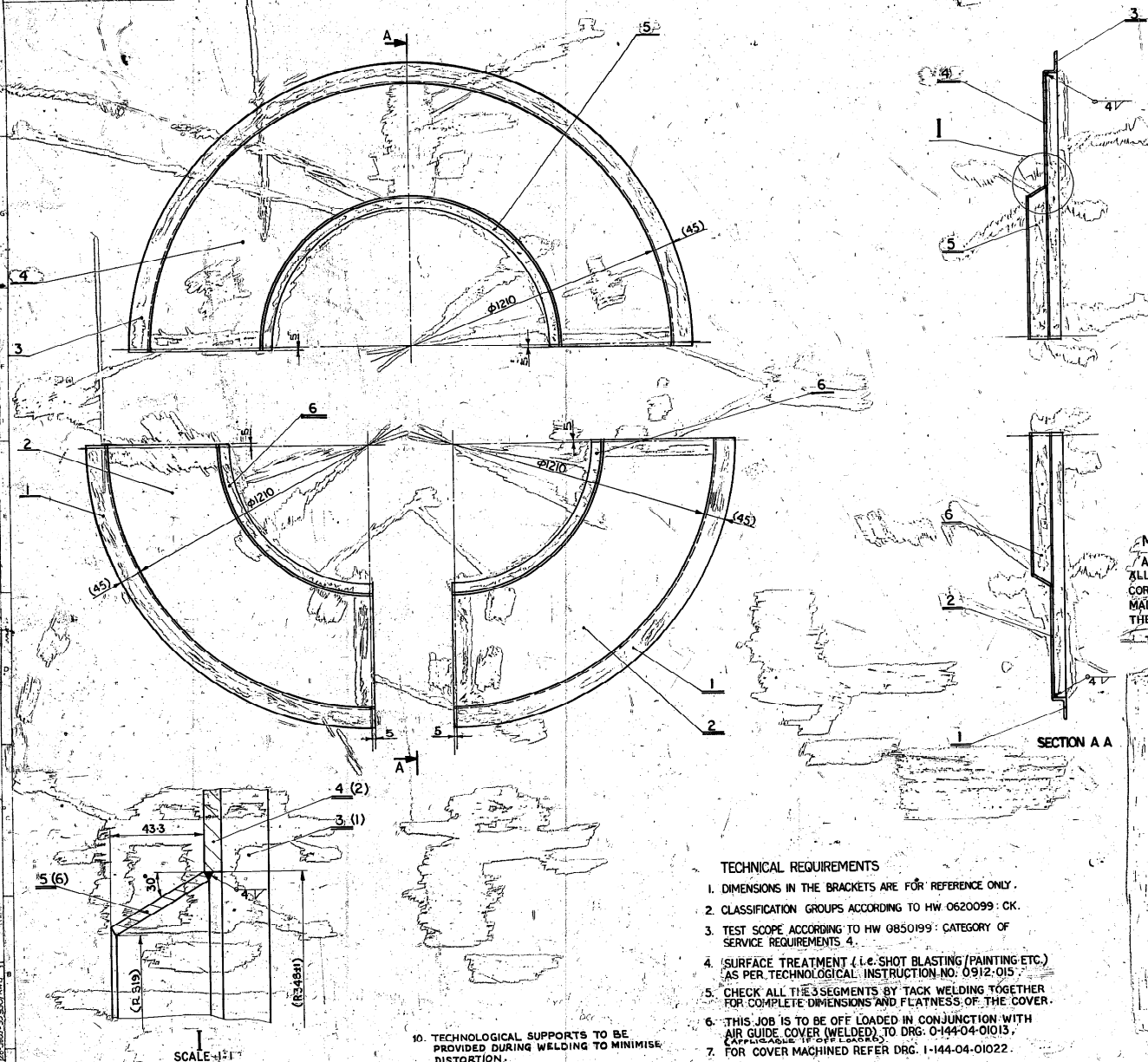
1

NO. OF SHEETS.

1

SIZE A4

1-144-04-01023



SYMBOL AND SIZE OF SEAM	4 
SEAM LENGTH M	6.050
WEIGHT OF DEPOSITED METAL Kg	0.570
TYPE OF ELECTRODE	E-6013

ANGLES ITEM 1 & 3 TO BE BENT TO I.D. OF 1210 KEEPING BENDING ALLOWANCE OF 200 mm AT BOTH ENDS. CHECK THE BENDING CORRECTNESS OF THE ANGLES WITH TECHNOLOGICAL TEMPLATE (TO BE MADE BY SUBCONTRACTOR) AND RECTIFY IF NECESSARY. CUT OFF THE EXTRA LENGTH.

TACK WELD ALL THE ITEMS FOLLOWED BY REGULAR WELDING

1. DIMENSIONS IN THE BRACKETS ARE FOR REFERENCE ONLY.

2. CLASSIFICATION GROUPS ACCORDING TO HW 0620099: CK.
3. TEST SCOPE ACCORDING TO HW 0850199: CATEGORY OF SERVICE REQUIREMENTS 4.
4. SURFACE TREATMENT (i.e. SHOT BLASTING/PAINTING ETC.) AS PER TECHNOLOGICAL INSTRUCTION NO. 0912-015.
5. CHECK ALL THE SEGMENTS BY TACK WELDING TOGETHER FOR COMPLETE DIMENSIONS AND FLATNESS OF THE COVER.
6. THIS JOB IS TO BE OFF LOADED IN CONJUNCTION WITH AN IN-GUIDE COVER (WELDED) TO DRG: 0-144-04-01013 (CAPTAINABLE IF OFF LOADED)
FOR COVER HATCHED REFER DRG. 1-144-04-01022.
8. IDENTIFICATION ACCORDING TO HW 0400397.
9. ALL THE THREE SEGMENTS OF COVER OF EACH ~~3~~ IDENTIFIABLY IDENTIFIED SO THAT MIXING OF SEGMENTS OF COVERS OF OTHER PLANT OR

10. TECHNOLOGICAL SUPPORTS TO BE PROVIDED DURING WELDING TO MINIMISE DISTORTION.

002	—	006 PLATE	3-144-04-01075	AA101808013 AA10108	NO	1.000	F 7
001	—	005 PLATE	3-144-04-01074	AA101808013 AA10108	NO	2.000	8
001	—	004 SEGMENT	4-144-04-01078	AA101808056 AA10108	NO	24.360	C 2
001	—	003 ANGLE	3-144-04-01069	HW1012608964 AA10108	NO	15.570	F 12
002	—	002 SHEET	4-144-04-01177	AA101808056 AA10108	NO	12.260	E 12
002	—	001 ANGLE	3-144-04-01068	HW1012608964 AA10108	NO	2.810	E

VAR	00	REMARKS	ITEM NO	DESCRIPTION	DRAWING NO	MATERIAL SPEC	QTY	UNIT
59	64/65		75/75	27/25	55/55	77/77	2/2	1/1

CARD TYPE 3		CARD TYPE 1	
GMS/33 3P NO		STATUS 3P DRG	
0-144-04-01011		TYPE OF PRODUCT	
AGREED		OR	
NAME		BRUSHLESS EXCITER FOR 500 MW TG.	
SIGN.		NAME OF CUSTOMER / PROJECT	
DATE			

WT	Ro	21-2-90	NAME OF CUSTOMER PROJECT	NAME	SIGN	DATE	NO
			BH&I BHARAT HEAVY ELECTRICALS LTD. RANIPUR HARDWAR	T.N.G. SM	<i>Datta</i> <i>By</i>	24-2-90 2-4-90	VA

DATE	APPROVED	JOINT	SCALE	WEIGHT (KG)	REF ID: A54048	NO. OF
1	THROCKEN	T.G.E.	1:5	64-640	1-144-04-01022	001
		CODE				
		4133				
		C M F				

TITLE		DRAWING NO	
COVER (WELDED)		1-144-04-01023	
SHEET NO		NO OF SHEETS	

COVER (WELDED)

1-144-04-01023

SIZE A1



CORPORATE STANDARD

AA0230208

Rev. No. 01

PAGE 1 of 3

GENERAL TOLERANCES – TOLERANCES FOR LINEAR AND ANGULAR DIMENSIONS WITHOUT INDIVIDUAL TOLERANCE INDICATIONS

0.0 GENERAL

When selecting the tolerance class, the respective customary workshop accuracy has to be taken into consideration. If smaller tolerances are required or larger tolerances are permissible and more economical for any individual feature, such tolerances should be indicated to the relevant nominal dimension(s).

General tolerance for linear and angular dimensions apply when drawings or associated specifications refer to this standard in accordance with clauses 3 and 4. If there are general tolerances for other International standards, reference shall be made to them on the drawings or associated specifications. For a dimension between an unfinished and a finished surface, e.g. of cast or forged parts, for which no individual tolerance is directly indicated, the larger of the two general tolerances in question applies, e.g. for castings, see ISO 8062, Castings - system of Dimensional Tolerances.

1.0 SCOPE

The standard is intended to simplify drawing indications and it specifies general tolerances for linear and angular dimensions without individual tolerance indications in four tolerance classes.

It applies to the dimensions of parts that are produced by metal removal or parts that are formed from sheet metal.

NOTE:

- 1) The concepts behind the general tolerancing of linear and angular dimensions are described in Annex-A.
- 2) These tolerances may be suitable for use with materials other than metals.

This standard only applies for the following dimensions which do not have an individual tolerance indication:

- a) Linear dimensions (e.g. external sizes, internal sizes, step sizes, diameters, radii, distances, external radii and chamfer heights for broken edges).
- b) Angular dimensions, including angular dimensions usually not indicated, e.g. right angles (90°), unless reference to IS: 2102 (Part 2) is made, or angles of uniform polygons.
- c) Linear and angular dimensions produced by machining assembled parts.

It does not apply for the following dimensions:

- a) Linear and angular dimensions which are covered by reference to other standards on general tolerances.
- b) Auxiliary dimensions indicated in brackets.
- c) Theoretically exact dimensions indicated in rectangular frames.

2.0 COMPLIANCE WITH STANDARDS

This standard is based on IS: 2102 (Part 1)-1993 (ISO 2768-1).

3.0 GENERAL TOLERANCES

3.1 Linear dimensions are given in Table 1 and 2.

3.2 Angular dimensions: General tolerance specified in angular units control only the general orientation of lines or line elements of surfaces, but not their form deviations.

The general orientation of the line derived from the actual surface is the orientation of the contracting line of ideal geometrical form. The maximum distance between the contacting line and the actual line shall be the least possible value (see IS: 12160).

The permissible deviations of angular dimensions are given in Table 3.

Revisions: As per clause 17.7 of MOM of PGC-DOP+BES

APPROVED:
PROCEDURAL GUIDELINES COMMITTEE –
PGC (DOP+BES)

Rev. No. 01

Amd. No.

Reaffirmed

Prepared

Issued

Dt. of 1st Issue

Dt: 01-12-1995

Dt:

Year: 2013

HEP, Bhopal

Corp. R&D

22-06-1978

AA0230208

Rev. No. 01

PAGE 2 of 3

CORPORATE STANDARD**4.0 INDICATIONS ON DRAWINGS:**

If general tolerances in accordance with this standard shall apply, the following information shall be indicated.

Example: AA0230208 m

5.0 REJECTION

Unless otherwise stated, work pieces exceeding the general tolerance shall not lead to automatic rejection provided that the ability of the work piece to function is not impaired (see clause A4).

6.0 NOTE:

6.1 For "permissible deviations for Un-toleranced dimensions of castings" refer AA0230402.

6.2 For "Tolerances and machining allowances for flame cutting" refer AA0621101.

6.3 For "General tolerances for welding construction for length and angles" refer AA0621104.

6.4 For "General tolerances for welded structures form and position" refer AA0621105.

Table 1 – Permissible deviations for linear dimensions except for broken edges
(external radii and chamfer heights, see table 2)

Values in millimetres

Tolerance class		Permissible deviations for basic size range							
Designation	Description	0.5 ¹⁾ Up to 3	Over 3 Up to 6	Over 6 Up to 30	Over 30 Up to 120	Over 120 Up to 400	Over 400 Up to 1000	Over 1000 Up to 2000	Over 2000 Up to 4000
f	Fine	±0.05	±0.05	±0.1	±0.15	±0.2	±0.3	±0.5	-
m	Medium	±0.1	±0.1	±0.2	±0.3	±0.5	±0.8	±1.2	±2
c	Coarse	±0.2	±0.3	±0.5	±0.8	±1.2	±2	±3	±4
v	Very coarse	-	±0.5	±1	±1.5	±2.5	±4	±6	±8

1) For nominal sizes below 0.5 mm, the deviations shall be indicated adjacent to the relevant nominal size(s).

Table 2 – Permissible deviations for broken edges (external radii and chamfer heights)

Values in millimetres

Tolerance class		Permissible deviations for basic size range		
Designation	Description	0.5 ¹⁾ up to 3	Over 3 up to 6	Over 6
f	fine	±0.2	±0.5	±1
m	medium			
c	coarse	±0.4	±1	±2
v	very coarse			

1) For nominal sizes below 0.5 mm, the deviations shall be indicated adjacent to the relevant nominal size(s)

Table 3 – Permissible deviations of angular dimensions

Tolerance class		Permissible deviations for ranges of lengths, in millimetres, of the shorter side of the angle concerned				
Designation	Description	Up to 10	Over 10 Up to 50	Over 50 Up to 120	Over 120 Up to 400	Over 400
f	fine	±1°	±0°30'	±0°20'	±0°10'	±0.5'
m	medium					
c	coarse	±1°30'	±1°	±0°30'	±0°15'	±0°10'
v	very coarse	±3°	±2°	±1°	±0°30'	±0°20'

CS-248 19/3/16



CORPORATE STANDARD

AA0230208

Rev. No. 01

PAGE 3 of 3

Annex A (informative)

Concepts behind general tolerancing of linear and angular dimensions

- A.1 General tolerances should be indicated on the drawing by reference to this standard in accordance with clause 4.

The values of general tolerances correspond to tolerance classes of customary workshop accuracy, the appropriate tolerance class being selected and indicated on the drawing according to the requirement of the components.

- A.2 Above certain tolerance values, there is usually no gain in manufacturing economy by enlarging the tolerance. For example, a feature having a 35 mm diameter could be manufactured to a high level of conformance in a workshop with "customary medium accuracy". Specifying a tolerance of ± 1 mm would be of not benefit in this particular workshop, as the general tolerance values of ± 0.3 mm would be quite adequate.

However, if, for functional reasons, a feature requires a smaller tolerance value than the general tolerance values, these should not be indicated adjacent to the dimension but should be stated on the drawing as described in clause 4. This type of tolerance allows full use of the concept of general tolerancing.

There will be "exceptions to the rule" where the function of the feature allows a larger tolerance than the general tolerances, and the larger tolerance will provide manufacturing economy. In these special cases, the larger tolerance should be indicated individually adjacent to the dimension for the particular feature, e.g. the depth of blind holes drilled at assembly.

- A.3 Using general tolerances leads to the following advantages:

- drawings are easier to read and thus communication is made more effective to the user of the drawing;
- The design draughtsman saves time by avoiding detailed tolerance calculations as it is sufficient to know that the function allows a tolerance greater than or equal to the general tolerance;
- The drawing readily indicates which feature can be produced by normal process

capability, which also assists quality engineering by reducing inspection levels;

- Those dimensions remaining, which have individually indicated tolerances, will, for the most part, be those controlling features for which the function requires relatively small tolerances and which therefore may require special effort in the production – this will be helpful for production planning and will assist quality control services in their analysis of inspection requirements;
- Purchase and sub-contract supply engineers can negotiate orders more readily since the "customary workshop accuracy" is known before the contract is placed; this also avoids arguments on delivery between the buyer and supplier, since in this respect the drawing is complete.

These advantages are fully obtained only when there is sufficient reliability that the general tolerances will not be exceeded, i.e. when the customary workshop accuracy of the particular workshop is equal to or finer than the general tolerances indicated in the drawing.

The workshop should therefore

- Find out by measurements what is customary workshop accuracy is;
- Accept only those drawings having general tolerances equal to or greater than its customary workshop accuracy;
- Check by sampling that its customary workshop accuracy does not deteriorate.

Relying on underlined "good workmanship" with all its uncertainties and misunderstandings is no longer necessary with the concept of general geometrical tolerances. The general geometrical tolerances defines the required accuracy of "good workmanship".

- A.4 The tolerance the function allows is often greater than the general tolerances. The function of the part is, therefore, not always impaired when the general tolerance is (occasionally) exceeded at any feature of the work piece. Exceeding the general tolerance should lead to a rejection of the work piece only if the function is impaired.

19/3/16

CS - 218



CORPORATE STANDARD

AA0621104

Rev. No. 01-

PAGE 1 of 6

GENERAL TOLERANCES FOR WELDING CONSTRUCTIONS FOR LENGTHS AND ANGLES

1.0 GENERAL

- 1.1 General tolerances are permissible variations corresponding to the degrees of accuracy normally observed in workshops where details of tolerances are not provided in the drawings.
- 1.2 The general tolerances specified in this standard apply to dimensions for which the tolerances are indicated on the nominal dimensions for welded components, welded assemblies and welded structures.
- 1.3 The variations apply to linear dimensions such as outside dimensions, inside dimensions, stepped dimensions, widths, Centre-to-Centre distances and also angles.
- 1.4 Special rulings may be stated for linear dimensions of welded structures consisting of several assemblies.
- 1.5 This standard is based on BS EN ISO 13920-1997
- 1.6 General tolerances for machined components are covered in Corporate Standard AA0230208.
- 1.7 Refer Corporate Standard AA0621105 for general tolerances for welded structures - Form and Position.

2.0 SCOPE

- 2.1 This standard prescribes four degrees of accuracy based on differences arising out of function and manufacture of welded components, assemblies and structures.
- 2.2 For technical and economic reasons other degrees of accuracy may be appropriate which have to be specifically stated.

3.0 GENERAL TOLERANCES

- 3.1 Tolerances for linear dimensions are given in Table 1.
- 3.2 Table 2, for the tolerances on angular dimensions.

4.0 REPRESENTATION ON DRAWINGS

- 4.1 The required degree of accuracy shall be specified in all fabrication drawings.
For example class 'B' of AA0621104 (BS EN ISO 13920)

Revisions: Clause 1.5, 3, 4.1, Table 1 & 2

APPROVED:
INTERPLANT MATERIAL RATIONALISATION
COMMITTEE - MRC (W)

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AA0621104

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4.2 Figures 1 to 5 give examples of how dimensions (linear & angular) are to be indicated on the drawings. (Refer page 6 of 6 of this standard)

5.0 TESTING

5.1 The actual size of an angular structural component is determined by placing suitable measuring instruments tangentially on the welded part so that the zone affected by the weld is eliminated. The variation is obtained from the difference between the dimension in the drawing and the actual size.

TABLE-1 TOLERANCE FOR LINEAR DIMENSIONS

Range of nominal sizes l in mm											
Tolerance Class	2 to 30	Over 30 up to 120	Over 120 up to 400	Over 400 up to 1000	Over 1000 up to 2000	Over 2000 up to 4000	Over 4000 up to 8000	Over 8000 up to 12000	Over 12000 up to 16000	Over 16000 up to 20000	Over 20000
Tolerances t in mm											
A	± 1	± 1	± 1	± 2	± 3	± 4	± 5	± 6	± 7	± 8	± 9
B		± 2	± 2	± 3	± 4	± 6	± 8	± 10	± 12	± 14	± 16
C		± 3	± 4	± 6	± 8	± 11	± 14	± 18	± 21	± 24	± 27
D		± 4	± 7	± 9	± 12	± 16	± 21	± 27	± 32	± 36	± 40

TABLE-2 TOLERANCES FOR ANGULAR DIMENSIONS

Tolerance Class	Range of Nominal sizes l in mm (Length of shorter leg)		
	Up to 400	Over 400 upto 1000	Over 1000
	Tolerance Δα (In degrees and minutes)		
A	± 20'	± 15'	± 10'
B	± 45'	± 30'	± 20'
C	± 1°	± 45'	± 30'
D	± 1°30'	± 1°15'	± 1°
Calculated and rounded tolerances t, in mm/m ^a			
A	± 6	± 4.5	± 3
B	± 13	± 9	± 6
C	± 18	± 13	± 9
D	± 26	± 22	± 18
^a The value indicated in mm/m correspond to the tangent value of the general tolerance. It is to be multiplied by the length, in m, of the shorter leg.			

NOTE:

- 1) The permissible variations also apply to unmarked angles of 90° and 180°.
- 2) The shorter side of the angle is specified as the reference side.
- 3) Its length can also be taken from a specially indicated reference point to be shown in the drawings.
- 4) If the drawing contains no angle data, but only linear dimensions, then the permissible variations are to be taken in mm/m.

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- 6.0 Tolerances on dimensions of welded assemblies, the part of which are machined preliminarily and the assembly after welding as per given size not subjected to machining are set 50% lower than the tolerances on dimensions requiring a given accuracy.
- 7.0 In case of necessity, it is allowed to set as symmetrical tolerances in relation to nominal, but in this case the sum total of the value of the tolerance is to be preserved as per table 1.
- 8.0 Deformation of welded constructions (not in contact with floor plate) is allowed up to limits given in table 3.

Remarks:

- 1) The local convexities and concavities of the sheathing surface having smooth transition are allowed up to 4 mm.
- 2) General bend along the whole length of the sheathing should not exceed W mm per running metre.
- 3) Bends in the thin walled construction of the type of branch pipes, baffles of air draft, hydro-generators are considered separately in every particular case.

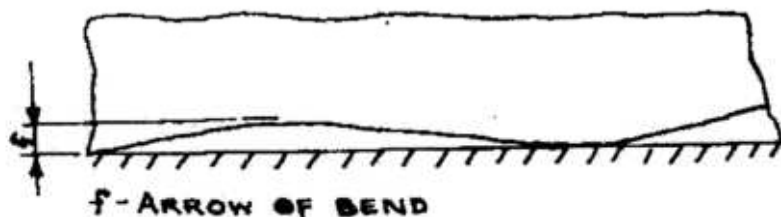


TABLE-3

Type of Construction	Length in mm						
	10000 to 15000	5000 to 10000	3000 to 5000	1500 to 3000	1000 to 1500	500 to 1000	Upto 500
Beams, spokes, stands, guards and similar parts	Allowable bend in mm						
	10.0	8.0	6.0	4.5	3.0	2.5	2.0
Frames, Floor plates dished parts, boxes External covers, bearings and Similar parts.	12.0	10.0	8.0	6.0	4.0	3.0	2.0

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9.0 Allowance for machining of welded construction is determined as per table 5.

Remarks:

- 1) In case of machining of diameters and constructions from two sides the allowance is doubled.
- 2) For "Dimension as per drawing" is taken the dimension for which the allowance is meant.

10.0 Tolerances on bend "C" shall be as per table 4.

TABLE – 4

Width of flange "b" in mm	Thickness of flange "s" in mm	Tolerance "c" in mm
400-201	60-41	3.0
	40-31	3.5
	30-21	4.0
	20-11	4.5
	10 and lower	5.0
200-150	40-31	3.0
	30-21	3.5
	20-11	4.0
	10 and lower	5.0
149-100	40-31	2.5
	30-21	3.0
	20-11	3.5
	10	4.5
99-50	30-21	2.0
	20-11	2.5
	10	3.0
50 and lower	30-21	1.5
	20-11	2.0
	10	2.5

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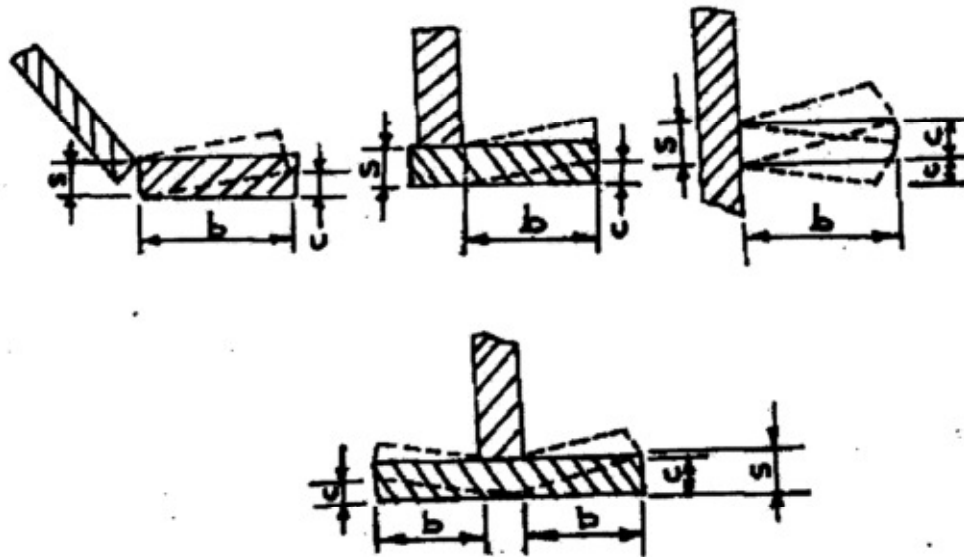


TABLE-5

Dimension as per Drawing (mm)	Machining Allowance per side (mm)
Upto 500	6
More than 500 & upto 1000	8
More than 1000 & upto 2000	10
More than 2000 & upto 4000	12
More than 4000 & upto 6000	14
More than 6000 & upto 10000	18
More than 10000 & upto 15000	22
More than 15000	24

11.0 REFERRED STANDARDS (Latest publications including amendment)

- 1) AA0230208
- 2) AA0621105

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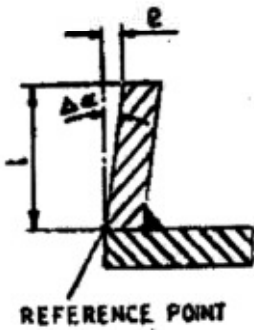


FIG. 1

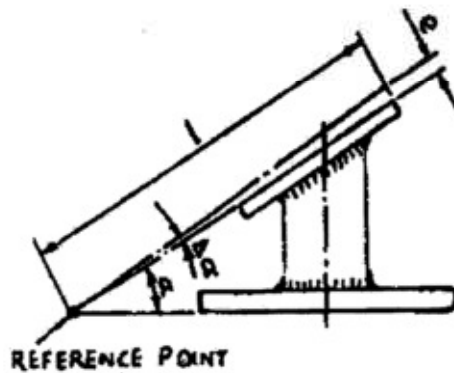


FIG. 2

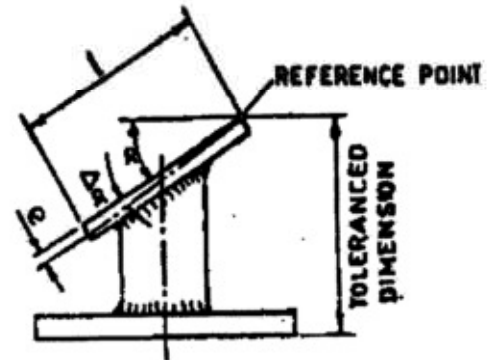


FIG. 3

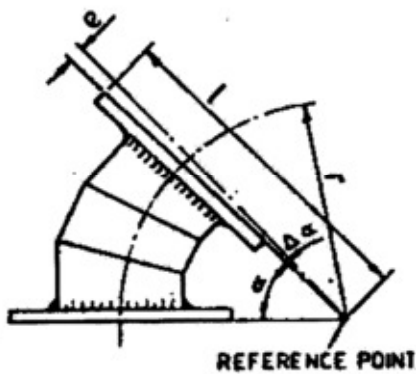


FIG. 4

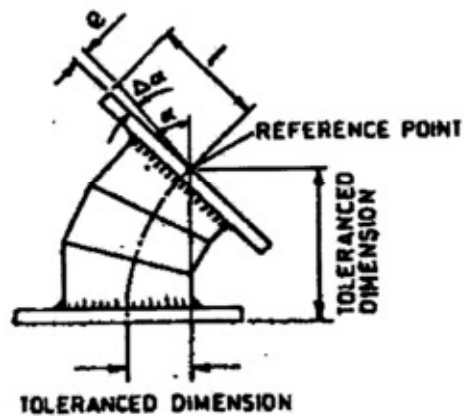


FIG. 5



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TOLERANCES AND MACHINING ALLOWANCES FOR FLAME CUTTING

1.0 SCOPE

This standard lays down the tolerances, machining allowances and the surface finish to be obtained for steel plates and rolled products, flame cut by hand or by machine.

2.0 FINISH OF CUT SURFACES

- 2.1 Surface finish to be obtained on cut surfaces for various methods of cutting is given in table 1.

TABLE 1: FINISH OF CUT SURFACE

(CLAUSE 2.1)

Methods of Cutting	Plate Thickness mm	Finish in Microns
Automatic Gas cutting	5 to 10	320 to 800
	11 to 40	160 to 500
	41 to 100	320 to 800
	above 100	500 to 1200
Semi-Automatic Gas cutting	5 to 10	500 to 1200
	11 to 40	320 to 800
	41 to 100	500 to 1200
	above 100	800 to 2000
Manual Gas cutting	5 to 10	800 to 2000
	11 to 40	800 to 2000
	41 to 100	800 to 2000
	above 100	1200 to 3000
	Rolled Sections	1200 to 2000
	Pipes	1200 to 2000

2.2 NOTES

- 2.2.1 Local notches on the gas cut surface having depth upto twice the highest roughness value as per the above table are permissible in case their number does not exceed 4 per metre length of cut. In case the gas cut surface is to be subsequently machined, the allowable depth of local notches may be increased to 70% of the machining allowance on side.
- 2.2.2 The roughness of gas cut surface for scrap cutting of risers giving allowances for bending and other such rough jobs is not covered in this standard.

Revisions:
As per Clause 4 of MOM of 10th IPSC, WG-W

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15 Jan 1976

2.2.3 The total length of deviated cuts on the gas cut surface shall not exceed 20% of the actual length of cut and length of maximum deviated cut should not be more than 150 mm.

2.2.4 The deviated cuts shall have smooth transitions.

3.0 TOLERANCE AND ALLOWANCES

3.1 TOLERANCES AND ALLOWANCES SCHEME

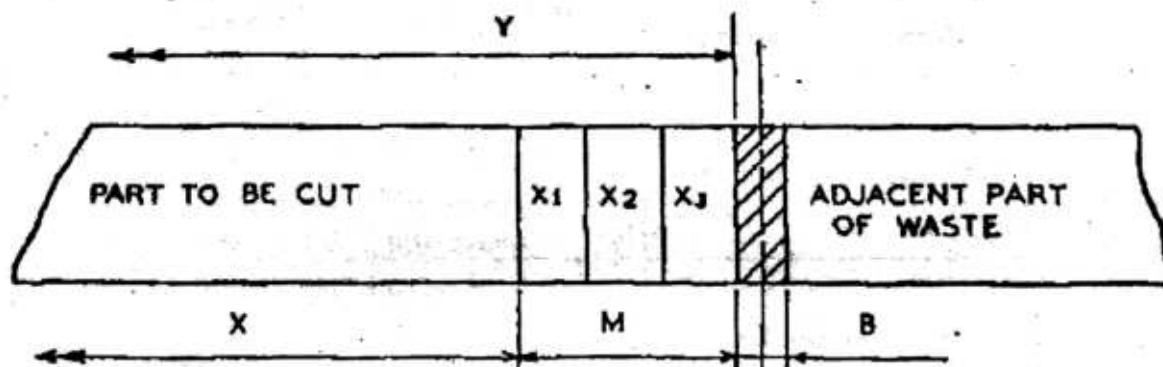


FIG. 1

X = Nominal size of part

Y = Nominal size of blank for the part

M = Machining allowance

B = Width of cut

X₁ = Allowance, considering the local unevenness during culling

X₂ = Allowance, considering violation of dimensions of parts to be cut as a result of inaccurate placement of plates on tables, inaccuracy of setting of cutting torch in relation to the plate to be cut.

X₃ = Allowance, considering inaccuracy of marking (error in making of templates) depending upon the overall dimensions of parts to be cut.



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- 3.2 Value of machining allowance along the periphery of parts depends upon the thickness of metal to be cut & the equipment used for flame cutting according to table 2A.

TABLE 2A

MACHINING ALLOWANCE (IN mm) ON EACH SIDE OR RADIUS ON GAS CUT EDGES WHICH ARE TO BE MACHINED SUBSEQUENTLY (KERF ALLOWANCE i.e. WIDTH OF CUT NOT INCLUDED)

PROCESS/ MACHINE	THICKNESS OF PLATES IN mm					
	UPTO 25 mm	ABOVE 25 mm UPTO 50 mm	ABOVE 50 mm UPTO 100 mm	ABOVE 100 mm UPTO 150 mm	ABOVE 150 mm UPTO 250 mm	ABOVE 250 mm
CNC F/C	04	05	05	06	08	10
PANTOGRAPH F/C	05	06	07	08	10	12
ELETRONIC F/C	04	06	-	-	-	-
PORTABLE F/C	05	07	08 UPTO 75 mm THICKNESS	-	-	-
PLASMA CUTTING	06	08 UPTO 50 mm THICKNESS	-	-	-	-

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- 3.3** Value of machining allowances on the surface of an item (which is flame cut) depends upon its, out of flatness and hence shall be governed by its largest dimension. As such the plate thickness shall be selected by adding machining allowance on each face being machined vide table 2B.

TABLE 2B

MACHINING ALLOWANCES (IN mm) ON EACH FACE (SURFACE) ON GAS CUT PLATES WHICH ARE TO BE MACHINED SUBSEQUENTLY

NOMINAL SIZE OF THE PART (IN mm)	MACHINING ALLOWANCE ON EACH FACE (SURFACE) IN mm
UPTO 500	03
MORE THAN 500 AND UPTO 1000	05
MORE THAN 1000 AND UPTO 2000	06
MORE THAN 2000 AND UPTO 4000	08
MORE THAN 4000 AND UPTO 6000	10
MORE THAN 6000 AND UPTO 10000	12
MORE THAN 10000 AND UPTO 15000	15
MORE THAN 15000	18



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- 3.4 The tolerances on dimensions of parts gas cut and finished without further machining are given in table 3

TABLE 3: TOLERANCES ON GAS CUT (SURFACES) WHICH ARE NOT TO BE MACHINED SUBSEQUENTLY (CLAUSE 3.3.)

Nominal size of parts of blanks including allowances	Value of tolerance in mm ($\pm$) Thickness of metal to be cut in mm							
	Upto 25 Auto	Manual	26-50 Auto	Manual	51-100 Auto	Manual	101-200 Auto	Manual
More than 40 upto 250	1.5	2.5	2.0	3.0	2.5	4.0	3.0	5.0
251-500	2.0	3.0	2.5	3.5	3.0	4.5	3.5	5.5
501-1000	2.5	3.5	3.0	4.0	3.5	5.0	4.0	6.0
1001-2000	3.0	4.0	3.5	4.5	4.0	5.5	4.5	6.5
2001-3000	3.5	4.5	4.0	5.0	4.5	6.0	5.0	7.0
3001-5000	4.0	5.0	4.5	5.5	5.0	6.5	5.5	8.0
5001-10000	4.5	5.5	5.0	6.0	5.5	7.0	6.0	9.0

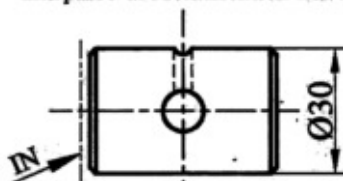
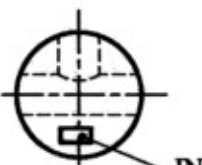
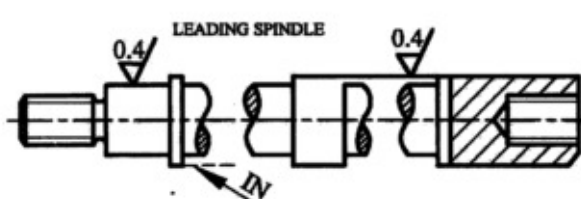
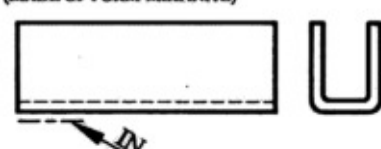
- 3.5 The cut shall be square and out of squareness due to the cut shall be limited to 5% of thickness if cut by hand and 3% of thickness if cut by machines.

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दिनांक एवं समय SIGN & DATE		संस्थान मानक (डीप - हरिद्वार) PLANT STANDARD (HEEP - HARDWAR)	HW 0400397 पृष्ठ 6 का 1 Page 1 of 6
स्वतंत्र एवं SUPERSEDES INVENT	Based upon KUN 107.01		
<u>IDENTIFICATION OF WORK PIECES</u>			
1.0 PURPOSE OF STANDARD :			
1.1 This standard shall be followed at HEEP for identification of work pieces. 1.2 To avoid mix-ups of parts of materials. To avoid placing identification marking where they might cause functional interference, for example notch effect. 1.4 To minimize re-stampings during manufacture. 1.5 To place the identification marking in identical location on identical parts. 1.6 To place the identification marking in such a manner as to leave them legible when the parts are assembled. 1.7 To place the identification marking in such a manner that corrosion and erosion cannot destroy the marking.			
2.0 IDENTIFICATION:			
2.1 Extent of identification Work order No. Drawing No. Q No. IR No. Heat No. in case of castings/ forgings			
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निर्देश एवं स्टाम्प SIGN & DATE			संस्थान मानक (हीप - हार्डवेयर) PLANT STANDARD (HEEP - HARDWAR)	HW 0400397 पृष्ठ 6 का 2 Page 2 of 6
SUPERSEDES INVENTORY	जारी हुई वजन की	Material colour codes for ferrous materials as per corporate standard number AA0400305. Material colour codes or its abbreviation for aluminium & aluminium alloys as per corporate standard no. AA0400310. Material colour codes or its abbreviation for copper and copper alloys as per corporate standard no. AA0400310. Material test stamp as per quality assurance system no. SMI 301 (Material procurement control system) Supplier's number/ manufacture's symbol (if specified in order documents). Acceptance stamp of customer's representative (if agreed upon with customer). "All rough machined casting and forgings received at our works must be identified by the casting/ forging nos. stamped by the supplier based on numbers giving by BHEL on the indent. These identification number must be retransferred suitably at works on the casting/ forging in case they are removed due to further machining"		
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.		2.2 Means of identification The identification is stamped on the part with a marking punch, except for the following: Sheet metal parts of $\leq 3\text{mm}$ thickness should be marked by electric engraver. Also wherever punching is not possible, admissible electric engraver can be used (see figure - 3) Not yet machined castings and forgings are to be marked with oil paint on the surface which will remain unmachined even after final machining as far as possible. After machining this identification must be replaced by punch marking. For identification marking example see pages 5. Smaller items such as fasteners M16 and below, machined parts of nipple connectors/ nut nipple set where punching/ engraving of identification details is not possible, the following procedure to be adopted:		
स्वसाक्षिक एवं गोपनीय इस प्रलेख में दी गई सूचना भारत भारती इलेक्ट्रिकल्स की संपत्ति है। इसका प्रयोग एवं आकाश रूप से किसी भी प्रकार का प्रसारण, जो कि कंपनी के हित में हानिकारक हो न किया जाए।				
निर्देश एवं दिनांक SIGN & DATE  25/01/13				
जारी हुई वजन INVENTORY P-1709	Rev.No.04		निर्माणकर्ता WORKED BY जांचकर्ता CHECKED BY	Lalit Kumar B. Choudhary  18.3.13  18.3.13

SUPERSEDES INVENTORY जारी की तारीख	दिनांक पर हस्ताक्षर SIGN & DATE		संस्थान मानक (डीप - हार्डवेयर) PLANT STANDARD (HEEP - HARDWARE)		HW 0400397 पृष्ठ 6 का 3 Page 3 of 6	
COPYRIGHT AND CONFIDENTIAL The information on this document is the property of Bharat Heavy Electrical Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company.		(i) For smaller items total weight less than 2Kg., these items may be put in plastic/ gunny bag suitably tied and bags may be tagged giving full details per clause 2.1. (ii) If the number of parts is large i.e. weighting more than 2 kg., these are to be packed in a wooden box and identification detail to be clearly written on the box by paint. (The requirements listed above to be mentioned in purchase order) (iii) After the receipt of the boxes in store, the items are to be verified, steeloscope testing for chemistry of the components is to be done by quality control. The boxes are to be closed and sealed after satisfactory verification by quality control. (iv) Shop planning/ shop store must be keep such boxes separately to avoid mixing with other similar items. (v) Production to maintain and keep the records of these items plant order wise and Q. No. also to be mentioned in the records. 2.3 Process of identification Ferrous material and its alloys should be marked with the material colour code as per corporate standard no. AA0400305. Aluminium and copper material and its alloys should be marked with the material colour code as per corporate standard AA0400310. If the colour code during manufacturing is removed than the work piece must be marked with abbreviation equivalent to colour code of the material as per AA0400310. It must be shown on the accompanying documents and compared with the work piece prior to the start of the first operation. Remaining identification should be affixed after the part is checked. 2.4 Identification of sub-contracted material The identification of sub-contracted material/ semifinished parts, issued from stores shall be as per SMI- 623 (A) subcontracting				
स्वसंस्कार एवं गोपनीय इस प्रतीक से ही यह सूचना प्राप्त की जा सकती है कि इसका प्रसारण आंतरिक रूप से किया जा रहा है। यदि नहीं, तो इसे गोपनीय माना जायेगा।						
हस्ताक्षर एवं दिनांक SIGN & DATE  25/3/13						
जारी की तारीख INVENTORY 0-1709	Rev.No. 04		निर्माणकर्ता WORKED BY	Lalit Kumar		18.3.13
			जाँचकर्ता CHECKED BY	B. Choudhary		18.03.13

COPYRIGHT AND CONFIDENTIAL The information on this document is the property of BHARAT HEAVY ELECTRICAL LIMITED. It must not be used directly or indirectly in any way detrimental to the interest of the company		संस्थान मानक (हीप-हरिद्वार) PLANT STANDARD (HEEP-HARDWAR)	HW 0400397 पृष्ठ 6 का 4 PAGE 4 OF 6						
SYSTEMS WHICH READS AS UNDER:-									
2.4.1 In case of issue of materials direct from stores, sub-contracting store will ensure that 'Q' mark and inspection seal are punched/ painted on total lengths/areas of plates by QCX before despatch of material to such contractor and these will be recorded on all the copies of SMIV by sub contracting store. (Ref. clause 9.6 of SMI 623-A) 2.4.2 In case of partly process materials shop planning will ensure that semifinished items are inspected and clear identification marks are punched/ painted by shop QCX before handing over to sub contracting store. (Ref. clause 10.5 of SMI 623 -A)									
3 Drawing Notation: The following shall be written in the vicinity of the title block of the blank drawing sheet: Identification according to HW0400397 At the place indicated with <u>IN</u> → The place of identification has to be indicated by an arrow and the letters in <u>(IN)</u> →									
 FIG.1  FIG.2									
If it is not possible to allow to stamp the identification mark with a marking punch, one of the following remarks should be entered on the drawing.									
 FIG.3 INSULATING CAP (MADE OF FORM-MIKANITE)  FIG.4									
संस्थापक के र एवं गैर पंजीय इस दस्तावेज में से कोई भी अंश बिना लिखित अनुमति के प्रसारित नहीं किया जा सकता है। तारीख: 18.3.13	Rev.No. 04	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">निर्माणकर्ता WORKED BY</td> <td style="width: 30%;">Lalit Kumar</td> <td style="width: 30%;">18.3.13</td> </tr> <tr> <td>जांचकर्ता CHECKED BY</td> <td>B.Chodhary</td> <td>18.3.13</td> </tr> </table>	निर्माणकर्ता WORKED BY	Lalit Kumar	18.3.13	जांचकर्ता CHECKED BY	B.Chodhary	18.3.13	18.3.13
निर्माणकर्ता WORKED BY	Lalit Kumar	18.3.13							
जांचकर्ता CHECKED BY	B.Chodhary	18.3.13							

निर्माण एवं प्रमाणन SIGN & DATE		संस्थान मानक (हीप - हार्डवेयर) PLANT STANDARD (HEEP - HARDWAR)		HW 0400397 पृष्ठ 6 का 5 Page 5 of 6															
		In case of the mass produced parts eg. cores, spacers, conductors (hollow conductors and solid strands) and cooling pipes (generator construction) respectively condenser cooling pipes, the identification spot does not need to be indicated on the drawing, identification according to HW0400397 is sufficient. Guidelines for the selection of the place of identification is contained in plant standard no. HW0400398. 4.0 SPACE REQUIREMENT: The size of the letter used for marking of casting and forgings with oil paint, as well as other parts with a marking punch is left to the individual operator. It should be chosen according to the space available for marking purposes as well as size of the part. The standardized letter and number of punch sizes at corporate level are 3, 5, 8 & 10 millimeter. See section 2.2 for means of identification if sufficient space is not available for stamping all the required information on the part. 5.0 EXAMPLES OF IDENTIFICATION MARKINGS: <table border="1"> <thead> <tr> <th>TURBINE L.P. SHAFT</th> <th>IDENTIFICATION</th> </tr> </thead> <tbody> <tr> <td>WORK ORDER NUMBER</td> <td>10049-A-107-01</td> </tr> <tr> <td>DRAWING NUMBER</td> <td>9 103 01 01000</td> </tr> <tr> <td>IDENTIFICATION NUMBER FOR ATTESTED/ CONTROLLED MATERIAL</td> <td>XX-X-X-XXXXXX-XX (As per AA4915)</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>MOVING BLADE</th> <th>IDENTIFICATION</th> </tr> </thead> <tbody> <tr> <td>WORK ORDER NUMBER</td> <td>10049-A-107-01</td> </tr> <tr> <td>DRAWING NUMBER</td> <td>21 0 1 02010 01</td> </tr> <tr> <td>MATERIAL CODE COLOUR</td> <td>ORANGE-VOILET-ORANGE</td> </tr> </tbody> </table>				TURBINE L.P. SHAFT	IDENTIFICATION	WORK ORDER NUMBER	10049-A-107-01	DRAWING NUMBER	9 103 01 01000	IDENTIFICATION NUMBER FOR ATTESTED/ CONTROLLED MATERIAL	XX-X-X-XXXXXX-XX (As per AA4915)	MOVING BLADE	IDENTIFICATION	WORK ORDER NUMBER	10049-A-107-01	DRAWING NUMBER	21 0 1 02010 01
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स्वामित्व अधिकार एवं गोपनीय इस दस्तावेज में दी गई जानकारी भारत भारती इलेक्ट्रिकल्स की संपत्ति है। इसका प्रयोग एवं प्रसारण बिना भारत भारती इलेक्ट्रिकल्स की लिखित अनुमति के किया नहीं जा सकता है।																			
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धारणी सूची में स्थान INVENTORY P-1709	Rev.No 04		निर्माणकर्ता WORKED BY Lalit Kumar	जाँचकर्ता CHECKED BY B. Choudhary	तिथि 18.3.13														

From my service SIGN & DATE मूल से मेरे से हस्ताक्षर और तिथि		संस्थान मानक (हीप : हरिद्वार) PLANT STANDARD (HEEP : HARIDWAR)		HW0400397 पृष्ठ का Page 6 of 6																
SUPERSEDES INVENTORY मूल को प्रतिस्थापित करने वाला संख्या	6.0 IDENTIFICATION NUMBER FOR ATTESTED/ CONTROLLED MATERIALS: The identification scheme for system for attested/ controlled material is as follows: <table border="0"> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> <td style="text-align: center;">5</td> </tr> <tr> <td style="text-align: center;">XX</td> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> <td style="text-align: center;">XXXXX</td> <td style="text-align: center;">XX</td> </tr> <tr> <td colspan="3" style="text-align: center;">SRV No.</td> <td colspan="2" style="text-align: center;">SL. No.</td> </tr> </table> Barrel 1 will be two digits code representing the receipt cell concerned. Barrel 2 will be single digit indicating whether the material required is imported or indigenous. '0' will be used for imported and '1' for indigenous materials. Barrel 3 will be a single digit representing the last digit of the financial year. (for example '4' will be written for 1984-85) Barrel 4 will be a five digit serial numbers within Barrel 1 & 3 Barrel 5 will be serial number of the entry on store receipt voucher.					1	2	3	4	5	XX	X	X	XXXXX	XX	SRV No.			SL. No.	
	1	2	3	4	5															
XX	X	X	XXXXX	XX																
SRV No.			SL. No.																	
7.0 IDENTIFICATION FOR DABG-DEFENCE ITEMS: Only applicable for DABG-Defence items where specifically 'IN' is marked on the drawings. Identification for Items shall be either punched/engraved/Laser marked or any equivalent method by shop/vendor (as case may be) prior to protective surface treatment/coating, if any, in following format: a) D YY XXXX Z - N: (D indicates BOI, YY indicates Year, XXXX indicates last 4 digits of PO, Z item sl. number in PO, N item's own running sl. no.). b) X YY XXXX Z - N: (X indicates Sub-contracting, YY indicates Year, XXXX indicates last 4 digits of SCO, Z item sl. number in SCO, N item's own running sl. no.). c) S YY XXXXX Z - N: (S indicates Shop manufactured, YY indicates Year, XXXXX indicates last 5 digits of docket, Z item sl. number in docket, N item's own running sl. no.).																				
From my service SIGN & DATE मूल से मेरे से हस्ताक्षर और तिथि	REV. NO. 04	(Supersedes)		निर्माणकर्ता WORKED BY PRASHANT (DPE)	25.09.21															
मूल को प्रतिस्थापित करने वाला INVENTORY NO. P-1709			जांचकर्ता CHECKED BY RAHUL (DPE)	25.09.21	25.09.21															

दिनांक एवं हस्ताक्षर SIGN & DATE		संस्थान मानक (हीप : हरिद्वार) PLANT STANDARD (HEEP: HARIDWAR)		HW0620099 पृष्ठ का Page 1 of 1	
SUPERSEDES INVENTORY NO.	Welding — Fusion-welded joints in steel, nickel, titanium and their alloys — Quality levels for imperfections				
भारती पूर्ण संख्या अधिकारिक संख्या	1. Scope: This Standard provides quality levels of imperfections in fusion-welded joints in all types of steel, nickel, titanium and their alloys. It applies to material thickness ≥ 0.5 mm. It covers fully penetrated butt welds and all fillet welds. Its principles can also be applied to partial-penetration butt welds.				
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. Classification Group: The classification group is the level of quality based on ISO 5817. The limits of imperfections for its various quality levels for all the stated cases are to be followed in accordance with ISO 5817.				
	3. Weld Classification: 3.1 Three levels of weld quality — B, C & D have been established as per ISO 5817. 3.2 The type of weld shall be indicated with suffix 'S' for butt weld and suffix 'K' for fillet weld in the drawing 3.3 A two letter code utilising the above letters will comprise the classification groups indicating quality grade and type of weld. For Example: BS, BK, CS, CK, DS, DK 3.4 Quality of weld seam is to be indicated in drawing, eg : "Quality grade as per HW0620099 BS, BK"				
	4. Acceptance Criteria: The acceptance criteria are based on ISO 5817 for its different quality levels. This standard does not address NDT methods to be used for detection of surface and internal discontinuity. For the same, standard HW0850199 is to be referred. HW0850199 gives the correlation between the quality levels of ISO5817 and the NDT testing technique, testing level and acceptable level for surface and internal discontinuities. If welds are subjected to fatigue load, the same shall be indicated in the drawing. The same will be evaluated as per Table C.1 of ISO 5817.				
	भारती पूर्ण संख्या एवं योग्यता इस दस्तावेज में दी गई जानकारी भारत भारती लिमिटेड का संपत्ति है। इसका प्रयोग एवं प्रसारण केवल भारती लिमिटेड के अधिकार के बिना नहीं किया जा सकता है।				
दिनांक एवं हस्ताक्षर SIGN & DATE 30/03/18	TSX - D. GANGWAR	अनुवादक TRANSLATED BY QC - NDT AMIT KUMAR	कार्यवाही WORKED BY SUSHANT KR. THAKUR	दिनांक एवं हस्ताक्षर SIGNATURE & DATE 30/03/2018	
सहमत विभाग AGREED DEPTT. नाम NAME दिनांक एवं हस्ताक्षर DATE & SIGNATURE	SUPERSEDES REV.NO. 2 Dt. 30/03/2018 CHANGE ADVICE NO. TSX (WT)-18-65	जांचकर्ता CHECKED BY पर्यवेक्षणकर्ता SUPERVISED BY BS ARORA	स्वीकृति संस्थान मानकीकरण समिति APPROVED : PLANT STANDARDIZATION COMMITTEE निर्माण PREPARED : WTX	दिनांक DATE: 29/3/1983	Gr. NO. 1.42

संस्था मानक (हीप : हरिद्वार) PLANT STANDARD (HEEP: HARIDWAR)	HW0850199																			
	पृष्ठ Page	का 1 of 58																		
Based on PV0026-0-000000 (date 2014-06)																				
Non-destructive testing of welded joints																				
Introduction: This Standard deals with the testing of weld joints in assemblies within the boundary of the "turbo-set" (turbine, generator, condenser) and their related piping assemblies. For simplicity and convenience of use, the standard has been divided into following parts:																				
<table border="1"> <thead> <tr> <th>Part</th> <th>Description</th> <th>Page No.</th> </tr> </thead> <tbody> <tr> <td>Part 1</td> <td>General Principles</td> <td>Pages (2-8)</td> </tr> <tr> <td>Part 2</td> <td>Requirements on test procedures</td> <td>Pages (9-33)</td> </tr> <tr> <td>Part 2.4</td> <td>Hardness Testing</td> <td>Pages (34-45)</td> </tr> <tr> <td>Part 10</td> <td>Part Specific information on Heat Exchangers</td> <td>Pages (46-48)</td> </tr> <tr> <td>Part 11</td> <td>Component-specific data for piping</td> <td>Pages (49-58)</td> </tr> </tbody> </table>	Part	Description	Page No.	Part 1	General Principles	Pages (2-8)	Part 2	Requirements on test procedures	Pages (9-33)	Part 2.4	Hardness Testing	Pages (34-45)	Part 10	Part Specific information on Heat Exchangers	Pages (46-48)	Part 11	Component-specific data for piping	Pages (49-58)		
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SUPERSEDES INVENTORY NO.																				
REV. NO. 05 DATE 24/12/2018 CHANGE ADVICE NO. TSX(WT)-18-181																				
STE DINESH GOND EME ADIT NITIAL HXE TARUN HINSAL	TRANSLATED BY WORKED BY CHECKED BY SUPERVISED BY	NAME SUSHANT KR. THAKUR BL MEENA BS ARORA																		
QC - NDT AGREED DEPT.	NAME DATE & SIGNATURE	SIGNATURE & DATE Gr. NO. 6.49 DATE: 11.11.93																		



BHARAT HEAVY ELECTRICALS LIMITED

HEEP-HARIDWAR, UTTARAKHAND (249403)

General Instructions and Standard Terms & Conditions for bidding against Tender Enquiry (GISTC)

For Indian Bidders (Version June-2021, Rev: 06)

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1. GENERAL.

These general terms & conditions shall apply to all the Tender Enquiries, notice inviting tenders, request for quotations concerning the supply of goods and / or rendering of services to Bharat Heavy Electricals Ltd., HEEP, Haridwar (hereinafter referred to as BHEL or the Purchaser). In case of placement of order these conditions will become part of Purchase Order (P.O) until unless the deviations are specifically agreed by BHEL.

2. ORIGIN OF QUOTATION.

- The quotation should preferably be from the principal bidder. However tender specific authorized registered dealer/agent can also submit the bid on their behalf, failing which the quotation is liable to be ignored. BHEL prefers to deal directly with the principal manufacturers.
- An agent cannot quote on behalf of more than one principal in the same Tender Enquiry.

3. SUBMISSION OF TENDER.

- Bid / Quotation must be enclosed in sealed cover on which tender enquiry number and the due date MUST BE written and be invariably sent under REGISTERED POST / SPEED POST / COURIER / Dropped in the Tender Box: addressed as follows:

Quotation against Enquiry No. _____

Dated: _____

Due on: _____

To,

**THE HEAD OF MATERIALS MANAGEMENT,
Heavy Electrical Equipment Plant,
Bharat Heavy Electricals Limited,
HARIDWAR-249403 (Uttarakhand), INDIA.**

- TENDER ROOM is located at: Room No. - 415, 4th Floor, Main Admin. Building, BHEL-HEEP, Haridwar.

Quotations / Bids not in accordance with General Instructions and Standard Terms & Conditions are likely to be ignored.



BHARAT HEAVY ELECTRICALS LIMITED

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- c) In case of Three / Two Part Bid, technical bid containing technical offer, duly signed and un-priced copy of the Price Bid should be kept in one envelope. Price Bid containing only the price should be kept in a separate envelope. All envelopes indicating Part-1 or Part-2 or Part-3 as the case may be to be put in a bigger envelope. Please note that un-priced bid should be the exact replica of price bid but without prices.
- d) The bid / quotation must be posted before due date, keeping allowance for postal transit time. Quotations sent by any mode but not received in time will be ignored. Tender received through authorized E-mail is also acceptable. However, in time submission of tender in tender box shall be the responsibility of the bidder, sent through any mode. Documents submitted with the offer / bid shall be signed and stamped in each page by authorized representative of the bidder.
- e) Any additional documents submitted by supplier / bidder, during processing of registration application / tender or after placement of order shall not be accepted unless it is submitted with forwarding letter and duly signed and stamped.
- f) The bids of the bidders who are on the banned list and also the bids of the bidders, who engage the services of the banned firms, shall be rejected. The cutting / overwriting in the bid / offer must be duly attested by the signatories to the bid. The list of firms banned by BHEL is available on BHEL web site www.bhel.com.
- g) Being PMD vendor, if you are not quoting against this tender enquiry, please send your regret letter positively for our reference with valid reasons for not participating in the tender enquiry. Repeated lack of response on the part of bidder may lead to deletion such PMD vendor from BHEL's approved vendor list.
- h) The bidders will submit Integrity Pact, duly signed by its authorized signatory, along with their bids wherever estimated tender value is Rs. 2 Crore or more.
- i) In case of open tender, technically qualified unregistered bidders may apply online for registration through <http://www.bhel.com/index.php/vender>.
- j) BHEL reserves the right to award tendered quantities among more than one bidder (after acceptance of L1 price by the other bidders). BHEL can also consider awarding of part of the tendered quantity to other than L-1 bidder at L1 counter offered rates, if the quantity offered by the L-1 bidder is less than the quantity tendered for.
- k) In case of e-Tendering (Online bidding through e-portal), offline bid submitted in hard copy or in any other form by the vendor / supplier will not be accepted and will be rejected out rightly. Only e-portal bid will be accepted.

4. TENDER OPENING.

Tender opening is scheduled to start in the Tender Room at 2:00 PM, on the due date. Therefore, bid / quotations must reach this office / tender Box latest by 1:45 PM on due date. Only participating bidders are allowed to attend tender opening. **TENDERS RECEIVED AFTER THE SPECIFIED TIME OF THEIR 'SUBMISSION' WILL BE TREATED AS LATE TENDERS AND SHALL NOT BE CONSIDERED UNDER ANY CIRCUMSTANCES.** The bidders or their authorized representatives may be allowed to attend tender opening if duly authorized by their principals, through a tender specific letter on that particular day. General authorization letter is not acceptable.

Note: - Foreign bidders willing to attend the bid opening has to provide the requisite documents to the concerned Purchase executives for arranging gate pass for them.

5. SPECIFICATION, DRAWINGS & STANDARD.

- a) Bidders must give their detailed specification in the quotation along with relevant technical literature / catalogue etc. against the tender enquiry.
- b) The Bid should be accompanied with relevant copies of catalogues, drawings or specification as per tender enquiry.



BHARAT HEAVY ELECTRICALS LIMITED

HEEP-HARIDWAR, UTTARAKHAND (249403)

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For Indian Bidders (Version June-2021, Rev: 06)

If these documents are not furnished, the offer is liable to be rejected.

- c) Wherever national / international (N/IN) standards are referred, the latest N/IN standards are to be followed. Mention year & date of standard revision that shall be followed for the supply.
- d) All Drawings and Standards are proprietary of BHEL. It must not be used in anyway detrimental to the interest of BHEL or without permission of BHEL.

6. PRICE SCHEDULE.

- a) Kindly quote your prices in figures and words both. In case of any discrepancy in value, the prices quoted in words shall be considered for evaluation and establishing L1 status.
- b) Prices quoted should not be more than the prices quoted to any other BHEL units / offices / divisions. Vendor to submit copy of latest Purchase Order placed by any unit of BHEL for similar items in the technical bid. In case no order has been placed on such items, specific confirmation that no order has been placed on such items should be provided.
- c) Prices should be quoted on F.O.R. Destination basis. Transit insurance shall be arranged by BHEL and not to be included in the prices. The offers quoted on other than F.O.R destination basis may result in non-consideration of such bids.
- d) In case BHEL accepts the EX-Works prices, such offers will be loaded by 1.5% of EX-Works value towards freight or with actual freight charges as per BHEL freight rate contract whichever is higher.
- e) In case of Indigenous items covered by DGS & D Rate Contract, the bidders should submit latest valid copy of the rate contract along with bid / quotation
- f) Applicable **IGST / CGST / SGST** and any other statutory levy should be indicated separately and clearly in the bid / quotation.

g) Bidders can dispatch goods through any Indian Bank Association approved transporters having their branch at HARIDWAR / destination. If material is dispatched through other than Indian Bank Association approved transporter, material to be delivered on door delivery BHEL Stores basis.

h) In case of dispatch of material through any other unapproved transporter, payment shall be made only after receipt of material and any additional charges payable to the transporter shall be to the bidder's account.

i) Any demurrage / godown rent payable to the transporter / or to godown's owner due to any delay attributed by the supplier shall be recovered from supplier's account.

j) Currency of Evaluation shall be INR.

NB: Financial evaluation of L1, L2 Status will be on the basis of Landed Cost to BHEL.

7. REVERSE AUCTION.

Wherever RA is declared in the special terms and conditions of tender enquiry, following shall be applicable and Bidders to confirm the same:

"BHEL shall be resorting to Reverse Auction (RA) (Guidelines as available on www.bhel.com) for this tender. RA shall be conducted among all the techno-commercially qualified bidders.

Price bids of all techno-commercially qualified bidders shall be opened and same shall be considered as initial bids of bidders in RA. In case any bidder(s) do(es) not participate in online Reverse Auction, their sealed envelope price bid along with applicable loading, if any, shall be considered for ranking."

8. DELIVERY TERMS.

a) Goods shall be delivered on 'FOR Destination' basis to the named destination unless otherwise called for in the tender enquiry.

b) Loading on account of 3rd party inspection charges in case of Indian bidders shall be 0.20%.



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9. LIQUIDATED DAMAGES (LD) FOR LATE DELIVERY.

a) Where items of Purchase Order are independently usable.

Liquidated Damages (LD) for Late Deliveries shall be applicable @0.5% per week or part thereof on the value of respective delayed supplies subject to a maximum of 10% of the value of respective delayed supplies. Value of delayed supplies will mean the Gross Value payable to the vendor (Before LD) against such supplies excluding taxes and duties.

b) Where the total items are required for a main equipment and items are interdependent.

Liquidated Damages (LD) for Late Deliveries shall be applicable @0.5% per week or part thereof on total value of Purchase Order subject to maximum of 10% of the total value of Purchase Order. Purchase Order value for this purpose shall be the Total Gross Value payable to the vendor (Before LD) excluding taxes and duties.

c) Bidders are requested to quote the best delivery meeting the delivery requirements. BHEL reserves the right to reject the offers not meeting BHEL's delivery requirement.

d) Commencement of delivery period shall be reckoned from the date of PO / LOI or any other agreed milestone.

e) Bidder shall deliver the goods in the manner and schedule agreed under the terms and conditions of Purchase order.

f) DELIVERY IN CASE OF REJECTION: In case the material is rejected, then date of replacement will be considered as the actual date of delivery.

g) DELIVERY AGAINST BANK DOCUMENTS: In case payment terms quoted by bidder are documents through bank, and the delivery terms being "FOR Haridwar / FOR Transporter Go-down" then date of delivery will be date of intimation by transporter / bidder of delivery of material at Haridwar for the LD purpose.

h) Where the payments are through bank, the documents may be presented for negotiation to BHEL authorized / nominated bank.

i) Payment of Liquidated Damages (LD) shall not in any way relieve the vendor from any of its obligations & liabilities under the contract.

10. PAYMENT TERMS.

a) BHEL's standard payment term is Payment after receipt and acceptance of materials / items at HEEP, BHEL-Store or at desired destination unless otherwise specified in Special Terms attached to the tender enquiry.

b) BHEL reserves the right to accept or reject the offer of the bidder who quotes the payment term other than BHEL's standard payment term.

c) Loading on account of deviation in payment terms shall be done as per extant rules of BHEL-Haridwar.

d) 100% payment along with taxes, freight & insurance will be made after receipt and acceptance of material and within 75 days from the date of invoice subject to submission of non-discrepant documents within 15 days of supply as per terms and conditions of Purchase Order. In case any discrepancy found in the documents, BHEL will notify the same to vendor within 7 days of receipt. Vendor has to clear all the discrepancies in one go within 7 days thereafter else the payment of vendor may get delayed.

e) For MSEs (covered under MSME Act) which are registered and periodically renewed with BHEL, the payment will be made within 45 days or as prescribed in the relevant act.

f) Adherence to the above time schedule of payment is contingent upon Vendor complying with GST Rules w.r.t availment of Input Tax Credit by BHEL.

g) In case GST credit is delayed / denied to BHEL, due to non / delayed receipt of goods and / or tax invoice or expiry of the timeline prescribed in GST Law for availing such ITC, or any other reason not attributable to BHEL, GST amount shall be recoverable from Vendor along with interest levied / leviable on BHEL.

h) The taxes and duties that are reimbursed would be the ones applicable as on the contractual Purchase order delivery date or the amount actually paid whichever is less.

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Payment Terms	Days of Loading
After Receipt & Acceptance of material within 75 days of supply.	No Loading
Against Delivery at BHEL-Stores Haridwar.	45
Against documents through bank (CAD):	45
Letter of Credit (LC)	120
Usance LC	No Loading if usance period is > 120 Days.
	Loading of days' difference i.e. difference between 120 days and usance period if the usance period is < 75 days.
Advance	Delivery Period + 120 Days - Advance Payment Days.

11. TAXES & DUTIES.

- a) The bidder to specify in their offer (part 1 bid) the category of their registration under GST like Registered, Unregistered and composite dealer.
- b) The provisional GST registration number of Bharat Heavy Electrical Ltd, Heavy Electricals Equipment Plant, Ranipur, Haridwar is "05AAACB4146P1ZL" with state Code as "05" and State Name as "Uttarakhand".
- c) Please quote our provisional GST registration number in all invoices raised for supply of goods and services under GST regime and also ensure filing of timely return and payment of tax and compliance of other applicable provisions on supplier under GST regime.
- d) No GST will be reimbursed to unregistered or composite dealer. In the event, any GST is quoted by composite dealer, the same shall be added to the cost of supply in evaluating the bid.
- e) Since, input credit of GST will be available to BHEL-Haridwar only after correct filing of return and payment of applicable GST by supplier, reimbursement of GST shall be made by

BHEL-Haridwar on matching of vendor inputs at GST portal, ensuring availability of input credit to BHEL Haridwar. Payment of GST will be made to vendor after matching of input credit and vendor to ensure submission of their invoices along with consent to accept payment of tax after such matching in all cases where bills are submitted directly to BHEL-Haridwar or through bank or under LC or through any other mode.

- f) In the event of any disallowance of input credit or applicability of interest or any other financial liability arises on BHEL-Haridwar due to any default of supplier under GST, such implication shall be to supplier's account.
- g) In the event of any change in the status of the vendor after the submission of the bid but before the supply, GST applicable at the time of supply or in the bid, based on the registration status of the vendor, whichever is lower shall be payable.
- h) Where ever applicable If PAN (Permanent Account Number) of the recipient is not available, income tax is deductible either at the normal rate or at the rate of 20 percent, whichever is higher as per Section 206AA of Indian Income Tax Act 1961.
- i) The bidder shall clearly indicate HSN (*Harmonised System Nomenclature*) / SAC (*Service Accounting Code*), its description and applicable rate of GST for each item in his techno-commercial bid.
- j) 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.
- k) **IMPORTED GOODS OFFERED BY INDIAN BIDDERS AGAINST DEALER INVOICE:** Wherever the material being offered is imported, the bidder must quote the prices inclusive of IGST. The rate and value of IGST as included in the price must be indicated separately. In case quantum of IGST is not mentioned by the bidder the same will not be considered for



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evaluation. However, bidder will have to pass on the benefit of IGST to BHEL at the time supply.

- l) In case of directly dispatchable items to Customer's Site, BHEL-Haridwar will inform the GST registration number of the respective customer which must be mentioned on the vendor's invoice. Vendor to ensure availability of such information from BHEL-Haridwar before dispatch of any material. However, while filing GSTN-1, BHEL Haridwar GSTN number to be quoted.

Note: - Vendors must ensure compliance of all the applicable rules and procedure as envisaged in the GST Regime. Any loss to BHEL-Haridwar due to fault / non-compliance by the vendor will be to the vendor's account.

12. BANK GUARANTEE.

In case the bank guarantees are required to be deposited towards security deposit/performance guarantee or for any other purpose as per the terms of this tender enquiry, such bank guarantees of the requisite value in the denominated currency of the purchase order should be from one of the Indian branch of BHEL consortium banks and the bank guarantee should be in the proforma as prescribed by BHEL. The proforma of bank guarantee and the list of consortium banks are displayed at BHEL website www.bhelhwr.co.in. However, in case the bank guarantee is not from BHEL consortium banks, then the bidder has to get the bank guarantee confirmed from one of the Indian branch of BHEL consortium banks and the bank charges for such confirmation will be borne by the bidder.

13. GUARANTEE / WARRANTY AND CORRESPONDING REPAIRS / REPLACEMENT OF GOODS.

Goods shall comply with the specifications for material, workmanship and performance. Unless otherwise specified, the warranty shall be for a period of 18 months from the date of receipt. If the delivery is found non-compliant during the warranty period, leading to rejection, the Seller shall arrange free replacement / repair of goods, within one month from the date of intimation or any mutually agreed period. The rejected goods shall be taken away by the Seller at his cost and

replaced on Delivered Duty Paid (DDP) (FOR - BHEL Stores / designated destination basis) within such period. In the event of the Seller's failure to comply, Purchaser may take action as appropriate, including Repair / Replenish rejected goods & disposal of rejections, at the risk & cost of the Seller. In case the defects attributable to Seller are detected during processing of the goods at BHEL or at our subcontractor's works, the Seller shall be responsible for free replacement / repair of the goods as required by BHEL.

- b) **RETURN OF REJECTED MATERIAL FOR REPLACEMENT:** The bidder shall have to pay 5% incidental charges while taking back supplied material if it is found rejected on receipt. The rejected material shall be sent back only after receipt of replacement / submission of BG / refund of amount paid.

14. QUALITY REQUIREMENT.

Your bid / quotation should have specific confirmation regarding meeting all our quality requirements such as. (i) Test Certificate (TC), (ii) Guarantee Certificate (GC) / Warranty Certificate (WC), (iii) Quality Plan (QP) (if applicable); and (iv) Pre-Dispatch Inspection at your works (if applicable).

15. VALIDITY.

The quotation should be valid for a minimum period of 90 days effective from the date of opening of tender, unless otherwise specified in the tender enquiry.

16. RIGHT OF ACCEPTANCE.

- a) **BHARAT HEAVY ELECTRICALS LIMITED HARIDWAR** reserves the right to reject any or all the bids / quotations without assigning any reason thereof. BHEL also reserves the right to increase or decrease the tendered quantities. Bidders should be prepared to accept order for reduced quantity without any extra charges.
- b) Any discount / revised offer / bids submitted by a bidder on its own shall be considered, provided it is received on or before the due date and time of offer / bid submission (Part-1). Conditional discounts shall not be considered for evaluation of tenders.



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- c) Unsolicited discounts / revised offers / bids given after Part-1 bid opening shall not be accepted. No change in price will be permitted within the validity period asked for in the tender enquiry.
- d) In case of changes in scope and / or technical specification and / or commercial terms & conditions having price implication, techno-commercially acceptable bidders shall be asked by BHEL to submit the impact of such changes on their price bids. In case a bidder opts to submit revised price bid instead of impact called for then the latest price bid shall prevail. However, in both situations, original price bid will be necessarily opened.
- e) The bidder whose bid is technically not accepted will be informed & EMD wherever submitted shall be returned after finalization of contract. EMD shall be forfeited in the event of bidder opting out after tender opening.
- f) BHEL reserves the right to short close the existing Purchase Order / Rate Contract / Work Order or any extension thereof at any stage.

17. TRANSIT INSURANCE.

- a) Transit Insurance will be covered by BHEL under its open Insurance Policy. Seller shall inform dispatch particulars (Purchase Order, RR /GR, Invoice value etc.) to "Finance department (Store bill Section), BHEL Ranipur, Haridwar (Uttarakhand-India) with value of consignment to the Purchaser within 07 days of dispatch for BHEL to arrange insurance coverage in its policy. Failure on the part of seller to inform dispatch particulars will make him liable to pay for any transit damages / losses suffered by the Purchaser.
- b) If Quoted Prices are inclusive of transit insurance, no weightage shall be given while evaluating the bids for Cost of Insurance, being in BHEL Scope.

18. RISK PURCHASE.

In case of abnormal delays (beyond the maximum late delivery period as per LD clause) in supplies / defective supplies or non-fulfillment of any other terms and conditions given in Purchase Order, BHEL may cancel the Purchase Order in full or part thereof, and may also make the purchase of such material from elsewhere / alternative source at the risk and cost of the supplier. BHEL will take all reasonable steps to get the material from alternate source at optimum cost. If bidder does not agree to the above Risk Purchase Clause, BHEL reserves the right to reject the offer. In case for compelling reasons BHEL accepts the offer without acceptance of this clause by the bidder and in the eventuality of Risk Purchase, appropriate action will be taken as per BHEL extant rules. This will be without prejudice to any other right of BHEL under the contract or under General Law.

19. FORCE MAJEURE CLAUSE.

Notwithstanding any other thing contained anywhere else in the contract or PO (Purchase Order), In case the discharge of obligation under the contract by either party is impeded or made unreasonably onerous, neither party shall be considered in breach of the contract to the extent that performance of their respective obligation is prevented by an event of Force Majeure that arises after the effective date (PO date).

In the above clause, Force Majeure means an event beyond the control of the parties to the contract which prevents a party from complying with any obligation of the contract including but not limited to:

- a) Act of God (Such as but not limited to earthquake, drought, tidal waves, floods etc.).
- b) War (whether war be declared or not), Hostilities Invasion, Act of foreign enemy etc.
- c) Rebellion, revolution, insurrection, civil war etc.
- d) Contamination of Radio Activity from any nuclear fuel or from any other nuclear waste or any other hazardous materials.
- e) Riots, commotions, strike unless restricted to the employees of supplier.
- f) Acts of terrorism.



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- g) Other unforeseeable circumstances beyond the control of the parties and which the affected party cannot avoid even by using its best efforts.
- h) Cancellation of contract by customer.
- i) Change in law / government. Regulation making the performance impossible.
- j) Pandemic or Epidemic.

The party claiming to be affected by force majeure shall notify the other party in writing immediately without delay on the intervention and on the cessation of such circumstances.

Irrespective of any extension of time, if an event of force majeure occurs and its effect continues for more than 180 days the affected party shall have right to cancel the contract.

As soon as reasonably practicable following the date of commencement of a Force Majeure Event, and within a reasonable time following the date of termination of a Force Majeure Event, either Party invoking it shall submit to the other Party reasonable proof of the nature of the Force Majeure Event and of its effect upon the performance of the Party's obligations under this Agreement.

The party shall, and shall ensure that its Subcontractors shall, at all times take all reasonable steps within their respective powers and consistent with Good Operating Practices (but without incurring unreasonable additional costs) to:

- a) Prevent Force Majeure Events affecting the performance of the party's obligations under this Agreement.
- b) mitigate the effect of any Force Majeure Event and
- c) Comply with its obligations under this Agreement.

If the war like situation has developed in a country where a seller's works is located in this P.O. or there is political instability and Indian Embassy located in that country forbids or advises for not having any business dealing with the sellers located in such zone / region/ country, then BHEL reserves the right to cancel the order.

20. NON-DISCLOSURE AGREEMENT.

All Drawing and Technical Documents relating to the product or its manufacture submitted by one party to the other, prior or

subsequent to the formation of contract, shall remain property of the submitting party. Drawing, technical documents or other technical information received by one party, shall not without the consent of the other party, be used for any other purpose than that, for which they were provided. Such technical information shall not without the consent of the submitting party, otherwise be used or copied, reproduced, transmitted or communicated to a third party. Patterns supplied by BHEL will remain BHEL's property which shall be returned by the bidder on demand to BHEL. Bidder shall in no way share or use such intellectual property of BHEL to promote his own business with others or to gain a commercial advantage. BHEL reserves the right to claim damages from the bidder, or take appropriate action as deemed fit against the bidder, for any infringement of the provisions contained herein as available under law or equity.

21. SETTLEMENT OF DISPUTES / ARBITRATION.

In case of any dispute arising out of as in connection with this contract, the same shall be referred to arbitration under Arbitration & Conciliation Act 1996 of a sole arbitrator who shall be appointed by mutual consent of the parties. The seat & venue of arbitration shall be Haridwar.

The proceedings shall be conducted in English. The Governing law of contract shall be the substantive law of India.

22. WHARFAGE / DEMURRAGE RESPONSIBILITY.

In the event of delay in receipt of documents by Manager (Stores-Shipping) BHEL-Haridwar and in case where dispatches are made through Unapproved Transporter the sole responsibility for wharfage / demurrage for such delay shall be that of supplier.

23. CONDITIONS FOR AVAILING MICRO & SMALL ENTERPRISES (MSE'S) BENEFITS.

- a) "MSE Suppliers can avail the intended benefits only if they submit along with the offer, attested copies of either EM II certificate having deemed validity (**five years** from the date of issue of acknowledgement in EM II) or valid NSIC certificate or EM II certificate along with attested copy of a CA certificate



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(Format enclosed at annexure-1 where deemed validity of EM II certificate of five years has expired) applicable for the relevant financial year (latest audited). Date to be reckoned for determining the deemed validity will be the date of bid opening (Part 1 in case of two-part bid) or vendor has to give Udyog Adhar Memorandum (UAM). Non submission of such documents will lead to consideration of their bid at par with other bidders. No benefit shall be applicable for this enquiry if any deficiency in the above required documents is found or the requisite documents are not submitted before price bid opening. If the tender is to be submitted through e-procurement portal, then the above require document are to be uploaded on the portal. Documents should be notarized or attested by a Gazetted officer. **UAM need not required to be notarized or attested.**

b) Any new supplier will be eligible for registration with BHEL as MSE supplier provided at least any one of the following documents are submitted along with application for registration: -

1. Udyog Adhar Memorandum (UAM).
2. Valid National Small Industries Commission (NSIC) Certificate.
3. Entrepreneurs Memorandum part II (EM II) certificate (valid based on deemed validity of 5 years) or
4. EM II certificate along with attested copy of CA Certificate (as per prescribed format at annexure-A) applicable for the relevant financial year (latest audited), where the deemed validity of EM II is over.
5. However, credentials of all MSE suppliers will be verified before advancing the intended benefits.
6. MSE bidders claiming SC/ST status will have to submit SC/ST certificate of the Proprietor from competent authority. Attested (notarized or attested by Gazetted officer) copy to be submitted along with the offer.
7. In case techno-commercial accepted bidders include MSE source and their prices (based on landed cost – considering quoted prices) are within the price band of 15% w.r.t. L-1 bidder, then BHEL can offer **25%** of quantity of respective item (rounded off to nearest number) to MSE bidders at L-1 price and in case, more than one MSE bidder is in 15 % band and the same is accepted by more than one MSE bidders then **25%** quantities of respective items will be considered for ordering on proportionate basis amongst MSE bidders.

8. There will be minimum of **3%** reservation for women owned MSEs within the above mentioned 25% reservation.
9. The reservation for MSEs owned by SC/ST will be **6.25%** { 25% out of target of 25% - refer para 4 of Public Procurement Policy for the Micro and Small Enterprises(MSEs)}.
10. The definition of MSEs owned by Women Entrepreneurs is clarified as under:
 - a) In case of proprietary MSE, proprietor shall be Woman.
 - b) In case of partnership MSE, the Woman partners shall be holding at least 51% of share in the unit.
 - c) In case of Private Limited companies, at least 51% share shall be held by Women promoters.
11. The definition of MSEs owned by SC/ST is clarified as under:
 - a) In case of proprietary MSE, proprietor(s) shall be SC/ST.
 - b) In case of partnership MSE, the SC/ST partners shall be holding at least 51% of shares in the unit.
 - c) In case of Private Limited companies, at least 51% share shall be held by SC/ST promoters.
12. While distributing the **25%** quantity amongst MSE bidders the decimal points in quantity shall be ignored for all the bidders except the L-1 amongst MSE bidders. Balance quantity after allocating the quantity to other MSE bidders ignoring the quantities in decimal, shall be given to L-1 (amongst MSE) bidder. However, if there are more than one MSE bidder at the same price level than preference for additional quantities due to ignoring off the decimal (as mentioned above) shall be given to the bidder offering favorable terms to BHEL and if the conditions offered are also same then preference will be given to the bidder having high SPR rating.
13. In case there are more than one MSE bidders (with different landed cost to BHEL) within 15% price band of lowest bidder and quantity to be offered is 1 no. only, then preference shall be given to the MSE bidder with lowest landed cost.
14. In case there are more than one MSE bidders (with same landed cost to BHEL) within 15% price band of lowest bidder and quantity to be offered is 1 no. only, then preference shall be given first, based on the favorable terms in the bid and in case terms are also same, the bidder with high SPR rating shall be given preference.
15. If L1 bidder is MSE bidder, entire quantity will be given to such MSE bidder only.



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16. Note: It may however be noted that MSE guidelines as on date (Date of Technical Bid Opening Part-1) shall prevail.

17. "As per the OM No. F.No. 1(2)(1)/2016-MA dtd. 09.02.2017 issued from the Office of Development Commissioner (Micro, Small & Medium Enterprises), "Traders and agents should not be allowed to avail the benefits extended under the PP Policy."

In view of this, it is clarified that benefits of MSE (such as EMD Waiver, Tender fee exemption, Price preference, Payment preference etc.) will be given only to those MSE Vendors who are manufacturers of offered items against the NIT. No MSE benefits shall be provided to Agents / Stockists / Dealers / Traders etc. for the items offered but not manufactured by themselves."

24. INFORMATION TO THE BIDDERS.

a) Purchase related information is available at our Business-to-Business (B2B) Portal available on our website <https://hwr.bhel.com>. The user ID & password can be obtained by sending a request to concerned purchase executives.

b) Intimate your change in mail address or communication address or changes, if any, by email to AGM (SDX/MM) giving your bidder Code.

c) Please resolve your rejections and unexecuted overdue purchase order immediately which are posted at our B2B Portal, which can be visited through our site <https://hwr.bhel.com>

d) Copy of this Tender Enquiry is being sent through the post.

e) The Bidder declares that they will not enter into any illegal or undisclosed agreement or understanding, whether formal or informal with other bidder(s). This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.

In case, the bidder is found having indulged in above activities, suitable action shall be taken by BHEL as per extant policies/guidelines.

f) Supplier must upload digitally signed e-Invoice on B2B portal for processing of Bills.

In other cases, inked signed hard copy of Invoice to be submitted for processing of Bills.

25. MAKE IN INDIA (GOVT-NOTIFICATION).

A. This tender enquiry shall be governed by notification no. P-45021/2/2017-PP (BE-II) dated 04.06.2020 of government of INDIA and subsequent circulars issued afterwards. Accordingly, the minimum local content, the margin of purchase preference and the procedure for preference to make in INDIA shall be adhered.

B. The margin of purchase preference shall be 20%.

- 'Class-I local Supplier' means a supplier or service provider, whose goods, services or works offered for procurement, has local content equal to or more than 50%, as defined under this order.
- 'Class-II local Supplier' means a supplier or service provider, whose goods, services or works offered for procurement, has local content more than 20% but less than 50%, as defined under this order.
- 'Non- local Supplier' means a supplier or service provider, whose goods, services or works offered for procurement, has local content less than or equal to 20%, as defined under this order.

C. Vendor to specifically confirm if they are Class-I or Class-II local supplier or not as per above mentioned notification. Accordingly, the 'Class-I local supplier' / 'Class-II local Supplier' at the time of tender, bidding or solicitation shall be required to indicate percentage of local content and provide self-certification that the item offered meets the local content requirement for 'Class-I local supplier' / 'Class-II local Supplier', as the case may be. They shall also give details of the location(s) at which the local value addition is made.

D. In cases of Procurement for a Value in Excess of Rs. 10 Crores, the 'Class-I local supplier' / 'Class-II local Supplier' shall be required to provide a Certificate from the Statutory Auditor or Cost Auditor of the Company (in the case of companies) or from a practicing Cost Accountant or practicing Chartered Accountant (in respect of suppliers other than companies) giving the percentage of Local Content.



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E. Requirement of Purchase Preference:

Purchase preference shall be given to 'Class-I local supplier' in procurements undertaken by procuring entities in the manner specified hereunder -

a. In the procurements of goods or works, which are covered by para 3(b) of mentioned Govt. circular and which are divisible in nature, the 'class-I local supplier' shall get purchase preference over 'Class-II supplier' as well as 'Non-local supplier', as per following procedure:

- i. Among All qualified bids, the lowest bid will be termed as L1. If L1 is 'Class-I local supplier', the contract for full quantity will be awarded to L1.
- ii. If L1 bid is not a 'Class-I local supplier', 50% of the order quantity shall be awarded to L1. Thereafter, the lowest bidder among the 'Class-I local supplier' will be invited to match the L1 price for the remaining 50% quantity subject to the class-I local supplier's quoted price falling within the margin of purchase preference, and contract for that quantity shall be awarded to such 'Class-I local supplier' subject to matching the L1 price. In case such lowest eligible 'Class-I local supplier' fails to match the L1 price or accepts less than the offered quantity, the next higher 'Class-I local supplier' within the margin of purchase preference shall be invited to match the L1 price for remaining quantity and so on, and contract shall be awarded accordingly. In case some quantity is still left uncovered on Class-I local supplier, then such balance quantity may also be ordered on the L1 bidder".

b. In the procurements of goods or works, which are covered by para 3(b) of mentioned Govt. circular and which are not divisible in nature, and in procurement of services where the bid is evaluated on price alone, the 'class-I local supplier' shall get purchase preference over 'Class-II supplier' as well as 'Non-local supplier', as per following procedure:

- i. Among all qualified bids, the lowest bid will be termed as L1. If L1 is 'Class-I local supplier', the contract will be awarded to L1.
- ii. If L1 is not 'Class-I local supplier', the lowest bidder among the 'Class-I local supplier', will be invited to match the L1 price subject to Class-I local supplier's quoted price falling

within the margin of purchase preference, and the contract shall be awarded to such 'Class-I local supplier' subject to matching the L1 price.

iii. In case such lowest eligible 'Class-I local supplier', fails to match the L1 price, the 'Class-I local supplier' with the next higher bid within the margin of purchase preference shall be invited to match the L1 price and so on and contract shall be awarded accordingly. In case none of the 'Class-I local supplier' within the margin of purchase preference matches the L1 prices, the contract may be awarded to the L1 bidder.

c. 'Class-II local supplier' will not get purchase preference in any procurement, undertaken by procuring entities.

F. For this procurement, the local content to categorize a supplier as a Class-I local supplier/ Class-II local supplier/ Non-local supplier and purchase preference to Class-I local supplier, is as defined in Public Procurement (Preference to Make in India), Order 2017 dated 04.06.2020 issued by DPIIT. In case of subsequent orders issued by nodal ministry, changing the definition of local content for the items of the NIT, the same shall be applicable even if issued after issue of this NIT, but before opening of Part-II bids against this NIT.

G. Procurements where estimated value to be procured is less than Rs. 5 lakhs shall be exempted from GOI order No. P-45021/2/2017-PP (BE-II) dated 04.06.2020.

H. For procurement of Goods & Services which are divisible in nature, following shall be operated for **MSE bidders** under Public procurement Policy for the Micro and Small Enterprises (MSEs) Amendment Order, 2019, Ref. No. AA: SSP: MSE: Amndt, dtd. 30.11.2018, Circular No. 44 of 2018-19;-

a. If L1 bid is not from "Class-I local Supplier" and price quoted by MSE bidder falls within the margin of Purchase preference (L1+15% for MSEs), then 25 % of total order quantity of respective item (rounded off to nearest number) shall be awarded to MSE bidder, subject to MSE bidder matching the L1 Price. Out of Remaining 75% quantity, distribution shall be operated as per below sub-clause (2) –

b. If "Class- I Local Supplier" (Next to L1, other than MSE) quoted price falling within the Margin of Purchase Preference, and "Class-I local supplier" matches the L1 price,



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then 50% of remaining Quantity (after allocation of 25% to MSE) i.e. 37.5% shall be awarded to local supplier and 37.5% shall be awarded to foreign bidder.

Note: L1 Price refers to lowest evaluated / landed cost to Company.

For Further details, please refer GOI order no. P-45021 / 2 / 2017 - PP (BE-II) dated 04.06.2020.

26. RESTRICTIONS UNDER RULE 144(XI) OF THE GENERAL FINANCIAL RULES (GFRs), 2017

All provisions of Order No. F.No.6/18/2019-PPD of Department of Expenditure (DoE) shall be applicable for this tender enquiry (Order copy is available at <https://doe.gov.in/procurement-policy-divisions>). Accordingly, any bidder from a country which shares a land border with India (except the countries to which the Govt. of India has extended lines of credit or in which the Govt. of India is engaged in development projects for which list is available at <https://www.mea.gov.in/>) will be eligible to bid in this tender only if the bidder is registered with the Competent Authority as specified in Annex I of the said Order of DoE.

Updated list of the countries to which lines of credit have been extended or in which development projects are undertaken are available on the Ministry of External affairs website (<https://www.mea.gov.in/>)

For the purpose of this order, definition of Bidder from a country which shares a land border with India shall be same as defined in the Annex III of the said order.

Registration with the competent authority as stipulated in the said order is responsibility of bidder. Bidder has to submit a certificate certifying following along with offer:

"I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India; I certify that bidder (.... Name of Bidder) is not from such a country or, if from such a country, has been registered with the Competent Authority. I hereby certify that bidder (.....Name of bidder) fulfils all requirements in this regard and is eligible to be considered"

If the bidder is from such country which shares a land border with India evidence of valid registration by the Competent Authority shall also be attached along with offer."

27. NOTE.

- Special conditions of enquiry, if enclosed by BHEL, will supersede the respective standard / general terms of enquiry.
 - Any other Standard terms and Conditions of the bidder attached / referred against the tender enquiry will be treated as null and void ab initio.
 - In order to protect the commercial interests of BHEL, it becomes necessary to take action against suppliers / contractors by way of suspension of business dealings, who either fail to perform or are in default without any reasonable cause, cause loss of business / money / reputation, indulged in malpractices, cheating, bribery, fraud or any other misconducts or formation of cartel so as to influence the bidding process or influence the price etc. Guide- lines for Suspension of Business Dealings with Suppliers / Contractors shall prevail over which is available at BHEL website <http://www.bhel.com>
 - The bidder along with its associate / collaborators / sub-contractors / sub-vendors / consultants / service providers shall strictly adhere to BHEL Fraud Prevention Policy displayed on BHEL website <http://www.bhel.com> and shall immediately bring to the notice of BHEL-Management about any fraud or suspected fraud as soon as it comes to their notice.
 - "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 detailed below;
- Victim:** Any person who suffers permanent disablement or dies in an accident as defined below.
 - Accident:** Any death or permanent disability resulting solely and directly from any unintended and unforeseen injurious

Quotations / Bids not in accordance with General Instructions and Standard Terms & Conditions are likely to be ignored.



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occurrence caused during the manufacturing / operation and works incidental thereto at BHEL factories/ **offices and precincts** thereof , project execution , erection and commissioning, services, repairs and maintenance, trouble shooting, serving , overhaul, renovation and retrofitting , trial operation, performance guarantee testing undertaken by the company or during any works / during working at BHEL Units/ Offices/ townships and premises/ project sites.

3. Compensation in respect of each of the victims:

- (i) In the event of death or **permanent disability** resulting from **Loss of both limbs**: Rs. 10,00,000/- (Rs. Ten Lakh).
- (ii) In the event of **other permanent disability**: Rs. 7,00,000/- (Rs. Seven Lakh).

4. Permanent Disablement: A disablement that is classified as a permanent total disablement under the proviso to Section 2(l) of the Employees Compensation Act, 1923."

f) The bidder shall be in compliance with applicable laws, rules and regulations throughout the terms of the contract for conducting its business generally and to perform its obligations under this contract.