

TENDER ENQUIRY NO.: X/6620/2023/0148/B/1

SUB: - TERMS & CONDITIONS FOR FABRICATION OF HOT WELL-1

(1160457002300) & HOT WELL-2 (1160457002400)

NIT-Notice Inviting Tender

Salient Details of Notice Inviting Tender (NIT)		
Sl. No.	Issue	Description
1.	Item details	As per Enquiry Annexure X/6620/2023/0148/B/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: 27-06-2023 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: 27-06-2023 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)	40000
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 AND CONDITIONS FOR Enquiry No.X/6620/2023/0148/B/1

SL.	TERMS	VENDOR'S ACCEPTANCE/ REMARKS
1	<u>Scope of Work:</u> - 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 75 days as per clause 5.0 of T& C of enquiry.	
6	Bank Guarantee/Indemnity Bond: 25% BG & 75% 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 Risk Purchase clause as per standard policy of BHEL.	
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 -20.10)	
21	Conflict of Interest:Confirm acceptance of Clause 21.0 of T & C of Enq.	
22	Duly Filled Annexure A (Unpriced- Quoted / Not Quoted)	
22	We have submitted Make in India certificate (duly filled and signed as per Annexure-B).	
23	We accept all terms and conditions of GISTC Rev. 06.	
24	Rates have been quoted in indian Rupees on per Piece basis.	
25	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)

SUB: - TERMS & CONDITIONS FOR FABRICATION OF HOT WELL-1
(1160457002300) & HOT WELL-2 (1160457002400)

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 BHEL Material & Party 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.)
1	Hotwell-1	1160457002300	2	7878.65	269.824	8148.474
2	Hotwell-2	1160457002400	2	7778.27	223.804	8002.074

Remark-

1. T.R. OF THE DRAWINGS ARE TO BE STRICLY FOLLOWED.
- 2) FOR CBOM-11604570023-00, MATERIAL OF CBOM IT NO-8, 9, 10, 11, 24, 27-3, 27-6, 27-7, 29-1 & 30 WILL BE PROVIDED BY BHEL..
IT NO-21, 22, 27-11, 27-12, 27-13 WILL NOT BE PROVIDED & THESE WILL BE ASSEMBLED IN BHEL.
- 3) FOR CBOM-11604570024-00, MATERIAL OF IT NO-7, 8, 9, 10, 11, 24, 28-3, 28-6, 28-7 WILL BE PROVIDED BY BHEL. MATERIAL OF IT NO-21, 22, 28-11, 28-12, 28-13 WILL NOT BE PROVIDED & THESE WILL BE ASSEMBLED IN BHEL.
- 4) ALL OTHER ITEMS OF THESE CBOMS WILL BE PARTY MATERIAL
- 5) DELIVERY IS 75 DAYS FROM THE DATE OF LAST MATERIAL SENT

- **TOTAL LOAD FOR THE Enquiry (Approximately) = 32301.1 Kg.**
- The rate (s) should be quoted in **Rupees/Pc.**
- Cleaning of parts, removal of mill scale from components prior to assembly will be in scope of vendor.
- CHP Clearance may be obtained from NTPC/LLOYD/RITES/NPC at party's end.
- Final Assembly shall undergo cleaning to ensure that all parts are free from dents, mills, spatters.
- Customer's seal (if Any on supplied Material) to be transferred.
- Copies of the relevant certificates to be supplied to the receiving shop.
- Quality plan (if any) to be followed for Material induction and CHP.
- All special tests viz., UT, RT, HYDRAULIC & KEROSENE etc. are to be performed as per drg. requirements.
- Aesthetic appearance shall also be ensured and inspected before delivery to BHEL.
- Material used should be procured from BHEL approved vendors only.

- 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.	Delivery
1	Hotwell-1	1160457002300	2	75 Days from last BHEL material sent to vendors work
2	Hotwell-2	1160457002400	2	75 Days from last BHEL material sent to vendors work

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: -** 25 % Bank Guarantee and 75% 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: -

Inspection by BHEL/BHEL nominated inspection agency and customer/customer nominated inspection agency as per drawing and quality plan requirements (Manufacturing Quality Plan no. 2.01.01 rev 00 Dated 23.01.2020 (DOC. NO. 4540-001-110-QVM-Q-200) is attached).

Sub-contractor to provide a summary sheet of documents/TCs provided for correlation.

Sub-contractor to mention relevant QP clauses on all TCs/ reports for every lot.

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. /Kg) post RA in price confirmation sheet. In the course of evaluation, if more than one bidder happens to occupy L1 status, effective L1 will be decided by soliciting discounts from respective L1 bidders. 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/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. 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

Action against Bidders / vendor / supplier / contractor in case of default:

In order to protect the commercial interests of BHEL, BHEL shall take action against supplies / 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, indulge in malpractices, cheating, bribery, fraud or any other misconduct or formation of cartels so as to influence the bidding process or influence the price etc.

Suspension of Business Dealings could be in the form of “Hold” or “Banning” a supplier/ contractor or a bidder and shall be as per “Guidelines for Suspension of Business Dealings with Suppliers/ Contractors” available at BHEL’s website “<https://www.bhel.com/guidelines-suspension-business-dealings-suppliers-contractors>”.

19. DISTRIBUTION OF LOADS: -

Enquiry has been issued with following terms & conditions :

Vendor has to quote the rate **in Rs. per Pc. Basis**.

Item 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).

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**

Authorized Signature:

(with date & seal of company)

Name of Supplier: -

Annexure - A**SUB: - TERMS & CONDITIONS FOR FABRICATION OF HOT WELL-1
(1160457002300) & HOT WELL-2 (1160457002400)**

OpenTender Enquiry No.: X/6620/2023/0148/B/1

Sl. No.	Item Description/Drg No.	MATERIAL BY	Qty	Weight in Kg / piece	Quoted/Not Quoted (Tick the correct option)
1	Hotwell-1 /1160457002300	Combined	2	8148.474	
2	Hotwell-2 /1160457002300	Combined	2	8002.074	

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.

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

AA1011819074 (PL-10MM)					
SL024	S	2851	SHAH BROTHERS ISPAT PVT. LTD.	APPROVED	
SL024	M	6244	ARCELORMITTAL NIPPON STEEL	APPROVED	
SL024	M	8166	STEEL AUTHORITY OF INDIA LTD	APPROVED	
SL024	M	41307	JINDAL STEEL & POWER LTD.	APPROVED	
SL024	M	41575	WELSPUN CORP LTD	APPROVED	
SL024	M	70089	SUNLION PIPING ENGINEERING CO.	APPROVED	
SL024	M	72167	SALZGITTER MANNESMANN INTERNAT	APPROVED	
SL024	M	77007	DILLINGER INTERNATIONAL	APPROVED	
SL024	M	78004	STEEL FORCE ASIA NV-BELGIUM	APPROVED	
SL024	M	78021	NLMK PLATES SALES SA	APPROVED	
SL024	S	90016	BURWILL RESOURCES LTD.	APPROVED	
SL024	S	91021	DAEWOO INTERNATIONAL CORPORATI	APPROVED	
SL024	M	96026	SIJ ACRONI D.O.O.	APPROVED	

AA1011819112(PL-16MM)					
SL024	S	2851	SHAH BROTHERS ISPAT PVT. LTD.	APPROVED	
SL024	M	6244	ARCELORMITTAL NIPPON STEEL	APPROVED	
SL024	M	8166	STEEL AUTHORITY OF INDIA LTD	APPROVED	
SL024	M	41307	JINDAL STEEL & POWER LTD.	APPROVED	
SL024	M	41575	WELSPUN CORP LTD	APPROVED	
SL024	M	70089	SUNLION PIPING ENGINEERING CO.	APPROVED	
SL024	M	72167	SALZGITTER MANNESMANN INTERNAT	APPROVED	
SL024	M	77007	DILLINGER INTERNATIONAL	APPROVED	
SL024	M	78004	STEEL FORCE ASIA NV-BELGIUM	APPROVED	
SL024	M	78021	NLMK PLATES SALES SA	APPROVED	
SL024	S	90016	BURWILL RESOURCES LTD.	APPROVED	
SL024	S	91021	DAEWOO INTERNATIONAL CORPORATI	APPROVED	
SL024	M	96026	SIJ ACRONI D.O.O.	APPROVED	

AA1011819139(PL-20MM)					
SL024	S	2851	SHAH BROTHERS ISPAT PVT. LTD.	APPROVED	
SL024	M	6244	ARCELORMITTAL NIPPON STEEL	APPROVED	
SL024	M	8166	STEEL AUTHORITY OF INDIA LTD	APPROVED	
SL024	M	41307	JINDAL STEEL & POWER LTD.	APPROVED	
SL024	M	41575	WELSPUN CORP LTD	APPROVED	
SL024	M	70089	SUNLION PIPING ENGINEERING CO.	APPROVED	

SL024	M	72167	SALZGITTER MANNESMANN INTERNAT	APPROVED	
SL024	M	77007	DILLINGER INTERNATIONAL	APPROVED	
SL024	M	78004	STEEL FORCE ASIA NV-BEIGIUM	APPROVED	
SL024	M	78021	NLMK PLATES SALES SA	APPROVED	
SL024	S	90016	BURWILL RESOURCES LTD.	APPROVED	
SL024	S	91021	DAEWOO INTERNATIONAL CORPORATI	APPROVED	
SL024	M	96026	SIJ ACRONI D.O.O.	APPROVED	

AA1011819155(PL-25MM)					
SL024	S	2851	SHAH BROTHERS ISPAT PVT. LTD.	APPROVED	
SL024	M	6244	ARCELORMITTAL NIPPON STEEL	APPROVED	
SL024	M	8166	STEEL AUTHORITY OF INDIA LTD	APPROVED	
SL024	M	41307	JINDAL STEEL & POWER LTD.	APPROVED	
SL024	M	41575	WELSPUN CORP LTD	APPROVED	
SL024	M	70089	SUNLION PIPING ENGINEERING CO.	APPROVED	
SL024	M	72167	SALZGITTER MANNESMANN INTERNAT	APPROVED	
SL024	M	77007	DILLINGER INTERNATIONAL	APPROVED	
SL024	M	78004	STEEL FORCE ASIA NV-BEIGIUM	APPROVED	
SL024	M	78021	NLMK PLATES SALES SA	APPROVED	
SL024	S	90016	BURWILL RESOURCES LTD.	APPROVED	
SL024	S	91021	DAEWOO INTERNATIONAL CORPORATI	APPROVED	
SL024	M	96026	SIJ ACRONI D.O.O.	APPROVED	

AA1011819171 (PL-32MM)					
SL024	S	2851	SHAH BROTHERS ISPAT PVT. LTD.	APPROVED	
SL024	M	6244	ARCELORMITTAL NIPPON STEEL	APPROVED	
SL024	M	8166	STEEL AUTHORITY OF INDIA LTD	APPROVED	
SL024	M	41307	JINDAL STEEL & POWER LTD.	APPROVED	
SL024	M	41575	WELSPUN CORP LTD	APPROVED	
SL024	M	70089	SUNLION PIPING ENGINEERING CO.	APPROVED	
SL024	M	72167	SALZGITTER MANNESMANN INTERNAT	APPROVED	
SL024	M	77007	DILLINGER INTERNATIONAL	APPROVED	
SL024	M	78004	STEEL FORCE ASIA NV-BEIGIUM	APPROVED	
SL024	M	78021	NLMK PLATES SALES SA	APPROVED	
SL024	S	90016	BURWILL RESOURCES LTD.	APPROVED	
SL024	S	91021	DAEWOO INTERNATIONAL CORPORATI	APPROVED	
SL024	M	96026	SIJ ACRONI D.O.O.	APPROVED	

AA1041801114 (PL-16 MM)					
SL024	S	2851	SHAH BROTHERS ISPAT PVT. LTD.	APPROVED	
SL024	M	6244	ARCELORMITTAL NIPPON STEEL	APPROVED	
SL024	M	8166	STEEL AUTHORITY OF INDIA LTD	APPROVED	

SL024	M	41307	JINDAL STEEL & POWER LTD.	APPROVED	
SL024	M	70089	SUNLION PIPING ENGINEERING CO.	APPROVED	
SL024	M	72167	SALZGITTER MANNESMANN INTERNAT	APPROVED	
SL024	M	77007	DILLINGER INTERNATIONAL	APPROVED	
SL024	M	78004	STEEL FORCE ASIA NV-BEIGIUM	APPROVED	
SL024	M	78021	NLMK PLATES SALES SA	APPROVED	
SL024	S	90016	BURWILL RESOURCES LTD.	APPROVED	
SL024	S	91021	DAEWOO INTERNATIONAL CORPORATI	APPROVED	
SL024	M	96026	SIJ ACRONI D.O.O.	APPROVED	

MAT. CODE AA1010209086 (RND 16)

Mvenmatcatn	Ventype	Vencd	Vnm1	Apprvd	Dollar
SL039	S	2968	SANDOZ METALS (INDIA)	APPROVED	
SL039	M	3598	ARCVAC FORGECAST PRIVATE LTD	APPROVED	
SL039	S	4177	MAHAWAR IRON STORES PVT LTD	APPROVED	
SL039	M	4191	SKYWAY STEEL INDUSTRIES	APPROVED	
SL039	M	19158	LAXCON STEELS LTD	APPROVED	
SL039	M	24025	RASHTRIYA ISPAT NIGAM LIMITED	APPROVED	
SL039	M	41122	SUN FLAG IRON & STEEL CO. LTD.	APPROVED	

MAT. CODE AA1010209108 (RND 20)

SL039	S	2968	SANDOZ METALS (INDIA)	APPROVED	
SL039	M	3598	ARCVAC FORGECAST PRIVATE LTD	APPROVED	
SL039	S	4177	MAHAWAR IRON STORES PVT LTD	APPROVED	
SL039	M	4191	SKYWAY STEEL INDUSTRIES	APPROVED	
SL039	M	19158	LAXCON STEELS LTD	APPROVED	
SL039	M	24025	RASHTRIYA ISPAT NIGAM LIMITED	APPROVED	
SL039	M	41122	SUN FLAG IRON & STEEL CO. LTD.	APPROVED	

MAT. CODE AA1010209124 (RND 25)

Mvenmatcatn	Ventype	Vencd	Vnm1	Apprvd	Dollar
SL039	S	2968	SANDOZ METALS (INDIA)	APPROVED	
SL039	M	3598	ARCVAC FORGECAST PRIVATE LTD	APPROVED	
SL039	S	4177	MAHAWAR IRON STORES PVT LTD	APPROVED	
SL039	M	4191	SKYWAY STEEL INDUSTRIES	APPROVED	
SL039	M	19158	LAXCON STEELS LTD	APPROVED	
SL039	M	21050	ISMT LIMITED	APPROVED	
SL039	M	24025	RASHTRIYA ISPAT NIGAM LIMITED	APPROVED	
SL039	M	41122	SUN FLAG IRON & STEEL CO. LTD.	APPROVED	

PQR(Pre-Qualifying Requirements of Indent no- 20230148)

Item : Hotwell-1, Hotwell-2 (drg.no- 11604570023, 1604570024)

PRE-QUALIFICATION REQUIREMENT

01.00	TECHNICAL REQUIREMENT	Required	Vendor's Offer	Remarks
01.01	Vendors should have experience of fabricating (cutting/bending/assembly/welding/pre-fabrication machining) and supplying of atleast 1 no. Hotwell or equivalent having size 5000X2000mmX1000mm (LXBXH) and above and weight 5 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 must be EOT crane 5 Tons and above. ii) Vendor must have levelled bed plate size : Length= 7,000mm 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 50 mm and above. (v) Vendor must have rolling bending facility of plate thickness 20mm and above at width of 2500mm and above. (vi) Vendor must have suitable drilling facility to drill hole of size 25mm and above in plate thickness of 40mm 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 Hot Well or equivalent having size 5000X2000mmX1000mm (LXBXH) and above and weight 5 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 1.03.	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 Hot Well or equivalent having size 5000X2000mmX1000mm (LXBXH) and above and weight 5 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

31.05.2023

31/05/2023
[Ravi Deshwal
Mgt(WTX)]

Santosh
31/5/23
[Santosh Gird
Mgt(WTX)]

31-05-2023
(Ravi Deshwal)
AGM-WT

Reference : CC-ENGG-4540-001-110-QVM-Q-200

Date : 16/01/2023

From : CHANDEKAR PRADEEP GOPAL
DY. GENERAL MANAGER

To : BHARAT HEAVY ELECTRICALS LTD
NEW DELHI
110049
IN

Cc : sisodia@bhel.in

Subject : EPC TTPP3 (2x660MW)

Please find enclosed following drawings/ documents for necessary action at your end.

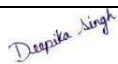
Vendor Drg. No. : 2.01.01
Orgn. Drg. No. : 4540-001-110-QVM-Q-200
Revision No. : 01
Drg. Title : CONDENSER SUB- ASSLY-ENDORSEMENT
App. Category : CAT-I
Release Date : 16/01/2023



Scan to verify

Comments : Endorsed in Cat-I for Talcher-III EPC Package

Chandekar

ENDORSEMENT SHEET FOR QP			
REFERENCE / STANDARD / FIELD QUALITY PLAN (RQP / SQP/RFQP/SFQP)			
TO BE FILLED IN BY SUPPLIER AT TIME OF SUBMISSION			<div style="border: 1px solid black; padding: 2px; display: inline-block;">एन.टी.पी.सी. NTPC</div>
PROJECT NAME	2 X 660 MW TALCHER TPP		REVIEW & ENDORSEMENT BY NTPC PROJECT SPECIFIC QP NUMBER ALLOTTED QP NO.: 4540-001-110-QVM-Q-200 DOC TITLE: CONDENSER SUB- ASSLY- ENDORSEMENT REV. NO.: 01 DATE:
CONTRACT NO.:	CS-4540-001A-2-FC-NOA-7227/7228		
MAIN SUPPLIER	BHEL		
MANUFACTURER WORKS & ADDRESS	M/S BHEL HEEP HARIDWAR		
ITEM /EQUIPMENT / SYSTEM/ SUB-SYSTEM DETAILS i.e. MODEL TYPE/SIZE/RATING etc.	CONDENSER SUB-ASSEMBLY (DOMEWALL, BOTTOM PLATE, HOTWELL, WATER BOX AND WATER CHAMBER)	BHEL QP NO. : 2.01.01	
APPROVED QP NO.: RQP/SQP/RFQP/SFQP	9915-371-110-HWR-QVM-Q-120	REV. NO.: 01	DATE: 14.01.2020
Confirmation by Main Supplier (TICK WHICHEVER APPLICABLE)			
<input checked="" type="checkbox"/> I. That the item/ component is identical to that considered for QP approval. OR. II. That there are minor changes in the item/ component with respect to that considered for QP approval, however the same do not affect the contents of QP. OR III. That there are minor changes in the item/ component with respect to that considered for QP approval, however the same affect the QP slightly, as indicated below / in attached sheet.			<input checked="" type="checkbox"/> The QP is endorsed for this project without any change The QP is endorsed for this project with changes as indicated.
			<u>DISTRIBUTION OF ENDORSEMENT OF</u> A) RQP/SQP: 1. MAIN SUPPLIER (WITH A COPY OF QP) 2. MANUFACTURER 3. RIO 4. CQA-SPL 5. CQA-O/C B) RFQP/SFQP: 1. MAIN SUPPLIER (with a copy of QP) 2. MANUFACTURER 3. NTPC FQA (with a copy of QP) 4. NTPC Erection (with a copy of QP) 5. CQA-SPL 6. CQA-O/C
 SIGN.: (Main Supplier) DATE: 05.01.2023	SIGN.: (Manufacturer) DATE:		NTPC (Reviewed /Approved by/ Date & Seal)



Reference: null371:263

Project: Talcher Thermal Power Project St-III (2x660MW)
NTPC Doc No: 4540-001-110-QVM-Q-200, Rev-1
Doc Title: CONDENSER SUB- ASSLY-ENDORSEMENT

Date:16-01-20

From:	VIVEK P SRIVASTAVA AGM , PE -TF	To:	BHEL BHEL house, Siri Fort New Delhi-110049
		CC:	- -
SUBJECT : KHURJA, TURBINE GENERATOR AND ASSOCIATED PACKAGE Please find enclosed following drawings/documents for necessary action at your end as indicated in purpose code.			
VENDOR DRG NO:	null		
NTPC DRG NO:	9915-371-110-HWR-QVM-Q-120		
REVISION NO:	01		
DRG TITLE:	MQP for CONDENSER SUB-ASSEMBLY		
APP CATEGORY:	I		
RELEASE DATE:	16-01-20		
COMMENTS:	CAT-I		



Engineering Division
ISO 9001:2008 Certified

अभियंत्रिकी कार्यालय परिसर, प्लॉट नं.- ए 8ए, सेक्टर-24, पोस्ट बॉक्स नं.- 13, नोएडा (उ प्र) पिन-201 307
टेलिफोन नं.- 0120-2410333, 2410116 फैक्स-0120-2410136, 2410137

पंजीकृत कार्यालय: एनटीपीसी भवन, स्कोप कॉम्प्लेक्स, 7 इंस्टीट्यूशनल एरिया, लोधी रोड, नई दिल्ली-110 003

टेलिफोन नं.- 011-24361018 फैक्स-011-24361018, वेबसाइट: www.ntpc.co.in


ENGINEERING OFFICE COMPLEX, Plot No: A-8A, Sector-24, Post Box No: 13, Noida (UP), Pin-201 307

Telephone No: 0120-2410333, 2410116 Fax-0120-2410136, 2410137

Registered Office: NTPC Bhawan, Scope Complex, 7 Institutional Area, Lodhi Road, New Delhi-110 003

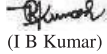
Telephone No: 011-24360100 Fax-011-24361018, Website: www.ntpc.co.in

Chandekar

		MANUFACTURING QUALITY PLAN						CAT-I		PROJECT: KHURJA STPP (2 X 660 MW) PACKAGE: MAIN PLANT PACKAGE CONTRACT NO. 9915-371 MAIN SUPPLIER: BHEL, Haridwar											
														ITEM: CONDENSER SUB-ASSEMBLY (DOMEWALL, BOTTOM PLATE, HOTWELL, WATER BOX AND WATER CHAMBER)							
																				QP NO.: 2.01.01	
																				REV. 01	
								DATE: 14-JAN-2020													
								PAGE 1 OF 1													
SL. NO	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORDS	AGENCY			REMARKS									
1	2	3	4	5	6	7	8	9	D	S	B	C	11								
1.000	Material receiving inspection.	Verification of supplier's certificate for Plate thickness > 40 mm	Major	Certificate review	100%	AA 10119 AA10401	AA 10119 AA10401	List of Q. Nos.	✓	-	p	V	Refer Note-1								
2.000	In process inspection																				
2.100		Visual inspection of weld seam preparation.	Major	Visual	100%	Drawing	Drawing	Obs. Sheet		P*	P/ V*	-									
2.200		Visual inspection of welds.	Major	Visual	100%	Drawing	Drawing	Obs. Sheet		P*	P/ W*	-									
2.300		RT/UT of butt welds & DPT	Major	NDT	As per drg.	Drawing	Drawing	Report	✓	P*	P/ W*	W/ V*									
2.400	For water box & water chamber	RT/UT & DPT of fabricated flange	Major	NDT	As per drg.	Drawing	Drawing	Report	✓	P*	P/ W*	W/ V*									
2.500		DPT of fillet welds/ lifting lugs	Major	NDT	As per drg.	Drawing	Drawing	Report	✓	P*	P/ W*	W/ V*									
2.600	For water box & water chamber	Verification of dimensions and visual inspection after machining & drilling	Major	Visual & measurement	Random	Drawing	Drawing	Obs. Sheet	✓	P*	P/ V*	V									
2.700		Matching of water box & water chamber (hole matching)	Major	Visual	100%	Drawing	Drawing	Obs. Sheet	✓	P*	P/ W*	W/ V*									
3.000	Final inspection																				
3.100		Check for paint thickness	Major	Visual	100%	Drawing	Drawing	Obs. Sheet		P*	P/ V*	-									
3.200		Predespach inspection	Major	Visual	100%	Drawing	Drawing	COC		-	P	-									

Note: 1) BHEL approved source of original plate manufacturer. Q number is to be verified by NTPC as per MOM dated: 17.10.07 pt. Certification signature by Digitally signed by Shirendrasankar Sonkar, DN: cn=Shirendrasankar Sonkar, o=NTPC, c=IN, email=shirendrasankar@ntpc.co.in, serial=100, version=1, reason=CAT I, location=NTPCEOC

* In case of offloading on BHEL approved sub-contractors.

 (I B Kumar)		Legend: Records identified with "tick" shall be submitted to customer as a QA Documentation package. S= sub-vendor, B= BHEL/ BHEL nominated inspection agency, C= Customer/ customer representative, P= Perform, V= Review of records W= Customer witness (not hold, BHEL to give advance notice and customer to Associate but work will not stop. CHP= Customer Hold Point (work will not proceed unless the clearance from customer)				DOC. NO. 9915-371-110-HWR-QVM-Q-120 REV 01 CAT			
Approved By: (A K Swami)									
MANUFACTURER/ SUB-CONTRACTOR		MAIN-SUPPLIER				FOR CUSTOMER USE			
SIGNATURE						REVIEWED BY APPROVED BY APPROVAL SEAL			



COMBINED BILL OF MATERIAL

Printed On:31.05.2023

Printed By:

CBOM No: 11604570023
Description: HOTWELL-1

CBOM Var: 00

Revno: 7

Rev Date: 11.03.2022

Total weight: 8156.4

RECORD OF CHANGES

Drawing No	Var	Revno	Rev Date	Description
11604570023	00	1	11.12.2017	ITEM NO.10 REPLACED.
11604570023	00	2	01.05.2018	Updation of norm per piece in item no-21 & 22
11604570023	00	3	16.03.2019	IT.NO. 29 & 30 ADDED.
11604570023	00	4	06.04.2019	Item No.29 & 30 Replaced.
11604570023	00	5	18.01.2022	Item no 28 updated.
11604570023	00	6	11.03.2022	Auto Revision 21603470110/00
11604570023	00	7	11.03.2022	total assembly wt. updated

CBOM - 11604570023 00

ENGG

WTX

	Initial	Date	Initial	Date
Worked By	hxemuk	23.11.2017	wtxman	25.11.2017
Checked By	hxemuk	23.11.2017	wtxblm	27.11.2017
Approved By	hxerb	06.12.2017	wtxblm	27.11.2017



COMBINED BILL OF MATERIAL

Printed On:31.05.2023

Printed By:

CBOM No: 11604570023 CBOM Var: 00
Description: HOTWELL-1

Revno: 7

Rev Date: 11.03.2022

Total weight: 8156.4

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty(Total)	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
0	11604570023 00			8156.4						
1(1)	HOTWELL-1			Y						
MF CD			Y		0306-0314-000D					
1	21604570133 00	AA1011819112	AA10119	890.0	1774.0X3995.0	1	1	935.5	0.0	935.5
1(1)	SHELL		BORROWED	Y	PL 16					
MF DR					0072-0301-0306			DR		KG
2	21604570133 01	AA1011819112	AA10119	1244.0	2480.0X3995.0	1	3	1307.8	0.0	3923.4
3(3)	SHELL		BORROWED	Y	PL 16					
MF DR					0072-0301-0306			DR		KG
3	21604570133 02	AA1011819112	AA10119	328.0	654.0X3995.0	1	1	344.9	0.0	344.9
1(1)	SHELL		BORROWED	Y	PL 16					
MF DR					0072-0301-0306			DR		KG
4	31604570262 00	AA1011819112	AA10119	328.36	1328.0X2456.0	1	1	430.5	0.0	430.5
1(1)	END PLATE		BORROWED	Y	PL 16					
MF DR					0072-0301-0306			DR		KG
5	31604570271 00	AA1011819112	AA10119	277.45	1328.0X2456.0	1	1	538.0	0.0	538.0
1(1)	END PLATE-II		BORROWED	Y	PL 16					
MF DR					0072-0301-0306			DR		KG
6	31604570263 00	AA1011819112	AA10119	2.35	175.0X120.0	1	20	2.8	0.0	56.0
20(20)	STIFFENER		BORROWED	Y	PL 16					
MF DR					0072-0301-0306			DR		KG
7	31604570278 00	AA1041801114	AA10401	2.26	175.0X120.0	1	4	2.8	0.0	11.2
4(4)	STIFFENER		BORROWED	Y	PL 16					
MF DR					0072-0301-0317-0306					KG
8	21604570134 00	HW1047955130	AA10455	2.62	163.0	1	2	0.163	0.0	0.326
2(2)	NOZZLE		BORROWED	Y	114.3X6.02					
MF DR					0072-0315-0306			DR		MR
9	21604570134 04	AA1041155697	AA10455	34.0	431.0	1	2	0.431	0.0	0.862
2(2)	NOZZLE			Y	PI 323.9X10.0					
MF DR					0072-0315-0306					MR

ENGG**WTX**

	Initial	Date	Initial	Date
Worked By	hxemuk	23.11.2017	wtxman	25.11.2017
Checked By	hxemuk	23.11.2017	wtxblm	27.11.2017
Approved By	hxeb	06.12.2017	wtxblm	27.11.2017



COMBINED BILL OF MATERIAL

Printed On:31.05.2023

Printed By:

CBOM No: 11604570023 CBOM Var: 00

Revno: 7

Rev Date: 11.03.2022

Description: HOTWELL-1

Total weight: 8156.4

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty(Total)	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
10	21604570134 05	HW1041255640	AA10455	66.5	567.0	1	1	0.567	0.0	0.567
1(1)	NOZZLE			Y	PI 508X9.53					
MF DR					0072-0315-0306					MR
11	41604570118 00	AA1010209248	AA10109	2.3	160.0	1	2	6.308	0.0	12.616
2(2)	SOCKET		BORROWED	Y	RND 80					
MF DR					0072-0315-0306				DR	KG
12	31604570265 00	AA1011819112	AA10119	797.46	4884.0X1300.0	1	1	838.0	0.0	838.0
1(1)	PARTITION PLATE-I		BORROWED	Y	PL 16					
MF DR					0072-0301-0306				DR	KG
13	31604570269 00	AA1011819112	AA10119	813.79	4984.0X1300.0	1	1	855.0	0.0	855.0
1(1)	PARTITION PLATE-II		BORROWED	Y	PL 16					
MF DR					0072-0301-0306				DR	KG
14	31604570264 00	AA1011819112	AA10119	18.0	1199.0X120.0	1	2	19.0	0.0	38.0
2(2)	STIFFENER		BORROWED	Y	PL 16					
MF DR					0072-0301-0306				DR	KG
15	31604570264 01	AA1011819112	AA10119	7.4	492.0X120.0	1	6	7.8	0.0	46.8
6(6)	STIFFENER		BORROWED	Y	PL 16					
MF DR					0072-0301-0306				DR	KG
16	31604570264 02	AA1011819112	AA10119	10.3	684.0X120.0	1	4	10.8	0.0	43.2
4(4)	STIFFENER		BORROWED	Y	PL 16					
MF DR					0072-0301-0306				DR	KG
17	31604570264 03	AA1011819112	AA10119	8.7	579.0X120.0	1	2	9.2	0.0	18.4
2(2)	STIFFENER		BORROWED	Y	PL 16					
MF DR					0072-0301-0306				DR	KG
18	31604570281 00	AA1011819112	AA10119	4.0	295.0X120.0	1	2	4.7	0.0	9.4
2(2)	STIFFENER			Y	PL 16					
MF DR					0072-0301-0306					KG
19	31604570281 01	AA1011819112	AA10119	3.9	286.0X120.0	1	4	4.53	0.0	18.12
4(4)	STIFFENER			Y	PL 16					
MF DR					0072-0301-0306					KG

ENGG**WTX**

	Initial	Date	Initial	Date
Worked By	hxemuk	23.11.2017	wtxman	25.11.2017
Checked By	hxemuk	23.11.2017	wtxblm	27.11.2017
Approved By	hxeb	06.12.2017	wtxblm	27.11.2017



COMBINED BILL OF MATERIAL

Printed On:31.05.2023

Printed By:

CBOM No: 11604570023 CBOM Var: 00

Revno: 7

Rev Date: 11.03.2022

Description: HOTWELL-1

Total weight: 8156.4

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty(Total)	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
20	31604570281 02	AA1011819112	AA10119	2.4	187.0X120.0	1	2	2.96	0.0	5.92
2(2)	STIFFENER			Y	PL 16					
MF DR					0072-0301-0306					KG
21		AA7115102023	AA7115102	0.059	1.0	1	8	1.0	0.0	8.0
8(8)	BOLT HEX C-4.6			Y	M12X50					
SI DR	BOLT HEX C-4.6				0075-0306					NO
22		HW7151195079	HW7151195	0.087	1.0	1	8	1.0	0.0	8.0
8(8)	NUTS HEX A 04CR18NI10			Y	M12					
SI DR	NUTS HEX A 04CR18NI10				0075-0306					NO
23		AA1010209124	AA10109	4.58	1190.0	1	24	4.8	0.0	115.2
24(24)	ROUND BAR DIA 25,L=1190			Y	RND 25					
MF DR	ST-C20-HR-RND				0072-0315-0306					KG
24		HW1041146787	AA10446	1.08	200.0	1	2	0.2	0.0	0.4
2(2)	PIPE 60.3X3.91,L=200			Y	PI 60.3X3.91					
MF DR	ST-BQ-A1-CDS-TUBE				0072-0315-0306					MR
25	31650170184 07	AA1011819155	AA10119	1.25	150.0X150.0	1	2	4.6	0.0	9.2
2(2)	PLT FLANGE		BORROWED	Y	PL 25			DIA 150.		
MF DR					0072-0301-0317-0390					KG
26	31650170185 07	AA1011819155	AA10119	1.62	150.0X150.0	1	2	4.64	0.0	9.28
2(2)	BLANK FLANGE		BORROWED	Y	PL 25					
MF DR					0072-0301-0317-0306			DR		KG
27	21603470110 00			191.1						
2(2)	MAN HOLE ASSEMBLY			Y						
MF DR			N		0306					
27-2	31603470117 00	AA1011819074	AA10119	44.39	1885.0X300.0	1	2	46.65	0.0	93.3
1(2)	PIPE			Y	PL 10					
MF DR					0072-0301-0306					KG
27-3	41601570010 00	AA1011819198	AA10119	32.44	765.0X765.0	1	2	193.12	0.0	386.24
1(2)	PLATE FLANGE			Y	PL 40			Dia 765/600, off cut wt. 115kg		
MF DR					0072-0301-0317-0306					KG

ENGG

WTX

Worked By	hxemuk	23.11.2017	wtzman	25.11.2017
Checked By	hxemuk	23.11.2017	wtxblm	27.11.2017
Approved By	hxeb	06.12.2017	wtxblm	27.11.2017



COMBINED BILL OF MATERIAL

Printed On:31.05.2023

Printed By:

CBOM No: 11604570023 CBOM Var: 00

Revno: 7

Rev Date: 11.03.2022

Description: HOTWELL-1

Total weight: 8156.4

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty(Total)	Description		Assy. Remarks	Inclusion?	Mat Shape		Remarks			
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
27-4	41601570011 00	AA1011819171	AA10119	108.06	755.0X755.0	1	2	150.55	0.0	301.1
1(2)	BLANK FLANGE			Y	PL 32					
MF DR					0072-0301-0317-0306					KG
27-5	41604570004 00	AA1010209086	AA10109	0.44	325.0	1	2	0.513	0.0	1.026
1(2)	HANDLE			Y	RND 16			RND DIA 16,L=325		
MF DR					0072-0315-0306					KG
27-6		AA7121130076	AA7121130	0.029	0.0	0	0	0.0	0.0	4.0
2(4)	SCRU HEX SET F.D.P A-14H			Y						
SI DR	M10X45				0075-0306					NO
27-7		AA7161005078	AA7161005	0.017	0.0	0	0	0.0	0.0	4.0
2(4)	WASHER PNCHD A-ST			Y						
SI DR	22				0075-0306					NO
27-8	41601570001 00	AA1011819139	AA10119	0.38	53.0X110.0	1	4	1.3	0.0	5.2
2(4)	LUG			Y	PL 20					
MF DR					0072-0301-0317-0306					KG
27-9	41601570002 00	AA1011819139	AA10119	0.38	53.0X110.0	1	4	1.3	0.0	5.2
2(4)	LUG			Y	PL 20					
MF DR					0072-0301-0317-0306					KG
27-10		AA1010209108	AA10109	0.75	310.0	1	2	0.8	0.0	1.6
1(2)	ROUND BAR DIA20,L=310			Y	RND 20					
MF DR	ST-C20-HR-RND				0072-0315-0306					KG
27-11		HW2151702987	AA21502	0.2	670.0X670.0	1	2	2.0	0.0	4.0
1(2)	CAF GASKET DIA670/576,S=1.6			Y	1.6 T			od/id=670/576		
MF DR	CAF-SHEET				0072-0306					KG
27-12		AA7111124146	AA7111124	0.049	0.0	0	0	0.0	0.0	40.0
20(40)	BOLT HEX A-8.8			Y						
SI DR	M24X110				0072-0306					NO
27-13		AA7151112025	AA7151112	0.11	0.0	0	0	0.0	0.0	40.0
20(40)	NUT HEX. B-6			Y						
SI DR	M24				0072-0306					NO

ENGG

WTX

	Initial	Date	Initial	Date
Worked By	hxemuk	23.11.2017	wtxman	25.11.2017
Checked By	hxemuk	23.11.2017	wtxblm	27.11.2017
Approved By	hxeb	06.12.2017	wtxblm	27.11.2017



COMBINED BILL OF MATERIAL

Printed On:31.05.2023

Printed By:

CBOM No: 11604570023 CBOM Var: 00

Revno: 7

Rev Date: 11.03.2022

Description: HOTWELL-1

Total weight: 8156.4

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty(Total)	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
28	31604570279 00	AA1011819074	AA10119	1.0	303.0X40.0	1	4	1.0	0.0	4.0
4(4)	STIFFENER			Y	PL 10					
MF DR					0072-0301-0306					KG
29	31601670512 00			11.52						
3(3)	DISPERSER NOZZLE		BORROWED	Y						
MF DR			N		0306					
29-1	31601670514 00 00	HW1047955148	AA10455	9.92	530.0	1	3	0.53	0.0	1.59
1(3)	PERFORATED PIPE			Y	168.3X4.78					
MF DR					0072-0315-0317-0306					MR
29-2	41605170110 00 00	AA1011819074	AA10119	1.6	150.0X150.0	1	3	2.2	0.0	6.6
1(3)	PLATE			Y	PL 10			Dia=150		
MF DR					0072-0301-0306					KG
30	41601570040 03	HW1041055668	AA10455	9.5	335.0	1	3	0.335	0.0	1.005
3(3)	PIPE			Y	PI 168.3X7.11					
MF DR					0072-0315-0306					MR

CBOM - 11

	ENGG		WTX	
	Initial	Date	Initial	Date
Worked By	hxemuk	23.11.2017	wtxman	25.11.2017
Checked By	hxemuk	23.11.2017	wtxblm	27.11.2017
Approved By	hxeb	06.12.2017	wtxblm	27.11.2017



COMBINED BILL OF MATERIAL

Printed On:31.05.2023

Printed By:

CBOM No: 11604570024 CBOM Var: 00

Revno: 4

Rev Date: 11.03.2022

Description: HOTWELL-2

Total weight: 7947.3

RECORD OF CHANGES

Drawing No	Var	Revno	Rev Date	Description
11604570024	00	1	01.05.2018	updataion in item no-21 & 22
11604570024	00	2	18.01.2022	Item no 29 updated
11604570024	00	3	11.03.2022	Auto Revision 21603470110/00
11604570024	00	4	11.03.2022	Auto Revision 21603470110/00

CBOM - 11604570024 00

ENGG

WTX

	Initial	Date	Initial	Date
Worked By	hxemuk	23.11.2017	wtxman	25.11.2017
Checked By	hxemuk	23.11.2017	wtxblm	27.11.2017
Approved By	hxerb	06.12.2017	wtxblm	27.11.2017



COMBINED BILL OF MATERIAL

Printed On:31.05.2023

Printed By:

CBOM No: 11604570024 CBOM Var: 00
Description: HOTWELL-2

Revno: 4

Rev Date: 11.03.2022

Total weight: 7947.3

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty(Total)	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
0	11604570024 00			7947.3						
1(1)	HOTWELL-2			Y						
MF CD			Y	8010.0	0306-0314-000D					
1	21604570133 00	AA1011819112	AA10119	890.0	1774.0X3995.0	1	1	935.5	0.0	935.5
1(1)	SHELL		BORROWED	Y	PL 16					
MF DR					0072-0301-0306			DR		KG
2	21604570133 01	AA1011819112	AA10119	1244.0	2480.0X3995.0	1	3	1307.8	0.0	3923.4
3(3)	SHELL		BORROWED	Y	PL 16					
MF DR					0072-0301-0306			DR		KG
3	21604570133 02	AA1011819112	AA10119	328.0	654.0X3995.0	1	1	344.9	0.0	344.9
1(1)	SHELL		BORROWED	Y	PL 16					
MF DR					0072-0301-0306			DR		KG
4	31604570262 00	AA1011819112	AA10119	328.36	1328.0X2456.0	1	1	430.5	0.0	430.5
1(1)	END PLATE		BORROWED	Y	PL 16					
MF DR					0072-0301-0306			DR		KG
5	31604570271 00	AA1011819112	AA10119	277.45	1328.0X2456.0	1	1	538.0	0.0	538.0
1(1)	END PLATE-II		BORROWED	Y	PL 16					
MF DR					0072-0301-0306			DR		KG
6	31604570263 00	AA1011819112	AA10119	2.35	175.0X120.0	1	20	2.8	0.0	56.0
20(20)	STIFFENER		BORROWED	Y	PL 16					
MF DR					0072-0301-0306			DR		KG
7	21604570134 00	HW1047955130	AA10455	2.62	163.0	1	2	0.163	0.0	0.326
2(2)	NOZZLE		BORROWED	Y	114.3X6.02					
MF DR					0072-0315-0306			DR		MR
8	21604570134 03	HW1041155778	AA10455	27.78	418.0	1	2	0.418	0.0	0.836
2(2)	NOZZLE			Y	PI 323.9X8.38					
MF DR					0072-0315-0306					MR
9	41604570118 00	AA1010209248	AA10109	2.3	160.0	1	2	6.308	0.0	12.616
2(2)	SOCKET		BORROWED	Y	RND 80					
MF DR					0072-0315-0306			DR		KG

ENGG

WTX

	Initial	Date	Initial	Date
Worked By	hxemuk	23.11.2017	wtxman	25.11.2017
Checked By	hxemuk	23.11.2017	wtxblm	27.11.2017
Approved By	hxeb	06.12.2017	wtxblm	27.11.2017



COMBINED BILL OF MATERIAL

Printed On:31.05.2023

Printed By:

CBOM No: 11604570024 CBOM Var: 00

Revno: 4

Rev Date: 11.03.2022

Description: HOTWELL-2

Total weight: 7947.3

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty(Total)	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
10	21604570134 04	AA1041155697	AA10455	34.0	431.0	1	2	0.431	0.0	0.862
2(2)	NOZZLE			Y	PI 323.9X10.0					
MF DR					0072-0315-0306					MR
11	21604570134 01	HW1041155980	AA10455	23.18	418.0	1	1	0.418	0.0	0.418
1(1)	NOZZLE		BORROWED	Y	PI 323.9X7.1					
MF DR					0072-0315-0306				DR	MR
12	31604570265 00	AA1011819112	AA10119	797.46	4884.0X1300.0	1	1	838.0	0.0	838.0
1(1)	PARTITION PLATE-I		BORROWED	Y	PL 16					
MF DR					0072-0301-0306				DR	KG
13	31604570269 00	AA1011819112	AA10119	813.79	4984.0X1300.0	1	1	855.0	0.0	855.0
1(1)	PARTITION PLATE-II		BORROWED	Y	PL 16					
MF DR					0072-0301-0306				DR	KG
14	31604570264 00	AA1011819112	AA10119	18.0	1199.0X120.0	1	2	19.0	0.0	38.0
2(2)	STIFFENER		BORROWED	Y	PL 16					
MF DR					0072-0301-0306				DR	KG
15	31604570264 01	AA1011819112	AA10119	7.4	492.0X120.0	1	6	7.8	0.0	46.8
6(6)	STIFFENER		BORROWED	Y	PL 16					
MF DR					0072-0301-0306				DR	KG
16	31604570264 02	AA1011819112	AA10119	10.3	684.0X120.0	1	4	10.8	0.0	43.2
4(4)	STIFFENER		BORROWED	Y	PL 16					
MF DR					0072-0301-0306				DR	KG
17	31604570264 03	AA1011819112	AA10119	8.7	579.0X120.0	1	2	9.2	0.0	18.4
2(2)	STIFFENER		BORROWED	Y	PL 16					
MF DR					0072-0301-0306				DR	KG
18	31604570281 00	AA1011819112	AA10119	4.0	295.0X120.0	1	2	4.7	0.0	9.4
2(2)	STIFFENER			Y	PL 16					
MF DR					0072-0301-0306					KG
19	31604570281 01	AA1011819112	AA10119	3.9	286.0X120.0	1	4	4.53	0.0	18.12
4(4)	STIFFENER			Y	PL 16					
MF DR					0072-0301-0306					KG

ENGG

WTX

Worked By	hxemuk	23.11.2017	wtzman	25.11.2017
Checked By	hxemuk	23.11.2017	wtxblm	27.11.2017
Approved By	hxeb	06.12.2017	wtxblm	27.11.2017



COMBINED BILL OF MATERIAL

Printed On:31.05.2023

Printed By:

CBOM No: 11604570024 CBOM Var: 00

Revno: 4

Rev Date: 11.03.2022

Description: HOTWELL-2

Total weight: 7947.3

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty(Total)	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
20	31604570281 02	AA1011819112	AA10119	2.4	187.0X120.0	1	2	2.96	0.0	5.92
2(2)	STIFFENER			Y	PL 16					
MF DR					0072-0301-0306					KG
21		AA7115102023	AA7115102	0.059	1.0	1	8	1.0	0.0	8.0
8(8)	BOLT HEX C-4.6			Y	M12X50					
SI DR	BOLT HEX C-4.6				0075-0306					NO
22		HW7151195079	HW7151195	0.087	1.0	1	8	1.0	0.0	8.0
8(8)	NUTS HEX A 04CR18NI10			Y	M12					
SI DR	NUTS HEX A 04CR18NI10				0075-0306					NO
23		AA1010209124	AA10109	4.58	1190.0	1	24	4.8	0.0	115.2
24(24)	ROUND BAR DIA 25,L=1190			Y	RND 25					
MF DR	ST-C20-HR-RND				0072-0315-0306					KG
24		HW1041146787	AA10446	1.08	200.0	1	2	0.2	0.0	0.4
2(2)	PIPE 60.3X3.91,L=200			Y	PI 60.3X3.91					
MF DR	ST-BQ-A1-CDS-TUBE				0072-0315-0306					MR
25	31650170184 07	AA1011819155	AA10119	1.25	150.0X150.0	1	2	4.6	0.0	9.2
2(2)	PLT FLANGE		BORROWED	Y	PL 25			DIA 150.		
MF DR					0072-0301-0317-0390					KG
26	31650170185 07	AA1011819155	AA10119	1.62	150.0X150.0	1	2	4.64	0.0	9.28
2(2)	BLANK FLANGE		BORROWED	Y	PL 25					
MF DR					0072-0301-0317-0306			DR		KG
27	31604570278 00	AA1041801114	AA10401	2.26	175.0X120.0	1	4	2.8	0.0	11.2
4(4)	STIFFENER		BORROWED	Y	PL 16					
MF DR					0072-0301-0317-0306					KG
28	21603470110 00			191.1						
2(2)	MAN HOLE ASSEMBLY			Y						
MF DR			N		0306					
28-2	31603470117 00	AA1011819074	AA10119	44.39	1885.0X300.0	1	2	46.65	0.0	93.3
1(2)	PIPE			Y	PL 10					
MF DR					0072-0301-0306					KG

ENGG

WTX

	Initial	Date	Initial	Date
Worked By	hxemuk	23.11.2017	wtxman	25.11.2017
Checked By	hxemuk	23.11.2017	wtxblm	27.11.2017
Approved By	hxeb	06.12.2017	wtxblm	27.11.2017



COMBINED BILL OF MATERIAL

Printed On:31.05.2023

Printed By:

CBOM No: 11604570024 CBOM Var: 00

Revno: 4

Rev Date: 11.03.2022

Description: HOTWELL-2

Total weight: 7947.3

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty(Total)	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
28-3	41601570010 00	AA1011819198	AA10119	32.44	765.0X765.0	1	2	193.12	0.0	386.24
1(2)	PLATE FLANGE			Y	PL 40			Dia 765/600, off cut wt. 115kg		
MF DR					0072-0301-0317-0306					KG
28-4	41601570011 00	AA1011819171	AA10119	108.06	755.0X755.0	1	2	150.55	0.0	301.1
1(2)	BLANK FLANGE			Y	PL 32					
MF DR					0072-0301-0317-0306					KG
28-5	41604570004 00	AA1010209086	AA10109	0.44	325.0	1	2	0.513	0.0	1.026
1(2)	HANDLE			Y	RND 16			RND DIA 16,L=325		
MF DR					0072-0315-0306					KG
28-6		AA7121130076	AA7121130	0.029	0.0	0	0	0.0	0.0	4.0
2(4)	SCRU HEX SET F.D.P A-14H			Y						
SI DR	M10X45				0075-0306					NO
28-7		AA7161005078	AA7161005	0.017	0.0	0	0	0.0	0.0	4.0
2(4)	WASHER PNCHD A-ST			Y						
SI DR	22				0075-0306					NO
28-8	41601570001 00	AA1011819139	AA10119	0.38	53.0X110.0	1	4	1.3	0.0	5.2
2(4)	LUG			Y	PL 20					
MF DR					0072-0301-0317-0306					KG
28-9	41601570002 00	AA1011819139	AA10119	0.38	53.0X110.0	1	4	1.3	0.0	5.2
2(4)	LUG			Y	PL 20					
MF DR					0072-0301-0317-0306					KG
28-10		AA1010209108	AA10109	0.75	310.0	1	2	0.8	0.0	1.6
1(2)	ROUND BAR DIA20,L=310			Y	RND 20					
MF DR	ST-C20-HR-RND				0072-0315-0306					KG
28-11		HW2151702987	AA21502	0.2	670.0X670.0	1	2	2.0	0.0	4.0
1(2)	CAF GASKET DIA670/576,S=1.6			Y	1.6 T			od/id=670/576		
MF DR	CAF-SHEET				0072-0306					KG
28-12		AA7111124146	AA7111124	0.049	0.0	0	0	0.0	0.0	40.0
20(40)	BOLT HEX A-8.8			Y						
SI DR	M24X110				0072-0306					NO

ENGG

WTX

Initial

Date

Initial

Date

Worked By

hxemuk

23.11.2017

wtzman

25.11.2017

Checked By

hxemuk

23.11.2017

wtxblm

27.11.2017

Approved By

hxeb

06.12.2017

wtxblm

27.11.2017



COMBINED BILL OF MATERIAL

Printed On:31.05.2023

Printed By:

CBOM No: 11604570024 CBOM Var: 00

Revno: 4

Rev Date: 11.03.2022

Description: HOTWELL-2

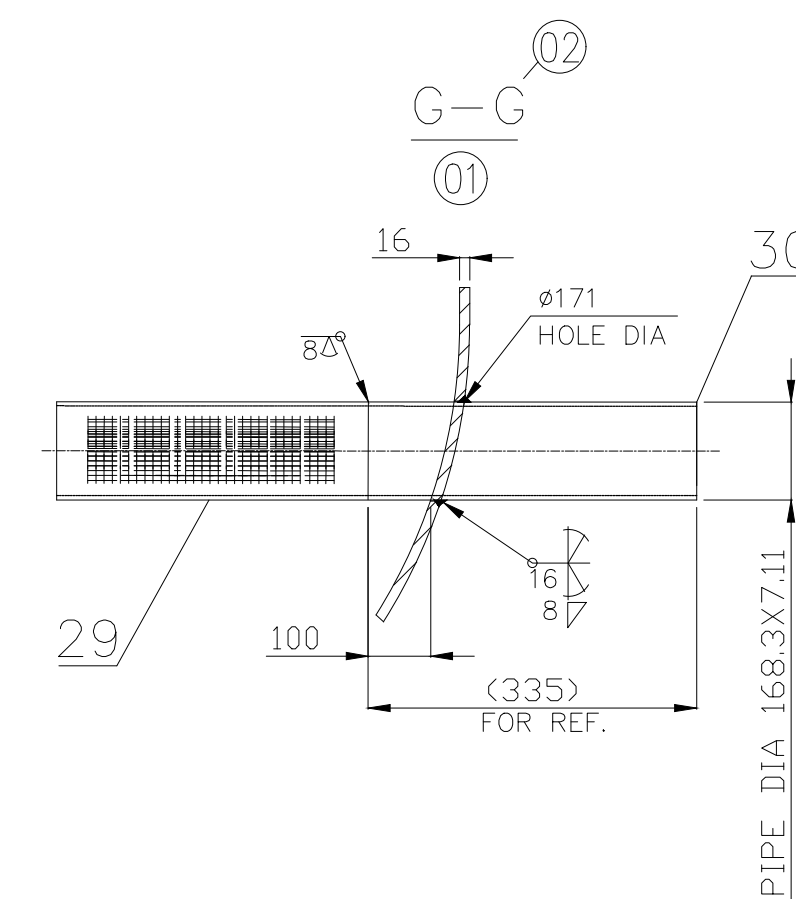
Total weight: 7947.3

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty(Total)	Description		Assy. Remarks	Inclusion?	Mat Shape					
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
28-13		AA7151112025	AA7151112	0.11	0.0	0	0	0.0	0.0	40.0
20(40)	NUT HEX. B-6			Y						
SI DR	M24				0072-0306					NO
29	31604570279 00	AA1011819074	AA10119	1.0	303.0X40.0	1	4	1.0	0.0	4.0
4(4)	STIFFENER			Y	PL 10					
MF DR					0072-0301-0306					KG

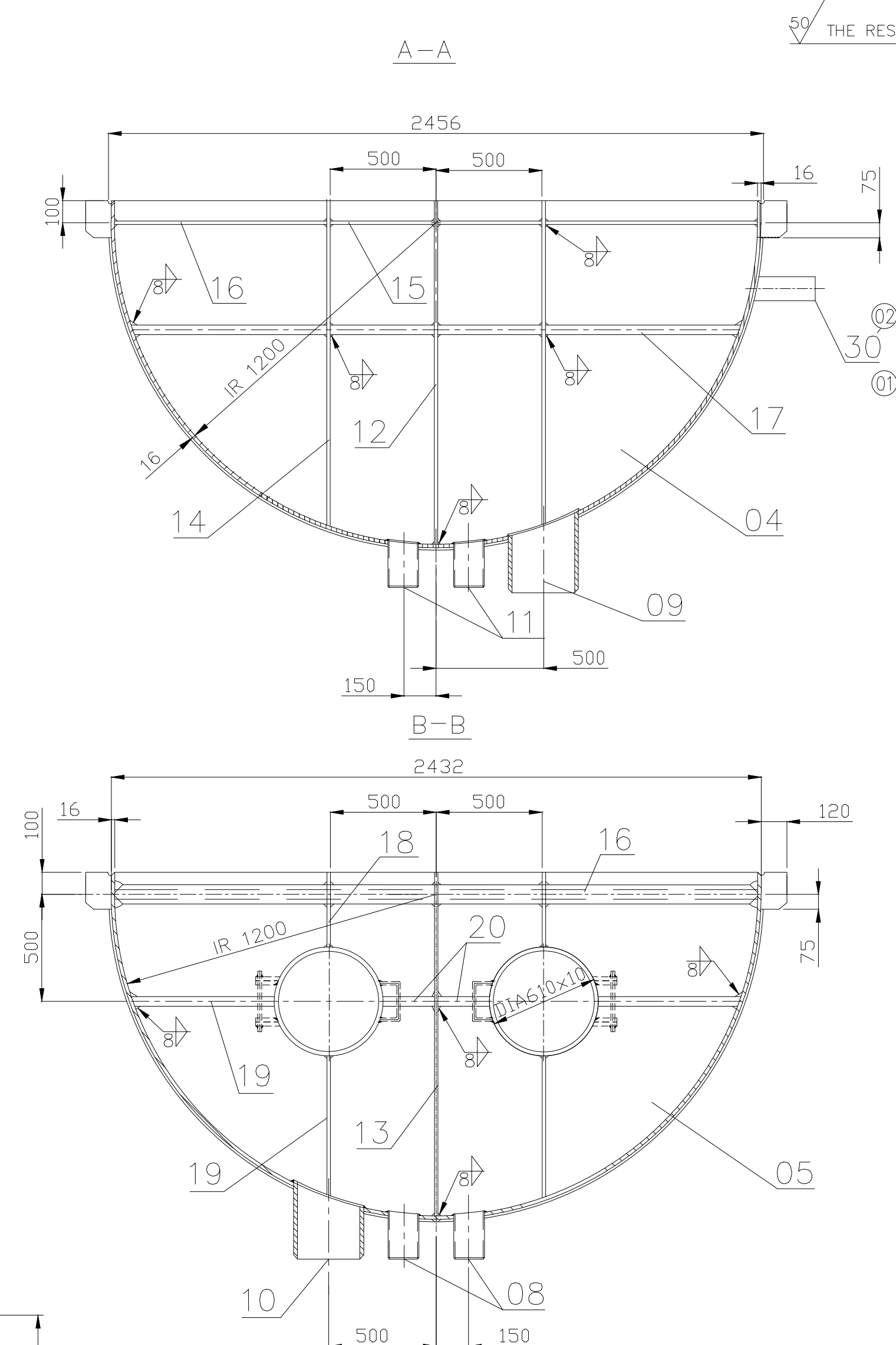
CBOM - 11604570024

	ENGG		WTX	
	Initial	Date	Initial	Date
Worked By	hxemuk	23.11.2017	wtxman	25.11.2017
Checked By	hxemuk	23.11.2017	wtxblm	27.11.2017
Approved By	hxerb	06.12.2017	wtxblm	27.11.2017

प्राप्तकर्ता/प्राप्तकर्ता	मंडल/INVENTORY NO.	दिनांक और हस्ताक्षर/SIGN & DATE	मंडलगत अभिलेख संख्या /REFERENCE DRG.NO.
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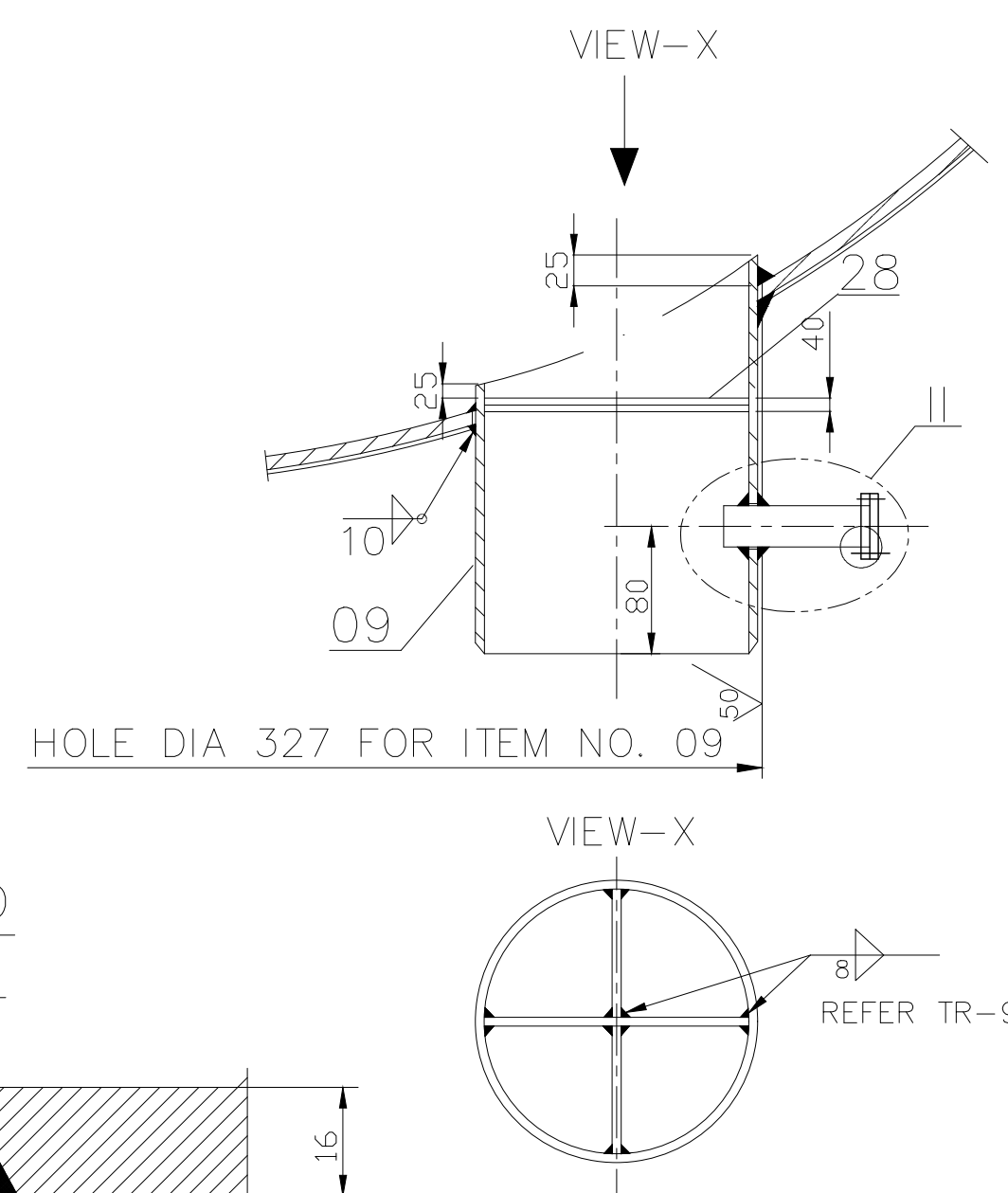


SECTION F-F



TECHNICAL REQUIREMENTS: —



1. THE EDGE OF THE STIFFENERS TO BE WELDED WITH THE CURVED PORTION OF HOTWELL/MANHOLE NOZZLE SHOULD BE GROUND SMOOTH, IF REQUIRED, FOR PROPER MATCHING.
2. QUALITY NOTE: –
 - (i) VISUAL INSPECTION OF WELD SEAM AS PER PS HW 0620099, CLASSIFICATION GROUP CS/BK FOR ITEM NO. 01 TO 05.
CS/CK FOR THE REST.
 - (ii) NON DESTRUCTIVE EXAMINATION OF WELD SEAM AS PER HW 0850199 (PART 10).
3. PAINING: – PAINTING IS TO BE DONE AS PER HXE PRODUCT STD. NO HE 77001.
4. GENERAL TOLERANCES ON STRAIGHTNESS, FLATNESS AND PARALLELISM SHALL BE MAINTAINED AS PER AA0621105 GRADE – F.
5. HOLE DIA 30 MAY BE MADE ON ITEM NO. 7 FOR LIFTING/HANDLING OF HOTWELL.
6. LIFTING TO BE DONE USING ITEM NO. 7 AT FOUR LOCATIONS SIMULTANEOUSLY.
 7. ☐ THIS INDICATES CRITICAL TO QUALITY (CTQ).
 8. EXCESS PROJECTION OF NOZZLES (ITEM NO 09 TO 11) SHOULD BE CUT AS SHOWN IN DETAIL OF NOZZLE WELD.
 9. ONE PIECE OF ITEM NO. 28 TO BE CUT TO SUITABLE FOR MAKING CROSS STIFFENING.



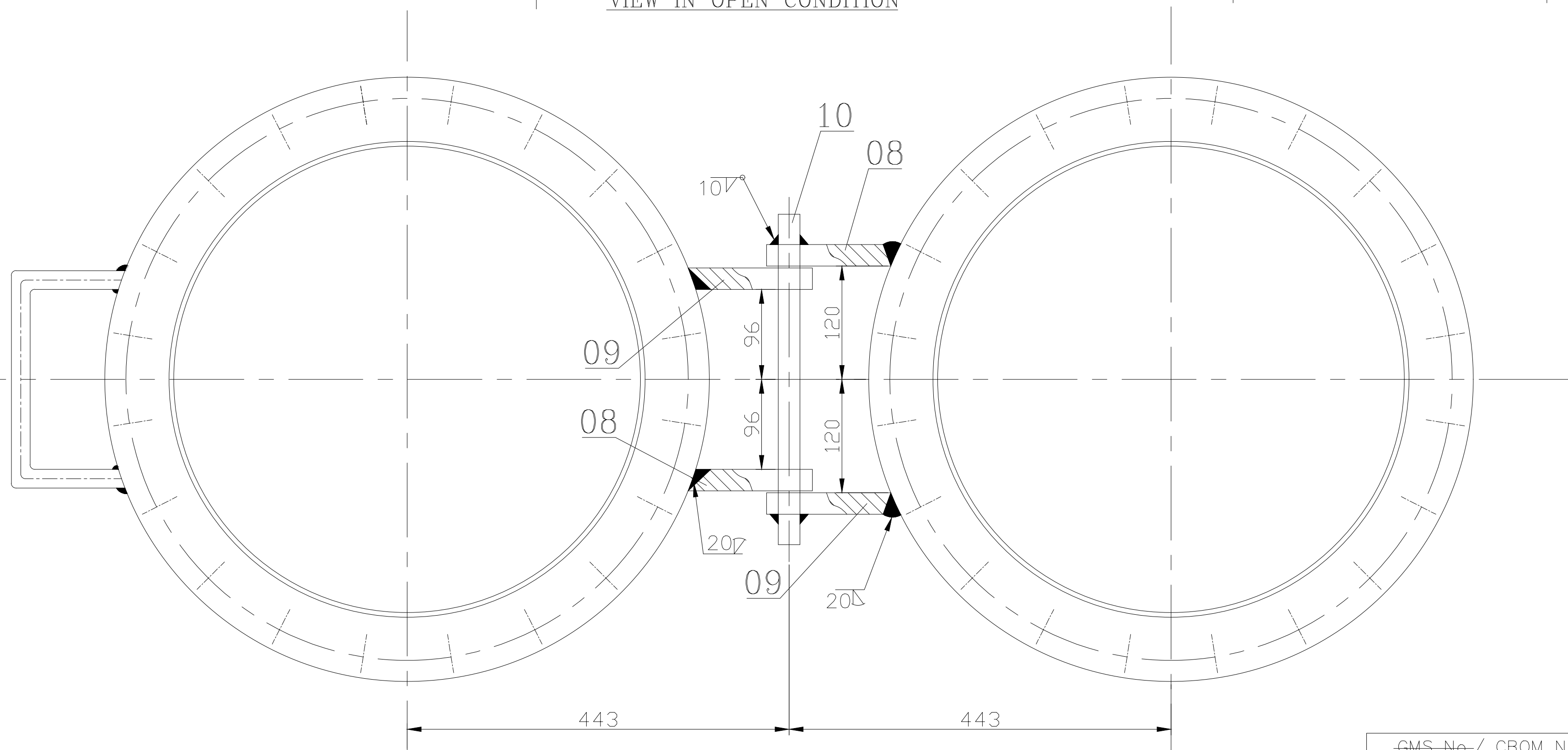
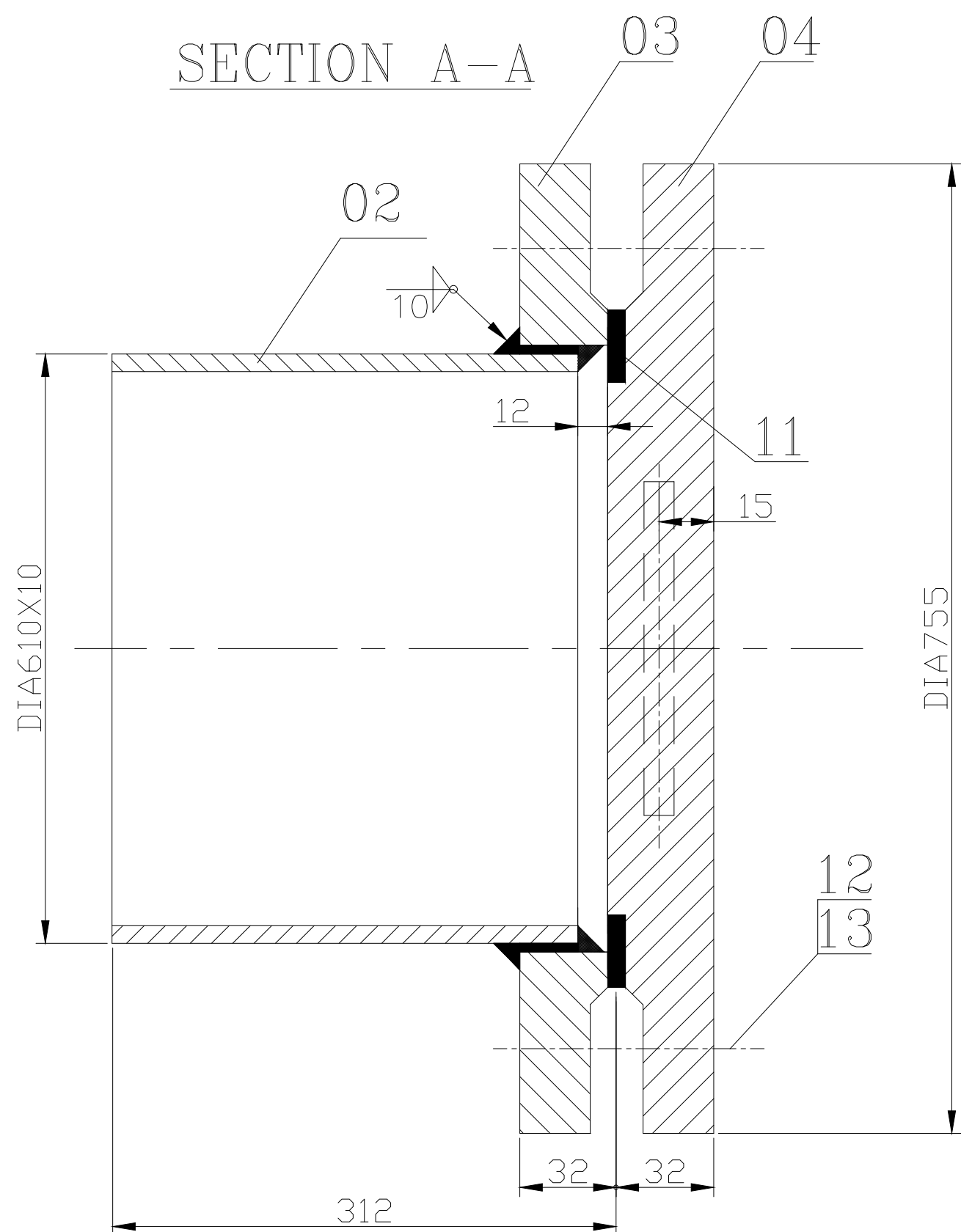
10▷	16△	16△	12△	8⋈	8▷	6▷	SIZE & SYMBOL OF SEAM
2.26	2.44	25.48	3.77	4.2	8.7	0.72	WELD LENGTH (M).
1.22	3.39	35.42	3.21	4.12	5.86	0.16	WT. OF WELD METAL (Kg).
E-309Cb	E-7018						TYPE OF ELECTRODE

अमर्य विभागा का कार्य			
GRADE OF UNTOLERANCED DIMENSION			
मीमीमीन - एए06211008 एम			
MACHINING - AA0230208 m			
बन्दिप - एए06211001 का श्रेणी बी			
WELDING-CLASS 'B' OF AA06211104			
गैस कटिंग - एए06211001 का सामान 3			
GAS CUTTING- TABLE 3 OF AA0621110			
मीमीमीन REV. 02	DATE [06/06/2018]	कर्मचारी का नाम अधिकारी CHP	MUKESH D.K. YADAV
HXE-19-F0031			
ITEM NO.30 (NOZZLE) SHIFED			
AS MARKED (02)			

मी.वी.ओ.एम./C.B.O.M.	11604570023		अंशकृत या न STATUS OF DR
बकाश प्रविष्टि ADDED DEFT.	नाम / NAME	प्रमाण / PROOF	दिनांक / DATE
वर्गिष्ट टंक	MANISH	ह.	-
मी.वी.ओ. REV. O1	दिनांक 18.03.19	अंशकृत कर AL TRSD. BY MANISH CHD	S.JOSHI MUKESH
	HXE-18-F0028		
G.F-4.5.6	ITEM NO. 29,30 ADDED & VIEW G-C		
	DRAWING CHANCE AS PER MARK (01)		

ग.	उपयाद का प्रकार या ग्राहक/परियोजना का नाम		660 MW MAITREE				
ग.	TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT						
घ.	<div><div></div><div>भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार BHARAT HEAVY ELECTRICALS LIMITED, RANIPUR, HARDWAR</div></div>	अनुमति/SCALE 1: 30	भार कि.ग्रा. WEIGHT (KG) 7952.0	नाम /NAME ANIL MUKESH R.BANSAL	हस्ताक्षर /SIGN sd/- sd/- sd/-	दिनांक /DATE 23.11.17 23.11.17 23.11.17	ऑर्डर नं. No. of Var.
च.	निष्पत्ति शीट एम्बेडिंग ऑफिस. DEPTT. HXE कोड /CODE 4222			ऑपरेटिंग प्रक्रिया का संदर्भ REFER TO ASSLY. DRG. —		ऑपरेटिंग प्रक्रिया का संदर्भ ITEM NO. —	ऑर्डर नं. No. of ITEMS
छ.	शीपक /TITLE HOT WELL-I	काट कोड CARD CODE		अभिकल्प संख्या /DRAWING NO. 11604570023	प्रकृत/Sheets No. 01	प्रकृत/Sheets No. 22	प्रकृत/Sheets No. 02

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WELDING QUALITY NOTE:-

WELDING CLASSIFICATION GROUP ACCORDING TO HW0620099 CS/BK, TEST
SCOPE ACCORDING TO HW0850199 CATEGORY OF SERVICE REQUIREMENTS-3.

Ref.Drawing No.

Sign & Date

Inventory No.

443

443

GRADE OF UNTOL.DIM

M/CG.-C/M/F AA0230208

WELDING-A/B/C/D AA0621104

GAS CUTTING-'T3'AA0621101

GMS No./ CBOM No.

11604570023

STATUS OF DRG

U

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT

660 MW

DRN

NAME

SIGN

DATE

ANIL

Sd/-

22.11.17

CHD

MUKESH

Sd/-

22.11.17

APPD

R.BANSAL

Sd/-

22.11.17

NO. OF VAR


-

73

74

DEPT HXE

CODE 4222



SCALE NTS

WEIGHT (KG) 138.6

REF. TO ASSY. DRG. 11604570023

ITEM No. -

NO. OF ITEMS

-

75

77

TITLE :
MAN HOLE ASSEMBLY

CARD CODE

DRAWING NO. 21603470110

1 00

SHEET No. 01

No. OF SHEETS 01

REV

DATE

ALTERED CHECKED

REV

DATE

ALTERED CHECKED

REV

DATE

ALTERED CHECKED

REV

DATE

ALTERED CHECKED

REV

DATE

ALTERED CHECKED

REV

DATE

ALTERED CHECKED

REV

DATE

ALTERED CHECKED

8

7

6

5

4

3

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REF. DRG NO.

SIGN & DATE

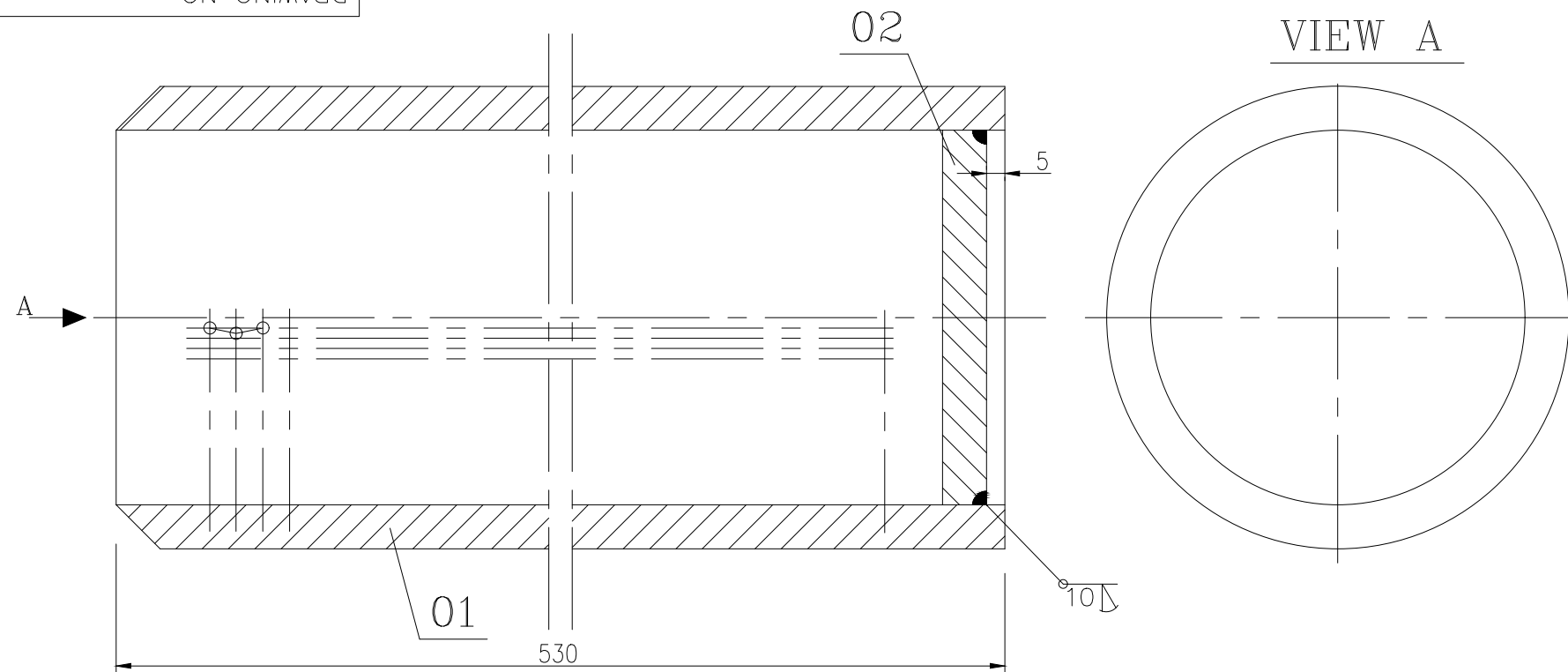
INVENTORY NO.

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

FORM: DG-38(B)

DRAWING NO.
31601670512



VIEW A

TECHNICAL REQUIREMENTS:-

1. QUALITY NOTE FOR WELDING:-CLASSIFICATION GROUPS ACCORDING HW 0620099 CC/BK
TEST SCOPE ACCORDING TO HW 0850199. CAT. OF SERVICE REQUIREMENTS 3.
2. PAINTING IS TO BE DONE AS PER HE 77001.

GRADE OF UNTOL. DIM.:—			CBOM NO. 01601570058		STATUS OF DRG.		TYPE OF PRODUCT OR NAME OF CUSTOMER/ PROJECT																	
M/CG- V/C/M/F AA 0230208			AGREED DEPT.		NAME		SIGN		DATE		DRN		NAME		SIGN		DATE		NO.OF VAR.					
WELDING—A/B/C/D—AA621104			WT.		TSC.		Sd.		16.02.09		CHD		DEEPAK		Sd.		16.02.09							
GAS CUTTING—T3'AA0621101			APD		S.K.B		Sd.		16.02.09		73, 74													
REV.		DATE		ALTERED CHECKED		REV.		DATE		ALTERED CHECKED		DEPT.		SCALE N.T.S		WEIGHT(Kg.) 11.52		REF. TO ASSY. DRG. 01601570058		ITEM NO. 5		NO.OF ITEMS 75, 77		
												TITLE DISPERSER NOZZLE			1			3			DRAWING NO. 31601670512			
																					SHEET NO. 01		NO.OF SHEETS 01	

SIZE A3

FORM: DG-38(B)

The diagram shows a circular cross-section of a machine, labeled 'A-A' at the top. A vertical dashed line represents the axis of symmetry. The outer boundary is a circle, and the inner boundary is a smaller circle. The space between them is filled with diagonal hatching. Numerous radial lines extend from the center to the outer boundary, representing the blades. A 5-degree angle is marked between the radial lines and the outer boundary. A curved arrow at the bottom indicates a pitch distribution of 10 degrees, labeled '8 PITCHES @ 10°'.

Technical drawing of a diamond mesh. The drawing shows a grid of circles (nodes) connected by diagonal lines forming a diamond pattern. The following dimensions and labels are present:

- 02**: A label in a circle pointing to the top-left node.
- 16**: A dimension line indicating the horizontal distance between two nodes in the top row.
- 28 PITCHES @16**: A label indicating the total horizontal length of the mesh is 28 pitches, each 16 units long.
- 10"**: A dimension line indicating the vertical height of the mesh is 10 inches.
- 14.68**: A dimension line indicating the vertical height of the mesh is 14.68 units.
- PERIPHERAL LENGTH FOR 10 ON OD.**: A label indicating the peripheral length for 10 on OD.
- 16 PITCHES @10"**: A label indicating the total vertical length of the mesh is 16 pitches, each 10 inches long.
- 02**: A label in a circle pointing to the bottom-right node.

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INVENTORY NO.

HT(Kg.)	REF. TO ASSY. DRG.	ITEM NO.	NO.OF ITEMS
020	31601670512	01	75, 77

1	3	DRAWING NO. 31601670514	Rev. 03
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SIZE A3

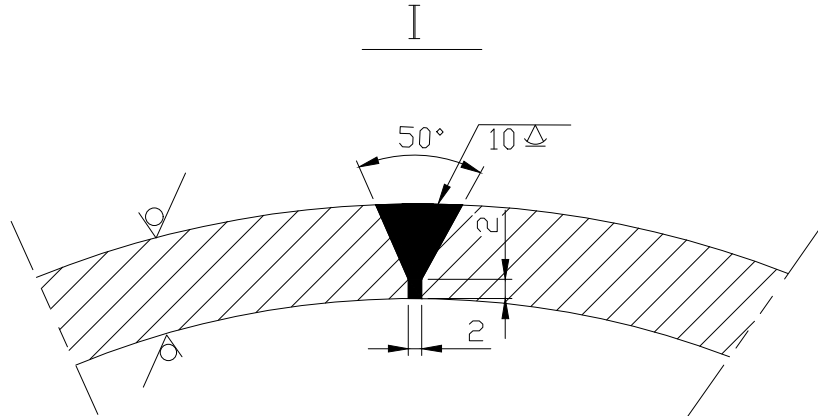
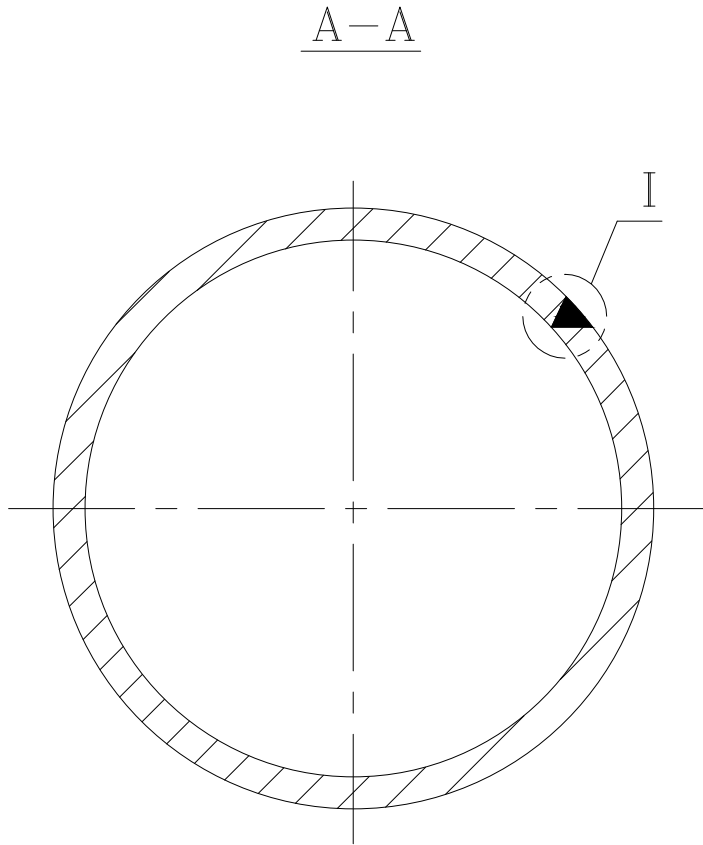
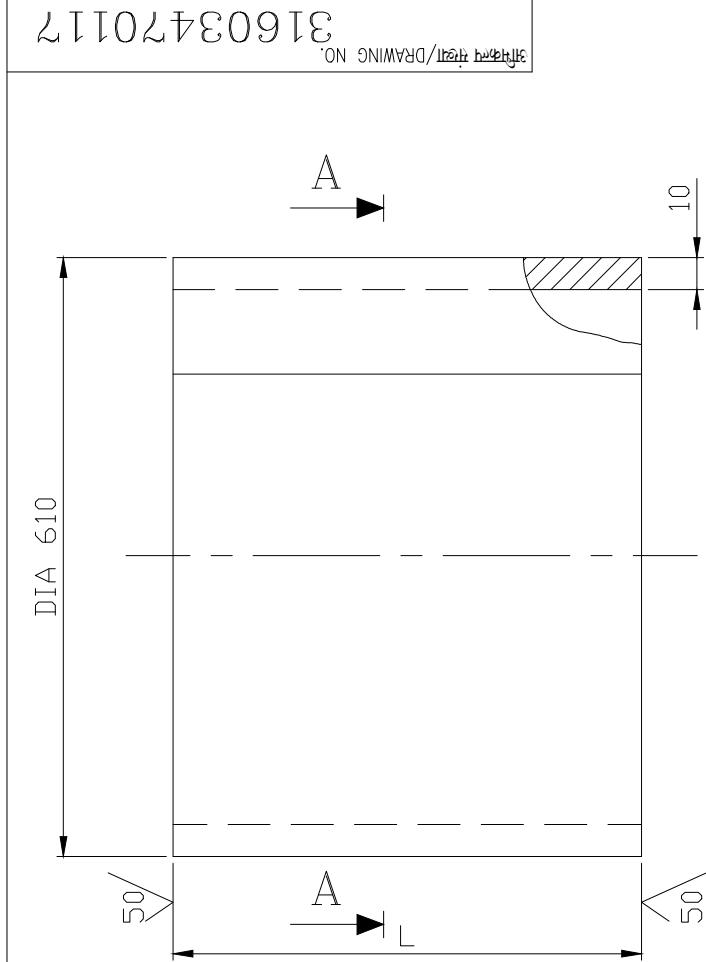
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मन्वीधिका एवं गोपनीय
इस प्रोजेक्ट में दी गई सूचना भारत हेवी इलेक्ट्रिकल्स लिमिटेड की
संपत्ति है। इसका प्रत्यक्ष या अप्रत्यक्ष रूप में किसी भी तरह
प्रयोग नहीं किया जाए जो कंपनी के हित में हानिकारक हो।

संदर्भित अभिकल्प संख्या
REFERENCE DRG. NO.

हस्ताक्षर और दिनांक/SIGN & DATE

INVENTORY NO.



50/
THE REST

TABLE—1

VAR	L	DEVELOPED LENGTH	WEIGHT (Kg)
00	300	1885	44.39

T.R. :-

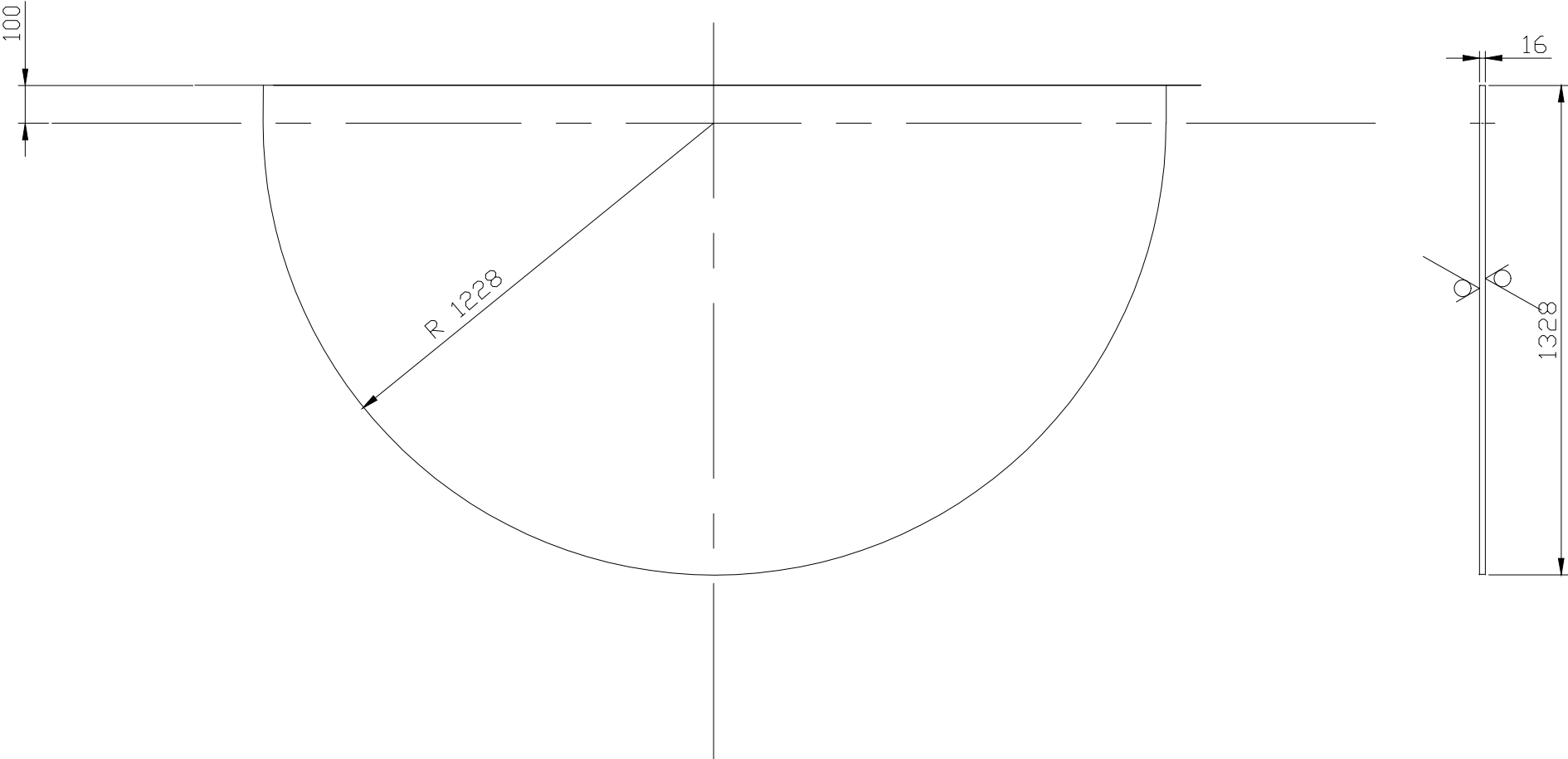
- VISUAL INSPECTION OF WELD SEAMS AS PER HW0620099.
CLASSIFICATION GROUPS :- CS.
- NON DESTRUCTIVE TESTING EXAMINATION OF WELD SEAMS AS PER HW0850199 PART 10.
- THE GENERAL TOLERANCES OF STRAIGHTNESS, FLATNESS AND PARALLELISM SHALL BE MAINTAINED AS PER AA0621105 GRADE-F.

असह्य विमाओं का वर्ग GRADE OF UNTOLERANCED DIMENSION			सी.वी.ओ.एम./C.B.O.M. 11604570023		अभिकल्प का स्तर STATUS OF DRG.		उत्पाद का प्रकार या ग्राहक/परियोजना का नाम TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT					
मशीनिंग - एए0230208 एम MACHINING - AA0230208 m			सहमत विभाग AGREED DEPTT.	नाम/NAME	हस्ताक्षर/ SIGN.	दिनांक/DATE	660 MW					
वेल्डिंग - एए0621104 की श्रेणी बी WELDING-CLASS 'B' OF AA0621104			WT	MANISH	sd/-	-	भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार BHARAT HEAVY ELECTRICALS LIMITED, RANIPUR, HARDWAR					
गैस कटिंग - एए0621101 की सारणी 3 GAS CUTTING-TABLE 3 OF AA0621101							अभिकल्प संख्या/DRAWING NO. 31603470117					
संशोधन REV.	दिनांक DATE	संशोधनकर्ता ALTERED BY जांचकर्ता CHD	संशोधन REV.	दिनांक DATE	संशोधनकर्ता ALTERED BY जांचकर्ता CHD	विभाग DEPTT. HXE	कोड/COE 4222	अनुपात/SCALE N.T.S	भार कि.ग्रा. WEIGHT (KG) SEE TABLE-I	असेम्बली अभिकल्प का संदर्भ REFER TO ASSLY. DRG. 21603470110	नग क्रमांक ITEM NO. 02	पृष्ठों की संख्या No. of Sheets 22 23 24
						शीर्षक/TITLE PIPE DIA 610X10			कार्ड कोड CARD CODE 7			

मल्लिका एवं गोपीनाथ
इस प्रोजेक्ट में दी गई सूचना भारत हेवी इलेक्ट्रिकल्स लिमिटेड की संपत्ति है। इसका प्रत्यक्ष या अप्रत्यक्ष रूप में किसी भी तरह प्रयोग नहीं किया जाए जो कंपनी के हित में हानिकारक हो।

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समर्पित अभिकल्प संख्या REFERENCE DRG. NO.	हस्ताक्षर और दिनांक/SIGN & DATE
सामग्री सूची संख्या INVENTORY NO.	

प्रथम कोण प्रक्षेपण/FIRST ANGLE PROJECTION				सभी विमाएं मिलिमीटर में हैं।/ALL DIMENSIONS ARE IN mm.				फ़ॉर्म डीजी 38 (बी)/FORM 38 (B)																																											
अभिकल्प संख्या/DRAWING NO. 31604570262				<div>50 / THE REST.</div> 																																															
<table><tr><td colspan="3">असह्य विमाओं का वर्ग GRADE OF UNTOLERANCED DIMENSION</td><td colspan="2">सी.बी.ओ.एम./C.B.O.M. 11604570013</td><td colspan="2">अभिकल्प का स्तर STATUS OF DRG.</td></tr><tr><td colspan="3">मशीनिंग - एए0230208 एम MACHINING - AA0230208 m</td><td>सहमत विभाग AGREED DEPTT.</td><td>नाम/NAME</td><td>हस्ताक्षर/ SIGN.</td><td>दिनांक/DATE</td></tr><tr><td colspan="3">वेल्डिंग - एए0621104 की श्रेणी बी WELDING-CLASS 'B' OF AA0621104</td><td>वेल्डिंग टेक्नो.</td><td></td><td>ह.</td><td>-</td></tr><tr><td colspan="3">गैस कटिंग - एए0621101 की सारणी 3 GAS CUTTING-TABLE 3 OF AA0621101</td><td colspan="4"></td></tr></table>				असह्य विमाओं का वर्ग GRADE OF UNTOLERANCED DIMENSION			सी.बी.ओ.एम./C.B.O.M. 11604570013		अभिकल्प का स्तर STATUS OF DRG.		मशीनिंग - एए0230208 एम MACHINING - AA0230208 m			सहमत विभाग AGREED DEPTT.	नाम/NAME	हस्ताक्षर/ SIGN.	दिनांक/DATE	वेल्डिंग - एए0621104 की श्रेणी बी WELDING-CLASS 'B' OF AA0621104			वेल्डिंग टेक्नो.		ह.	-	गैस कटिंग - एए0621101 की सारणी 3 GAS CUTTING-TABLE 3 OF AA0621101							<table><tr><td>विभाग DEPTT.</td><td>होट एक्सचेंजर अभि. HXE</td><td>अनुपात/SCALE 1:15</td><td>भार कि.ग्रा. WEIGHT (KG) 328.36</td><td colspan="2">असेम्बली अभिकल्प का संदर्भ REFER TO ASSLY. DRG. 11604570013</td><td>नग क्रमांक ITEM NO. SEE TABLE</td><td>वर्गों की संख्या NO. OF ITEMS</td></tr><tr><td colspan="4">शीर्षक/TITLE END PLATE</td><td colspan="2">कार्ड कोड CARD CODE</td><td colspan="2"></td></tr></table>				विभाग DEPTT.	होट एक्सचेंजर अभि. HXE	अनुपात/SCALE 1:15	भार कि.ग्रा. WEIGHT (KG) 328.36	असेम्बली अभिकल्प का संदर्भ REFER TO ASSLY. DRG. 11604570013		नग क्रमांक ITEM NO. SEE TABLE	वर्गों की संख्या NO. OF ITEMS	शीर्षक/TITLE END PLATE				कार्ड कोड CARD CODE			
असह्य विमाओं का वर्ग GRADE OF UNTOLERANCED DIMENSION			सी.बी.ओ.एम./C.B.O.M. 11604570013		अभिकल्प का स्तर STATUS OF DRG.																																														
मशीनिंग - एए0230208 एम MACHINING - AA0230208 m			सहमत विभाग AGREED DEPTT.	नाम/NAME	हस्ताक्षर/ SIGN.	दिनांक/DATE																																													
वेल्डिंग - एए0621104 की श्रेणी बी WELDING-CLASS 'B' OF AA0621104			वेल्डिंग टेक्नो.		ह.	-																																													
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विभाग DEPTT.	होट एक्सचेंजर अभि. HXE	अनुपात/SCALE 1:15	भार कि.ग्रा. WEIGHT (KG) 328.36	असेम्बली अभिकल्प का संदर्भ REFER TO ASSLY. DRG. 11604570013		नग क्रमांक ITEM NO. SEE TABLE	वर्गों की संख्या NO. OF ITEMS																																												
शीर्षक/TITLE END PLATE				कार्ड कोड CARD CODE																																															
				पृष्ठ संख्या/Sheets No. 01				पृष्ठों की संख्या/No. of Sheets 01																																											

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इस प्रोजेक्ट में दी गई सूचना भारत हेवी इलेक्ट्रिकल्स लिमिटेड की
संपत्ति है। इसका प्रत्यक्ष या अप्रत्यक्ष रूप में किसी भी तरह
प्रयोग नहीं किया जाए जो कंपनी के हित में हानिकारक हो।

संदर्भित अभिकल्प संख्या
REFERENCE DRG. NO.

हस्ताक्षर और दिनांक/SIGN & DATE

सामग्री सूची संख्या
INVENTORY NO.

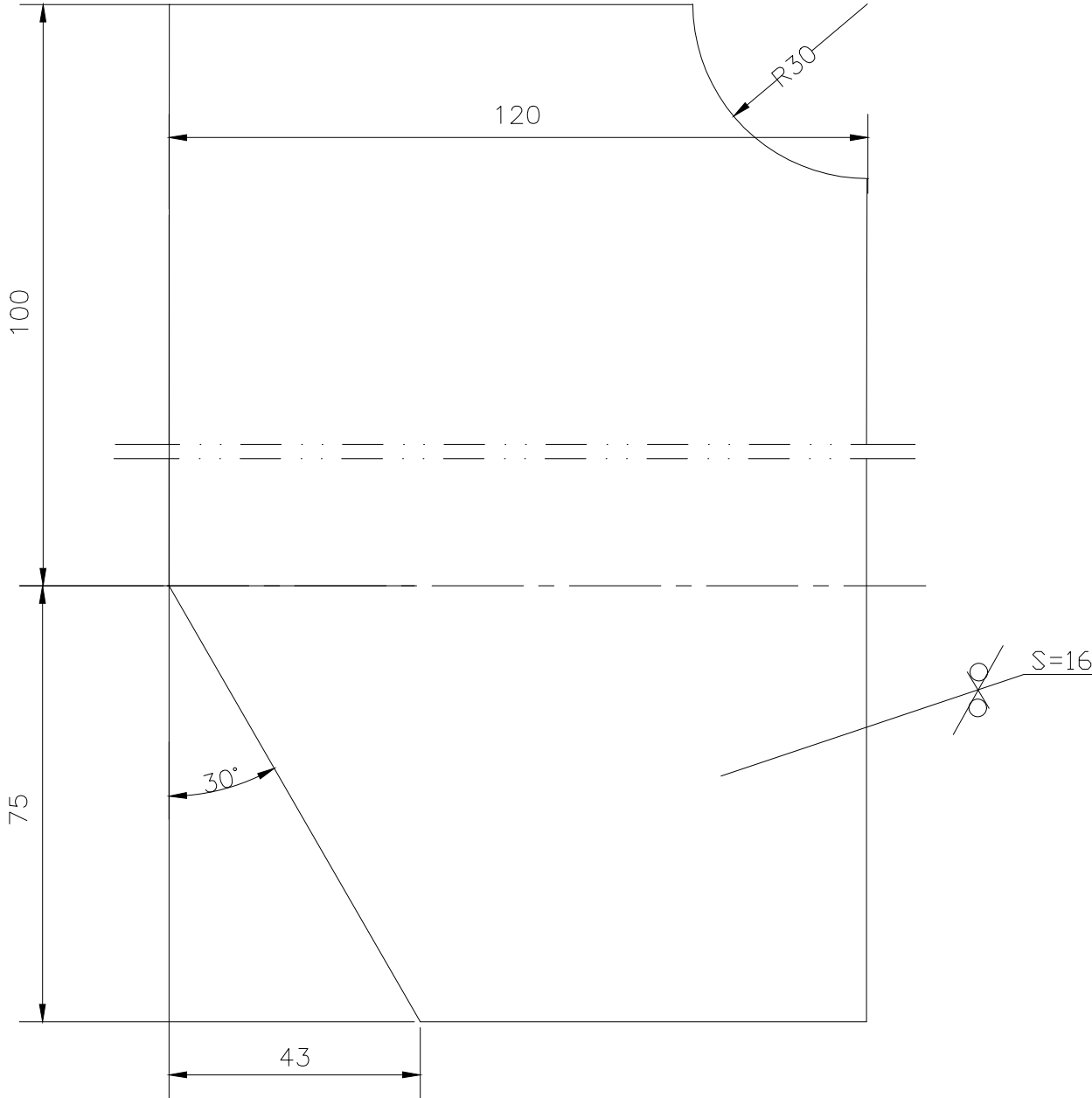
प्रथम कोण प्रक्षेपण/FIRST ANGLE PROJECTION


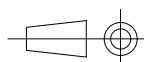
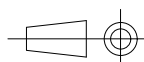
सभी विमाएं मिलिमीटर में हैं।/ALL DIMENSIONS ARE IN mm.

फ़ॉर्म डीजी 38 (बी)/FORM 38 (B)

अभिकल्प संख्या/DRAWING NO.
31604570263

50 THE REST.



असह्य विमाओं का वर्ग GRADE OF UNTOLERANCED DIMENSION			सी.बी.ओ.एम./C.B.O.M. 11604570013			अभिकल्प का स्तर STATUS OF DRG.			उत्पाद का प्रकार या ग्राहक/परियोजना का नाम TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT									
मशीनिंग - एए0230208 एम MACHINING - AA0230208 m			सहमत विभाग AGREED DEPTT.	नाम/NAME	हस्ताक्षर/ SIGN.	दिनांक/DATE			660 MW LALITPUR									
वेल्डिंग - एए0621104 की श्रेणी बी WELDING-CLASS 'B' OF AA0621104			वेल्डिंग टेक्नो.		ह.	-					भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार BHARAT HEAVY ELECTRICALS LIMITED, RANIPUR, HARDWAR			नाम/NAME	हस्ताक्षर/SIGN	दिनांक/DATE	वेरिएंट संख्या No. of Var.	
गैस कटिंग - एए0621101 की सारणी 3 GAS CUTTING-TABLE 3 OF AA0621101											विभाग/DRG.	जांचकर्ता CHD	SAUMYA	sd/-	20.08.11			
											स्वीकृत/आदेश APPD	SKANT	sd/-	20.08.11				
संशोधन REV.	दिनांक DATE	संशोधनकर्ता ALTERED BY जांचकर्ता CHD	संशोधन REV.	दिनांक DATE	संशोधनकर्ता ALTERED BY जांचकर्ता CHD	विभाग DEPTT.	हीट एक्सचेंजर अभि. HXE		अनुपात/SCALE 1:1	भार कि.ग्रा. WEIGHT (KG) 2.37	असेम्बली अभिकल्प का संदर्भ REFER TO ASSLY. DRG. 11604570013			नग क्रमांक ITEM NO. SEE TABLE	नगों की संख्या NO. OF ITEMS			
						कोड/CODE 4222						शीर्षक/TITLE		कार्ड कोड CARD CODE	अभिकल्प संख्या/DRAWING NO.			
												STIFFENER			7 31604570263		22 23 24	
											पृष्ठ संख्या/Sheets No.		01		पृष्ठों की संख्या/No. of Sheets		01	

A3 साइज़/A3 SIZE

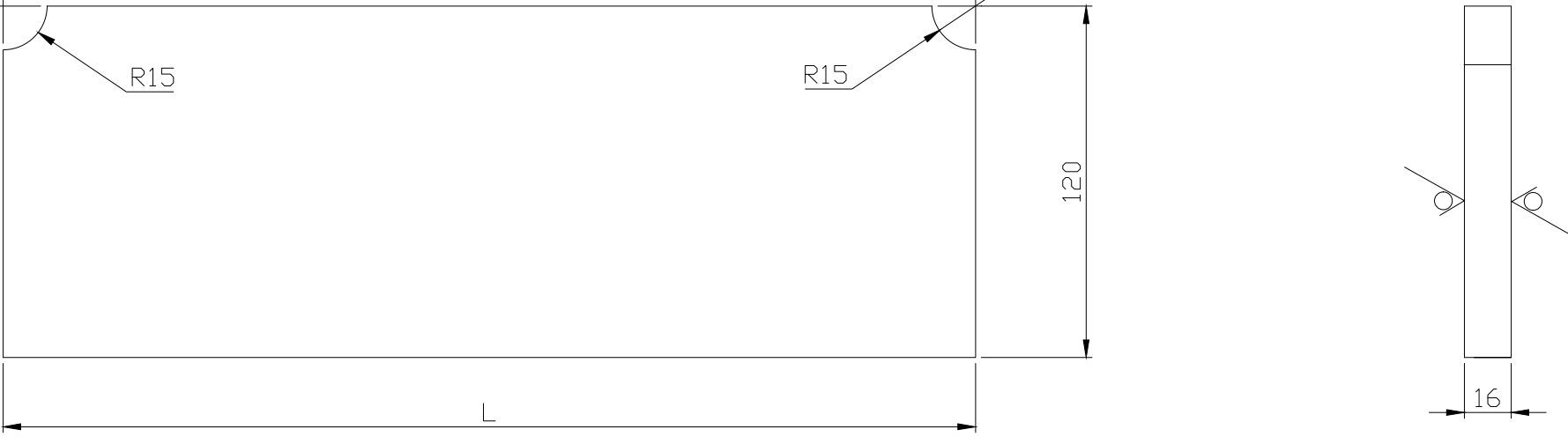
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इस प्रोजेक्ट में दी गई सूचना भारत हेवी इलेक्ट्रिकल्स लिमिटेड की
संपत्ति है। इसका प्रत्यक्ष या अप्रत्यक्ष रूप में किसी भी तरह
प्रयोग नहीं किया जाए जो कंपनी के हित में हानिकारक हो।

संदर्भित अभिकल्प संख्या
REFERENCE DRG. NO.

हस्ताक्षर और दिनांक/SIGN & DATE

सामग्री सूची संख्या
INVENTORY NO.

प्रथम कोण प्रक्षेपण/FIRST ANGLE PROJECTION				सभी विमाएं मिलिमीटर में हैं।/ALL DIMENSIONS ARE IN mm.				फ़ॉर्म डीजी 38 (बी)/FORM 38 (B)											
अभिकल्प संख्या/DRAWING NO. 31604570264				<div>50/ ALL OVER EXCEPT OTHERWISE STATED</div> <div>ONLY FOR ITEM NO. 15 & 18</div> <div></div>															
TABLE: –																			
VAR.	ITEM NO.	L	WT.(Kg)																
00	14	1199	18																
01	15	492	7.4																
02	16	684	10.3																
03	17	579	8.7																
<div>असह्य विमाओं का वर्ग GRADE OF UNTOLERANCED DIMENSION</div> <div>मशीनिंग - एए0230208 एम MACHINING – AA0230208 m</div> <div>वेल्डिंग - एए0621104 की श्रेणी बी WELDING–CLASS 'B' OF AA0621104</div> <div>गैस कटिंग - एए0621101 की सारणी 3 GAS CUTTING–TABLE 3 OF AA0621101</div>				<div>सी.बी.ओ.एम./C.B.O.M.</div> <div>11604570013</div> <div>सहमत विभाग AGREED DEPTT.</div> <div>नाम/NAME</div> <div>हस्ताक्षर/ SIGN.</div> <div>दिनांक/DATE</div>				<div>उत्पाद का प्रकार या ग्राहक/परियोजना का नाम TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT</div> <div>660 MW LALITPUR</div>											
<div>संशोधन REV.</div> <div>दिनांक DATE</div> <div>संशोधनकर्ता ALTERED BY जांचकर्ता CHD</div>				<div>संशोधन REV.</div> <div>दिनांक DATE</div> <div>संशोधनकर्ता ALTERED BY जांचकर्ता CHD</div>				<div>विभाग DEPTT.</div> <div>हीट एक्सचेंजर अभि. HXE</div> <div>कोड/4222</div>		<div>अनुपात/SCALE</div> <div>1: 2</div>		<div>भार कि.ग्रा. WEIGHT (KG)</div> <div>SEE TABLE</div>		<div>असेम्बली अभिकल्प का संदर्भ REFER TO ASSLY. DRG.</div> <div>11604570013</div>		<div>नग क्रमांक ITEM NO. SEE TABLE</div>		<div>पृष्ठों की संख्या No. of Sheets</div> <div>01</div>	
								<div>शीर्षक/TITLE</div> <div>STIFFENER</div>		<div>कार्ड कोड CARD CODE</div>		<div>अभिकल्प संख्या/DRAWING NO.</div> <div>31604570264</div>							
												<div>पृष्ठ संख्या/Sheets No.</div> <div>01</div>							

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इस प्रोजेक्ट में दी गई सूचना भारत हेवी इलेक्ट्रिकल्स लिमिटेड की
संपत्ति है। इसका प्रत्यक्ष या अप्रत्यक्ष रूप में किसी भी तरह
प्रयोग नहीं किया जाए जो कंपनी के हित में हानिकारक हो।

संदर्भित अभिकल्प संख्या
REFERENCE DRG. NO.

हस्ताक्षर और दिनांक/SIGN & DATE

सामग्री सूची संख्या
INVENTORY NO.

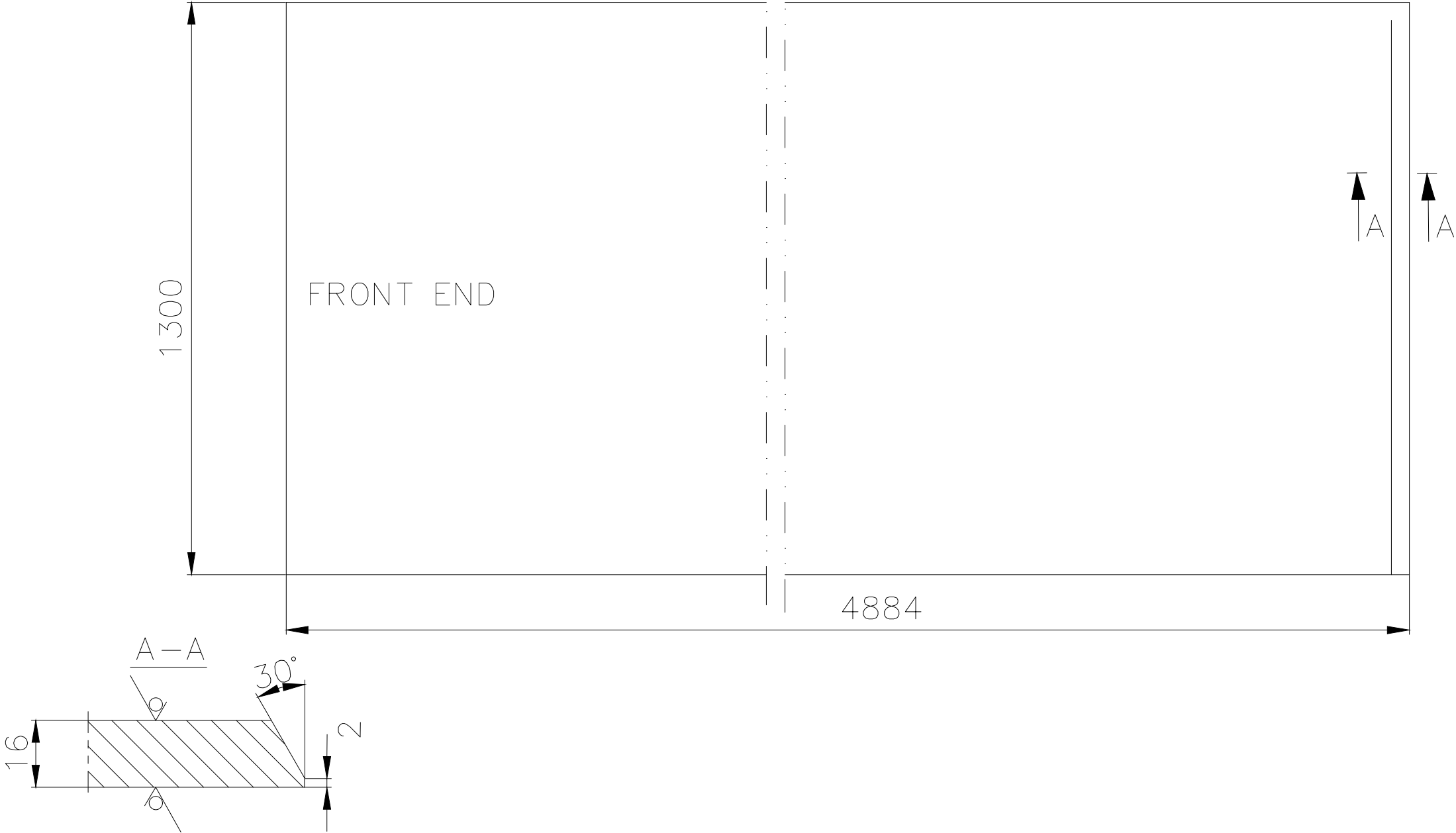
प्रथम कोण प्रक्षेपण/FIRST ANGLE PROJECTION

सभी विमाएं मिलिमीटर में हैं।/ALL DIMENSIONS ARE IN mm.

फ़ॉर्म डीजी 38 (बी)/FORM 38 (B)

अभिकल्प संख्या/DRAWING NO.
31604570265

50 THE REST.



असह्य विमाओं का वर्ग GRADE OF UNTOLERANCED DIMENSION			सी.वी.ओ.एम./C.B.O.M. 11604570013		अभिकल्प का स्तर STATUS OF DRG.		उत्पाद का प्रकार या ग्राहक/परियोजना का नाम TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT						
मशीनिंग - एए0230208 एम MACHINING - AA0230208 m			सहमत विभाग AGREED DEPTT.	नाम/NAME	हस्ताक्षर/ SIGN.	दिनांक/DATE	660 MW LALITPUR						
वेल्डिंग - एए0621104 की श्रेणी बी WELDING-CLASS 'B' OF AA0621104			वेल्डिंग टेक्नो.		ह.	-	विभाग DEPTT.						
गैस कटिंग - एए0621101 की सारणी 3 GAS CUTTING-TABLE 3 OF AA0621101							भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार BHARAT HEAVY ELECTRICALS LIMITED, RANIPUR, HARDWAR						
संशोधन REV.	दिनांक DATE	संशोधनकर्ता ALTERED BY जांचकर्ता CHD	संशोधन REV.	दिनांक DATE	संशोधनकर्ता ALTERED BY जांचकर्ता CHD	विभाग DEPTT.	होट एक्सचेंजर अभि. HXE	अनुपात/SCALE 1:10	भार कि.ग्रा. WEIGHT (KG) 797.46	असेम्बली अभिकल्प का संदर्भ REFER TO ASSLY. DRG. 11604570013		नग क्रमांक ITEM NO. 26	नगों की संख्या NO. OF ITEMS
							शीर्षक/TITLE PARTITION PLATE-I		कार्ड कोड CARD CODE	अभिकल्प संख्या/DRAWING NO. 31604570265			
									पृष्ठ संख्या/Sheets No. 01		पृष्ठों की संख्या/No. of Sheets 01		

A3 साइज़/A3 SIZE

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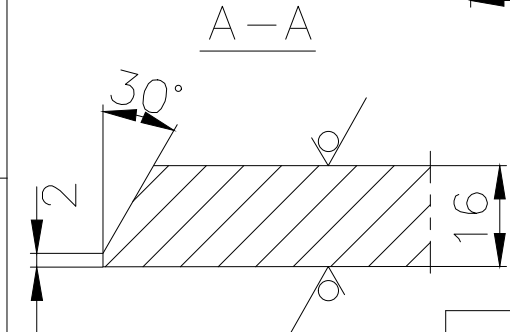
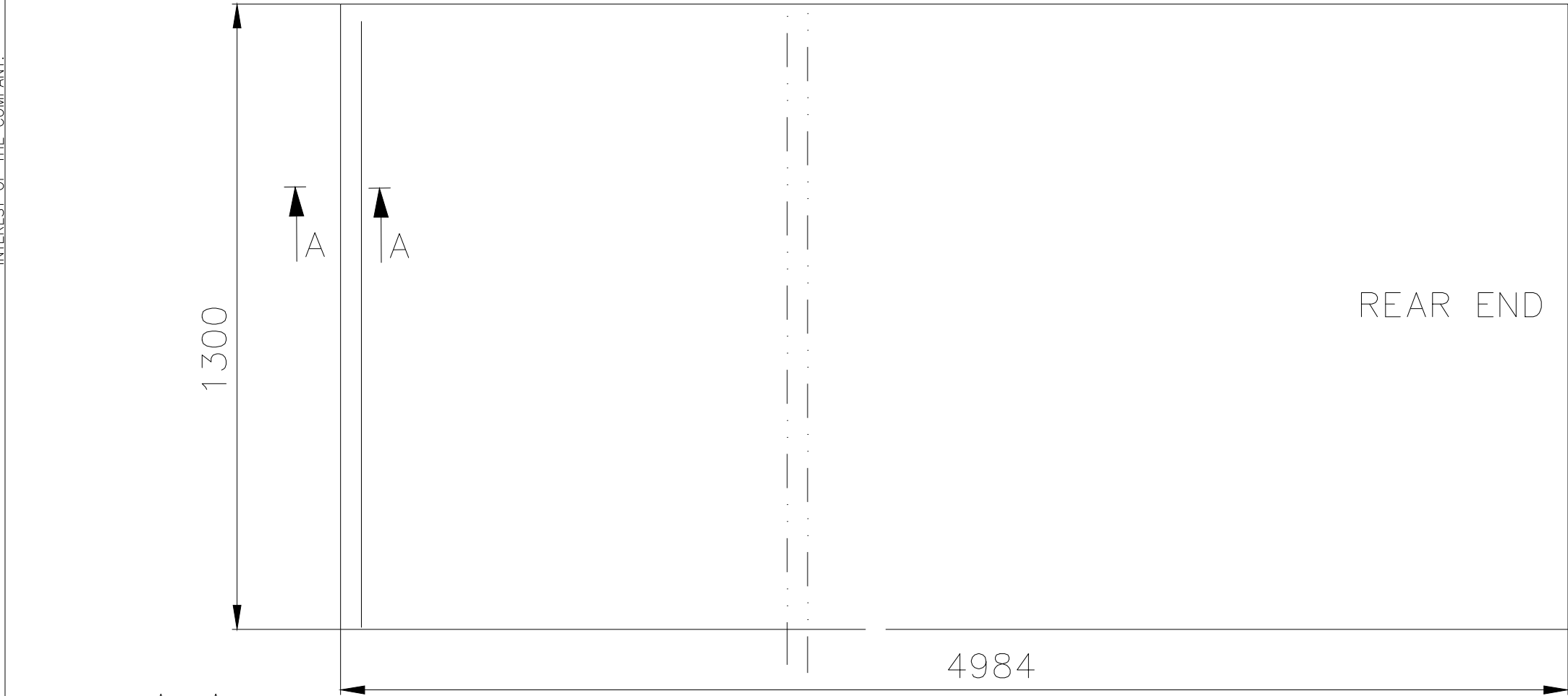
मन्वीधिका एवं गोपनीय
इस प्रोजेक्ट में दी गई सूचना भारत हेवी इलेक्ट्रिकल्स लिमिटेड की
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प्रयोग नहीं किया जाए जो कंपनी के हित में हानिकारक हो।

संदर्भित अभिकल्प संख्या
REFERENCE DRG. NO.

हस्ताक्षर और दिनांक/SIGN & DATE

सामग्री सूची संख्या
INVENTORY NO.

अभिकल्प संख्या/DRAWING NO.
31604570269



असह्य विमाओं का वर्ग GRADE OF UNTOLERANCED DIMENSION			सी.वी.ओ.एम./C.B.O.M. 11604570013		अभिकल्प का स्तर STATUS OF DRG.		उत्पाद का प्रकार या ग्राहक/परियोजना का नाम TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT																			
मशीनिंग - एए0230208 एम MACHINING - AA0230208 m			सहमत विभाग AGREED DEPTT.	नाम/NAME	हस्ताक्षर/ SIGN.	दिनांक/DATE	660 MW LALITPUR																			
वेल्डिंग - एए0621104 की श्रेणी बी WELDING-CLASS 'B' OF AA0621104			वेल्डिंग टेक्नो.		ह.	-	<div>बीएचईएल</div> <div>भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार</div> <div>BHARAT HEAVY ELECTRICALS LIMITED, RANIPUR, HARDWAR</div> <table><tr><td>विभागकर्ता CHD</td><td>नाम/NAME</td><td>हस्ताक्षर/SIGN</td><td>दिनांक/DATE</td><td>वैरिएंट संख्या No. of Var.</td></tr><tr><td>जांचकर्ता APPD</td><td>SAUMYA</td><td>sd/-</td><td>20.08.11</td><td></td></tr><tr><td></td><td>SKANT</td><td>sd/-</td><td>20.08.11</td><td></td></tr></table>					विभागकर्ता CHD	नाम/NAME	हस्ताक्षर/SIGN	दिनांक/DATE	वैरिएंट संख्या No. of Var.	जांचकर्ता APPD	SAUMYA	sd/-	20.08.11			SKANT	sd/-	20.08.11	
विभागकर्ता CHD	नाम/NAME	हस्ताक्षर/SIGN	दिनांक/DATE	वैरिएंट संख्या No. of Var.																						
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	SKANT	sd/-	20.08.11																							
गैस कटिंग - एए0621101 की सारणी 3 GAS CUTTING-TABLE 3 OF AA0621101																										
संशोधन REV.	दिनांक DATE	संशोधनकर्ता ALTERED BY जांचकर्ता CHD	संशोधन REV.	दिनांक DATE	संशोधनकर्ता ALTERED BY जांचकर्ता CHD	विभाग DEPTT.	होट एक्सचेंजर अभि. HXE	अनुपात/SCALE 1:10	भार कि.ग्रा. WEIGHT (KG) 813.79	असेम्बली अभिकल्प का संदर्भ REFER TO ASSLY. DRG. 11604570013	नग क्रमांक ITEM NO. 26	नगों की संख्या NO. OF ITEMS														
						कोड/CODE 4222				शीर्षक/TITLE PARTITION PLATE-II			कार्ड कोड CARD CODE	अभिकल्प संख्या/DRAWING NO. 31604570269												
													पृष्ठ संख्या/Sheets No. 01	पृष्ठों की संख्या/No. of Sheets 01												

प्रपत्र डीजी 38 (बी)/FORM 38 (B)

50 THE REST.

A3 साइज़/A3 SIZE

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REF. DRG NO.

SIGN & DATE

INVENTORY NO.

FIRST ANGLE PROJECTION

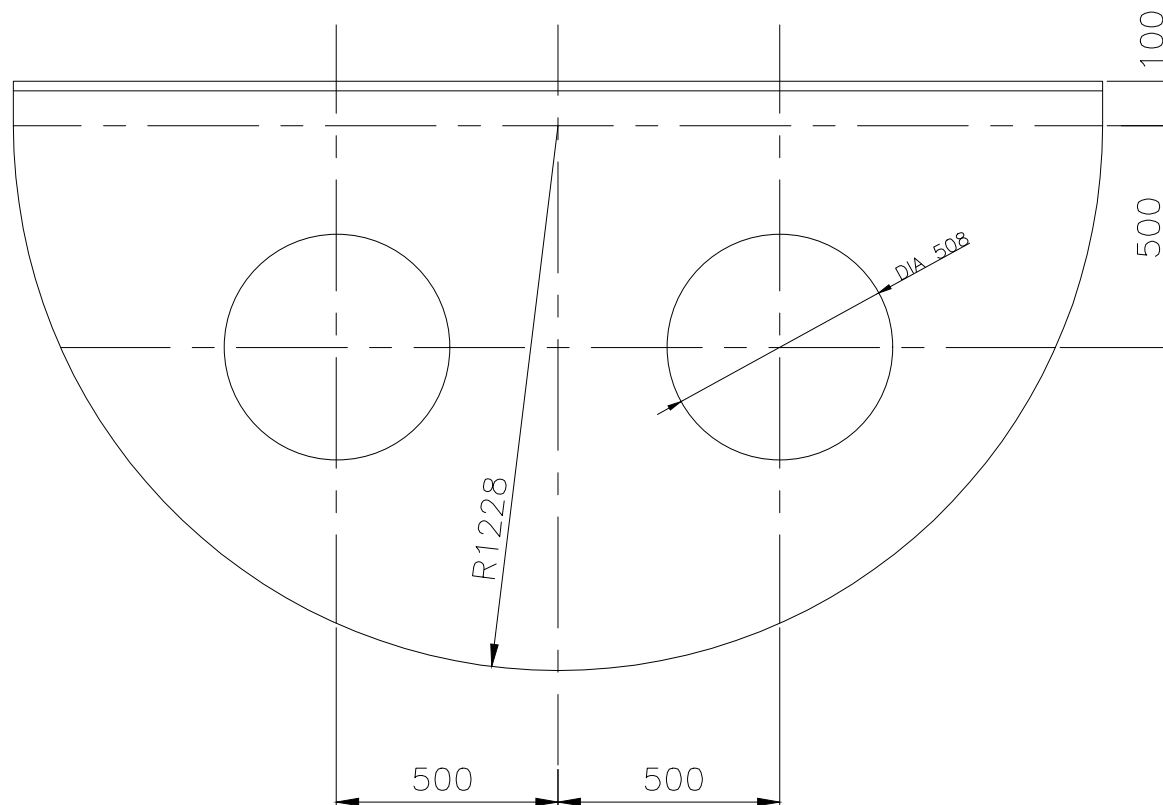
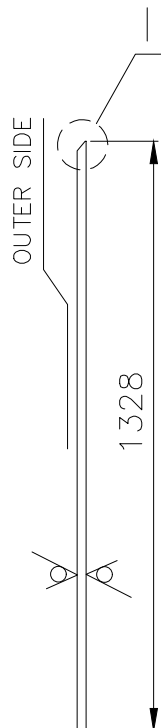
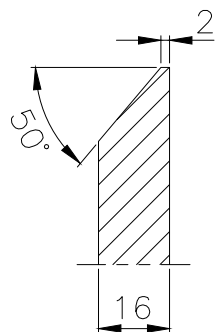
(ALL DIMENSIONS ARE IN mm)

FORM: DG-38(B)

DRAWING NO. 31601470271

50° THE REST.

DETAIL-I



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

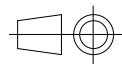
CBOM NO. 11604570016		STATUS OF DRG.	
AGREED DEPT.	NAME	SIGN	DATE
WT	—	sd.	—
REV.	DATE	ALTERED CHECKED	

TYPE OF PRODUCT
OR
NAME OF CUSTOMER/ PROJECT 800 MW YERAMARUS



BHARAT HEAVY ELECTRICALS LTD.
HARDWAR

DEPT. HXE
CODE 4222



SCALE
1: 20

WEIGHT(Kg.)
277.45

NAME	SIGN	DATE	NO.OF VAR.
DRN AVINASH	Sd.	20.08.11	73 , 74
CHD SAUMYA	Sd.	20.08.11	
APD SKANT	Sd.	20.08.11	

REF. TO ASSY. DRG. 11604570016	ITEM NO. —	NO.OF ITEMS 75 , 77
-----------------------------------	------------------	---------------------------

TITLE
END PLATE-II

DRAWING NO.
31604570271

SHEET NO. 01 NO.OF SHEETS 01

SIZE A3

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संपत्ति है। इसका प्रत्यक्ष या अप्रत्यक्ष रूप में किसी भी तरह
प्रयोग नहीं किया जाए जो कंपनी के हित में हानिकारक हो।

संदर्भित अभिकल्प संख्या
REFERENCE DRG. NO.

हस्ताक्षर और दिनांक/SIGN & DATE

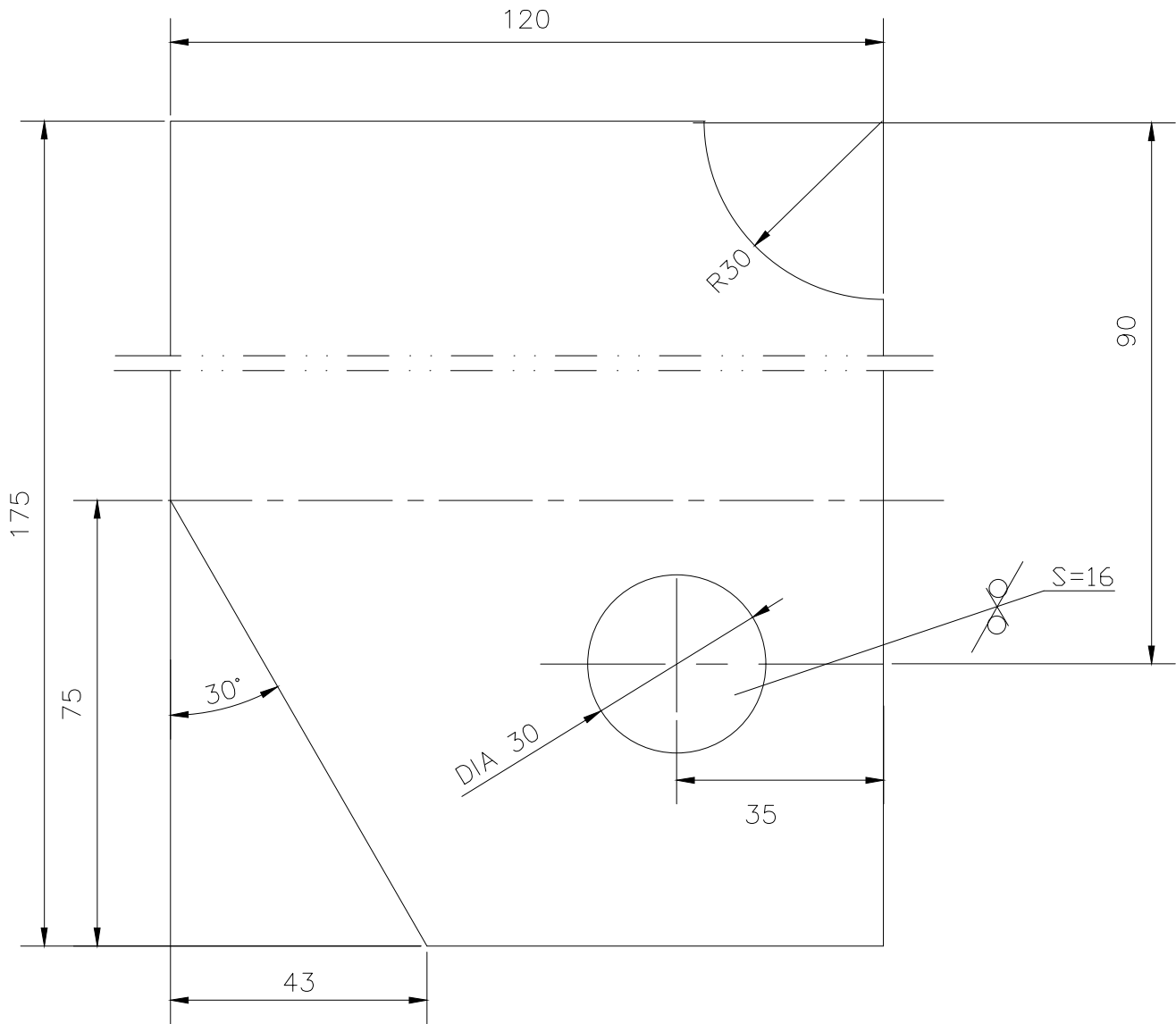
सामग्री सूची संख्या
INVENTORY NO.

प्रथम कोण प्रक्षेपण/FIRST ANGLE PROJECTION

सभी विमाएं मिलिमीटर में हैं।/ALL DIMENSIONS ARE IN mm.

फ़ॉर्म डीजी 38 (बी)/FORM 38 (B)

अभिकल्प संख्या/DRAWING NO.
31604570278



असह्य विमाओं का वर्ग GRADE OF UNTOLERANCED DIMENSION			सी.वी.ओ.एम./C.B.O.M. 11604570019		अभिकल्प का स्तर STATUS OF DRG.		उत्पाद का प्रकार या ग्राहक/परियोजना का नाम TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT					
मशीनिंग - एए0230208 एम MACHINING - AA0230208 m			सहमत विभाग AGREED DEPTT.	नाम/NAME	हस्ताक्षर/ SIGN.	दिनांक/DATE	660 MW ENNORE					
वेल्डिंग - एए0621104 की श्रेणी बी WELDING-CLASS 'B' OF AA0621104			वेल्डिंग टेक्नो.		ह.	-	भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार BHARAT HEAVY ELECTRICALS LIMITED, RANIPUR, HARDWAR					
गैस कटिंग - एए0621101 की सारणी 3 GAS CUTTING-TABLE 3 OF AA0621101							विभाग DEPTT.					
संशोधन REV.	दिनांक DATE	संशोधनकर्ता ALTERED BY	संशोधन REV.	दिनांक DATE	संशोधनकर्ता ALTERED BY	विभाग DEPTT.	होट एक्सचेंजर अभि. HXE	अनुपात/SCALE	भार कि.ग्रा. WEIGHT (KG)	असेम्बली अभिकल्प का संदर्भ REFER TO ASSLY. DRG.	नग क्रमांक ITEM NO.	नगों की संख्या NO. OF ITEMS
		जोड़कर्ता CHD			जोड़कर्ता CHD	कोड/	CODE 4222	1:1	2.26	11604570019	SEE TABLE	
							शीर्षक/TITLE			कार्ड कोड CARD CODE	अभिकल्प संख्या/DRAWING NO.	
							STIFFENER				31604570278	
										पृष्ठ संख्या/Sheets No.	01	
										पृष्ठों की संख्या/No. of Sheets	01	

A3 साइज़/A3 SIZE

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संपत्ति है। इसका प्रत्यक्ष या अप्रत्यक्ष रूप में किसी भी तरह
प्रयोग नहीं किया जाए जो कंपनी के हित में हानिकारक हो।

संदर्भित अभिकल्प संख्या
REFERENCE DRG. NO.

हस्ताक्षर और दिनांक/SIGN & DATE

सामग्री सूची संख्या
INVENTORY NO.

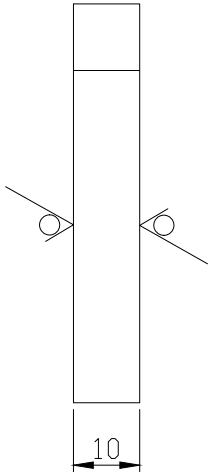
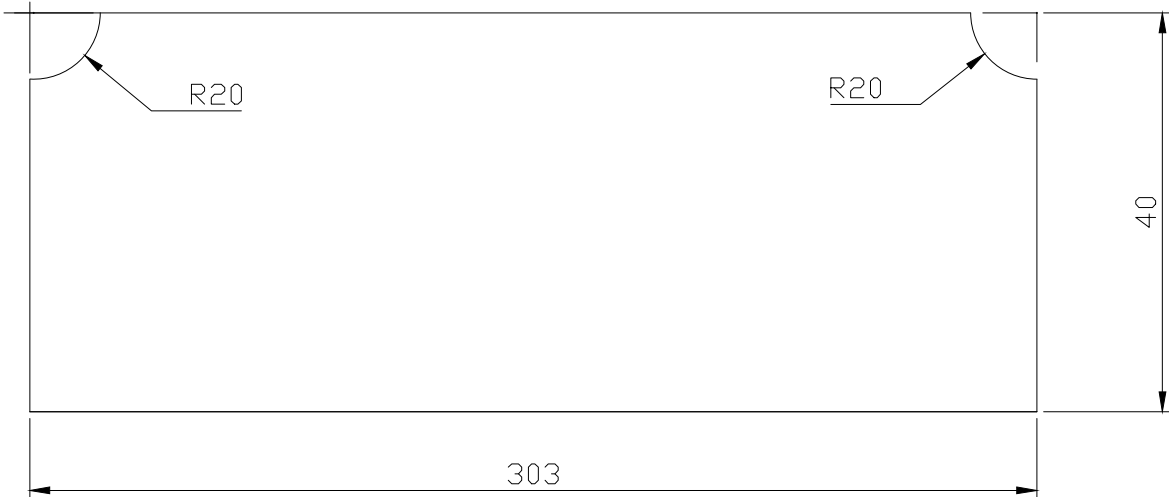
प्रथम कोण प्रक्षेपण/FIRST ANGLE PROJECTION

सभी विमाएं मिलिमीटर में हैं।/ALL DIMENSIONS ARE IN mm.

फ़ॉर्म डीजी 38 (बी)/FORM 38 (B)

अभिकल्प संख्या/DRAWING NO.
31604570279

50/ ALL OVER EXCEPT OTHERWISE STATED



असह्य विमाओं का वर्ग GRADE OF UNTOLERANCED DIMENSION			सी.वी.ओ.एम./C.B.O.M. 11604570022			अभिकल्प का स्तर STATUS OF DRG.			उत्पाद का प्रकार या ग्राहक/परियोजना का नाम TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT						
मशीनिंग - एए0230208 एम MACHINING - AA0230208 m			सहमत विभाग AGREED DEPTT.		नाम/NAME	हस्ताक्षर/ SIGN.	दिनांक/DATE	800 MW NORTH CHENNAI							
वेल्डिंग - एए0621104 की श्रेणी बी WELDING-CLASS 'B' OF AA0621104			वेल्डिंग टेक्नो.			ह.	-								
गैस कटिंग - एए0621101 की सारणी 3 GAS CUTTING-TABLE 3 OF AA0621101															
संशोधन REV.	दिनांक DATE	संशोधनकर्ता ALTERED BY जांचकर्ता CHD	संशोधन REV.	दिनांक DATE	संशोधनकर्ता ALTERED BY जांचकर्ता CHD	विभाग DEPTT.		हीट एक्सचेंजर अभि. HXE	अनुपात/SCALE 1: 2	भार कि.ग्रा. WEIGHT (KG) 1.0	असेम्बली अभिकल्प का संदर्भ REFER TO ASSLY. DRG. 11604570022		नग क्रमांक ITEM NO.	समूह की संख्या NO. OF ITEMS	
						शीर्षक/TITLE STIFFENER				कार्ड कोड CARD CODE	अभिकल्प संख्या/DRAWING NO. 31604570279				
										पृष्ठ संख्या/Sheets No. 01		पृष्ठों की संख्या/No. of Sheets 01			

A3 साइज़/A3 SIZE

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संपत्ति है। इसका प्रत्यक्ष या अप्रत्यक्ष रूप में किसी भी तरह
प्रयोग नहीं किया जाए जो कंपनी के हित में हानिकारक हो।

संदर्भित अभिकल्प संख्या
REFERENCE DRG. NO.

हस्ताक्षर और दिनांक/SIGN & DATE

सामग्री सूची संख्या
INVENTORY NO.

प्रथम कोण प्रक्षेपण/FIRST ANGLE PROJECTION

सभी विमाएं मिलिमीटर में हैं।/ALL DIMENSIONS ARE IN mm.

फ़ॉर्म डीजी 38 (बी)/FORM 38 (B)

अभिकल्प संख्या/DRAWING NO.
31604570281

50/ ALL OVER EXCEPT OTHERWISE STATED

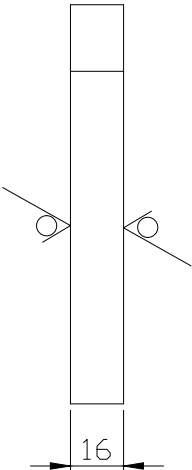


TABLE: –

VAR.	ITEM NO.	L	WT.(Kg)
00	18	295	4.0
01	19	286	3.9
02	20	187	2.4

असह्य विमाओं का वर्ग GRADE OF UNTOLERANCED DIMENSION			सी.वी.ओ.एम./C.B.O.M. 11604570023		अभिकल्प का स्तर STATUS OF DRG.	उत्पाद का प्रकार या ग्राहक/परियोजना का नाम TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT						
मशीनिंग - एए0230208 एम MACHINING – AA0230208 m			सहमत विभाग AGREED DEPTT.	नाम/NAME	हस्ताक्षर/ SIGN.	दिनांक/DATE	660 MW					
वेल्डिंग - एए0621104 की श्रेणी बी WELDING–CLASS ‘B’ OF AA0621104			वेल्डिंग टेक्नो.	MANISH	ह.	–	भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार BHARAT HEAVY ELECTRICALS LIMITED, RANIPUR, HARDWAR					
गैस कटिंग - एए0621101 की सारणी 3 GAS CUTTING–TABLE 3 OF AA0621101												
संशोधन REV.	दिनांक DATE	संशोधनकर्ता ALTERED BY जांचकर्ता CHD	संशोधन REV.	दिनांक DATE	संशोधनकर्ता ALTERED BY जांचकर्ता CHD	विभाग DEPTT.	होट एक्सचेंजर अभि. HXE	अनुपात/SCALE 1: 2	भार कि.ग्रा. WEIGHT (KG) SEE TABLE	असेम्बली अभिकल्प का संदर्भ REFER TO ASSLY. DRG. 11604570023	नग क्रमांक ITEM NO. SEE TABLE	पृष्ठों की संख्या No. of Sheets
						कोड/4222	शीर्षक/TITLE STIFFENER	कार्ड कोड CARD CODE	अभिकल्प संख्या/DRAWING NO. 31604570281			00
									पृष्ठ संख्या/Sheets No.	01	पृष्ठों की संख्या/No. of Sheets	
												01

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REF. DRG NO.

SIGN & DATE

INVENTORY NO.

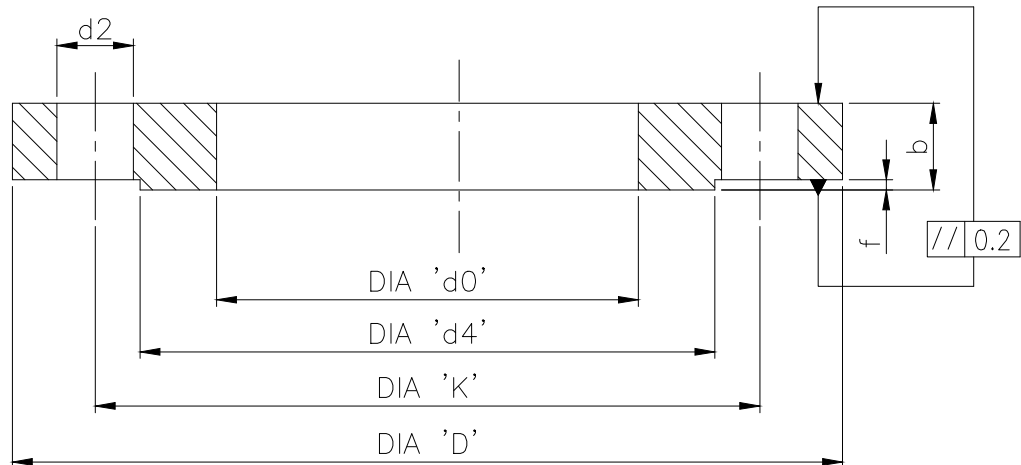
FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

FORM: DG-38(B)

DRAWING NO
31650170184

12.5/
▽ ALL OVER



VAR	NOM SIZE	FLANGED DIMENSIONS									BOLTING DETAILS				CODE NO./SPCN.	WT.
		d0		D		b		RAISED FACE			BOLT SIZE	HOLES		P.C.D K		
		NOM	TOL	NOM	TOL	NOM	TOL	d4 NOM	TOL	f		NO.	d2			
01	10	17.7	+0.5 +0.0	75	±1	12		35	+0.0 -1.0	2	M10	4	11	50	AA1011819139	0.31
02	15	21.8		80		12		40		2	M10	4	11	55	AA1011819139	0.35
03	20	27.4		90		14		50		2	M10	4	11	65	AA1011819155	0.53
04	25	34.2		100		14		60		2	M10	4	11	75	AA1011819155	0.65
05	32	42.9		120		16		70		2	M12	4	14	90	AA1011819155	1.05
06	40	48.8		130		16		80			M12	4	14	100	AA1011819155	1.18
07	50	60.8		140		16		90		3	M12	4	14	110	AA1011819155	1.25
08	65	76.6		160		16		110			M12	4	14	130	AA1011819155	1.63
09	80	89.9		190		18		120		3	M16	4	18	150	AA1011819163	2.63
10	100	115.3	+1.0 +0.0	210	±1.5	18	+3 -0	148	+0.0 -2.0		M16	4	18	170	AA1011819163	2.93
11	125	140.7		240		20		178		3	M16	8	18	200	AA1011819163	3.91
12	150	169.3		265		20		202			M16	8	18	225	AA1011819163	4.31
13	200	221.1		320	±2	22		258		3	M16	8	18	280	AA1011819171	6.29
14	250	275		375		24		312		3	M16	12	18	335	AA1011819171	8.31
15	300	325.9		440		24		365		4	M20	12	22	395	AA1011819171	10.7
16	350	357.6		493		26		415		4	M20	12	22	445	AA1011819180	15.9
17	400	408.4		540		28		465		4	M20	16	22	495	AA1011819180	25.0
18	500	510.0		+1.5 +0.0	645			30	570	+0.0 -3.0	4	M20	20	22	600	AA1011819198
19	600	612.6	755		32			670	5		M24	20	26	705	AA1011819198	40.9

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

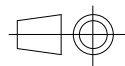
CBOM NO. 81650170016				STATUS OF DRG.
AGREED DEPT.	NAME	SIGN	DATE	
W.T.	I.RAM	SD/-	26.2.94	
REV.	DATE	ALTERED	ANIL	
01	22.09.11	CHECKED	SAUMYA	
HXE-11-F0179				
NEW ACAD DRG. SUPERSEDES OLD TRACING DRG.				

TYPE OF PRODUCT
OR
NAME OF CUSTOMER/ PROJECT



BHARAT HEAVY ELECTRICALS LTD.
HARDWAR

DEPT. HXE
CODE 4222



SCALE
NTS

WEIGHT(Kg.)
SEE BOM

REF. TO ASSY. DRG.
—

ITEM
NO.
—

TITLE

PLT FLANGE

1 3

DRAWING NO.
31650170184

01

SHEET NO. 01 NO.OF SHEETS 01

SIZE A3

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REF. DRG NO.

SIGN & DATE

INVENTORY NO.

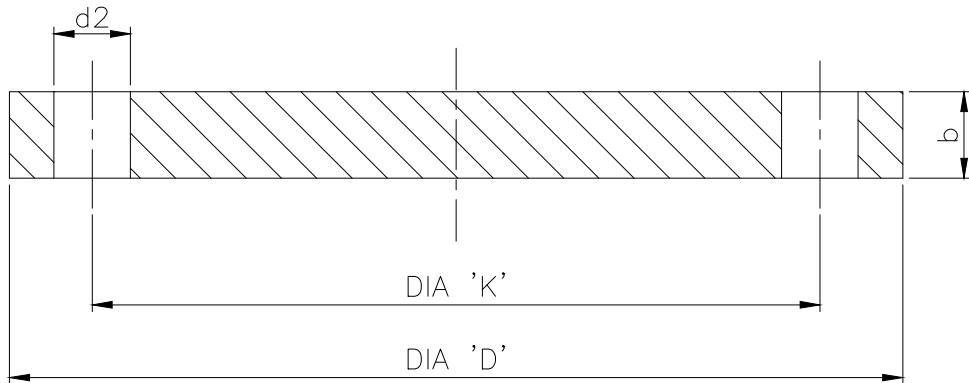
FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

FORM: DG-38(B)

DRAWING NO
31650170185

12.5/
ALL OVER



VAR	NOM SIZE	FLANGED DIMENSIONS				BOLTING DETAILS				CODE NO./ SPCN	WT.
		D		b		BOLT SIZE	HOLES		P.C.D K		
		NOM	TOL	NOM	TOL		NO.	d2			
01	10	75	±1	12	+3 -0	M10	4	11	50	AA1011819139/AA10119	0.38
02	15	80		12		M10	4	11	55	AA1011819139/AA10119	0.44
03	20	90		14		M10	4	11	65	AA1011819155/AA10119	0.65
04	25	100		14		M10	4	11	75	AA1011819155/AA10119	0.82
05	32	120		14		M12	4	14	90	AA1011819155/AA10119	1.17
06	40	130		14		M12	4	14	100	AA1011819155/AA10119	1.39
07	50	140		14		M12	4	14	110	AA1011819155/AA10119	1.62
08	65	160		14		M12	4	14	130	AA1011819155/AA10119	2.44
09	80	190	±1.5	16		M16	4	18	150	AA1011819155/AA10119	3.43
10	100	210		16		M16	4	18	170	AA1011819155/AA10119	4.76
11	125	240		18		M16	8	18	200	AA1011819163/AA10119	6.11
00	150	265		18		M16	8	18	225	AA1011819163/AA10119	7.51
13	175	295	±2	20		M16	8	18	255	AA1011819163/AA10119	10.40
14	200	320		20		M16	8	18	280	AA1011819163/AA10119	12.30
01	250	375		22		M16	12	18	335	AA1011819171/AA10119	18.30
16	300	440		22		M20	12	22	395	AA1011819171/AA10119	25.30
17	350	493		22		M20	12	22	455	AA1011819171/AA10119	31.60
18	400	540		22		M20	16	22	495	AA1011819171/AA10119	38.40
19	500	645		24		M20	20	22	600	AA1011819171/AA10119	60.40

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

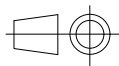
CBOM NO. 81650170016				STATUS OF DRG.
AGREED DEPT.	NAME	SIGN	DATE	
W.T.	I.RAM	SD/-	26.02.94	
REV.	DATE	ALTERED	ANIL	
01	22.09.11	CHECKED	SAUMYA	
HXE-11-F0179				
NEW ACAD DRG. SUPERSEDES OLD TRACING DRG.				

TYPE OF PRODUCT
OR
NAME OF CUSTOMER/ PROJECT



BHARAT HEAVY ELECTRICALS LTD.
HARDWAR

DEPT. HXE
CODE 4222



SCALE
NTS

WEIGHT(Kg.)
SEE BOM

REF. TO ASSY. DRG.
—

ITEM
NO.
—

TITLE
BLANK FLANGE

DRAWING NO.
31650170185

SHEET NO. 01 NO.OF SHEETS 01

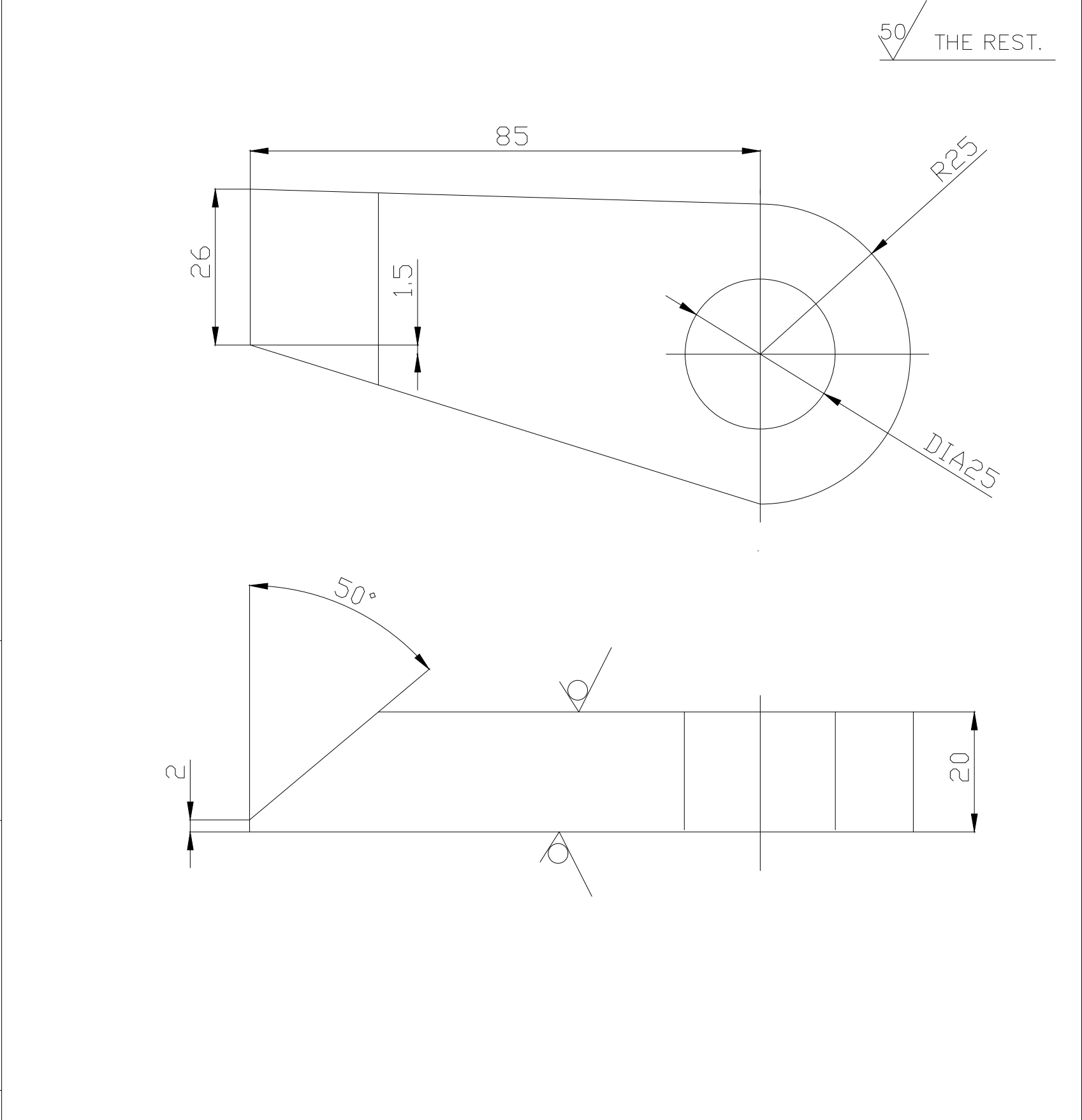
SIZE A3

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

REV	DATE	ALTERED	REV	DATE	ALTERED	RK GARG	CBOM No.			STATUS
		CHECKED			CHECKED		MK LAHOTI	GMS 91601570001	OF DRG	
			HXE-03-F-1063			AGREED DEPT.		NAME	SIGN	DATE
			HARD COPY TO BE REPLACED BY SOFT COPY.			W.T.		GARG	sd.	7.3.80


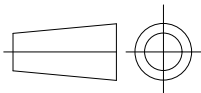
GRADE OF UNTOL.DIM.M/CGC/M/F.AA0230208 WELDING A/B/C/D AA0621104 GAS CUTTING-T3 AA0621101



REF.DRG.No.

SIGN & DATE

INVENTORY No.

<div></div> <div>BHARAT HEAVY ELECTRICALS LTD HARDWAR</div>					NAME	SIGN	DATE	NO. OF VAR	
				DRN	AHMAD	sd			
				CHD	L.K.S.	sd	21.2.80		
				APD	A.SINGH	sd	22.2.80		
DEPT. HXE		SCALE	WEIGHT(Kg)	REF.TO ASSY.DRG.			ITEM	No OF ITEMS	
CODE 4222		—	0.38	21601570001			No. 04		
TITLE					DRAWING No.				
LUG					41601570002				
					SHEET No. 01		No.OF SHEETS 01		

SIZE A4

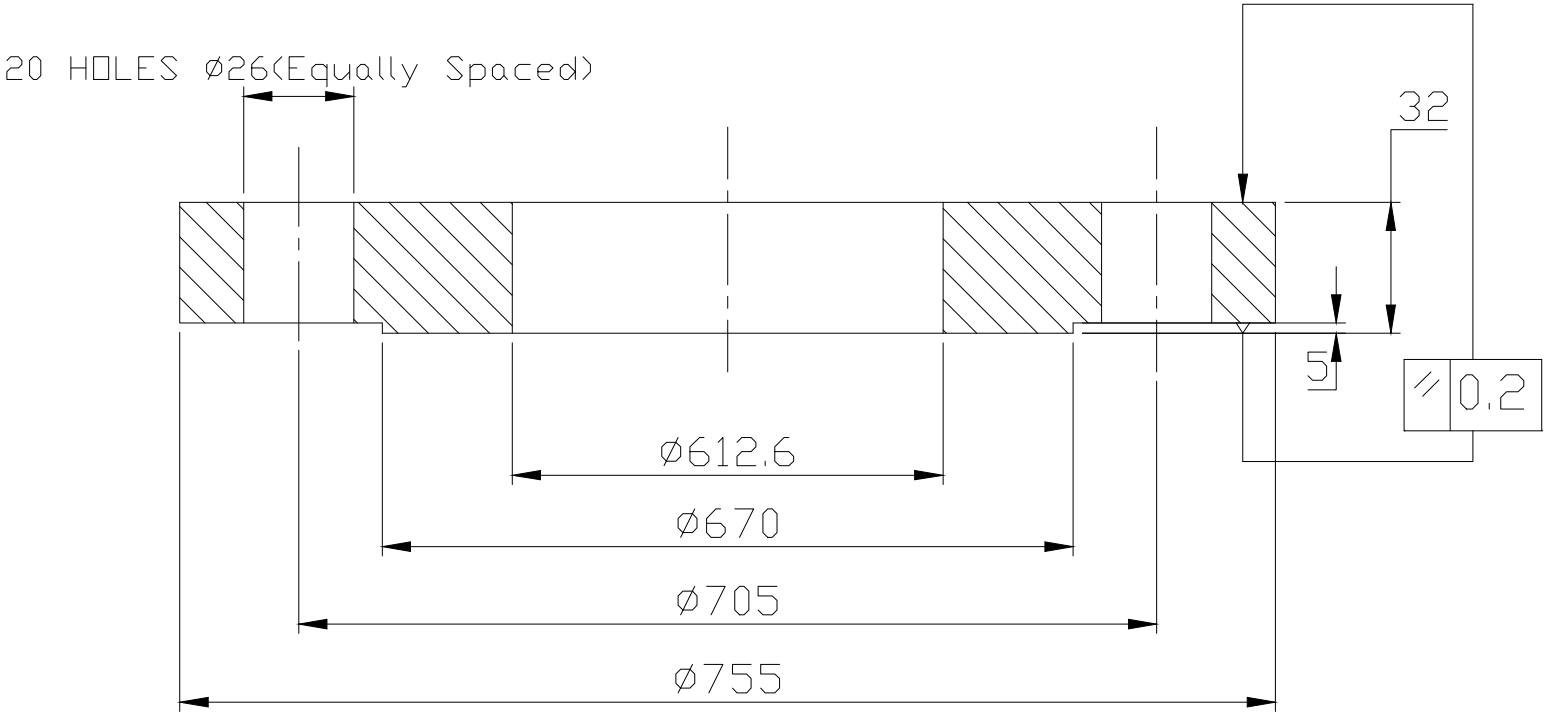
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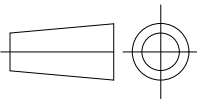
FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN mm) FORM DG 39(B)


REV	DATE	ALTERED	REV	DATE	ALTERED	CBOM No. 11601570030			STATUS OF DRG
		CHECKED			CHECKED				
						AGREED DEPT.	NAME	SIGN	DATE
						WT.	I RAM	sd/-	23.08.07

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

12.5
✓ THE REST.



INVENTORY No.	DEPT. HXE CODE 4222		SCALE NTS	WEIGHT(Kg) 93.00	REF.TO ASSY.DRG. 21603470041				ITEM No. 03	No OF ITEMS	
					DRAWING No. 41601570010						
					SHEET No. 01						No.OF SHEETS 01
					TITLE PLATE FLANGE						

SIGN & DATE	 BHARAT HEAVY ELECTRICALS LTD HARDWAR		NAME	SIGN	DATE	NO. OF VAR
		DRN	RKK	Sd.	22.08.07	
		CHD	NP	Sd.	22.08.07	
		APD	NPM	Sd.	24.08.07	

REF.DRG.No.	
-------------	--

SIZE A4

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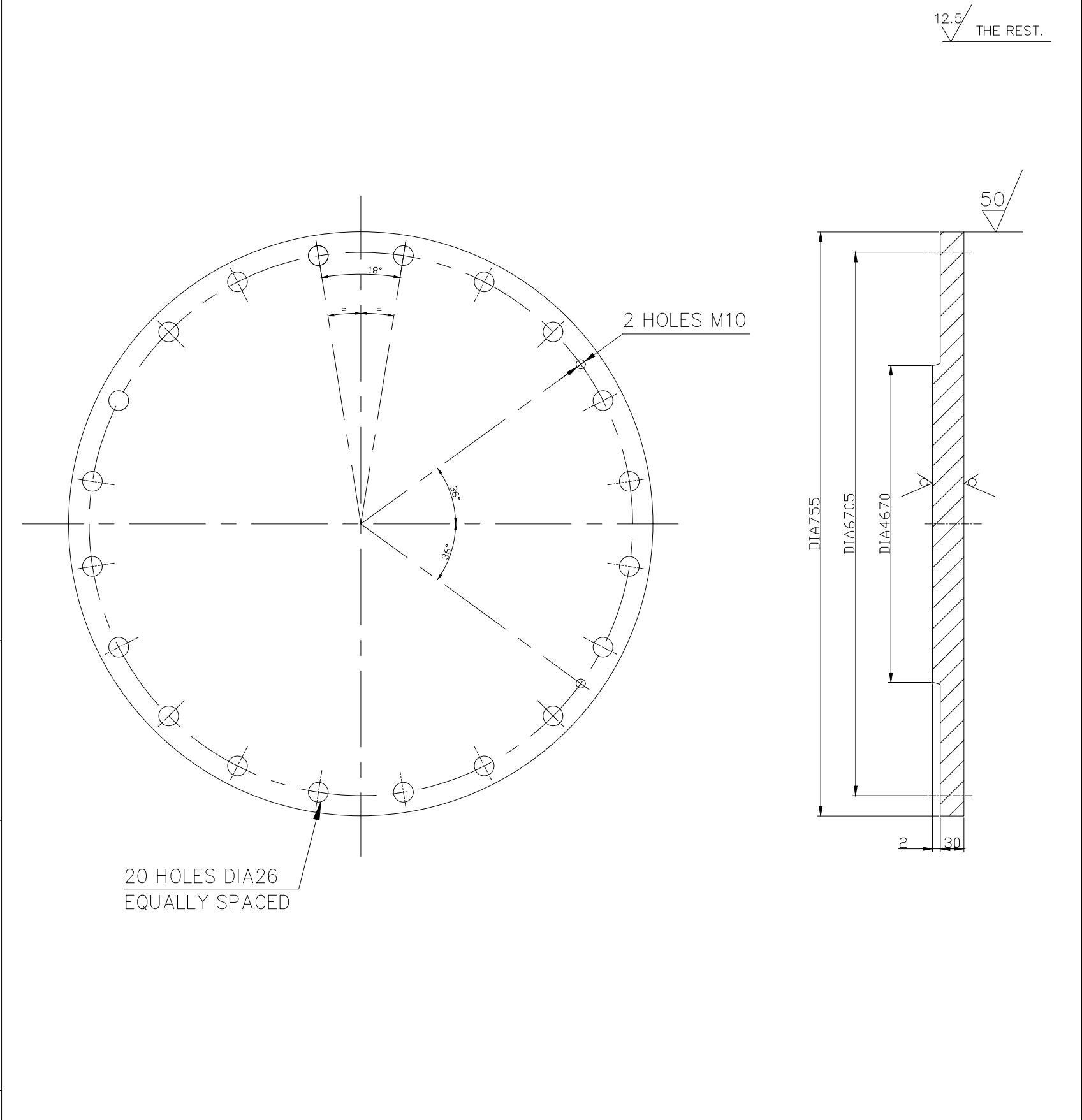
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FIRST ANGLE PROJECTION

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

REV	DATE	ALTERED	REV	DATE	ALTERED	CBOM No.		STATUS	
		CHECKED			CHECKED	11601570030		OF DRG	
						AGREED DEPT.	NAME	SIGN	DATE
						WT.	I RAM	sd/-	23.08.07

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


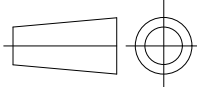


12.5/ THE REST.

REF.DRG.No.

SIGN & DATE

INVENTORY No.

<div></div> <div>BHARAT HEAVY ELECTRICALS LTD HARDWAR</div>					NAME	SIGN	DATE	NO. OF VAR
				DRN	RKK	Sd.	22.08.07	
				CHD	NP	Sd.	22.08.07	
				APD	NPM	Sd.	24.08.07	
DEPT. HXE		SCALE NTS	WEIGHT(Kg) 93.00	REF.TO ASSY.DRG. 21603470041			ITEM No. 04	No OF ITEMS
CODE 4222								
TITLE BLANK FLANGE				DRAWING No. 41601570011				
				SHEET No. 01 No.OF SHEETS 01				

SIZE A4

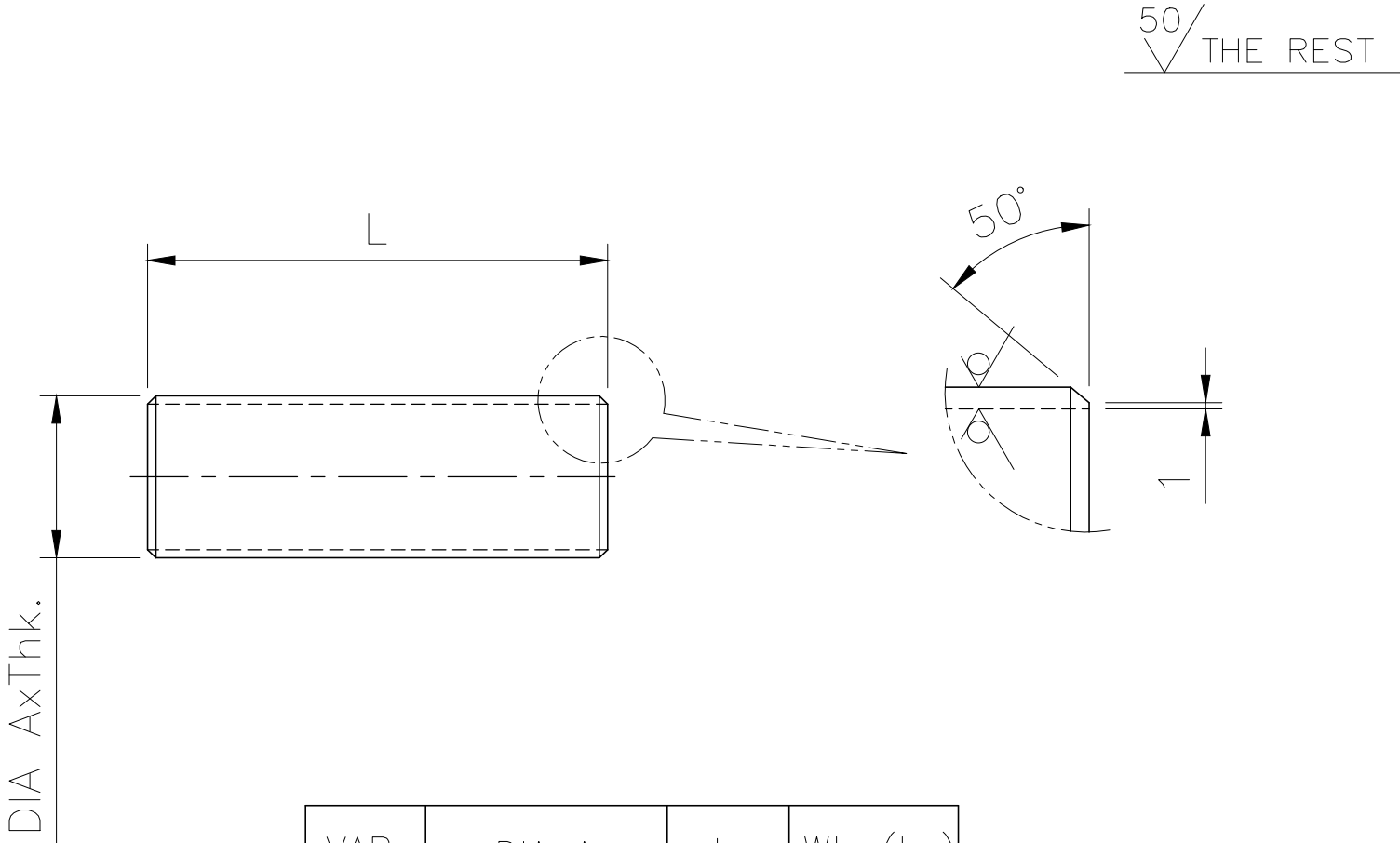
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स्वाधिकार एवं गोपनीय
इस प्रलेख में दी गई सूचना भारत हेवी इलेक्ट्रिकल्स लिमिटेड की
सम्पत्ति है। इसका प्रत्यक्ष या अप्रत्यक्ष रूप में किसी भी तरह
प्रयोग नहीं किया जाए जो कम्पनी के हित में हानिकार हो।

प्रथम कोण प्रक्षेपण / FIRST ANGLE PROJECTION सभी विमाणें मिलिमीटर में हैं। / ALL DIMENSIONS ARE IN mm.

प्रपत्र डीजी 39 (बी)
FORM 39 (B)


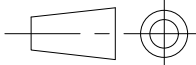
संशोधन REV. 02	दिनांक DATE 25.01.22	संशोधनकर्ता ALTERED BY जांचकर्ता CHD S.JOSHI J.KUMAR	संशोधन REV. 01	दिनांक DATE 19.08.19	संशोधनकर्ता ALTERED BY जांचकर्ता CHD S.JOSHI D.K.YADAV	सी.बी.ओ.एम./C.B.O.M. 01601570077	अभिकल्प का स्तर STATUS OF DRG. U
HXE-22-F0011			HXE-19-F0063			सहमत विभाग AGREED DEPTT.	दिनांक/DATE
VARIENT 04 changed \varnothing 219.1 instead of \varnothing 168.3 VARIENT 05,06 & 07 added			VARIENT 04 ADDED			नाम/NAME Wt. Manish	हस्ताक्षर/ SIGN. -Sd- 03.07.18
मशीनिंग - एए0230208 एम MACHINING - AA0230208 m			वेल्डिंग - एए0621104 की श्रेणी बी WELDING-CLASS 'B' OF AA0621104			गैस कटिंग - एए0621101 की सारणी 3 GAS CUTTING-TABLE 3 OF AA0621101	



VAR	DIA A	L	Wt. (kg)
00	\varnothing 33.4x3.38	275	0.89
01	\varnothing 88.9x6.30	280	3.60
02	\varnothing 114.3x4.5	315	3.84
03	\varnothing 168.3x7.11	335	9.50
04	\varnothing 219.1x10.31	537	26.4
05	\varnothing 168.3x7.11	537	15.18
06	\varnothing 219.1x6.35	537	17.88
07	\varnothing 219.1x6.35	390	13.0

NOTE :-

- PAINTING IS TO BE DONE AS PER HXE PRODUCT STD. HE 77001
- THE GENERAL TOLERANCE ON STRAIGHTNESS, FLATNESS AND PARALLELISM SHALL BE MAINTAINED AS PER AA0621105 GRADE-F.

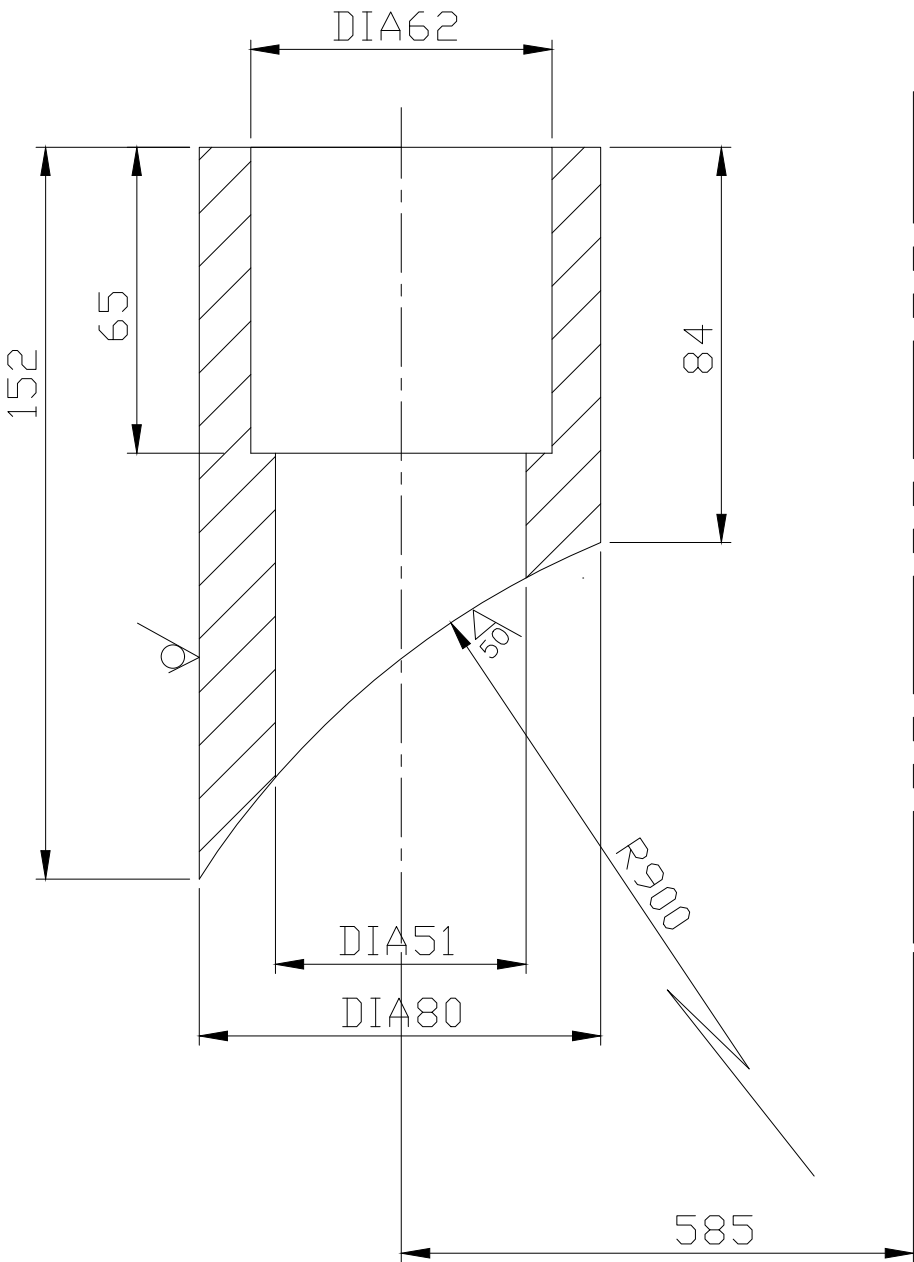
<div><div>बीएचईएल</div><div></div></div> <div>भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार</div> <div>BHARAT HEAVY ELECTRICALS LIMITED, RANIPUR, HARDWAR</div>		निर्माणकर्ता DRN.	S.JOSHI	हस्ताक्षर /SIGN	Sd/-	दिनांक /DATE	07.06.18	वैरिएन्ट संख्या No. of Var. —
		जाचकर्ता CHD	D.K.Yadav	Sd/-	07.06.18			
		स्वीकृतीदाता APPD	N.Prakash	Sd/-	07.06.18			
विभाग DEPTT.	HXE		अनुपात/SCALE —	भार कि.ग्रा. WEIGHT (KG) SEE TABLE	असेम्बली अभिकल्प का संदर्भ REFER TO ASSLY. DRG. — — — — —	नग क्रमांक ITEM NO. —	नों की संख्या NO. OF ITEMS —	
कोड/CODE	4222							
शीर्षक/TITLE <u>PIPE</u>					अभिकल्प संख्या/DRAWING NO.			REV.
					7 41601570040 22 23 24			02
					पृष्ठ संख्या/Sheets No. 01			पृष्ठों की संख्या/No. of Sheets 01

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

REV	DATE	ALTERED	REV	DATE	ALTERED	CBOM No.			STATUS OF DRG
		CHECKED			CHECKED	01604570042			
						AGREED DEPT.	NAME	SIGN	DATE
						WT.	I. RAM	Sd.	22.9.05

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



25/
THE REST.

NOTE: – RADIUS R–900 TO BE CUT DURING ASSEMBLY STAGE.

REF.DRG.No.


SIGN & DATE

INVENTORY No.



BHARAT HEAVY ELECTRICALS LTD
HARDWAR

	NAME	SIGN	DATE	NO. OF VAR
DRN	VIMAL	Sd.	19.9.05	
CHD	R.RAWAT	Sd.	19.9.05	
APD	N.P.M.	Sd.	20.9.05	

DEPT. HXE		SCALE	WEIGHT(Kg)	REF.TO ASSY.DRG.	ITEM	No OF
CODE 4222		1: 2	2.30	01604570042	No.	ITEMS
TITLE				DRAWING No.		
<u>SOCKET</u>				41604570118		
				SHEET No. 01	No.OF SHEETS	01

SIZE A4

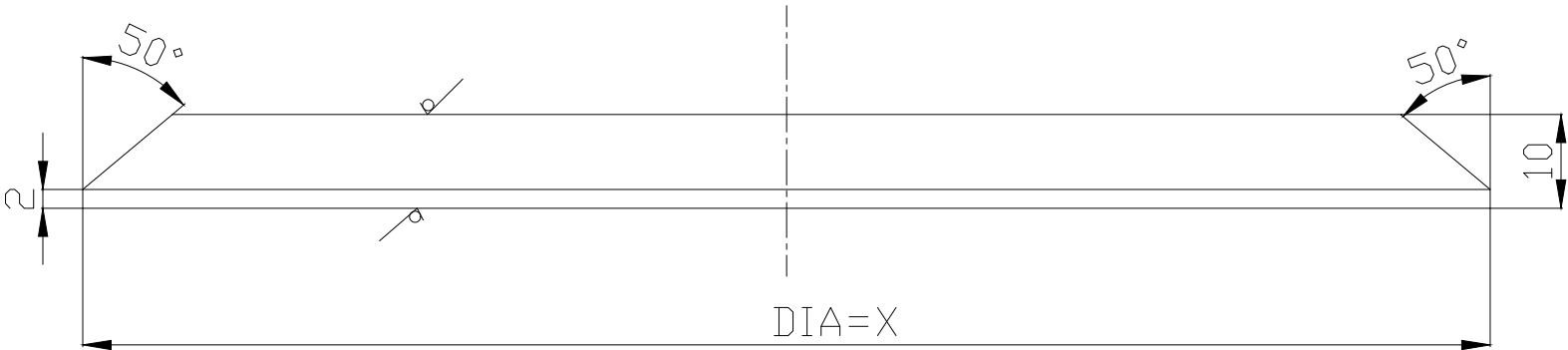
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FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN mm) FORM DG 39(B)

REV	DATE	ALTERED	REV	DATE	ALTERED	CBOM No.			STATUS OF DRG
		CHECKED			CHECKED	01601570058			
						AGREED DEPT.	NAME	SIGN	DATE
						WT.	TSC.	Sd.	16/02/09

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



VAR.	X	WT.
00	150	1.6
01	102	1.2

INVENTORY No.	DEPT. HXE		SCALE	WEIGHT(Kg)	REF.TO ASSY.DRG.		ITEM	No OF ITEMS
	CODE 4222		N.T.S	—	01601570058		No.	
	TITLE		DRAWING No.					
	PLATE				41605170110			
					SHEET No. 01		No.OF SHEETS 01	

SIGN & DATE		BHARAT HEAVY ELECTRICALS LTD HARDWAR		NAME	SIGN	DATE	NO. OF VAR
			DRN	ARVIND	Sd.	16/02/09	
			CHD	DEEPAK	Sd.	16/02/09	
			APD	SKB	Sd.	16/02/09	

REF.DRG.No.	00	150	1.6
	01	102	1.2



BHARAT HEAVY ELECTRICALS LTD
HARDWAR

	NAME	SIGN	DATE	NO. OF VAR
DRN	ARVIND	Sd.	16/02/09	
CHD	DEEPAK	Sd.	16/02/09	
APD	SKB	Sd.	16/02/09	

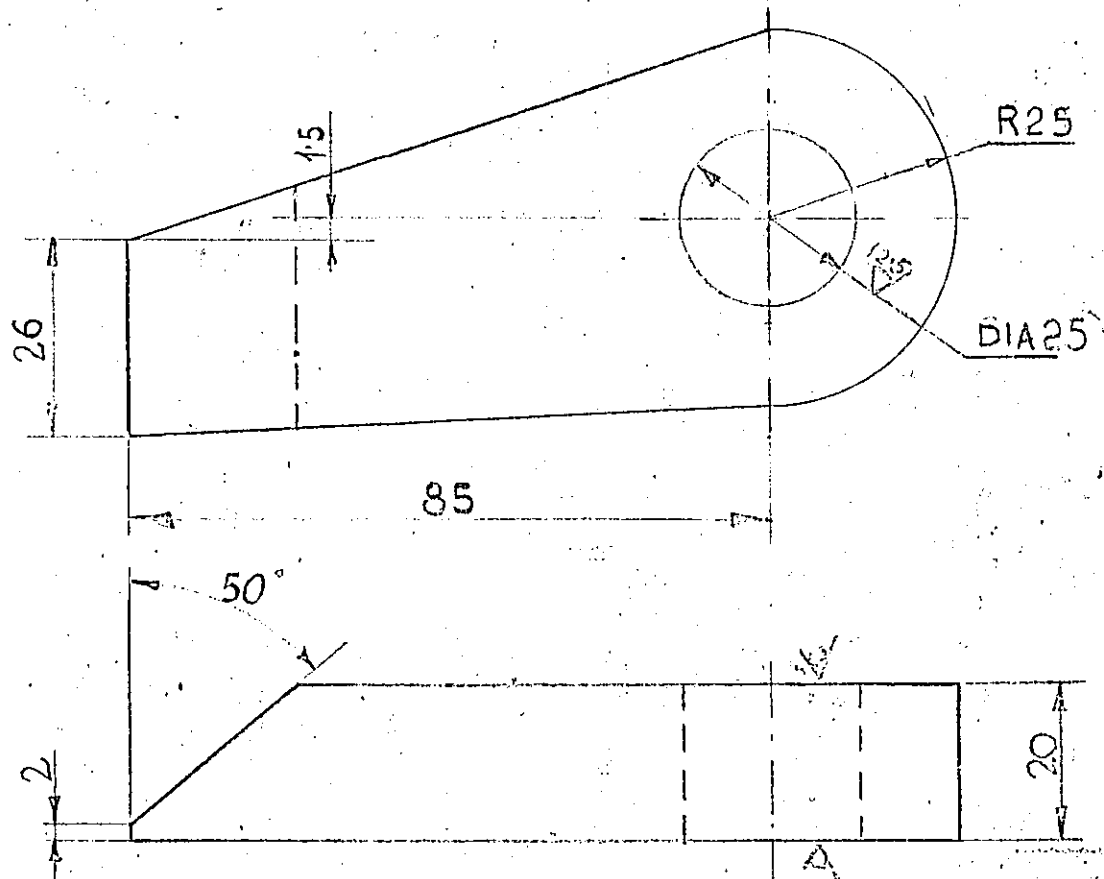
SIZE A4

FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN mm)

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REV	DATE	ALTERED	REV	DATE	ALTERED	GMS 9-160-15-70001	AGREED DEPT	NAME	SIGN	DATE
		CHECKED			CHECKED					

50/ ALL OVER



Ref. Drg. No.

QTY	NO OF	UNIT OF	LUG	ITEM	STD	DRAWING NO.	AA 10119	UNIT WT	0.38
VARI	NO	QTY	DESCRIPTION	NO				(KG)	
ANT	ANT	RM. UNIT							
		QTY							

CARD TYPE 2

CARD TYPE 1

Sign & Date

DG-39		BHARAT HEAVY ELECTRICALS LTD.	RANIPUR - HARDWAR.
-------	--	--------------------------------------	---------------------------

Inventory No.

DEPT	CODE	SCALE	WEIGHT (KG)	REF. TO ASSY. DRG.	ITEM NO.
HXE	4222	1:1		2-160-15-70001	003
LUG				NAME	SIGN.
				DRAWN	AMAD
				CHECKED	SRIVASTAVA
				APPROVED	A. SINGH
Dimensions to be Controlled Within Limits as Shown				DRAWING NO.	
Machining Tolerance \pm .25 mm Unless Otherwise				4-160-15-70001	
Shown. Non Machining Tolerance \pm				SHEET NO.	NO. OF SHEETS.
				1	1

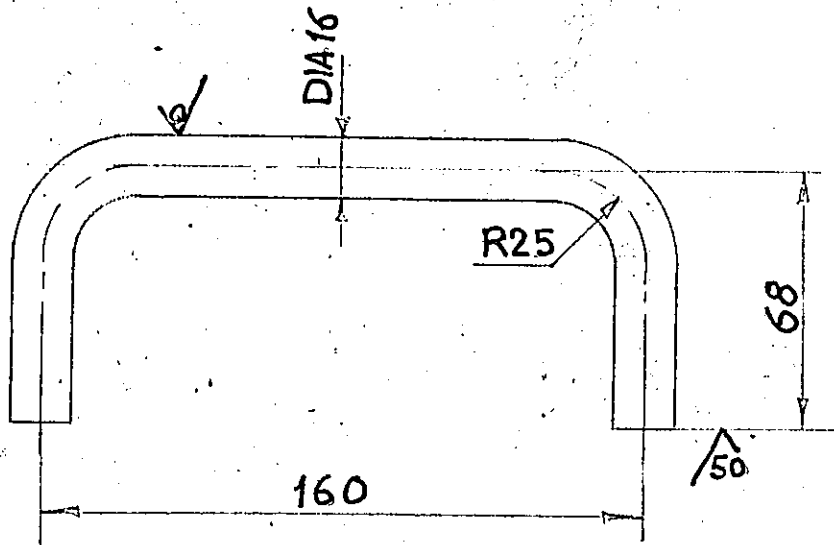
SIZE A4

FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN mm)

01

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REV	DATE	ALTERED	REV	DATE	ALTERED	GMS NO	9-160-45-70001	STATUS OF DRG
02	27.3.95	<i>[Signature]</i>	01	4/6/94	<i>[Signature]</i>	AGREED	NAME	SIGN DATE
CHECKED <i>[Signature]</i>			CHECKED <i>[Signature]</i>			WT	G 986	7.25
HXE-95-27			HXE-94-97			MATL CODE B		
MATL CODE WAS AA1010212079			WAS HW1010212051			AA10112		



DEVELOPED LENGTH = 275

001			HANDLE	001			AA1010209086		0.44
66.64	62.62	53	52	31	23	18	20	22	13
QTY	NO OF	UNIT OF	DESCRIPTION	ITEM NO	STD	DRAWING NO	MATERIAL CODE	A	COMP
VAR	VAR	R.M UNIT					MATERIAL SPECN	C	GRADE
ANT	ANTS	QTY							QTY

CARD TYPE 2

CARD TYPE 1



BHARAT HEAVY ELECTRICALS LTD.
RANIPUR - HARDWAR.

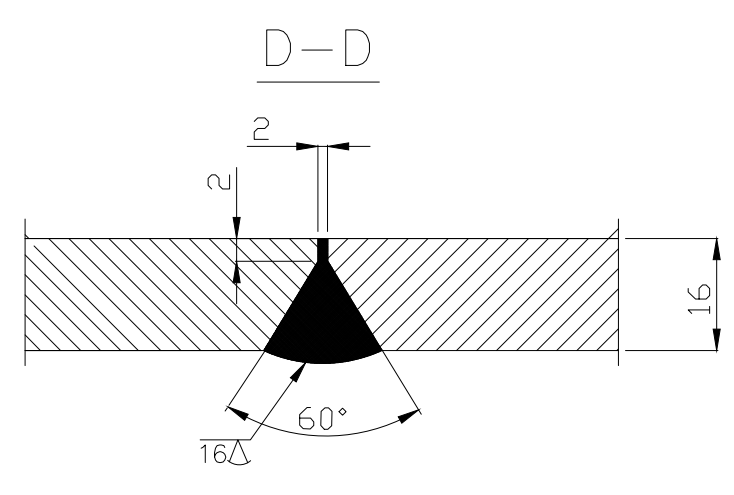
DEPT	CODE	SCALE	WEIGHT (KG)	REF. TO ASSY. DRG.	ITEM NO.
HXE	043	1:2	0.44	3-160-45-70006	002
DRAWN			NAME	SIGN.	DATE
CHECKED			M. L. L.	M. L. L.	6.3.79
APPROVED			A. SINGH.		10.4.79

HANDLE

Dimensions to be Controlled Within Limits as Shown	CARD CODE	DRAWING NO.
Machining Tolerance \pm 25 mm Unless Otherwise Shown. Non Machining Tolerance \pm		4-160-45-70004
	SHEET NO.	NO. OF SHEETS.
	1	1

SIZE A4

संख्या और दिनांक/SLN & DATE	संदर्भित अभिलेख संख्या /REFERENCE DRG.NO.
-----------------------------	---



- A1 साइज/A1 SIZ

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Inventory No
Sign & Date
Ref:Drawing No>

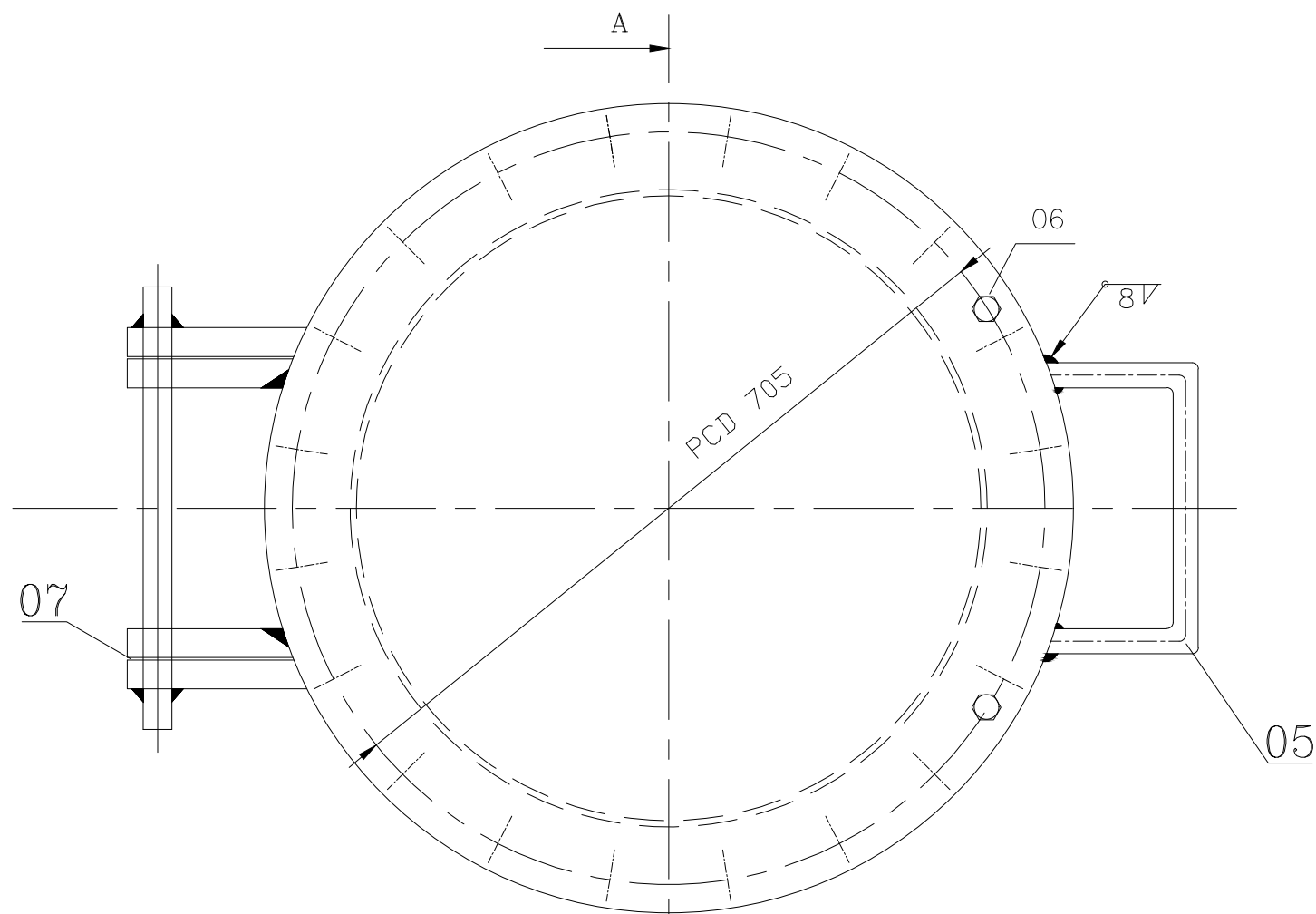
21603470110

DRAWING No.

FIRST ANGLE PROJECTION

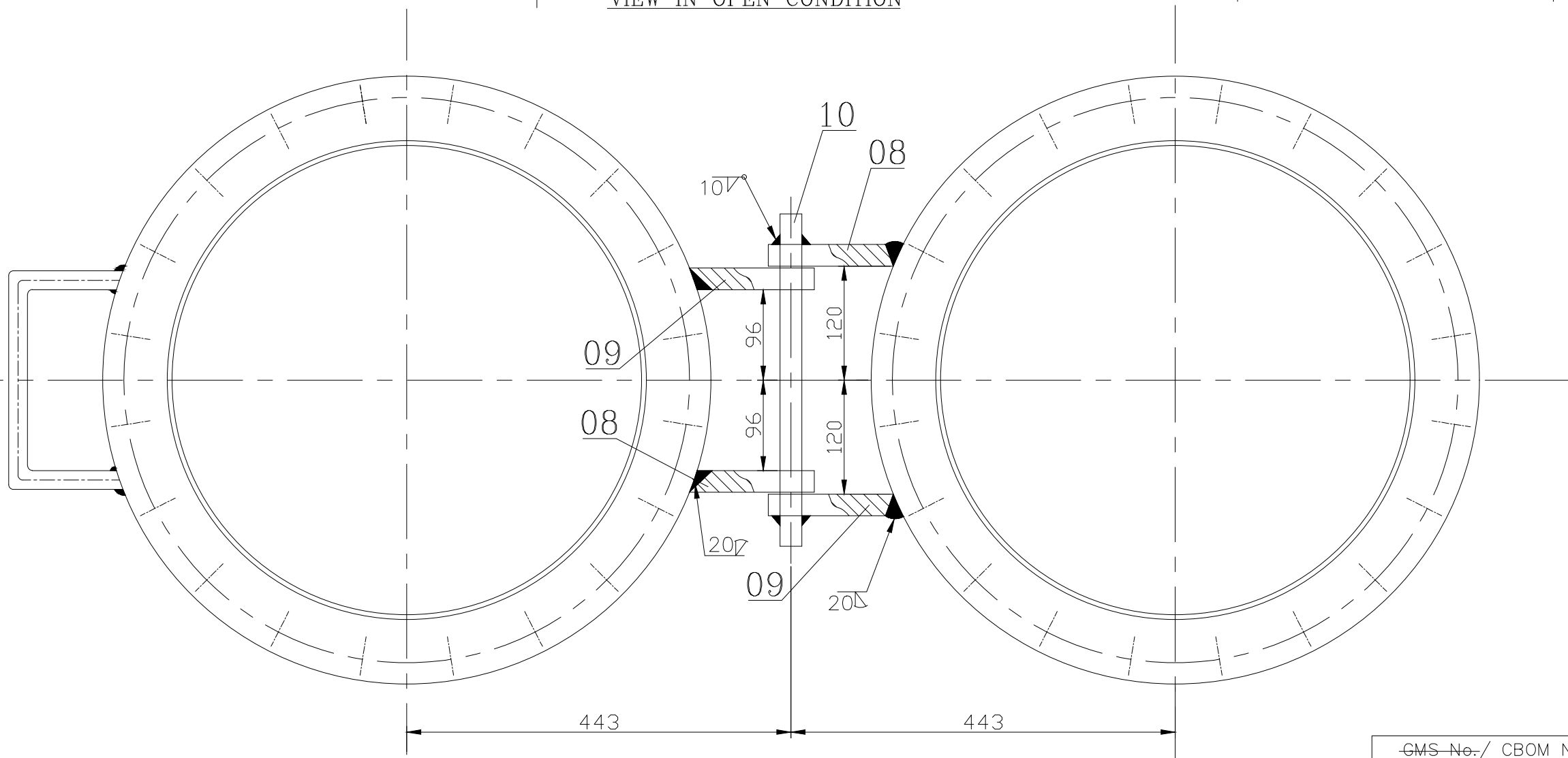
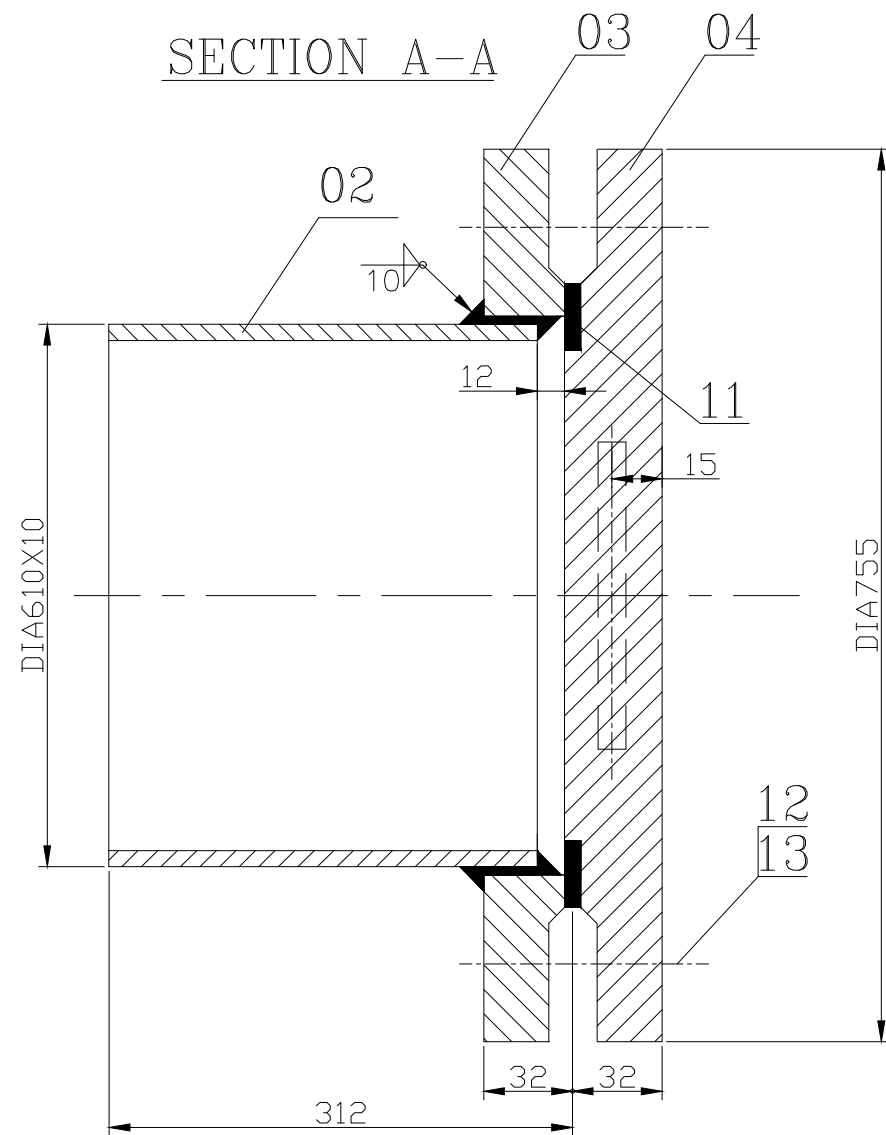
(ALL DIMENSIONS ARE IN mm)

FORM DG 44(B)



VIEW IN OPEN CONDITION

SECTION A-A



T.R. -

WELDING QUALITY NOTE:-

WELDING CLASSIFICATION GROUP ACCORDING TO HW0620099 CS/BK, TEST SCOPE ACCORDING TO HW0850199 CATEGORY OF SERVICE REQUIREMENTS-3.

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

GMS No./ CBOM No.		11604570023		STATUS OF DRG	
AGREED DEPT	NAME	SIGN	DATE		
WT	MANISH	sd/-	-		

TYPE OF PRODUCT
OR
NAME OF CUSTOMER/PROJECT

660 MW

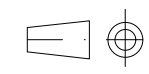


BHARAT HEAVY ELECTRICALS LTD.
RANIPUR, HARDWAR

DRN	NAME	SIGN	DATE	NO. OF VAR
CHD	MUKESH	Sd/-	22.11.17	
APPD	R.BANSAL	Sd/-	22.11.17	

DEPT HXE

CODE 4222



SCALE
NTS

WEIGHT (KG)
138.6

REF. TO ASSY. DRG.
11604570023

ITEM
No.
73 74
75 77

TITLE :
MAN HOLE ASSEMBLY

CARD
CODE

DRAWING NO.
21603470110

SHEET No. 01 No. OF SHEETS 01

SIZE A2

यामगी पूरी संख्या/INVENTORY NO.	हस्ताक्षर और दिनांक/SIGN & DATE	संशोधित अधिकृत्य संख्या /REFERENCE DRG.NO.
---------------------------------	---------------------------------	--

Diagram illustrating the geometry of a rectangular duct with a U-bend. The duct has a length L and a development length of 3995. The U-bend has a radius of 100. The flow direction is indicated by arrows labeled A, B, and C.

DEVELOPMENT LENGTH=(3995)

$$\frac{\mathbb{B}-\mathbb{B}}{1:1}$$

50/ THE REST.

2432

R1200

16

$$\frac{\text{C}-\text{C}}{1:1}$$

45° (ONLY FOR VAR 00)

OUT SIDE
SURFACE

45°

16

TABLE: —

VAR	L	WEIGHT (KG)	ITEM NO.
00	1774	890	1
01	2480	1244	2
02	654	328	3

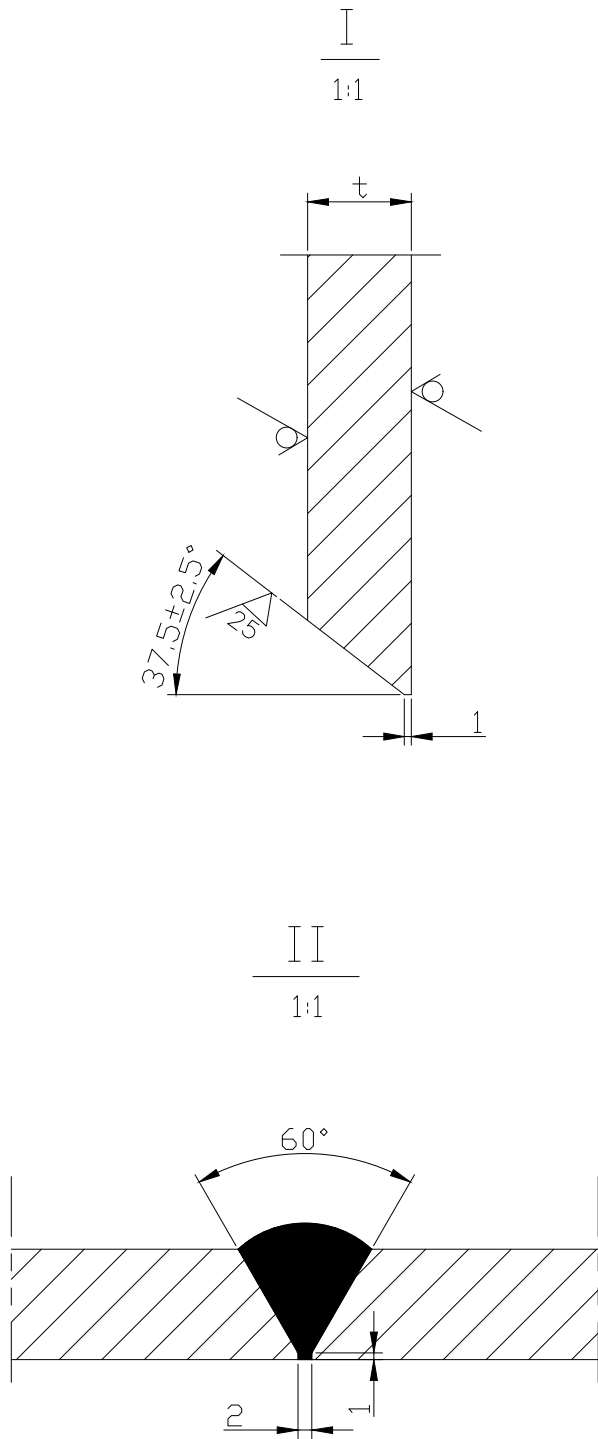
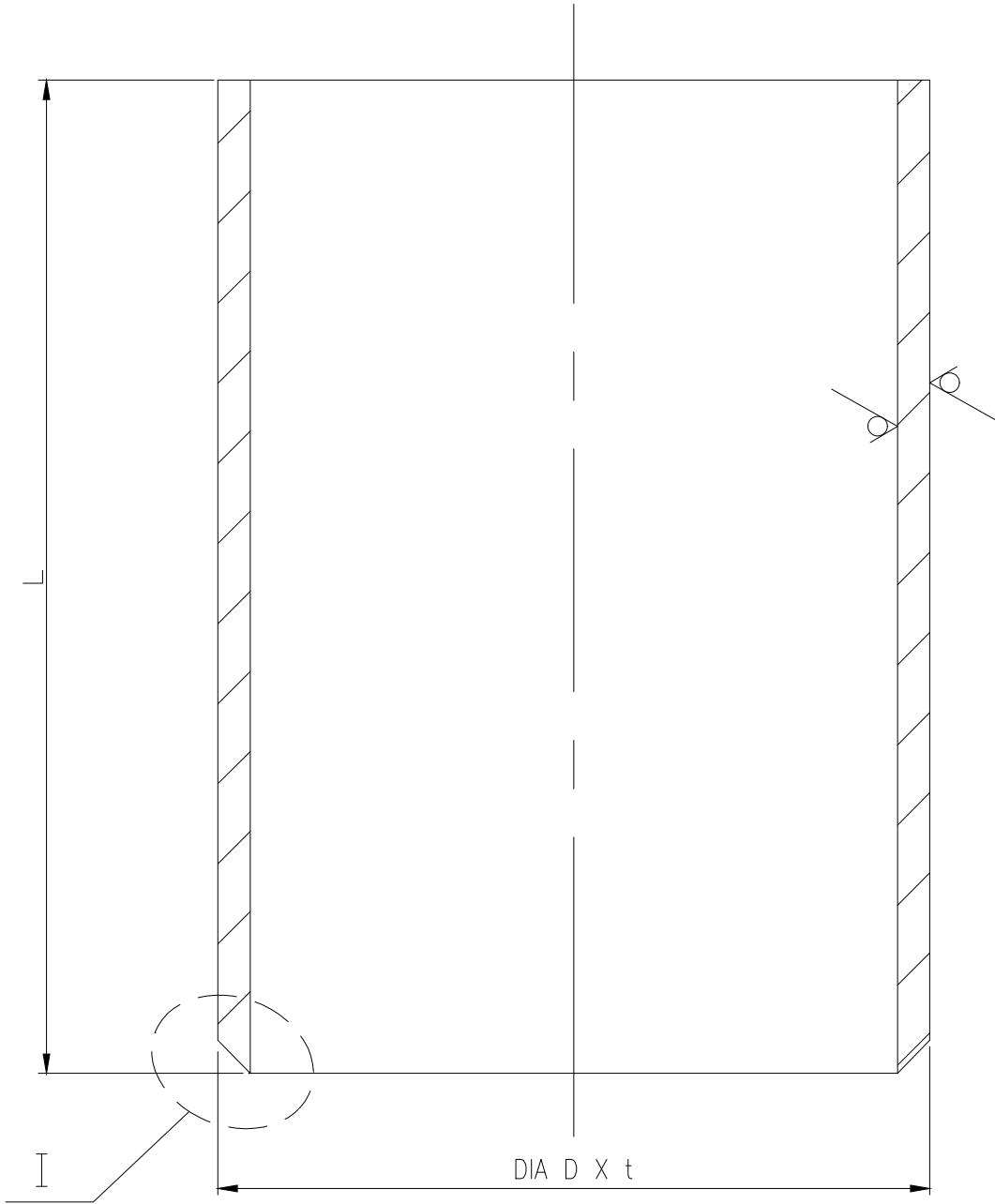
असत्य विमाओं का वर्ग GRADE OF UNTOLERANCED DIMENSION			सी.बी.ओ.एम./C.B.O.M. 11604570016			अधिकृत्य का स्टATUS OF DRG. U			उत्पाद का प्रकार या ग्राहक/परियोजना का नाम TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT			800 MW YERAMARUS		
मशीनिंग - एए0230208 एम MACHINING - AA0230208 m			मशीन विभाग AGREED DEPTT.			नाम/NOME			हस्ताक्षर/SIGN.			दिनांक/DATE		
वैलडिंग - एए0621104 की श्रेणी बी WELDING-CLASS 'B' OF AA0621104			वैलडिंग टेक्नी.						ह.			-		
गेस कटिंग - एए0621101 की सारणी 3 GAS CUTTING-TABLE 3 OF AA0621101														
संशोधन REV.			दिनांक DATE			संशोधनकरा ALTERED BY			संशोधनकरा CHD			संशोधन करी NO. OF ITEMS		
विभाग DEPTT.			हॉट एक्सचेंजर ओपि. HXE			कोड/CODE 4222						अनुपात/SCALE 1:10		
						शीर्षक/TITLE			SHELL			कार्ड कोड CARD CODE		
			4									अभिकल्प संख्या/DRAWING NO. 721604570133		
												प्रयुक्त संख्या/Sheets No. 1 प्रयुक्तों की संख्या/No. of Sheets 1		

सबको अधिकार एवं गोपनीय
इस प्रलेख में दी गई सूचना भारत हेवी इलेक्ट्रिकल्स लिमिटेड की संपत्ति है। इसका प्रत्यक्ष या
अप्रत्यक्ष रूप में किसी भी तरह प्रयोग नहीं किया जाए, जो कंपनी के हित में हानिकार हो।
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सामग्री सूची संख्या/INVENTORY NO.
आवृत्ति और तिथि/ISSN & DATE
संदर्भित अभिलेख संख्या /REFERENCE DRG.NO.

TECH. REQUIREMENTS:-

- IF REQUIRED, NOZZLE VAR. 02 MAY BE MADE FROM PLATE (AA10119).
- WELDING TO BE DONE AS PER DETAIL – II.
- VISUAL INSPECTION OF WELD SEAM AS PER PS HW 0620099, CLASSIFICATION
GROUP CS/BK.
- NON DESTRUCTIVE EXAMINATION OF WELD SEAM TO BE DONE AS PER HW 0850199 PART 10.



TABLE

VAR.	D X t	L	Wt. (kg)
00	114.3X6.02	163	2.62
01	323.9X7.1	418	23.18
02	355.6X9.53	431	35.07
03	323.9X8.38	418	27.78
04	323.9X10	431	34
05	508X9.53	557	66.5

50 THE REST.

असह्य विमाओं का वर्ग GRADE OF UNTOLERANCED DIMENSION				सी.बी.ओ.एम./C.B.O.M.		अभिलेख का स्तर STATUS OF DRG.		उत्पाद का प्रकार या ग्राहक/परियोजना का नाम TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT			
मशीनिंग - एए0230208 एम MACHINING – AA0230208 m				11604570013		U		—			
वेल्डिंग - एए0621104 की श्रेणी बी WELDING—CLASS 'B' OF AA0621104				वेल्डिंग टेक्नो.		—		ह.		—	
गैस कटिंग - एए0621101 की श्रेणी 3 GAS CUTTING—TABLE 3 OF AA0621101											
संशोधन REV. 03		दिनांक DATE 21.05.18	संशोधक/परिवर्तित ALTERED BY ANIL मुकुश	संशोधन REV. 02		दिनांक DATE 13.6.16	संशोधक/परिवर्तित ALTERED BY S.K. मुकुश	संशोधन REV. 01		दिनांक DATE 21.05.16	संशोधक/परिवर्तित ALTERED BY M.S. मुकुश
		HXE-18-F0059 VAR. 05 ADDED. AS MARKED 03				HXE-16-F0040 VAR. 04 ADDED. AS MARKED 02				HXE-16-F0035 VAR. 03 ADDED. AS MARKED 01	
विभाग DEPTT.		हॉट एक्सचेंजर अभि. HXE		अनुपात/SCALE 1:2		भार कि.ग्रा. WEIGHT (KG) SEE—TABLE		असेम्बली अभिलेख का संदर्भ REFER TO ASSLY. DRG. 11604570016		नग क्रमांक ITEM NO. —	
काई कोड CARD CODE —		अभिलेख संख्या/DRAWING NO. 21604570134		नग की संख्या NO. OF ITEMS 03		पृष्ठ संख्या/Sheets No. 01		पृष्ठों की संख्या/No. of Sheets 01			

INVENTORY NO.

I

I

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3. THE GENERAL TOLERANCES OF STRAIGHTNESS, FLATNESS AND PARALLELISM SHALL BE MAINTAINED AS PER AA0621105 GRADE-F.

VAR	L	DEVELOPED LENGTH	WEIGHT (Kg)
00	300	1885	44.39

A3 साइज़/A3 SIZE

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सम्पत्ति है। इसका प्रत्यक्ष या अप्रत्यक्ष रूप में किसी भी तरह
प्रयोग नहीं किया जाए जो कम्पनी के हित में हानिकर हो।

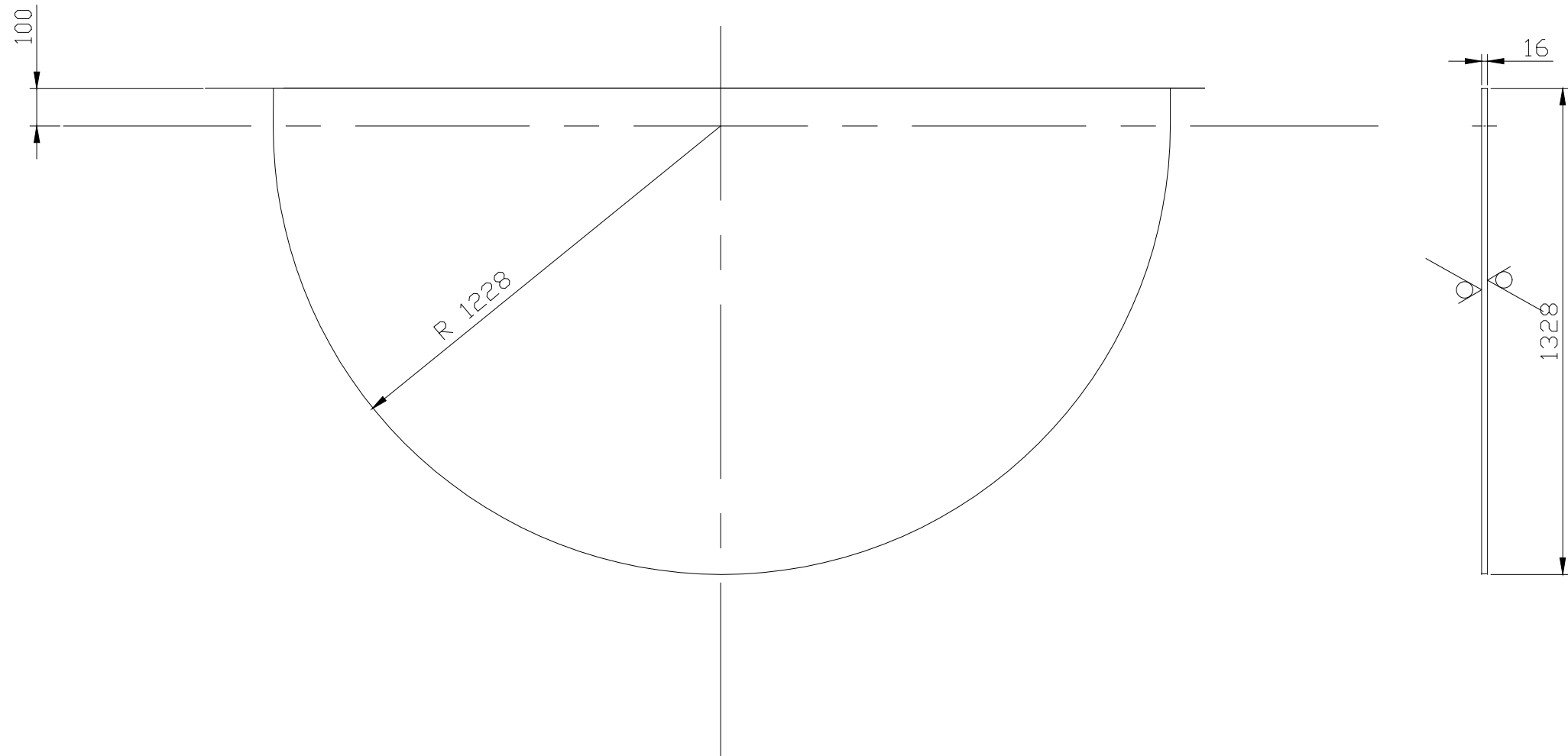
संदर्भित अभिकल्प संख्या
REFERENCE DRG. NO.

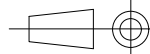
हस्ताक्षर और दिनांक/SIGN & DATE

सामग्री सूची संख्या
INVENTORY NO.

31604570262

50 THE REST.



असह्य विमाओं का वर्ग GRADE OF UNTOLERANCED DIMENSION			सी.बी.ओ.एम./C.B.O.M. 11604570013			अभिकल्प का स्तर STATUS OF DRG.			उत्पाद का प्रकार या ग्राहक/परियोजना का नाम TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT						
मशीनिंग - एए0230208 एम MACHINING - AA0230208 m			सहमत विभाग AGREED DEPTT.	नाम/NAME	हस्ताक्षर/ SIGN.	दिनांक/DATE	660 MW LALITPUR								
वेल्डिंग - एए0621104 की श्रेणी बी WELDING-CLASS 'B' OF AA0621104			वेल्डिंग टेक्नो.		ह.	-	<div><div><div>बीएचईएल</div><div>BHARAT HEAVY ELECTRICALS LIMITED,</div><div>RANIPUR, HARDWAR</div></div><div><div>विभाग/DEPTT.</div><div>होट एक्सचेंजर अभि. HXE</div><div>कोड/CODE 4222</div></div><div><div>शीर्षक/TITLE</div><div>END PLATE</div></div></div>								
गैस कटिंग - एए0621101 की सारणी 3 GAS CUTTING-TABLE 3 OF AA0621101															
संशोधन REV.	दिनांक DATE	संशोधनकर्ता ALTERED BY जांचकर्ता CHD	संशोधन REV.	दिनांक DATE	संशोधनकर्ता ALTERED BY जांचकर्ता CHD	विभाग DEPTT.	HXE	कोड/CODE 4222		अनुपात/SCALE 1:15	भार कि.गा. WEIGHT (KG) 328.36	असेम्बली अभिकल्प का संदर्भ REFER TO ASSLY. DRG. 11604570013		नग क्रमांक ITEM NO. SEE TABLE	नगों की संख्या NO. OF ITEMS
											कार्ड कोड CARD CODE	अभिकल्प संख्या/DRAWING NO. 7 31604570262		पृष्ठ संख्या/Sheets No. 01	पृष्ठों की संख्या/No. of Sheets 01

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सम्पत्ति है। इसका प्रत्यक्ष या अप्रत्यक्ष रूप में किसी भी तरह
प्रयोग नहीं किया जाए जो कम्पनी के हित में हानिकार हो।

संदर्भित अभिकल्प संख्या
REFERENCE DRG. NO.

हस्ताक्षर और दिनांक/SIGN & DATE

सामग्री सूची संख्या
INVENTORY NO.

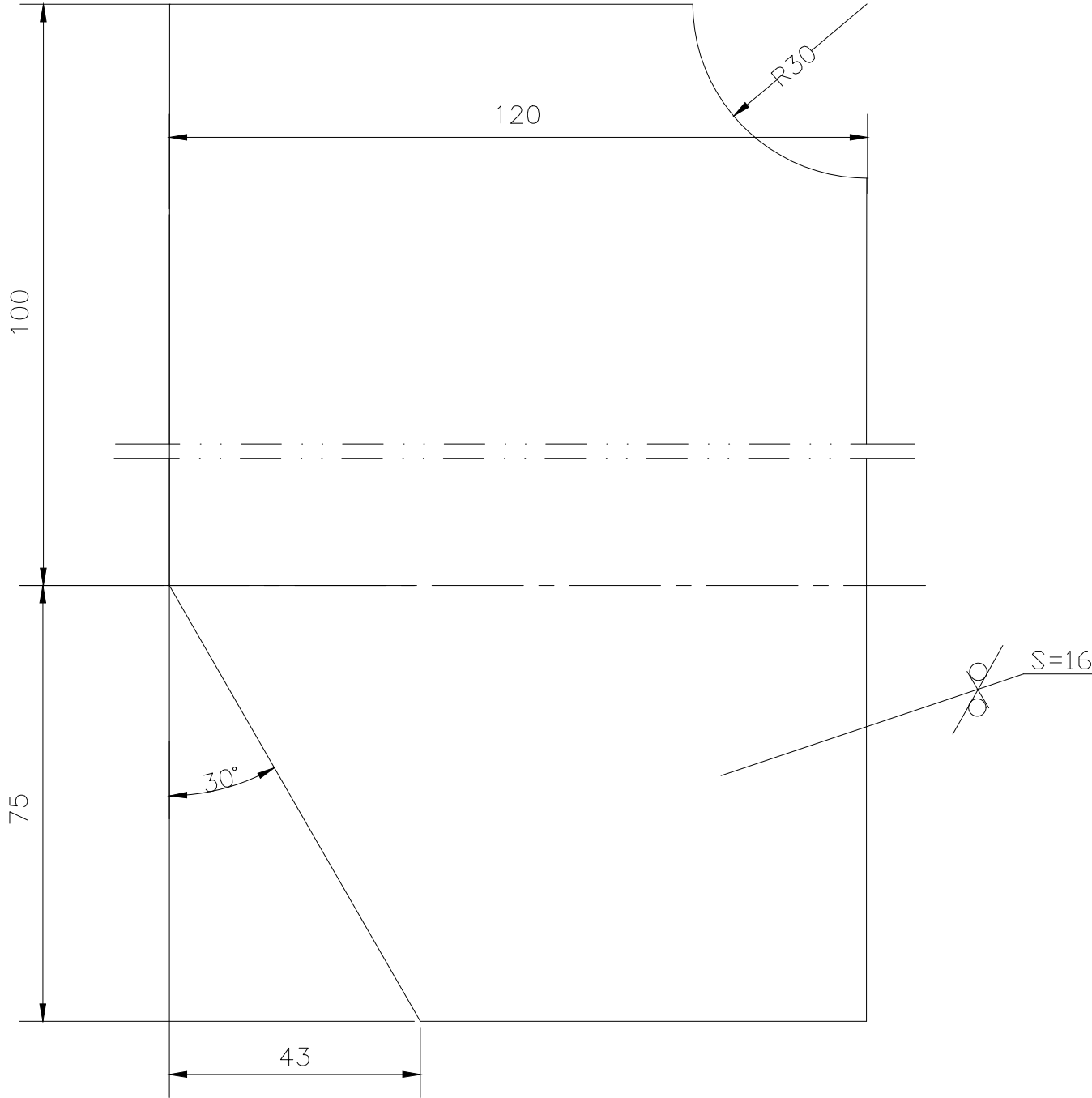
प्रथम कोण प्रक्षेपण/FIRST ANGLE PROJECTION

सभी विमाणें मिलिमीटर में हैं।/ALL DIMENSIONS ARE IN mm.

प्रपत्र डीजी 38 (बी)/FORM 38 (B)

अभिकल्प संख्या/DRAWING NO.
31604570263

50 THE REST.



असह्य विमाओं का वर्ग GRADE OF UNTOLERANCED DIMENSION			सी.बी.ओ.एम./C.B.O.M. 11604570013		अभिकल्प का स्तर STATUS OF DRG.	उत्पाद का प्रकार या ग्राहक/परियोजना का नाम TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT					660 MW LALITPUR					
मशीनिंग - एए0230208 एम MACHINING – AA0230208 m			सहमत विभाग AGREED DEPTT.	नाम/NAME	हस्ताक्षर/ SIGN.	दिनांक/DATE	<div><div>बीएचईएल</div><div>भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार BHARAT HEAVY ELECTRICALS LIMITED, RANIPUR, HARDWAR</div></div>						नाम/NAME	हस्ताक्षर/SIGN	दिनांक/DATE	वेरिफाई संख्या No. of Var.
वेल्डिंग - एए0621104 की श्रेणी बी WELDING–CLASS 'B' OF AA0621104			वेल्डिंग टेक्नो.		ह.	—						विभागकर्ताDRN	AVINASH	sd/—	20.08.11	
गैस कटिंग - एए0621101 की सारणी 3 GAS CUTTING–TABLE 3 OF AA0621101												जांचकर्ता CHD	SAUMYA	sd/—	20.08.11	
								स्वीकृतिदाता APPD	SKANT	sd/—	20.08.11					
संशोधन REV.	दिनांक DATE	संशोधनकर्ता ALTERED BY जांचकर्ता CHD	संशोधन REV.	दिनांक DATE	संशोधनकर्ता ALTERED BY जांचकर्ता CHD	विभाग DEPTT. HXE	होट एक्सचेंजर अभि. HXE		अनुपात/SCALE 1:1	भार कि.ग्रा. WEIGHT (KG) 2.37	असेम्बली अभिकल्प का संदर्भ REFER TO ASSLY. DRG. 11604570013		नग क्रमांक ITEM NO. SEE TABLE	नगों की संख्या NO. OF ITEMS		
						कोड/4222										
शीर्षक/TITLE STIFFENER										कार्ड कोड CARD CODE	अभिकल्प संख्या/DRAWING NO. 7 31604570263 22 23 24					
											पृष्ठ संख्या/Sheets No. 01	पृष्ठों की संख्या/No. of Sheets 01				

A3 साइज़/A3 SIZE

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सम्पत्ति है। इसका प्रत्यक्ष या अप्रत्यक्ष रूप में किसी भी तरह
प्रयोग नहीं किया जाए जो कम्पनी के हित में हानिकार हो।

समग्री सूची संख्या
INVENTORY NO.

हस्ताक्षर और दिनांक /SIGN & DATE

संदर्भित अभिकल्प संख्या
REFERENCE DRG. NO.

प्रथम कोण प्रक्षेपण /FIRST ANGLE PROJECTION

सभी विमाणें मिलिमीटर में हैं। /ALL DIMENSIONS ARE IN mm.

फ़ॉर्म 38 (बी) /FORM 38 (B)

अभिकल्प संख्या /DRAWING NO.
31604570264

50/ ALL OVER EXCEPT OTHERWISE STATED

ONLY FOR ITEM NO. 15 & 18

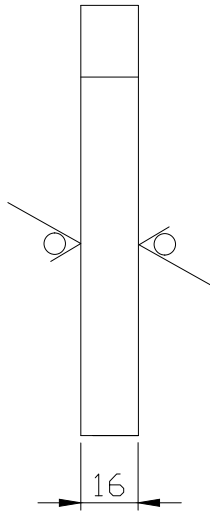


TABLE: –

VAR.	ITEM NO.	L	WT.(Kg)
00	14	1199	18
01	15	492	7.4
02	16	684	10.3
03	17	579	8.7

असह्य विमाणों का वर्ग GRADE OF UNTOLERANCED DIMENSION				सी.बी.ओ.एम./C.B.O.M. 11604570013		अभिकल्प का स्तर STATUS OF DRG.		उत्पाद का प्रकार या ग्राहक/परियोजना का नाम TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT									
मशीनिंग - एए0230208 एम MACHINING – AA0230208 m				सहमत विभाग AGREED DEPTT.	नाम/NAME	हस्ताक्षर/ SIGN.	दिनांक/DATE	660 MW LALITPUR									
वेल्डिंग - एए0621104 की श्रेणी बी WELDING–CLASS ‘B’ OF AA0621104				वेल्डिंग टेक्नो.		ह.	–	भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार BHARAT HEAVY ELECTRICALS LIMITED, RANIPUR, HARDWAR									
गैस कटिंग - एए0621101 की सारणी 3 GAS CUTTING–TABLE 3 OF AA0621101								विभाग DEPTT.									
संशोधन REV.	दिनांक DATE	संशोधनकर्ता ALTERED BY		संशोधन REV.	दिनांक DATE	संशोधनकर्ता ALTERED BY		विभाग DEPTT.	हीट एक्सचेंजर अभि. HXE	अनुपात/SCALE 1: 2	भार कि.गा. WEIGHT (KG) SEE TABLE	असेम्बली अभिकल्प का संदर्भ REFER TO ASSLY. DRG. 11604570013		नग क्रमांक ITEM NO. SEE TABLE	नगों की संख्या NO. OF ITEMS		
								कोड /CODE 4222				शीर्षक/TITLE STIFFENER		कार्ड कोड CARD CODE	अभिकल्प संख्या /DRAWING NO. 31604570264		
												पृष्ठ संख्या /Sheets No. 01		पृष्ठों की संख्या /No. of Sheets 01			

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प्रयोग नहीं किया जाए जो कम्पनी के हित में हानिकार हो।

समग्री सूची संख्या
INVENTORY NO.

हस्ताक्षर और दिनांक/SIGN & DATE

संदर्भित अभिकल्प संख्या
REFERENCE DRG. NO.

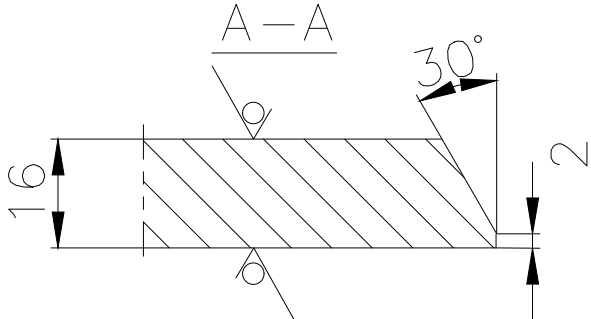
प्रथम कोण प्रक्षेपण/FIRST ANGLE PROJECTION


सभी विमाणें मिलिमीटर में हैं।/ALL DIMENSIONS ARE IN mm.

फ़ॉर्म 38 (बी)/FORM 38 (B)

अभिकल्प संख्या/DRAWING NO.
31604570265

50 / THE REST.



असह्य विमाओं का वर्ग GRADE OF UNTOLERANCED DIMENSION			सी.बी.ओ.एम./C.B.O.M. 11604570013		अभिकल्प का स्तर STATUS OF DRG.	उत्पाद का प्रकार या ग्राहक/परियोजना का नाम TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT					660 MW LALITPUR					
मशीनिंग - एए0230208 एम MACHINING – AA0230208 m			सहमत विभाग AGREED DEPTT.	नाम/NAME	हस्ताक्षर/ SIGN.	दिनांक/DATE	<div><div>बीएचईएल</div><div>भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार BHARAT HEAVY ELECTRICALS LIMITED, RANIPUR, HARDWAR</div></div>					विभागकर्ताDRN	नाम/NAME	हस्ताक्षर/SIGN	दिनांक/DATE	वेरिएन्ट संख्या No. of Var.
वेल्डिंग - एए0621104 की श्रेणी बी WELDING–CLASS 'B' OF AA0621104			वेल्डिंग टेक्नो.	ह.	—	जांचकर्ता CHD						AVINASH	sd/—	20.08.11		
गैस कटिंग - एए0621101 की सारणी 3 GAS CUTTING–TABLE 3 OF AA0621101						स्वीकृतिदाता APPD						SAUMYA	sd/—	20.08.11		
संशोधन REV.	दिनांक DATE	संशोधनकर्ता ALTERED BY	संशोधन REV.	दिनांक DATE	संशोधनकर्ता ALTERED BY	विभाग DEPTT.	हीट एक्सचेंजर अभि. HXE		अनुपात/SCALE 1:10	भार कि.ग्रा. WEIGHT (KG) 797.46	असेम्बली अभिकल्प का संदर्भ REFER TO ASSLY. DRG. 11604570013		नग क्रमांक ITEM NO. 26	नगों की संख्या NO. OF ITEMS		
		जांचकर्ता CHD														
							शीर्षक/TITLE PARTITION PLATE—I				कार्ड कोड CARD CODE	अभिकल्प संख्या/DRAWING NO.				
												7	31604570265	22		
											पृष्ठ संख्या/Sheets No.	01	पृष्ठों की संख्या/No. of Sheets	01		

A3 साइज़/A3 SIZE

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स्वत्वधिकार एवं गोपनीय
इस प्रलेख में दी गई सूचना भारत हेवी इलेक्ट्रिकल्स लिमिटेड की
सम्पत्ति है। इसका प्रत्यक्ष या अप्रत्यक्ष रूप में किसी भी तरह
प्रयोग नहीं किया जाए जो कम्पनी के हित में हानिकार हो।

समग्री सूची संख्या INVENTORY NO.	हस्ताक्षर और दिनांक/SIGN & DATE	संदर्भित अभिकल्प संख्या REFERENCE DRG. NO.
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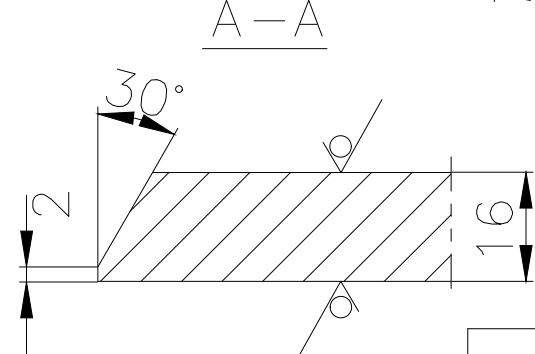
प्रथम कोण प्रक्षेपण/FIRST ANGLE PROJECTION

सभी विमाणें मिलिमीटर में हैं।/ALL DIMENSIONS ARE IN mm.

फ़ॉर्म 38 (बी)/FORM 38 (B)

अभिकल्प संख्या/DRAWING NO.
31604570269

50 / THE REST.



असह्य विमाओं का वर्ग GRADE OF UNTOLERANCED DIMENSION			सी.बी.ओ.एम./C.B.O.M. 11604570013			अभिकल्प का स्तर STATUS OF DRG.			उत्पाद का प्रकार या ग्राहक/परियोजना का नाम TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT															
मशीनिंग - एए0230208 एम MACHINING - AA0230208 m			सहमत विभाग AGREED DEPTT.	नाम/NAME	हस्ताक्षर/ SIGN.	दिनांक/DATE	660 MW LALITPUR																	
वेल्डिंग - एए0621104 की श्रेणी बी WELDING-CLASS 'B' OF AA0621104			वेल्डिंग टेक्नो.		ह.	-	<div><div>बीएचईएल</div><div>भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार BHARAT HEAVY ELECTRICALS LIMITED, RANIPUR, HARDWAR</div></div>																	
गैस कटिंग - एए0621101 की सारणी 3 GAS CUTTING-TABLE 3 OF AA0621101																	विभाग DEPTT.	हीट एक्सचेंजर अभि. HXE		अनुपात/SCALE 1:10	भार कि.ग्रा. WEIGHT (KG) 813.79	असेम्बली अभिकल्प का संदर्भ REFER TO ASSLY. DRG. 11604570013	नग क्रमांक ITEM NO. 26	नगों की संख्या NO. OF ITEMS
संशोधन REV.	दिनांक DATE	संशोधनकर्ता ALTERED BY जांचकर्ता CHD	संशोधन REV.	दिनांक DATE	संशोधनकर्ता ALTERED BY जांचकर्ता CHD	कोड/											CODE 4222	शीर्षक/TITLE PARTITION PLATE-II	कार्ड कोड CARD CODE	अभिकल्प संख्या/DRAWING NO. 7 31604570269 22 23 24	पृष्ठ संख्या/Sheets No. 01	पृष्ठों की संख्या/No. of Sheets 01		

A3 साइज़/A3 SIZE

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REF. DRG NO.

SIGN & DATE

INVENTORY NO.

FIRST ANGLE PROJECTION

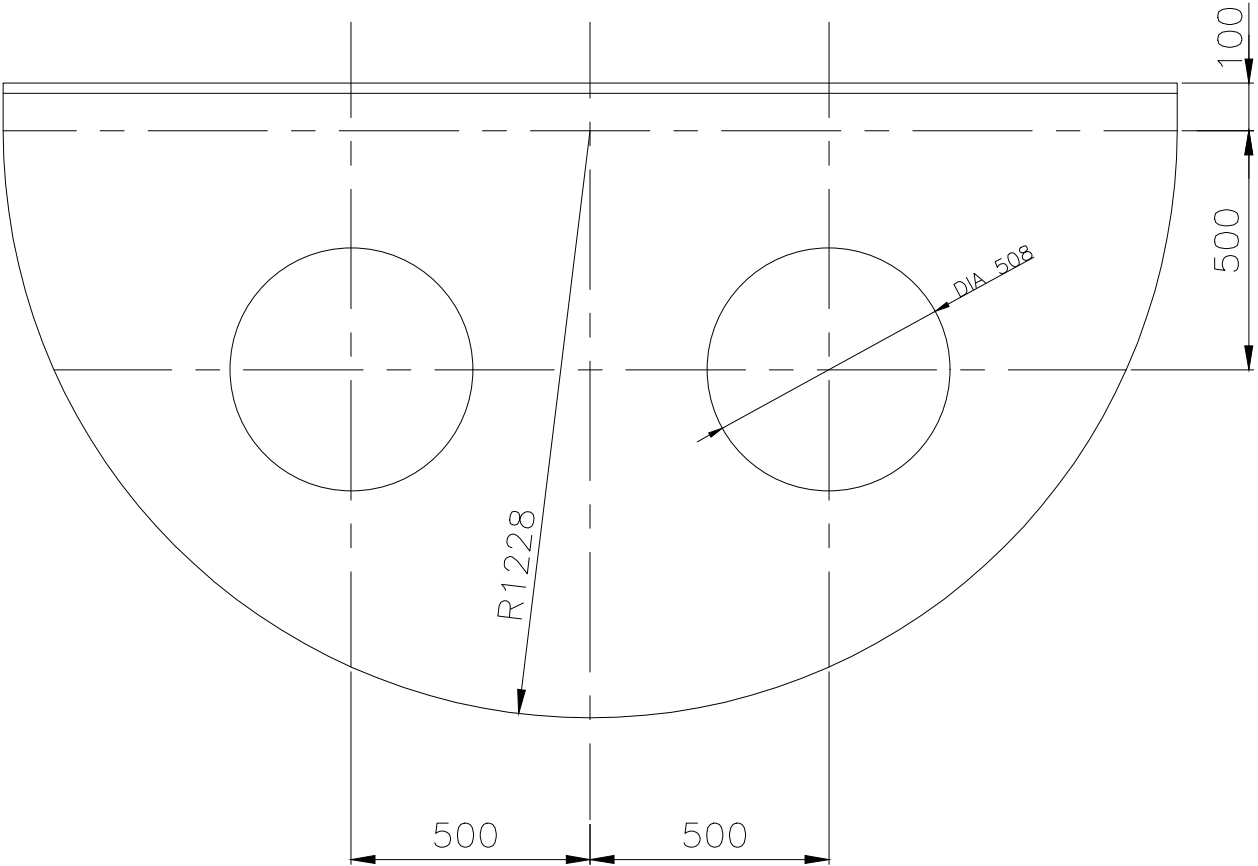
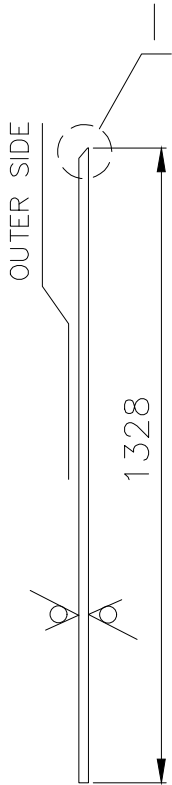
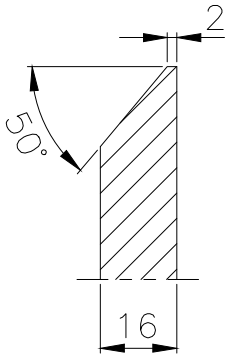
(ALL DIMENSIONS ARE IN mm)

FORM: DG-38(B)


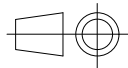
DRAWING NO. 31601470271

50° THE REST.

DETAIL-I



GRADE OF UNTOL. DIM.:—			CBOM NO. 11604570016		STATUS OF DRG.	
M/CG- V/C/M/F AA 0230208			AGREED DEPT.	NAME	SIGN	DATE
WELDING-A/B/C/D-AA621104			WT	—	sd.	—
GAS CUTTING-T3'AA0621101						
REV.	DATE	ALTERED CHECKED	REV.	DATE	ALTERED CHECKED	

TYPE OF PRODUCT OR NAME OF CUSTOMER/ PROJECT										800 MW YERAMARUS									
<div></div> <div>BHARAT HEAVY ELECTRICALS LTD. HARDWAR</div>						NAME	SIGN	DATE	NO.OF VAR.										
					DRN	AVINASH	Sd.	20.08.11											
					CHD	SAUMYA	Sd.	20.08.11											
					APD	SKANT	Sd.	20.08.11											
DEPT. HXE			SCALE		WEIGHT(Kg.)		REF. TO ASSY. DRG.				ITEM NO.		NO.OF ITEMS						
CODE 4222			1: 20		277.45		11604570016				—								
TITLE					1 3		DRAWING NO. 31604570271												
							71 22 23 24												
							SHEET NO. 01				NO.OF SHEETS 01								

SIZE A3

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सम्पत्ति है। इसका प्रत्यक्ष या अप्रत्यक्ष रूप में किसी भी तरह
प्रयोग नहीं किया जाए जो कम्पनी के हित में हानिकार हो।

समर्पित अभिकल्प संख्या
REFERENCE DRG. NO.

हस्ताक्षर और दिनांक/SIGN & DATE

सामग्री सूची संख्या
INVENTORY NO.

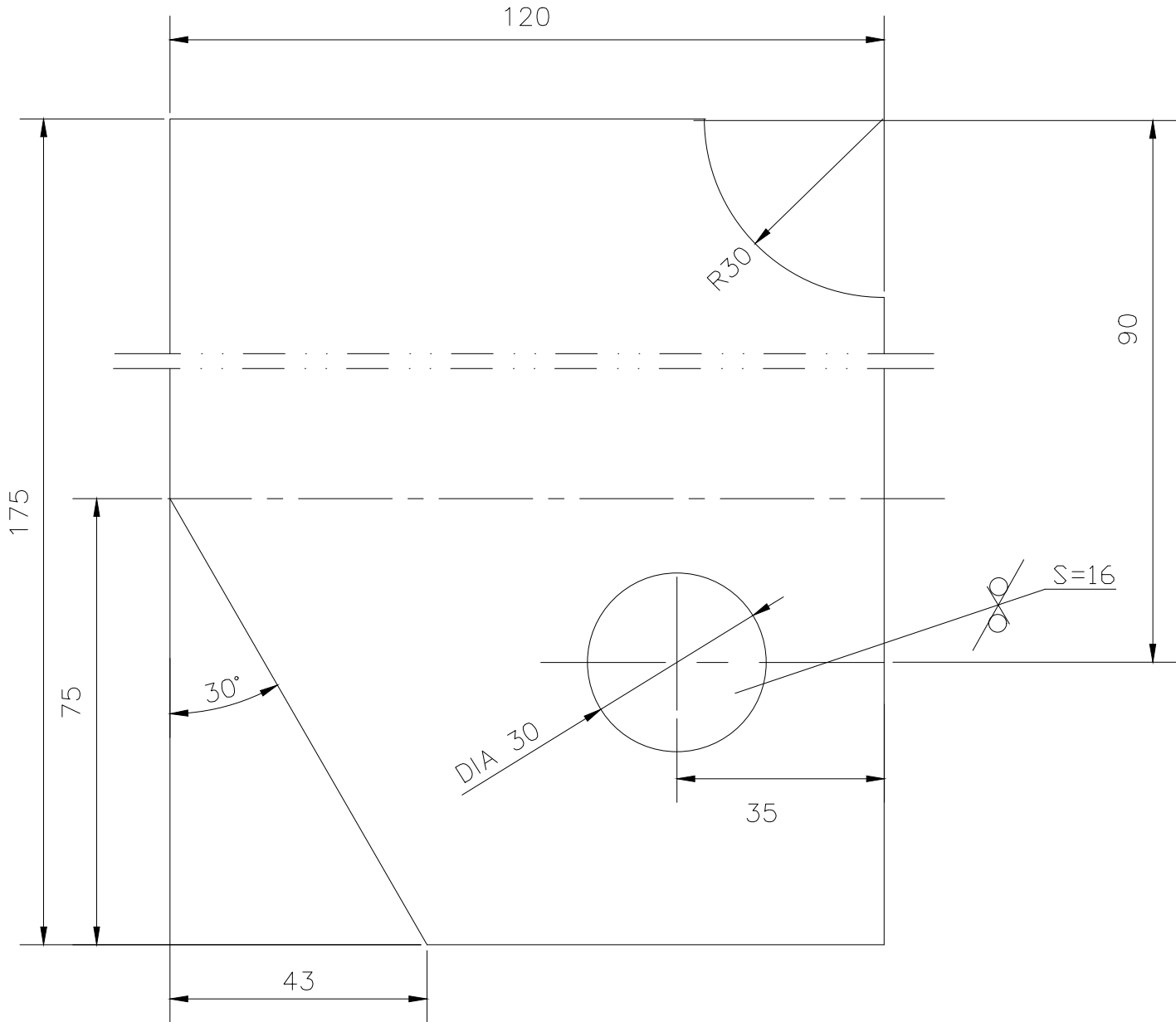
प्रथम कोण प्रक्षेपण/FIRST ANGLE PROJECTION

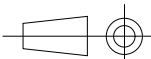
सभी विमाण् मिलिमीटर में हैं।/ALL DIMENSIONS ARE IN mm.

प्रपत्र डीजी 38 (बी)/FORM 38 (B)

अभिकल्प संख्या/DRAWING NO.
31604570278

50
THE REST.



असह्य विमाओं का वर्ग GRADE OF UNTOLERANCED DIMENSION			सी.बी.ओ.एम./C.B.O.M. 11604570019		अभिकल्प का स्तर STATUS OF DRG.	उत्पाद का प्रकार या ग्राहक/परियोजना का नाम TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT									
मशीनिंग - एए0230208 एम MACHINING - AA0230208 m			सहमत विभाग AGREED DEPTT.	नाम/NAME	हस्ताक्षर/ SIGN.	दिनांक/DATE	660 MW ENNORE								
वेल्डिंग - एए0621104 की श्रेणी बी WELDING-CLASS 'B' OF AA0621104			वेल्डिंग टेक्नो.		ह.	-	<div>बीएचईएल</div> भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार BHARAT HEAVY ELECTRICALS LIMITED, RANIPUR, HARDWAR				निर्माणकर्ता/DRN	नाम/NAME	हस्ताक्षर/SIGN	दिनांक/DATE	वेरिफाई संख्या No. of Var.
गैस कटिंग - एए0621101 की सारणी 3 GAS CUTTING-TABLE 3 OF AA0621101											जांचकर्ता CHD	RAM	sd/-	12.01.15	
							स्वीकृतिदाता APPD	MUK	sd/-	12.01.15	SKANT	sd/-	12.01.15		
संशोधन REV.	दिनांक DATE	संशोधनकर्ता ALTERED BY जांचकर्ता CHD	संशोधन REV.	दिनांक DATE	संशोधनकर्ता ALTERED BY जांचकर्ता CHD	विभाग DEPTT. HXE		अनुपात/SCALE 1:1	भार कि.ग्रा. WEIGHT (KG) 2.26	असेम्बली अभिकल्प का संदर्भ REFER TO ASSLY. DRG. 11604570019			नग क्रमांक ITEM NO. SEE TABLE	नगों की संख्या NO. OF ITEMS	
						कोड/4222									
शीर्षक/TITLE STIFFENER									कार्ड कोड CARD CODE	अभिकल्प संख्या/DRAWING NO. 7 31604570278 22 23 24					
										पृष्ठ संख्या/Sheets No. 01	पृष्ठों की संख्या/No. of Sheets 01				

A3 साइज़/A3 SIZE

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सम्पत्ति है। इसका प्रत्यक्ष या अप्रत्यक्ष रूप में किसी भी तरह
प्रयोग नहीं किया जाए जो कम्पनी के हित में हानिकार हो।

समग्री सूची संख्या
INVENTORY NO.

हस्ताक्षर और दिनांक /SIGN & DATE

संदर्भित अभिकल्प संख्या
REFERENCE DRG. NO.

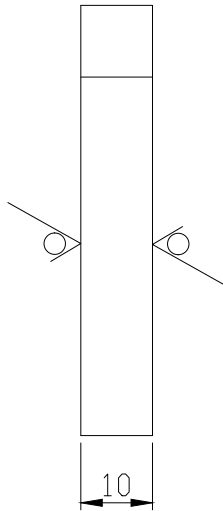
प्रथम कोण प्रक्षेपण /FIRST ANGLE PROJECTION

सभी विमाणें मिलिमीटर में हैं। /ALL DIMENSIONS ARE IN mm.

फ़ॉर्म डीजी 38 (बी) /FORM 38 (B)

अभिकल्प संख्या /DRAWING NO.
31604570279

50 / ALL OVER EXCEPT OTHERWISE STATED



असह्य विमाओं का वर्ग GRADE OF UNTOLERANCED DIMENSION			सी.बी.ओ.एम./C.B.O.M. 11604570022		अभिकल्प का स्तर STATUS OF DRG.		उत्पाद का प्रकार या ग्राहक/परियोजना का नाम TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT										
मशीनिंग - एए0230208 एम MACHINING – AA0230208 m			सहमत विभाग AGREED DEPTT.	नाम/NAME	हस्ताक्षर/ SIGN.	दिनांक/DATE	800 MW NORTH CHENNAI										
वेल्डिंग - एए0621104 की श्रेणी बी WELDING–CLASS 'B' OF AA0621104			वेल्डिंग टेक्नो.		ह.	–	<div>बीएचईएल</div> <div>भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार</div> <div>BHARAT HEAVY ELECTRICALS LIMITED, RANIPUR, HARDWAR</div>				निर्माणकर्ता/DRN	नाम/NAME	हस्ताक्षर/SIGN	दिनांक/DATE	वेरिफाई संख्या No. of Var.		
गैस कटिंग - एए0621101 की सारणी 3 GAS CUTTING–TABLE 3 OF AA0621101											जांचकर्ता CHD	MUKESH	sd/–	16.06.16			
											स्वीकृतिदाता APPD	S.KANT	sd/–	16.06.16			
संशोधन REV.	दिनांक DATE	संशोधनकर्ता ALTERED BY जांचकर्ता CHD	संशोधन REV.	दिनांक DATE	संशोधनकर्ता ALTERED BY जांचकर्ता CHD	विभाग DEPTT.	हीट एक्सचेंजर अभि. HXE		अनुपात/SCALE 1: 2	भार कि.ग्रा. WEIGHT (KG) 1.0	असेम्बली अभिकल्प का संदर्भ REFER TO ASSLY. DRG. 11604570022			नग क्रमांक ITEM NO.	नगों की संख्या NO. OF ITEMS		
						कोड/ CODE 4222											
शीर्षक/TITLE STIFFENER										कार्ड कोड CARD CODE	अभिकल्प संख्या/DRAWING NO. 7 31604570279 22 23 24						
										पृष्ठ संख्या/Sheets No. 01		पृष्ठों की संख्या/No. of Sheets 01					

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सम्पत्ति है। इसका प्रत्यक्ष या अप्रत्यक्ष रूप में किसी भी तरह
प्रयोग नहीं किया जाए जो कम्पनी के हित में हानिकार हो।

समशी सूची संख्या
INVENTORY NO.

हस्ताक्षर और दिनांक /SIGN & DATE

संदर्भित अभिकल्प संख्या
REFERENCE DRG. NO.

प्रथम कोण प्रक्षेपण /FIRST ANGLE PROJECTION

सभी विमाणें मिलिमीटर में हैं।/ALL DIMENSIONS ARE IN mm.

फ़ॉर्म डीजी 38 (बी)/FORM 38 (B)

अभिकल्प संख्या /DRAWING NO.
31604570281

50/ ALL OVER EXCEPT OTHERWISE STATED

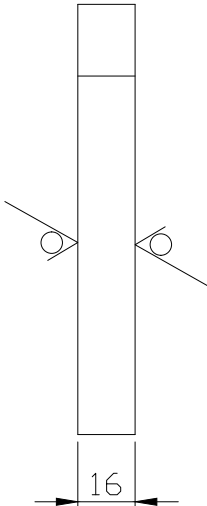


TABLE: –

VAR.	ITEM NO.	L	WT.(Kg)
00	18	295	4.0
01	19	286	3.9
02	20	187	2.4

असह्य विमाणों का वर्ग GRADE OF UNTOLERANCED DIMENSION				सी.बी.ओ.एम./C.B.O.M. 11604570023		अभिकल्प का स्तर STATUS OF DRG.		उत्पाद का प्रकार या ग्राहक/परियोजना का नाम TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT											
मशीनिंग - एए0230208 एम MACHINING – AA0230208 m				सहमत विभाग AGREED DEPTT.	नाम/NAME	हस्ताक्षर/ SIGN.	दिनांक/DATE	660 MW											
वेल्डिंग - एए0621104 की श्रेणी बी WELDING–CLASS ‘B’ OF AA0621104				वेल्डिंग टेक्नो.	MANISH	ह.	–	बीएचईएल भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार BHARAT HEAVY ELECTRICALS LIMITED, RANIPUR, HARDWAR											
गैस कटिंग - एए0621101 की सारणी 3 GAS CUTTING–TABLE 3 OF AA0621101								विभाग DEPTT. HXE											
				संशोधन REV.	दिनांक DATE	संशोधनकर्ता ALTERED BY		कोड /CODE 4222		अनुपात/SCALE 1: 2		भार कि.गा. WEIGHT (KG) SEE TABLE		असेम्बली अभिकल्प का संदर्भ REFER TO ASSLY. DRG. 11604570023		नग क्रमांक ITEM NO. SEE TABLE		नगों की संख्या NO. OF ITEMS –	
								शीर्षक/TITLE STIFFENER		कार्ड कोड CARD CODE		अभिकल्प संख्या/DRAWING NO. 31604570281				नगों की संख्या NO. OF ITEMS 00			
												पृष्ठ संख्या/Sheets No. 01				पृष्ठों की संख्या/No. of Sheets 01			

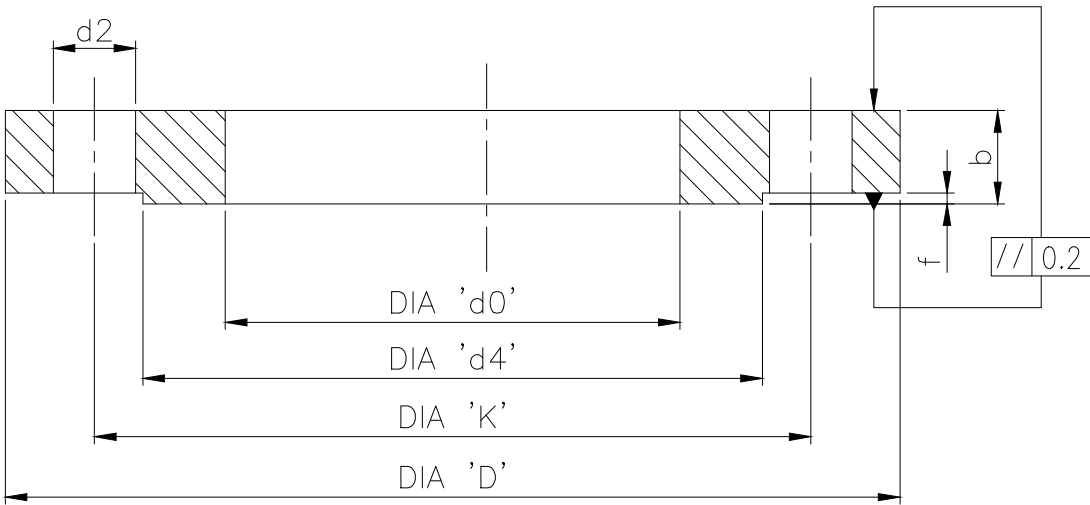
FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

FORM: DG-38(B)

12.5/
ALL OVER

31650170184
DRAWING NO



VAR	NOM SIZE	FLANGED DIMENSIONS									BOLTING DETAILS				CODE NO./SPCN.	WT.
		d0		D		b		RAISED FACE			BOLT SIZE	HOLES		P.C.D K		
		NOM	TOL	NOM	TOL	NOM	TOL	d4 NOM	TOL	f		NO.	d2			
01	10	17.7	+0.5 +0.0	75	±1	12		35	+0.0 -1.0	2	M10	4	11	50	AA1011819139	0.31
02	15	21.8		80		12		40		2	M10	4	11	55	AA1011819139	0.35
03	20	27.4		90		14		50		2	M10	4	11	65	AA1011819155	0.53
04	25	34.2		100		14		60		2	M10	4	11	75	AA1011819155	0.65
05	32	42.9		120		16		70		2	M12	4	14	90	AA1011819155	1.05
06	40	48.8		130		16		80			M12	4	14	100	AA1011819155	1.18
07	50	60.8		140		16		90		3	M12	4	14	110	AA1011819155	1.25
08	65	76.6		160		16		110			M12	4	14	130	AA1011819155	1.63
09	80	89.9		190		18		120		3	M16	4	18	150	AA1011819163	2.63
10	100	115.3	+1.0 +0.0	210	±1.5	18	+3 -0	148	+0.0 -2.0		M16	4	18	170	AA1011819163	2.93
11	125	140.7		240		20		178		3	M16	8	18	200	AA1011819163	3.91
12	150	169.3		265		20		202			M16	8	18	225	AA1011819163	4.31
13	200	221.1		320		±2		22		258	3	M16	8	18	280	AA1011819171
14	250	275		375	24			312		3	M16	12	18	335	AA1011819171	8.31
15	300	325.9		440	24			365		4	M20	12	22	395	AA1011819171	10.7
16	350	357.6		493	26			415		4	M20	12	22	445	AA1011819180	15.9
17	400	408.4		+1.5 +0.0	540			28	465	4	M20	16	22	495	AA1011819180	25.0
18	500	510.0	645			30		570	4	M20	20	22	600	AA1011819198	32.4	
19	600	612.6	755			32		670	5	M24	20	26	705	AA1011819198	40.9	

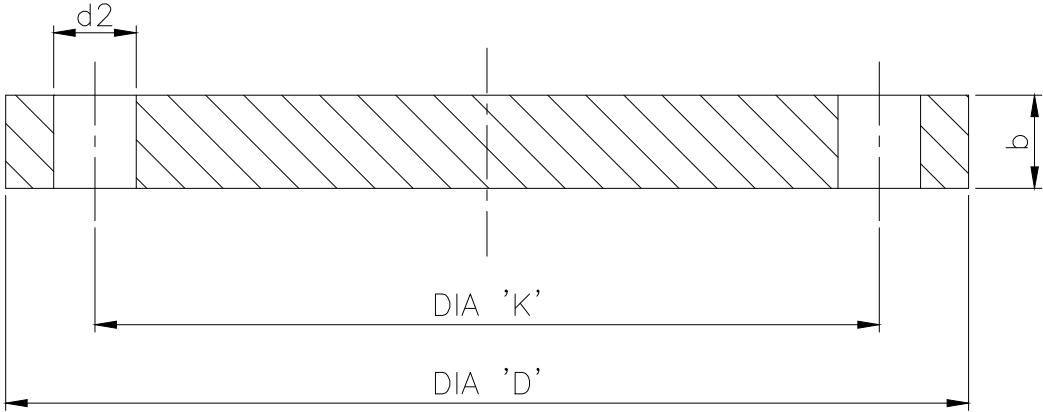
GRADE OF UNTOL. DIM.:—			CBOM NO. 81650170016		STATUS OF DRG.		TYPE OF PRODUCT OR NAME OF CUSTOMER/ PROJECT									
M/CG- V/C/M/F AA 0230208			AGREED DEPT.	NAME	SIGN	DATE	<div><div><div>सी एच ई एल</div><div>BHARAT HEAVY ELECTRICALS LTD.</div><div>HARDWAR</div></div><div><div>DEPT. HXE</div><div>CODE 4222</div><div>TITLE PLT FLANGE</div></div><div><div>SCALE NTS</div><div>WEIGHT(Kg.) SEE BOM</div><div>REF. TO ASSY. DRG. —</div></div><div><div>DRN</div><div>CHD</div><div>APD</div><div>NAME GARG RK</div><div>S.K.B.</div><div>K.N.M.</div><div>SIGN Sd.</div><div>Sd.</div><div>Sd.</div><div>DATE 16.02.94</div><div>12.03.94</div><div>ITEM NO. —</div><div>DRAWING NO. 31650170184</div></div><div><div>NO.OF VAR.</div><div>73, 74</div><div>NO.OF ITEMS</div><div>75, 77</div></div></div>									
WELDING—A/B/C/D—AA621104			W.T.	I.RAM	SD/—	26.2.94										
GAS CUTTING—'T3'AA0621101																
REV.	DATE	ALTERED CHECKED	REV.	DATE	ALTERED ANIL CHECKED SAUMYA											
			HXE-11-F0179													
			NEW ACAD DRG. SUPERSEDES OLD TRACING DRG.													



SIZE A3

31650170185
DRAWING NO.

12.5/
ALL OVER



VAR	NOM SIZE	FLANGED DIMENSIONS				BOLTING DETAILS				CODE NO./ SPCN	WT.
		D		b		BOLT SIZE	HOLES		P.C.D K		
		NOM	TOL	NOM	TOL		NO.	d2			
01	10	75	±1	12	+3 -0	M10	4	11	50	AA1011819139/AA10119	0.38
02	15	80		12		M10	4	11	55	AA1011819139/AA10119	0.44
03	20	90		14		M10	4	11	65	AA1011819155/AA10119	0.65
04	25	100		14		M10	4	11	75	AA1011819155/AA10119	0.82
05	32	120		14		M12	4	14	90	AA1011819155/AA10119	1.17
06	40	130		14		M12	4	14	100	AA1011819155/AA10119	1.39
07	50	140		14		M12	4	14	110	AA1011819155/AA10119	1.62
08	65	160		14		M12	4	14	130	AA1011819155/AA10119	2.44
09	80	190	±1.5	16		M16	4	18	150	AA1011819155/AA10119	3.43
10	100	210		16		M16	4	18	170	AA1011819155/AA10119	4.76
11	125	240		18		M16	8	18	200	AA1011819163/AA10119	6.11
00	150	265		18		M16	8	18	225	AA1011819163/AA10119	7.51
13	175	295	±2	20		M16	8	18	255	AA1011819163/AA10119	10.40
14	200	320		20		M16	8	18	280	AA1011819163/AA10119	12.30
01	250	375		22		M16	12	18	335	AA1011819171/AA10119	18.30
16	300	440		22		M20	12	22	395	AA1011819171/AA10119	25.30
17	350	493		22		M20	12	22	455	AA1011819171/AA10119	31.60
18	400	540		22		M20	16	22	495	AA1011819171/AA10119	38.40
19	500	645		24		M20	20	22	600	AA1011819171/AA10119	60.40


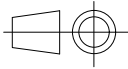
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REF. DRG NO.

SIGN & DATE

INVENTORY NO.

GRADE OF UNTOL. DIM.:-			CBOM NO. 81650170016		STATUS OF DRG.	
M/CG- V/C/M/F AA 0230208			AGREED DEPT.	NAME	SIGN	DATE
WELDING-A/B/C/D-AA621104			W.T.	I.RAM	SD/-	26.02.94
GAS CUTTING-'T3'AA0621101						
REV.	DATE	ALTERED	REV.	DATE	ALTERED ANIL	
		CHECKED	01	22.09.11	CHECKED SAUMYA	
			HXE-11-F0179			
			NEW ACAD DRG. SUPERSEDES OLD TRACING DRG.			

TYPE OF PRODUCT OR NAME OF CUSTOMER/ PROJECT						
 BHARAT HEAVY ELECTRICALS LTD. HARDWAR			DRN	NAME	SIGN	DATE
			CHD	GARG RK	Sd.	
			APD	S.K.B.	Sd.	16.02.94
				K.N.M.	Sd.	12.03.94
DEPT. HXE		SCALE	WEIGHT(Kg.)	REF. TO ASSY. DRG.		ITEM NO.
CODE 4222		NTS	SEE BOM	-		-
TITLE			DRAWING NO.		NO.OF VAR.	
BLANK FLANGE			31650170185		01	
			SHEET NO. 01		NO.OF SHEETS 01	

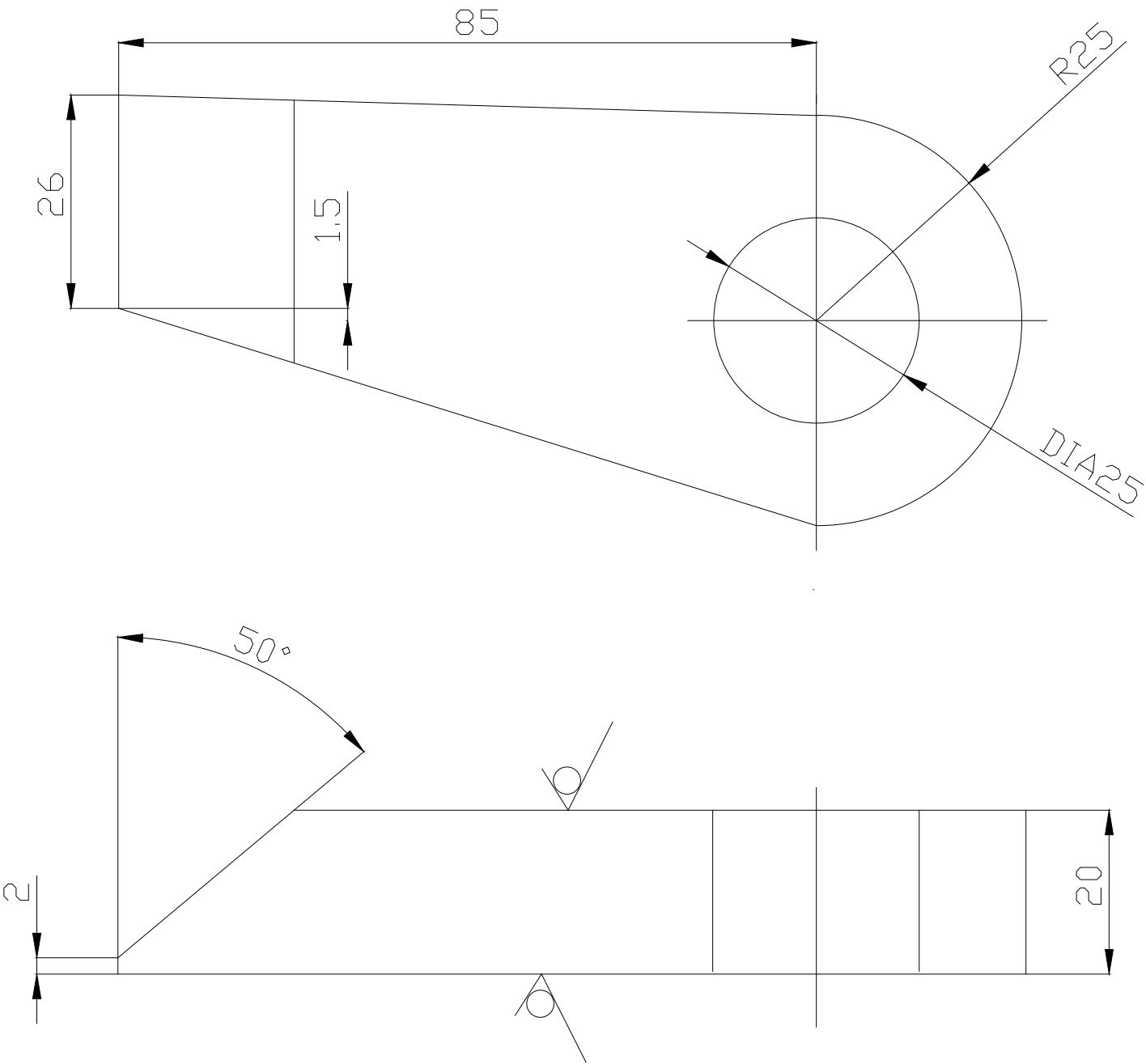
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FIRST ANGLE PROJECTION

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

REV	DATE	ALTERED	REV	DATE	ALTERED	RK GARG	CBOM No.			STATUS OF DRG
		CHECKED			CHECKED		MK LAHOTI	GMS 91601570001		
			HXE-03-F-1063			AGREED DEPT.	NAME	SIGN	DATE	
			HARD COPY TO BE REPLACED BY SOFT COPY.			W.T.	GARG	sd.	7.3.80	
GRADE OF UNTOL.DIM.M/CGC/M/F.AA0230208					WELDING A/B/C/D AA0621104			GAS CUTTING-T3 AA0621101		

50/ THE REST.



REF.DRG.No.


SIGN & DATE

INVENTORY No.



BHARAT HEAVY ELECTRICALS LTD
HARDWAR

	NAME	SIGN	DATE	NO. OF VAR
DRN	AHMAD	sd		
CHD	L.K.S.	sd	21.2.80	
APD	A.SINGH	sd	22.2.80	

DEPT. HXE		SCALE	WEIGHT(Kg)	REF.TO ASSY.DRG.	ITEM No.	No OF ITEMS
CODE 4222		—	0.38	21601570001	04	
TITLE				DRAWING No.		
LUG				41601570002		
				SHEET No. 01	No.OF SHEETS	01

SIZE A4

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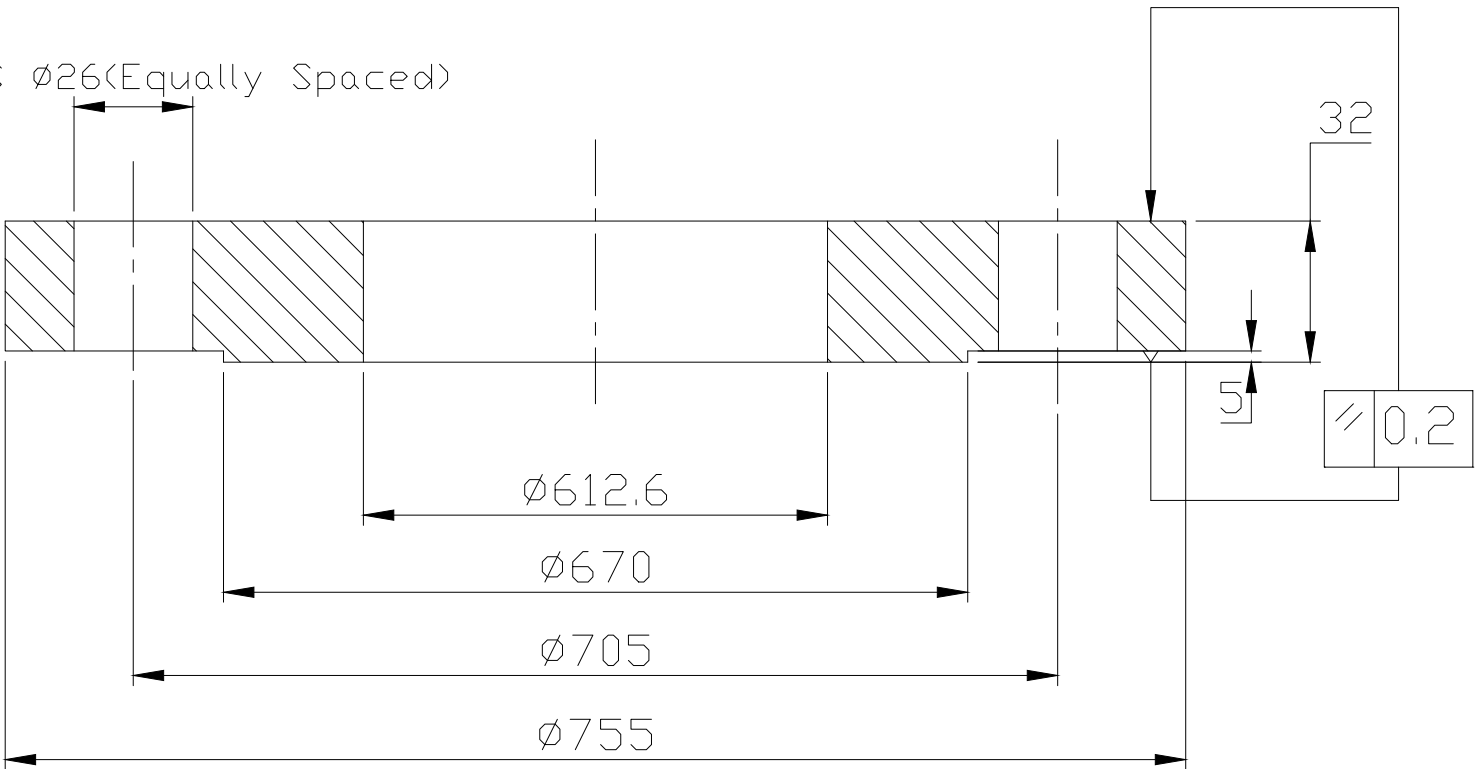
FIRST ANGLE PROJECTION

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

REV	DATE	ALTERED	REV	DATE	ALTERED	CBOM No. 11601570030			STATUS OF DRG
		CHECKED			CHECKED				
						AGREED DEPT.	NAME	SIGN	DATE
						WT.	I RAM	sd/-	23.08.07
GRADE OF UNTOL.DIM.M/CGC/M/F.AA0230208				WELDING A/B/C/D AA0621104		GAS CUTTING-T3 AA0621101			

12.5/
THE REST.

20 HOLES $\phi 26$ (Equally Spaced)



REF.DRG.No.

SIGN & DATE

INVENTORY No.



BHARAT HEAVY ELECTRICALS LTD
HARDWAR

	NAME	SIGN	DATE	NO. OF VAR
DRN	RKK	Sd.	22.08.07	
CHD	NP	Sd.	22.08.07	
APD	NPM	Sd.	24.08.07	

DEPT. HXE		SCALE	WEIGHT(Kg)	REF.TO ASSY.DRG.	ITEM	No OF
CODE 4222		NTS	93.00	21603470041	No.	ITEMS
TITLE				DRAWING No.		
PLATE FLANGE				41601570010		
			SHEET No. 01		No.OF SHEETS 01	

SIZE A4

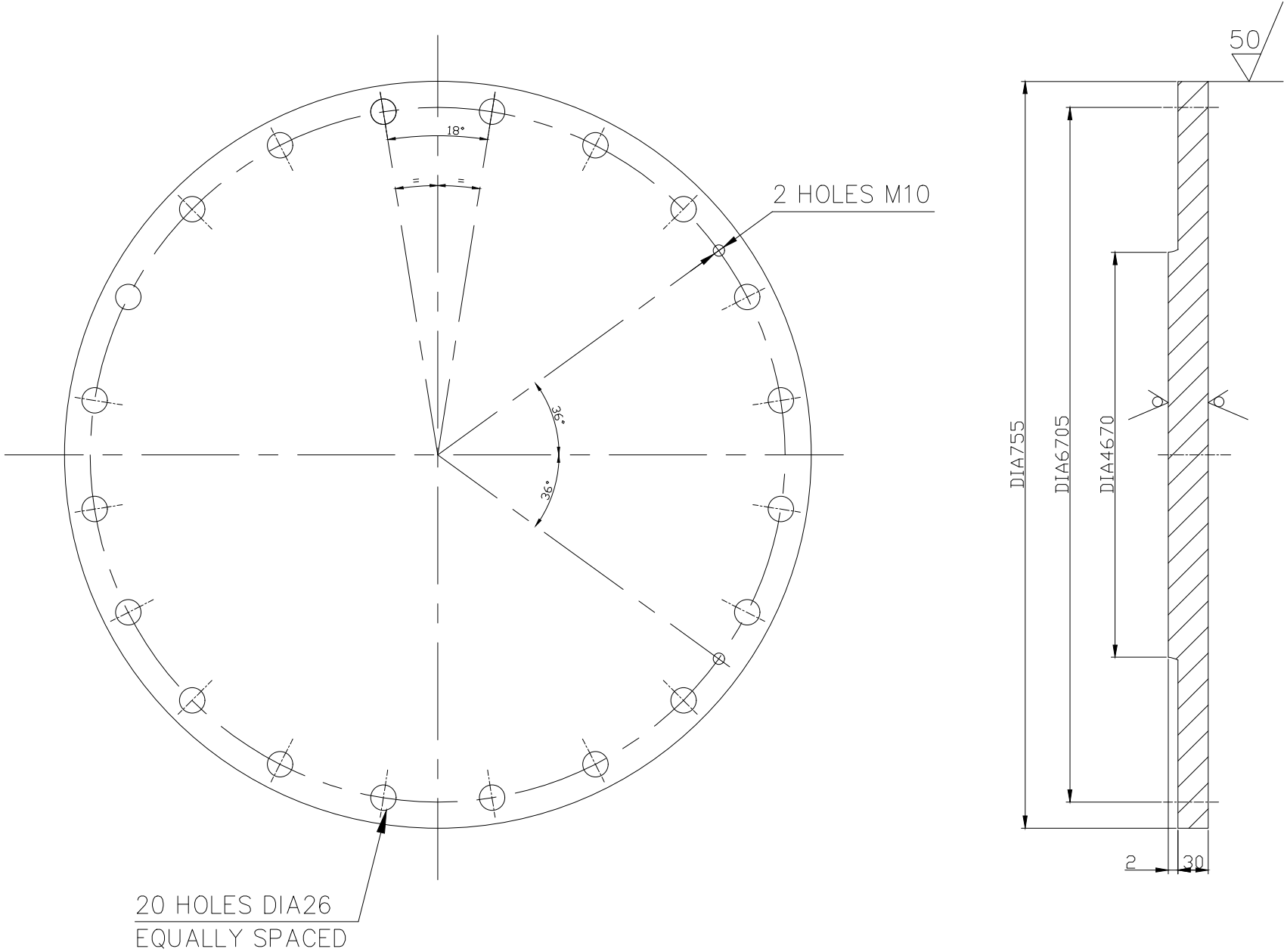
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FIRST ANGLE PROJECTION

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

REV	DATE	ALTERED	REV	DATE	ALTERED	CBOM No. 11601570030			STATUS OF DRG
		CHECKED			CHECKED				
						AGREED DEPT.	NAME	SIGN	DATE
						WT.	I RAM	sd/-	23.08.07
GRADE OF UNTOL.DIM.M/CGC/M/F.AA0230208					WELDING A/B/C/D AA0621104	GAS CUTTING-T3 AA0621101			

12.5/
THE REST.



REF.DRG.No.


SIGN & DATE

INVENTORY No.



BHARAT HEAVY ELECTRICALS LTD
HARDWAR

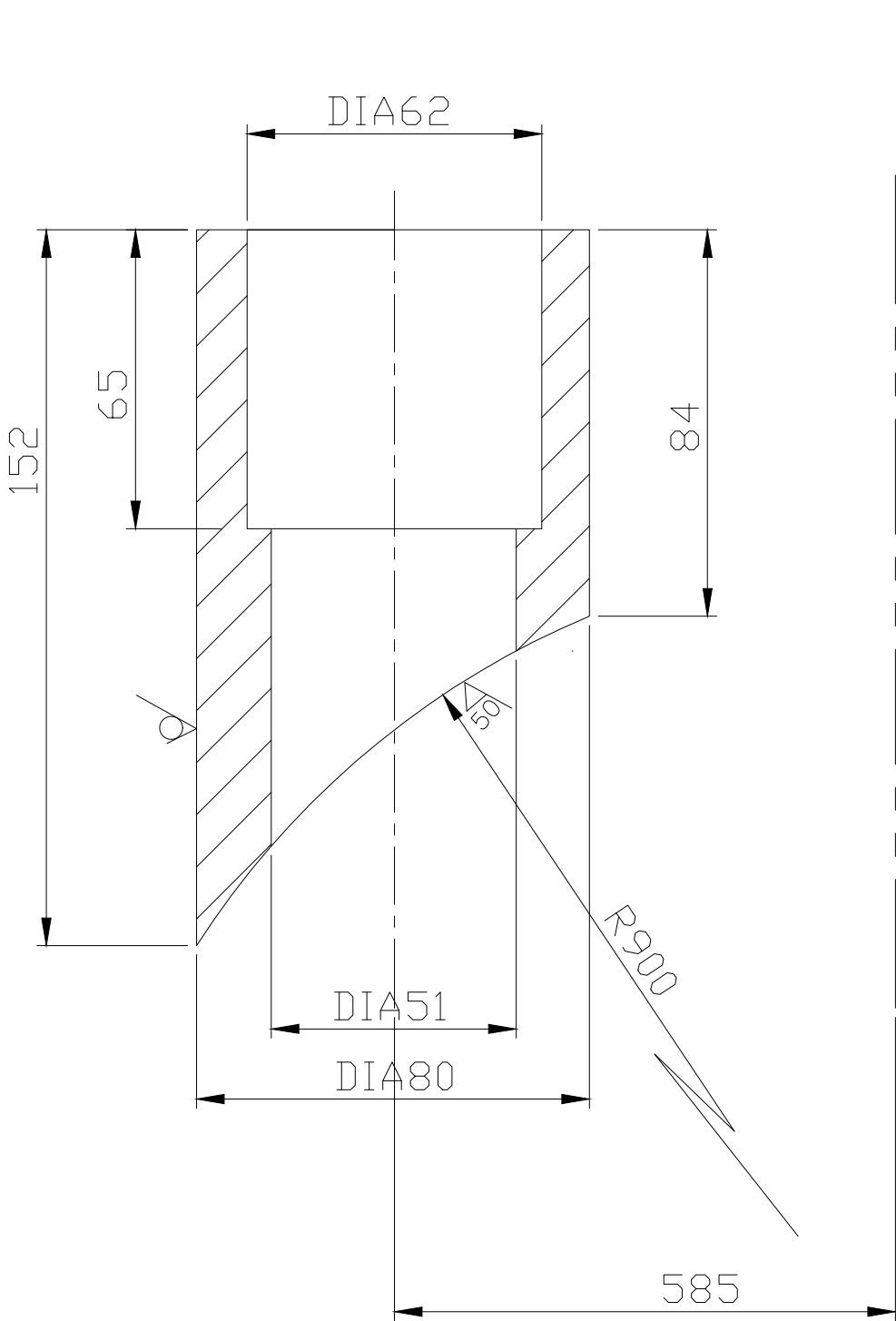
	NAME	SIGN	DATE	NO. OF VAR
DRN	RKK	Sd.	22.08.07	
CHD	NP	Sd.	22.08.07	
APD	NPM	Sd.	24.08.07	

DEPT. HXE		SCALE	WEIGHT(Kg)	REF.TO ASSY.DRG.		ITEM	No OF
CODE 4222		NTS	93.00	21603470041		No.	ITEMS
TITLE				DRAWING No.			
BLANK FLANGE				41601570011			
				SHEET No. 01	No.OF SHEETS 01		

SIZE A4


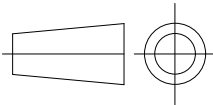
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REV	DATE	ALTERED	REV	DATE	ALTERED	CBOM No. 01604570042			STATUS OF DRG
		CHECKED			CHECKED				
						AGREED DEPT.	NAME	SIGN	DATE
						WT.	I. RAM	Sd.	22.9.05
GRADE OF UNTOL.DIM.M/CGC/M/F.AA0230208				WELDING A/B/C/D AA0621104			GAS CUTTING-T3 AA0621101		



25/
THE REST.

NOTE: – RADIUS R–900 TO BE CUT DURING ASSEMBLY STAGE.

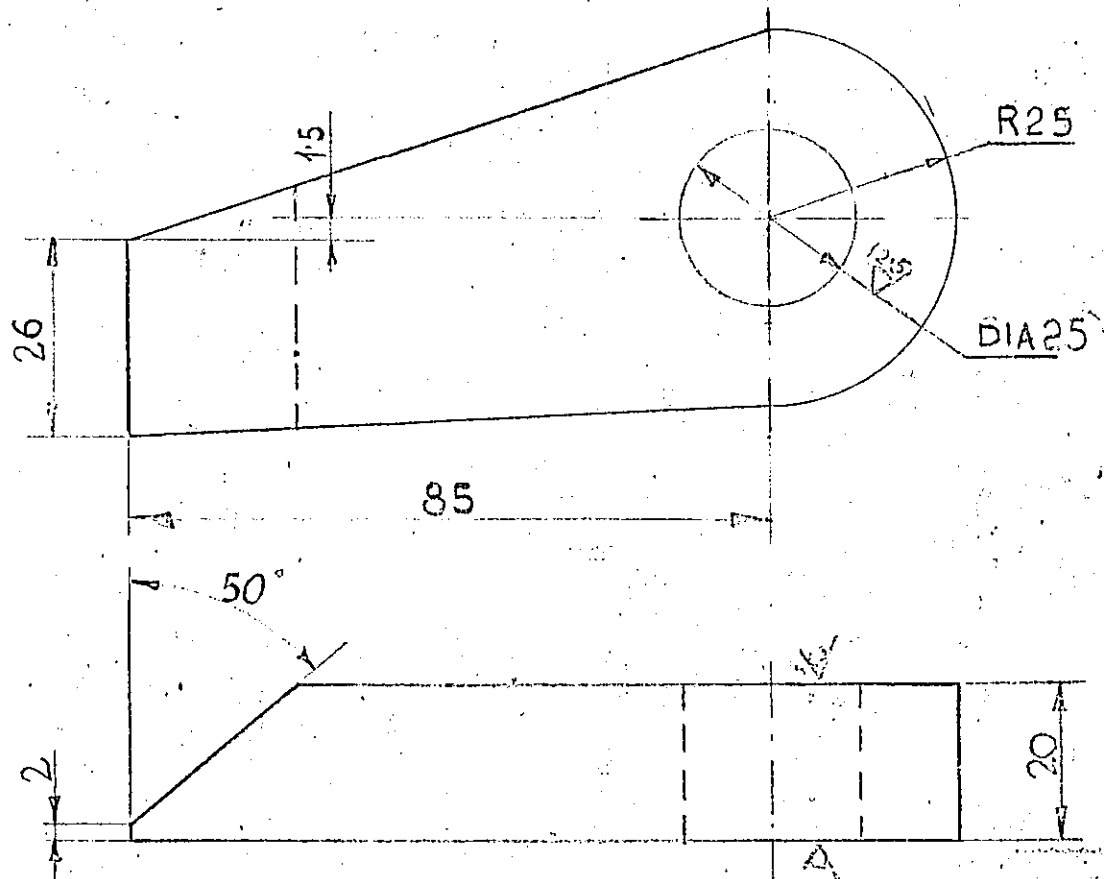
REF.DRG.No.	<div>585</div>									
	NOTE: — RADIUS R—900 TO BE CUT DURING ASSEMBLY STAGE.									
SIGN & DATE										
	<div><div><div>बी एच ई एल</div><div></div></div><div>BHARAT HEAVY ELECTRICALS LTD HARDWAR</div></div>					NAME	SIGN	DATE	NO. OF VAR	
					DRN	VIMAL	Sd.	19.9.05		
					CHD	R.RAWAT	Sd.	19.9.05		
					APD	N.P.M.	Sd.	20.9.05		
INVENTORY No.	DEPT. HXE		SCALE	WEIGHT(Kg)	REF.TO ASSY.DRG. 01604570042			ITEM	No OF ITEMS	
	CODE 4222		1:2					No.		
	TITLE				DRAWING No.					
	<u>SOCKET</u>				41604570118					
				SHEET No. 01		No.OF SHEETS 01				

FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN mm)

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REV	DATE	ALTERED	REV	DATE	ALTERED	GMS 9-160-15-70001			
		CHECKED			CHECKED	AGREED DEPT	NAME	SIGN	DATE
						W.T.	GARG	GARG	1.3.80

50/ ALL OVER.



Ref. Drg. No.

QTY	NO OF	UNIT OF	LUG	ITEM	STD	DRAWING NO.	AA 10119	UNIT WT	0.38
VARI	NO	QTY	DESCRIPTION	NO			MATERIAL CODE	(K3)	
ANT	ANT	RM. UNIT					MATERIAL SPECN.	QTY	
		QTY							

CARD TYPE 2

CARD TYPE 1

Sign & Date

DG-39		BHARAT HEAVY ELECTRICALS LTD.							
		RANIPUR - HARDWAR.							

Inventory No.

DEPT	CODE	SCALE	WEIGHT (KG)	REF. TO ASSY. DRG.	ITEM NO.
HXE	4222	1:1		2-160-15-70001	003
LUG				NAME	SIGN.
				DRAWN	AS
				CHECKED	SRIVASTAVA
				APPROVED	A. SINGH
Dimensions to be Controlled Within Limits as Shown				DRAWING NO.	
Machining Tolerance \pm .25 mm Unless Otherwise				4-160-15-70001	
Shown. Non Machining Tolerance \pm				SHEET NO.	NO. OF SHEETS.
				1	1

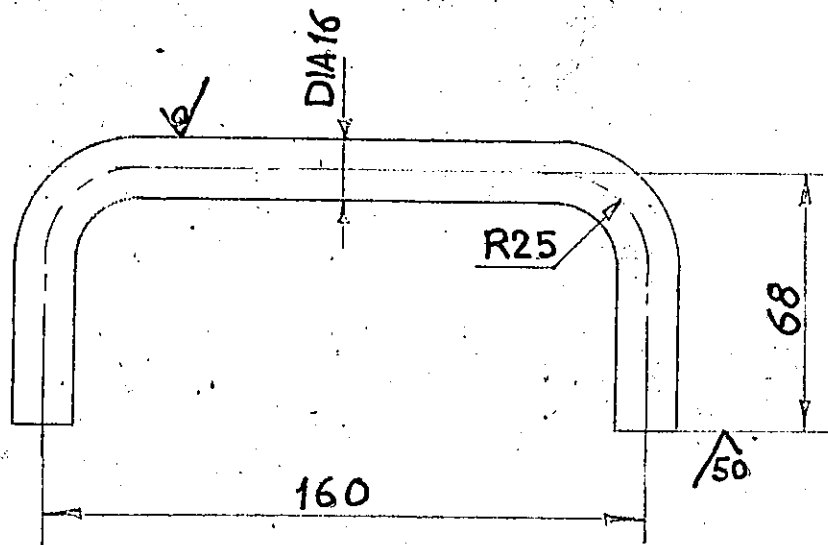
SIZE A4

FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN mm)

01

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REV 02	DATE 27.3.95	ALTERED	REV 01	DATE 4/6/94	ALTERED	GMS NO 9-160-45-70001	STATUS OF DRG
CHECKED			CHECKED			AGREED	SIGN DATE
HXE-95-27			HXE-94-97		MATL CODE B	WT	6.986
MATL CODE WAS AA1010212079			WAS HW1010212051		AA10112		



DEVELOPED LENGTH = 275

001			HANDLE	001			AA1010209086		0.44
66.64	62.62	53	52	31	23	18	20	22	13
QTY	NO OF	UNIT OF	DESCRIPTION	ITEM NO	STD	DRAWING NO	MATERIAL CODE	A	COMP
VAR	VAR	R.M UNIT					MATERIAL SPECN	C	GRADE
ANT	ANTS	QTY							QTY

CARD TYPE 2

CARD TYPE 1

BHARAT HEAVY ELECTRICALS LTD.
RANIPUR - HARDWAR.

DEPT HXE	CODE 043	SCALE 1:2	WEIGHT (KG) 0.44	REF. TO ASSY. DRG. 3-160-45-70006	ITEM NO. 002
HANDLED			DRAWN KHATRI	SIGN.	DATE 6.3.79
			CHECKED M.L.L.	SIGN.	DATE 10.4.79
			APPROVED A.SINGH.	SIGN.	DATE 10.4.79

Dimensions to be Controlled Within Limits as Shown	CARD CODE	DRAWING NO. 4-160-45-70004
Machining Tolerance \pm 25 mm Unless Otherwise Shown. Non Machining Tolerance \pm		SHEET NO. 1
		NO. OF SHEETS. 1

SIZE A4



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

HEEP-HARIDWAR, UTTARAKHAND (249403)

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

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

- 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.

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



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)

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, L2Status 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 it's 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.

- a) Special conditions of enquiry, if enclosed by BHEL, will supersede the respective standard / general terms of enquiry.
- b) Any other Standard terms and Conditions of the bidder attached / referred against the tender enquiry will be treated as null and void ab initio.
- c) 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>
- d) 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.
- e) "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;
 1. **Victim:** Any person who suffers permanent disablement or dies in an accident as defined below.
 2. **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.