(SUB-CONTRACTING DEPARTMENT)

Tender Enquiry No	BHEL: IVP:SC:2425: CCASS
Enquiry date	**08.08.2024**
Last time and date of tender submission	**11:00 Hrs 19.08.2024**
Tender opening time and date	**15.00 Hrs 19.08.2024**
Quotation Parts	**Two-part**
Counter offer	**Not applicable in this tender**
Reverse Auction	**Not applicable in this tender**
Mode of tender	**e-procurement**

Tenders in two parts through e-procurement mode-

Part-I: Techno-commercial bids and Part-II: Price bids are invited for SS plate cutting and/or bending of components as per relevant BHEL drawings.

Bid	Description	Documents to be submitted
Part-I	Techno-Commercial bid in response against Tender Enquiry No. BHEL: IVP:SC:2425: CCASS	Acceptance of all terms and conditions. Taxes applicable, if any, are to be mentioned in this part bid. **Attested Copy of MSE/SSI/NSIC Certificate/Copy of CA Certificate (if applicable). Copy of UDYAM certificate can also be submitted Documents required as per Pre-Qualification Criteria**
Part-II	Price bid in response against Tender Enquiry No. BHEL: IVP:SC: 2425: CCASS	Price bid (BOQ).

Instruction to bidder (In case of E-Procurement)

1. Interested bidders / suppliers shall submit their offer through e-procurement mode at https://eprocurebhel.co.in/.
2. Offers in any other mode will not be accepted.
3. Procedure for submission of tender is available in the <Bidder Manual Kit= at e-tender portal https://eprocurebhel.co.in/.
4. In case of any difficulty faced while registering on BHEL`s e-Procurement portal developed by NIC, queries may be addressed to 0120-4001002, 0120-4001005 and 0120-6277787; email: supporteproc@nic.in. These details are also available on 'Contact Us' page of the portal.
5. the bidders are solely responsible for correctness / authenticity of all the statements, documents, certificates uploaded on the portal.
6. Disclaimer clause: Neither the Organization (Bharat Heavy Electricals Ltd.) nor the service provider is responsible for any failure of submission of bids due to failure of internet or other connectivity problems or reasons thereof.

1. PRICE QUOTATION SHALL BE AS PER UNDER:

The items are to be manufactured as per the scope and the drawing number. Minimum rates are to be quoted by the

Vendor (hereinafter referred as Sub-Contractor) on per piece basis and on FOR Goindwal basis.

1. Quoted rates for each component shall be per piece basis. Vendor shall quote unit rate for each component.
2. Contractor shall quote rate for each item with retention of scrap generated during cutting / machining excluding burning/cutting allowance. Goods and Services Tax (GST) applicable on job work shall be payable to vendor by the BHEL
    a. GST registered Vendors – Vendor shall quote the rate exclusive of GST in the price bid format. Applicable GST shall be specified by the vendor separately in Techno Commercial Format. GST shall be paid by vendor which shall be reimbursed to vendor by BHEL.
    b. Non-GST registered Vendors – Vendor shall quote the rate exclusive of GST in the price bid format. In the techno commercial format vendor shall specify himself as non GST vendor. In such case the GST shall be paid by BHEL.
3. **Applicable taxes (GST) on scrap retained by sub-contractor shall be borne by the sub-contractor**.
    a. GST registered Vendors – Vendors are liable to pay the GST on the scrap retained by vendors to government.
    b. Non GST registered Vendors – GST on scrap retained by vendor shall be borne by Vendor. In such cases, BHEL shall recover GST on scrap retained by vendor.
4. Material cost, GST, Overheads @5% and applicable interest, as per the existing tax laws shall be recovered from vendors, for materials lying at their works for a period more than 365 days, whatsoever may be the reason for its retention.

Vendors are required to ensure compliance of GST provisions and registration of their firm as per GST act 2017.

2. SCOPE OF WORK:

1. The scope of work includes cutting and/or bending of SS plate components as per respective drawing numbers mentioned in tender enquiry and later, mentioned in sub-contracting purchase order. In some components additional machining operations like drilling, milling etc. may also be involved. Material will be manufactured as per tolerance mentioned in the drawings. For tolerances on untoleranced dimensions, document TP0230299 is to be followed. BHEL shall provide raw material for the items. Details of items along with drawing number is attached at Annexure-I.
2. The scope of work includes bending/machining of SS plate components as per relevant drawings.
3. The individual cut piece should have straight edges. Grinding and deburring where required, is in the subcontractor scope.
4. For items requiring bending, the die design should include compensation on account of any spring back to achieve final dimensions after bending as per drawing.

3. PRE-QUALIFICATION CRITERIA:

a) **PQ1:** ***Turnover Criteria:*** Bidder should have Minimum Average Annual Financial Turnover of Rs. 20Lakhs, over three financial years viz. FY 2020-21, 2021-22 and 2022-23. To certify the same, bidder need to submit balance sheets of above stated three years. Balance sheets should be audited, as applicable. The value of turnover to be considered is without Taxes. If the balance sheets are not audited, bidder need to submit CA

certificate for the turnover. **Audited balance sheets/CA certificate with valid UDIN (Unique Document Identification Number) will only be considered for this criteria.**
Start-ups shall be exempted from the above pre-qualification criteria Sr. no. 3, without any relaxation in quality standards or technical parameters as per D.O. No. 5(4)/2016-BE-I dated 15.02.2017. For claiming Start-Up exemption, vendors have to submit DPIIT (Dept. of Promotion of Industry and Internal Trade)/DIPP (Department for Industrial Policy and Promotion) recognition certificates.)

PQ2: ***Equipment set up required:*** *Following machines shall be available with the vendor.*

1. ***Profile Cutting: Vendor to ensure availability of at least one machine among the following installed at vendor's own premises and suiting the plate sizes involved in tender:-***
   CNC Plasma Cutting machine/ CNC Laser Cutting Machine/ CNC Water Jet Cutting.

   For this, vendor to provide following on their company's letterhead (duly signed & stamped):
   a) machine's description(Plasma, Laser etc. along with its Make & Model),
   b) its bed/table size & the working area (Length X Width)
   c) the maximum S.S. plate thickness the machine can cut.
   d) and shall certify that the specifications of the cutting machine/s is/are suitable for manufacturing of component sizes present in this tender.

2. ***Bending Machine: Vendor to ensure availability of one machine among the following and suiting the plate sizes involved in tender: -***
   Manual Bending Machine/ CNC Bending machine.

   For this, vendor to provide following on their company's letterhead (duly signed & stamped):
   a) machine's description(Manual/CNC along with its Make & Model),
   b) the maximum S.S. plate thickness & width, the machine can bend
   c) and shall certify that the specifications of the bending machine/s is/are suitable for manufacturing of component sizes present in this tender.

3. **Experience Details -** Vendor *to provide atleast one copy of their customer's purchase orders* for components manufactured from ferrous(including its alloys) sheets/plates with thickness greater or equal to 3mm , along with copies of following documents related to the submitted P.O.:*
   a) component's engineering drawing/s,
   b) component's laser/plasma/water jet - cutting/nesting plan(layout) drawing (may involve group of different components),
   c) and its invoice.
   *(*Date of eligible Purchase Order/s & corresponding invoice/s: should be 01.01.2021 or afterwards and upto the date of actual bid opening)*

It may be noted that vendors having S.S. cutting and bending facility for plate thickness upto 6mm are also eligible to participate in the tender but only for evaluation group G1, as classified in table at clause 4.c).

Further, BHEL reserves the right to verify bidders installed technical capability by visit, if so decided. In case of mis-representation of facts, the bid is liable to be rejected.

4. EVALUATION CRITERIA FOR FINALIZATION OF L1 VENDOR:-

a) Vendor shall quote unit rate for each component, inclusive of tooling and die cost if any.
b) Unit component rate shall be multiplied with the respective component wise quantity required to calculate the total component wise rate.
c) No. of plates to be provided by BHEL of each thickness are mentioned below. Sub-contractor is required to optimally generate his own cutting plan/Nesting with minimum wastages. In case of any variation in the no. of plates required, sub-contractor may approach BHEL for discussion before the price bid opening. Details of raw material to be issued to vendor-

Sl. No.	Evaluation Groups	Plate Description	No of plates to be issued	Dimensions (MM X MM)	*Unit Weight (Per plate) (Kg)	*Total Weight (Kg)
1.	G1	SS SHEET 3.15 MM - SA240TY310S	3	1250 X3250	103	309
2.		SS PLATE 6.00 MM - SA240TY310S	38	1250 X 3250-36nos 1250X1000-1no 1250X1150-1no	197 61 70	7092 61.0 70.0
3.	G2	SS PLATE-10 MM - SA240TP309S	26	1250 X 3250-24nos 1250 X 1650-1no 1250 X 600-1no	328 167 61	7872 167 61
4.		SS PLATE 12 MM - SA240TP310S	1	1250*2650-1No	321	321

* Theoretical weight of plates (actual weight may vary).

Number of plates mentioned above are indicative only. Vendors are required to generate their own Nesting/Cutting Plan. Accordingly, no. of plates to be issued shall be determined after finalization of L1 bidder.

d) L1 vendor shall be determined on Group wise basis i.e. Group G1 and G2 separately. For evaluation of bids to award the contract, BHEL will take into consideration the material cost & conversion cost (offers) both. This is on account of cost & weight of any extra length of plate, if demanded by bidder for execution of tender. Accordingly required loading shall be done on bids for deciding of L1 bidder. Following offcuts shall be generated in the cutting of different plates. These shall be returned by the sub-contractor along-with the other finished components..

Sl. No.	Evaluation Groups	Plate Thickness	No of Offcuts	Dimensions (MM X MM)
1.	G1	3.15 MM	01	2235X1250
2.		6.00 MM	01	145X1250
3.	G2	10.00 MM	01	1758X1250
4.		12.00 MM	01	375X1250
		Total	**04**	

The above mentioned plate offcuts will also be considered for loading calculation.

e) Other than the plate offcuts mentioned above, vendor to retain remaining scrap generated in the form of (nested) web.

5. VALIDITY OF OFFER:

The rate quoted shall be valid for 90 days after tender opening for finalization of the Tender.

6. EVALUATION IN CASE OF MORE THAN ONE L1:

In the course of evaluation (groupwise), if more than one bidder happens to occupy L1 status, effective L1 will be decided by soliciting discounts from the respective L1 bidders.

In case more than one bidder happens to occupy L1 status even after soliciting discounts, the L1 bidder shall be decided by a toss/ draw of lots, in presence of respective L1 bidders or their representatives.

Ranking will be done accordingly. BHEL decision in such situations shall be final and binding.

7. INSPECTION:

a) Inspection of the finished components will be done at vendor's premises after receipt of inspection request along with dimension report. No deviation unless authenticated by authorized BHEL Officials will be allowed. The inspection request and the dimensional report shall be in the format prescribed by BHEL.
b) BHEL reserves the right to carry out inspection at its premises as and when required.
c) In case of Rework due to Sub Contractor's fault, the rework shall be carried out by Sub Contractor at no extra cost. While in case of rejection due to sub-contractor fault, raw material cost along with any other relevant charges will be recovered.
e) Calibrated gauges, fixtures and measuring instruments must be available with vendor at all times.
f) Dimension reports shall be kept ready prior to inspection.

8. DELIVERY OF FINISHED COMPONENTS:

a) The inspected components shall be delivered at Component Stores along with 4 copies of delivery challan, bearing seal of Main Gate Security and 2 copies of Inspection Report.
b) Delivery challan should have the details like PO No., IR NO., Component Code and Material description.
c) Finished components shall be unloaded in designated area as directed by the Store-keeper.
d) Finished goods shall be delivered at BHEL Component Stores at Sub-contractor's own cost. Facility for handling heavy materials (like lifter/crane) will be provided by BHEL.
e) The Sub Contractor shall supply the finished components with proper packing arrangement and marking material code and vendor code. On small items by pasting sticker on each piece or writing with Permanent Marker/Paint or making suitable size small packets & clearly writing its vendor code and material code on outside of the packed lot in such a way that pieces could be counted from outside the packet.
f) The packing and stacking of items is in the scope of sub-contractor and should be good enough to avoid any kind of storage/transit damage. Any rework/rejection on account of any type of storage/transit damage, shall be recovered from vendor.
g) Left out plate/offcuts generated during cutting of different plates will be returned to BHEL by vendors along with finished components.

9. DELIVERY SCHEDULE:

Vendor shall be required to complete the order as mentioned in PO/LOI/ delivery requirement given through other communications. Further, BHEL may release delivery schedule from time to time based upon our

requirement. Vendor shall be required to complete the order as per the BHEL schedule requested. As per BHEL requirement delivery period will be given as 90 days from PO placement date.

10. ISSUE OF RAW MATERIAL:

a) Vendor has to lift the raw material from BHEL stores on his own vehicle. Facility for handling heavy materials (like lifter/crane) will be provided by BHEL.
b) Vendor has to appoint an authorized representative for issue and collect of raw material from BHEL.
c) If due to any reason, raw material issued to the vendor is more than the required, then the vendor has to return the excess material to the respective stores.
d) For material Lifting and follow up communication, vendors registered email id's and phone no's will be used.

11. ACCESS TO MANUFACTURING PREMISES:

During the currency of the contract and while Sub-Contracting Orders placed on the vendor are under execution, authorized representatives of BHEL shall be allowed free access to the manufacturing facilities for the purpose of inspection or monitoring the progress of purchase orders. This access will also be extended to representatives of BHEL's customers accompanying the authorized representative/s of BHEL, if our contractual requirements with our customer's call for the same.

12. GUARANTEE:

Vendor shall give a guarantee of eighteen months from acceptance of material at BHEL for undertaking repairs/replacement of any defect observed during machining/ welding/assembly/ hydraulic testing or subsequent processing notwithstanding the previous acceptance. Entire cost of such repairs/replacement of material will be deducted from any of the running bills/PBG.

In case of vendor fault when the repair is carried out by BHEL on components, the welding repair charges shall be @ Rs 11.80 per cc for carbon steel, Rs 12.60 per cc for alloy steel and Rs 16.60 per cc for stainless steel grades. In addition to this, if any other repair charges such as machining cost is incurred by BHEL the same shall be borne by the sub-contractor.

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The components manufactured as per BHEL drawing should be free of machining/welding/gas cutting/fabrication defects. If the item is found defective after receipt during onward processing at Shop, total cost will be recovered from Sub-contractor as per clause no. 8c & 8d.

13. CONFIDENTIALLY OF BHEL DRAWINGS/DOCUMENTS:

Sub-contractor/s shall ensure confidentiality of BHEL drawings and documents issued to them and shall not pass on the same to any unauthorized agency/person. Violation of the same shall tantamount to cancellation of the contract of the Sub-contractor.

14. BANK GUARANTEE AND PERFORMANCE SECURITY DEPOSIT:

a) Sub-contractor will have to execute a Bank Guarantee, in the prescribed format, for a sum of minimum 5% of the value of the maximum materials likely to be in possession of the Sub-contractor at any point of time. BG already submitted by the sub-contractor shall be taken into consideration and any additional requirement shall be conveyed by BHEL.

b) PERFORMANCE SECURITY To ensure due performance of the contract, Performance Bank Guarantee (PBG) or Security Deposit (SD), hereafter referred as performance security is to be obtained from the

successful bidder awarded the contract. Performance security is to be submitted by the date specified in the contract.

The total amount of Performance Security should be five percent (5%) of the contract value.

Modes of deposit:

Performance security may be furnished in the following forms:

(i) Local cheques of Scheduled Banks (subject to realization)/ Pay Order/ Demand Draft/ Electronic Fund Transfer in favour of BHEL.

(ii) Bank Guarantee from Scheduled Banks / Public Financial Institutions as defined in the Companies Act. The Bank Guarantee format should have the approval of BHEL.

(iii) Fixed Deposit Receipt issued by Scheduled Banks / Public Financial Institutions as defined in the Companies Act (FDR should be in the name of the Contractor, a/c BHEL).

(iv) Securities available from Indian Post offices such as National Savings Certificates, Kisan Vikas Patras etc. (held in the name of Contractor furnishing the security and duly endorsed/ hypothecated/ pledged, as applicable, in favour of BHEL).

(v) Insurance Surety Bond.

(Note: BHEL will not be liable or responsible in any manner for the collection of interest or renewal of the documents or in any other matter connected therewith)

Performance Security is to be furnished within 14(fourteen) days after notification of the award and it should remain valid for a period of 60 (sixty) days beyond the date of completion of all contractual obligations of the supplier, including warranty obligations. The Security Deposit shall carry no interest.

Forfeiture of Performance Security: The performance security will be forfeited and credited to BHEL's account in the event of a breach of contract by the supplier.

15. INDEMNITY BOND:

Sub-contractor shall have to indemnify BHEL for any loss to BHEL's material in custody of the Sub-contractor against theft or financial liability against funding agency/financial institution or any other loss. The bond is to be executed on non-judicial stamp paper as per the format prescribed by BHEL. Indemnity Bond is to be submitted by L1 bidder after placement of PO and before issuing raw material from BHEL Stores.

16. TERMS OF PAYMENT:

a. Due payment against job work done shall be made within 45 days from receipt of invoice at IVP Goindwal and receipt of following documents:
   i. Two copies of Invoice i.e. Original & Duplicate for Transporter. Vendors are required to mention GST of BHEL on Tax invoices.
   ii. Original Challan
   iii. Original Inspection Report
   The rejected material should also be deposited along with the accepted material through Delivery Challan.
   BHEL releases payment through EFT mode ONLY. Necessary details may please be submitted by filling required format before release of payment.
b. GST registration number is to be submitted by qualified vendor as per GST law
c. Conditions relating to release of GST portion:

d. Payment of GST portion will be released to vendor only upon completion of statutory requirement and further subject to following:
The reimbursement of GST portion of invoice shall be released only upon: -
   a. Vendor declaring such invoice in his GSTR-1and
   b. Receipt of goods and Tax invoice by BHEL and
   c. Confirmation of payment of GST thereon by vendor on GSTN portal.

e. Above is subject to receipt of goods/service and tax invoice thereof along with vendor declaring invoice in his return and paying GST within timeline prescribed for availing ITC by BHEL.

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

g. In case vendor delays declaring such invoice in his return and GST credit availed by BHEL is denied or reversed subsequently as per GST law, GST amount paid by BHEL towards such ITC reversal as per GST law shall be recoverable from vendor/contractor alongwith interest levied / leviable on BHEL.

17. AVAILING INPUT TAX CREDIT (ITC) BY BHEL:

a. Since ITC can be availed only when BHEL is in possession of GST Tax invoice and after receipt of goods. Thus, vendor to ensure timely dispatch of goods and and submission Tax invoice. It may be noted that in case of any delay in receipt of Tax Invoice and/or receipt of goods, the ITC availment by BHEL will get delayed thus entailing additional cash outflow & may even get denied if ITC availm ent timelines are breached.

b. Further ITC can be availed only when vendor has declared such invoice in his outward supply Return GSTR-1 and after GST thereon has been paid by him at the time of filing of monthly Return.

c. If GST credit is delayed/denied to BHEL due to non/delayed receipt of goods and/or tax invoice or expiry of timeline prescribed in GST law for availing such ITC, or any other reasons not attributable to BHEL, GST amount shall be recoverable from vendor along with interest levied/leviable on BHEL.

d. Further, in case vendor delays declaring such invoice in his return and GST credit availed by BHEL is denied or reversed subsequently as per GST law, GST amount paid by BHEL towards such ITC reversal as per GST law shall be recoverable from vendor/contractor along with interest levied/leviable on BHEL.

18. LIABILITY UNDER REVERSE CHARGE (RCM)

Any GST liability arising on BHEL under Reverse Charge (RCM) before actual receipt of goods and/ or Invoice thereof would be subject to recovery of Interest leviable for the period between the date of such liability and actual date of eligibility of ITC based on receipt of goods, receipt of Invoices and other conditions specified in GST Law as applicable.

19. FIRM PRICES:

The contract shall be on the basis of firm prices. No variation in price shall be entertained during the currency of the tender.

20. PENALTY AND TERMINATION:

a. If the Sub-contractor fails to deliver the material or any installment thereof within the period fixed for such delivery or at any time repudiates the purchase order before the expiry of such period, BHEL may without prejudice to the right of the Sub-contractor impose damages for breach of the Sub-contracting order.

b. Time is the essence of the contract'. As such, delivery of goods specified in the Purchase Orders released under the scope of this contract shall be made within the time limit prescribed therein. Penalty for late delivery will be applicable @ 0.5% per week or part thereof subject to a maximum of 10.0 % **of delayed portion**.
If any vendor does not accept LD ½% of the supply for each week of delay subject to a maximum of 5%, their offer is likely to be rejected by BHEL and the price bid shall not be opened. Bidders

accepting for 10% LD shall not be loaded on account of LD. However bidders who offer any other % LD [between 5% to 10%] shall be loaded @ % deviation from 10% and their accepted %.e.g. If a bidder accepts for a max of 7% LD only, their offer would be loaded @ 3% (10 – 7 = 3).

c. **Applicable GST shall also be recovered from suppliers/contractors on LD amount. For this Invoice will be issued by BHEL.**

d. Withdraw the material and Sub-contract elsewhere without notice to the Sub-contractor, on the account and at the risk of the Sub-contractor, of the components not so delivered. The decision of BHEL in
this regard shall be final and binding without canceling the Sub- contracting order in respect of the installments not yet due for delivery, or

e. Cancel the Sub-contracting order or a portion thereof and if so desired Sub-Contract the materials not so delivered at the risk and cost of the Sub-contractor. If the Sub-contractor has defaulted in the performance of the original order, the BHEL shall have the right to ignore its tender for risk purchase even though the lowest. Where action is taken under this clause, the Sub-contractor shall be liable, for any loss which the BHEL may incur due to the Sub-contractor failure to deliver the component within the period fixed for such delivery.

f. In this regard, BHEL standard operating procedure for implementation of risk and cost option on non-performing and/or defaulting contractors/suppliers shall be followed.
Risk and cost amount =[(A-B)+(A x H/100)]
Where,

A=Value of balance scope of work/supply as per rates of new contract

B=Value of balance scope of work/supply as per rates of old contract being paid to contractor/supplier at the time of termination of contract i.e inclusive of PVC& ORC, if any

H=Overhead factor to be taken as 5

Incase (A-B) is less than (0) zero, value of (A-B) shall be taken as (0) zero

Balance Scope of Supply: Difference of Contract quantities and Executed quantities as on the date of issue of Letter for 'Termination of Contract', shall be taken as balance scope of supply for calculating risk and cost amount.

Contract quantities are the quantities as per original contract. If, Contract has been amended, quantities as per amended Contract shall be considered as Contract quantities.

21. FORCE MAJEURE:

If at any time during the continuance of the contract, the performance in which or in any part by either party of any obligations under the contract are prevented or delayed by reason of any war, hostilities, acts of public enemy, civil commotion, sabotage, fires, explosions, epidemics, quarantine restrictions, or acts of God (hereinafter referred to "an events" then provided the notice of happening of any such event is given by either party to the other within 21 days of the occurrence thereof, neither party shall by reason of such event be entitled to terminate the contract nor shall either party have any claim for damages against the other in respect of such non-performance and delay in performance and delivery under the contract shall be resumed as soon as practicable after such event has come to an end or ceased to exist. If the performance in whole or part of any obligation under the contract is prevented or delayed by reason of any such event, claims of extension of time shall be granted for periods considered reasonable by BHEL subject to prior notification by the Vendor to BHEL of the particulars of the event and supply to BHEL, if required, of any supporting evidence. Any waiver of time in respect of partial installment shall not be deemed a waiver of time in respect of remaining deliveries.

22. DISPUTES/ARBITRATION:

In the event of any dispute and /or difference arising between the Sub-contractor and BHEL as to interpretation and/or execution of the contract and/or the respective rights and liabilities of the parties, such disputes and/or differences shall be referred to the sole arbitrator nominated by BHEL. The provisions of the Indian Arbitration Act and the rules there under shall apply to such arbitration. The

award passed by the arbitrator shall be final and conclusively binding on all the parties.

23. JURISDICTION:

The court of the place from where the Sub-contracting order issued during the contractual period shall alone have jurisdiction to decide any dispute arising out of or in connection with the purchase order.

24. SUB-LETTING:

The Sub-contracting order or any part thereof shall not be Sub-contracted, assigned or otherwise transferred without giving the notification to BHEL in writing. However, vendor can outsource the Heat Treatment/Plating/Bending from authorized dealers of the process. But vendors have to submit certificate from third party to BHEL for the job undertaken.

25. MISCELLANEOUS:

a) BHEL reserves the right to accept or reject any part or whole of the tender without assigning any reason thereof.

b) BHEL reserves the right to discontinue any component/change scope of work/assembly as the need arises from time to time during the currency of tender.

c) In case of any loss that might be caused to BHEL due to lapse on the part of the workers deployed by Sub contractor, such loss shall be compensated by Sub Contractor and in this connection, BHEL has the right to deduct appropriate amount from his bills etc. to make good of such loss to BHEL beside imposition of penalty. In case of any deficiencies /lapses on the part of personnel deployed by Sub contractor, BHEL shall be within its right to terminate the contract forthwith or take any other action without assigning any reasons whatsoever.

d) All Personnel Protective Equipment's/Safety Equipment's are to be provided by Sub Contractors to its workers deployed for work inside BHEL premises.

e) ***In case of death/mishap/physical disability occurred during discharging the duties by Sub Contractor/workers deployed by Sub Contractors inside BHEL premises, the compensation liability solely rests with the Sub Contractor.***

f) The identification and traceability w.r.t Make/Melt/Heat & Material type of raw material issued to Sub Contractor shall be maintained by him during processing and onward final submitting the components in BHEL Stores. BHEL reserves the right to verify the compositions/mechanical/chemical properties of parent material at any stage of processing at Sub Contractors end and also of final machined components submitted in BHEL stores.

g) The Sub Contractor shall supply the finished components with proper packing arrangement as specified in respective Purchase Order(s).

h) The Sub Contractor(s) who have deployed their labor for work within BHEL Premises shall be responsible for compliance of following Labour laws/Acts

1. Payment of Wages Act 1936.
2. The Employees Provident Fund and Miscellaneous Provision Act 1952.
3. The Factory Act 1948.
4. The Employee State Insurance Act 1948.
5. The Employment of Children's Act 1938.
6. The Minimum Wages Act 1948.
7. Workmen Compensation Act 1923

(Any other Labour laws as applicable will be taken into consideration for compliance of labour laws in this contract.)

i) For this procurement, Public procurement (Preference to Make in India), Order 2017 dtd 15.06.2017, 28.05.2018, 29.05.2019 & 04.06.20 and subsequent orders issued by the respective Nodal ministry shall be applicable even if issued after the issue of this NIT but before finalization of contract /PO/WO against this NIT.

In the event of any Nodal ministry prescribing higher or lower percentage of purchase preference and/ or local content in respect of this procurement, same shall be applicable. Further with ref to Clause no .9 a of above mentioned order self-certification from all bidders is required as mentioned below:

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 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.

j) Abridged version of Guidelines for Suspension of business dealings with suppliers/contractors are available at below mentioned link

https://www.bhel.com/guidelines-suspension-business-dealings-supplierscontractors

26. PERFORMANCE MONITORING:

a) The Sub-contractor/s with whom contract is entered into will be evaluated based on the "System for Performance Monitoring & Rating for Vendors".

b) Performance Rating will be taken into consideration while releasing further orders on the Sub-contractor. Based on performance of the Sub-contractor, supplier control checks will be specified from time to time and will be binding on the sub-contractor.

c) The Supplier Performance Rating shall be used for assessing the performance of a supplier in comparison with other suppliers with a view to decide whether or not to continue to procure the products from the supplier if the Supplier Performance Rating is below a certain limit.

d) For more details on Supplier Performance Rating, supplier can read Para 9.0 in abridged version available at following link: -

https://www.bhel.com/sites/default/files/SEARP-2016_abridged_for_web.pdf

e) The feedback to the supplier shall be posted every quarter. In addition, the annual SPR rating shall also be intimated to the supplier. In case, the vendor does not contest the SPR ratings within 15 days of the availability of SPR on B2B portal, it shall be construed that the vendor has accepted the SPR ratings provided by BHEL.

27. DEALING WITH BANNED SUPPLIERS /CONTRACTORS:

The offers of the bidders who are under suspension as also the offers of the bidders, who engage the services of the banned firms, shall be rejected. The list of banned firms is available on BHEL web site www.bhel.com.

1. Integrity commitment, performance of the contract and punitive action thereof:
   a. Commitment by BHEL:
      BHEL commits to take all measures necessary to prevent corruption in connection with the tender process and execution of the contract. During the tender process, BHEL will treat all Bidder(s) in a transparent and fair manner, and with equity.
   b. Commitment by Bidder/ Supplier/ Contractor:
      a. The bidder/ supplier/ contractor commit to take all measures to prevent corruption and will not directly or indirectly influence any decision or benefit which he is not legally entitled to nor will act or omit in any manner which tantamount to an offence punishable under any provision of the Indian Penal Code, 1860 or any other law in force in India.
      b. The bidder/ supplier/ contractor will, when presenting his bid, disclose any and all payments he has made, and is committed to or intends to make to agents, brokers or any

other intermediaries in connection with the award of the contract and shall adhere to relevant guidelines issued from time to time by Govt. of India/ BHEL.

c. The bidder/ supplier/ contractor will perform/ execute the contract as per the contract terms & conditions and will not default without any reasonable cause, which causes loss of business/ money/ reputation, to BHEL.

If any bidder/ supplier/ contractor during pre-tendering/ tendering/ post tendering/ award/ execution/ post-execution stage indulges in mal-practices, cheating, bribery, fraud or and other misconduct or formation of cartel so as to influence the bidding process or influence the price or acts or omits in any manner which tantamount to an offence punishable under any provision of the Indian Penal Code, 1860 or any other law in force in India, then, action may be taken against such bidder/ supplier/ contractor as per extant guidelines of the company available on www. bhel.com and/or under applicable legal provisions".

28. WORDS AND FIGURES:-

a) If, in the price structure quoted for the required goods/ services/ works, there is discrepancy between the unit price and the total price (which is obtained by multiplying the unit price by the quantity}, the unit price shall prevail and the total price corrected accordingly, unless in the opinion of the purchaser there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price corrected accordingly.

b) If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and

c) If there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject of (a) and (b) above.

d) If there is such discrepancy in an offer, the same shall be conveyed to the bidder with target date upto which the bidder has to send his acceptance on the above lines and if the bidder does not agree to the decision of the purchaser, the bid is liable to be ignored.

e) Bid should be free from correction, overwriting, using corrective fluid, etc. Any interlineation, cutting, erasure or overwriting shall be valid only if they are attested under full signature(s) of person(s) signing the bid else bid shall be liable for rejection. All overwriting/ cutting, etc will be numbered by bid opening officials and announced during bid opening.

29. PREF ERENCES F O R MSE' s:

Preferences* as mentioned in "Public Procurement Policy for Micro and Small Enterprises (MSEs) Order, 2012" & "Public Procurement Policy for Micro and Small Enterprises (MSEs) Amendment Order, 2018" or as per latest guidelines issued by government shall be given to Micro and Small enterprises.

MSE suppliers can avail the indented benefits only if they submit along with 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 CA certificate (where deemed validity of EM II certificate of five year has been expired) applicable for the relevant financial year (latest audited). Date to be reckoned for determining the deemed validity will be the last date of bid opening (Part-I in case of two part bid). Non submission of such documents will lead to consideration of their bids at par with other bidders. No benefit shall be applicable for this enquiry if any deficiency in the above required documents are not submitted before price bid opening. Documents should be notarized or attested by the Gazetted officer. Copy of UDYAM certificate can also be submitted.

*All these preferences are applicable subject to the submission of applicable certificates (i.e. District Industries Centers or Khadi and Village Industries Commission or Khadi and Village Industries Board or

Coir Board or National Small Industries Corporation or Directorate of Handicrafts and Handloom or any other body specified by Ministry of Micro, Small and Medium Enterprises).

Necessary Document to be submitted in Part-I:

- Acceptance of all techno-commercial terms and conditions. **If nothing is mentioned for any terms and condition, it shall be concluded that the same is accepted.**

Documents required as per Pre Qualification Criteria

- **Attested Copy of MSME/SSI/NSIC Certificate (if applicable). Copy of UDYAM certificate can also be submitted**
- **Attested Copy of CA Certificate certifying quantum of investment in Plant and machinery if applicable (please refer Clause 30)**
- Un-priced bid with all taxes and duties (extra/inclusive) and % mentioned.

Document to be submitted in Part-II:

Rates per pc (no.) mentioned in figures as well as in words. **No other condition shall be mentioned.**

Non-submission of such document 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 not cleared before price bid opening

30. SUPPLIED MATERIAL ADJUSTMENT:

Item/s pending in previous PO has to be billed in previous PO only. Otherwise BHEL will be free to adjust the supplies in previous PO. Any implication of Taxes will be on supplier's account. For this it is desirable to reconcile the pending PO statement every month/frequently. Vendor can ask for pending PO's from BHEL anytime.

31. Fraud Prevention:

"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."

32. Submission of signed & stamped documents:

The supplier and bidders while submitting documents in response to NIT/Tender etc. are required to ensure that:

"Documents submitted with the offer shall be stamped and signed in each page by the authorized representative of the bidder".

For and on behalf of BHEL

Rohit Kumar
Engineer/Sub-Contg.

Annexure-I							
Tender Enquiry BHEL:IVP:SC:2425:CCASS							
Sl.No.	**Group No.**	**Drawing No.**	**Item No.**	**Variant**	**Item Description**	**Raw Material Description**	**Quantity (in Nos.)**
1	G1	1-45-802-01928	1	0	PL 3.15X716X250	SS SHEET 3.15 MM - SA240TY310S	24
2		1-45-802-01928	2	0	PL 3.15X716X250	SS SHEET 3.15 MM - SA240TY310S	24
3		1-45-802-01928	9	0	PL 3.15X85X46	SS SHEET 3.15 MM - SA240TY310S	96
4		0-45-802-03098	11	A	PL 6X198X305	SS PLATE-6 MM-SA240TP309S	16
5		0-45-802-03098	11	B	PL 6X198X305	SS PLATE-6 MM-SA240TP309S	16
6		1-45-802-01926	1	0	PL 6X639X76	SS PLATE-6 MM-SA240TP309S	48
7		1-45-802-01926	2	0	PL 6X440X76	SS PLATE-6 MM-SA240TP309S	48
8		1-45-802-01926	3	0	PL 6X228X76	SS PLATE-6 MM-SA240TP309S	48
9		1-45-802-01926	4	0	PL 6X60X76	SS PLATE-6 MM-SA240TP309S	96
10		1-45-802-01927	1	0	PL 6X550X241	SS PLATE-6 MM-SA240TP309S	48
11		1-45-802-01927	2	0	PL 6X254X228	SS PLATE-6 MM-SA240TP309S	48
12		1-45-802-01927	3	0	PL 6X550X203	SS PLATE-6 MM-SA240TP309S	48
13		1-45-802-01927	4	0	PL 6X228X203	SS PLATE-6 MM-SA240TP309S	48
14		1-45-802-01927	5	0	PL 6X114X38	SS PLATE-6 MM-SA240TP309S	48
15		1-45-802-01927	6	0	PL 6X114X38	SS PLATE-6 MM-SA240TP309S	48
16		1-45-802-01927	8	0	PL 6X203X60	SS PLATE-6 MM-SA240TP309S	96
17		1-45-802-02254	1	0	PL 6X724X154	SS PLATE-6 MM-SA240TP309S	64
18		1-45-802-02254	2	0	PL 6X124X174	SS PLATE-6 MM-SA240TP309S	64
19		1-45-802-02254	3	0	PL 6X752X263	SS PLATE-6 MM-SA240TP309S	64
20		1-45-802-02254	4	0	PL 6X373X174	SS PLATE-6 MM-SA240TP309S	128
21		1-45-802-02335	1	0	PL 6X200X724	SS PLATE-6 MM-SA240TP309S	16
22		1-45-802-02335	3	0	PL 6X179X342	SS PLATE-6 MM-SA240TP309S	32

23		1-45-802-02335	4	0	PL 6X281X932	SS PLATE-6 MM-SA240TP309S	32
24		1-45-802-02335	5	0	PL 6X342X415	SS PLATE-6 MM-SA240TP309S	16
25		1-45-802-02335	6	0	PL 6X342X415	SS PLATE-6 MM-SA240TP309S	16
26		1-45-802-02335	7	0	PL 6X118X415	SS PLATE-6 MM-SA240TP309S	32
27		1-45-802-02335	8	0	PL 6X128X415	SS PLATE-6 MM-SA240TP309S	16
28		1-45-802-02335	9	0	PL 6X189X415	SS PLATE-6 MM-SA240TP309S	16
29		1-45-802-02335	10	0	PL 6X131X244	SS PLATE-6 MM-SA240TP309S	64
30		1-45-802-02335	12	0	PL 6X245X205	SS PLATE-6 MM-SA240TP309S	16
31		1-45-802-02335	13	0	PL 6X249X244	SS PLATE-6 MM-SA240TP309S	16
32		1-45-802-02335	19	0	PL 6X200X724	SS PLATE 6.00 MM - SA240TY310S	16
33		2-45-000-01699	5	0	PL 6X13X44	SS PLATE 6.00 MM - SA240TY310S	24
34		2-45-802-01698	2	0	PL 6X38X333	SS PLATE-6 MM-SA240TP309S	48
35		2-45-802-02082	1	1	PL6X507X775	SS PLATE-6 MM-SA240TP309S	80
36		2-45-802-02082	2	2	PL6X467X798	SS PLATE-6 MM-SA240TP309S	80
37		2-45-802-02082	8	8	PL6X150X150	SS PLATE-6 MM-SA240TP309S	160
38		2-45-802-02083	1	0	PL 6X159X239	SS PLATE-6 MM-SA240TP309S	16
39		2-45-802-02083	2	0	PL 6X185X724	SS PLATE-6 MM-SA240TP309S	8
40		2-45-802-02083	3	0	PL 6X239X390	SS PLATE-6 MM-SA240TP309S	32
41		2-45-802-02083	7	0	PL 6X724X185	SS PLATE-6 MM-SA240TP309S	8
42		2-45-802-02083	8	0	PL 6X238X795	SS PLATE-6 MM-SA240TP309S	16
43		2-45-802-02083	10	0	PL 6X278X316	SS PLATE-6 MM-SA240TP309S	16
44		2-45-802-02083	11	0	PL 6X14X205	SS PLATE-6 MM-SA240TP309S	16
45		3-45-000-01245	5	0	BEARING PLATE PL 6X38X38	SS PLATE-6 MM-SA240TP309S	48
46		3-45-000-01299	9	7	NOZZLE TIP SUPPORT PLATE	SS PLATE 6.00 MM - SA240TY310S	16
47	G2	0-45-802-03096	9	A	PL 10X51X252	SS PLATE-10 MM - SA240TP309S	24

48		0-45-802-03096	9	B	PL 10X51X252	SS PLATE-10 MM - SA240TP309S	24
49		1-45-802-01928	3	0	PL 10X716X216	SS PLATE-10 MM - SA240TP309S	24
50		1-45-802-01928	4	0	PL 10X716X216	SS PLATE-10 MM - SA240TP309S	24
51		1-45-802-01928	5	0	PL 10X252X216	SS PLATE-10 MM - SA240TP309S	48
52		1-45-802-01928	6	0	PL 10X252X62	SS PLATE-10 MM - SA240TP309S	48
53		2-45-000-01699	7	0	PL 10X70X228	SS PLATE-10 MM - SA240TP309S	24
54		2-45-802-02082	3	3	PL10X366X490	SS PLATE-10 MM - SA240TP309S	80
55		2-45-802-02082	4	4	PL10X417X692	SS PLATE-10 MM - SA240TP309S	80
56		2-45-802-02082	5	5	PL10X172X497	SS PLATE-10 MM - SA240TP309S	480
57		2-45-802-02082	6	6	PL10X254X692	SS PLATE-10 MM - SA240TP309S	80
58		2-45-802-02082	7	7	PL10X31X298	SS PLATE-10 MM - SA240TP309S	240
59		2-45-802-02082	9	9	PL10X55X120	SS PLATE-10 MM - SA240TP309S	160
60		2-45-802-02082	10	10	PL10X38X38	SS PLATE-10 MM - SA240TP309S	160
61		3-45-320-01323	1	0	PL 12X126X178	SS PLATE 12 MM - SA240TP310S	48
62		3-45-320-01388	1	1	PL 12X110X180	SS PLATE 12 MM - SA240TP310S	48
63		3-45-320-01388	1	2	PLATE 12X110X180	SS PLATE 12 MM - SA240TP310S	48

Techno Commercial cum Unpriced Bid format

Tender Enquiry No. BHEL: IVP:SC: 2425: CCASS

Vendor Name :_____

Vendor is to submit responses for each of following points (where applicable, may please tick √ the appropriate box)**:**

1.	The rates quoted by vendor are FOR Goindwal basis.	Yes	No
2.	Please specify whether your firm is GST registered	GST registered	
		Non GST registered	
3.	GST registered vendors to specify rate of GST applicable on job work and SAC code	GST @_____%	
4.	Is your Firm registered as MSE? If Yes Kindly Submit copy of your Udyam / MSME/SSI/NSIC Registration Certificate.	Yes	No
5.	Is the Ownership of your firm covered under SC/ST Category? If yes, Please Submit the relevant certificate/documents attested by Gazetted Officer or Notary.	Yes	No
6.	Is the owned by women? If yes, please submit the relevant documents.	Yes	No
7.	It is self-certified that item (s) offered meets the local content requirement for 'Class-I Local Supplier'/ 'Class-II Local Supplier' (as the case may be) as per latest Make in India Order issued by DPIIT	Yes	No
8.	Please specify whether your firm is coming under Class-I Local Supplier or Class-II Local Supplier or Non-Local Supplier	Class-I Local	
		Supplier/Class-II Local Supplier	
		Non-Local Supplier	
9.	Please specify Percentage of Local content as per latest Make in India Order issued by DPIIT		
10.	Please give details of location (s) at which the local value addition is made		
11.	Please confirm that the running BG and any additional BG submitted later during the course of this tender shall be applicable for it	Yes	No
12.	All the documents submitted with offer has been signed and stamped by authorized representative.	Yes	No

Plate thickness	**No of plates required to be mentioned by bidder**	**Size of plates required**	**Left out plate/offcut size**
3.15 mm			
6 mm			
10 mm			
12 mm			

We accept that our offers are valid for **90 days** after tender opening (**As per BHEL terms & conditions)**
We accept that if the certificates required at Sl.No.4,5&6 above are not attached with the bid, the associated benefits/preferences, as per latest guidelines issued by government for Micro and Small Enterprises (MSEs) will not be applicable.
We understand that anything other than prices mentioned in the price bid shall not be considered by BHEL.
We accept all the terms and conditions of the Tender Enquiry No. BHEL: IVP:SC: 2425: CCASS

Authorized signatory with seal

Tender Inviting Authority: BHEL IVP Goindwal Sahib

Name of Work: The scope of work includes Cutting/bending/machining of SS plate components as per relevant drawings for CCA

Contract No: BHEL:IVP:SC:2425:CCASS dated 08.08.2024

Name of the Bidder/ Bidding Firm / Company :	

PRICE SCHEDULE

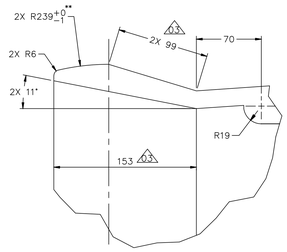
(This BOQ template must not be modified/replaced by the bidder and the same should be uploaded after filling the relevent columns, else the bidder is liable to be rejected for this tender. Bidders are allowed to enter the Bidder Name and Values only)

NUMBER #	TEXT #	TEXT #	NUMBER #	TEXT #	TEXT	NUMBER #	TEXT	NUMBER #
Sl. No.	Item Description	Item Code / Make	Quantity	Units	DRG. No.	BASIC RATE In Figures To be entered by the Bidder in Rs. /PCS	Group No.	TOTAL AMOUNT excluding taxes in Rs. P
1	2	3	4	5	8	7	19	11
1	PL 3.15X716X250	1-SS SHEET 3.15 MM - SA240TY310S	24	No	1-45-802-01928		G1	0.00
2	PL 3.15X716X250	2-SS SHEET 3.15 MM - SA240TY310S.	24	No	1-45-802-01928		G1	0.00
3	PL 3.15X85X46	3-SS SHEET 3.15 MM - SA240TY310S..	96	No	1-45-802-01928		G1	0.00
4	PL 6X198X305	1-SS PLATE-6 MM-SA240TP309S.	16	No	0-45-802-03098		G1	0.00
5	PL 6X198X305	2-SS PLATE-6 MM-SA240TP309S	16	No	0-45-802-03098		G1	0.00
6	PL 6X639X76	3-SS PLATE-6 MM-SA240TP309S	48	No	1-45-802-01926		G1	0.00
7	PL 6X440X76	4-SS PLATE-6 MM-SA240TP309S	48	No	1-45-802-01926		G1	0.00
8	PL 6X228X76	5-SS PLATE-6 MM-SA240TP309S	48	No	1-45-802-01926		G1	0.00
9	PL 6X60X76	6-SS PLATE-6 MM-SA240TP309S	96	No	1-45-802-01926		G1	0.00
10	PL 6X550X241	7-SS PLATE-6 MM-SA240TP309S	48	No	1-45-802-01927		G1	0.00
11	PL 6X254X228	8-SS PLATE-6 MM-SA240TP309S	48	No	1-45-802-01927		G1	0.00
12	PL 6X550X203	9-SS PLATE-6 MM-SA240TP309S	48	No	1-45-802-01927		G1	0.00
13	PL 6X228X203	10-SS PLATE-6 MM-SA240TP309S	48	No	1-45-802-01927		G1	0.00
14	PL 6X114X38	11-SS PLATE-6 MM-SA240TP309S	48	No	1-45-802-01927		G1	0.00
15	PL 6X114X38	12-SS PLATE-6 MM-SA240TP309S	48	No	1-45-802-01927		G1	0.00
16	PL 6X203X60	13-SS PLATE-6 MM-SA240TP309S	96	No	1-45-802-01927		G1	0.00
17	PL 6X724X154	14-SS PLATE-6 MM-SA240TP309S	64	No	1-45-802-02254		G1	0.00
18	PL 6X124X174	15-SS PLATE-6 MM-SA240TP309S	64	No	1-45-802-02254		G1	0.00
19	PL 6X752X263	16-SS PLATE-6 MM-SA240TP309S	64	No	1-45-802-02254		G1	0.00
20	PL 6X373X174	17-SS PLATE-6 MM-SA240TP309S	128	No	1-45-802-02254		G1	0.00
21	PL 6X200X724	18-SS PLATE-6 MM-SA240TP309S	16	No	1-45-802-02335		G1	0.00
22	PL 6X179X342	19-SS PLATE-6 MM-SA240TP309S	32	No	1-45-802-02335		G1	0.00
23	PL 6X281X932	20-SS PLATE-6 MM-SA240TP309S	32	No	1-45-802-02335		G1	0.00
24	PL 6X342X415	21-SS PLATE-6 MM-SA240TP309S	16	No	1-45-802-02335		G1	0.00
25	PL 6X342X415	22-SS PLATE-6 MM-SA240TP309S	16	No	1-45-802-02335		G1	0.00
26	PL 6X118X415	23-SS PLATE-6 MM-SA240TP309S	32	No	1-45-802-02335		G1	0.00
27	PL 6X128X415	24-SS PLATE-6 MM-SA240TP309S	16	No	1-45-802-02335		G1	0.00
28	PL 6X189X415	25-SS PLATE-6 MM-SA240TP309S	16	No	1-45-802-02335		G1	0.00
29	PL 6X131X244	26-SS PLATE-6 MM-SA240TP309S	64	No	1-45-802-02335		G1	0.00
30	PL 6X245X205	27-SS PLATE-6 MM-SA240TP309S	16	No	1-45-802-02335		G1	0.00
31	PL 6X249X244	28-SS PLATE-6 MM-SA240TP309S	16	No	1-45-802-02335		G1	0.00
32	PL 6X200X724	29-SS PLATE 6.00 MM - SA240TY310S	16	No	1-45-802-02335		G1	0.00
33	PL 6X13X44	30-SS PLATE 6.00 MM - SA240TY310S	24	No	2-45-000-01699		G1	0.00
34	PL 6X38X333	31-SS PLATE-6 MM-SA240TP309S	48	No	2-45-802-01698		G1	0.00
35	PL6X507X775	32-SS PLATE-6 MM-SA240TP309S	80	No	2-45-802-02082		G1	0.00
36	PL6X467X798	33-SS PLATE-6 MM-SA240TP309S	80	No	2-45-802-02082		G1	0.00
37	PL6X150X150	34-SS PLATE-6 MM-SA240TP309S	160	No	2-45-802-02082		G1	0.00
38	PL 6X159X239	35-SS PLATE-6 MM-SA240TP309S	16	No	2-45-802-02083		G1	0.00
39	PL 6X185X724	36-SS PLATE-6 MM-SA240TP309S	8	No	2-45-802-02083		G1	0.00
40	PL 6X239X390	37-SS PLATE-6 MM-SA240TP309S	32	No	2-45-802-02083		G1	0.00

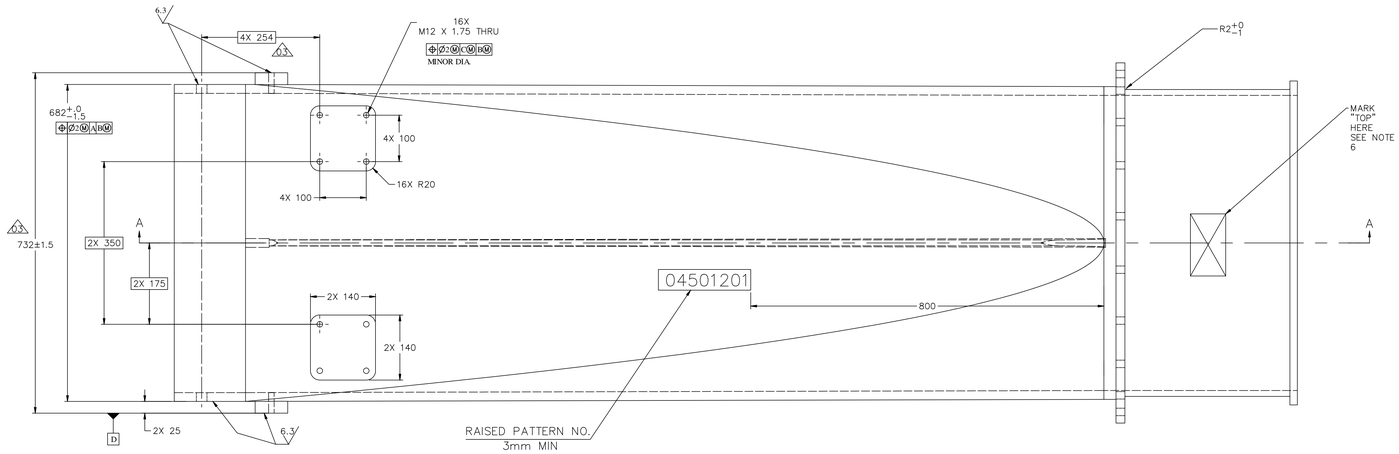
41	PL 6X724X185	38-SS PLATE-6 MM-SA240TP309S	8	No	2-45-802-02083		**G1**	**0.00**
42	PL 6X238X795	39-SS PLATE-6 MM-SA240TP309S	16	No	2-45-802-02083		**G1**	**0.00**
43	PL 6X278X316	40-SS PLATE-6 MM-SA240TP309S	16	No	2-45-802-02083		**G1**	**0.00**
44	PL 6X14X205	41-SS PLATE-6 MM-SA240TP309S	16	No	2-45-802-02083		**G1**	**0.00**
45	BEARING PLATE PL 6X38X38	42-SS PLATE-6 MM-SA240TP309S	48	No	3-45-000-01245		**G1**	**0.00**
46	NOZZLE TIP SUPPORT PLATE	43-SS PLATE 6.00 MM - SA240TY310S	16	No	3-45-000-01299		**G1**	**0.00**
47	PL 10X51X252	1-SS PLATE-10 MM -SA240TP309S	24	No	0-45-802-03096		**G2**	**0.00**
48	PL 10X51X252	2-SS PLATE-10 MM -SA240TP309S	24	No	0-45-802-03096		**G2**	**0.00**
49	PL 10X716X216	3-SS PLATE-10 MM -SA240TP309S	24	No	1-45-802-01928		**G2**	**0.00**
50	PL 10X716X216	4-SS PLATE-10 MM -SA240TP309S	24	No	1-45-802-01928		**G2**	**0.00**
51	PL 10X252X216	5-SS PLATE-10 MM -SA240TP309S	48	No	1-45-802-01928		**G2**	**0.00**
52	PL 10X252X62	6-SS PLATE-10 MM -SA240TP309S	48	No	1-45-802-01928		**G2**	**0.00**
53	PL 10X70X228	7-SS PLATE-10 MM -SA240TP309S	24	No	2-45-000-01699		**G2**	**0.00**
54	PL10X366X490	8-SS PLATE-10 MM -SA240TP309S	80	No	2-45-802-02082		**G2**	**0.00**
55	PL10X417X692	9-SS PLATE-10 MM -SA240TP309S	80	No	2-45-802-02082		**G2**	**0.00**
56	PL10X172X497	10-SS PLATE-10 MM -SA240TP309S	480	No	2-45-802-02082		**G2**	**0.00**
57	PL10X254X692	11-SS PLATE-10 MM -SA240TP309S	80	No	2-45-802-02082		**G2**	**0.00**
58	PL10X31X298	12-SS PLATE-10 MM -SA240TP309S	240	No	2-45-802-02082		**G2**	**0.00**
59	PL10X55X120	13-SS PLATE-10 MM -SA240TP309S	160	No	2-45-802-02082		**G2**	**0.00**
60	PL10X38X38	14-SS PLATE-10 MM -SA240TP309S	160	No	2-45-802-02082		**G2**	**0.00**
61	PL 12X126X178	1-SS PLATE 12 MM - SA240TP310S	48	No	3-45-320-01323		**G2**	**0.00**
62	PL 12X110X180	2-SS PLATE 12 MM - SA240TP310S	48	No	3-45-320-01388		**G2**	**0.00**
63	PLATE 12X110X180	3-SS PLATE 12 MM - SA240TP310S	48	No	3-45-320-01388		**G2**	**0.00**

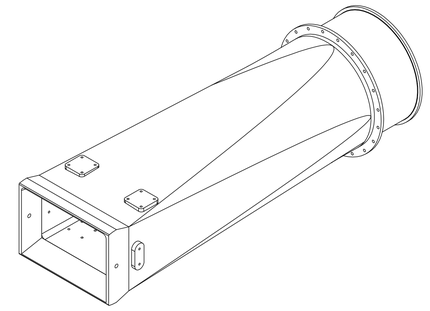
DRAWING NO: 0-45-320-01201

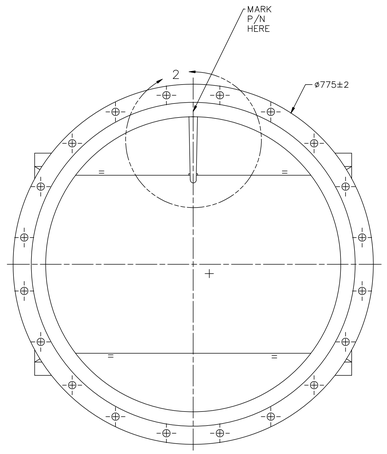
FOR TOLERANCES OF UNTOLERANCED DIMENSIONS DURING MANUFACTURE REFER PLANT STD. NO TP 023 0299

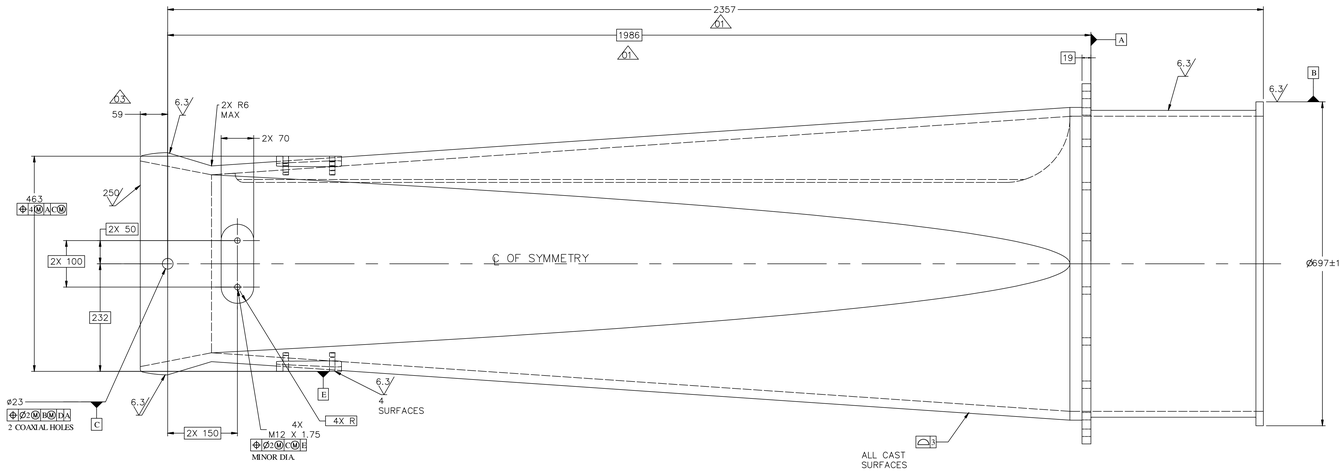


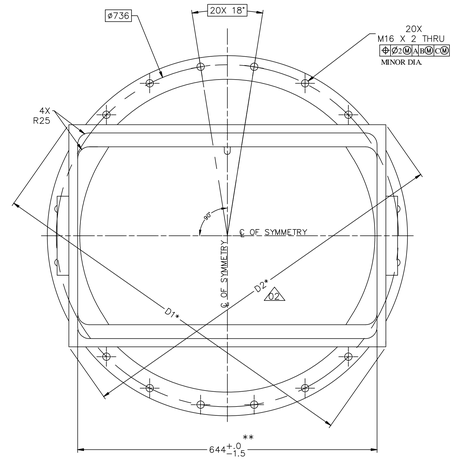
DETAIL 1
SCALE 1 / 2





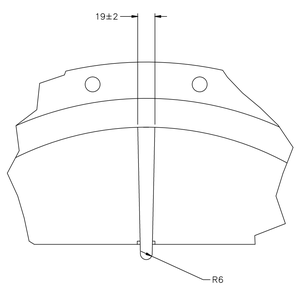




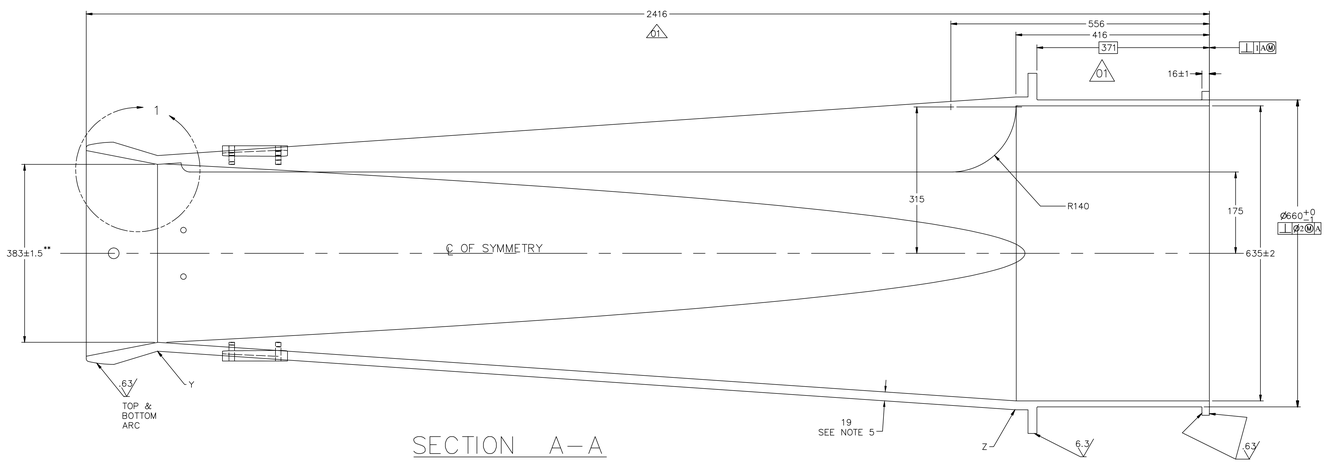


∗ DIFFERENCE BETWEEN DIAGONAL DIMENSIONS SHALL BE WITHIN 1.5MM AFTER MACHINING.

** CRITICAL DIMENSION



DETAIL 2
SCALE 1 / 2



SECTION A-A

NOTES:

1. DIMENSIONS AND TOLERANCES PER ASME Y14.5M-1994
   UNLESS OTHERWISE SPECIFIED:
   a. ALL LINEAR DIMENSIONS ARE IN MILLIMETERS
   b. TOLERANCE ON LINEAR DIMENSIONS ±3.
   c. TOLERANCE ON ANGULAR DIMENSIONS ±1°.
   d. UN-TOLERANCED CASTING DIMS ARE BASIC
   e. UN-TOLERANCED MACHINED DIMS TO BE WITHIN ±0.8MM
2. ALL FILLETS AND ROUNDS R6 UNLESS NOTED.
3. INDICATES SURFACE FINISH PER ANSI B.46.1, USE UNLESS NOTED.
4. INSIDE SURFACE TO BE SMOOTH, USE GRAPHITE DRY SAND CORE.
5. MAINTAIN 19 MIN. WALL THICKNESS FROM POINT "Y" TO "Z".
6. PART MARKING METHOD NOT TO RAISE SURFACE.
7. ALL DIAMETERS TO BE CONCENTRIC WITHIN 0.15MM TIR.
8. CONSIDERING POSITIVE TOLERANCES AND DENSITY VARIATIONS THE WEIGHT OF FINISHED COAL NOZZLE CAN VARY UPTO A MAXIMUM OF 850KGS

MATERIAL CODE: 920182260000
WEIGHT: 750KG

MATERIAL SPECIFICATION CHART			
FOR INDEX TO MATERIAL SPECIFICATION REFER TO STANDARD NO. 17-64, INDEX NO. 14.2			
ITEM	SPEC. NO.	NOMINAL COMPOSITION	PURCHASING INSTRUCTIONS
307	A-536	Ductile Cast Iron Mod. Grade 65-45-12	POE8

REV	DATE	ALTERED : M.V	CHD & APPD : G.S.K	ZONE
03	08.02.12	DIMENSIONS ADDED.		
02	07.12.11	DIAGONAL DIMENSIONS ADDED		
01	16.06.11	DRAWING REVISED AS PER ALSTOM LATEST DRAWING E-903-5317-R2	CHD & APPD : M.T.P	

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT

Bharat Heavy Electricals Ltd
UNIT: HIGH PRESSURE BOILER PLANT
TIRUCHIRAPALLI - 620014

	NAME	SIGNATURE	DATE
DRN	B.C	-sd-	08.03.11
CHD	M.V	-sd-	08.03.11
APPD	M.T.P	-sd-	08.03.11

355-052

DEPT | ALL DIMENSIONS ARE IN MM | PROJECTION | SCALE: NTS | WEIGHT (Kg) | REF TO ASSY / OLD DWG: E-903-5317-R2

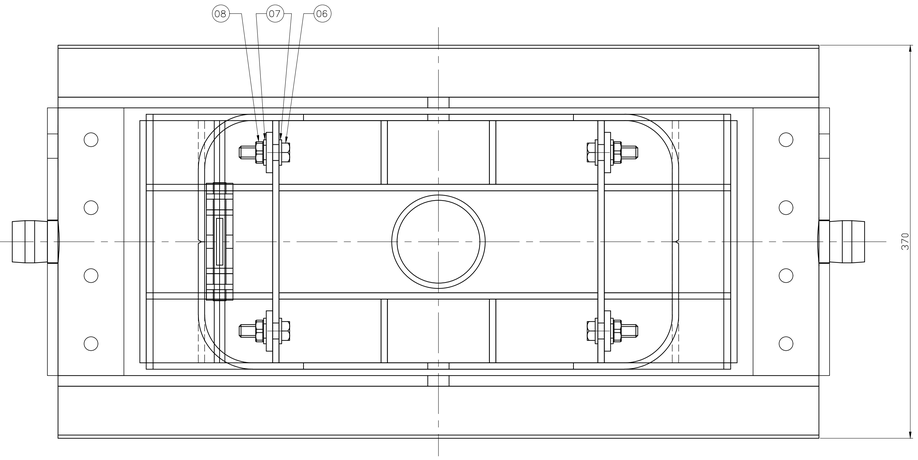
CODE

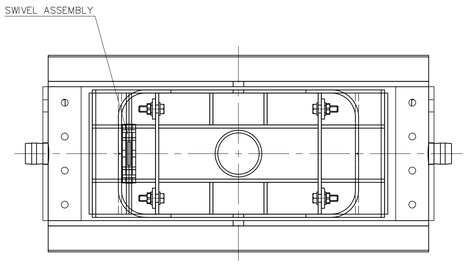
TITLE: CAST COAL NOZZLE FOR 812MM WIDE WINDBOX

DRAWING NO : 0-45-320-01201 | REV 03

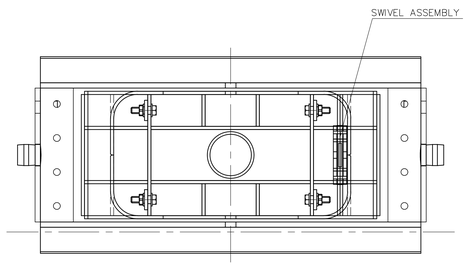
DRAWING NO. 0-45-802-03096

FOR TOLERANCES OF UNTOLERANCED DIMENSIONS DURING MANUFACTURE REFER PLANT STD. NO TP 023 0299

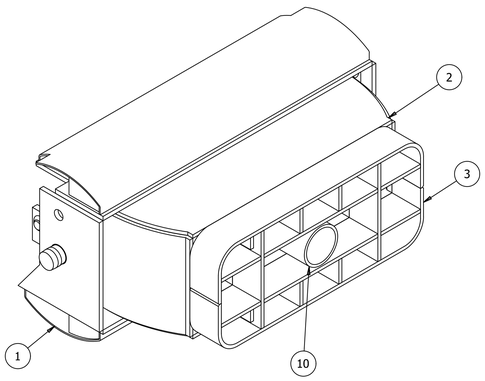


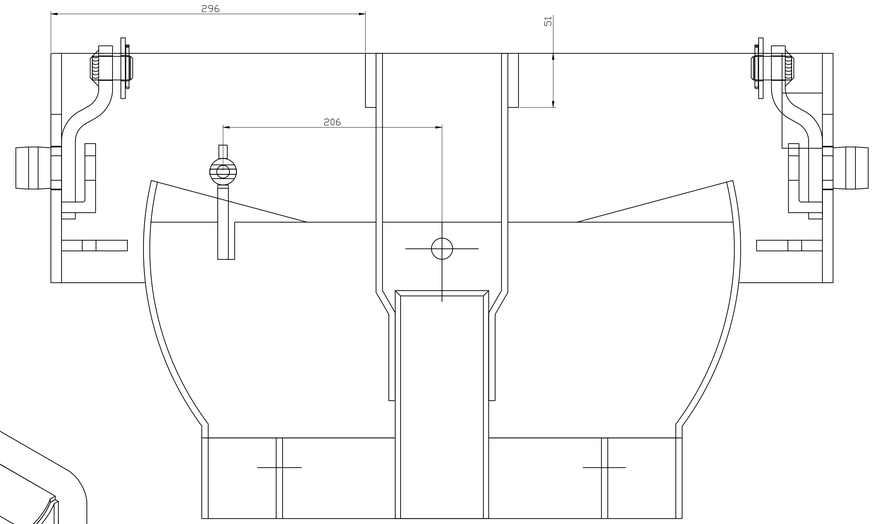


ARRANGEMENT–A
CORNER 1 & 3

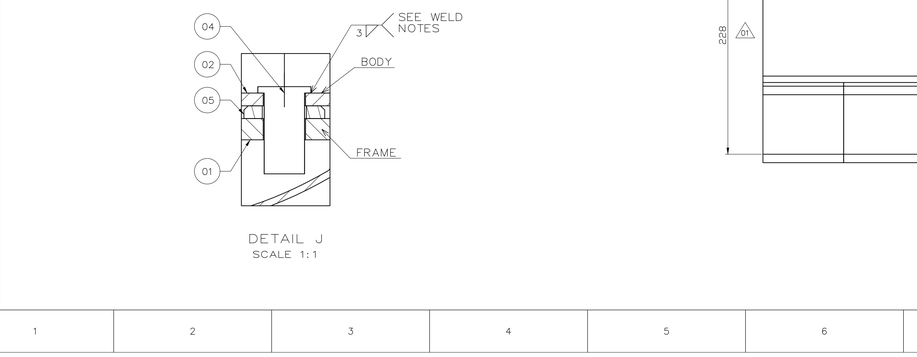


ARRANGEMENT–B
CORNER 2 & 4

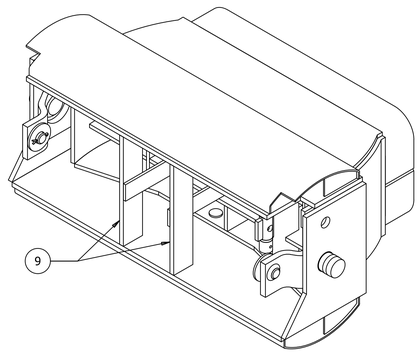


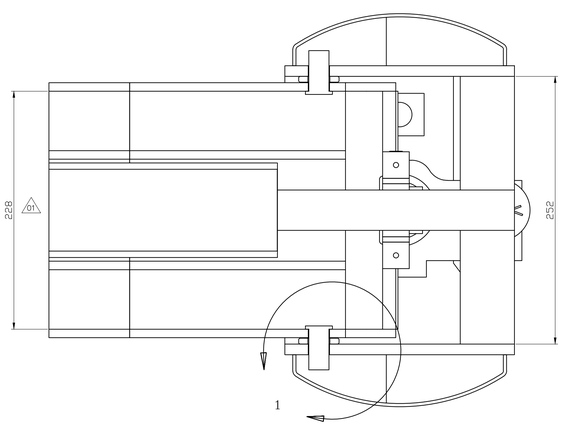


SECTION A–A



DETAIL J
SCALE 1:1





SECTION B–B

	ITEM NUMBER	DESCRIPTION	STD	DRAWING NUMBER		ITEM NO / VAR NO	MATERIAL CODE / MATERIAL SPECN	A/C/P / DI	UNIT WEIGHT / QUANTITY	QC ZONE
	11	OPERATING LEVER ASSEMBLY		3-45-320-01323			ASSEMBLY		1.644	
									2	
	10	NOZZLE TIP SLEEVE INSERT ASSEMBLY		2-45-802-01698			ASSEMBLY		3.933	
									1	
	09	PL 10 X 51 X 252				150118970000		NO	1.078	
						SA240TP309S			2	
	08	SS HEX. NUT M12		4-45-800-01695		150241110000		NO	0.022	
						SA479TY304			4	
	07	SS PLAIN WASHER M12		4-45-800-01694		150112710000		NO	0.027	
						SA479TY304			8	
	06	SS HEX. HD SCREW M12X1.75PITCHX40L		4-45-800-01693		150241110000		NO	0.050	
						SA479TY304			4	
	05	BEARING PLATE		3-45-000-01245		150119320000		NO	0.053	
						SA240TP309S			2	
	04	PIN DETAIL		3-45-000-01246		150241110000		NO	0.099	
						SA479TY304			2	
	03	AIR NOZZLE TIP W/YAW & SCANNER REMOVABLE FRONT SECTION		1-45-802-01926			ASSEMBLY	NO	10.398	
									1	
	02	AIR NOZZLE TIP W/YAW & SCANNER-BODY		1-45-802-01927			ASSEMBLY	NO	35.929	
									1	
	01	AIR NOZZLE TIP W/YAW & SCANNER-FRAME		1-45-802-01928			ASSEMBLY	NO	43.238	
									1	

GENERAL NOTES:

1. DIMENSIONS AND TOLERANCES UNLESS OTHERWISE SPECIFIED.
   A. ALL LINEAR DIMENSIONS ARE IN MILLIMETERS.
   B. TOLERANCE ON LINEAR DIMENSIONS: ±2
   C. TOLERANCE ON ANGULAR DIMENSIONS: ±1°
2. FOR FABRICATION AND WELDING INFORMATION NOT SHOWN SEE DWGS. 1–45–000–01615 & 1–45–000–01616.
3. NOZZLE TIP F.A. = 0.097 SQ.M. THRU INSIDE OF ASSEMBLY ONLY
4. ENSURE ±25° HORIZONTAL MOVEMENT.

WELD NOTES:

1. ALL WELDS SHALL BE QUALIFIED IN ACCORDANCE WITH ASME BOILER & PRESSURE VESSEL CODE, SECTION IX OR EQUIVALENT STANDARD.
2. WHEN REPLACING PARTS, WELDS SHOWN ARE SUITABLE FOR FIELD WELDS.
3. WORKMANSHIP SHALL BE IN ACCORDANCE WITH AND MEET REQUIREMENT OF A.W.S. D1.1.

REV	DATE	ALTERED : BALAJI D
01	06.10.2021	CHD & APPD:Shankar Naik V
ZONE		DRAWING REVISED AS INDICATED.

CUSTOMER No.:1727

PROJECT: 1x660 MW BHUSAWAL TPS UNIT-6

OWNER: MAHAGENCO — MAHARASHTRA STATE POWER GENERATION CO. LTD.

CONSULTANT: DEVELOPMENT CONSULTANTS PVT. LTD. CONSULTING ENGINEERS VASHI, NAVI MUMBAI

Bharat Heavy Electricals Ltd
UNIT: HIGH PRESSURE BOILER PLANT
TIRUCHIRAPALLI – 620014

	NAME	SIGNATURE	DATE
DRN	Bimal Chowdhury	–sd–	21.03.2019
CHD	Vikash Sethi	–sd–	21.03.2019
APPD	Shankar Naik V	–sd–	21.03.2019

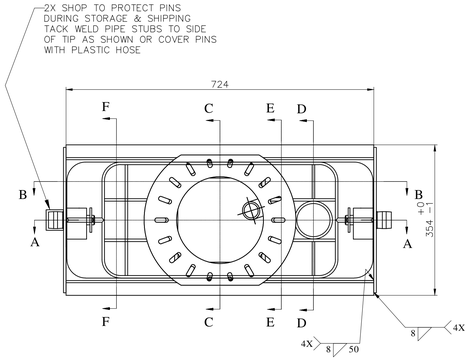
355–052 | DEPT FS | CODE 129 | ALL DIMENSIONS ARE IN MM | PROJECTION | SCALE NTS | WEIGHT (Kg) 99.750 | REF TO ASSY / OLD DWG

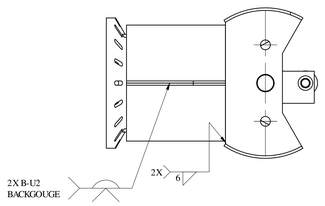
TITLE: AUX AIR NOZZLE TIP W/YAW & SCANNER ASSEMBLY

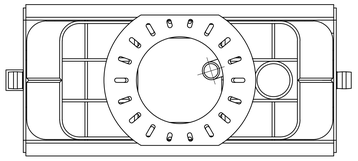
DRAWING NO : 0-45-802-03096 | REV 01

DRAWING NO 0-45-802-03098

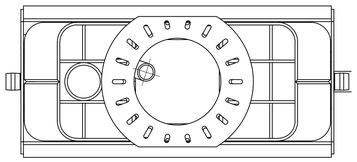
FOR TOLERANCES OF UNTOLERANCED DIMENSIONS DURING MANUFACTURE REFER PLANT STD. NO TP 023 0299





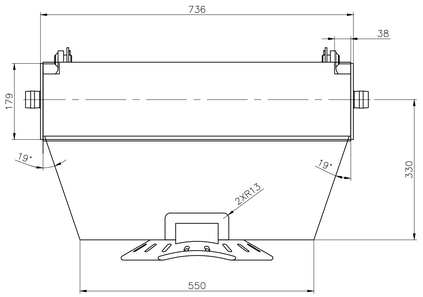


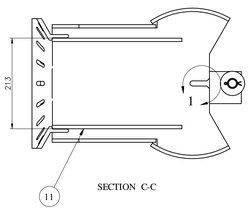
ARRANGEMENT B
CORNERS 1 & 3



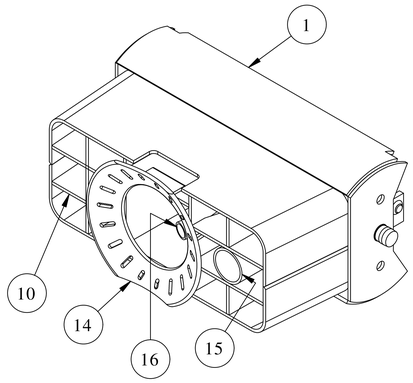
ARRANGEMENT A
CORNERS 2 & 4

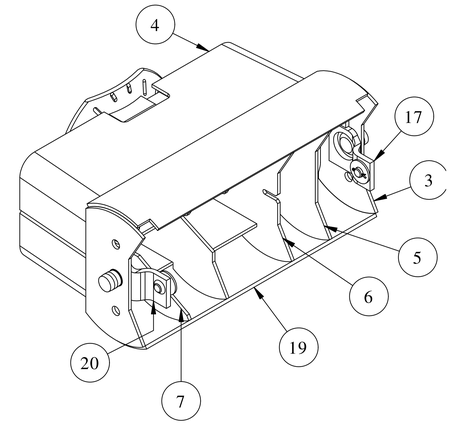
NOTES:
1. DIMENSIONS AND TOLERANCES ARE AS FOLLOWS UNLESS OTHERWISE SPECIFIED:
   A. ALL LINEAR DIMENSIONS ARE IN MILLIMETERS.
   B. TOLERANCES ON LINEAR DIMENSIONS: ±1.
   C. TOLERANCES ON ANGULAR DIMENSIONS: ±1°.
2. FOR FABRICATION AND WELDING INFORMATION NOT SHOWN, SEE DWG. 1-45-000-01617
3. INTERLOCKING SLOTS IN BOTH HORIZONTAL AND VERTICAL PARTITION PLATES, IF APPLICABLE, APPROXIMATELY 8 WIDE.
4. NOZZLE TIP F.A. = .106 M^2 (1.1409 ft^2) (THRU INSIDE OF TIP ONLY).
5. FOR DETAILS OF TIP REFER DRAWING NO 1-45-802-02335

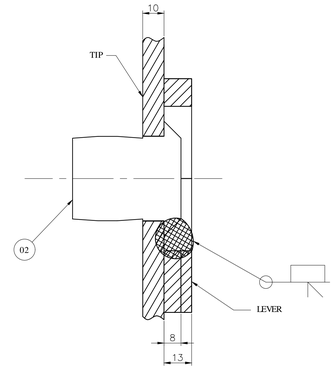




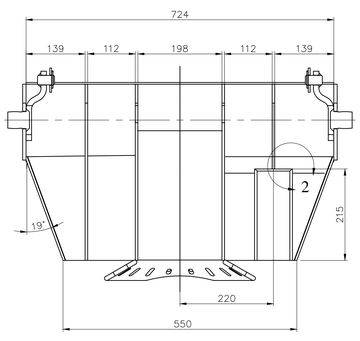
SECTION C-C

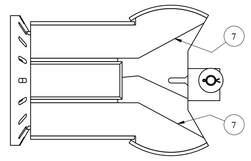




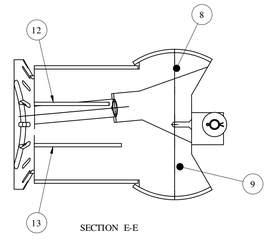


SECTION G-G
SCALE NTS
2 PLACES

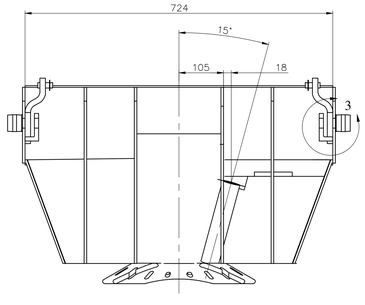


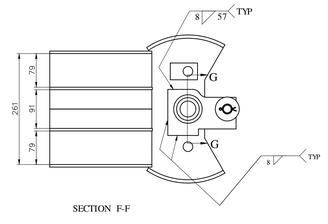


SECTION D-D

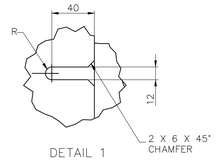


SECTION E-E

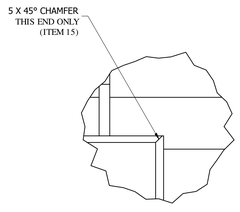




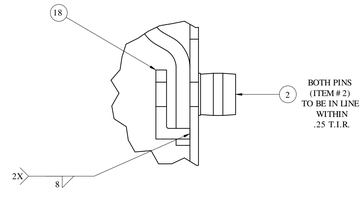
SECTION F-F



DETAIL 1



DETAIL 2



DETAIL 3
SCALE 1:5

	ITEM NUMBER	DESCRIPTION	STD	DRAWING NUMBER			UNIT	UNIT WEIGHT		ZONE
					ITEM NO	MATERIAL CODE	A/C/P			
					VAR NO	MATERIAL SPECN	DI	QUANTITY		
	20	OPERATING LEVER ASSLY.		3-45-320-01388		ASSEMBLY	NO	1.330		
					02			1		
	19	PL6 X 200 X 724				150110030000	NO	7.011		
						SA240TP309S		1		
	18	PIN CONNECTING LUG		3-45-000-01158		9204048300000	NO	0.245		
					01	SA351I8CR8NISS		2		
	17	OPERATING LEVER ASSLY.		3-45-320-01388		ASSEMBLY	NO	1.330		
					01			1		
	16	TUBE ø44.5 X 4 : 197L				154520650001	NO	0.836		
						SA213TP347H		1		
	15	PIPE ø88.9 X 5.60 : 215L				151510906000	NO	2.782		
						SA213TP304H		1		
	14	DIFFUSER DISK		3-41-125-00116		920510040000	NO	5.500		
						A560 50Cr50Nicb		1		
	13	PL6 X 249 X 244				150110030000	NO	2.335		
						SA240TP309S		1		
	12	PL6 X 245 X 205				150110030000	NO	2.432		
						SA240TP309S		1		
	11	PL6 X 198 X 305				150110030000	NO	2.924		
						SA240TP309S		2		
	10	PL6 X 131 X 244				150110030000	NO	1.057		
						SA240TP309S		4		
	09	PL6 X 189 X 415				150110030000	NO	2.678		
						SA240TP309S		1		
	08	PL6 X 128 X 415				150110030000	NO	1.322		
						SA240TP309S		1		
	07	PL6 X 118 X 415				150110030000	NO	1.499		
						SA240TP309S		2		
	06	PL6 X 342 X 415				150110030000	NO	5.314		
						SA240TP309S		1		
	05	PL6 X 342 X 415				150110030000	NO	5.287		
						SA240TP309S		1		
	04	PL6 X 281 X 932				150110030000	NO	10.324		
						SA240TP309S		2		
	03	PL6 X 179 X 342				150110030000	NO	2.243		
						SA240TP309S		2		
	02	NOZZLE TIP PIVOT PIN		3-45-000-01239		150241600000	NO	0.560		
						SA479TY304		2		
	01	PL6 X 200 X 724				150110030000	NO	6.958		
						SA240TP309S		1		

CUSTOMER No.:1727

PROJECT: 1x660 MW BHUSAWAL TPS UNIT-6

OWNER: MAHAGENCO — MAHARASHTRA STATE POWER GENERATION CO. LTD.

CONSULTANT: DEVELOPMENT CONSULTANTS PVT. LTD. CONSULTING ENGINEERS VASHI, NAVI MUMBAI

Bharat Heavy Electricals Ltd
UNIT: HIGH PRESSURE BOILER PLANT
TIRUCHIRAPALLI - 620014

	NAME	SIGNATURE	DATE
DRN	Bimal Chowdhury	-sd-	21.03.2019
CHD	Vikash Sethi	-sd-	21.03.2019
APPD	Shankar Naik V	-sd-	21.03.2019

355-052

DEPT	ALL DIMENSIONS ARE IN MM	PROJECTION	SCALE	WEIGHT (Kg)	REF TO ASSY / OLD DWG
FS			NTS	84.933	
CODE 129					

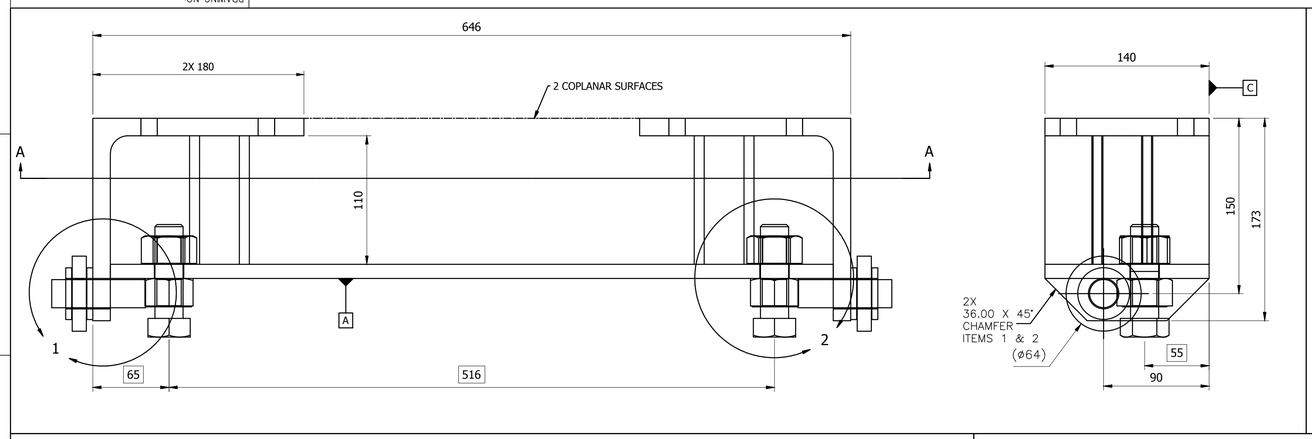
TITLE: OIL NOZZLE TIP WITH SCANNER AND HEA ASSEMBLY

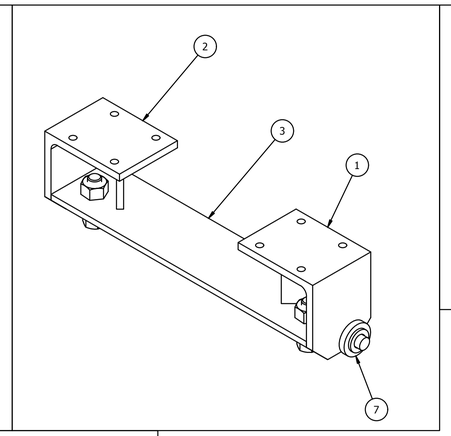
DRAWING NO : 0-45-802-03098 REV 00

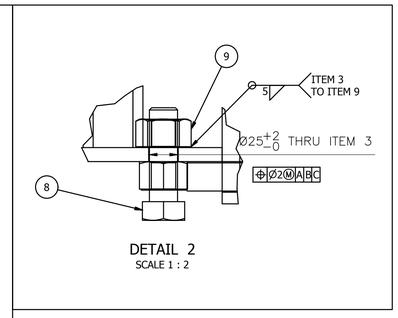
REV	DATE	ALTERED :
01		CHD & APPD :
ZONE		

DRAWING NO: 1-45-320-01659

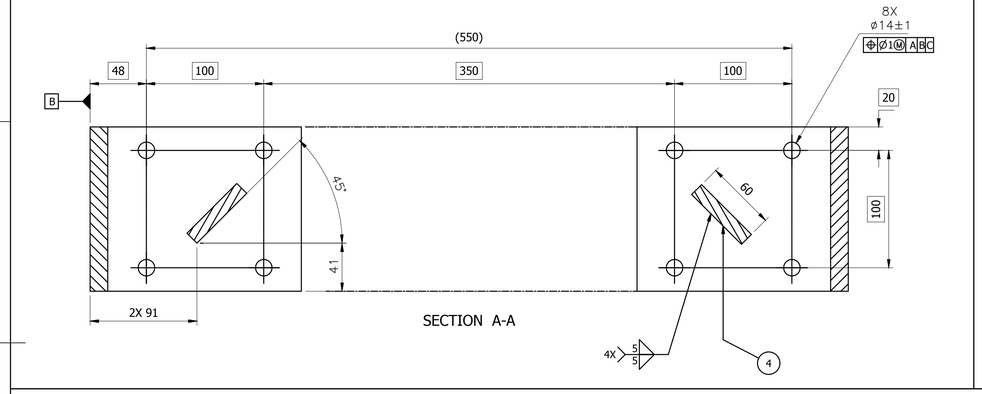
FOR TOLERANCES OF UNTOLERANCED DIMENSIONS DURING MANUFACTURE REFER PLANT STD. NO TP 023 0299

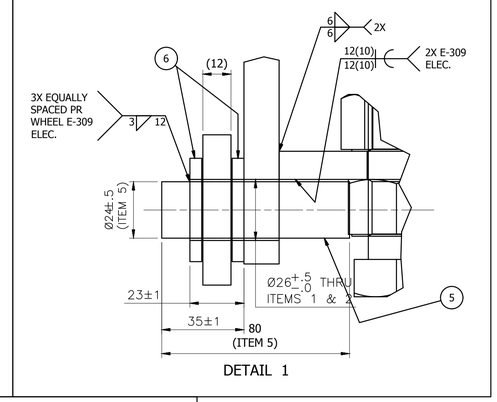






DETAIL 2
SCALE 1 : 2

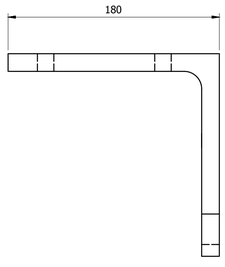


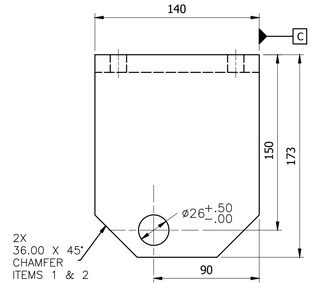


DETAIL 1

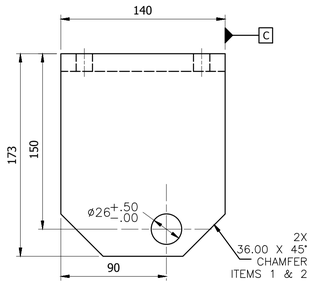
NOTES:

1. DIMENSIONS AND TOLERANCES PER ASME Y14.5M–1994
   UNLESS OTHERWISE SPECIFIED:
   a. ALL LINEAR DIMENSIONS ARE IN MILLIMETERS.
   b. TOLERANCE ON LINEAR DIMENSIONS ±1
   c. TOLERANCE ON ANGULAR DIMENSIONS ±1°
2. ALL WELDING PER A.W.S. D1.1 – USE E–7018 ELECTRODE
   UNLESS OTHERWISE SPECIFIED.
3. BREAK ALL SHARP EDGES.

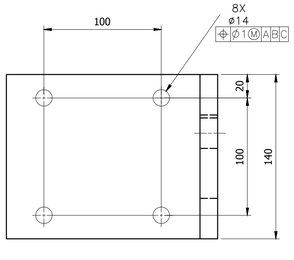




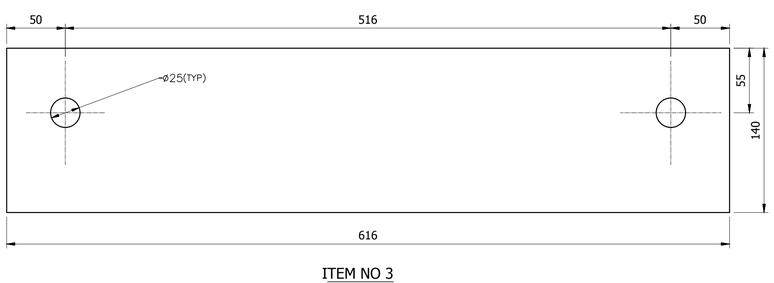
ITEM 1



ITEM 2



DETAIL OF ITEM 1 & 2



ITEM NO 3

VARIANT NUMBER	ITEM NUMBER	DESCRIPTION	STD	DRAWING NUMBER	ITEM NO / VAR NO	MATERIAL CODE / MATERIAL SPECN	A/C/P / DI	UNIT / UNIT WEIGHT / QUANTITY	GS	ZONE
	09	HEAVY HEX NUT M24				413040002400		0.110		
						IS: 1363(P–3)		4		
	08	HEAVY HEX BOLT M24X3.0X80L(F.T)				412222410000		0.463		
						IS: 1363(P–2)		2		
	07	CASTER WHEEL		4–45–320–01654		150111320000		0.253		
						IS2062FE410A		2		
	06	WASHER FLAT ø24				414180002400		0.043		
						IS: 6649		4		
	05	BAR ø24X80L				150241110000		0.317		
						SA479TY304		2		
	04	STIFFENER PLATE, PL12X60X108				150111320000		0.610		
						IS2062FE410A		2		
	03	BOTTOM PLATE, PL12X616X140				150111320000		7.938		
						IS2062FE410A		1		
	02	ISA 200X200X20THK,140L				150131540000		4.914		
						IS2062FE410A		1		
	01	ISA 200X200X20THK,140L				150131540000		4.914		
						IS2062FE410A		1		

01

REV	DATE	ALTERED : BALAJI D
01	29.07.2021	CHD & APPD : SHANKAR NAIK V
ZONE	ITEM 09 MATERIAL CODE CHANGED FROM 4121524080O0 TO 413040002400	

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT

Bharat Heavy Electricals Ltd
UNIT: HIGH PRESSURE BOILER PLANT
TIRUCHIRAPALLI – 620014

355–053

	NAME	SIGNATURE	DATE
DRN	BIMAL.C	–sd–	22.09.11
CHD	GSK	–sd–	22.09.11
APPD	MTP	–sd–	22.09.11

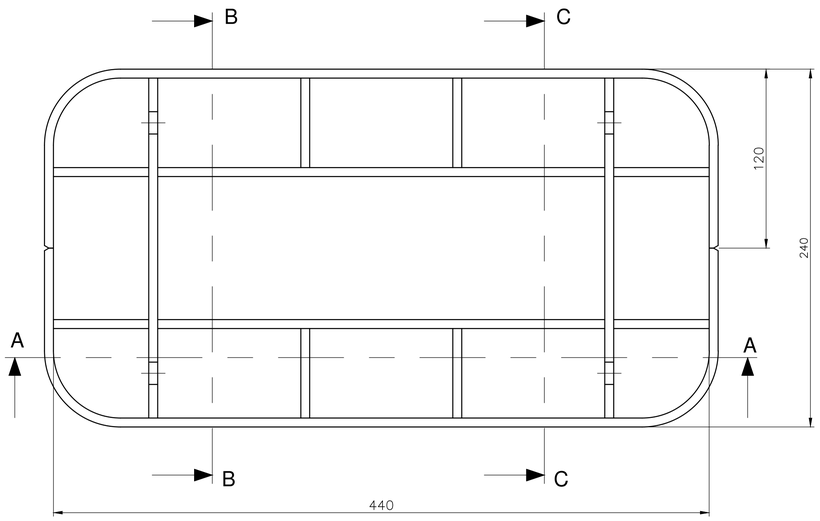
DEPT	ALL DIMENSIONS ARE IN MM	PROJECTION	SCALE	WEIGHT (Kg)	REF TO ASSY / OLD DWG
FS			NTS	21.664	D–903–6839/R0
CODE 129					

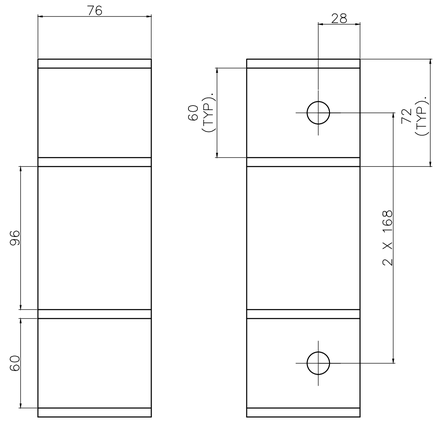
TITLE: COAL NOZZLE FRONT SUPPORT (BOTTOM)

DRAWING NO : 1–45–320–01659 REV 01

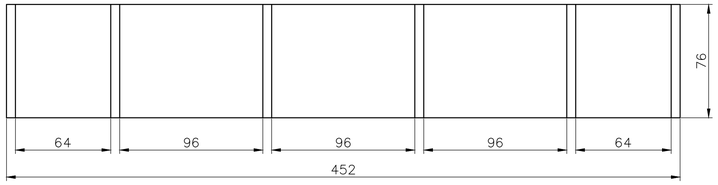
DRAWING NO: 1-45-802-01926

FOR TOLERANCES OF UNTOLERANCED DIMENSIONS DURING MANUFACTURE REFER PLANT STD. NO TP 023 0299

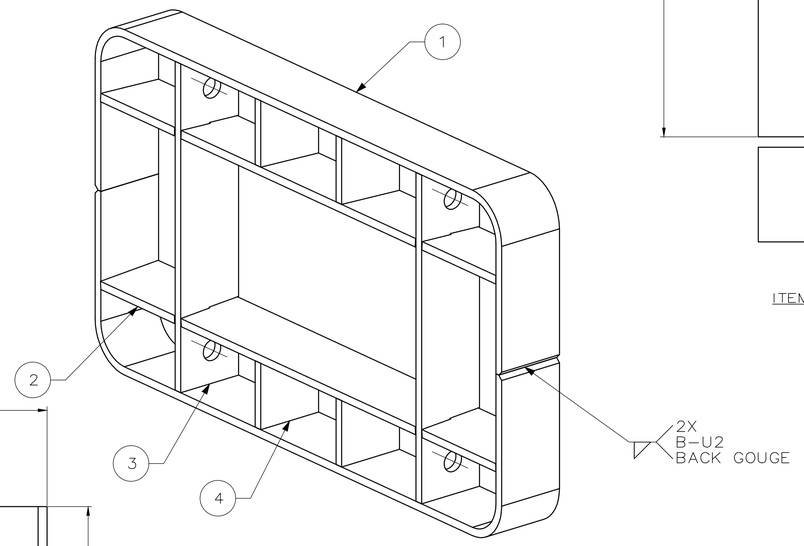


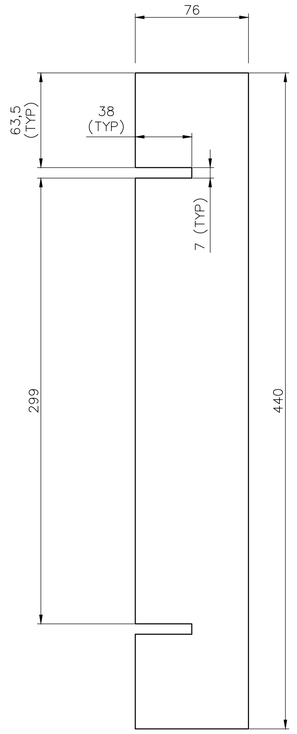


SECTION B-B SECTION C-C

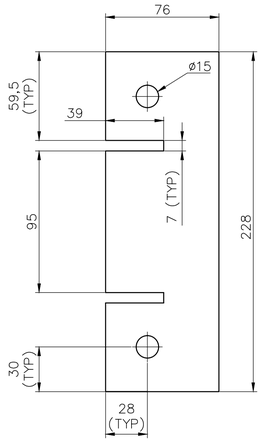


SECTION A-A

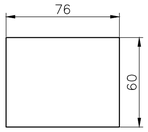




ITEM NO.–2



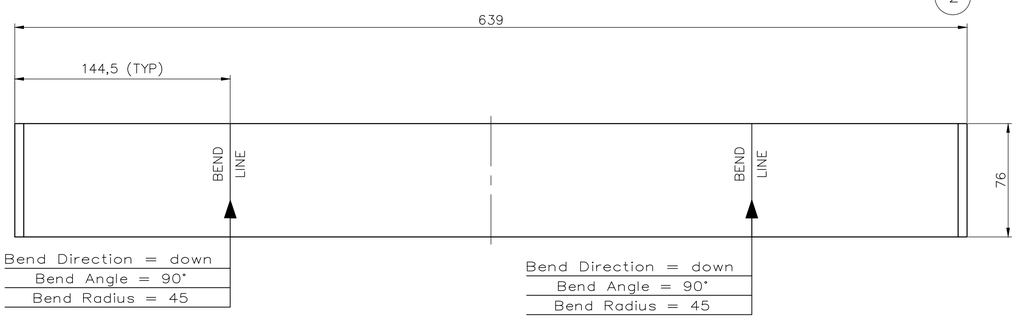
ITEM NO.–3



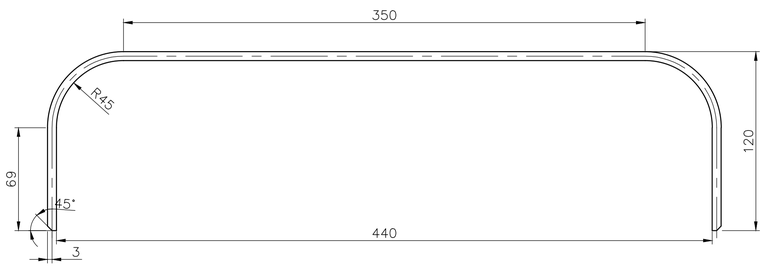
ITEM NO.–4

NOTES :

1. DIMENSIONS AND TOLERANCES UNLESS OTHERWISE SPECIFIED.
   A. ALL LINEAR DIMENSIONS ARE IN MILLIMETERS.
   B. TOLERANCE ON LINEAR DIMENSIONS ±1
   C. TOLERANCE ON ANGULAR DIMENSIONS ±1°
2. FOR FABRICATION AND WELDING INFORMATION NOT SHOWN, SEE DRAWINGS 1–45–000–01615 & 1–45–000–01616.
3. INTERLOCKING SLOTS IN BOTH HORIZONTAL AND VERTICAL PARTITION PLATES IF APPLICABLE APPROXIMATELY 7 WIDE.
4. ASSEMBLY TO BE ABRASIVELY CLEANED.



ITEM – 1 : DEVELOPED VIEW



ITEM – 1 : FORMED VIEW

VARIANT NUMBER	ITEM NUMBER	DESCRIPTION	STD	DRAWING NUMBER	ITEM NO / VAR NO	MATERIAL CODE / MATERIAL SPECN	A/C/P / DI	UNIT / QUANTITY	UNIT WEIGHT	GS	ZONE
	04	PL 6 X 60 X 76				150119320000			0.221		
						SA240TP310S			4		
	03	PL 6 X 228 X 76				150119320000			0.813		
						SA240TP310S			2		
	02	PL 6 X 440 X 76				150119320000			1.593		
						SA240TP310S			2		
	01	PL 6 X 639 X 76				150119320000			2.351		
						SA240TP310S			2		

REV	DATE	ALTERED :
01		CHD & APPD :
ZONE		

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT

BHEL 355–053

Bharat Heavy Electricals Ltd
UNIT: HIGH PRESSURE BOILER PLANT
TIRUCHIRAPALLI – 620014

	NAME	SIGNATURE	DATE
DRN	BIMAL CHOWDHURY	–sd–	17.10.2014
CHD	DHEERAJ KUMAR	–sd–	17.10.2014
APPD	ARULPRABHU R	–sd–	17.10.2014

DEPT: FS | CODE: 129 | ALL DIMENSIONS ARE IN MM | PROJECTION | SCALE: 1 : 2 | WEIGHT (Kg): 10.398 | REF TO ASSY / OLD DWG

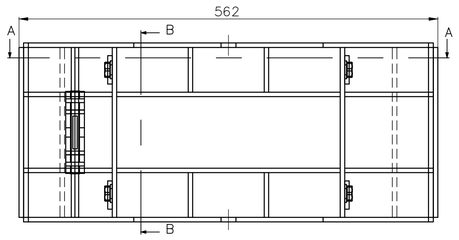
TITLE: AIR NOZZLE TIP W/ YAW & SCANNER REMOVABLE FRONT SECTION

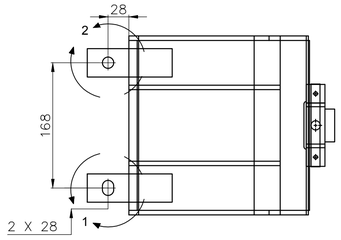
DRAWING NO : 1–45–802–01926

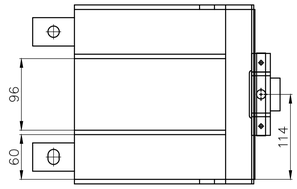
REV: 00

DRAWING NO. 1-45-802-01927

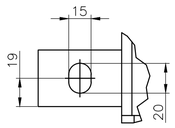
FOR TOLERANCES OF UNTOLERANCED DIMENSIONS DURING MANUFACTURE REFER PLANT STD. NO TP 023 0299



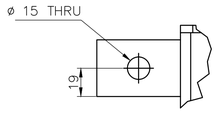




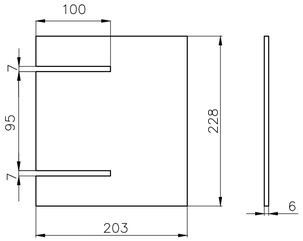
SECTION B – B
SCALE 1:4



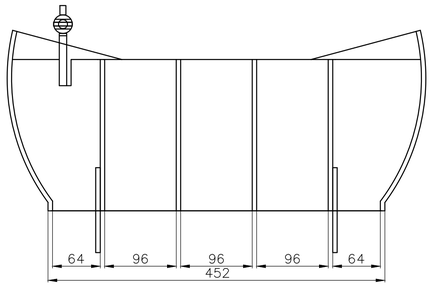
DETAIL 1
SCALE 1:2

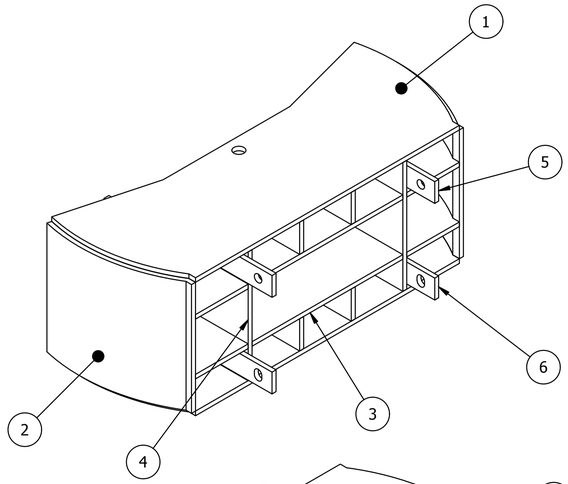


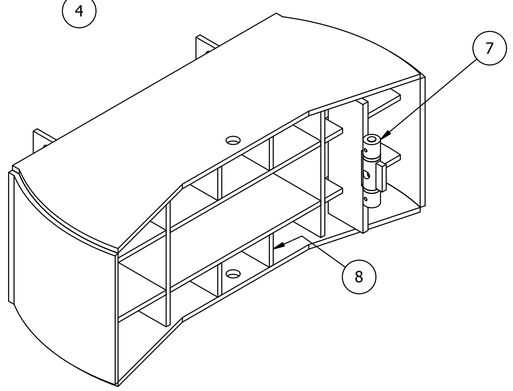
DETAIL 2
SCALE 1:2

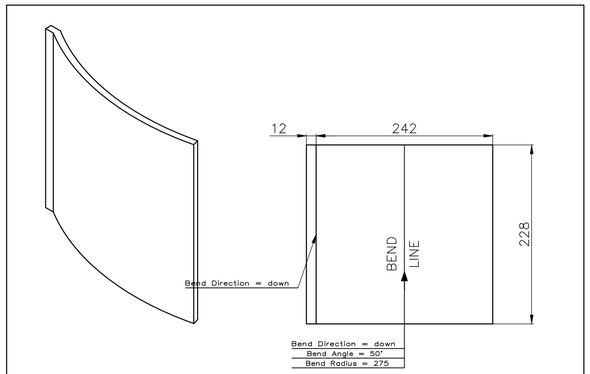


⚠ ITEM 4





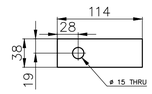




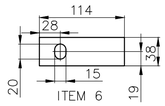
FORMED VIEW

DEVELOPED VIEW

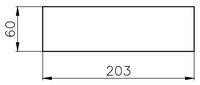
⚠ ITEM 2



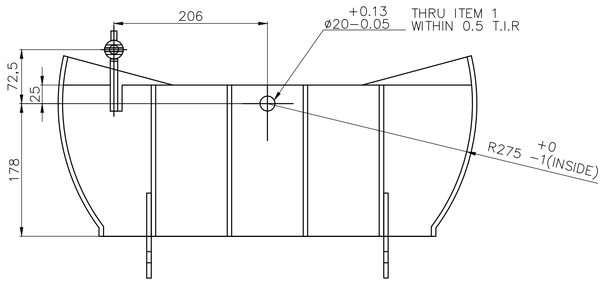
ITEM 5



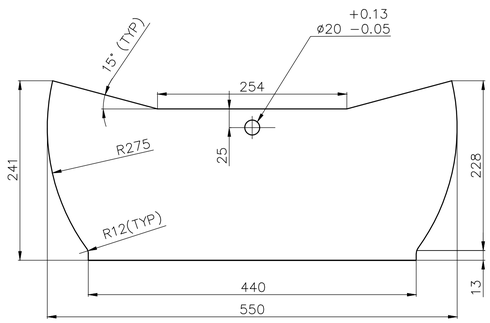
ITEM 6



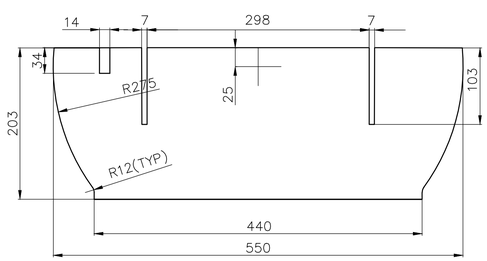
ITEM 8



SECTION A–A
SCALE 1:4



ITEM 1



⚠ ITEM 3

NOTES :

1. DIMENSIONS AND TOLERANCES UNLESS OTHERWISE SPECIFIED.
   A. ALL LINEAR DIMENSIONS ARE IN MILLIMETERS.
   B. TOLERANCE ON LINEAR DIMENSIONS ±2
   C. TOLERANCE ON ANGULAR DIMENSIONS ±1°
2. FOR FABRICATION AND WELDING INFORMATION NOT SHOWN, SEE DRAWINGS 1–45–000–01615 & 1–45–000–01616.
3. INTERLOCKING SLOTS IN BOTH HORIZONTAL AND VERTICAL PARTITION PLATES IF APPLICABLE APPROXIMATELY 7 WIDE.
4. ASSEMBLY TO BE ABRASIVELY CLEANED.

VARIANT NUMBER	ITEM NUMBER	DESCRIPTION	STD	DRAWING NUMBER	ITEM NO / VAR NO	MATERIAL CODE / MATERIAL SPECN	A/C/P / DI	UNIT / QUANTITY	UNIT WEIGHT	GS	ZONE
	08	PL.6 X 203 X 60				150119320000		NO	0.590		
						SA240TP309S			4		
	07	SWIVEL ASSEMBLY "A"=224		2–45–000–01699		ASSEMBLY		NO	1.699		
									1		
	06	PL.6 X 114 X 38				150119320000		NO	0.201		
						SA240TP309S			2		
	05	PL.6 X 114 X 38				150119320000		NO	0.198		
						SA240TP309S			2		
	04	PL.6 X 228 X 203				150119320000		NO	2.241		
						SA240TP309S			2		
	03	PL.6 X 550 X 203				150119320000		NO	5.033		
						SA240TP309S			2		
⚠2	02	PL.6 X 254 X 228				150119320000		NO	2.782		
						SA240TP309S			2		
	01	PL.6 X 550 X 241				150119320000		NO	5.310		
						SA240TP309S			2		

REV	DATE	ALTERED : Bimal Chowdhury	REV	DATE	ALTERED : BALAJI D
02	06.10.2021	CHD & APPD Shankar Naik V	01	06.10.2021	CHD & APPDShankar Naik V
ZONE		DESCRIPTION & WEIGHT FOR ITEM NO 02 ALTERED HENCE TOTAL WEIGHT ALSO ALTERED.	ZONE		DRAWING REVISED AS INDICATED.

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT

Bharat Heavy Electricals Ltd
UNIT: HIGH PRESSURE BOILER PLANT
TIRUCHIRAPALLI – 620014
355–053

	NAME	SIGNATURE	DATE
DRN	BIMAL CHOWDHURY	–sd–	18.10.2014
CHD	DHEERAJ KUMAR	–sd–	18.10.2014
APPD	ARULPRABHU R	–sd–	18.10.2014

DEPT: FS | CODE: 129 | ALL DIMENSIONS ARE IN MM | PROJECTION | SCALE: 1 : 2, 1 : 4 | WEIGHT (Kg): 35.589 | REF TO ASSY / OLD DWG

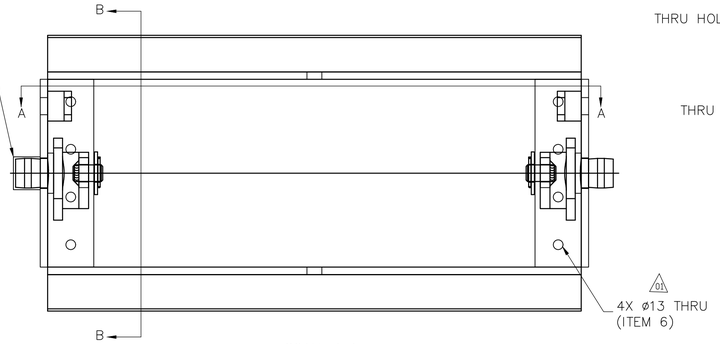
TITLE: AIR NOZZLE TIP W/ YAW & SCANNER BODY

DRAWING NO : 1–45–802–01927 | REV: 02

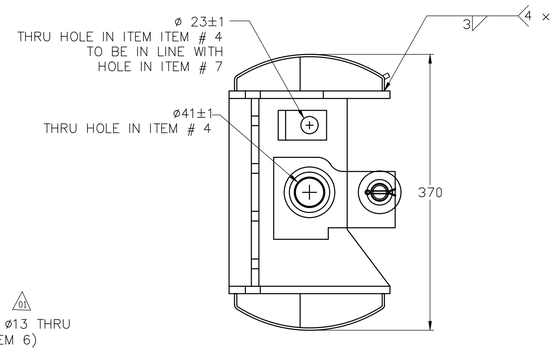
DRAWING NO: 1-45-802-01928

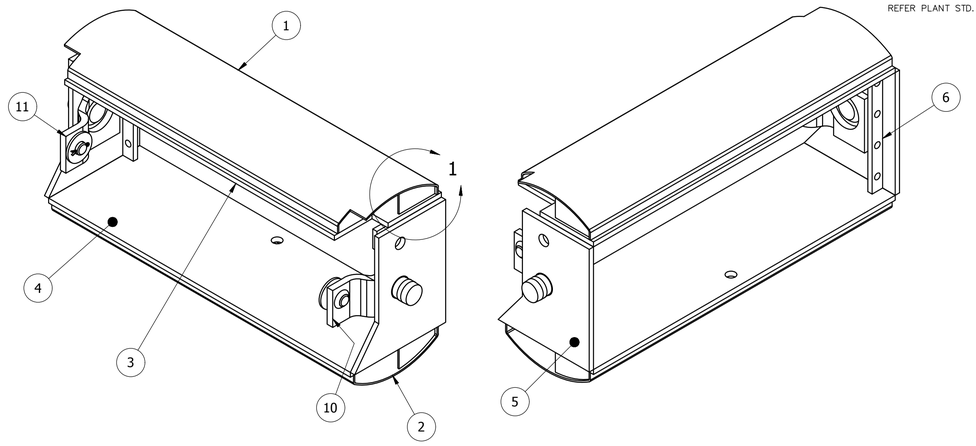
FOR TOLERANCES OF UNTOLERANCED DIMENSIONS DURING MANUFACTURE REFER PLANT STD. NO TP 023 0299

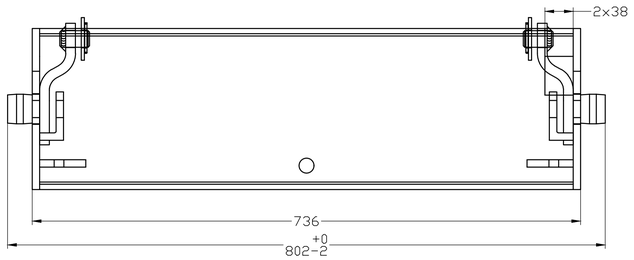
2X SHOP TO PROTECT PINS DURING STORAGE & SHIPPING. TACK WELD PIPE STUBS TO THE FRAME OR COVER PINS WITH PLASTIC HOSE

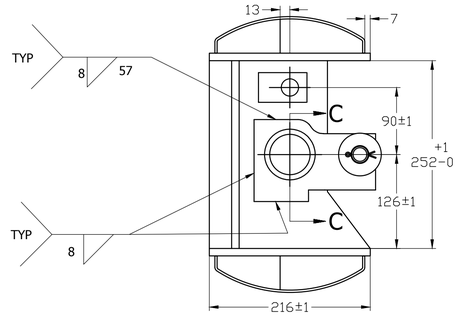


SCALE 1:4

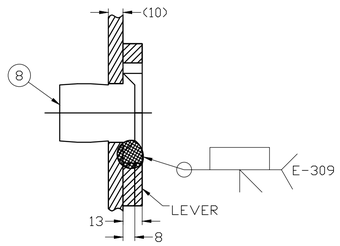




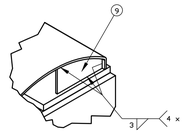




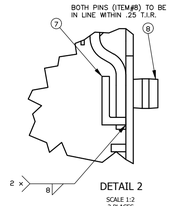
SECTION B-B
SCALE 1:2



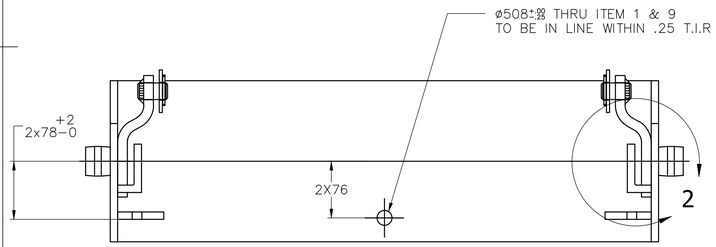
SECTION C-C
SCALE NTS
2 PLACES



DETAIL 1
SCALE 1:2



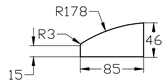
DETAIL 2
SCALE 1:2
2 PLACES



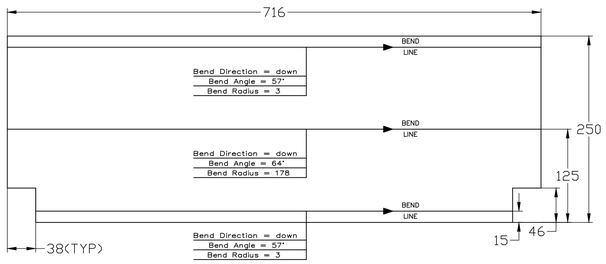
SECTION A-A
SCALE 1:5

NOTES :

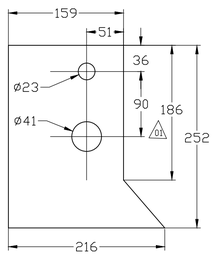
1. DIMENSIONS AND TOLERANCES UNLESS OTHERWISE SPECIFIED.
   A. ALL LINEAR DIMENSIONS ARE IN MILLIMETERS.
   B. TOLERANCE ON LINEAR DIMENSIONS ±2
   C. TOLERANCE ON ANGULAR DIMENSIONS ±1°
2. FOR FABRICATION AND WELDING INFORMATION NOT SHOWN, SEE DRAWINGS 1-45-000-01615 & 1-45-000-01616.
3. INTERLOCKING SLOTS IN BOTH HORIZONTAL AND VERTICAL PARTITION PLATES IF APPLICABLE APPROXIMATELY 7 WIDE.
4. ASSEMBLY TO BE ABRASIVELY CLEANED.



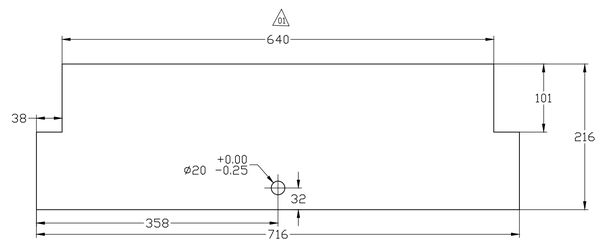
ITEM 9



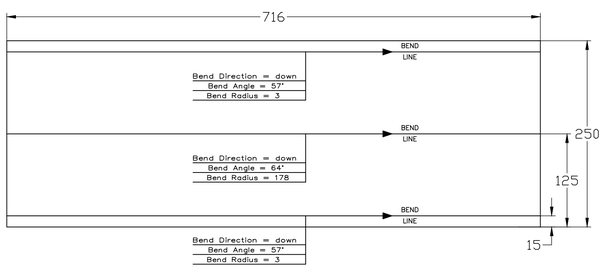
ITEM 1



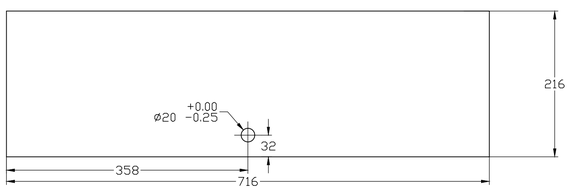
ITEM 5



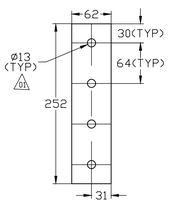
ITEM 3



ITEM 2



ITEM 4



ITEM 6

VARIANT NUMBER	ITEM NUMBER	DESCRIPTION	STD	DRAWING NUMBER				A/C/P	UNIT	UNIT WEIGHT	GS	ZONE
						ITEM NO	MATERIAL CODE					
						VAR NO	MATERIAL SPECN		DI	QUANTITY		
	09	PL.3.15 X 85 X 46					150118750000		NO	0.076		
							SA240TY310S			4		
	08	NOZZLE TIP PIVOT PIN		3-45-000-01239			15024160000		NO	0.560		
						00	SA479TY304			2		
	07	PIN CONNECTING LUG		3-45-000-01158			920404830000		NO	0.245		
						01	SA240TP309S			2		
	06	PL.10 X 252 X 62					150118970000		NO	1.185		
							SA240TP309S			2		
	05	PL.10 X 252 X 216					150118970000		NO	3.157		
							SA240TP309S			2		
	04	PL.10 X 716 X 216					150118970000		NO	12.116		
							SA240TP309S			1		
	03	PL.10 X 716 X 216					150118970000		NO	11.513		
							SA240TP309S			1		
	02	PL.3.15 X 716 X 250					150118750000		NO	4.550		
							SA240TY310S			1		
	01	PL.3.15 X 716 X 250					150118750000		NO	4.461		
							SA240TY310S			1		

REV	DATE	ALTERED : BALAJI D
02	18.10.2021	CHD & APPD : SHANKAR NAIK V
ZONE	ITEM NO-09 DIMENSION CORRECTED.	
REV	DATE	ALTERED : BIMAL CHOWDHURY
01	20.1.2020	CHD & APPD : SHANKAR NAIK V
ZONE	ITEM 03,05,06 NEW DIMENSION ADDED.	

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT

Bharat Heavy Electricals Ltd
UNIT: HIGH PRESSURE BOILER PLANT
TIRUCHIRAPALLI - 620014
355-053

	NAME	SIGNATURE	DATE
DRN	BIMAL CHOWDHURY	-sd-	20.10.2014
CHD	DHEERAJ KUMAR	-sd-	20.10.2014
APPD	ARULPRABHU R	-sd-	20.10.2014

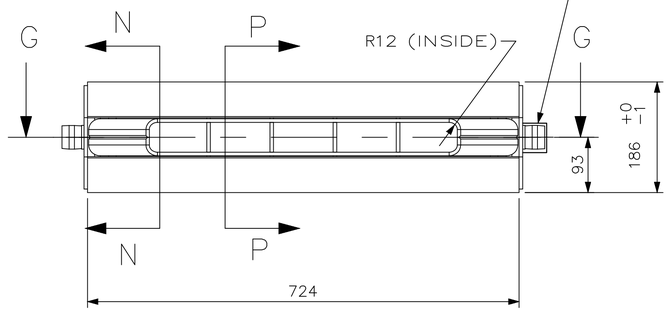
DEPT	ALL DIMENSIONS ARE IN MM	PROJECTION	SCALE	WEIGHT (Kg)	REF TO ASSY / OLD DWG
FS			---	43.238	
CODE 129					

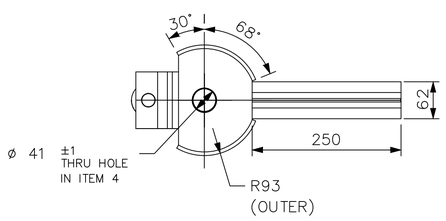
TITLE: AIR NOZZLE TIP WITH YAW AND SCANNER FRAME

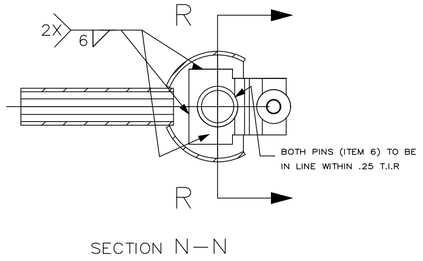
DRAWING NO : 1-45-802-01928 REV 02

DRAWING NO: 1-45-802-02254

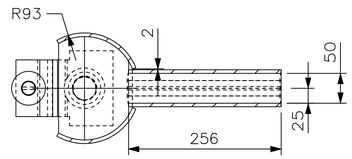
2X
SHOP TO PROTECT PINS
SURING STORAGE &
SHIPPING TACKWELD PIPE
STUB TO SIDE OF TIP
AS SHOWN OR LOVER
PINS WITH PLASTIC HOSE







SECTION N−N

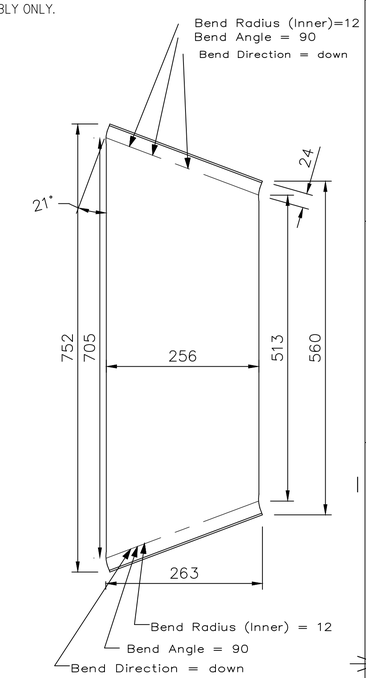


SECTION P−P

GENERAL NOTES:

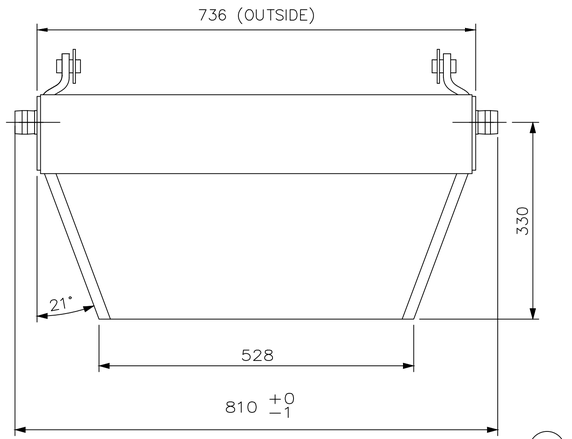
1. DIMENSIONS AND TOLERANCES UNLESS OTHERWISE SPECIFIED:
   A. ALL LINEAR DIMENSIONS ARE IN MILLIMETERS.
   B. TOLERANCE ON LINEAR DIMENSIONS: ±1
   C. TOLERANCE ON ANGULAR DIMENSIONS: ±1°
2. FOR FABRICATION AND WELDING INFORMATION NOT SHOWN, SEE DWGS. 1−45−000−01616 & 1−45−000−01619
3. NOZZLE TIP F.A. = 0.02725 M^2 THRU INSIDE OF ASSEMBLY ONLY.

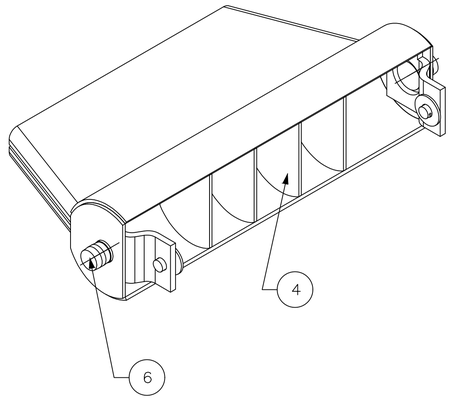
FOR TOLERANCES OF UNTOLERANCED DIMENSIONS DURING MANUFACTURE REFER PLANT STD. NO TP 023 0299

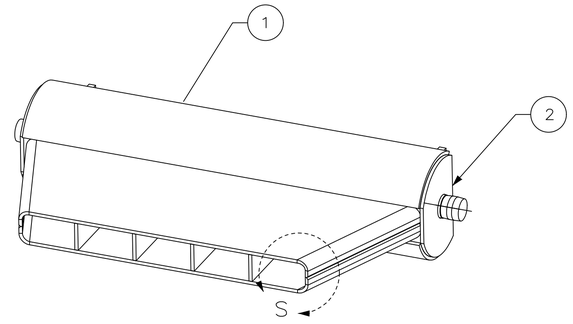


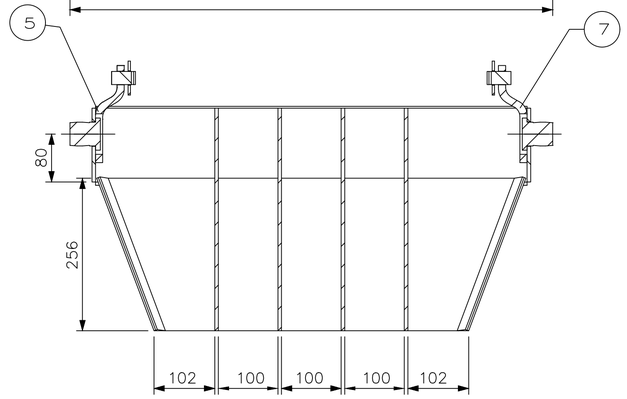
ITEM − 3

DEVELOPED VIEW

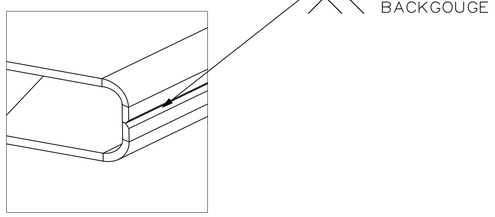




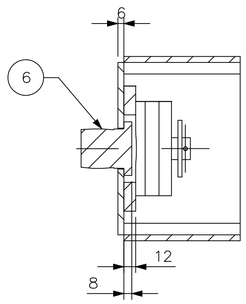




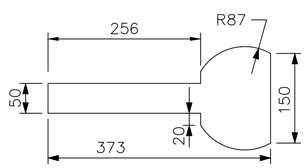
SECTION G−G



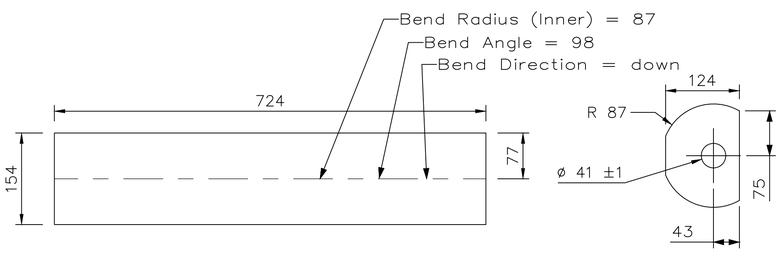
DETAIL S
SCALE 1:2



SECTION R−R



ITEM − 4



ITEM 1 :: DEVELOPED VIEW

ITEM − 2

	07	OPERATING LEVER ASSY.	3-45-320-01388		ASSEMBLY			1.330					
				02				1					
	06	NOZZLE TIP PIVOT PIN (METRIC)	3-45-000-01239		150241600000			0.560					
					SA479TY304			2					
	05	OPERATING LEVER ASSY.	3-45-320-01388		ASSEMBLY			1.330					
				01				1					
	04	PL.6 X 373 x 174			150110030000			1.504					
					SA240TP309S			4					
	03	PL.6 X 752 X 263			150110030000			8.226					
					SA240TP309S			2					
	02	PL.6 X 124 X 174			150110030000			0.844					
					SA240TP309S			2					
	01	PL.6 X 724 X 154			150110030000			5.384					
					SA240TP309S			2					
VARIANT NUMBER	ITEM NUMBER	DESCRIPTION	STD	DRAWING NUMBER	ITEM NO	MATERIAL CODE	A/C/P	UNIT	UNIT WEIGHT	GS	ZONE		
					VAR NO	MATERIAL SPECN		DI	QUANTITY				

CUSTOMER No.:1727

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

PROJECT: 1x660 MW BHUSAWAL TPS UNIT−6

OWNER: MAHAGENCO — MAHARASHTRA STATE POWER GENERATION CO. LTD.

CONSULTANT: DEVELOPMENT CONSULTANTS PVT. LTD.
CONSULTING ENGINEERS
VASHI, NAVI MUMBAI

Bharat Heavy Electricals Ltd
UNIT: HIGH PRESSURE BOILER PLANT
TIRUCHIRAPALLI − 620014

	NAME	SIGNATURE	DATE
DRN	Bimal Chowdhury	−sd−	21.03.2019
CHD	Vikash Sethi	−sd−	21.03.2019
APPD	Shankar Naik V	−sd−	21.03.2019

355−052

DEPT	ALL DIMENSIONS ARE IN MM	PROJECTION	SCALE	WEIGHT (Kg)	REF TO ASSY / OLD DWG
FS			NTS	38.704	
CODE 129					

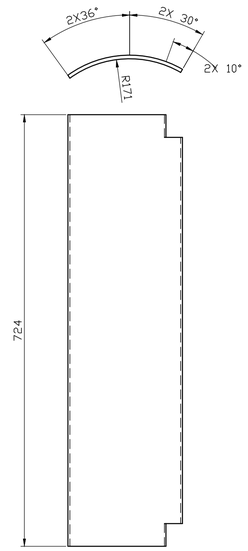
TITLE: STRAIGHT AIR NOZZLE TIP ASSY. (SANDWICHES OIL NOZZLE TIP)

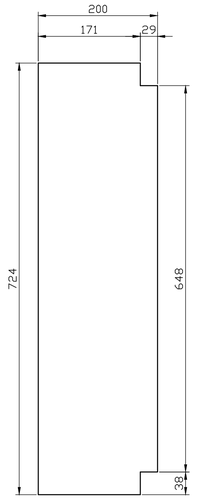
DRAWING NO: 1-45-802-02254 REV 00

REV	DATE	ALTERED :
ZONE		CHD & APPD :

DRAWING NO: 1-45-802-02335

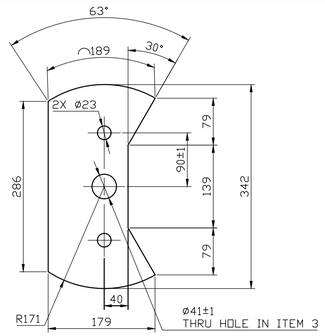
FOR TOLERANCES OF UNTOLERANCED DIMENSIONS DURING MANUFACTURE REFER PLANT STD. NO TP 023 0299



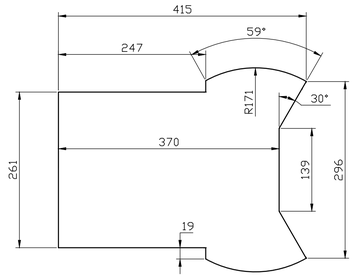


DEVELOPED VIEW

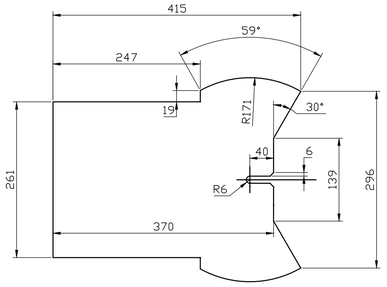
ITEM NO 1



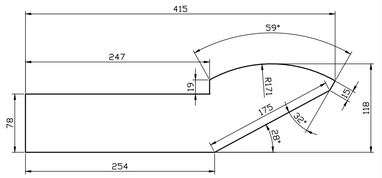
ITEM NO 3



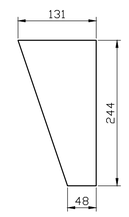
ITEM NO 5



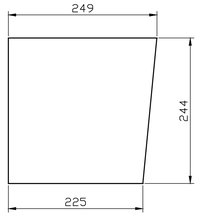
ITEM NO 6



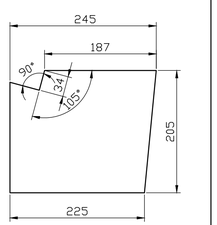
ITEM NO 7



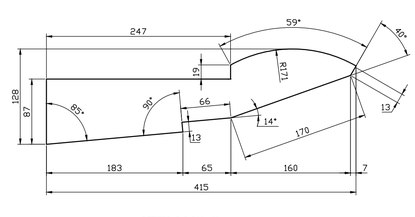
ITEM NO 10



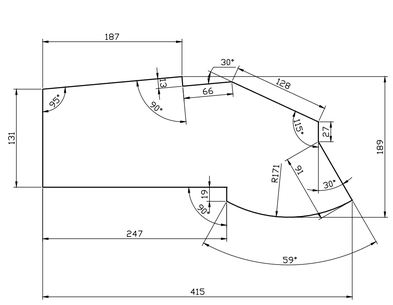
ITEM NO 13



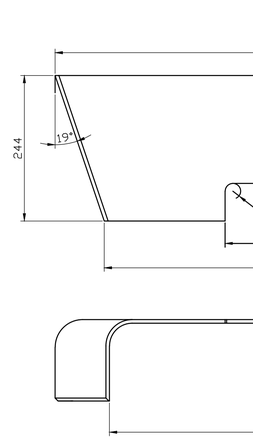
ITEM NO 12



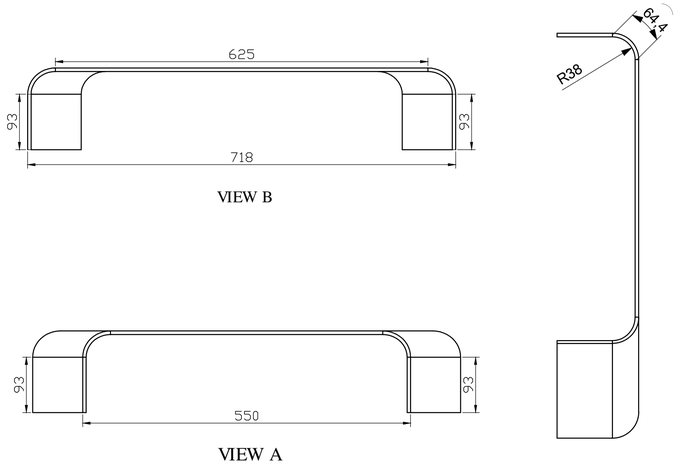
ITEM NO 8



ITEM NO 9

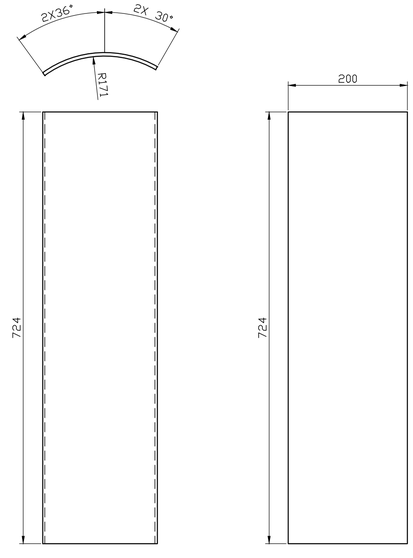


ITEM NO 4



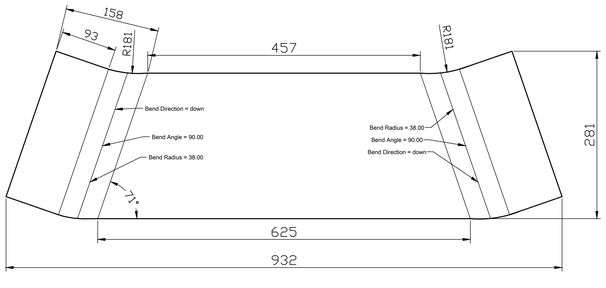
VIEW B

VIEW A

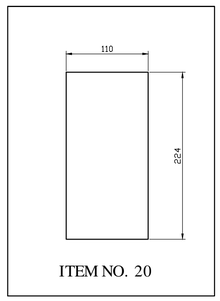


DEVELOPED VIEW

ITEM NO 19



DEVELOPED VIEW (ITEM NO -04)



ITEM NO. 20

NOTES:

1. DIMENSIONS AND TOLERANCES ARE AS FOLLOWS UNLESS OTHERWISE SPECIFIED:
   A. ALL LINEAR DIMENSIONS ARE IN MILLIMETERS.
   B. TOLERANCES ON LINEAR DIMENSIONS: ±1.
   C. TOLERANCES ON ANGULAR DIMENSIONS: ±1°.
2. FOR FABRICATION AND WELDING INFORMATION NOT SHOWN, SEE DWG. 1-45-000-01617.

REV	DATE	ALTERED :
01		CHD & APPD :
ZONE		

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT

Bharat Heavy Electricals Ltd
UNIT: HIGH PRESSURE BOILER PLANT
TIRUCHIRAPALLI – 620014

	NAME	SIGNATURE	DATE
DRN	BIMAL CHOWDHURY	-sd-	05.04.2019
CHD	VIKAS SETHI	-sd-	05.04.2019
APPD	SHANKAR NAIK V	-sd-	05.04.2019

355-053

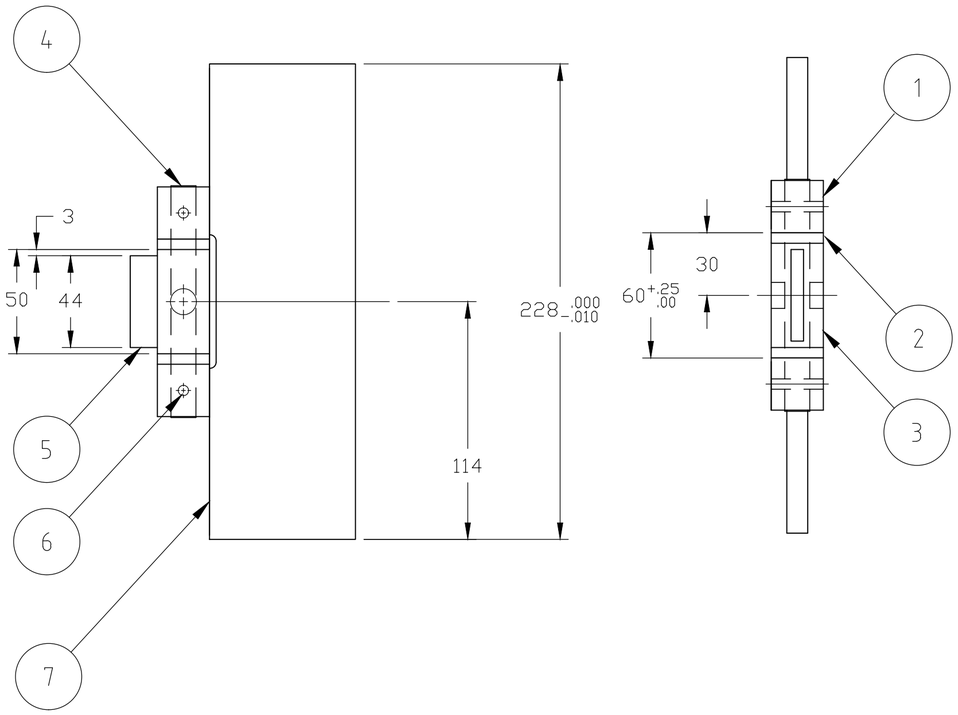
DEPT	ALL DIMENSIONS ARE IN MM	PROJECTION	SCALE	WEIGHT (Kg)	REF TO ASSY / OLD DWG
FS			1 : 5		0-45-802-03098
CODE 129					

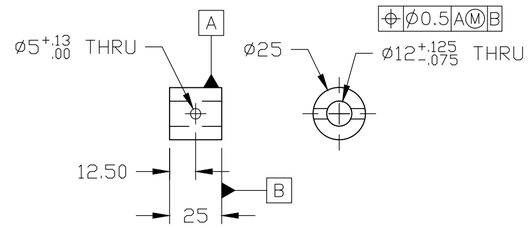
TITLE: *OIL NOZZLE TIP (DETAILS)*

DRAWING NO : 1-45-802-02335 REV 00

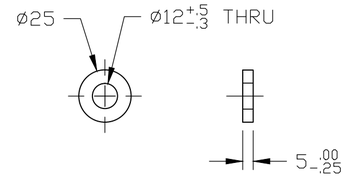
DRAWING NO: 2-45-000-01699

FOR TOLERANCES OF UNTOLERANCED DIMENSIONS DURING MANUFACTURE REFER PLANT STD. NO TP 023 0299

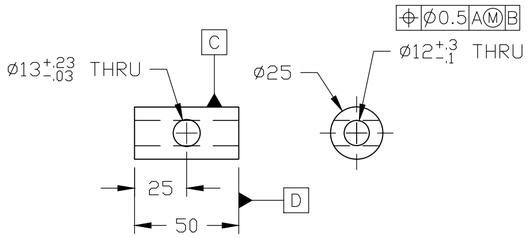




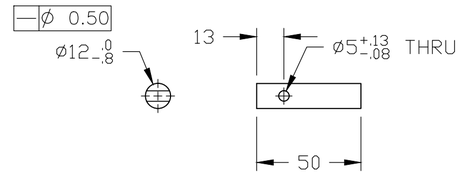
ITEM NO. 1



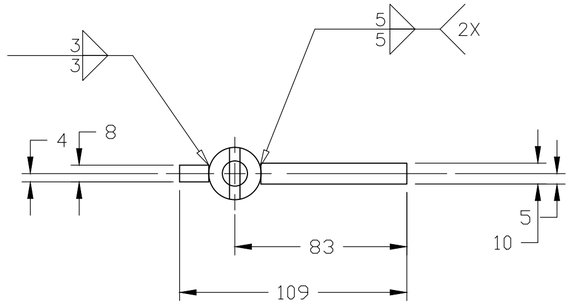
ITEM NO. 2

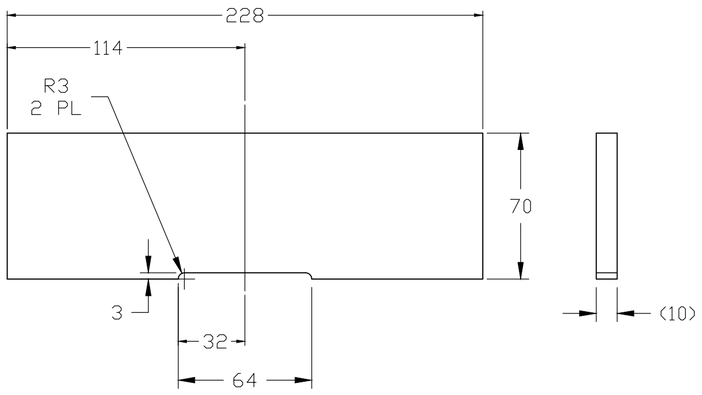


ITEM NO. 3



ITEM NO. 4





ITEM NO. 7

GENERAL NOTES:

1. DIMENSIONS & TOLERANCES ARE PER ASME Y14.5M–1994 UNLESS OTHERWISE SPECIFIED:
   a. ALL DIMENSIONS ARE IN MM
   b. TOLERANCES ON ANGULAR DIMENSIONS &±2.0.
   c. TOLERANCES ON ANGULAR DIMENSIONS ±1°–00'.
2. WELD PER A.W.S D1.1 & USE E–308 ELECTRODE.

VARIANT NUMBER	ITEM NUMBER	DESCRIPTION	STD	DRAWING NUMBER								
	7	PL.10 X 70 X 228			ITEM NO	150118970000		UNIT	1.273			
					VAR NO	SA240TP309S						
	6	BAR ø5 X25LG ROLL PIN			ITEM NO	150241370000		UNIT	0.006			
					VAR NO	SA479TY304		DI	2			
	5	PL.6 X 13 X 44			ITEM NO	150119320000		UNIT	0.028			
					VAR NO	SA240TP309S		DI	1			
	4	BAR ø12X 50LG			ITEM NO	150241460000		UNIT	0.043			
					VAR NO	SA479TY304		DI	2			
	3	BAR ø25 X 50LG			ITEM NO	150241110000		UNIT	0.126			
					VAR NO	SA479TY304		DI	1			
	2	BAR ø25 X 5LG			ITEM NO	160052580100		UNIT	0.015			
					VAR NO	BRASS		DI	2			
	1	BAR ø25 X 25LG			ITEM NO	150241110000		UNIT	0.072			
					VAR NO	SA479TY304		DI	2			

REV	DATE	ALTERED :
01		CHD & APPD :
ZONE		

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT

Bharat Heavy Electricals Ltd
UNIT: HIGH PRESSURE BOILER PLANT
TIRUCHIRAPALLI – 620014

355-054

	NAME	SIGNATURE	DATE
DRN	BIMAL CHOWDHURY	–sd–	20.10.2014
CHD	DHEERAJ KUMAR	–sd–	20.10.2014
APPD	ARULPRABHU R	–sd–	20.10.2014

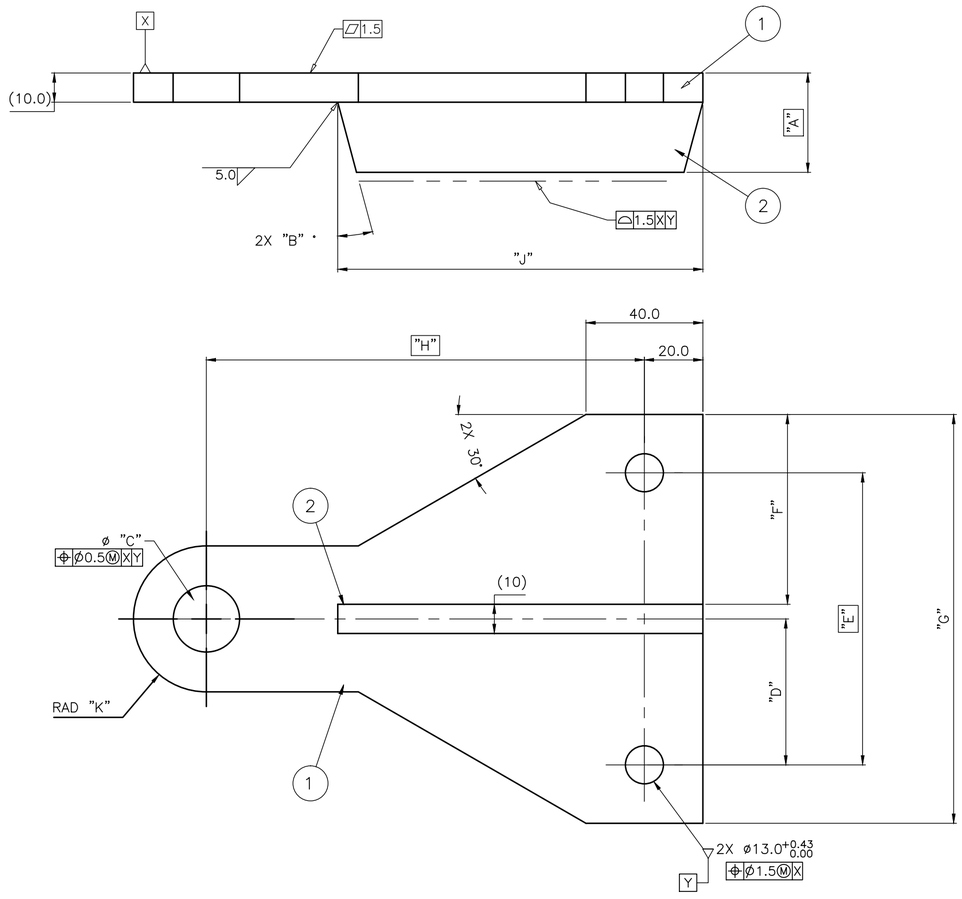
DEPT	ALL DIMENSIONS ARE IN MM	PROJECTION	SCALE	WEIGHT (Kg)	REF TO ASSY / OLD DWG
FS			1:2	1.699	
CODE 129					

TITLE: SWIVEL ASSEMBLY

DRAWING NO : 2-45-000-01699 REV 00

DRAWING NO: 2-45-320-01447

FOR TOLERANCES OF UNTOLERANCED DIMENSIONS DURING MANUFACTURE REFER PLANT STD. NO TP 023 0299



VARIANT NO.	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"J"	"K"	WT.
1	47	15°	22.740 22.610	40	80	55	120	150	125	25	1.827
2	38	15°	"	"	"	"	"	"	"	"	1.663
3	30	15°	22.740 22.610	40	80	55	120	150	125	25	1.513
4	47	15°	19	50	100	65	140	150	88	25	1.862
5	45	15°	22.740 22.610	50	100	65	140	150	125	25	1.962
6	35	15°	22.740 22.610	40	80	55	120	150	125	25	1.608
7	25	15°	22.740 22.610	50	100	65	140	150	125	25	1.591
8	25	15°	22.740 22.610	50	100	65	140	140	125	25	1.551
9	37	15°	22.740 22.610	50	100	65	140	150	125	25	1.815
10	34	15°	22.740 22.610	50	100	65	140	150	125	25	1.758
11	38	15°	22.740 22.610	50	100	65	140	150	125	25	1.837

VARIANT NUMBER	ITEM NUMBER	DESCRIPTION	STD	DRAWING NUMBER	ITEM NO / VAR NO	MATERIAL CODE / MATERIAL SPECN	A/C/P / DI	UNIT / UNIT	UNIT WEIGHT / QUANTITY	GS	ZONE
	02	PL 10X38X125			150110980000 IS2062FE410A				0.326 1		
11	01	PL 10X195X140			150110980000 IS2062FE410A				1.511 1		
	02	PL 10X34X125			150110980000 IS2062FE410A				0.287 1		
10	01	PL 10X195X140			150110980000 IS2062FE410A				1.471 1		
	02	PL 10X37X125			150110980000 IS2062FE410A				0.316 1		
09	01	PL 10X195X140			150110980000 IS2062FE410A				1.499 1		
	02	PL 10X25X125			150110980000 IS2062FE410A				0.198 1		
08	01	PL 10X185X140			150110980000 IS2062FE410A				1.353 1		
	02	PL 10X25X125			150110980000 IS2062FE410A				0.198 1		
07	01	PL 10X195X140			150110980000 IS2062FE410A				1.393 1		
	02	PL 10X35X125			150110980000 IS2062FE410A				0.297 1		
06	01	PL 10X195X120			150110980000 IS2062FE410A				1.311 1		
	02	PL 10X45X125			150110980000 IS2062FE410A				0.395 1		
05	01	PL 10X195X140			150110980000 IS2062FE410A				1.567 1		
	02	PL 10X47X88			150110980000 IS2062FE410A				0.278 1		
04	01	PL 10X195X140			150110980000 IS2062FE410A				1.584 1		
	02	PL 10X30X125			150110980000 IS2062FE410A				0.247 1		
03	01	PL 10X195X120			150110980000 IS2062FE410A				1.266 1		
	02	PL 10X38X125			150110980000 IS2062FE410A				0.326 1		
02	01	PL 10X195X120			150110980000 IS2062FE410A				1.337 1		
	02	PL 10X47X125			150110980000 IS2062FE410A				0.414 1		
01	01	PL 10X195X120			150110980000 IS2062FE410A				1.413 1		

REV	DATE	ALTERED :
01		CHD & APPD :
ZONE		

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

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT

Bharat Heavy Electricals Ltd
UNIT: HIGH PRESSURE BOILER PLANT
TIRUCHIRAPALLI – 620014
355-054

	NAME	SIGNATURE	DATE
DRN	BIMAL.C	–sd–	10.03.11
CHD	J.V.V.A.K	–sd–	10.03.11
APPD	M.T.P	–sd–	10.03.11

DEPT	ALL DIMENSIONS ARE IN MM	PROJECTION	SCALE	WEIGHT (Kg)	REF TO ASSY / OLD DWG
FS(FB)			N.T.S		C–902–2850/R7
CODE 129					

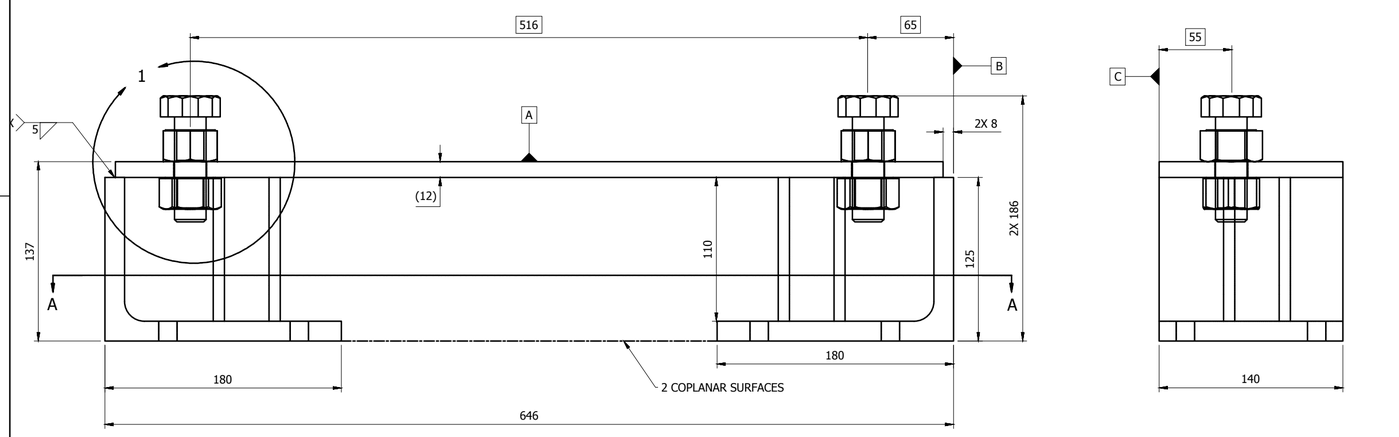
TITLE: NOZZLE TIP PIVOT BRACKET

DRAWING NO : 2–45–320–01447

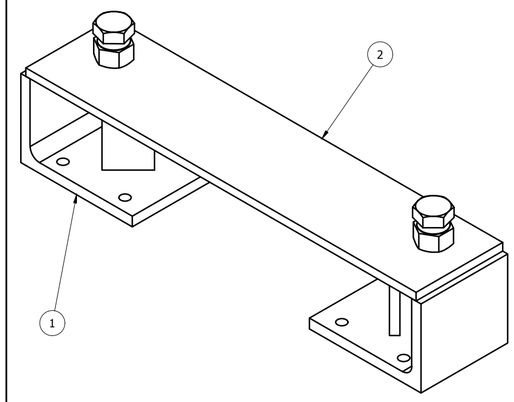
REV 00

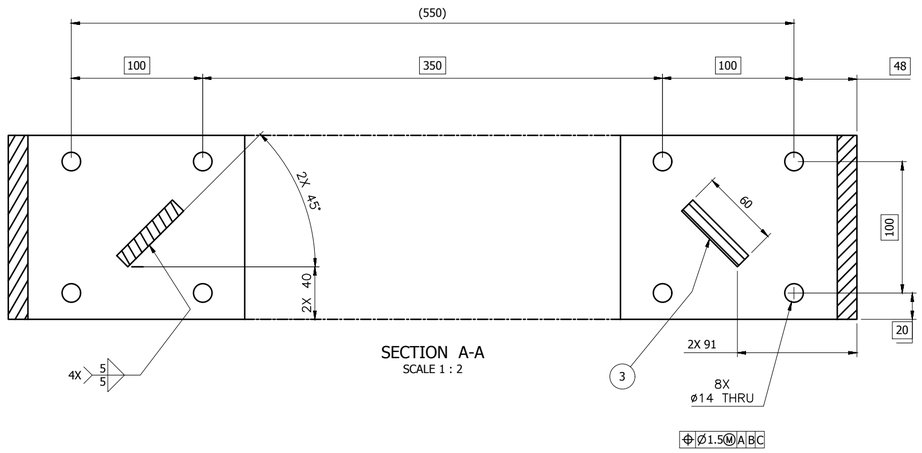
DRAWING NO: 2-45-320-01485

FOR TOLERANCES OF UNTOLERANCED DIMENSIONS DURING MANUFACTURE REFER PLANT STD. NO TP 023 0299

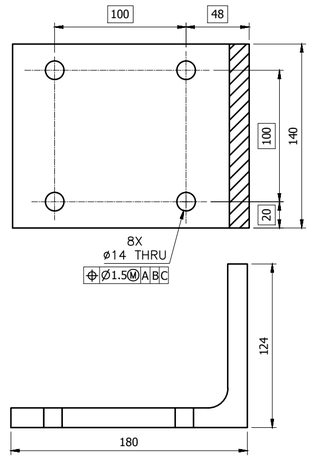


P/N 9036837

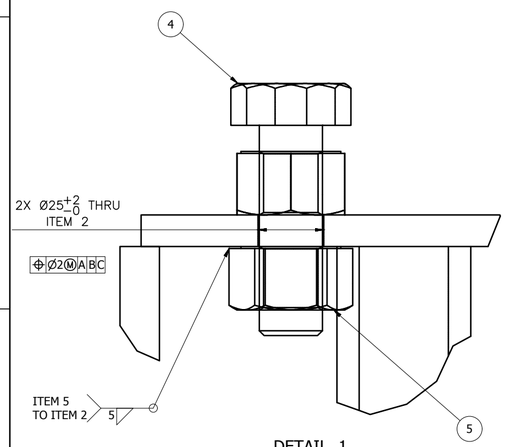




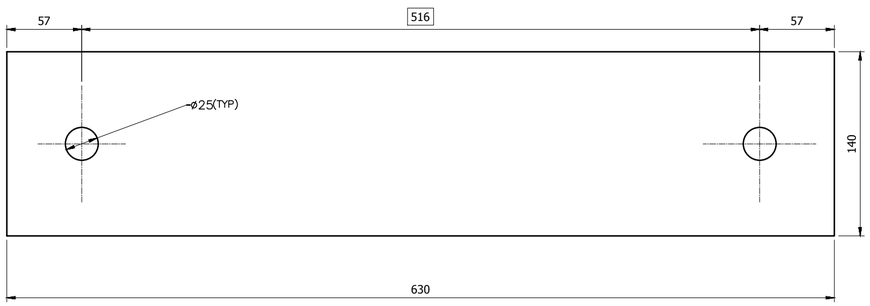
SECTION A-A
SCALE 1 : 2



ITEM NO 1



DETAIL 1
2 PLACES
SCALE 1 : 1



ITEM NO 2

NOTES:

1. DIMENSIONS AND TOLERANCES PER ASME Y14.5M–1994
   UNLESS OTHERWISE SPECIFIED:
   a. ALL LINEAR DIMENSIONS ARE IN MILLIMETERS.
   b. TOLERANCE ON LINEAR DIMENSIONS ±1
   c. TOLERANCE ON ANGULAR DIMENSIONS ±1°
2. ALL WELDING PER A.W.S. D1.1 – USE E–7018 ELECTRODE
   UNLESS OTHERWISE SPECIFIED.
3. BREAK ALL SHARP EDGES.

VARIANT NUMBER	ITEM NUMBER	DESCRIPTION	STD	DRAWING NUMBER	ITEM NO / VAR NO	MATERIAL CODE / MATERIAL SPECN	A/C/P / DI	UNIT / QUANTITY	UNIT WEIGHT	GS / ZONE
	05	HEAVY HEX NUT M24				413040002400			0.110	
						IS:1363(P–3)			4	
	04	HEAVY HEX BOLT M24X3.0X80L(F.T)				412222410000			0.463	
						IS:1363(P–2)			2	
	03	STIFFENER PLATE, PL12X60X108				150111320000			0.610	
						IS2062FE410A			2	
	02	TOP PLATE, PL12X630X140				150111320000			7.938	
						IS2062FE410A			1	
	01	SA 200X200X20THK L=140				150131540000			4.914	
						IS2062FE410A			2	

01

REV	DATE	ALTERED / CHD & APPD
01	29.07.2021	ALTERED :BALAJI D CHD & APPD :SHANKAR NAIK V
ZONE	ITEM 05 MATERIAL CODE CHANGED FROM 412152408000 TO 413040002400	

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT

Bharat Heavy Electricals Ltd
UNIT: HIGH PRESSURE BOILER PLANT
TIRUCHIRAPALLI – 620014
355–054

	NAME	SIGNATURE	DATE
DRN	BIMAL.C	–sd–	22.09.11
CHD	GSK	–sd–	22.09.11
APPD	MTP	–sd–	22.09.11

DEPT	ALL DIMENSIONS ARE IN MM	PROJECTION	SCALE	WEIGHT (Kg)	REF TO ASSY / OLD DWG
FS			NTS	20.352	D–903–6837/R0
CODE 129					

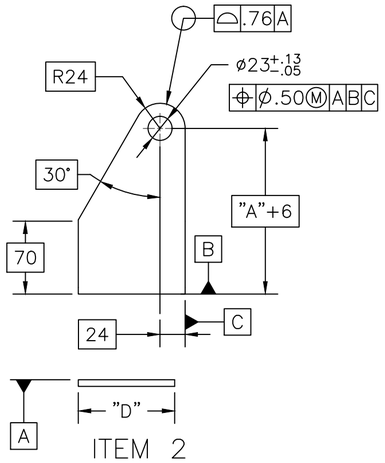
TITLE: COAL NOZZLE FRONT SUPPORT (TOP)

DRAWING NO : 2–45–320–01485 REV 01

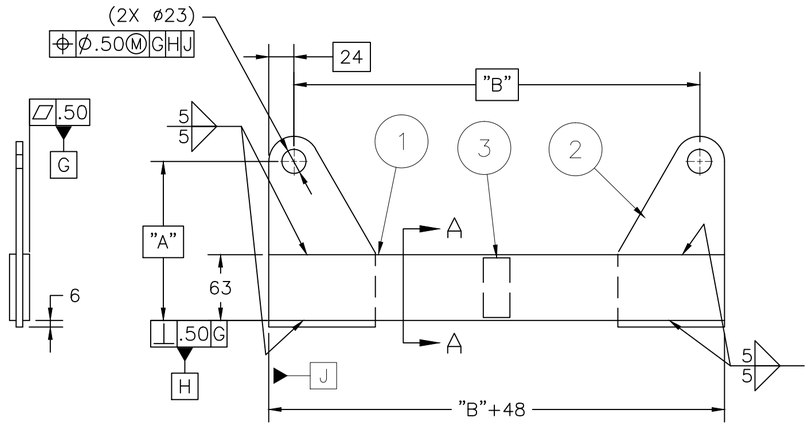
CORPORATE DRG ID:TP-DG-2-45-320-01485/01

DRAWING NO: 2-45-320-01525

FOR TOLERANCES OF UNTOLERANCED DIMENSIONS DURING MANUFACTURE REFER PLANT STD. NO TP 023 0299



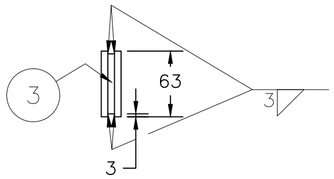
ITEM 2



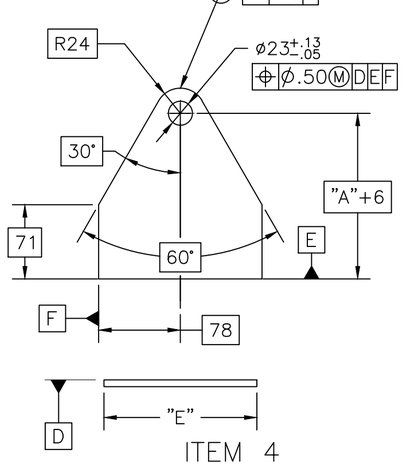
VARIANT–01
(SEE CONTRACT ARRG'T DRAWING
BOM FOR DIM'S A & B)

GENERAL NOTES:
1. DIMENSIONS AND TOLERANCES PER ASME Y14.5M–1994 UNLESS OTHERWISE SPECIFIED.
   a. ALL DIMENSIONS ARE IN MILLIMETERS.
   b. TOLERANCES ON DIMENSIONS ±1.
   c. TOLERANCES ON ANGULAR DIMENSIONS ±1°
   d. BREAK ALL SHARP EDGES R. 1 MAX.
3. ALL WELDS TO BE IN ACCORDANCE WITH AWS D.1.1, LATEST EDITION. USE E–8018 ELECTRODE OR EQUIV.

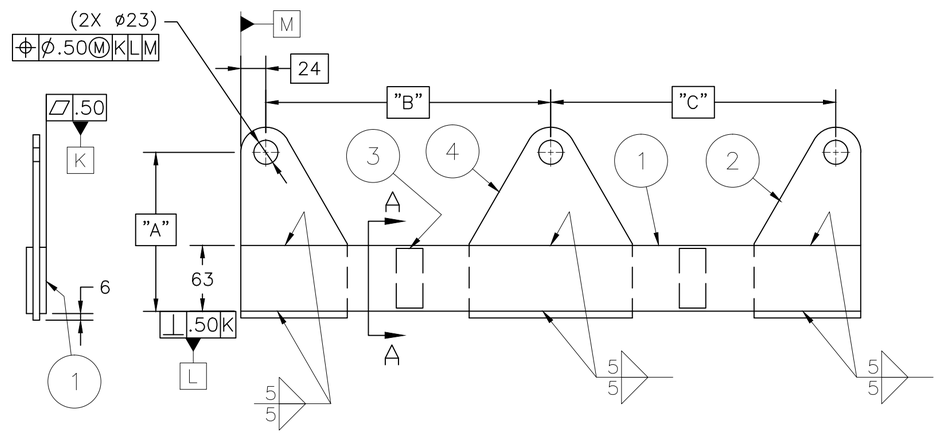
DIMENSIONAL LIMITS:
5. "A" DIM. NOT TO EXCEED 203MM
6. "B" OR "C" DIM. NOT TO EXCEED 2072.2MM – (7.2 X "A")
7. ITEM 3 TO BE EQUALLY SPACED BETWEEN ITEMS 2 (VAR.01) OR ITEMS 2 AND 4 (VAR.04). SEE CHART (C–2) FOR QTY. OF ITEM 3.



SECTION A–A



ITEM 4



VARIANT–02
(SEE CONTRACT ARRG'T DRAWING
BOM FOR DIM'S A & B)

VARIANT NUMBER	ITEM NUMBER	DESCRIPTION	STD	DRAWING NUMBER	ITEM NO / VAR NO	MATERIAL CODE / MATERIAL SPECN	A/C/P / DI	UNIT / QUANTITY	UNIT WEIGHT	GS ZONE
02	04	PLATE 6X(A+30)X"E"				159421030000 / A588GRA	ND		SEE GMS / 1	
02	03	PLATE 6X25X57				159421030000 / A588GRA	ND		0.067 / SEE CHART	
01	02	PLATE 6X(A+30)X"D"				159421030000 / A588GRA	ND		SEE GMS / 2	
01	01	PLATE 6X63X(B+C+48)				159421030000 / A588GRA	ND		SEE GMS / 2	
01	03	PLATE 6X25X57				159421030000 / A588GRA	ND		0.067 / SEE CHART	
01	02	PLATE 6X(A+30)X"D"				159421030000 / A588GRA	ND		SEE GMS / 2	
01	01	PLATE 6X63X(B+48)				159421030000 / A588GRA	ND		SEE GMS / 2	

QTY. OF ITEM 3 CHART		
DIM. "B" & "C"	ASSY. -AA ITEM 3 NO. REQ'D.	ASSY. -AB ITEM 3 NO. REQ'D.
UP TO 305	0	0
305 TO 610	1	2
610 TO 914	2	4
914 TO 1219	3	6
1219 TO 1524	4	8

REV	DATE	ALTERED : DHEERAJ KUMAR
01	30.12.2014	CHD & APPD SARAVANAKUMAR G
ZONE	ITEM NO 01 AND 02, QUNATITY REVISED FROM 01 TO 02	

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT: STANDARD

Bharat Heavy Electricals Ltd
UNIT: HIGH PRESSURE BOILER PLANT
TIRUCHIRAPALLI – 620014
355–054

	NAME	SIGNATURE	DATE
DRN	G S K	–sd–	20.09.2011
CHD	G S K	–sd–	20.09.2011
APPD	M T P	–sd–	20.09.2011

DEPT	ALL DIMENSIONS ARE IN MM	PROJECTION	SCALE	WEIGHT (Kg)	REF TO ASSY / OLD DWG
FS			NTS		C–903–6924/00
CODE 129					

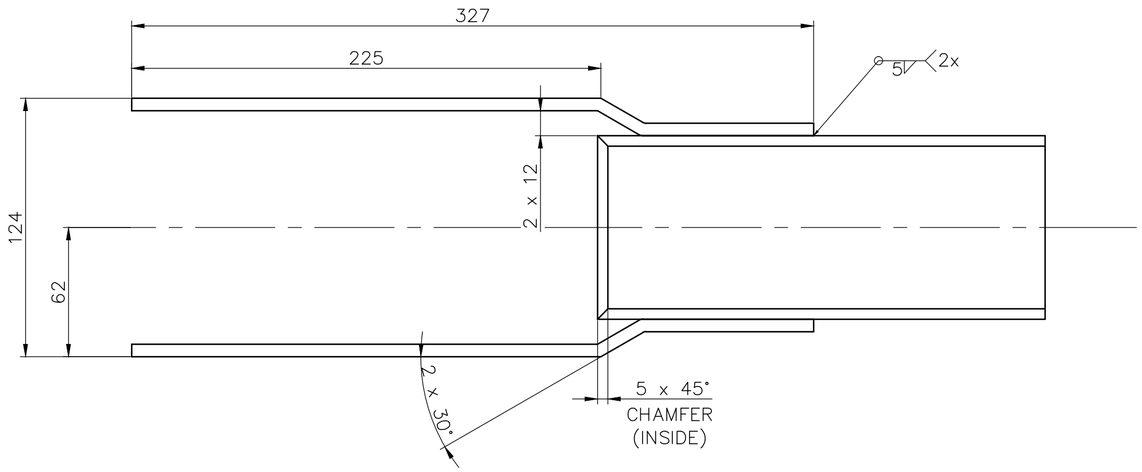
TITLE: NOZZLE TIP CONNECTION BAR

DRAWING NO : 2-45-320-01525

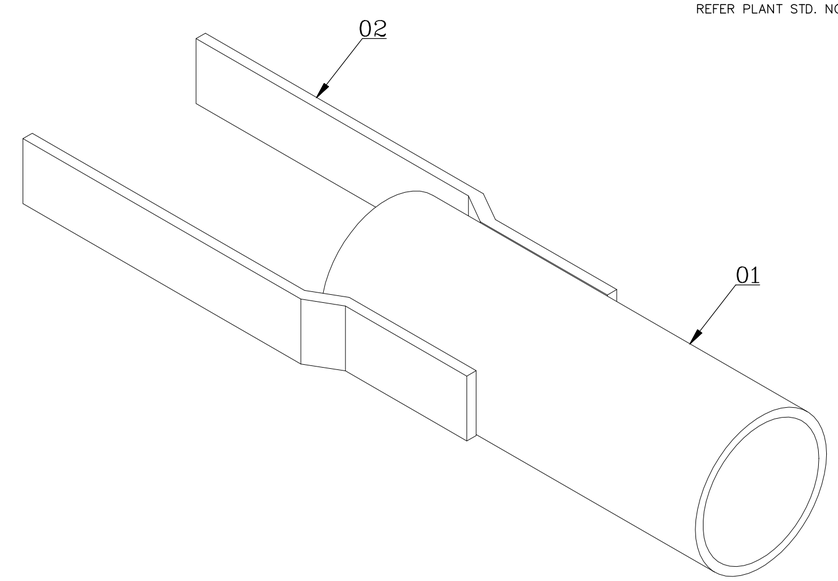
REV 01

DRAWING NO: 2-45-802-01698

FOR TOLERANCES OF UNTOLERANCED DIMENSIONS DURING MANUFACTURE REFER PLANT STD. NO TP 023 0299

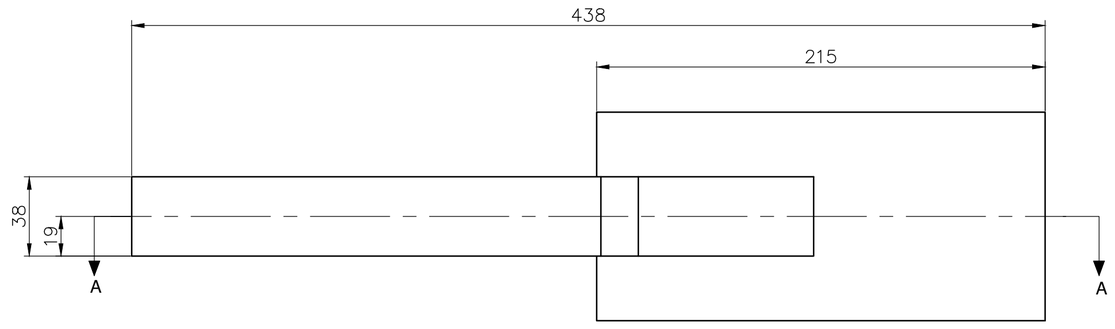


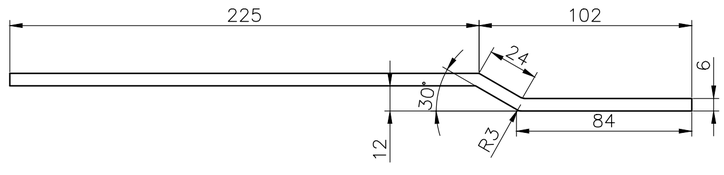
SECTION A–A



GENERAL NOTES:

1. DIMENSIONS AND TOLERANCES PER ASME Y14.5M-1994
   UNLESS OTHERWISE SPECIFIED:
   a. ALL DIMENSIONS ARE IN MILLIMETERS.
   b. TOLERANCES ON LINEAR DIMENSIONS ±1.
   c. TOLERANCES ON ANGULAR DIMENSIONS ±1°.
2. ALL WELDS PER A.W.S. D1.1, LATEST EDITION. USE E-309 ELECTRODE OR EQUAL UNLESS OTHERWISE SPECIFIED.





ITEM NO–2

VARIANT NUMBER	ITEM NUMBER	DESCRIPTION	STD	DRAWING NUMBER								
	02	PL – 6 x 38 x 333			ITEM NO	150119320000			0.613			
					VAR NO	SA240TP309S			2			
	01	PIPE–88.9 DIA x 5.6 THK x 215			ITEM NO	151510900000			2.707			
					VAR NO	SA213TP304H(CERT)			1			

REV	DATE	ALTERED :
01		CHD & APPD :
ZONE		

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT

Bharat Heavy Electricals Ltd
UNIT: HIGH PRESSURE BOILER PLANT
TIRUCHIRAPALLI – 620014
355-054

	NAME	SIGNATURE	DATE
DRN	BIMAL CHOWDHURY	–sd–	16–10–2014
CHD	DHEERAJ KUMAR	–sd–	16–10–2014
APPD	ARULPRABHU R	–sd–	16–10–2014

DEPT	ALL DIMENSIONS ARE IN MM	PROJECTION	SCALE	WEIGHT (Kg)	REF TO ASSY / OLD DWG
FS			1:2	3.933	
CODE 129					

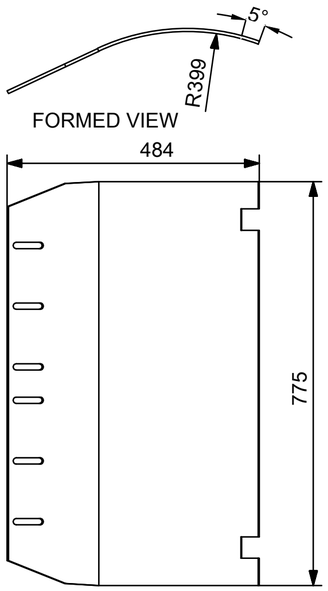
TITLE
NOZZLE TIP SLEEVE INSERT ASSEMBLY

DRAWING NO : 2–45–802–01698

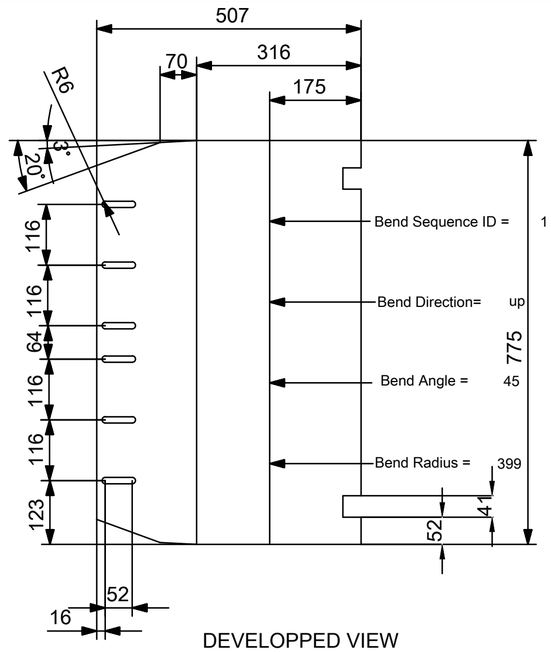
REV 00

DRAWING NO: 2-45-802-02082

FOR TOLERANCES OF UNTOLERANCED DIMENSIONS DURING MANUFACTURE REFER PLANT STD. NO TP 023 0299

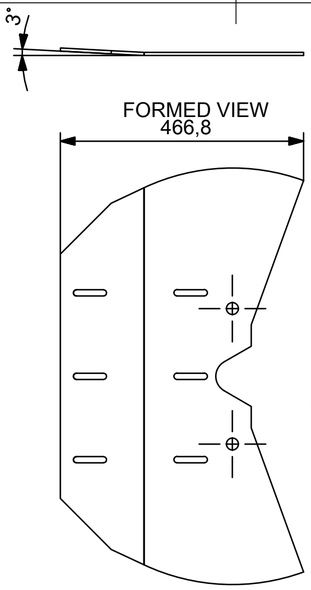


FORMED VIEW

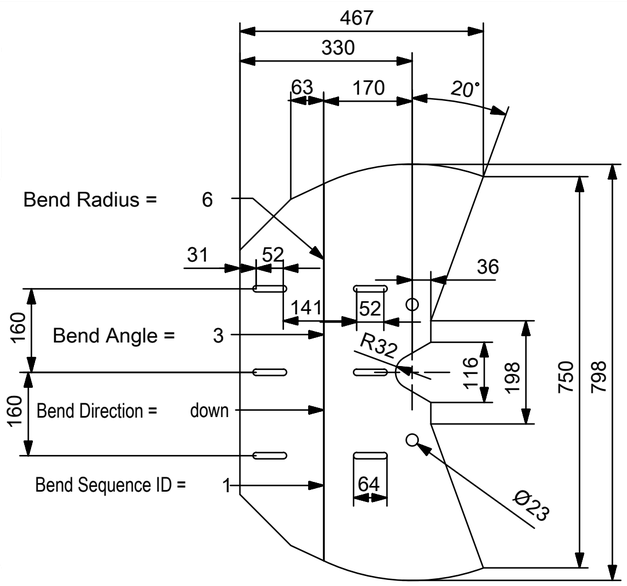


DEVELOPPED VIEW

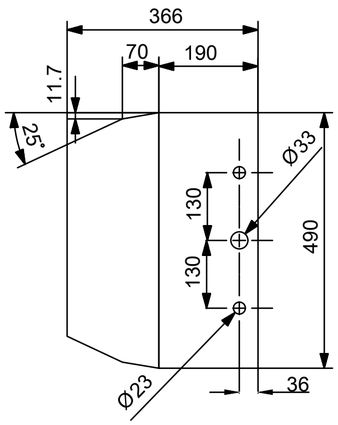
ITEM NO-01
PI6X 507 X 775



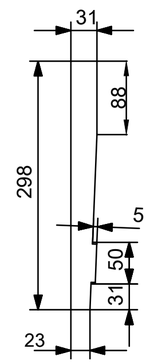
ITEM NO-02
PL6X467X798



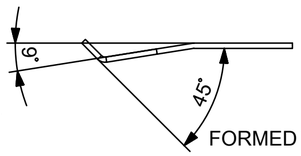
DEVELOPED VIEW



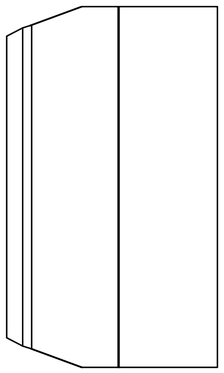
ITEM NO-03
PL10X366X490

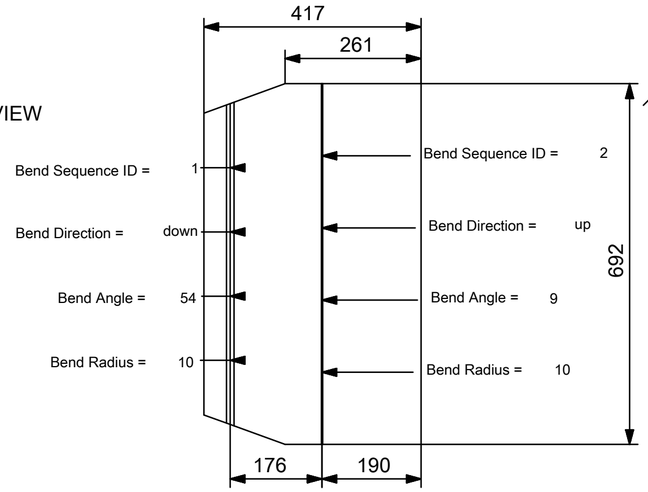


ITEM NO-07
PL10X31X298



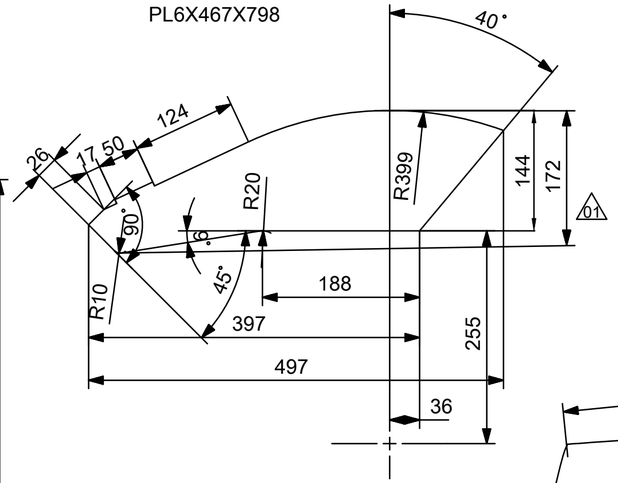
FORMED VIEW





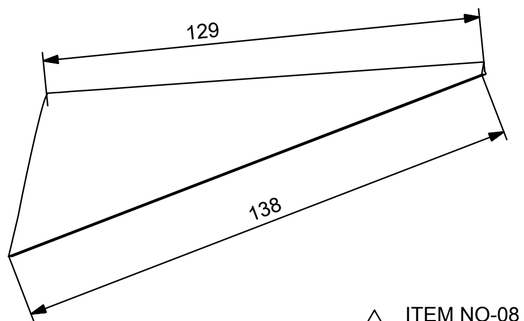
DEVELOPPED VIEW

ITEM NO-04
PL10X417X692

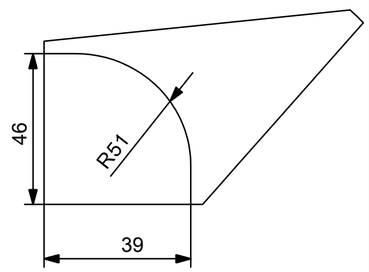


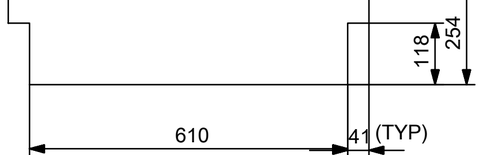
ITEM NO-05
PL10X172X497 △01

ITEM NO-09
PL10X55X120

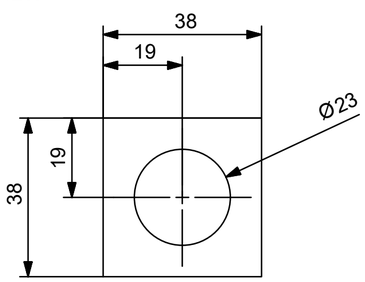


△01 ITEM NO-08
PL. 6X150X150





ITEM NO-06
PL10X254X692



ITEM NO-10
PL10X38X38

REV	DATE	ALTERED : B.CHOWDHURY
01	24.02.2020	CHD & APPD :SHANKAR NAIK
ZONE	ITEM NO 5 DIMENSION ADDED.	

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT

Bharat Heavy Electricals Ltd
UNIT: HIGH PRESSURE BOILER PLANT
TIRUCHIRAPALLI – 620014
355-054

	NAME	SIGNATURE	DATE
DRN	B.Chowdhury	-sd-	29.03.2019
CHD	Vikas Sethi	-sd-	29.03.2019
APPD	Shankar Naik V	-sd-	29.03.2019

DEPT	ALL DIMENSIONS ARE IN MM	PROJECTION	SCALE	WEIGHT (Kg)	REF TO ASSY / OLD DWG
FS			NTS	-----	0-45-802-03213
CODE 129					

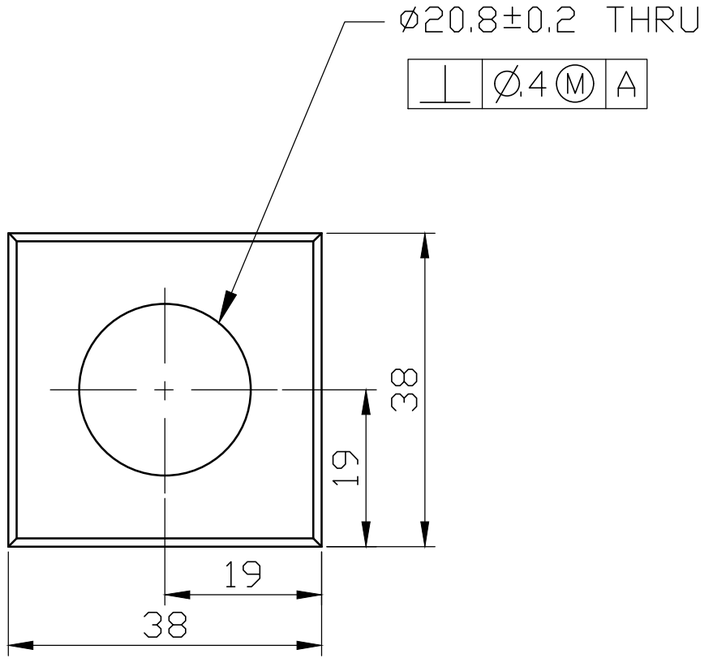
TITLE: COAL NOZZLE TIP DETAILS

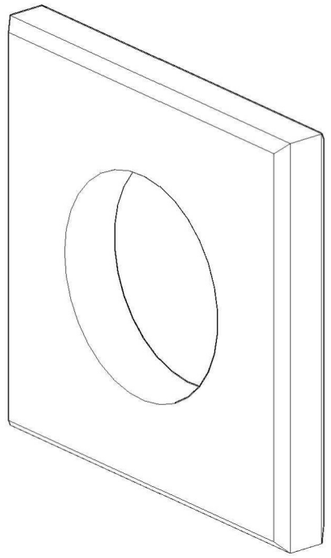
DRAWING NO : 2-45-802-02082

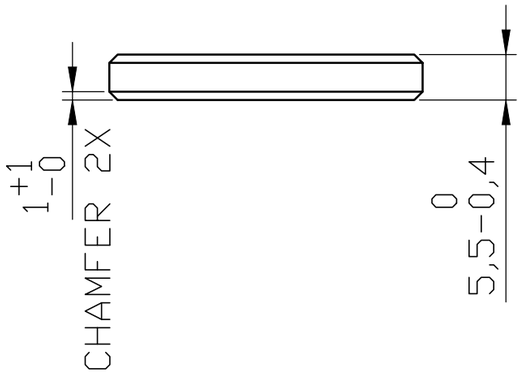
REV 01

DRAWING NO: 3-45-000-01245

FOR TOLERANCES OF UNTOLERANCED DIMENSIONS DURING MANUFACTURE REFER PLANT STD.NO TP 023 0299







NOTES:
1. DIMENSIONS AND TOLERANCES PER ASME Y14.5M-1994
   a. ALL DIMENSIONS ARE IN MILLIMETERS
   b. TOLERANCES ON DIMENSIONS ±2.0.
   c. TOLERANCES ON ANGULAR DIMENSIONS ±1°-00'.

VARIANT NUMBER	ITEM NUMBER	DESCRIPTION	STD	DRAWING NUMBER			A/C/P		GS
	01	PL-6 X 38 X 38			ITEM NO	150110030000		UNIT	0.047
					VAR NO	SA240TP309S		DI	1

REV	DATE	ALTERED
02	28.12.15	ALTERED :BIMAL CHOWDHURY CHD & APPD SHANKAR NAIK V

MATERIAL CODE ALTERED FROM 150117410000 TO 150110030000

REV	DATE	ALTERED
01	06.06.12	ALTERED : M.V CHD & APPD : G S K

WEIGHT ALTERED.

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT

355-055

Bharat Heavy Electricals Ltd
UNIT: HIGH PRESSURE BOILER PLANT
TIRUCHIRAPALLI – 620014

	NAME	SIGNATURE	DATE
DRN	BV		09-03-11
CHD	JVVA		09-03-11
APPD	MTP		09-03-11

DEPT	ALL DIMENSIONS ARE IN MM	PROJECTION	SCALE	WEIGHT (Kg)	REF TO ASSY / OLD DWG
FS			NTS	0.047	B-903-0616/R2
CODE 129					

TITLE

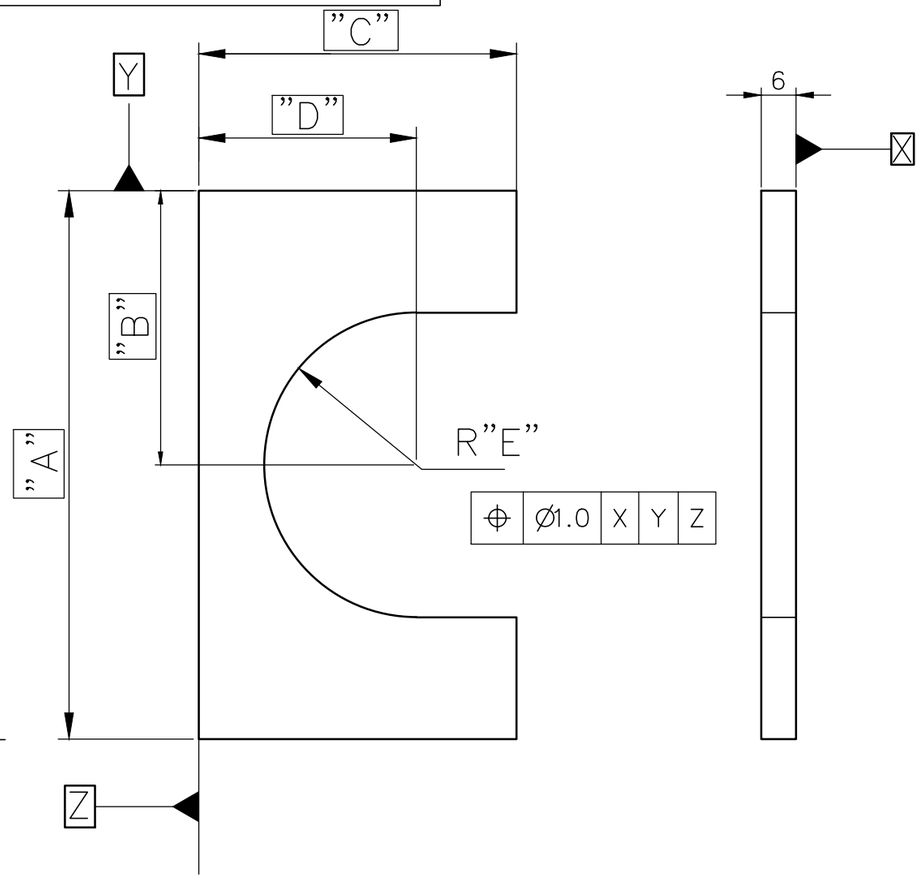
BEARING PLATE

DRAWING NO : 3-45-000-01245

REV 02

DRAWING NO: 3-45-000-01299

FOR TOLERANCES OF UNTOLERANCED DIMENSIONS DURING MANUFACTURE REFER PLANT STD.NO TP 023 0299



NOTES

1. DIMENSIONS AND TOLERANCES PER ASME Y14.5M–1994 UNLESS OTHERWISE SPECIFIED
   a. ALL DIMENSIONS ARE IN MILLIMETERS
   b. TOLERANCES ON DIMENSIONS ±2.0.
   c. TOLERANCE ON ANGULAR DIMENSIONS ±1°–00'.

VAR NO	"A"	"B"	"C"	"D"	"E"
01	142	64	64	44	25
02	160	64	64	44	25
03	128	64	64	44	25
04	120	60	60	44	25
05	104	52	50	50	36
06	116	63	73	50	35
07	126	63	73	50	35
02 08	94	47	68	50	35

VARIANT NUMBER	ITEM NUMBER	DESCRIPTION	STD	DRAWING NUMBER	ITEM NO / VAR NO	MATERIAL CODE / MATERIAL SPECN	A/C/P	UNIT / DI	UNIT WEIGHT / QUANTITY	GS
02	08	PL.6X94X68				150110030000 / SA240TP309S	C	NO	0.150 / 1	
	07	PL.6X126X73				150110030000 / SA240TP309S	C	NO	0.216 / 1	
	06	PL6X116X73				150110030000 / SA240TP309S	C	NO	0.181 / 1	
	05	PL6X104X50				150110030000 / SA240TP309S	C	NO	0.120 / 1	
	04	PL.6X120X60				150110030000 / SA240TP309S	C	NO	0.233 / 1	
	03	PLX6X128X64				150110030000 / SA240TP309S	C	NO	0.268 / 1	
	02	PL.6X160X64				150110030000 / SA240TP309S	C	NO	0.368 / 1	
	01	PL.6X142X64				150110030000 / SA240TP309S	C	NO	0.311 / 1	

REV	DATE	ALTERED / CHD & APPD
02	05.11.2015	ALTERED : BIMAL CHOWDHURY CHD & APPD: SHANKAR NAIK.V
ZONE		VARIANT NO 08 ADDED
REV	DATE	ALTERED / CHD & APPD
01	30.12.2014	ALTERED : DHEERAJ KUMAR CHD & APPD:SARAVANAKUMAR G
ZONE		MATERIAL CODE REVISED FROM 150117410000 TO 150119320000

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT

Bharat Heavy Electricals Ltd
UNIT: HIGH PRESSURE BOILER PLANT
TIRUCHIRAPALLI – 620014
355–055

	NAME	SIGNATURE	DATE
DRN	MELWIN	–sd–	09.03.11
CHD	G.S.K	–sd–	09.03.11
APPD	MTP	–sd–	09.03.11

DEPT	ALL DIMENSIONS ARE IN MM	PROJECTION	SCALE	WEIGHT (Kg)	REF TO ASSY / OLD DWG
FS			1:2	REF. BOM	C–903–0220/05
CODE 129					

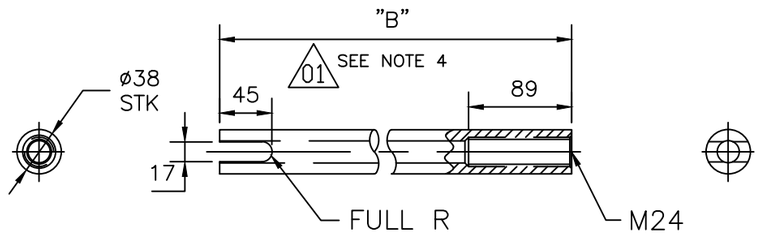
TITLE: NOZZLE TIP SUPPORT PLATE

DRAWING NO : 3–45–000–01299

REV 02

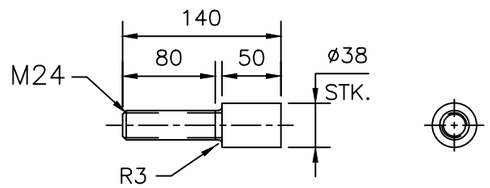
DRAWING NO: 3-45-320-01266

FOR TOLERANCES OF UNTOLERANCED DIMENSIONS DURING MANUFACTURE REFER PLANT STD.NO TP 023 0299



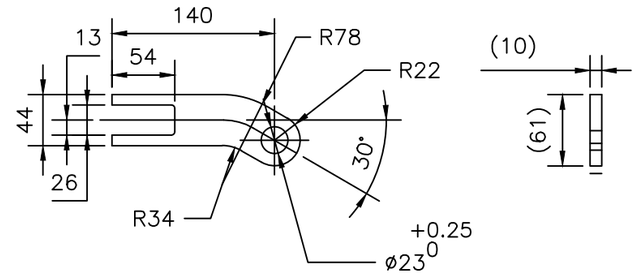
ITEM NO : 1

TUBE – ø33 x 10 WALL x "B"
MAT'L. SAI106GRB



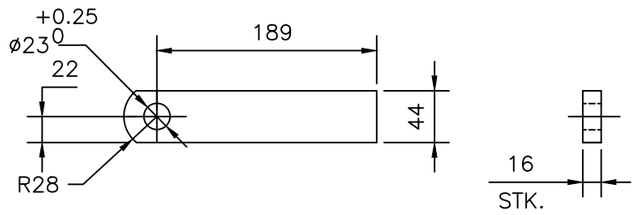
ITEM NO : 2

BAR– RD ø38 x SHOP DEV.
MAT'L. IS2062



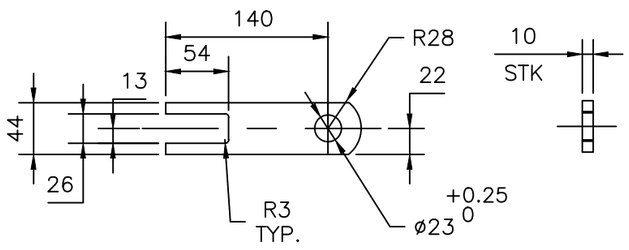
ITEM NO :5

BAR–F 61 X 10 X SHOP DEVELOPED
MAT'L. IS2062



ITEM NO : 3

MAT'L. IS2062



ITEM NO : 4

BAR–F 44 x 10 x SHOP DEV.
MAT'L. IS2062

NOTES:

1. ALL DIMENSIONS ARE MILLIMETERS.
2. TOLERANCES: DIMS. ±0.8.
3. UNSPECIFIED MACHINED SURFACES. SURFACE ROUGHNESS VALUES ARE IN MICROMETERS.
4. 01 FOR DIMENSION "B" REFER NOZZLE ADJUSTING LINK ASSEMBLY DRAWING.

REV	DATE	ALTERED : DHEERAJ KUMAR
01	31.12.2014	CHD & APPD:SARAVANAKUMAR G
ZONE	NOTE 4 ADDED.	

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT

BHEL 355–055

Bharat Heavy Electricals Ltd
UNIT: HIGH PRESSURE BOILER PLANT
TIRUCHIRAPALLI – 620014

	NAME	SIGNATURE	DATE
DRN	BIMAL.C	–sd–	10.03.11
CHD	J.V.V.A.K	–sd–	10.03.11
APPD	MTP	–sd–	10.03.11

DEPT	CODE	ALL DIMENSIONS ARE IN MM	PROJECTION	SCALE	WEIGHT (Kg)	REF TO ASSY / OLD DWG
FS	129			NTS		B–903–1968/R2

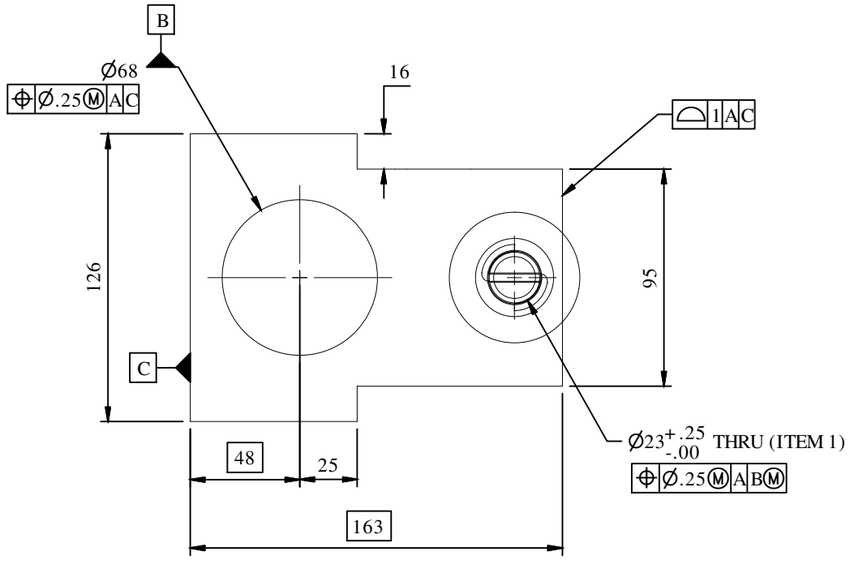
TITLE: NOZZLE ADJUSTING LINK DETAILS

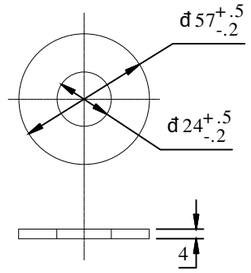
DRAWING NO : 3–45–320–01266

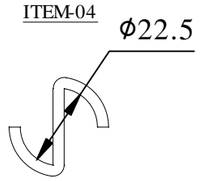
REV 01

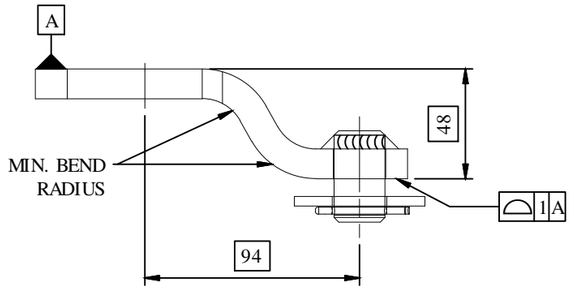
DRAWING NO: 3-45-320-01323

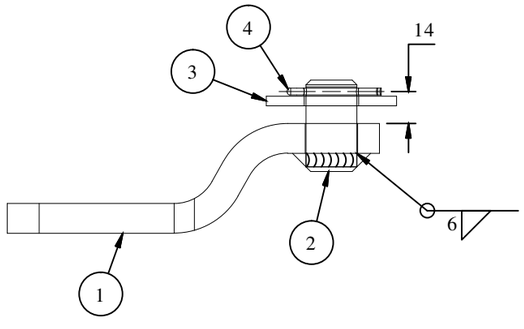
FOR TOLERANCES OF UNTOLERANCED DIMENSIONS DURING MANUFACTURE REFER PLANT STD.NO TP 023 0299











DEV.LENGTH=178

GENERAL NOTES:
1. DIMENSIONS AND TOLERANCES PER ASME Y14.5M – 1994 UNLESS OTHERWISE SPECIFIED:
   a. ALL DIMENSIONS ARE IN MILLIMETERS.
   b. TOLERANCE ON DIMENSIONS
   c. TOLERANCE ON ANGULAR DIMENSIONS
2. ALL WELDING SHALL MEET THE REQUIREMENTS OF AWS D1.1 LATEST EDITION.
3. ALL WELDING USE E–309 ELECTRODE UNLESS OTHERWISE SPECIFIED.

VARIANT NUMBER	ITEM NUMBER	DESCRIPTION	STD	DRAWING NUMBER	ITEM NO / VAR NO	MATERIAL CODE / MATERIAL SPECN	A/C/P / DI	UNIT	UNIT WEIGHT / QUANTITY	GS
	04	SS PIN; 3.15ø – 65L				150360110000		NO	0.004	
						AISI304			1	
	03	WASHER; SHEET 4Xø57				150112950000		NO	0.065	
						SA240TP304			1	
	02	LINK PIN		3–45–320–01322		150241110000		NO	0.121	
					01	SA479TY304			1	
	01	PLATE 12X126X178				159116090000		NO	1.454	
						SA240TP309S			1	

REV	DATE	ALTERED :
01		CHD & APPD:
ZONE		

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT

355–055

Bharat Heavy Electricals Ltd
UNIT: HIGH PRESSURE BOILER PLANT
TIRUCHIRAPALLI – 620014

	NAME	SIGNATURE	DATE
DRN	G S K	–sd–	26.01.2011
CHD	G S K	–sd–	26.01.2011
APPD	M T P	–sd–	27.01.2011

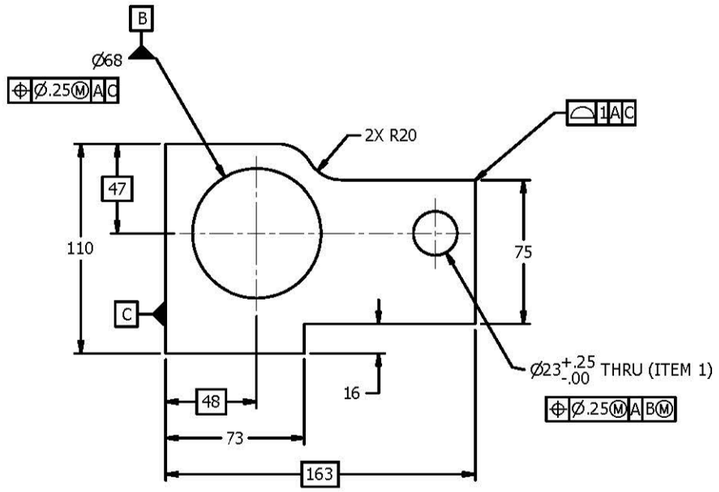
DEPT	ALL DIMENSIONS ARE IN MM	PROJECTION	SCALE	WEIGHT (Kg)	REF TO ASSY / OLD DWG
FS			NTS	1.644	C–903–6923/01
CODE 3730					

TITLE
OPERATING LEVER ASSEMBLY
FOR ADJUSTABLE NOZZLE TIP WITH PIVOT PIN

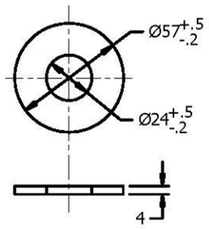
DRAWING NO : 3-45-320-01323

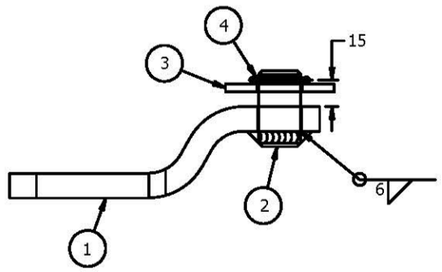
REV 00

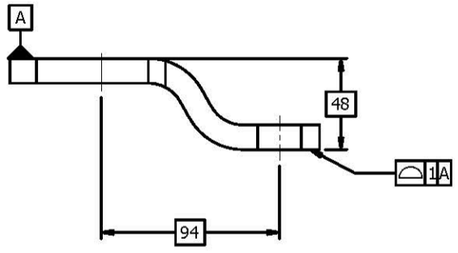
DRAWING NO: 3-45-320-01388



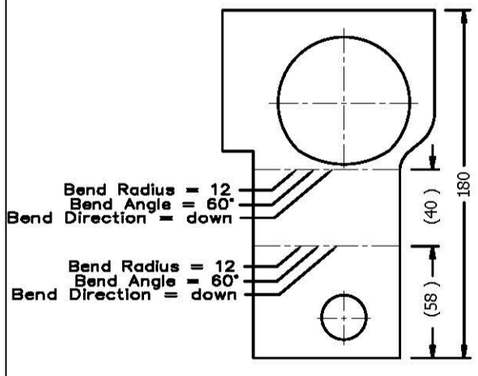
ITEM-03



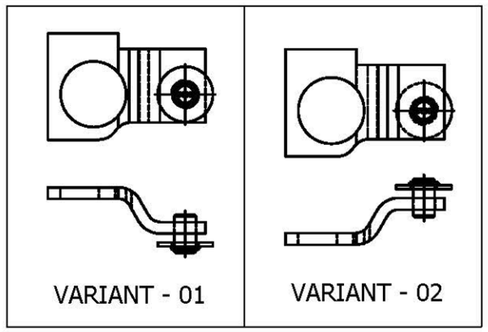




ITEM-04



DEVELOPED VIEW



FOR TOLERANCES OF UNTOLERANCED DIMENSIONS DURING MANUFACTURE REFER PLANT STD.NO TP 023 0299

GENERAL NOTES:

1. DIMENSIONS AND TOLERANCES PER ASME Y14.5M - 1994 UNLESS OTHERWISE SPECIFIED:
   a. ALL DIMENSIONS ARE IN MILLIMETERS.
   01 b. TOLERANCE ON DIMENSIONS ±1
   01 c. TOLERANCE ON ANGULAR DIMENSIONS ±1°
2. ALL WELDING SHALL MEET THE REQUIREMENTS OF AWS D1.1 LATEST EDITION.
3. ALL WELDING USE E-309 ELECTRODE UNLESS OTHERWISE SPECIFIED.

VARIANT NUMBER	ITEM NUMBER	DESCRIPTION	STD	DRAWING NUMBER	ITEM NO / VAR NO	MATERIAL CODE / MATERIAL SPECN	A/C/P / DI	UNIT / QUANTITY	UNIT WEIGHT	GS
	04	**SS PIN;3.15 - 65L**				150360110000 / AISI304	NO		0.004 / 1	
	03	**WASHER; SHEET 4X 57**				150112950000 / SA240TP304	NO		0.065 / 1	
	02	LINK PIN		3-45-320-01322	01	150241110000 / SA479TY304	NO		0.121 / 1	
02	01	PLATE 12 X 110 X 180				159116090000 / SA240TP309S	NO		1.140 / 1	
01	01	PLATE 12 X 110 X 180				159116090000 / SA240TP309S	NO		1.140 / 1	

REV	DATE	ALTERED : BIMAL CHOWDHURY
02	23.03.13	CHD & APPD: K.RAJMOHAN
ZONE	REVISED DUE TO PDF CONVERSION ERROR	
REV	DATE	ALTERED : BIMAL CHOWDHURY
01	04.03.13	CHD & APPD: K.RAJMOHAN
ZONE	TOLERANCE FOR LINEAR & ANGULAR ADDED ±1 & ±1° SIMULTANEOUSLY	

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT

Bharat Heavy Electricals Ltd
UNIT: HIGH PRESSURE BOILER PLANT
TIRUCHIRAPALLI – 620014
355–055

	NAME	SIGNATURE	DATE
DRN	A R K	-sd-	14.07.2012
CHD	K R M	-sd-	14.07.2012
APPD	M T P	-sd-	14.07.2012

DEPT	ALL DIMENSIONS ARE IN MM	PROJECTION	SCALE	WEIGHT (Kg)	REF TO ASSY / OLD DWG
FS			NTS	1.330	C-903-6986/00
CODE 3730					

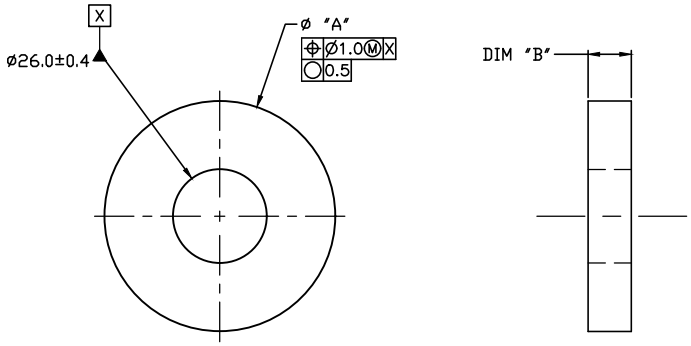
TITLE
OPERATING LEVER ASSEMBLY
FOR ADJUSTABLE NOZZLE TIP WITH PIVOT PIN

DRAWING NO : 3-45-320-01388

REV 02

REV	DATE	ALTERED :
01		CHD & APPD :

FOR TOLERANCES OF UNTOLERANCED DIMENSIONS DURING MANUFACTURE REFER PLANT STD. NO TP 023 0299



NOTES:

1. DIMENSIONS AND TOLERANCES PER ASME Y14.5M-1994 UNLESS OTHERWISE SPECIFIED:
   a. ALL DIMENSIONS ARE IN MILLIMETERS.
   b. TOLERANCES ON DIMENSIONS ±1.0
   c. TOLERANCES ON ANGULAR DIMENSIONS ±1°00′
2. BREAK ALL SHARP EDGES.

VARIANT NUMBER	DESCRIPTION	STD	MATERIAL CODE	A/C/P	UNIT	UNIT WEIGHT
			MATERIAL SPECN			QUANTITY
01	PLBXøA "A"=64, "B"=12		150111320000			0.253
			IS2062FE410GRA			1

	NAME	SIGNATURE	DATE
DRN	BIMAL.C	-sd-	10.03.11
CHD	J.V.V.A.K	-sd-	10.03.11
APPD	MTP	-sd-	10.03.11

Bharat Heavy Electricals Ltd
UNIT: HIGH PRESSURE BOILER PLANT
TIRUCHIRAPALLI – 620014

355-056

DEPT	ALL DIMENSIONS ARE IN MM	PROJECTION	SCALE	WEIGHT (Kg)	REF TO ASSY / OLD DWG
FS			NTS		B-903-3408/R0
CODE 129					

TITLE	DRAWING NO :	REV
CASTER WHEEL DETAIL	4-45-320-01654	00