



# BHARAT HEAVY ELECTRICALS LIMITED

( A Government of India Undertaking )  
HIGH PRESSURE BOILER PLANT  
PURCHASE DEPARTMENT - FOSSIL BOILERS  
THIRUCHIRAPALLI - 620014  
TAMILNADU (INDIA)

PHONE :2577331  
GRAMS : BHARATELEC  
FAX NO: 2520719  
E-mail: srchandran@bheltry.co.in  
Web:


429-002/A

	<b>Enquiry No</b>	<b>Enquiry Date</b>	<b>Due Date for Quotation</b>
	2661500012 - 55	08.01.2015	03.02.2015
Please quote Enquiry No, Date and due date in all correspondences. This is only a request for quotation and not an order			

Item	Description	Unit	Quantity	Delivery Quantity	Schedule Date
10	7518D0702500 FRONT WALL CASTING - 2 AS PER DRG.NO. 4M-18D-07-20509, Note for sl.no. 10 to 90:- (1)Material: Heat Resistant Steel Casting, Grade 11, IS 4522. (2)Ceritificate for material composition from Govt. approved lab to be provided along with material supply. However BHEL will also check at BHEL lab for final acceptance. (3)The Drawing No. and Grade of Casting to be embossed in each casting for identification. (4)All the castings to be offered for inspection by BHEL before despatch at vendor's works.For that supplier should send pre- despatch inspection call letter to BHEL official. After receipt of pre despatch inspection call letter BHEL official will visit the supplier works within one week. (5) The offerer shall submit the offer in two part bid system. VENDOR QUALIFYING CRITERIA Only those vendors who satisfy the following conditions will get qualified to participate in the tender: 1.Vendor should have minimum 3 years experience in this field. 2.Previous PO details for supplying similar kind of items should be submitted along with offer.Otherwise offer will be rejected. 3.Company profile details has to be provided along with offer. 4.BHEL reserves the right to visit the vendor's works for verifying the manufacturing facilities and any other credential furnished by the vendor. In case the information furnished with the offers found to be false /incorrect, the offer shall be rejected.	NO	20.000	20.00	10.04.15
20	7518B0402300 FRONT WALL TOP CASTING AS PER DRG. No. 4M-18B-04-21507.	NO	15.000	15.00	10.04.15

The offers should reach us 30 minutes before the time of opening of tenders.  
The offers will be opened at 14.30 hrs on the due date of tender in the presence of tenderers who have submitted their offer and who may like to be present for the tender opening.Late and delayed offers are liable to be rejected.

Yours faithfully,  
For **BHARAT HEAVY ELECTRICALS LIMITED**

  
MANAGER /PURCHASE  
(FOSSIL BOILERS)  
Yours faithfully,



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Web:

Page  
2/2

2661500012 / 08.01.2015

30	7518D0702600 DOOR CASTING-1 AS PER DRG.NO. 4M-18D-07-20495	NO	3.000	3.00	10.04.15
40	7518D0702700 DOOR CASTING-3 AS PER DRG.NO. 4M-18D-07-20496	NO	3.000	3.00	10.04.15
50	7518D0702800 DOOR CASTING-2 AS PER DRG.NO. 4M-18D-07-20497 OF PART NO. DC-2, L = 280 MM,	NO	20.000	20.00	10.04.15
60	7518D0702900 DOOR CASTING-4 AS PER DRG.NO. 4M-18D-07-20497 OF PART NO. DC-4, L = 325 MM,	NO	17.000	17.00	10.04.15
70	7518D0703000 DOOR CASTING-5 AS PER DRG NO. 4M-18D-07-20498-01	NO	2.000	2.00	10.04.15
80	7518D0703100 DOOR CASTING-7 AS PER DRG NO. 4M-18D-07-20499	NO	2.000	2.00	10.04.15
90	7518D0703200 DOOR CASTING-6 AS PER DRG NO. 4M-18D-07-20500-01	NO	17.000	17.00	10.04.15

**General Note:**

GENERAL NOTE:PLEASE SUBMIT YOUR OFFER IN "TWO PART BID SYSTEM" AS PER THE ANNEXURES ENCLOSED.

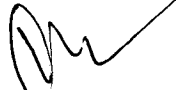
ENCLOSURES:ANNEXURE II,III,IV,V,VI,VII.

**Enclosures:**

"LD clause has to be confirmed without fail."

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The offers will be opened at 14.30 hrs on the due date of tender in the presence of tenderers who have submitted their offer and who may like to be present for the tender opening.Late and delayed offers are liable to be rejected.

Yours faithfully,  
For **BHARAT HEAVY ELECTRICALS LIMITED**

  
MANAGER / PURCHASE  
(FOSSIL BOILERS)  
Yours faithfully,

**CAPITAL PURCHASE**  
**COMMERCIAL TERMS AND CONDITIONS**

**1.0 QUOTATIONS**

The Bidders shall submit the offer in **TWO INNER ENVELOPES** as indicated below which shall be sealed in one outer envelope.

**Envelope I** This sealed envelope should contain all the copies of technical bid together with un-priced commercial bid & annexure III. This envelope should be clearly marked **'Part I - Technical and commercial bid'**,

Indicating Enquiry No., Due Date and Address & Reference of the Bidder.

**Envelope II** This sealed envelope should contain **price as per Annexure-IV format**. This envelope should be clearly marked **"Part II - Price bid"**, indicating **Enquiry No., Due Date and Address & Reference of the Bidder**.

Both the envelopes (Part I & II) shall be put in one cover (**Envelope III**), duly sealed, superscribing as Part I and Part II of Enquiry No., due date of opening and the address and reference of the Bidder

The above offer should reach this office on or before the due date by 14.00 hours (IST). Late offers will not be considered.

Tender should not be addressed to any individual's name but only by designation to

**SENIOR MANAGER /PURCHASE/ CP & SP/ MM / MFG  
BHARAT HEAVY ELECTRICALS LIMITED  
HIGH PRESSURE BOILER PLANT  
TIRUCHIRAPALLI - 620 014  
TAMIL NADU**

Tenders should be free from **CORRECTION AND ERASURES**, Corrections if any, must be attested. All Amounts shall be indicated both in words as well as in figures. Where there is difference between amount quoted in words and figures, amount quoted in words shall prevail.

Offers should be in **ENGLISH** and accompanied by detailed technical literature, catalogue and detailed dimensional drawings in **ENGLISH** or otherwise, the offers will not be considered.

**2.0 OPENING OF TENDERS**

The Part I - Technical & commercial bid alone would be opened on the Tender opening date.

The Part II - Price bid of technically suitable Bidders alone would be opened. The Technically Suitable Bidders would be informed about the tender opening date through e-mail.

Clarifications if any required by BHEL for Technical evaluation **would be** sought from Bidders before opening of Part II - price bid

**For any queries clarifications the bidders may contact us through our FAX NO. +91 431 2520719 or through e-mail <mmcpmfg1@bheltry.co.in >&< chells@bheltry.co.in>**

**MM: CP & SP**  
**Annexure For Techno Commercial Bid**

Check List - to be filled and submitted along with Technical Bid

BHEL Commercial Terms and Conditions for Indigenous Supplies	Vendor's Confirmation / Comments
Technical confirmation to BHEL's Specification as called for in BHEL Format shall be furnished. If needed additional sheets shall be used.	
Prices shall be <b>quoted item wise</b> only as per the model format enclosed	
Prices shall be quoted on " <b>FIRM PRICE</b> " basis only The prices should be only on <b>F.O.R / Despatching station</b> basis with <b>Packing &amp; Forwarding</b> charges if any. <b>Applicable % of ED &amp; Sales Tax, Freight &amp; Insurance, Installation &amp; Commissioning Charges should be clearly Indicated</b>	
<b>Validity of offer</b> shall be for a minimum period of 120 days from the date of Tender opening	
Delivery period from the date of Letter of Intent / Purchase order shall be clearly mentioned in the offer	
<b>Liquidated damages @ '0.5%</b> per week subject to a maximum of 10% of the order value shall be applicable for delay in deliveries <b>For Details Refer Annexure- v</b>	
<b>Following Risk Purchase clause</b> shall be applicable The purchaser at his option will be entitled to terminate the contract and to purchase elsewhere at the risk and cost of the seller either the whole of the goods or any part which the supplier has failed to deliver or dispatch within the time stipulated or if the same were not available, the best and the nearest available substitute therefore The supplier shall be liable for any loss which the Purchaser may sustain by reason of such risk purchases	
<b>Payment term for supply portion:</b> Payment term is 100% direct payment after 45 days from the date of receipt and acceptance of materials <b>For details Refer Annexure- v</b>	
Erection / commissioning: (if applicable only) Erection / commissioning charges if any has been mentioned in the offer or else confirmation that Erection /commissioning shall be done at free of cost is available in the offer,	
The equipment shall be guaranteed for a period of 12 months from the date of commissioning	
Final inspection and acceptance of equipment will be after installation at BHEL, Trichy	
The vendor shall provide necessary drawings, Test Certificates and Operating Maintenance Manuals etc., as called for in the Technical Specification, in the required number of copies at no extra cost	
Any warranty replacement during warranty period shall be supplied free of charge on FOR BHEL, Trichy basis.	
Offers should be submitted only in <b>sealed cover super-scribing clearly the Enquiry reference and due date.</b>	
% of Excise Duty with cess	
% of TAX (CST/VAT) (INGST with FORM-17 or CST with C-FORM)	
Packing & Forwarding Charges ( if any in % only)	
Percentage of Freight& transit insurance charges, if any Freight charges from Dispatching station to BHEL, Tiruchirappalli • Supplier should quote for F.O.R-BHEL Trichy Stores.	
As per Commercial terms and conditions, acceptance for participation in Reverse auction (RA). Yes/No to be indicated	
Name of the person for participating reverse auction	
Land Line Number	
Fax Number	
Mobile Number	
E-mail ID	

## NOTE:-

- a) It is confirmed that all the terms and conditions stipulated In the Enquiry have been fully understood by us and all clarifications & details have been obtained.
- b) Your offer should be indicating applicable If any P&F Charges, % of ED, Sales Tax -CST or VAT, Service Tax), Freight, Insurance and Installation and Commissioning Charges etc., as per our Price Format
- c) Your specific acceptance to our Payment terms, LD & Risk Purchase Clause are essential for consideration of your offer. Other wise your offer is liable for rejection.
- d) No row shall be left blank. Please indicate NA, in case the Item is "not applicable"

## Annexure For Price Bid

**Bharat Heavy Electricals Limited TIRUCHIRAPPALLI CAPITAL PURCHASE**  
**MODEL PRICE BID FORMAT FOR INDIAN BIDDERS**

Annexure-IV

Enquiry No. & Date:

Bidder's Offer No. & Date:

Sl No	Description of item	Unit	Quantity	Rate in Rs.	Value in Rs.
	<b>TOTAL VALUE IN RS.</b>				
	<b>Packing &amp; Forwarding charges in % if any</b>				
	<b>Freight &amp; Insurance Charges In % if freight charges are not mentioned it will be considered as FOR-BHEL TRICHY.</b>				
	<b>Excise Duty (indicate in %)</b>				
	<b>A) TNGST — VAT (%)</b>				
	<b>B) CST with C-FORM — (%)</b>				
	<b>C) CST without C-Form — (%)</b>				
	<b>Approximate Net weight of the total consignment</b>				
	<b>Approximate Gross weight of the total consignment</b>				
	<b>Approximate Dimensions of the Consignment</b>				
	<b>The price indicated shall be inclusive of all accessories, spares etc. as given in the scope of supply. Individual item-wise break-up price shall be attached as an annexure to this price bid format.</b>				

**Signature & Seal of Vendor**

**NOTE:**

1. The price bid should be submitted only as per the above format. No row shall be left blank. Please indicate NA, in case the item is "not applicable".
2. Prices shall be quoted item-wise only as per the above format.
3. If Price quoted is Inclusive of ED, the included ED Value and Base Value shall be indicated item-wise.

<b>Payment Term (Indigenous)</b>	
<b>If materials are receivable at Stores/Trichy <u>without</u> PBG</b>	Payment term is 100% direct payment after 45 days from the date of receipt and acceptance of materials.
<b>If materials are receivable at Stores/Trichy <u>with</u> PBG</b>	Payment term is 100% direct payment after 45 days from the date of receipt and acceptance of materials and against 10% PBG valid for the warranty period.
Any deviation in the above payment term will attract loading as mentioned below. “Base rate of SBI (as applicable on the date of bid opening. Techno-commercial bid opening in case of two part bids) + 6% shall be considered for loading for the period of relaxation sought by bidders.	

Payment through Bank is not preferred. In case of Payment through Bank is opted by Supplier, BHEL prefers documents submission through bank with copy of LR and door delivery of Goods to Site/Stores with Consignee copy attached. In this case Loading will be 3% on the offered value.

Offers of indigenous Suppliers with payment terms as LC/Advance Payment are liable for rejection.

#### **Liquidated Damages / Penalty -**

Liquidated damages shall be 0.5% of the total order value per week or part thereof subject to a maximum of 10% of the total order value.

For staggered delivery schedule, LD shall be 0.5% of the undelivered portion per week of the delay or part thereof subject to a maximum of 10% of the total order value.

Any deviation from the above LD clause, loading will be applied to the extent to which it is not agreed by the bidder (at offered value).

#### **Guarantee / Warranty Period – (if applicable)**

Normally No deviation permitted and the deviated offers are liable for rejection.

#### **Ranking-**

BHEL will consider the ranking after the loading is applied as referred above wherever deviations are observed.

#### **Performance Bank Guarantee – (if applicable)**

Normally No deviation permitted and the deviated offers are liable for rejection.

#### **NOTE:-**

1. If the due date of tender opening happens to be a holiday, the tenders will be opened on the next working day.
2. BHEL reserves the right to go for a reverse auction (RA) instead of opening the submitted sealed bid which will be decided after technical evaluation. Information and general terms and conditions covering RA are given in commercial terms and conditions.
3. Corrigendum if any, with respect to this tender will be hosted only in the website <http://www.bhel.com> or <http://tenders.gov.in>. You are requested to visit the website regularly for updates.

**Special Provisions for Micro and Small Enterprises (MSE)**

1. 20% of the tendered quantity is earmarked for MSE suppliers in this tender.
2. Out of the 20% tendered quantity reserved for MSE suppliers, 4% shall be earmarked for procurement from MSE owned by SC/ST entrepreneurs.
3. In case MSE vendor participating in the tender quotes within the price band of L1+15%, they will be allowed to supply the portion of the requirement subject to acceptance of L1 price by MSE vendor. In case of more than one such MSE, the supply shall be shared proportionately.
4. "MSE suppliers can avail the intended benefits only if they submit along with the offer, attested copies of either EM II certificate having deemed validity (five years from the date of issue of acknowledgement in EM-II) or valid NSIC certificate or EM II certificate along with attested copy of a CA certificate (Format enclosed at Annexure -VII where deemed validity of EM II certificate of five Years has expired) applicable for the relevant financial year (latest audited). Date to be reckoned for determining the deemed validity will be the date of bid opening (Part 1 in case of two part bid). Non submission of such documents will lead to consideration of their bid at par with other bidders. No benefit shall be applicable for this enquiry if any deficiency in the above required documents are not submitted before price bid opening. If the tender is to be submitted through e-procurement portal, then the above required documents are to be uploaded on the portal. Documents should be notarized or attested by a Gazetted officer."

**Certificate by Chartered Accountant on letter head**

This is to Certify that M/S .....  
(hereinafter referred to as 'company') having its registered office at  
..... is registered under MSMED Act 2006, (Entrepreneur  
Memorandum No (Part-II) ..... dtd:.....,  
Category: ..... (Micro/Small)). (Copy enclosed).

Further verified from the Books of Accounts that the investment of the company as on  
date..... as per MSMED Act 2006 is as follows:

1. **For Manufacturing Enterprises:** Investment in plant and machinery (i.e. original cost  
excluding land and building and the items specified by the Ministry of Small Scale Industries vide its  
notification No.S.O.1722(E) dated October 5, 2006 :  
Rs.....Lacs
2. **For Service Enterprises:** Investment in equipment (original cost excluding land and building and  
furniture, fittings and other items not directly related to the service rendered or as may be notified under the MSMED  
Act, 2006:  
Rs.....Lacs

The above investment of Rs.....Lacs is within permissible limit of  
Rs.....Lacs for .....Micro / Small (Strike off which is not applicable)  
Category under MSMED Act 2006.

Date:

(Signature)

Name -

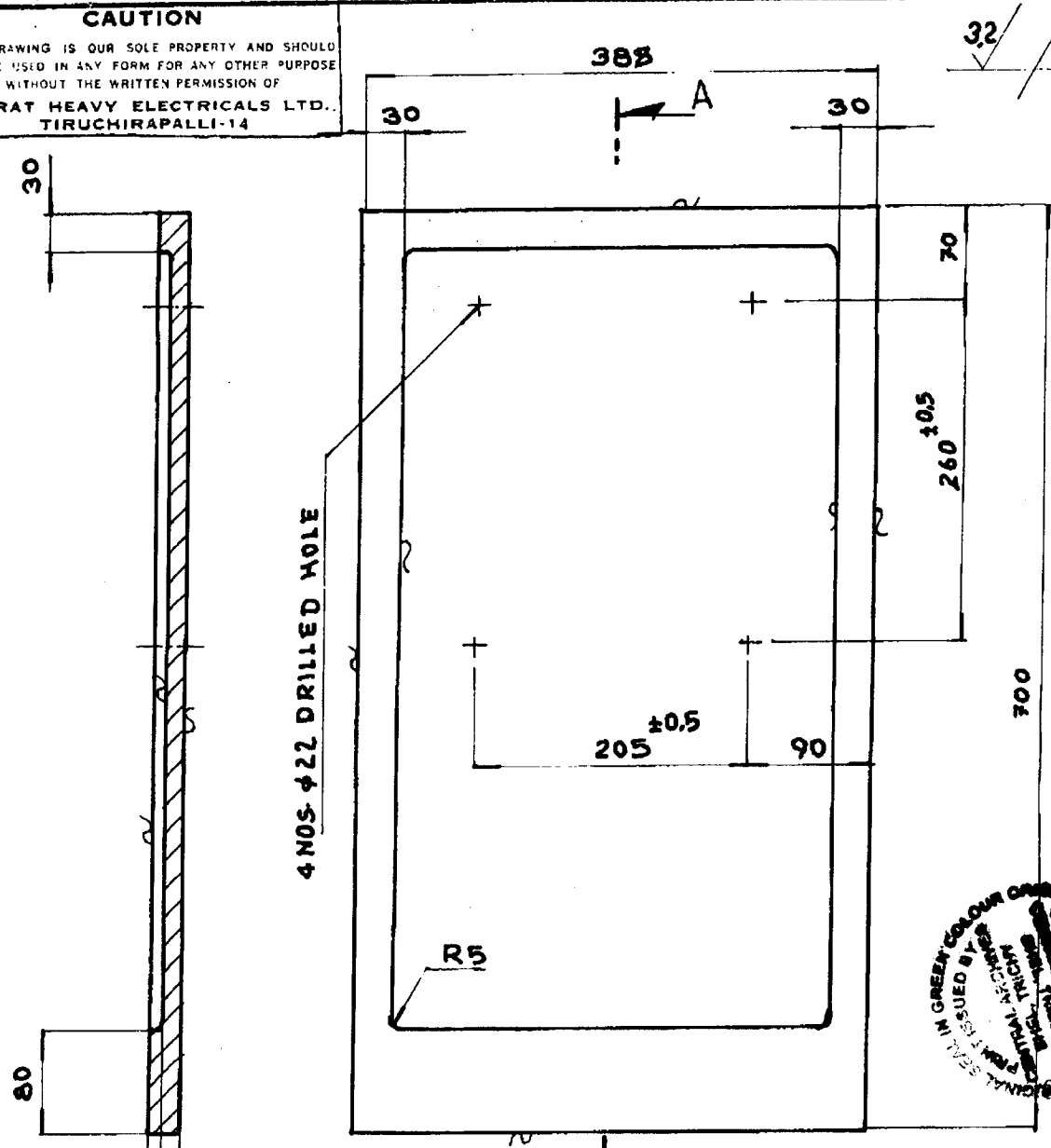
Membership number -

Seal of Chartered Accountant

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**BHARAT HEAVY ELECTRICALS LTD.,**  
**TIRUCHIRAPALLI-14**

INDEX No. 39 - 607



4 NOS. φ22 DRILLED HOLE



**NOTE:-**  
 ALL RADII ARE 5mm UNLESS OTHERWISE SPECIFIED.  
 ALL SHARP CORNERS TO BE ROUNDED R 2MM.

SEC-AA

MATL. ~~C-0.2 TO 0.4%~~ ~~Si-2% TO 3%~~  
~~Cr-1.75 TO 2.25%~~

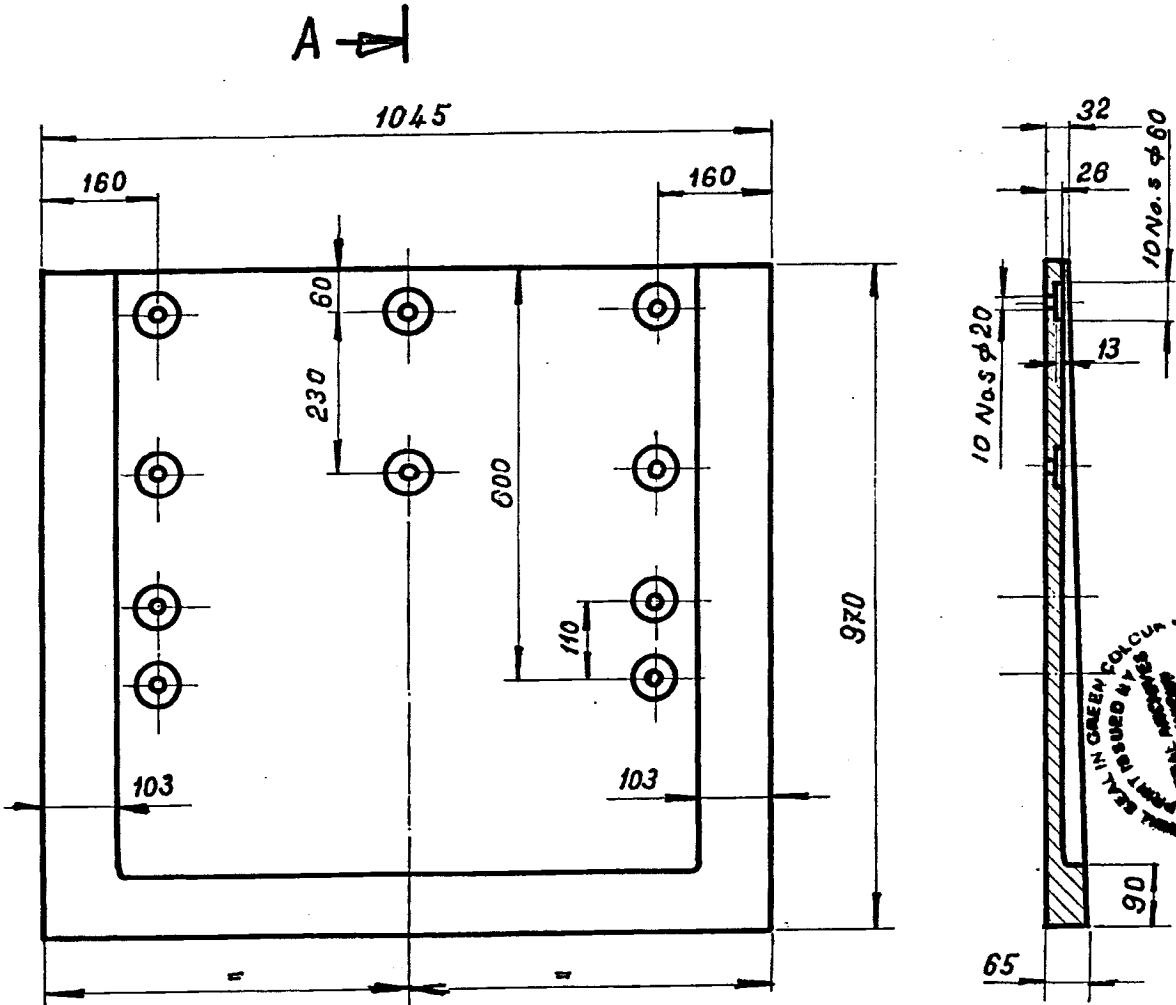
16	HEAT RESISTANT GASTINGS		IS:4522	48.78	2-M-18d-3748	02		
NO. OF PIECES	DESCRIPTION	SEMI-PRODUCT	FINAL MATERIAL	INITIAL MATERIAL	NET WT (KG)	GROSS WT (KG)	DRAWING NO.	ITEM NO.
REMARKS			TOTAL NET WT (KG)					
SCALE	DRAWN	REFERENCE	ALTERATIONS	DATE	SIGNATURE	INDEX		
1:5	V. Jayaraman	8007/PW/404-2	MATL WAS	21.9.81				
	CHECKED		CI GR 20 IS: 2103-89					
	APPROVED							
	STDS. OFFICER							
	DATE							
MACHINE PLATE HEATING FURNACE			TYPE 150T-VULCAN		INV. NO.			
TITLE: FRONT WALL CASTING - 2			DRAWING NO. 07		4.M.18d.20509			
NO. OF SHEETS			SHEET NO.					



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**TIRUCHIRAPALLI-14**

INDEX NO. 39-607



**NOTE:**

**SECTION-AA**

HEAT RESISTANT STEEL CASTING			
* CHEMICAL COMPOSITION			
C	Cr	Mn MAX.	Si MAX.
0.2-0.4	6.0-8.0	1.0	2.0



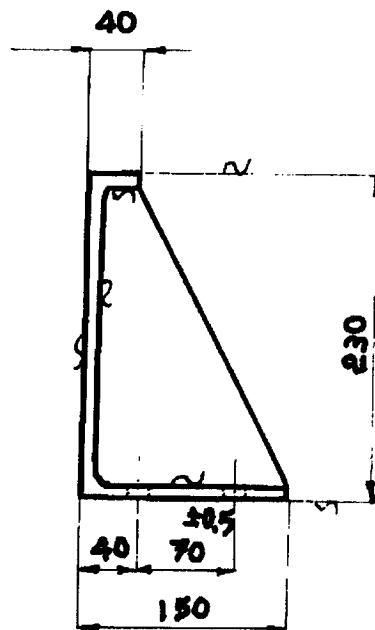
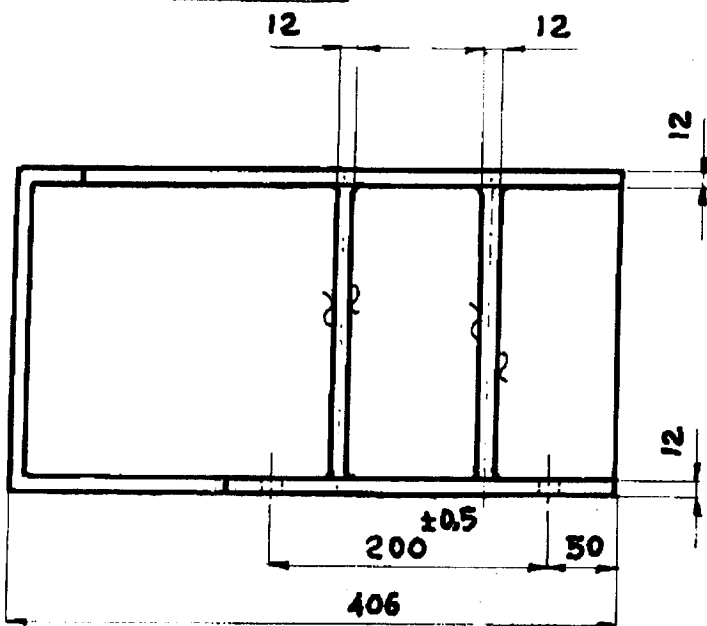
6			* SEE NOTE (2)			265.7	1.M-18B-0901	05	
NO. OF PIECES	DESCRIPTION	SEMI-PRODUCT	FINAL MATERIAL	INITIAL MATERIAL	SCRAP SORT	NET Wt (kg)	GROSS Wt (kg)	DRAWING NO.	ITEM NO.
REMARKS				TOTAL NET Wt (kg)		CC:00 / EC:04			
SCALE 1:10	DRAWN	G. G. RAJ.		REFERENCE	ALTERATIONS		DATE	SIGNATURE	INDEX
	CHECKED	K. U. B. Sanyal			MATL. CHANGED		06-08-87	[Signature]	(2)
	APPROVED	[Signature]							
	STDS. OFFICER								
DATE		16. 02. 1984							
MACHINE PLATE HEATING FURNACE.			TYPE: WELLMAN 4BT.		INV. NO.				
TITLE: <b>FRONT WALL TOP CASTING.</b>			DRAWING NO. <b>4. M. 18B-21507.</b>		SHEET NO.				
NO. OF SHEETS			SHEET NO.						

INDEX No. 39 - 607

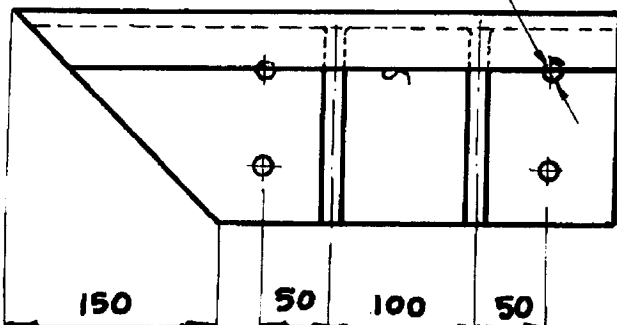
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**TIRUCHIRAPALLI-14**

3.2 / / ~ /



4 NOS.  $\phi$ 18 HOLE



MATL.  
~~C-02 TO 0.44~~  
~~C-6 TO 87~~  
~~M-1 TO 1000~~  
~~S-2 TO 1000~~



**NOTE:**

ALL RADII ARE 5mm UNLESS OTHERWISE SPECIFIED.  
 ALL SHARP CORNERS TO BE ROUNDED BY RADIUS: 2MM

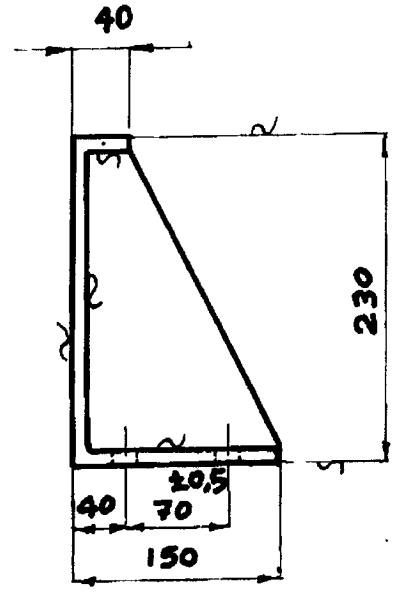
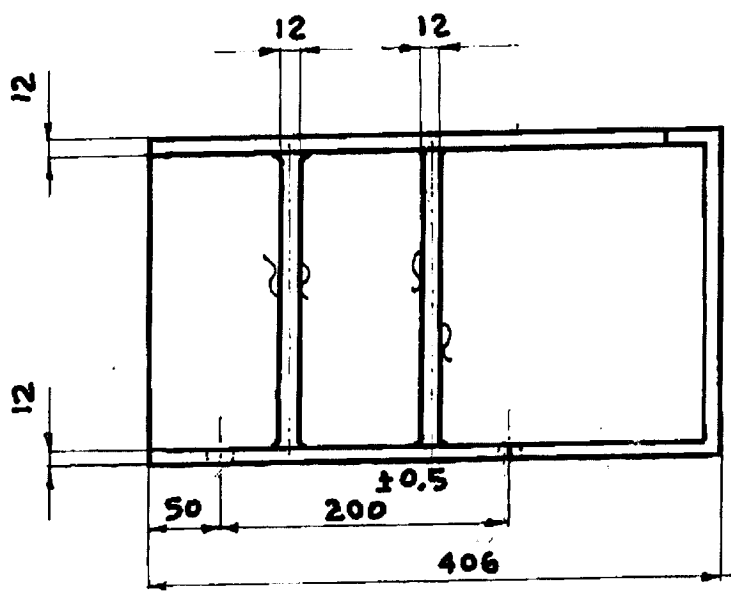
3	HEAT RESISTANT CASTINGS	15:4522	158	2-M-182-044 70 01
NO. OF PIECES	DESCRIPTION	SEMI-PRODUCT	INITIAL MATERIAL	ITEM NO.
			NET GROSS Wt(KG)	DRAWING NO.
REMARKS			TOTAL NET Wt(KG)	47.4
SCALE	DRAWN	REFERENCE	ALTERATIONS	DATE
1:5	U. Jayaraman	8007/PH/405-2	MATL WAS	3.3.98
	CHECKED		CI GR20 IS:210	
	APPROVED			
	STDS. OFFICER			
	DATE	10.9.81		
MACHINE		PLATE HEATING FURNACE	TYPE: 150T -YULCAN	INV. NO.
TITLE:		DRAWING NO.		
DOOR CASTING		4.M.18d.20495		
1		NO. OF SHEETS		
		SHEET NO.		

INDEX NO. 39 - 607

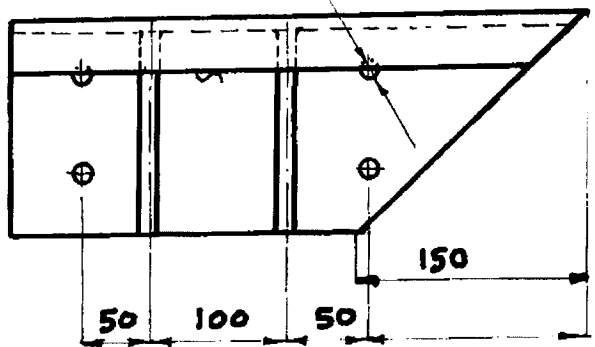
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 TIRUCHIRAPALLI-14

32 / 2 /



4 NOS.  $\phi 18$  HOLE



**NOTE**

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 ALL SHARP CORNERS TO BE ROUNDED BY RADIUS: 2 MM

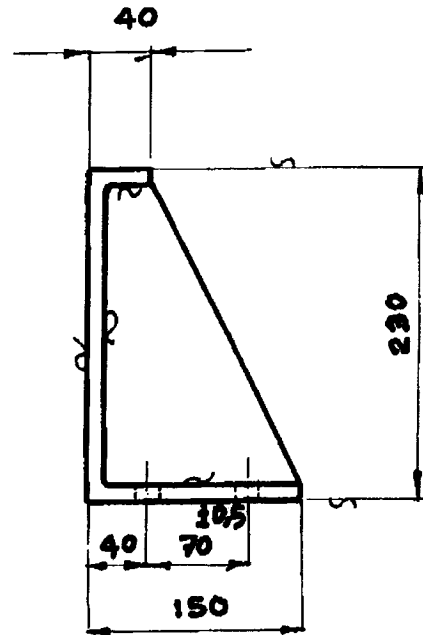
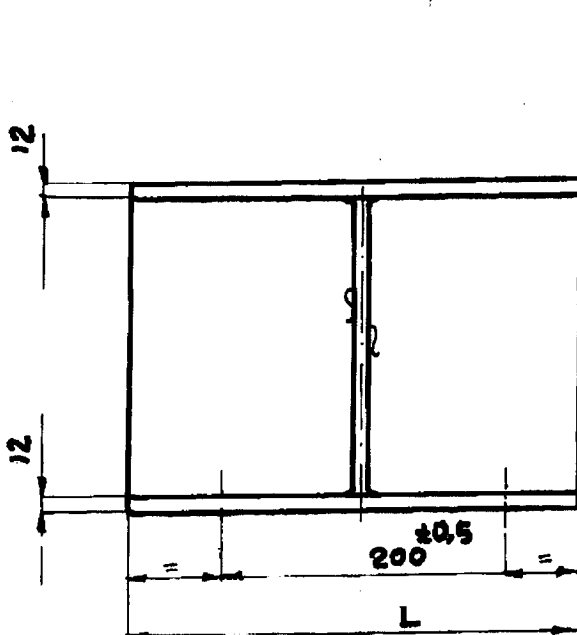
3		HEAT RESISTANT GASTINGS	IS: 4522	15.8	2-M-182-04470	03
NO. OF PIECES	DESCRIPTION	SEMI-PRODUCT	INITIAL MATERIAL	NET GROSS WT (KG)	DRAWING NO.	ITEM NO.
				47.4		
REMARKS		REFERENCE	ALTERATIONS	DATE	SIGNATURE	INDEX
SCALE	DRAWN					
1:5	<i>V. Jayaraman</i>	8007/PHI	MATL WAS	3-3-98	<i>[Signature]</i>	03
	CHECKED	405-2	CL GR 20+TS: 210			
	APPROVED					
	STDS. OFFICER					
	DATE	10.8.81				
MACHINE PLATE HEATING FURNACE			TYPE: 150 T - VULCAN INV. NO.			
TITLE:			DRAWING NO. 07			
<b>DOOR CASTING-3</b>			<b>4.M.18d. 20496</b>			
NO. OF SHEETS			SHEET NO.			



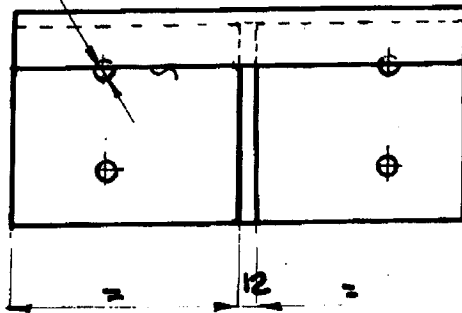
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 TIRUCHIRAPALLI - 14

3.2 / W /



4 NOS. Ø18 HOLE



PART NO	L
DC-2	280
DC-4	325



**NOTE:**

**ALL RADII ARE 5mm UNLESS OTHERWISE SPECIFIED.**

**ALL SHARP CORNERS TO BE ROUNDED BY RADIUS: 2MM**

NO. OF PIECES	DESCRIPTION	SEMI-PRODUCT	FINAL MATERIAL	INITIAL MATERIAL	SCRAP SORT	NET WT (KG)	GROSS WT (KG)	DRAWING NO.	ITEM NO.
20	DC-2		HEAT RESISTANT CASTINGS	IS: 4522 Gr. 11		10.5		2-M-18-D07-4470	02
17	DC-4		37	"		12.4		2-M-18-D-04470	04
TOTAL NET WT (kg)						420.8			

REMARKS	SCALE	DRAWN	CHECKED	APPROVED	STDS. OFFICER	DATE	ALTERATIONS	DATE	SIGNATURE	INDEX
	1:5	V. Jayaraman	S. Srinivasan	Randamany		10.8.81	MATL WAG C.I. GR. 20: IS: 210	3.3.98	A	01

MACHINE **PLATE HEATING FURNACE**

TITLE: **DOOR CASTING**  
2 & 4

TYPE: 150T-VULCAN INV. NO.

DRAWING NO. **4-M-18d.20497**



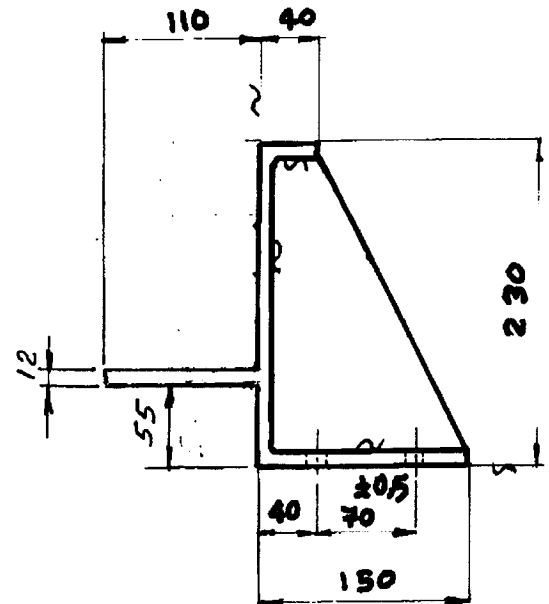
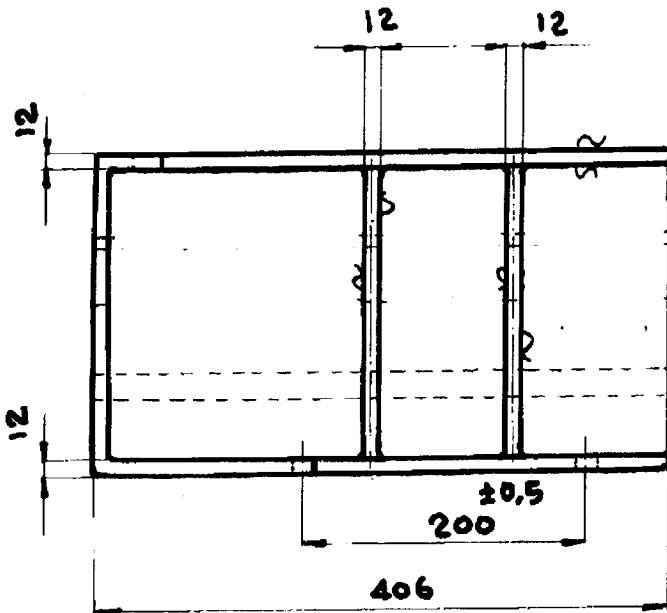
NO. OF SHEETS SHEET NO.

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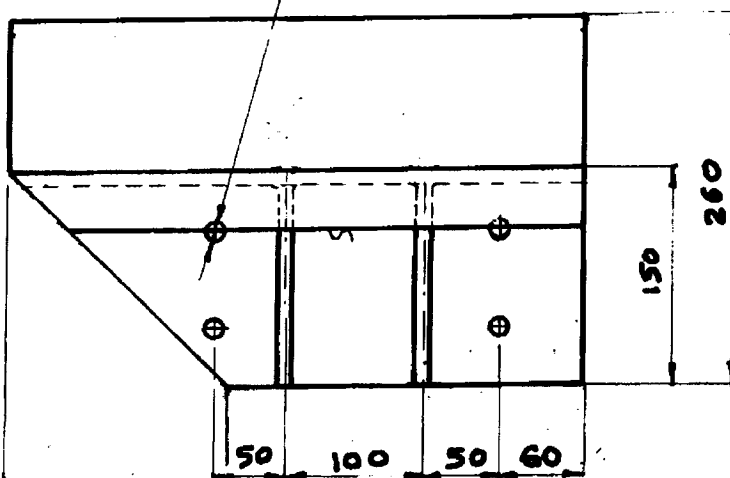
**CAUTION**

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32/

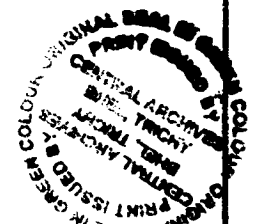


4 NOS # 18 HOLE



MATL:

- C - 0.2 TO 0.47.
- Cr - 6 TO 8%.
- Mn - 1% Max.
- Pi - 2% Max.



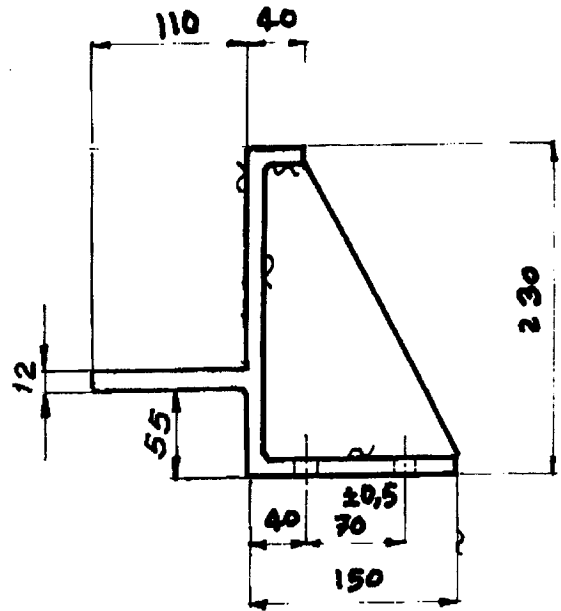
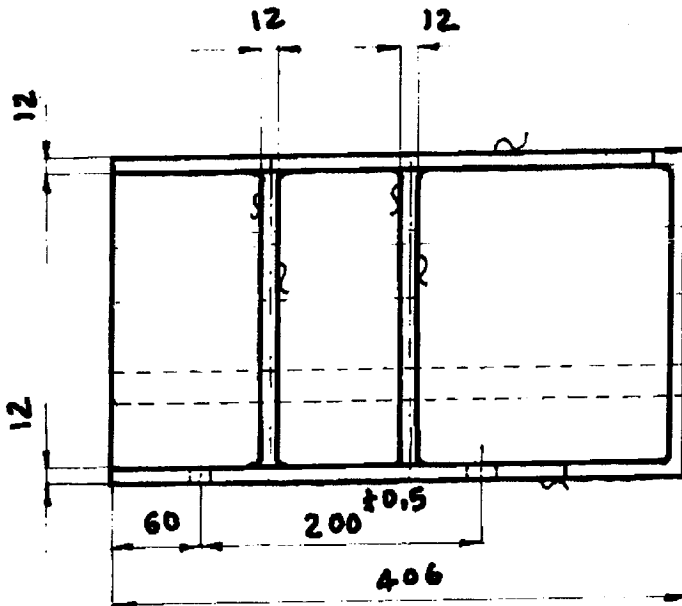
NOTE: 150  
ALL RADII ARE 5mm UNLESS OTHERWISE SPECIFIED.  
ALL SHARP CORNERS ARE TO BE ROUNDED BY RADIUS: 2MM

1		HEAT RESISTANT CASTINGS				2-M-18P-04470		05	
NO. OF PIECES	DESCRIPTION	SEMI-PRODUCT	FINAL MATERIAL	INITIAL MATERIAL	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	DRAWING NO.	ITEM NO.
						18.3			
REMARKS						TOTAL NET WT (kg) 18.3			
SCALE	DRAWN	REFERENCE		ALTERATIONS		DATE	SIGNATURE INDEX		
1:5	<i>J. Jayaraman</i>	8007/PH/405-2		MATERIAL WAS CI GR 20.ES:210		33-98	<i>[Signature]</i> 01		
	CHECKED								
	APPROVED								
	STDS. OFFICER								
	DATE	10.8.81							
MACHINE		PLATE HEATING FURNACE			TYPE: 150 T - VULCAN		INV. NO.		
TITLE:		DDDR CASTING-5			DRAWING NO.		07		
					4.M.18d.20498		01		
NO. OF SHEETS						SHEET NO.			

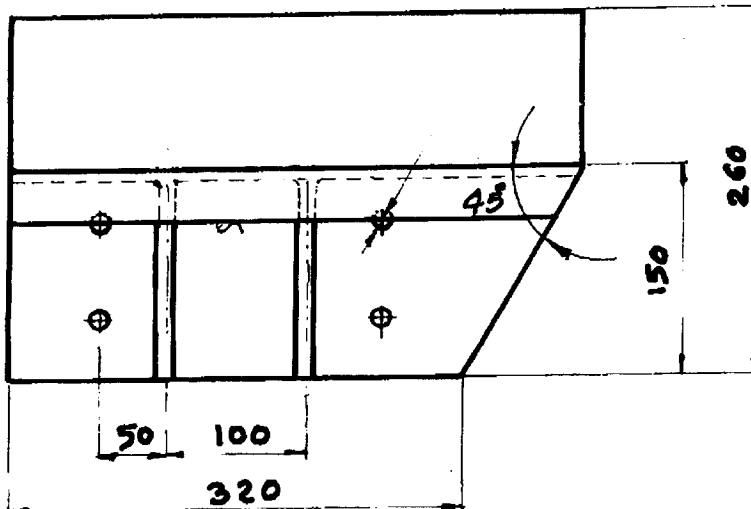
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**BHARAT HEAVY ELECTRICALS LTD.,**  
**TIRUCHIRAPALLI-14**

3.2 / 2 / -



4 NOS.  $\phi 18$  HOLE



MATL.

C = 0.2 TO 0.4%  
 Cr = 6 TO 8%  
 Mn = 1% Max.  
 Si = 2% Max.

NOTE:

ALL RADII ARE 5MM UNLESS OTHERWISE SPECIFIED.  
 ALL SHARP CORNERS ARE TO BE ROUNDED BY RADIUS: 2MM

NO. OF PIECES		DESCRIPTION	SEMI-PRODUCT	FINAL MATERIAL	INITIAL MATERIAL	SCRF SURF	NET Wt (kg)	GROSS Wt (kg)	DRAWING NO.	ITEM NO.
1		HEAT RESISTANT CASTINGS, GR11			IS:4522		18.3		2-M-182-0447807	
REMARKS		TOTAL NET WT (kg) 18.3								
SCALE	DRAWN	REFERENCE	ALTERATIONS		DATE	SIGNATURE	INDEX			
1:5	V. Jayaraman	8007/PH/								
	S. Shanmugasundaram	405-2								
	STDS. OFFICER	DATE								
		10.8.81								
MACHINE		TITLE		TYPE		INV. NO.				
PLATE HEATING FURNACE		DOOR CASTING-7		150 T - VULCAN						
DRAWING NO.		NO. OF SHEETS		SHEET NO.						
4.M.18d-20499										

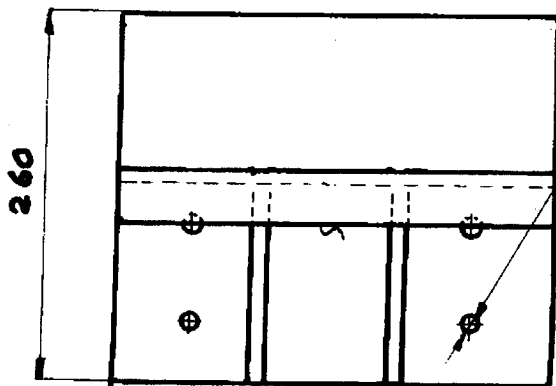
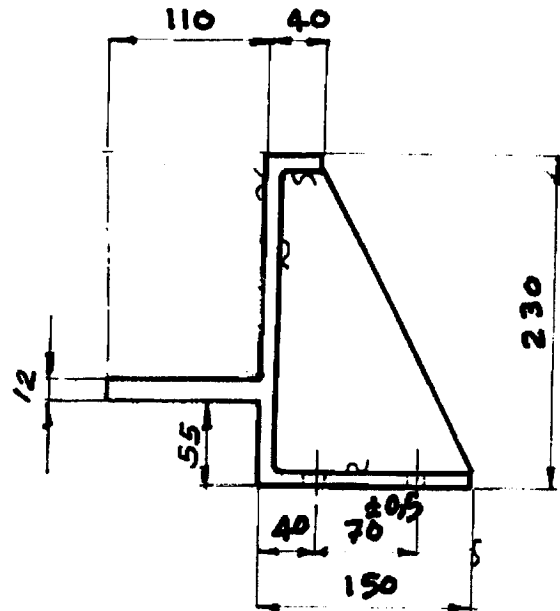
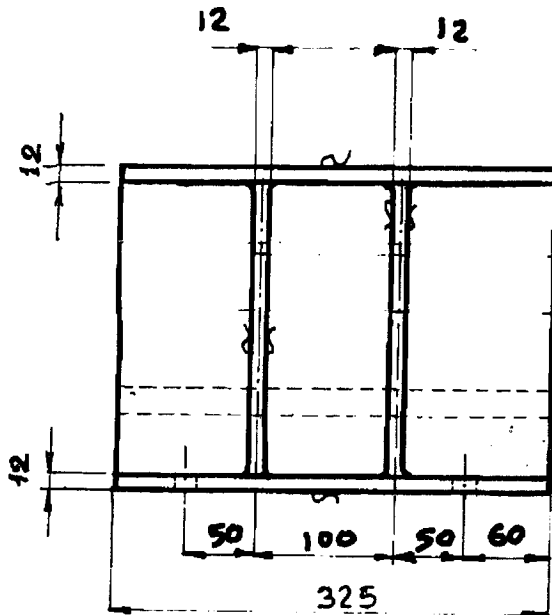


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**BHARAT HEAVY ELECTRICALS LTD.,**  
**TIRUCHIRAPALLI-14**

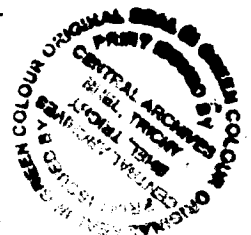
3.2/1/2/7



4 NOS. Ø18 HOLE

MATL.

C.02 TO 0.4%  
 C1 .6 TO 0.7%  
 Mn 1% MAX.  
 Si 2% MAX.



**NOTE:**

**ALL RADII ARE 5MM UNLESS OTHERWISE SPECIFIED.**  
**ALL SHARP CORNERS ARE TO BE ROUNDED BY RADIUS:2 MM**

17	HEAT RESISTANT CASTINGS. Gr. 11		15-4522	20.8	2-M-182-0447006				
NO. OF PIECES	DESCRIPTION	SEMI-PRODUCT	FINAL MATERIAL	INITIAL MATERIAL	SCRAP SORT	NET WT (KG)	GROSS WT (KG)	DRAWING NO.	ITEM NO.
REMARKS			TOTAL NET WT (KG)		353.8				
SCALE	DRAWN	REFERENCE	ALTERATIONS		DATE	SIGNATURE	INDEX		
1:5	V. Jayaraman	3007/PH/	MATL. WAS C.1 G.20		33.98		01		
	CHECKED	405-2	18: 210						
	APPROVED								
	STDS. OFFICER								
	DATE	10.8.81							
MACHINE		PLATE HEATING FURNACE		TYPE:		150 T-VULCAN, INV. NO.			
TITLE:		DOOR CASTING-6		DRAWING NO.		4-M.18D07-20500 01			
NO. OF SHEETS				SHEET NO.					

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