



ISO 9001 Company

# Heavy Engineering Corporation Limited

(A Govt. of India Enterprise)

Heavy Machine Building Plant

Ancillary & Contract Department

## Tender Notice

Tender No. ACD/HMB/19/SC&IC/2097/OTE-5848 dtd 30.09.19 for **the procurement of steel casting and iron casting items** is available on our website in e-procurement section i.e. <https://etenders.gov.in/eprocure/app>. Aspiring bidders may go through the tender document.

Interested bidders are requested to submit their most competitive offer through e-procurement mode only. Offer submitted through offline mode will not be considered. For more information please visit our website <https://etenders.gov.in/eprocure/app>.

Bid submission end date	21.10.19	01:00 PM
Technical Bid Opening date	22.10.19	03:00 PM

Prospective Tenderers are advised to get register themselves only on at NIC e-tender portal i.e. <https://etenders.gov.in/eprocure/app>, obtain 'User ID' & 'Password' and go through the 'Self Help files' available in the Home Page after log in to the portal <http://etenders.gov.in>. They should also obtain Class III Digital Signature Certificate (DSC) in parallel which is essentially required for submission of their application. Detailed instructions for online bid submission are attached in **annexure-6**. No registration fee would be charged from the bidders.

Bidders are required to upload the bid along with all supporting documents including priced part (BoQ) only on the e-tendering website (<https://etenders.gov.in/eprocure/app>), on or before the due date and time for submission of bid.

### **NOTE:**

- 1. Any Future changes/notifications including extension of bid due date, pertaining to this tender will be published/hosted only on website & CPP Portal only.**



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## Submission of tender

The Following 2 covers shall be submitted through online CPP - portal by the bidders. Last date and time of submission of bids (cover 1, 2) is as per given dates.

### **Cover – I: - Containing techno-commercial bid**

Cover – I containing

- i. Duly Filled Annexure-1
- ii. All documents as per Annexure 1

### **Cover - II: Price Bid (BoQ)**

a) The tenderer shall upload the digitally signed Schedule of price bid in the form of BOQ.xls

Bidders may please note, the schedule of quantities is attached in the portal. The same (BOQ) shall be downloaded and be filled in the editable (un protected) cells only and they should necessarily submit their financial bids in the format provided after entering the financial quotes, name of the bidder etc.

### **Bid Opening Process is as below:-**

Cover-I: Technical bid opening date will be as per given dates. If any clarification is needed from the bidder about the deficiency in his uploaded documents in Cover-I, he will be asked to provide it through Short fall documents folder in e-tendering portal one time only or through mail. The bidder shall upload the requisite clarification / documents within time specified by HEC, failing which tender will be liable for rejection.

Cover-II: The financial bids of the contractors / firms found to be meeting the qualifying requirements and technical criteria shall be intimated through portal. (Depending on Cover-I evaluation any changes in the date shall be intimated through e-tendering portal).



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Dtd 30.09.19

**OPEN TENDER**

**A. Scope of Supply**

HEC intends to procure the following item. Interested firms are requested to submit their most competitive offer for supply of following item as per the technical Instructions and the terms & conditions given below.

Sl.No.	Drg.No.	Desc.	Qty	Wt/pc in Kg	Material Grade
1	6006-129	Housing Model-6642	2	30.00	C.I. Gr25 IS:210-62
2	1036-062	Housing Model-1541	2	62.00	C.I. Gr25 IS:210-62
3	4008-001	Spindle Guide	2	95.00	CY21-40 IS:210-62
4	1040.16.006	Roller Pin Dia-78	36	4.60	FG 260 IS:210-93
5	1507.27.857	Bearing Body	8	3.10	C.I. Gr. FG-150 IS:210-93
6	1040.18.308	Slider	6	8.50	FG260 IS:210-93
7	1507.27.845	Eye	4	6.00	CS.Gr280-520W IS:1030-89
8	1507.27.856	Flange	4	9.60	CS.Gr280-520W IS:1030-89
9	1507.27.884	Link	8	90.00	CS.Gr280-520W IS:1030-89
10	1507.39.502	Roller	4	58.00	CS.Gr2 IS:2707-96
11	1507.27.872	Bearing Body	4	72.00	CS.Gr280-520W IS:1030-89
12	1507.27.878	Cover	4	70.00	CS.Gr280-520W IS:1030-89
13	1507.28.152	Ring	4	16.40	CS.Gr230-450W IS:1030-89
14	1040.02.002	Stop	12	52.00	CS-640 IS:2644-79
15	1040.18.301	Jaw Disc	10	71.00	CS-Gr-2 IS:2707-89
16	1040.13.014	Central Journal Nut	1	88.00	C.S.
17	1040.18.304	Half Collar	12	30.00	C.S. Gr-2 IS:2707-89
18	1040.18.305	Slider Jaw	6	43.00	C.S. Gr-2 IS:2707-89
19	1040.18.311	D.H. Coupling	12	36.00	C.S. Gr-2 IS:2707-89
20	1040.18.312	D.H. Coupling	10	42.00	C.S. Gr-2 IS:2707-89

**B. Technical Instructions:**

1. Item sl.no. 1 to 3 and 9 to 20 to be supplied in rough machined condition and item sl.no. 4 to 8 to be supplied in finish machined condition as per drawings and its technical instruction.
2. Items should be of good surface finish as per HEC drawing and free from any defect like cracks, sand inclusion, blow holes etc.

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Ancillary & Contract Department, Ground Floor Administrative Building, HMBP, HEC, Ranchi 834004,  
Jharkhand, Phone: 0651 2400935,2400987 Fax: 0651 2401166, email: sunilksingh@hectd.com/  
raviverma@hectd.com/ alok.singh@hectd.com



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3. Bidders have to upload the details of **manufacturing facilities** available with them along with Technical Commercial Bid Part-1, as per Annexure 1. In case of non submission or incomplete Technical aspects with Techno-Commercial Bid Part-1, (as per Annexure-1) the offer may not be considered for the said Enquiry.
4. Drawings are enclosed with the Tender & detailed drawings are available in our office (ACD)/HMBP, HEC Ltd. for study on any working day before opening of tender.

**“The supplier has to give identification mark (to be indicated afterwards by HEC) on each item.”**

**Terms & conditions**

1. The rate quoted shall be Inclusive of all packing & forwarding, Freight charges & insurance on F.O.R HMBP Stores.
2. The Price quoted by the tenderer should be exclusive of GST. The rate and nature of GST applicable should be shown separately. GST will be paid to the seller at the rate at which it is liable to be assessed or has actually been assessed on the date of supply provided the transaction of sale is legally liable to GST and within the delivery period.
3. **Validity of offer** - The rates quoted must be firm and the offer made must remain valid for acceptance up to **three months** from the date of opening of the tender. The rate quoted must be in word and figure as well. In case any discrepancy in rate given in figures and word, the rate given in words will prevail.
4. **Payment terms:** 90% payment along with 100% taxes and duties within two months of receipt of material in HMBP and 10% against C.R.V (to be issue by our Stores after receipt and acceptance of material at HMBP). In case of any deviation by the bidders necessary loading @ 1% Per Month (12% max Per Year) on quoted price shall be applicable and L-1 firm will be decided based on landed cost after loading on quoted price.
5. **Delivery Schedule –within 60 days from the date of issue of PO.** In case the delivery schedule is not acceptable to any bidder, the Price bid of the bidder may not be opened for the said Enquiry.
6. Full particular i.e. specification, literature and or drawing wherever applicable should be submitted along with the quotation.
7. The Corporation does not pledge itself to accept the lowest or any tender and reserve to itself the right of accepting the whole or any part of tender or portion of the quantity offered and you shall supply the same at the rate quoted.
8. Inspection of the manufactured items will be done by QCA/HMBP or his authorized representative at supplier's works, Necessary tools and measuring instruments to be provided by the supplier.



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9. Corporation reserves the right to call for and examine at any time the books of accounts and other document and papers of the firm for the purpose of ascertaining whether any excess payment has been made or the firm likely to be received / received undue benefit out of execution of the particular contract.
10. **Earnest Money Deposit -Rs 5000/-** will have to be deposited by demand draft on any of the nationalized banks in favor of "Heavy Engineering Corporation Limited, payable at Ranchi" or in the form of Bank Guarantee as per annexure-4. The copy of EMD in form of DD/BG will have to enclose in the Techno- Commercial bid (Part 1) and the original copy of the same has to reach before opening date of tender. Exemption of EMD shall be applicable on submission of valid SSI/NSIC/MSME certificate and as per prevailing govt guidelines. SSI/NSIC/MSME Certificate to be enclosed in Techno Commercial Bid Part 1.
11. **Tender Fee -Rs 200/-** will have to be deposited by demand draft on any of the nationalized banks in favor of "Heavy Engineering Corporation Limited, payable at Ranchi. The copy of Tender Fee in form of DD will have to enclose in the Techno-Commercial bid (Part 1) and the original copy of the same has to reach before opening date of tender. Exemption of Tender Fee shall be applicable on submission of valid SSI/NSIC/MSME certificate and as per Govt rules. SSI/NSIC/MSME Certificate to be enclosed in Techno Commercial Bid Part 1.
12. **Security deposit (SD)** – Successful tenderers will have to deposit security equal to 5 % of the value of the contract within the desired period i.e. within 21 days of PO date. Failing this, the contract will be cancelled at the risk and expenses of the suppliers. SD will have to be deposited by demand draft on any of the nationalized banks in favor of "Heavy Engineering Corporation Limited, payable at Ranchi" or in the form of Bank Guarantee as per format at annexure-5. Exemption of SD shall be applicable as per prevailing govt guidelines.
13. **Delivery** : The time for and the date of delivery of the Stores stipulated in the acceptance of tender shall be deemed to be the essence of the Contract and delivery must be completed not later than the dates specified therein. Otherwise:
  - a. The purchaser to recover from the Contractor a sum of 0.5% per week (Completed week) of the price of the Stores (upto maximum 10%) as liquidated damages, which the contractor has failed to deliver as aforesaid or
  - b. The purchaser may procure the undelivered stores/ similar items from elsewhere, without notice to the contractor at the risk of the contractor without canceling the contract in respect of the consignment not yet due for delivery or
  - c. To cancel the contract or a portion thereof.
14. The rates quoted shall also be inclusive of embossing on the material. The ownership namely HMBP should be at a predominant place of the material to a size/ thickness upon the volume of the material.
15. The corporation reserves the right to reject any / all tender partly / fully and no tenderer can ask any explanation anywhere in this regard.
16. Successful Bidders have to sign the confidentially agreement in HEC's format.



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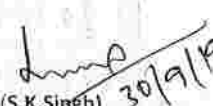
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17. **Guarantee clause-** The items supplied shall be guaranteed for a period of 12 months from the date of commissioning or 18 months from the date of supply whichever is earlier against defective materials or bad workmanship
18. The repeat order for 100% quantity may be placed on successful bidder/bidders within one year from the date of delivery of the original Purchase Order on mutual agreement.
19. Order placed as a result of this tender will be governed by the Corporation's General Terms and Conditions of Contract which can be referred in HEC's website [www.hecltd.com](http://www.hecltd.com)

**Note:-**

1. As per the govt. Guidelines it is to be specified clearly in your offer whether your firm is registered with SSI/NSIC/MSME and also confirm whether the firm is owned by SC/ST Entrepreneurs or not.
2. Pl. provide UAM no to avail Facilities of MSME.
3. Please get registered your firm with HEC Ltd.

  
(S.K. Singh) 30/9/19  
DGM/ACD/HMBP



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**Annexure – 1**

PART – I (Techno - Commercial Bid)

Tender No. ACD/HMB/19/SC&IC/2097/OTE-5848

Dtd 30.09.19

	Requisite	✓ your option		Remark
		Yes	No	
1	Whether the scope of work (A) & technical instruction (B) mentioned in the tender enquiry schedule is acceptable.	Yes	No	
2	Reference & Photocopies of Major PO's placed on you by HEC /Other companies for similar items.	Yes	No	(Upload the relevant documents)
3	Duly notarized/Self Attested copies of Manufacturing Facilities (Casting, Machining etc.) available at your works for the same work/similar work. <b>In case you don't have own Casting facility, Pl provide the tie up letter &amp; Credential of tie up from where the Casting will be procured.</b>	Yes	No	(Upload the relevant documents)
4	Whether EMD and Tender fees Deposited (As per Clause 10 & 11 of Terms & Conditions)	Yes	No	(In case yes, then upload Copy of DD/BG)
5	Whether SSI/NSIC/MSME	Yes	No	(In case yes, then upload certificate)
6	F.O.R. HMBP (As per clause 1 of Terms & condition)	Yes	No	
7	UAM no to avail Facilities of MSME	Yes	No	(In case yes, mention UAM no .....)
8	Payment Term (As per clause 4 of Terms & condition)	Yes	No	(In case your answer is No, then please mention your term) _____
9	Delivery Term (As per clause 5 of Terms & condition)	Yes	No	(In case your answer is No, then please mention your term) _____
10	Validity (As per clause 3 of Terms & conditions)	Yes	No	
11	L.D. Clause & Risk purchase clause (As per clause 13(a) & 13(b) of Terms & conditions)	Yes	No	
12	Guarantee Clause (As per clause 18 of Terms & conditions)	Yes	No	
13	Security Deposit (As per clause 12 of Terms & conditions)	Yes	No	
14	GST	Yes	No	Applicable GST (%) .....



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15	Inspection (As per clause 8 of Terms & conditions)	Yes	No	
16	Self Declaration (as per annexure-3)	Yes	No	
17	Firm is owned by SC/ST Entrepreneurs	Yes	No	
18	Whether Terms & Condition/Note etc. mentioned in the tender enquiry is acceptable to the tenderer	Yes	No	
19	Contact Person Name:- Email:- Contact Number:-			

**Note :** In case of non-submission / submission of incomplete documents in terms of proofs duly notarized/self attested as per above details, your offer may not be considered for the said Enquiry.

(Signature of Tenderer)  
With official Seal





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## Annexure – 2

### PART-II (Price Bid)

The tenderer shall upload the digitally signed Schedule of price bid in the form of BOQ.xls

Bidders may please note, the schedule of quantities is attached in the portal. The same (BOQ) shall be downloaded and be filled in the editable (unprotected) cells only and they should necessarily submit their financial bids in the format provided after entering the financial quotes, name of the bidder etc.



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**Annexure – 3**

Tender No. ACD/HMB/19/SC&IC/2097/OTE-5848

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**Self-Declaration**

I \_\_\_\_\_, Son / Daughter of  
Shri \_\_\_\_\_ age \_\_\_\_\_ years, resident of  
\_\_\_\_\_ in the District of \_\_\_\_\_, do hereby  
declare that all the information given in the offer and in the enclosed documents is true  
to the best of my knowledge and belief and nothing has been concealed therein. I am  
well aware of the fact that if the information given by me is proved false / not true at  
any point of time, I will have to face punishment as per any provision of Law for the time  
being in force as well as the benefit availed of by me or the benefit accrued to me shall  
be summarily cancelled.

Date: -

(Signature of Tenderer)  
With official Seal



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**Annexure 4**

Format for

**BANK GUARANTEE FOR EARNEST MONEY DEPOSIT**

*(to be issued by any Nationalized bank preferably State bank of India negotiable at their counters in Ranchi)*

NO.

Dated:

TO  
ANCILLARY & CONTRACT DEPARTMENT  
MATERIAL MANAGEMENT DIVISION  
HEAVY MACHINE BUILDING PLANT  
HEAVY ENGINEERING CORPORATION LTD.  
RANCHI-834004, JHARKHAND  
INDIA

Dear Sirs,

In consideration of your agreeing to accept the Earnest money deposit of Rs.-----  
(Rs----- ) furnishable to you by M/s-----  
------(Hereinafter  
Referred to As Contractor) In terms of the Enquiry No. -----  
-----Dtd. ----- for Supply of -----  
(Hereinafter Referred to as the Contract) in the form of a Bank Guarantee in the Manner  
hereinafter contained we -----, having  
registered office at -----do hereby covenant and  
agree with you as follows.

1. We hereby undertake to indemnify you up to a sum of Rs. ----- (Rs. -----  
----- only) against any loss or damage caused to or suffered by  
you or that may be caused to or suffered by you by reason of any breach or breaches on  
the part of the contractor of any of the terms and conditions contained in the said  
contract and in the event the Contractor shall make any default or defaults in carrying  
out any of the works under the said contract or otherwise in the observance and  
performance of any of the terms and conditions relating thereto in accordance with the  
true intent and meaning thereof, we shall forthwith on demand and without any protest  
or demur pay to you such sum or sums not exceeding in total the said sum of Rs.-----  
----- (Rs. -----amount-----only) as may be claimed by you as your



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losses and/or damages, costs, charges or expenses by reason of such default or defaults on the part of the contractor.

2. Notwithstanding anything to the contrary contained in this guarantee your decision as to whether the contractor has made any such default or defaults and the amount or amounts to which you are entitled by reasons thereof will be binding on us and we shall not be entitled to ask you to establish your claim or claims or damages or losses suffered by you but will pay the amount demanded by you under this guarantee forthwith on your demand without any protest or demur.

3. This guarantee shall continue and hold good until it is released by you on the application by the contractor after expiry of the related warranty period of the said contract and after the contractor have discharged all their obligations under the said contract and produced a certificate of due completion of the work under the said contract and submitted a "NO Demand Certificate" provided always that this guarantee shall in no event remain in force after the date of----- without prejudice to your claim or claims arisen and demanded from or otherwise notified to us in writing before the expiry of six months from the said date which will be enforceable against us not withstanding that the same is or are enforced after the said date.

4. We-----, further undertake to extend the validity of this beyond the period prescribed in clause 3 or as extended from time to time for such further period as may be required in writing before the Expiry of this and upon such extension(s), all terms and conditions of this shall remain in full force till the expiry of this extended period(s).

5. You will have the fullest liberty without affecting this guarantee from time to time to vary any of the terms and conditions of the said contract or extend the time of performance of the contractor or to postpone for any time or from time to time any of your rights or powers against the contractor and either to enforce or forbear to enforce any of the terms and conditions of the said contract and we shall not be released from our liability under this guarantee by the exercise of your liberty with reference to matters aforesaid or by reason of any time being given to the contractor or any other forbearance, act or omission on your part or any indulgence by you to the contractor or by any other variation or modification of the said contract or any other act, matter or things whatsoever, which, under the law relating to sureties, would but for the provisions hereof, have the effect of so releasing us from our liability hereunder provided always that nothing herein contained will enlarge our liability hereunder beyond the limit of Rs. -----(Rs.-----) as aforesaid or extend the period of the guarantee beyond the said Date of ----- unless expressly agreed to by us in writing in terms of clause 4 hereof.

6. This guarantee shall not in any way be affected by your taking or varying or giving up any securities from the contractor or any other person, firm or company on its behalf or by the winding up, dissolution, insolvency or death as the case may be of the contractor.

7. In order to give full effect to the guarantee herein contained, you shall be entitled to act as if we are your principal debtors in respect of all your claims against the contractor



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hereby guaranteed by us as aforesaid and we hereby expressly waive all our rights of suretyship and other rights, if any, which are in any ways inconsistent with any of the provisions of this guarantee.

8. Subject to the maximum limit of our liability as aforesaid this guarantee will cover all your claim or claims against the contractor from time to time arising out of or in relation to the said contract and in respect of which your claim in writing is lodged on us before expiry of six months from the date of expiry of this guarantee.

9. Any notice by way of demand or otherwise hereunder shall be in writing and may be sent by special Courier or Telefax to us or our Local Address as aforesaid.

10. This guarantee and the powers & provisions herein contained are in addition to and not by way of limitation or substitution for any other guarantee or guarantees heretofore given to you by us whether jointly with others or alone and now existing uncanceled and that this guarantee is not intended to and shall not revoke or limit such guarantee or guarantees.

11. This guarantee shall not be affected by any change in the constitution of the contractor or us nor shall it be affected by any change in your constitution or by any Amalgamation or absorption thereof or therewith but will ensure for the benefit or and be available to and enforceable by the absorbing or amalgamated company or concern.

12. This guarantee is irrevocable during the period of its currency and shall not be revoked without your previous consent in writing.

13. We further agree and undertake to pay you the amount demanded by you in writing irrespective of any dispute or controversy between you and the contractor or any reference to arbitration of the said dispute/controversy pending or a civil suit filed by the contract or in respect of the dispute or controversy.

14. Notwithstanding anything contained herein above our liability under this guarantee is restricted to Rs.----- (Rs. -----only) and this guarantee shall remain in force until -----unless a written claim is lodged on us for payment under this guarantee within six months from the date of expiry of this guarantee . i.e. On or before-----all your rights under this guarantee shall be forfeited and we shall be deemed to have released and discharged from all liabilities there under, irrespective of whether or not the original guarantee is returned to us.

15. We have power to issue this guarantee in your favour under the memorandum and articles of association of the bank and the undersigned has full power to execute this guarantee under the power of Attorney Granted to them by the Bank.

FOR AND ON BEHALF OF

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## Annexure 5

### Format for BANK GUARANTEE FOR SECURITY DEPOSIT

( to be issued by any Nationalized bank preferably State bank of India negotiable at their counters in Ranchi )

TO,

M/S HEAVY ENGINEERING CORPORATION LIMITED  
PLANT PLAZA ROAD,  
DHURWA,  
RANCHI – 4

Dear sir,

In consideration of your agreeing to accept the security deposit of rs. ....'amount'..... furnishable to you by m/s ..... 'firms name'..... (hereinafter referred to as contractor) in terms of the contract no. ....'hec's purchase order no'.....for supply of ..... 'details of items'.....(hereinafter referred to as the 'contract' ) in the form of a bank guarantee in the manner hereinafter contained we.....'bank details'..... branch, having registered office at ..... 'place'..... do hereby covenant and agree with you as follows:

1. We hereby undertake to indemnify you up to a sum of rs. ....'amount'.....(rupees ..... 'amount in words'.....) against any loss or damage caused to or suffered by you or that may caused to or suffered by you by reason of any breach or breaches on the part of the contractor of any of the terms and conditions contained in the said contract and in the event the contractor shall make any default or defaults in carrying out any of the works under the said contract or otherwise in the observance and performance of any of the terms and conditions relating thereto in accordance with the true intent and meaning thereof, we shall forthwith on demand and without any protest



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or demur pay to you such sum or sums not exceeding in total the said sum of rs. ....'amount'.....(rupees ..... 'amount in words'.....) as may be claimed by you as your losses and / or damages, costs, charges or expenses by reason of such default or defaults on the part of the contractor.

2. Notwithstanding anything to the contrary contained in this guarantee your decision as to whether the contractor has made any such default or defaults and the amount or amounts to which you are entitled by reasons thereof will be binding on us and we shall not be entitled to ask you to establish your claim or claims or damages or losses suffered by you but will pay the amount demanded by you under this guarantee forthwith on your demand without any protest or demur.
3. This guarantee shall continue and hold good untill it is released by you on the application by the contractor after expiry of the related warranty period of the said contract and after the contractor have discharged all their obligations under the said contract and produced a certificate of due completion of the work under the said contract and submitted a 'no demand certificate' provided always that this guarantee shall in no event remain in force after the date of ...'date'..... without prejudice to your claim or claims arisen and demanded from or otherwise notified to us in writing before the expiry of six months from the said date which will be enforceable against us notwithstanding that the same is or are enforced after the said date.
4. We ..... 'bank name'....., further undertake to extend the validity of this beyond the period prescribed in clause 3 or as extended from time to time, for such further period as may be required in writing before the expiry of this and upon such extension(s), all terms and conditions of this shall remain in full force till the expiry of this extended period(s).
5. You will have the fullest liberty without affecting this guarantee from time to time to vary any of the terms and conditions of the said contract or extend the time of performance of the contractor or to postpone for any time or from time to time any of your rights or powers against the contractor and either to enforce or forebear to enforce any of the terms



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and conditions of the said contract and we shall not be released from our liability under this guarantee by the exercise of your liberty with reference to matters aforesaid or by reason of any time being given to the contractor or any other forbearance, act or omission on your part or any indulgence by you to the contractor or by any other variation or modification of the said contract or any other act, matter or things whatsoever, which, under the law relating to sureties, would but for the provisions hereof, have the effect or so releasing us from our liability hereunder provided always that nothing herein contained will enlarge our liability hereunder beyond the limit of rs. ....'amount'.....(rupees ..... 'amount in words'.....) as aforesaid or extend the period of the guarantee beyond the said date of ...'date'.... unless expressly agreed to by us in writing in terms of clause 4 hereof.

6. This guarantee shall not in any way be affected by your taking or varying or giving up any securities from the contractor or any other person, firm or company on its behalf or by the winding up, dissolution, insolvency or death as the case may be of the contractor.
7. In order to give full effect to the guarantee herein contained, you shall be entitled to act as if we are your principal debtors in respect of all your claims against the contractor hereby guaranteed by us as aforesaid and we hereby expressly waive all our rights of suretyship and other rights, if any, which are in any way inconsistent with any of the provisions of this guarantee.
8. Subject to the maximum limit of our liability as aforesaid this guarantee will cover all your claim or claims against the contractor from time to time arising out of or in relation to the said contract and in respect of which your claim in writing is lodged on us before expiry of six months from the date of expiry of this guarantee.
9. Any notice by way of demand or otherwise hereunder shall be in writing and may be sent by special courier, speed post or telefax to us at our local address as aforesaid.
10. This guarantee and the powers & provisions herein contained are in addition to and not by way of limitation of or substitution for any other





ISO 9001 Company

**Heavy Engineering Corporation Limited**  
(A Govt. of India Enterprise)  
**Heavy Machine Building Plant**  
**Ancillary & Contract Department**

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guarantee or guarantees heretofore given to you by us whether jointly with others or alone and now existing uncanceled and that this guarantee is not intended to and shall not revoke or limit such guarantee or guarantees.

11. This guarantee shall not be affected by any change in the constitution of the contractor or us nor shall it be affected by any change in your constitution or by any amalgamation or absorption thereof or therewith but will ensure for the benefit of and be available to and enforceable by the absorbing or amalgamated company or concern.
12. This guarantee is irrevocable during the period of its currency and shall not be revoked without your previous consent in writing.
13. We further agree and undertake to pay you the amount demanded by you in writing irrespective of any dispute or controversy between you and the contractor or any reference to arbitration of the said dispute / controversy pending or a civil suit filed by the contractor in respect of the dispute or controversy.
14. Notwithstanding anything contained herein above our liability under this guarantee is restricted to rs. ....'amount'.....(rupees ..... 'amount in words'.....) and this guarantee shall remain in force until ..... 'date'.... unless a written claim is lodged on us for payment under this guarantee within six months from the date of expiry of this guarantee i.e. on or before ...'date' + '6 month'..... all your rights under this guarantee shall be forfeited and we shall be deemed to have released and discharged from all liabilities thereunder. irrespective of whether or not the original guarantee is returned to us.
15. We have power to issue this guarantee in your favour under the memorandum and articles of association of the bank and the undersigned has full power to execute this guarantee under the power of attorney granted to them by the bank.

FOR AND ON BEHALF OF  
'name of bank'

'signature with seal'



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**Annexure-6**

**Instructions for Online Bid Submission**

The bidders are required to submit soft copies of their bids electronically on the CPP Portal, using valid Digital Signature Certificates. The instructions given below are meant to assist the bidders in registering on the CPP Portal, prepare their bids in accordance with the requirements and submitting their bids online on the CPP Portal.

More information useful for submitting online bids on the CPP Portal may be obtained at: <https://eprocure.gov.in/eprocure/app>.

**REGISTRATION**

- (i) Bidders are required to enroll on the e-Procurement module of the Central Public Procurement Portal (URL: <https://etenders.gov.in/eprocure/app>) by clicking on the link "Online bidder Enrollment" on the CPP Portal which is free of charge.
- (ii) As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts.
- (iii) Bidders are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the CPP Portal.
- (iv) Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (Class II or Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India (e.g. Sify / nCode / eMudhra etc.), with their profile.
- (v) Only one valid DSC should be registered by a bidder. Please note that the bidders are responsible to ensure that they do not lend their DSC's to others which may lead to misuse.
- (vi) Bidder then logs in to the site through the secured log-in by entering their user ID / password and the password of the DSC / e-Token.

**SEARCHING FOR TENDER DOCUMENTS**

- i) There are various search options built in the CPP Portal, to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, Organization Name, Location, Date, Value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of



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search parameters such as Organization Name, Form of Contract, Location, Date, Other keywords etc. to search for a tender published on the CPP Portal.

- ii) Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. These tenders can be moved to the respective 'My Tenders' folder. This would enable the CPP Portal to intimate the bidders through SMS / e-mail in case there is any corrigendum issued to the tender document.
- iii) The bidder should make a note of the unique Tender ID assigned to each tender, in case they want to obtain any clarification / help from the Helpdesk.

**PREPARATION OF BIDS**

- i) Bidder should take into account any corrigendum published on the tender document before submitting their bids.
- ii) Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the bid documents have to be submitted, the number of documents - including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.
- iii) Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document / schedule and generally, they can be in PDF / XLS / RAR formats. Bid documents may be scanned with 100 dpi with black and white option which helps in reducing size of the scanned document.
- iv) To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, annual reports, auditor certificates etc.) has been provided to the bidders. Bidders can use "My Space" or "Other Important Documents" area available to them to upload such documents. These documents may be directly submitted from the "My Space" area while submitting a bid, and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process.

**Note:** My Documents space is only a repository given to the Bidders to ease the uploading process. If Bidder has uploaded his Documents in My Documents space, this does not automatically ensure these Documents being part of Technical Bid.



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**SUBMISSION OF BIDS**

- i) Bidder should log into the site well in advance for bid submission so that they can upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other issues.
- ii) The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.
- iii) Bidder has to select the payment option as "offline" to pay the tender fee / EMD as applicable and enter details of the instrument.
- iv) Bidder should prepare the EMD as per the instructions specified in the tender document. The original should be posted/couriered/given in person to the concerned official, latest by as specified in the tender documents. The details of the DD / any other accepted instrument, physically sent, should tally with the details available in the scanned copy and the data entered during bid submission time. Otherwise the uploaded bid will be rejected.
- v) Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. If the price bid has been given as a standard BOQ format with the tender document, then the same is to be downloaded and to be filled by all the bidders. Bidders are required to download the BOQ file, open it and complete the white coloured (unprotected) cells with their respective financial quotes and other details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it and submit it online, without changing the filename. If the BOQ file is found to be modified by the bidder, the bid will be rejected.
- vi) The server time (which is displayed on the bidders' dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission.
- vii) All the documents being submitted by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128 bit encryption technology. Data storage encryption of sensitive fields is done. Any bid document that is uploaded to the server is subjected to symmetric encryption using a system generated symmetric key. Further this key is subjected to asymmetric encryption using buyers/bid openers public keys. Overall, the uploaded tender



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documents become readable only after the tender opening by the authorized bid openers.

- viii) The uploaded tender documents become readable only after the tender opening by the authorized bid openers.
- ix) Upon the successful and timely submission of bids (i.e. after Clicking "Freeze Bid Submission" in the portal), the portal will give a successful bid submission message & a bid summary will be displayed with the bid no. and the date & time of submission of the bid with all other relevant details.
- x) The bid summary has to be printed and kept as an acknowledgement of the submission of the bid. This acknowledgement may be used as an entry pass for any bid opening meetings.

**ASSISTANCE TO BIDDERS**

- i) Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contact person indicated in the tender.
- ii) Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24x7 **CPP Portal** Helpdesk.

Note: For any query related to registration and processing on the Portal please visit

FAQ available at

<https://etenders.gov.in/eprocure/app?page=FAQFrontEnd&service=page>

You may call the Helpdesk. The 24 x 7 Help Desk Numbers are  
0120-4200462, 0120-4001002, 0120-4001005, 0120-6277787

E-Mail: [support-eproc@nic.in](mailto:support-eproc@nic.in)

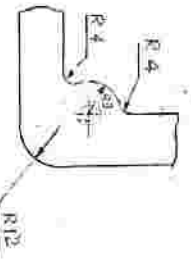
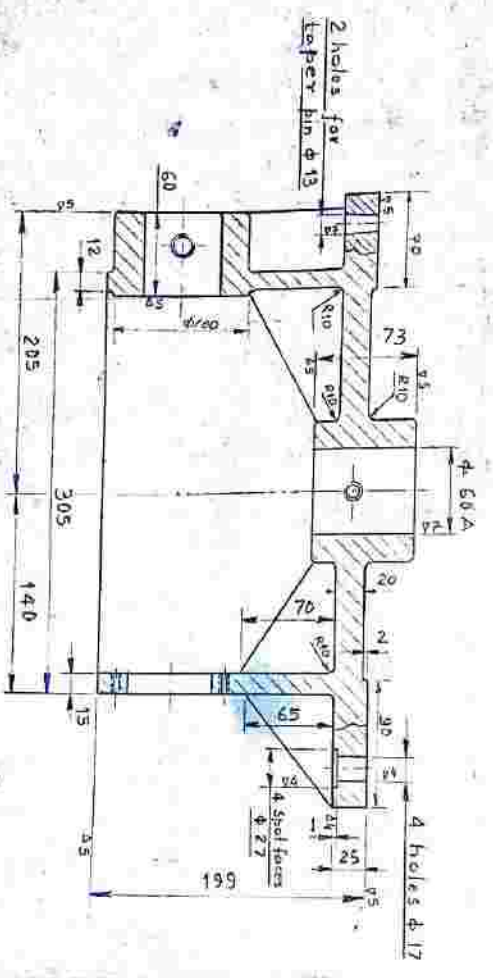
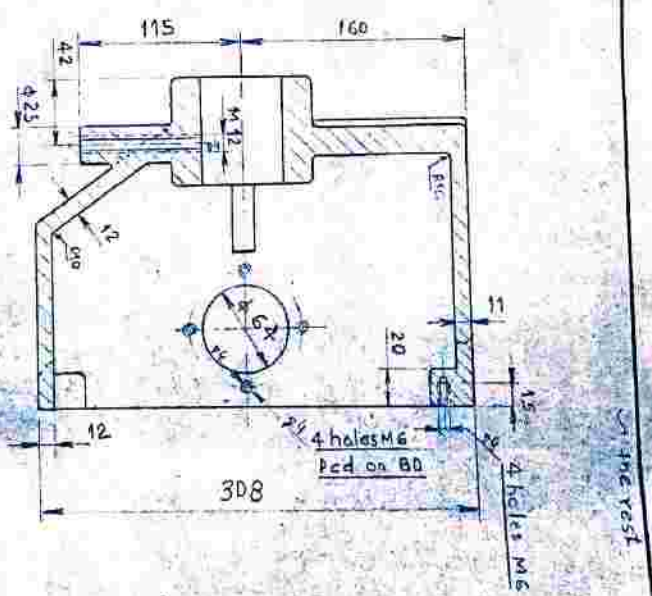
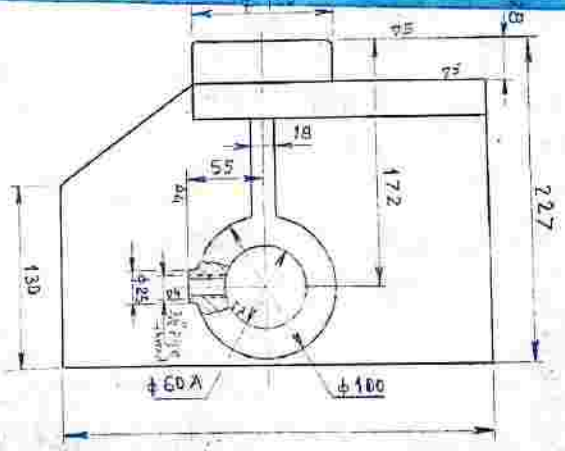
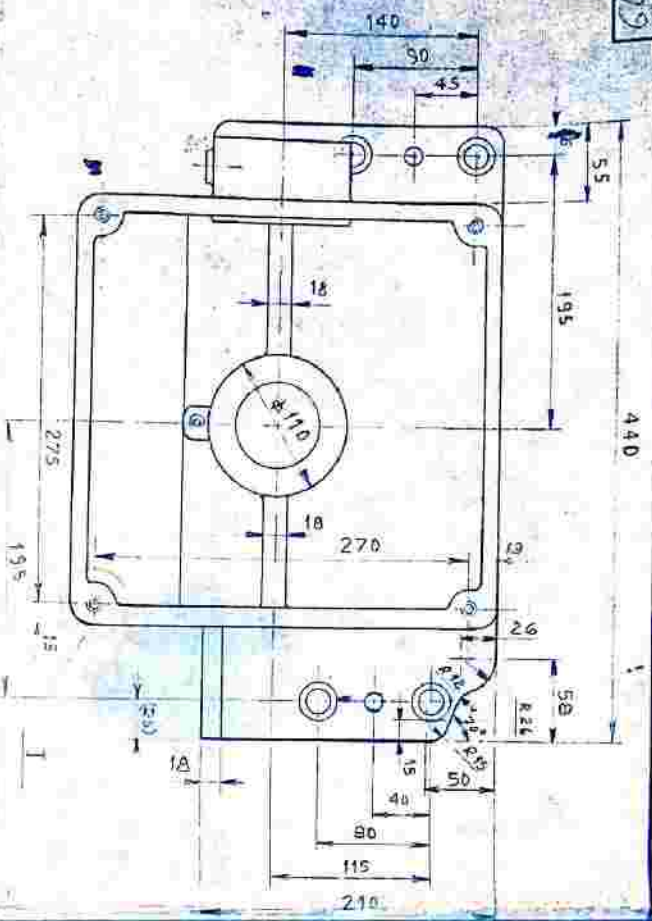
**Or**

You may call to our service provider, Mr.Kushal (7903884318)

E-Mail: [kushalniccl@gmail.com](mailto:kushalniccl@gmail.com)

\*\*\*

6006-129



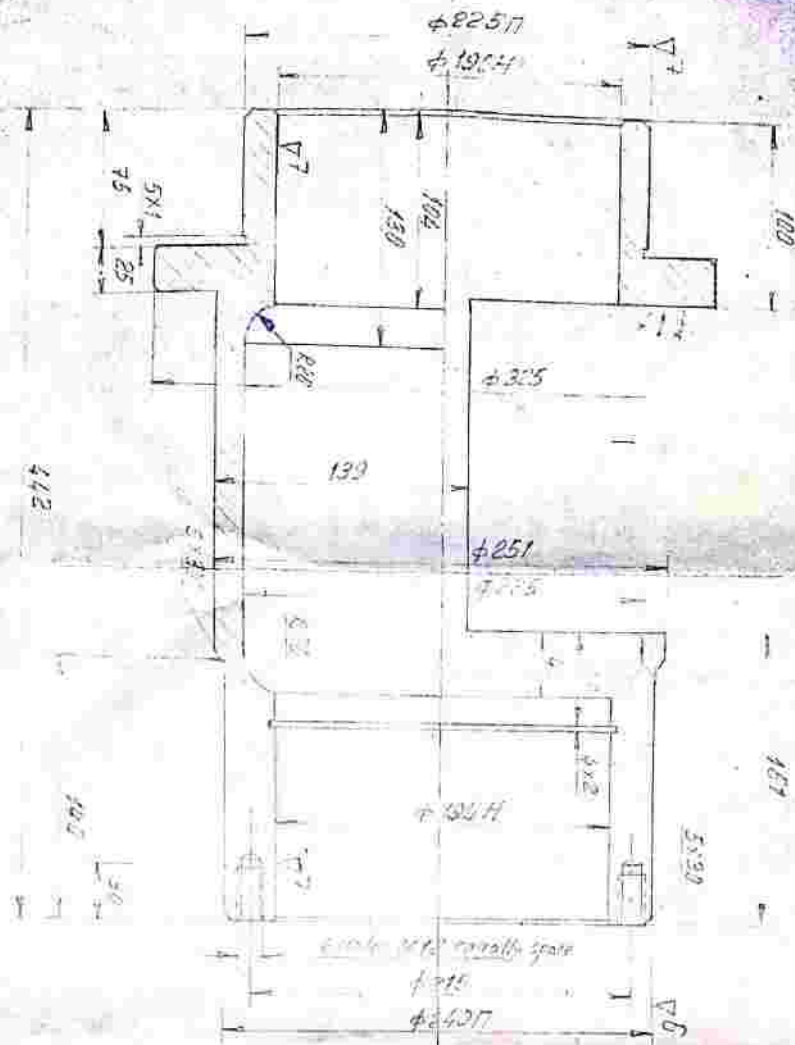
I  
Scale 1:1

Notes:  
 (1) Unmentioned casting radii's 5 mm.  
 (2) Casting should be free from all the defects.

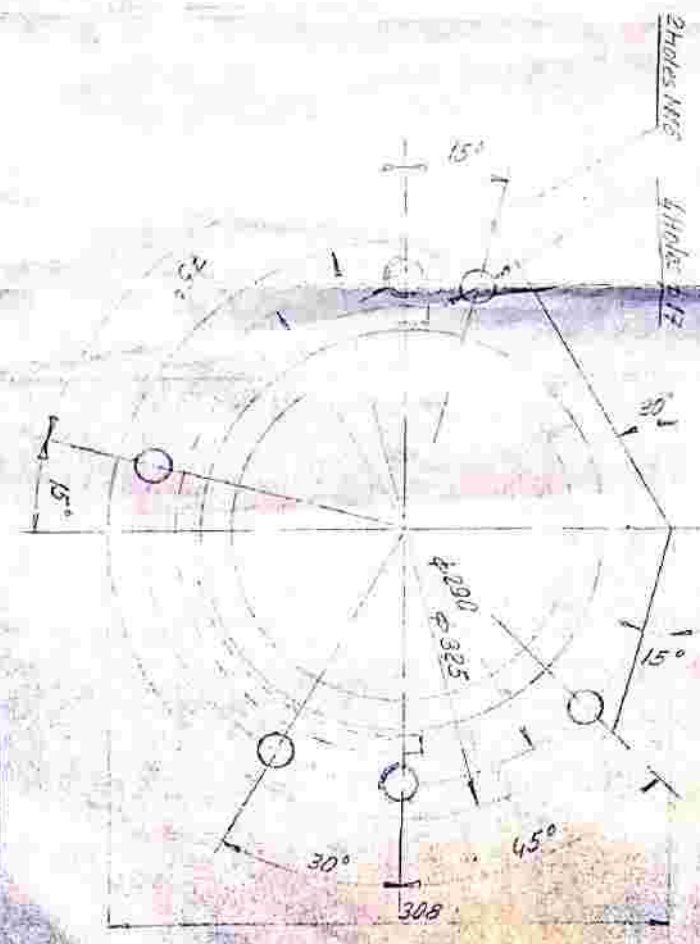
NO.	REV.	REVISION	DATE

<b>HOUSING</b>		<b>6006-129</b>
Model — 6642		DATE: 12/11/23
DESIGNED BY	J. KUMAR	<b>HMB</b>
DRAWN BY	M. TIRUPATI	
CHECKED BY	P. SURESH	DATE: 12/11/23
DATE	12/11/23	SCALE: 1:1

420 9201



SHOULDER 2 X 3

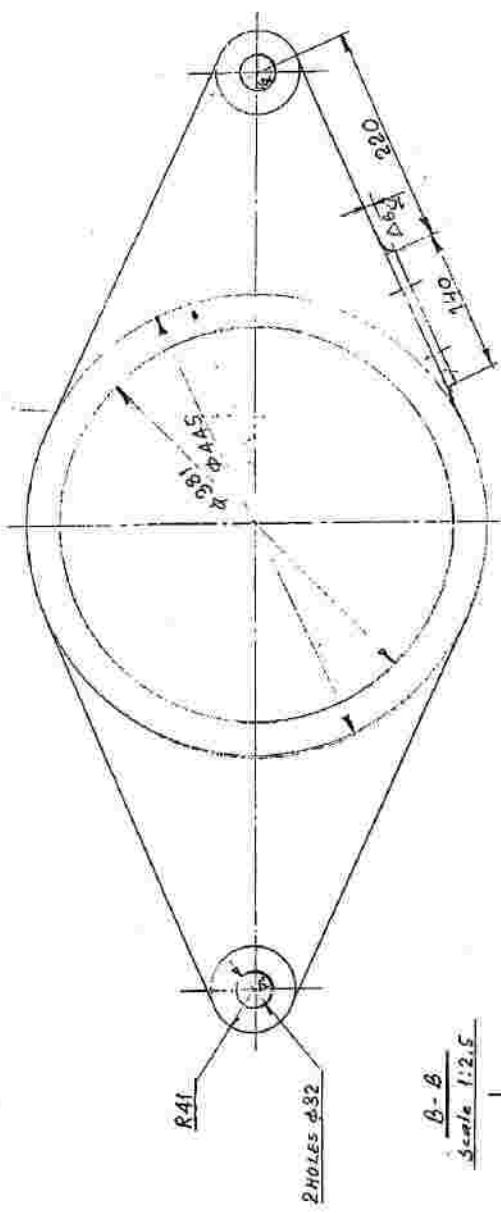
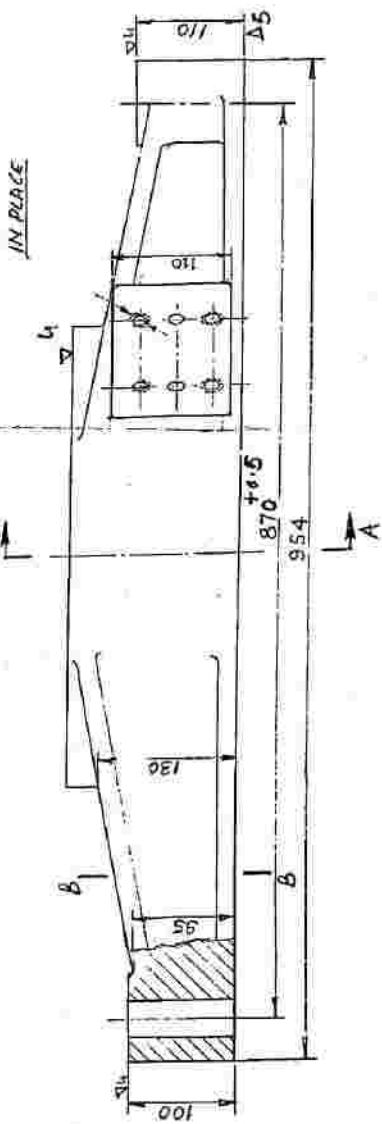
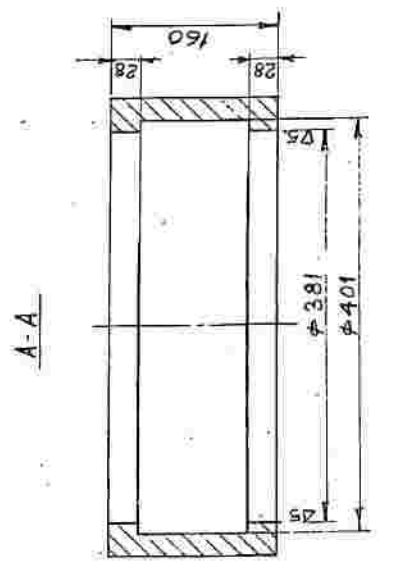


$\nabla 4$  the rest

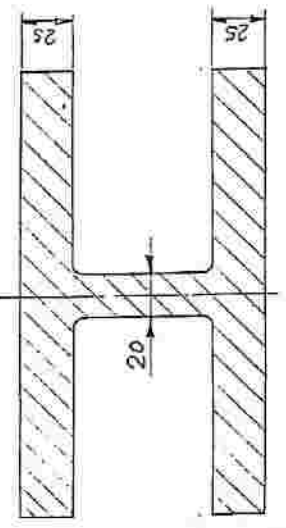
Rev. No.	
By	
Check By	
Date	

<b>HOUSING</b>		<b>1036-062</b>
Model:	1541	Material:
Part No.		Scale:
Author:		Drawn:
Check By:		Date:
Material:		
Scale:		
Drawn:		
Date:		

the rest



B-B  
Scale 1:2.5



SPINDLE GUIDE

250T Press

4008-001

Material = CY21-40  
I.S. 230-62

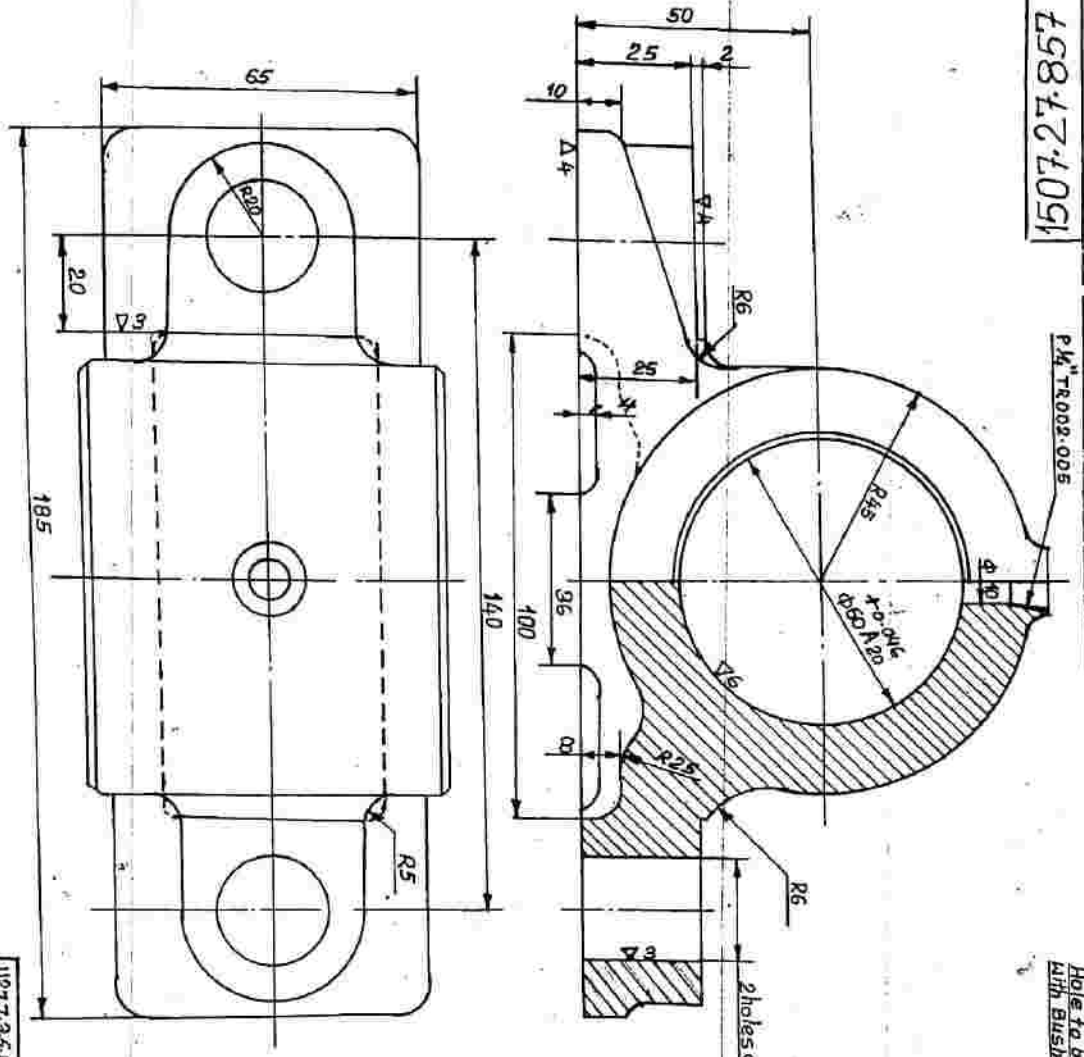
Model- 250T Press	Scale 1:5	Wt. in kg- 95
Bureau Chief	Group Leader	Designer
Drawn By	H. Khess	Checked By
Ref. Proj. No.	Norm. Check	

HMB  
MAY '70  
H. E. C. LTD, RANCHI  
Mech. Maint. Dept

Index No. Revision Signature Date



1507.27.857



Hole to be drilled together with Bush drawing No. 1507.27.858

**TECHNICAL INSTRUCTIONS**

1. Unmentioned cast radii are 5m.m.
2. Ovality & taper of the hole φ 60 A<sub>20</sub> should not exceed 0.03 m.m.

REVISED  
CO

REVISED

CO  
SEE & IN 3/20/86  
15-3-1395  
1507.27.857  
Mater. 241-810-38  
Nov 84  
H. T. C. LTD. BANGOR

**BEARING BODY**

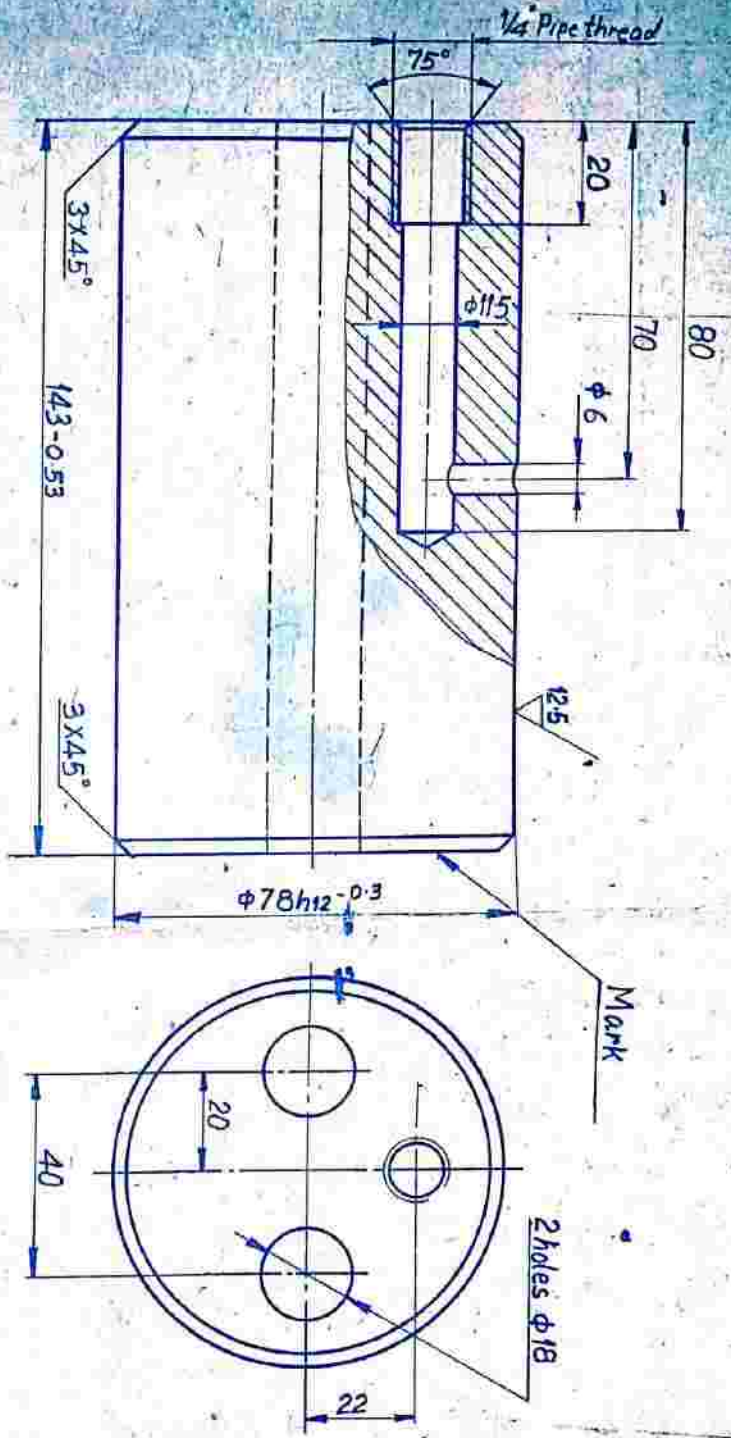
1127.25-8	Bearing Chief	S.P. 2410
	Group Leader	G.E. Mathon
	Designer	G.E. Mathon
	Drawn by	R.N. DAS
1507.27.857	Bat. Des. No.	Name, Cont.

Duplicate tracing. *Ulfm* 1-8-86

P/W/Jan-84-3000 Nov.

15-3-1395

900-91-0701



**Technical Instructions**

1. Displacement of holes φ 18 and that with 1/4 p. thread from their nominal position should not be more than 0.5mm in any direction.
2. Non parallelity of the axes of the holes φ 18 w.r.t each other and w.r.t the axes of the pin should not be more than 0.5 mm.
3. Separated blow holes not more than 3 in number of area 3mm<sup>2</sup> and depth 2mm. are allowed.
4. It is permitted to rectify not more than two blow holes of area 5 to 35 mm<sup>2</sup> and depth upto 5mm.
5. Hardness is to be Hc 133-170.

REVALIDATED

Ex-1  
 S.M.S. Co. 96  
 2012/12

Note - Patterns for drg. No. 1002.16.03 may be used.

25/ the rest

Index No.	Revision	Signature	Date

1080.35.07

1060.16.000

Roller Pin φ78

Scale: 1:1

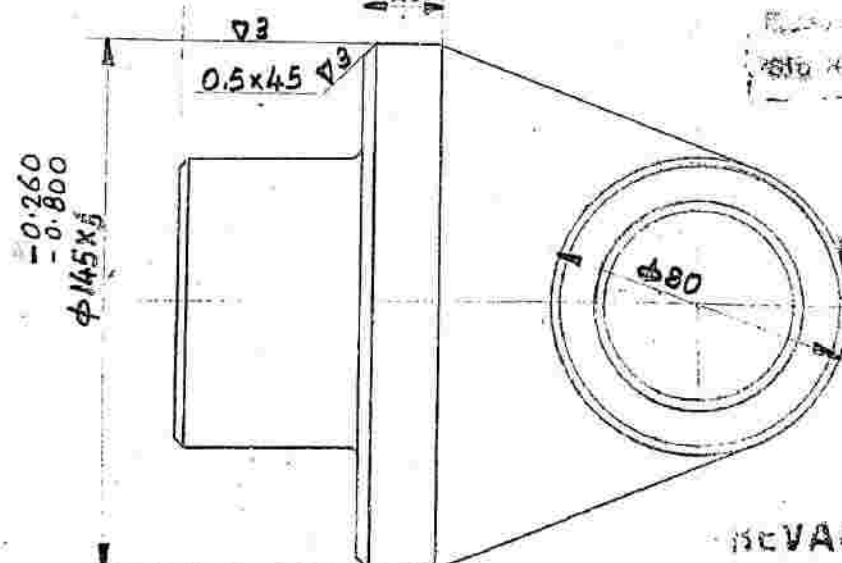
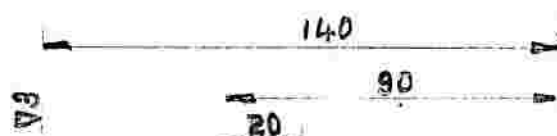
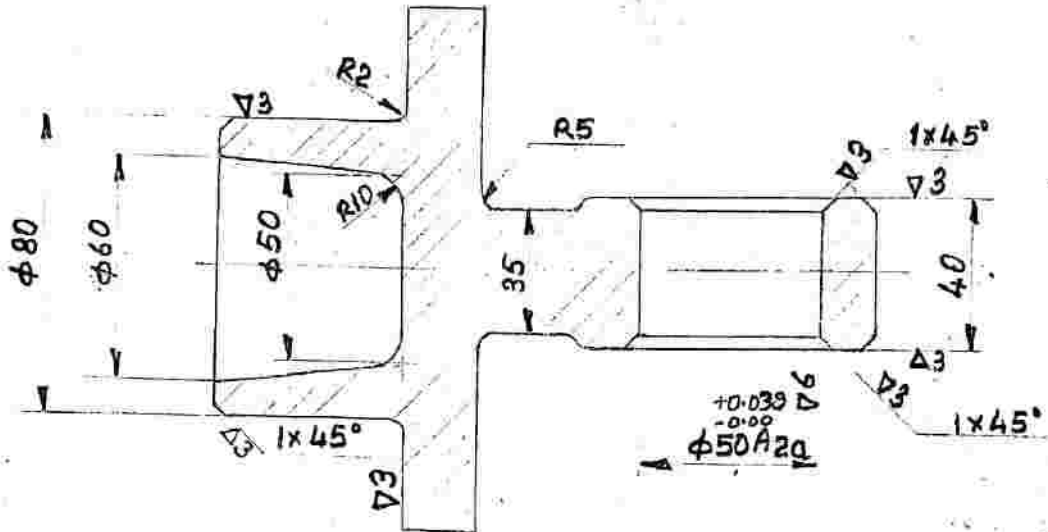
1040.16.006

Bureau Chief	B. J. Gorthi	Scale: 1:1
Gr. Checked by	V. K. Mathur	15.09.93
Designed by	S. N. Gupta	15.09.93
Drawn by	D. N. Singh	15.09.93
Norm. Chkd.		

H. E. C. LTD. BANGALU

1507.27.845

~ = the rest



4TE  
CO. 31/2/69  
817198  
(AKSINGH)

REVALIDATED

Bureau CO. 31/2/69  
Sig. & Dt. Alka 20/10/74  
06105714

REVALIDATED

Bureau CO. 17.3.38  
Sig. & Dt. (ALOK KUMAR)

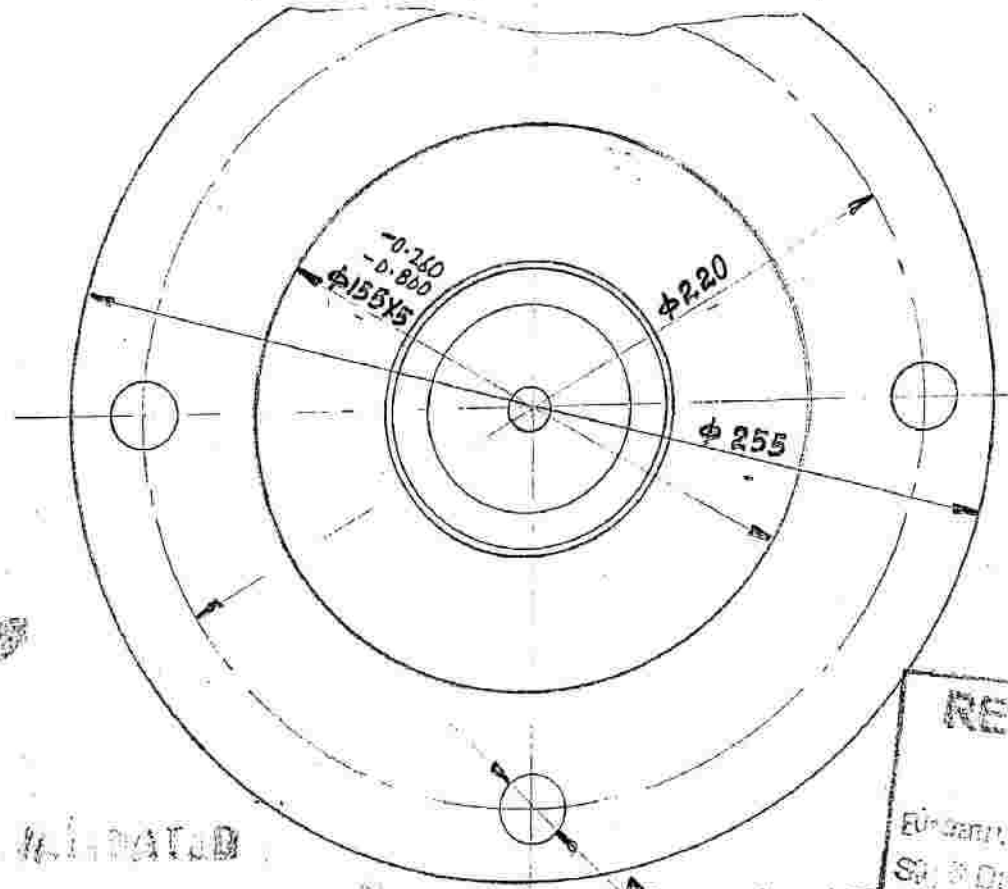
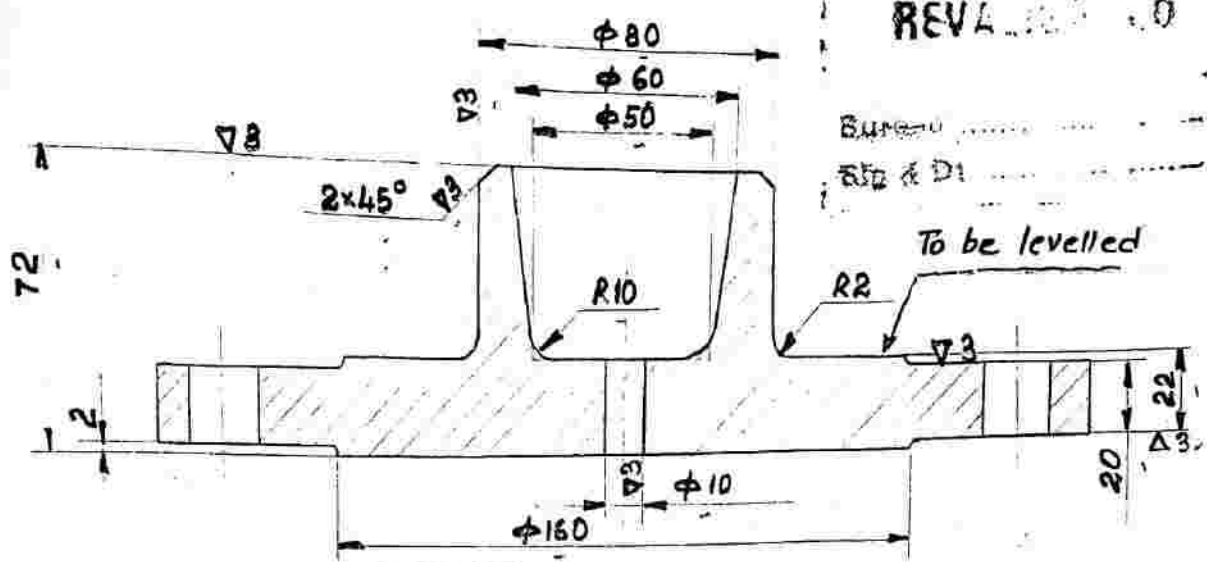
Form 140

11277.35.71	<b>EYE</b>		1507.27.845
	Bureau Chief	S.P. Jain	Material: <u>SSC-23Gr.201-52061</u> <u>15:1030-82</u> <u>89</u>
	Group Leader	G.E. Mathew	Weight in Kg: <u>6</u>
	Designer	G.E. Mathew	Scale: <u>1:2</u>
			<b>HMB</b>
			NOV 67

95822091

whereast

REVAL...  
Bureau  
S.D. & D.I.



REVALIDATED  
 S.D. & D.I. CO  
 Neha  
 06/05/14

Co  
 17.3.38  
 (CALOK KUMAR)

11277.3.5.7

# FLANGE

## 1507.27.856

Material : GS-Gr-2 (SG-280-520)  
 IS-1030-62 (IS-1030-88)

Weight in Kg : 9.6

Scale : 1:2

Bureau Chief	S. P. Jain
Group Leader	G. E. Mathew
Designer	G. E. Mathew
Drawn by	R. N. Das
Norm Cont.	

*G. E. Mathew*  
*R. N. Das*

**HMB**  
 H. E. C. LTD., RANCHI

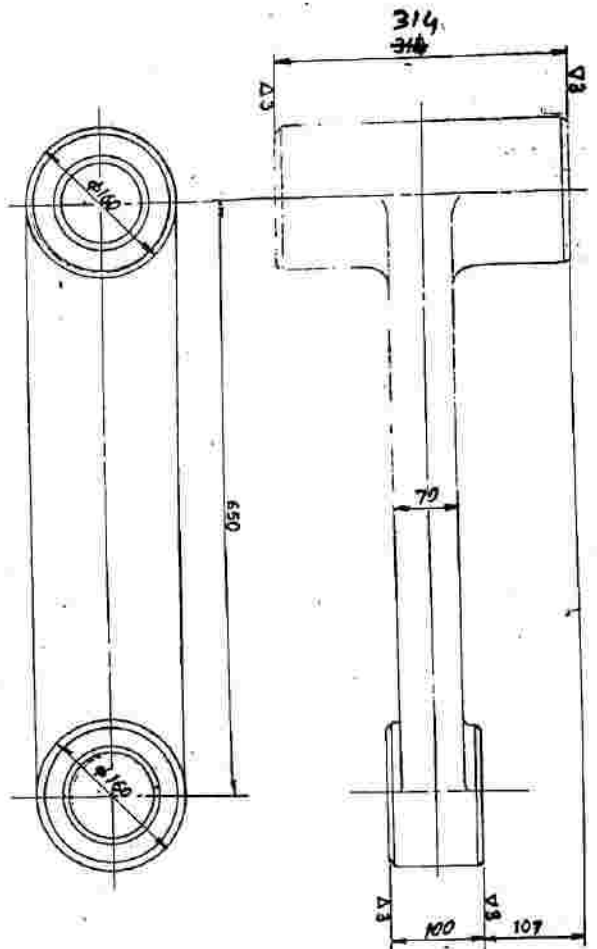
NOV 67  
 Rev-D

1507.27.690  
 Ref. Drg. No.

1154-7157

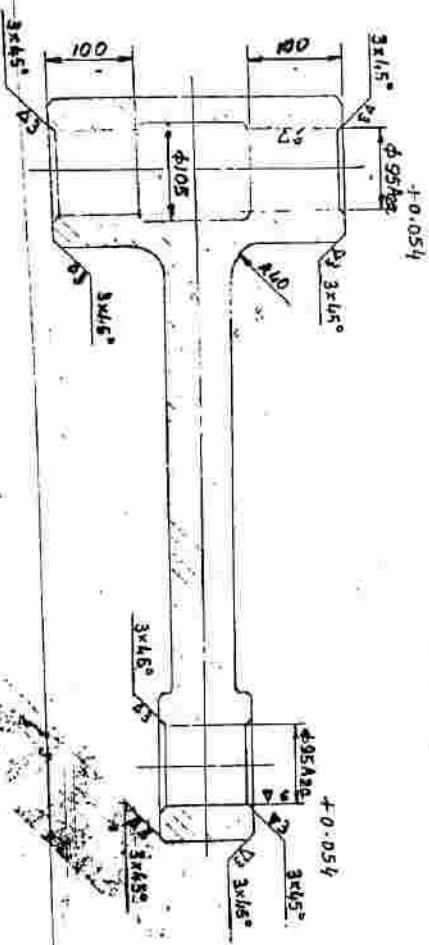
Form 140

1507.27.884



- TECHNICAL INSTRUCTIONS**
1. Unsharpened radii are 10mm.
  2. Non-parallelity and skew of holes  $\phi 95$ As should not exceed 0.05mm.
  3. Blow holes are not allowed.

TO  
K. Srinivasan  
25/01/15



REV A

CO  
K. Srinivasan  
25/01/15  
(AKS/mgh)

\* Matl: S5 In. 280-320  
15:1030-08

15-3-1328

LINK

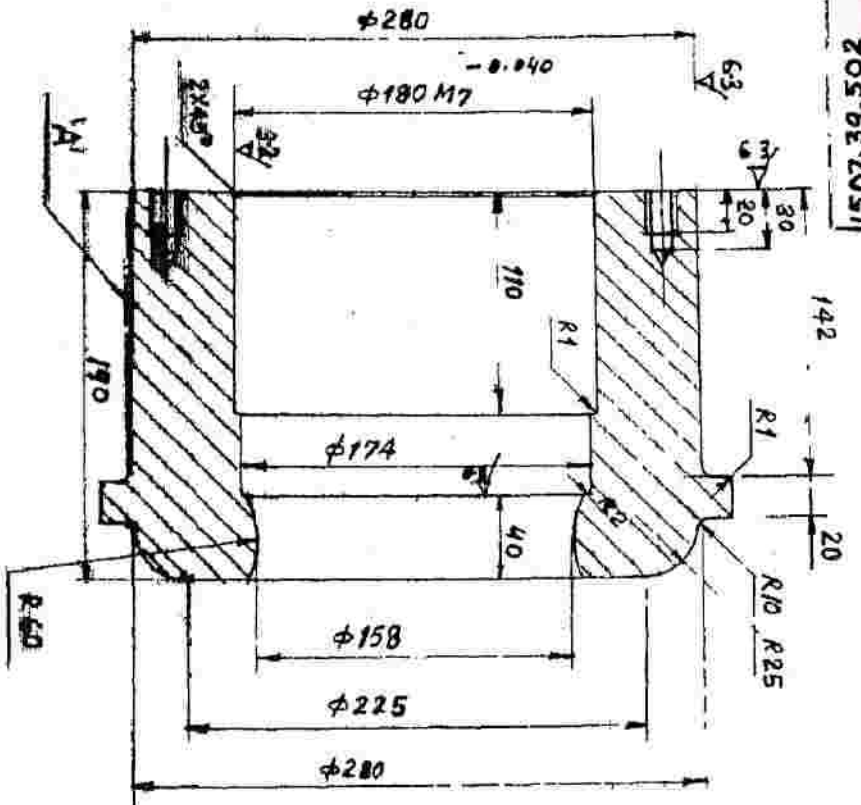
1507.27.884

Scale 1:5

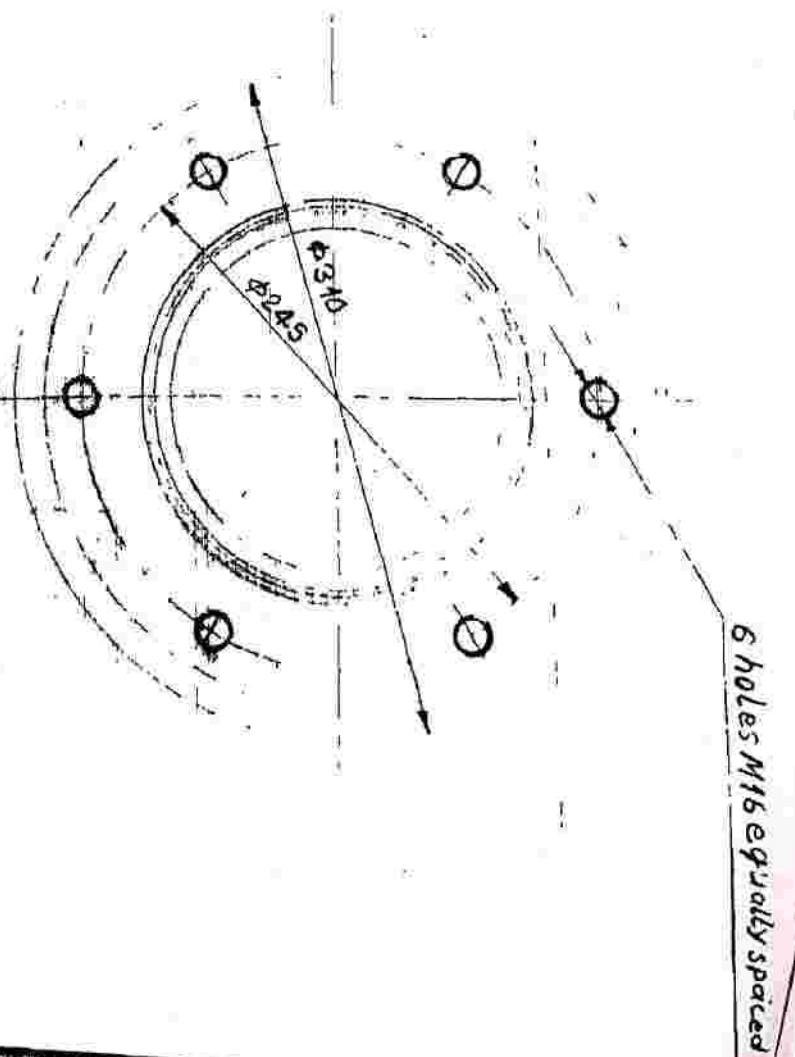
**HMB**  
HEC LTD. RANCHI

1127739  
1507.27.884  
1507.27.600  
1507.27.600  
1507.27.600

REVISION



**REVALIDATED**  
 C.O. [Signature]  
 (H.K. Singh)



Surface N should be hardened HRC 35-40 to a depth of 3mm.

**REVALIDATED**

Technical Instructions

Sl. No.	Revision	Appr.	Date

P.N. W/In. 5600-16.100

**Roller**

NOF 37

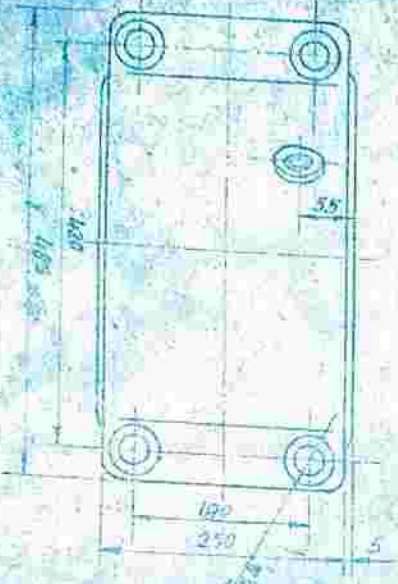
Material: S.S. 4140  
 Q.S. 2707-64

Dec-94

Rev-0

15-3-12022

1507 27 878



**TECHNICAL INSTRUCTIONS**

1. Unmachined cast iron are 50 mm
  2. Machining of surfaces indicated by  $\phi$  except surface of bearing and faces on 260  $\phi$  should be done after welding lever and
  3. Hole  $\phi$  260  $\phi$  and holes 260  $\phi$  should be done after welding together with bearing cover
- dra.-no. 1507 27 878



Section A-A (turned)

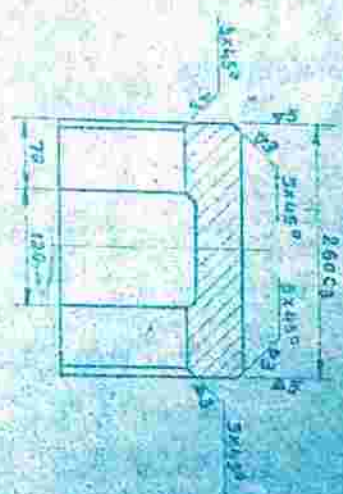
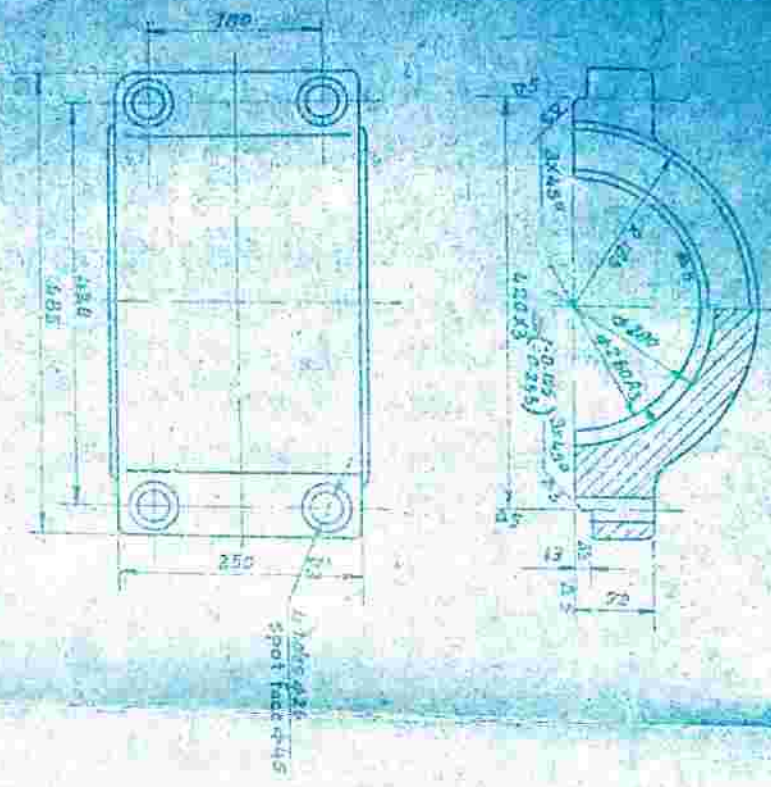


**BEARING BODY**

DATE	1507 27 878
BY	1507 27 878
CHECKED	1507 27 878
APPROVED	1507 27 878

REV. NO.	1	DATE	1507 27 878
REV. NO.	2	DATE	1507 27 878
REV. NO.	3	DATE	1507 27 878
REV. NO.	4	DATE	1507 27 878
REV. NO.	5	DATE	1507 27 878

SA. 922.2051



**TECHNICAL INSTRUCTIONS**

1. Unmentioned cast-rodin are 8mm.
2. Machining of surface & keys and its chamfer and face on 260 Cg should be done together with their organization 150737001, as applicable.

1/2 inch dia. spot face r45

1/2 inch dia. spot face r45

Spot face r45

(A.R. 150737001)

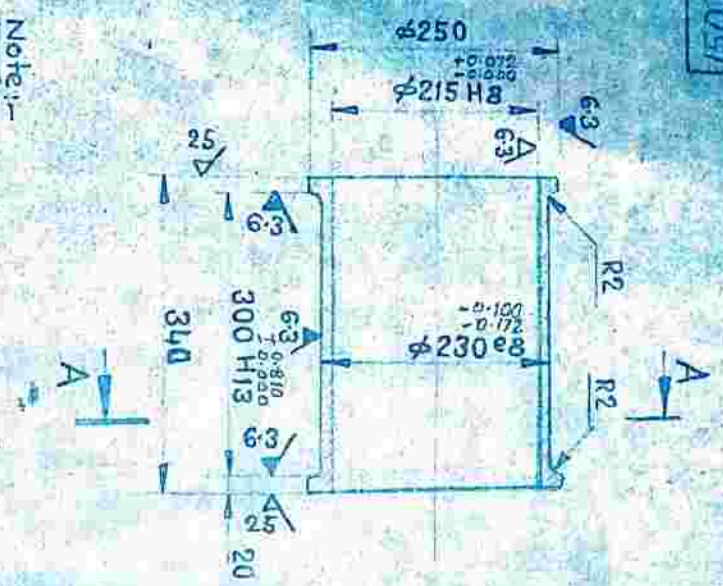
COVER

1507 27876

1507 27876		1507 27876	
1507 27876	1507 27876	1507 27876	1507 27876
1507 27876	1507 27876	1507 27876	1507 27876
1507 27876	1507 27876	1507 27876	1507 27876
1507 27876	1507 27876	1507 27876	1507 27876
1507 27876	1507 27876	1507 27876	1507 27876
1507 27876	1507 27876	1507 27876	1507 27876
1507 27876	1507 27876	1507 27876	1507 27876
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1507 27876	1507 27876	1507 27876	1507 27876



150720162

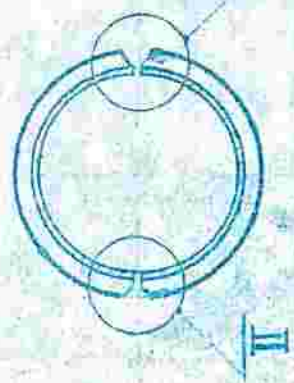


Note:-

1. Splitting of ring as shown in I and II to be done after machining  $\phi 215H8$  and 340
2.  $\nabla$  indicates machining after welding.

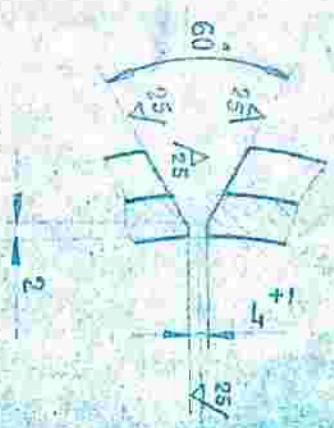
CO  
18.11.2016  
150720162  
150720162

Section A-A



Scale 1:1

II  
Scale 1:1



Scale 1:1

REVALIDATED

\* CO  
150720162

Rev. No.	Revision	Signature	Date

Ring

150720162

Bureau Chief: Z. Ahmed  
 Group leader: Z. Ahmed  
 Designer: Z. Ahmed  
 Processor: Z. Ahmed

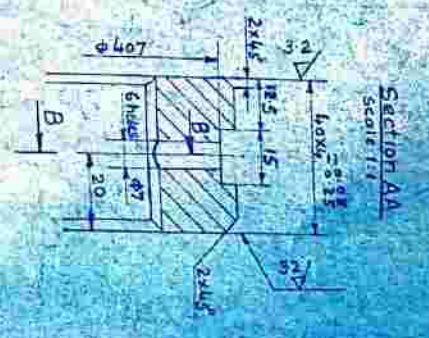
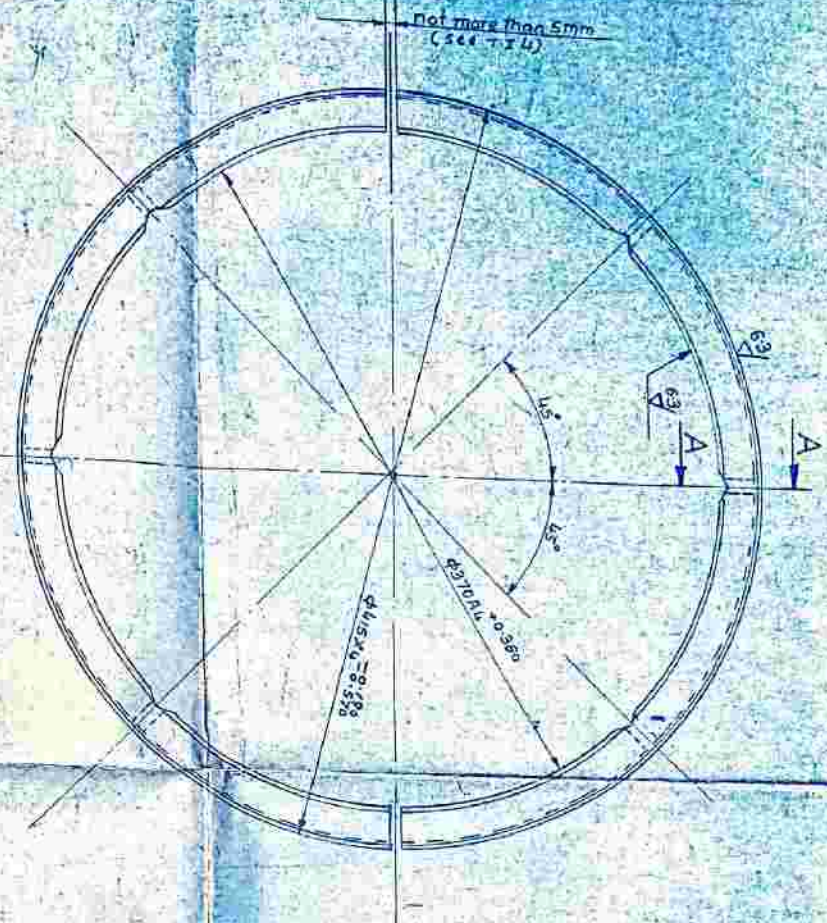
Scale 1:1

Weight in kg: 15.76

Material: 300 H13

150720162

RANSHI (MDVA)



- Technical Instructions**
1. Surface finish - finish by sandblasting with a maximum surface roughness of  $R_{a} 6.3$ .
  2. Quantity of surface roughness - shall be as per minimum hold-in instruction.
  3. The steel of this part has hardness HRC 28-30.
  4. After machining, hardness to be provided into film holder.
  5. All sharp corners must be removed after parting.

Note on Pattern:

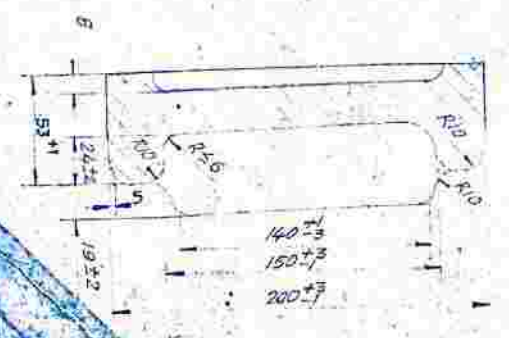
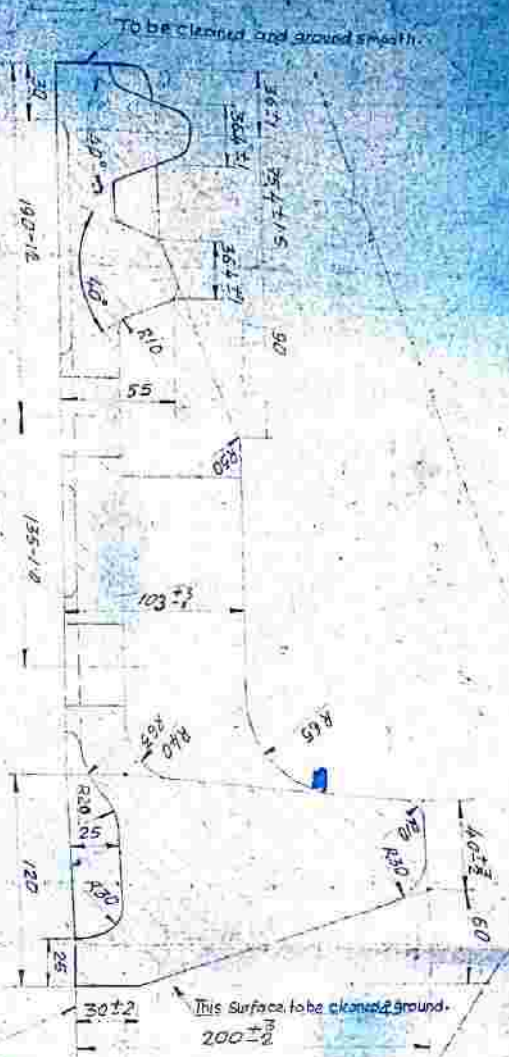
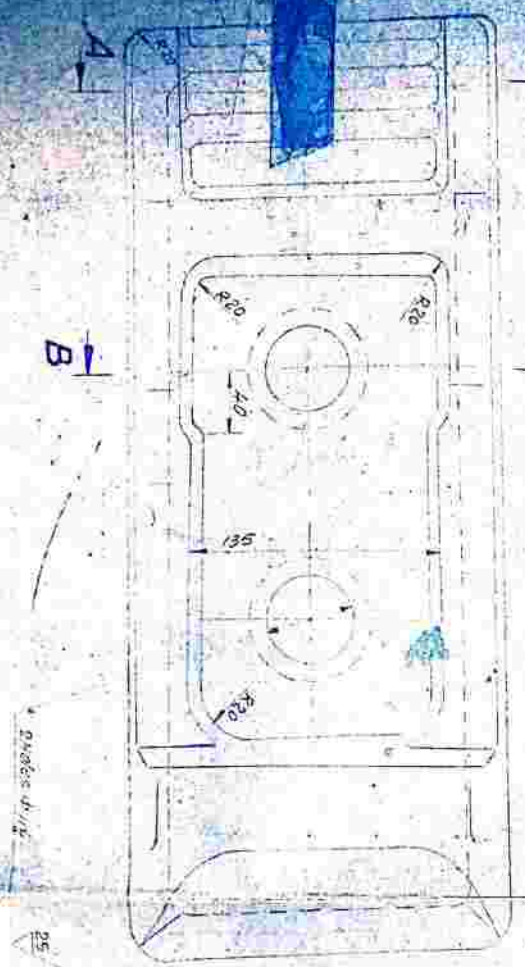
Pattern for old dra. NO. 10061B 305 mm/Ln used.

REVALIDATED

By  
Date

10401B 308		10401B 308	
Glider			
Drawing No. 10401B 308 Date 15/05/2015	Designing By N.K.S. SURESH Checked By N.K.S. SURESH	Date 15/05/2015	By N.K.S. SURESH
Approved By N.K.S. SURESH Date 15/05/2015		REVALIDATED By _____ Date _____	

Material	
Quantity	
Notes	



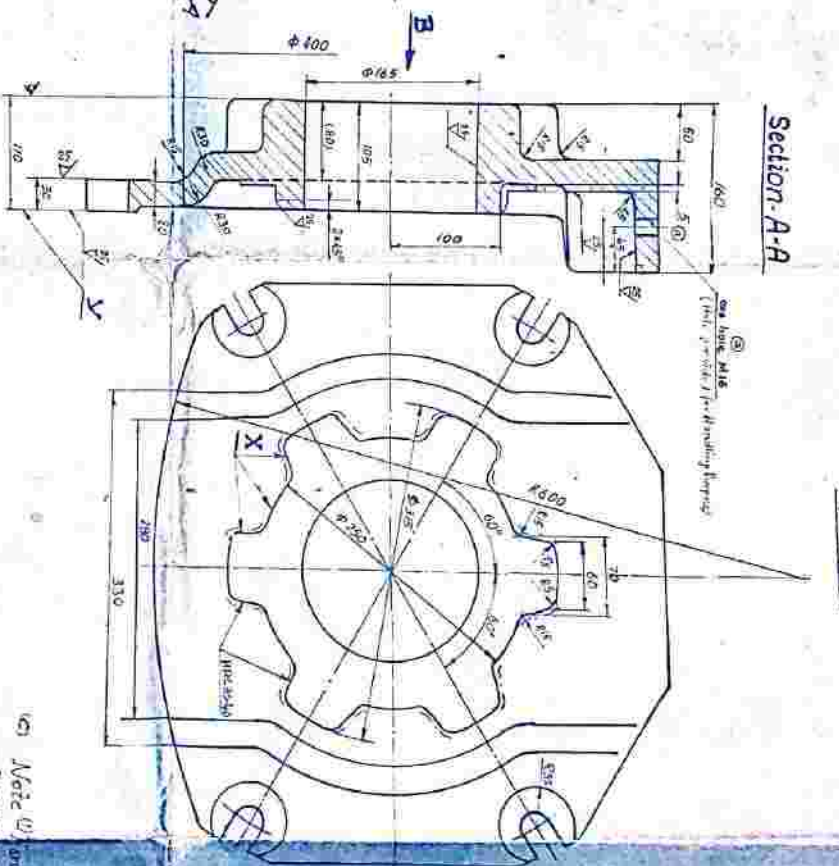
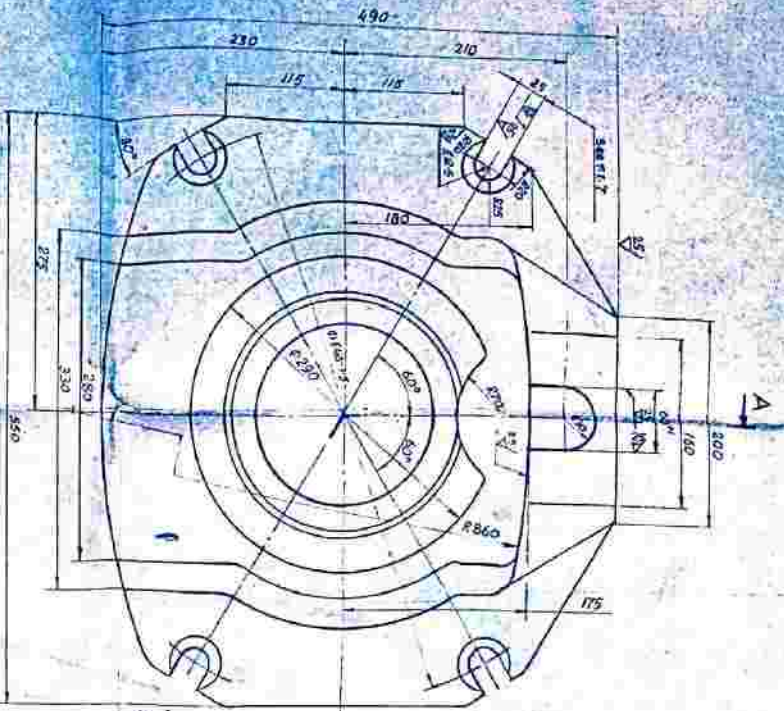
Section B-B

Section A-A

Technical Instructions:

1. The detail should be free from all casting defects.
2. Radii not indicated may be taken as 50 μ.
3. This detail is interchangeable with detail Stop, drawing No. 1005, 02.02, unless the stamp thereon may be used.
4. The stop should be supplied in hardened and tempered condition to achieve the mechanical properties including hardness.

Project No.	1010.02.002
Design No.	1010.02.002
Part Name	STOP
Drawing No.	1010.02.002
Scale	1:1
Author	RMD
Check	RMD
Appr.	



Section A-A

View B

Note On Material

1. Composition

C	Mn	Si	Cr	Ni	S & P
0.50-0.60	0.1-0.2	0.2-0.5	0.3-0.5	0.3-0.5	0.015 max

2. Mechanical Properties after hardening & tempering

Rockwell C	48-52	Elongation in tension impact (Charpy)	178-268
Yield strength (MPa)	550	Impact strength (J)	178-268
Hardness (HV)	550		

3. In case the material is considered to be purchased under purchased condition to be subsequently hardened & tempered in HRC. The relevant certificate for the shipment from the supplier.

Technical Instructions

1. Minimum diameter in the diameter of 160 (160 & 20) should not exceed more than 0.01mm.
2. Dimension of 160 from the nominal position should not be more than 0.01mm.
3. Roundness of 160 will not be greater than 0.01mm.
4. Sliding of ground will not be required to replace any should be within 0.01mm.
5. Surface may have surface roughness up to 0.2.
6. Deviation from flatness of face (top surface) should not be more than 0.01mm.
7. Subsequent of ground to be given nominal position should not be more than 0.01mm.
8. Side surfaces of jaws to be hardened & tempered.
9. Surface to be hardened & tempered with the same heat treatment as the jaws.
10. The heat bar should be internally cooled and should be hardened & tempered along with the jaw to ensure the mechanical properties are maintained. The hardness value to be cross-checked on the jaw.

Note: 1. Hardness after tempering & tempering to be 48-52 HRC.  
2. Check impact EL with 2 mm depth 1 kg hammer for reference.

Note on Pattern:

Pattern for old die, No. 1066, 18, 302 may be used.

Rev	Description	Date
1	Initial	11/11/2011
2	Change	11/11/2011
3	Change	11/11/2011

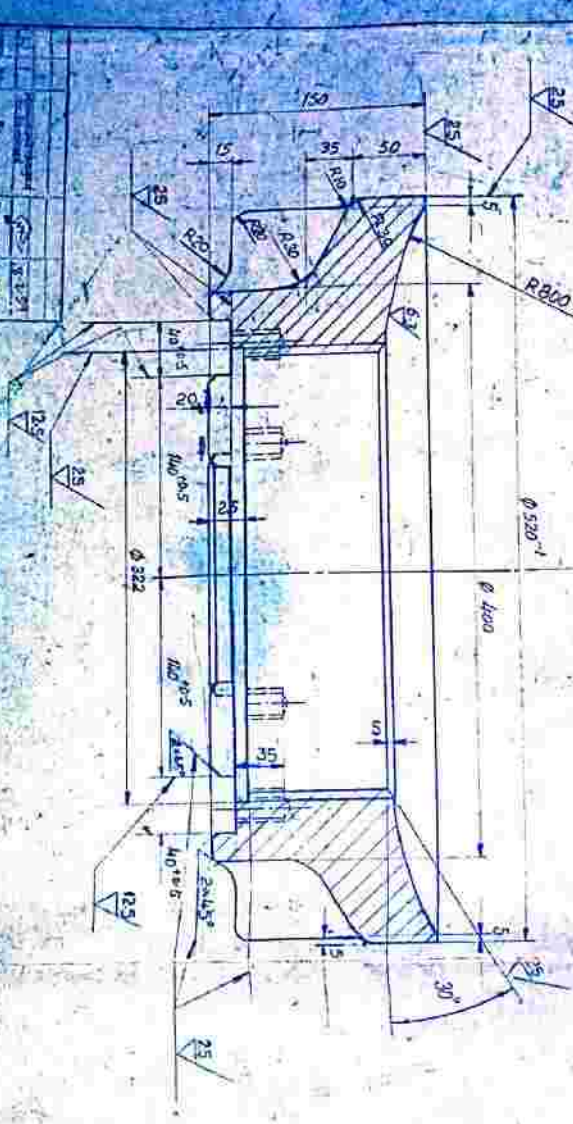
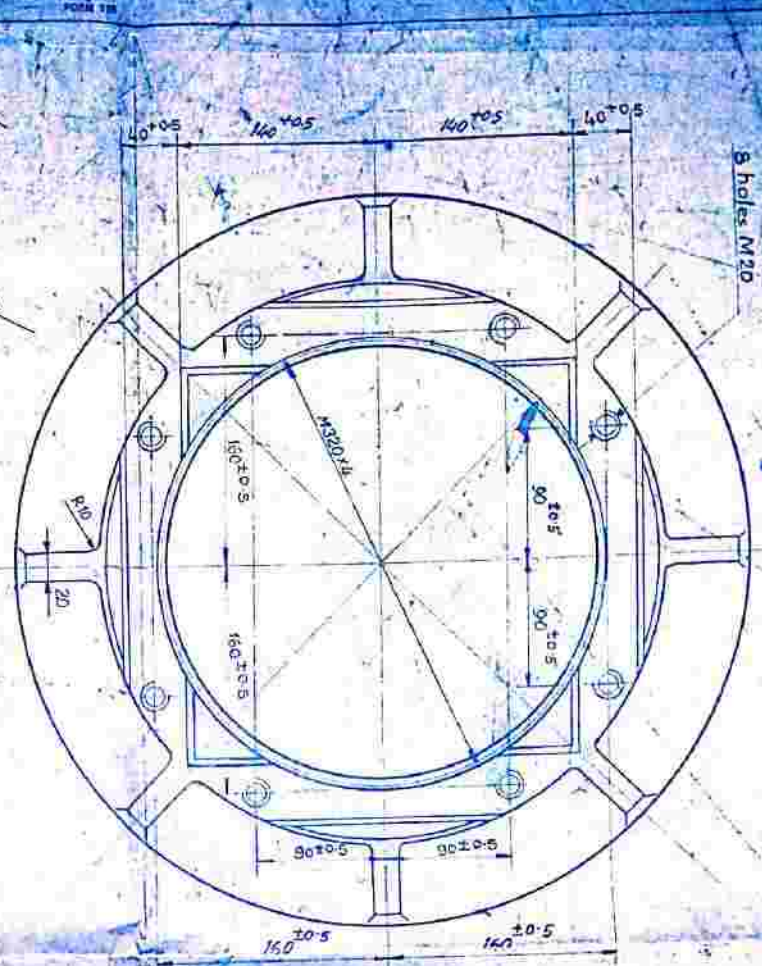
Jaw Die

REVISED

106-18-302

HMB

710 E 0701



**Technical Instructions**

1. In the casting there should not be any defects on the spherical surface or on surface to be threaded.
2. The detail should be hardened & tempered to HRC 207-210.
3. Heat no should be marked.
4. Runout of the surface  $\phi 320$  relative to the hole  $\phi 320$  should not exceed 2mm.
5. Threads should not be stripped.
6. Sharp edges should be rounded off.

The internal key bar should be polished on a fine beltway heat treatment and the same should be hardened and tempered along with the job to ensure the following properties. Hardness to be cross checked on the test.

Note: Chemical composition and Mechanical properties of the material to be as follows:-

Chemical Composition			
C	Mn	Si	C (Max)
0.32	0.50	0.20	0.30
0.40	0.60	0.31	0.30

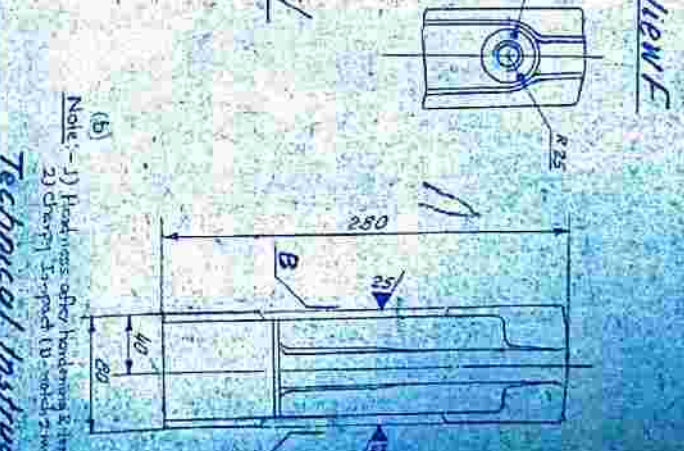
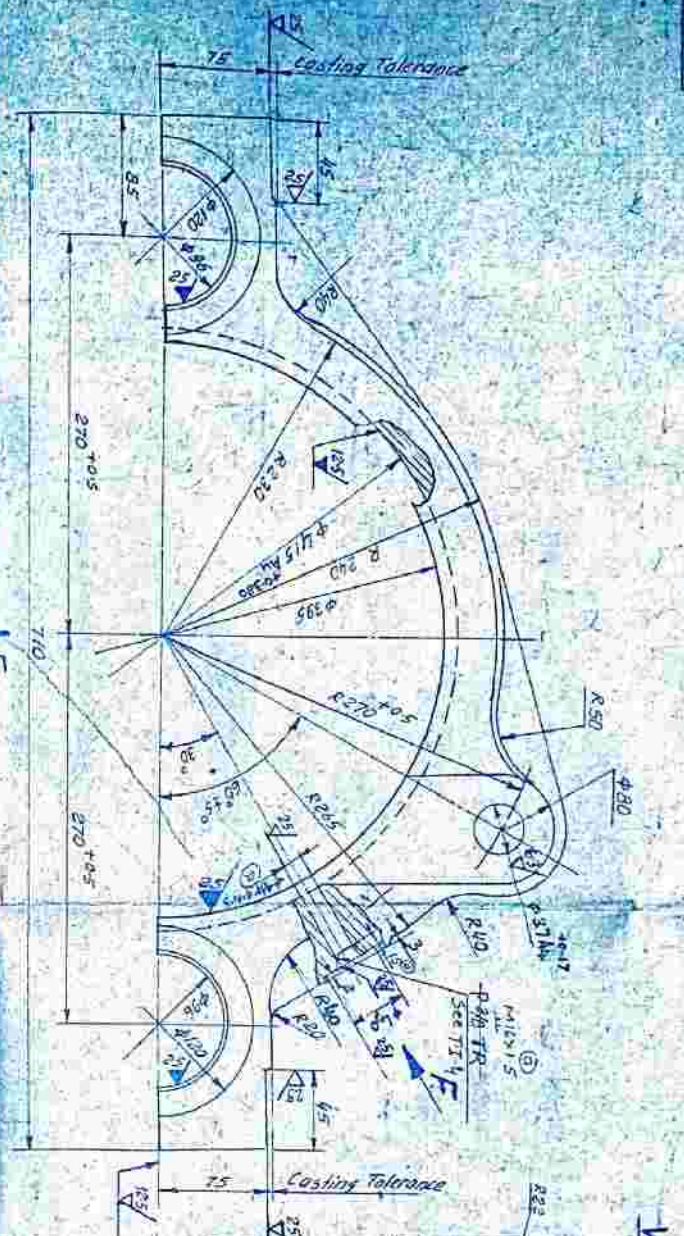
Mechanical Properties			
UTS (Min)	Yp (Min)	Elongation	Impact Energy
Kg/mm <sup>2</sup>	Kg/mm <sup>2</sup>	% (Min)	Kg/cm <sup>2</sup>
85	35	16	3.5

Note: Pattern for dng. No-1003.18.13 (Excavator EDC 650) may be used for casting this detail.

REV. 18/11/10  
EKC-I  
WSS 59-96

10/01/12-12  
(S/S/00)  
1003.13.15  
(Indian)

Central Journal Nut	
10/01/12-12	(S/S/00)
1003.13.15	(Indian)



Note: (b) Products after hardening & tempering to be checked along with the test bar. Tempered to match 2 mm depth of hardness.

**Technical Instruction**

1. Non-porosity of holes  $\phi 415$  &  $\phi 395$  should be checked over the whole of the depth.
2. Run out of faces A & B should not be more than 0.2 mm W.T.  $\phi 415$  All surfaces marked A & B are to be together with the other half collar. Hole holes are to be made only in pairs.
3. Sharp edges are to be removed.
4. Drilling of 4 holes  $\phi 19$  & hole  $\phi 37$  should be done together in both A & B half collars.
5. The test bar should be integrally cast on the same machine and tempered along with the test bar.

**Note On Material**

Composition		C		Mn		Si		P		S	
62	0.40	0.4	0.9	0.20	0.52	0.05	max	0.015	max	0.005	max

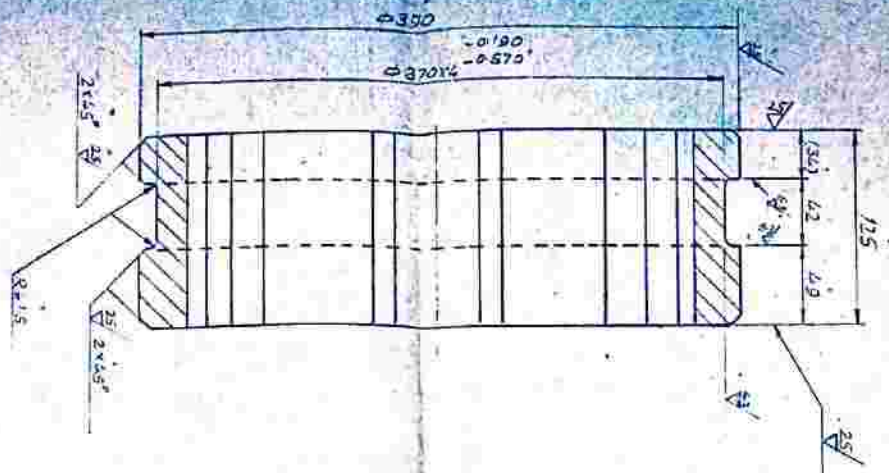
**Half Collar**

Note on Pattern: Pattern for old dry No. 1006 (B. 308) may be used.

**View E**

**View F**



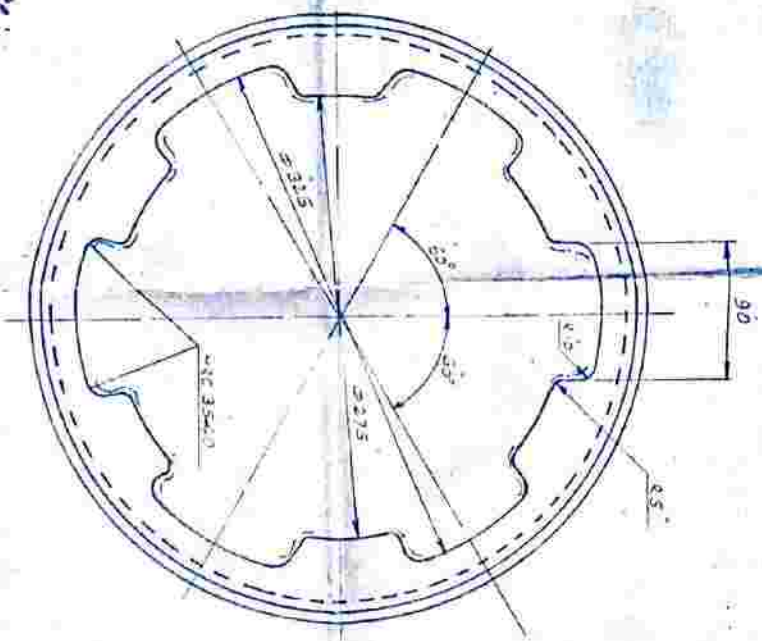


**Note:**

1. Hardness after hardening and tempering to be 250-260.
2. Major Impact (U-notch 2mm depth) 4 kg-m/cm<sup>2</sup>.

**Note on Pattern**

Pattern for 0.5 dia. No. 102818307 may be used.



**Technical Instructions**

1. Inside surfaces should be sand blasted.
2. Displacement of jaws from the nominal dia. should not be more than 2 mm.
3. Maximum deviation in dimension of jaw should not exceed 2mm for one axial.
4. Run-out of surface should not exceed 0.25 mm.
5. Run-out of side surfaces of jaw should not exceed 0.25 mm.
6. Side surfaces of jaw should be hardened to Rc 45-50.
7. Surfaces to be hardened must be smooth and free from projections and depressions. The surface should also be free from all castings defects like sand inclusions, blow holes, fins, cracks, sand gaps etc.
8. The test bar should be integrally cast and should be hardened and tempered along with the job to ensure the mechanical properties as per below. The hardness value is to be cross checked on the job.

**NOTE ON MATERIAL**

**1. Composition**

C	Mn	Si	P	S
0.22-0.40	0.4-0.9	0.1-0.52	0.03 max	0.035 max

**2. Mechanical properties after hardening & tempering**

Rockwell C	Brinell	Impact (kg-m/cm <sup>2</sup> )	Hardness (HV)
55C	350	16	24

3. In case the detail is decided to be produced under normal condition to be subsequently hardened and tempered in H.C., the relevant composition to be obtained from discussion.

**REVALIDATED**

Bureau - EXCV TMS  
Sg. I Dt. ...

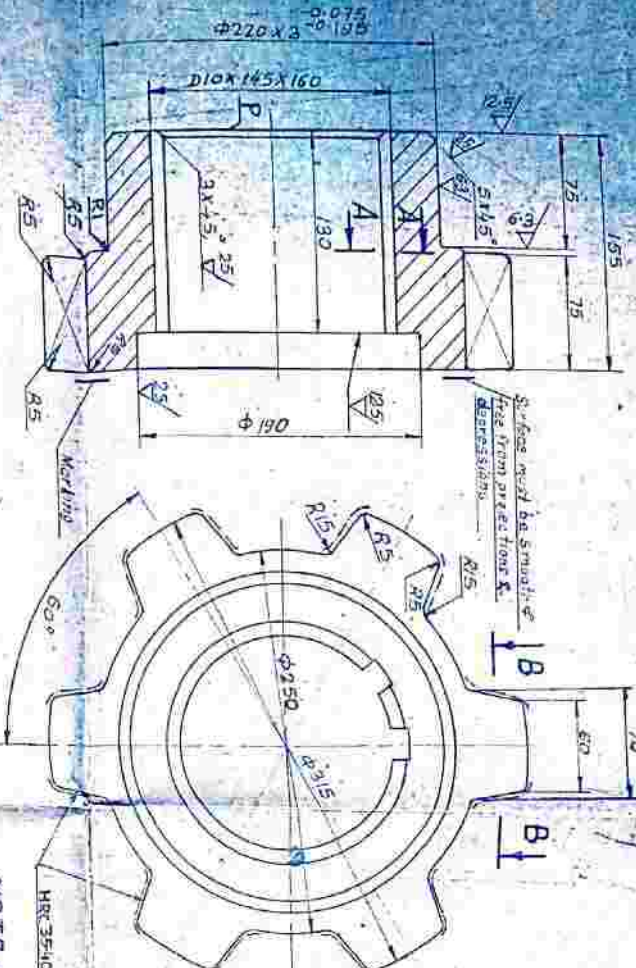
Index No.	Revision	Signature	Date
1			
2			

PROCESS (NAME)	(SIGN)
WELDING	
TECH. (NAME)	(SIGN)

**Slider Jaw**

104018305

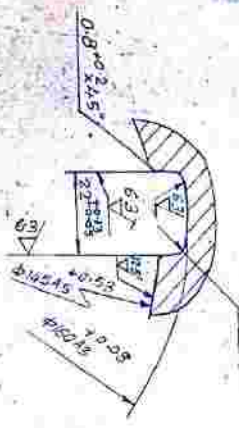
**HMB**



**Section B-B**



**Section A-A**



Scale 1:1

**1. Composition**

Element	Min	SI	CP	Ni	SP
C	0.40-0.50	0.20-0.30	0.3 max	0.3 max	0.25 max

**2. Mechanical Properties after Hardening**

Temp. (°C)	Yield strength (N/mm²)	Tensile strength (N/mm²)	Elongation (%)	Impact (J)	Hardness (HRC)
550	350	550	16	20	30
175-255					

**NOTE ON MATERIAL**

1. Run-out of surface 'P' w.r.t.  $\phi 160$ RS should be within 0.1mm.
2. Hardness after hardening die in bearing hole should be within 30HRC.
3. Chamfer Impact (notch in middle) should be within 1mm and the surface should be machined off.
4. Run-out of  $\phi 220$ RS w.r.t.  $\phi 160$ RS should be within 0.1mm.
5. Run-out of surface 'P' w.r.t.  $\phi 160$ RS should be within 0.1mm.
6. The side surfaces of the jaw should be hardened to HRC 35-40.
7. Displacement of jaws from their nominal position should not be more than 2mm.
8. Maximum deviation in dimension of jaws (60 $\pm$ 10) should not exceed 2mm for one detail.
9. Radial pulsation of the outside surface of jaw ( $\phi 215$ ) w.r.t.  $\phi 145$ RS should be checked. It should be within 1mm and the surface should be machined off.
10. Run-out of  $\phi 220$ RS w.r.t.  $\phi 160$ RS should be within 0.1mm.
11. Run-out of surface 'P' w.r.t.  $\phi 160$ RS should be within 0.1mm.

**Note: (A)**

This drawing is made as per IS 1006 except for material which has C.S. 50115. 2444. 64 in place of material given in this drawing. This drawing is same as IS 1006 except for splines which are made in place of shaft splines given in this drawing.

1. This drawing is same as IS 1006 except for material which has C.S. 50115. 2444. 64 in place of material given in this drawing.
2. This drawing is same as IS 1006 except for splines which are made in place of shaft splines given in this drawing.
3. In case the detail is decided to be produced under normalised condition to be subsequently hardened and tempered in HRC the relevant condition to be obtained from design dept.

**Technical Instructions**

1. The casting should be sound and free from blow holes, cracks, sand inclusions and other casting defects.
2. The casting should be nicely fettled and cleaned.
3. The jaw surfaces should be end blasted.
4. The jaw bar should be integrally cast and should be hardened and tempered along with the job to ensure the mechanical properties as given below.
5. The hardness value is to be cross checked and no repair by welding without prior intimation and permission is permitted.
6. The side surfaces of the jaw should be hardened to HRC 35-40.
7. Displacement of jaws from their nominal position should not be more than 2mm.
8. Maximum deviation in dimension of jaws (60 $\pm$ 10) should not exceed 2mm for one detail.
9. Radial pulsation of the outside surface of jaw ( $\phi 215$ ) w.r.t.  $\phi 145$ RS should be checked. It should be within 1mm and the surface should be machined off.
10. Run-out of  $\phi 220$ RS w.r.t.  $\phi 160$ RS should be within 0.1mm.
11. Run-out of surface 'P' w.r.t.  $\phi 160$ RS should be within 0.1mm.

**Driving Half Coupling**

Part No.	Qty	Material	Remarks
1	1	MS	Shaft
2	1	MS	Key
3	1	MS	Washer
4	1	MS	Nut
5	1	MS	Washer
6	1	MS	Nut
7	1	MS	Washer
8	1	MS	Nut
9	1	MS	Washer
10	1	MS	Nut
11	1	MS	Washer
12	1	MS	Nut
13	1	MS	Washer
14	1	MS	Nut
15	1	MS	Washer
16	1	MS	Nut
17	1	MS	Washer
18	1	MS	Nut
19	1	MS	Washer
20	1	MS	Nut
21	1	MS	Washer
22	1	MS	Nut
23	1	MS	Washer
24	1	MS	Nut
25	1	MS	Washer
26	1	MS	Nut
27	1	MS	Washer
28	1	MS	Nut
29	1	MS	Washer
30	1	MS	Nut



Material: MS  
G12  
E123456789

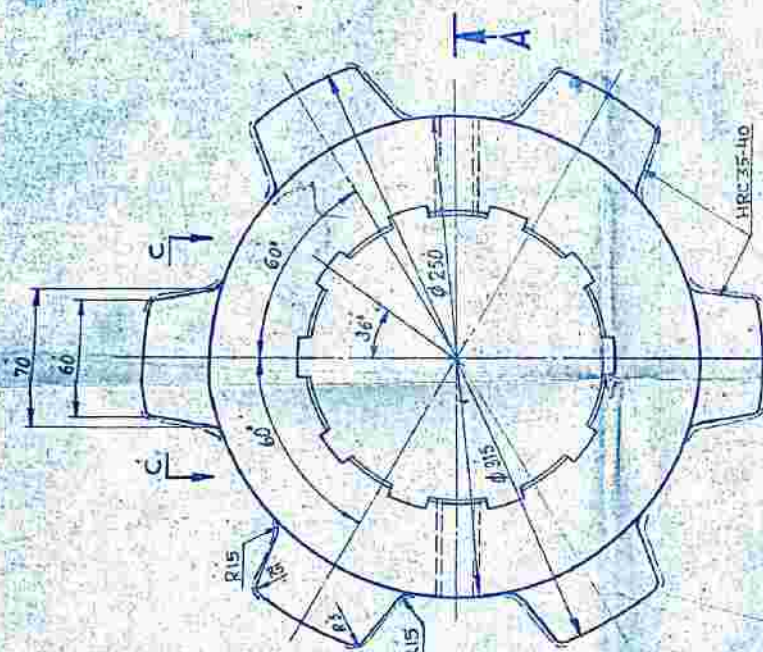


**Technical Instructions:**

1. The casting should be sound and free from blow holes, dross, sand inclusions and other casting defects.
2. The casting should be nicely fettled and cleaned. The flow surfaces should be sand blasted.
3. The test bar should be integrally cast and should be hardened and tempered along with the job to ensure the mechanical properties as given below.
4. The hardness value is to be cross checked on the job.
5. No repair by welding without prior information and permission is permitted.
6. The side surfaces of the jaws should be hardened to Rc 55-60.
7. Displacement of jaws from their nominal position should not be more than 2mm.
8. Maximum deviation in dimension of jaws (6 and 7c) should not exceed 2mm. for one detail.
9. Radial pulsation of the out side surface of jaw (φ 315) with respect to φ 145 R5 should be checked.  
It should be within 1mm and the excess should be machined off.
10. Centre of holes M16 must coincide with the centre of the projected portion of the spine. AS shown in the drawing.  
Displacement of the holes M16 should be within 0.1mm from their nominal position.

(a)

NOTE: (1) Hardness after hardening and tempering to be HRC 220-260  
(2) Chastity Impact (V) notch 2mm after 1000 cycles for reference



**Notes on Material:**

1. Composition:

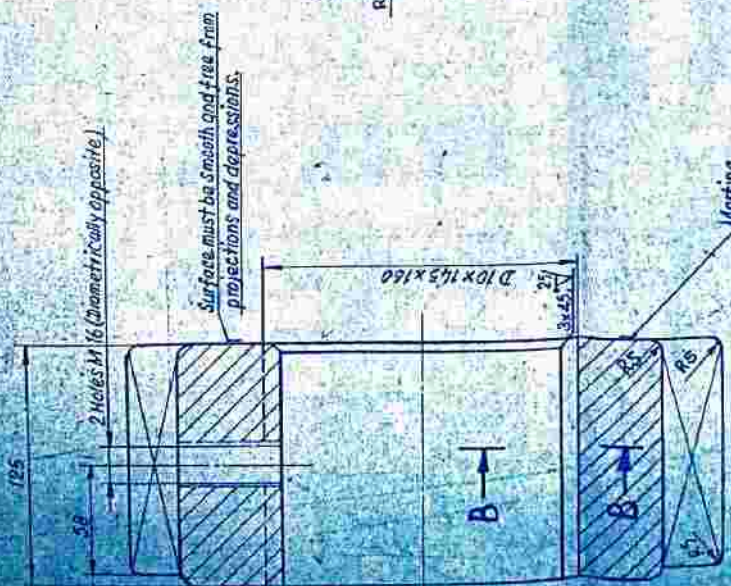
C	Mn	Si	Cr	Ni	S	P	Each
0.32-0.40	0.4-0.9	0.2-0.52	0.3 Max.	0-3 Max.	0.05 Max.	0.05 Max.	

2. Mechanical Properties after Hardening and Tempering

Tensile Strength (MPa/mm)	Yield Strength (MPa/mm)	Elongation in gage length (%)	Reduction of Area (%)	Impact (min. J)	Hardness (BHN)
550	350	16	20	30	199-269

3. In case the detail is decided to be procured under normalised condition to be subsequently hardened and tempered in HRC, the relevant condition to be obtained from RPD, NMBP.

**Section A-A**



**Section B-B**



**Section C-C**



1004.18-324  
REV. 10-0053

**Driver Half Coupling**

1040-18-312

DATE: 05-20-2018

DESIGNED BY: HMB

CHECKED BY: HMB

APPROVED BY: HMB

U.S. STEEL CORPORATION

Co-ordinated by:

PROCESS: (NAME)

WELDING: (NAME)

TECH: (NAME)

DESIGN: (NAME)

PLANT: (NAME)