



ISO 9001 Company

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

Open Tender Notice

Tender No. ACD/HMB/20/SC/2136/OTE-6106 dtd 27.08.2020 is available on our website in e-procurement section i.e. <https://etenders.gov.in/e procure/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/e procure/app>.

Bid submission closing date	15.09.2020	01:00 PM
Technical Bid opening date	16.09.2020	03:00 PM

Prospective Tenderers are advised to get register themselves only on at NIC e-tender portal i.e. <https://etenders.gov.in/e procure/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/e procure/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. Ref. and PO as per Annexure 1, Sl. 2
- iii. Facilities available at your works for the same work/similar work as per Annexure 1, Sl. 3
- iv. All other documents as per Annexure 1 and Self Declaration as per Annexure 3

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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OPEN TENDER

No. ACD/HMB/20/SC/2136/OTE-6106

Date: 27/08/2020

(A) Scope of Supply

HEC intends to procure the "Steel Casting Items". 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	1040.01.301	Eq. Sheave	5	66.00	C.S. 280 - 520W IS:1030-89
2	1050.01.538	Bush	10	2.50	Au Mn Steel Gr-1, IS:276-92
3	1040.02.002	Stop	10	52.00	CS640 IS:2644-79
4	1040.05.026	Taper Bushing	5	11.00	C.S. 280 - 520W IS:1030-89
5	1040.07.436	Bracket	10	95.00	Steel Casting
6	1040.09.402	Brg. Cover	5	65.00	C.S. 280 - 520W IS:1030-89
7	1040.09.426	Wedge	10	4.00	C.S. 280 - 520W IS:1030-89
8	1040.09.431	Brg. Cover	5	66.00	C.S. 280 - 520W IS:1030-89
9	1040.11.039	Brake Pulley	10	27.00	CS Gr.1 IS:2707-89
10	1040.13.014	C.J. Nut	5	88.00	Steel Casting
11	1040.18.003	Flange	5	53.00	CS Gr.2 IS:2707-89
12	1040.18.038	Brg. Housing	5	92.00	C.S. 280 - 520W IS:1030-89
13	1040.18.301	Jaw Disc	28	71.00	CS Gr.2 IS:2707-96
14	1040.18.304	Half Collar	56	30.00	CS Gr.2 IS:2707-96
15	1040.18.305	Slider Jaw	28	43.00	CS Gr.2 IS:2707-96
16	1040.18.311	D.H. Coupling	28	36.00	CS Gr.2 IS:2707-96
17	1040.18.312	D.H. Coupling	28	42.00	CS Gr.2 IS:2707-96
18	1040.19.014	Retainer	20	8.10	C.S. 280 - 520W IS:1030-89
19	1040.03.102	Brg. Cover	10	50.00	C.S. 280 - 520W IS:1030-89
20	1040.03.221	Brake Pulley	5	28.00	CS Gr.1 IS:2707-96
21	1040.03.254	Pulley	5	65.00	C.S. 280 - 520W IS:1030-89

(B) Technical Instructions:

1. Item Sl.No. 1,2,4,6,7,8 & 9 are to be supplied in Finish machined condition as per drawings and its technical instructions.
2. Item sl.no. 3,5,10,11,12,13,14,15,16,17,18,19,20 & 21 are to be supplied in rough machined condition (5 mm on tool point) as per drawings and its technical instructions.
3. Items should be of good surface finish as per HEC drawing and free from any defect like cracks, sand inclusion, blow holes etc.
4. Items have to be supplied as per HEC Drawings with Ultrasonic Quality (conforming to Standards) in case it is mentioned in the HEC drawings.



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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.**
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.
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 30,000/-** 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. 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 (Non Refundable) –Rs 300/-** 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



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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.

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. There is no obligation on our part to accept delayed / late tenders. Tenders received after the due date of opening are liable to be summarily rejected.
15. 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.
16. The corporation reserves the right to reject any / all tender partly / fully and no tenderer can ask any explanation anywhere in this regard.
17. Successful Bidders have to sign the confidentially agreement in HEC's format.
18. **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 delivery whichever is earlier against defective materials or bad workmanship
19. 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.
20. Based on HEC's requirement and as per TCC Recommendation, the total Tendered Quantity may be split amongst more than one Successful bidder at L-1 Landed Price.
21. 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

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)
DGM/ACD/HMBP
FOR AND ON BEHALF OF HEC Ltd.



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Annexure – 1

PART – I (Techno - Commercial Bid)

No. ACD/HMB/20/SC/2136/OTE-6106

Date: 27/08/2020

Sl.No.	Requisite		Remark
1	Whether the scope of Supply (A) & technical instruction (B) mentioned in the tender enquiry is acceptable.	Yes / No	
2	Reference & Photocopies of Major PO's placed on you by HEC /Other companies for same/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. In case you don't have own Casting facility, PI provide the tie up letter & Credential of tie up from where the Casting will be procured.	Yes / No	(Upload the relevant documents)
4	Whether SSI/NSIC/MSME (For exemption of Tender Fee and EMD only), Also mention UAN No.....	Yes / No	(Upload the relevant documents)
5	Whether EMD & Tender Fee deposited (As per clause 10 & 11 of Terms & conditions)	Yes / No	(Upload the copy of DD BG)
6	F.O.R. HMBP (As per clause 1 of Terms & condition)	Yes / No	
7	Payment Term(As per clause 4 of Terms & condition)	Yes / No	(In case your answer is No, then please mention your term)
8	Delivery Term(As per clause 5 of Terms & condition)	Yes / No	(In case your answer is No, then please mention your term)
9	Validity (As per clause 3 of Terms & conditions)	Yes / No	
10	L.D. Clause(As per clause 13(a) of Terms & conditions)	Yes / No	
11	Risk Purchase Clause (As per clause 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	GST rate.....
15	Inspection Clause (As per clause 8 of Terms & conditions)	Yes / No	
16	Split Clause (As per clause 20 of Terms & conditions)	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, 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

No. ACD/HMB/20/SC/2136/OTE-6106

Date: 27/08/2020

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

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

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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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 hereby guaranteed by us as aforesaid and we hereby expressly waive all our rights of



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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 or demur pay to



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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 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 ...'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 and conditions of the said contract and we shall not be released from our



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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 guarantee or guarantees heretofore given to you by us whether jointly



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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'



ISO 9001 Company

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

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 search parameters such as Organization Name, Form of Contract, Location, Date, Other



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Ancillary & Contract Department

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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Heavy Machine Building Plant
Ancillary & Contract Department

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 documents



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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

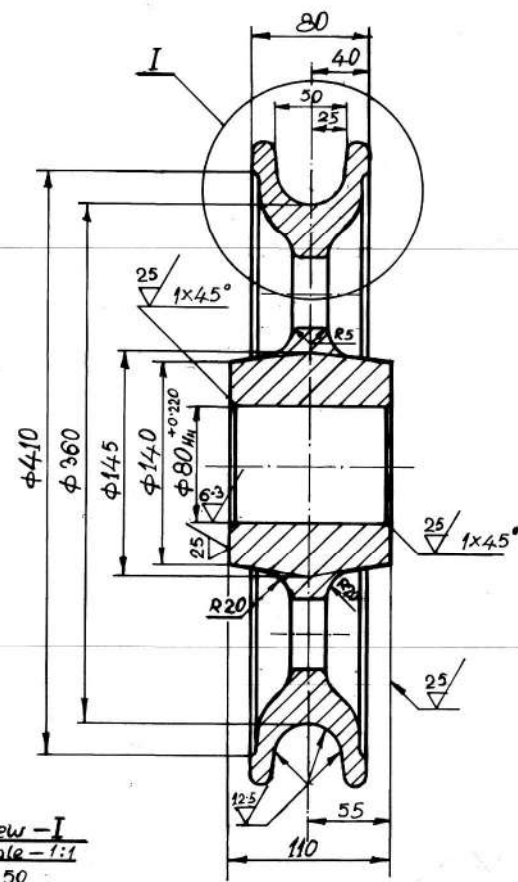
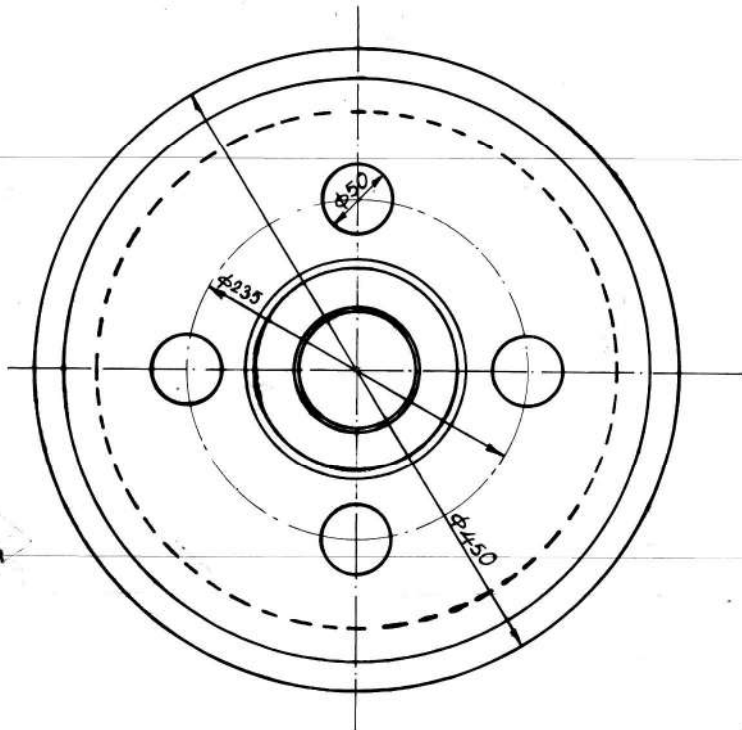
<https://etenders.gov.in/e procure/app?page=FAQFrontEnd&service=page>

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

Or

You may call to our service provider, Mr.Kushal (7903884318)
E-Mail: kushalniccl@gmail.com

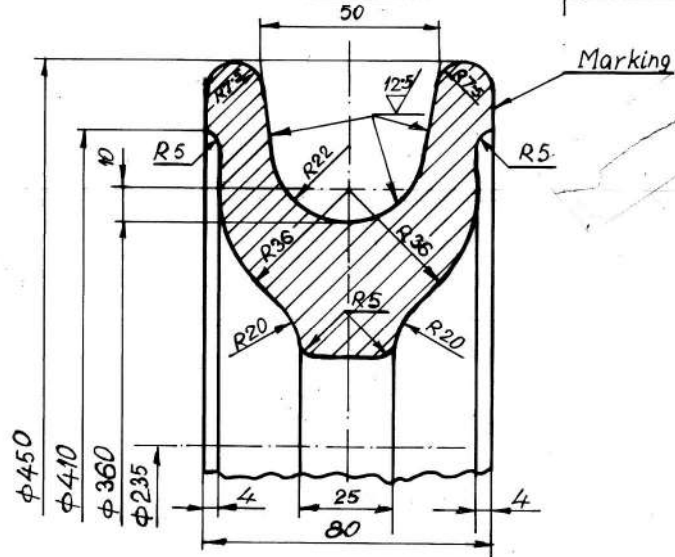
the rest



Technical Instructions

1. Casting radii to be 5m.m. unless otherwise specified.
2. Casting should be sound. The groove surface should be free from blow holes and other casting defects.
3. Hardness after heat-treatment to be Hb 156-197.
4. Material Note -
Casting conforming to Grade 26-50, IS:1030-74 is to have -
Carbon from 0.32 to 0.40%
Manganese from 0.50 to 0.80%
Silicon from 0.17 to 0.37%

View-I
Scale - 1:1



REVALIDATED
Bureau Ex-I
Sigs & Dts S.S. S.S.

Note:- This detail is interchangeable with Equalising Sheave drg. No. 1003.01.301

* Gy 280-1104
IS: 1030-83

1080.02.301		1040.01.301	
Equalising Sheave			
Drawn by	B. J. Chel	Checked by	V. K. Ma
Designed by	S. N. L. C.	Material	IS: 1030-74
Drawn by	S. N. L. C.	In No.	68-02
Scale	1:1		

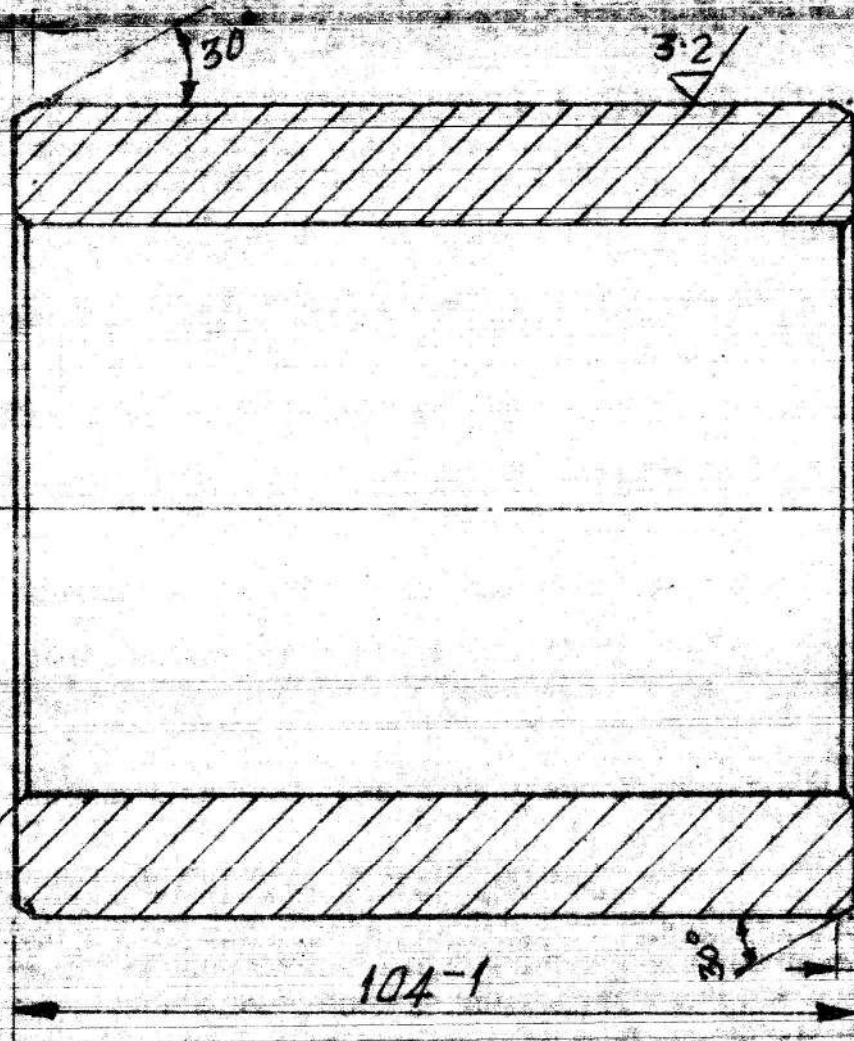
Form 138

No.	Revision	Signature	Date

1050-01-538

12.5/ The rest

1x45°
(BOTH ENDS)



ME/R3/83
43

Tech. Instruction

- 1) The detail should be free from all casting defects.
- 2) Bush to have pilot bore of $\phi 70$ as cast.



BUSH

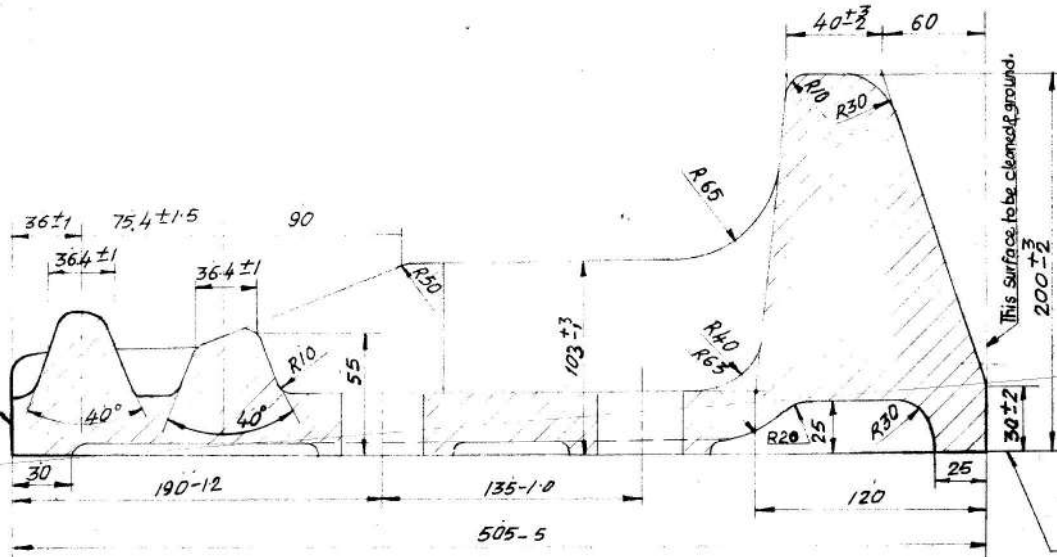
1050-01-538

MATERIAL :- AU-Mn Steel Gr. I
IS: 276-92

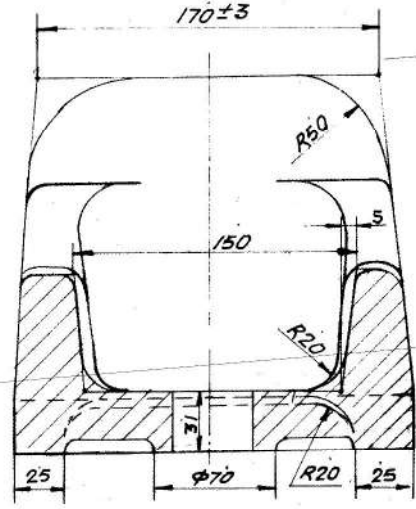
HEAD OF DEPT.	
BUREAU CHIEF	V.K. MATHUR
GROUP LEADER	S. RAJAMUNIAN
DESIGNER	R. PRASAD
REF. DRG. NO.	1050-01-550
DRAWN BY	A.N. SINGH

SCALE: 1:1	WEIGHT IN KG.: 2.5
HMB	JULY '98
H.E.C. LTD. RANCHI	REV-0

To be cleaned and ground smooth.

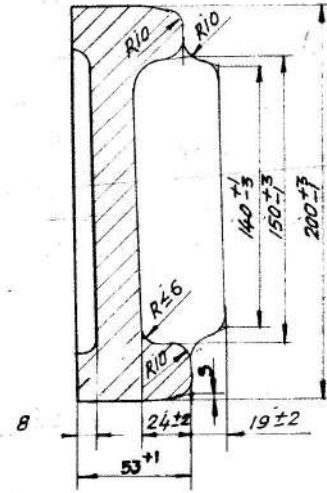
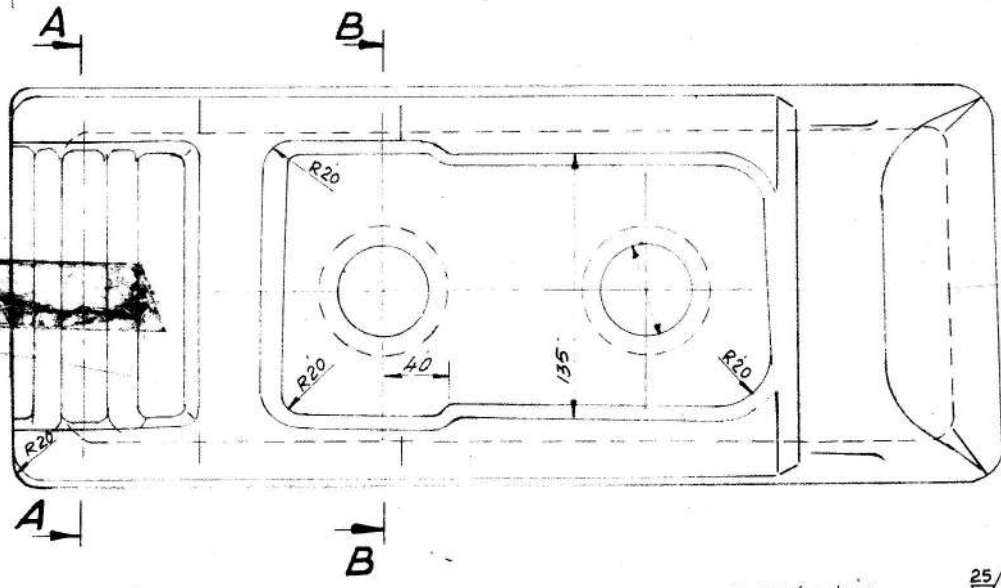


Section B-B



Section A-A

- Technical Instructions**
1. The detail should be free from all casting defects.
 2. Radii not indicated may be taken as 5mm.
 3. This detail is interchangeable with earlier stop drg no. 1005.02.02 and the same pattern may be used.
 4. The stop should be supplied in hardened and tempered condition to achieve mechanical properties including hardness.



2 Holes φ 44

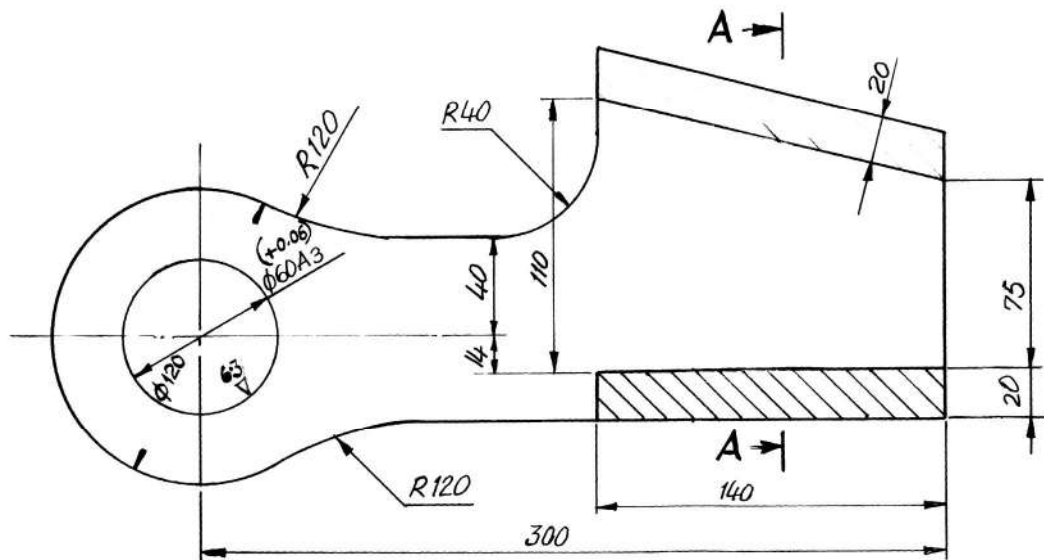
REVALUATED
Bureau Exc-I
Sig & Dt. YMS/ESK

1005.02.02 1080.04.11	Stop	1040.02.002
Bureau Chief Gr. Ld/Chkd. by Designed by Drawn by Ref. Drg. No.	N. K. SINGH S. NATH G. MISTRY H. L. RANA	Scale: 1:2 Weight in kg. HMB H. E. C. LTD., RANCHI

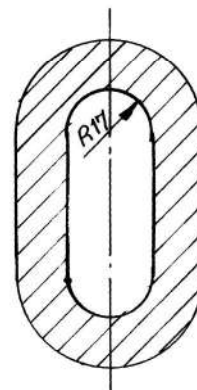
Index No.	Revision	Signature	Date

10-2-128

1040.05.026



Section A-A

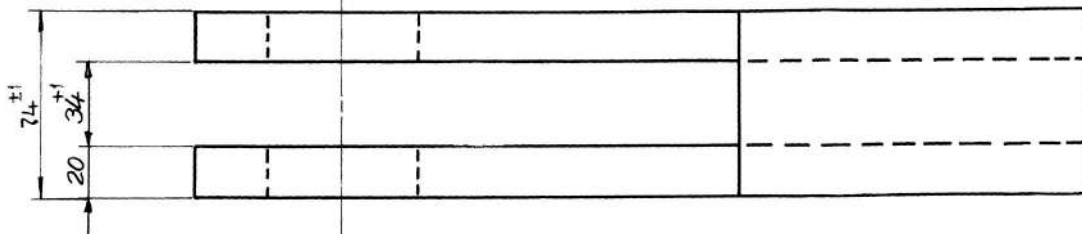


Technical Instructions

1. Casting should be free from blow holes and other casting defects.
2. Internal surfaces of the bushing and its outside surfaces on $\phi 120$ should be cleaned.

Note - Pattern for drg. No. 1002.05.13 may be used. Both the details are interchangeable.

Ex-1
WRS 15.6.96

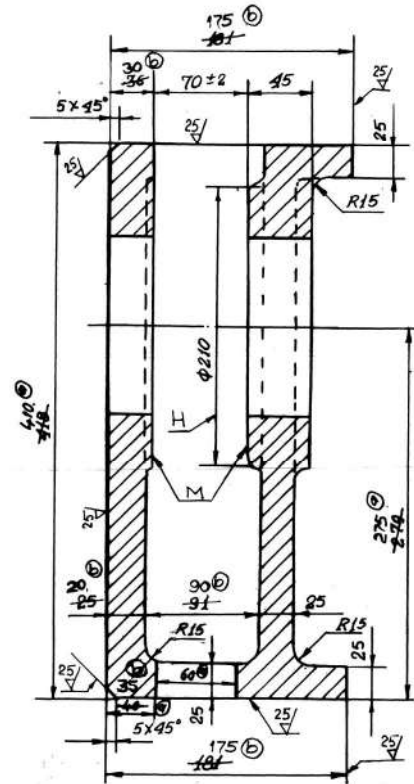
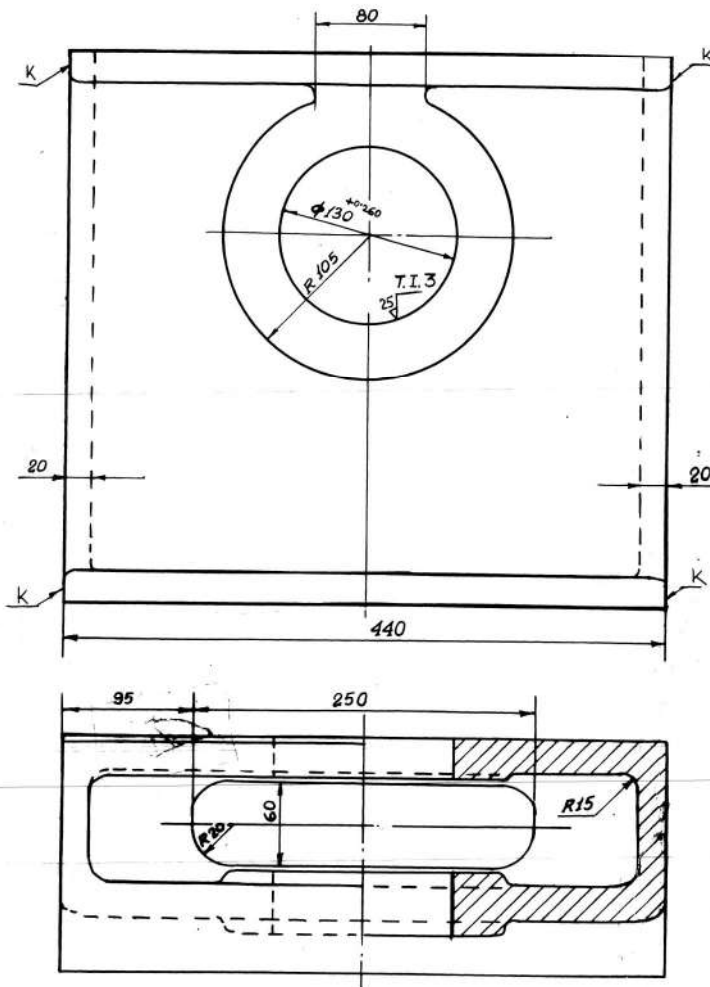


Item No.	Drg. No.	Description	Material	No. Of	Per piece Weight in Kg	Total	Remarks
HOR131262 1002.05.13		Taper Bushing	Gr 280-520W IS:1030-89			1040.05.026	
						Material: CS-27-54 IS:1030-74	
						weight in kg. 11	
		Head of Deptt.					
		Bureau Chief	N.K. Sinha				
		Group leader	S. Nath				
		Designer	G. Mistry				
104005000		R.f. Drg. No.					
		Norm. Post.					
						H M B	June '86
						H. E. C. LTD. RANCHI	

Index	No.	Revision	Signature	Date

10-3 3556

1040-07-436



Technical Instructions

1. Un-machined weld surfaces 'K' are to be cleaned bright.
2. Surfaces 'M' should be parallel to each other within 4 m.m. over the length 'H'.
3. Black spots on machined surface $\phi 130$ not allowed. Black spots on other machined surfaces allowed, but should not exceed 30% of the whole surface.
4. Un-mentioned casting radii may be taken as 5-10 m.m.

Chemical Compositions

	C	Mn	Si	Cr	Ni	Cu	S	P
Min ^{pp}	0.20	0.50	0.20	-	-	-	-	-
Max ^{pp}	0.28	0.80	0.37	0.30	0.30	0.30	0.05	0.05

Mechanical Properties

Section	UTS kg/mm ²	Yp kg/mm ²	% Elongation	Impact kg/m ²	Hardness Hb	Remarks
≤ 100	45	24	19	4.0	115-170	No elongation in horizontal & longitudinal condition
> 100	42	21	15	3.5	117-156	

REVALIDATED

Bureau Exc-I
Sdg & Dt 10/10/75

Dimensions 25, 36, 40, 91 & 118 changed
to 20, 30, 35, 90 & 175 respectively. P.S.B. 2/10/75

Index	No.	Revision	Signature	Date
①	6	to 20, 30, 35, 90 & 175 respectively.	P.S.B.	2/10/75
②	1	Final dimension order	S.P.	8.8.48

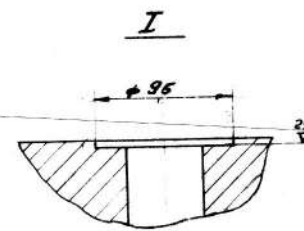
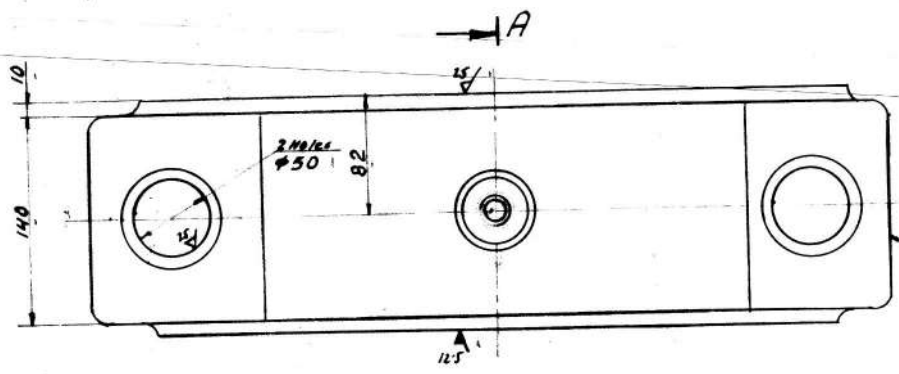
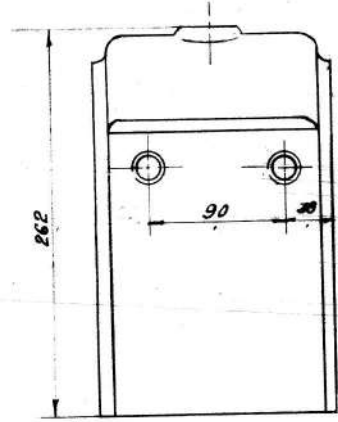
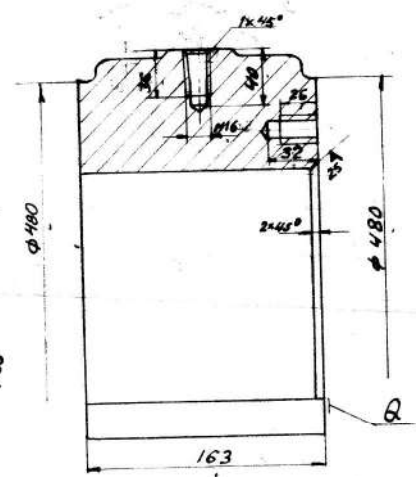
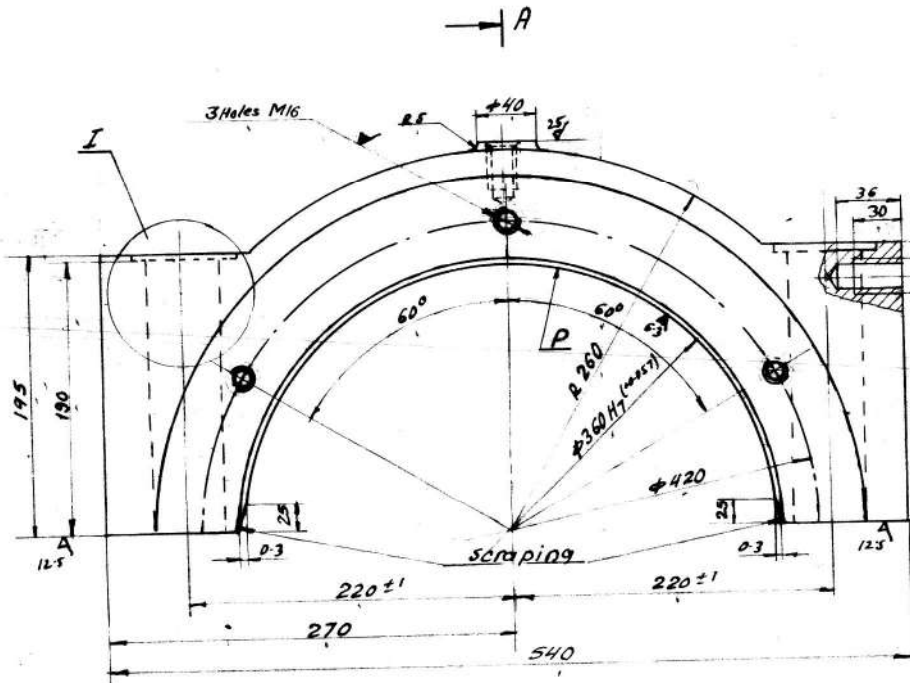
1040-07-436	Bracket	1040-07-436
		See table
Bureau Chief Dr. Lakshmi, V. K. Narayan Designed by V.R. Narayan Drawn by A. Singh	Scale: 1:2.5	Weight to be 9.8-10.2
1040-07-400	HMB	Mar 84
Ref. Des. No.	H. E. C. LTD., BANGALURU	Rev: B

1040.03.402

of the re.

section A-A

VIEW B



Technical Instructions

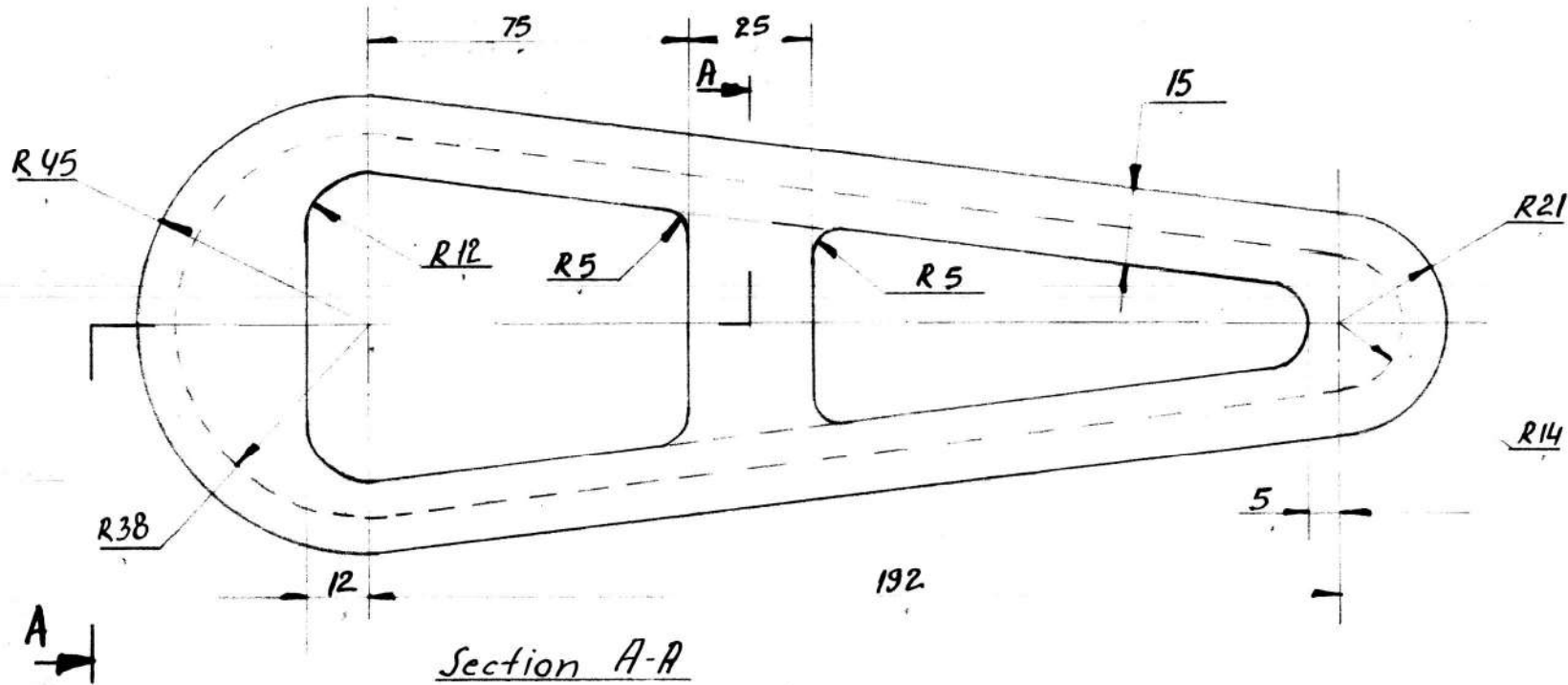
1. unmentioned casting radii to be 10 mm.
2. Casting to be per accuracy class B-AS 003-102
3. Ovality and taper of hole ϕ 360 H7 to be within the tolerance for diameter.
4. Displacement of holes from their nominal position should not be more than 0.5 mm.
5. The surfaces marked ∇ to be machined together with the left hand stand drawing no. 1040.03.480 and the pair to be match marked.
6. Non perpendicularity of surface Q w.r.t. axis of surface P to be not more than 0.1 mm.

REVALIDATED
 Bureau: Exc-I
 Stp. of Dt: MS 9.2.85

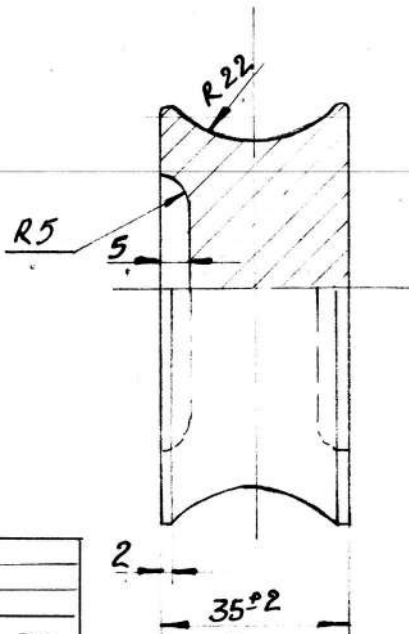
Index No.	Re	Signature	Date

1080.20.432-		Bearing Cover		1040.03.402	
Bureau Chief	<u>V. S. Sankaran</u>	INS/Secy	Scale: <u>1:1.5</u>	Material: <u>GG-15</u>	Weight in kg: <u>6.5</u>
Gr. Ld/Chkd. by	<u>V. Kumar</u>	<u>N. S.</u>	HMB		
Designed by	<u>V. Kumar</u>	<u>N. S.</u>	H. E. C. LTD., RANCHI		
Drawn by	<u>M. Sankaran</u>	<u>N. S.</u>	June. 85		
Ref. Des. No.	Norm. Chkd.				

1040.09.426



Section A-A



Form 137

REVALIDATED
BUREAU
STG & DT

REVALIDATED
Bureau Exc-I
Stg & Dt MS 9.2.16

Index	No.	Revision	Signature	Date

1080.20.426

Wedge

CS280-520W
IS: 1030-89

1040.09.426

Material CS 280-520W
Weight in kg. 4

Bureau Chief M.S. San Karan
Group Leader M.S. San Karan
Designer S. Raja Mohan
Drawn by P.S.C. Verma
Norm. Contd.

Scale: 1:1
HMB
H. E. C. LTD., RANCHI

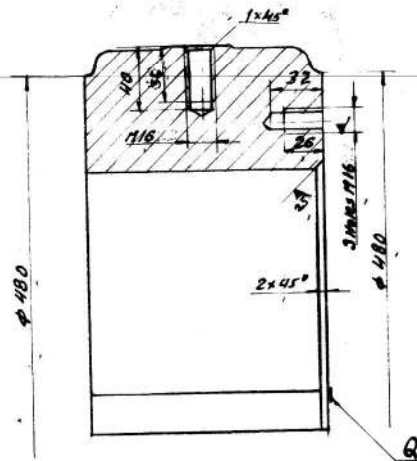
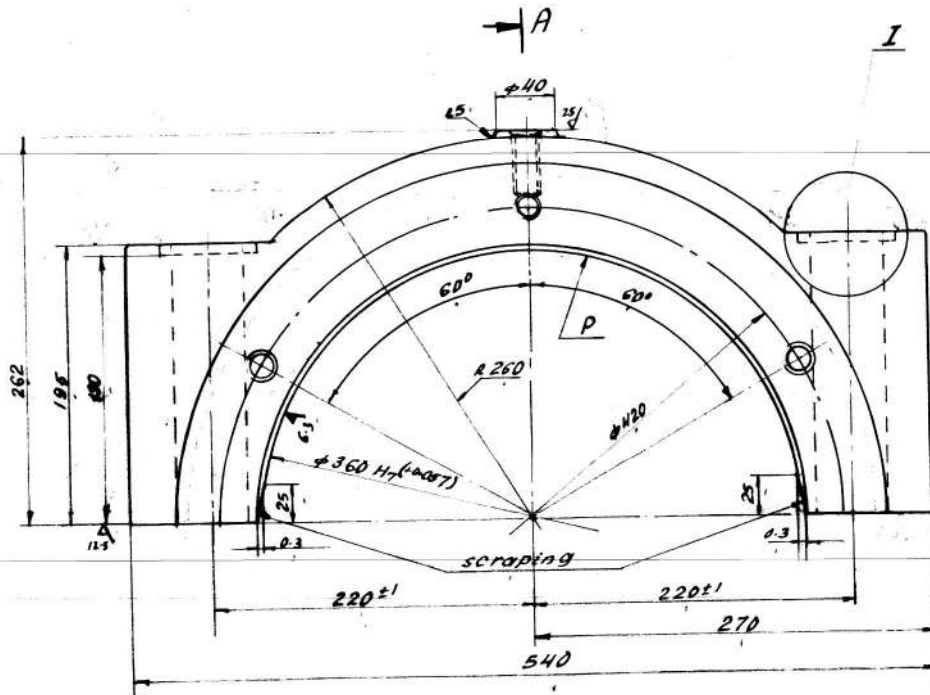
Feb '85

10-3-3216

1EH 60 0701

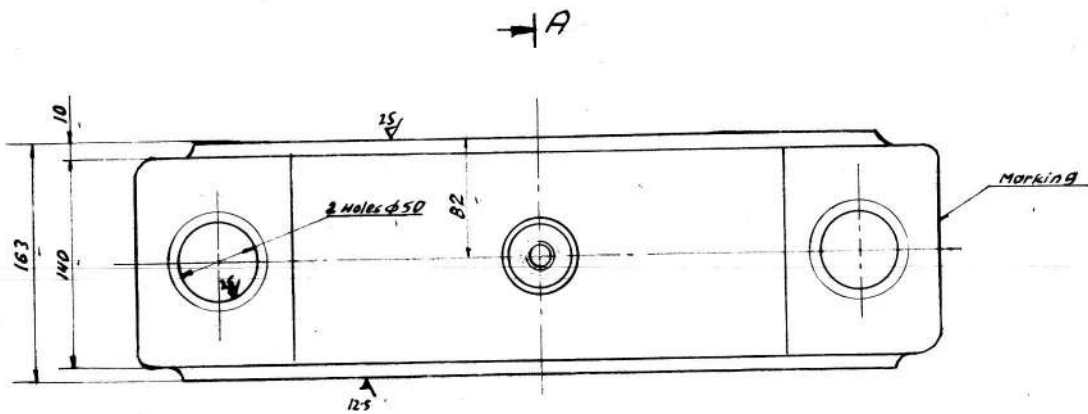
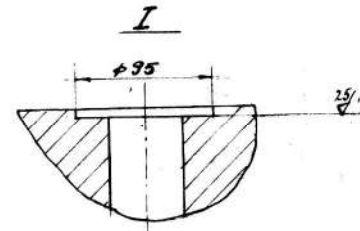
The rest

Section A-A



Technical Instructions

1. Unmentioned casting radii to be 10 mm.
2. Casting to be as per accuracy class B ps 003-102
3. Ovality and taper of hole $\phi 360 H7$ to be within half the tolerance for diameter.
4. Displacement of holes from their nominal position should not be more than 0.5 mm.
5. The surfaces marked ∇ to be machined together with the left hand stand drawing no. 1040.09.400 and the pair to be match marked.
6. Non perpendicularity of surface Q w.r.t. axis of surface P to be not more than 0.1 mm.



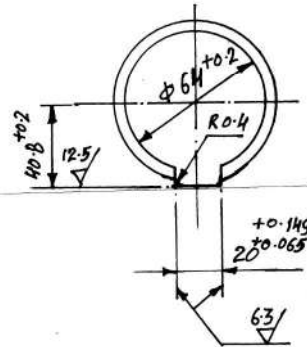
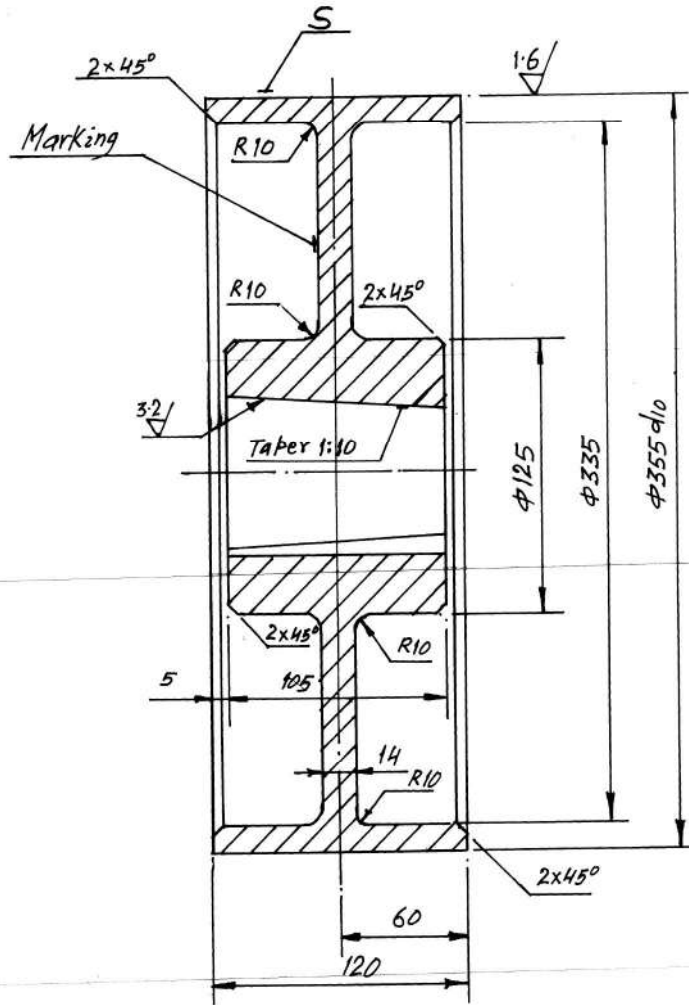
REVALIDATED
 Bureau Ex-I
 Dtg & Dt W.D. 2.2.28

No.	Revision	Signature	Date

1080.20.433-1	Bearing Cover		1040.09.431
	CS 280-580W 15-1080-89	Scale: 1:2.5	Weight in kg: 8.8
Bureau Chief	V. KUMAR		
Gr. Lt/Chkd. by			
Designed by			
Drawn by			
Mat. Chkd.			
1040.09.400	HMB		H. E. C. LTD., RANCHI

620-11-0401

25/
the rest



Technical Instructions

1. Pulsation of $\phi 355$ dia w.r.t. axis of the bore to be not more than 0.1 mm.
2. Skewing and parallel shift of the key-way w.r.t. axis of the bore to be not more than 0.1 mm and 0.15 mm. respectively.
3. Round off sharp edges.
4. Hardness of surface 's' should be HRC 40-50.
5. Tapered bore should be checked with the gauge and area of contact should be uniform and not be less than 70%.
6. Pattern of DRG. no. 1003.11-27 may be used with suitable modification.

10-3-2698

Tracing completed
VMS

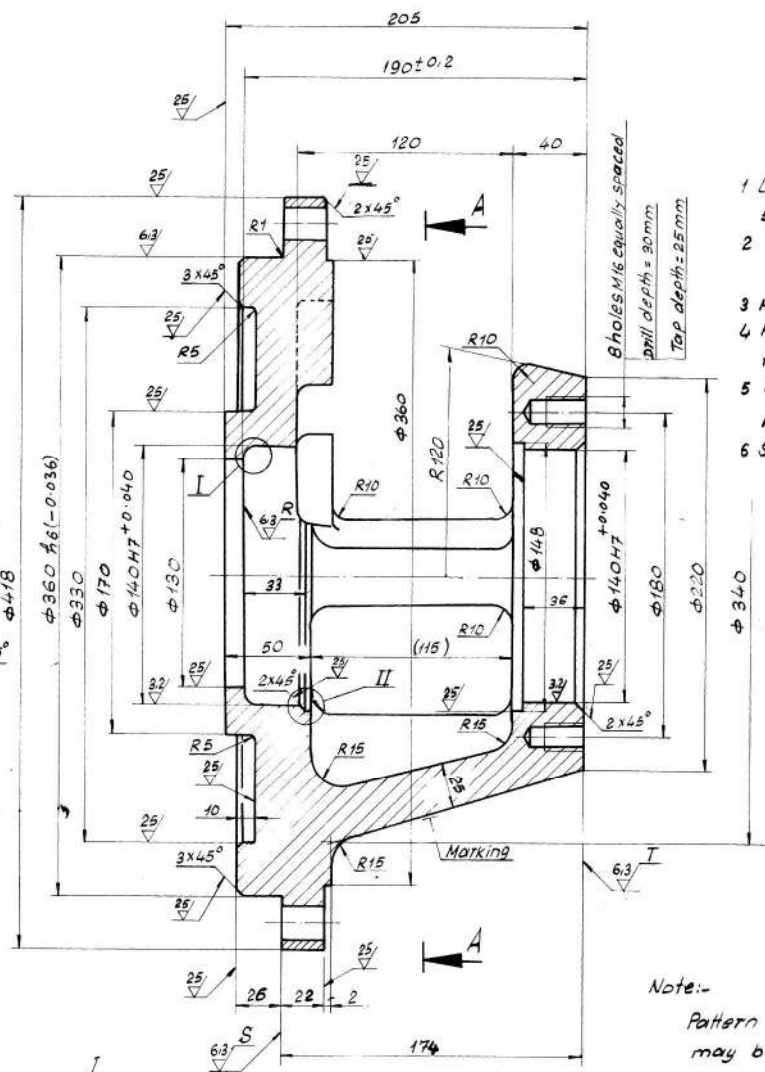
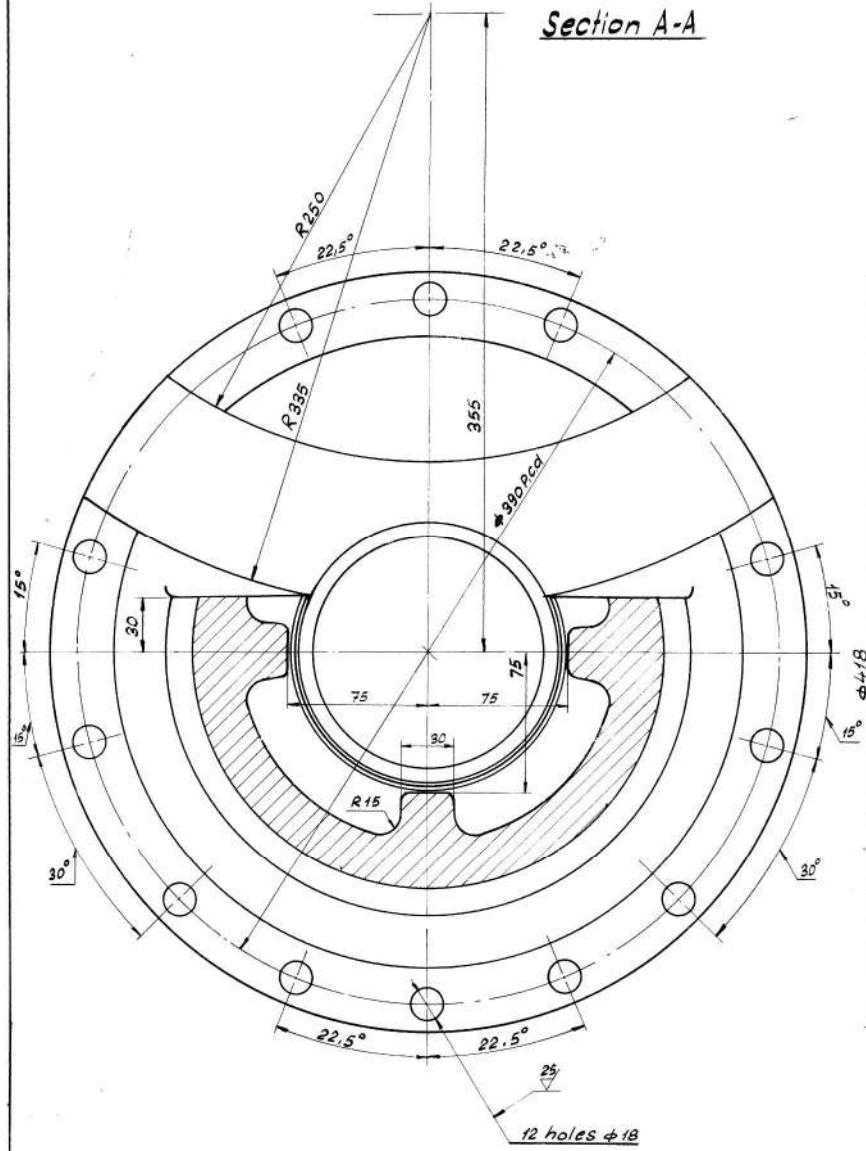
	BRAKE PULLEY		1040-11-039	
			C.S. Gr. I MATERIAL: IS: 2707-89	
1080-16-41	BUREAU CHIEF	S. Basu	SCALE: 1:25	WEIGHT IN KG: 27.00
	GROUP LEADER	S. B. Upadhyay	HMB H.E.C. LTD. RANCHI	
	DESIGNER	S. C. Samar		
1040-11-000	DRAWN BY	H. S. Singh	DEC. 84	
Ref. DRG. No.	NORM. CHKD.		REV-0	

Index	No.	Revision	Signature	Date

Traced by A.N. Singh

10-3-2698

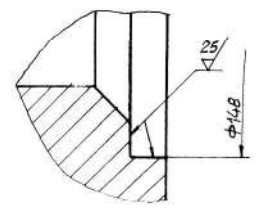
Section A-A



Technical Instructions:

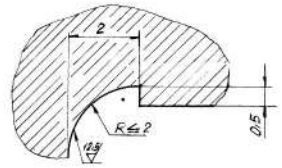
- 1 Unindicated cast radii to be within 5mm and cast slopes within 2°
- 2 The casting should be free from cross blow holes and other casting defects.
- 3 Hardness to be within HB: 217-269
- 4 Pulsation of $\phi 360$ Hs with respect to $\phi 140$ to be not more than 0.05 mm
- 5 Butt pulsation of the surfaces 'S' R & T w.r.t. $\phi 140$ H7 to be not more than 0.03 mm
- 6 Sharp edges to be rounded off.

II
Scale 5:1



Note:-
Pattern of flange drg. No. 1006.18.506 may be used

I
Scale: 10:1



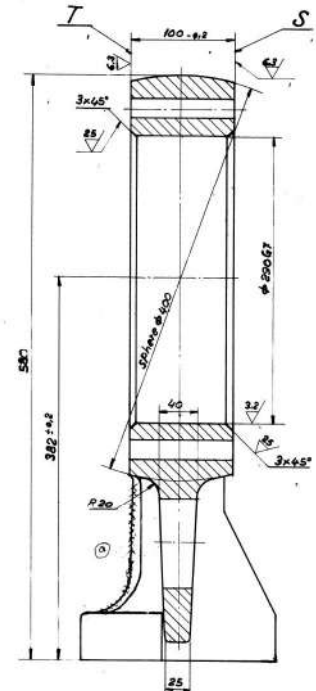
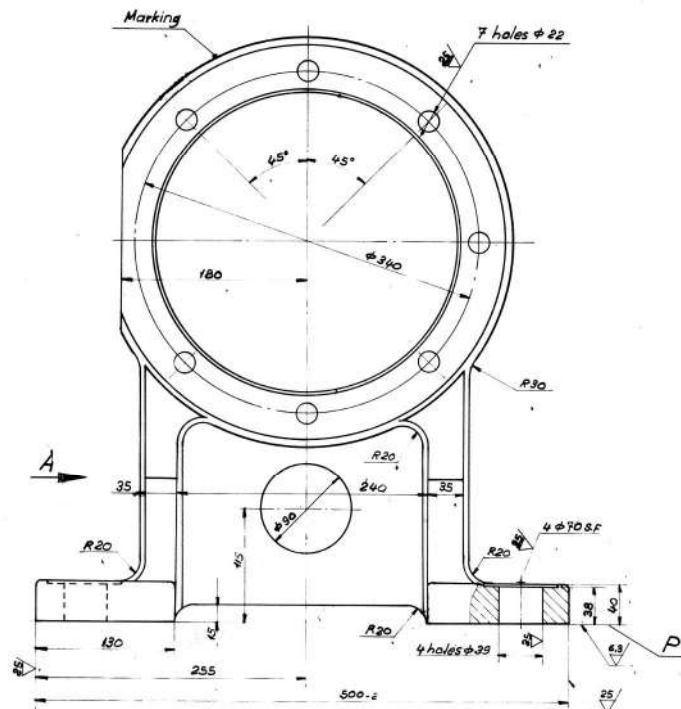
Mat: CS Gr. 2
IS: 2707-89
* Material: CS Gr 200-320W
IS: 1030-89

Index no.	Revision	Signature	Date

REVALIATED
RG
Signature 21.4.88

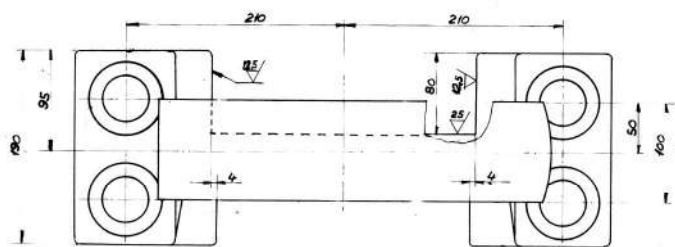
REVALIATED
RG
Signature 18.11.96

1006.18.506	Flange		1040 18 003	
			* Material: CS-20-89	
	Approved by: S. Basu	Checked by: S. S. Laddhyan	Scale: 1:2	Weight in kg: 13.00
	Designed by: S. C. Samal	Drawn by: D. K. Nandi	HEC RANCHI, INDIA	July 84
1040.18.001	Ref. drg. No. Norm. Chkd.			

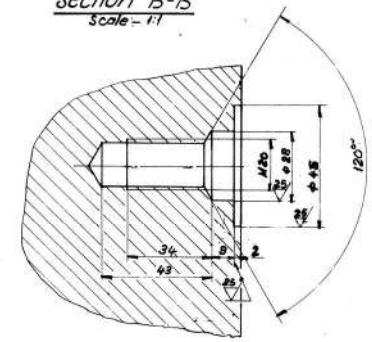


Technical Instructions

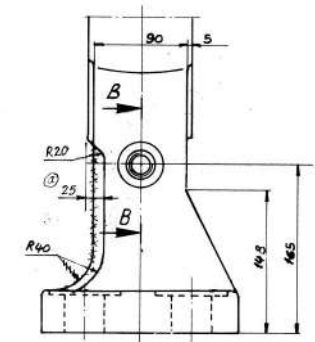
1. Un-indicated cast radii and slopes may be taken 5mm and 2° respectively.
2. Casting should be free from blow holes, cracks and other casting defects
3. Casting should be stress relieved.
4. Displacement of the axis of the bore $\phi 290.67$ w.r.t the surface "P" to be not more than 0.10 mm.
5. Butt pulsation of the surface "S" and "T" w.r.t the axis of the bore $\phi 290.67$ to be not more than 0.075 mm.
6. Ovality and taper of the fitting diameter to be within half of their respective diametral tolerances.
7. Round off sharp edges.
8. Pattern of Dwg No 1006.18.102 may be used for casting this detail.



Section B-B
Scale - 1:1



View A



HEC
18.11.1964

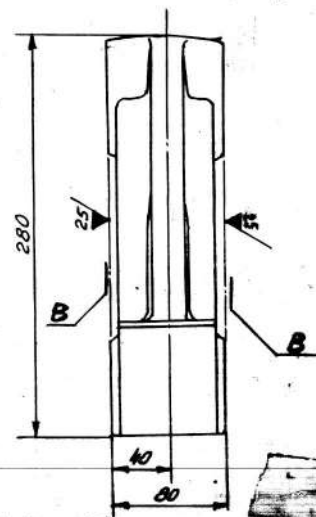
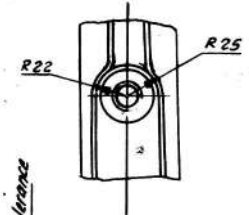
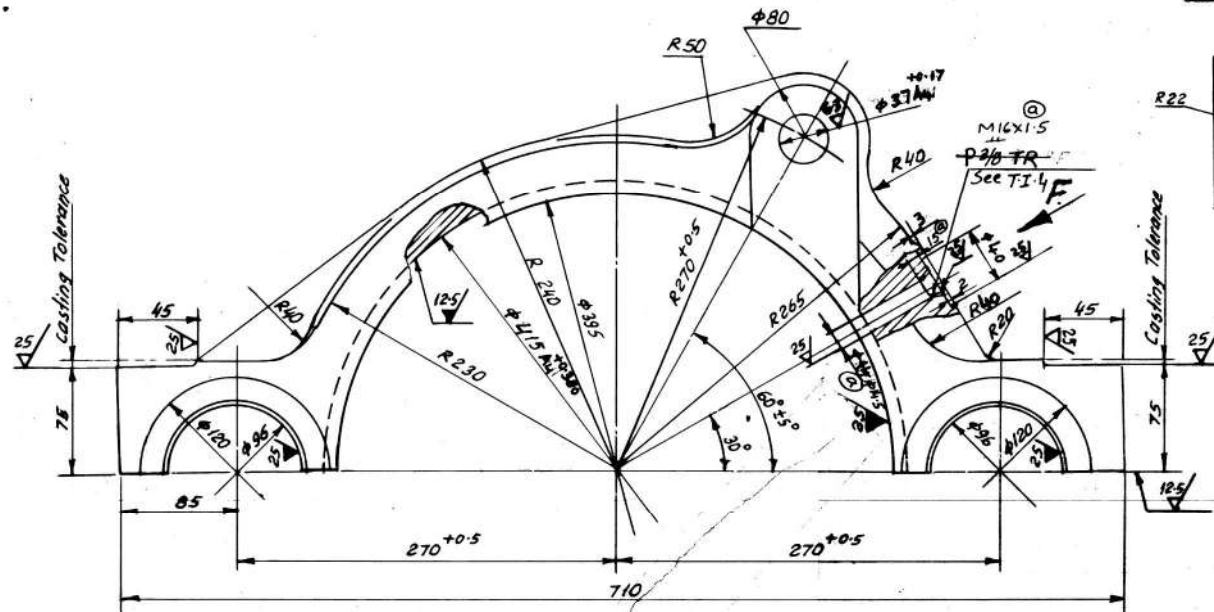
* Material - C45 280-520W
IS: 1030-69

1040.18.038	Bearing Housing		1040.18.038
Approved by	S. B. Rao	Checked by	R. K. Rao
Designed by	A. K. Rao	Drawn by	J. Ramram
1040.18.038	HEC		Rev. 01
18.11.1964	RANCHI, INDIA		

1040.18.038	2	Dim. 25 added	18/11/64
Order No	Revision	Signature	Date

1060.18.308

VIEW F



- (b)
 Note: - 1) Hardness after hardening & tempering to be 110-120
 2) Charpy Impact (U-notch 2mm deep) 4 kg-m

Technical Instructions

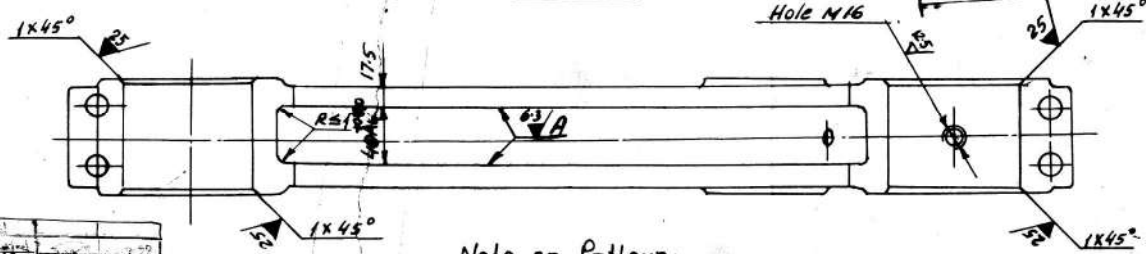
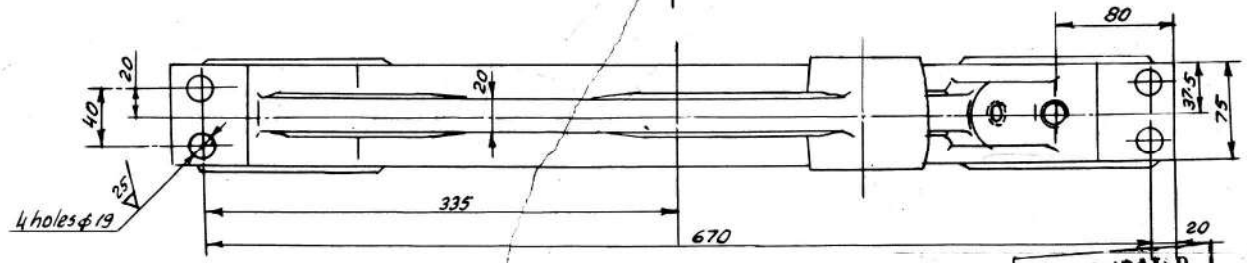
1. Non-parallelity of holes φ36 & φ37 μ w.r.t φ415 μ should not be more than 0.4 mm over the width of the detail.
2. Run-out of faces A & B should not be greater than 0.8 mm w.r.t φ415 μ .
3. Surfaces marked ∇ are to be machined together with the other half collar.
4. Hole φ36 B-SPT to be made only in one half.
5. Sharp edges are to be removed.
6. Drilling of 4 holes φ19 & hole φ37 μ should preferably be done together in both the half collars.
7. The test bar should be integrally cast and should be hardened and tempered along with the job to ensure the mechanical properties as shown below. The hardness value is to be cross-checked on the job.

Note On Material (b)

1. Composition					
C	Mn	Si	Cr	Ni	P & S max
0.32-0.40	0.4-0.9	0.20-0.52	0.3 max	0.2 max	0.008 max

2. Mechanical Properties after Hardening & Tempering					
Yield Strength (MPa min)	Tensile Strength (MPa min)	Elongation (min)	Reduction in Area (min)	Impact (J)	Hardness (HRC)
550	750	16	20	30	17-24

VIEW E



Note on Pattern:
 Pattern for old drg. No. 1006.18.308 may be used.

Index	No.	Revision	Signature	Date
1	1	1		

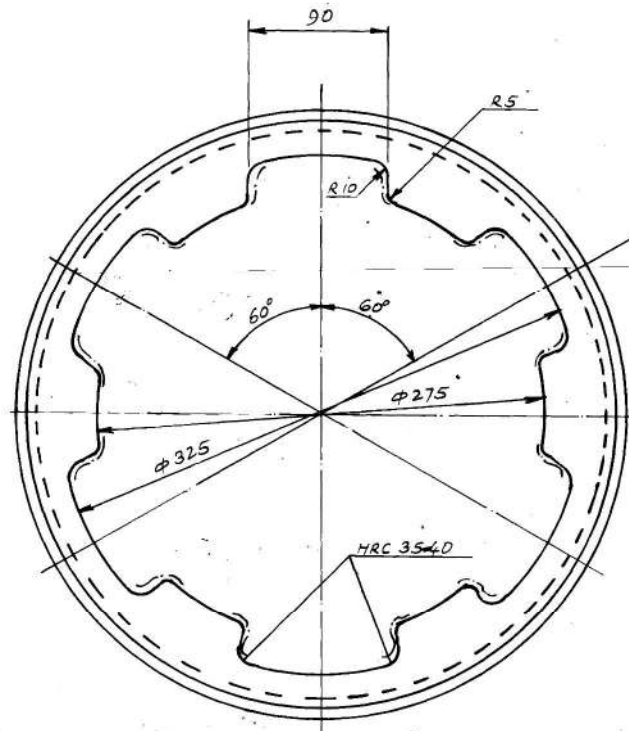
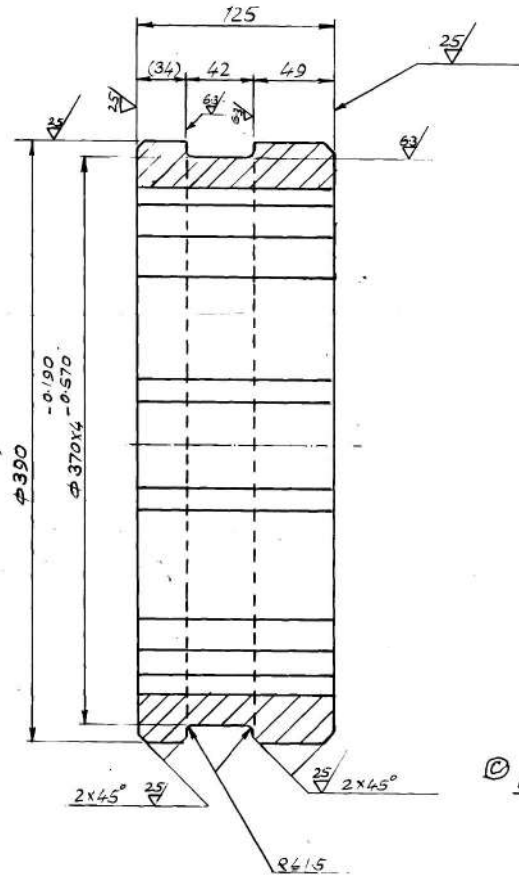
1060.30.08	Half Collar		1060.18.308
Design by	Dr. M. S. Srinivasan	Checked by	S. M. Srinivasan
Designed by	S. M. Srinivasan	Checked by	S. M. Srinivasan
Drawn by	S. M. Srinivasan	Checked by	S. M. Srinivasan
Rev. Dwg. No.		Checked by	S. M. Srinivasan

10-2-1967

1040.18.305

Technical Instructions

1. Inside surfaces should be sand blasted.
2. Displacement of jaws from the nominal position should not be more than 2 mm.
3. Maximum deviation in dimension of jaw-groove (90) should not exceed 2 mm for one detail.
4. Run-out of surface $\phi 370 \times 4$ w.r.t $\phi 275$ should not be more than 1 mm.
5. Non-parallelity of side surfaces of jaw-grooves w.r.t the axis of $\phi 275$ should not be more than 1 mm over the length of 125 mm.
6. Side surfaces of jaw-groove should be hardened to RC 35-40.
7. Surfaces to be hardened must be smooth and free from projections and depressions. The surfaces should also be free from all castings defects like sand inclusions, blow holes, fins, cracks, hard spot 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 given below. The hardness value is to be cross-checked on the job.



© Note:

1. Hardness after hardening and tempering to HB 220-260
2. Charpy Impact (U-notch 2 mm deep) - 4 kgf-m/cm²

Note on Pattern

Pattern for old drg. No-1006/18.307 may be used

NOTE ON MATERIAL

1. Composition

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

2. Mechanical properties after hardening & tempering

Tensile strength (MPa min)	Yield strength (MPa min)	Elongation (%)	Reduction of area (%)	Impact (J)	Hardness (HRC)
550	350	16	20	30	177-269

3. In case the detail is decided to be procured under normalised condition to be subsequently hardened and tempered in H.C, the relevant condition to be obtained from 20179 A/11

REVALIDATED
Bureau - EXCY. I/ME
Sig. & Dt. 16-8-98
24-11-12

Material - Gr 2
IS: 2707-96

Tracing Compared

Co-ordinated by: 11.8.99

1040.18.305

Material: 1040.18.305

Scale: 1:2.5 Wt. in kg: 4300.

PROCESS (NAME) (SIGN)

WELDING TECH (NAME) (SIGN)

प्र. ई. सी. 1080.30.07

विभागाध्यक्ष N.K. Sinha

प्रशाखा प्रमुख S.N. Chaudhary

एच सी डी S.N. Chaudhary

डिजाइनर R. Sangar

चेक करी S. Prasad

1040.18.400

1040.18.300

वर्कमै ड्राइंग सेंटर

पच. एम. बी., रांची

16/8/98

HMB

Index	No.	Revision	Signature	Date
C	1	None added		
B	1	None taken away		
A	4	Material change	12.8.98	

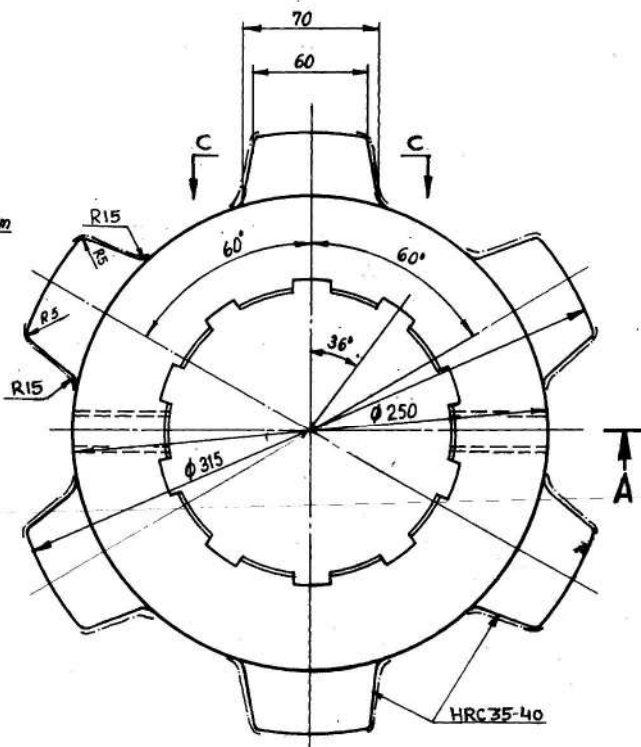
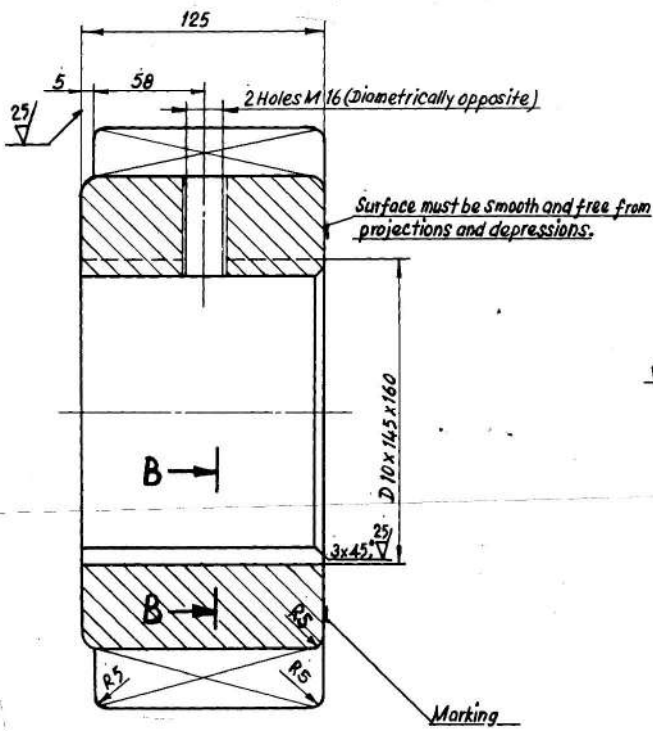
16-2-2920

FORM NO. 135

1040.18.305-1668

10-2-1668

Section A-A



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. The Jaw surface 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 35-40.
7. Displacement of jaws from their nominal position should not be more than 2mm.
8. Maximum deviation in dimension of jaws (60 and 70) should not exceed 2mm. for one detail.
9. Radial pulsation of the out side surface of jaw ($\phi 315$) with respect to $\phi 145 A5$ 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 spline as shown in the drawing. Displacement of the holes M16 should be within 0.5mm from their nominal position.

- Note:- (1) Hardness after hardening and tempering to be HB 220-260
- (2) Charpy Impact (U-Notch, 2mm deep) - 4 kgm/cm² - for reference.

REVALIDATED
Bureau ME
Elg & Ct 12-8-98
24-7-12

1. Composition:-

C	Mn	Si	Cr	Ni	SPEach
0.32-0.40	0.4-0.9	0.2-0.52	0.3 Max.	0.3 Max.	0.05 Max.

2. Mechanical Properties after Hardening and Tempering

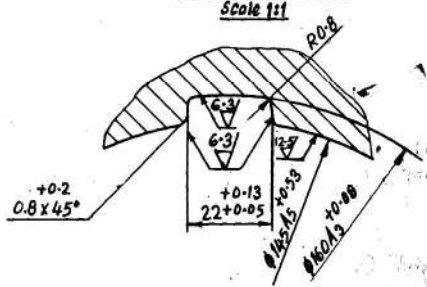
Tensile Strength (MPa) Min.	Yield Strength (MPa) Min.	Elongation % Min.	% Reduction in area Min.	Impact min. (J)	Hardness (BHN)
550	350	16	20	30	179-269

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

Section C-C



Section B-B



INDEX NO.	REVISION	SIGNATURE	DATE
(1)	1st changed	WPS	11-7-99
(2)	5th Material changed	WPS	12-8-98

Co-ordinated by:-

PROCESS	(NAME)	(SIGN)
WELDING		
TECH:	(NAME)	(SIGN)

REF. DNG. NO.	NO. OF SHEETS	TOTAL SHEETS

Driven Half Coupling

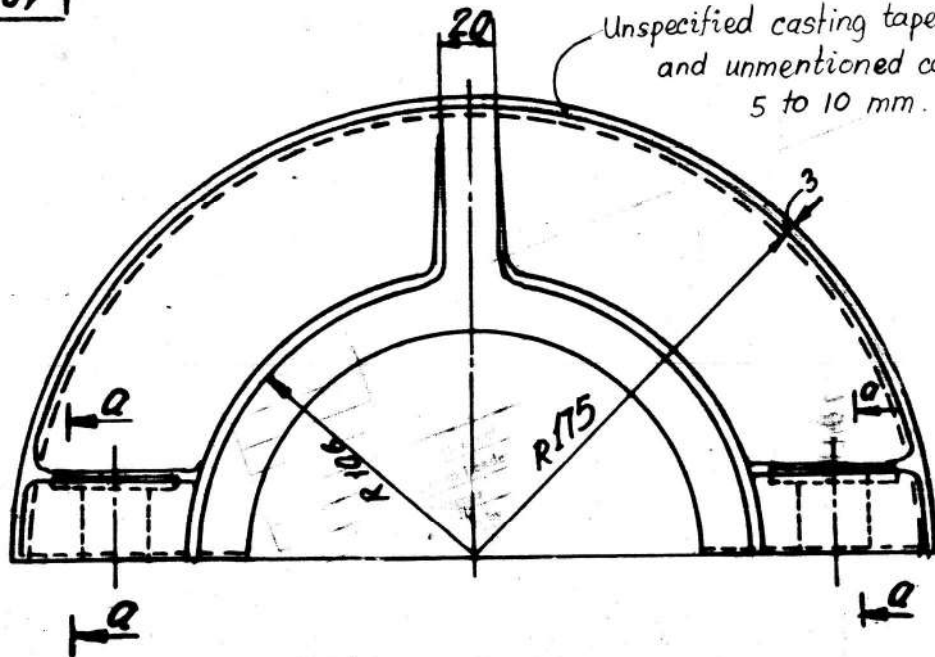
1040-18-312

MATERIAL: Steel Casting
JIS 5602

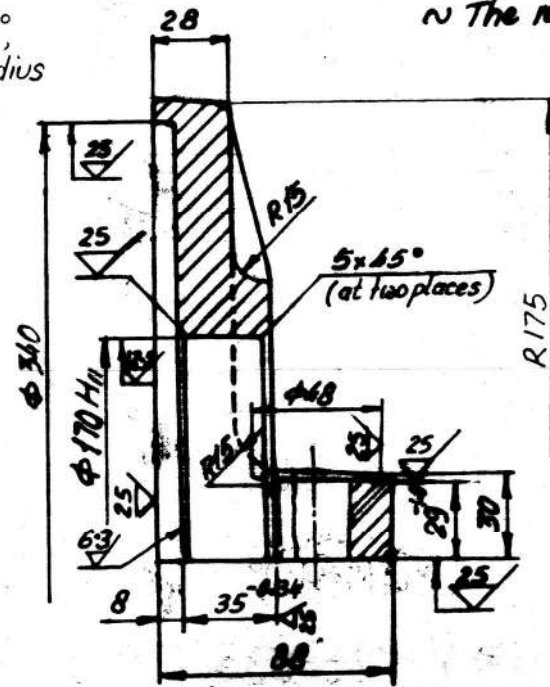
BUREAU CHIEF	DESIGNER	SCALE	WEIGHT IN KG.
S. Verma	S. Singh	1:2	3.2
GROUP LEADER	DR. S. Singh		
	F. Singh		

HMB
M.E.C. LTD. BANCHI
NOV-92

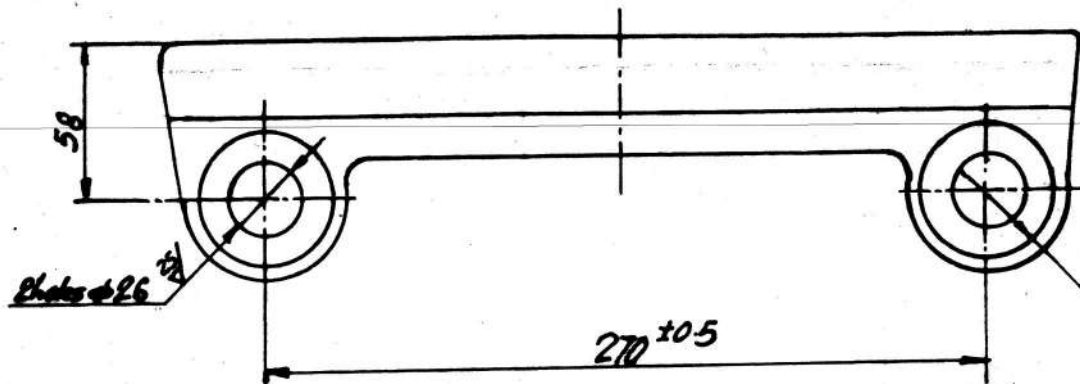
10401901



Unspecified casting taper upto 5°
and unmentioned casting radius
5 to 10 mm.



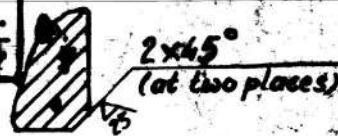
~ The rest



Section A-A
Scale 2:1

REVALIDATED

Bureau ... DE-3/ME
City & Date ...

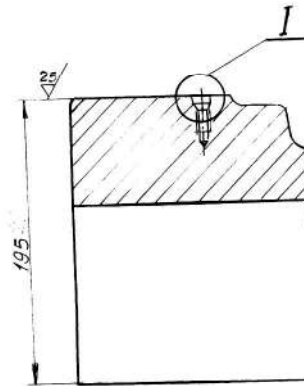
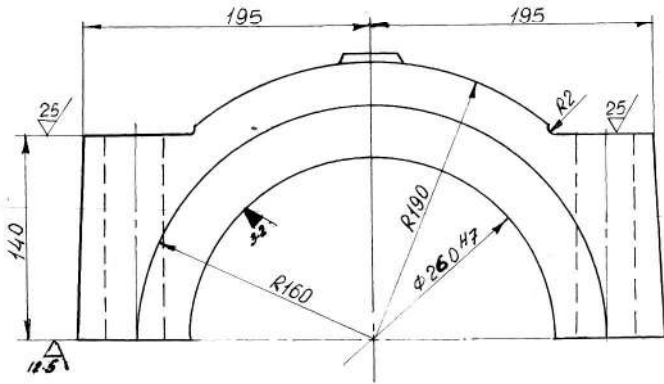


2x45°
(at two places)

R30

Note :- The detail is to be machined together with
the other mating half.

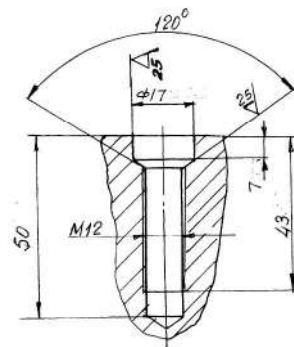
10401901	Retainer	C.S. 200-500 15:100-25	10401901



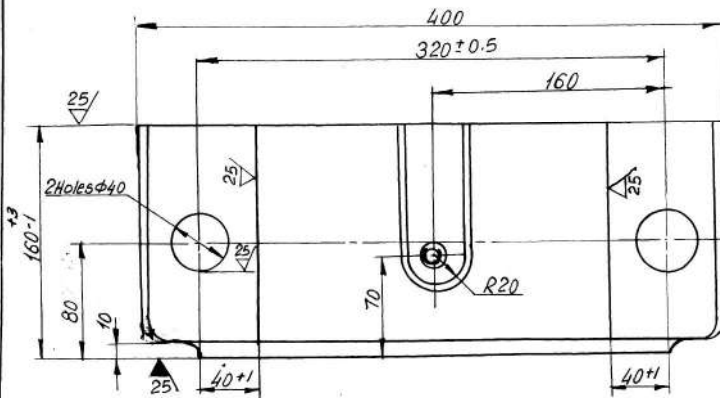
Technical Instructions

1. Un-specified casting radii may be taken as 5-10 mm
2. Surfaces marked ∇ are to be machined together with mating details as per drg no 104003100
3. Burrs & sharp edges are to be removed

Detail I
Scale 1:1



FORM 135



REVALUATED
EXC-I/ME
WRS 15/6/84
6-1F/12

Indx. No.	Revision	Signature	Date

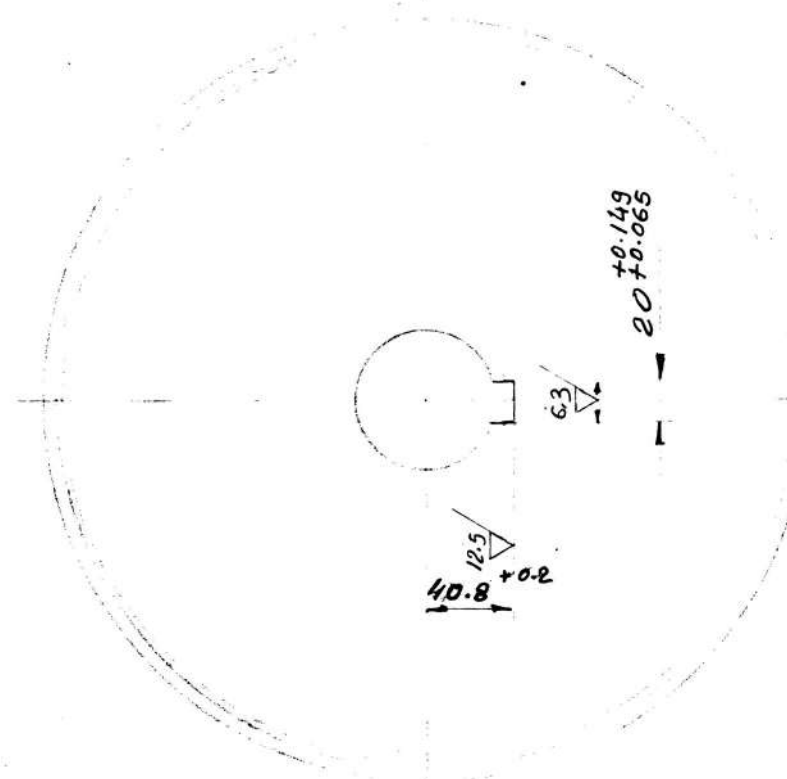
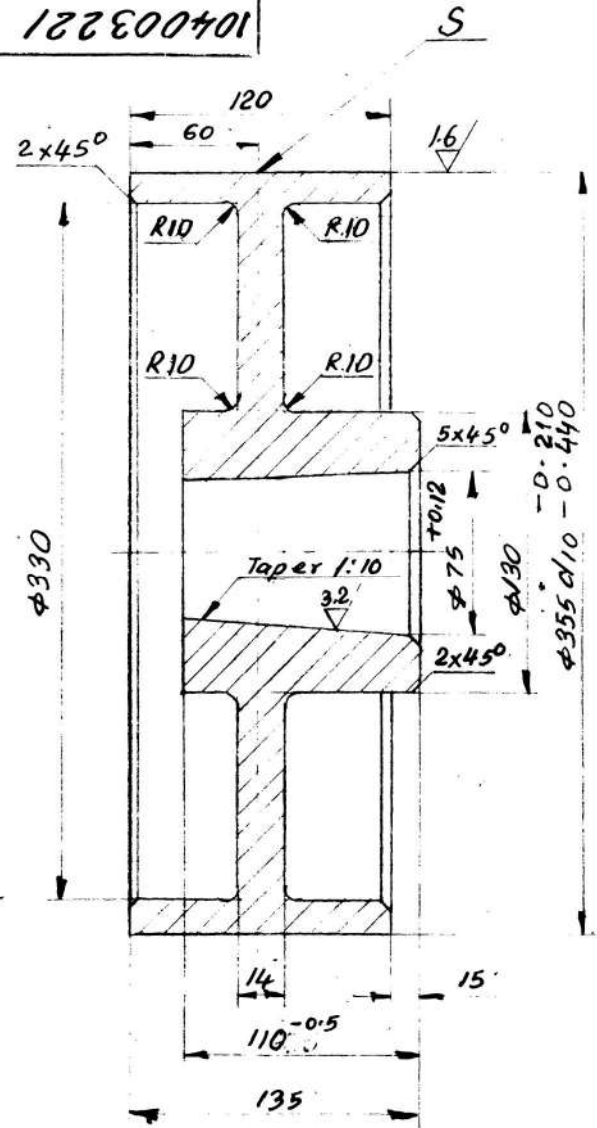
1040 03 101		104003102	
Bearing Cover		C.S 26-52	
Scale: 1:2.5		Material: IS 1030-74	
Weight: in kg. 50		Nov '84	
Branch Chief	S. S. Jha	H.M.B.	Rev: 0
Gr. Ld/Chd. by	B.K. Datta		
Designed by	S. Akhtar	H.E.C. EN'D., RANCHI	
Drawn by	S. Akhtar		
Norm. Chd.			

10-2-1335

104003221

25 / the rest

Form 137



- Technical Instructions
1. Pulsation of $\phi 355$ d10 w.r.t. axis of the bore to be not more than 0.1mm.
 2. Skewing and parallel shift of the key-way w.r.t. axis of the bore to be not more than 0.1mm and 0.15mm respectively.
 3. Round off sharp edges.
 4. Hardness of surface's should HRC 40-50
 5. Tapered bore should be checked with the gauge and area of contact should be uniform and not be less than 70%

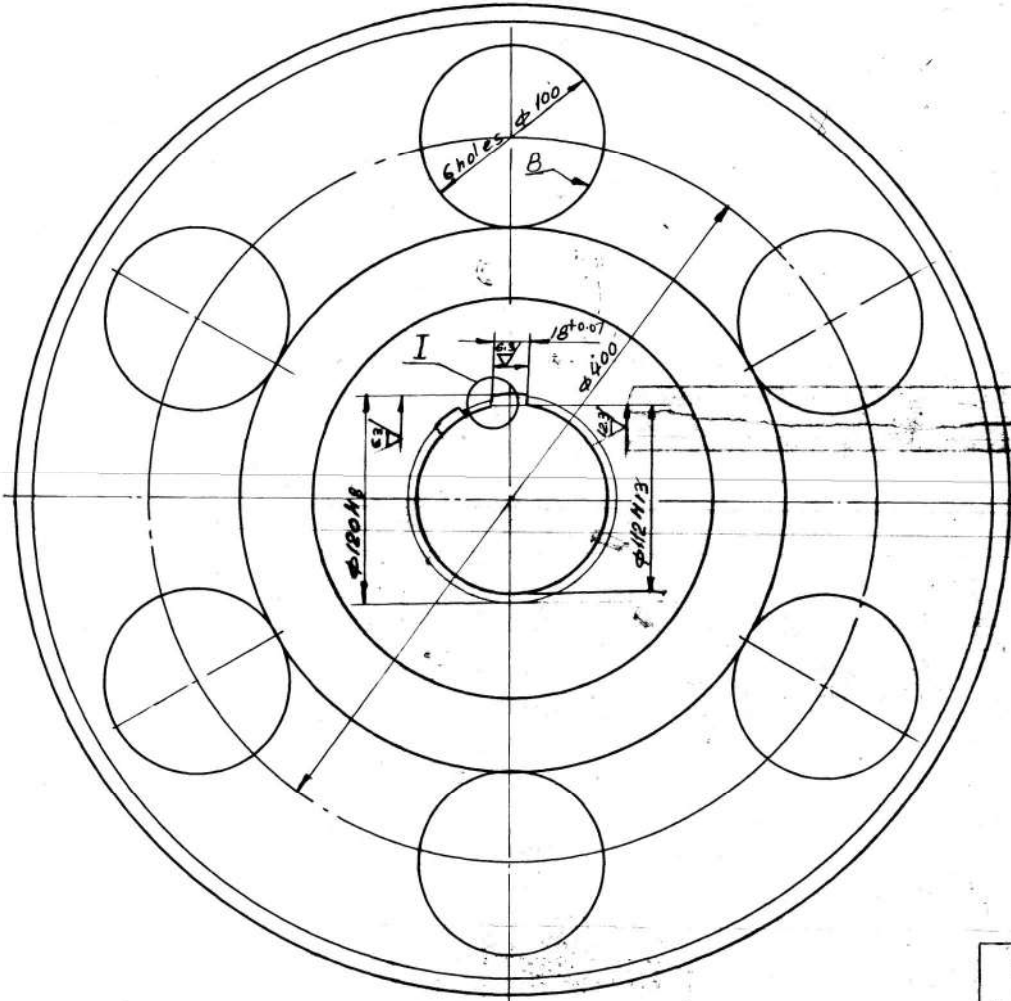
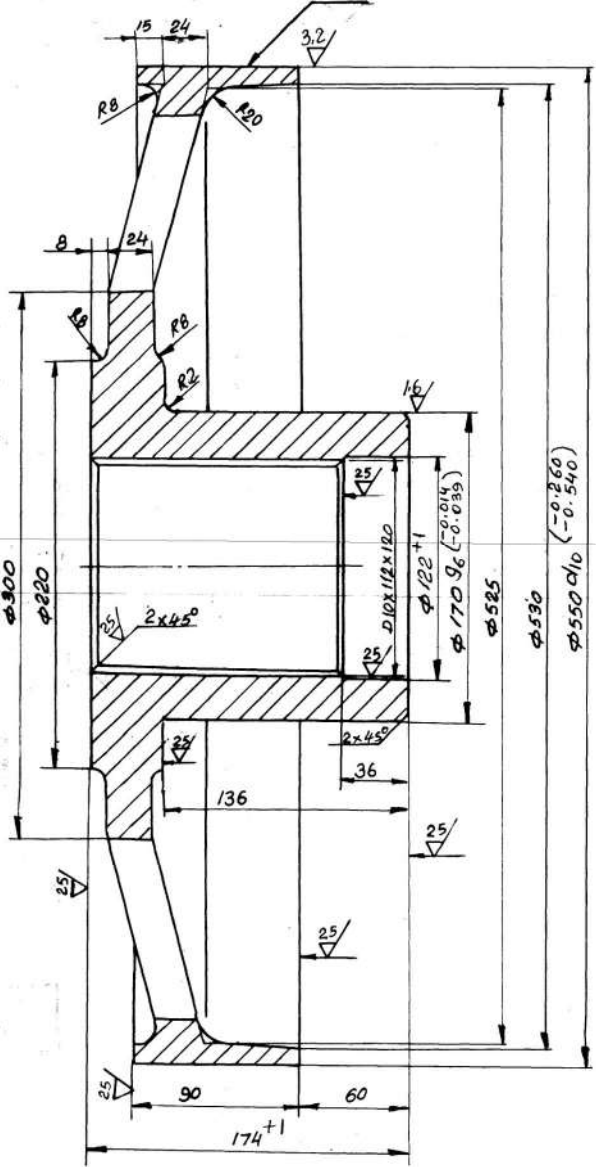
REVALIDATED
 Bureau Exc-I/ME
 Dtd & Dt 12-11-86

Index	No.	Revision	Signature	Date
(2)	1	Weight changed	<i>[Signature]</i>	1.7.85

108005387	Brake Pulley $\phi 355$		104003221	
			C.S. Gr I Material: IS: 2707-86	
	Bureau Chief <u>H. Singh</u>	Scale: 1:2.5	Weight in kg <u>2700.28</u>	
	Group Leader <u>B. Mukharjee</u>	HMB H. E. C. LTD., RANCHI		
	Designer <u>R. Jha</u>			
104003200	Drawn by <u>R. D. Singh</u>	April '85		Rev-6 A
Ref. Drg. No.	Norm. Cont.			

10-3-2859

104003254

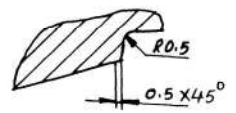


Technical Instructions

1. The casting should be cleaned for painting.
2. Blow holes on the surface *R* are not allowed.
3. Run-out of surface denoted by $\phi 170.96$ with respect to $\phi 120$ should not exceed 0.05 mm.
4. Spines should be checked and not exceed 0.05 mm.
5. Run-out of surface $\phi 550$ with respect to surface $\phi 170.96$ should not exceed 0.05 mm.
6. The pulley is to be statically balanced for this hole 'B' may be made to 120 mm by gas cut followed by grinding. Maximum unbalance allowed is 200 gm at R 275 mm.
7. Sharp edges should be rounded off.
8. Casting radii not shown to be taken $R=5$ mm.

Detail I

Scale:- 2:1



Special Note:-

1. Casting should be of Ultrasonic quality.
2. Casting should be free from cracks, blow hole and other casting defects.
3. BHN = 160-175 180

REVALIDATED

Bureau **EX-I**
 Sdg & Dt **DRS 15-7-20-12-12**

Note:- pattern of drg. no. 1003.03.246 may be used for casting.

Index No.	Revision	Signature	Date
1	Special note added		

104003254		Pulley		CSG 280-50mm 154090-88		104003254	
Drawn by	S. S. Jha	Checked by	R. Jha	Design No.	104003254	Scale	1:1
Designed by	R. Jha	Approved by	R. D. Singh	Material	CSG 280-50mm 154090-88	Weight	
Drawn by	R. D. Singh	Drawn by		Manufacturer			
Drawn by		Drawn by		Manufacturer			

10-2-1342

10-2-1342