

Tender Enquiry No	1819-038
Enquiry date	18.06.2018
Last time and date of tender submission	15:00 Hrs 10.07.2018
Tender opening time and date	15:30 Hrs 10.07.2018
Quotation Parts	<u>Two-part</u>
Item Description	Turning Fixtures
Material Standard	<u>As per Annexure II & III</u>
Delivery schedule (In days)	<u>60 Days from PO/LOI</u>
Validity of offer (In days)	<u>45</u>
Test Certificate	<u>Required</u>
Guarantee Certificate	<u>Required</u>

Item: Turning Fixtures

Pre-Qualification Term

For manufacturers

Procurement shall be preferred from manufacturers. In case manufacturer insists on engaging a dealer / agent, such dealer/agent is not allowed to represent more than one manufacturer.

For dealers

In case of dealers/agents, Authorized dealer certificate is required from original manufacturer for this tender. In case bids are received from dealer/agent and manufacturer both, bid submitted by dealer will be rejected. A dealer representing more than one manufacturer will be rejected for same item, kindly quote for single make only.

S1. QUOTATION SUBMISSION

Tenders in two part bids are invited for Supply of **Turning Fixtures to BHEL IVP Goindwal**. Following point need to be noted by supplier as follows: -

Sealed tenders in two parts; Part-I: Techno-commercial bid and Part-II: Price bid are hereby invited for supply of **‘Turning Fixtures to BHEL IVP Goindwal’** as per tender enquiry. The relevant documents are attached with the Enquiry.

 BHEL GOINDWAL	SPECIAL TERMS AND CONDITIONS FOR (Tender Enquiry No. 1819-038 Dated 18.06.2018 Due date 10.07.2018) ITEM: Turning Fixtures for BHEL IVP Goindwal
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The two bids should be submitted in **separate sealed inner envelopes** duly mentioning the detail as follows:

Bid	Bid description	Superscribing on envelope	*** Should contain ***
Part I in First sealed envelope	Techno-Commercial Offer	Part-I (Techno-Commercial) bid against tender enquiry no: 1819-038 Dated 18.06.2018.	1. Acceptance of all terms and conditions of tender enquiry. (Preferred is submitting signed copy of terms and conditions; if nothing is mentioned for any term, it shall be summarily concluded that the same is acceptable and no representation whatsoever shall be entertained later on). 2. Un-priced bid as per format attached. All details, i.e. whether quoted for item, duties and taxes etc. should be filled.
Part II in Second sealed envelope	Price Bid	Part-II (Price) bid against tender enquiry No: 1819-038 Dated 18.06.2018 .	Price bid in the format attached. Anything other than prices mentioned in the price bid shall be considered invalid & in no case will be accepted.

All the sealed envelopes should be put in outer sealed envelope superscribing all details i.e. Enquiry Number, Date, Supplier's Name and Address and Item.

S2 General Contract Conditions

These Special terms and conditions and GCC collectively are the part of tender terms and conditions.

CHECKLIST AND SEQUENCE OF DOCUMENTS TO BE SUBMITTED IN TWO PARTS BIDS

S. No.	Document	Status
1	Envelope should contain (1) Techno-Commercial bid	Yes, Sealed
2	Price Bid sealed in separate envelope superscribing tender enquiry detail, due date of opening, sender address	Yes, sealed
3	All two sealed envelopes put in an outer envelope mentioning all details like Enquiry no., description, due date	Yes

S3. Loading Criteria Cum Counter Offer

BHEL reserves the right to negotiate with L1 or re-float the tender in case the quoted prices are not acceptable. BHEL will not give counter-offer to vendors for this tender except MSE benefits mention in clause no. G14 of GCC of MM Tenders. In case any MSE vendor, do not accept the accept the counter offer, then the applicable counter offer (i.e.20 %) quantity shall be given to L1 vendor. In case of two or more L1 vendors, the tender quantity shall be divided equally among L1 vendors.

Annexure-II : Unprice Bid format for Tender Enquiry No.1819-038 Dated 18.06.2018 Due date of opening 10.07.2018.						
Sr. No.	Material	Material Description	Technical Specification	Unit of measurement	Req. Qty	Quoted
1	TE425557500	TURNING FIXTURE030 TURNING FIXTURE030 / DRG. NO. : 10-T-42-18537/ 00	1.Material of construction as per BOM in drawing. 2.Tool no. must be punched beofre hardening. 3.Dimensional inspection by BHEL before hardening. 4.Material composition certificate and Heat treatment/Hardening chart must be provided by vendor.	NO	1	Yes/No
2	TE425557400	TURNING FIXTURE TURNING FIXTURE / DRG. NO. : 10-T-42-18530/ 00		NO	1	Yes/No
3	TE425494201	TURNGFIX000000000000\		NO	1	Yes/No
4	TE425513101	TURNGFIX000000000000 TURNING FIXTURE / DRG. NO. : 10-T-42-17424/ 00		NO	1	Yes/No
GST rate				Whether GST is applicable? (kindly tick)	Applicable / Not applicable	
				If GST is applicable, kindly tick whether it is Extra / Inclusive	Extra / Inclusive	
				% age rate of GST (if applicable)	Please mention clearly>>	
Delivery destination (FOR Goindwal Sahib basis)						Please accept>>
Validity of offers (As per BHEL terms 45 days validity is required)						Please accept>>
The above prices are Firm, without any price esclation; are Rs. per unit Basisand are on FOR Goindwal Sahib basis. We accept all terms and conditions of the Tender Enquiry No. 1819-038 Dated 18.06.2018. Authorised signatory with seal						

Annexure-III : Price Bid format for Tender Enquiry No.1819-038 Dated 18.06.2018 Due date of opening 10.07.2018.

Sr. No.	Material	Material Description	Technical Specification	Unit of measurement	Req. Qty	Unit Basic Price, Rs. (to be filled by bidder)	
						In Figures	In Words
1	TE425557500	TURNING FIXTURE030 TURNING FIXTURE030 / DRG. NO. : 10-T-42-18537/ 00	1.Material of construction as per BOM in drawing. 2.Tool no. must be punched beofre hardening. 3.Dimensional inspection by BHEL before hardening. 4.Material composition certificate and Heat treatment/Hardening chart must be provided by vendor.	NO	1		
2	TE425557400	TURNING FIXTURE TURNING FIXTURE / DRG. NO. : 10-T-42-18530/ 00		NO	1		
3	TE425494201	TURNNGFIX000000000000\ TURNNGFIX000000000000\ / DRG. NO. : 10-T-42-16968/ 00		NO	1		
4	TE425513101	TURNNGFIX000000000000 TURNING FIXTURE / DRG. NO. : 10-T-42-17424/ 00		NO	1		

Nothing except prices will be entertained in part-II of tender.

Authorised signatory with seal

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

G1. INSTRUCTION TO BIDDER

Quotations shall be submitted before due date and time. Late offers are liable to be rejected, so please ensure to submit bid well within due date and time. Techno-commercial part will be opened on due date.

Based on evaluation of techno-commercial offers, Price bids of bidders who qualify from techno-commercial evaluation shall be opened. BHEL may decide to open the Price bid same day at 1700 hrs. If not opened on the same day, all qualifying bidders shall be notified for date of opening of Price bids by email/fax/post/courier/E-procurement system generated email.

G1.1 INSTRUCTION TO BIDDER (In case of Non-E-Procurement / Paper/ Manual/ Hard Copy based tenders)

Sealed Tenders can be dropped in the tender box labeled as 'Tender box for MM contracts'. This tender box is located at the entrance of Admin block BHEL Goindwal. Fax (01859-222061) / E-Mail (tendermm_ivp@bhel.in) offers received in time shall be considered only when such offers are complete in all respects. In case of bulky tender please handover quotation to Sh Harpreet Rai/ SDGM/Head-MM or Sh Gurcharan Singh / AGM-Operations & MM. [Contact: 01859 224 615/631]. Bid can be send to following address:

**BHEL, Industrial Valve Plant,
#433, Industrial Complex,
Goindwal Sahib, Distt. Tarn Taran,
Punjab-143422.**

G1.2 INSTRUCTION TO BIDDER (In case of E-Procurement)

Interested bidders/Suppliers shall submit their offer through e-Procurement mode at <https://bhel.abcprocure.com>. **Offers in any other mode will not be accepted.**

For Enterprise Procurement System (EPS) Bidders/Suppliers are requested to follow these steps:

a. Requirements

1. Computer with good Internet Connection.
2. Operating System should be Windows Vista/ Windows 7 and above.
3. Web Browsers: Internet Explorer 9.0 (32-bit Browser only) & above

b. Mandatory Requirements:

Suppliers interested for registration for BHEL Open Tenders should have a valid DSC (Digital Signature Certificate) before Proceeding forward for Registration. Herein a Valid DSC refers to a Class-II/III Digital Signature Certificate (DSC) for Signing & Encryption (Required both digital signature certificate: Signing & Encryption) of bids issued by any of the valid Certifying Authorities (approved by Controller of Certifying Authorities) in India. Valid Digital Signature Certificate (DSC) must be installed in a computer system from where you want to access the website.

For registration of Suppliers in EPS:

For registration of supplier in EPS (<https://bhel.abcprocure.com>) and any other assistance, please contact the support team of M/s e Procurement Technologies limited, Ahmedabad as per details mentioned in table below: -



General Contract Conditions (GCC) of MM Tenders

[Address: BHEL Industrial Valve Plant: 433, Industrial Complex, Goindwal Sahib, Distt Tarn Taran, Punjab-143422]

Name	Contact Nos.	e-mail ID	Role	Location
Mukunthan	+91 6353215001	Trichy.bhel@eptl.in	Support Executive	Trichy
Swapnil Hamilton	+91 7940270549	swapnil.h@eptl.in	Support Executive	HO – Ahmedabad
Hardik Oza	+91 7940270560	Hardik.oza@eptl.in	Support Executive	HO – Ahmedabad
Ankur Bhatt	+91 7940270590	ankur.bhatt@eptl.in	Support Executive	HO – Ahmedabad
Prashant Rajyaguru	+91 7940270545	prashant@eptl.in	Asst. Manager – Implementation & Support	HO – Ahmedabad
Dharam Rathod	+91 7940270596	dharam@eptl.in	Manager – Implementation & Support	HO – Ahmedabad
Pradip Parmar	+91 7940270532	pradip@eptl.in	Sr Mgr – Implementation & Support	HO – Ahmedabad
Devang Patel	+91 7940270576	devang@eptl.in	Sr Manager – Implementation & Support	HO – Ahmedabad

G2 OTHER IMPORTANT INFORMATION RELATED TO E-PROCUREMENT TENDERS

1. The bidder has to keep track of any changes by viewing the addendum / Corrigendum's issued by the Purchaser on time-to- time basis in the E-Procurement platform. The Company calling for tenders shall not be responsible for any claims/problems arising out of this.
2. The user should complete all the processes and steps required for bid submission. The successful bid submission can be ascertained once acknowledgement is given by the system through bid submission number after completing all the processes and steps. BHEL and M/s e Procurement Technologies limited will not be responsible for incomplete bid submission by users. Users may also note that the incomplete bids will not be saved by the system and are not available for the Purchaser for processing.
3. Before uploading scanned documents if any, the bidders shall sign on all the statements, documents, certificates uploaded by him, owning responsibility for their correctness / authenticity.
4. On the due date of tender opening, only technical bids will be opened. The opened technical bids will be evaluated by us and clarifications required, if any, will be called for from the bidders on technical and commercial points. If no reply is received from the vendor for the clarification raised by BHEL with in the final cut-off date, those vendors offer will be processed with the documents available / submitted against this tender. Offers not meeting the required specification and technical condition will be summarily rejected. The price bids of technically suitable bidders will be opened on a later date with prior intimation to techno-commercially suitable bidders.
5. Ranking L-1, L-2 etc. shall be done for individual item for the techno-commercially acceptable offers on landed cost to BHEL, IVP Goindwal basis and BHEL reserves the right to place order for individual items with different vendors. In the event of more than one vendor becoming L1 for the item, the enquiry quantity will be shared equally among all the L1 vendors.
6. BHEL reserves the right to negotiate with L1 vendor or re-float the tender for items where, L1 price is not the lowest acceptable price; BHEL reserves the right to increase or decrease the tender quantity.
7. If supplier is mentioning delivery destination within state/ outside state depending upon his location of factory, Free On Road etc these are assumed as on FOR Goindwal. If supplier is wishing to give delivery on Ex works basis, then he has to clearly mention about it.



GCC: REV:07

General Contract Conditions (GCC) of MM Tenders

[Address: BHEL Industrial Valve Plant: 433, Industrial Complex, Goindwal Sahib, Distt
Tarn Taran, Punjab-143422]

G3 PRICE BASIS

- a. Order of enquiry item sl. No. shall be maintained in the quotation.
- b. The rates quoted shall be firm and fixed. No price variation is proposed and allowed.
- c. Rates quoted should be F.O.R Goindwal basis. If bidder has quoted Ex Works, loading shall be done as per BHEL discretion for tender evaluation.

Variation in GST or any other statutory levies during contractual delivery period shall be to BHEL's account

G4 VALIDITY OF OFFERS:

The offers shall be kept open for acceptance 'for number of days mentioned in special terms and conditions' from the date of opening of the tender. In case of extension of tender opening date, the validity shall be suitably revised.

G5 SCOPE OF SUPPLY

Material shall be supplied as per the applicable latest Technical Delivery Conditions (TDC)/ Material Standard requirements/BPS/Drawing and other requirement as given in the Tender Enquiry. National & International material Standards shall have to be arranged by vendors themselves.

G6 REPLACEMENT OF REJECTION

If the material is rejected due to defective workmanship during inspection or at the time of actual use, within the guarantee period (i.e. as per clause 13), the rejected material shall be replaced by the supplier. Corresponding quantity shall be treated as unsupplied against respective purchase order till replacement is received at BHEL. If the material is found defective and rejected during use for which payment has already been released the rejected quantity shall be supplied free of cost by the vendor within a month of intimation of the rejection by BHEL.

Lifting of rejected material is under Supplier's scope. BHEL will inform related invoice, qty etc to supplier. Supplier is expected to give the plan to lift and advance intimation when visiting to lift the material. Material should be lifted within one month from date of intimation. After one month BHEL will not be responsible for rejected material. BHEL may decide to send the rejected material on to Pay basis to supplier. Any leniency/ unresponsiveness/delay on part of supplier may lead to appropriate action by BHEL. Any request to postpone in written may be considered but replacement should not be linked with lifting of material.

G7 SUPPLIED MATERIAL ADJUSTMENT

Item/s pending in previous PO has to be billed in previous PO only. Otherwise BHEL will be free to adjust the supplies in previous PO. Any implication of tax will be on supplier's account. For this it is desirable to reconcile the pending PO statement every month/frequently. BHEL will give pending PO statement every month. This can also be viewed at Portal (<http://vis.bheltry.co.in/mm/index.jsp>).

G8 DELIVERY SCHEDULE

Supplies shall be affected and completed as per schedule mentioned in special terms and conditions. **Further, BHEL may release delivery schedule from time to time based upon our requirement with mutual understanding.** Vendor shall be required to complete the order as per the BHEL schedule requested.

G9 ACCESS TO MANUFACTURING PREMISES:

While Purchase Orders placed on the vendor are under execution, authorized representatives of BHEL shall be allowed free access to the manufacturing facilities for the purpose of inspection or monitoring the progress of purchase orders. This access will also be extended to representatives of



General Contract Conditions (GCC) of MM Tenders

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BHEL's customers accompanying the authorized representative/s of BHEL (which shall be intimated in advance), if our contractual requirements with our customers call for the same.

G10 TERMS OF PAYMENT:

- a. Due payment against supplies received shall be due after 30 days of receipt and acceptance of material and shall be paid within next 15 days' period. In case of any deviation from standard payment term mentioned, BHEL at its discretion may load on the item price at "Base rate of SBI (as applicable on the date of bid opening; Techno-commercial bid opening) + 6% shall be considered for loading for the period of relaxation sought by bidders.
- b. Documents to be submitted (if applicable)
 - i. Tax invoice (Invoice shall be GST compliant and should contains all the required information such as GST No, HSN code etc.)
 - ii. Transporter copy along with material/consignment.
 - iii. Material Test Certificates (MTC) and
 - iv. Compliance Certificate.
- c. GST registration number is to be submitted by qualified vendor as per GST law.
- d. It is mandatory to mention proper material codes in the invoices and separate invoices to be raised for different POs.
- e. ***BHEL releases payment through EFT mode ONLY. Necessary details may please be submitted by filling required format before release of payment.***
- f. ***Conditions relating to release of GST portion:***

Payment of GST portion will be released to vendor only upon completion of statutory requirement and further subject to following:

The reimbursement of GST portion of invoice shall be released only upon: -

 1. vendor declaring such invoice in his GSTR-1 and
 2. receipt of goods and Tax invoice by BHEL and
 3. Confirmation of payment of GST thereon by vendor on GSTN portal.
 4. Above is subject to receipt of goods/service and tax invoice thereof along with vendor declaring invoice in his return and paying GST within timeline prescribed for availing ITC by BHEL.

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

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

G11 AVAILING INPUT TAX CREDIT (ITC) BY BHEL:

1. Since ITC can be availed only when BHEL is in possession of GST Tax invoice and after receipt of goods. Thus, vendor to ensure timely dispatch of goods and Tax invoice. It may be noted that in case of any delay in receipt of Tax Invoice and/or receipt of goods, the ITC availment by BHEL will get delayed thus entailing additional cash outflow & may even get denied if ITC availment timelines are breached.
2. Further ITC can be availed only when vendor has declared such invoice in his outward supply Return GSTR-1 and after GST thereon has been paid by him at the time of filing of monthly Return.

GCC: REV.07

3. If GST credit is delayed/denied to BHEL due to non/delayed receipt of goods and/or tax invoice or expiry of timeline prescribed in GST law for availing such ITC, or any other reasons not attributable to BHEL, GST amount shall be recoverable from vendor along with interest levied/leviable on BHEL.
4. Further, in case vendor delays declaring such invoice in his return and GST credit availed by BHEL is denied or reversed subsequently as per GST law, GST amount paid by BHEL towards such ITC reversal as per GST law shall be recoverable from vendor/contractor along with interest levied/leviable on BHEL.

G12 LIABILITY UNDER REVERSE CHARGE (RCM)

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

G13 INSPECTION

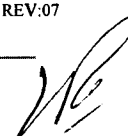
- a. All required tests as called in referred material standard/BHEL/TDC/drawing etc shall be carried out by vendor at no extra cost. **BHEL may decide to inspect itself/arrange third party at vendors' works itself as and when necessary with prior intimation to the vendor.** No additional charges shall be claimed for such inspections.
- b. Third party inspection charges will be borne by BHEL. Moreover, all required infrastructure (testing, tools etc) have to be arranged by supplier.
- c. **Vendor will give inspection call sufficiently in advance considering the delivery period stipulated in the purchase order.**
- d. Material Test Certificates (MTC), Inspection reports and Compliance/Guarantee Certificate are to be provided along with the supplies.
- e. Latest applicable revisions of standards/procedures to be referred. International/National standards are to be arranged by vendor.
- f. Any inspection carried out before supply by vendor/incoming stage at BHEL notwithstanding, if any defect/non-conformity is noted during processing, the same shall be attended/replaced by vendor at no extra cost.
- g. Necessary tooling including thread gauges etc. have to be arranged by vendor. Only in exceptional cases, based on BHEL discretions item/nature, BHEL may consider request to provide gauges if available with BHEL. But in no case this shall be linked with delivery of material.
- h. BHEL representative from unit or CQ is authorized to carry out audits along with TPIA at vendor's works before clearing the items for dispatch.

G14 PREFERENCES FOR MSE's

Preferences as mentioned in "Public Procurement Policy for Micro and Small Enterprises (MSEs) Order, 2012" shall be given to Micro and Small enterprises.

Main points which are mentioned in the above order are as follows:

- 20% Procurement of the tender value shall be made from MSE (Micro, Small Enterprises) firms.
- 4% from the above mentioned 20% procurement quantity shall be procured from MSE's owned by SC /ST's. Failure to participate by any MSE owned by SC/ST's this 4% quantity shall be procured from other MSEs.



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- EMD shall be exempted for MSE's. All these benefits are subject to production of all statutory documents
- In tender, participating Micro and Small Enterprises quoting price within price band of L1+15 per cent shall also be allowed to supply a portion of requirement by bringing down their price to L1 price in a situation where L1 price is from someone other than a Micro and Small Enterprise and such Micro and Small Enterprise shall be allowed to supply up to 20 per cent of total tendered value. In case of more than one such Micro and Small Enterprise, the supply shall be shared proportionately (to tendered quantity).

“MSE suppliers can avail the intended benefits only if they submit along with the offer, attested copies of either EM II certificate having deemed validity (five years from the date of issue of acknowledgement in EM II) or valid NSIC certificate or EM II certificate along with attested copy of a CA certificate (Format enclosed at Annexure -1 where deemed validity of EM II certificate of five years has expired) applicable for the relevant financial year (latest audited). Date to be reckoned for determining the deemed validity will be the date of bid opening (Part 1 in case of two part bid). Non submission of such documents will lead to consideration of their bid at par with other bidders. No benefit shall be applicable for this enquiry if any deficiency in the above required documents is not submitted before price bid opening. If the tender is to be submitted through e-procurement portal, then the above required documents are to be uploaded on the portal. Documents should be notarized or attested by a Gazetted officer.”

G15 GUARANTEE/WARRANTEE

Vendor shall give a guarantee of 18 months from the date of dispatch or 12 months from date of receipt, against manufacturing defects, whichever is earlier. In case of non-acceptance of this term bid will be rejected.

G16 PENALTY FOR LATE DELIVERY

‘Time is the essence of the contract’. As such, delivery of goods specified in the Purchase Orders released under the scope of this contract shall be made within the time limit prescribed therein. Penalty for late delivery will be applicable @ 0.5% per week or part thereof subject to a maximum of 10.0 %.

If any vendor does not accept LD ½% of the supply for each week of delay subject to a maximum of 5%, their offer is likely to be rejected by BHEL and the price bid shall not be opened. Bidders accepting for 10% LD shall not be loaded on account of LD. However, bidders who offer any other % LD [between 5% to 10%] shall be loaded @ % deviation from 10% and their accepted %. e.g. If a bidder accepts for a max of 7% LD only, their offer would be loaded @ 3% (10 – 7 = 3).

BHEL reserves the right to receive or not receive the material after the due date of PO. Applicable GST shall also be recovered from suppliers/contractors on LD amount. For this Debit note will be issued by BHEL indicating the respective supply invoice number.

G17 RISK PURCHASE

BHEL shall be entitled to terminate the contract/pending POs at any stage and to purchase elsewhere at the risk and cost of the vendor, either the whole of the goods or any part thereof which the supplier has failed to deliver or dispatch within the time stipulated as aforesaid. Vendor shall be liable for the losses, which BHEL may sustain by way of such risk purchase.

G18 SUB-CONTRACT

The purchase order or any part thereof shall not be sub-contracted, assigned or otherwise transferred without previously obtaining the BHEL's consent in writing.

G19 FORCE MAJEURE

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

G20 DISPUTES

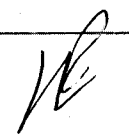
In the event of any dispute and/or difference arising between the Vendor and BHEL as to interpretation and/or execution of the contract and/or the respective rights and liabilities of the parties, such disputes and/or differences shall be referred to the sole arbitrator nominated by BHEL. The provisions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

G21 JURISDICTION

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

G22 CLARIFICATIONS

The correspondence exchanged against the tender from both tenderer and BHEL through email/e-procurement are considered as valid document legally though it is not signed. It is treated as valid confirmations made on behalf of the respective company and very much comes under the legal ambit of the business transaction and hence it is binding on both the parties to the business. Any transaction pertaining to the tender from both the parties of business done round the clock irrespective of the office or business hours of the companies, are valid legally and





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binding on both the parties. This applies to the extent only in such cases where deadline time for transaction is not specifically declared by either or both the parties to the business.

G23 LOI (Letter of Intent)

BHEL may issue LOI prior to the PO for any reason whatsoever. The LOI in such cases is to be treated as PO for all practical purposes and all the Terms & Conditions of the tender shall be applicable from the date of issue of LOI.

G24 WORDS AND FIGURES

- a. If, in the price structure quoted for the required goods/ services/ works, there is discrepancy between the unit price and the total price (which is obtained by multiplying the unit price by the quantity}, the unit price shall prevail and the total price corrected accordingly, unless in the opinion of the purchaser there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price corrected accordingly.
- b. If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and
- c. If there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject of (a) and (b) above.
- d. If there is such discrepancy in an offer, the same shall be conveyed to the bidder with target date upto which the bidder has to send his acceptance on the above lines and if the bidder does not agree to the decision of the purchaser, the bid is liable to be ignored.
- e. Bids should be free from correction, overwriting, using corrective fluid, etc. Any interlineation, cutting, erasure or overwriting shall be valid only if they are attested under full signature(s) of person(s) signing the bid else shall be liable for rejection.
- f. All overwriting/cutting, etc will be numbered by bid opening officials and announced during bid opening.

G25 GENERAL

- a. BHEL will not be bound by any power of attorney granted by the vendors or by changes in the composition of the firm made subsequent to the execution of the contract. They may, however, recognize such power of attorney and changes after obtaining proper legal advice, the cost of which will be chargeable to the vendor concerned.
- b. BHEL reserves the right to extend the due date of opening, which shall be informed. Validity of offer shall be deemed to be revised accordingly.
- c. BHEL reserves the right to accept or reject any part or whole of the tender of a bidder by assigning a valid reason thereof. BHEL reserves the right to cancel the tender without assigning any reason thereof and without any obligation before any commitment.
- d. If possible, please submit soft copy of price quotation [copied on a blank CD of standard make] put in the sealed offer.
- e. Acceptance of all terms and conditions, in the form of signed copy of T&C or confirmation separately written, shall be submitted along with quotation. If nothing is mentioned, it shall be concluded that terms and conditions are acceptable.
- f. BHEL may increase/decrease item/s based on BHEL requirement before price bid opening. Suitable price implication may be asked from suppliers.
- g. BHEL may drop item/items from tender at any stage of tender before placing PO. BHEL may also delete PO with consent with supplier within delivery date of PO.
- h. After releasing PO, it is assumed that supplier has accepted PO if we do not receive acknowledgement from supplier within 5 days of date of PO.
- i. Any term is special tender terms and conditions will supersede the GCC.
- j. BHEL reserves the right to negotiate with L1 bidder/s.

GCC: REV:07

G26 BANNED FIRMS

The offers of the bidders who are on the banned list as also the offer of the bidders, who engage in the services of the banned firms, shall be rejected. The list of banned firms is available on BHEL website www.bhel.com.

G27 DISCLAIMER CLAUSE: (Only for E procurement)

Neither the Organization (Bharat Heavy Electricals Ltd.) nor the service provider (M/s e Procurement Technologies limited) is responsible for any failure of submission of bids due to failure of internet or other connectivity problems or reasons thereof.

G28 FRAUD PREVENTION POLICY

The Bidder along with its associate / collaborators / sub-contractors / sub-vendors / consultants / service providers shall strictly adhere to BHEL Fraud Prevention Policy displayed on BHEL website <http://www.bhel.com> and shall immediately bring to the notice of BHEL management about any fraud or suspected fraud as soon as it comes to their notice.

G29 REVERSE AUCTION

BHEL reserves the right to go for Reverse Auction (RA) (Guidelines as available on www.bhel.com) instead of opening the sealed envelope price bid, submitted by the bidder. This will be decided after techno-commercial evaluation. Bidders to give their acceptance with the offer for participation in RA. Non-acceptance to participate in RA may result in non-consideration of their bids, in case BHEL decides to go for RA.

Those bidders who have given their acceptance to participate in Reverse Auction will have to necessarily submit 'Process compliance form' (to the designated service provider) as well as 'Online sealed bid' in the Reverse Auction. Non-submission of 'Process compliance form' or 'Online sealed bid' by the agreed bidder(s) will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines for suspension of business dealings with suppliers/ contractors (as available on www.bhel.com).

The bidders have to necessarily submit online sealed bid less than or equal to their envelope sealed price bid already submitted to BHEL along with the offer. The envelope sealed price bid of successful L1 bidder in RA, if conducted, shall also be opened after RA and the order will be placed on lower of the two bids (RA closing price & envelope sealed price) thus obtained. The bidder having submitted this offer specifically agrees to this condition and undertakes to execute the contract on thus awarded rates.

If it is found that L1 bidder has quoted higher in online sealed bid in comparison to envelope sealed bid for any item(s), the bidder will be issued a warning letter to this effect. However, if the same bidder again defaults on this count in any subsequent tender in the unit, it will be considered as fraud and will invite action by BHEL as per extant guidelines for suspension of business dealings with suppliers/ contractors (as available on www.bhel.com).



General Contract Conditions (GCC) of MM Tenders

[Address: BHEL Industrial Valve Plant: 433, Industrial Complex, Goindwal Sahib, Distt Tarn Taran, Punjab-143422]

G30 SUSPENSION OF BUSINESS DEALINGS WITH DEFAULTERS

BHEL shall take action against suppliers by way of suspension of business dealings, who either fail to perform or are in default without any reasonable cause, cause loss of business/ money/ reputation, indulge in malpractices, cheating, bribery, fraud or any other misconduct or formation of cartels so as to influence the bidding process or influence the price etc. Such action under Suspension of Business Dealings could be in the form of "Hold" or "Banning" a supplier or a bidder or an applicant for registration as a registered supplier. The detailed guidelines are available at our www.bhel.com.

Certificate by Chartered Accountant on letter head

This is to Certify that M/S ,
(hereinafter referred to as 'company') having its registered office at
is registered under MSMED Act 2006, (Entrepreneur
Memorandum No (Part-11) dtd:.....,
Category:..... (Micro/Small)). (Copy enclosed).

Further verified from the Books of Accounts that the investment of the company as per the latest audited financial year as per MSMED Act 2006 is as follows:

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

(Strike off whichever is not applicable)

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

Or

The company has been graduated from its original category {Micro/ Small} (Strike off which is not applicable) and the date of graduation of such enterprise from its original category is (dd/mm/yyyy) which is within the period of 3 years from the date of graduation of such enterprise from its original category as notified vide S.O. No.3322(E) dated 01.11.2013 published in the gazette notification dated 04.11.2013 by Ministry of MSME.

Date:

(Signature)

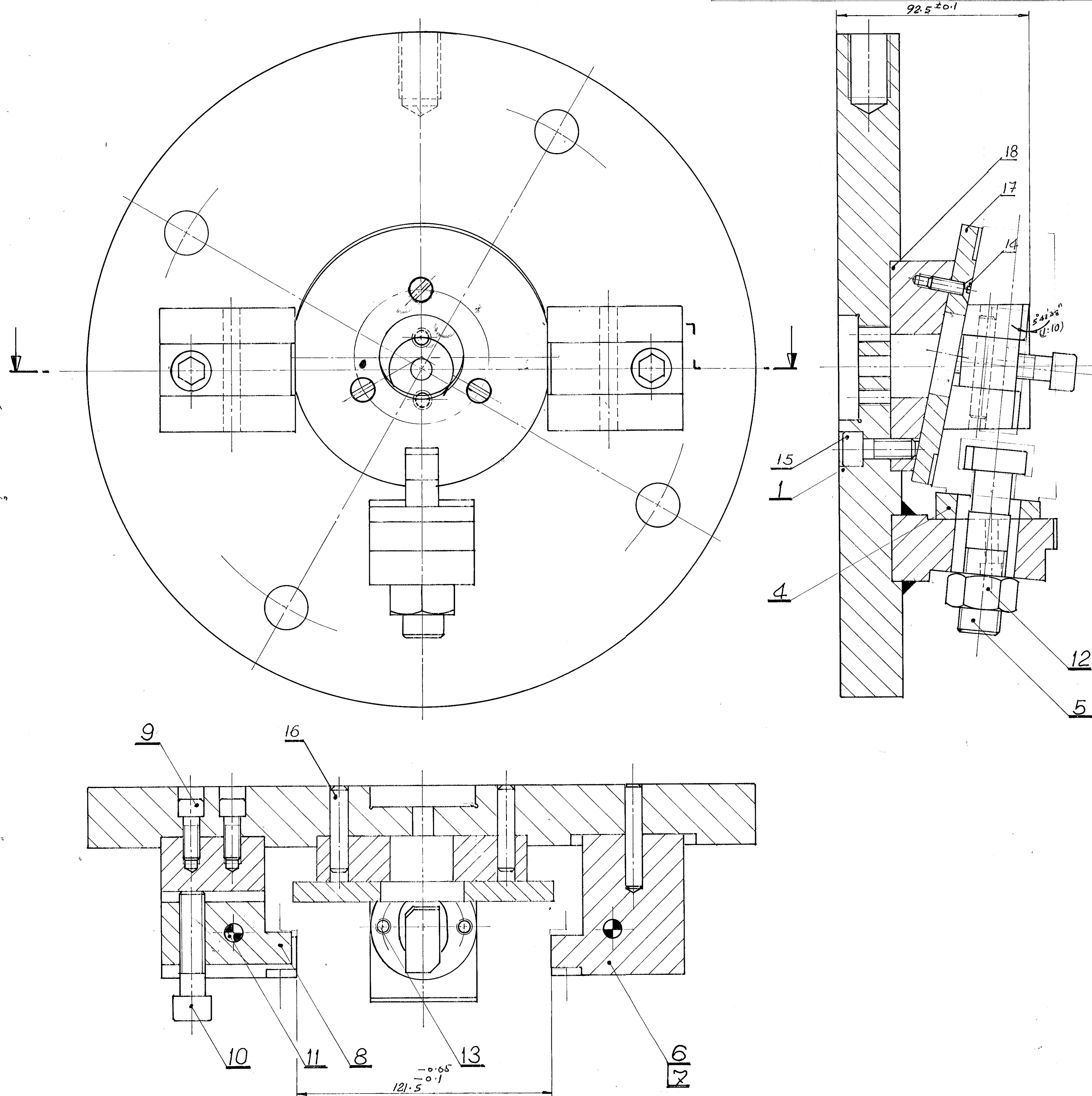
Name-

Membership number-

Seal of Chartered Accountant

10-T-42-16968

TOLERANCE NOT SPECIFIED
SHALL BE AS PER
MEDIUM IS: 2102



1	TAPER BASE		BM. C16	1.0	2074225638	18
1	WEAR PLATE		BM. C16	0.8	3074236845	11
2	CYL. PIN $\phi 8 \times 40$	BPS: 417-02				16
3	ALLEN. SCR. M10X25	BPS: 412-02				15
3	C'SUNK. SCR. M6X20	BPS: 413-05				14
2	ALLEN. SCR. M6X20	BPS: 412-02				13
1	HEX. NUT. M20	BPS: 413-01				12
2	CYL. PIN. $\phi 8 \times 50$	BPS: 417-02				11
2	ALLEN. SCR. M12X50	BPS: 412-02				10
4	ALLEN. SCR. M8X20	BPS: 412-02				9
2	CLAMP		BM. CQ4.5	0.6	40742.39176	8
1	GUIDE L.H.		BM. C16	1.0	30742.33993	7
1	GUIDE R.H.		BM. C16	1.0	30742.33992	6
1	T' BOLT.		BM. CQ4.5	0.2	40742.39175	5
1	TAPER PLATE		BM. CQ4.5	0.2	40742.39170	4
1	WELDMENT (2-3)			19.0	10742.16969	1
COMP. DRG 2.V. N033.03328 COMP. DES. WEDGE ASSY. 4" 150" TYPE & GROUP DV W.C: 4127						

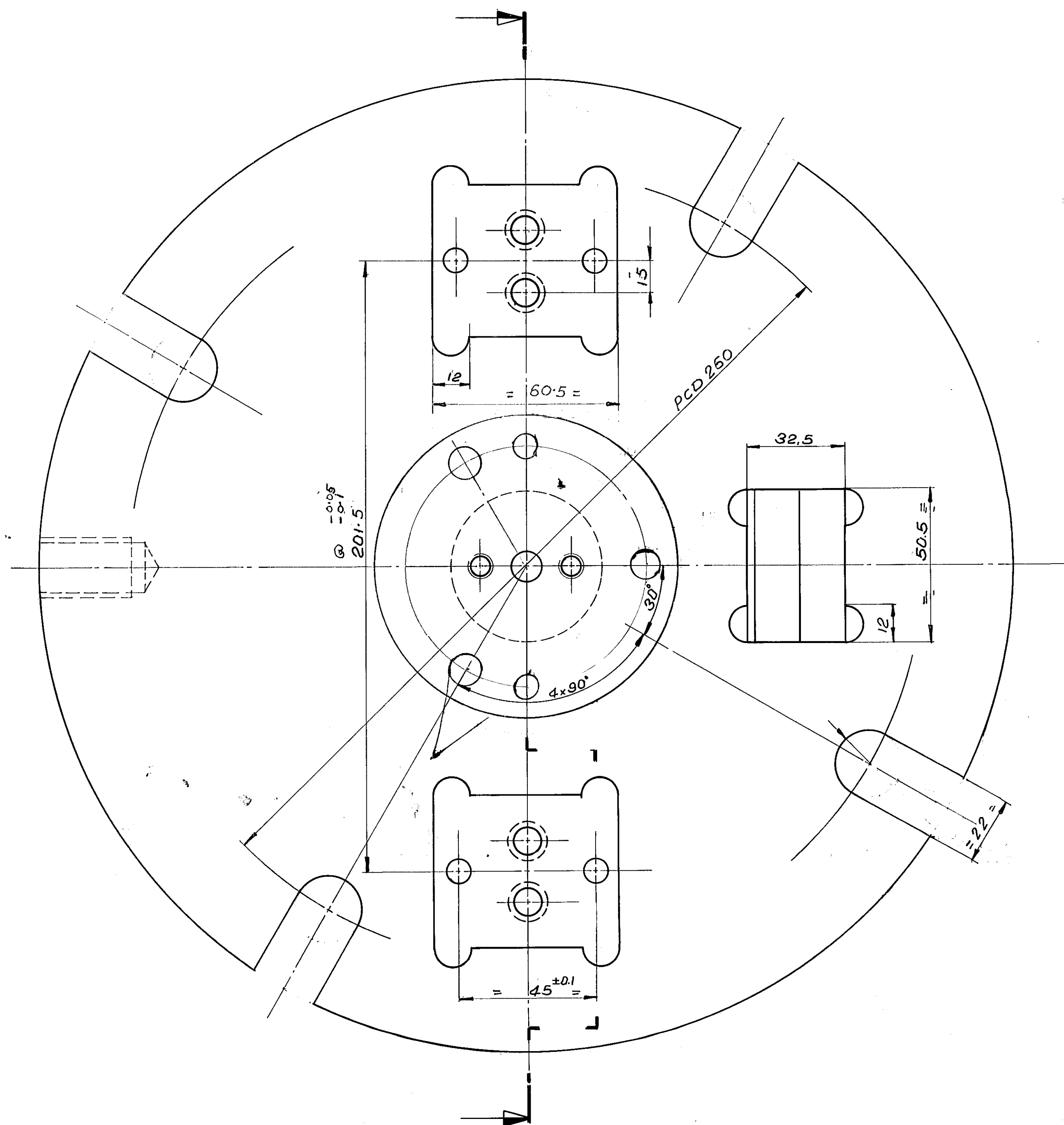
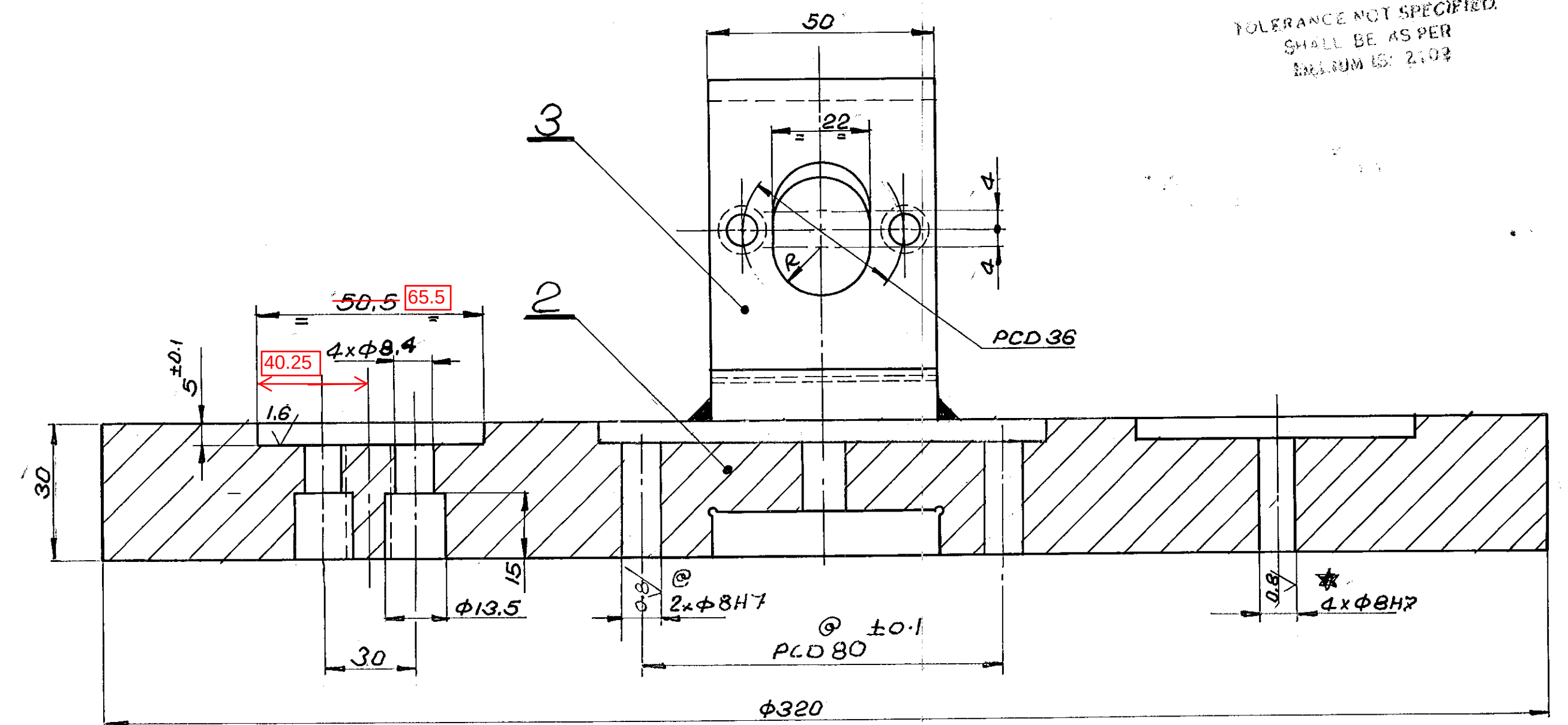
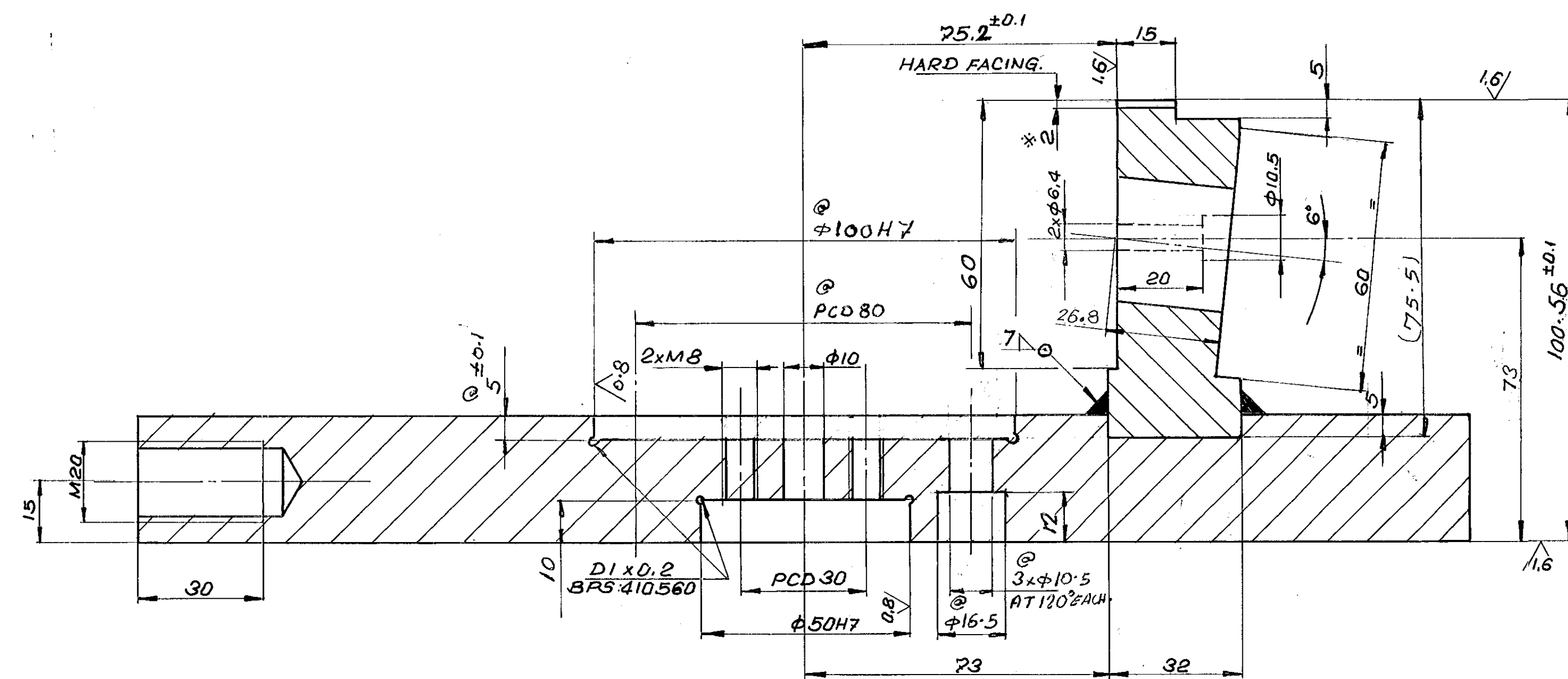
BHARAT HEAVY ELECTRICALS LTD.,
BOILER PLANT UNIT, TIRUCHIRAPALLI-14

FIRST ANGLE	SCALE	DRAWN	K. SAIVAM	TOTAL NET WT (KG)
	1:1	CHECKED		TYPE
		APPROVED		
ALL DIMENSIONS IN MILLIMETRES	DATE	09.12.93	NEW/OLD DRG NO.	RETRACED

CAUTION
THE INFORMATION CONTAINED IN THIS
DRAWING IS THE PROPERTY OF
BHARAT HEAVY ELECTRICALS LTD.,
BOILER PLANT UNIT, TIRUCHIRAPALLI-14
AND SHALL NOT BE USED WITHOUT THEIR
EXPRESS WRITTEN PERMISSION IN ANY
FORM OR PART THEREOF FOR ANY OTHER
PURPOSE THAN FOR WHICH IT IS SENT
TO YOU.

DATE	ALTERED 7.10.1991
220894	CHECKED (K. SAIVAM)
ITGM N03. 12.115.16.17.218	ARE ADDED.
33-113	

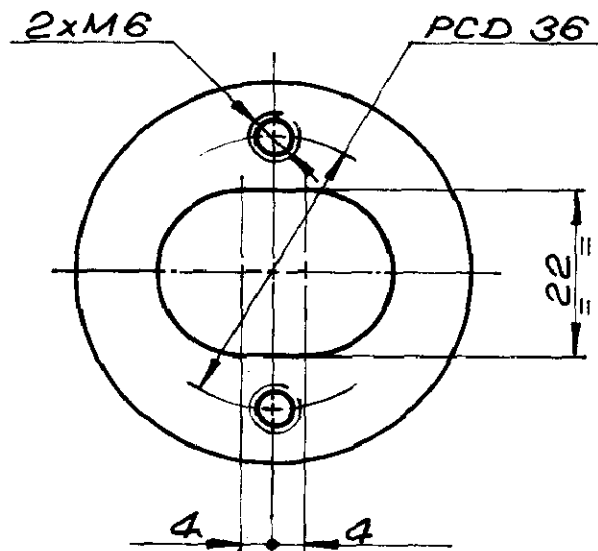
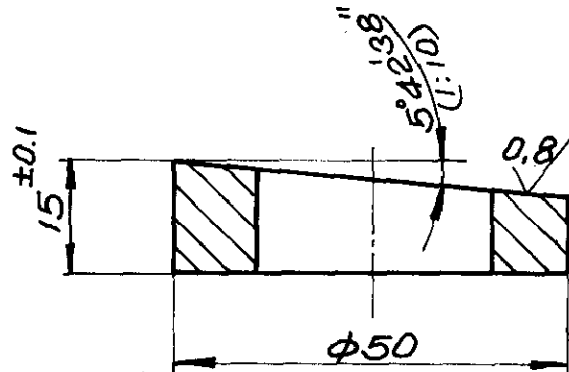
DRAWING NO.	10-T-42-16968
REVISION	



1	32x50x75.6			BM.C16	1.0	SECTION 3
1	φ320x30			BM.C16	1.0	SECTION 2
BHARAT HEAVY ELECTRICALS LTD., BOILER PLANT UNIT, TIRUCHIRAPALLI-14						
FIRST ANGLE	SCALE	DRAWN	CHECKED	DATE	TOTAL NET WT (KG)	19.0
	1:1	K. SAIVAM	K. SAIVAM			
ALL DIMENSIONS IN MILLIMETRES						NEW/OLD DRG. NO.
CAUTION						
THE INFORMATION CONTAINED IN THIS DRAWING IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LTD. BOILER PLANT UNIT, TIRUCHIRAPALLI-14 AND SHALL NOT BE USED WITHOUT THEIR EXPRESS WRITTEN PERMISSION IN ANY FORM OR PART THEREOF FOR ANY OTHER PURPOSE THAN FOR WHICH IT IS SENT TO YOU.						
DRAWING NO.						REVISION
10-T-42-16969						A

HARDEN & TEMPER TO 28^{±2} HRC
CHAMFER ALL SHARP EDGES

3.2// 0.8//



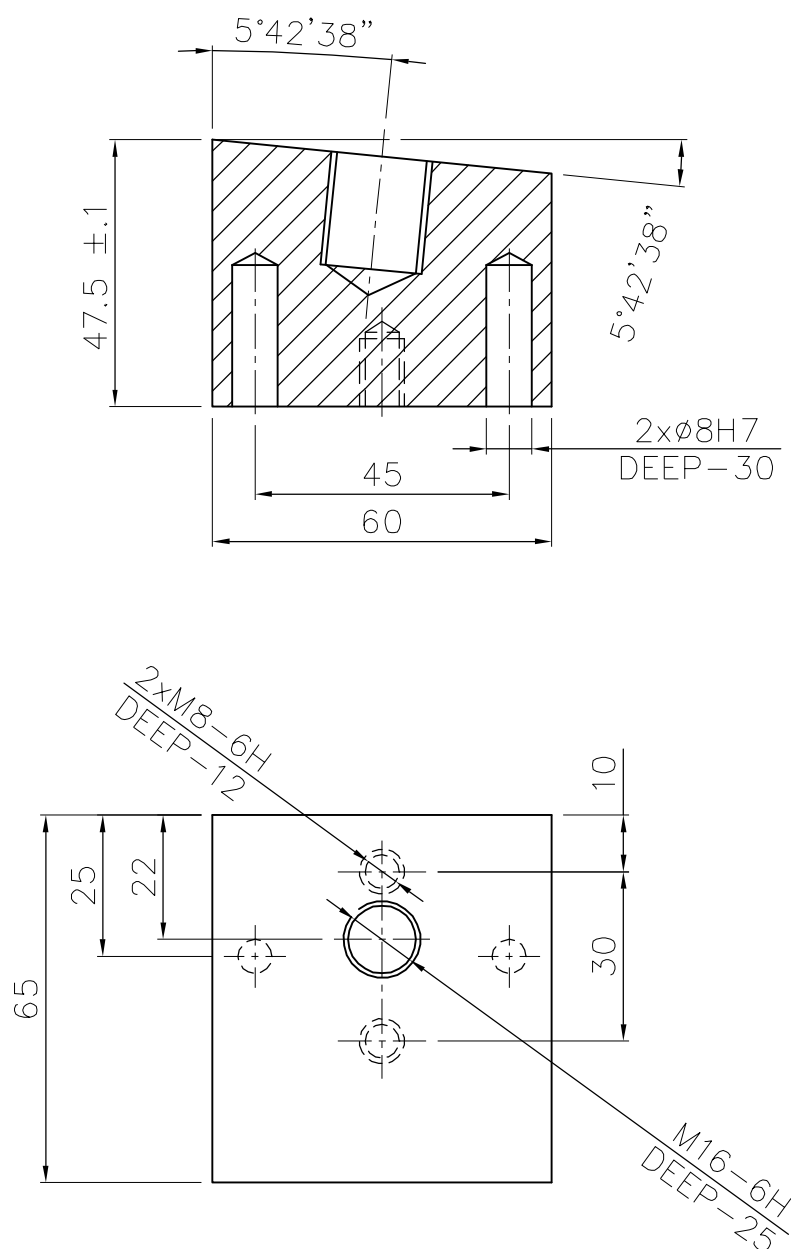
10.T.42-17395/3
10.T.42.16966/4

φ50x15		IS:1875 CP4.		0.2		4	
Q. OF PIECES	NAME - DIMENSIONS	SEMI-PRODUCT	FINAL MATERIAL	INITIAL MATERIAL	SCRAP SORT	NET Wt (kg)	ITEM NO.
REMARKS				TOTAL NET Wt (kg)			
SCALE	DRAWN	K. SAIVAM.	ALTERATIONS		DATE	SIGNA- TURE	ALTERA- TION INDEX
	CHECKED						
	APPROVED						
	STDS. OFFICER	TRANS. COPY NO.					
	DATE	25.08.89					
TYPE		GROUP	OLD DRG.		NEW DRG.		
TITLE		DRAWING NO.					
TAPER PLATE		40-T-42-39170					

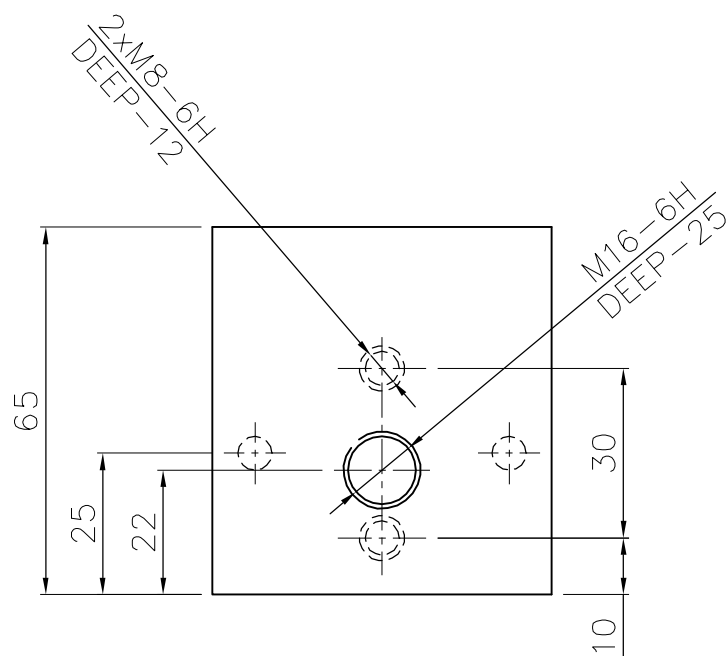
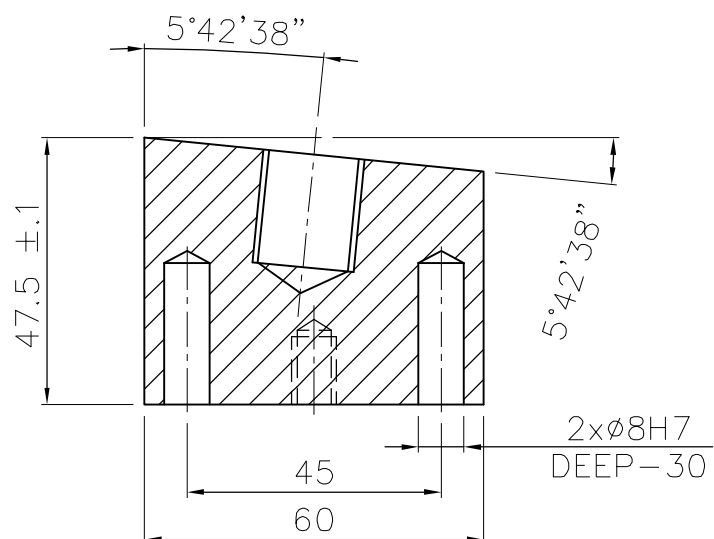


33-116

DRAWING: 30-T-42-33992
COMPONENT: GUIDE-R.H.
MATERIAL: ASTM-A36/BM-C16



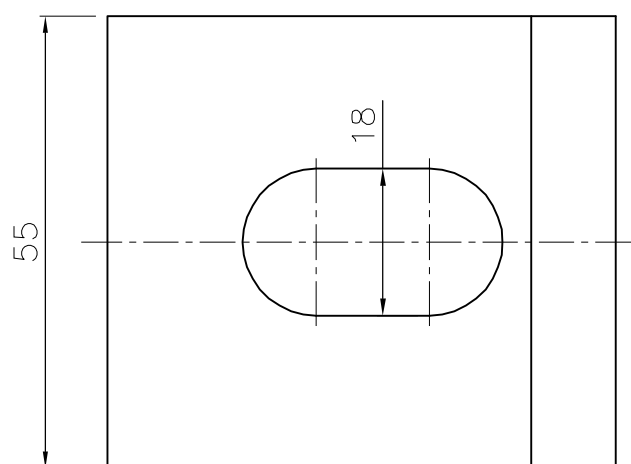
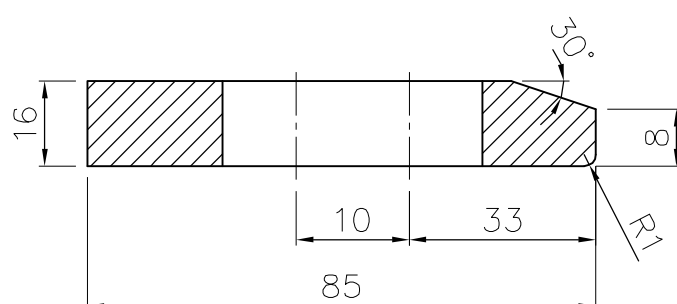
DRAWING: 30-T-42-33993
COMPONENT: GUIDE-L.H.
MATERIAL: ASTM-A36/BM-C16



DRAWING: 40-T-42-39176

COMPONENT: CLAMP

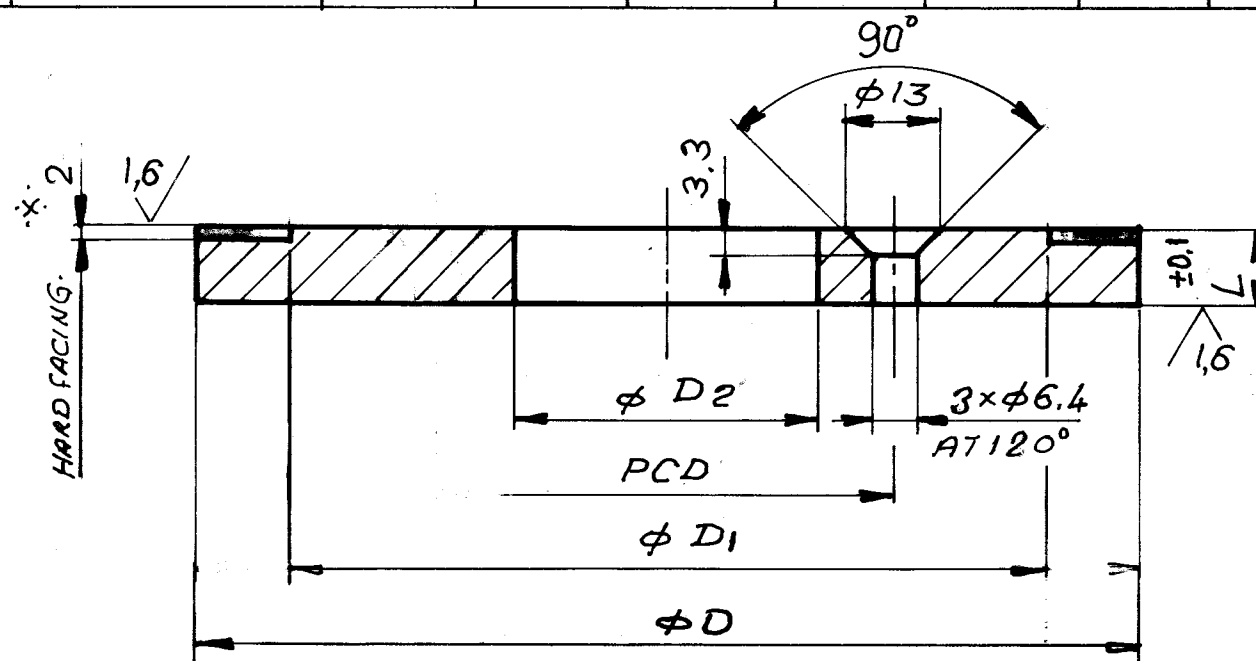
MATERIAL: IS-1875 CL.4

HARDEN AND TEMPER TO 38 HR_c.

*^{±2}
HARD FACING HARDNESS IS TO 35 HRC CHAMFER ALL SHARP EDGES.

3.2/1.6

SLNO	FOR TOOL NO	D	D ₁	D ₂	PCD	L	Wt	REMARKS
1	42-55121-01	125	95	40	60	6	0.5	4" - 300 #
2	42-55129-01	235	190	120	150	10	2.5	8" - 300 #
3	42-55128-01	285	240	140	160	10	3.7	10" - 300 #
4	42-55182-01	340	290	180	200	12	5.5	12" - 300 #
5	42-55127-01	275	240	125	150	10	4.5	10" - 150 #
6	42-54942-01	125	90	40	65	10	0.8	4" - 150 #
7	42-54941-01	95	70	30	50	6	0.3	3" - 300 #
8	42-54941-01	95	70	30	50	21.1	1.0	3" - 150 #
9	42-55131-01 42-55598-00	70	40	20	40	8.0	0.2	2" - 150 # 300 #



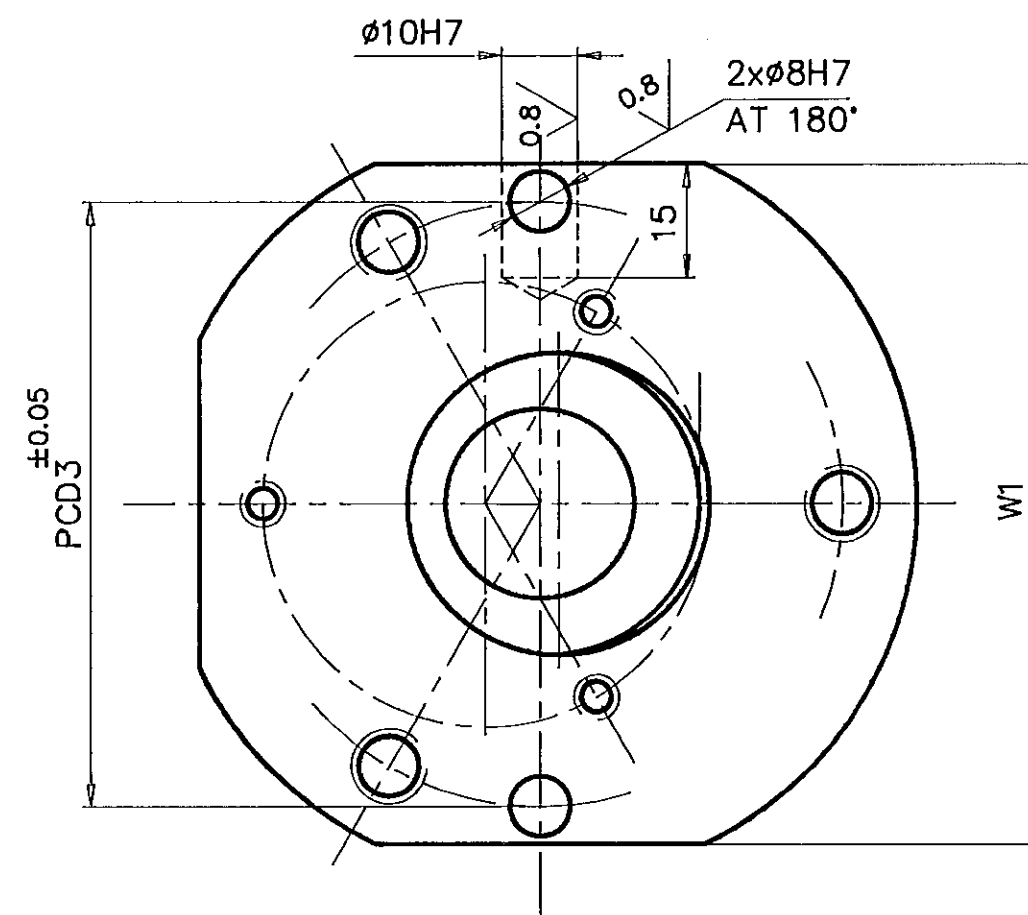
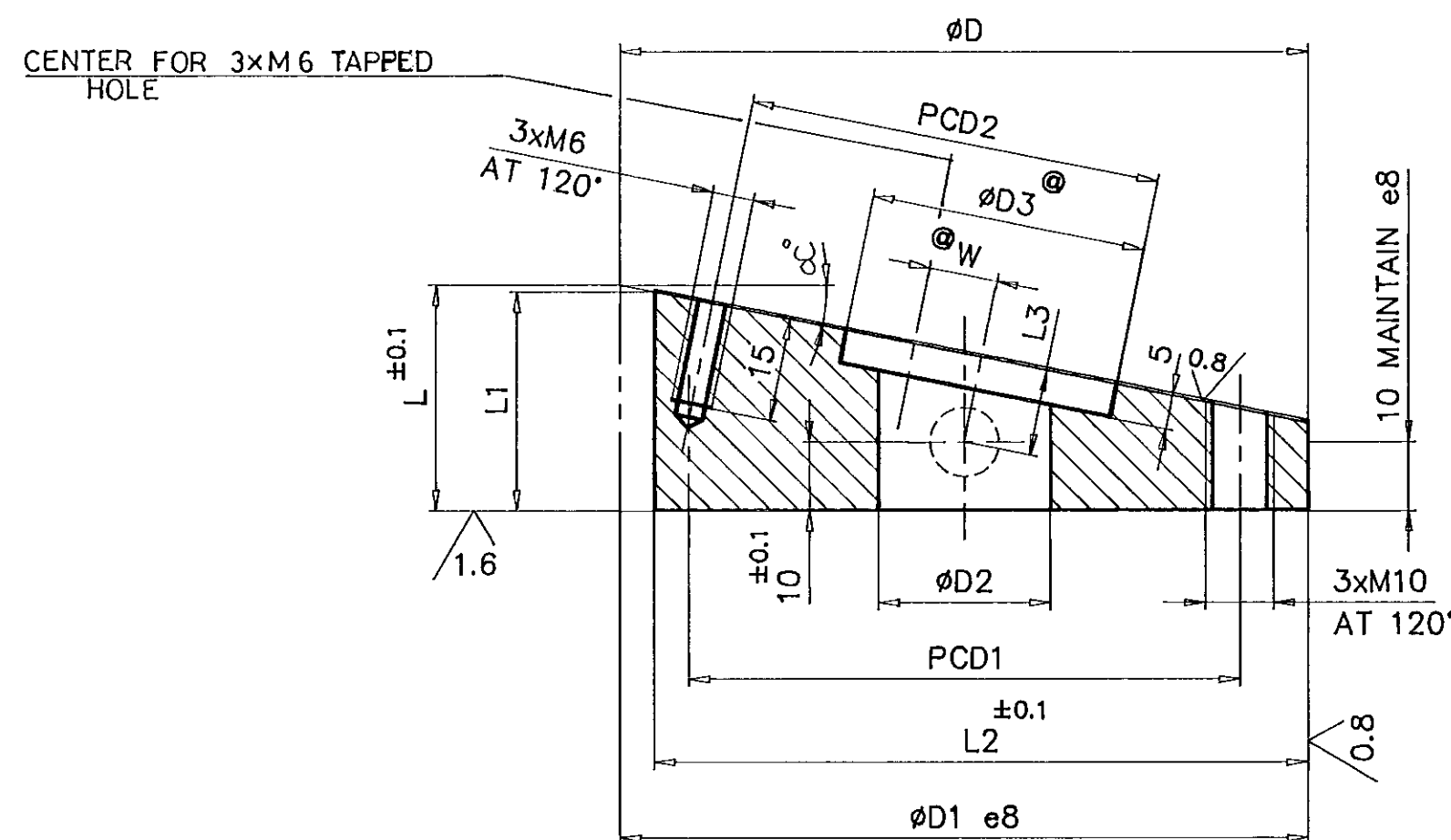
10T 42-18689/6
10T 42-17395/06
10-T-42-17395/17

$\phi D \times L$		IS: 2062 Fe 410A		17					
NO. OF PIECES	DESCRIPTION	SEM. PRO. / SEQ. NO.	INT. MAT. / SEQ. NO.	FINAL MATERIAL	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	DRAWING NO.	ITEM NO.
BHARAT HEAVY ELECTRICALS LTD., BOILER PLANT UNIT, TIRUCHIRAPALLI-14									
FIRST ANGLE	SCALE	DRAWN	PCP 28.3-94		TOTAL NET WT. (kg)				
		CHECKED	Ramon 220394		TYPE				
		APPROVED	V. Balu						
ALL DIMENSIONS IN MILLIMETRES		DATE		NEW/OLD DRG. NO.					
CAUTION THE INFORMATION CONTAINED IN THIS DRAWING IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LTD., BOILER PLANT UNIT, TIRUCHY-14 AND SHALL NOT BE USED WITHOUT THEIR EXPRESS WRITTEN PERMISSION IN ANY FORM OR PART THEREOF FOR ANY OTHER PURPOSE THAN FOR WHICH IT IS SENT TO YOU.									
A		DATE	ALTERED						
ZONE		CHECKED							
33-115									
WEAR PLATE									
DRAWING NO.		30-T-42-36845							
REVISION									

SL. No.	FOR TOOL NO.	D	D1	D2	D3 [⊙]	L	L1	L2	L3	PCD1	PCD2	PCD3	W [⊙]	W1	α°	Wt.		REMARKS.
1	42-55121-01	100	100	25	40	32.8	31.8	95	12.55	80	60	80	9.91	90	11°25'16" (1:5)	1.3		
2	42-55129-01	200	200	100	115	60.8	59.8	195	30.20	170	150	170	15.54	190	11°25'16" (1:5)	7.3		
3	42-55128-01	220	220	110	125	62.8	61.8	215	30.20	170	160	170	16.54	210	11°25'16" (1:5)	8.9		
4	42-55182-01	250	250	160	175	41.4	40.9	245	18.80	220	200	220	9.68	240	5°43'28" (1:10)	6.3		
5	42-55127-01	200	200	125	140	55.7	54.7	195	25.26	150	150	150	14.75	190	11°25'16" (1:5)	5.2		
6	42-54942-01	100	100	30	45	30.6	29.6	95	10.39	80	65	80	9.18	95	11°25'16" (1:5)	1.0		
7	42-54941-01	95	95	20	35	27.0	26.0	95	7.35	75	50	75	9.87	90	11°25'16" (1:5)	0,9		

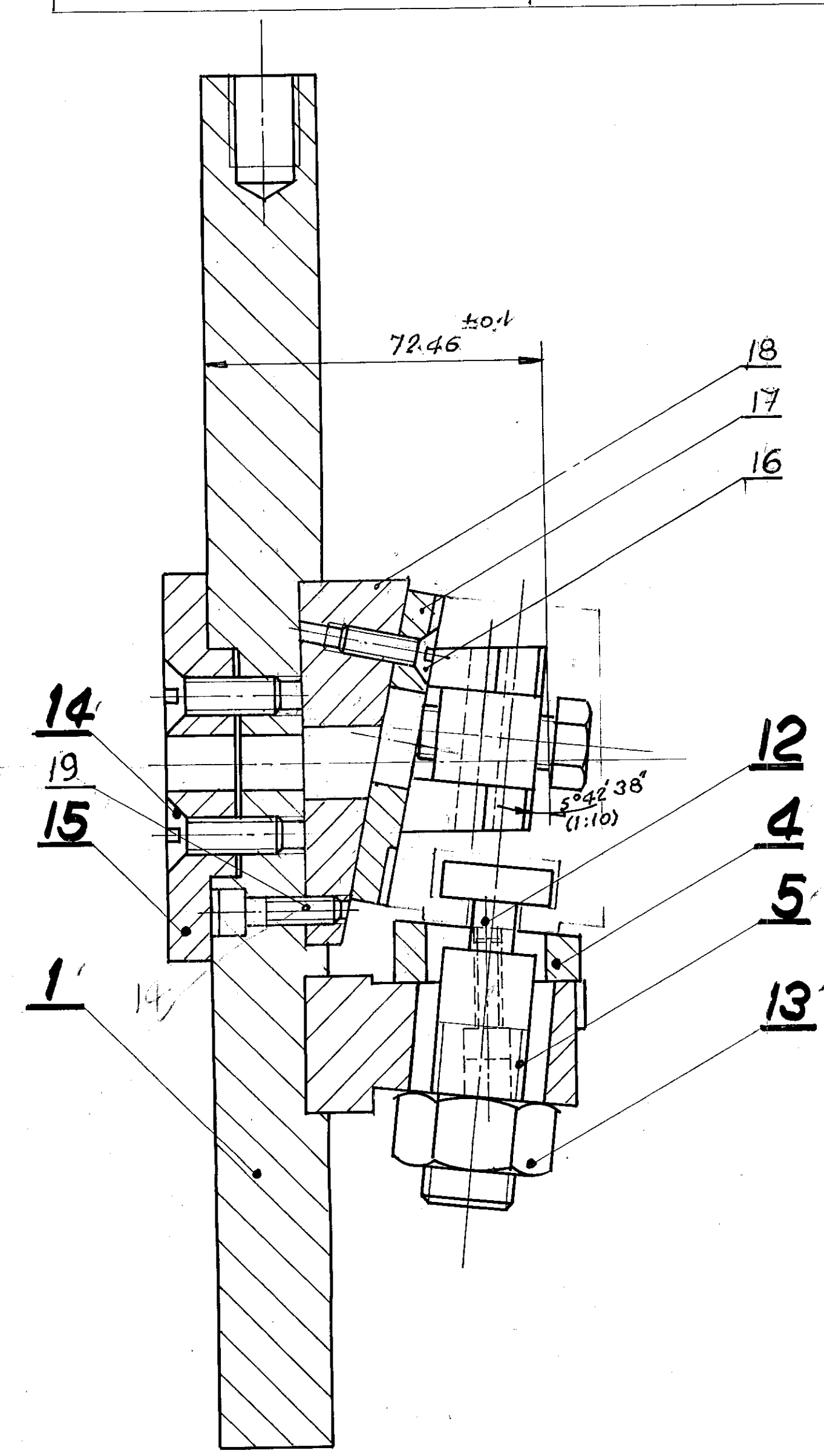
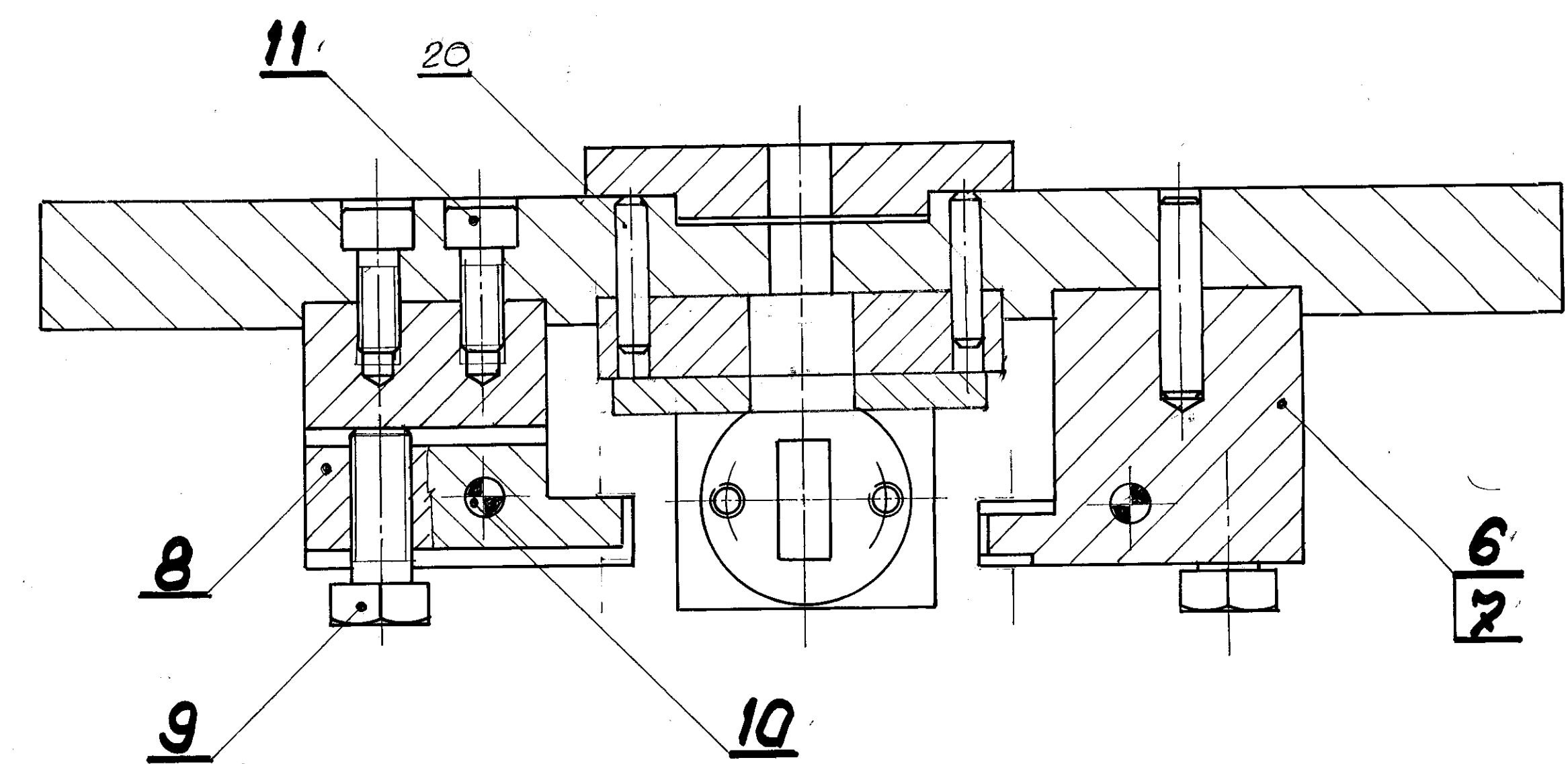
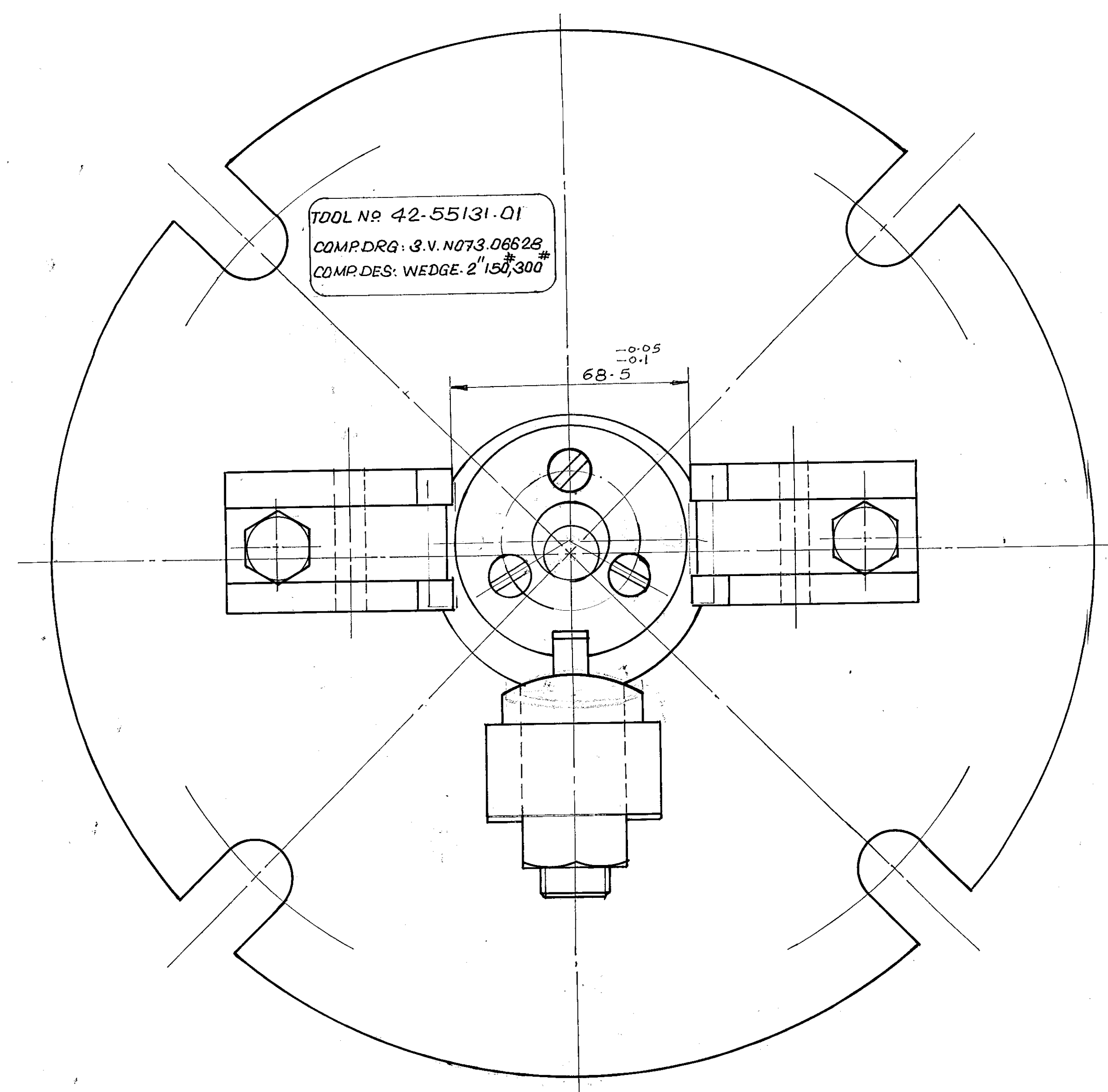
80-120 e8	-0.072 -0.126
180-250 e8	-0.100 -0.172
10 H7	+0.015 0.0

80-120 e8	-0.072 -0.126
180-250 e8	-0.100 -0.172
10 H7	+0.015 0.0



ØDXL				13:2062 Fe 410B						18	
NO. OF PIECES	DESCRIPTION	SEAL. PRO/SEQ. NO.	INT. MAT/SEQ. NO.	FINAL MATERIAL	SCRAP SORT	NET WT.(KG)	GROSS WT.(KG)	DRAWING NO		ITEM NO.	
										10-T-42-17385	
BHARAT HEAVY ELECTRICALS LTD., BOILER PLANT UNIT, TIRUCHIRAPALLI-14											
FIRST ANGLE.		SCALE	DRAWN	K.SAIVAM	TOTAL NET WT.KG						
		NTS	CHECKED	<i>V. Balan</i>	TYPE						
			APPROVED								
ALL DIMENSIONS IN MILLIMETRES.			DATE	05.08.94	NEW/OLD DRG NO.						
CAUTION THE INFORMATION CONTAINED IN THIS DRAWING IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LTD BOILER PLANT UNIT, TIRUCHY-14 AND SHALL NOT BE USED WITHOUT THEIR EXPRESS WRITTEN PERMISSION IN ANY FORM OR MANNER THEREOF FOR ANY OTHER PURPOSE THAN FOR WHICH IT IS SENT TO YOU.				TITLE.							
				TAPER BASE							
				TAPER BASE							
				DRAWING NO.				REVISION			
				20-T-42-25638							
				A							

A	DATE	ALTERED	K.S.
	05.07.94	CHECKED	VRBARSU
ZONE	DIMNS. 9.91,15.54,16.54,9.68,14.75		
@	9.18 & 9.87 WERE 7.4,9.5,10.5,7.8		
	9.7,7.1 & 8.4 RESP.		
	DIMN. ØD3 ADDED.		



@ 2	CYL PIN $\phi 6 \times 30$	BPS:417-02					20
@ 3	ALLEN SCR. M6 $\times 20$	BPS:412-02					19
@ 1	TAPER BASE	BM.C16	0.7		30T42369/4		18
@ 1	WEAR PLATE	BM.C16	0.2		30T42368/45		17
@ 3	C'SUNK SCREW M6 $\times 20$	BPS:412-05					16
1	LOCATOR	SL.Nº 1	BM.C16	0.45	20T5016850		15
2	C'SUNK SCR. M8 $\times 20$	BPS:412-05					14
1	HEX.NUT M20	BPS:413-01					13
2	ALLEN.SCR. M6 $\times 20$	BPS:412-02					12
4	ALLEN.SCR. M8 $\times 20$	BPS:412-02					11
2	CYLINDRICAL PIN $\phi 8 \times 40$	BPS:417-07					10
2	HEX.SCR. M12 $\times 25$	BPS:412-22					9
2	CLAMP	BM.CQ45	0.4		40T4239169		8
1	GUIDE. L.H.	BM.C16			30T4235773		7
1	GUIDE. R.H.	BM.C16			30T4235772		6
1	T-BOLT.	BM.CQ45	0.2		40T4240721		5
1	TAPER PLATE.	BM.CQ45	0.2		40T4240720		4
1	WELD MENT. (2-3)				13-5	10T4217425	1
COMP.DRG: 3.V. N073.06628 COMP.DES: WEDGE-2"150/300# TYPE&GROUP: DV. W.C: 4128 USE WITH:							

MARK: 42-55131-01

BHARAT HEAVY ELECTRICALS LTD.,
BOILER PLANT UNIT, TIRUCHIRAPALLI-14

FIRST ANGLE	SCALE: 1:1	DRAWN: K.SAIVAM	TOTAL NET WT (KG)
CHECKED: TRAMAR 050892	DATE: 04.08.92	TYPE: NEW/OLD DRG NO.	
APPROVED:			

ALL DIMENSIONS IN MILLIMETRES

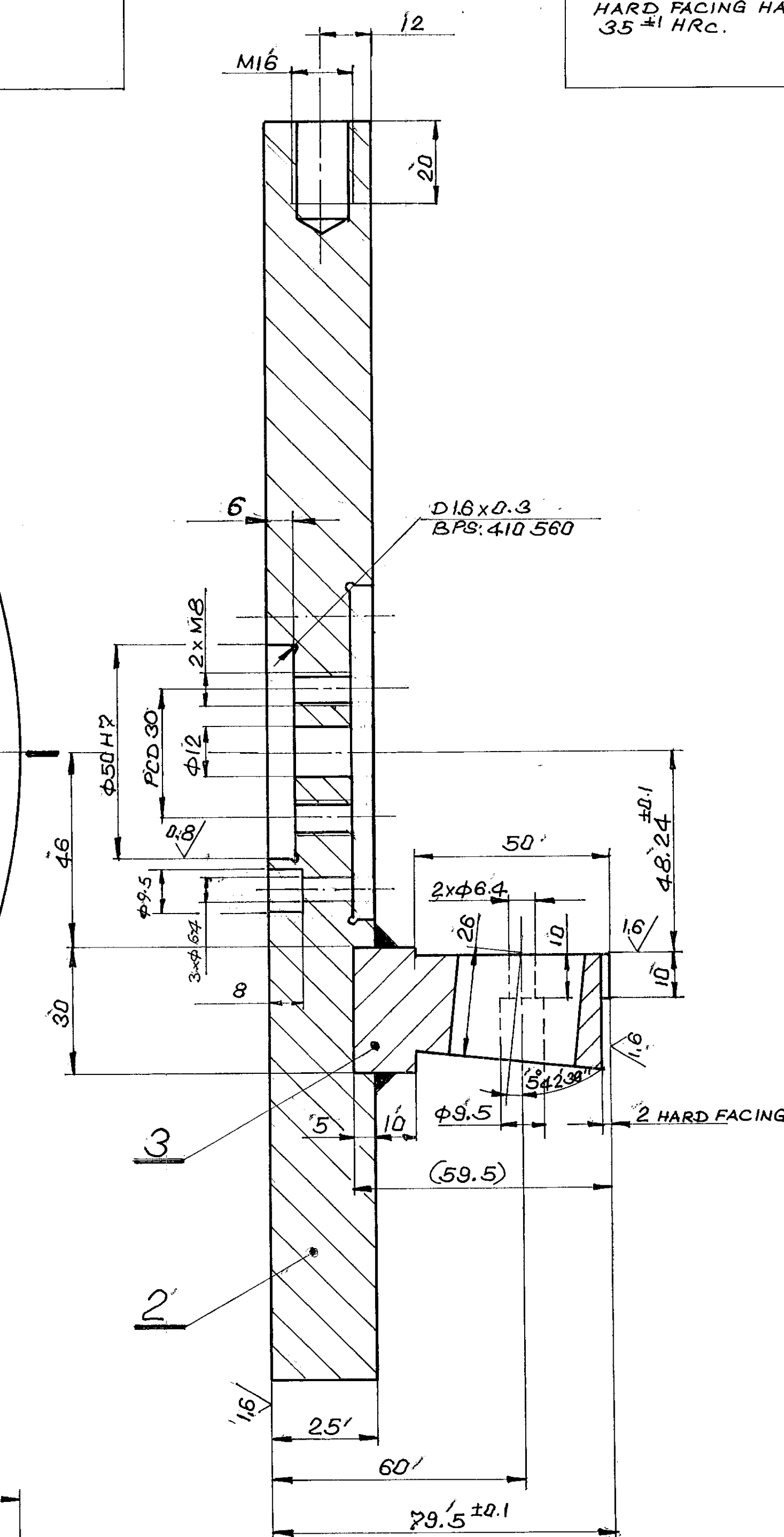
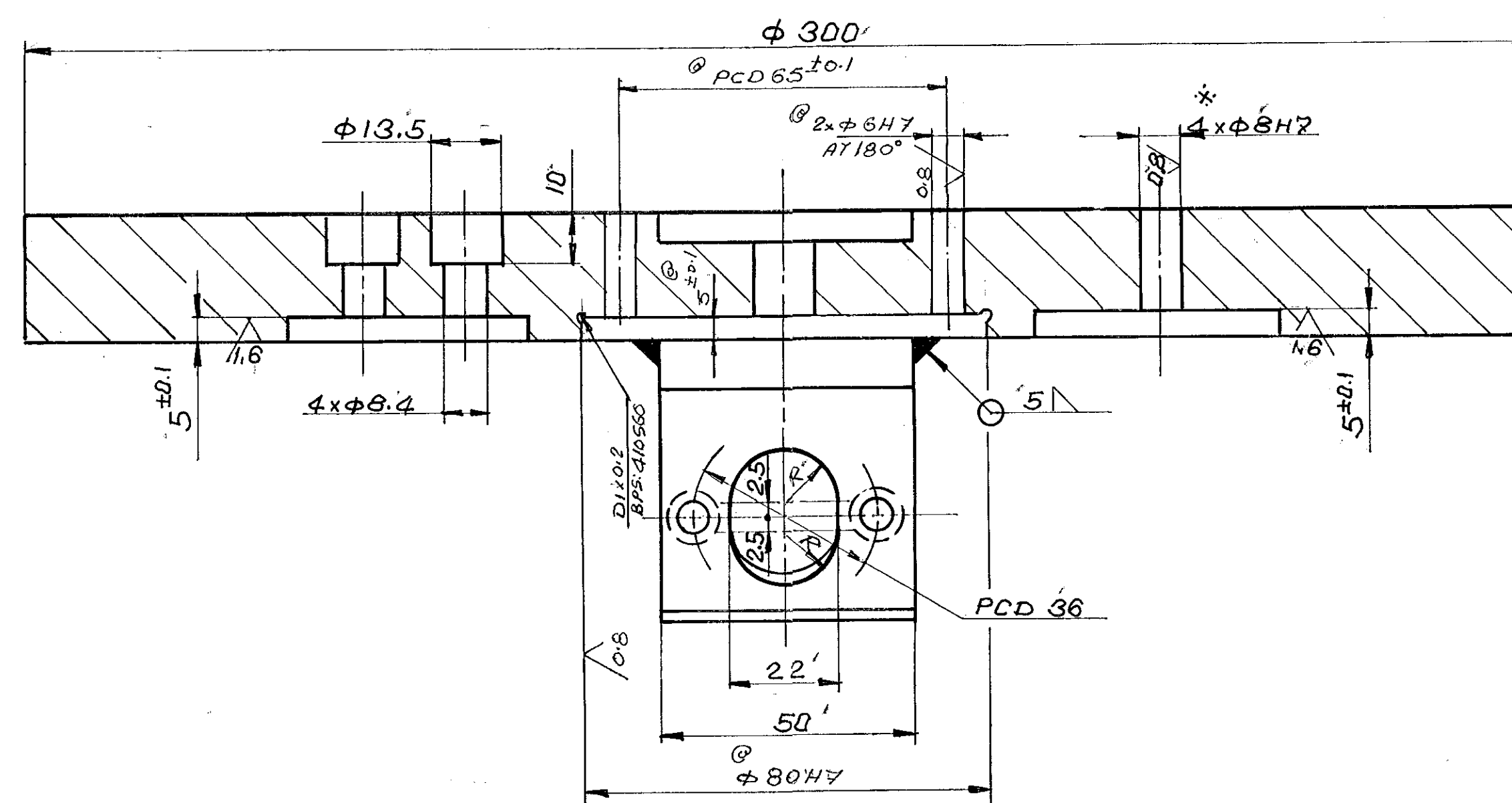
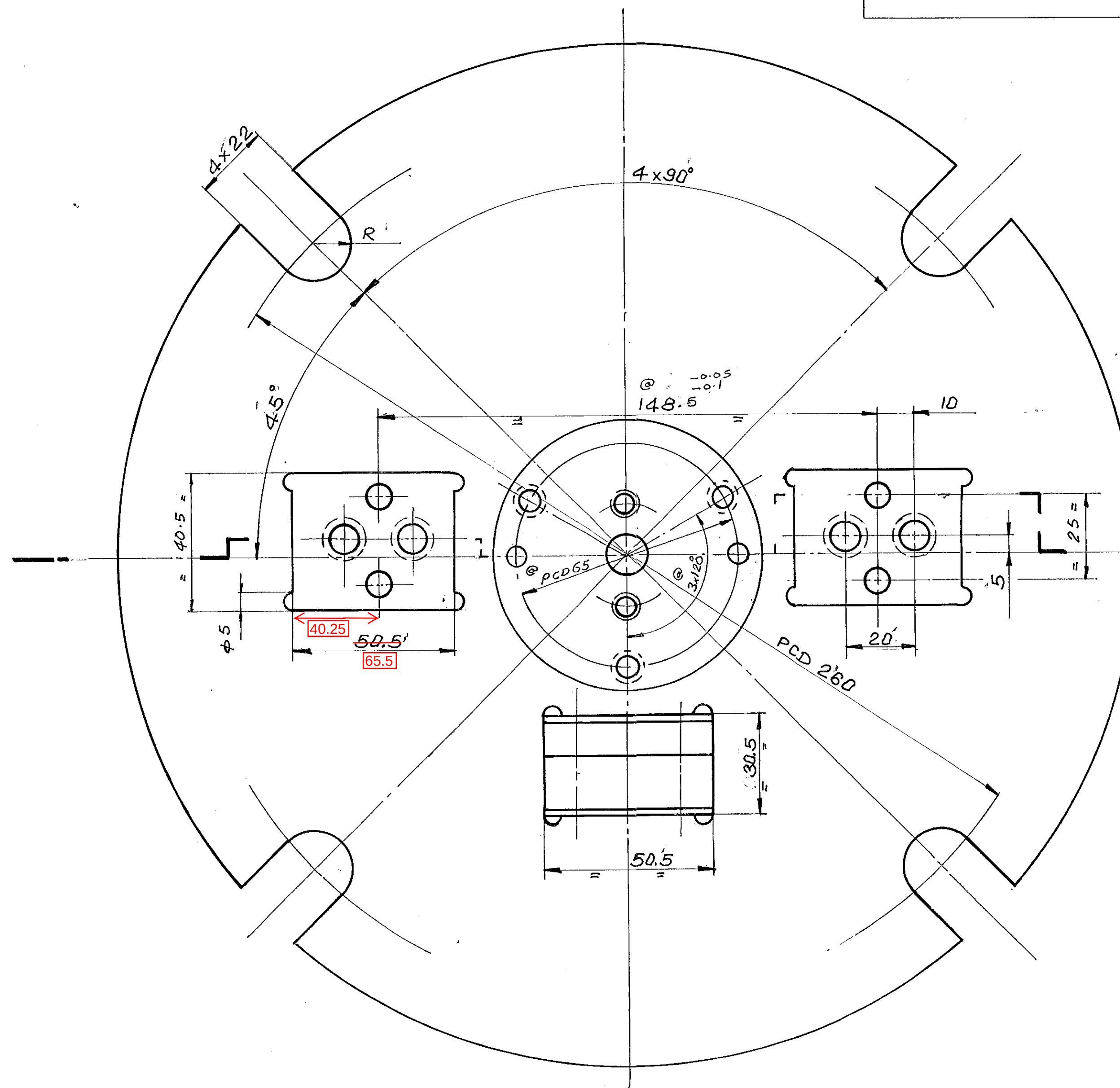
CAUTION
 THE INFORMATION CONTAINED IN THIS DRAWING IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LTD. AND SHALL NOT BE USED WITHOUT THEIR EXPRESS WRITTEN PERMISSION IN ANY FORM OR PART THEREOF FOR ANY OTHER PURPOSE THAN FOR WHICH IT IS SENT TO YOU.

DRAWING NO: **10-T-42-17424**

REVISION: **A**

DATE: 22/05/94
 CHECKED: TDO
 ITEM Nos: 16, 17, 18, 19 & 20
 ARE ADDED.

TOLERANCE NOT SPECIFIED
 SHALL BE AS PER
 MEDIUM IS: 1:102



* $\phi 8H7$ TO BE DRILLED WITH ITEM NO 6 & 7. HARD FACING HARDNESS IS TO 35 ± 1 HRC.

32/ 16/ 08/

TOLERANCE NOT SPECIFIED SHALL BE AS PER MEDIUM IS. 2102

$\phi 8H7$	+0.015 0.0
$\phi 50H7$	+0.025 0.0
$80H7$	+0.030 0.0
$6H7$	+0.012 0.0

1	30x50x60			BM.C16	0.5		3
1	$\phi 300 \times 25$			BM.C16	13.0		2
10-T-42-1742							

BHARAT HEAVY ELECTRICALS LTD.,
BOILER PLANT UNIT, TIRUCHIRAPALLI-14

FIRST ANGLE	SCALE	DRAWN	K. SAIVAM.	TOTAL NET WT (KG)	13.5
	1:1	CHECKED	TRAMPAL 050892	TYPE	
		APPROVED		DATE	30.07.92
ALL DIMENSIONS IN MILLIMETRES					

CAUTION
THE INFORMATION CONTAINED IN THIS DRAWING IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LTD., BOILER PLANT UNIT, TIRUCHIRAPALLI-14 AND SHALL NOT BE USED WITHOUT THEIR EXPRESS WRITTEN PERMISSION IN ANY FORM OR PART THEREOF FOR ANY OTHER PURPOSE THAN FOR WHICH IT IS SENT TO YOU.

WELDMENT.

Drawing No. 10-T-42-17425 A

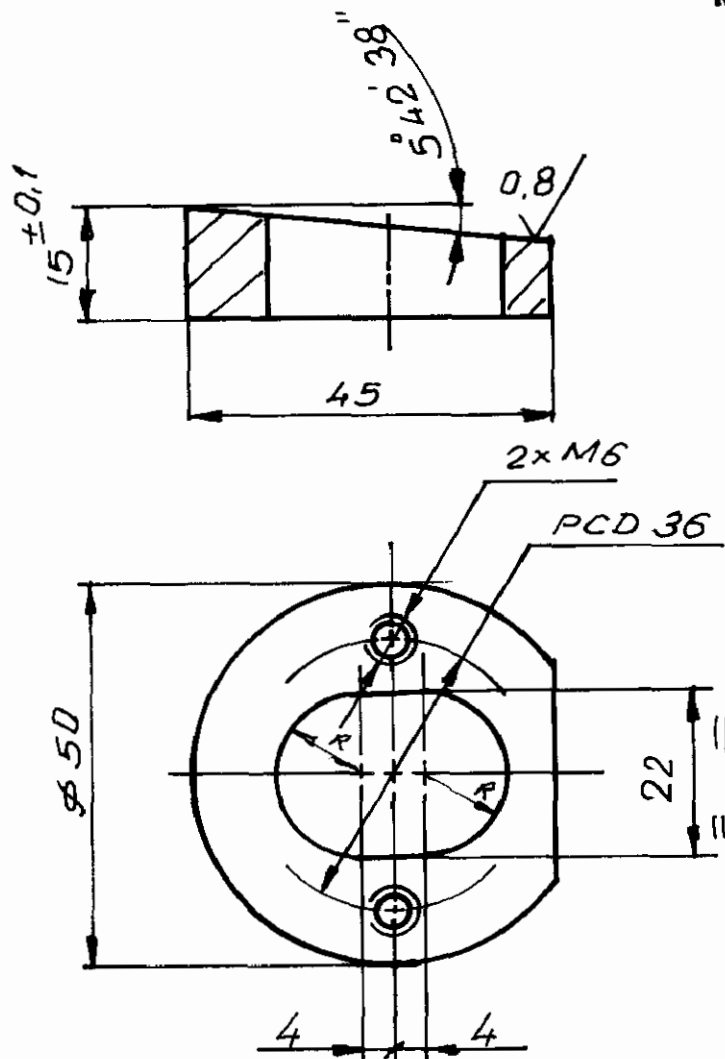
A	DATE	ALTERED BY RAMA.
	300594	CHECKED TH <u> </u> OL
ZONE	DIMNS. ARE ADDED	
@	148.5 ^{-0.05} _{-0.1} WNS 148 ⁺⁰	

HARDEN AND TEMPERTO
28 ± 2 HRC.

CHAMFER ALL SHARP EDGES.

3.2/ 0.8/

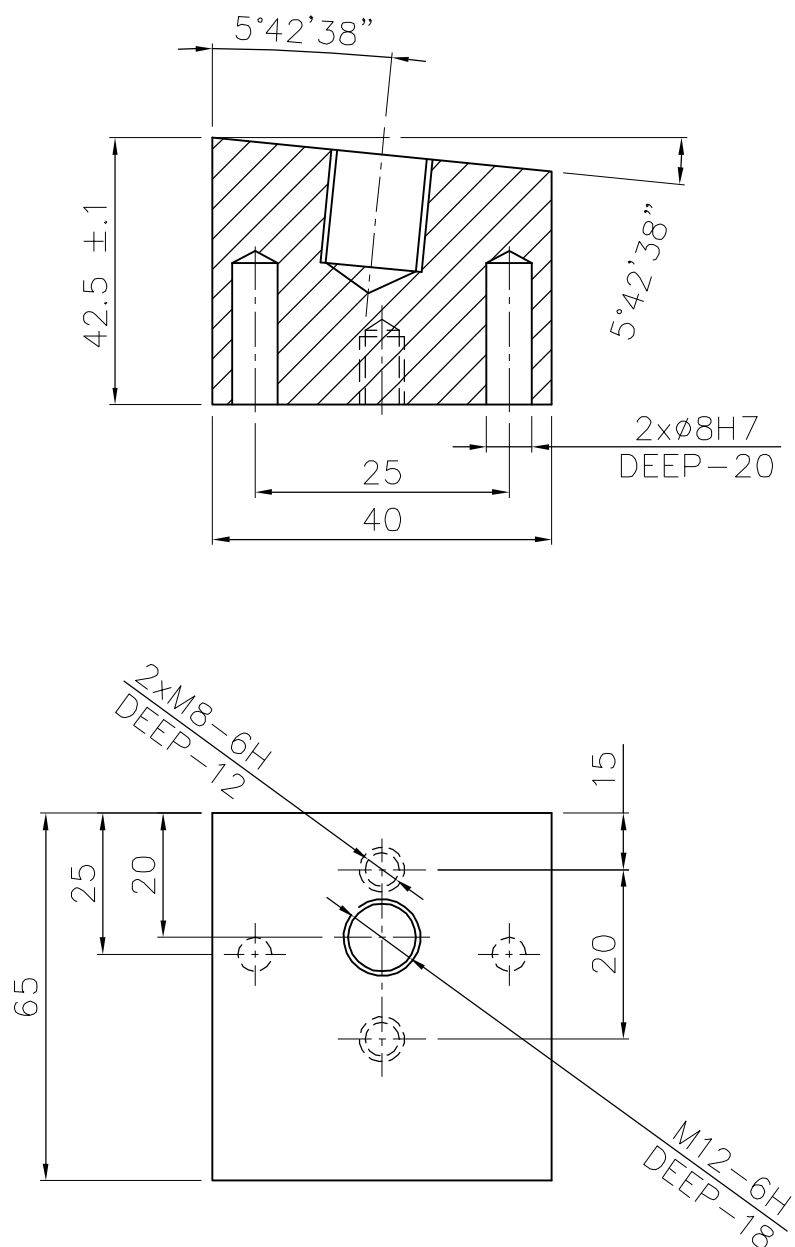
TOLERANCE NOT SPECIFIED
SHALL BE AS PER
MEDIUM IS 210.



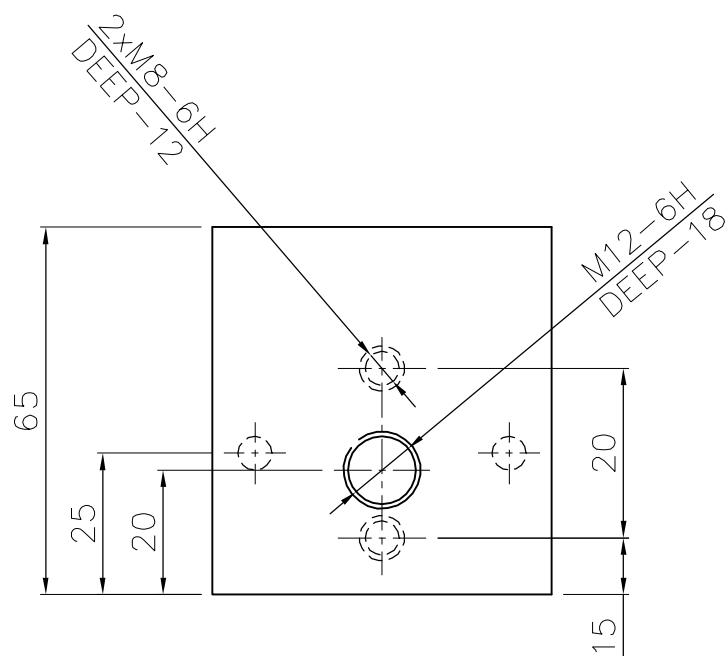
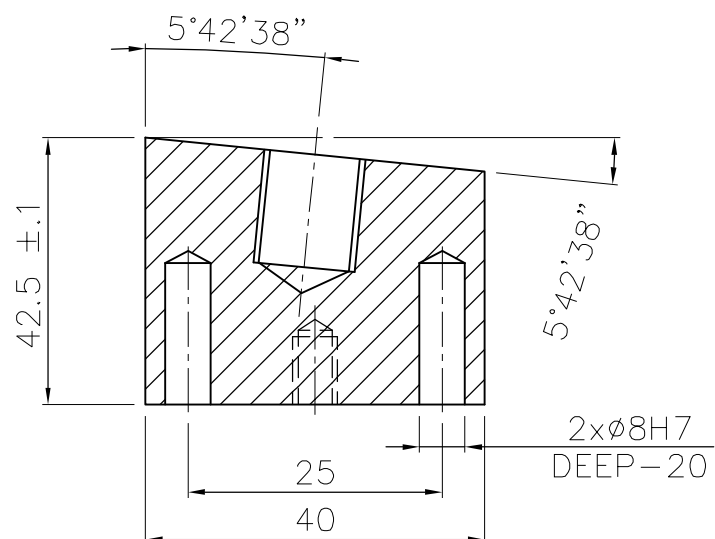
10-T-42-17424

NO. OF PIECES		NAME - DIMENSIONS		SEMI - PRODUCT	FINAL MATERIAL	INITIAL MATERIAL	SCRAP SORT	NET Wt (kg)	GROSS Wt (kg)	DRAWING NO.	ITEM NO.
		ϕ 50 x 15			BM. CQ45			0.2			4
REMARKS						TOTAL NET Wt (kg)					
SCALE 1:1	DRAWN	PCP 31-7-92				ALTERATIONS		DATE	SIGNA- TURE	ALTERA- TION INDEX	
	CHECKED	TRANGE 05 08 92									
	APPROVED										
	STDS. OFFICER					TRANS. COPY NO.					
	DATE										
TYPE		GROUP		OLD DRG.		NEW DRG					
TITLE				DRAWING NO.							
33-116		TAPER PLATE		40-T-42-40720							

DRAWING: 30-T-42-35772
COMPONENT: GUIDE-R.H.
MATERIAL: ASTM-A36/BM-C16

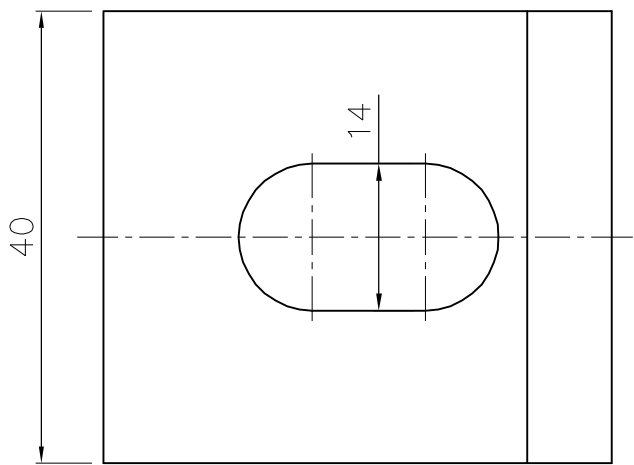
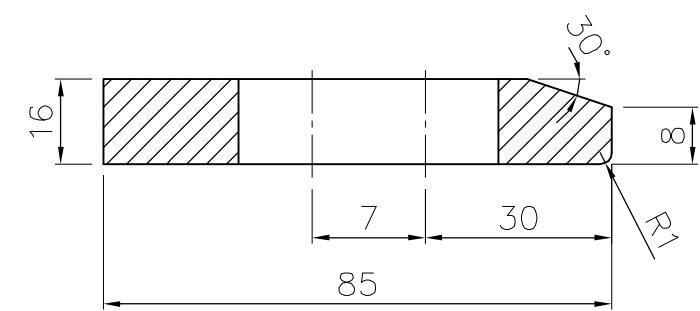


DRAWING: 30-T-42-35773
COMPONENT: GUIDE-L.H.
MATERIAL: ASTM-A36/BM-C16



DRAWING: 40-T-42-39169
COMPONENT: CLAMP
MATERIAL: IS-1875 CL.4

HARDEN AND TEMPER TO 30 HRc.



09891-05-L-02

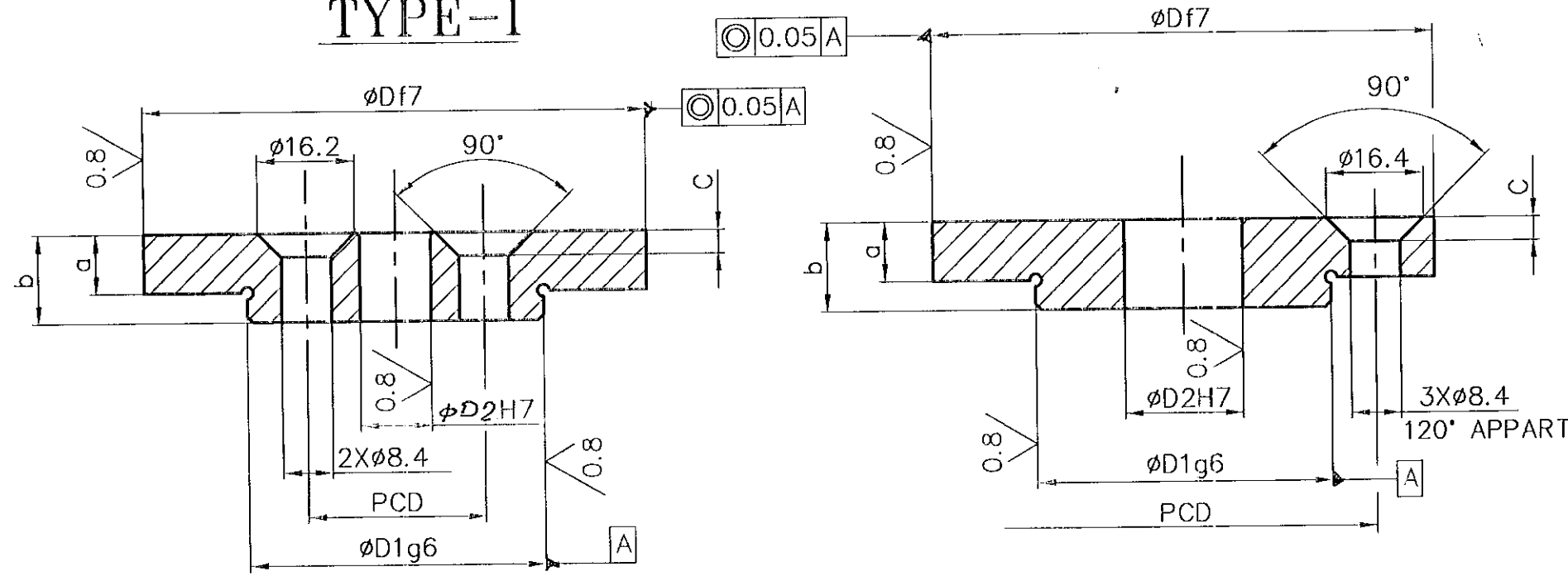
DRAWING NO.

TYPE-II

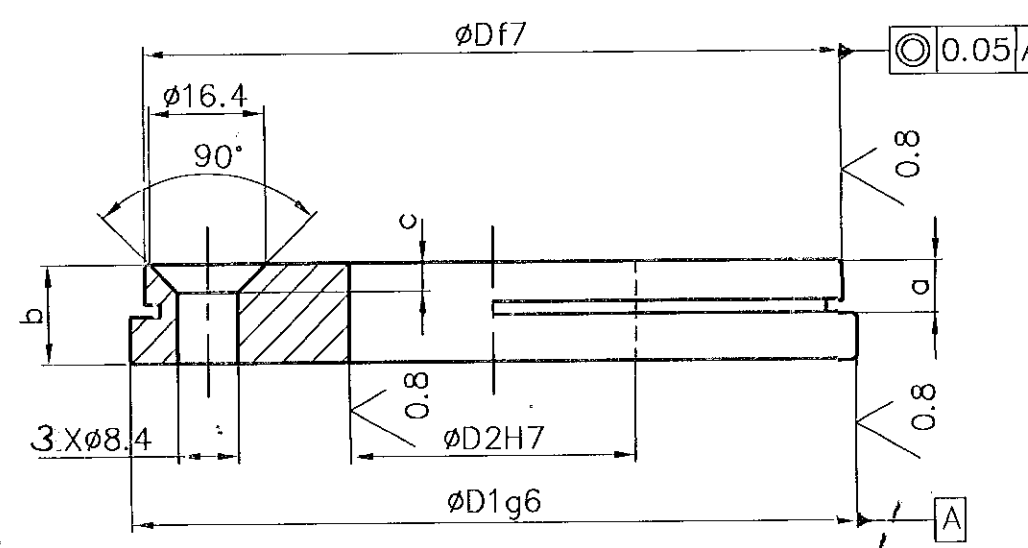
---CASE CARBURISE TO A DEPTH OF 0.8mm
AND HARDEN & TEMPER TO 55 HRC.

3.2/0.8

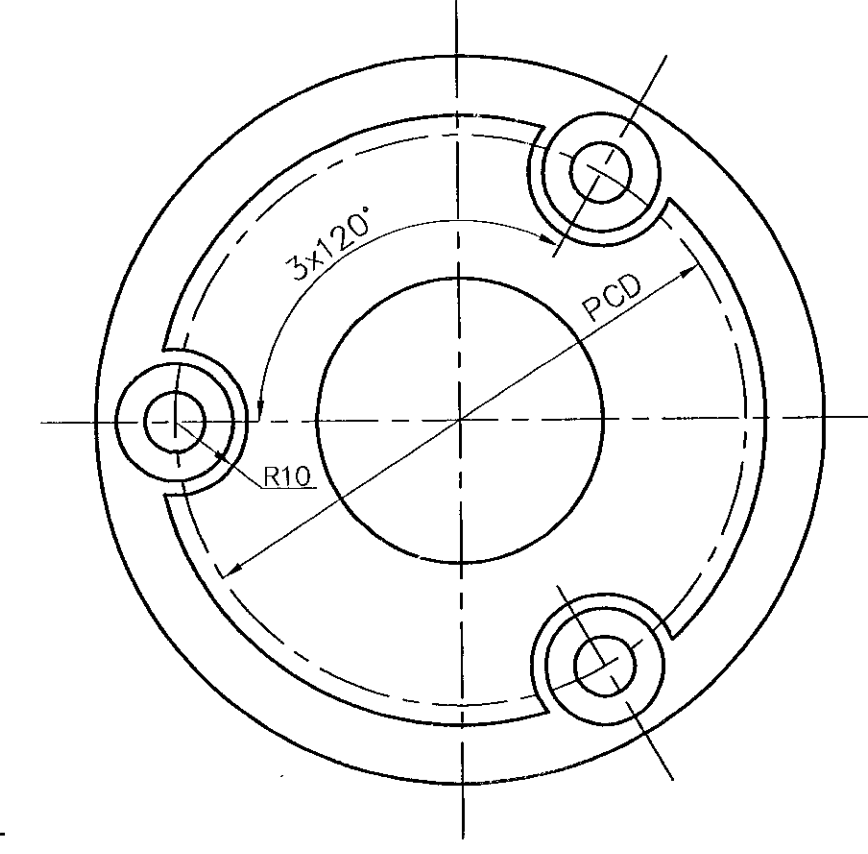
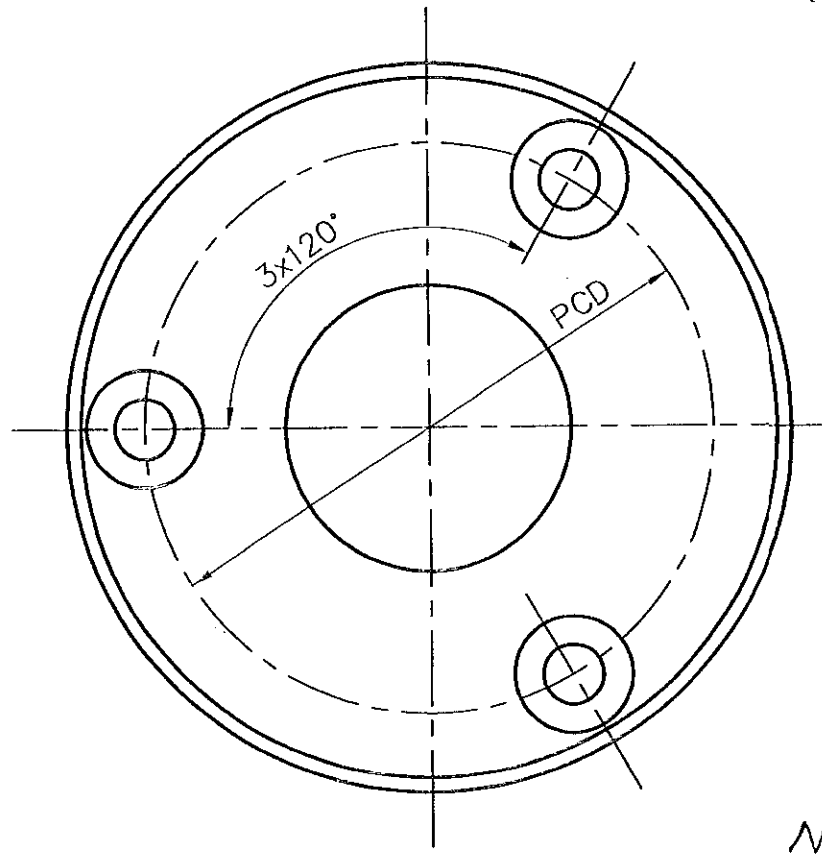
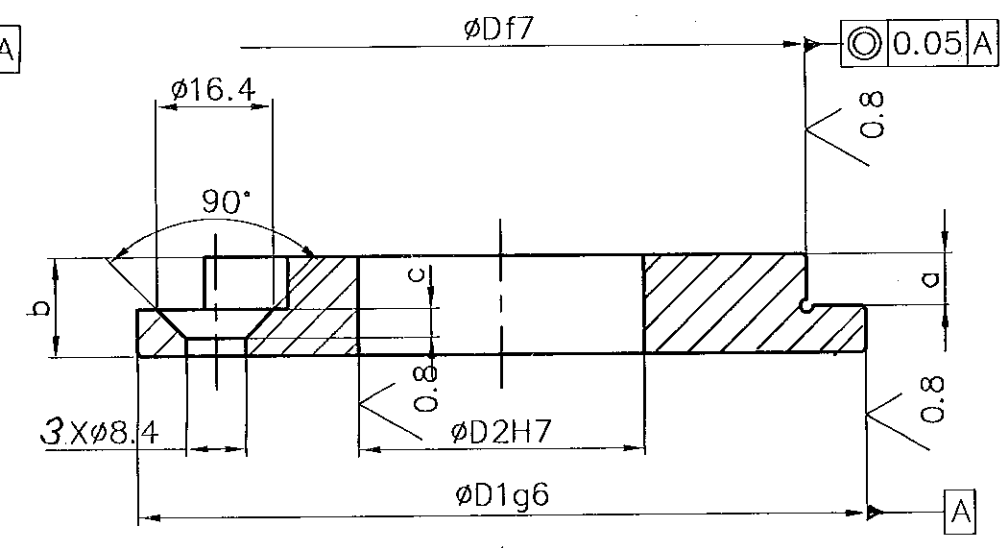
TYPE-I



TYPE-III



TYPE-IV



NOTE:-
P - PREFERRED
NP - NOT PREFERRED

SL. No:	TOOL No:	TYPE	$\phi Df7$	$\phi D1g6$	$\phi D2H7$	a	b	c	PCD	No OF HOLES	Wt IN Kg	M/C	REMARKS
01	50-52125-00	I	85	50	12	10	15	4	30	2	0.49	LB 20	P
02	50-52130-00	II	85	50	20	10	15	4	65	3	0.46	LB 20	NP
03	50-52135-00	IV	85	100	40	10	20	4	80	3	0.79	LB 20	NP
04	50-52140-00	I	98	50	12	3.5	8.5	4	30	2	0.25	SK 12	P
05	50-52145-00	III	98	100	40	3.5	13.5	4	80	3	0.64	SK 12	NP
06	50-52150-00	II	160	100	40	8	18	4	80	3	1.69	SU 63A	P
07	50-52155-00	I	160	50	12	8	13	4	30	2	1.31	SU 63A	NP
08	50-52160-00	II	160	50	20	8	13	4	65	3	1.29	SU 63A	NP
09	50-52895-00	II	260	50	20	9	20	4	180	3	3.84	SK 25% MODEL 1541	P
10	50-54053-00	II	160	100	40	8	18	4	130	3	1.69	SU 63A	P
11	50-54473-00	III	98	100	40	9	19	4	80	3	0.91	9C 30	NP
12	50-14538-00	II	205	100	20	9	20	4	180	3	3.10	SK 50	P
13	50-14539-00	II	260	100	20	9	20	4	180	3	3.84	SK 25	P
14	50-14661-00	II	280	100	20	9	20	4	180	3	3.9	COOPER	P
15	50-54342-00	II	152.4	100	40	13	20	4	130	3	1.8	DYNACUT	P
16	50-14939-00	II	260	200	20	9	15	4	230	3	2.27	SK 25	P
17	50-14940-00	II	276.8	200	20	9	15	4	230	3	2.32	COOPER	P
18	50-54528-00	II	98	50	20	3.5	8.5	4	80	3	0.3	SK 12	P
19	50-54542-00	II	152.4	50	20	13	20	4	80	3	1.6	DYNACUT	NP
20	50-54545-00	II	126.1	100	40	12	18	4	80	3	1.5	L45 CHUCK	NP
21	50-54571-00	I	80.75	50	10	10	15	4	30	2	0.3	WSU 80	P
22	50-54572-00	II	80.75	50	30	10	15	4	65	3	0.3	WSU 80	NP
23	50-54573-00	III	80.75	100	40	10	15	4	60	3	0.3	WSU 80	NP
24	50-54574-00	II	140	50	20	10	15	4	80	3	1.2	SBCNC 35	P
25	50-54575-00	II	192.65	100	50	10	20	4	150	3	3.2	MAXMULLER	P
26	50-54584-00	I	192.7	50	12	8	13	4	30	2	1.7	MAXMULLER MDW 20	NP
27	50-54585-00	II	192.7	100	40	8	18	4	80	3	2.2	MAXMULLER MDW 20	P
28	50-54587-00	I	100	50	12	8	13	4	30	2	0.25	SKS 25 SKIQ 12	P
29	50-54591-00	I	100	100	20	---	19	4	60	3	1.1	SKS 25	NP

F	DATE 30.01.95	DRAWN: SJW	CHECKED: S. Kamesh	E	DATE 16.08.94	DRAWN: GSK	CHECKED: S. Kamesh
(f)	SL. No:29 ADDED.				(e)	SL. No:21, 22, 23 & 24 ADDED	
D	DATE 21.09.93	DRAWN: PSR	CHECKED: S. Kamesh	C	DATE 11.07.83	DRAWN: GSK	CHECKED: S. Kamesh
(d)	SL. No:20 ADDED.				(c)	BM C16 WAS BM CH4 HRC 50 WAS 62.	
B	DATE 14.07.79	DRAWN: CDP	CHECKED: S. Kamesh	A	DATE 15.02.77	ALTERED KS	CHECKED: S. Kamesh
(b)	SL. No:10 ADDED.				(a)	SL. No:9 ADDED.	

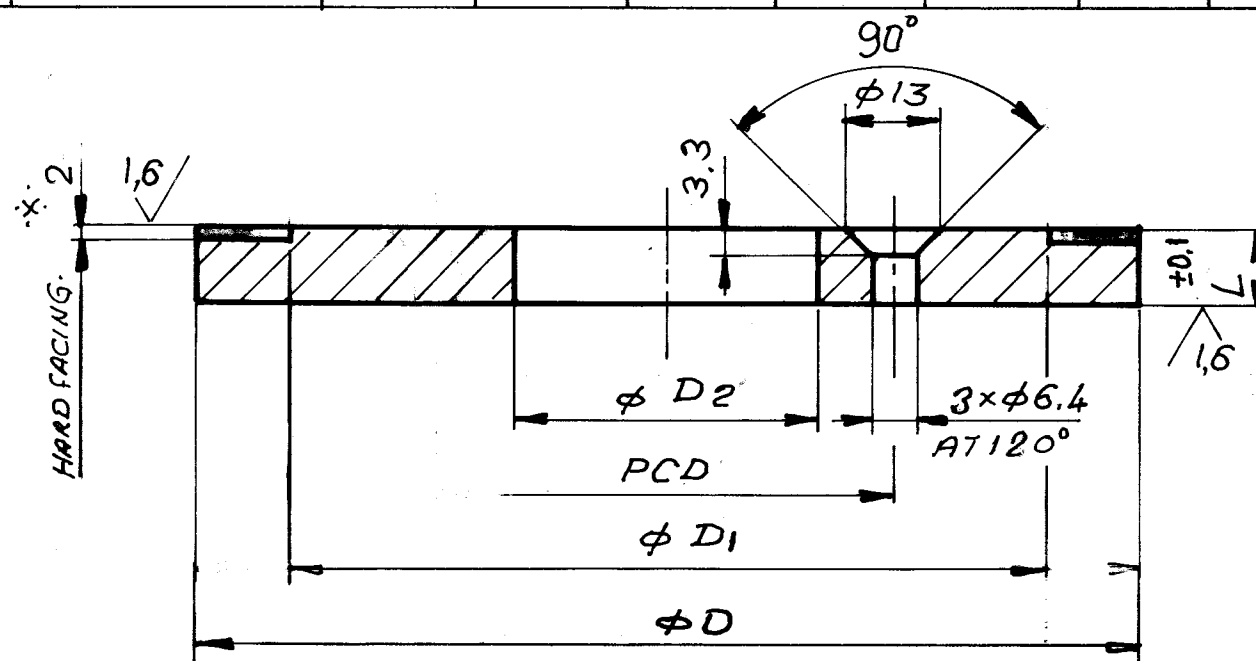
$\phi D \times b$		IS: 2062 Fe410A				1	
NO. OF PIECES	DESCRIPTION	SEM. PRO/SEQ. NO.	INT. MAT/SEQ. NO.	FINAL MATERIAL	SCRAP SORT	NET WT.(KG)	GROSS WT.(KG)
COMP. DRG. NO.							
COMP. DESC.							
GROUP:		WC: MV					
BHARAT HEAVY ELECTRICALS LTD., BOILER PLANT UNIT, TIRUCHIRAPALLI-14							
FIRST ANGLE	SCALE	DRAWN	SS PERUMAL	TOTAL NET WT.KG			
	NTS	CHECKED	S. Kamesh	TYPE	REDRAWN		
ALL DIMENSIONS IN MILLIMETRES.				DATE	22.05.2000		
CAUTION				TITLE			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LTD. BOILER PLANT UNIT, TIRUCHY-14 AND SHALL NOT BE USED WITHOUT THEIR EXPRESS WRITTEN PERMISSION IN ANY FORM OR PART THEREOF FOR ANY OTHER PURPOSE THAN FOR WHICH IT IS SENT TO YOU.				LOCATOR			
				DRAWING NO.			
				20-T-50-16850			
				REVISION			
				F			

12H7	+0.018
20H7	+0.021
40H7	+0.025
50g6	-0.009
100g6	-0.012
85 f7	-0.036
98 f7	-0.071
260 f7	-0.056
280 f7	-0.108
126.1 f7	-0.073
80.75f7	-0.036
30H7	+0.025
160 f7	-0.043
152.4 f7	-0.083

*^{±2}
HARD FACING HARDNESS IS TO 35 HRC CHAMFER ALL SHARP EDGES.

3.2/1.6

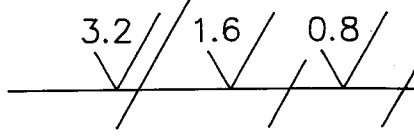
SLNO	FOR TOOL NO	D	D ₁	D ₂	PCD	L	Wt	REMARKS
1	42-55121-01	125	95	40	60	6	0.5	4" - 300 #
2	42-55129-01	235	190	120	150	10	2.5	8" - 300 #
3	42-55128-01	285	240	140	160	10	3.7	10" - 300 #
4	42-55182-01	340	290	180	200	12	5.5	12" - 300 #
5	42-55127-01	275	240	125	150	10	4.5	10" - 150 #
6	42-54942-01	125	90	40	65	10	0.8	4" - 150 #
7	42-54941-01	95	70	30	50	6	0.3	3" - 300 #
8	42-54941-01	95	70	30	50	21.1	1.0	3" - 150 #
9	42-55131-01 42-55598-00	70	40	20	40	8.0	0.2	2" - 150 # 300 #



10T 42-18689/6
10T 42-17395/06
10-T-42-17395/17

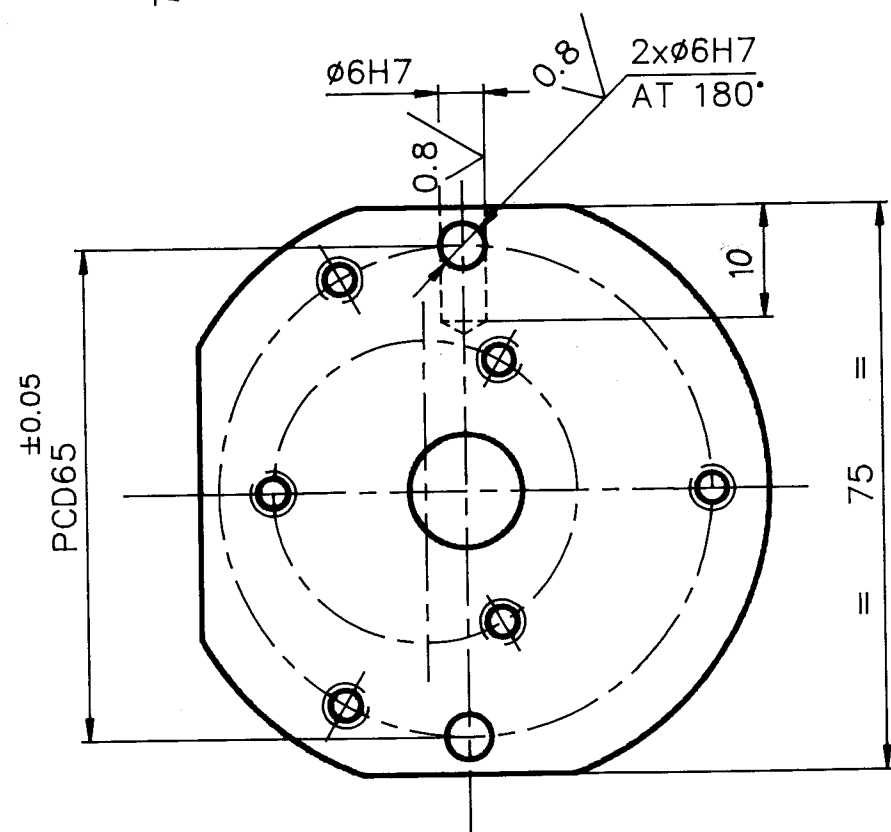
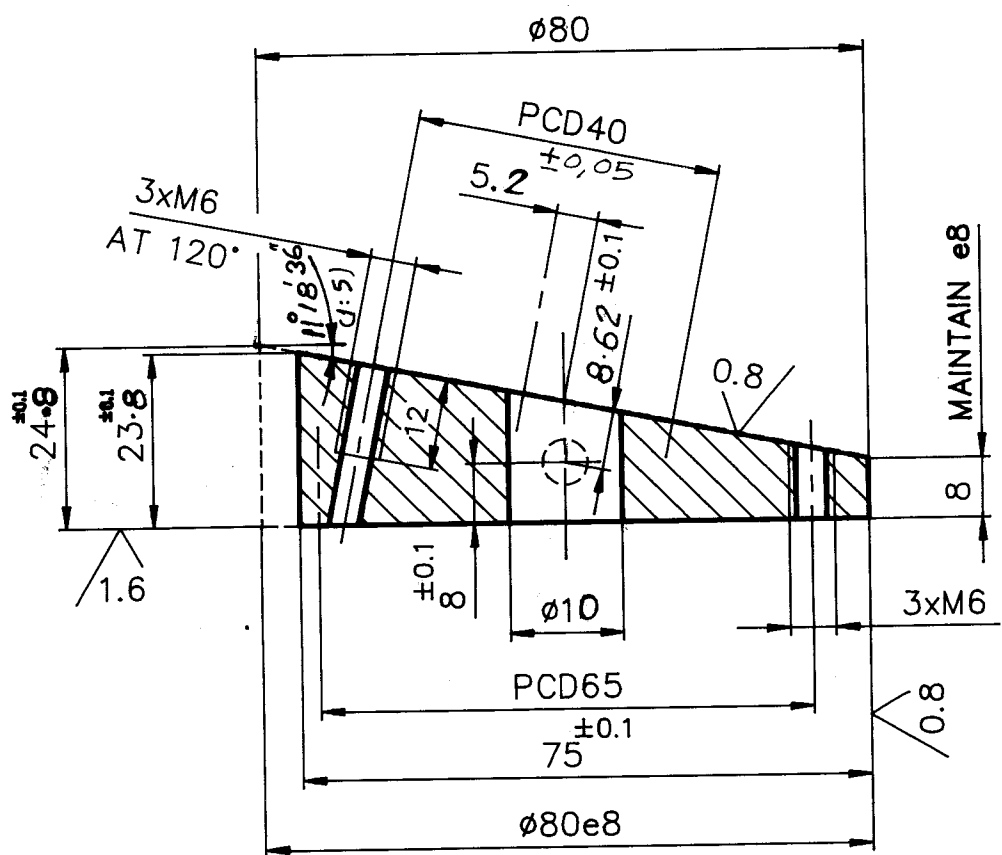
$\phi D \times L$		IS: 2062 Fe 410A		17					
NO. OF PIECES	DESCRIPTION	SEM. PRO. / SEQ. NO.	INT. MAT. / SEQ. NO.	FINAL MATERIAL	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	DRAWING NO.	ITEM NO.
BHARAT HEAVY ELECTRICALS LTD., BOILER PLANT UNIT, TIRUCHIRAPALLI-14									
FIRST ANGLE	SCALE	DRAWN	PCP 28.3-94		TOTAL NET WT. (kg)				
		CHECKED	Ramon 220394		TYPE				
		APPROVED							
ALL DIMENSIONS IN MILLIMETRES		DATE				NEW/OLD DRG. NO.			
CAUTION THE INFORMATION CONTAINED IN THIS DRAWING IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LTD., BOILER PLANT UNIT, TIRUCHY-14 AND SHALL NOT BE USED WITHOUT THEIR EXPRESS WRITTEN PERMISSION IN ANY FORM OR PART THEREOF FOR ANY OTHER PURPOSE THAN FOR WHICH IT IS SENT TO YOU.									
A		DATE	ALTERED						
ZONE		CHECKED							
33-115									
WEAR PLATE									
DRAWING NO. 30-T-42-36845 REVISION									

CHAMFER ALL SHARP EDGES.



TOLERANCE NOT SPECIFIED
SHALL BE AS PER
MEDIUM IS : 2102

ø6H7	+0.012 +0.000
ø80e8	-0.060 -0.106



NO. OF PIECES	DESCRIPTION	SERIAL NO./REV. NO.	REV. DATE/SERIAL NO.	FINAL MATERIAL	SHEET NO.	NET WT.(KGS)	GROSS WT.(KGS)	DRAWING NO	ITEM NO.
	ø80X24		IS:2062 Fe 410B		0.7			10-T-42-17424 10-T-42-18689/5	18

BHARAT HEAVY ELECTRICALS LTD.,
BOILER PLANT UNIT, TIRUCHIRAPALLI-14

FIRST ANGLE.	SCALE	DRAWN	K.SAIVAM.	TOTAL NET WT.KG
	1:1	CHECKED	300594.	TYPE
ALL DIMENSIONS IN MILLIMETRES.		APPROVED		
		DATE	28-05-94	NEW/OLD DRG NO.

CAUTION



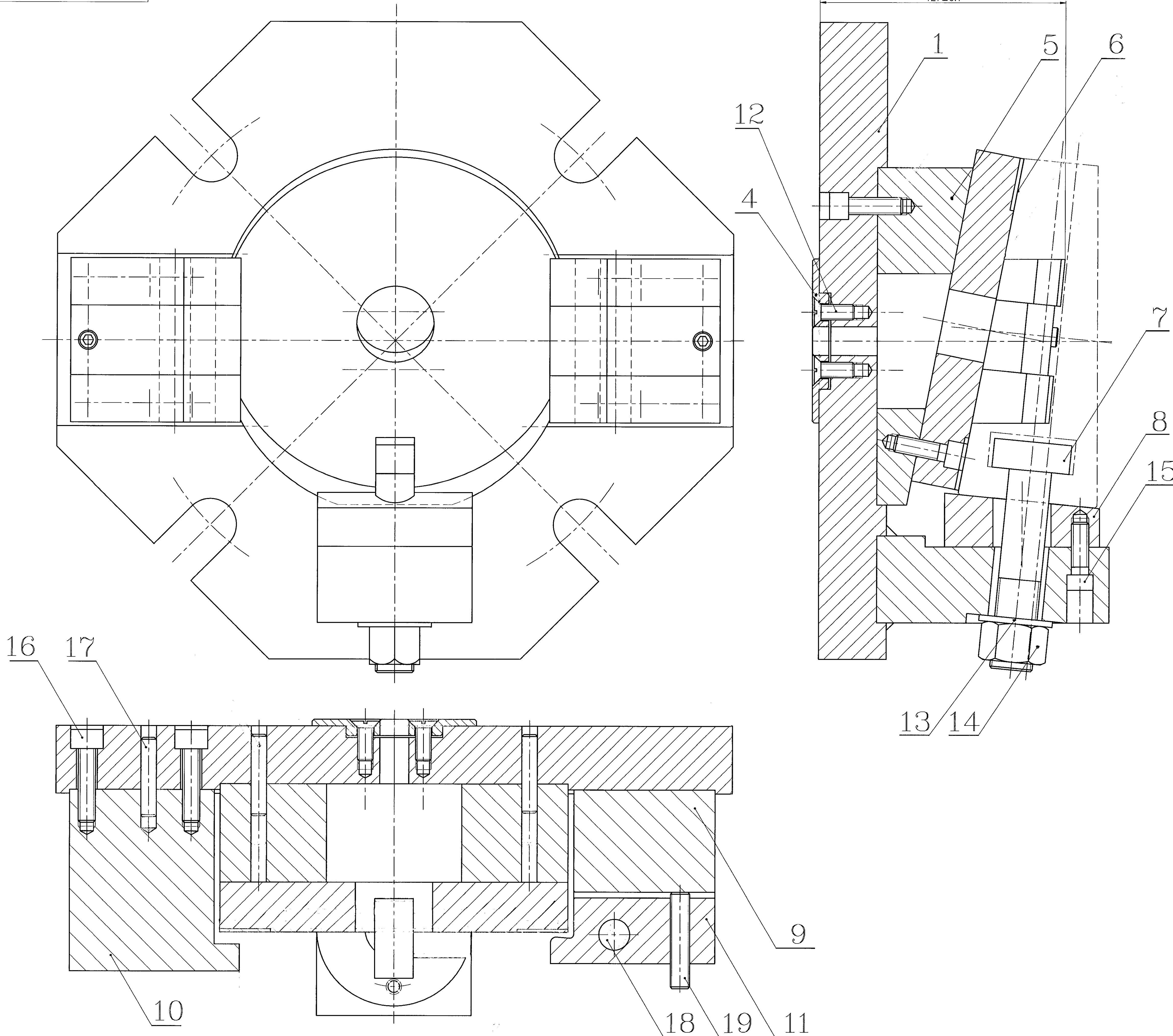
THE INFORMATION CONTAINED IN THIS
DRAWING IS THE PROPERTY OF
BHARAT HEAVY ELECTRICALS LTD
BOILER PLANT UNIT, TIRUCHY-14
AND SHALL NOT BE USED WITHOUT THEIR
EXPRESS WRITTEN PERMISSION IN ANY
FORM OR FOR ANY PURPOSE FOR ANY OTHER
PURPOSE THAN FOR WHICH IT IS SENT
TO YOU.

TITLE	TAPER BASE	REVISION
DRAWING NO.	30-T-42-36914	

A	DATE	APPROVED
2006		CHECKED

10-T-42-18530

TOLERANCE FOR
UNTOLERANCED DIMENSIONS
UP TO 6 MM = ±0.1 MM
> 6 UP TO 120 MM = ±0.2 MM
MORE THAN 120 MM = ±0.3 MM
ANGULAR TOLERANCE = ±0.5 Deg
CHAMFER = ±0.3 Deg



2	HEX. SDC. GR. SCR.-M16X50	IS:6094-A-445							19
2	PIN Ø8X80	IS:6689							18
6	PIN Ø8X40	IS:6689							17
8	HEX. SDC. HEAD SCR.-M10X30	IS:6094-A-8.8							16
8	HEX. SDC. HEAD SCR.-M8X30	IS:6094-A-8.8							15
1	HEX. NUT-M24	IS:1364(P3)B-6&22H							14
1	WASHER-M24	IS:2016							13
2	C'SUNK SCREW -M8X15	IS:1366-A-4.8							12
2	CLAMP		IS:1875 C14	1.10	40T42-41652				11
1	GUIDE-II		ASTM-A36	5.20	20T42-25669				10
1	GUIDE-I		ASTM-A36	5.20	20T42-25668				9
1	TAPER PLATE		IS:2062 Fe410B	0.80	40T42-44422				8
1	T-BOLT		IS:1875 C14	0.30	30T42-40252				7
1	WEAR PLATE-I		IS:2062 Fe410B	3.90	40T42-44423				6
1	TAPER BASE		IS:1875 C14	5.40	20T42-23519				5
1	LOCATOR	SL. NO. 1	IS:2062 Fe410A	0.49	20T42-16850F				4
1	WELDMENT	(2&3)		25.00	10T42-18533				1

NO. OF PIECES	DESCRIPTION	SOL. PROJ/SEC. NO.	INT. MAT/SEC. NO.	FINAL MATERIAL	SCREW SIZE	NET WT.(KG)	GROSS WT.(KG)	DRAWING NO.	ITEM NO.
COMP. DRG. NO.	2-V-NC06-13610								
COMP. DESC.	WEDGE-6"-150#								
GROUP:	DV	WC:	4131						

TOOL NO :- 42-55574-00

FIRST ANGLE

SCALE

1:1

ALL DIMENSIONS IN MILLIMETRES.

DATE

07/02/04

CAUTION

THE INFORMATION CONTAINED IN THIS DRAWING IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LTD. AND SHALL NOT BE USED WITHOUT THEIR EXPRESS WRITTEN PERMISSION IN ANY FORM OR PART THEREOF FOR ANY OTHER PURPOSE THAN FOR WHICH IT IS SENT TO YOU.

293-089

DATE

ALTERED

CHECKED

ZONE

TITLE

TURNING FIXTURE

TURNING FIXTURE

DRAWING NO.

10-T-42-18530

REVISION

BHARAT HEAVY ELECTRICALS LTD.,

BOILER PLANT UNIT,

TIRUCHIRAPALLI-14

DRAWN

A.KUMAR

CHECKED

APPROVED

DATE

07/02/04

TOTAL NET WT.KG

TYPE

NEW/OLD DRG. NO.

10-T-42-18533

ON ORIGIN

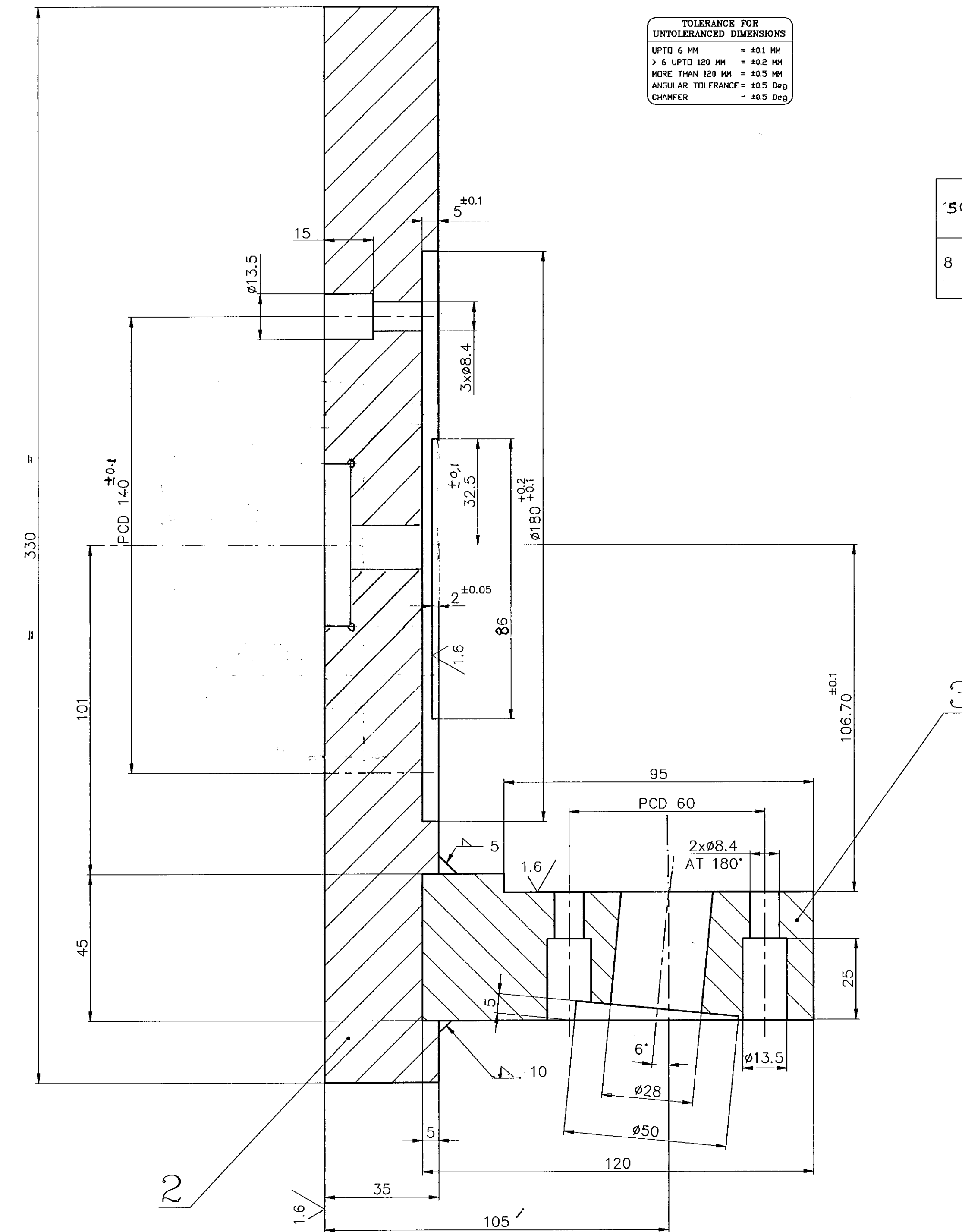
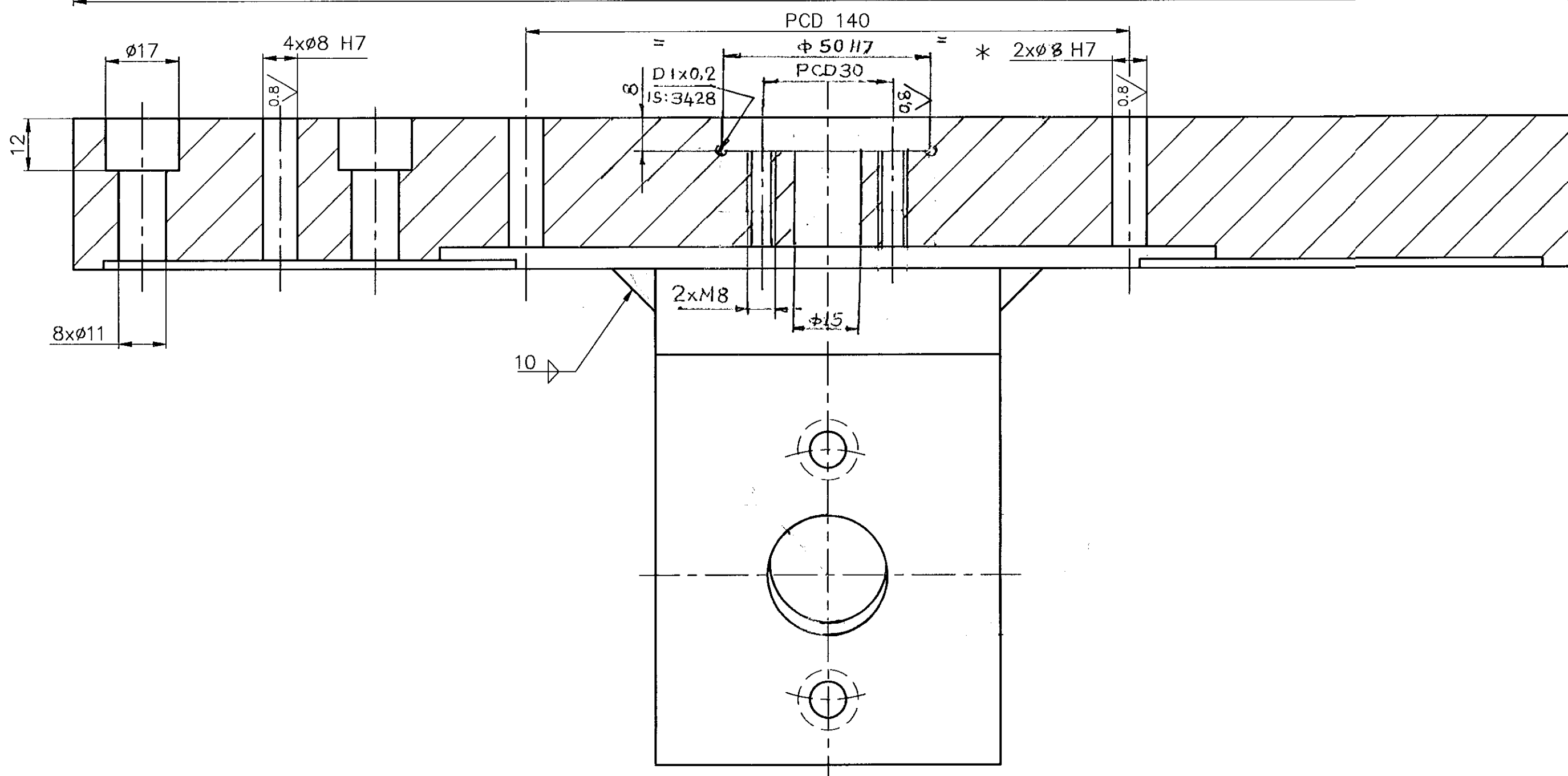
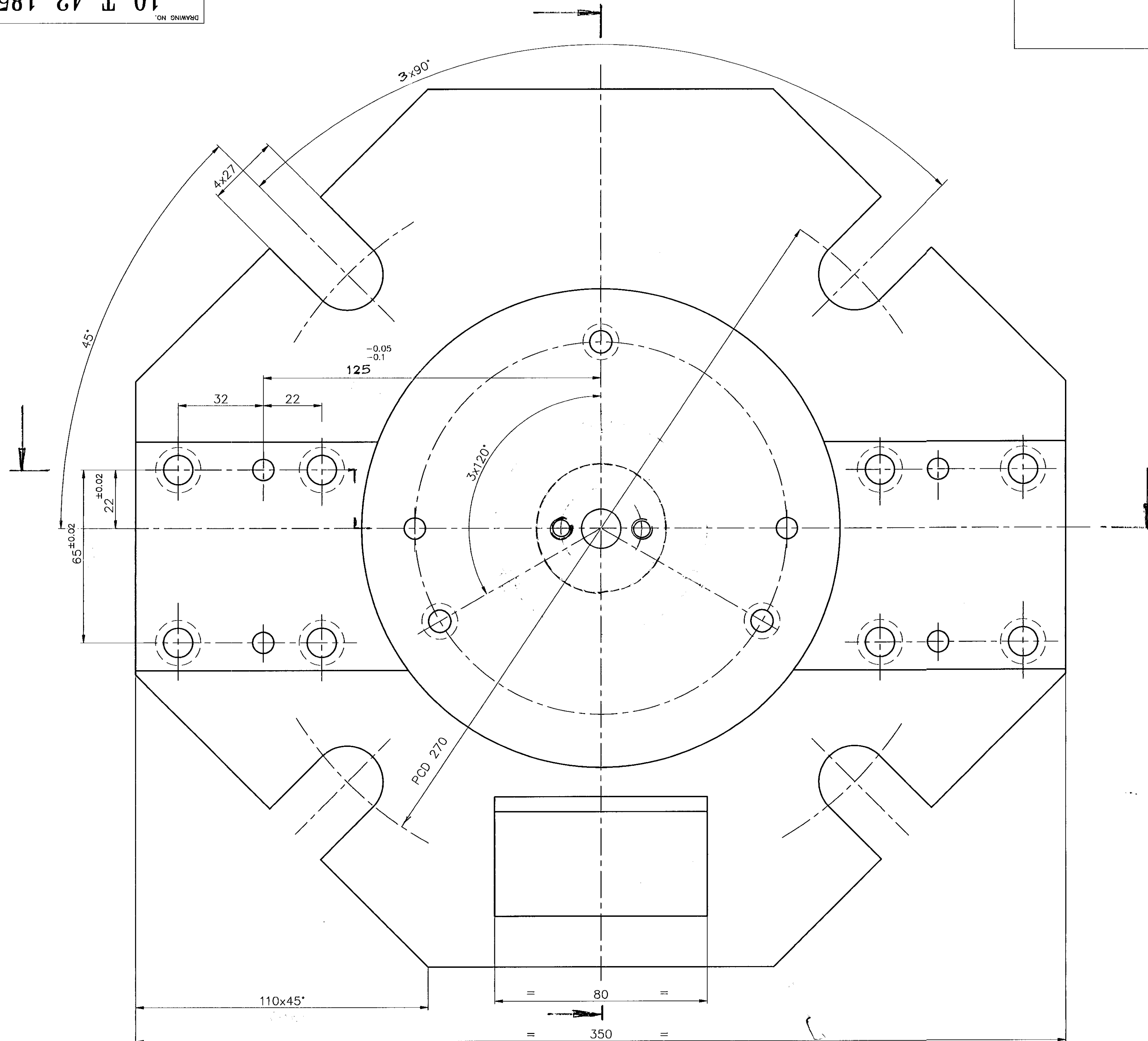
CHAMFER SHARP EDGES.

* $\phi 8$ H7 TO BE DRILLED WITH ITEM No.5

3.2 / 1.6 / 0.8 /

TOLERANCE FOR
UNTOLERANCED DIMENSIONS
UP TO 6 MM = ± 0.1 MM
> 6 UP TO 120 MM = ± 0.2 MM
MORE THAN 120 MM = ± 0.3 MM
ANGULAR TOLERANCE = ± 0.5 Deg
CHAMFER = ± 0.5 Deg

50 H7	+0.025 0.0
8 H7	+0.015 0.0



1	PL.45x80x120		IS:2062Fe410B		3.0		SECTION	3	
1	PL.35x330x350		IS:2062Fe410B		22.0		SECTION	2	
NO. OF PIECES	DESCRIPTION	SERIAL PROJ/REQ. NO.	INT. MAT/REQ. NO.	FINAL MATERIAL	SOURC SORT	NET WT.(KG)	GROSS WT.(KG)	DRAWING NO	ITEM NO

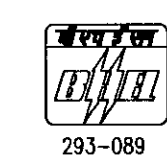
10-T-42-185301

10-T-42-18533/1

BHARAT HEAVY ELECTRICALS LTD.,
BOILER PLANT UNIT, TIRUCHIRAPALLI-14

FIRST ANGLE:	SCALE	DRAWN	A.KUMAR	TOTAL NET WT.KG	25.0
CHECKED	1:1	CHECKED		TYPE	
APPROVED		APPROVED			
DATE		DATE	13/02/04	NEW/OLD DRG NO.	

CAUTION



THE INFORMATION CONTAINED IN THIS
DRAWING IS THE PROPERTY OF
BHARAT HEAVY ELECTRICALS LTD
BOILER PLANT UNIT, TIRUCHY-14
AND SHALL NOT BE USED WITHOUT THEIR
EXPRESS WRITTEN PERMISSION IN ANY
FORM OR PART THEREOF FOR ANY OTHER
PURPOSE THAN FOR WHICH IT IS SENT
TO YOU.

WELDMENT

10-T-42-18533

09891-09-L-02

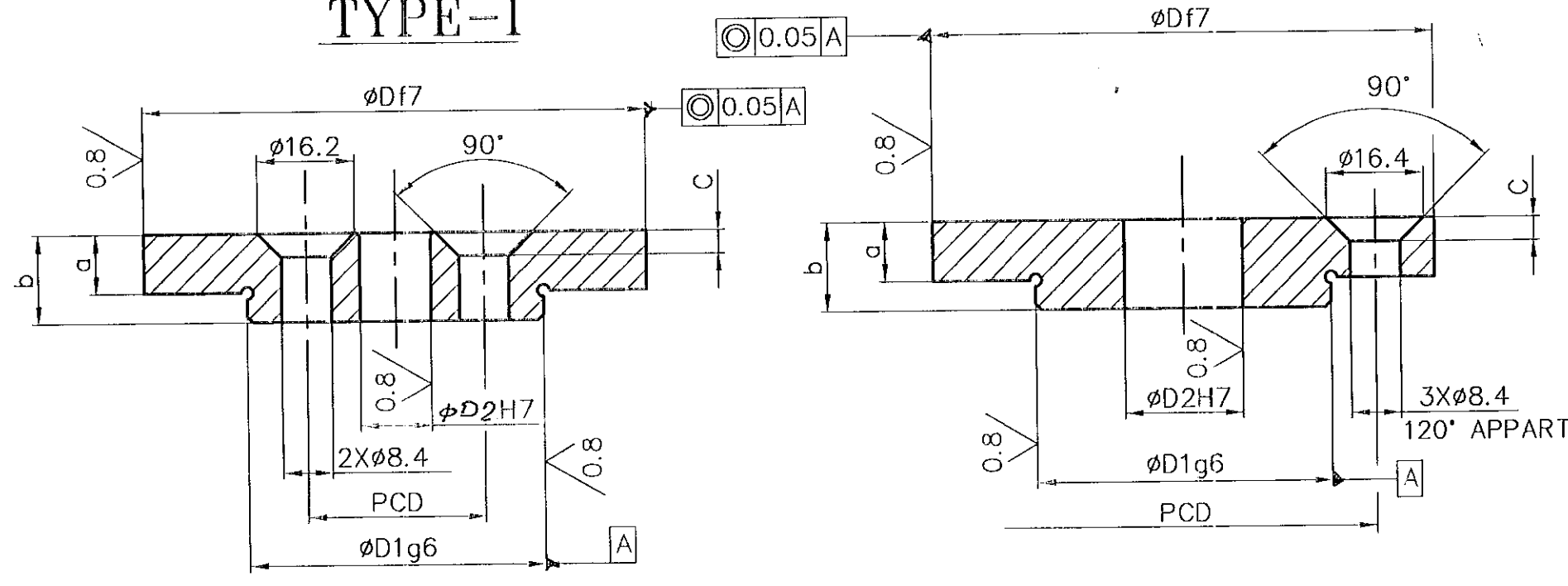
DRAWING NO.

TYPE-II

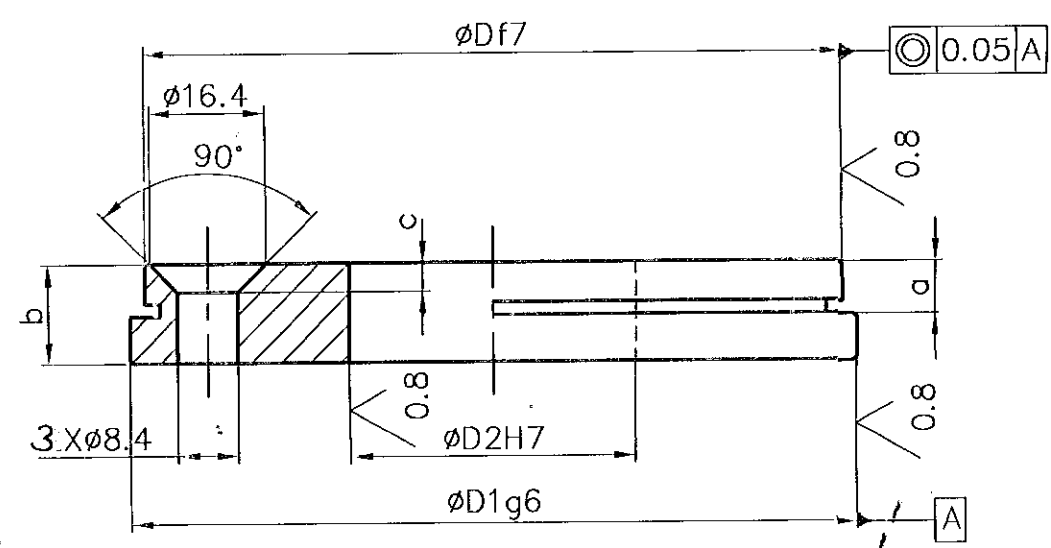
---CASE CARBURISE TO A DEPTH OF 0.8mm
AND HARDEN & TEMPER TO 55 HRC.

3.2/0.8

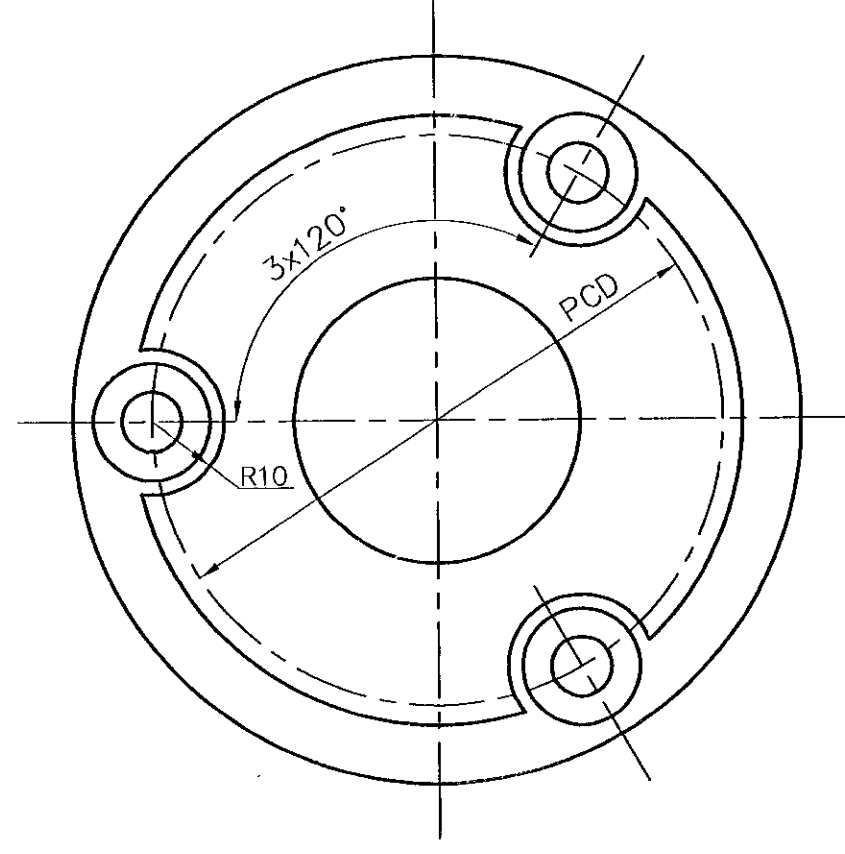
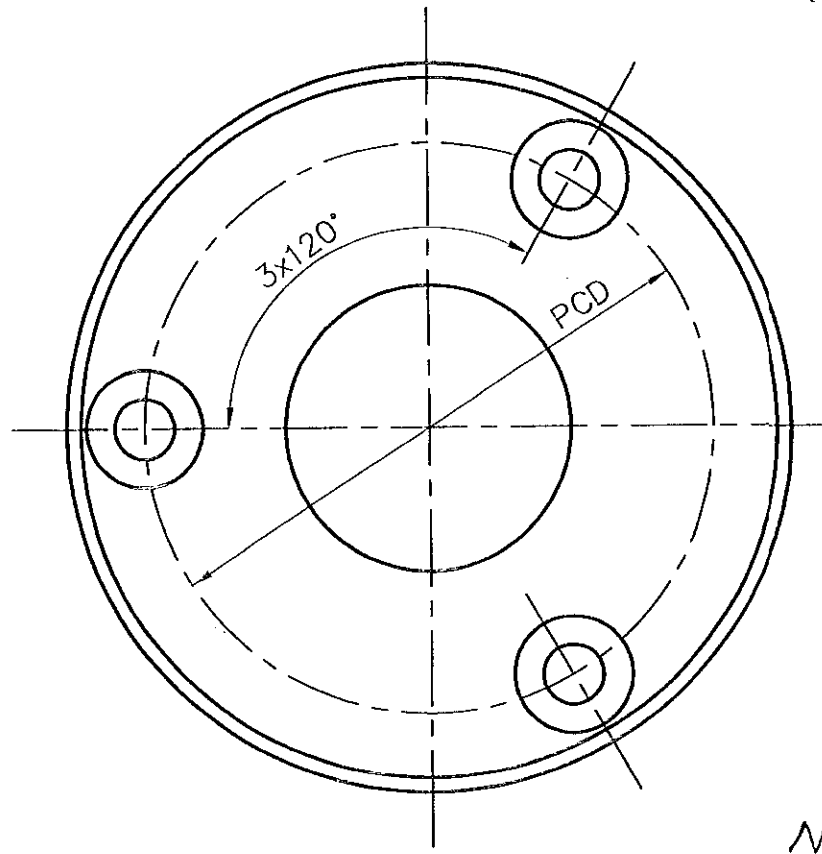
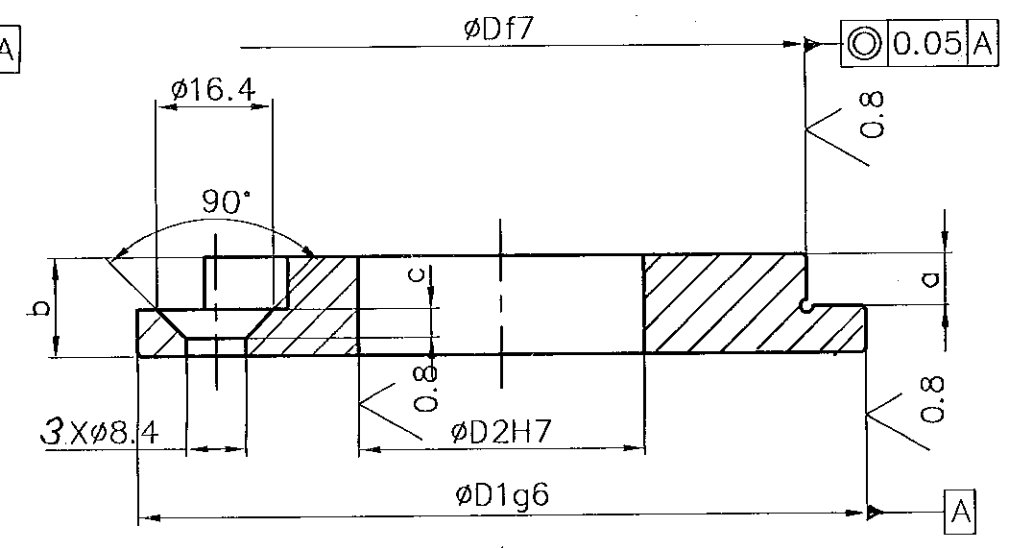
TYPE-I



TYPE-III



TYPE-IV



NOTE:-
P - PREFERRED
NP - NOT PREFERRED

SL. No:	TOOL No:	TYPE	$\phi Df7$	$\phi D1g6$	$\phi D2H7$	a	b	c	PCD	No OF HOLES	Wt IN Kg	M/C	REMARKS
01	50-52125-00	I	85	50	12	10	15	4	30	2	0.49	LB 20	P
02	50-52130-00	II	85	50	20	10	15	4	65	3	0.46	LB 20	NP
03	50-52135-00	IV	85	100	40	10	20	4	80	3	0.79	LB 20	NP
04	50-52140-00	I	98	50	12	3.5	8.5	4	30	2	0.25	SK 12	P
05	50-52145-00	III	98	100	40	3.5	13.5	4	80	3	0.64	SK 12	NP
06	50-52150-00	II	160	100	40	8	18	4	80	3	1.69	SU 63A	P
07	50-52155-00	I	160	50	12	8	13	4	30	2	1.31	SU 63A	NP
08	50-52160-00	II	160	50	20	8	13	4	65	3	1.29	SU 63A	NP
09	50-52895-00	II	260	50	20	9	20	4	180	3	3.84	SK 25% MODEL 1541	P
10	50-54053-00	II	160	100	40	8	18	4	130	3	1.69	SU 63A	P
11	50-54473-00	III	98	100	40	9	19	4	80	3	0.91	9C 30	NP
12	50-14538-00	II	205	100	20	9	20	4	180	3	3.10	SK 50	P
13	50-14539-00	II	260	100	20	9	20	4	180	3	3.84	SK 25	P
14	50-14661-00	II	280	100	20	9	20	4	180	3	3.9	COOPER	P
15	50-54342-00	II	152.4	100	40	13	20	4	130	3	1.8	DYNACUT	P
16	50-14939-00	II	260	200	20	9	15	4	230	3	2.27	SK 25	P
17	50-14940-00	II	276.8	200	20	9	15	4	230	3	2.32	COOPER	P
18	50-54528-00	II	98	50	20	3.5	8.5	4	80	3	0.3	SK 12	P
19	50-54542-00	II	152.4	50	20	13	20	4	80	3	1.6	DYNACUT	NP
20	50-54545-00	II	126.1	100	40	12	18	4	80	3	1.5	L45 CHUCK	NP
21	50-54571-00	I	80.75	50	10	10	15	4	30	2	0.3	WSU 80	P
22	50-54572-00	II	80.75	50	30	10	15	4	65	3	0.3	WSU 80	NP
23	50-54573-00	III	80.75	100	40	10	15	4	60	3	0.3	WSU 80	NP
24	50-54574-00	II	140	50	20	10	15	4	80	3	1.2	SBCNC 35	P
25	50-54575-00	II	192.65	100	50	10	20	4	150	3	3.2	MAXMULLER	P
26	50-54584-00	I	192.7	50	12	8	13	4	30	2	1.7	MAXMULLER MDW 20	NP
27	50-54585-00	II	192.7	100	40	8	18	4	80	3	2.2	MAXMULLER MDW 20	P
28	50-54587-00	I	100	50	12	8	13	4	30	2	0.25	SKS 25 SKIQ 12	P
29	50-54591-00	I	100	100	20	---	19	4	60	3	1.1	SKS 25	NP

F	DATE 30.01.95	DRAWN: SJW	CHECKED: S. Kamesh	E	DATE 16.08.94	DRAWN: GSK	CHECKED: S. Kamesh
(f)	SL. No:29 ADDED.				(e)	SL. No:21, 22, 23 & 24 ADDED	
D	DATE 21.09.93	DRAWN: PSR	CHECKED: S. Kamesh	C	DATE 11.07.83	DRAWN: GSK	CHECKED: S. Kamesh
(d)	SL. No:20 ADDED.				(c)	BM C16 WAS BM CH4 HRC 50 WAS 62.	
B	DATE 14.07.79	DRAWN: CDP	CHECKED: S. Kamesh	A	DATE 15.02.77	ALTERED KS	CHECKED: S. Kamesh
(b)	SL. No:10 ADDED.				(a)	SL. No:9 ADDED.	

$\phi D \times b$		IS: 2062 Fe410A				1	
NO. OF PIECES	DESCRIPTION	SEM. PRO/SEQ. NO.	INT. MAT/SEQ. NO.	FINAL MATERIAL	SCRAP SORT	NET WT.(KG)	GROSS WT.(KG)
COMP. DRG. NO.				TOOL NO :- 50- -00			
COMP. DESC.							
GROUP:		WC: MV					
BHARAT HEAVY ELECTRICALS LTD., BOILER PLANT UNIT, TIRUCHIRAPALLI-14							
FIRST ANGLE	SCALE	DRAWN	SS PERUMAL	TOTAL NET WT.KG			
	NTS	CHECKED	S. Kamesh	TYPE	REDRAWN		
ALL DIMENSIONS IN MILLIMETRES.				APPROVED	22.05.2000		
CAUTION				TITLE			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LTD. BOILER PLANT UNIT, TIRUCHY-14 AND SHALL NOT BE USED WITHOUT THEIR EXPRESS WRITTEN PERMISSION IN ANY FORM OR PART THEREOF FOR ANY OTHER PURPOSE THAN FOR WHICH IT IS SENT TO YOU.				LOCATOR			
				DRAWING NO.			
				20-T-50-16850			
				REVISION			
				F			

12H7	+0.018
20H7	+0.021
40H7	+0.025
50g6	-0.009
100g6	-0.012
85 f7	-0.036
98 f7	-0.071
260 f7	-0.056
280 f7	-0.108
126.1 f7	-0.073
80.75f7	-0.036
30H7	+0.025
160 f7	-0.043
152.4 f7	-0.083

HARDEN & TEMPER TO 28^{±2} HRC.

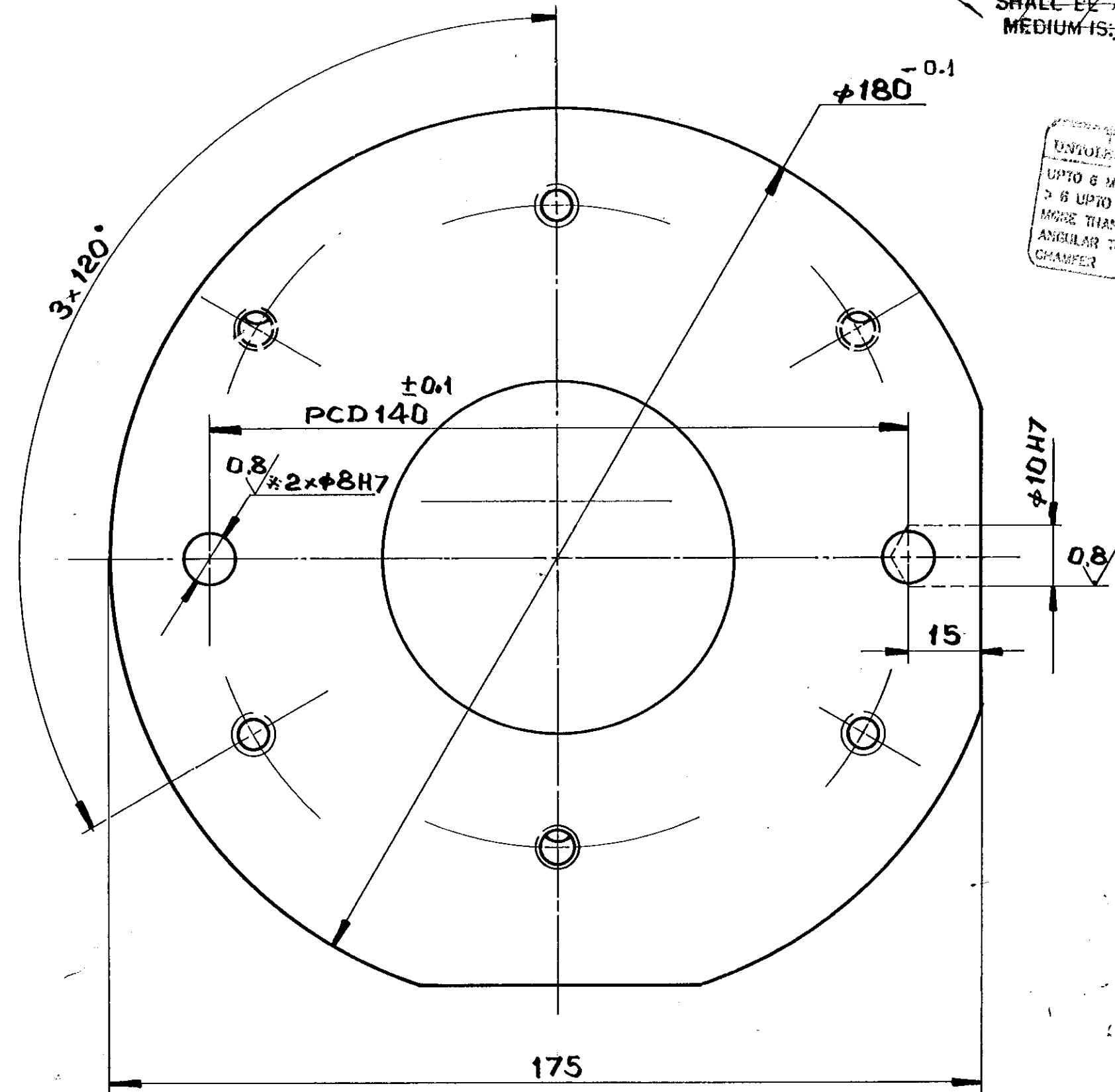
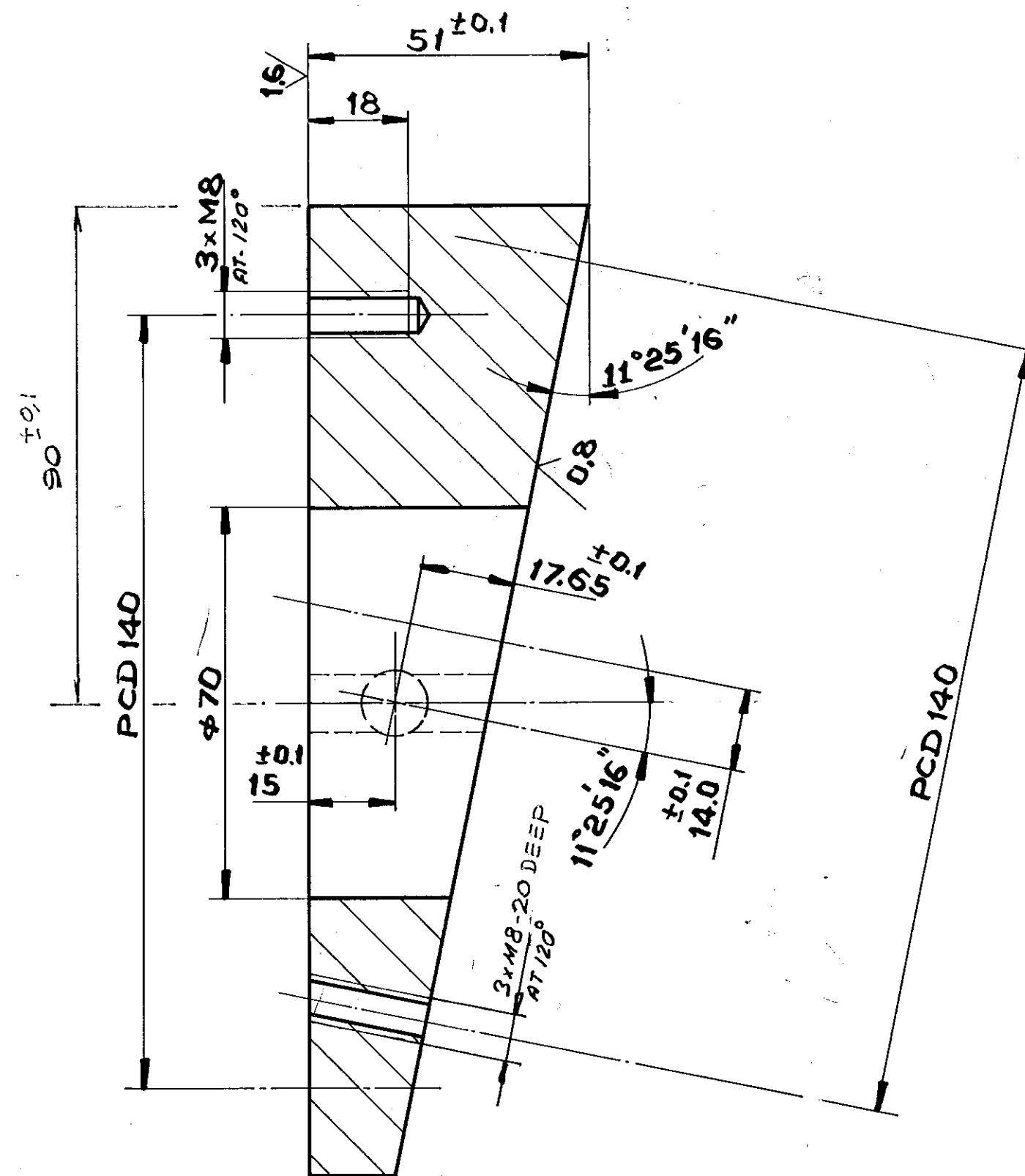
CHAMFER SHARP EDGES.
* $\phi 8H7$ TO BE DRILLED WITH
ITEM No.1.

3.2 $\sqrt{\quad}$ 1.6 $\sqrt{\quad}$ 0.8 $\sqrt{\quad}$

TOLERANCE NOT SPECIFIED
SHALL BE AS PER
MEDIUM IS: 2102

10 H7	+0.015
8 H7	0

TOLERANCE NOT SPECIFIED
SHALL BE AS PER
MEDIUM IS: 2102

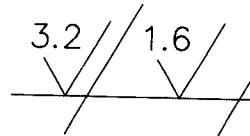


$\phi 180 \times 51$		IS: 1875		5.4					
NO. OF PIECES	DESCRIPTION	SEM. PRO/SEQ. NO.	INT. MAT/SEQ. NO.	FINAL MATERIAL	SCRAP SORT	NET WT.(KG)	GROSS WT.(KG)	DRAWING NO.	ITEM NO.
10.T.42.16801 10.T.42.18530/5									
BHARAT HEAVY ELECTRICALS LTD., BOILER PLANT UNIT, TIRUCHIRAPALLI-14									
FIRST ANGLE	SCALE	DRAWN	C.DEVI PRASAD	TOTAL NET WT.(KG)					
CHECKED	1:1	CHECKED		TYPE					
APPROVED		APPROVED							
ALL DIMENSIONS IN MILLIMETRES				DATE	07.07.1988	NEW / OLD DRG. NO.			
CAUTION THE INFORMATION CONTAINED IN THIS DRAWING IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LTD., BOILER PLANT UNIT, TIRUCHY-14 AND SHALL NOT BE USED WITHOUT THEIR EXPRESS WRITTEN PERMISSION IN ANY FORM OR PART THEREOF FOR ANY OTHER PURPOSE THAN FOR WHICH IT IS SENT TO YOU.									
TAPERBASE									
DRAWING NO.									REVISION
20.T.42.23519									

A	DATE	ALTERED
	CHECKED	
ZONE		

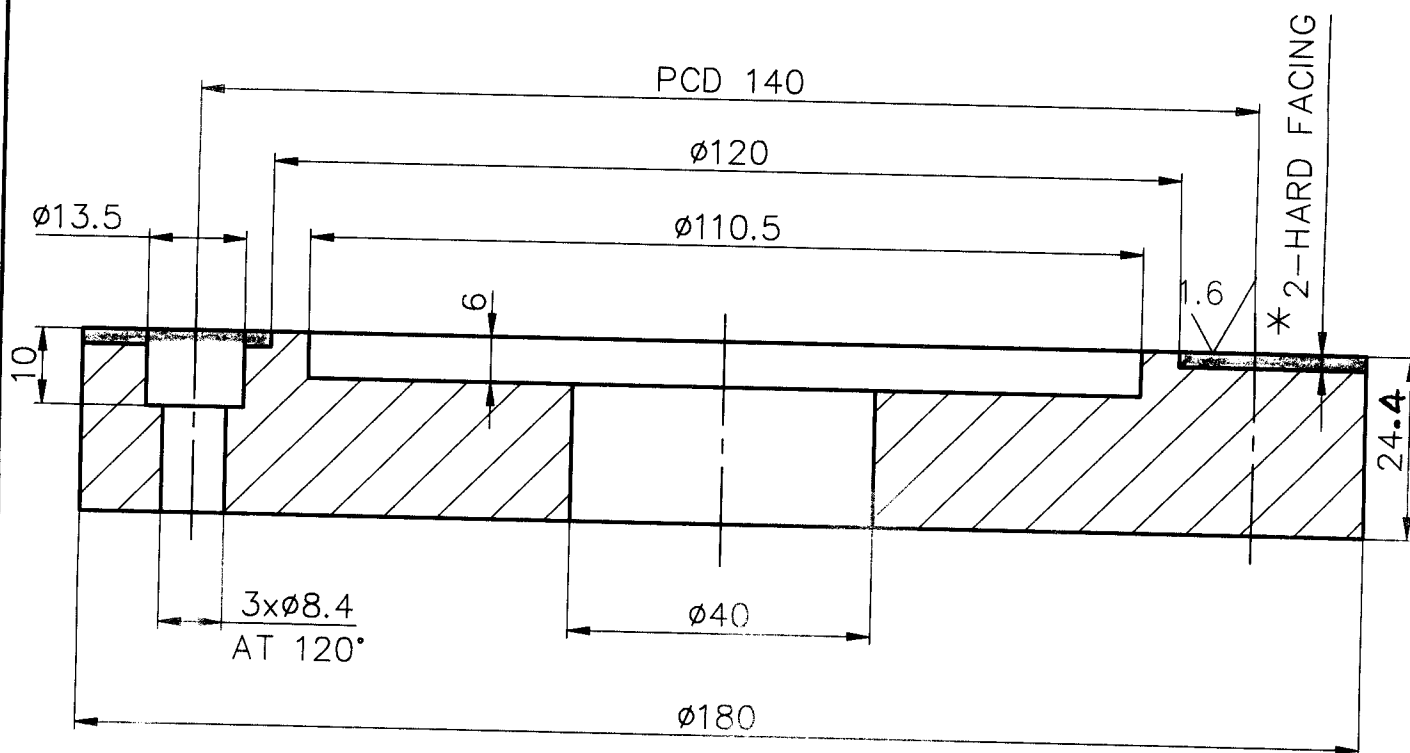
* HARDFACING HARDNESS
TO BE 35-40 HRc.

CHAMFER SHARP EDGES.



TOLERANCE FOR
UNTOLERANCED DIMENSIONS

UPTO 6 MM = ± 0.1 MM
> 6 UPTO 120 MM = ± 0.2 MM
MORE THAN 120 MM = ± 0.5 MM
ANGULAR TOLERANCE = ± 0.5 Deg
CHAMFER = ± 0.5 Deg



10T42-18530

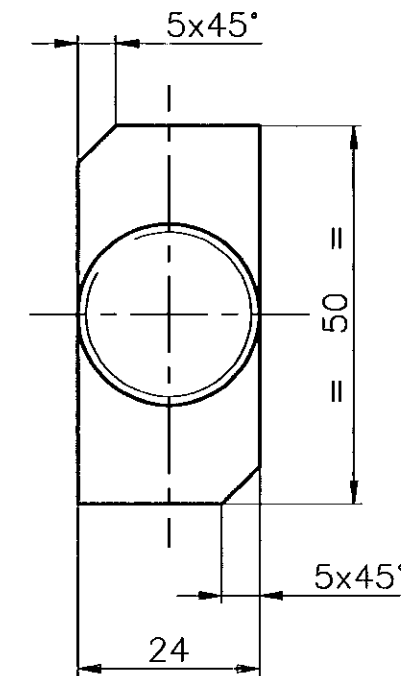
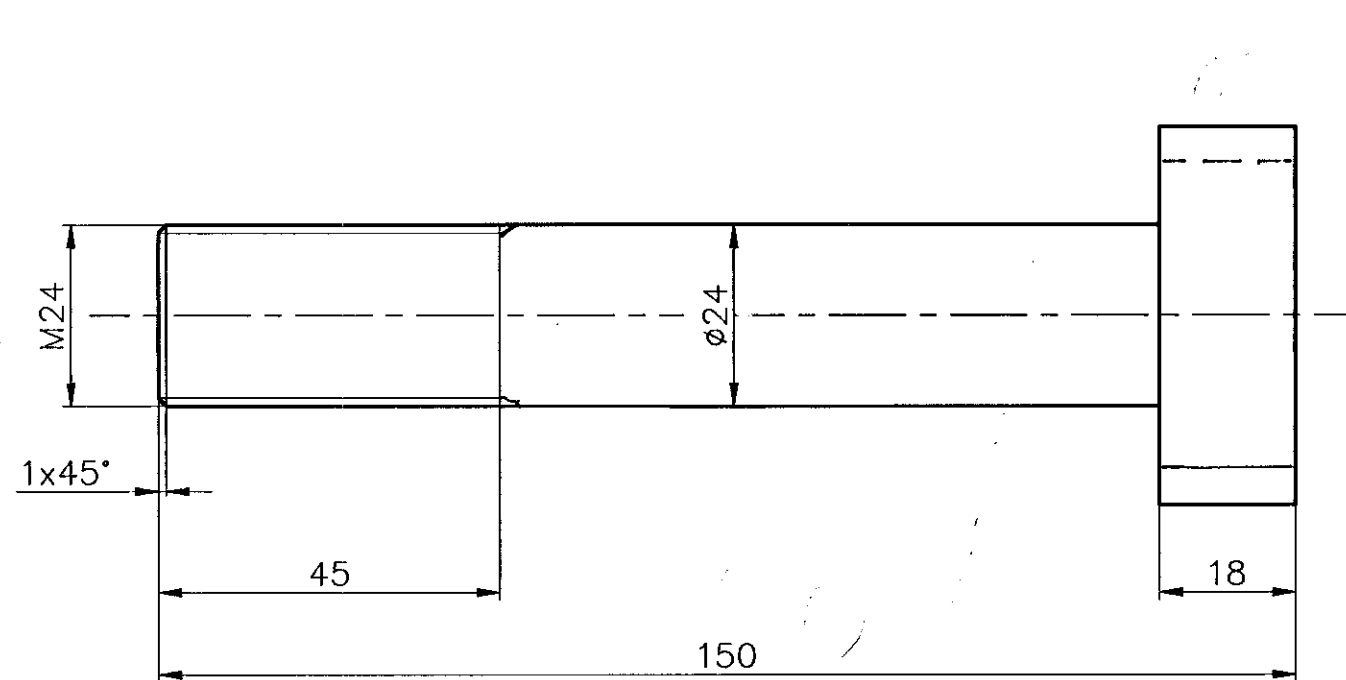
180x24.4		IS: 2062Fe410B		3.9		6			
NO. OF PIECES	NAME-DIMENSIONS	SEMI-PRODUCT	FINAL MATERIAL	INITIAL MATERIAL	SCRAP SORT	NET WT (KG)	GROSS WT (KG)	DRAWING NO.	ITEM NO.
REMARKS				TOTAL NET Wt(kg)					
SCALE 1:1	DRAWN	A.KUMAR		ALTERATIONS		DATE	SIGNATURE	ALTERATION INDEX	
	CHECKED	<i>[Signature]</i>							
	APPROVED	<i>[Signature]</i>							
	STDS. OFFICER			TRANS. COPY NO.					
	DATE	18-02-04							
		TYPE GROUP		OLD DRG.		NEW DRG.			
TITLE		WEAR PLATE I		DRAWING No.		40-T-42-44423			
293-092									

HARDEN & TEMPER TO 28^{±1} HRC.

CHAMFER ALL SHARP EDGES.

3.2

TOLERANCE FOR UNTOLERANCED DIMENSIONS	
UPTO 6 MM	= ±0.1 MM
> 6 UPTO 120 MM	= ±0.2 MM
MORE THAN 120 MM	= ±0.5 MM
ANGULAR TOLERANCE	= ±0.5 Deg
CHAMFER	= ±0.5 Deg



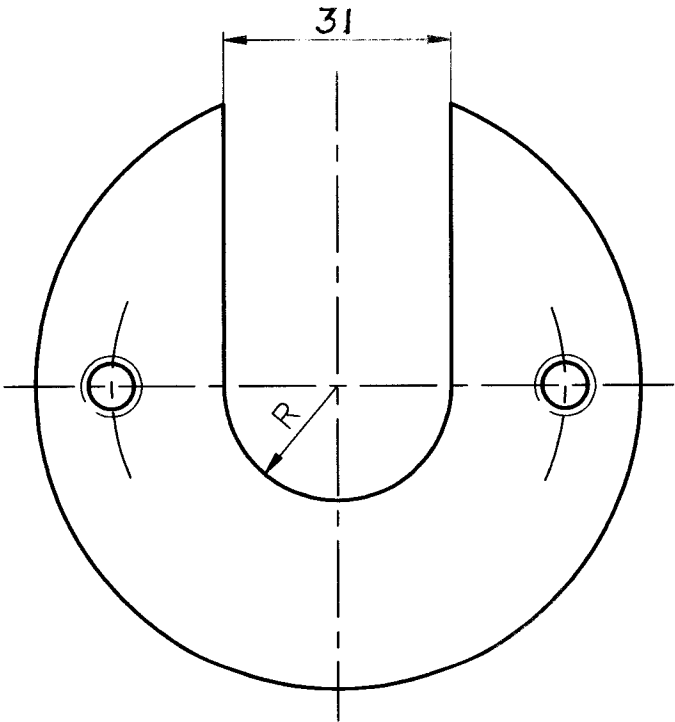
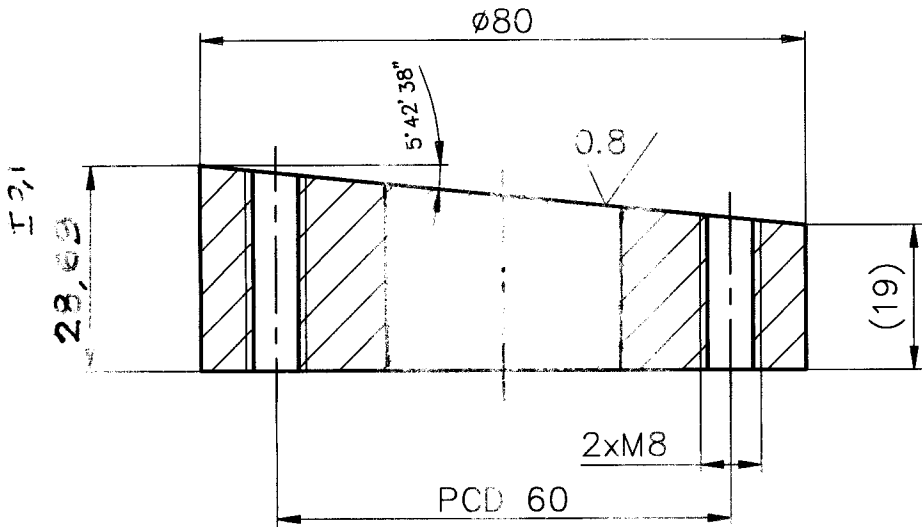
NO. OF PIECES	DESCRIPTION	SEM. PRO/SEQ. NO.	INT. MAT/SEQ. NO.	FINAL MATERIAL	SCRAP SORT	NET WT.(KG)	GROSS WT.(KG)	DRAWING NO	ITEM NO.
	Ø56X150			IS:1875 CL 4		0,3		10.T.42.18536	7
10-T-42-18530/7 10-T-42-18541/7 10-T-42-18537/7									
BHARAT HEAVY ELECTRICALS LTD., BOILER PLANT UNIT, TIRUCHIRAPALLI-14									
FIRST ANGLE.		SCALE		DRAWN		RENGITH.R		TOTAL NET WT.KG	
		1:1		CHEKED				TYPE	
				APPROVED					
ALL DIMENSIONS IN MILLIMETRES.				DATE		14/02/2004		NEW/OLD DRG NO.	
CAUTION THE INFORMATION CONTAINED IN THIS DRAWING IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LTD BOILER PLANT UNIT, TIRUCHY-14 AND SHALL NOT BE USED WITHOUT THEIR EXPRESS WRITTEN PERMISSION IN ANY FORM OR PART THEREOF FOR ANY OTHER PURPOSE THAN FOR WHICH IT IS SENT TO YOU.									
 293-091 T-BOLT T-BOLT DRAWING NO. 30-T-42-40253 REVISION									

A	DATE	ALTERED
ZONE		CHECKED

HARDEN & TEMPER TO 28±1 HRc.
CHAMFER SHARP EDGES.

3.2 / 0.8

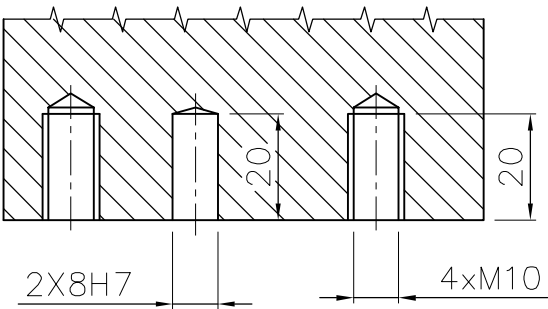
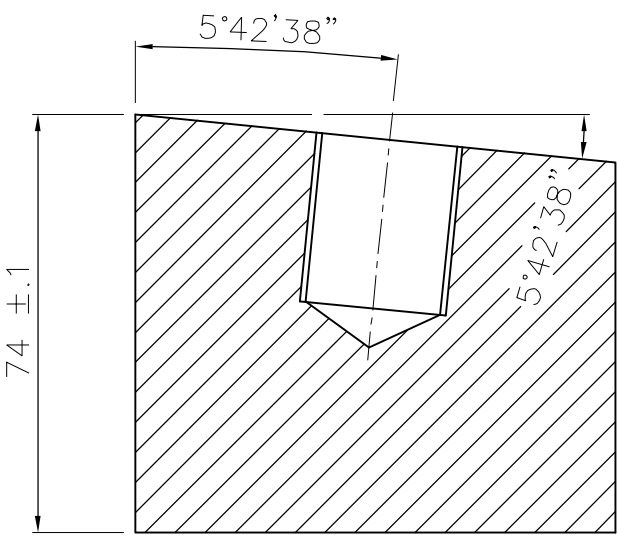
TOLERANCE FOR UNTOLERANCED DIMENSIONS	
UPTO 6 MM	= ±0.1 MM
> 6 UPTO 120 MM	= ±0.2 MM
MORE THAN 120 MM	= ±0.5 MM
ANGULAR TOLERANCE	= ±0.5 Deg
CHAMFER	= ±0.5 Deg



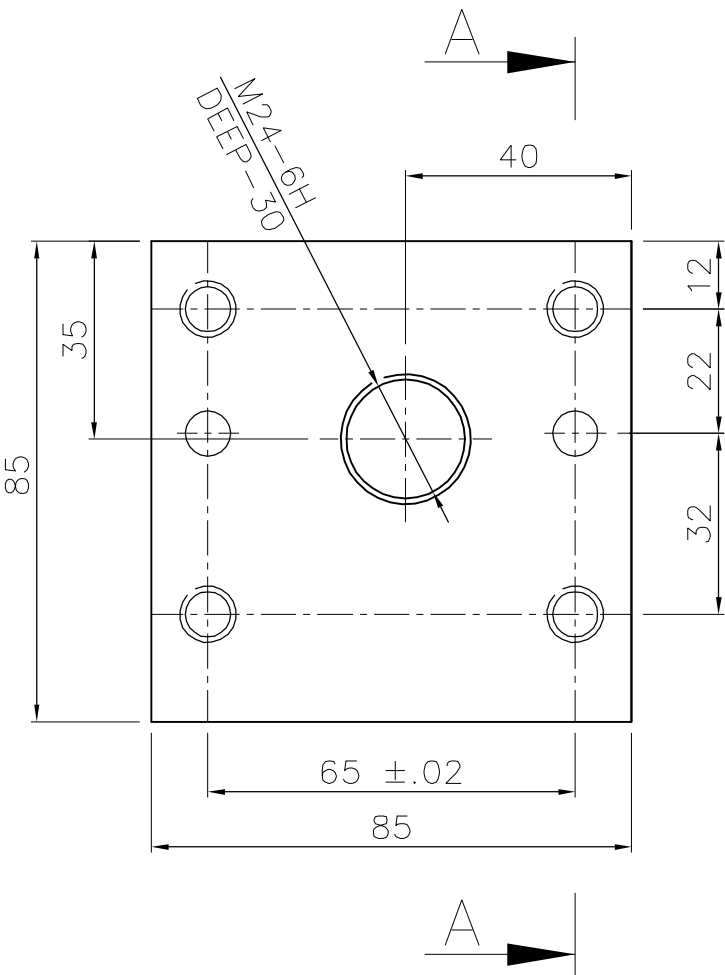
10T42-18530

Ø80x29		IS:1875 CI4		0.8		8			
NO. OF PIECES	NAME-DIMENSIONS	SEMI-PRODUCT	FINAL MATERIAL	INITIAL MATERIAL	SCRAP SORT	NET WT (KG)	GROSS WT (KG)	DRAWING NO.	ITEM NO.
REMARKS				TOTAL NET WT(kg)					
SCALE 1:1	DRAWN	A.KUMAR		ALTERATIONS		DATE	SIGNATURE	ALTERATION INDEX	
	CHECKED	<i>[Signature]</i>							
	APPROVED	<i>[Signature]</i>							
	STDS. OFFICER			TRANS. COPY NO.					
	DATE	30-01-04							
		TYPE GROUP		OLD DRG.		NEW DRG.			
293-092		TITLE		DRAWING No.					
TAPER PLATE				40-T-42-44422					

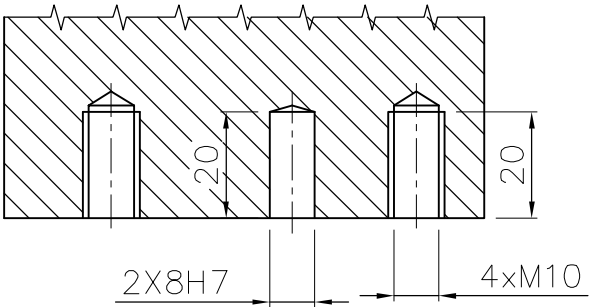
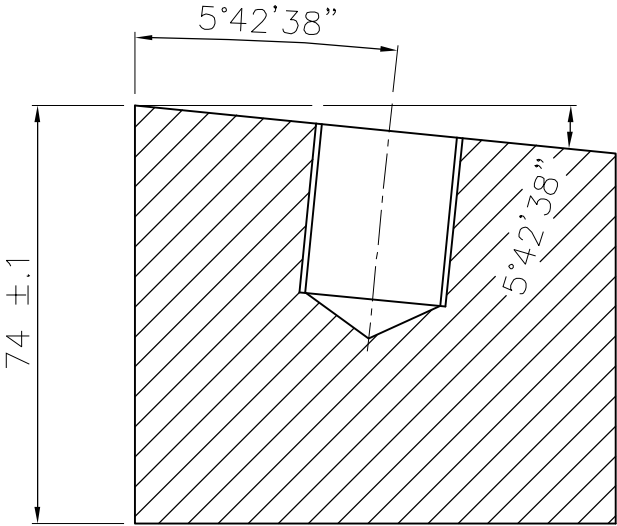
DRAWING: 20-T-42-25668
COMPONENT: GUIDE-I
MATERIAL: ASTM-A36



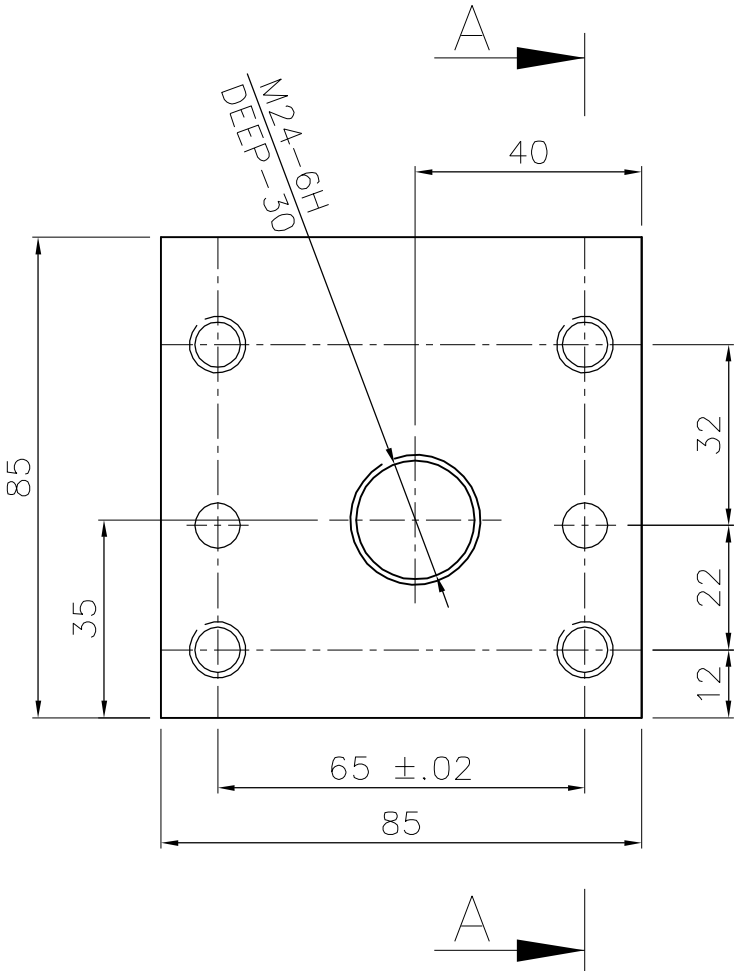
SECTION-AA



DRAWING: 20-T-42-25669
COMPONENT: GUIDE-II
MATERIAL: ASTM-A36

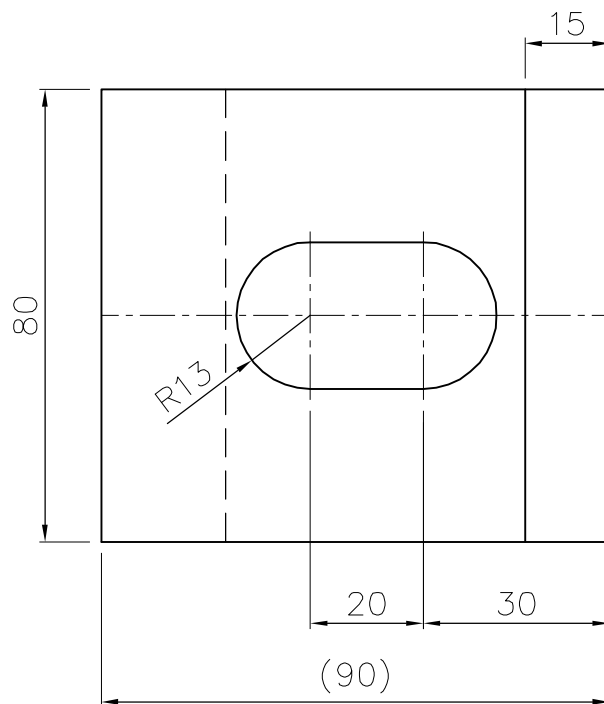
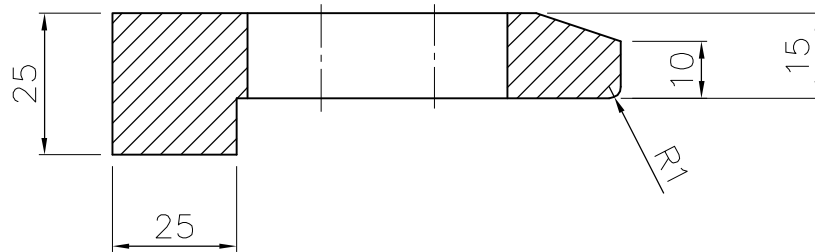


SECTION-AA



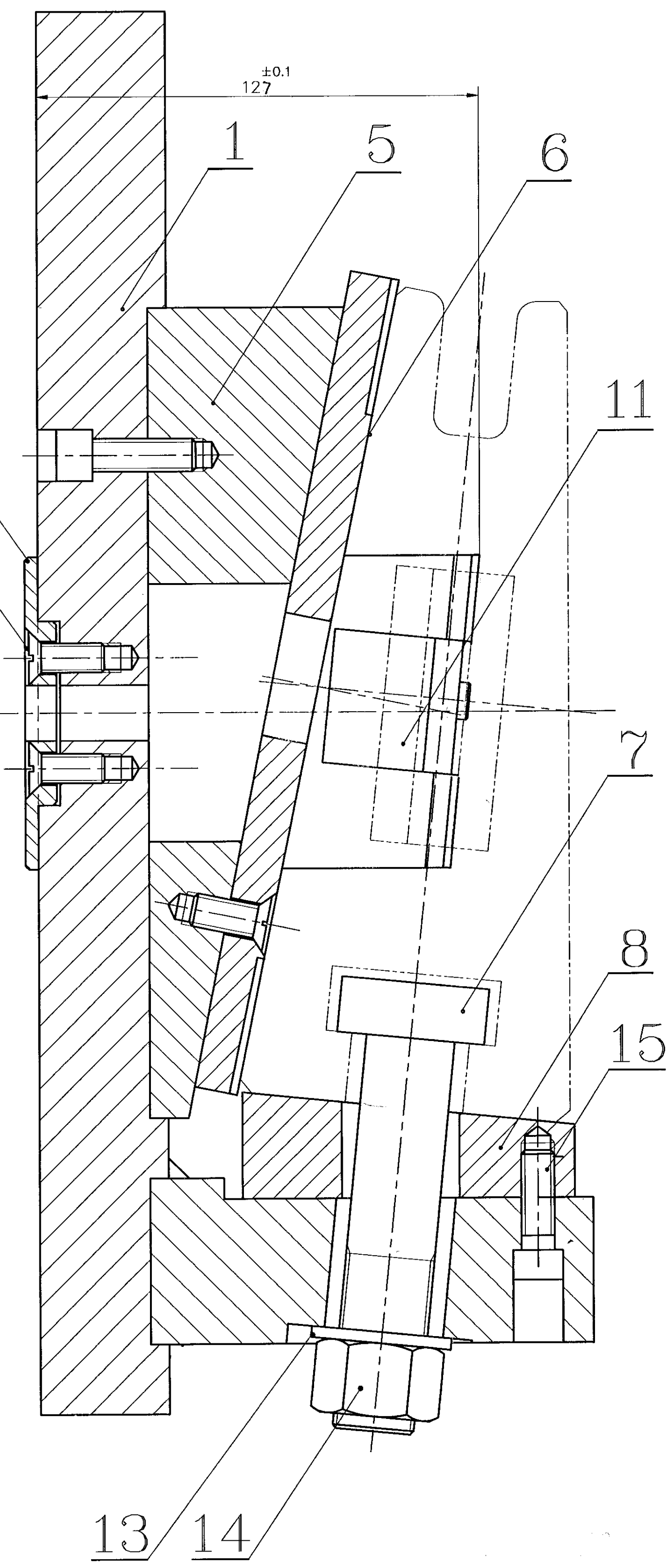
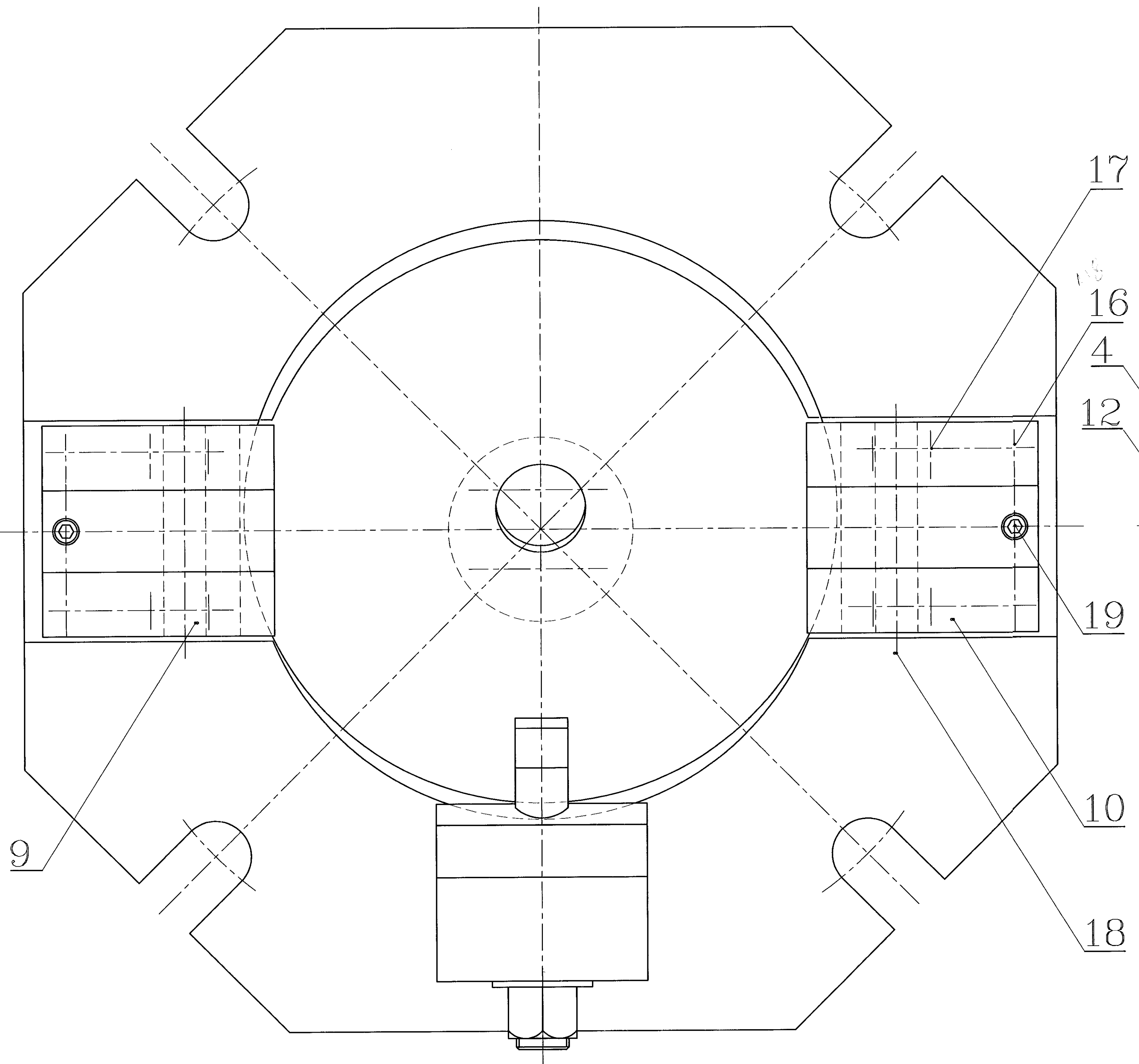
DRAWING: 40-T-42-41652
COMPONENT: CLAMP
MATERIAL: IS-1875 CL.4

HARDEN AND TEMPER TO 28 HR_c.



10-T-42-18537

TOLERANCE FOR UNTOLERANCED DIMENSIONS	
UP TO 6 MM	= ±0.1 MM
> 6 UP TO 120 MM	= ±0.2 MM
MORE THAN 120 MM	= ±0.5 MM
ANGULAR TOLERANCE	= ±0.5 Deg
CHAMFER	= ±0.5 Deg



NO. OF PIECES	DESCRIPTION	SEM. PRO/REG. NO.	INT. MAT/REG. NO.	FINAL MATERIAL	SCRAP SORT	NET WT.(KG)	GROUPS WT.(KG)	DRAWING NO	ITEM NO
2	HEX. SOC. GR. SCR.-M16X50		IS:6094-A-4.8H _{3.5}						19
2	PIN Ø8X80		IS:6689						18
6	PIN Ø8X40		IS:6689						17
8	HEX. SOC. HEAD SCR.-M10X30		IS:6094-A-8.8						16
8	HEX. SOC. HEAD SCR.-M8X30		IS:6094-A-8.8						15
1	HEX. NUT-M24		IS:1364(P3)B-6&22H						14
1	WASHER-M24		IS:2016						13
5	C'SUNK SCREW -M8X18		IS:1366-A-4.8						12
2	CLAMP		IS:1875 C14		1.2			40T42-41652	11
1	GUIDE-II		ASTM-A36		5.20			20T42-25669	10
1	GUIDE-I		ASTM-A36		5.20			20T42-25668	9
1	WEAR PLATE-II		IS:1570 T215 C+12		1.2			40T42-44441	8
1	T-BOLT		IS:1875 C14		0.30			30T42-40253	7
1	WEAR PLATE-I		IS:2062 Fe410A		4.5			40T42-44442	6
1	TAPER BASE		IS:1875 C14		8.5			20T42-27433	5
1	LOCATOR	(S.L.No:0)	IS:2062 Fe410A		0.49			20T42-16850F	4
1	WELDMENT	(2&3)			42.4			10T42-18538	1
COMP. DRG. NO. 2-V-NC08-13631									
COMP. DESC. WEDGE-8"-150# GV									
GROUP: DV WC: 4131									

TOOL NO :- 42-55575-00

BHARAT HEAVY ELECTRICALS LTD.,
BOILER PLANT UNIT, TIRUCHIRAPALLI-14

FIRST ANGLE	SCALE	DRAWN	TOTAL NET WT.(KG)
	1:1	A.KUMAR	
CHECKED			TYPE
APPROVED			
ALL DIMENSIONS IN MILLIMETRES.	DATE	050304	NEW/OLD DRG. NO.

CAUTION
THE INFORMATION CONTAINED IN THIS DRAWING IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LTD BOILER PLANT UNIT, TIRUCHY-14 AND SHALL NOT BE USED WITHOUT THEIR EXPRESS WRITTEN PERMISSION IN ANY FORM OR PART THEREOF FOR ANY OTHER PURPOSE THAN FOR WHICH IT IS SENT TO YOU.

TURNING FIXTURE
TURNING FIXTURE
DRAWING NO. 10-T-42-18537
REVISION

A	DATE	ALTERED
ZONE		CHECKED

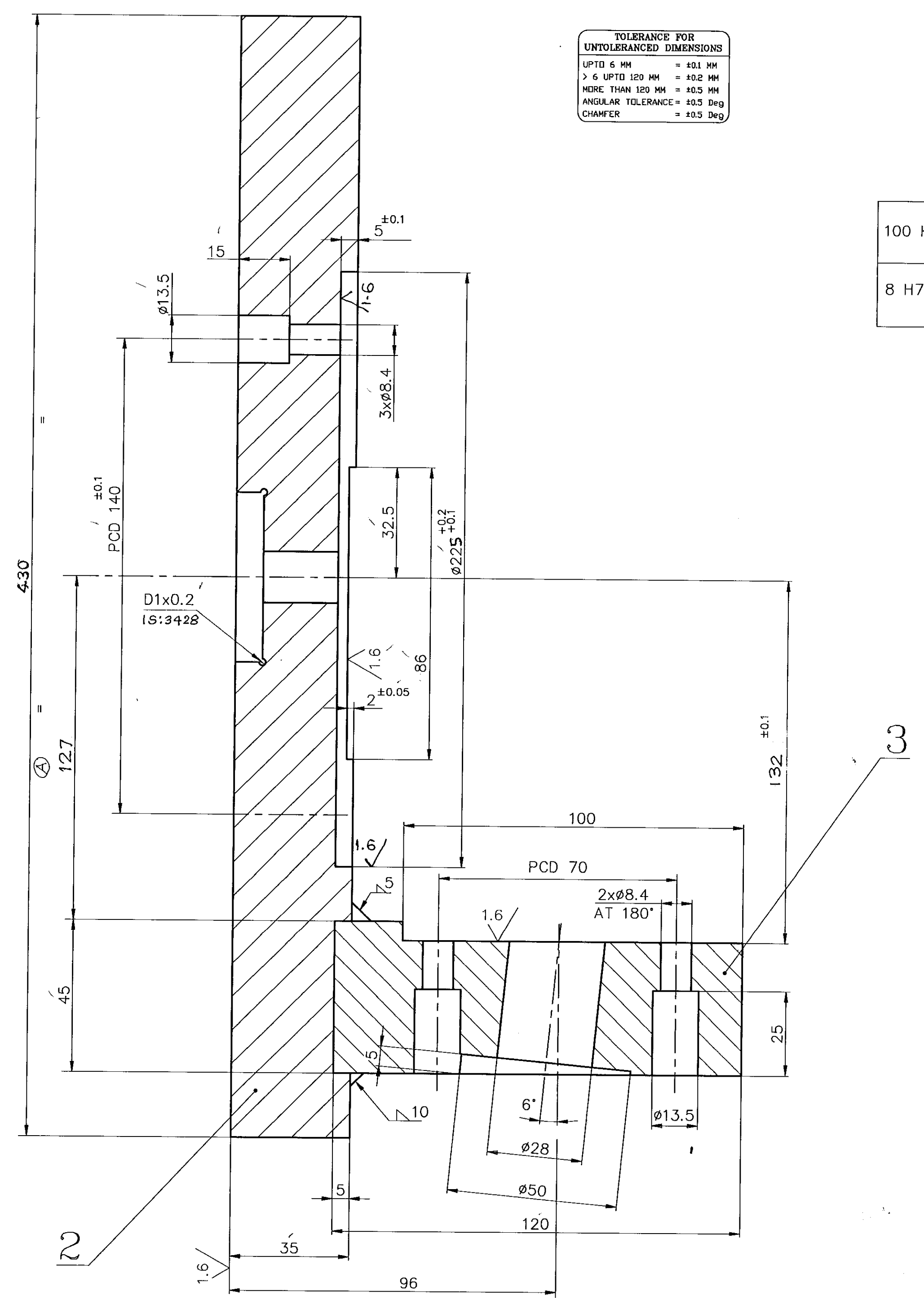
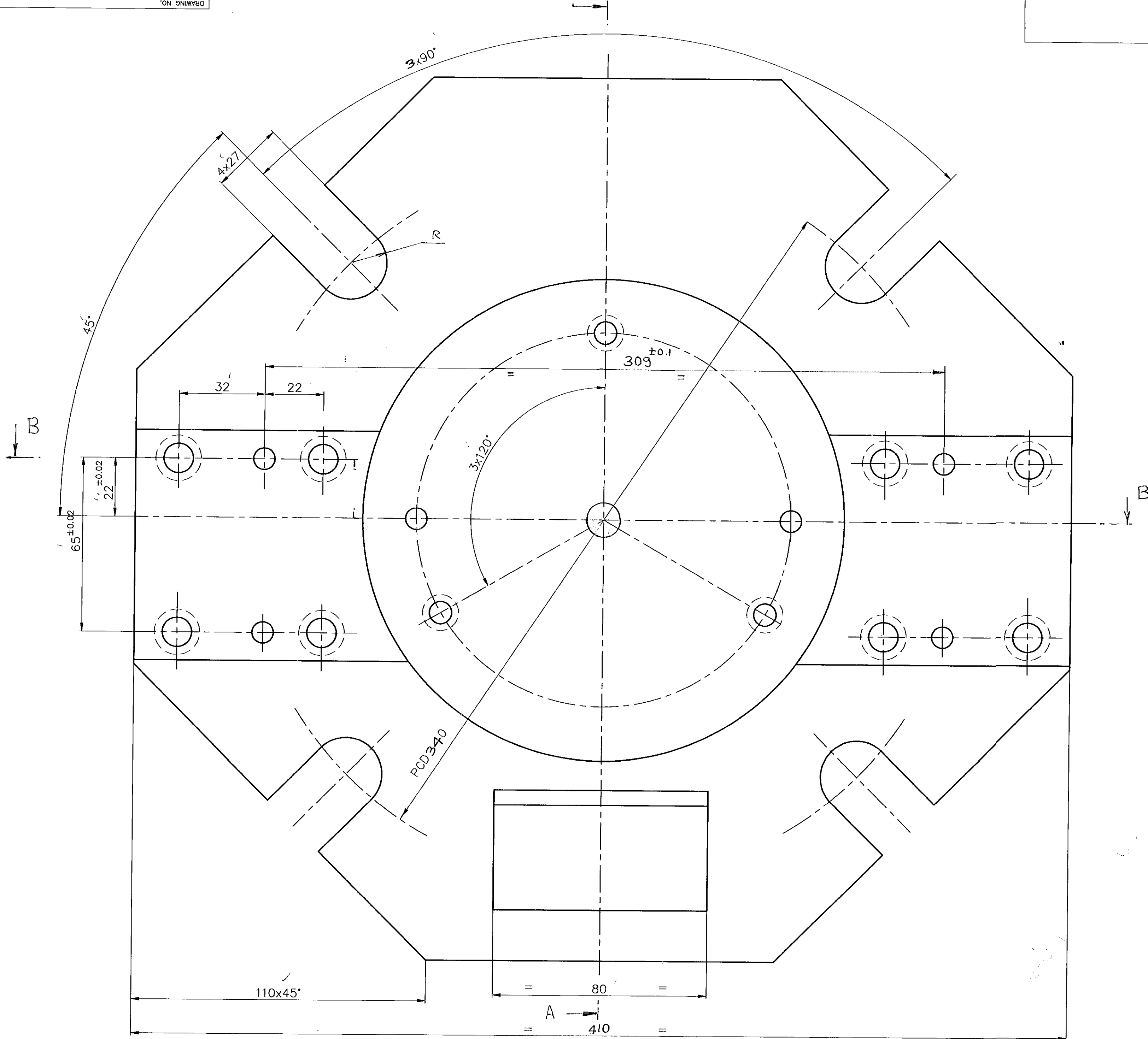
10-T-42-18538

CHAMFER SHARP EDGES.
* Ø8 H7 TO BE DRILLED WITH ITEM No.4

3.2 / 1.6 / 0.8 /

TOLERANCE FOR
UNTOLERANCED DIMENSIONS
UP TO 6 MM = ±0.1 MM
> 6 UP TO 120 MM = ±0.2 MM
MORE THAN 120 MM = ±0.5 MM
ANGULAR TOLERANCE = ±0.5 Deg
CHAMFER = ±0.5 Deg

100 H7	+0.035 0.0
8 H7	+0.015 0.0



SECTION-AA

SECTION-BB

1	PL.45x80x120		IS:2062Fe410B		3.3		SECTION	3	
1	PL.35x410x430		IS:2062Fe410B		39.1			2	
NO. OF PIECES	DESCRIPTION	SER. PRO/REV. NO.	INT. MAT/REV. NO.	FINAL MATERIAL	GROUP SYM.	NET WT.(KG)	GROSS WT.(KG)	DRAWING NO	ITEM NO.

10-T-42-18537/1

10-T-42-18537/1

BHARAT HEAVY ELECTRICALS LTD.,
BOILER PLANT UNIT, TIRUCHIRAPALLI-14

FIRST ANGLE:	SCALE:	DRAWN:	A.KUMAR	TOTAL NET WT.KG	42.4
CHECKED:	1:1	CHECKED:		TYPE	
APPROVED:		APPROVED:		DATE	05/03/04
ALL DIMENSIONS IN MILLIMETRES.				NEW/OLD DRG NO.	

CAUTION



THE INFORMATION CONTAINED IN THIS
DRAWING IS THE PROPERTY OF
BHARAT HEAVY ELECTRICALS LTD.
AND SHALL NOT BE USED WITHOUT THEIR
EXPRESS WRITTEN PERMISSION IN ANY
FORM OR PART THEREOF FOR ANY OTHER
PURPOSE THAN FOR WHICH IT IS SENT
TO YOU.

WELDMENT	
WELDMENT	
DRAWING NO.	
10-T-42-18538	
REVISION	
A	

DATE	06/07/04	ALTERED	A.KUMAR
ZONE		CHECKED	
DIM 127 WAS 101			

09891-05-L-02

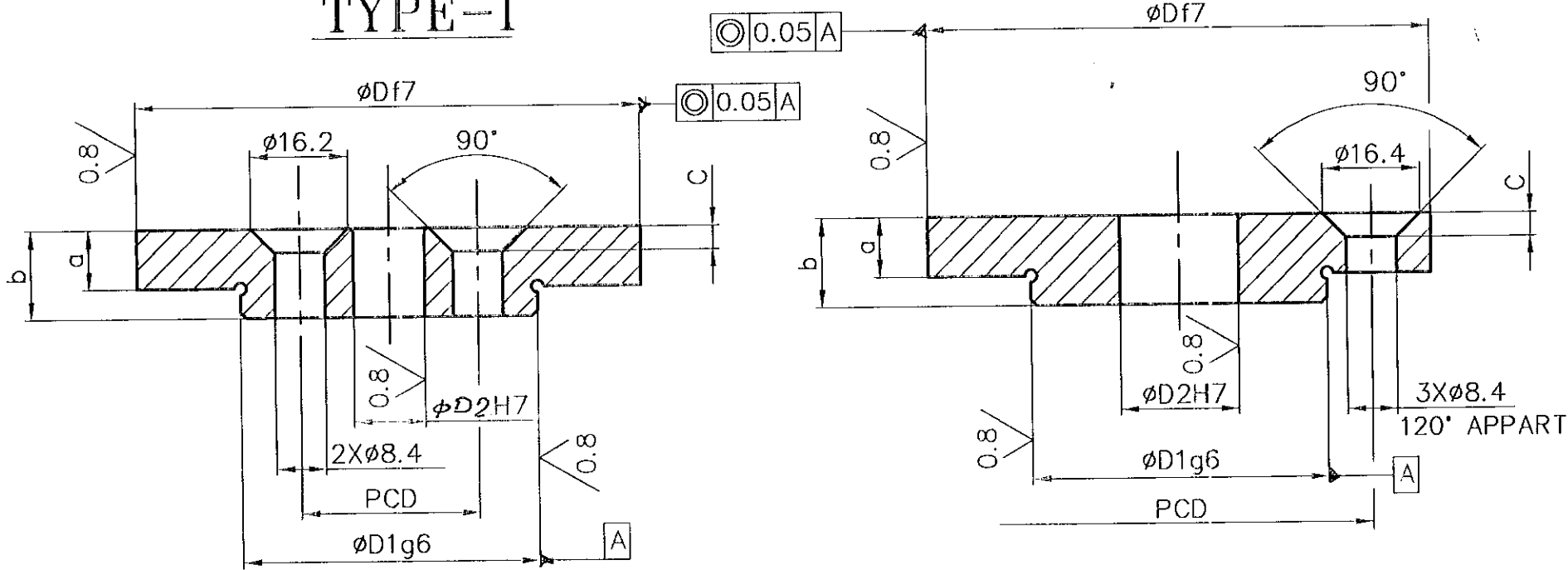
DRAWING NO.

TYPE-II

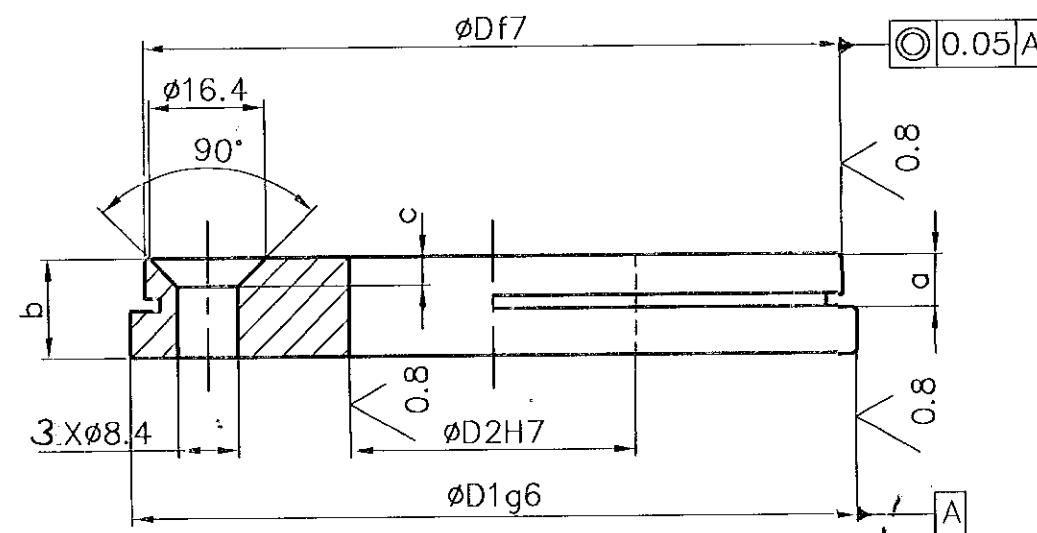
---CASE CARBURISE TO A DEPTH OF 0.8mm
AND HARDEN & TEMPER TO 55^{±2} HRC.

3.2/0.8

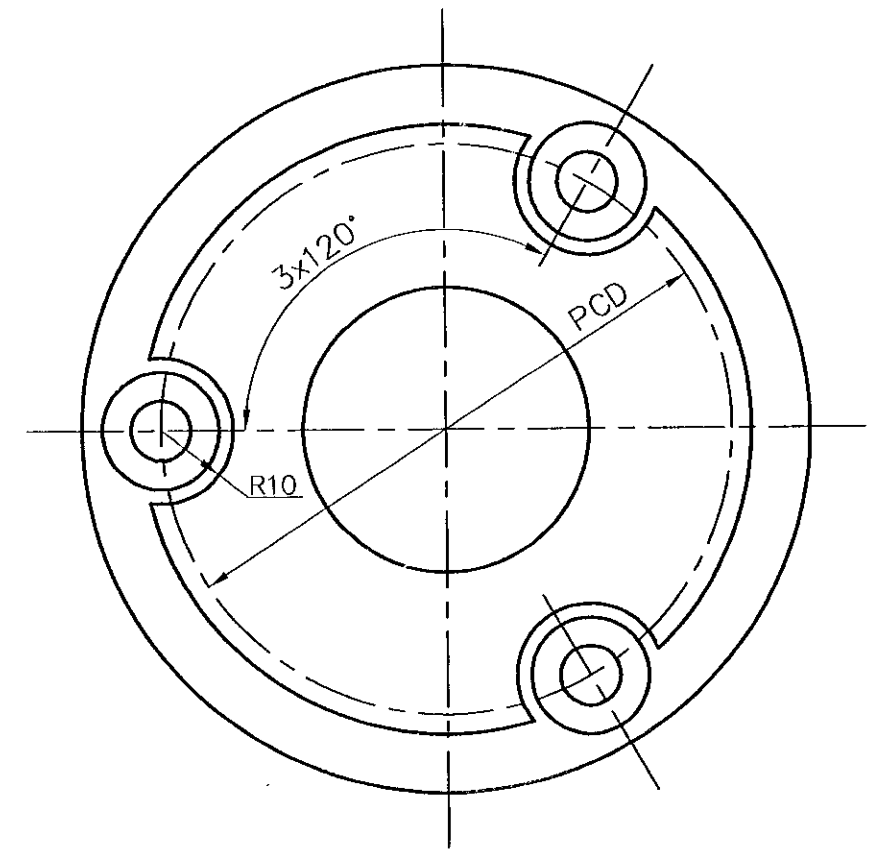
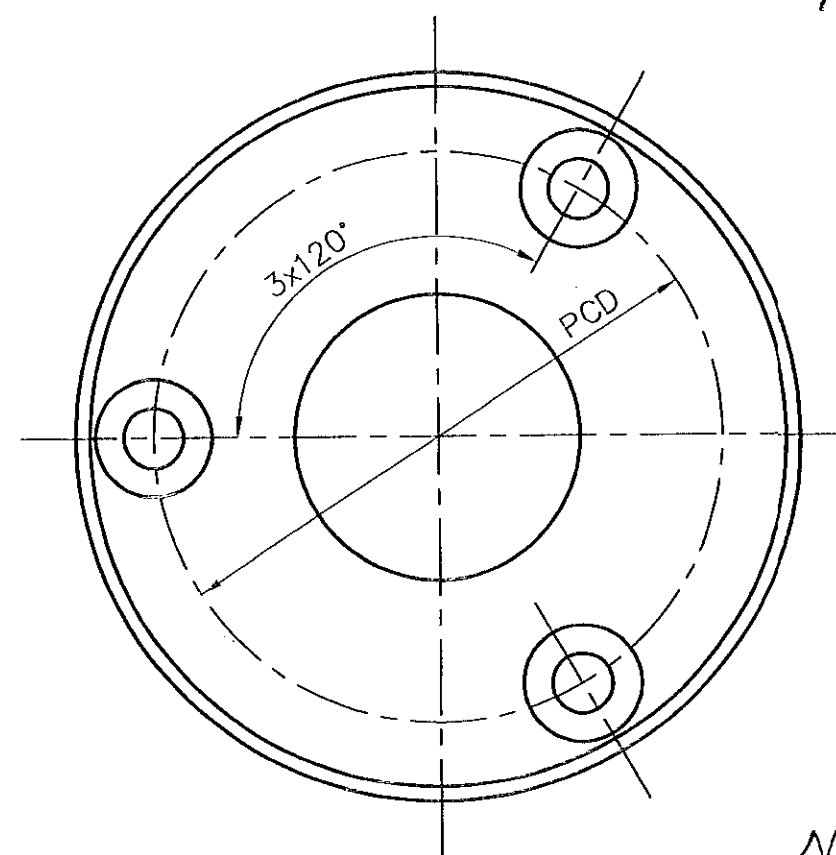
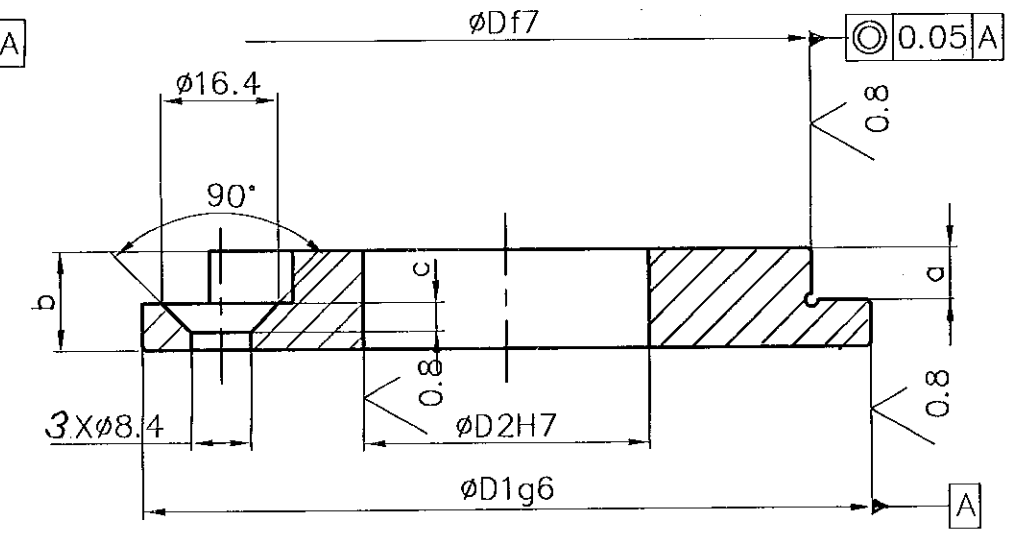
TYPE-I



TYPE-III



TYPE-IV



NOTE:-
P - PREFERRED
NP - NOT PREFERRED

SL. No.	TOOL No.	TYPE	ØDf7	ØD1g6	ØD2H7	a	b	c	PCD	No OF HOLES	Wt IN Kg	M/C	REMARKS
01	50-52125-00	I	85	50	12	10	15	4	30	2	0.49	LB 20	P
02	50-52130-00	II	85	50	20	10	15	4	65	3	0.46	LB 20	NP
03	50-52135-00	IV	85	100	40	10	20	4	80	3	0.79	LB 20	NP
04	50-52140-00	I	98	50	12	3.5	8.5	4	30	2	0.25	SK 12	P
05	50-52145-00	III	98	100	40	3.5	13.5	4	80	3	0.64	SK 12	NP
06	50-52150-00	II	160	100	40	8	18	4	80	3	1.69	SU 63A	P
07	50-52155-00	I	160	50	12	8	13	4	30	2	1.31	SU 63A	NP
08	50-52160-00	II	160	50	20	8	13	4	65	3	1.29	SU 63A	NP
09	50-52895-00	II	260	50	20	9	20	4	180	3	3.84	SK 25% MODEL 1541	P
10	50-54053-00	II	160	100	40	8	18	4	130	3	1.69	SU 63A	P
11	50-54473-00	III	98	100	40	9	19	4	80	3	0.91	9C 30	NP
12	50-14538-00	II	205	100	20	9	20	4	180	3	3.10	SK 50	P
13	50-14539-00	II	260	100	20	9	20	4	180	3	3.84	SK 25	P
14	50-14661-00	II	280	100	20	9	20	4	180	3	3.9	COOPER	P
15	50-54342-00	II	152.4	100	40	13	20	4	130	3	1.8	DYNACUT	P
16	50-14939-00	II	260	200	20	9	15	4	230	3	2.27	SK 25	P
17	50-14940-00	II	276.8	200	20	9	15	4	230	3	2.32	COOPER	P
18	50-54528-00	II	98	50	20	3.5	8.5	4	80	3	0.3	SK 12	P
19	50-54542-00	II	152.4	50	20	13	20	4	80	3	1.6	DYNACUT	NP
20	50-54545-00	II	126.1	100	40	12	18	4	80	3	1.5	L45 CHUCK	NP
21	50-54571-00	I	80.75	50	10	10	15	4	30	2	0.3	WSU 80	P
22	50-54572-00	II	80.75	50	30	10	15	4	65	3	0.3	WSU 80	NP
23	50-54573-00	III	80.75	100	40	10	15	4	60	3	0.3	WSU 80	NP
24	50-54574-00	II	140	50	20	10	15	4	80	3	1.2	SBCNC 35	P
25	50-54575-00	II	192.65	100	50	10	20	4	150	3	3.2	MAXMULLER	P
26	50-54584-00	I	192.7	50	12	8	13	4	30	2	1.7	MAXMULLER MDW 20	NP
27	50-54585-00	II	192.7	100	40	8	18	4	80	3	2.2	MAXMULLER MDW 20	P
28	50-54587-00	I	100	50	12	8	13	4	30	2	0.25	SKS 25 SKIQ 12	P
29	50-54591-00	I	100	100	20	---	19	4	60	3	1.1	SKS 25	NP

F	DATE 30.01.95	DRAWN: SJW CHECKED: S. Kamesh	E	DATE 16.08.94	DRAWN: GSK CHECKED: S. Kamesh
(f)	SL. No:29 ADDED.		(e)	SL. No:21, 22, 23 & 24 ADDED	
D	DATE 21.09.93	DRAWN: PSR CHECKED: S. Kamesh	C	DATE 11.07.83	DRAWN: GSK CHECKED: S. Kamesh
(d)	SL. No:20 ADDED.		(c)	BM C16 WAS BM CH4 HRC 50 WAS 62.	
B	DATE 14.07.79	DRAWN: CDP CHECKED: S. Kamesh	A	DATE 15.02.77	ALTERED KS CHECKED: S. Kamesh
(b)	SL. No:10 ADDED.		(a)	SL. No:9 ADDED.	

ØDxØb		IS: 2062 Fe410A		1	
NO. OF PIECES	DESCRIPTION	SEM. PRO/SEQ. NO.	INT. MAT/SEQ. NO.	FINAL MATERIAL	SCRAP SORT
COMP. DRG. NO.	TOOL NO :- 50- -00				
COMP. DESC.	WC: MV				
GROUP:	BHARAT HEAVY ELECTRICALS LTD., BOILER PLANT UNIT, TIRUCHIRAPALLI-14				
FIRST ANGLE.	SCALE	DRAWN	SS PERUMAL	TOTAL NET WT.KG	
NTS		CHECKED	S. Kamesh	TYPE	REDRAWN
ALL DIMENSIONS IN MILLIMETRES.		APPROVED	S. Kamesh	DATE	22.05.2000
CAUTION		TITLE			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LTD BOILER PLANT UNIT, TIRUCHY-14 AND SHALL NOT BE USED WITHOUT THEIR EXPRESS WRITTEN PERMISSION IN ANY FORM OR PART THEREOF FOR ANY OTHER PURPOSE THAN FOR WHICH IT IS SENT TO YOU.		LOCATOR			
DRAWING NO.		REVISION			
20-T-50-16850		F			

12H7	+0.018 0.
20H7	+0.021 0.
40H7	+0.025 0.
50g6	-0.009 -0.025
100g6	-0.012 -0.034
85 f7	-0.036 -0.071
98 f7	-0.056 -0.108
260 f7	-0.073 -0.083
126.1 f7	-0.036 -0.071
80.75f7	+0.025 0.
30H7	-0.043 -0.083
160 f7	
152.4 f7	

20-T-42-27433

DRAWING NO.

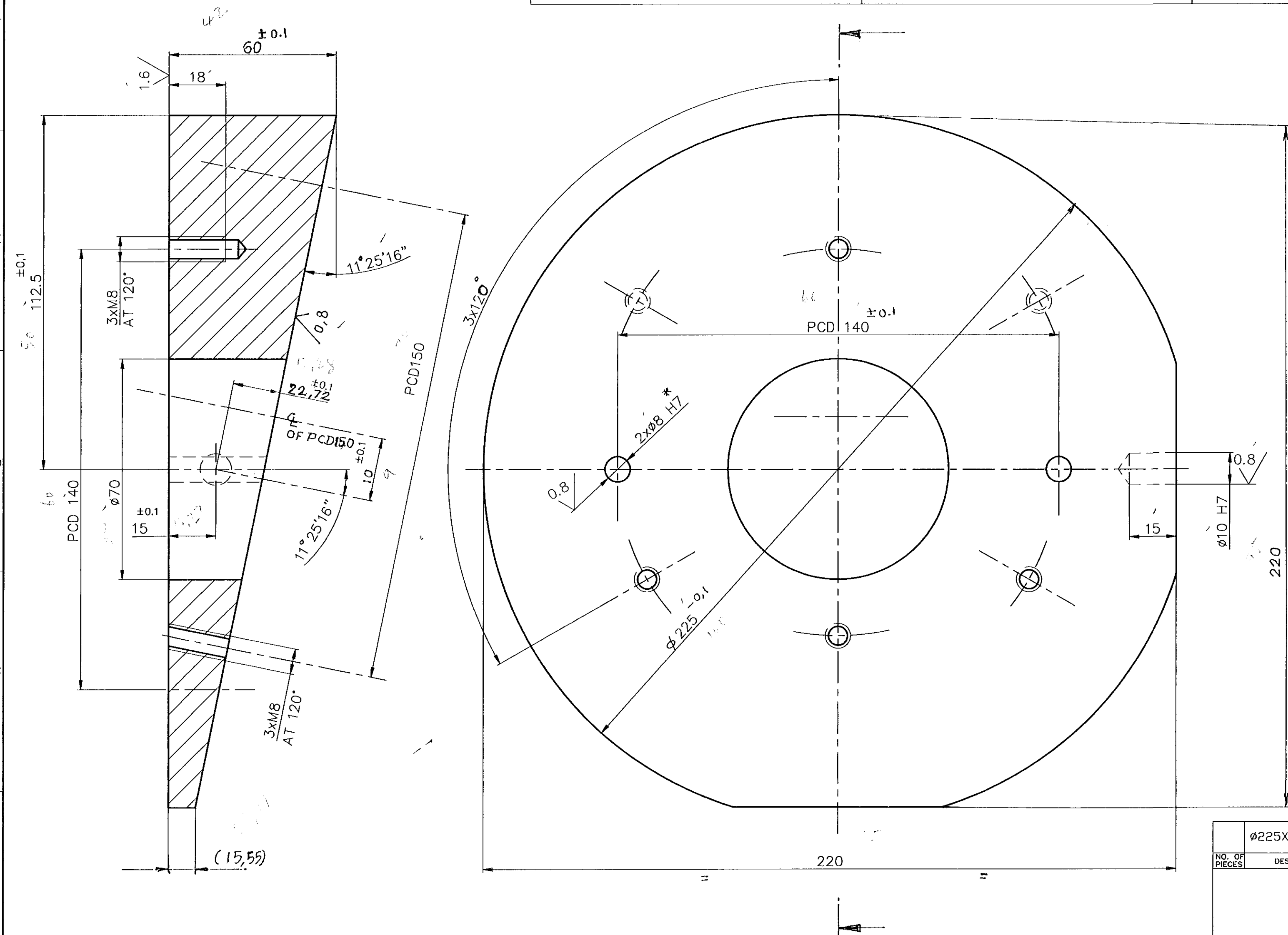
HARDEN TEMPER TO 28±1 HRc.

CHAMFER SHARP EDGES.
* Ø8 H7 TO BE DRILLED WITH ITEM No.1

3.2 / 1.6 / 0.8 /

TOLERANCE FOR UNTOLERANCED DIMENSIONS	
UPTO 6 MM	= ±0.1 MM
> 6 UPTO 120 MM	= ±0.2 MM
MORE THAN 120 MM	= ±0.5 MM
ANGULAR TOLERANCE	= ±0.5 Deg
CHAMFER	= ±0.5 Deg

8 H7	+0.015
10 H7	0



Ø225X 60			IS:1875 CL 4	8,5					
NO. OF PIECES	DESCRIPTION	SER. PRO/SEQ. NO.	INT. MAT/SEQ. NO.	FINAL MATERIAL	SCRAP SORT	NET WT.(KG)	GROSS WT.(KG)	DRAWING NO	ITEM NO.
								10-T-42-18537/5	

BHARAT HEAVY ELECTRICALS LTD.,
BOILER PLANT UNIT, TIRUCHIRAPALLI-14

FIRST ANGLE.	SCALE 1:1	DRAWN A.KUMAR	TOTAL NET WT.KG 5.40
CHEKED		APPROVED	TYPE
ALL DIMENSIONS IN MILLIMETRES.	DATE	040304	NEW/OLD DRG NO.

CAUTION



293-090

THE INFORMATION CONTAINED IN THIS
DRAWING IS THE PROPERTY OF
BHARAT HEAVY ELECTRICALS LTD
BOILER PLANT UNIT, TIRUCHY-14
AND SHALL NOT BE USED WITHOUT THEIR
EXPRESS WRITTEN PERMISSION IN ANY
FORM OR PART THEREOF FOR ANY OTHER
PURPOSE THAN FOR WHICH IT IS SENT
TO YOU.

TAPER BASE

TAPER BASE

DRAWING NO.

20-T-42-27433

REVISION

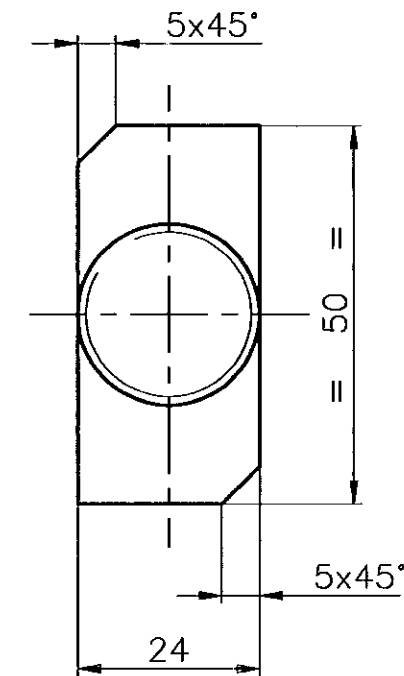
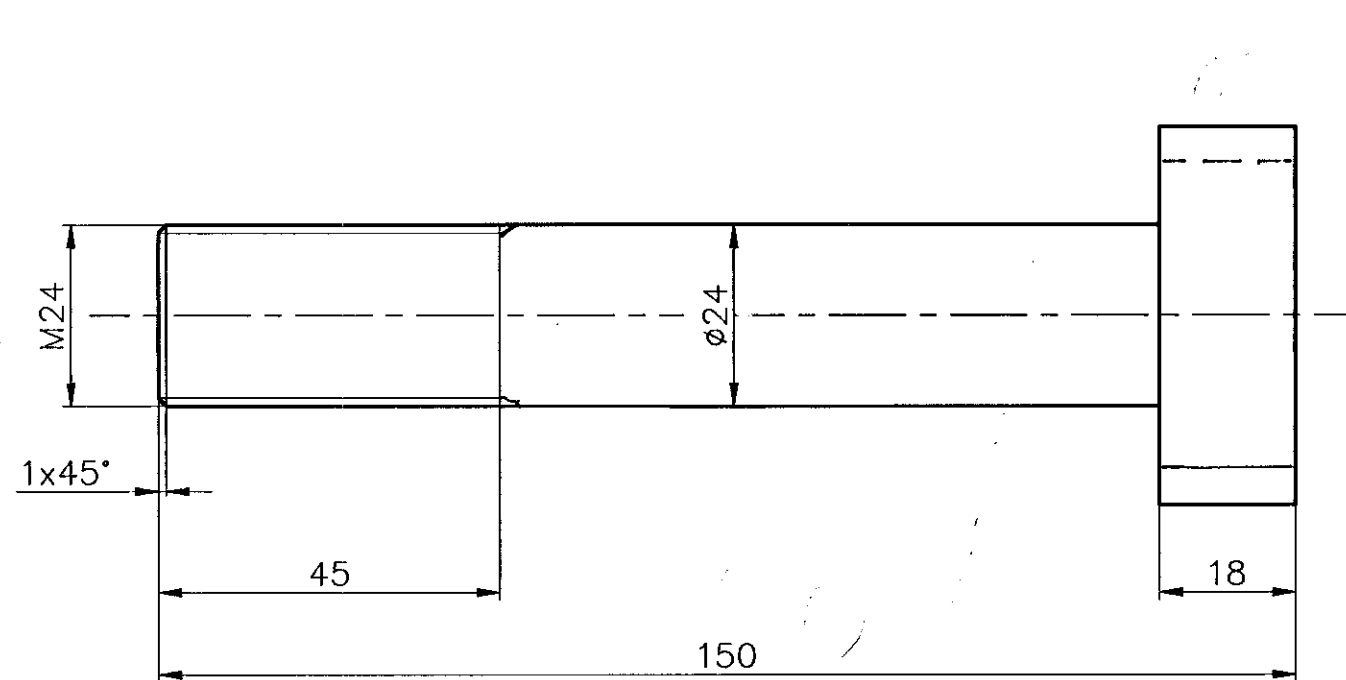
A	DATE	ALTERED
ZONE		CHECKED

HARDEN & TEMPER TO 28^{+1} HRC.

CHAMFER ALL SHARP EDGES.

3.2

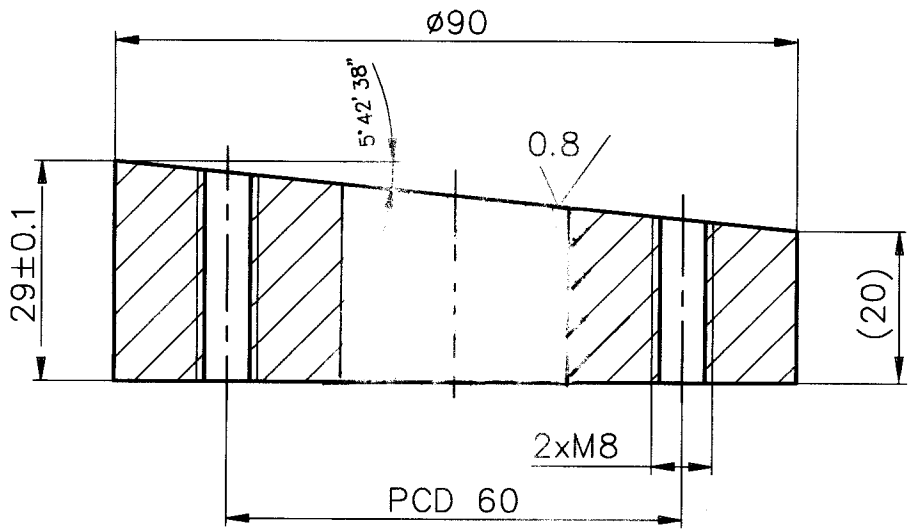
TOLERANCE FOR UNTOLERANCED DIMENSIONS	
UPTO 6 MM	= ± 0.1 MM
> 6 UPTO 120 MM	= ± 0.2 MM
MORE THAN 120 MM	= ± 0.5 MM
ANGULAR TOLERANCE	= ± 0.5 Deg
CHAMFER	= ± 0.5 Deg



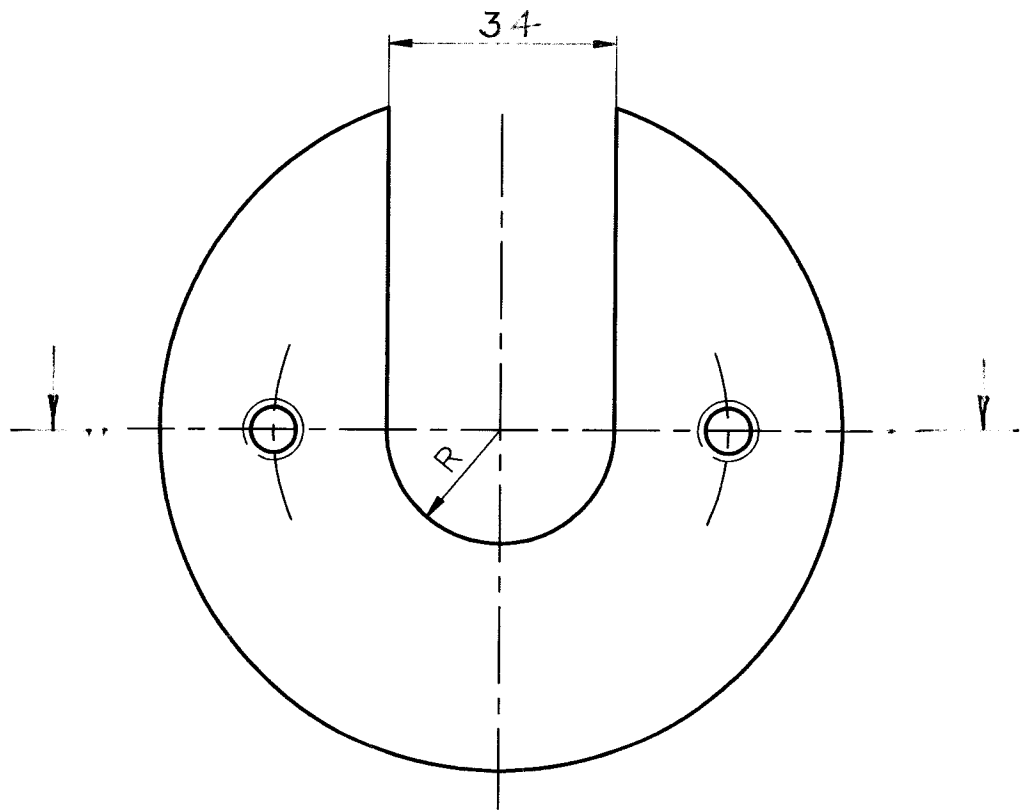
	Ø56X150			IS:1875 CL 4	0,3		10.T.42.18536	7	
NO. OF PIECES	DESCRIPTION	SEM. PRO/SEQ. NO.	INT. MAT/SEQ. NO.	FINAL MATERIAL	SCRAP SORT	NET WT.(KG)	GROSS WT.(KG)	DRAWING NO	ITEM NO.
								10-T-42-18530/7 10-T-42-18541/7 10-T-42-18537/7	
BHARAT HEAVY ELECTRICALS LTD., BOILER PLANT UNIT, TIRUCHIRAPALLI-14									
FIRST ANGLE. 	SCALE 1:1	DRAWN RENGITH.R	CHEKED 	APPROVED 	DATE 14/02/2004	TOTAL NET WT.KG	TYPE		
ALL DIMENSIONS IN MILLIMETRES.						NEW/OLD DRG NO.			
CAUTION THE INFORMATION CONTAINED IN THIS DRAWING IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LTD BOILER PLANT UNIT, TIRUCHY-14 AND SHALL NOT BE USED WITHOUT THEIR EXPRESS WRITTEN PERMISSION IN ANY FORM OR PART THEREOF FOR ANY OTHER PURPOSE THAN FOR WHICH IT IS SENT TO YOU.						TITLE. T-BOLT T-BOLT DRAWING NO. 30-T-42-40253			
A		DATE	ALTERED		REVISION				
ZONE		CHECKED							

HARDEN & TEMPER TO 58±2 HRC.
CHAMFER SHARP EDGES.

3.2 / 0.8



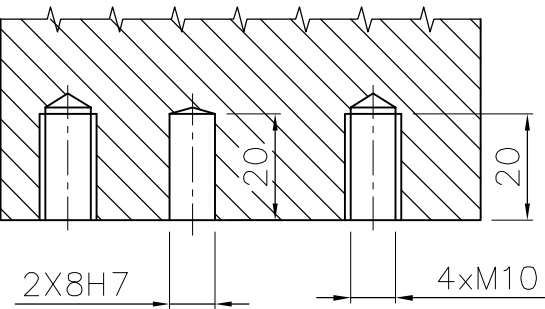
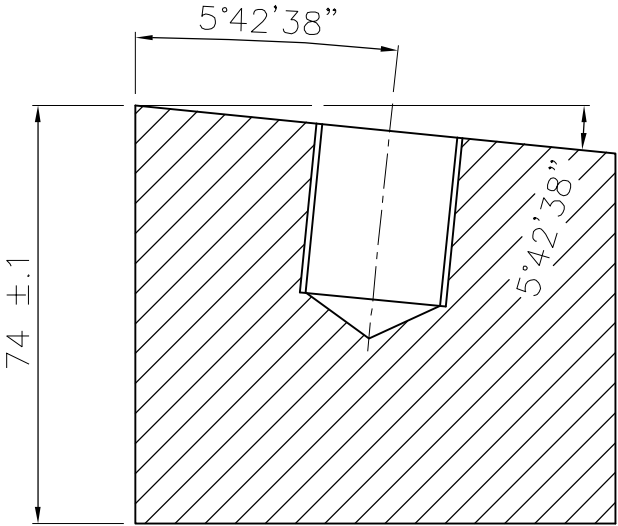
TOLERANCE FOR UNTOLERANCED DIMENSIONS	
UPTO 6 MM	= ±0.1 MM
> 6 UPTO 120 MM	= ±0.2 MM
MORE THAN 120 MM	= ±0.5 MM
ANGULAR TOLERANCE	= ±0.5 Deg
CHAMFER	= ±0.5 Deg



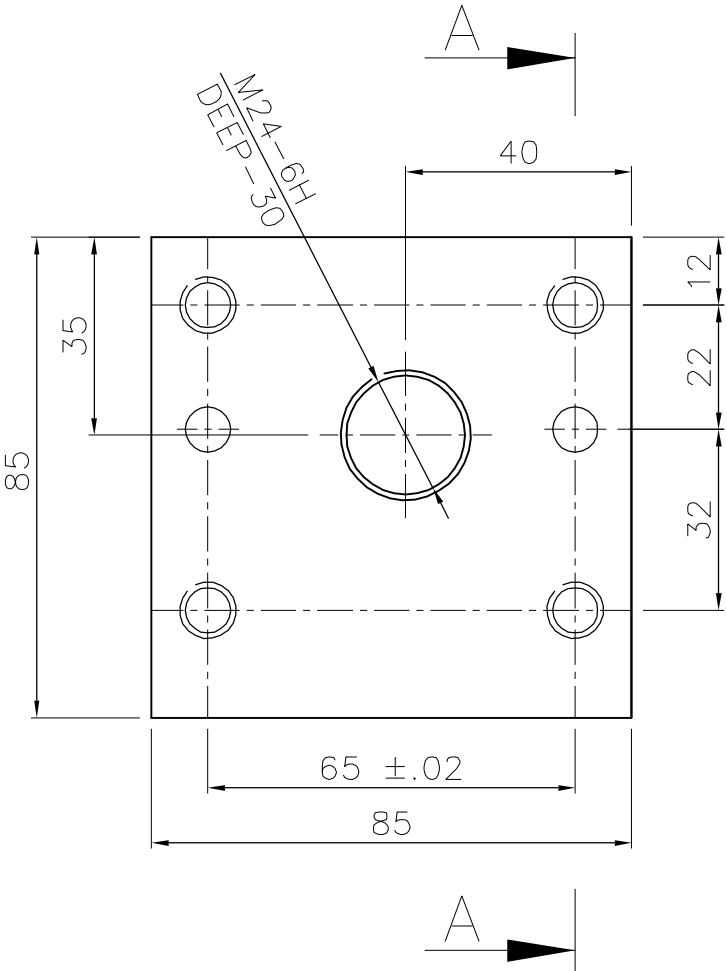
10T42-18537

Ø90x29		15:1570 T215C12		2				8	
NO. OF PIECES	NAME-DIMENSIONS	SEMI-PRODUCT	FINAL MATERIAL	INITIAL MATERIAL	SCRAP SORT	NET WT (KG)	GROSS WT (KG)	DRAWING NO.	ITEM NO.
REMARKS				TOTAL NET Wt(kg)					
SCALE 1:1	DRAWN	A.KUMAR		ALTERATIONS		DATE	SIGNATURE	ALTERATION INDEX	
	CHECKED	<i>AKumar</i>							
	APPROVED	<i>permal</i>							
	STDS. OFFICER			TRANS. COPY NO.					
	DATE	03-03-04							
		TYPE GROUP		OLD DRG.		NEW DRG.			
TITLE				DRAWING No.					
WEAR PLATE II				40-T-42-44441					
293-092									

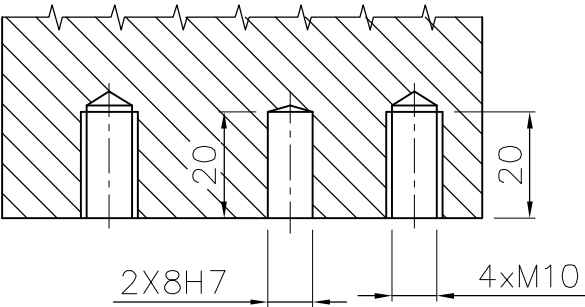
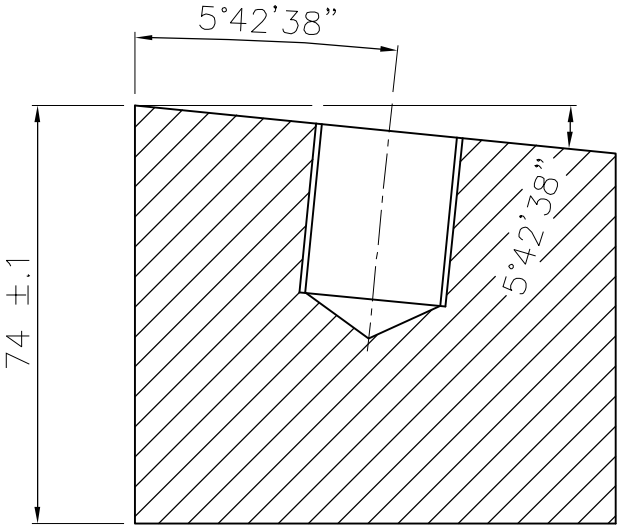
DRAWING: 20-T-42-25668
COMPONENT: GUIDE-I
MATERIAL: ASTM-A36



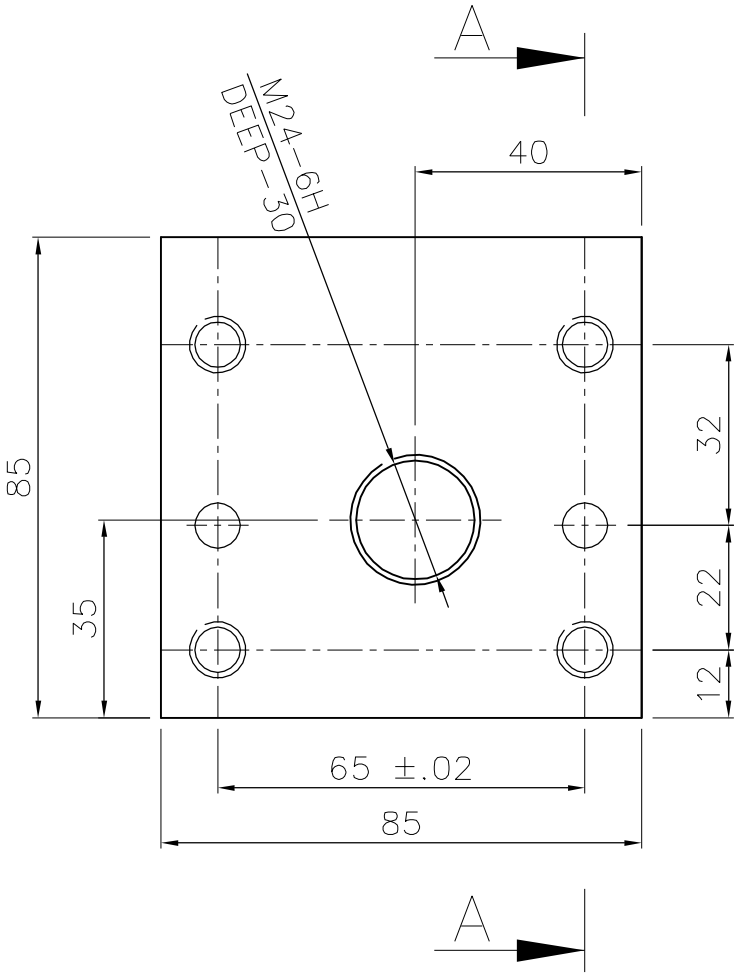
SECTION-AA



DRAWING: 20-T-42-25669
COMPONENT: GUIDE-II
MATERIAL: ASTM-A36



SECTION-AA



DRAWING: 40-T-42-41652

COMPONENT: CLAMP

MATERIAL: IS-1875 CL.4

HARDEN AND TEMPER TO 28 HR_c.