

Technical Specifications

Sl.No	Item Description and Technical Specifications	Qty (Nos)	Vendor's Confirmation /Acceptance
1	SPUR GEAR AS PER DRG No: 4-M-10A78-30095	2	
2	PAWL AS PER DRG No: 4-M-06B09-30091	2	
3	RATCHET AS PER DRG No: 3-M-06B09-16356	2	
4	SPUR GEAR AS PER DRG No: 3-M-08D05-16353	2	
5	SPUR GEAR AS PER DRG No: 3-M-08D05-16354	2	
6	PINION SHAFT AS PER DRG No:3-M-08D05-30087	2	
7	SPUR GEAR AS PER DRG No: 4-M-08D05-30088	2	
8	SPUR GEAR AS PER DRG No: 4-M-08D05-30089	2	
9	SPUR GEAR AS PER DRG No: 4-M-08D05-30090	2	
10	SPROCKET AS PER DRG No: 3-M-01B14-16234	2	
11	SCREW ROD AS PER DRG No: 3-M-08B06-16359	2	
12	BOX NUT AS PER DRG No: 3-M-08B06-16358	2	
13	SPINDLE AS PER DRG No: 2-M-06F01- 06362	1	
14	SEGMENT AS PER DRG No: 2-M-06F01- 16357	2	
Common Note for All items: - Supplier shall suitably punch / tag / engrave the given drawing Number against each item during supply.			

Supplier's Signature & Seal

Annexure B

Pre-Qualification Criteria

A. Pre-Qualification Criteria		
SL. No	Pre-Qualification Criteria	Vendor's Confirmation /Acceptance
	Only those vendors who satisfy the following condition will get qualified to participate in the tender. If the vendor does not qualify as per PRE- QUALIFICATION CRITERIA, the offer of such bidder(s) will not be considered.	
1.	Previous PO details for supplying similar kind of items to BHEL or any-other Organization should be submitted along with offer. Otherwise offer will be rejected.	

Supplier's Signature & Seal

Annexure – A- Additional Terms and Conditions for GeM Enquiry

The terms and condition mentioned in this document are applicable in addition to the GeM General Terms and Conditions. Bidders shall furnish pointwise confirmation/details.

<i>To be filled by bidder</i>		
Description of the Equipment:		
GeM Tender No. & Date		
Name of the firm (Bidder)		:
Address		:
Contact details		<u>Contact person 1</u> Name: Designation: Office Phone: Mobile: e-mail: <u>Contact person 2</u> Name: Designation: Office Phone: Mobile: e-mail:
Offer/Quotation reference with date		:
Sl · N o	Terms and conditions	Vendor's confirmation
1.	Technical: Supply of Machining items Spares as per BHEL Drawings shall be as per technical Specifications attached with the enquiry. Bidder shall comply the technical specification as per the enquiry. Any clarifications/deviations to the specification requirements are to be clearly indicated in the above format. Hidden deviations indicated elsewhere in the offer will not be evaluated.	
2.	Pre-qualification requirement: Offer shall be considered only if bidder is meeting Tender Prequalification requirement (Annexure-B). Vendor to comply with Pre-Qualification requirement of the tender and submit along with their technical bid - the credentials and other documents as indicated in the PQR in the format prescribed. Otherwise their offer will get rejected.	
3.	Inspection by BHEL/as per Technical specification(if any).	
4.	Vendor offers will be considered for price bid opening subject to fulfilment of techno commercial suitability.	
5.	Evaluation of the tender will be on total package basis.	
6.	Payment terms: <ol style="list-style-type: none"> 1. Payment terms for Non MSME Suppliers: Within 90 days after CRAC 2. Dealers/Traders (if the quoted items are not manufactured by the supplier) shall be considered as Non-MSME supplier for this tender. 3. Payment terms for Micro & Small Enterprises (MSEs): Within 45 days after CRAC. To entitle the above payment terms, the supplier should be manufacturer of the offered item and should upload UDYAM Registration Certificate in proof of MSE. 4. Payment terms for Medium Enterprises: Within 60 days after CRAC. 	

	<p>To entitle the above payment terms, the supplier should be manufacturer of the offered item and should upload UDYAM Registration Certificate in proof of Medium Enterprises.</p> <p>Payment shall be as per above terms.</p> <p>This a mandatory deemed accepted clause if you are submitted your offer through GeM. Any deviation in this clause anywhere in the offer will be ignored. If a supplier has submitted their offer against this enquiry, it shall be construed that they have accepted the above payment terms relevant to their MSME category without any deviation (Dealers/Traders (if the quoted items are not manufactured by the supplier) shall be considered as Non-MSME supplier for this tender).</p> <p>In case of Auto PRC/CRAC, Payment due date shall be calculated from CRAC date or material acceptance date by BHEL whichever is later.</p>	
7.	<p>Firm Price:</p> <p>The quoted / finalised rates shall be Firm till execution of the supplies. Offer with PVC clause will not be considered.</p>	
8.	<p>Liquidated Damages:</p> <p>LD terms shall be as per GeM General Terms and Conditions. Invoice date/Bill of Lading date/Airway Bill date/Lorry way bill date/e-waybill/Railway Receipt date, whichever is later will be considered for LD calculation.</p>	
9.	<p>Delivery term:</p> <p>The quote shall be on FOR BHEL STORES - Trichy destination basis inclusive of Packing, forwarding, Freight also to yours account. Transit Insurance is under Supplier scope.</p>	
10.	<p>Performance Bank Guarantee:</p> <p>Not Applicable</p>	
11.	<p>Repair & replacements: Within the guarantee period vendor has to replace / rectify the defective/ damaged items on free of cost within a reasonable time of reporting from our end.</p>	
12.	<p>Kindly Indicate the HSN Code for all items</p>	
13.	<p>Rate quoted in GeM portal should be on FOR destination basis inclusive of all taxes, freight etc. Transit Insurance is under Supplier scope.</p> <p>Please indicate the applicable GST %, P & F and freight cost (in % of material cost), which is included in your quoted rate in GeM portal.</p>	
14.	<p>Documents are to be submitted along with technical bid (Part-1)</p> <ol style="list-style-type: none"> 01. Covering letter 02. Unpriced offer. 03. Filled up and signed technical specification (GeM Tender catalogue). 04. Filled BHEL Terms and condition sheet (Annexure-A). 05. Filled Annexure-B - PQR along with supporting documents. 06. Documents required along with offer as per technical specification 07. Product Catalogues (if any). 08. MSE UDYAM Certificate (if applicable). 09. Self-Certification is not applicable as per Make in India clause. <p>Note: All the pages of documents are to be signed and sealed by authorized signatory of the company. Any query during enquiry stage shall be replied within two days failing which offer may be rejected as non-responsive.</p>	

15.	Inspection and testing requirements: Inspection and testing requirements are to be carried out as per the specification and BHEL Technical specifications in the enquiry. All test certificates are to be submitted while supply. If required by BHEL, test certificates to be produced before supply.	
16.	Response to Tenders for Indigenous supplier will be entertained only if the vendor has a valid GST registration Number (GSTIN) which should be clearly mentioned in the offer. If the dealer is exempted from GST registration, a declaration with due supporting documents need to be furnished for considering the offer. Dealers under composition scheme should declare that he is a composition dealer supported by the screen shot taken from GSTN portal. The dealer has to submit necessary documents if there is any change in status under GST.	
17.	Supplier shall mention their GSTIN in all their invoices (incl. credit Notes, Debit Notes) and invoices shall be in the format as specified/prescribed under GST laws. Invoices shall necessarily contain Invoice number (in case of multiple numbering system is being followed for billing like SAP invoice no, commercial invoice no etc., then the Invoice No. which is linked/uploaded in GSTN network shall be clearly indicated), Billed to party (with GSTIN) & Shipped to party details, item description as per PO, Quantity, Rate, Value, applicable taxes with nomenclature (like IGST, SGST, CGST & UTGST) separately, HSN/ SAC Code, Place of Supply etc. Wherever E-Invoice is applicable, the tax invoice/ CN / DN submitted by the vendor must contain the QR code generated in E-Invoice Portal & IRN.	
18.	All invoices shall bear the HSN Code for each item separately (Harmonized System of Nomenclature)/ SAC code (Services Accounting Code).	
19.	Invoices will be processed only upon completion of statutory requirement and further subject to following: <ul style="list-style-type: none"> • Vendor declaring such invoice in their GSTR-1 Return/ IFF • Receipt of Goods or Services and Tax invoice by BHEL. 	
20.	As the continuous uploading of tax invoices in GSTN portal (in GSTR-1/ IFF) is available for all (i.e. both Small & Large) tax payers, all invoices raised on BHEL may be uploaded immediately in GST portal on dispatch of material /rendering of services. The supplier shall ensure availability of Invoice in GSTN portal before submission of invoice to BHEL. Invoices will be admitted by BHEL only if the invoices are available in GSTN portal (in BHEL's GSTR-2A/ GSTR-2B).	
21.	In case of discrepancy in the data uploaded by the supplier in the GSTN portal or in case of any shortages or rejection in the supply, then BHEL will not be able to avail the tax credit and will notify the supplier of the same. Supplier has to rectify the data discrepancy in the GSTN portal or issue credit note or debit note (details also to be uploaded in GSTN portal) for the shortages or rejections in the supplies or additional claims, within the calendar month informed by BHEL.	
22.	In cases where invoice details have been uploaded by the vendor but failed to remit the GST amount to GST Department (Form PMT-08 or Form GST RET-01 to be submitted) within stipulated time, then GST paid on the invoices pertaining to the month for which GST return not filed by the vendor will be recovered from the vendor along with the applicable interest (currently 24% p.a) and all subsequent bills of the vendor will not be processed till filing of the GST return by the vendor	
23.	In case GST credit is denied to BHEL due to non-receipt or 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 claimed in the invoice shall be disallowed to the vendor.	

24.	Where any GST liability arising on BHEL under Reverse Charge (RCM), the vendor has to submit the invoices to BHEL well within the timeline prescribed in GST Law, to enable BHEL to discharge the GST liability. If there is a delay in submission of invoice by the vendor resulting in delayed payment of GST by BHEL along with Interest, then such Interest payable or paid shall be recovered from the vendor.	
25.	GST TDS will be deducted as per Section 51 of CGST Act 2017 and in line with Notification 50/2018 –Central Tax dated 13.09.2018. GST TDS certificate will be generated in GSTN portal subsequent to vendor accepting the TDS deduction in the GSTN portal & the vendor can directly download the Certificate from the GSTN Portal.	
26.	As per the provisions of Section 194Q of the Income Tax Act, we BHARAT HEAVY ELECTRICALS LIMITED, HPBP, TRICHY having PAN AAACB4146P, had turnover in the preceding financial year for more than Rs 10 Crores. Hence, we are liable as buyer to deduct tax at source on the payment for invoices issued by Supplier on or after 1st July 2021. Accordingly, discontinue charging TCS u/s 206C(1H) on invoices issued from 1st Jul 2021 onward. We shall deduct the eligible TDS u/s 194Q on the payments for invoices issued on or after 1st Jul 2021. TDS deducted so, shall be deposited to the Income Tax Department, and TDS certificate to this effect. Tax credit of such TDS shall reflect in FORM26AS of the supplier at the end of same quarter in which TDS is deducted. For Suppliers who have not filed Income Tax returns for the last 2 preceding assessment years, TDS deduction at higher rates will be applicable as per Section 206AB and Section 206CCA of Income-tax act.	
27.	GST CREDIT: Suppliers are advised to get registered to GSTN portal. Tenderer under "GST credit" shall be preferred.	
28.	Any change in applicable rates of Tax or any other statutory levies (Direct / Indirect) or any new introduction of any levy by means of statute and its corresponding liability for the deliveries beyond the agreed delivery date for reasons not attributable to BHEL will be to vendors account. BHEL will not reimburse the same and any subsequent claim in this respect will be summarily rejected.	
29.	BILL PROCESSING METHOD: Supplier has to ensure the full quantity of material delivery within given PO delivery date to process the bill for payment. In case supplier fails to deliver full quantity within delivery date, bills received after PO delivery date will be processed after final despatch of the total pending supply. Further, bills will be clubbed and forwarded for payment processing as a single bunch.	
30.	MSE /START-UP VENDOR: <i>UDYAM Registration certificate shall be submitted by MSE vendors to avail MSE benefits. Start-up category certificate shall be submitted by start-up companies to avail exemption in Annual Turnover/Past experience if PQC stipulates requirement of Annual Turnover/Past experience.</i>	
31.	Make in India Policy: Refer the Tender document regarding public procurement policy (Preference to Make in India), Order 2017. Self-certification for local content is not applicable as defined in public procurement (Preference to Make in India), Order 2017	
32.	Fraud Prevention Policy 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.	
33.	<p>Risk purchase clause:</p> <p>a. In the event of any successful Tenderer's failure to fulfil any of the tender / Contract obligations including supply of whole or any part of the ordered items as per Contract / Agreement, BHEL has the right to terminate the contract and purchase from elsewhere, at the risk and cost of the defaulted supplier, either the whole of the goods or any part which the supplier has failed to deliver or dispatch within the time stipulated in the contract or if the same were not available, the best and nearest available substitute thereof. The supplier shall be liable for the additional expenditure/difference in Cost, if any, including consequential losses which BHEL may sustain by reason of risk purchase in addition to the applicable LD as per the Purchase order/contract.</p> <p>b) The decision of BHEL with regard to the additional expenditure / difference in cost and consequential losses incurred by BHEL shall be final and binding on the supplier.</p> <p>c) The amount recoverable under risk purchase shall be recovered from the defaulted supplier in all or any of the following manners:</p> <ol style="list-style-type: none"> i. from dues available in the form of Bills payable to defaulted supplier, SD, BGs against the same contract. ii. from the dues payable to defaulted supplier against other contracts in the same Region/Unit /any other region/unit iii. In-case recoveries are not possible with any of the above available options, Legal action shall be initiated for recovery against defaulted supplier. iv. GST will be applicable to the amount recoverable under risk purchase 	
34.	<p>CONFLICT OF INTEREST:</p> <p>A bidder shall not have conflict of interest with other bidders. Such conflict of interest can lead to anti-competitive practices to the detriment of Procuring Entity's interests. The bidder found to have a conflict of interest shall be disqualified. A bidder may be considered to have a conflict of interest with one or more parties in this bidding process, if:</p> <ol style="list-style-type: none"> a) they have controlling partner (s) in common; or b) they receive or have received any direct or indirect subsidy financial stake from any of them; or c) they have the same legal representative/agent for purposes of this bid; or d) they have relationship with each other, directly or through common third parties, <u>that puts them in a position to have access to information about or influence on the bid of another Bidder;</u> or e) Bidder participates in more than one bid in this bidding process, Participation by a Bidder in more than one Bid will result in the disqualification of all bids in which the parties are involved. <u>However, this does not limit the inclusion of the components/ sub-assembly/ Assemblies from one bidding manufacturer in more than one bid;</u> or f) In cases of agents quoting in offshore procurements, on behalf of their principal manufacturers, one agent cannot represent two manufacturers or quote on their behalf in a particular tender enquiry. One manufacturer can also authorise only one agent/dealer. There can be only one bid from the following: <ol style="list-style-type: none"> 1. The principal manufacturer directly or through one Indian agent on his behalf; and 	

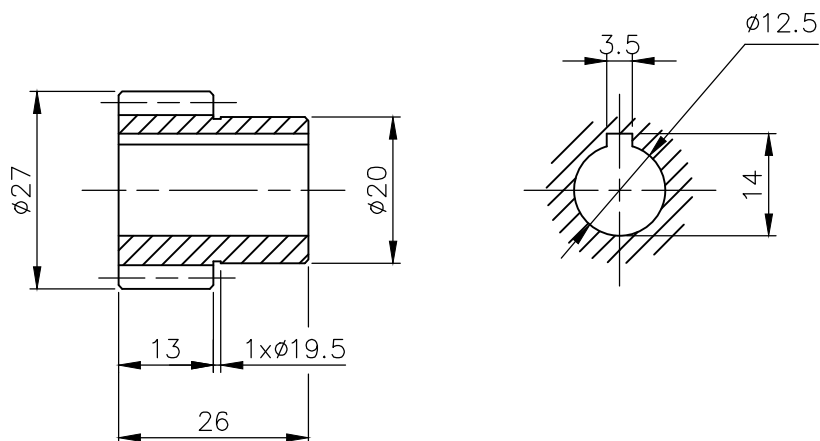
	<p>2. Indian/foreign agent on behalf of only one principal;</p> <p style="text-align: center;">or</p> <p>g) A Bidder or any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the contract that is the subject of the Bid, or</p> <p>h) In case of a holding company having more than one independently manufacturing units, or more than one unit having common business ownership/Management, only one unit shall quote. Similar restrictions would apply to closely related sister companies. Bidder must proactively declare such sister/common business/ management units in same/similar line of business.</p>	
35.	Set off : BHEL shall have the right to recover any money which in the sole opinion of BHEL is due from the supplier from any money due to the supplier under this Contract or any other contract or from the Security Deposit/BG furnished by the supplier under this Contract or any other contract.	
36.	Cartel Formation: The Bidder declares that they will not enter into any illegal or undisclosed agreement or understanding, whether formal or informal with other Bidder(s). This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process. In case, the Bidder is found having indulged in above activities, suitable action shall be taken by BHEL as per extant policies/ guidelines.	
37.	The offers of the bidders who are under suspension and also the offers of the bidders, who engage the services of the banned firms /principal/agents, shall be rejected. The list of banned firms is available on BHEL web site www.bhel.com	
38.	The following documents are to be sent along with consignment to store: One Duplicate for Transporter copy of tax invoice + one extra copy of tax invoice + Delivery challan + LR COPY+E-Way bill+ Test Certificates (if applicable).	
39.	Seller Tax invoice, LR copy, E-Way bill, Courier docket etc. are to be uploaded in GeM portal while updating dispatch details in GeM portal	
40.	Seller Tax invoices (Original for Recipient + Duplicate for Transporter) either in Original hard copies or Digitally Signed Soft copies along with copy of LR + E-Way bill are to be sent to the buyer	
	<p>Note:</p> <ol style="list-style-type: none"> 1. In the event of our customer order covering this tender being cancelled /placed on hold / otherwise modified, BHEL would be constrained to accordingly cancel / hold / modify the tender at any stage of execution. 2. BHEL may negotiate the L1 rate, if not meeting our budget / estimated cost. BHEL may re-float the tender opened, if L1 price is not acceptable to BHEL. 3. BHEL reserves its right to reject an offer due to unsatisfactory past performance by the respective Vendor in the execution of any contract to any BHEL project / Unit. 4. Any other commercial terms indicated by the vendor in their offer elsewhere will be ignored. BHEL will proceed with tender evaluation as per Annexure-A and GeM general terms and conditions only. 	

Vendor's Seal & Signature

ALL DIMENSIONS ARE IN MM

REV	DATE	ALTERED
		CHECKED
		APPROVED
ZONE		

3.2/





NO.OF TEETH	16
MODULE	1.5
PRESSURE ANGLE	20
WITH ACROSS 3 TEETH	11.4066 ^{-0.113} _{-0.150}
CORRECTION FACTOR	NIL
QLTY.&TOL.ZONE	9C DIN 3967
MATING GEAR NO.OF TEETH	40
MATING GEAR DRAWING NO:	—
CENTRE DISTANCE	—

NOTE: —

1. SHARP CORNERS TO BE REMOVED

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	Ø27x26L		—	—		
ITEM NO	DESCRIPTION	DRAWING NO	MATL CODE	UNIT WT		
			MATL SPEC	QTY		
EQPT: CNC PLASMA TRANSFERRED ARC WELDING INTER WELD HETTIGER/STELLITE/GMBH						
	Bharat Heavy Electricals Ltd HIGH PRESSURE BOILER PLANT TIRUCHIRAPALLI — 620014	DRN	S.SELVAMANICKAM	S. Selvamanickam	30.12.22	
		CHD	A.DANASEKAR	A. Danasekar		30.12.22
		APPD	A.DANASEKAR	A. Danasekar		31.12.22
DEPT M&S	GRADE OF UNTOL. DIM φ/M/F IS: 2102		SCALE 1:1	WEIGHT (Kg) —	REF TO ASSY DWG NO	
CODE 2597					REF TO OLD DWG NO	
TITLE	SPUR GEAR 16TxØ27 (FLUX FEEDER UNIT DRIVE GEAR BOX ASSY.)		CARD CODE U 01	DRAWING NO : 4-M-10A78-30095		
				REV	00	

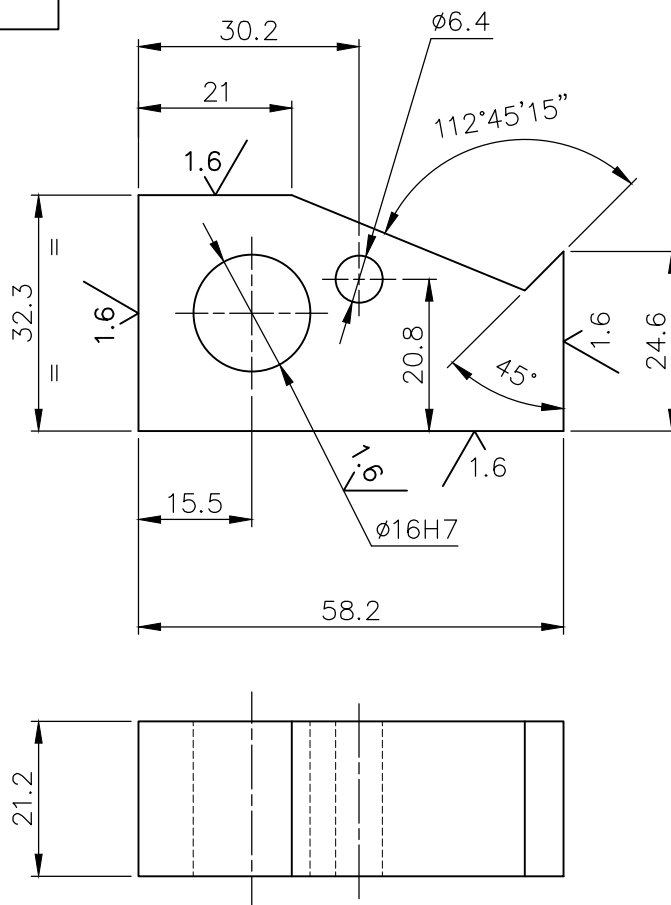


ALL DIMENSIONS ARE IN MM

REV	DATE	ALTERED
		CHECKED
		APPROVED
ZONE		

Ø16H7	+0.018
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3.2//1.6



NOTE: -

- 1. SHARP CORNERS TO BE REMOVED
- 2. HARDENED TO HRC.35^{±2}

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ITEM NO	DESCRIPTION	DRAWING NO	IS: 5517	0.31
			55C8	1
			MATL CODE	UNIT WT
			MATL SPEC	QTY

EQPT: VERTUCAL ROTOR SURFACE GRINDER-ABB/VRSG 1000

	Bharat Heavy Electricals Ltd		DRN	S.SELVAMANICKAM	SIGNATURE	S. Selvamanickam	DATE	15.12.22
	HIGH PRESSURE BOILER PLANT		CHD	A.DANASEKAR	SIGNATURE	A. Danasekar	DATE	15.12.22
	TIRUCHIRAPALLI - 620014		APPD	A.DANASEKAR	SIGNATURE	A. Danasekar	DATE	16.12.22

DEPT	GRADE OF UNTOL. DIM		SCALE	WEIGHT (Kg)	REF TO ASSY DWG NO	ITEM
M&S	Ø/M/F		1:1	0.31	REF TO OLD DWG NO	
CODE	IS: 2102					
2597						

TITLE	CARD CODE	DRAWING NO :	REV
PAWL	U 01	4-M-06B09-30091	00
(FEED MECHANISM ASSY.)			

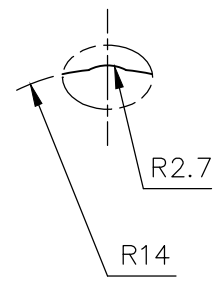
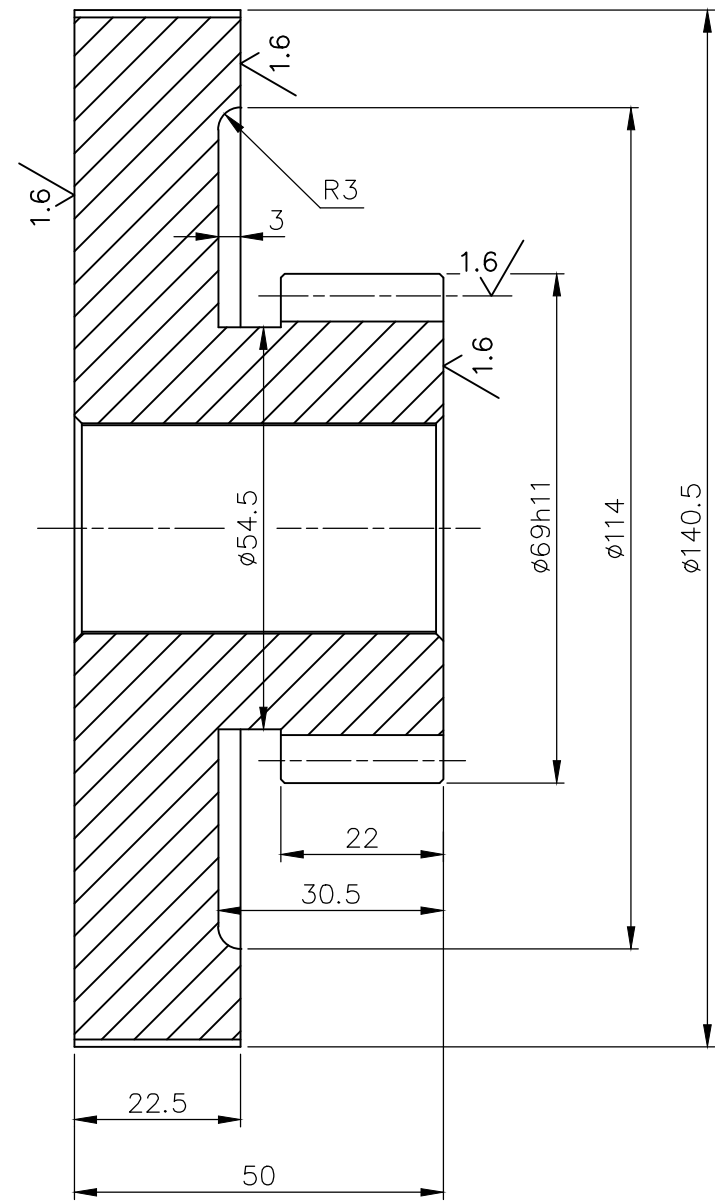
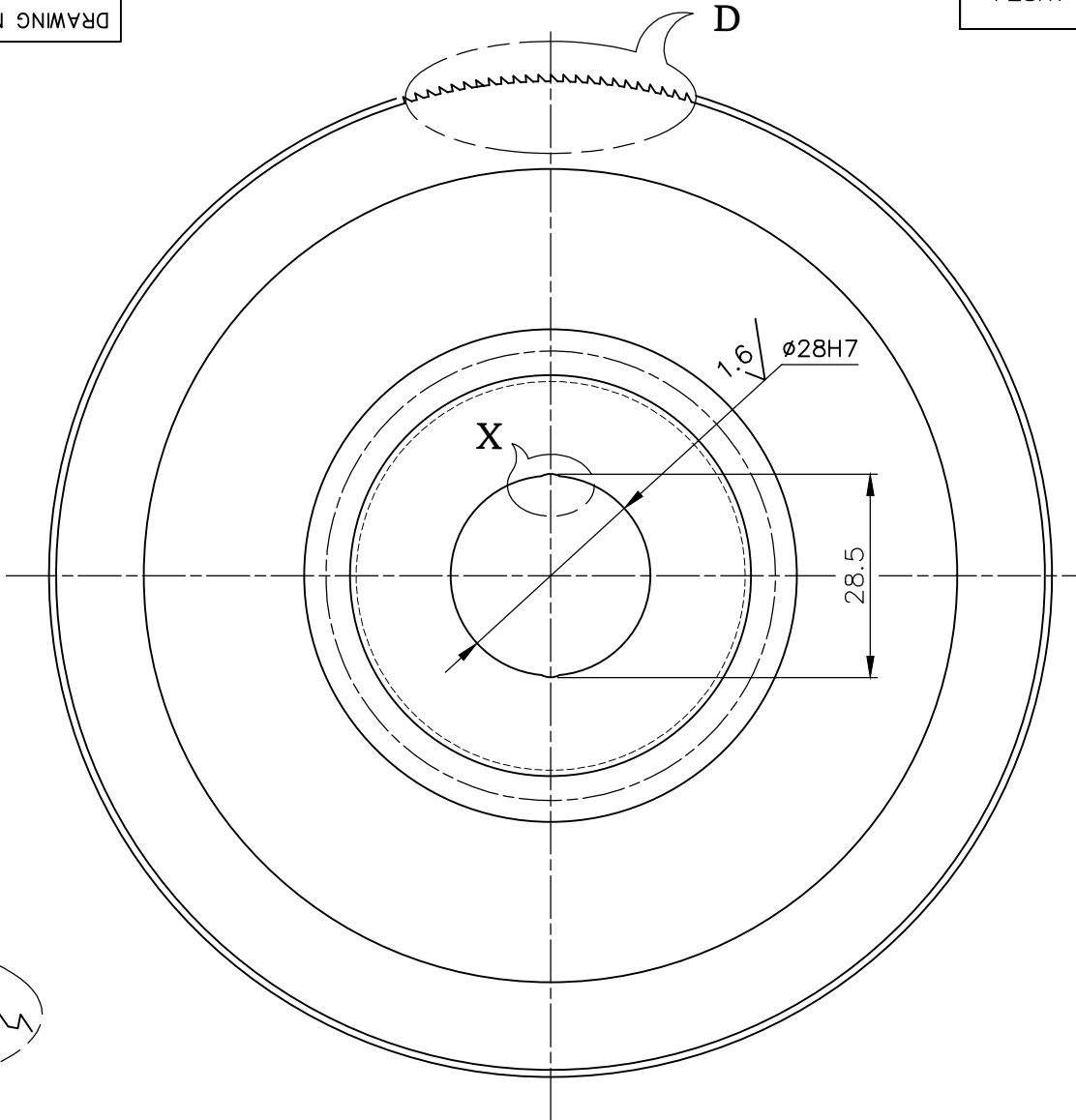


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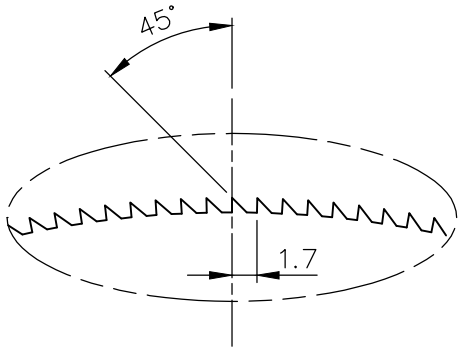
ALL DIMENSIONS ARE IN MILLIMETRES

ø28H7	+0.021 0.000	ø69h11	-0.000 -0.190
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3.2//1.6



DETAIL - X



TOOTH DETAIL - D

RATCHET NO.OF TEETH: 252/1 mm DEEP

NOTE: -

- 1. SHARP CORNERS TO BE REMOVED
- 2. HARDENED TO HRC.35 ±2

NO.OF TEETH	21
MODULE	3
PRESSURE ANGLE	20°
WITH ACROSS 3 TEETH	23.02320 ^{-0.141} / _{-0.188}
CORRECTION FACTOR	NIL
QLTY.&TOL.ZONE	9C DIN 3967
MATING GEAR NO.OF TEETH	21
MATING GEAR DRAWING NO:	-
CENTRE DISTANCE	-

REV	DATE	ALTERED	CHECKED	APPROVED
ZONE				

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ITEM NO	ø140.5x50L	DRAWING NO	IS: 5517	3.13
DESCRIPTION		MATL CODE	55C8	1
		MATL SPEC		QTY
EQPT: VERTICAL ROTOR SURFACE GRINDER ABB/VRSG 1000				
Bharat Heavy Electricals Ltd HIGH PRESSURE BOILER PLANT TIRUCHIRAPALLI - 620014		DRN	NAME S.SELVAMANICKAM	SIGNATURE <i>S. Selvamanickam</i>
		CHD	A.DANASEKAR	<i>A. Danasekar</i>
		APPD	A.DANASEKAR	<i>A. Danasekar</i>
DEPT M&S	GRADE OF UNTOL. DIM ø/M/F IS: 2102	SCALE 1:1 2:1	WEIGHT (Kg) 3.13	DATE 15.12.22
CODE 2597	TITLE RATCHET (FEED MECHANISM ASSY.)		REF TO ASSY DWG NO	ITEM
		CARD CODE U 01	REF TO OLD DWG NO	
		DRAWING NO : 3-M-06B09-16356		REV

A3-SIZE

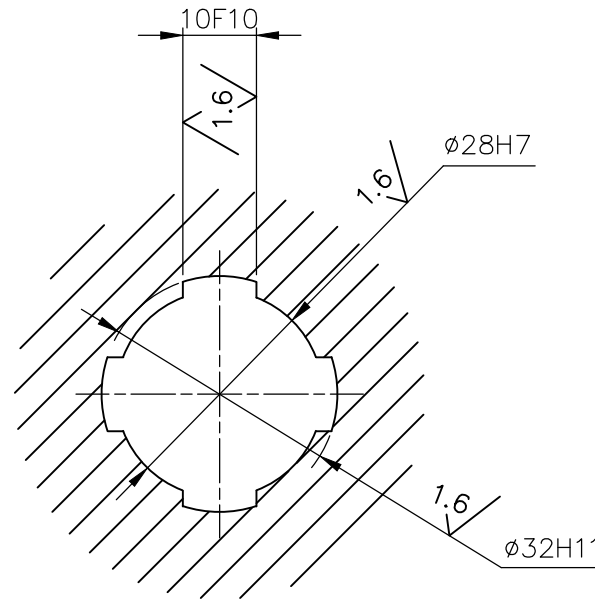
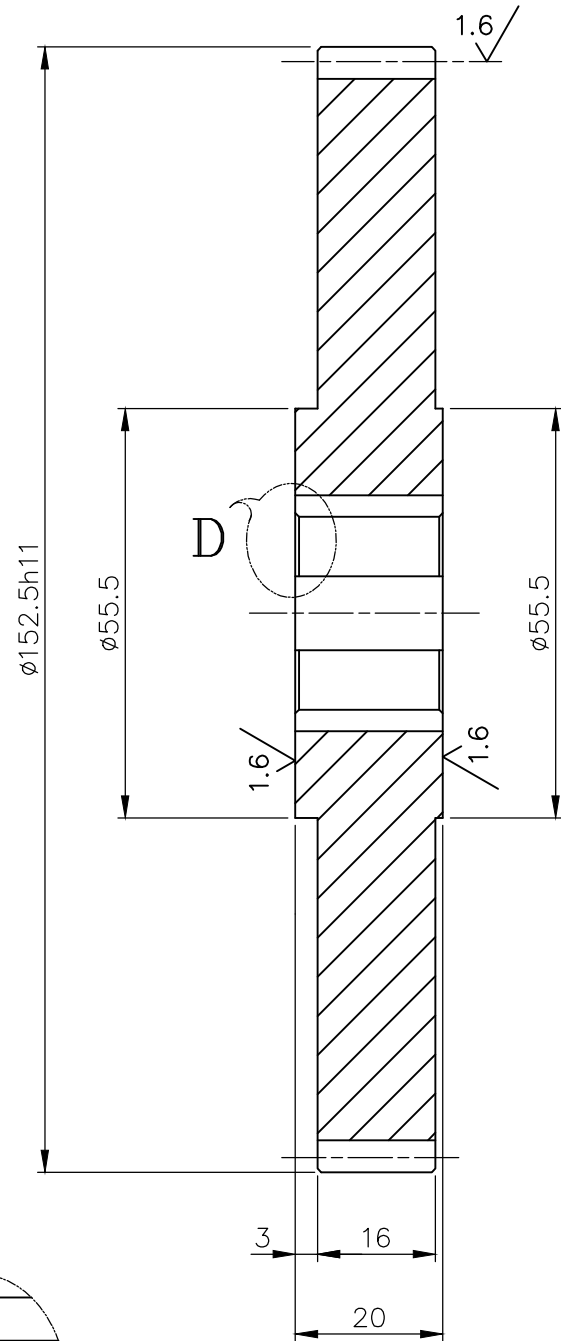
CORPORATE DRG

DRAWING NO: 3-M-08D05-16353

ALL DIMENSIONS ARE IN MILLIMETRES

$\phi 152.5h11$	-0.000 -0.250	$\phi 28H7$	$+0.021$ 0.000	10F10	$+0.013$ $+0.071$
				$\phi 32H7$	$+0.025$ 0.000

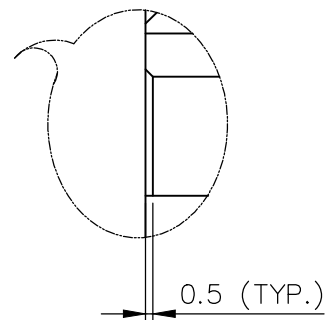
3.2//1.6



NO.OF TEETH	59
MODULE	2.5
PRESSURE ANGLE	20
WITH ACROSS 7 TEETH	50.0377 -0.158 -0.210
CORRECTION FACTOR	0.00
QLTY.&TOL.ZONE	9C DIN 3967
MATING GEAR NO.OF TEETH	13&20
MATING GEAR DRAWING NO:	-
CENTRE DISTANCE	-

NOTE: -

- SHARP CORNERS TO BE REMOVED
- HARDENED TO HRC.35^{±2}



DETAILS - D

REV	DATE	ALTERED
		CHECKED
		APPROVED
ZONE		

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EQPT: L22 TP LATHE/L22-TP		IS: 5517		2.19
55C8				1
ITEM NO	DESCRIPTION	DRAWING NO	MATL CODE	UNIT WT
			MATL SPEC	QTY
Bharat Heavy Electricals Ltd HIGH PRESSURE BOILER PLANT TIRUCHIRAPALLI - 620014		DRN	NAME S.SELVAMANICKAM	SIGNATURE <i>S. Selvamanickam</i>
		CHD	A.DANASEKAR	<i>A. Danasekar</i>
		APPD	A.DANASEKAR	<i>A. Danasekar</i>
DEPT M&S	GRADE OF UNTOL. DIM $\phi/M/F$ IS: 2102	SCALE 1:1	WEIGHT (Kg) 2.19	REF TO ASSY DWG NO
CODE 2597				REF TO OLD DWG NO
TITLE SPUR GEAR 59Tx 2.5 (FEED GEAR BOX ASSY.)			CARD CODE U 01	DRAWING NO : 3-M-08D05-16353
				REV

A3-SIZE

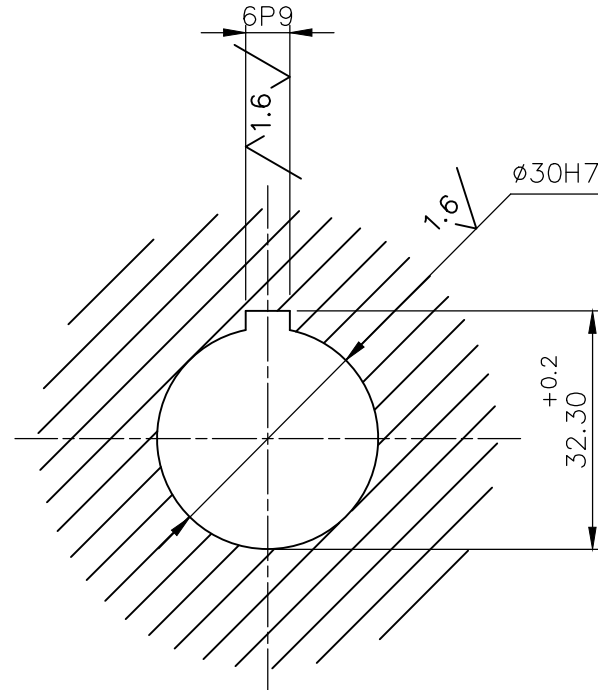
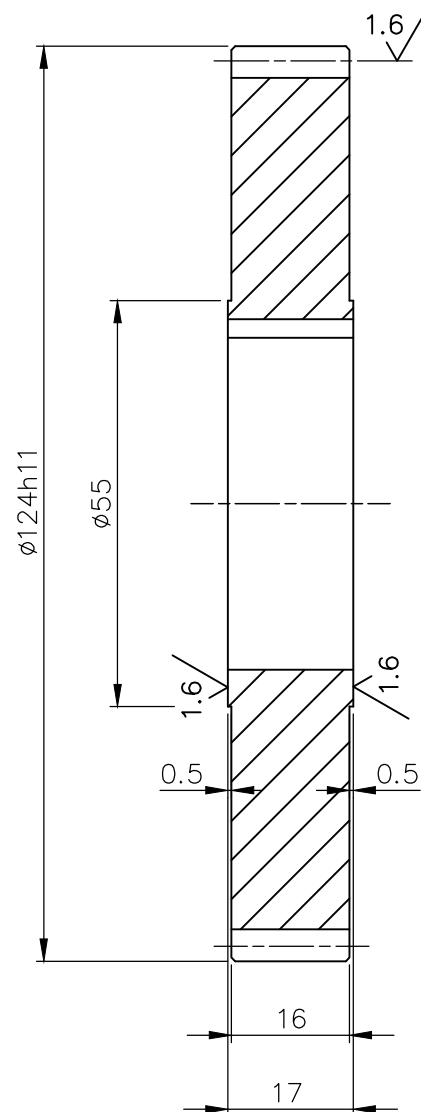
CORPORATE DRG

DRAWING NO: 3-M-08D05-16354

ALL DIMENSIONS ARE IN MILLIMETRES

ø124h11	-0.000	ø30H7	+0.021
	-0.250		0.000
6P9	-0.012		
	-0.042		

3.2//1.6




NO.OF TEETH	60
MODULE	2
PRESSURE ANGLE	20
WITH ACROSS 7 TEETH	40.0582 ^{-0.158} _{-0.210}
CORRECTION FACTOR	0.00
QLTY.&TOL.ZONE	9C DIN 3967
MATING GEAR NO.OF TEETH	61
MATING GEAR DRAWING NO:	-
CENTRE DISTANCE	-

NOTE: -

1. SHARP CORNERS TO BE REMOVED
2. HARDENED TO HRC.35 ^{±2}

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	ø124x17L		IS: 5517	1.42
			55C8	1
ITEM NO	DESCRIPTION	DRAWING NO	MATL CODE	UNIT WT
			MATL SPEC	QTY
EQPT: L22 TP LATHE/L22-TP				
 Bharat Heavy Electricals Ltd HIGH PRESSURE BOILER PLANT TIRUCHIRAPALLI - 620014		DRN	NAME S.SELVAMANICKAM	SIGNATURE <i>S. Selvamanickam</i>
		CHD	A.DANASEKAR	<i>A. Danasekar</i>
		APPD	A.DANASEKAR	<i>A. Danasekar</i>
DEPT M&S	GRADE OF UNTOL. DIM ø/M/F IS: 2102	SCALE 1:1	WEIGHT (Kg) 1.42	REF TO ASSY DWG NO REF TO OLD DWG NO
CODE 2597				
TITLE SPUR GEAR 60Txø124 (FEED GEAR BOX ASSY.)			CARD CODE U 01	DRAWING NO : 3-M-08D05-16354
				REV

REV	DATE	ALTERED
		CHECKED
		APPROVED
ZONE		

A3-SIZE

CORPORATE DRG

ALL DIMENSIONS ARE IN MM

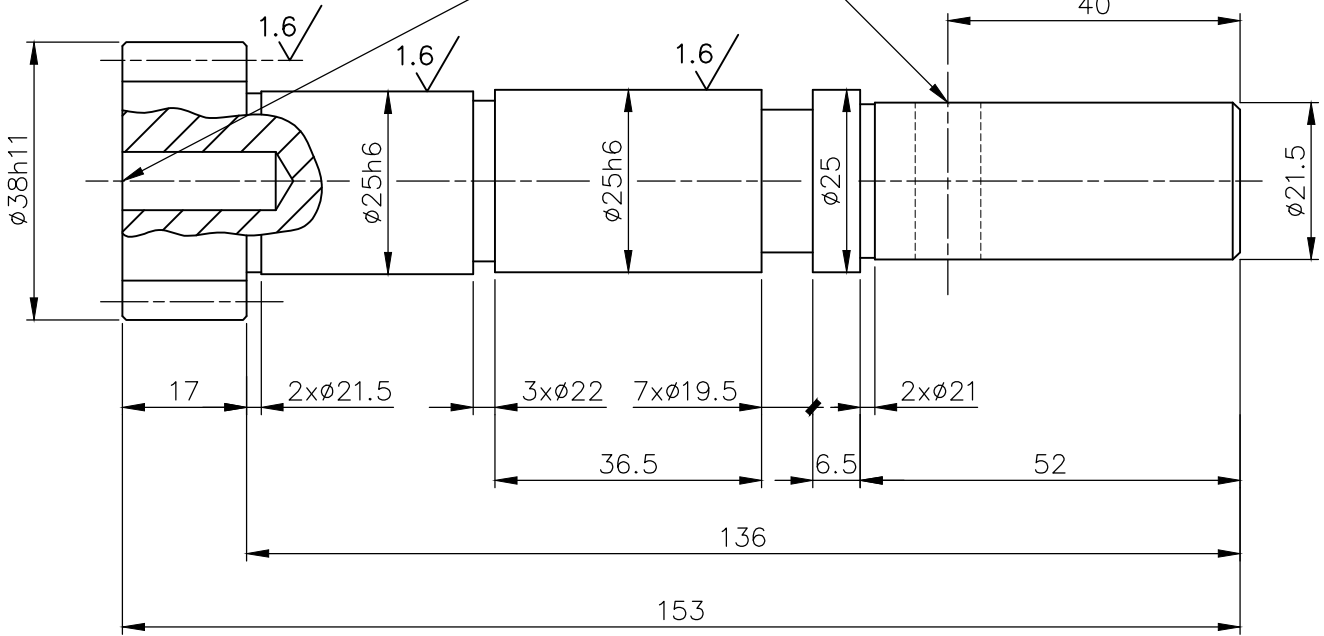
REV	DATE	ALTERED
		CHECKED
		APPROVED
ZONE		

$\phi 38h11$	-0.000	$\phi 25h6$	-0.000
	-0.160		-0.013

3.2//1.6//0.8//

HOLE $\phi 9$ AT ASSY.

HOLE $\phi 8/21$ DEEP



NO.OF TEETH	13
MODULE	2.5
PRESSURE ANGLE	20
WITH ACROSS 2 TEETH	11.5255 $\begin{matrix} -0.127 \\ -0.169 \end{matrix}$
CORRECTION FACTOR	0.00
QLTY.&TOL.ZONE	9C DIN 3967
MATING GEAR NO.OF TEETH	59
MATING GEAR DRAWING NO:	-
CENTRE DISTANCE	-

NOTE: -

1. SHARP CORNERS TO BE REMOVED
2. HARDENED TO HRC.35 ± 2

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	$\phi 38 \times 153L$		IS: 5517	0.67
ITEM NO	DESCRIPTION	DRAWING NO	MATL CODE	UNIT WT
			MATL SPEC	QTY

EQPT: L22TP LATHE/L22-TP

	Bharat Heavy Electricals Ltd		DRN	S.SELVAMANICKAM	SIGNATURE	S.Selvamanickam	DATE	24.11.22
	HIGH PRESSURE BOILER PLANT		CHD	A.DANASEKAR	A. Danasekar			25.11.22
	TIRUCHIRAPALLI - 620014		APPD	A.DANASEKAR	A. Danasekar			25.11.22

DEPT M&S	GRADE OF UNTOL. DIM		SCALE	WEIGHT (Kg)	REF TO ASSY DWG NO	ITEM
CODE	$\phi/M/F$		1:1	0.67	REF TO OLD DWG NO	

TITLE	CARD CODE	DRAWING NO :	REV
PINION SHAFT $\phi 38 \times 153L$ (FEED GEAR BOX ASSY.)	U 01	4-M-08D05-30087	00

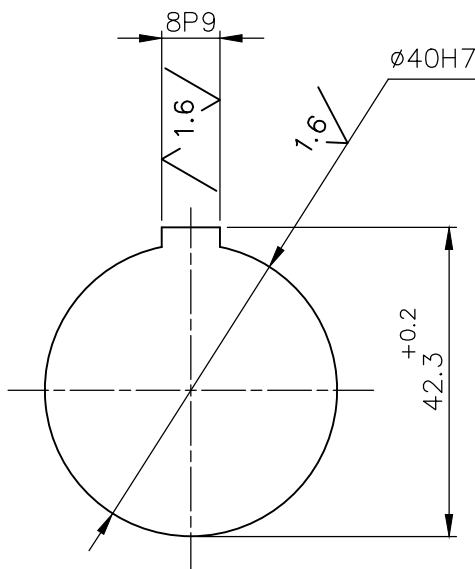
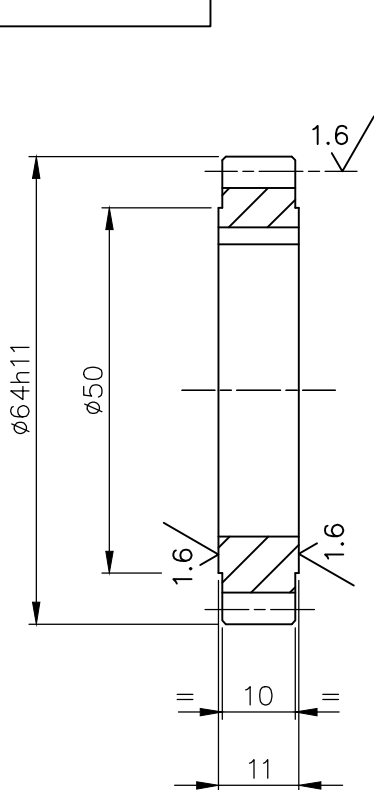


ALL DIMENSIONS ARE IN MM

REV	DATE	ALTERED
		CHECKED
		APPROVED
ZONE		

ø64h11	-0.000	ø40H7	+0.025
	-0.190		0.000
8P9	-0.015		
	-0.051		

3.2//1.6



NO.OF TEETH	30
MODULE	2
PRESSURE ANGLE	20
WITH ACROSS 4 TEETH	21.5052 ^{-0.141} / _{-0.188}
CORRECTION FACTOR	0.00
QLTY.&TOL.ZONE	9C DIN 3967
MATING GEAR NO.OF TEETH	40
MATING GEAR DRAWING NO:	-
CENTRE DISTANCE	-

NOTE: -

1. SHARP CORNERS TO BE REMOVED
2. HARDENED TO HRC.35 ^{±2}

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ITEM NO	DESCRIPTION	DRAWING NO	IS: 5517	0.16
			55C8	1
			MATL CODE	UNIT WT
			MATL SPEC	QTY

EQPT: L22TP LATHE/L22-TP								
	Bharat Heavy Electricals Ltd HIGH PRESSURE BOILER PLANT TIRUCHIRAPALLI - 620014		DRN	S.SELVAMANICKAM	SIGNATURE	S. Selvamanickam	DATE	25.11.22
			CHD	A.DANASEKAR	A. Danasekar			26.11.22
			APPD	A.DANASEKAR	A. Danasekar			27.11.22

DEPT	M&S	GRADE OF UNTOL. DIM	SCALE	WEIGHT (Kg)	REF TO ASSY DWG NO	ITEM
CODE	2597	ø/M/F IS: 2102	1:1	0.16	REF TO OLD DWG NO	

TITLE	CARD CODE	DRAWING NO :	REV
SPUR GEAR 30Txø64 (FEED GEAR BOX ASSY.)	U 01	4-M-08D05-30088	00

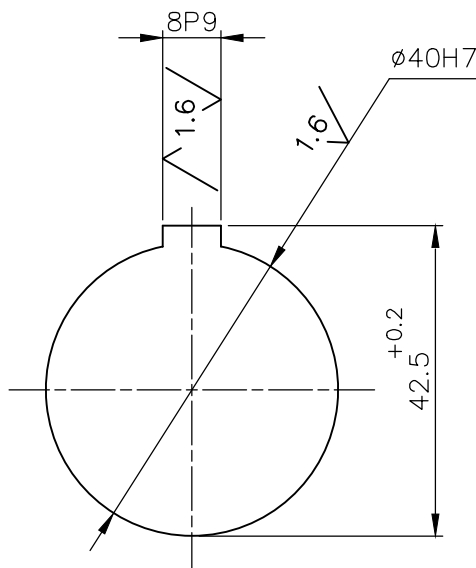
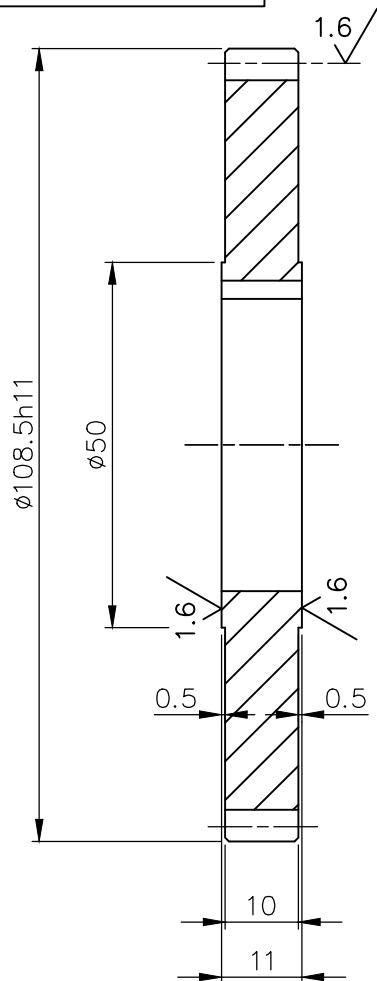


ALL DIMENSIONS ARE IN MM

REV	DATE	ALTERED
		CHECKED
		APPROVED
ZONE		

ø108.5h11	-0.000	ø40H7	+0.025
	-0.220		0.000
8P9	-0.015		
	-0.051		

3.2//1.6//



NO.OF TEETH	60
MODULE	1.75
PRESSURE ANGLE	20
WITH ACROSS 7 TEETH	35.0509 ^{-0.158} / _{-0.210}
CORRECTION FACTOR	0.00
QLTY.&TOL.ZONE	9C DIN 3967
MATING GEAR NO.OF TEETH	20
MATING GEAR DRAWING NO:	-
CENTRE DISTANCE	-

NOTE: -

- SHARP CORNERS TO BE REMOVED
- HARDENED TO HRC.35^{±2}

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ITEM NO	DESCRIPTION	DRAWING NO	IS: 5517	0.68
			55C8	1
			MATL CODE	UNIT WT
			MATL SPEC	QTY

EQPT: L22TP LATHE/L22-TP				
	Bharat Heavy Electricals Ltd HIGH PRESSURE BOILER PLANT TIRUCHIRAPALLI - 620014		DRN	NAME: S.SELVAMANICKAM SIGNATURE: <i>S.Selvamanickam</i> DATE: 25.11.22
			CHD	NAME: A.DANASEKAR SIGNATURE: <i>A. Danasekar</i> DATE: 26.11.22
			APPD	NAME: A.DANASEKAR SIGNATURE: <i>A. Danasekar</i> DATE: 27.11.22

DEPT: M&S	GRADE OF UNTOL. DIM: $\phi/M/F$	SCALE: 1:1	WEIGHT (Kg): 0.68	REF TO ASSY DWG NO	ITEM
CODE: 2597	IS: 2102			REF TO OLD DWG NO	

TITLE: SPUR GEAR 60Txø108.5 (FEED GEAR BOX ASSY.)	CARD CODE: U 01	DRAWING NO: 4-M-08D05-30089	REV: 00
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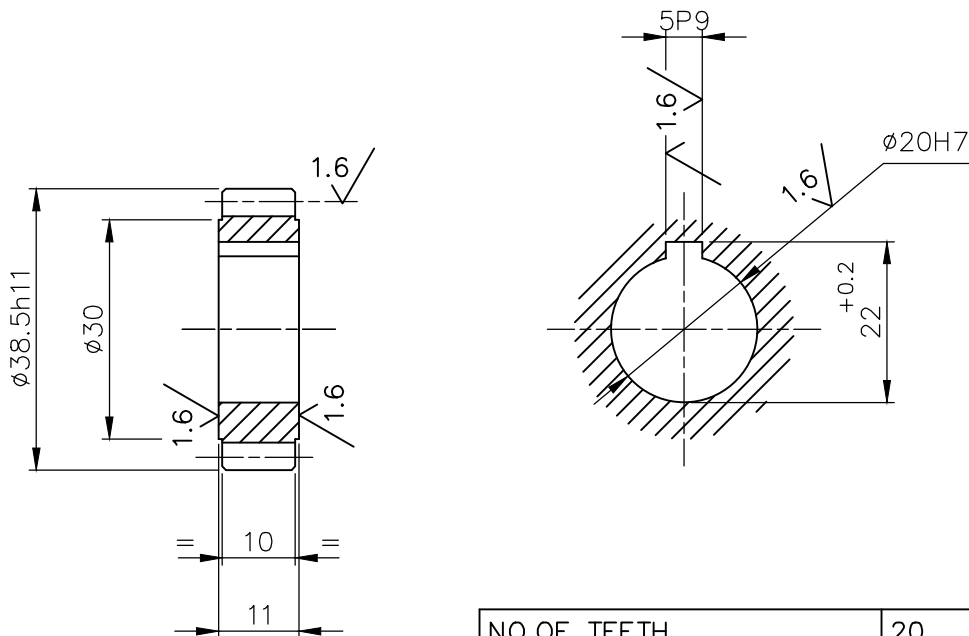


ALL DIMENSIONS ARE IN MM

REV	DATE	ALTERED
		CHECKED
		APPROVED
ZONE		

ø38.5h11	-0.000	ø20H7	+0.021
	-0.160		0.000
5P9	-0.012		
	-0.042		

3.2//1.6//



NO.OF TEETH	20
MODULE	1.75
PRESSURE ANGLE	20
WITH ACROSS 3 TEETH	13.4057 ^{-0.127} _{-0.169}
CORRECTION FACTOR	0.00
QLTY.&TOL.ZONE	9C DIN 3967
MATING GEAR NO.OF TEETH	60
MATING GEAR DRAWING NO:	-
CENTRE DISTANCE	-

NOTE: -

- SHARP CORNERS TO BE REMOVED
- HARDENED TO HRC.35 ±2

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ITEM NO	DESCRIPTION	DRAWING NO	IS: 5517	0.10
			55C8	1
			MATL CODE	UNIT WT
			MATL SPEC	QTY

EQPT: L22TP LATHE/L22-TP



Bharat Heavy Electricals Ltd
HIGH PRESSURE BOILER PLANT
TIRUCHIRAPALLI - 620014

DRN	NAME	SIGNATURE	DATE
CHD	S.SELVAMANICKAM	S.Selvamanickam	28.11.22
APPD	A.DANASEKAR	A.Danasekar	28.11.22
	A.DANASEKAR	A.Danasekar	29.11.22

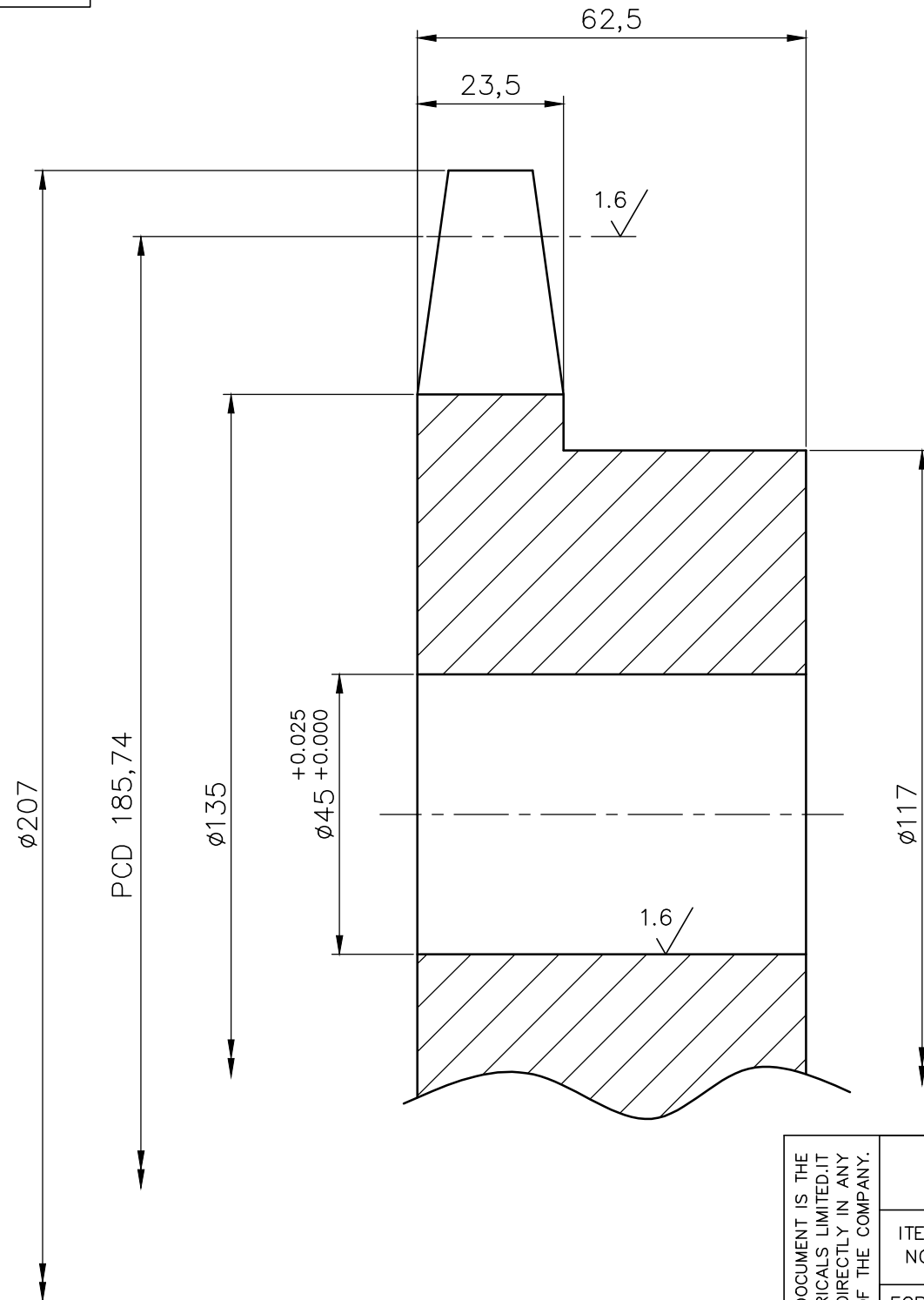
DEPT	GRADE OF UNTOL. DIM	SCALE	WEIGHT (Kg)	REF TO ASSY DWG NO	ITEM
M&S	φ/M/AF			1:1	0.10
CODE	IS: 2102				
2597					

TITLE	CARD CODE	DRAWING NO :	REV
SPUR GEAR 20Txø38.5 (FEED GEAR BOX ASSY.)	U 01	4-M-08D05-30090	00



ALL DIMENSIONS ARE IN MILLIMETRES

DRAWING NO: 3-M-01B14-16234



3.2/1.6/

NOTE:

No.OF TEETH = 13
 PITCH = 44.45 (1.75")
 ROLLER DIA = 25.4 (1")

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REV	DATE	ALTERED
		CHECKED
		APPROVED
ZONE		

ROD $\phi 207 \times 62.5L$		IS 2062		8.70	
		E 250 A		1	
ITEM NO	DESCRIPTION	DRAWING NO	MATL CODE	UNIT WT	
			MATL SPEC	QTY	
EQPT: HORIZONTAL BORING / NOMURA CNC BNF130					
Bharat Heavy Electricals Ltd HIGH PRESSURE BOILER PLANT TIRUCHIRAPALLI - 620014		DRN	NAME C.PONNUSAMY	SIGNATURE <i>C. Ponnusamy</i>	DATE 02/12/20
		CHD	A.DANASEKAR	<i>A. Danasekar</i>	03/12/20
		APPD	A.DANASEKAR	<i>A. Danasekar</i>	03/12/20
DEPT M&S	GRADE OF UNTOL. DIM $\phi/M/F$ IS: 2102	SCALE 1:1	WEIGHT (Kg) 8.70	REF TO ASSY DWG NO	ITEM
CODE 2597				REF TO OLD DWG NO	
TITLE SPROCKET - 13T (Y- AXIS COUNTER BALANCE CHAIN DRIVE)			CARD CODE U 01	DRAWING NO : 3-M-01B14-16234	REV 00

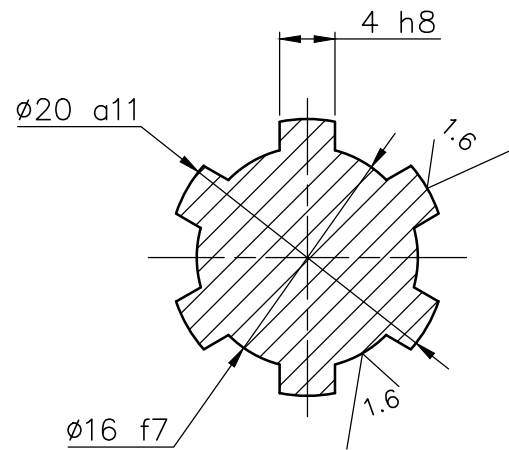
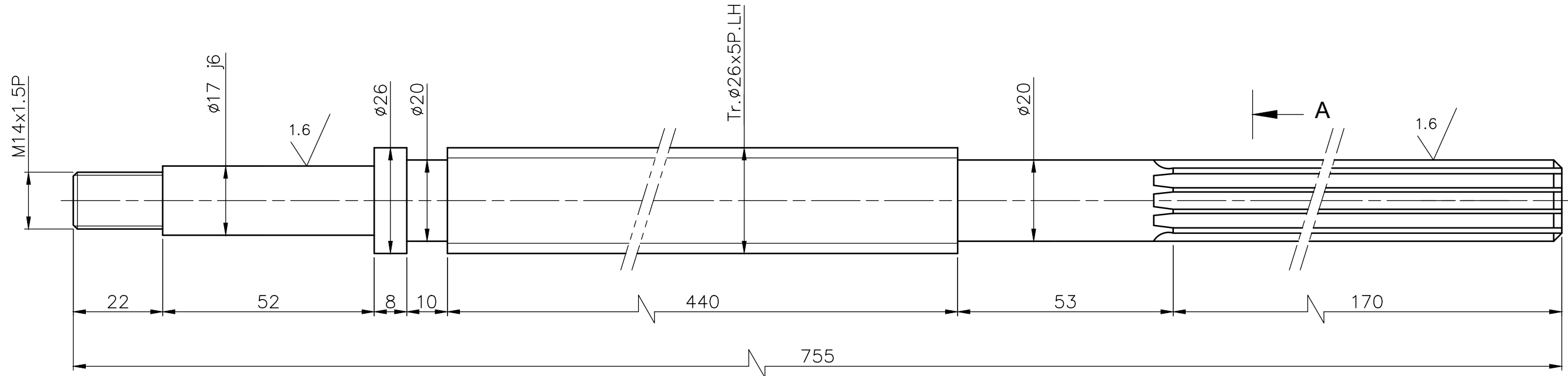
3-M-08B06-16359

DRAWING NO:

ALL DIMENSIONS ARE IN MILLIMETRES

ø17 j6	+0.008 -0.003	ø20 a11	-0.300 -0.430
4 h8	-0.000 -0.018	ø16 f7	-0.016 -0.034

3.2



SECTION - AA

SCALE - 2:1

NOTE: -

- SHARP EDGES TO BE REMOVED.
- MATTING BOX NUT DRAWING NO 3-M-08B06-16358

REV	DATE	ALTERED
		CHECKED
		APPROVED
ZONE		

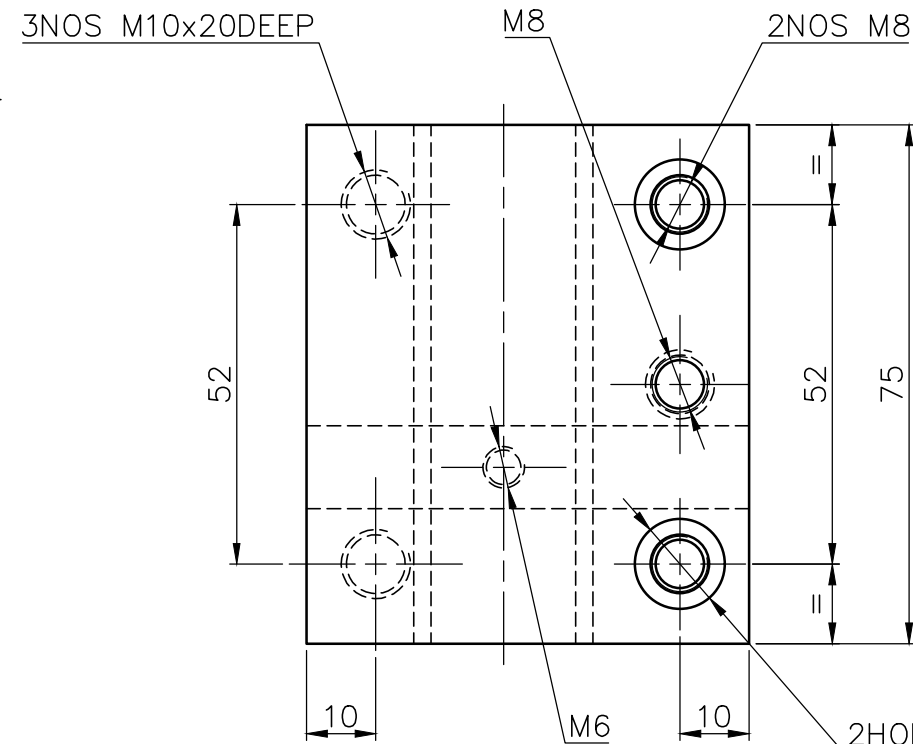
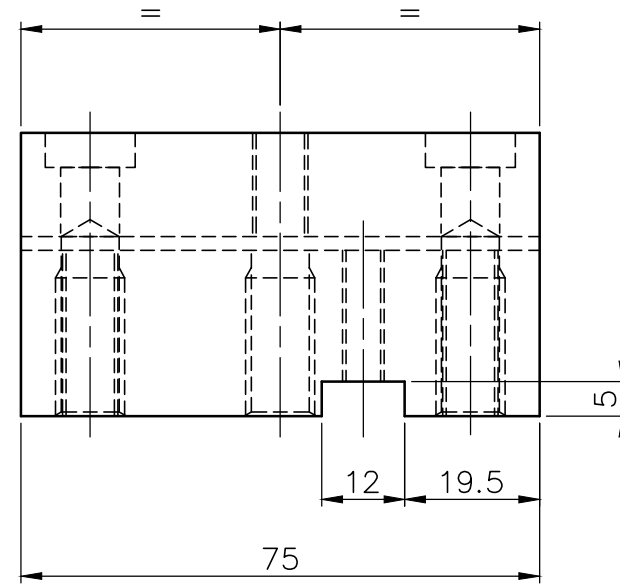
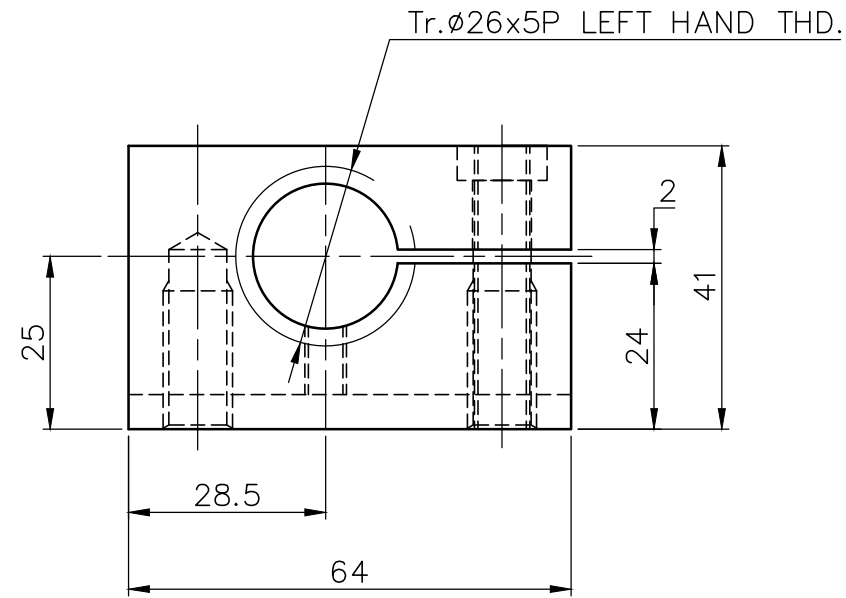
EQPT: CENTERLESS CYLINDRICAL GRINDING MACHINE / BB6	ITEM NO	ROD ø26 x 755L	DRAWING NO	ASME	3.00
				SA 105	1
				MATL CODE	UNIT WT
				MATL SPEC	QTY
Bharat Heavy Electricals Ltd HIGH PRESSURE BOILER PLANT TIRUCHIRAPALLI - 620014	DRN	NAME	SIGNATURE	DATE	
	CHD	N.MADURAVEERAN	<i>N. maduraveeran</i>	27.12.22	
	APPD	A.DANASEKAR	<i>A. Danasekar</i>	28.12.22	
DEPT	GRADE OF UNTOL. DIM	SCALE	WEIGHT (Kg)	REF TO ASSY DWG NO	ITEM
M&S	φ/M/∅	1:1	-	-	00
CODE	IS: 2102	2:1		REF TO OLD DWG NO	
2597					
TITLE				CARD CODE	REV
SCREW ROD Tr.Ø26x5P LH				U 01	00
(CROSS SLIDE)				DRAWING NO : 3-M-08B06-16359	

ALL DIMENSIONS ARE IN MILLIMETRES

3.2


3-M-08B06-16358

DRAWING NO:



NOTE: -

- 01. SHARP EDGES TO BE REMOVED.
- 02. MATTING SCREW ROD DRAWING NO 3-M-08B06-16359

ITEM NO	DESCRIPTION	DRAWING NO	IS 28		
			PHOSPHOR BRONZE (PB)		
EQPT: CENTERLESS CYLINDRICAL GRINDING MACHINE / BB6	 Bharat Heavy Electricals Ltd HIGH PRESSURE BOILER PLANT TIRUCHIRAPALLI - 620014	DRN	NAME N.MADURAVEERAN	SIGNATURE <i>N. maduraveeran</i>	DATE 27.12.22
		CHD	A.DANASEKAR	<i>A. Danasekar</i>	28.12.22
DEPT M&S	GRADE OF UNTOL. DIM φ/M/∅	SCALE 1:1	WEIGHT (Kg)	REF TO ASSY DWG NO -	ITEM 00
CODE 2597	IS: 2102			REF TO OLD DWG NO -	
TITLE BOX NUT Tr.Ø26x5P LH (CROSS SLIDE SCREW ROD)	CARD CODE U 01	DRAWING NO : 3-M-08B06-16358			REV 00

REV	DATE	ALTERED
		CHECKED
		APPROVED
ZONE		

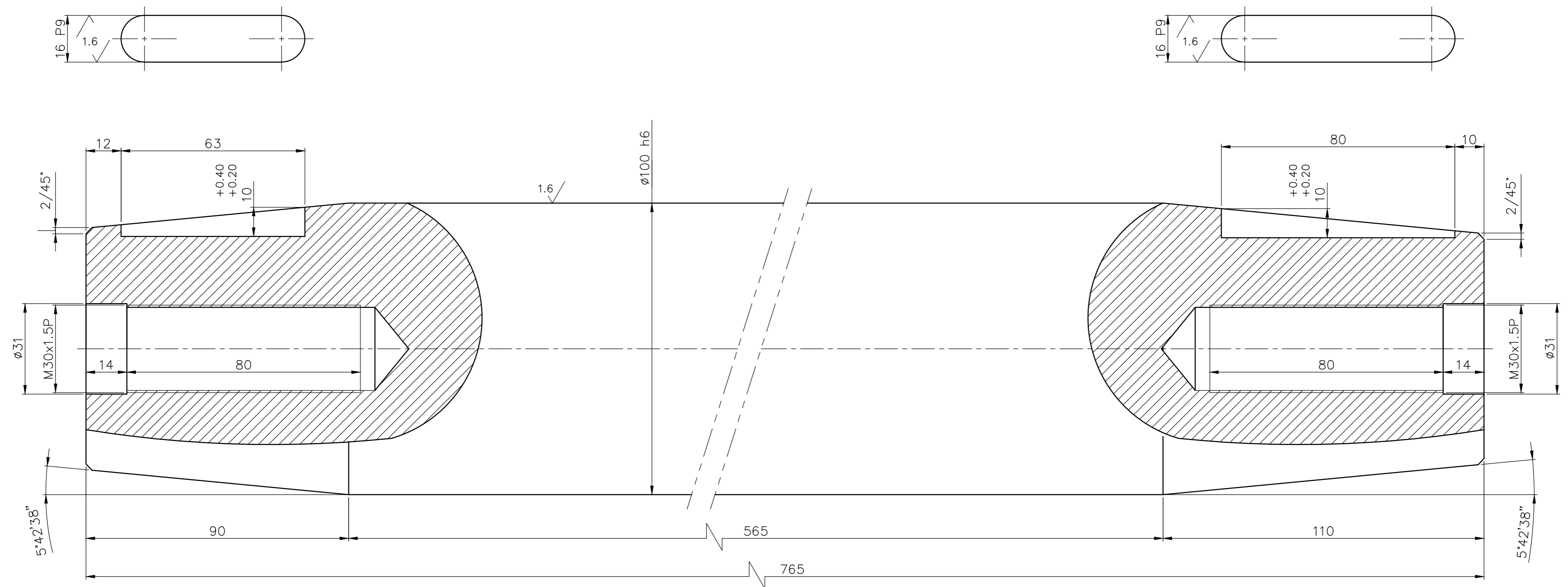
A3-SIZE

2-M-06F01-06362
DRAWING NO.

ø100 h6	-0.000 -0.022	16 P9	-0.018 -0.061
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ALL DIMENSIONS ARE IN MILLIMETERS

1.6



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				SA 105	1	
				MATL CODE	UNIT WT	
				MATL SPEC	QTY	
EQPT: CENTERLESS CYLINDRICAL GRINDING MACHINE / BB6						
Bharat Heavy Electricals Ltd HIGH PRESSURE BOILER PLANT TIRUCHIRAPALLI - 620014			DRN	NAME	SIGNATURE	DATE
			CHD	N.MADURAVEERAN	<i>N. Maduraveeran</i>	26.12.22
			APPD	A.DANASEKAR	<i>A. Danasekar</i>	26.12.22
DEPT	GRADE OF UNTOL. DIM	SCALE	WEIGHT (Kg)	REF TO ASSY DWG NO	ITEM	
M&S	ø / M / #	1:1	46.00	-	00	
CODE	IS: 2102			REF TO OLD DWG NO		
2597				-		
TITLE				DRAWING NO :	REV	
MAIN SPINDLE ø100x765L				2-M-06F01-06362	00	
(GRINDING MACHINE / BB6)				U 01		

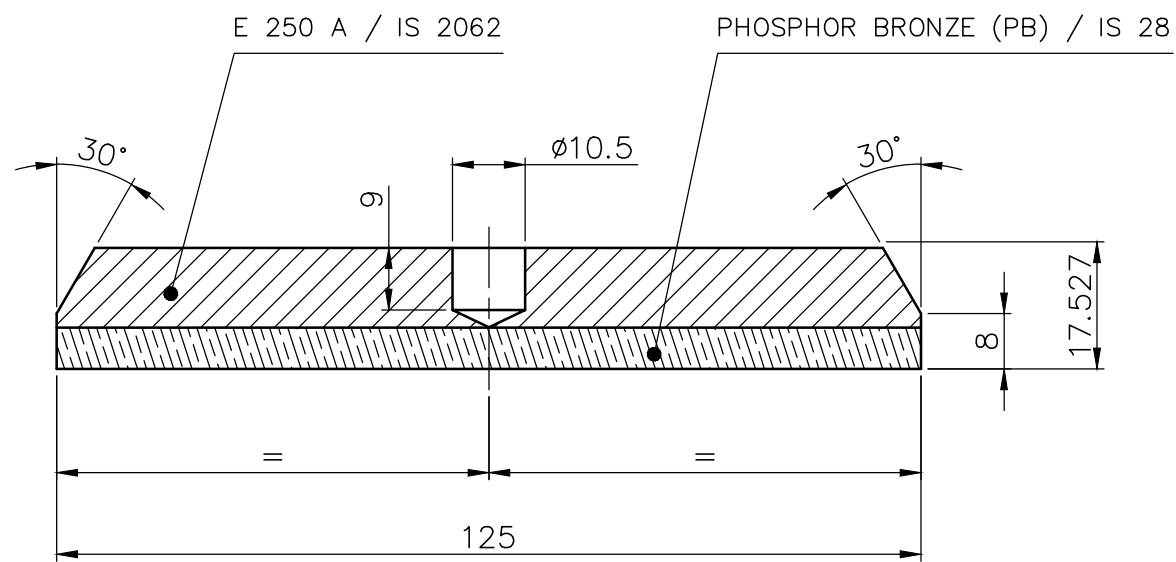
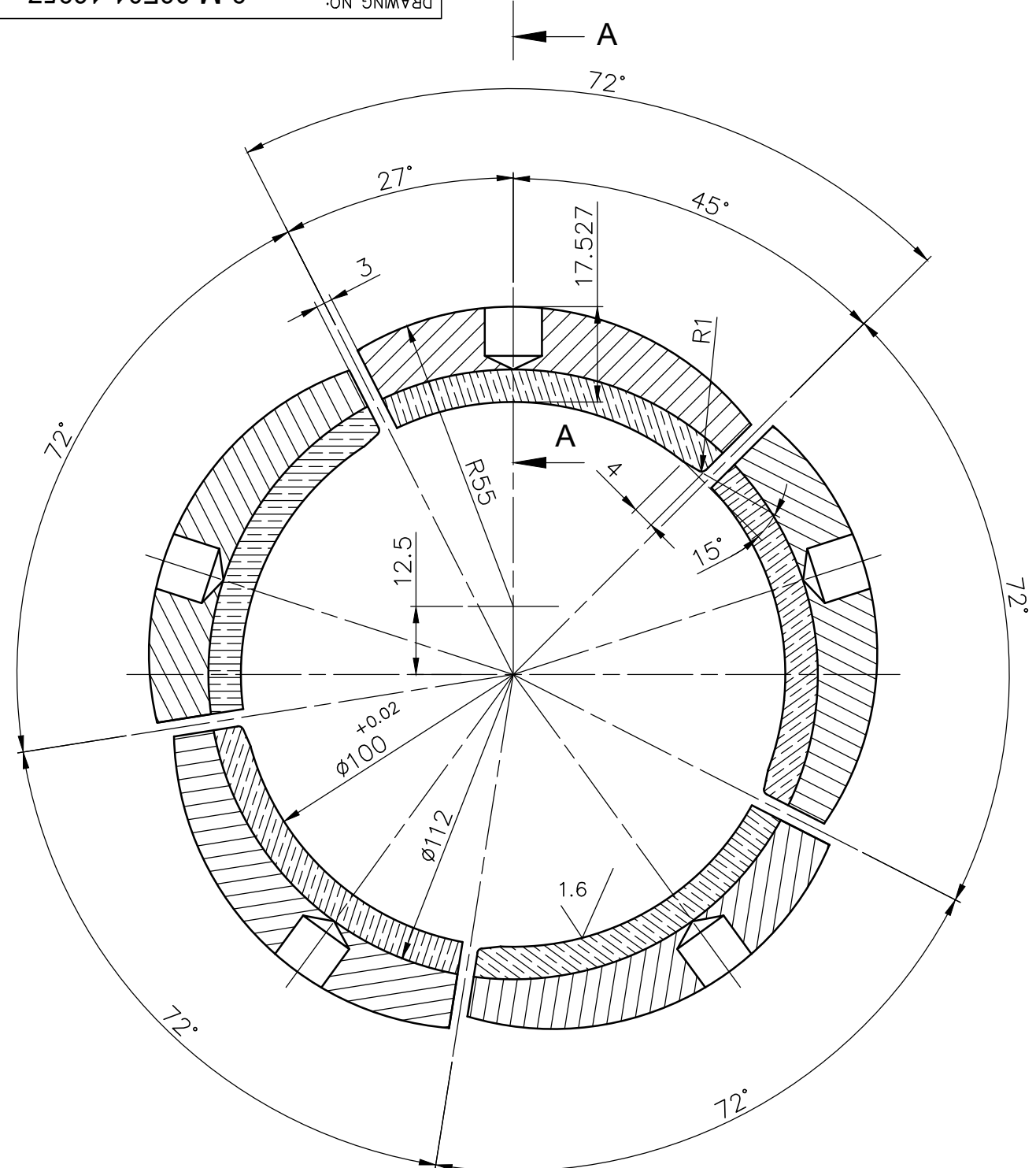
REV	DATE	ALTERED
		CHECKED
		APPROVED
ZONE		

A2-SIZE

3-M-06F01-16357

DRAWING NO:

ALL DIMENSIONS ARE IN MILLIMETRES



SECTION - AA

REV	DATE	ALTERED
		CHECKED
		APPROVED
ZONE		

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ITEM NO	DESCRIPTION	DRAWING NO	MATL CODE	UNIT WT	
			MATL SPEC	QTY	
EQPT: CENTERLESS CYLINDRICAL GRINDING MACHINE / BB6					
	Bharat Heavy Electricals Ltd HIGH PRESSURE BOILER PLANT TIRUCHIRAPALLI - 620014	DRN	NAME N.MADURAVEERAN	SIGNATURE <i>N. maduraveeran</i>	DATE 27.12.22
		CHD	A.DANASEKAR	<i>A. Danasekar</i>	28.12.22
		APPD	A.DANASEKAR	<i>A. Danasekar</i>	28.12.22
DEPT M&S	GRADE OF UNTOL. DIM φ/M/∅	SCALE 1:1	WEIGHT (Kg)	REF TO ASSY DWG NO	ITEM 00
CODE 2597	IS: 2102			REF TO OLD DWG NO	
TITLE SEGMENT (GRINDING MACHINE / BB6)			CARD CODE U 01	DRAWING NO : 3-M-06F01-16357	REV 00