

BHARAT HEAVY ELECTRICALS LIMITED

(A Government of India Undertaking)

HIGH PRESSURE BOILER PLANT
PURCHASE DEPARTMENT - FOSSIL BOILERS
THIRUCHIRAPALLI - 620014
TAMILNADU (INDIA)

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1/3

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



429-002/A


Enquiry No	Enquiry Date	Due Date for Quotation
2661400871 - 55	28.11.2014	26.12.2014

Please quote Enquiry No, Date and due date in all correspondences.
This is only a request for quotation and not an order

Item	Description	Unit	Quantity	Delivery Quantity	Schedule Date
10	7510B4500100 SPUR GEAR AS PER GRG. NO.3M-10B-45-15050 VENDOR QUALIFYING CRITERIA Only those vendors who satisfy the following conditions will get qualified to participate in the tender: 1. Vendor should have minimum 3 years of experience in this field. 2. Previous PO details for supplying similar kind of items to BHEL and/or any-other Organisation should be submitted along with offer. Otherwise offer will be rejected. 3. Company profile details has to be provided along with offer. 4. BHEL reserves the right to visit the vendor's works for verifying the manufacturing facilities and any other credential furnished by the vendor. In case the information furnished with the offers found to be false /incorrect, the offer shall be rejected.	NO	4.000	4.00	28.02.15
20	7510B4400100 SPUR GEAR AS PER GRG. NO.4M-10B-44-29408 NOTE: FOR SL.NO. 20 TO 40 ARE MATING COMPONENTS. HENCE THESE ITEMS SHOULD BE PROCURED FROM SINGLE SOURCE ONLY.	NO	4.000	4.00	28.02.15
30	7510B4400200 SPUR GEAR AS PER GRG. NO.4M-10B-44-29409	NO	2.000	2.00	28.02.15
40	7510B4400300 IDLER GEAR AS PER GRG. NO.4M-10B-44-29410	NO	2.000	2.00	28.02.15
50	7510B4400400 BOX NUT (RH) AS PER GRG. NO.4M-10B-44-29407 NOTE: FOR SL.NO. 50 AND 60 ARE SAME DRG.NO. BUT DIFFRENT THREAD. HENCE	NO	2.000	2.00	28.02.15

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

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


MANAGER / PURCHASE
(FOSSIL BOILERS)
Yours faithfully,



BHARAT HEAVY ELECTRICALS LIMITED

(A Government of India Undertaking)
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E-mail: srchandran@bheltry.co.in
Web:

2661400871 / 28.11.2014

THESE ITEMS SHOULD BE PROCURED FROM
SINGLE SOURCE ONLY.

60	7510B4400500 BOX NUT (LH) AS PER GRG. NO.4M-10B-44-29407	NO	2.000	2.00	28.02.15
70	7510B4700100 SPUR GEAR AS PER GRG. NO.4M-10B-47-29415 NOTE: FOR SL.NO. 70 TO 90 ARE MATING COMPONENTS. HENCE THESE ITEMS SHOULD BE PROCURED FROM SINGLE SOURCE ONLY.	NO	4.000	4.00	28.02.15
80	7510B4700200 IDLER GEAR AS PER GRG. NO.4M-10B-47-29413	NO	2.000	2.00	28.02.15
90	7510B4700300 SPUR GEAR AS PER GRG. NO.4M-10B-47-29412	NO	2.000	2.00	28.02.15
100	7510B4700400 LEAD SCREW NUT (RH) AS PER GRG. NO. 4M-10B-47-29414 NOTE: FOR SL.NO. 100 AND 110 ARE SAME DRG.NO. BUT DIFFRENT THREAD. HENCE THESE ITEMS SHOULD BE PROCURED FROM SINGLE SOURCE ONLY.	NO	2.000	2.00	28.02.15
110	7510B4700500 LEAD SCREW NUT (LH) AS PER GRG. NO. 4M-10B-47-29414	NO	2.000	2.00	28.02.15
120	7508F1203100 WORM SHAFT AS PER DRG:4M-08F12-27960 NOTE: FOR SL.NO. 120 AND 130 ARE MATING COMPONENTS. HENCE THESE ITEMS SHOULD BE PROCURED FROM SINGLE SOURCE ONLY.	NO	5.000	5.00	28.02.15
130	7508F1203200 WORM WHEEL AS PER DRG:4M-08F12-27961	NO	5.000	5.00	28.02.15

General Note:

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

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

Enclosures:

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

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

MANAGER / PURCHASE
(FOSSIL BOILERS)
Yours faithfully,



BHARAT HEAVY ELECTRICALS LIMITED

(A Government of India Undertaking)
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PURCHASE DEPARTMENT - FOSSIL BOILERS
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2661400871 / 28.11.2014

"LD clause has to be confirmed without fail."

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

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

MANAGER / PURCHASE
(FOSSIL BOILERS)
Yours faithfully,

CAPITAL PURCHASE
COMMERCIAL TERMS AND CONDITIONS

1.0 QUOTATIONS

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

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

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

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

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

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

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

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

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

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

2.0 OPENING OF TENDERS

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

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

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

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

MM: CP & SP
Annexure For Techno Commercial Bid

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

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

NOTE:-

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

Special Provisions for Micro and Small Enterprises (MSE)

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

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

Payment through Bank is not preferred. In case of Payment through Bank is opted by Supplier, BHEL prefers documents submission through bank with copy of LR and door delivery of Goods to Site/Stores with Consignee copy attached. In this case Loading will be 3% on the offered value.
Offers of indigenous Suppliers with payment terms as LC/Advance Payment are liable for rejection.

Liquidated Damages / Penalty -
Liquidated damages shall be 0.5% of the total order value per week or part thereof subject to a maximum of 10% of the total order value.
For staggered delivery schedule, LD shall be 0.5% of the undelivered portion per week of the delay or part thereof subject to a maximum of 10% of the total order value.
Any deviation from the above LD clause, loading will be applied to the extent to which it is not agreed by the bidder (at offered value).

Guarantee / Warranty Period – (if applicable)
Normally No deviation permitted and the deviated offers are liable for rejection.

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

Performance Bank Guarantee – (if applicable)
Normally No deviation permitted and the deviated offers are liable for rejection.

NOTE:-

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

Certificate by Chartered Accountant on letter head

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

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

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

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

Date:

(Signature)

Name -

Membership number -

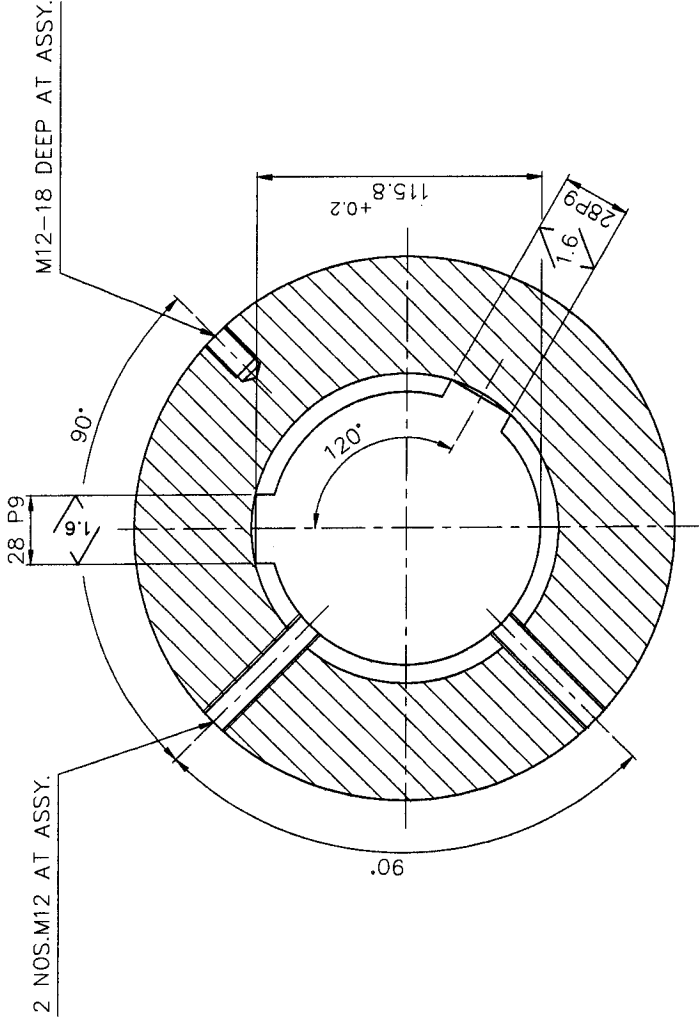
Seal of Chartered Accountant

ALL DIMENSIONS ARE IN MM

CAUTION: THIS DRAWING IS THE SOLE PROPERTY AND SHOULD NOT BE USED IN ANY FORM FOR ANY PURPOSE WITHOUT THE WRITTEN PERMISSION OF BHARAT HEAVY ELECTRICALS LIMITED TRICHIRAPPALLI - 600 014.

Ø220 h11	-0.000	Ø110 H7	+0.035	Ø28 P9	-0.022
	-0.290		0.000		-0.074

3.2/1.6/



2 NOS.M12 AT ASSY.

M12-18 DEEP AT ASSY.

NOTE: - CHAMFER CORNERS FOR 2/45°
HARDENED HRC.35 ±2

NO.OF TEETH	20
MODULE	10
PRESSURE ANGLE	20°
WITH ACROSS 3 TEETH	76.60 -0.178 -0.237
CORRECTION FACTOR	-
Q.LTY.&TOL.ZONE	9C DIN 3967
MATING GEAR NO.OF TEETH	-
MATING GEAR DRAWING NO:	-
CENTRE DISTANCE	-

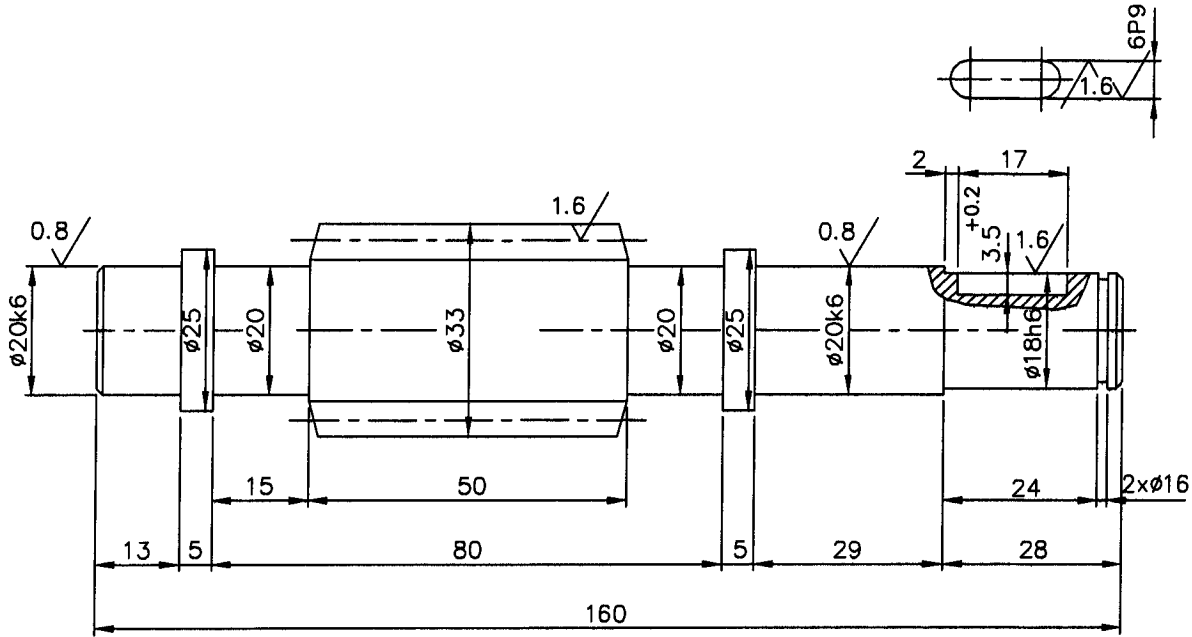
Ø220x147 L	55C8	IS: 5517	21.98
DESCRIPTION	MATERIAL	STANDARD	NET.WT IN KGS.
REFERENCE:		ALTERATIONS:	DEN REF DATE SIGN INDEX
SCALE DRN: S.Selvaranickam			
CHD: R.Ramamoorthy			
APPD: K.Ramanan			
DATE: 22.01.13			
MACHINE: POSITIONER	TYPE: ROMAR-300T		
TITLE:	DRAWING No:		
		3M10B4515050	Sheet No
			No of Sheets

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6P9	-0.012	ø18h6	-0.000
	-0.042		-0.011
		ø20k6	+0.015
			+0.002

3.2//1.6/0.8//



NOTE: -

CHAMFER SHARP CORNERS TO 1/45°
 HARDENED TO HRC 40⁺²

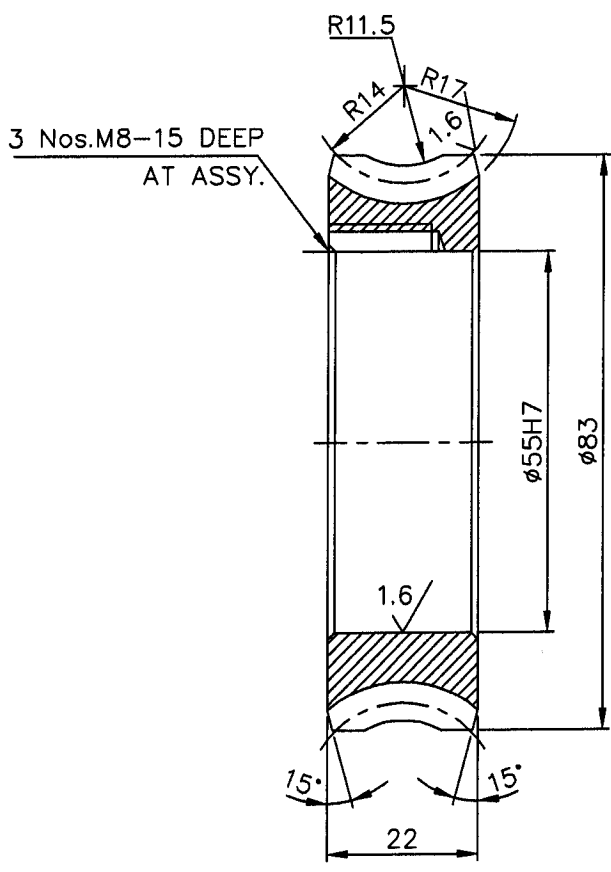
NO.OF STARTS	DOUBLE
MODULE	2.5
PRESSURE ANGLE	20°
HELIX ANGLE	10° 7' 28"
HAND OF HELIX	R.H
AXIAL PITCH	7.85
MATING WORM No. OF TEETH	30
MATING WORM DRG. No.	4.M.08F12.27961
CENTRE DISTANCE	51.5

	ø33x160L	55 C8	IS: 5517	0.40		
No. of Pieces	DESCRIPTION	MATERIAL	STANDARD	NET.WT.IN KGS.	DRAWING No.	ITEM No.
	REFERENCE:		ALTERATIONS:	DCN REF	DATE	SIGN.
SCALE	DRAWN	P.ALBERT ROSS				
1:1	CHECKED	R.RAMAMOORTHY				
	APPROVED	C.S.JAYASHEELAN				
	DATE	15.01.07				
	MACHINE: CNC SLANT BED LATHE		TYPE: HMT STC15			
	TITLE:	DRAWING No:			REV.	
	WORM SHAFT øD33x2Stx160L	4M08F1227960				
	(CHIP CONVEYOR ASSY.)	Sheet No:		No. of Sheets:		

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ALL DIMENSIONS ARE IN MM

ø55H7	+0.030	3.2//1.6//	✓/✓/✓
	+0.000		



NOTE: -

CHAMFER SHARP CORNERS TO 1/45°

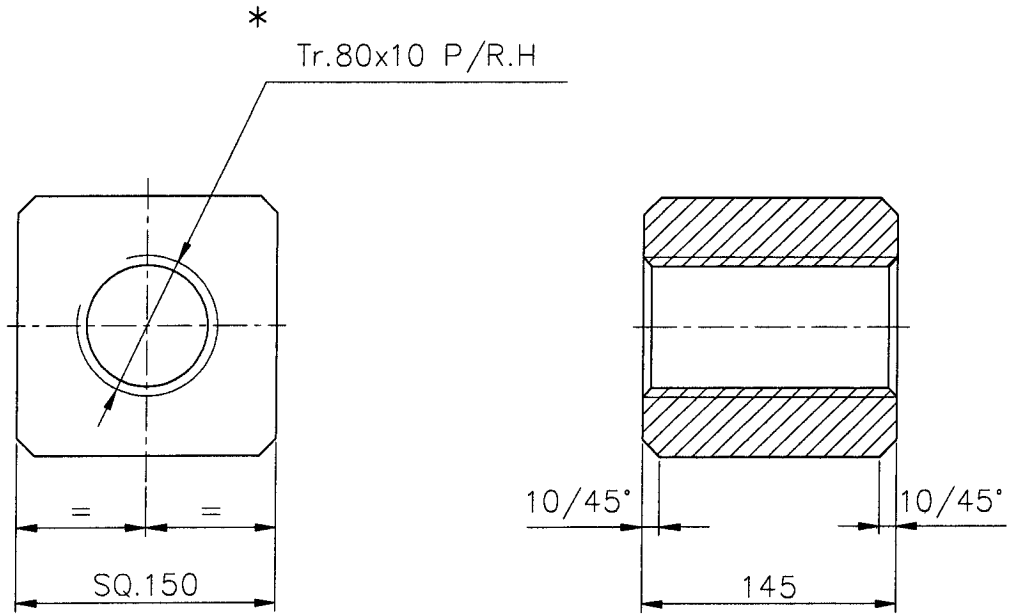
NO.OF TEETH	30
MODULE	2.5
PRESSURE ANGLE	20°
HELIX ANGLE	10° 7' 28"
HAND OF HELIX	R.H
MATING WORM No. OF STARTS	DOUBLE
MATING WORM DRG. No.	4.M.08F12.27960
CENTRE DISTANCE	51.5

	ø83x22L	Pcu Sn 7	IS: 28	0.50			
⊗							
No.of Pieces	DESCRIPTION	MATERIAL	STANDARD	NET.WT.IN KGS.	DRAWING No.	ITEM No.	
	REFERENCE:		ALTERATIONS:	DCN REF	DATE	SIGN.	INDEX
SCALE	DRAWN	<i>R.Narayanan</i>					
1:1	CHECKED	R.RAMAMOORTHY					
	APPROVED	C.S.JAYASHEELAN					
	DATE	15.01.07					
	MACHINE: CNC SLANT BED LATHE	TYPE: HMT STC15					
	TITLE:	DRAWING No:					REV.
	WORM WHEEL 30T×ØD83 (CHIP CONVEYOR ASSY.)	4M08F1227961					
	Sheet No:		No.of Sheets:				

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ALL DIMENSIONS ARE IN MM

3.2 / 1.6 / 0.8 /



NOTE:

AVOID SHARP CORNERS

* ONE SHOWN THREAD RH ANOTHER ONE IS LH

MATING SCREW REF.DRG.NO. : 3M10B4414940

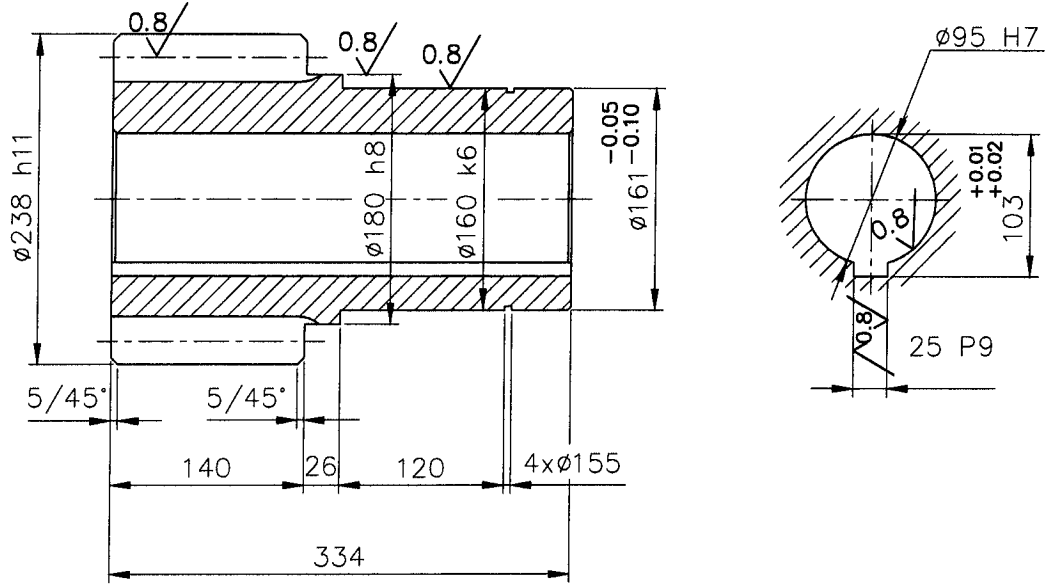
4	150 SQ.x145 L	45 C8	IS: 7283	19.8			
No. of Pieces	DESCRIPTION	MATERIAL	STANDARD	NET.WT.IN KGS.	DRAWING No.		ITEM No.
	REFERENCE: CUSR-300.029a		ALTERATIONS:	DCN REF	DATE	SIGN.	INDEX
SCALE 1:5	DRN/TCD.	P.ALBET ROSS					
	CHD.	R.RAMAMOORTHY					
	APP.	C.S.JAYASHEELAN					
	DATE	04-07-12					
	MACHINE: WELDING ROTATOR		TYPE: CU BUILT 300T				
	TITLE: BOX NUT Tr.80x10 P/L.H/R.H (IDLER UNIT)		DRAWING No:		REV.		
			4M10B4429407				
		Sheet No:		No. of Sheets:			

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ø160 k6	+0.050	ø238 h11	-0.000
	+0.004		-0.290
25 P9	-0.022	ø95 H7	+0.035
	-0.074		+0.000
			ø180 h8
			-0.072

3.2 / 1.6 / 0.8



NO.OF TEETH	15
MODULE	14
PRESSURE ANGLE	20°
WIDTH A/C 2 TEETH	64.7388 ^{-0.101} _{0.169}
QUALITY & TOL.ZONE	9e.DIN 3967
CORRECTION FACTOR	-
MATING GEAR No.OF TEETH	-
MATING GEAR DRG.No.	-
CENTRE DISTANCE	-

NOTE:

AVOID SHARP CORNERS

HARDENED TO HRC.50⁺²

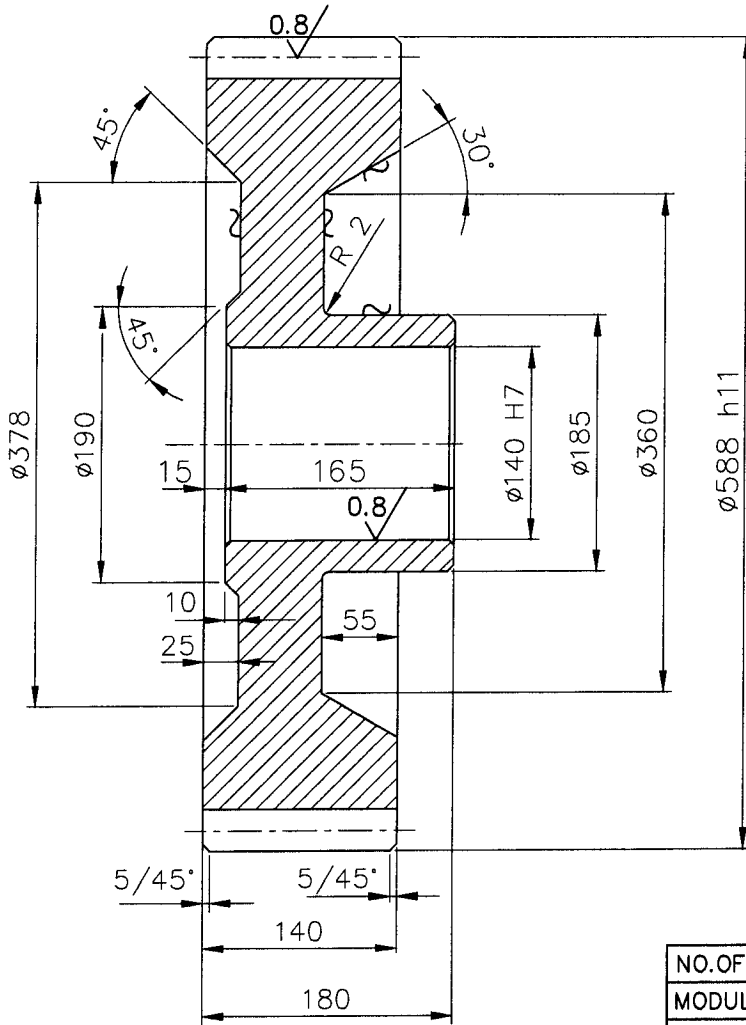
ø240x334 L		13 Ni.13 Cr.3	IS: 4432	X			
No.of Pieces	DESCRIPTION	MATERIAL	STANDARD	NET.WT.IN KGS.	DRAWING No.	ITEM No.	
	REFERENCE: CUSR-300.021a		ALTERATIONS:	DCN REF	DATE	SIGN.	INDEX
SCALE	DRN/TCO: P.ALBET ROSS						
1:5	CHD. R.RAMAMOORTHY						
	APP. C.S.JAYASHELAN						
	DATE 04-07-12						
	MACHINE: WELDING ROTATOR	TYPE: CU BUILT 300T					
	TITLE: SPUR GEAR 15T/ø238 (ROLLER DRIVE ASSY.)	DRAWING No:					REV.
		4M10B4429408					
	Sheet No:		No.of Sheets:				

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ALL DIMENSIONS ARE IN MM

ø140 H7	+0.040	ø588 h11	-0.000
	+0.000		-0.400

3.2/√/0.8/√



NOTE:

AVOID SHARP CORNERS
HARDENED TO HRC.50^{±2}

NO.OF TEETH	40
MODULE	14
PRESSURE ANGLE	20°
WIDTH A/C 5 TEETH	193.8258 ^{-0.101} _{-0.169}
QUALITY & TOL.ZONE	9e.DIN 3967
CORRECTION FACTOR	NIL
MATING GEAR No.OF TEETH	50
MATING GEAR DRG.No.	4M10B4429409
CENTRE DISTANCE	-
FINISHING	GROUND

	ø590x180 L	13 Ni.13 Cr.3	IS: 4432	206.0			
No.of Pieces	DESCRIPTION	MATERIAL	STANDARD	NET.WT.IN KGS.	DRAWING No.		ITEM No.
	REFERENCE: CUSR-300.019a		ALTERATIONS:	DCN REF	DATE	SIGN.	INDEX
SCALE	DRN/TC.D. P.ALBET ROSS						
1:5	CHD. R.RAMAMOORTHY						
	APP. C.S.JAYASHEELAN						
	DATE 04-07-12						
	MACHINE: WELDING ROTATOR	TYPE: CU BUILT 300T					
	TITLE: SPUR GEAR 40T/ø588 (ROLLER DRIVE ASSY.)	DRAWING No:		4M10B4429409			REV.
		Sheet No:	No.of Sheets:				

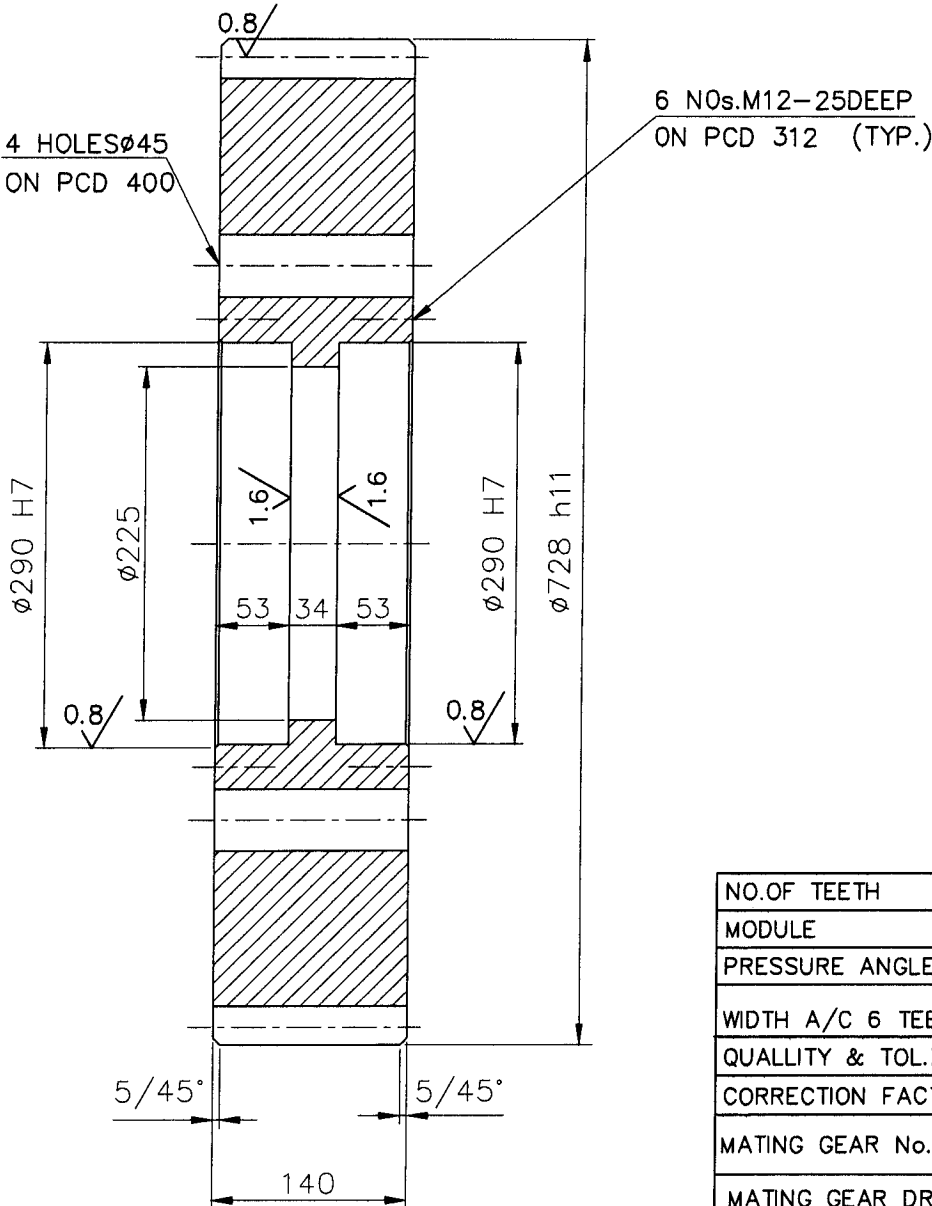
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CAUTION:

ALL DIMENSIONS ARE IN MM

ø290 H7	+0.052	ø728 h11	-0.000
	+0.000		-0.400

3.2 / 1.6 / 0.8 /



NOTE:
AVOID SHARP CORNERS
HARDENED TO HRc.50±2

NO.OF TEETH	50
MODULE	14
PRESSURE ANGLE	20°
WIDTH A/C 6 TEETH	237.1166 ^{-0.113} _{-0.188}
QUALITY & TOL.ZONE	9e.DIN 3967
CORRECTION FACTOR	NIL
MATING GEAR No.OF TEETH	40
MATING GEAR DRG.No.	4M10B4429408 4M10B4429409
CENTRE DISTANCE	-
FINISHING	GROUND

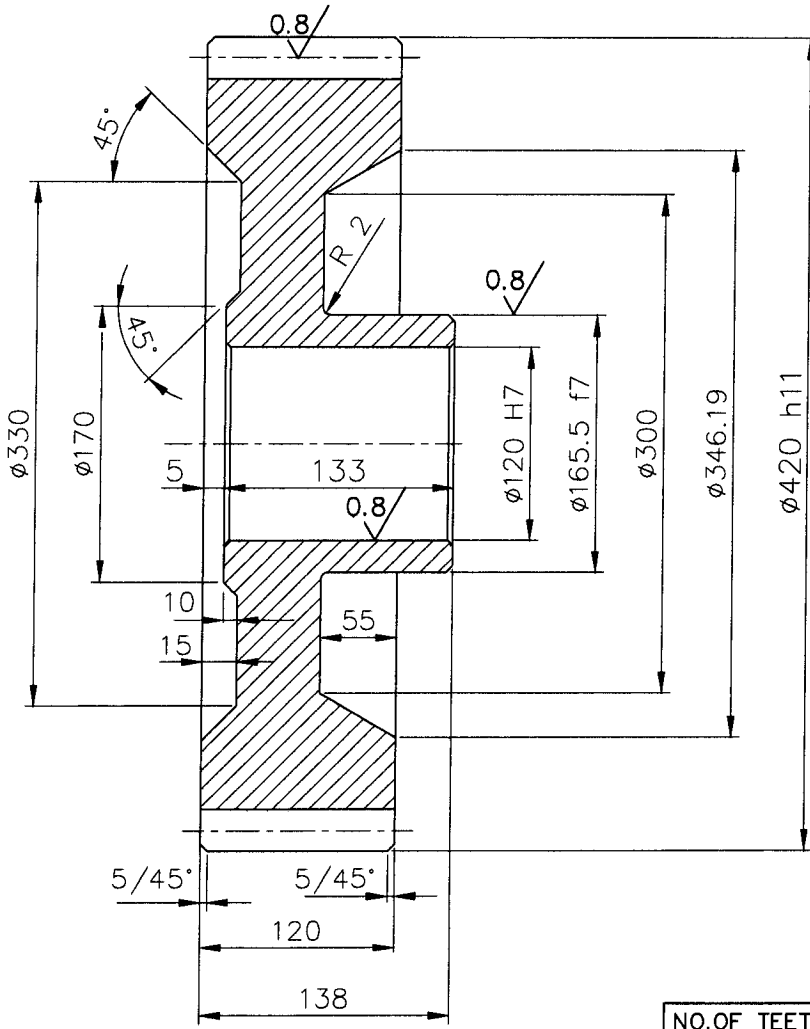
ø730x140 t		13 Ni.13 Cr.3	IS: 4432	336.69		
No.of Pieces	DESCRIPTION	MATERIAL	STANDARD	NET.WT.IN KGS.	DRAWING No.	ITEM No.
	REFERENCE: CUSR-300.020a		ALTERATIONS:	DCN REF	DATE	SIGN. INDEX
SCALE 1:5	DRN/TC.D.	P.ALBET ROSS				
	CHD.	R.RAMAMOORTHY				
	APP.	C.S.JAYASHEELAN				
	DATE	04-07-12				
	MACHINE:	WELDING ROTATOR		TYPE:	CU BUILT 300T	
	TITLE:	IDLER GEAR 50T/ø728 (ROLLER DRIVE ASSY.)		DRAWING No:	4M10B4429410	
		Sheet No:		No.of Sheets:		
						REV.

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TRICHIRAPPALLI - 620 014

ALL DIMENSIONS ARE IN MM

ø165 f7	-0.043	ø420 h11	-0.000
	-0.083		-0.400
		ø120 H7	+0.035
			+0.000

3.2/0.8/



NOTE:

AVOID SHARP CORNERS

CASE HARDENED TO HRC.50⁺²

NO.OF TEETH	40
MODULE	10
PRESSURE ANGLE	20°
WIDTH A/C 5 TEETH	138.4470 ^{-0.113} _{0.168}
QUALITY & TOL.ZONE	9e.DIN 3967
CORRECTION FACTOR	-
MATING GEAR No.OF TEETH	-
MATING GEAR DRG.No.	-
CENTRE DISTANCE	-

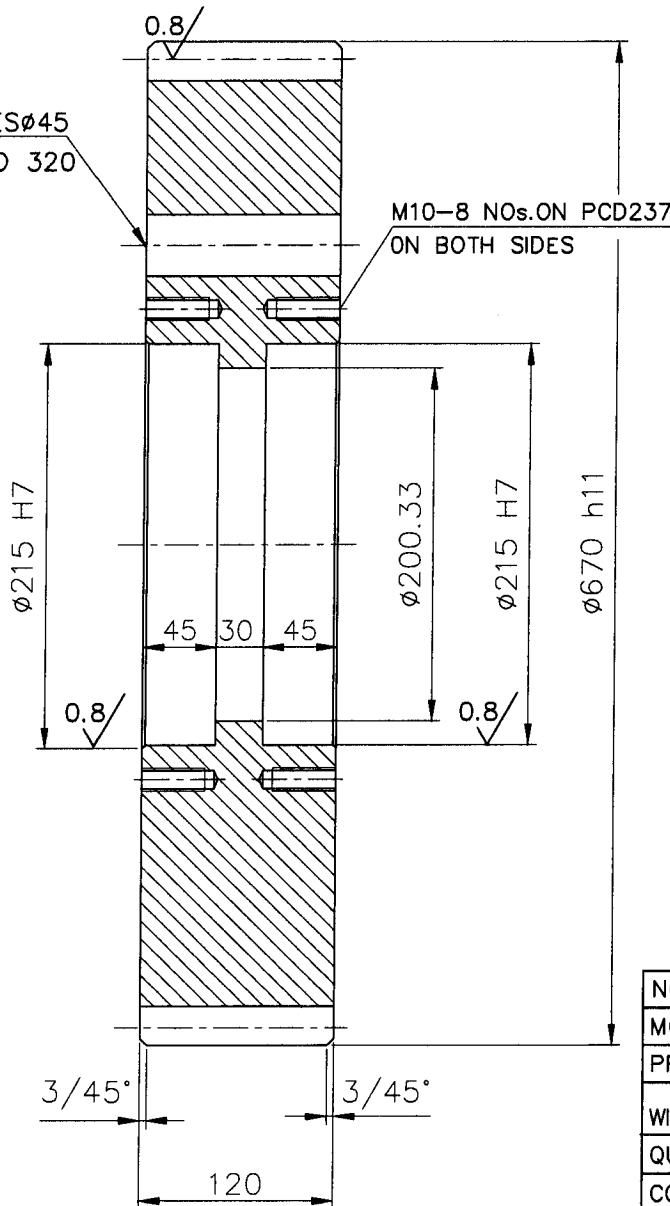
ø420x138 L		13 Ni.13 Cr.3	IS: 4432	119.90			
No.of Pieces	DESCRIPTION	MATERIAL	STANDARD	NET.WT.IN KGS.	DRAWING No.		ITEM No.
	REFERENCE: CUSR-150-09	ALTERATIONS:		DCN REF	DATE	SIGN.	INDEX
SCALE	DRN/TCO: P.ALBET ROSS						
NTS	CHD: R.RAMAMOORTHY						
	APP: C.S.JAYASHEELAN						
	DATE: 04-07-12						
	MACHINE: WELDING POSITIONER			TYPE: CU BUILT 150T			
	TITLE: SPUR GEAR 40T/ø420 (ROLLER DRIVE ASSY.)			DRAWING No:			REV.
				4M10B4729412			
			Sheet No:			No.of Sheets:	

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TECHNICAL - 620-014

ALL DIMENSIONS ARE IN MM

ø670 h11	-0.000
	-0.400
ø215 H7	+0.072
	+0.000

3.2/ 0.8/



NOTE:

AVOID SHARP CORNERS
CASE HARDENED TO HRC.50^{±2}

NO.OF TEETH	65
MODULE	10
PRESSURE ANGLE	20°
WIDTH A/C 6 TEETH	170.7610 ^{-0.113} _{-0.188}
QUALITY & TOL.ZONE	9e.DIN 3967
CORRECTION FACTOR	-
MATING GEAR No.OF TEETH	-
MATING GEAR DRG.No.	-
CENTRE DISTANCE	-

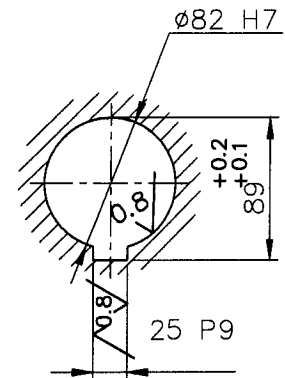
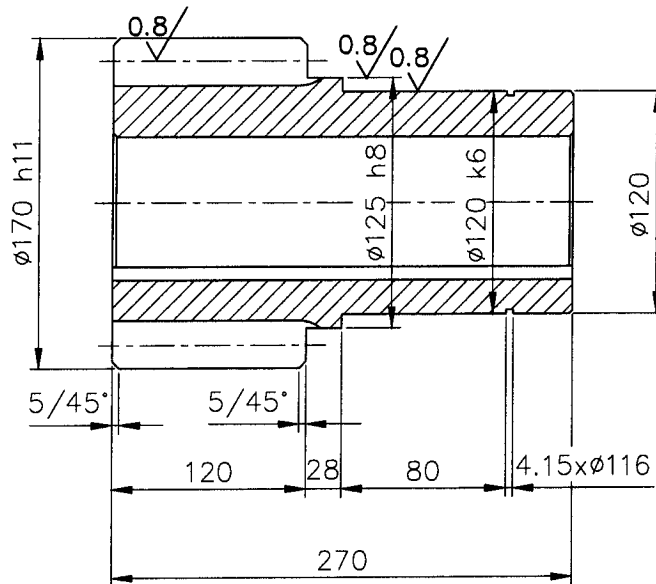
ø670x120 t		13 Ni.13 Cr.3	IS: 4432	302.64		
No.of Pieces	DESCRIPTION	MATERIAL	STANDARD	NET.WT.IN KGS.	DRAWING No.	ITEM No.
	REFERENCE: CUSR-150-08		ALTERATIONS:	DCN REF	DATE	SIGN.
SCALE	DRN/TCB. P.ALBET ROSS					
NTS	CHD. R.RAMAMOORTHY					
	APP. C.S.JAYASHEELAN					
	DATE 07-07-12					
	MACHINE: WELDING POSITIONER	TYPE: CU BUILT 150T				
	TITLE: IDLER GEAR 65T/ø670 (IDLER DRIVE ASSY.)	DRAWING No:				REV.
		4M10B4729413				
	Sheet No:		No.of Sheets:			

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ALL DIMENSIONS ARE IN MM

ø120 k6	+0.028	ø170 h11	-0.000
	+0.003		-0.290
		ø82 H7	+0.035
			+0.000
		ø125 h8	-0.000
			-0.063

3.2 / 1.6 / 0.8



NO.OF TEETH	15
MODULE	15
PRESSURE ANGLE	20°
WIDTH A/C 2 TEETH	46.4690 ^{-0.089} _{0.148}
QUALITY & TOL.ZONE	9e.DIN 3967
CORRECTION FACTOR	-
MATING GEAR No.OF TEETH	-
MATING GEAR DRG.No.	-
CENTRE DISTANCE	-

NOTE:

AVOID SHARP CORNERS
HARDENED TO HRC.50^{±2}

ø170x270 L		13 Ni.13 Cr.3	IS: 4432	36.93			
No.of Pieces	DESCRIPTION	MATERIAL	STANDARD	NET.WT.IN KGS.	DRAWING No.		ITEM No.
	REFERENCE: CUSR-300.021a		ALTERATIONS:	DCN REF	DATE	SIGN.	INDEX
SCALE	DRN/TCD. P.ALBET ROSS						
NTS	CHD. R.RAMAMOORTHY						
	APP. C.S.JAYASHEELAN						
	DATE 04-07-12						
	MACHINE: WELDING POSITIONER		TYPE: &U BUILT 150T				
	TITLE: SPUR GEAR 15T/ø170 (ROLLER DRIVE ASSY.)		DRAWING No:		REV.		
			4M10B4729415				
		Sheet No:		No.of Sheets:			