



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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PHONE :2577629
GRAMS : BHARATELEC
FAX NO: 2520719
E-mail: srchandran@bheltry.co.in
Web:


429-002/A

Enquiry No	Enquiry Date	Due Date for Quotation
2661400239 - 55	05.04.2014	30.04.2014
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	7512A2200100 SCREW ROD AS PER DRG NO:4M-12A-22-28568 NOTE: FOR SL.NO. 10 TO 30 ARE MATING COMPONENTS. HENCE THESE ITEMS SHOULD BE PROCURED FROM SINGLE SOURCE ONLY. 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 experience in this field. 2.Previous PO details for supplying similar kind of machining items 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	8.000	8.00	04.06.14
20	7512A2200200 BOX NUT AS PER DRG NO:4M-12A-22-28569	NO	8.000	8.00	04.06.14
30	7512A2200300 SUPPORT AS PER DRG NO:3M-12A-22-14170	NO	8.000	8.00	04.06.14
40	7510A6102400 SCREW ROD AS PER DRG NO:4M-10A-61-28908 NOTE: FOR SL.NO. 40 AND 50 ARE MATING COMPONENTS. HENCE THESE ITEMS SHOULD BE PROCURED FROM SINGLE SOURCE ONLY.	NO	10.000	10.00	04.06.14
50	7510A6102500 BOX NUT AS PER DRG NO:4M-10A-61-28909	NO	10.000	10.00	04.06.14

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

2661400239 / 05.04.2014

60	7510A6200100 SHAFT AS PER DRG NO:4M-10A-62-28893	NO	10.000	10.00	04.06.14
70	7510A6102600 SHAFT AS PER DRG NO:4M-10A-61-28623	NO	10.000	10.00	04.06.14
80	7512B3602500 SHAFT AS PER DRG NO:4M-12B-36-28902	NO	10.000	10.00	04.06.14
90	7510A6106400 SCREW ROD AS PER DRG NO. 4M-10A-61-29287	NO	10.000	10.00	04.06.14
100	7510A6109000 LOCK BOLT AS PER DRG NO. 4M-10A-61-29460	NO	8.000	8.00	04.06.14
110	7510A6109100 GUIDE ROD AS PER DRG NO. 4M-10A-61-29461	NO	8.000	8.00	04.06.14
120	7510A6109200 MEASURING UNIT ROLLER SHAFT AS PER DRG NO. 4M-10A-61-29643	NO	8.000	8.00	04.06.14
130	7510A6109300 ROLLER AS PER DRG NO. 4M-10A-61-29644	NO	8.000	8.00	04.06.14
140	7512A2500900 MAIN SHAFT AS PER DRG NO: 4M-12A-25-29018	NO	8.000	8.00	04.06.14
150	7512A2201000 ROTAING ASSEMBLY AS PER DRG. NO.3M-12A-22-14928, SUB DRG. NO. 4M-12A-22-29432, 4M-12A-22-29366, 4M-12A-22-29433,	NO	16.000	16.00	04.06.14
160	7512B1700700 TRUNNION AS PER DRG.NO. 4M-12B-17/18-10698-01	NO	70.000	70.00	04.06.14

General Note:


general note:
please submit your offer in "two part bid system"
as per annexure enclosed.

enclosures:

annexure II,III,IV,V,VI&VII and DRAWINGS

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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PURCHASE DEPARTMENT - FOSSIL BOILERS
THIRUCHIRAPALLI - 620014
TAMILNADU (INDIA)

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Page
3/3

2661400239 / 05.04.2014


Enclosures:

"LD clause has to be confirmed without fail."

"Payment to vendors will be made only thro E-Payment mode"

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 < arjerome@bheltry.co.in > & < chells@bheltry.co.in>

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:-

- 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.
- 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
- 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.
- No row shall be left blank. Please indicate NA, in case the item is "not applicable"

Annexure For Price Bid

**Bharat Heavy Electricals Limited TIRUCHIRAPPALLI
MODEL PRICE BID FORMAT FOR INDIAN BIDDERS**

CAPITAL PURCHASE
Annexure-IV

Enquiry No. & Date:
Bidder's Offer No. & Date:

SI No	Description of item	Unit	Quantity	Rate in Rs.	Value in Rs.
	TOTAL VALUE IN RS.				
	Packing & Forwarding charges in % if any				
	Freight & Insurance Charges In % if freight charges are not mentioned it will be considered as FOR-BHEL TRICHY.				
	Excise Duty (indicate in %)				
	A) TNGST — VAT (%)				
	B) CST with C-FORM — (%)				
	C) CST without C-Form — (%)				
	Approximate Net weight of the total consignment				
	Approximate Gross weight of the total consignment				
	Approximate Dimensions of the Consignment				
	The price indicated shall be inclusive of all accessories, spares etc. as given in the scope of supply. Individual item-wise break-up price shall be attached as an annexure to this price bid format.				

Signature & Seal of Vendor

NOTE:

1. The price bid should be submitted only as per the above format. No row shall be left blank. Please indicate NA, in case the item is "not applicable"
2. Prices shall be quoted item-wise only as per the above format.
3. If Price quoted is Inclusive of ED, the included ED Value and Base Value shall be indicated item-wise.

Payment Term (Indigenous)	
If materials are receivable at Stores/Trichy without 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 with 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.

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 offer, attested copies of either EM II certificate having deemed validity (Two years from the date of issue of acknowledgement in EM II) or valid NSIC certificate or EM II certificate along with CA certificate (Format enclosed Annexure - VII) applicable for the year, certifying quantum of investment in plant and machinery within the permissible limit as per the act for relevant status (Micro or small) where the deemed validity of EM II is over. Date to be reckoned for determining the deemed validity will be the last date of technical bid submission. Offer/s received without these documents will lead to consideration of their offer at par with other bidders and MSE status of such suppliers shall be shifted to Non MSE supplier.

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 -

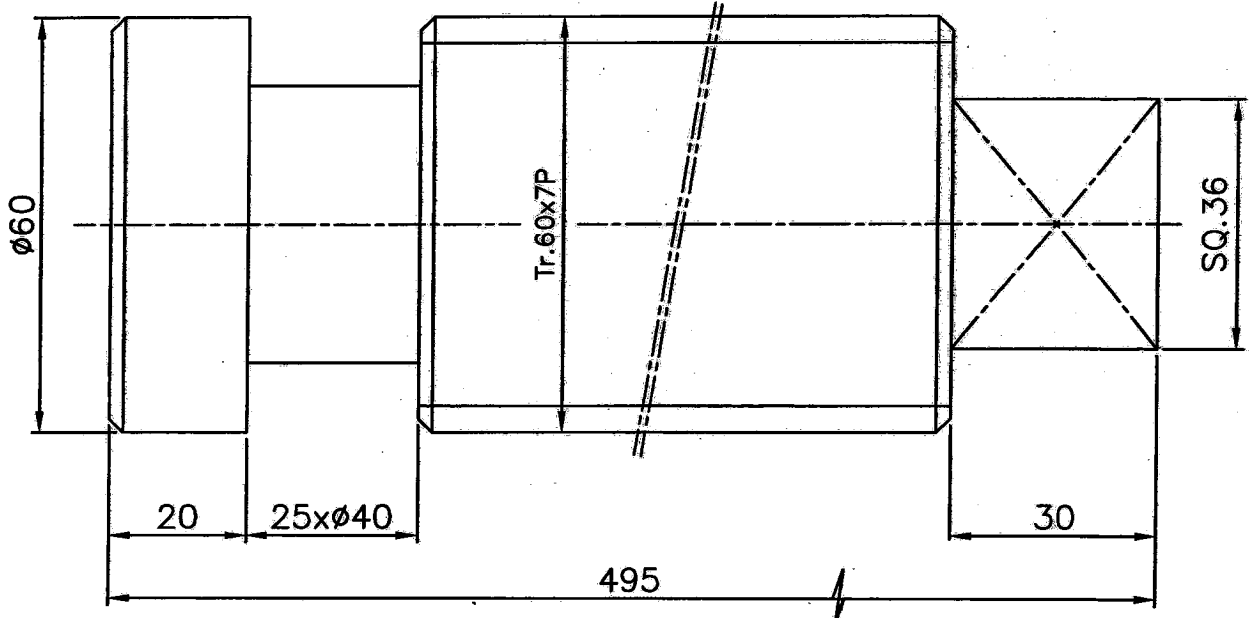
Seal of Chartered Accountant

THIS DRAWING IS OUR SOLE PROPERTY AND SHOULD NOT BE USED IN ANY FORM FOR ANY PURPOSE WITHOUT THE WRITTEN PERMISSION OF BHARAT HEAVY ELECTRICALS LIMITED, TRICHURAPPALLI - 620 014.

CAUTION:

ALL DIMENSIONS ARE IN MM

3.2/

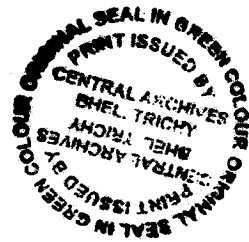


NOTE: -

CHAMFER ALL SHARP CORNERS TO 2/45°

MATING BOX NUT REF.DRG.NO.4M12A2228569

±2
HARDENED TO HRC 35



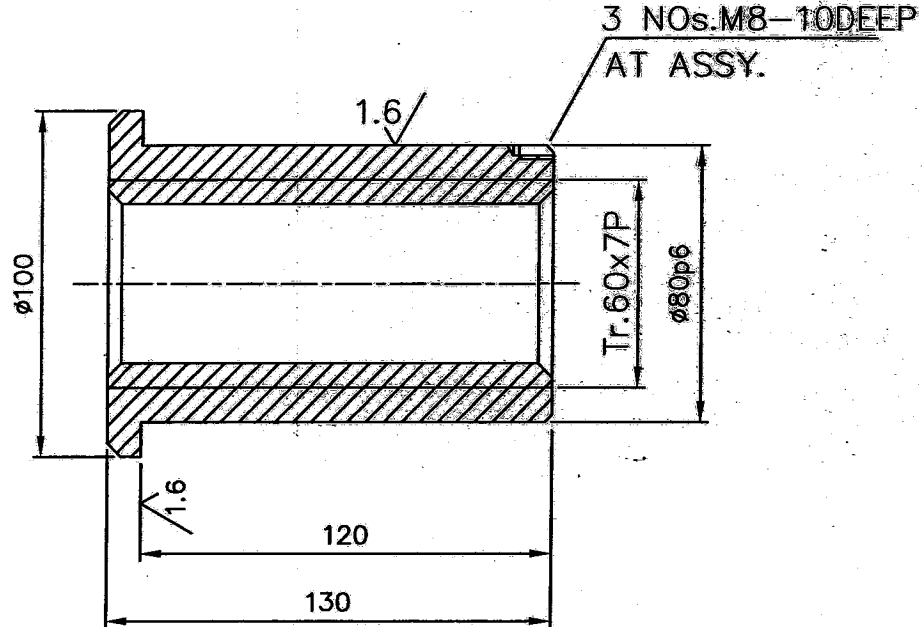
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SCALE	REFERENCE:	ALTERATIONS:		DCN REF	DATE	SIGN, INDEX
	1:1					
	DRAWN	P.Albertrose				
	CHECKED	R.Ramamoorthy				
	APPROVED	C.S.Jayasheelan				
	DATE	17-06-10				
MACHINE:	SYSTEM BENDER		TYPE: GERMAN-CNC 100DP			
	TITLE:	SCREW ROD Tr.60x7Px495L		DRAWING No:		
(BENDING ARM)		4M12A2228568				
	Sheet No:		No. of Sheets:			

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ALL DIMENSIONS ARE IN MM

ø80p6	+0.059
	+0.037

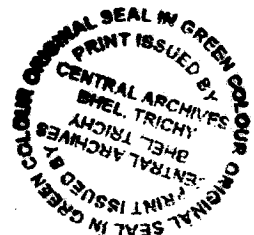
3.2/ 1.6/



NOTE: -

CHAMFER ALL SHARP CORNERS TO 2/45°

MATING SEREW ROD REF.DRG.NO.4M12A2228568



No. of Pieces		DESCRIPTION	MATERIAL	STANDARD	NET.WT.IN KGS.	DRAWING No.	ITEM No.
REFERENCE:		ALTERATIONS:		DCN REF	DATE	SIGN.	INDEX
SCALE	DRAWN	P.Albertrose					
	CHECKED	R.Ramamoorthy					
	APPROVED	C.S.Jayasheelan					
	DATE	15-06-10					
MACHINE: SYSTEM BENDER			TYPE: GERMAN-CNC 100DP				
TITLE: BOX NUT Tr.60x7 P-130 L (BENDING ARM)			DRAWING No:		4M12A2228568		
Sheet No:			No. of Sheets:				

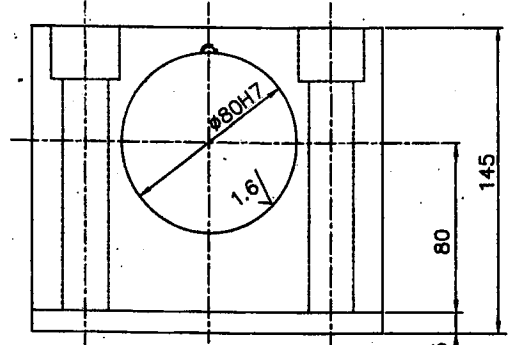
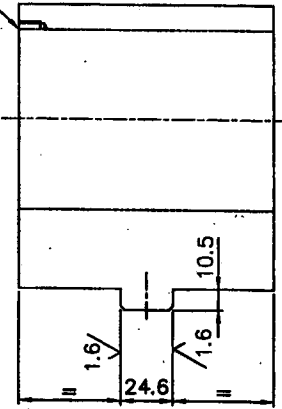
CAUTION: THIS DRAWING IS NOT TO BE REPRODUCED OR USED IN ANY MANNER FOR ANY PURPOSE WITHOUT THE WRITTEN PERMISSION OF INDIAN HEAVY ELECTRONICS LIMITED TIRUCHIRAPPALLI - 620 016.

ALL DIMENSIONS ARE IN MM

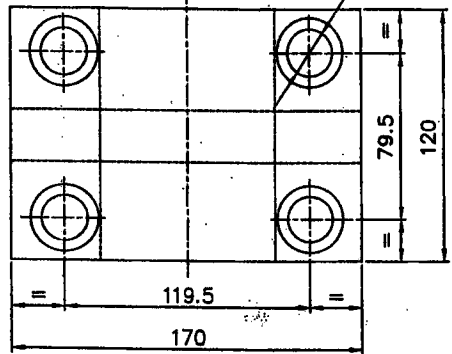
ø80 H7	+0.030
	+0.000

3.2//1.6//

3 NOS M8-10DEEP
AT ASSY.



4 HOLES ø22
CBR ø32.5-26 DEEP



NOTE:-
ALL SHARP CORNERS TO BE CHAMFER TO 2/45°

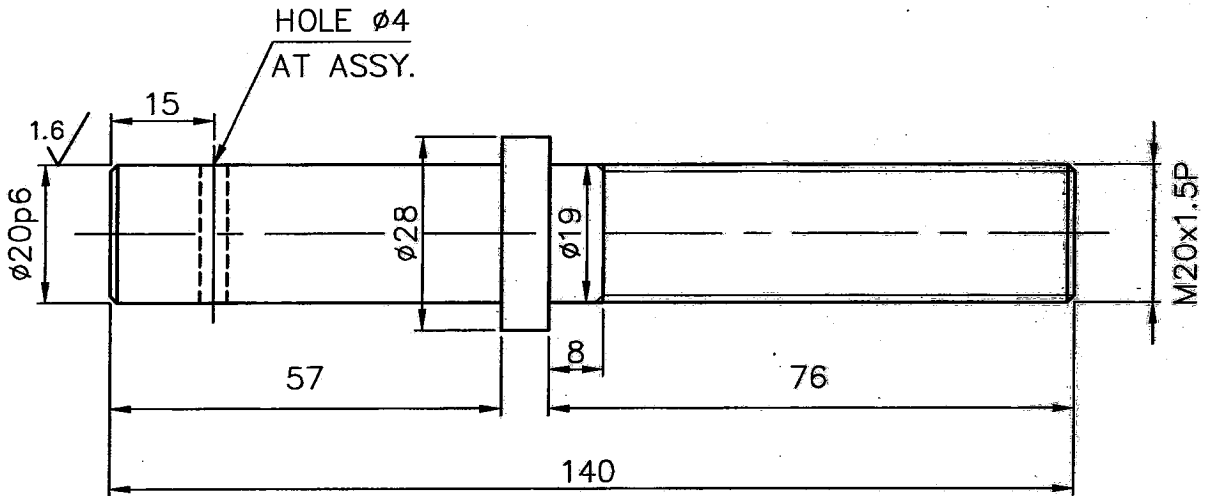
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DESCRIPTION	MATERIAL	STANDARD	NET.WT.IN KGS.	DRAWING No.	ITEM No.	
REFERENCE		ALTERATIONS:	DCN	REF	DATE	SIGN. INDEX
SCALE	DRAWN	P. A. ROSS				
1:2	CHECKED	R. RAMAMOORTHY				
	APPROVED	C. S. JAYASHEELAN				
	DATE	16-06-10				
MACHINE: SYSTEM BENDER			TYPE: GERMAN-CNC 1000P			
TITLE: SUPPORT			DRAWING No.		REV.	
			3M12A2214170			
			Sheet No		No of Sheets	

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ALL DIMENSIONS ARE IN MM

ø20p6	+0.032
	+0.022

3.2//1.6//



NOTE:

CORNERS TO BE REMOVED 1x45°

MATING BOX NUT REF.DRG.NO. : 4M10A61-28909



No. of Pieces	ø28x140L		45C8	IS: 2004	0.37	DRAWING No.		ITEM No.
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SCALE	REFERENCE:		ALTERATIONS:		DCN REF	DATE	SIGN.	INDEX
	DRAWN	G.G.R						
1:1	CHECKED	R.RAMAMOORTHY						
	APPROVED	C.S.JAYASHEELAN						
	DATE	04/05/11						
	MACHINE: 20 TORCH PANNEL PROCESSING			TYPE: KKK (UNIT-2)		REV.		
	TITLE: SCREW ROD M20x1.5Px140L (FIN GUIDE ASSY.)			DRAWING No:		4M10A6128908		
				Sheet No:		No. of Sheets:		

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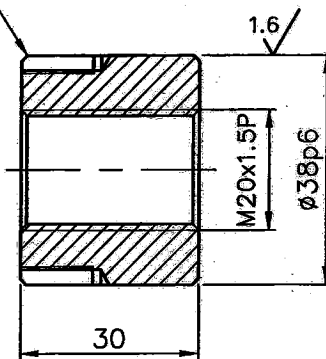
CAUTION:

ALL DIMENSIONS ARE IN MM

ø38p6 $\begin{matrix} +0.042 \\ +0.026 \end{matrix}$

3.2/1.6


2NOS./M6-15DEEP
AT ASSY.



NOTE:

CORNERS TO BE REMOVED 1x45°

MATING SCREW ROD REF.DRG.NO. : 4M10A61-28908

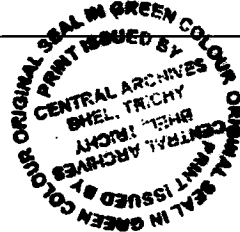
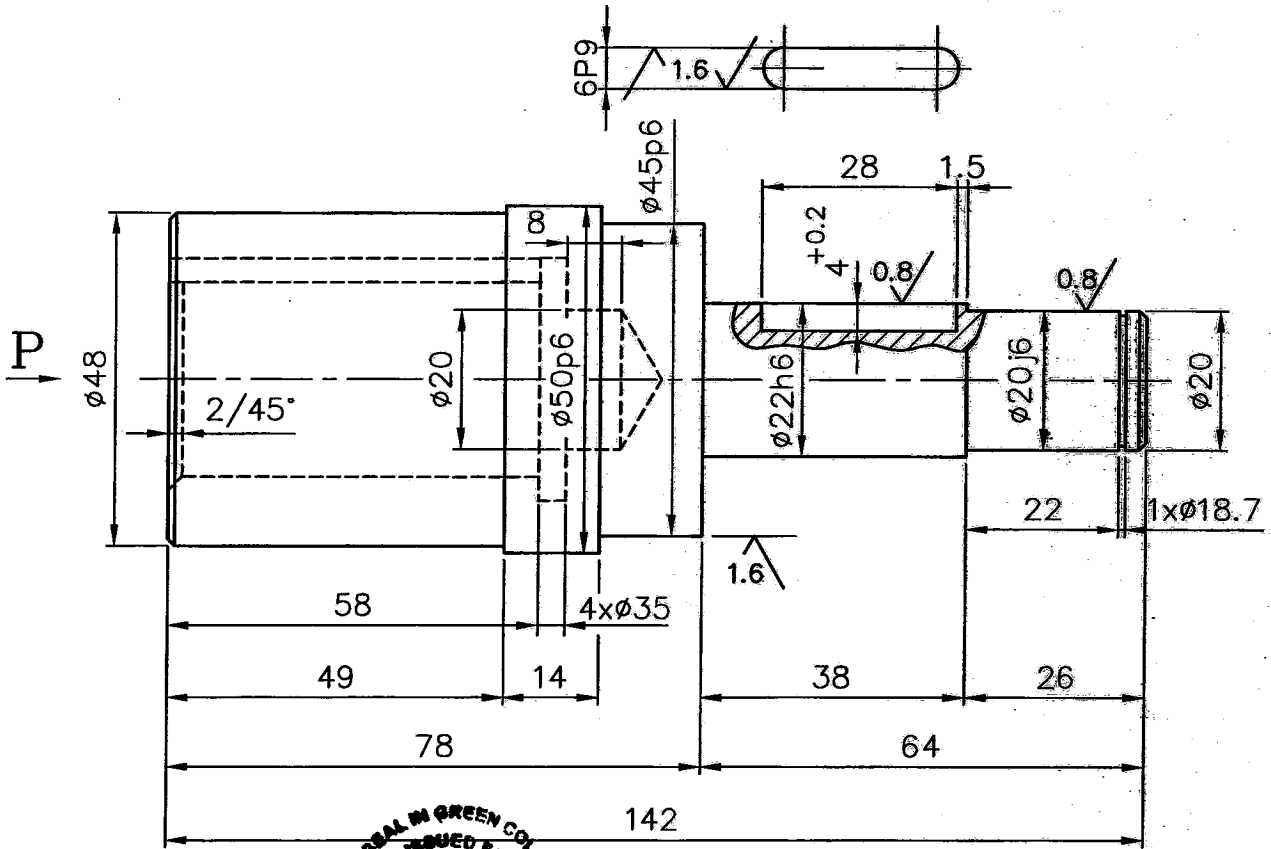
No. of Pieces		DESCRIPTION	MATERIAL	STANDARD	NET.WT.IN KGS.	DRAWING No.		ITEM No.
No. of Pieces		REFERENCE		ALTERATIONS	DCN REF	DATE	SIGN.	INDEX
SCALE	DRAWN	G.G.R						
	CHECKED	R.RAMAMOORTHY						
1:1	APPROVED	C.S.JAYASHEELAN						
	DATE	04/05/11						
MACHINE: 20 TORCH PANNEL PROCESSING				TYPE: KKK (UNIT-2)				
TITLE: BOX NUT M20x1.5Px30L (FIN GUIDE ASSY.)				DRAWING No:		REV.		
				4M10A6128909				
				Sheet No:		No. of Sheets:		

CAUTION: THIS DRAWING IS OUR SOLE PROPERTY AND SHOULD NOT BE USED IN ANY FORM FOR ANY PURPOSE WITHOUT THE WRITTEN PERMISSION OF BHARAT HEAVY ELECTRICALS LIMITED TRICHIRAPPALLI - 620 014.

ALL DIMENSIONS ARE IN MM

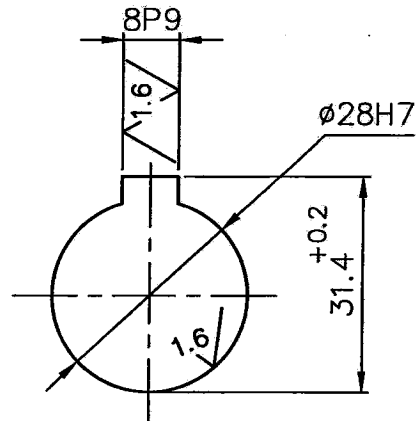
ø45p6	+0.042	ø22h6	-0.000	8P9	-0.015
ø50p6	+0.026		-0.013		-0.051
ø20j6	+0.009	ø28H7	+0.021	6P9	-0.012
	-0.004		0.000		-0.042

3.2/1.6/0.8/



NOTE:

CORNERS TO BE CHAMFERED 1/45°



VIEW-P

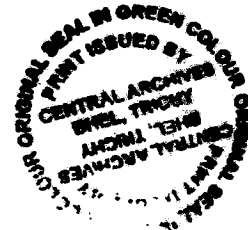
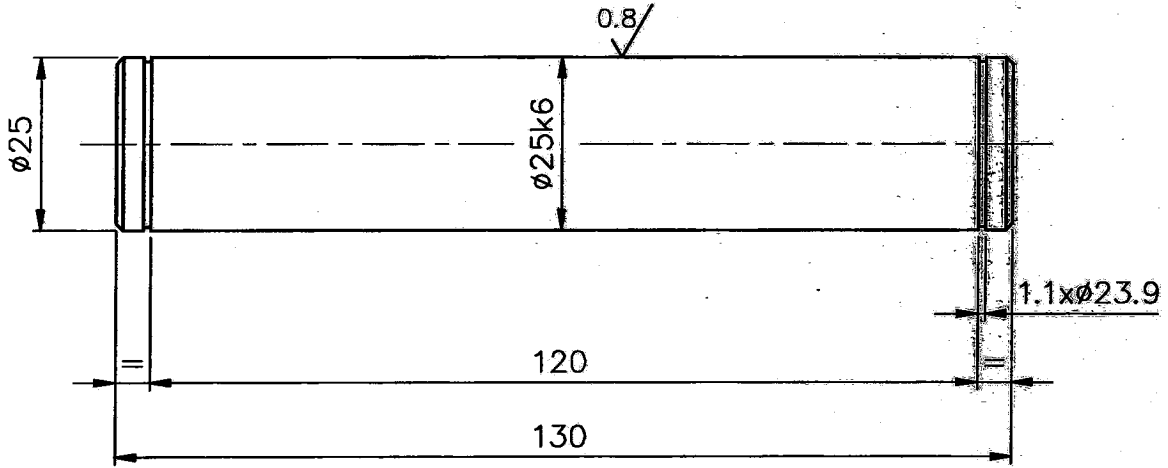
X		ø50x142L	45C8	IS: 2004	2.25		
No. of Pieces	DESCRIPTION		MATERIAL	STANDARD	NET.WT.IN KGS.	DRAWING No.	ITEM No.
	REFERENCE:			ALTERATIONS:	DCN REF	DATE	SIGN.
SCALE	DRAWN	S.Selvamanickam					
1:5	CHECKED	R.RAMAMOORTHY					
	APPROVED	C.S.JAYASHEELAN					
	DATE	30.03.11					
MACHINE: STRAIGHT TUBE BUTT WELDER		TYPE: W.TECH(CHINA)					
TITLE: SHAFT ø50x142L (IN FEED SIDE ROLLER DRIVE)		DRAWING No:		REV.			
		4M10A6228893					
Sheet No:				No. of Sheets:			

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ALL DIMENSIONS ARE IN MM

ø25k6	+0.015
	+0.002

3.2/0.8/



NOTE: -

CORNERS TO BE CHAMFERED $1/45^\circ$

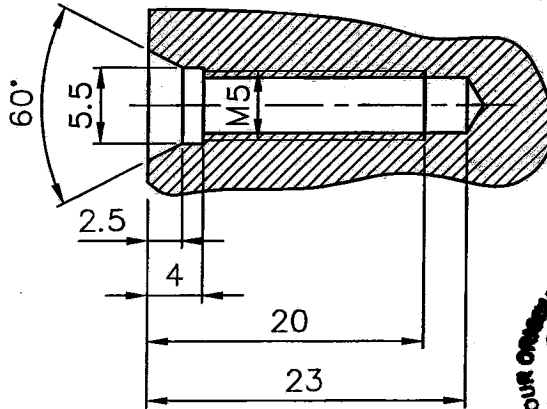
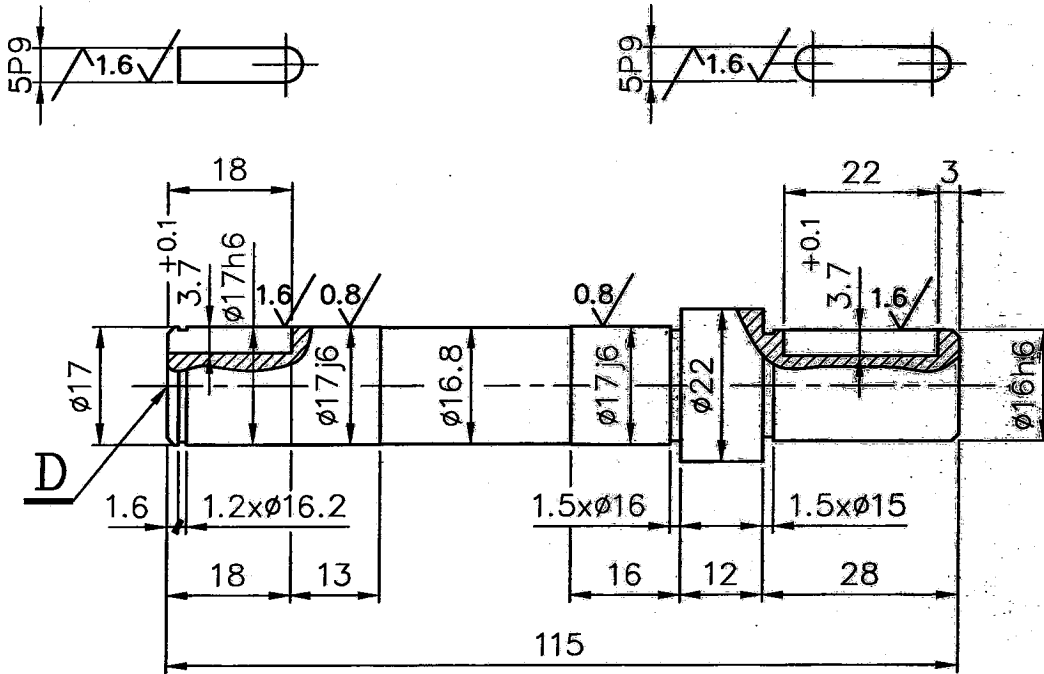
No. of Pieces	ø25x130L		45C8	IS: 7283	0.50	DRAWING No.		ITEM No.
	DESCRIPTION		MATERIAL	STANDARD	NET.WT.IN KGS.	DATE	SIGN.	INDEX
SCALE	DRAWN	S.Selvamanickam		ALTERATIONS:	DCN REF	DATE	SIGN.	INDEX
	CHECKED							
	APPROVED							
	DATE	03.09.10'						
REV.	MACHINE: 20 TORCH PANNEL PROCESSING			TYPE: KKK				
	TITLE: SHAF'T ø25x130L			DRAWING No:				
	(WALKER BEAM ASSY.)			4M10A6128623				
			Sheet No:		No. of Sheets:			

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ALL DIMENSIONS ARE IN MM

ø16h6	-0.000	ø17j6	+0.008
ø17h6	-0.011		-0.003
		5P9	-0.012
			-0.042

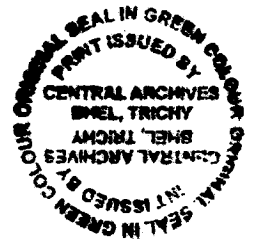
3.2//1.6//0.8//



NOTE:

CHAMFER CORNERS FOR 1/45°

DETAIL-D



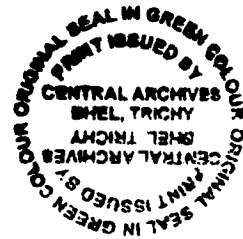
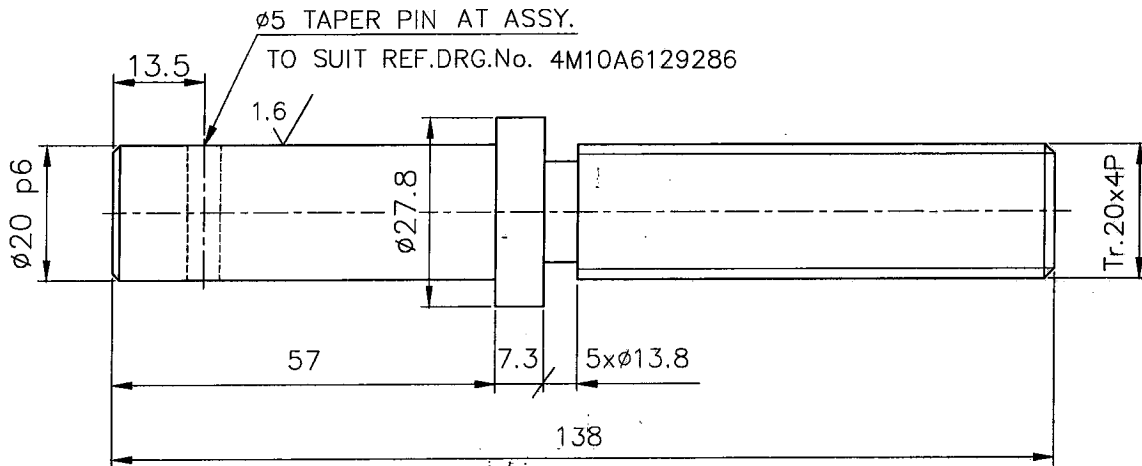
No. of Pieces	ø22x115L		45C8	IS: 7283	0.34	DRAWING No.		ITEM No.
	DESCRIPTION		MATERIAL	STANDARD	NET.WT.IN KGS.	DATE	SIGN.	INDEX
REFERENCE:		LOC.NO: 5959 4164		ALTERATIONS:		DCN REF		
SCALE	DRAWN	S.Selvamanickam						
1:1	CHECKED	R.Ramamoorthy						
2:1	APPROVED	C.S.Jayasheelan						
	DATE	28.04.11						
MACHINE: AUTOMATIC TUBE CUTTING END PREPARATION				TYPE: ATCP PEMA				
TITLE:				DRAWING No:				REV.
SHAFT ø22x115L				4M12B3628902				
(MEASURING UNIT)				Sheet No:				No. of Sheets:

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ALL DIMENSIONS ARE IN MM

ø20 p6 +0.035
+0.022

3.2//1.6



NOTE:

CHAMFER CORNERS TO 1/45°

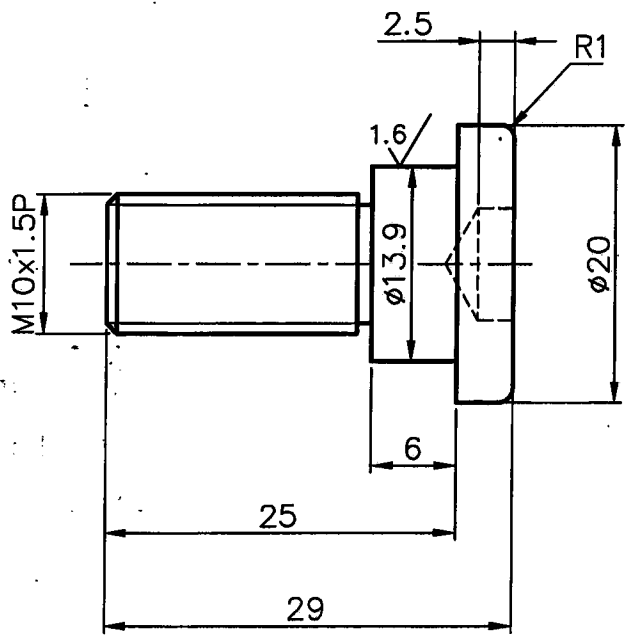
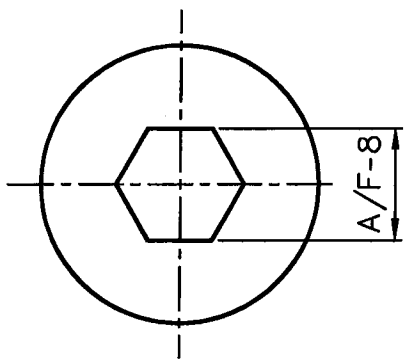
FOR MATING BOX NUT REF.DRG.No.4M10A6129294

	ø28x138 L		45 C8	IS: 7283	0.34		
No. of Pieces	DESCRIPTION		MATERIAL	STANDARD	NET.WT.IN KGS.	DRAWING No.	ITEM No.
	REFERENCE:		ALTERATIONS:		DCN REF	DATE	SIGN.
SCALE	DRN.	P.ALBET ROSS					
1:1	CHD.	R.RAMAMOORTHY					
	APP.	C.S.JAYASHEELAN					
	DATE	04-04-12					
	MACHINE: 20 TORCH PANEL PROCESSING WELDING			TYPE: KKK			
	TITLE:			DRAWING No:			REV.
	SCREW ROD Tr.20x4Px138 L (FIN GUIDE ASSY.)			4M10A6129287			
	Sheet No:		No. of Sheets:				

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ALL DIMENSIONS ARE IN MM

3.2/1.6



NOTE: -
ALL SHARP CORNERS TO BE REMOVED

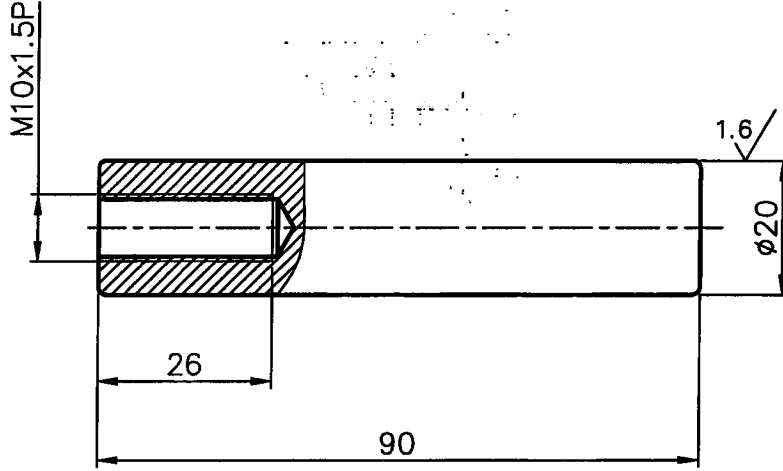


X		ø20x29L	SS-304	0.027				
No. of Pieces	DESCRIPTION		MATERIAL	STANDARD	NET.WT.IN KGS.	DRAWING No.		ITEM No.
		REFERENCE: LOCATION - 2887 4161		ALTERATIONS:	DCN REF	DATE	SGN.	INDEX
SCALE 2:1	DRN.	N.Maduraiveeran						
	CHD.	R.Ramamoorthy						
	APPD.	C.S.Jayasheelan						
	DATE	16.07.2012						
	MACHINE: 20TORCH PANEL PROCESSING WELDING			TYPE: KKK				
	TITLE: LOCK BOLT (MOUNTING PLATE) (MEASURING ROLLER UNIT)			DRAWING No:				
				4 M 1 0 A 6 1 2 9 4 6 0				
			Sheet No:		No. of Sheets:			

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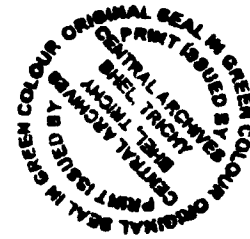
ALL DIMENSIONS ARE IN MM

3.2/1.6/



NOTE: -

ALL SHARP CORNERS TO BE REMOVED



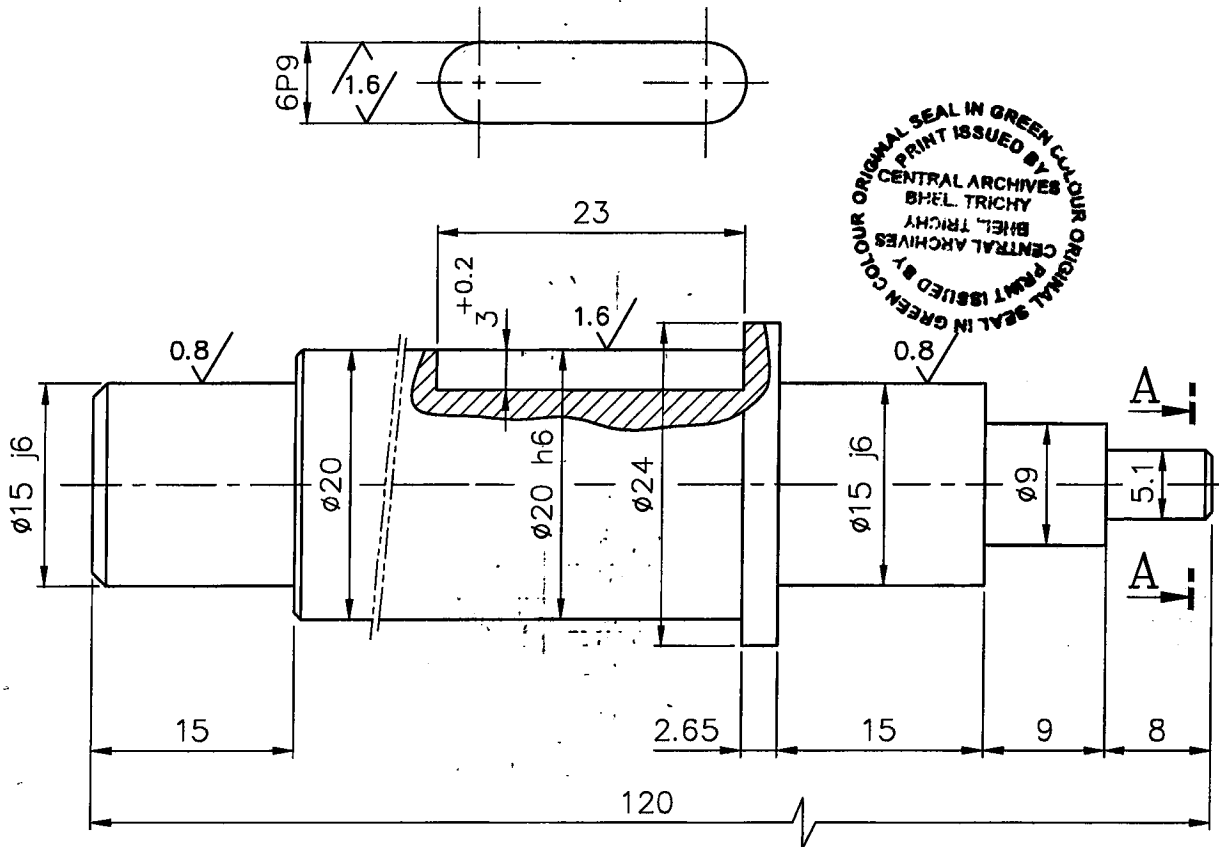
X		ø20x29L	SS-304	0.22				
No. of Pieces	DESCRIPTION		MATERIAL	STANDARD	NET.WT.IN KGS.	DRAWING No.		ITEM No.
		REFERENCE: LOCATION - 2887 4161	ALTERATIONS:		DCN REF	DATE	SIGN.	INDEX
SCALE 1:1	DRN.	N.Maduraiveeran						
	CHD.	R.Ramamoorthy						
	APPD.	C.S.Jayasheelan						
	DATE	16.07.2012						
MACHINE: 20TORCH PANEL PROCESSING WELDING			TYPE: KKK					
		TITLE: GUIDE ROD (MOUNTING PLATE) (MEASURING ROLLER UNIT)		DRAWING No:				
				4 M 1 0 A 6 1 2 9 4 6 1				
				Sheet No:		No. of Sheets:		

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ALL DIMENSIONS ARE IN MM

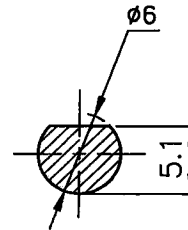
6 P9	-0.012	Ø15 j6	+0.008
	-0.042		-0.003
Ø20 h6	-0.000		
	-0.013		

3.2//1.6//0.8/



ORIGINAL SEAL IN GREEN COLOUR
 PRINT ISSUED BY
 CENTRAL ARCHIVES
 BHÉL, TRICHY
 ORIGINAL SEAL IN GREEN COLOUR
 PRINT ISSUED BY
 CENTRAL ARCHIVES
 BHÉL, TRICHY

NOTE: -
SHARP CORNERS TO BE REMOVED



SECTION-AA

X		Ø24X120 L	45C8	IS: 7283	0.30		
No. of Pieces		DESCRIPTION	MATERIAL	STANDARD	NET.WT.IN KGS.	DRAWING No.	ITEM No.
		REFERENCE:		ALTERATIONS:	DCN REF	DATE	SIGN.
SCALE	DRN.	S.Selvamanickam					
	CHED.	R.Ramamoorthy					
2:1	APPD.	R.Ramanan					
	DATE	18.03.13					
	MACHINE:	20 TORCH WELDING PROCESSING WELDING		TYPE:	KKK		
	TITLE:	MEASURING UNIT ROLLER SHAFT Ø24x120 L (FIN CALIBRATION)		DRAWING No:	REV.		
				4M10A6129643			
				Sheet No:	No. of Sheets:		

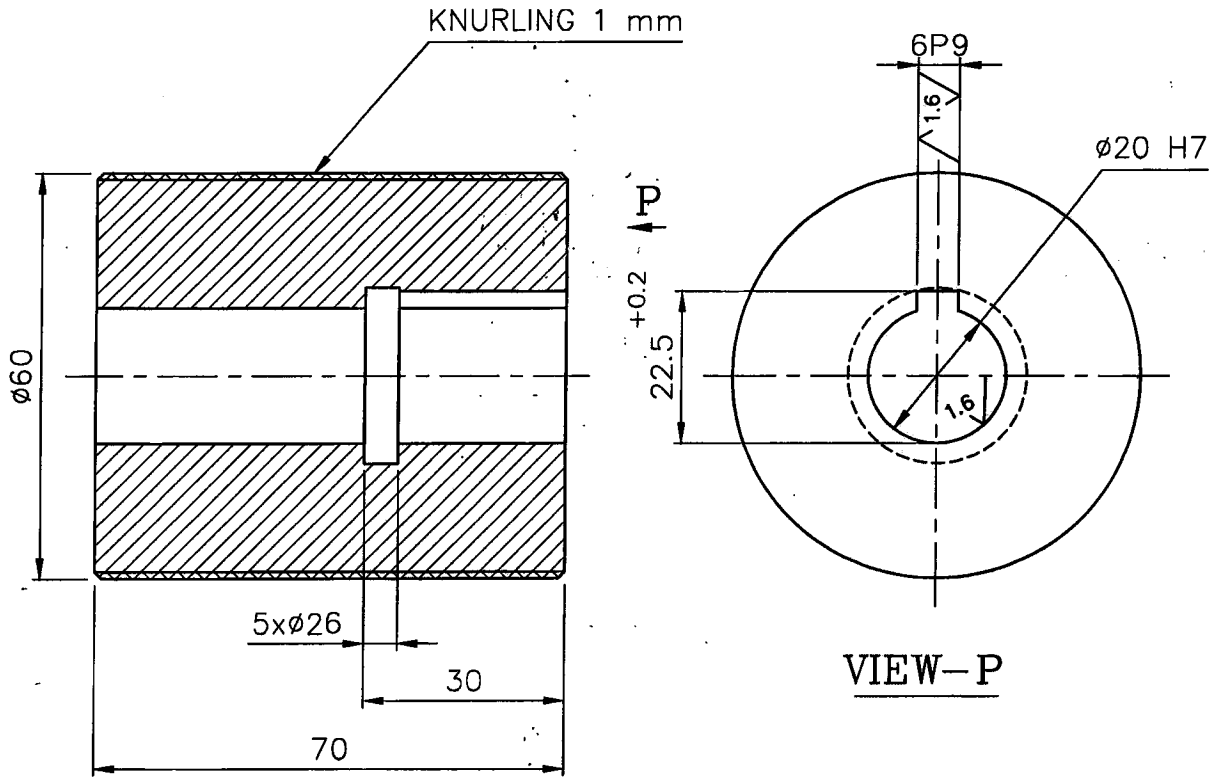
THIS DRAWING IS OUR SOLE PROPERTY AND SHOULD NOT BE USED IN ANY FORM FOR ANY PURPOSE WITHOUT THE WRITTEN PERMISSION OF BHARAT HEAVY ELECTRICALS LIMITED TRICHIRAPPALLI - 620 014.

CAUTION:

ALL DIMENSIONS ARE IN MM

6 P9	-0.012	ø20 H7	+0.021
	-0.042		+0.000

3.2//1.6/



NOTE: -

SHARP CORNERS TO BE REMOVED



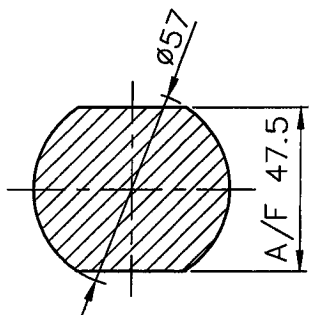
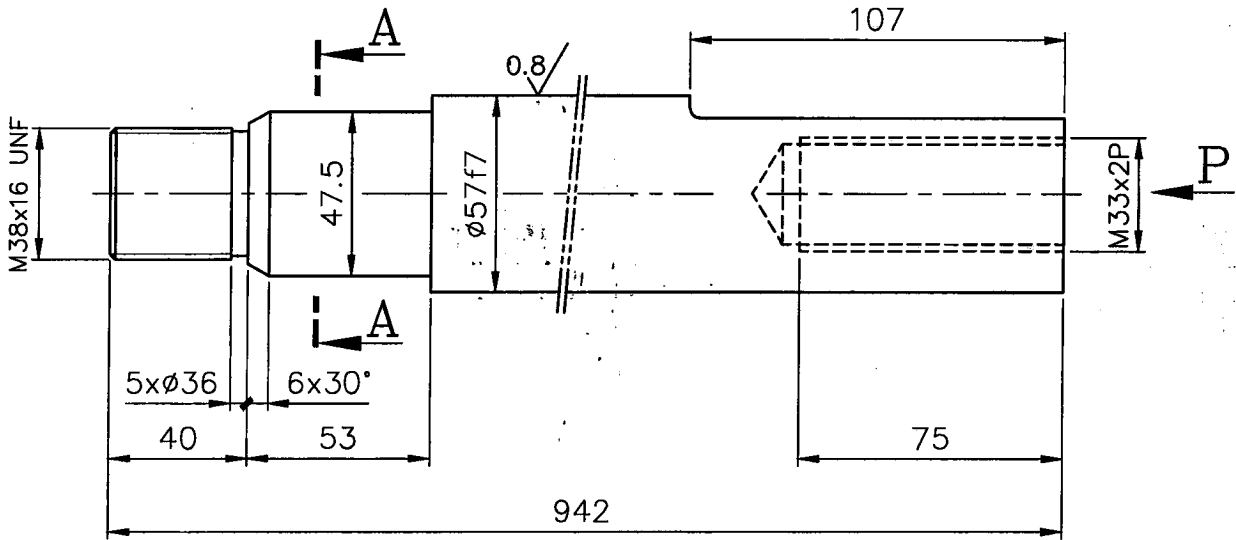
X		ø60X70 L	45C8	IS: 7283	1.31		
No. of Pieces		DESCRIPTION	MATERIAL	STANDARD	NET.WT.IN KGS.	DRAWING No.	ITEM No.
		REFERENCE:		ALTERATIONS:	DCN REF	DATE	SIGN.
SCALE	DRN.	S.Selvamanickam					
	CHED.	R.Ramamoorthy					
1:1	APPD.	R.Ramanan					
	DATE	18.03.13					
	MACHINE:	20 TORCH WELDING PROCESSING WELDING		TYPE:	KKK		
	TITLE:	ROLLER ID20xOD60x70 L		DRAWING No:			
		(FIN CALIBRATION)		4M10A61	29644	REV.	
				Sheet No:	No. of Sheets:		

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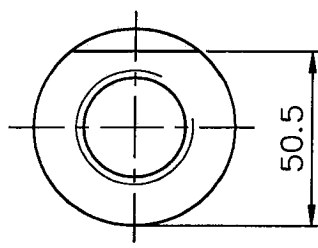
ALL DIMENSIONS ARE IN MM

Ø57f7 $\begin{matrix} -0.030 \\ -0.060 \end{matrix}$

3.2/0.8/



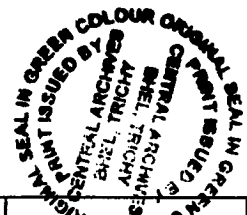
SECTION-AA



VIEW-P

NOTE:

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



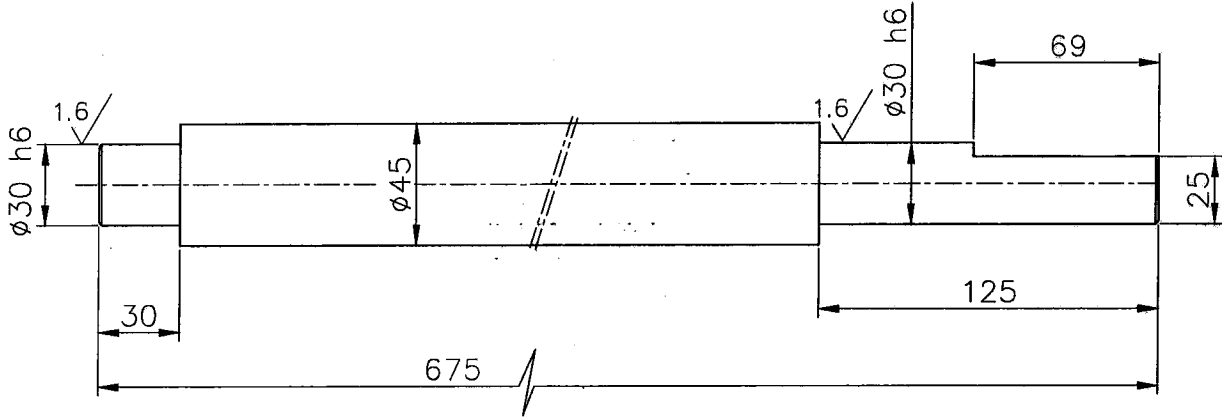
☒	Ø57x942L	55C8	IS: 5517	17.75		
No. of Pieces	DESCRIPTION	MATERIAL	STANDARD	NET.WT.IN KGS.	DRAWING No.	ITEM No.
	REFERENCE:		ALTERATIONS:	DCN REF	DATE	SIGN.
SCALE	DRAWN	S.Selvamanickam				
1:2	CHECKED	R.Ramamoorthy				
	APPROVED	C.S.Jayasheelan				
	DATE	19.07.11				
	MACHINE: CNC TUBE BENDING CNC		TYPE: PINES			
	TITLE: MAIN SHAFT Ø57x942L (SPLIT DIES)		DRAWING No:			REV.
			4M12A2529018			
			Sheet No:		No. of Sheets:	

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TRICHURAPALLI - 620 014

ALL DIMENSIONS ARE IN MM

ø30 h6	-0.000
	-0.013

3.2/1.6

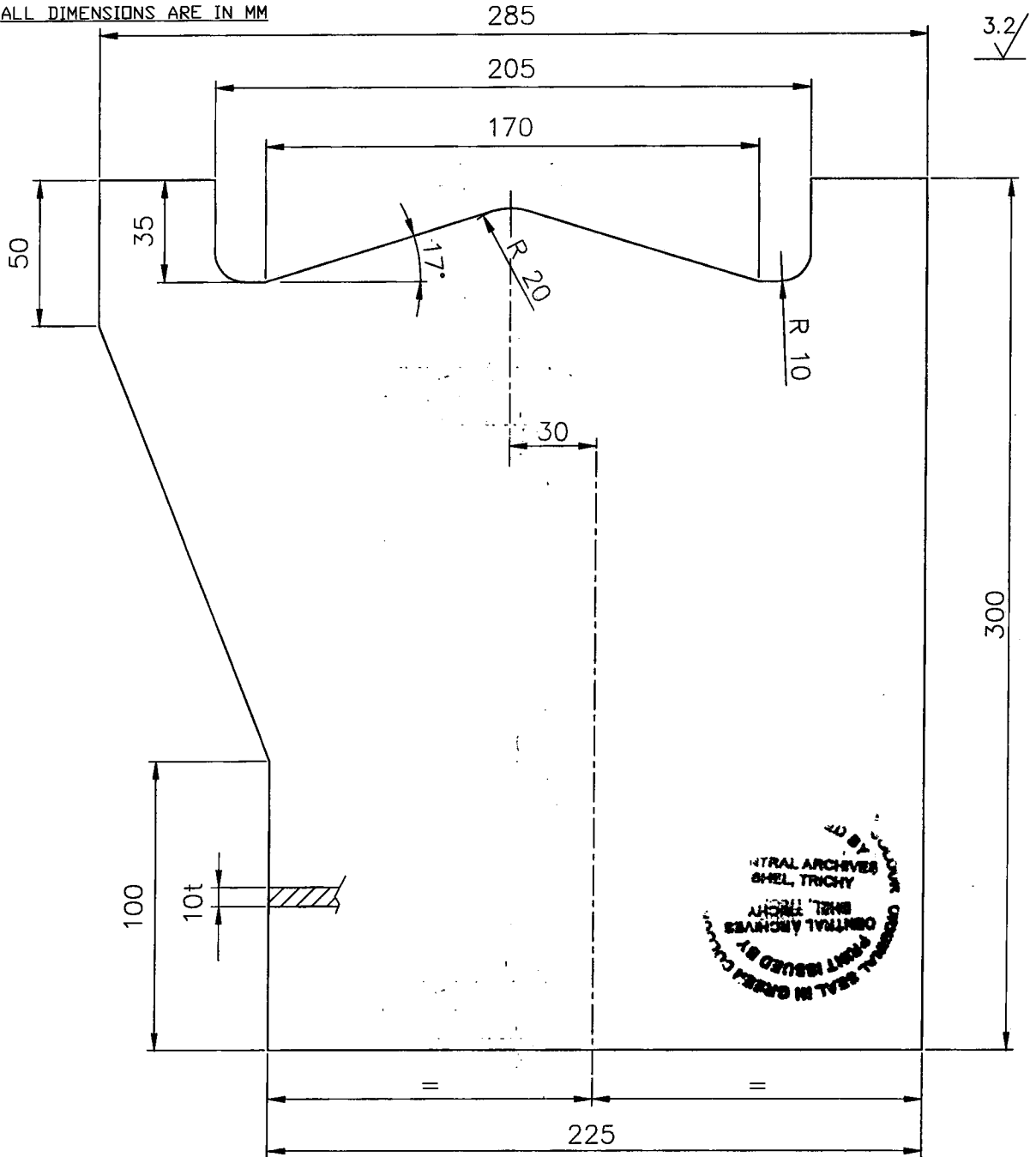


NOTE: -
AVOID SHARP CORNERS

	ø45x675 L		45 C8	IS: 7283	7.24	3M12A14920	03
No. of Pieces	DESCRIPTION		MATERIAL	STANDARD	NET.WT.IN KGS.	DRAWING No.	
	REFERENCE:		ALTERATIONS:		DCN REF	DATE	SIGN.
SCALE	DRN.	P.ALBET ROSS					
1: 2	CHD.	R.RAMAMOORTHY					
	APP.	C.S.JAYASHEELAN					
	DATE	06-07-12					
MACHINE: SYSTEM BENDER			TYPE: CNC 100 DB				
TITLE: SHAFT ø45x675 L (TUBE SUPPORT)			DRAWING No:				REV.
Sheet No:			4M12A2229432				No. of Sheets:

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ALL DIMENSIONS ARE IN MM



NOTE:

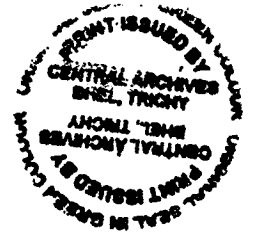
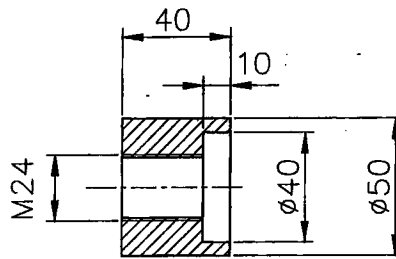
AVOID SHARP CORNERS

	PL.10tx285x300	Fe.410WA	IS: 2062	5.88	3M12A2214928	02
No. of Pieces	DESCRIPTION	MATERIAL	STANDARD	NET.WT.IN KGS.	DRAWING No.	ITEM No.
	REFERENCE: DRG.No: SRS-0100-04681-20080310		ALTERATIONS:	DCN REF	DATE	SIGN.
SCALE	DRN/TCO	P.ALBET ROSS				
1:2	CHD.	R.RAMAMOORTHY				
	APP.	C.S.JAYASHEELAN				
	DATE	16-06-12				
	MACHINE: SYSTEM BENDER	TYPE: CNC 100 DB				
	TITLE: SUPPORTING PLATE (TUBE SUPPORT)	DRAWING No:	4M12A2229366			REV.
		Sheet No:	No. of Sheets:			

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ALL DIMENSIONS ARE IN MM

3.2/



NOTE: -
AVOID SHARP CORNERS

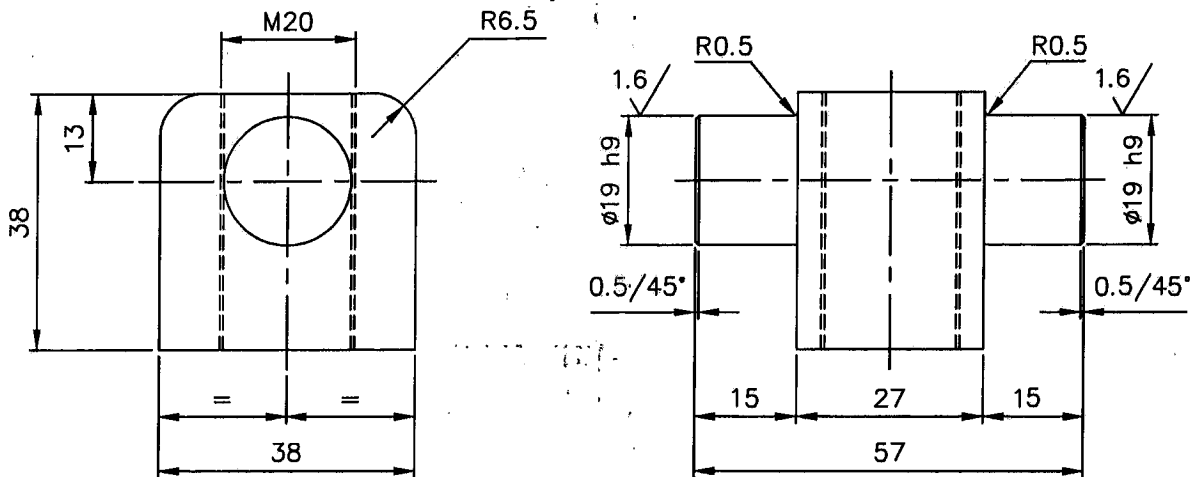
	ø50x 40 L		45 C8	IS: 7283	0.92	3M12A14920	03
No. of Pieces	DESCRIPTION		MATERIAL	STANDARD	NET.WT.IN KGS.	DRAWING No.	ITEM No.
	REFERENCE:			ALTERATIONS:	DCN REF	DATE	SIGN.
SCALE	DRN.	P.ALBET ROSS					
1: 2	CHD.	R.RAMAMOORTHY					
	APP.	C.S.JAYASHEELAN					
	DATE	06-07-12					
	MACHINE: SYSTEM BENDER			TYPE: CNC 100 DB			
	TITLE: NUT M24 (TUBE SUPPORT)			DRAWING No:			REV.
				4M12A2229433			
				Sheet No:			No. of Sheets:

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ALL DIMENSIONS ARE IN MM

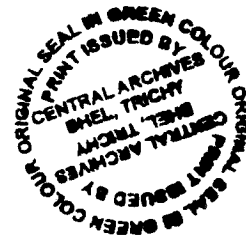
ø19 h9	-0.000
	-0.052

3.2/1.6
✓/✓



NOTE: -

01. HARDENED TO HRC 58 ± 2
02. CASE DEPTH 0.8mm



					1M12B1801695	08
		13Ni13Cr3 ⁰¹	IS: 4432	0.35	1M12B1700671	16
X						
No. of Pieces	DESCRIPTION	MATERIAL	STANDARD	NET.WT. IN KGS.	DRAWING No.	ITEM No.
	REFERENCE: DRG. No. SC-8000-004 ITEM. No.01		ALTERATIONS:	DCN REF	DATE	SIGN.
SCALE	DRAWN/TCD <i>R. Narayanan</i>	13Ni13Cr3 WAS BM-C30			01.04.13	K.R
1:2	CHECKED	G.GOVINDARAJ				
	APPROVED	K.RAMANAN				
	DATE	29.11.73/01.04.13				
	MACHINE: PORTABLE END CUT SCARFING	TYPE: FBE 38/76				
	TITLE: TRUNNION	DRAWING No:	17	REV.		
		4M12B181069801				
		No. of Sheets:		Sheet No:		