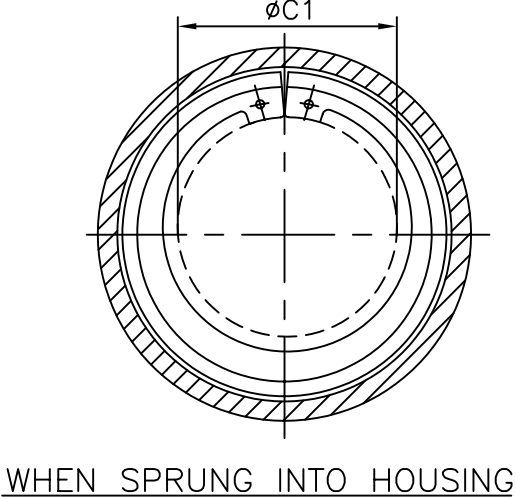
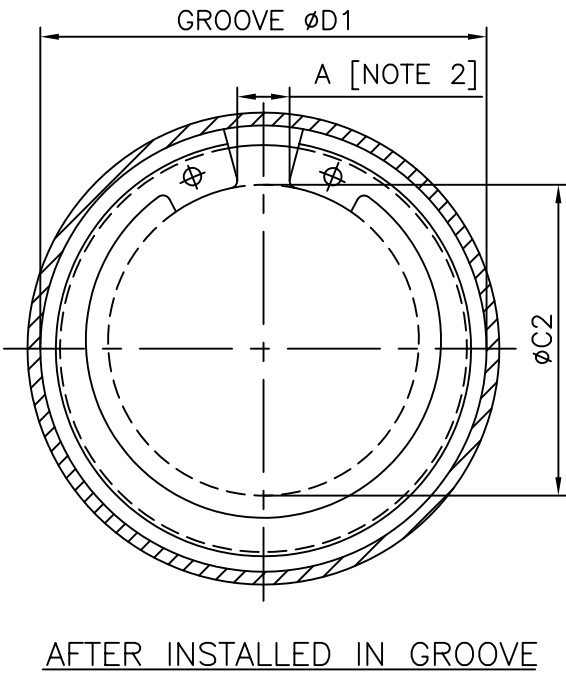
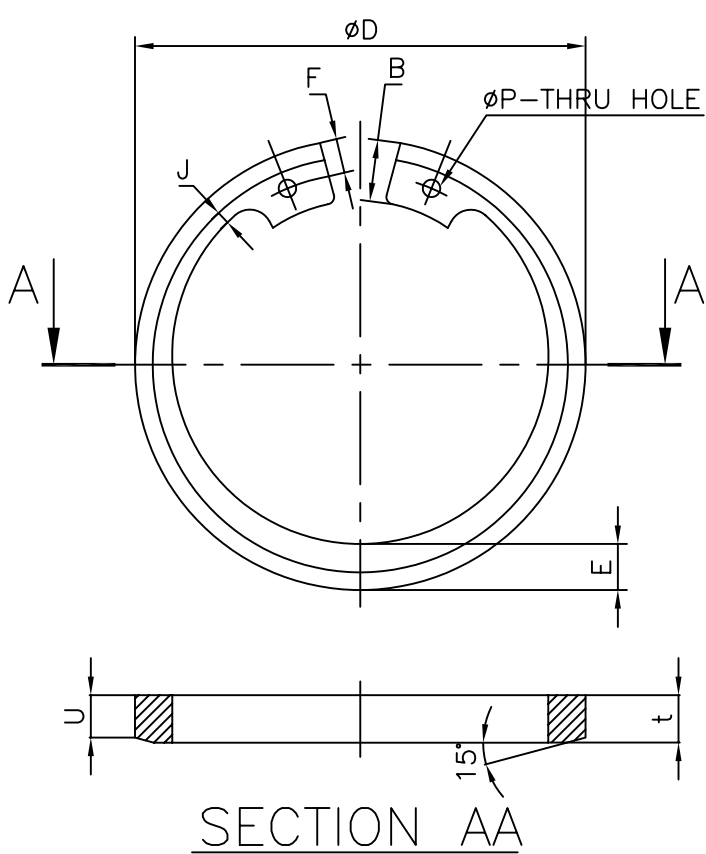


DRAWING NO. 3-V-0000-13132																	
SL. No.	DRAWING No.	MATERIAL		DIMENSIONS											DRESSER PART No.	TRUARC TYPE No.	APPROX Wt/1000 Kgs.
		CODE	SPECN	øC1	øC2	øD	t	U	F	B	E	øP	J	A	øD1	DIM.øS	
1	3-V-9405-13132/04	97419975*	CARBON SPRING STEEL(SAE 1075) [NOTE-1]	39.1	40.9	$57.912^{+1.016}_{-0.762}$	1.981 ± 0.076	1.524 ± 0.038	3.8	6.350 ± 0.127	4.724 ± 0.177	$2.362^{+0.381}_{-0.050}$	2.311 ± 0.177	8.9	$56.134^{+0.152}_0$	N5002-206 $52.375^{+0.050}_0$	8.2
2	3-V-9406-13132/04	97419976*	CARBON SPRING STEEL(SAE 1075) [NOTE-1]	48.5	50.8	$70.485^{+1.016}_{-0.762}$	1.981 ± 0.076	1.448 ± 0.037	4.3	7.112 ± 0.127	5.334 ± 0.177	$2.794^{+0.381}_{-0.050}$	2.616 ± 0.177	10.1	$68.174^{+0.152}_0$	N5002-250 $63.500^{+0.050}_0$	11.4
3	3-V-9641-13132/03	96291014	CARBON SPRING STEEL(SAE 1075) [NOTE-1]	142.2	147.3	185.623 ± 2.031	3.962 ± 0.126	3.073 ± 0.075	8.2	12.319 ± 0.254	11.354 ± 0.228	$4.750^{+0.507}_{-0.127}$	5.613 ± 0.228	27.0	$178.867^{+0.152}_0$	N5002-662 $168.275^{+0.076}_0$	138.5
4	3-V-9408-13132/04	96291016	CARBON SPRING STEEL(SAE 1075) [NOTE-1]	64.5	67.3	92.024 ± 1.396	2.769 ± 0.075	2.083 ± 0.063	5.2	8.687 ± 0.203	6.833 ± 0.202	$3.175^{+0.381}_{-0.050}$	3.429 ± 0.203	12.9	$88.621^{+0.152}_0$	N5002-325 $82.550^{+0.076}_0$	27.2
5	3-V-9456-13132/03	96291015	CARBON SPRING STEEL(SAE 1075) [NOTE-1]	171.5	177.5	224.028 ± 2.286	4.749 ± 0.126	3.708 ± 0.075	9.4	15.240 ± 0.254	13.716 ± 0.254	$4.749^{+0.508}_{-0.126}$	6.654 ± 0.253	31.4	$216.078^{+0.203}_0$	N5002-800 $203.208^{+0.076}_0$	251.6

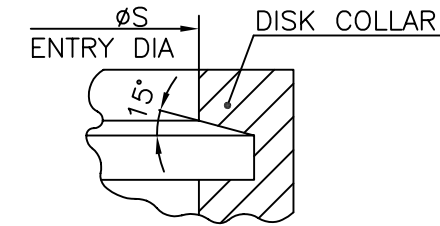


REVISION DETAILS		
REV. NO.	DATE	DETAILS
01	03.12.79	1. SL.NO:5 ADDED.
02	26.05.80	1. DIMENSIONS 'F' & GROOVE øD1 ADDED FOR SL.NO.S: 1 TO 5. 2. HOUSING PROFILE IS INCLUDED IN FIG. AFTER INSTALLED IN GROOVE.
03	16.04.87	1. DIM.øC2 ADDED IN FIG. AFTER INSTALLED IN GROOVE 2. FIG.WHEN SPRING INTO HOUSING ADDED. 3. NOTE-4 ADDED.
04	27.07.91	1. CARBON SPRING STEEL (SAE 1075) WAS PH 15-7 MO ST.ST. FOR SL.NO.1,2&4
05	20.10.92	1. ENTRY DIA DIM. øS & THE RELATIVE VIEW ADDED.DRG.REVISION NO 3 UPDATED.
06	30.03.94	1. IN NOTE-4,TDC 5:196 WAS TDC 5:138. DCN NO. SR:0061

NO OFF	DESCRIPTION	MATLCODE	MATLSPEC	HEAT TREATMENT	SCARP SORT	NET Wt (Kg)	GROSS Wt (Kg)	DRAWINGNO.	ITEM NO
--------	-------------	----------	----------	----------------	------------	-------------	---------------	------------	---------

NOTES:

- CADIUM PLATING DICHROMATE DIP.
- DIMENSION AFTER INSTALLED IN GROOVE.
- * CODE FOR IMPORTED COMPONENT.
- FOLLOW THE TDC OF 5:196 WITH LATEST REVISION.



REV	DATE	ALTERED	G.V
07	08.10.05	CHD & APPD	E.A
REDRAWN IN CAD AND UPDATED. DCP NO: 800514			

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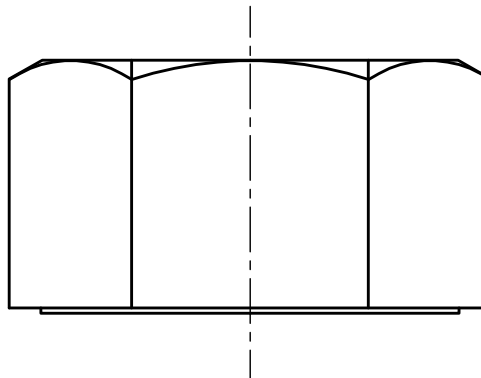
TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT									
 BHARAT HEAVY ELECTRICALS LTD., UNIT: HIGH PRESSURE BOILER PLANT. TIRUCHIRAPALLI-620014.						DRN	NAME	SIGN	DATE
						CHD	E.ATHIANNAVI		08.10.05
						APPD	E.ATHIANNAVI		08.10.05
DEPT VL		SCALE	WEIGHT (KG).	REFERENCE INFORMATION				NO. OF ITEMS	
CODE		NTS							
TITLE							CARD CODE	DRAWING NO.	REV
RETAINER RING							U 01	3-V-0000-13132	07

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FOR TOLERANCES OF UNTOLERANCED DIMENSIONS

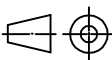
ALL DIMENSIONS ARE IN MILLIMETRES.
DURING MANUFACTURE REFER RELEVANT QCP/QP

REV	DATE	ALTERED
		CHD & APPD



NOTES:

- FOR ALL OTHER DIMENSIONS AND DETAILS REFER THE BASIC DRG.No. LISTED IN THE TABULATION.
- LATEST APPLICABLE CQP REQUIREMENTS OF THIS PROJECT IS TO BE TAKEN CARE OF.
- APPLICABLE MATERIAL IDENTIFICATION PROCEDURE IF ANY TO BE FOLLOWED.

06	4-V-7501-10575	964159840000	ASTM A194 Gr. 4 PRODUCT ATTEST	4-V-7501-10166/01	964155370000	0.05	1525VX		
05	4-V-7520-10575	964159830000	ASTM A194 Gr. 4 PRODUCT ATTEST	4-V-7520-10351/02	964155150000	0.364	1525VX		
04	4-V-7806-10575	964159820000	ASTM A194 Gr. 4 PRODUCT ATTEST	4-V-7806-10255	964155400000	0.04	1811LA-3X-20		
03	4-V-7800-10575	964159810000	ASTM A194 Gr. 4 PRODUCT ATTEST	4-V-7800-10256	964155500000	0.02	1811HA-6X-20 1525VX		
02	4-V-7827-10575	964159800000	ASTM A194 Gr. 4 PRODUCT ATTEST	4-V-7827-10270/01	964155590000	0.09	1739WD, 1538VX-10W, 1786WB,1786WD		
01	4-V-7802-10575	964159790000	ASTM A194 Gr. 4 PRODUCT ATTEST	4-V-7802-10254	964155390000	0.06	1759WB		
SL. No.	DRG.No	COMPONENT CODE	MATERIAL SPECN.	BASIC DRG.No.	BASIC COMP.CODE	WEIGHT IN (KGS)	MODEL No.		
NO OFF	DESCRIPTION	MATL CODE	MATL SPECN	HEAT TREATMENT	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	DRAWING No	ITEM No
 365-122 BHARAT HEAVY ELECTRICALS LTD., UNIT: HIGH PRESSURE BOILER PLANT. TIRUCHIRAPALLI 620014.					DRN	NAME B.RAJA	SIGN	DATE 29-10-2009	NO.OF VAR
					CHD	V.P.PILLAI		29-10-2009	
					APPD	E.ATHIANNABI		29-10-2009	
DEPT VL			SCALE NTS	WEIGHT (KG).	REFERENCE INFORMATIONS				NO. OF ITEMS
CODE 340									
TITLE NUT				CARD CODE U 01	DRAWING NO. 4-V-0000-10575				REV 00

Size A4

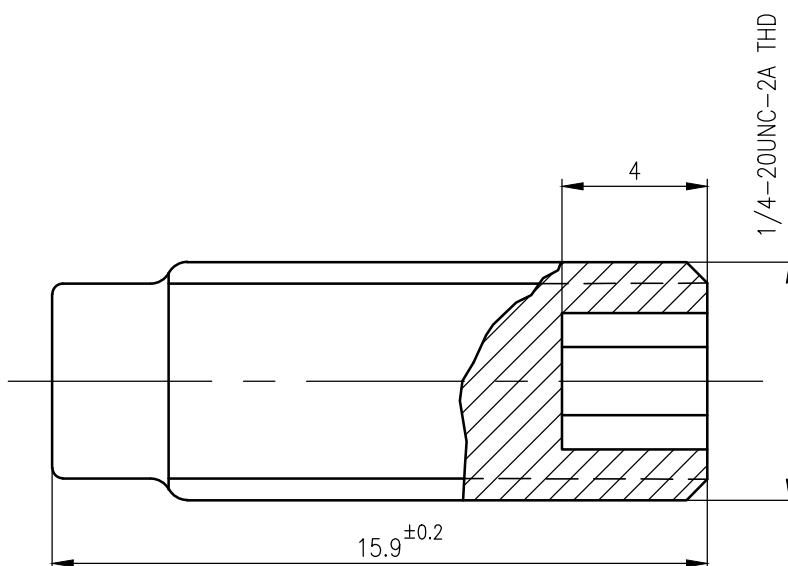
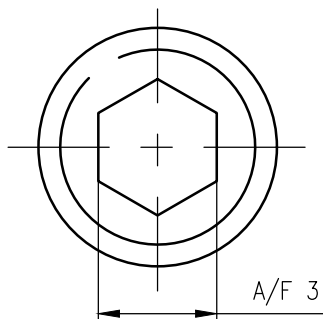
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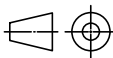
FOR TOLERANCES OF UNTOLERANCED DIMENSIONS

ALL DIMENSIONS ARE IN MILLIMETRES.
DURING MANUFACTURE REFER RELEVANT QCP/QP

DCP No. 802322	ALTD: A.K.P. CHD: R.E.	APPD: R.E. DT: 08.02.18
REV 01	REVISED AND REDRAWN IN CAD	
ZONE 		

3.2



-	-	961621600000	18-8 ST.ST CERTIFY	-	46	0.008	-	-	240
NO OFF	DESCRIPTION	MATL CODE	MATL SPECN	HEAT TREATMENT	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	DRAWING No	ITEM No
	BHARAT HEAVY ELECTRICALS LTD., UNIT: HIGH PRESSURE BOILER PLANT. TIRUCHIRAPALLI 620014.				DRN	NAME T.RAJARAMAN	SIGN <i>T.Rajaraman</i>	DATE 10-01-80	NO.OF VAR
365-122					CHD	V.ALAGARSWAMY	<i>V.Alagarswamy</i>	10-01-80	
					APPD	J.ABRAHAM	<i>J.Abraham</i>	10-01-80	
DEPT VL			SCALE	WEIGHT (KG).	REFERENCE INFORMATION				NO. OF ITEMS
CODE 340			NTS	-	-				
TITLE					CARD CODE	DRAWING NO.			REV
SET SCREW					U 01	4-V-7009-10107			01

Size A4

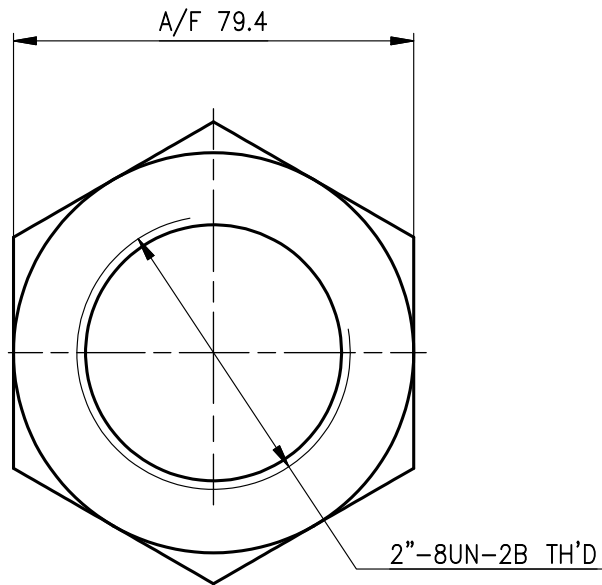
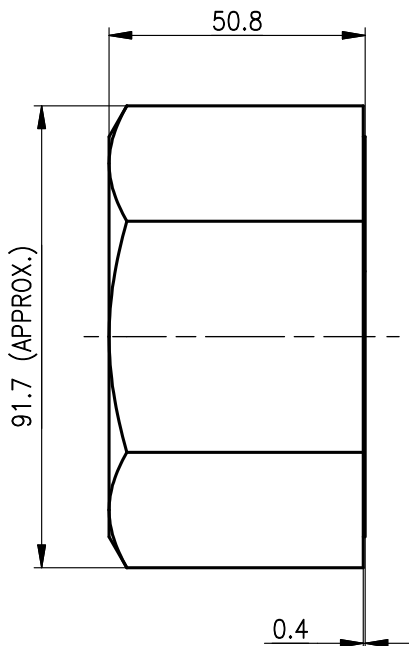
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FOR TOLERANCES OF UNTOLERANCED DIMENSIONS

ALL DIMENSIONS ARE IN MILLIMETRES.
DURING MANUFACTURE REFER RELEVANT QCP/QP

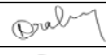
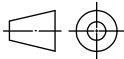
REV	DATE	ALTERED
		CHD & APPD

3.2



NOTES:

1. BEARING SURFACES SHALL BE FLAT AND AT RIGHT ANGLES TO THE AXIS OF THE THREAD HOLE WITHIN 0.304 T.I.R.
2. DEBURR SHARP EDGES

—	FORGING	964164150000/ 931713520000	ASTM A194 B8M PRODUCT ATTEST	SOLN TREATED & STRAIN HARDENED	46	1.4	—	—	231
NO OFF	DESCRIPTION	MATL CODE	MATL SPECN	HEAT TREATMENT	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	DRAWING No	ITEM No
 BHARAT HEAVY ELECTRICALS LTD. , UNIT: HIGH PRESSURE BOILER PLANT. TIRUCHIRAPALLI 620014. 365-122					DRN	NAME P.VINITHKUMAR	SIGN	DATE 31.03.17	NO.OF VAR
					CHD	R.RABIN		31.03.17	
					APPD	E.ATHIANNAVI		31.03.17	
DEPT VL			SCALE	WEIGHT (KG).		REFERENCE INFORMATIONS DR.DRG.NO: ST PART.NO: SSSS SL.NO:6237 REF.DRG.NO: 4-V-7081-10304/00			NO. OF ITEMS
CODE 340			NTS						
TITLE YOKE ROD NUT					CARD CODE U 01	DRAWING NO. 4-V-7311-10711			REV 00

COMP.CODE: 964164150000 / 931713520000

174BWR

Size A4

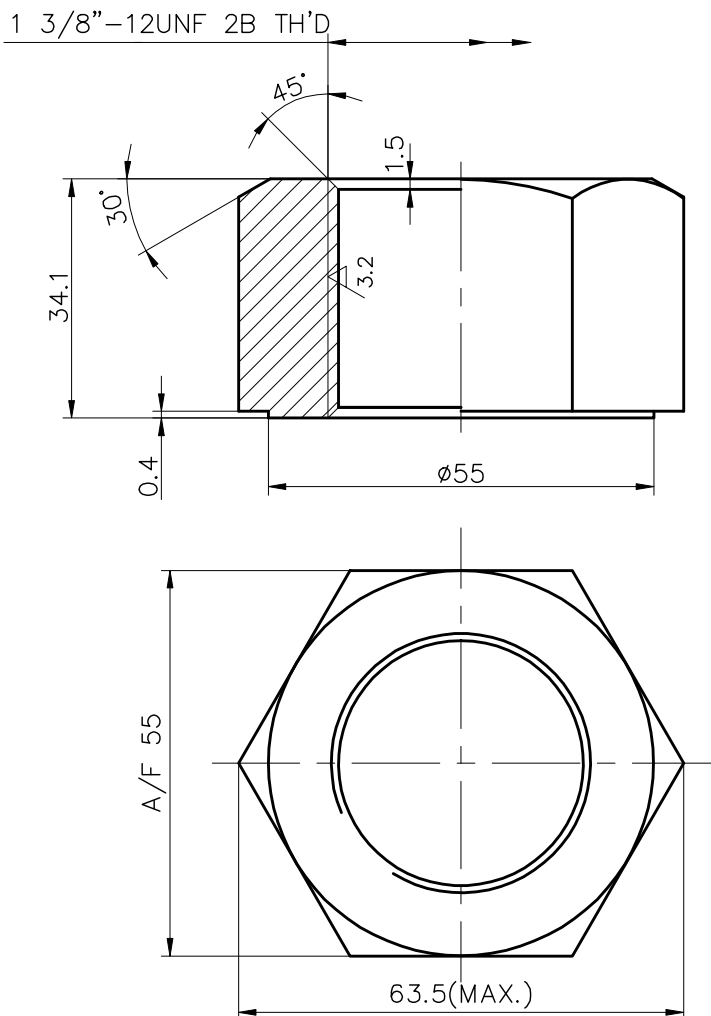
CAUTION: The information on this document is the property of BHARAT HEAVY ELECTRICALS LTD. It must not be used directly or indirectly in any way detrimental to the interest of the company.

FOR TOLERANCES OF UNTOLERANCED DIMENSIONS

ALL DIMENSIONS ARE IN MILLIMETRES.
DURING MANUFACTURE REFER RELEVANT QCP/QP

REV	DATE	ALTERED	LRS
02	20.10.04	CHD & APPD	EA
DRAWING REDRAWN & UPDATED. DCP No. 800379			

6.3 / 3.2
▽ / ▽

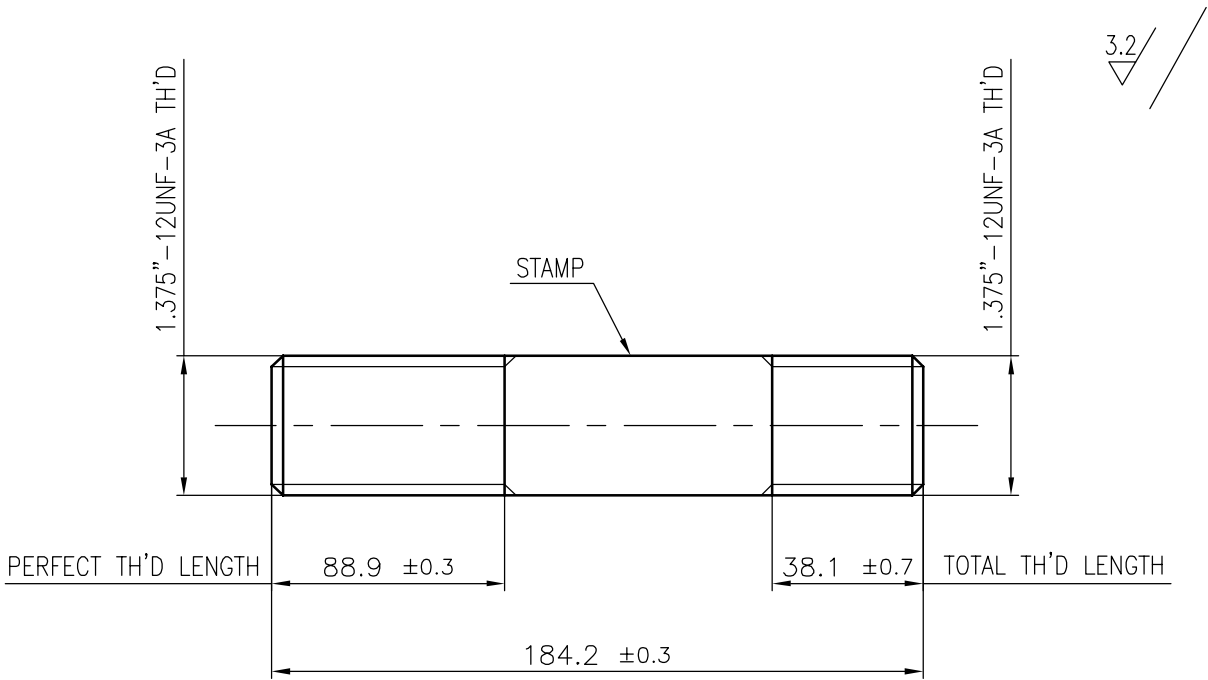


NOTES:

- HARDNESS AFTER HEAT TREATMENT 24 TO 38 HRC
- FOR QUALITY REQUIREMENTS & INSPECTION PROCEDURE REFER LATEST APPLICABLE QUALITY PROCEDURE.

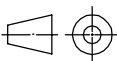
DRAWING REDRAWN WITH REV.02 ON 20.10.04

	ø80 X40	15039344	ASTM A194 GR.4 CERTIFY	QUENCHED& TEMPERED	20	0.364	1.6		506
NO OFF	DESCRIPTION	MATL CODE	MATL SPECN	HEAT TREATMENT	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	DRAWING No	ITEM No
365-122 BHARAT HEAVY ELECTRICALS LTD., UNIT: HIGH PRESSURE BOILER PLANT. TIRUCHIRAPALLI 620014.					DRN	NAME L.RENGASAMY	SIGN	DATE 20.10.2004	NO.OF VAR
					CHD	L.RENGASAMY		20.10.2004	
					APPD	E.ATHIANNAVI		20.10.2004	
DEPT VL		SCALE	WEIGHT (KG).		REFERENCE INFORMATIONS				NO. OF ITEMS
CODE 340		NTS			COMP.CODE: 964155150000/ 931706630000				
TITLE				CARD CODE	DRAWING NO.				REV
NUT (ERV IGV)				U 01	4-V-7520-10351				02



NOTES:

1. SHARP CORNERS TO BE REMOVED.
2. 45° CHAMFER FIRST THREAD.
3. UNSPECIFIED MACHINING TOLERANCES $\pm 0.25\text{mm}$.
4. PHOSPHATING AS PER LATEST APPLICABLE QUALITY PROCEDURE.
5. STUD SHOULD BE MANUFACTURED AND TESTED AS PER LATEST APPLICABLE QUALITY PROCEDURE.
6. HEAT TREATMENT: SOLUTION TREATED
HARDNESS 26–32 HRC

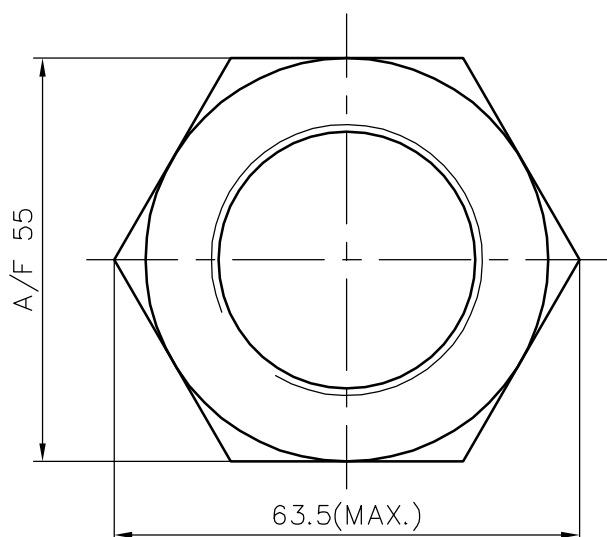
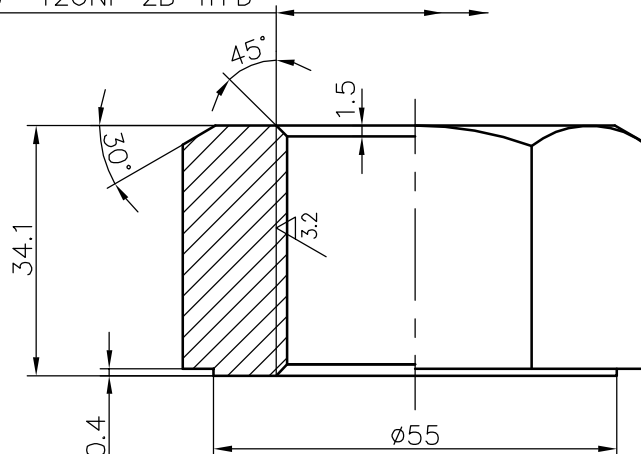
—	—	—	ASTM A193 Gr.B8 CERTIFY	NOTE-6	20	1.38	1.92	—	503
NO OFF	DESCRIPTION	MATL CODE	MATL SPECN	HEAT TREATMENT	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	DRAWING No	ITEM No
 BHARAT HEAVY ELECTRICALS LTD., UNIT: HIGH PRESSURE BOILER PLANT. TIRUCHIRAPALLI 620014.					DRN	NAME E.LAKSHMI	SIGN	DATE 18.09.13	NO.OF VAR
					CHD	S.MADHULINGAM		18.09.13	
					APPD	E.ATHIANNAVI		18.09.13	
DEPT VL			SCALE	WEIGHT (KG). —	REFERENCE INFORMATIONS				NO. OF ITEMS
CODE 340			NTS						
TITLE STUD				CARD CODE U 01	DRAWING NO. 4-V-7522-10627				REV 00

FOR TOLERANCES OF UNTOLERANCED DIMENSIONS

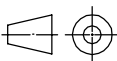
ALL DIMENSIONS ARE IN MILLIMETRES.
DURING MANUFACTURE REFER RELEVANT QCP/QP

6.3 / 3.2

1.375"-12UNF 2B TH'D

**NOTES:**

1. HARDNESS AFTER HEAT TREATMENT 26 TO 32 HRC
2. FOR QUALITY REQUIREMENTS & INSPECTION PROCEDURE REFER LATEST APPLICABLE QUALITY PROCEDURE.

	—	—	ASTM A194 GR.8 CERTIFY	QUENCHED& TEMPERED	20	0.4	0.4		506
N O O F F	DESCRIPTION	MATL CODE	MATL SPECN	HEAT TREATMENT	SCRAP SORT	NET WT (k g)	GROSS WT (k g)	DRAWING No	ITEM No
 BHARAT HEAVY ELECTRICALS LTD., UNIT: HIGH PRESSURE BOILER PLANT. TIRUCHIRAPALLI 620014. 365-122					DRN	NAME E.LAKSHMI	SIGN	DATE 17.09.2013	NO.OF VAR
					CHD	S.MADHULINGAM		17.09.2013	
					APPD	E.ATHIANNAVI		17.09.2013	
DEPT VL			SCALE	WEIGHT (KG).	REFERENCE INFORMATION				NO. OF ITEMS
CODE 340			NTS	0.4					
TITLE					CARD CODE	DRAWING NO.			REV
NUT (ERV IGV)					U 01	4—V—7522—10634			00

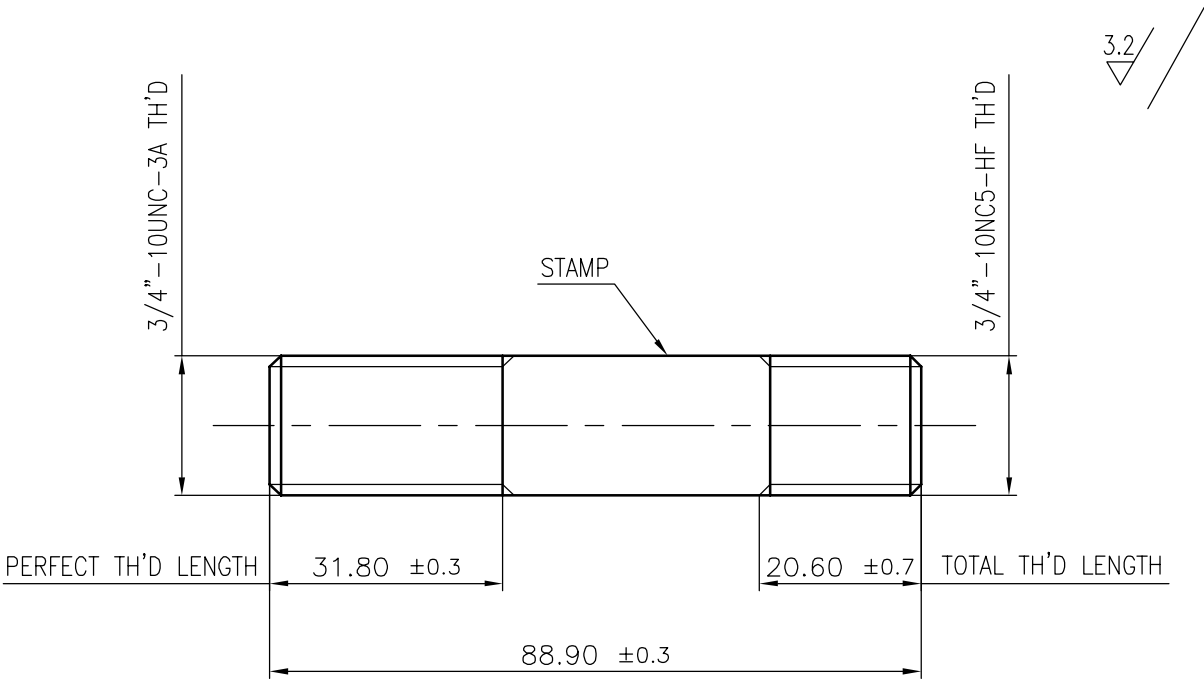
COMP. CODE: 964162420000

TYPE No. 1525VXHT

Size A4

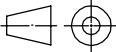
FOR TOLERANCES OF UNTOLERANCED DIMENSIONS

ALL DIMENSIONS ARE IN MILLIMETRES.
DURING MANUFACTURE REFER RELEVANT QCP/QP



NOTES:

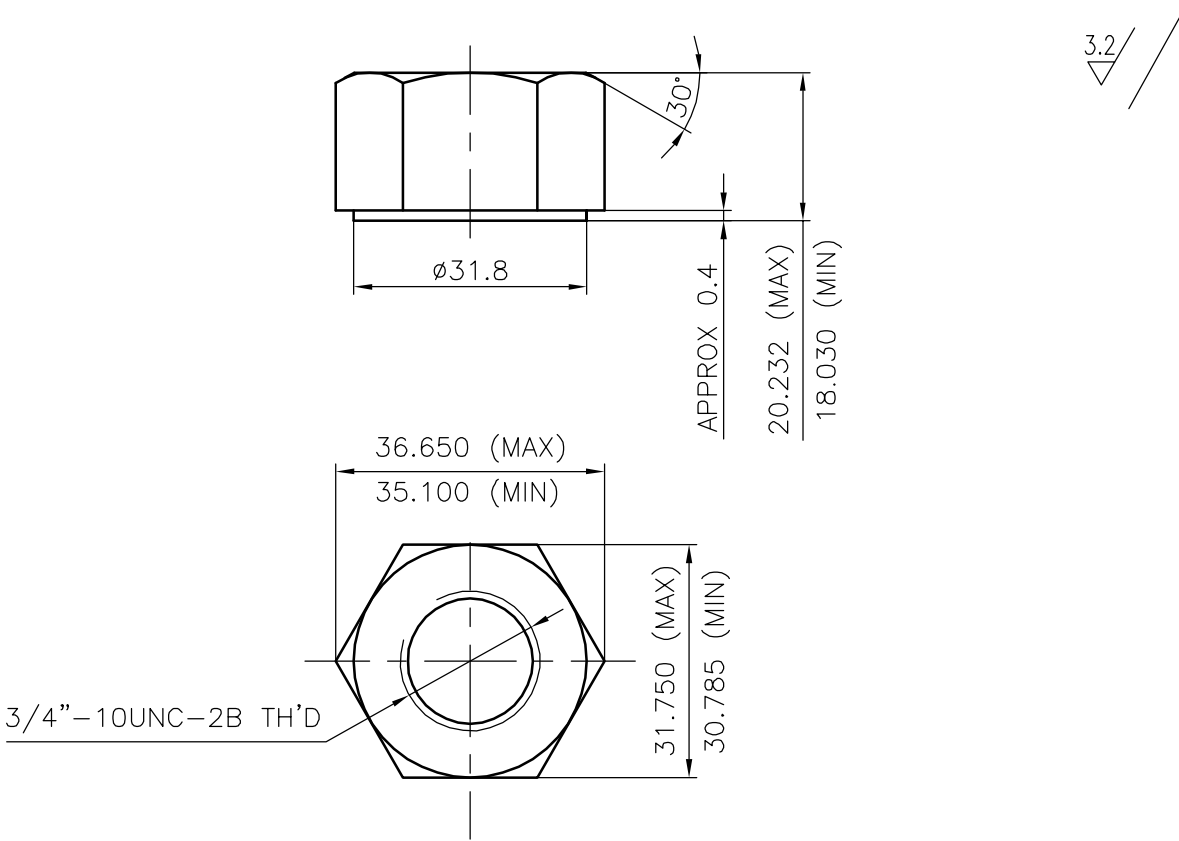
1. SHARP CORNERS TO BE REMOVED.
2. 45° CHAMFER FIRST THREAD.
3. UNSPECIFIED ANGLE TOLERANCES $\pm 0.5^\circ$
4. HARDNESS 26-32 HRC
5. PHOSPHATING AS PER LATEST APPLICABLE QUALITY PROCEDURE.
6. STUD SHOULD BE MANUFACTURED AND TESTED AS PER LATEST APPLICABLE QUALITY PROCEDURE.

—	—	—	ASTM A193 Gr.B8 CERTIFY	SOLUTION TREATED	20	0.20	0.39	—	501
NO OFF	DESCRIPTION	MATL CODE	MATL SPECN	HEAT TREATMENT	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	DRAWING No	ITEM No
 BHARAT HEAVY ELECTRICALS LTD., UNIT: HIGH PRESSURE BOILER PLANT. TIRUCHIRAPALLI 620014. 365-122					DRN	NAME E.LAKSHMI	SIGN	DATE 18.09.13	NO.OF VAR
					CHD	S.MADHULINGAM		18.09.13	
					APPD	E.ATHIANNAVI		18.09.13	
DEPT VL			SCALE	WEIGHT (KG).	REFERENCE INFORMATIONS				NO. OF ITEMS
CODE 340			—	—					
TITLE STUD — 7522					CARD CODE U 01	DRAWING NO. 4-V-7522-10635			REV 00

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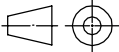
FOR TOLERANCES OF UNTOLERANCED DIMENSIONS DURING MANUFACTURE REFER RELEVANT QCP/QP

ALL DIMENSIONS ARE IN MILLIMETRES.



NOTES:

1. SHARP CORNERS TO BE REMOVED.
2. 45° CHAMFER FIRST THREAD.
3. UNSPECIFIED ANGLE TOLERANCES $\pm 0.5^\circ$
4. UNSPECIFIED MACHINING TOLERANCES $\pm 0.25\text{mm}$.
5. TREATED NUTS TO MEET ASTM SPEC. A194 GR.8
HARDNESS 26–32 HRC

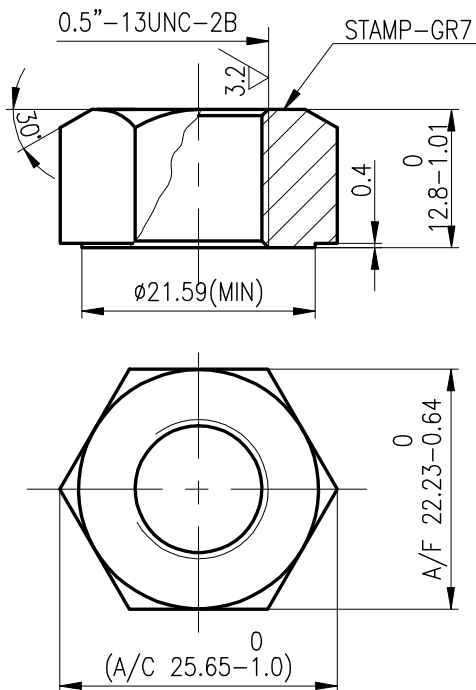
—	—	96416244	ASTM A194 Gr. 8 PRODUCT ATTEST	—	20	0.09	0.25	—	505
NO OFF	DESCRIPTION	MATL CODE	MATL SPECN	HEAT TREATMENT	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	DRAWING No	ITEM No
 BHARAT HEAVY ELECTRICALS LTD., UNIT: HIGH PRESSURE BOILER PLANT. TIRUCHIRAPALLI 620014. 365-122					DRN	NAME E.LAKSHMI	SIGN	DATE 18.09.13	NO.OF VAR
					CHD	S.MADHULINGAM		18.09.13	
					APPD	E.ATHIANNAVI		18.09.13	
DEPT VL			SCALE	WEIGHT (KG).		REFERENCE INFORMATIONS			NO. OF ITEMS
CODE 340			—	—					
TITLE					CARD CODE	DRAWING NO.			REV
NUT — 7522					U 01	4-V-7522-10636			00

FOR TOLERANCES OF UNTOLERANCED DIMENSIONS

ALL DIMENSIONS ARE IN MILLIMETRES.
DURING MANUFACTURE REFER RELEVANT QCP/QP

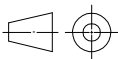
REV	DATE	ALTERED
		CHD & APPD

6.3/ 3.2



NOTES:

1. 45° CHAMFER FIRST & LAST THREAD.
2. HEAVY HEX. NUT TO THIS DRG. IS AS PER AMERICAN STD.
3. NUT SHOULD BE MANUFACTURED & TESTED AS PER LATEST APPLICABLE QUALITY PROCEDURE.
4. HARDNESS:- 24-38 HRC.
5. PHOSPHATE COAT AS PER LATEST APPLICABLE QUALITY PROCEDURE.
6. ALL APPLICABLE PROJECT SPECIFIC QUALITY DOCUMENTS LIKE CQP, ARE TO BE FOLLOWED.
7. APPLICABLE MATERIAL IDENTIFICATION PROCEDURE IF ANY TO BE FOLLOWED.

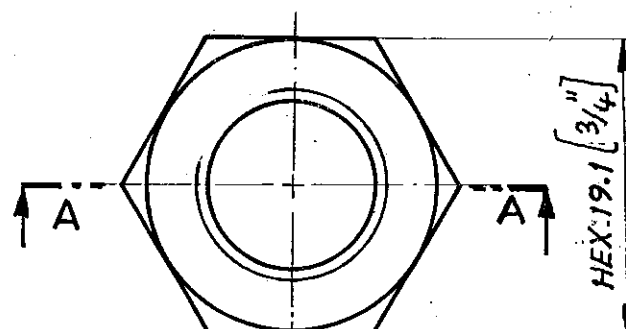
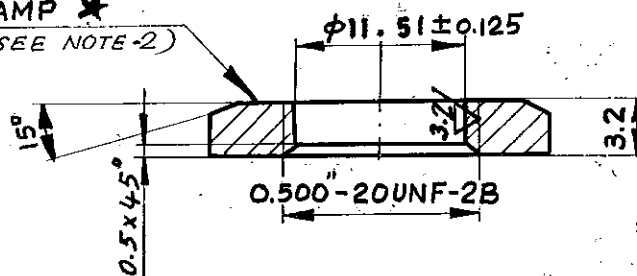
01	—	96 415 969	ASTM A194-GR7 (PROD.ATTEST)	Q & T 24-38 HRC	—	0.03	—	—	229
NO OFF	DESCRIPTION	MATL CODE	MATL SPECN	HEAT TREATMENT	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	DRAWING No	ITEM No
बीएचईएल  365-122 BHARAT HEAVY ELECTRICALS LTD., UNIT: HIGH PRESSURE BOILER PLANT. TIRUCHIRAPALLI 620014.					DRN	NAME B.RAJA	SIGN	DATE 19-10-2009	NO.OF VAR
					CHD	S.MADHULINGAM		19-10-2009	
					APPD	E.ATHIANNAVI		19-10-2009	
DEPT VL			SCALE	WEIGHT (KG).	REFERENCE INFORMATION				NO. OF ITEMS
CODE 340			NTS	0.03					
TITLE					CARD CODE	DRAWING NO.			REV
NUT (0.5"—13UNC)					U 01	4-V-9C1D-13868			00

CAUTION THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LTD IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY.

REV DRG ID			REV DRG ID			REV DRG ID		
REV	DATE	ALTERED	REV	DATE	ALTERED	REV	DATE	ALTERED
01	18.8.79	<i>Subbaraj</i>	02	3-2-84	<i>Subbaraj</i>	03	14-10-87	<i>Subbaraj</i>
		CHECKED <i>Subbaraj</i>			CHECKED <i>Subbaraj</i>			CHECKED <i>Subbaraj</i>
RAW MATERIAL SIZE & SPECIFICATION			SL. No. 2 & NOTE:2 ADDED.			IN SL. No. 01 RAW MATL. SIZE		
A276-414 CHANGED TO A276-TYPE 410 COND.T						φ25X8.5 WAS φ28X8.5 & MATL. SPECN. ASTM A182-F6 WAS ASTM A276-TYPE 610 COND.T.		

STAMP *

(SEE NOTE-2)



6.3 / 3.2

ALT. NAME	CHD.	REVISION No.5	UPDATED IN THE	TABULATED DRGS.
DCN. SR.	0017	REV.	04	DATE: 16.11.92

NOTES:-

1. DEBURR SHARP EDGES.

★ 2. STAMP 410T FOR SL. NO. 1, 316 FOR SL. NO. 2

ACTUAL SIZE

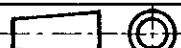
02	4-V-8822-13010	BAR $\phi 25 \times 8.5$	46	SOLUTION	15024276	0.01	0554703
		93076418		ANNEALED	ASTM A182-F316	0.03	
01	4-V-9753-13010/03	BAR $\phi 25 \times 8.5$	40	HARDNESS 24-29	15024255	0.01	0554713
		93075737		COND.T NRC	ASTM A182-F6	0.04	
SL. No.	DRG. No.	DESCRIPTION	SCRAP SORT	HEAT TREATMENT	MATL. CODE	NET WT. (KG)	DRESSER PART No.
		COMP. CODE			MATL. SPECN.	GRASS	



05-249/A

BHARAT HEAVY ELECTRICALS LIMITED

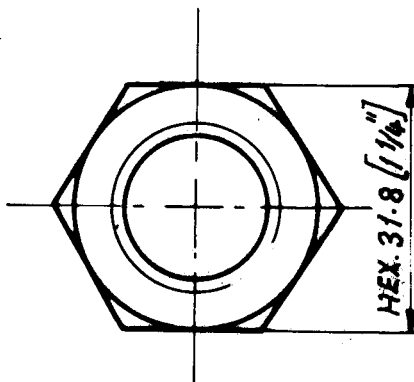
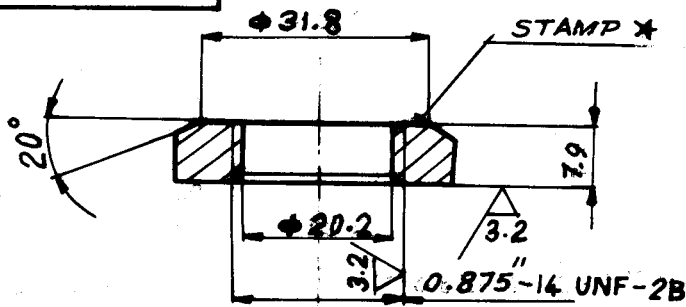
BOILER PLANT UNIT, TIRUCHIRAPALLI-620014

DEPT VL	CODE 340		SCALE 2:1	WEIGHT (kg) 0.01	(174) DRG. NO. 205547 DRESSER (REV. ECO41)	IT. NO. 102		
TITLE LOCK NUT					DRAWN	NAME ECO11	SIGN	DATE
					CHECKED	K.B	K.K/H	3.4.79
					APPROVED	D.K	D.K	28.5.79
DIMENSIONS TO BE CONTROLLED WITHIN LIMITS AS SHOWN. MACHINING TOLERANCE ± 0.25 mm UNLESS OTHERWISE SHOWN NON-MACHINING TOLERANCE $\pm$				CARD CODE	4 DRAWING NO. 4-V-0000-13010	15	16 REV 17 04	

REV. 01	DATE 18-8-79	ALTERED	CHECKED
HARDNESS VALUE 155 BHN INCLUDED.			

REV. 02	DATE 12-11-84	ALTERED	CHECKED
TABULATED DRG. WAS MAIN DRG. SL. No. 2 ADDED.			

REV. 03	DATE 18.1.90	ALTERED	CHECKED
SL. No. 03 ADDED.			



NOTES:-

1. 45° CHAMFER FIRST THREAD.

2. SECURE SHARP CORNERS.

3. THIS MATL. CAN BE SUBSTITUTED WITH AISI - 416 FOR SL. No. 01 ONLY.

MICROFILMED ON

00523

1082

03	4-V-8880-13017	15 924 501	K-500	0.04	HARDENED	1077106
	BAR 40 x 12.5	MONEL K-500	60	0.14	33 175 768	1520-300/4
02	4-V-8851-13017	15 024 277	F316	0.03	SOLUTION ANNEALED	1077105
	BAR 40 x 12.5	ASTM A182-F316	46	0.12	33 175 014	1520-300/54
01	4-V-9704-13017	15 924 958	416	0.03	ANNEALED 155 BHN	1077101
	BAR 45 x 12.5	ASTM A502-416	40	0.15	33 075 656	1520-8"
SL. No.	DRG. No.	MATL. CODE	STAMP	NET WT. [kg]	HEAT TREATMENT	DRESSER PART No.
	DESCRIPTION	MATL. SPECN. (CERTIFY)	SCRAP SORT	GROSS WT. [kg]	COMP. CODE	DRESSER TYPE No.



05-249/A

BHARAT HEAVY ELECTRICALS LIMITED

BOILER PLANT UNIT, TIRUCHIRAPALLI-620014

[REV. EC 041]

DEPT VL	CODE 340	SCALE 1:1	WEIGHT (kg)	DRESSER DRG. NO. 210771.		IT. NO. 102	
TITLE LOCK NUT				EC 009	NAME	SIGN	DATE
				DRAWN			
				CHECKED	K.B	K.B	28-3-79
				APPROVED	D.K	D.K	
DIMENSIONS TO BE CONTROLLED WITHIN LIMITS AS SHOWN. MACHINING TOLERANCE ± 0.25 mm. UNLESS OTHERWISE SHOWN NON-MACHINING TOLERANCE $\pm$				CARD CODE	4 DRAWING NO. 4-V-0000-13017 03		

15

16 REV 17

TP-DG-4-V-0000-13027
CORPORATE DRG ID

REV 01 DATE 16-05-92
ALTERNED
CHECKED

REV 02 DATE 22-08-90
ALTERNED
CHECKED

REV 03 DATE 04-09-90
ALTERNED
CHECKED

1. NOTES ADDED.
2. MATL. CERTIFICATION PRODUCT-
ATTEST WAS CERTIFY.

SL. No. 02 ADDED.

MATL. SPECN. A193 B8M
WAS A193-F316.

DCN:SR: 0017
ALT: M
CND:

REV DATE ALT: R
05 16.3.97 CND: APRD:

REV. 04
SL. 16-11-92

REVISION NOS. UPDATED
IN THE TABULATED
DRGS.

NOTES UPDATED. BAR # 16
WAS # 20 IN SL. No. 01.

DCN:SR: 0104

12.5
32

0.5 (1/2) - 13 UNC - 3A

STAMP: *

0.500" - 13 UNC - 3A

3.2

3.2

2X45°

15.9 ± 0.8

25.4 ± 3.0

53.98 ± 0.4

NOTES:-

1. STUD SHOULD BE MANUFACTURED AND TESTED
AS PER LATEST APPLICABLE QUALITY PROCEDURE.

2. PHOSPHATE COAT AS PER LATEST APPLICABLE QUALITY
PROCEDURE FOR SL. No. 01 ONLY.

02	BAR #16 X 60 4-V-8803-13027/02	15024315	CARBIDE SOLUTION TREATED BHN 223 MAX.	ASTM A193- B8M (AS TYPE 316)	40	B8M	0.09	33175720 3230601	P
01	BAR #16 X 60 4-V-9021-13027/02	15039084	Q&T 26-30 HRC	ASTM A193 GR B7	20	B7	0.15	33075361 3230101	P
SL. No.	DESCRIPTION DRG. No.	MATL. CODE	HEAT TREATMENT	MATL. SPECN (CERTIFY)	SCMP SORT	STAMP X	WTS WT(M)	COMP. CODE DRESSER PART	A/C



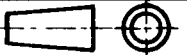
05-249/A

BHARAT HEAVY ELECTRICALS LIMITED

BOILER PLANT UNIT, TIRUCHIRAPALLI-620014

DEPT
VL

CODE
340



SCALE
1:1

WEIGHT (kg.)
0.04

DRESSER DRG NO: 323 [REV. EX 205]
[1356]

226

TITLE
STUD - 0.5" (1/2")

EC 009
DRAWN

CHECKED
K.B

APPROVED
Dug

NAME
K.B

SIGN
K.B

DATE
20-3-79

DATE
27/3/79

DIMENSIONS TO BE CONTROLLED WITHIN LIMITS AS
SHOWN. MACHINING TOLERANCE ± 0.25 mm. UNLESS
OTHERWISE SHOWN NON-MACHINING TOLERANCE ±

CARD
CODE

4 DRAWING NO.
4-V-0000-13027

15
16 REV 17

CAUTION

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ELECTRICALS LTD. IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN
ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY.

MICROFILMED ON
ROLL: 00523
FRAME: 073

100

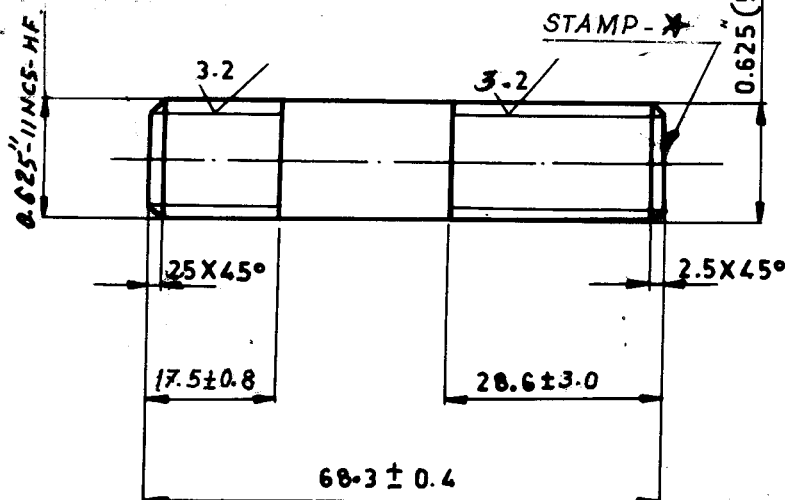
TP-DG-4-V-0000-13027
CORPORATE DRG ID

SIZE A-4

REV 01	DATE 19.5.81	ALTERED	REV 02	DATE 4.9.90	ALTERED
CHECKED			CHECKED		
1. NOTES ADDED.			SI. No. 02 ADDED.		
2. MATL. CERTIFICATION PRODUCT-ATTEST WAS CERTIFY.			DCN No. SRV. 90:25 J+23.8.90		
DCN: SR: 0017	ALT: M	REV DATE 04 10.3.97	ALT: R	END. & APPD: <i>[Signature]</i>	
REV. 03	REVISION NOS. UPDATED IN THE TABULATED		NOTES UPDATED.		
DATE: 16.11.92	DRAS.		DCN: SR: 0184		

12.5

3.2

**NOTES:-**

1. STUD SHOULD BE MANUFACTURED AND TESTED AS PER LATEST APPLICABLE QUALITY PROCEDURE.
2. PHOSPHATE COAT AS PER LATEST APPLICABLE QUALITY PROCEDURE FOR SI. No. 01 ONLY.



02	4-V-8000-13028/01	15024241	CARBIDE SOLUTION TREATED BHN 225 MAX	ASTM A193 -B8M (ANSI TYPE 316)	46	B8M	0.19	93175812	P
	BAR ϕ 20 X 77							3260310	
01	4-V-9035-13028/02	15039094	Q&T 26-30 HRC	ASTM A193 GR-B7	20	B7	0.22	93075508	P
	BAR ϕ 22 X 77							3260110	
SI No.	DRG. No.	MATL. CODE	HEAT TREATMENT	MATL SPECN (CERTIFY)	SCRAP SORT	STAMP	GROSS WT (KG)	COMP CODE	PREP. PART No.



05-249/A

BHARAT HEAVY ELECTRICALS LIMITED**BOILER PLANT UNIT, TIRUCHIRAPALLI-620014**

DEPT VL	CODE 340	SCALE 1:1	WEIGHT (kg) 0.09	DRESSER DRG NO: 326 [REV: EK705] [14.51]	IT. No. 226		
TITLE STUD - 0.625" (5/8)				EC 009	NAME	SIGN	DATE
				DRAWN			
				CHECKED	K.B	K.R. 20.3.79	
				APPROVED	D.K	21/3/79	
DIMENSIONS TO BE CONTROLLED WITHIN LIMITS AS SHOWN. MACHINING TOLERANCE $\pm$ 0.25 mm. UNLESS OTHERWISE SHOWN NON-MACHINING TOLERANCE $\pm$				4 DRAWING NO. 4-V-0000-13028		15 16 REV 17	
CARD CODE				06			

REV	DATE	ALTERED	REV.	DATE	ALT:-
01	19.5.81	CHECKED	03	6.9.90	END:-
02	9.8.82	CHECKED			

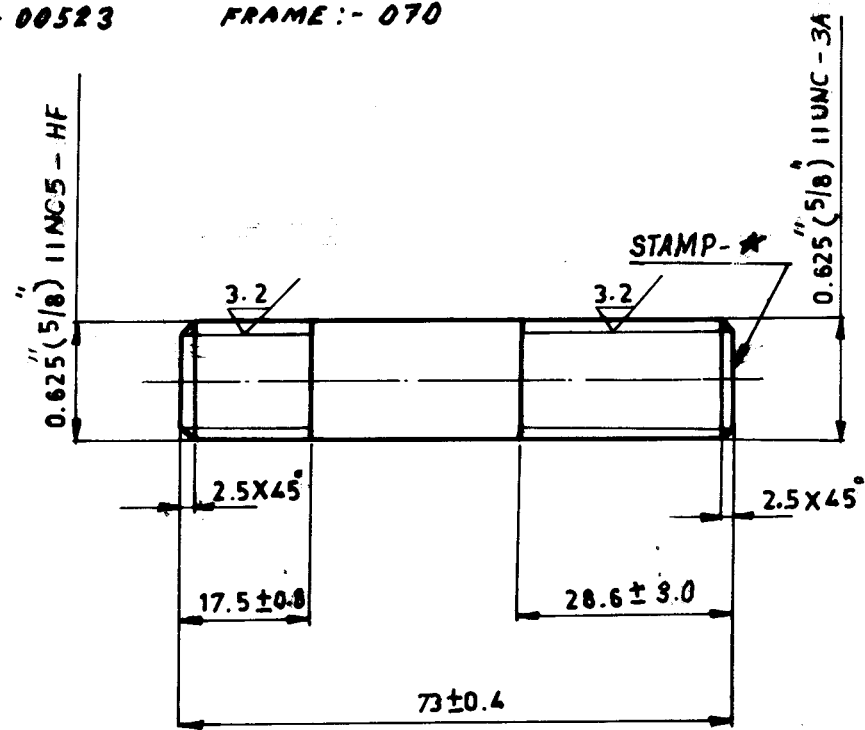
1. NOTES ADDED.
2. MATL. CERTIFICATION PRODUCT-ATTEST WAS CERTIFY.

SL. No. 02 ADDED.

MATL. SPECN. A193 B8M WAS A 182-F316.

DCN No. SAV: 90:25 & 23.8.90

MICROFILMED ON
ROLL:- 00523 FRAME:- 070



12.5 / 3.2

NOTES:-

1. STUD SHOULD BE MANUFACTURED AND TESTED AS PER LATEST APPLICABLE QUALITY PROCEDURE.
2. PHOSPHATE COAT AS PER LATEST APPLICABLE QUALITY PROCEDURE FOR SL. No. 01 ONLY.

REV	DATE	ALT:-	DCN:SR:	CHD:	REVISION NO.5.	UPDATED IN THE	TABULATED DRGS.
05	14.3.97	CHANGED	0017		REV. 04	DATE: 16.11.92	
					NOTES UPDATED.		
							DCN:SR: 01/04



SL. No.	DESCRIPTION	MATL CODE	HEAT TREATMENT	MATL SPECN	SCRAP SORT	A/C	GROSS WT(KG)	CAMP. CODE	STAMP
02	BAR $\phi 20 \times 81$ 4-V-8802-13030/02	15024241	CARBIDE SOLUTION TREATED BHN 223 MAX	ASTM A193 -B8M CANSTYRE316	45	P	0.2	33173712 3260306	B8M
01	BAR $\phi 22 \times 81$ 4-V-8813-13030/02	15039094	Q&T 26-30 HRC	ASTM A193 GR. B7	20	P	0.24	33075299 3260106	B7



BHARAT HEAVY ELECTRICALS LIMITED
BOILER PLANT UNIT, TIRUCHIRAPALLI-620014

05-249/A

DEPT	CODE	SCALE	WEIGHT (kg)	DRESSER	IT.No.
VL	340	1:1	0.1	DRG NO. 326 (REV. 205) [1452]	226
TITLE	EC 009	NAME	SIGN	DATE	
STUD 0.625" (5/8)	DRAWN				
	CHECKED	K.B	K.WTO	20.3.79	
	APPROVED	DK	Dy	27/3/79	

DIMENSIONS TO BE CONTROLLED WITHIN LIMITS AS SHOWN. MACHINING TOLERANCE ± 0.25 mm. UNLESS OTHERWISE SHOWN NON-MACHINING TOLERANCE $\pm$

CARD CODE

4 DRAWING NO.

4-V-0000-13030

15

16 REV 17

05

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TP-DG 4-V-10000-13031
CORPORATE DRG ID

REV 02
DATE 23.8.90
CHECKED

ALTERNED

1. NOTES ADDED.
2. MATL. CERTIFICATION PRODUCT-
ATTEST WAS CERTIFY.

SI. NO. 02 ADDED.
DCN NO: SRV: 90: 25 dt 23.8.90

DCN: SR: ALT: mly
0017 CHD:

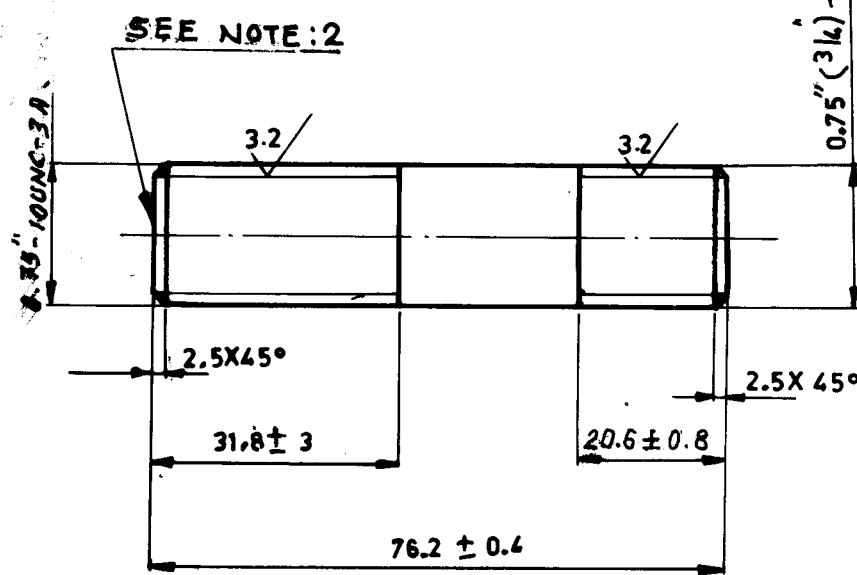
REV. DATE ALT: mly
04 10.3.97 CHD: APB:

REV. 03
16.11.92
REVISION: No. 1 UPDATED
IN THE TABULATED
DRGS.

NOTES UPDATED.
DCN: SR: 0184

12.5

3.2



NOTES:-

1. STUD SHOULD BE MANUFACTURED AND TESTED AS PER LATEST APPLICABLE QUALITY PROCEDURE.
2. STAMP 'B7' FOR SL. NO. 01 & B8M FOR SL. NO. 02.
3. PHOSPHATE COAT AS PER LATEST APPLICABLE QUALITY PROCEDURE FOR SL. NO. 01 ONLY.

02	4-V-8000-13031/01	BAR ϕ 25X86	ASTM A193-B8M (AISI TYPE 316)	CARBIDE SOLUTION TREATED BHN 223 MAX.	46	P 0.33
	3270401	93175805	15024276			
01	4-V-9036-13031/02	BAR ϕ 25X86	ASTM A193-GR. B7	Q&T 26-30 HRC	20	P 0.33
	3270101	93075528	15039086			
SL. NO.	DRG. NO.	DESCRIPTION	MATL. SPECN.	HEAT TREATMENT	SCRAP SMT	VP GROSS WEIGHT
	DRESSER PART NO.	COMP. CODE	MATL. CODE			

BHARAT HEAVY ELECTRICALS LIMITED
BOILER PLANT UNIT, TIRUCHIRAPALLI-620014

DEPT VL
CODE 340

SCALE 1:1

WEIGHT (kg.)
0.15

DRESSER DRG NO-327/REV-EN 70
[486] 226

TITLE
STUD - 0.75" (3/4)"

EC 009
DRAWN

CHECKED
K.B

APPROVED
D.K

NAME
K.M.

SIGN
eng

DATE
20.3.97

DATE
27/3/97

DIMENSIONS TO BE CONTROLLED WITHIN LIMITS AS SHOWN. MACHINING TOLERANCE $\pm$ 0.25 mm. UNLESS OTHERWISE SHOWN NON-MACHINING TOLERANCE $\pm$

CARD CODE

4 DRAWING NO.
4-V-0000-13031

15
16 REV 17
04

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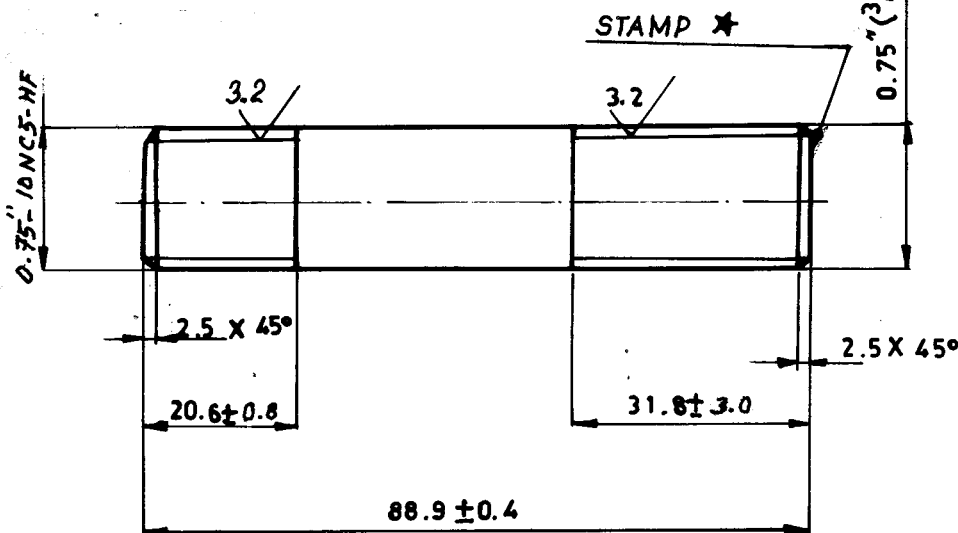
M.F.ROLL 00523 FRAME069

TP-DG 4-V-10000-13031
CORPORATE DRG ID

REV. 01	DATE 19.5.81	ALTERED	CHECKED
REV. 02	DATE 28.7.84	ALTERED E.ATMANATH	CHECKED 26.9.94
1. NOTES ADDED.		NOTE A AND SERIAL NO. 02 ADDED.	
2. MATL. CERTIFICATION PRODUCT-ATTEST WAS CERTIFY.			
DCN:SR: 0017	ALT: mhy	REV. 04	DATE 10.3.97
CHD:		CHD&APPD:	
REV. 03	REVISION NOS. UPDATED IN THE TABULATED DRGS.	NOTES UPDATED.	
DATE 16.11.92		DCN:SR: 0184	

12.5 / 32

0.75" (3/4) 10 UNC - 3A

**NOTES:-**

1. STUD SHOULD BE MANUFACTURED AND TESTED AS PER LATEST APPLICABLE QUALITY PROCEDURE.
2. HARDNESS :- 26-30 HRC.
3. PHOSPHATE COAT AS PER LATEST APPLICABLE QUALITY PROCEDURE.
4. STUD SHOULD BE MANUFACTURED AND TESTED AS PER ASTM A320 GR. B8.

02	4-V-8828-13032/04	BAR ϕ 25 X 97	CARBIDE SOL TREATED	15024111	B8	4	46	0.18
	ALTERNATE TO 3270110	93076443		AISI 304 CLASSI				0.37
01	4-V-9051-13032/03	BAR ϕ 25 X 97	QUENCHED & TEMPERED	15 039 006	B7	1, 2 & 3	-	0.18
	3270110	93075588		ASTM A193-GR. B7			20	0.37
SL. No.	DRG. No.	DESCRIPTION	HEAT TREATMENT	MATL. CODE	STAMP MARK	APPLICABLE NOTES	No. OFF	NET WT. CHG. SCRAP LOSS. SORT
	DRESSER PART No.	COMP. CODE		MATL. SPECN. [PRODUCT ATTEST]	*			



05-249/A

BHARAT HEAVY ELECTRICALS LIMITED
BOILER PLANT UNIT, TIRUCHIRAPALLI-620014

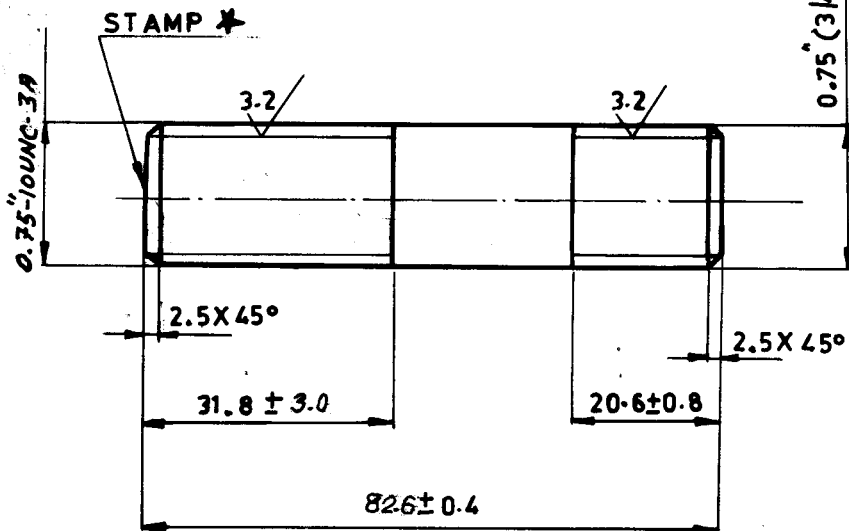
DEPT VL	CODE 340	SCALE 1:1	WEIGHT (kg) 0.18	DRESSER DRG NO: 322/REV: EK705/ SIZE NO. 10 [1486]	IT. NO. 226		
TITLE STUD - 0.75" (3/4)				EC 009 DRAWN	NAME	SIGN	DATE
				CHECKED	K.B	K. M/s	20.3.99
				APPROVED	J.K	guy	27.3.99
DIMENSIONS TO BE CONTROLLED WITHIN LIMITS AS SHOWN. MACHINING TOLERANCE $\pm$ 0.25 mm UNLESS OTHERWISE SHOWN NON-MACHINING TOLERANCE $\pm$				CARD CODE	4 DRAWING NO. 4-V-0000-13032 15 16 REV 17		

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REV. 01	DATE 19.5.81	CHECKED	REV. 02	DATE 4.9.90	ALTERED	CHECKED
1. NOTES ADDED.			NOTE : 02 ADDED. SL. NO. 02 ADDED			
2. MATL. CERTIFICATION PRODUCT- ATTEST WAS CERTIFY.			DCN. NO. SRV : 90:25 Dt 23.8.90			
DCN:SR:	ALT:	REV.	DATE	ALT:		
0017	CND:	04	10.3.97	CND & APD:		
REV. 03	REVISION NOS. UPDATED IN THE DATE: FABULATED DRGS.		NOTES UPDATED.			
16.11.92			DCN:SR:0184			

12.5 / 3.2

0.75" (3/4) 10 NC 5-H F



NOTES:-

1. STUD SHOULD BE MANUFACTURED AND TESTED AS PER LATEST APPLICABLE QUALITY PROCEDURE.
2. PHOSPHATE COAT AS PER LATEST APPLICABLE QUALITY PROCEDURE FOR SL. No. 01 ONLY.

02	4-V-8000-13033/01	15024276	CARBIDE SOLUTION TREATED BHN 223 MAX.	ASTM A-193 B 8M (AISI TYPE 316)	46	B8M	0.35	P	93175811
	BAR ϕ 25 X 91								3270408
01	4-V-9040-13033/05	15039086	Q & T 26-30 HRC	ASTM A193 GR B 7	20	B 7	0.35	P	93075570
	BAR ϕ 25 X 91								3270108
Sl. No.	DRG. No.	MATL. CODE	HEAT TREATMENT	MATL. SPECN	SCRAP SORT	STAMP	GROSS WT (KG)	A/C	COMP. CODE
	DESCRIPTION								DRESSER PART No.



05-249/A

BHARAT HEAVY ELECTRICALS LIMITED

BOILER PLANT UNIT, TIRUCHIRAPALLI-620014

[REV: EK705]

DEPT VL	CODE 340	SCALE NTS	WEIGHT (kg) 0.16	DRESSER	DRG NO. 327 [1486]	HT. No. 226
TITLE				EC009	NAME	SIGN
STUD- 0.75" (3/4)				DRAWN		
				CHECKED	K.B	K. K. K.
				APPROVED	D.K	27/3/93

DIMENSIONS TO BE CONTROLLED WITHIN LIMITS AS SHOWN. MACHINING TOLERANCE $\pm$ 0.25 mm. UNLESS OTHERWISE SHOWN NON-MACHINING TOLERANCE $\pm$

CARD CODE

4 DRAWING NO. 4-V-0000-13033

15 16 REV 17

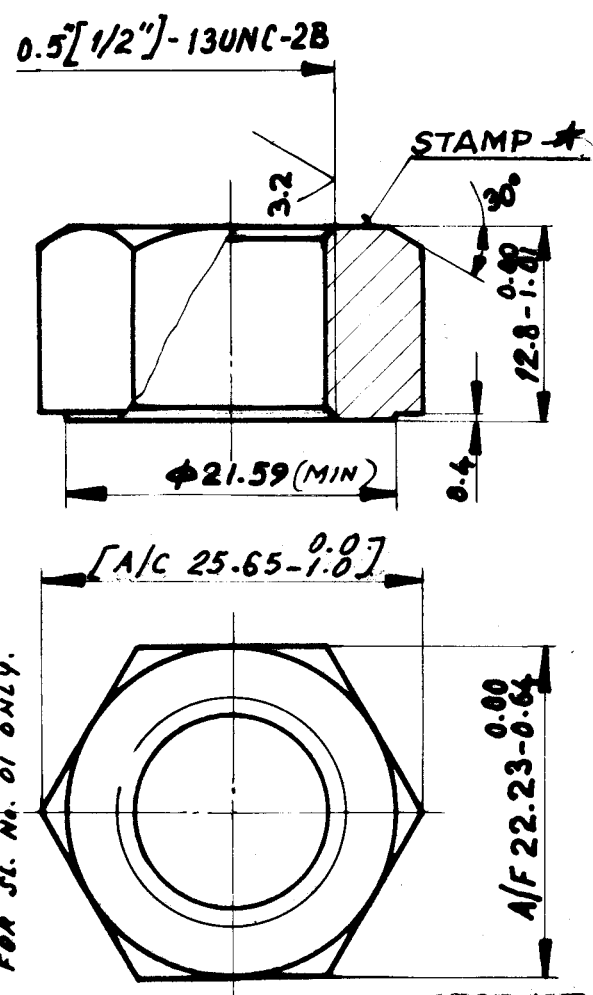
MICROFILMED ON : ROLL 00523 FRAME : 067

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REV	DATE	ALTERED	REV	DATE	ACT:
01	19.5.81	CHECKED	03	19.9.90	CND:
1. NOTES 3,4 & 5 ADDED.			FOR SL. NO. 02 MATL. A194 GR. 8M WAS A182 F.316.		
2. RAW MATERIAL ASTM A194-GR4 WAS GR 2H.			DEN No. SRV: 90:25 Dt. 23.8.90		
SI. No. 02 ADDED.					

NOTES:-

1. 45° CHAMFER FIRST & LAST THREAD.
2. HEAVY HEX. NUT TO THIS DRG IS AS PER AMERICAN STD.
3. NUT SHOULD BE MANUFACTURED & TESTED AS PER LATEST APPLICABLE QUALITY PROCEDURE.
4. HARDNESS:- 24-38 HRC FOR SL. NO. 01 ONLY.
5. PHOSPHATE COAT AS PER LATEST APPLICABLE QUALITY PROCEDURE FOR SL. NO. 01 ONLY.



6.3 / 3.2

REV	DATE	ALT.	CHD.	REV.	DATE	REV.	DATE
05	10.3.97	CHD.	0017	04	16.11.92	03	19.9.90
NOTES UPDATED.				REVISION NOS. UPDATED IN THE TABULATED DRGS.			
DEN: SRV: ACT: M...				DEN: SRV: 90:25			

02	BAR 32 X 17.5	15024242	SOLUTION ANNEALED	ASTM A194 GR. 8M (AISI TYPE 316)	45	P	0.11	33175 215	GR. 8M
01	BAR 32 X 17.5	15039222	QUENCHED & TEMPERED	ASTM A194 GR 4	10	P	0.11	33075 362 / 26415 508	GR. 4
SL. No.	DESCRIPTION	MATL. CODE	HEAT TREATMENT	MATL. SPECN	STRESS	A/C	WTS. (KG)	COMP. CODE	STAMP
	DRG. No.								



BHARAT HEAVY ELECTRICALS LIMITED
BOILER PLANT UNIT, TIRUCHIRAPALLI-620014

DEPT	CODE	SCALE	WEIGHT (kg.)	DRESSER	IT. NO.
VL	340	2:1	0.03	DRG NO: 220 (REV: GR. 8M) (1335)	229
TITLE				DRAWN	NAME
NUT 0.5" [1/2"]				RL	DATE
				CHECKED	DATE
				APPROVED	DATE

DIMENSIONS TO BE CONTROLLED WITHIN LIMITS AS SHOWN. MACHINING TOLERANCE ± 0.25 mm. UNLESS OTHERWISE SHOWN NON-MACHINING TOLERANCE ±

CARD CODE

4 DRAWING NO.

4-V-0000-13034

15

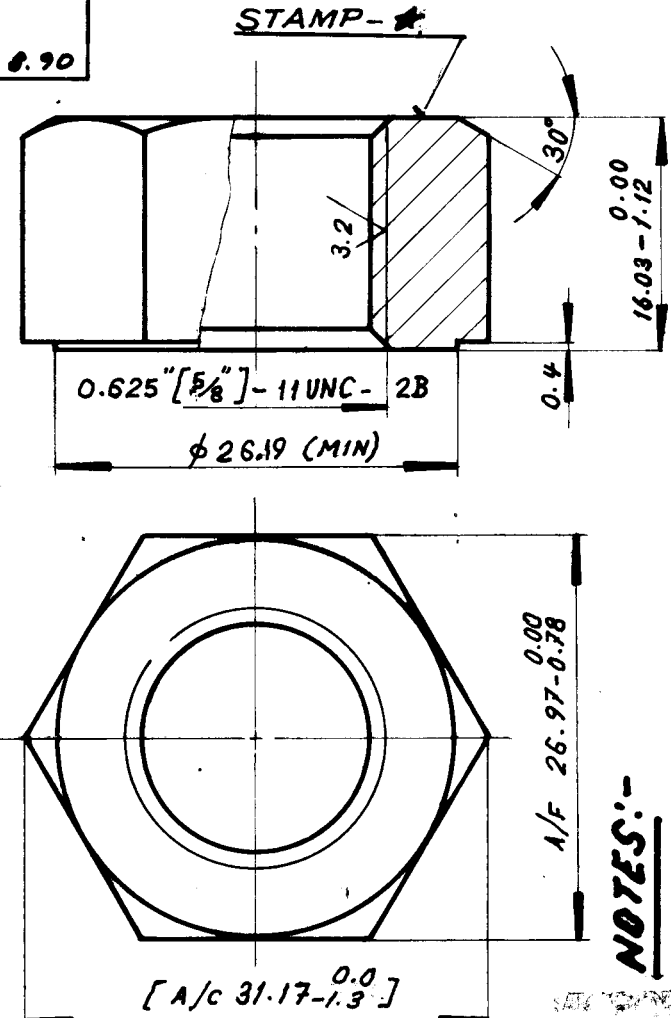
16 REV 17

05

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REV 01	DATE 19.5.81	ALTERED	CHECKED	REV 02	DATE 9.8.83	ALTERED	CHECKED	REV 03	DATE 4.6.90	ALTERED	CHECKED
1. NOTES 3, 4 & 5 ADDED. 2. RAW MATERIAL ASTM A194-GR 4 WAS GR 2H.				SL. No. 02 ADDED.				STAMP GR. 4 WAS 4.			
REV DATE 04.10.9.90 ALT: MLD CHD:				DCN No. 0017 REV. 05 DATE 16.11.92				DCN No. 90:25 SL. 23.8.90			
FOR SL. No. 02 MATL. A194 GR. 8M WAS A182 F-316.				6.3 3.2				DATE: 6.6.90			

REV. DATE 06.10.3.9	ALT: MLD	CHD: MLD	DCN: SR: 0184
NOTES UPDATED. BAR 32 WAS 40 IN SL. NO. 01.			
REVISION NOS. UPDATED IN THE TABULATED DRGS.			



NOTES:-

1. CHAMFER FIRST THREAD.
2. HEAVY HEX. NUT TO THIS DRG IS AS PER AMERICAN STD.
3. NUT SHOULD BE MANUFACTURED AND TESTED AS PER LATEST APPLICABLE QUALITY PROCEDURE.
4. HARDNESS :- 24-30HRC [FOR SL. NO. 01 ONLY]
5. PHOSPHATE COAT AS PER LATEST APPLICABLE QUALITY PROCEDURE FOR SL. NO. 01 ONLY.

Sl. No.	DESCRIPTION	MATL. CODE	HEAT TREATMENT	MATL. SPECN.	SCRAP SORT	A/C	CROSS WT (kg)	COMP. CODE	STAMP
02	BAR 32 X 23 4-V-8000-13035/02	15 024 242	SOLUTION ANNEALED BHN 126-223	ASTM A194 GR. 8M [AISI TYPE 316]	46	P	0.14	33175816 2203605	GR. 8M
01	BAR 32 X 23 4-V-9035-13035/03	-	QUENCHED & TEMPERED	ASTM-A194 GR 4	10	P	0.23	33075501/ 2208205	GR 4



BHARAT HEAVY ELECTRICALS LIMITED
BOILER PLANT UNIT, TIRUCHIRAPALLI-620014

DEPT VL	CODE 340	SCALE 2:1	WEIGHT (kg) 0.04	DRESSER	DRG No: 220 (1339) (REV. 15518)	IT. NO. 229
TITLE NUT 0.625" (5/8)				DRAWN SS	SIGN K. B. 1/4	DATE 23.3.79
				CHECKED KB	SIGN	DATE 23.3.79
				APPROVED DK	SIGN	DATE 27/3/20

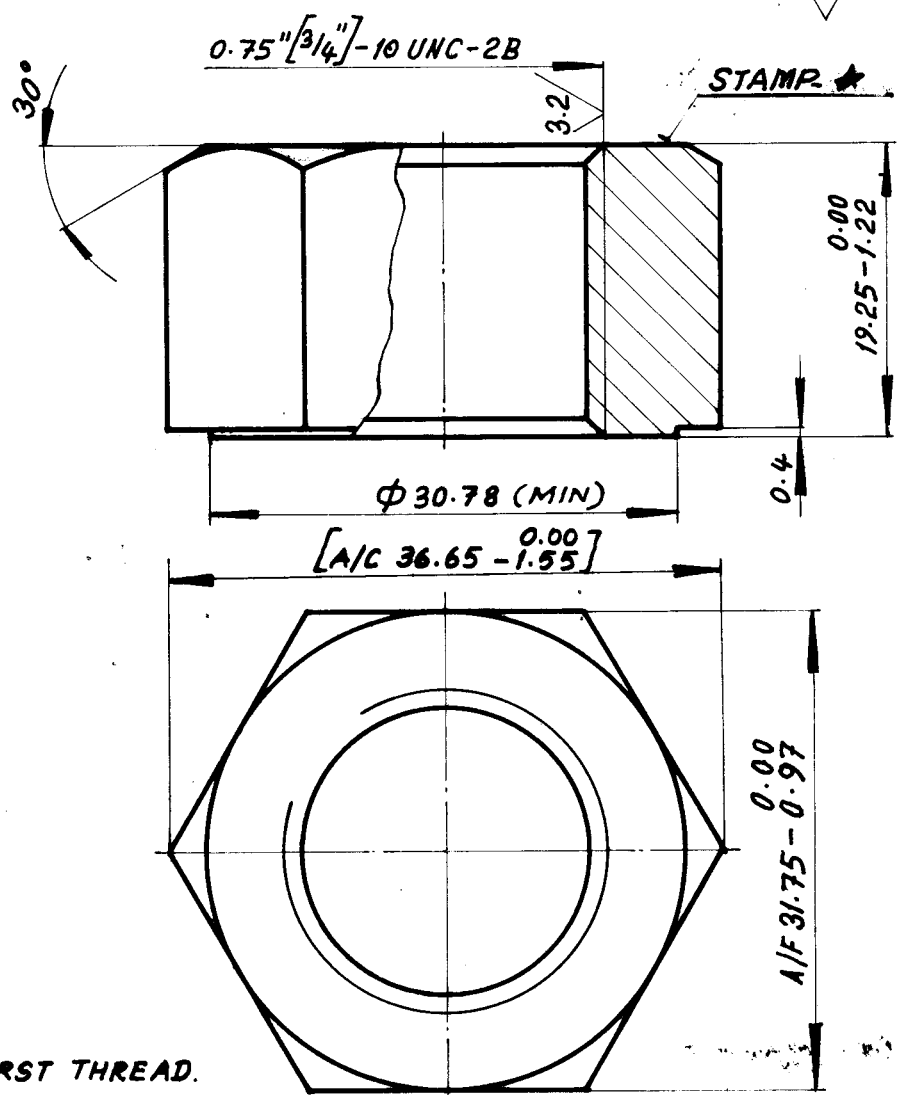
DIMENSIONS TO BE CONTROLLED WITHIN LIMITS AS SHOWN. MACHINING TOLERANCE ± 0.25 mm. UNLESS OTHERWISE SHOWN NON-MACHINING TOLERANCE $\pm$

CARD CODE	4 DRAWING NO. 4. V. 0000.13035	15	16 REV 17
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REV 02	DATE 4.6.90	ALTERED	CHECKED
1. NOTES 3, 4 & 5 ADDED.		STAMP GR. 4 WAS 4.	
2. RAW MATERIAL ASTM A 194-GR 4 WAS GR 2H.		DCN No. DATE: 00523	
		SRV: 90:10 4.6.90	

REV 03	DATE 19.9.90	ALT. No. 02	ADDED.
DCN No. 90:25	23.0.90		
REV. 04	DATE: 16.11.92	REVISION No. 5, UPDATED IN THE TABULATED DRGS.	



REV 05	DATE 10.3.99	ALT. No. 01	ADDED.
NOTES UPDATED.		DCN No. 0184	

NOTES:-

1. CHAMFER FIRST THREAD.
2. HEAVY HEX. NUT TO THIS DRG. IS AS PER AMERICAN STD.
3. NUT SHOULD BE MANUFACTURED AND TESTED AS PER LATEST APPLICABLE QUALITY PROCEDURE.
4. HARDNESS:- 24-38HRC.
5. PHOSPHATE COAT AS PER LATEST APPLICABLE QUALITY PROCEDURE FOR SL. No. 01 ONLY.

02	BAR 40 X 25	15024277	SOLUTION ANNEALED BHN 226-223	ASTM A194 GR. 2H (AISI TYPE 316)	46	P	0.25	93175874	GR.
	4-V-8000-13036/01							2203607	2H
01	BAR 40 X 25	15039340	Q & T	ASTM A194 GR. 4	10	P	0.25	93075589	GR.
	4-V-9051-13036/03							2200207	4
SL. No.	DESCRIPTION	MATL. CODE	HEAT TREATMENT	MATL. SPECN.	SCRAP SORT	A/C	GROSS WT. (KG)	COMP. CODE	STAMP
	DRG. No.								DRESSER PART No.



BHARAT HEAVY ELECTRICALS LIMITED
BOILER PLANT UNIT, TIRUCHIRAPALLI-620014

DEPT VL	CODE 340	SCALE 2:1	WEIGHT (kg.) 0.09	DRESSER DRG No:- 220 (1339) (REV. EK 519)	IT. No. 229
TITLE NUT 0.75\"[3/4\"]				DRAWN E.ATHI/ANNAVI	SIGN 22.3.79
				CHECKED K.B	K.M 23.3.79
				APPROVED D.K	27/3/79

DIMENSIONS TO BE CONTROLLED WITHIN LIMITS AS SHOWN. MACHINING TOLERANCE ± 0.25 mm. UNLESS OTHERWISE SHOWN NON-MACHINING TOLERANCE $\pm$

CARD CODE

4 DRAWING No.

4.V. 0000-13036

15

16 REV 17

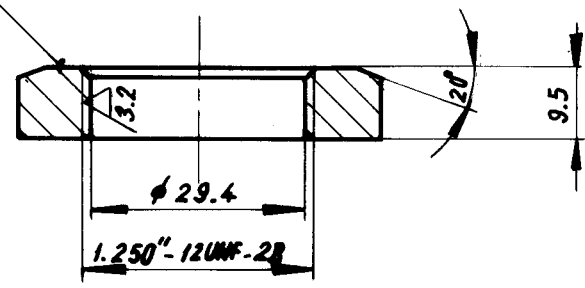
05

REV 01	DATE 10.00.00-13069	ALTERED	REV 02	DATE	ALTERED
CORPORATE DRG ID			CHECKED		
MAIN DRG. MADE AS TABULATED DRAWING AND SL. No. 2 ADDED IN TABULATION.					

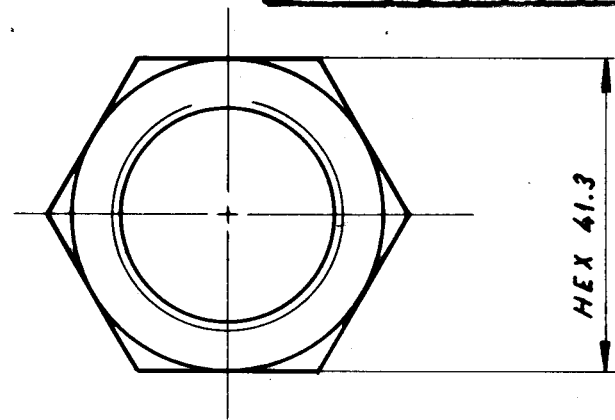
6.3 / 3.2

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STAMP *



MICROFILMED ON
ROLL 009522



- NOTE:-
1. 45° CHAMFER FIRST THREAD.
 2. THIS MATL. CAN BE SUBSTITUTED WITH AISI 416 FOR SL. No. 1 ONLY.

02	4-V-8816-13069	BAR	SOLUTION	ASTM A182-F316	15 024 365	1914 H	01	0.07
	1095703	Φ56 X 14	ANNEALED	(CERTIFY)	F316			0.27
01	4-V-9009-13069	BAR	ANNEALED	ASTM A582-416	15 924 258	1905 M	01	0.07
	1095701	Φ56 X 14	155 BHN	(CERTIFY)	416			0.27
SL. No.	DRAWING No.	DESCRIPTION	HEAT TREATMENT	MATL. SPECN.	MATL CODE	DRESSER TYPE No.		
	DRESSER PART No.				STAMP MARK *			

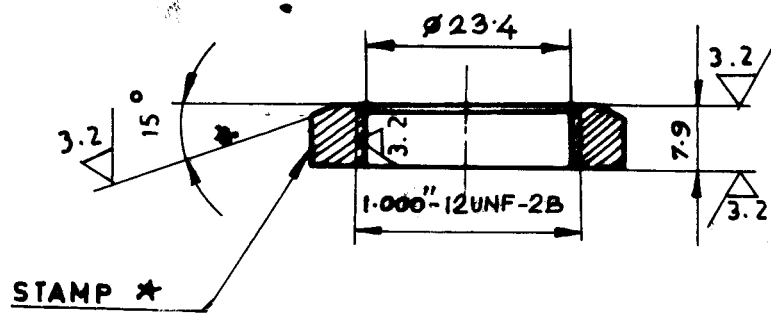


BHARAT HEAVY ELECTRICALS LIMITED
BOILER PLANT UNIT, TIRUCHIRAPALLI-620014

DEPT VL	CODE 340	SCALE 1:1	WEIGHT (kg) 0.07	DRESSER DRAW No:- 110957 [1446]	IT. NO. 102		
TITLE LOCK NUT				DRAWN	NAME A. Kumar	SIGN	DATE 16.7.79
				CHECKED	K. B	K. K. S	17.7.79
				APPROVED	D. K	27	4.8.79
DIMENSIONS TO BE CONTROLLED WITHIN LIMITS AS SHOWN. MACHINING TOLERANCE ± 0.25 mm. UNLESS OTHERWISE SHOWN NON-MACHINING TOLERANCE ±			CARD CODE	4 DRAWING NO. 4-V-0000-13069 15 16 REV 17 01			

REV 01	0000-13070	DATE	REV 02	DATE	ALTERED
01	0000-13070	CHECKED	02		CHECKED
SL. No. 82 ADDED.					

6.3 / 3.2



NOTE: 45° CHAMFER FIRST THREAD.



02	4-V-8824-13070	BAR 40x12.5	ASTM A182-F316	01	0.05	SOLUTION ANNEALED	0263103
		15 024 277		46	0.12	316	1912-30P/53
01	4-V-9005-13070	BAR 45x12.5	ASTM A582-416	01	0.05	ANNEALED 155 BHN	0263101
		15 924 358		40	0.15	416	1905H
SL.No.	DRG. No.	DESCRIPTION	MATL. SPECN.	NO. OFF	NET WT (kg)	HEAT TREATMENT	DRESSER PART NO.
		MATL CODE	(CERTIFY)	SCRAP SORT	GROSS WT (kg)	STAMP *	DRESSER TYPE NO.



BHARAT HEAVY ELECTRICALS LIMITED
BOILER PLANT UNIT, TIRUCHIRAPALLI-620014

05-249/A

[REV. EC 041]

DEPT VL	CDE 340	SCALE 1:1	WEIGHT (kg.) 0.05	DRESSER DRG. NO. 202631 (1369)	IT. NO. 102		
TITLE LOCKNUT				EC 011 DRAWN	NAME	SIGN	DATE
				CHECKED	K.B	K. H. H.	29.6.79
				APPROVED	D.K	Day	7.7.79
DIMENSIONS TO BE CONTROLLED WITHIN LIMITS AS SHOWN. MACHINING TOLERANCE ± 0.25 mm. UNLESS OTHERWISE SHOWN NON-MACHINING TOLERANCE $\pm$			CARD CODE	DRAWING NO. 4-V-0000-13070		15	16 REV 17
				01			

MICROFILMED ON.....
ROLL 00523 FRAME 031

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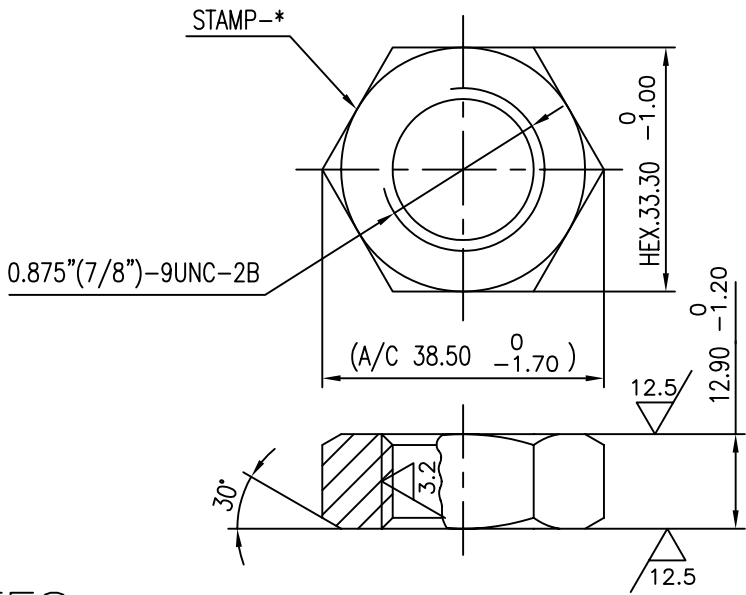
COBOPORATE DRG ID 0000-13070

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REV	DATE	ALTERED	G.V
03	04.08.05	CHD & APPD	E.A

96 CODE ADDED
DRG UPDATED
AND REDRAWN IN ACAD.
DCP NO:800498

6.3/12.5/3.2



NOTES:-

- 1. JAM NUT SHOULD BE MANUFACTURED AND TESTED AS PER APPLICABLE QUALITY DOCUMENTS.
- 2. HARDNESS:- 24-38 HRC.
- 3. PHOSPHATE COAT AS PER APPLICABLE QUALITY DOCUMENTS FOR SL.NO.01 ONLY.

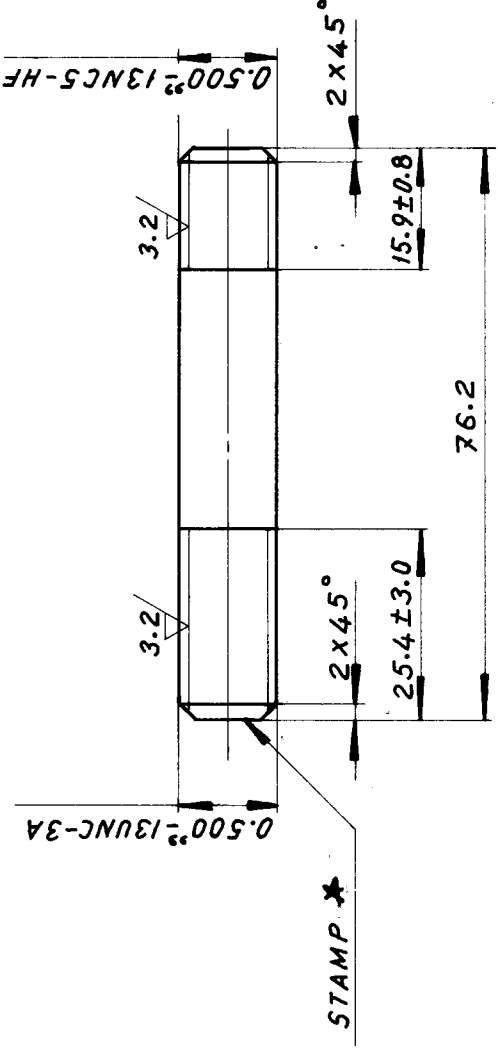
02	4-V-8939-13139	93176193	A182-F316 CERTIFY	SOLUTION ANNEALED	46	0.06	0.18	ø39x18	F316	
01	4-V-9456-13139/03	93075763 OR 96415569	A194-GR.4 CERTIFY	Q&T	10	0.06	0.18	ø39x18	GR.4	
SL NO.	DRAWING NO.	COMP.CODE	MATL SPECN	HEAT TREATMENT	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	DESCRIPTION	STAMP *	
NO OFF	DESCRIPTION	MATL CODE	MATL SPECN	HEAT TREATMENT	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	DRAWING No	ITEM No	
BHARAT HEAVY ELECTRICALS LTD., UNIT: HIGH PRESSURE BOILER PLANT. TIRUCHIRAPALLI 620014.					DRN	NAME G.VENKATESWARALU		SIGN	DATE 04.08.05	NO.OF VAR
		CHD	E.ATHIANNABI		04.08.05					
		APPD	E.ATHIANNABI		04.08.05					
DEPT VL		SCALE NTS	WEIGHT (KG). 0.06	REFERENCE INFORMATION				NO. OF ITEMS 132		
CODE 340				DR.DRG No: 221,SL.NO:724 REV: EF 280						
TITLE JAM NUT 0.875”(7/8”)				CARD CODE U 01	DRAWING NO. 4-V-0000-13139				REV 03	

REV	DATE	ALTERED	CHECKED
01	23.8.90	<i>[Signature]</i>	
REV	DATE	ALTERED	CHECKED
02	24.3.97	<i>[Signature]</i>	

Sl.No:2 ADDED.
DCN No. SRV:90:253+23.8.90

NOTES UPDATED.
DCN:SR:0106

12.5 / 3.2



NOTES:-

- 1. STUD SHOULD BE MANUFACTURED AND TESTED AS PER LATEST APPLICABLE QUALITY PROCEDURE.
- 2. PHOSPHATE COAT AS PER LATEST APPLICABLE QUALITY PROCEDURE FOR SL. No. 01 ONLY.

02	4-V-8000-13279/01	BAR ϕ 20 x 85	CARBIDE SOLUTION TREATED BHN 223 MAX.	15024241	P	46 B6M
	32306 05	93175806		ASTM A193-B6M (AISI TYPE 316)		226 0.21
01	4-V-9606-13279/01	BAR ϕ 20 x 85	Q & T 26-30 HRC	15 039 084	P	20 B7
	3230105	93075781		ASTM A193-B7		226 0.21
Sl.	DRG. No.	DESCRIPTION	HEAT TREATMENT	MATL CODE	A/C	STAMP
No	DRESSER PART No.	COMP. CODE		MATL SPEC		SCRAP SORT
						ITEM No.
						GROSS WT [kg]



Bharat Heavy Electricals Ltd.,
BOILER PLANT UNIT
TIRUCHIRAPALLI-620 014

DEPT.	V/L	TOL. FOR UN TOL	SCALE	WEIGHT (kg)	(1356) (REV:- EN 305)	ITEM NO.
CODE	340	M/C/D DIM. IS ± 0.4 mm.	1:1	0.08	DRESSER DRG.No. 323	226

DRN	NAME	SIGN	DATE
CHD	R.L.	<i>[Signature]</i>	05/01/82
APPD	K.S.R.	<i>[Signature]</i>	13.01.82
	D.K.	<i>[Signature]</i>	13.1.82

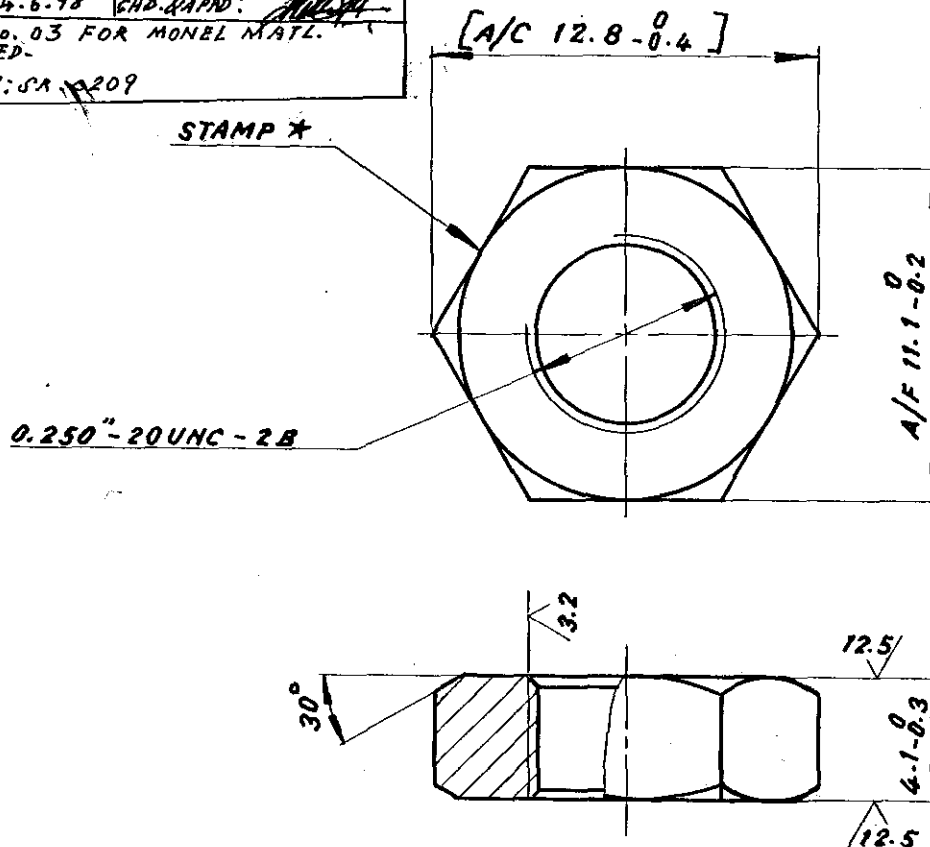
TITLE	CARD CODE	DRAWING NO.	REV
STUD-0.500" [1/2]	U 01	4-V-0000-13279	02

05-249/C

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REV	DATE	ALTERED	REV	DATE	ALTERED
01	24.1.85	CHD. <i>M. Jain</i>	02	24.3.97	CHD. <i>KAPAD: M. Jain</i>
MAIN DRG. MADE AS TABULATED DRG. AND SL. No. 02 ADDED.			NOTES UPDATED.		
03	4.6.98	ALT: <i>M. Jain</i> CHD. <i>KAPAD: M. Jain</i>	DCH: SR: 0186		
SL. No. 03 FOR MONEL MATL. ADDED.					
DCN: SA 1209					

6.3 / 12.5 / 3.2



NOTES:-

- HEX. JAM NUT IN THIS DRG. IS AS PER AMERICAN STD. B18.2.2 - 1972.
- JAM NUT SHOULD BE MANUFACTURED AND TESTED AS PER LATEST APPLICABLE QUALITY PROCEDURE.
- HARDNESS:- 24-38 HRC
- PHOSPHATE COAT AS PER LATEST APPLICABLE QUALITY PROCEDURE. } FOR SL. No. 01 ONLY.

03	4-V-88YK-13328	BAR ϕ 40 x 10 93176387	K-500	MONEL K-500	01	0.01
02	4-V-8927-13328/01	BAR ϕ 16 x 10 93175087	SOLUTION ANNEALED F 316	15 024 313	01	0.01
			ASTM A182 F316	46	0.02	
01	4-V-9770-13328/01	BAR ϕ 16 x 10 93076072	NORMALISED A105	15039138	01	0.01
			SA 105	10	0.02	
SL.No.	DRAWING No.	DESCRIPTION	HEAT TREATMENT	MATL CODE	No.OFF	NET WGT kg
		COMP. CODE	STAMP *	MATL SPECN (CERTIFY)	SCRAP SORT	GROSS WGT kg



Bharat Heavy Electricals Ltd.,
BOILER PLANT UNIT
TIRUCHIRAPALLI-620 014

DRN	NAME	SIGN	DATE
M.R.C	<i>M. Jain</i>		19.07.82
CHD	K.S. RAJU	<i>K.S. Raju</i>	19.07.82
APPO	D.K	<i>D.K</i>	20.7.82

DEPT. VL	GRADE OF UNTOOL. DIM C/M/F		SCALE 	WEIGHT (kg) 0.01	DRG. No. 221[REV. EF 280] DRESSER [SL. No. 724]	ITEM NO. 132
CODE 340						
TITLE JAM NUT [1/4"]				CARD CODE U 01	DRAWING NO. 4-V-0000-13328	REV 03

MICROFILMED ON
ROLL: 00522
FRAME: 364

1. STUD SHOULD BE MANUFACTURED AND TESTED AS PER LATEST APPLICABLE QUALITY PROCEDURE.

FORGOTTEN

LATEST APPLICABLE QUALITY PROCEDURE FOR ST. No. 01 ONLY.

ROLL 005219 DATE 1346



TP-DG 4-V-7000-10006
CORPORATE DRG ID

REV 02
DATE 3.7.81
ALTERED
CHECKED

Y. PERUMAL
3.2

1) ALL DIMENSIONS ARE CHANGED FROM INCH UNITS TO METRIC UNITS EXCEPT THREAD DIMENSION.
2. RAW MATL SIZE $\phi 80 \times 50$ WAS A/F 60.3 X 44.5
3. MATL. CODE ADDED
4. GROSS WEIGHT 1.97 WAS 1.36

B

0.4 APPROX

C

ϕD

30°

A

(2 3/8")

STD. SCR. SIZE	T.P.I. UN	STD. HEX. A = ϕD	B	C APPROX.	MATERIAL	PART NO	RAW MATL. SIZE	WT. KG	S.L. NO
1 1/2	8UN-28	60.3	38.1	69.67	ASTM A194 GR. 4 PRODUCT ATTEST	SSSS 887	$\phi 80 \times 50$	0.47	1

MICROFILMED ON
RC 005213 FRAME 3810

NOTE:
1. BEARING SURFACES SHALL BE FLAT AND AT RIGHT ANGLES TO THE AXIS OF THE THREAD HOLE WITHIN 0.300 T.I.R.
2. OIL QUENCHED NUTS TO MEET ASTM SPEC. A194 GR 4
HARDNESS 248-352.
BREAK ALL SHARP CORNERS & REMOVE BURRS.

		15039344 OR 96 415 536			20		1.97		231
NO OFF	DESCRIPTION	MATL. CODE	FINL. MATL.	HEAT TREATMENT	SCR-AP SORT	NET WT. KG	GROSS WT. KG	DRG. NO.	ITEM NO



05-249/A

BHARAT HEAVY ELECTRICALS LIMITED
BOILER PLANT UNIT, TIRUCHIRAPALLI-620014

DEPT	CODE	SCALE	WEIGHT (kg)	S.L. NO. 616 D.D. NO: STI-117-F/EC962	IT. NO.	
TITLE YOKE ROD NUT				DRAWN S.J.W	SIGN JW	DATE 1-2-79
				CHECKED VR	SIGN 2	
				APPROVED JA	SIGN R	

DIMENSIONS TO BE CONTROLLED WITHIN LIMITS AS SHOWN. MACHINING TOLERANCE ± 0.25 mm UNLESS OTHERWISE SHOWN NON-MACHINING TOLERANCE $\pm$

CARD CODE

4 DRAWING NO.
4-V-7000-10006

15
16 REV 17

CAUTION
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APPL. 1775 RWA, QW3, QW3, WA
DRESSER 1706 RWD
TYPE NO. 1785 WA

TP-DG 4-V-7000-10006
CORPORATE DRG ID

00001-000000

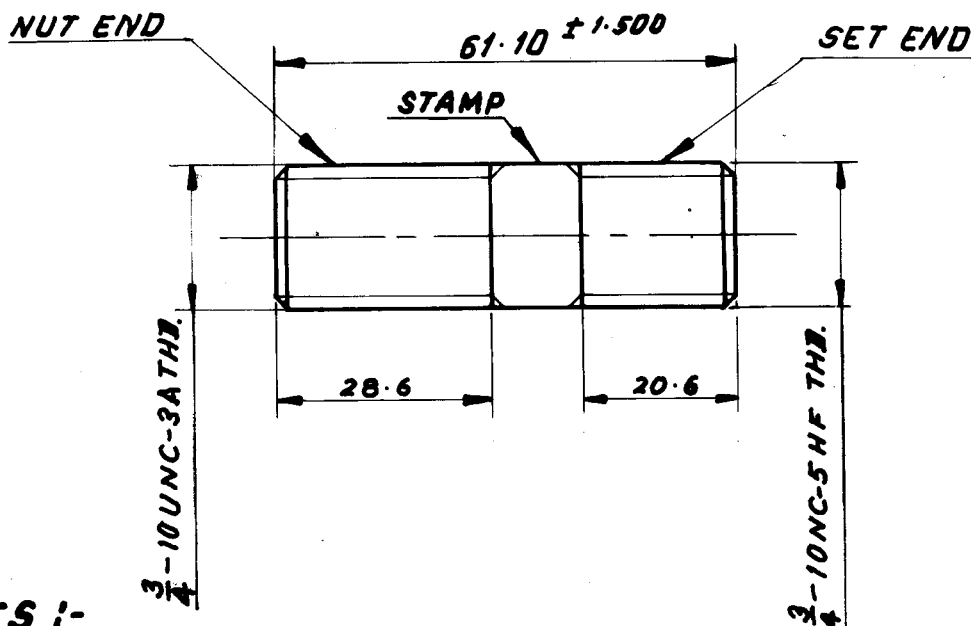
BASIC TYPE 1739 W.D
SIZE A-4

REV	DATE	ALTERED	BY
01	16-9-83	CHECKED	SE
02	20-6-97	CHECKED & APPD.	WJ.

1. NOTE 2, SHERADIZE
CHANGED TO PHOSPHATING

NOTES UPDATED.
DEN-NO.SV:0436

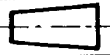
3.2

**NOTES :-**

- 45° CHAMFER FIRST THREAD
- PHOSPHATE COAT AS PER LATEST APPLICABLE QUALITY PROCEDURE.

MICROFILMED ON

ROLL 100523 FRAME 328

φ 22 x 70	15 039 096	ASTM A193 GR. B7 CERTIFY	QUENCHED & TEMPERED 8@32 HRC	20	0.14	0.21	—	226	
NO. OFF.	DESCRIPTION	MATL. CODE	FINAL MATL.	HEAT TREATMENT	SCRAM SORT	NET WT. (KG)	GROSS WT. (KG)	DRAWING NO.	ITEM NO.
		BHARAT HEAVY ELECTRICALS LIMITED BOILER PLANT UNIT, TIRUCHIRAPALLI-620014							
05-249/A									
DEPT VL	CODE 340		SCALE 1:1	WEIGHT (kg.) —	DR. DRG. NO. T-2991AF/CA808 PART NO. STUD-25		SL. NO. 822		
TITLE STUD 25					DRAWN	NAME K.P	SIGN K.P	DATE 24.4.79	
					CHECKED	VL	2	24.4.79	
					APPROVED	JA	11	24.4.79	
DIMENSIONS TO BE CONTROLLED WITHIN LIMITS AS SHOWN. MACHINING TOLERANCE ± 0.25 mm. UNLESS OTHERWISE SHOWN NON-MACHINING TOLERANCE ±				CARD CODE	4-V-7000-10059		02		

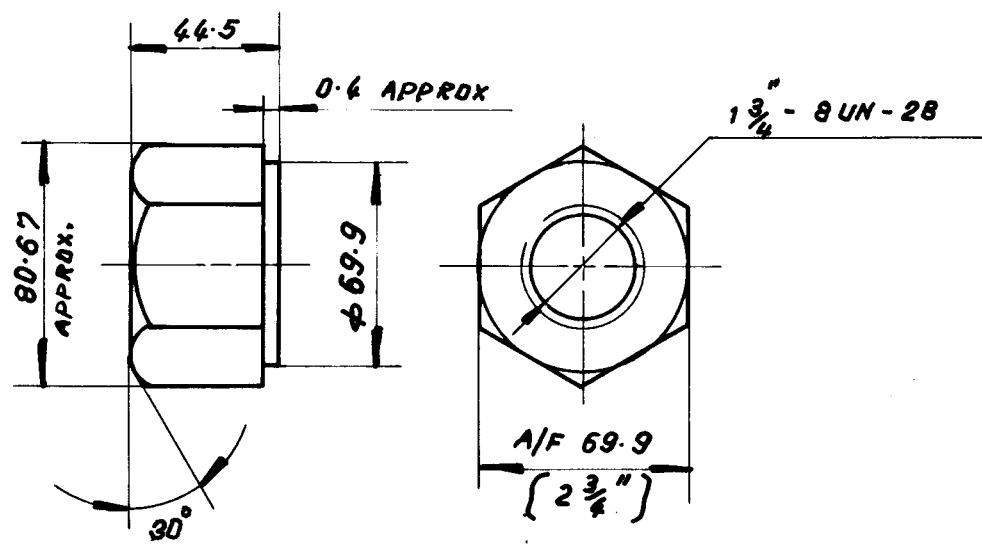
4 DRAWING NO.

15

16 REV 17

CAUTION THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LTD IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY.

- 1) INCH UNITS ARE CHANGED TO METRIC UNITS EXCEPT THREAD DIMENSION.
1. MATL. ASTM A194 GR. 4 WAS ASTM A194 GR. 2H
2. RAW MATL. SIZE $\phi 80 \times 60$ WAS A/F 69.6 X 50
3. MATL. CODE ADDED
4. GROSS WEIGHT 2.37 WAS 2.02



NOTE :-

1. BEARING SURFACES SHALL BE FLAT AND AT RIGHT ANGLES TO THE AXIS OF THE THREAD HOLE WITH IN 0.300 T.I.R
2. OIL QUENCHED NUTS TO MEET ASTM SPEC. A194 GR. 4
BRINELL HARDNESS 248 - 352
3. SHARP CORNERS TO BE REMOVED.

MICROFILMED ON
ROLL 100523 FRAME 31891

APPLICABLE TYPE-NOS.
1759 WA, 1785 WA
1775 RWA, 8WB, QWD.
1775 WR, 1705 RWD.

	$\phi 80 \times 60$	15 039 34 4 OR 96 415 51 4	ASTM A194 GR. 4 PRODUCT ATTEST FINAL MATL.		20	0.74	2.37		232
No. OFF	DESCRIPTION	MATL. CODE	HEAT TREATMENT	SCRAP SORT	NET Wt (kg)	GROSS Wt (kg)	DRG No.	ITEM No.	



05-249/A

BHARAT HEAVY ELECTRICALS LIMITED
BOILER PLANT UNIT, TIRUCHIRAPALLI-620014

DEPT	CODE		SCALE /	WEIGHT (kg)	PART No. SSSS 1117 DR. DRG No. STI-117-F/EC962		616	
TITLE YOKE ROD NUT					DRAWN	NAME F.R	SIGN 	DATE 27-3-77
					CHECKED	VR		
					APPROVED	JA		

DIMENSIONS TO BE CONTROLLED WITHIN LIMITS AS SHOWN. MACHINING TOLERANCE ± 0.25 mm. UNLESS OTHERWISE SHOWN NON-MACHINING TOLERANCE $\pm$

CARD CODE

4 DRAWING NO.

4-V-7001-10028 02

15 16 REV 17

TP-DG-4-V-7001-10060
CORPORATE DRG ID

FIRST ANGLE PROJECTION (ALL DIMENSIONS IN MILLIMETRES)

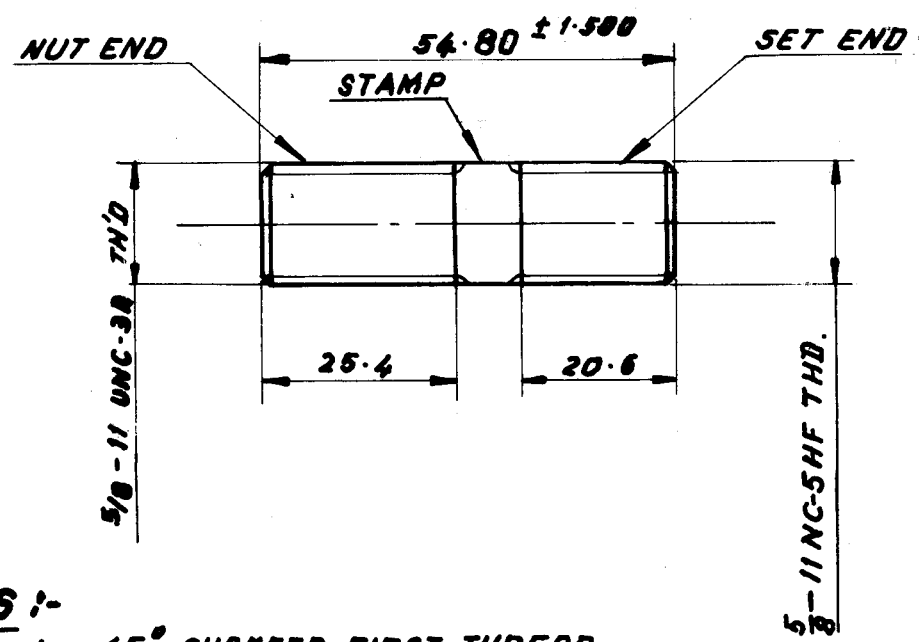
REV 01	DATE 15.3.83	ALTERED	CHECKED	REV 02	DATE 20.6.97	ALTERED	CHECKED
				FAPPD: VV.			

1. NOTE 2 - SHERADIZE CHANGED TO PHOSPHATING.

NOTES UPDATED.
DCN. NO. SY. 0436

3.2

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NOTES :-

1. 45° CHAMFER FIRST THREAD
2. PHOSPHATE COAT AS PER LATEST APPLICABLE QUALITY PROCEDURE.

NOT REPRODUCED ON
00593 3977

	φ 20 x 60	15 039 084	ASTM A193 GR. B7 CERTIFY	QUENCHED & TEMPERED 26-32 HRC	20	0,090-15	—	226	
NO. OFF	DESCRIPTION	MATL. CODE	FINAL MATL.	HEAT TREATMENT	SCRM SORT	NET WT. (KG)	GROSS WT. (KG)	DRAWING NO.	ITEM NO.



BHARAT HEAVY ELECTRICALS LIMITED
BOILER PLANT UNIT, TIRUCHIRAPALLI-620014

DEPT VL	CODE 340		SCALE 1:1	WEIGHT (kg.) —	DR. DRG. NO. T-2901AF/CA800	REV. NO. 022	
STUD 51					DRAWN H.R.	SIGN.	DATE 24.4.79
					CHECKED V.H.	SIGN.	DATE 24.4.79
					APPROVED J.A.	SIGN.	DATE 24.4.79

DIMENSIONS TO BE CONTROLLED WITHIN LIMITS AS SHOWN. MACHINING TOLERANCE ± 0.25 mm. UNLESS OTHERWISE SHOWN NON-MACHINING TOLERANCE ±

CARD CODE

4-DRAWING NO. 4-V-7001-10060	15	16 REV 17
------------------------------	----	-----------

COMP CODE: 930701000000

APPL. TYPE 1749WA

SIZE A0

FP-DO 4-V-7006-10109
CORPORATE DRG ID

REV 02 DATE 3-1-80
V. PERUMAL
CHECKED

ALTERED
CHECKED

3-2

1. MATL. ASTM A194 GR. 4 WAS
ASTM A194 GR 2H
2. RAW MATL. SIZE $\phi 50 \times 40$
WAS A/F 41.3 X L 0
3. MATL. CODE & NOTE-3 ADDED
4 GROSS WEIGHT 0.62 WAS 0.45

25

0.4 APPROX

47.68 APPROX

$\phi 41.3$

30°

1.8 UNC-2B THD

A/F 41.3 (1 5/8)

NOTES :-

MICROFILMED ON
ROLL 00523 FRAME 253

1. OIL QUENCHED NUTS TO MEET ASTM SPEC. A194 GR 4
BRINELL HARDNESS 248 - 352
2. BREAK ALL SHARP CORNERS AND REMOVE BURRS
3. BEARING SURFACES SHALL BE FLAT AND AT RIGHT ANGLES TO
THE AXIS OF THE THREAD HOLE WITH IN 0.300 T.I.R

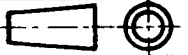
$\phi 50 \times 40$	15039225	ASTM A194 GR. 4 PRODUCT ATTEST	20	0.20	0.62	231			
NO OFF	DESCRIPTION	MATL. CODE	FINAL MATL.	HEAT TREATMENT	SCRAP SORT	NET Wt (kg)	GROSS Wt (kg)	DRAWING No	ITEM No

APPL
DRESSER
TYPE NOS.



05-249/A

BHARAT HEAVY ELECTRICALS LIMITED
BOILER PLANT UNIT, TIRUCHIRAPALLI-620014

DEPT	CODE		SCALE 1:1	WEIGHT (kg.)	DRESSER DRG No ST1-117F/EC962 PART No SSSS 200/SI No 2619		
YOKE ROD NUT					NAME HARI	SIGN	DATE 9-1-80
					CHECKED	APPROVED	4-4-80
DIMENSIONS TO BE CONTROLLED WITHIN LIMITS AS SHOWN. MACHINING TOLERANCE ± 0.25 mm. UNLESS OTHERWISE SHOWN NON-MACHINING TOLERANCE $\pm$				CARD CODE	4 DRAWING No. 4-V-7006-10109 01	15 16 REV 17	

1735 WA

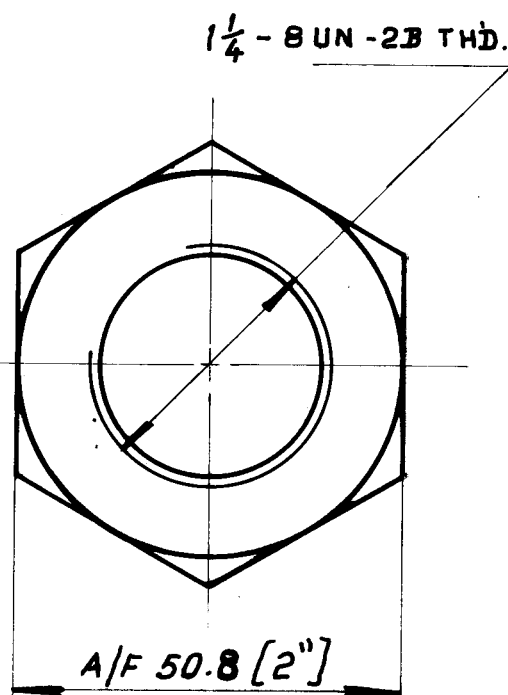
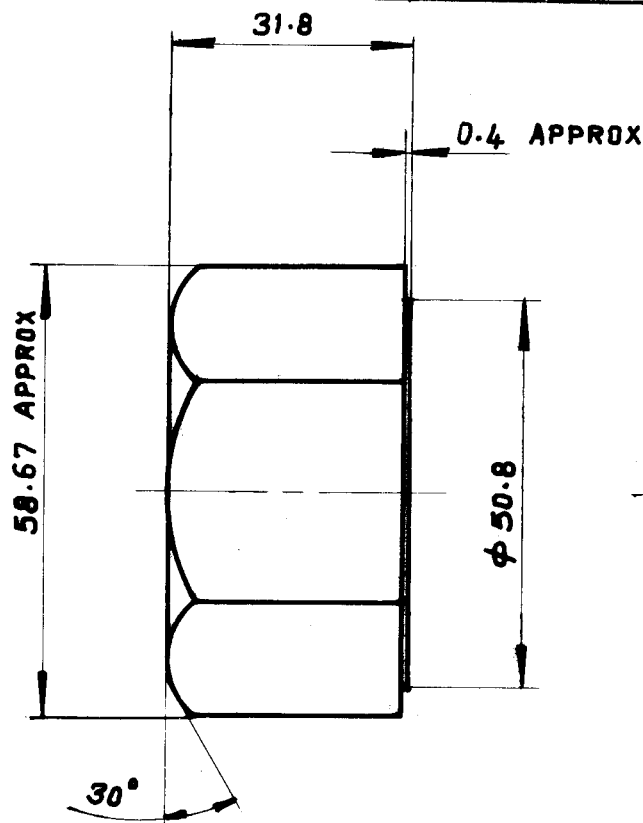
60101-9006-10109

FP-DO 4-V-7006-10109
CORPORATE DRG ID

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REV 01	DATE 3.7.81	ALTERED Y. PERUMAL	REV 02	DATE	ALTERED
		CHECKED SAT			CHECKED

1. MATL. ASTM A194 GR. 4 WAS ASTM A194 GR. 2H
2. RAW MATL. SIZE $\phi 63 \times 50$ WAS A/F 50.8 $\times$ 45
3. MATL. CODE ADDED
4. GROSS HEIGHT 1.22 WAS 0.80



NOTE:-

1. BEARING SURFACES SHALL BE FLAT AND AT RIGHT ANGLES TO THE AXIS OF THE THREAD HOLE WITHIN 0.300 T.I.R
2. OIL QUENCHED NUTS TO MEET ASTM SPEC. A194 GR 4 BRINELL HARDNESS 248-352
3. BREAK ALL SHARP CORNERS AND REMOVE BURRS.

MICROFILMED ON
ROLL 100523 FRAME 223

	Φ63 x 50	15039227	ASTM A194 GR. 4 PRODUCT		20	0.40	1.22		232
NO OFF	DESCRIPTION	MATL. CODE	ATTEST FINAL MATL.	HEAT TREATMENT	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	DRAWING NO	ITEM NO

APPL. DRESSER TYPE NOS



05-249/A

BHARAT HEAVY ELECTRICALS LIMITED
BOILER PLANT UNIT, TIRUCHIRAPALLI-620014

DEPT	CODE		SCALE 1:1	WEIGHT (kg.)	DRESSER DRG No ST-117F/EC962 PART No 5588 886 / SL No 2619	
TITLE YOKE ROD NUT					DRAWN SIGN	DATE 9.1.80
					CHECKED	4-4-80
					APPROVED	

DIMENSIONS TO BE CONTROLLED WITHIN LIMITS AS SHOWN. MACHINING TOLERANCE ± 0.25 mm. UNLESS OTHERWISE SHOWN NON-MACHINING TOLERANCE $\pm$

CARD CODE

4 DRAWING No.

15 16 REV 17

4-V-7006-10110

REV 02

DATE 26.9.77

ALTERED

CHECKED

APPROVED

3.2

1. NOTE 2 - SHERADIZE CHANGED TO PHOSPHATING.

NOTES UPDATED. DCN. NO. SV. 0436

NUT END

STAMP

SET END

41.30

19.1

12.7

± 1.500

1/2-13UNC-3ATM

1/2-13UNC-5 HFTM

NOTE :-

1. 45° CHAMFER FIRST THREAD.

2. PHOSPHATE COAT AS PER LATEST APPLICABLE QUALITY PROCEDURE.

MICROFILMED ON

ROLL 05523 FRAME 16A

φ 16 x 55	15089 115	ASTM A193 GR. B7 CERTIFY	QUENCHED & TEMPERED 26-38 HRC	20	0.04	0.09	226
NO OFF	DESCRIPTION	MATL. CODE	FINAL MATL.	HEAT TREATMENT	SCRA NET SORT (KG)	GROSS NET (KG)	ITEM NO

06-249/A

DEPT VL

CODE 340

SCALE 2:1

WEIGHT (kg.)

STUD 52

20.266 NO. T 2991 A / K 808

PART NO. STUD 52. SL. NO. 2481

DRAWN J. NARI

CHECKED

APPROVED

DATE 26.2.80

20.5.80

20.5.80

DIMENSIONS TO BE CONTROLLED WITHIN LIMITS AS SHOWN. MACHINING TOLERANCE ± 0.25 mm. UNLESS OTHERWISE SHOWN NON-MACHINING TOLERANCE ±

CARD CODE

4 DRAWING NO. 4-V-7022-10123 02

COMP. CODE : 930704220000

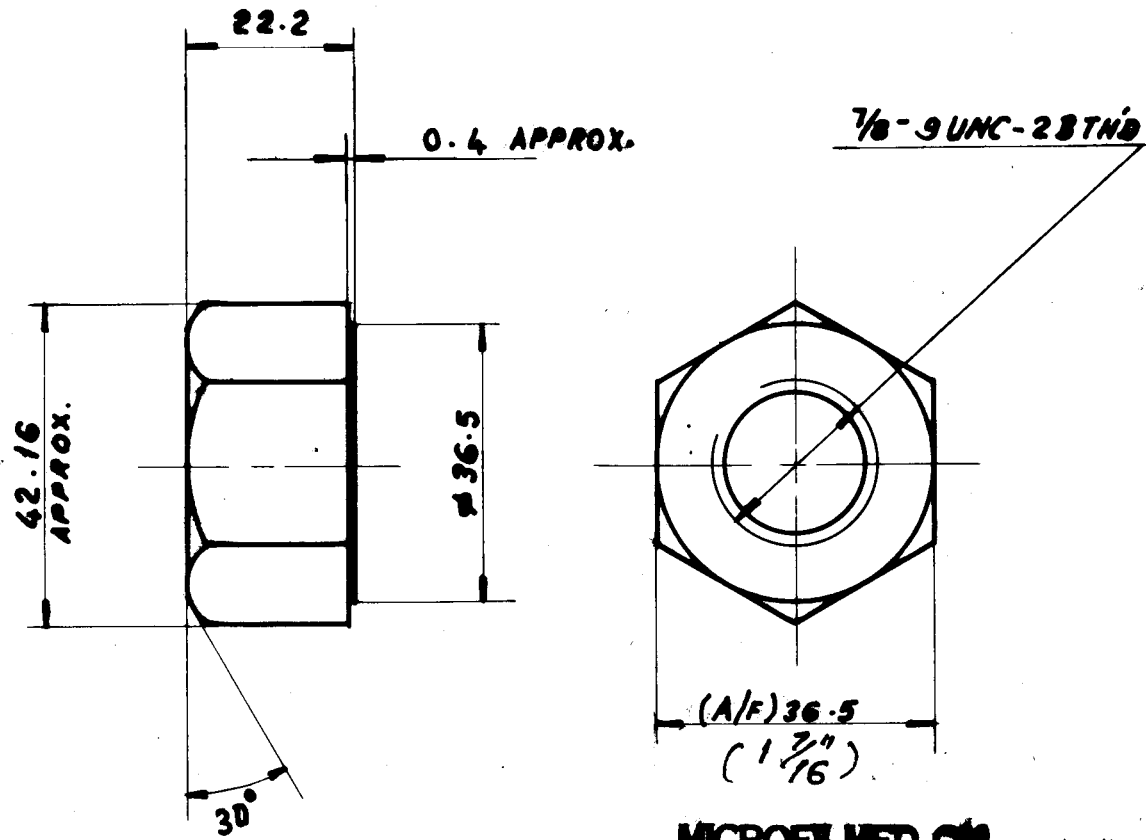
DATE 26.9.77

REV 02

3.2

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- 1. MATL. ASTM A194 Gr. 4 WAS ASTM A 194 Gr. 2H
- 2. RAW MATL. SIZE $\phi 50 \times 35$ WAS A/F 36.5 X 30
- 3. MATL. CODE & NOTE-3 ADDED
- 4. GROSS WEIGHT 0.54 WAS 0.27



MICROFILMED ON
ROLL 50523 FRAME 162

NOTES:-

- 1. OIL QUENCHED NUTS TO MEET ASTM SPEC. A 194 GRADE 4 BRINELL HARDNESS 248-352.
- 2. BREAK ALL SHARP CORNERS AND REMOVE BURRS.
- 3. BEARING SURFACES SHALL BE FLAT AND AT RIGHT ANGLES TO THE AXIS OF THE THREAD HOLE WITHIN 0.0025

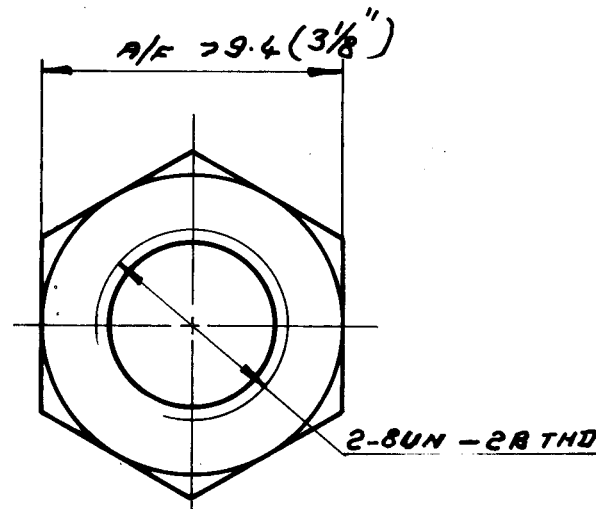
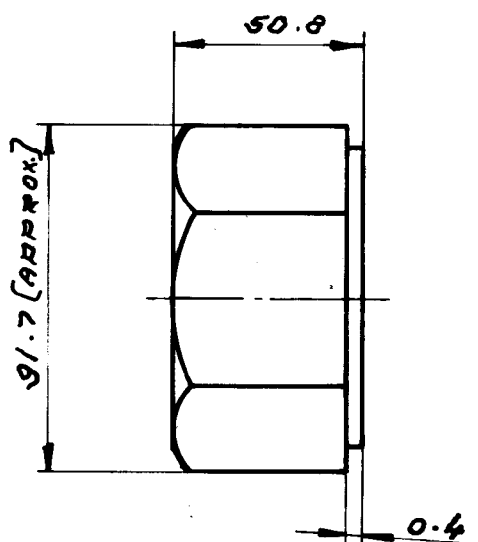
	Φ50X35	15039225 OR 96415511	ASTM A194 GR. 4 PRODUCT ATTEST	20	0.13	0.54		231
NO OFF	DESCRIPTION	MATL. CODE	FINAL MATL.	HEAT TREATMENT	SCRAP NET SORT (KG)	GROSS WT (KG)	DRAWING NO	ITEM NO.

APPL. DRESSER TYPE NO.			BHARAT HEAVY ELECTRICALS LIMITED				
	05-249/A		BOILER PLANT UNIT, TIRUCHIRAPALLI-620014				
DEPT	CODE		SCALE 1:1	WEIGHT (kg.)	DR. DRG. NO. STI-117-F/EC982 PART. NO. 3SSS134/SC. NO. 2619		
TITLE YOKE ROD NUT				DRAWN NAME HALLI	SIGN HALLI	DATE 20-5-80	
				CHECKED V. P			
				APPROVED S. R			
DIMENSIONS TO BE CONTROLLED WITHIN LIMITS AS SHOWN. MACHINING TOLERANCE ± 0.25 mm. UNLESS OTHERWISE SHOWN NON-MACHINING TOLERANCE $\pm$				CARD CODE	4 DRAWING NO. 4-V-7022-10125-01		

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REV 01	DATE 11/03/04	ALTERED
CHECKED	REV 02	DATE
		ALTERED
		CHECKED

3.2



NOTE:

1. BEARING SURFACES SHALL BE FLAT AND AT RIGHT ANGLES TO THE AXIS OF THE THREAD HOLE WITHIN 0.304 T.I.R.
2. OIL QUENCHED NUTS TO MEET ASTM SPEC. A194 Gr. 4 BRINELL HARDNESS 248 - 352.
3. SHARP CORNERS TO BE REMOVED.

MF 758023

	φ100x60	(FORGED BRASS ASTM A194 FROM φ80) 15039 344 OR 96415 516	Gr. 4 PRODUCT ATTEST		20	1.37	3.69		231
No OFF	DESCRIPTION	MATL. CODE	FINAL MATL.	HEAT TREATMENT	SCRAP SORT	NET Wt. (kg)	GROSS Wt. (kg)	DRG No.	ITEM No.



Bharat Heavy Electricals Ltd.,
BOILER PLANT UNIT
TIRUCHIRAPALLI-620 014

DRN	NAME	SIGN	DATE
CHD	K.P. LEON	[Signature]	10-2-84
APPD	V.PERUMAL	[Signature]	22-1-84
	S.RASHID	[Signature]	

DEPT.	GRADE OF UNTO. DIM	SCALE	WEIGHT (kg)	DR. DRG. No: ST/117-117-117-117
CODE	C/M/F	1:2		PART No: 5335
				SL. No: 6237

TITLE	CARD CODE	DRAWING NO.	REV
Yoke Rod Nut	U 01	4-V-7081-10304	

FP-DG-4-V-7501-10166
CORPORATE DRG ID

REV 02
DATE
ALTERED
CHECKED

1. MATL ASTM A194 Gr. 4 WAS
ASTM A194 Gr. 2H
2. RAW MATL. SIZE $\phi 32 \times 30$
WAS A/F 27 X 25
3. MATL. CODE 15039222
ADDED
4. GROSS WT. 0.19 WAS 0.12

3.2

STAMP

$\frac{5}{8}$ -11 UNC-2B TH'D

31.17

A/F 27 [$1\frac{1}{16}$ "]

0.4

15.9

30°

NOTES:-

1. OIL QUENCHED NUTS TO MEET ASTM SPEC. A 194 GRADE 4
BRINELL HARDNESS 248 - 352.
2. UNSPECIFIED MACHINING TOLERANCES ± 0.25 MM.
3. 45° CHAMFER FIRST THREAD.
4. SHARP CORNERS TO BE REMOVED.
5. FINISH - ZINC PLATE.

ROLL 00322 FRAME 020

NO OFF	DESCRIPTION	MATL. CODE.	FINAL MATL.	HEAT TREATMENT	SCRAP SORT	NET WE. IN(Kg)	GROSS WE. IN(Kg)	DRAWING. NO.	ITEM NO.
	$\phi 32 \times 30$	15 039 222 OR 96415537 AMENDED CERTIFY	ASTM A194 Gr. 4		20	0.05	0.19		505



Bharat Heavy Electricals Ltd.,

BOILER PLANT UNIT

TIRUCHIRAPALLI-620 014

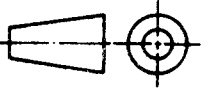
DRN
NAME
SAHAYAM.

CHD
V. PERUMAL

APPD
S. RASHID

SIGN
[Signature]

DATE
9-3-81

DEPT. VL	GRADE OF UNTO. DIM C/M/F		SCALE 2:1	WEIGHT (kg)	REF TO ASSY / OLD DRG DR. DRG. NO. 501-11-P/EC962 PART. NO. 132 Z SE. NO. 602.	ITEM NO.
CODE 340						

TITLE
NUT

CARD
CODE
U 01

DRAWING NO.
4-V-7501-10166 01

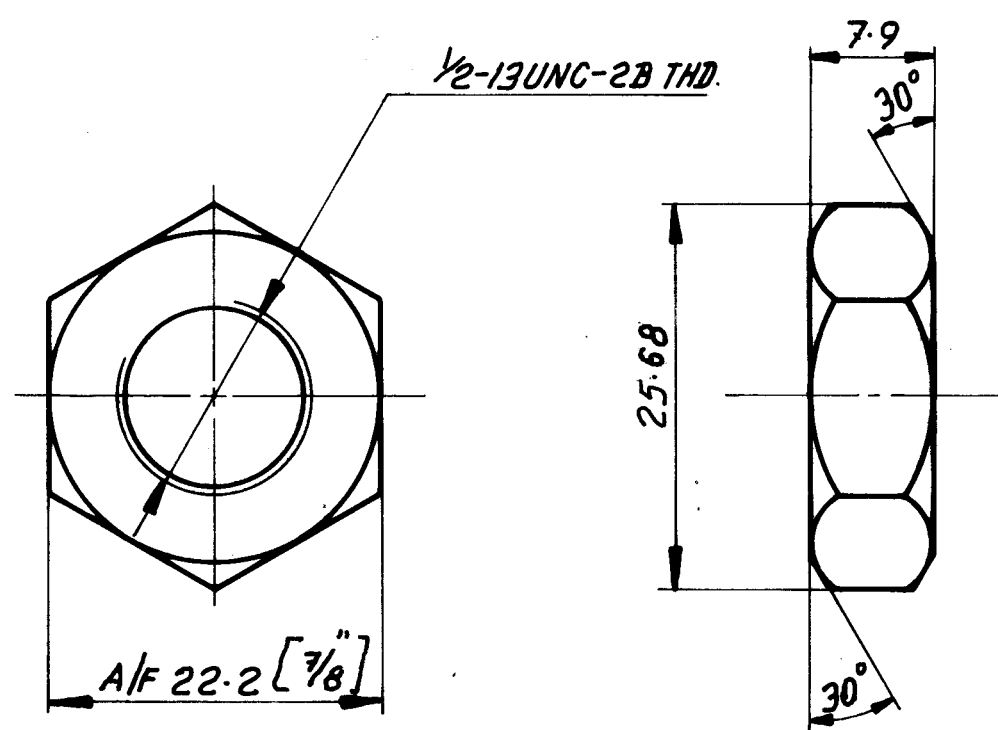
REV

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1520 VV-0W

P-DG 4-V-7501-10170 CORPORATE DRG ID	REV 02	DATE 20.6.97	ALTERED	CHECKED SAPPD: V2.
	1. MATL. ASTM A194 Gr. 4 WAS ASTM A194 Gr. 2 2. RAN MATL. SIZE $\phi 32 \times 25$ MM A/F 22.2 X 20 3. MATL. CODE 15039222 ADDED 4. GROSS WL. 0.16 WAS 0.06			

32



NOTES:-

1. SHARP CORNERS TO BE REMOVED.
2. 45° CHAMFER FIRST & LAST THREAD
3. UNSPECIFIED MACHINING TOLERANCES TO 0.25 mm.
4. TREATED NUTS TO MEET ASTM SPEC. A194 Gr 4
BRINELL HARDNESS 248 - 352
5. FINISH - ZINC PLATE.

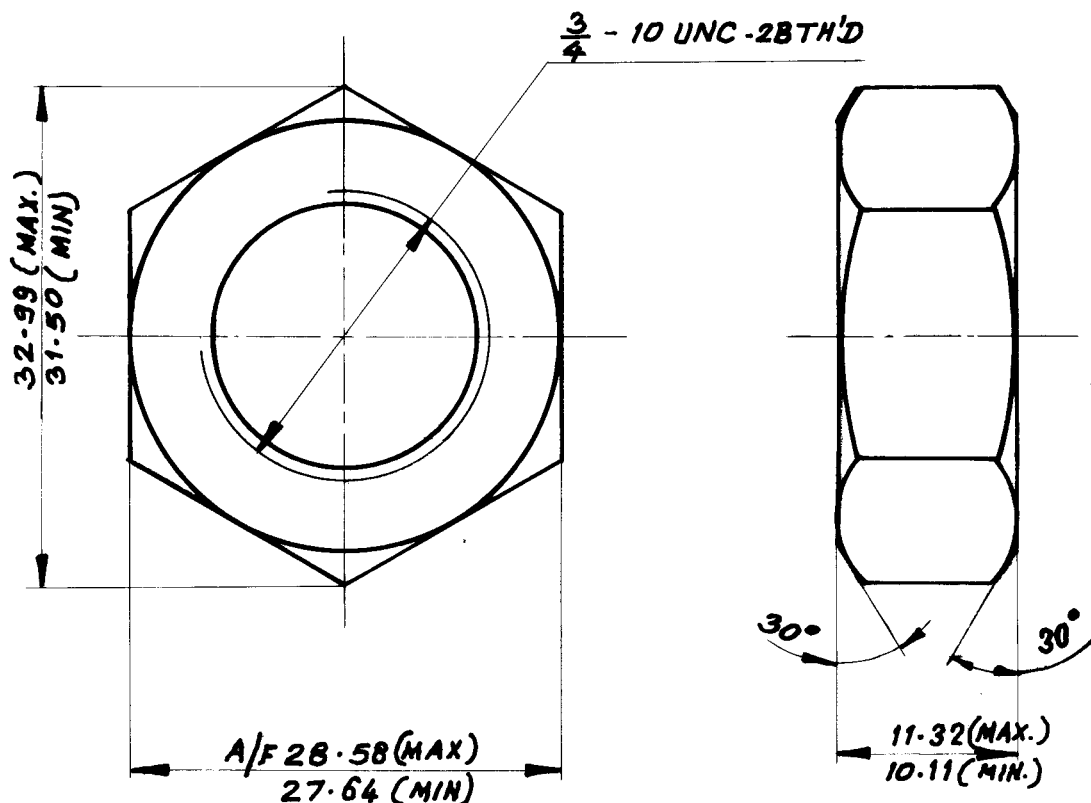
REPRODUCED ON
ROLL 100523 FROM 2151

$\phi 32 \times 20$	15039222	ASTM A194 Gr. 4 CERTIFY	—	20	0.03	0.13	—	132
NO OFF	DESCRIPTION	MATL. CODE	MATL. SPEC.	HEAT TREATMENT	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	ITEM NO
Bharat Heavy Electricals Ltd., BOILER PLANT UNIT TIRUCHIRAPALLI-620 014				DRN	NAME N.R.		SIGN N. Perumal	DATE 19-03-81
				CHD	V. PERUMAL		V. Perumal	19/3/81
				APPD	S. RASHID		S. Rashid	17/3/81
DEPT. VL	GRADE OF UNTOL DIM C/M/F	SCALE 2:1		DRESSER DRG NO: STI-117-G PART NO: 1132 (REV: CA 423) (SL: NM 805)				
CODE 340				CARD CODE U 01	DRAWING NO 4-V-7501-10170			REV 02
TITLE JAM NUT								

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REV 01	DATE	ALTERED	REV 02	DATE	ALTERED
		CHECKED			CHECKED

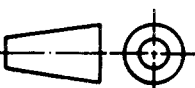
3-2



NOTES:-

1. SHARP CORNERS TO BE REMOVED.
2. 45° CHAMFER FIRST THREAD.
3. UNSPECIFIED MACHINING TOLERANCES ± 0.25 MM.

MICROFILMED ON
ROLL 00522 FRAME 118

φ 36 x 20		15 339 280	SA 105	NORMALISED (150-190 BHN)	10	0.04	0.16	509
NO OFF	DESCRIPTION	MATL. CODE	FINAL MATL.	HEAT TREATMENT	SCRAP SORT	NET WT IN (kg)	GROSS WT IN (kg)	ITEM NO.
 Bharat Heavy Electricals Ltd., BOILER PLANT UNIT TIRUCHIRAPALLI-620 014				DRN	NAME D. DEVI SAHAYAM.		SIGN <i>[Signature]</i>	DATE 9-3-'81
				CHD	V. PERUMAL		V. Perumal	
				APPD	S. RASHID		<i>[Signature]</i>	
DEPT. VL	GRADE OF UNTO. DIM C/M/F			SCALE 2:1	WEIGHT (kg)		REF TO ASSY / OLD DRG DR. DRG. NO. 221/... PART. NO. 2210105 SL. NO. 135	
CODE 340								
TITLE NUT				CARD CODE U 01	DRAWING NO. 4-V-7501-10171			REV

TP-DG-4-V-7501-0186
CORPORATE ID

REV 02
DATE 20.6.97
ALTERED
CHECKED / APPD: *Wj*

DATE 02.09.93
CHECKED *h.N*

DATE 01.86
ALTERED *S. Rajendran*

OMAC CODE ADDED.

NOTES UPDATED.
DCN. NO. SV: 0436

3.2
/

22.000 (MAX.)
20.980 (MIN.)

A/F 19.050 (MAX.)
A/F 18.420 (MIN.)

3.250 (MAX.)
2.670 (MIN.)

R0.76

31.75

NOTES:-

1. SHARP CORNERS TO BE REMOVED.

2. 45° CHAMFER FIRST THREAD.

3. FINISH - ZINC PLATE

4. UNSPECIFIED MACHINING TOLERANCES ±0.25 MM.

MICROFILMED IN
ROLL 00523 FRAME 204

	φ25 X 50	15 039 086	ASTM A193 Gr. B7	QUENCHED & TEMPERED	20	0.05	0.2	—	525
No. OFF	DESCRIPTION	MATL. CODE	FINAL MATL.	HEAT TREATMENT	SCRAP SORT	NET WT. (KG)	GROSS WT. (KG)	DRG. No.	ITEM NO.
Bharat Heavy Electricals Ltd., BOILER PLANT UNIT TIRUCHIRAPALLI-620 014				DRN	NAME M. RAJA	SIGN M. Rajendran	DATE 02-04-81		
				CHD	V. PERUMAL	V. Perumal	2-4-81		
				APPD	S. RASHID	S. Rashid	2/4/81		
DEPT. VL	GRADE OF UNTOL. DIM 2/M/F			SCALE 2:1	WEIGHT (kg)		DR. DRG. No. ST 2-83-K PART No. 74542Z / Sl. No. 264		
CODE 340									
TITLE CAP SCREW					CARD CODE U 01	DRAWING NO. 4-V-7501-10186			REV 02

OMAC CODE: 930707420000

1532 VX-9W

Size A4

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FOR TOLERANCES OF UNTOLEANCED DIMENSIONS REFER RELEVANT ISIRI SPECIFICATIONS

FOR TOLERANCES OF UNTOLENCED DIMENSIONS REFER MANUFACTURE RELEVANT QCP/00

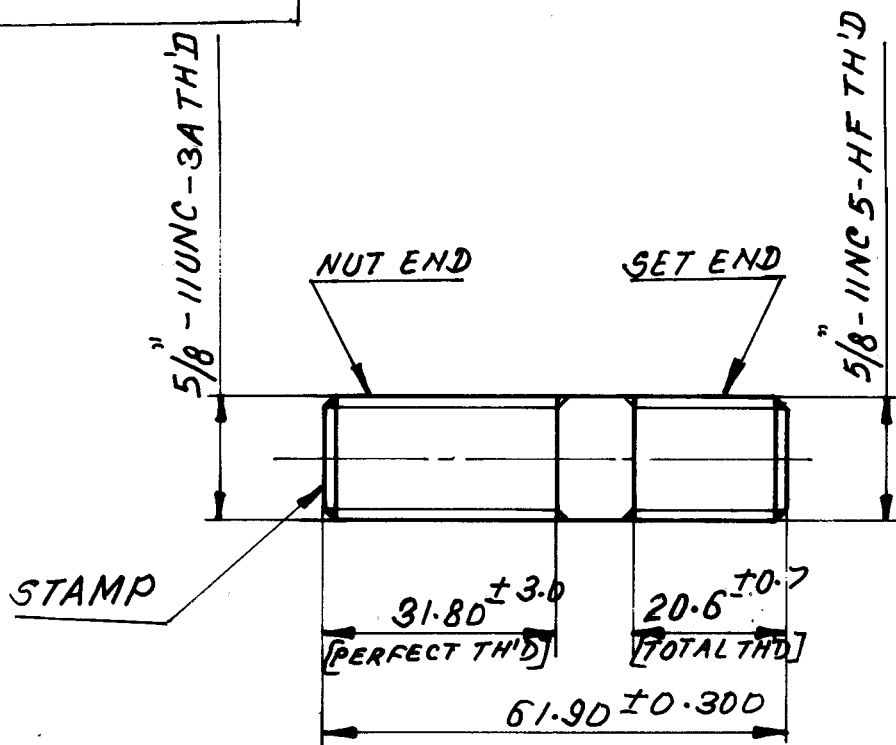
TP-DC 4-V-7520-10376

017/5/97CHD&APPD:W.

NOTES UPDATED.

DCN. NO. SV: 0428

3.2



NOTES

1. 45° CHAMFER FIRST THREAD.
2. PHOSPHATING AS PER LATEST APPLICABLE QUALITY PROCEDURE.
3. STUD SHOULD BE MANUFACTURED AND TESTED AS PER LATEST APPLICABLE QUALITY PROCEDURE.

	φ 25 X 70	15039086	ASTM A 193 Gr B7 CERTIFY	QUENCHED & TEMPERED	20	0.10	0.27	—	501
NO. OF PIECES	NAME - DIMENSIONS	MATL. CODE	FINAL MATERIAL	HEAT TREATMENT	SCRAP SORT	NET Wt (kg)	GROSS Wt (kg)	DRAWING NO.	ITEM NO.
REMARKS				PILOT VALVE TOP					
SCALE	DRAWN	A. VELUSAMY		ALTERATIONS	DATE	SIGNA- TURE	ALTERA- TION INDEX		
NTS	CHECKED	V. Perumal Pillai							
	APPROVED	W.		DR. DRG NO: 326/EX 389					
	STDS. OFFICER			PART NO/SL. NO 3260119/8581					
	DATE	29-3-89							
TYPE		GROUP		OLD DRG.		NEW DRG.			
TITLE		STUD		DRAWING NO.		4-V-7520-10376 01			

OMAC CODE : 931705170000

TP-DC 4-V-7520-10376
CORPORATE DRG ID

TP-DG-4-V-7520-10377
CORPORATE DRG ID

REV DATE
01 12.2.89

ALTD: 12.2.89
CHD: 12.2.89

DATE
17/5/97

ALTD: 17/5/97
CHD APPD: 17/5/97

NOTES UPDATED.
DCN. No. SV: 0428

3.2

1 3/8-12 UNF-3A TH'D

1 3/8-12 UNF-3A TH'D

STAMP

88.90 ± 3
[PERFECT THREAD]

38.10 ± 0.7
[TOTAL THREAD]

184.20 ± 0.3

NOTES:-
1 SHARP CORNERS TO BE REMOVED
2 45° CHAMFER FIRST THREAD
3 UNSPECIFIED MACHINING TOLERANCES ± 0.25 MM
4 PHOSPHATING AS PER LATEST APPLICABLE QUALITY PROCEDURE.
5 STUD SHOULD BE MANUFACTURED AND TESTED AS PER LATEST APPLICABLE QUALITY PROCEDURE.

NO. OF PIECES	NAME - DIMENSIONS	MATL CODE	FINAL MATERIAL	HEAT TREATMENT	SCRAP SORT	NET Wt (kg)	GROSS Wt (kg)	DRAWING NO.	ITEM NO.
	φ 40 X 195	15039167	ASTM A193 Gr. B16 - CERTIFY.	N&T 1100°F (MIN) 265 BHN (MIN)	20	1.38	1.92		503

REMARKS				MAIN BASE STUD					
SCALE	DRAWN	A. VELUSAMY		ALTERATIONS		DATE	SIGNA- TURE	ALTERA- TION INDEX	
1:25	CHECKED	V. Perumal Pillai							
	APPROVED	K. N. J.							
	STDS. OFFICER			TRANS. COPY NO.		DR. DRG. NO: 280/EC 163			
	DATE	29-3-89				PART NO. 280 02 01, SL. NO. 9934			

TYPE	GROUP	OLD DRG.	NEW DRG.
TITLE		DRAWING NO.	
STUD		4-V-7520-10377 02	

33-116

931705570000

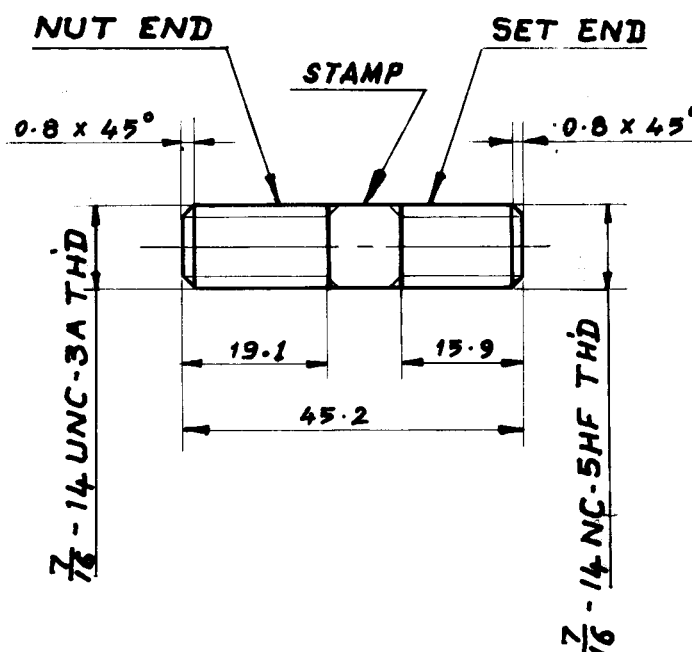
1525VX

TP-DG-4-V-7520-10377
CORPORATE DRG ID

NOTES UPDATED.
DCN. NO. SV: 0436

3.2

MICROFILMED ON
ROLL 00523 FRAME 2211



NOTES:-

- I. PHOSPHATE COAT AS PER LATEST APPLICABLE QUALITY PROCEDURE.

	φ16 x 60	15 039 115	ASTM A193 GR. B7 PRODUCT ATTEST FINAL MATL.	QUENCHED & TEMPERED 26-32 HRC HEAT TREATMENT	20	0.04	0.1	—	226
NO. OFF	DESCRIPTION	MATL. CODE			SCRAP SORT	NET WT. (KG)	GROSS WT. (KG)	DRAWING NO.	ITEM NO.



05-249/A

BHARAT HEAVY ELECTRICALS LIMITED

BOILER PLANT UNIT, TIRUCHIRAPALLI-620014

DEPT VL	CODE 340		SCALE 1:1	—	DR. DRG. NO. WA 882 / CA 808 PART NO. WA 882	SL. NO. 2663		
TITLE STUD					DRAWN K.R.	NAME K.R.	SIGN 	DATE 5-7-79
					CHECKED VR	VR		5-7-79
					APPROVED JA	JA		5-7-79
DIMENSIONS TO BE CONTROLLED WITHIN LIMITS AS SHOWN. MACHINING TOLERANCE ± 0.25 mm. UNLESS OTHERWISE SHOWN NON-MACHINING TOLERANCE $\pm$				CARD CODE	4 DRAWING NO. 15 16 REV 17 4-V-7800-10066 02			

COMP. CODE: 930705230000

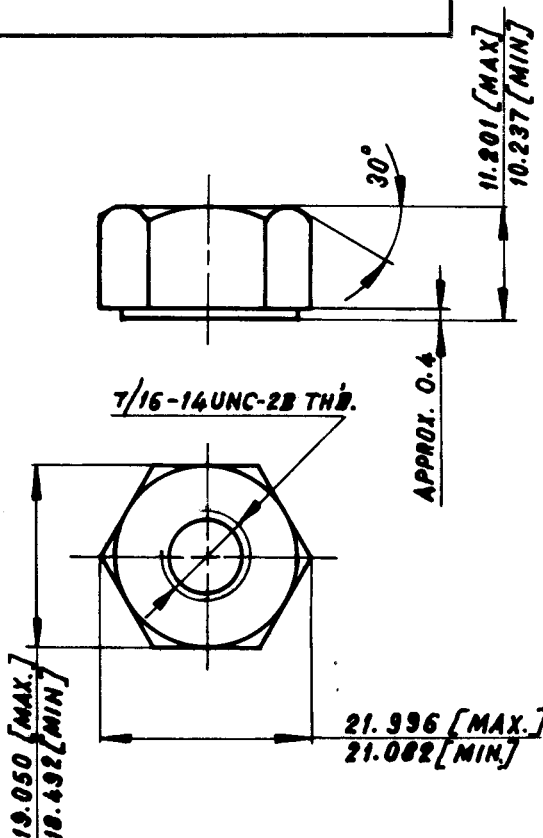
1811-HA

SIZE A-4

CAUTION: THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LTD. IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY MANNER WITHOUT THE INTEREST OF THE COMPANY.

REV	DATE	ALTERED
01	02	CHECKED

3.2



MICROFILMED ON
ROLL 00522 FRAME 128

NOTE:-

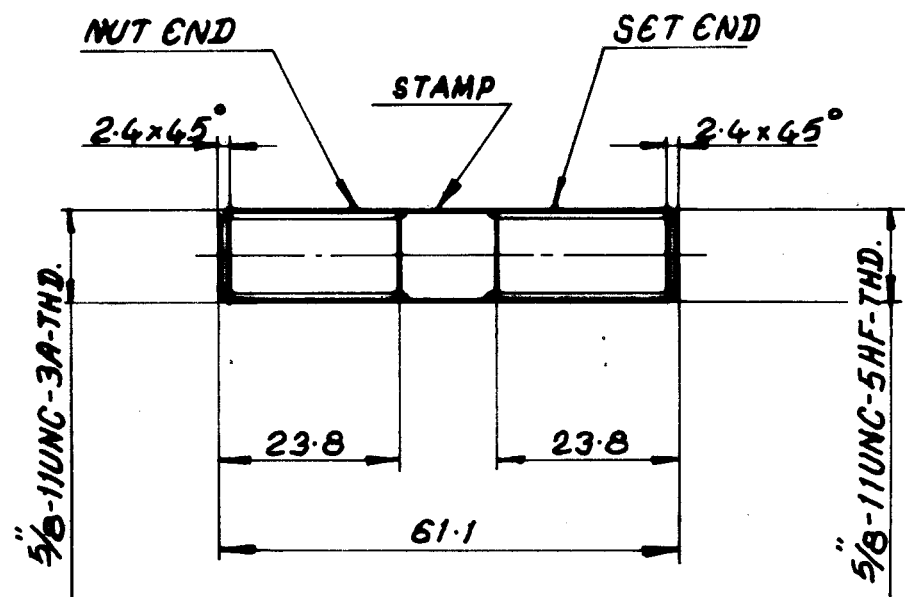
1. SHARP CORNERS TO BE REMOVED.
2. BRINELL HARDNESS 248-352.
3. TREATED NUTS TO MEET ASTM SPEC. A194 GR. 4.

Ø25 X 25		15039221 OR 96415550	ASTM A194 GR. 4. PRODUCT ATTEST	20	0.02	0.10	229
NO. OFF	DESCRIPTION	MATL. CODE	FINAL MATL.	HEAT TREATMENT	SCRAP SORT	NET WT. [kg]	GROSS WT. [kg]
Bharat Heavy Electricals Ltd., BOILER PLANT UNIT TIRUCHIRAPALLI-620 014				NAME M. RAJA	DATE 21-7-81		
				CHD V. PERUMAL	APPD S. RASHID		
DEPT.	GRADE OF UNTO. DIM C/M/F	SCALE	WEIGHT (kg)		DR. DRG No. 220/EM/519 PART No. 2200201/St. No. 2890		
TITLE NUT			CARD CODE U 01	DRAWING NO. 4-V-7800-10256			REV

REV	DATE	ALTERED
01	16.7.83	CHECKED <i>[Signature]</i>
02	20.6.97	CHECKED <i>[Signature]</i>

3.2

1. NOTE-1 ADDED.
NOTES UPDATED.
DCN. No. SV: 0436



NOTES:-

1. PHOSPHATE AS PER LATEST APPLICABLE QUALITY PROCEDURE.

MICROFILMED ON

POL 50522 FRAME 195

NO OFF	DESCRIPTION	MATL. CODE	ASTMA193 GR. B7 PRODUCT ATTEST FINAL MATL	QUENCHED & TEMPERED 28-32 MRC HEAT TREATMENT	20	0.1	0.24	—	226
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05-249/A

BHARAT HEAVY ELECTRICALS LIMITED
BOILER PLANT UNIT, TIRUCHIRAPALLI-620014

DEPT VL	CODE 340		SCALE 1:1	WEIGHT (kg)	DR. DRG No:-WAB802/CAB08 PART No:-WAB82C/SL. No. - 2663			
TITLE STUD					DRAWN	NAME N.R.	SIGN 	DATE 24-7-80
					CHECKED	V. P.		24-7-80
					APPROVED	S. A.		24-7-80

DIMENSIONS TO BE CONTROLLED WITHIN LIMITS AS SHOWN. MACHINING TOLERANCE ± 0.25 mm UNLESS OTHERWISE SHOWN NON-MACHINING TOLERANCE $\pm$

CARD CODE

4 DRAWING NO.

4-V-7802-10199 02

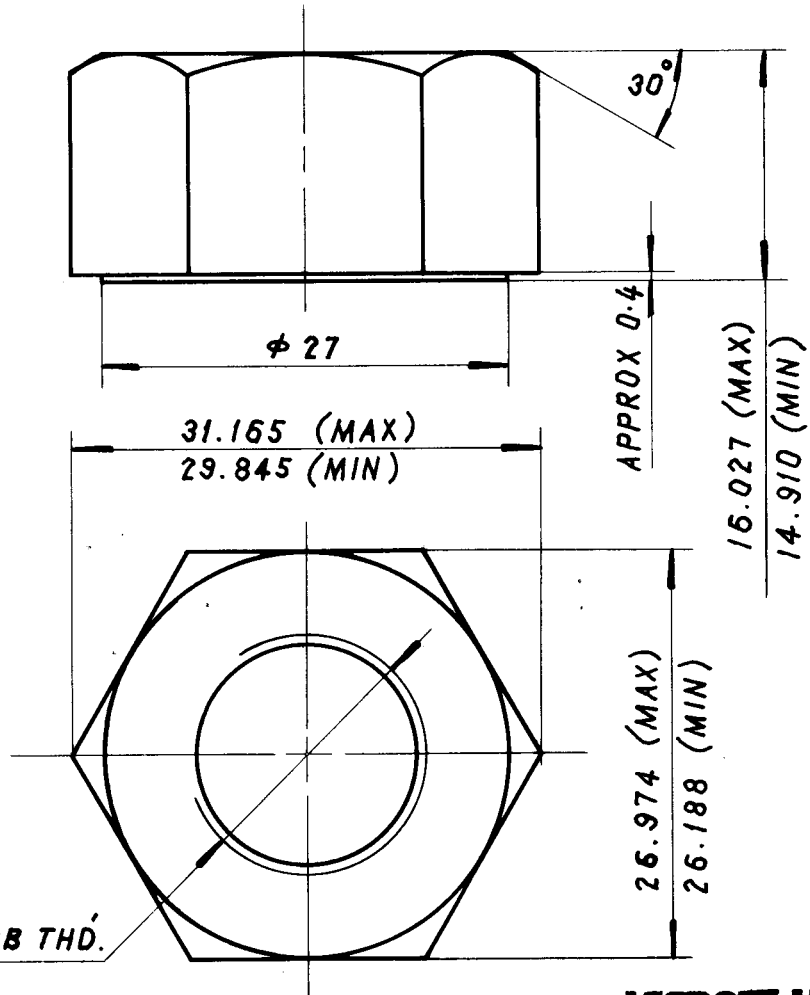
FOR TOLERANCES OF UNTOLENCED DIMENSIONS DURING MANUFACTURE REFER RELEVANT BCP/GR.

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TP-DG-REV-7802-10254	DATE	REV 02	DATE	ALTERED	CHECKED
CORPORATE DRG ID					

3.2/

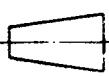
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NOTE :-

MICROFILMED ON
ROLL 00523 FRAME 1140

1. SHARP CORNERS TO BE REMOVED.
2. 45° CHAMFER FIRST THREAD.
3. TREATED NUTS TO MEET ASTM SPEC. A194 GR. 4
BRINELL HARDNESS 248 - 352.
4. UNSPECIFIED MACHINING TOLERANCES ± 0.25 mm.

APPL. DR TYPE NOS.	$\phi 32 \times 30$	15039222 OR 96415539	ASTM A194 GR. 4 PRODUCT ATTEST	20	0.06	0.19	229		
No. OFF	DESCRIPTION	MATL CODE	FINAL MATL.	HEAT TREATMENT	SCRAP SORT	NET WT (KG)	GROSS WT (KG)	DRG No.	ITEM No.
 Bharat Heavy Electricals Ltd., BOILER PLANT UNIT TIRUCHIRAPALLI-620 014				DRN	NAME T. Rajaraman		SIGN 	DATE	
				CHD	V. PERUMAL		V. Perumal	21-7-81	
				APPD	S. RASHID				
DEPT.	GRADE OF UNTOL DIM			SCALE	WEIGHT (kg)		DR. DRG No. 220 / EK 519		SL No.
CODE	C / M / F			2 : 1			PART No. 2200205		2838
TITLE				CARD CODE	DRAWING NO.				REV
NUT				U 01	4-V-7802-10254				

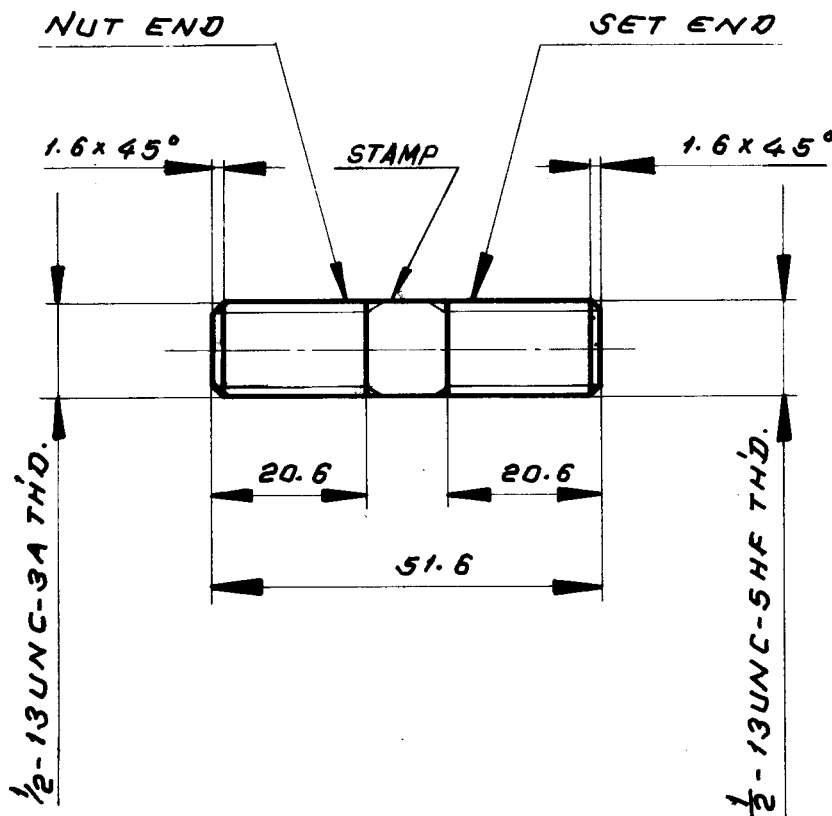
TP-DG-REV-7802-10254
CORPORATE DRG ID

REV 01	DATE 16-9-83	ALTERED	CHECKED
REV 02	DATE 20.6.97	ALTERED	CHECKED

1. NOTE -3 ADDED.

NOTES UPDATED.
DCN .NO. SV: 0436

3.2



NOTES:-

1. 45° CHAMFER FIRST THREAD.
2. SHARP CORNERS TO BE REMOVED.
3. PHOSPHATE COAT AS PER LATEST APPLICABLE QUALITY PROCEDURE.

MICROFILMED ON

ROLL 00523 FRAME 206

φ 20 x 65	15 039 084	ASTMA193 GR.B7 PRODUCT ATTEST FINAL MATL.	QUENCHED & TEMPERED 28-32 HRC HEAT TREATMENT	20	0.05	0.16	226
NO. OFF.	DESCRIPTION	MATL. CODE	FINAL MATL.	SCRAP SORT	NET WT (KG)	GROSS WT (KG)	ITEM NO.



05-249/A

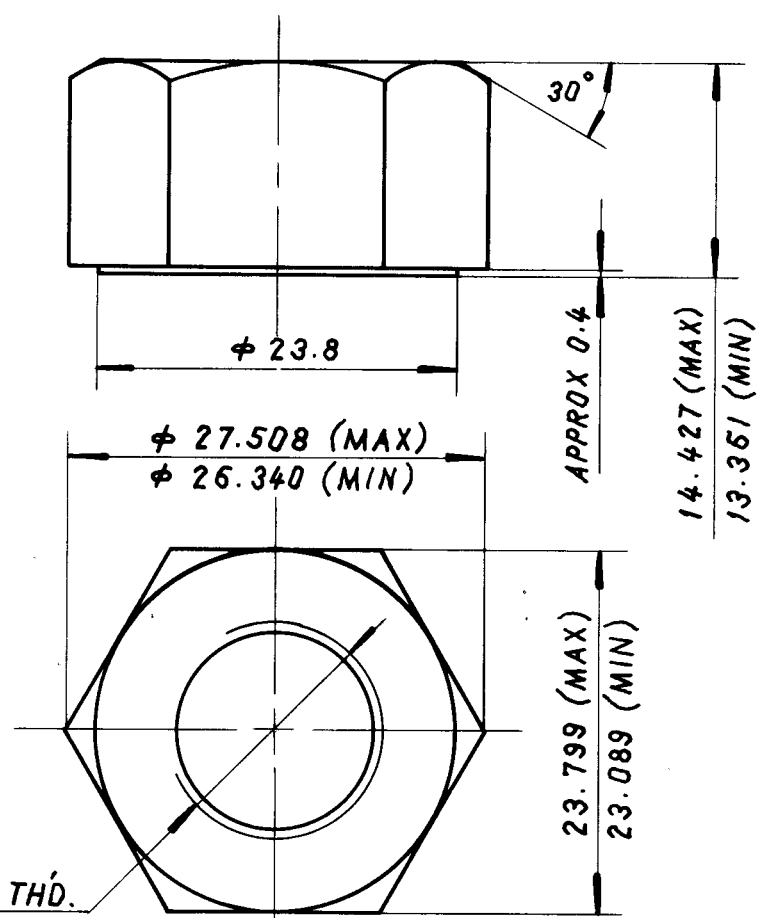
BHARAT HEAVY ELECTRICALS LIMITED
BOILER PLANT UNIT, TIRUCHIRAPALLI-620014

DEPT VL	CODE 340	SCALE 1:1	WEIGHT (kg) —	DR. DRG. NO: WA 882/CA 808
TITLE				PART NO: WA 882A/SL. NO: 2663
STUD				DRAWN
				CHECKED
				APPROVED
DIMENSIONS TO BE CONTROLLED WITHIN LIMITS AS SHOWN. MACHINING TOLERANCE ± 0.25 mm. UNLESS OTHERWISE SHOWN NON-MACHINING TOLERANCE ±				CARD CODE
DRAWING NO. 4-V-7805-10141				02

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REV 01	DATE	ALYSED	REV 02	DATE	ALTERED
CHECKED			CHECKED		

3.2



NOTE:-

1. SHARP CORNERS TO BE REMOVED.
2. 45° CHAMFER FIRST THREAD.
3. TREATED NUTS TO MEET ASTM SPEC. A194 GR.4
BRINELL HARDNESS 248 - 352.
4. UNSPECIFIED MACHINING TOLERANCES ± 0.25 mm.

ROLL 00523

APPL. DR
TYPE No.5

No. OFF	DESCRIPTION	MATL CODE	FINAL MATL	HEAT TREATMENT	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	DRG No.	ITEM No.
	$\phi 32 \times 30$	15 039 222 OR 96415 540	ASTM A194 GR.4 PRODUCT ATTEST		20	0.04	0.19		229



Bharat Heavy Electricals Ltd.,
BOILER PLANT UNIT
TIRUCHIRAPALLI-620 014

T. Rajaraman
CHD V. PERUMAL V. Perumal 21-7-81
APPD S. RASHID

DEPT.	GRADE OF UNTOL. DIM C/M/F	SCALE	WEIGHT (kg)	DR. DRG No. 220	EK 519	S (No.)
CODE		2:1		PART No. 2200206		2838

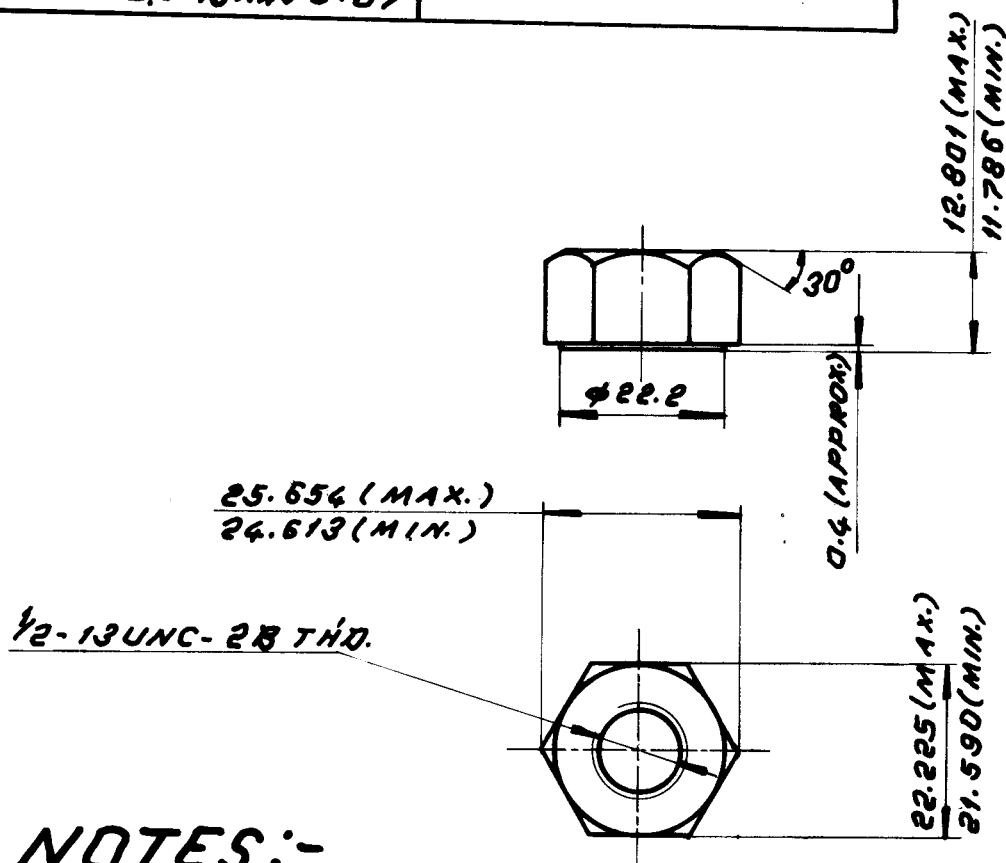
TITLE	CARD CODE	DRAWING NO.	REV
NUT	U 01	4-V-7806-10255	

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REV	DATE	ENTERED	V. PERUMAL.
01	15.7.81	CHECKED	SA
REV	DATE	ALTERED	
02		CHECKED	

1. MATL. ASTM A194 Gr. 4 WAS
ASTM A194 Gr. 2H.
2. RAW MATL. SIZE $\phi 32 \times 30$
WAS A/F 22.2 X 20
3. MATL. CODE 15039222
ADDED
4. NOTE-5 ADDED.
5. GROSS WT. 0.19 WAS 0.07

32



NOTES:-

1. SHARP CORNERS TO BE REMOVED.
2. UNSPECIFIED MACHINING TOLERANCES $\pm 0.25 \text{ mm}$.
3. 45° CHAMFER FIRST THREAD.
4. UNSPECIFIED ANGLE TOLERANCES $\pm \frac{1}{2}^\circ$
5. TREATED NUTS TO MEET ASTM SPEC. A194 Gr. 4
BRINELL HARDENSS 248-352.

MANUFACTURED ON
20.08.81

$\phi 32 \times 30$	15039222	ASTM A194 Gr 4	20	0.03	0.19	229		
NO. OF	DESCRIPTION	MATL. CODE	FINAL MATL.	HEAT TREATMENT	SERIAL NO. (K9)	NET WT. (K9)	DATE	ITEM NO.
			Bharat Heavy Electricals Ltd., BOILER PLANT UNIT TIRUCHIRAPALLI-620 014			DR. DRG. NO. 220/EX 513 PART NO: 220 02 04/SL. NO. 2837, 2838, 2839.		
DEPT.	GRADE OF UNTO. DIM C/M/F	SCALE	WEIGHT (kg)	DRN	NAME	SIGN	DATE	
				CHD	V. PERUMAL	V. Perumal	02.08.81	
				APPD	S. RASHID	SR		
TITLE			CARD CODE	DRAWING NO.			REV	
NUT			U 01	4-V-7809-1021501				

TP-DG-4-V-7826-10259
CORPORATE DRG ID

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REV 02
DATE
ALTERED
CHECKED

1. NOTE 3 ADDED.

3.2

NUT END
STAMP
SET END

5/8-11UNC-3A7HD
5/8-11UNC5-HF7HD

28.60 ± 3.000
23.80 ± 0.700
65.10 ± 0.300

NOTES:-

1. 45° CHAMFER FIRST THREAD.
2. SHARP CORNERS TO BE REMOVED
3. PHOSPHATE COAT AS PER Q.C.P 2:7:222 (DIVID'S ENGG. INST. PC 11)

MICROFILMED ON
ROLL 00523 FRAME 135

φ 20 X 70	15039084	ASTM A193 GR. B7 PRODUCT ATTES	Q & T 26-32HRC	20	0.10	0.17		226
No. OFF	DESCRIPTION	MATL. CODE	FINAL MATL.	HEAT TREATMENT	SCRAP SORT	NET WT. (kg)	GROSS WT. (kg)	ITEM No.

Bharat Heavy Electricals Ltd.,
BOILER PLANT UNIT
TIRUCHIRAPALLI-620 014

DRN
CHD
APPD

NAME
M. RAJA
V. PEROMAL
S. RASHID

DATE
20-10-81

DEPT.
CODE

GRADE OF UNTOL. DIM C/M/F

SCALE
2:1

WEIGHT (kg)

DR. DRG. No. 326/EK 785
PART No. 325

SL. No. 3344

TITLE
STUD

CARD CODE
U 01

DRAWING NO.
4-V-7826-10259

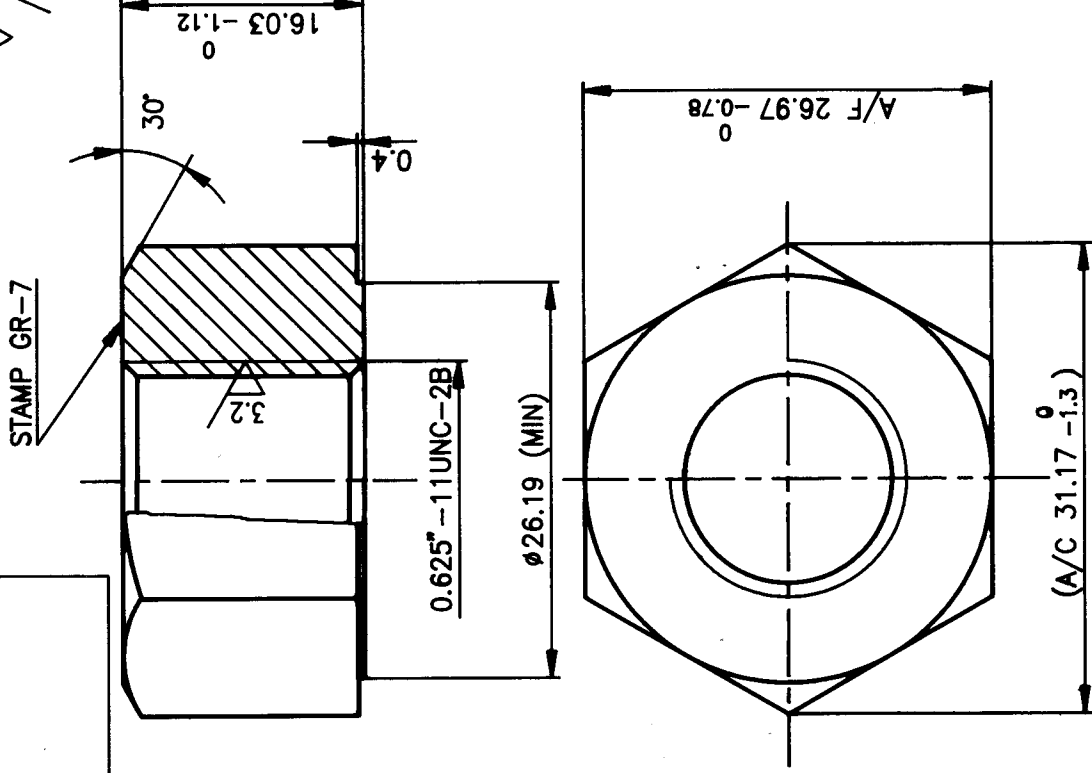
REV
01

REV	DATE	ALTERED	BY
01	19.4.97	CHECKED	MAPO: MAPO
ZONE		NOTES UPDATED.	
		DCN: SR: 0187	

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It must not be used directly or indirectly in any way detrimental to the interest of the company.

CORPORATE DRG ID
TP-DG-4-V-8885-13589

6.3 / 3.2



NOTES:-

- 45° CHAMFER FIRST THREAD.
- HEAVY HEX. NUT TO THIS DRG. IS AS PER AMERICAN STD. B 18.2.2.
- NUT SHOULD BE MANUFACTURED & TESTED AS PER **LATEST APPLICABLE QUALITY PROCEDURE & ALSO AS PER ASTM STD. A 194 GR.7 WITH SUPPLEMENTARY REQUIREMENT 34.**
- PHOSPHATE COAT AS PER **LATEST APPLICABLE QUALITY PROCEDURE.**
- THE TEST TO BE WITNESSED BY M/S NPCIL.
- 100% UT & LPI SHOULD BE CARRIED OUT.**



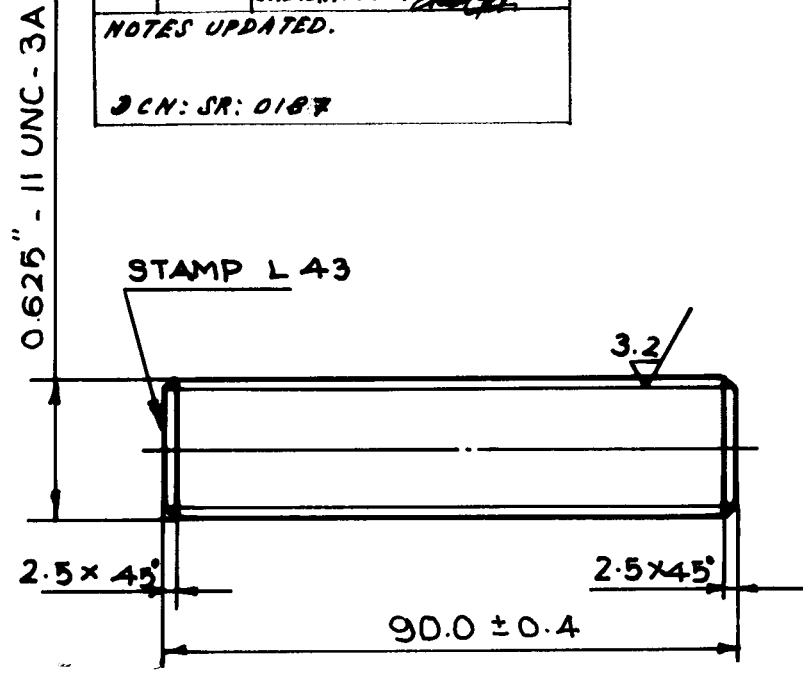
96415278		ASTM A194 GR. 7	Q & T	20	0.04		251 & 229
NO OFF	DESCRIPTION	MATL CODE	MATL SPECN (WELDED ATTACHED)	HEAT TREATMENT	SCRAP WT (kg)	GROSS WT (kg)	ITEM No
							DRAWING No
BHARAT HEAVY ELECTRICALS LTD., BOILER PLANT UNIT, TIRUCHIRAPALLI-620 014.				DESIGN	NAME	DATE	
				DRAWN	M. RAJA	9.4.92	
				CHECKED	EATHI	9.4.92	
				APPROVED	V. Malayappan	10/4/92	
DEPT	GRADE OF UNTOOL DIM	SCALE	WEIGHT (kg)	REF TO ASSY DRG.			
VL	C/N/F	NTS	0.04				
CODE	340						
TITLE			4-V-8885-13589			REVISION	
NUT 0.625" (5/8")						01	

CORPORATE DRG ID
TP-DG-4-V-8885-13589

ALL DIMENSIONS ARE IN MM

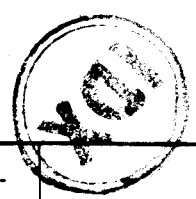
REV.	DATE	ALT.
01	19.4.97	CHD. APPD.: <i>[Signature]</i>
NOTES UPDATED.		
JCN: SR: 0187		

12.5 / 3.2



NOTES:-

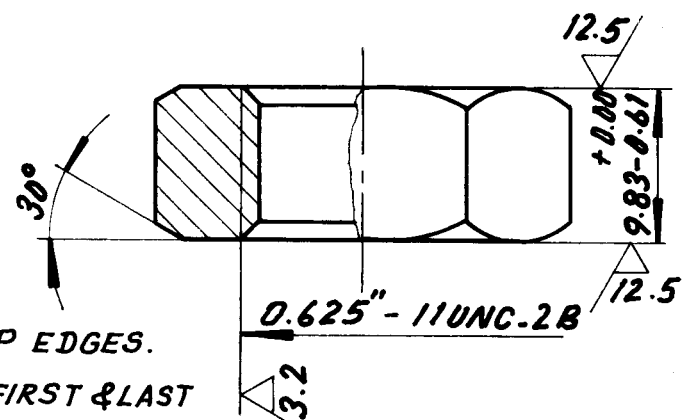
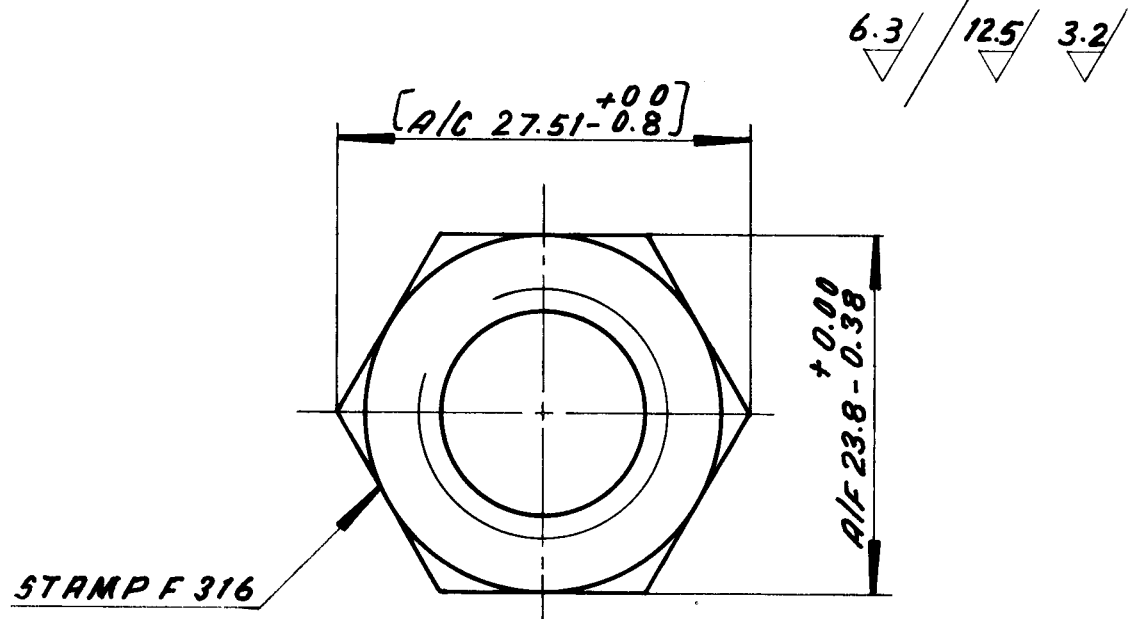
1. THE STUD SHOULD BE MANUFACTURED AND TESTED AS PER LATEST APPLICABLE QUALITY PROCEDURE & ALSO AS PER ASTM STD. A320 GR. L43.
2. THE TEST TO BE WITNESSED BY M/S NPCIL.
3. PHOSPHATE COAT AS PER LATEST APPLICABLE QUALITY PROCEDURE.
4. 100% UT & LPI TO BE CARRIED OUT.



Q & T		P	96415281	ASTM-A320 GR. L43	20	0.15	-	249	
NO. OF PIECES	HEAT TREATMENT	A/C	MATL.CODE	MATERIAL	SCRAP SORT	NET Wt (kg)	GROSS Wt (kg)	DRAWING NO.	ITEM NO.
REMARKS				TOTAL NET Wt (kg)					
SCALE	DRAWN	Y.UDAYA KUMAR.		ALTERATIONS	DATE	SIGNATURE	ALTERATION INDEX		
	CHECKED	E.Athiannan <i>[Signature]</i> 19.4.97							
	APPROVED	<i>[Signature]</i> 16/4/97							
	STDS. OFFICER			TRANS. COPY NO.					
	DATE	16/4/97							
TYPE		GROUP		OLD DRG.		NEW DRG			
TITLE				DRAWING NO.					
STUD		0.625 (5/8)		4-V-8885-13592		01			



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- NOTES:-**
1. DEBURR SHARP EDGES.
 2. 45° CHAMFER FIRST & LAST THREAD.

MICROFILMED ON
ROLL 005122 B118

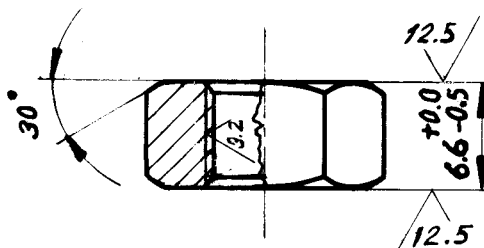
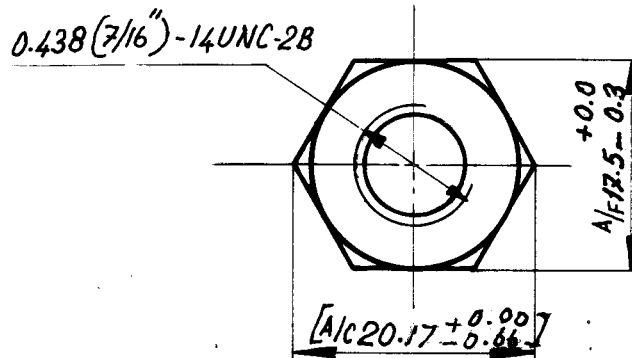
SOLUTION ANNEALED	BAR ϕ 32 X 14.5	15 024 242 ASTM A276 F316 (CERTIFIED)	46	0.02
			01	0.09
HEAT TREATMENT	DESCRIPTION	MATL CODE	SCRAP SORT	NET WT (KG)
		MATL SPEC	NO OFF	GROSS WT (KG)

Bharat Heavy Electricals Ltd., BOILER PLANT UNIT TIRUCHIRAPALLI-620 014		DRN	NAME	SIGN	DATE
		CHD	K.S.P	K.S. RATHI	09.03.83
		APPD	K.S. RAJU	[Signature]	6.5.83
DEPT. V&SB		TOL. FOR UNTOL. M/C DIM		SCALE	
340		15 ± 0.4		2:1	
TITLE		WEIGHT (kg)		DRESSER	
JAM NUT 0.625" (5/8")		0.02		DRG. NO.: 221 PART. NO.: 2210302 REV: EF 280 (724)	
CARD CODE		DRAWING NO.		ITEM NO.	
U 01		4.V.8906.13382		132	

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REV 02	DATE 10.3.97	ALTERED
CHECKED		
NOTES UPDATED.		
SCN: SR: 0184		

6.3 / 12.5 / 3.2



MICROFILMED ON
35mm FILM

NOTES:-

1. HEX. JAM NUT IN THIS DRG IS AS PER AMERICAN STD.
2. JAM NUT SHOULD BE MANUFACTURED AND TESTED AS PER LATEST APPLICABLE QUALITY PROCEDURE.
3. HARDNESS:- 24-38 HRC
4. PHOSPHATE COAT AS PER LATEST APPLICABLE QUALITY PROCEDURE.



NO. OF	DESCRIPTION	MATL CODE	HEAT TREATMENT	MATL SPECN	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	COMP. CODE	ITEM NO.
01	ROUND φ25 x 11.5	15 039 221	Q & T	ASTM A194 GR 4 (CERTIFY)	10	0.01	0.04	93075119	132



05-249/A

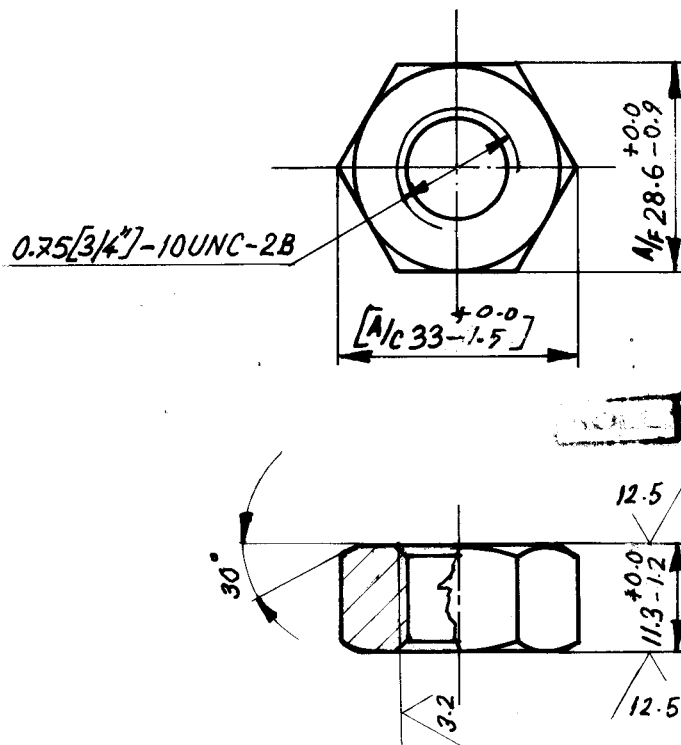
BHARAT HEAVY ELECTRICALS LIMITED
BOILER PLANT UNIT, TIRUCHIRAPALLI-620 014

DEPT VL	CODE 340	SCALE	WEIGHT (kg) 0.01	DRG NO.-221 [REV: EF280]	IT. NO.
TITLE JAM NUT 0.438" [7/16"]				DRAWN RL	SIGN K. B
				CHECKED K. B	DATE 23.3.79
				APPROVED D. K.	DATE 27.10.79
DIMENSIONS TO BE CONTROLLED WITHIN LIMITS AS SHOWN. MACHINING TOLERANCE ± 0.25 mm UNLESS OTHERWISE SHOWN NON-MACHINING TOLERANCE ±				4 DRAWING NO. 4. V. 9006.13051	

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REV 02	DATE 10.3.97	ALTERED	CHECKED & APPD.
1. RAW MATL. ASTM A194 GR4 WAS IS:1367 CLASS 6		NOTES UPDATED.	
2. MATL. CERTIFICATION 'CERTIFY' ADDED		PCN: SR: 0184	
3. NOTES 2, 3 & 4 ADDED.			

6.3 / 12.5 / 3.2



MICROFILMED ON

NOTES:-

1. HEX. JAM NUT IN THIS DRG. IS AS PER AMERICAN STD.
2. JAM NUT SHOULD BE MANUFACTURED AND TESTED AS PER LATEST APPLICABLE QUALITY PROCEDURE.
3. HARDNESS :- 24-38 HRC
4. PHOSPHATE COAT AS PER LATEST APPLICABLE QUALITY PROCEDURE.

01	BAR Ø 40 X 16.5	15039340	Q & T	ASTM A194 GR4 (CERTIFY)	10	0.04	0.16	93075324 96415544	132
NO. OFF	DESCRIPTION	MATL CODE	HEAT TREATMENT	MATL SPECN	JENAP SURT	NET WT(Kg)	GROSS WT(Kg)	COMP. CODE	ITEM NO.



05-249/A

BHARAT HEAVY ELECTRICALS LIMITED
BOILER PLANT UNIT, TIRUCHIRAPALLI-620014

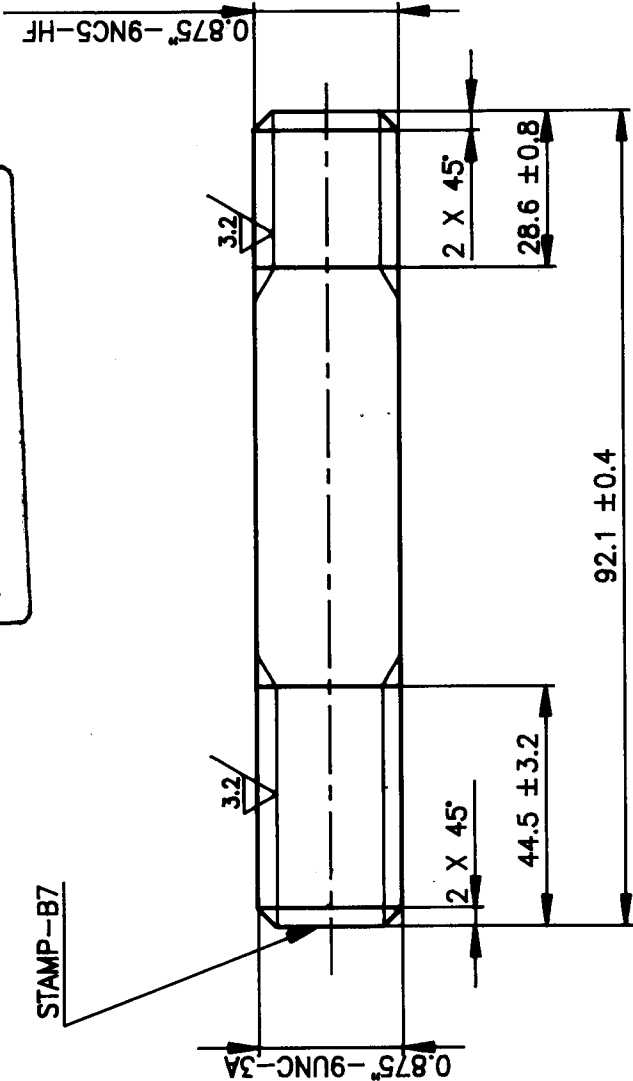
DEPT VL	CODE 340	SCALE	WEIGHT (kg) 0.04	DRG NO.-221 [REV:EF280] PART NO:-2210105 [724]	IT. NO.	
TITLE JAM NUT 0.75"[3/4]"				DRAWN RL	SIGN [Signature]	DATE 17/3/99
				CHECKED K.B	K. RAB	23.3.77
				APPROVED D.K	Ding	27/3/29
DIMENSIONS TO BE CONTROLLED WITHIN LIMITS AS SHOWN. MACHINING TOLERANCE ± 0.25 mm UNLESS OTHERWISE SHOWN NON-MACHINING TOLERANCE $\pm$			CARD CODE	4 DRAWING NO. 4.V-9013-13054		15 16 REV 17 02

REV	DATE	ALTERED
ZONE		CHECKED

12.5

3.2

TOLERANCE FOR UNTOLERANCED DIMENSIONS	
UPTO 6 MM	± 0.1 MM
> 6 UPTO 120	± 0.2 MM
MORE THAN 120 MM	± 0.5 MM
ANGULAR TOLERANCE	± 0.5 Deg.
CHAMFER	± 5 Deg.



NOTES:-

1. STUD SHOULD BE MANUFACTURED AND TESTED AS PER APPLICABLE QCP WITH LATEST REVISION.
2. PHOSPHATE COAT AS PER APPLICABLE QCP WITH LATEST REVISION.

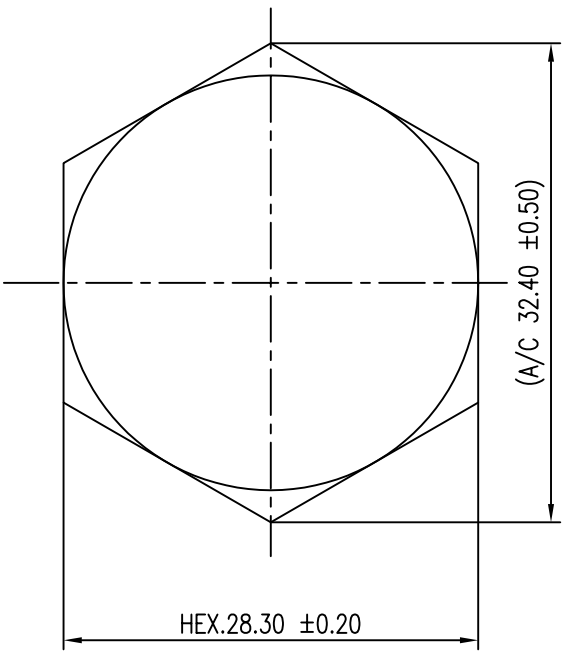
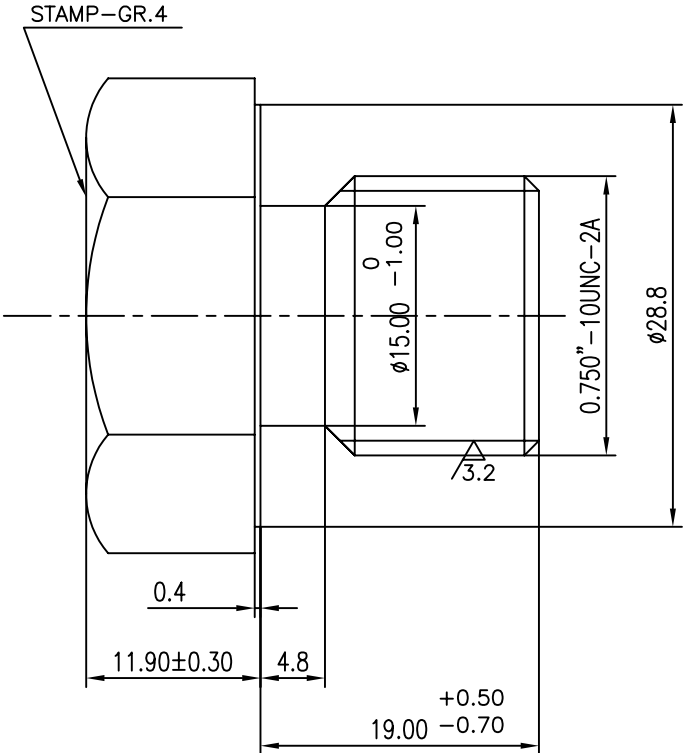
COMPONENT CODE:- 93175966

01	BAR 25 X 98	-	ASTM A193 GR. B7	Q & T 26-30 HRC	20	0.27	0.35	-	226
NO OFF	DESCRIPTION	MATL CODE	MATL SPECN (REFER ATTACHED)	HEAT TREATMENT	SCRAP SORT	NET WT (KG)	GROSS WT (KG)	DRAWING NO	ITEM NO
BHARAT HEAVY ELECTRICALS LTD., BOILER PLANT UNIT, TIRUCHIRAPALLI-620 014. DATE 17.5.93 DATE 17.5.93 DATE 19.5.93									
DEPL	GRADE OF UNTOL DIM	FIRST ANGLE	SCALE	WEIGHT (KG)	REF TO ASSY DRG.	ITEM NO			
V L	0.875		NTS	0.27	DRESSER DRG. No. 328 (REV. EK 705)	226			
CODE	348				PART NO. 0101 (SLNo. 1241)	REVISION			
TITLE		STUD-0.875" (7/8")			4-V-9077-13612			00	

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REV	DATE	ALTERED	G.V
04	04.08.05	CHD & APPD	E.A
96 CODE ADDED DRG UPDATED AND REDRAWN IN ACAD. DCP NO:800498			

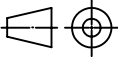
6.3/3.2



NOTES:-

- 1. 45° CHAMFER FIRST AND LAST THREAD.
- 2. HARDNESS 24-38 HRC.
- 3. PHOSPHATE COAT AS PER LATEST APPLICABLE QUALITY PROCEDURE.

COMP.CODE: 93075606 OR 96415595

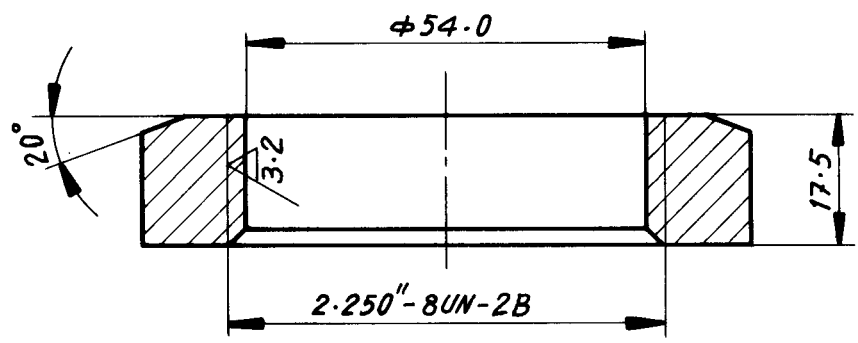
01	BAR ø33x38	—	A194—GR.4 (CERTIFY)	Q & T	10	0.11	0.37		158	
NO OFF	DESCRIPTION	MATL CODE	MATL SPECN	HEAT TREATMENT	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	DRAWING NO.	ITEM No	
 365-122 BHARAT HEAVY ELECTRICALS LTD., UNIT: HIGH PRESSURE BOILER PLANT. TIRUCHIRAPALLI 620014.					DRN	NAME	SIGN	DATE	NO.OF VAR	
					CHD	E.ATHIANNAVI		04.08.05		
					APPD	E.ATHIANNAVI		04.08.05		
DEPT VL			SCALE	WEIGHT (KG).	REFERENCE INFORMATION				NO. OF ITEMS	
CODE 340			NTS	0.11						
TITLE					CARD CODE	DRAWING NO.				REV
SEALING PLUG					U 01	4—V—9097—13157				04

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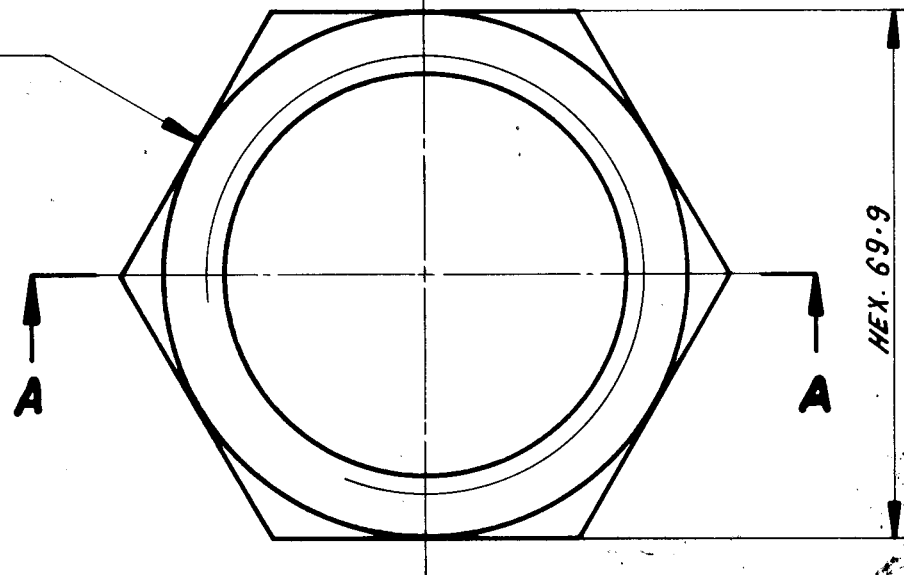
REV	DATE	ALTERED	REV	DATE	ALTERED
02	10.3.97	CHECKED & APPD.			
MATH. CODE 15924.217 WAS 35048074.			RAW MATL. SIZE $\phi 80$ WAS 100.		
DCN CONTROL No. SAV:90:3 Dt. 21.6.90			DCN:SR:0184		

SECTION-AA

6.3 / 3.2



STAMP 410T



NOTES:-

- 1. 45° CHAMFER FIRST THREAD.
- 2. DEBURR SHARP EDGES.



MICROFILMED ON
ROLL 00522 DATE 15/10

01	BAR $\phi 80 \times 25$		HARDNESS 24-29HRC COND-T	ASTM A276-TYPE 410 (CERTIFY)	40	0.27	1.54	93075750	102
No. OFF	DESCRIPTION	MATL. CODE	HEAT TREATMENT	MATL. SPECN	SCRAP SORT	NET WL (kg)	GROSS WL (kg)	COMP. CODE	ITEM No.
		BHARAT HEAVY ELECTRICALS LIMITED BOILER PLANT UNIT, TIRUCHIRAPALLI-620014							
05-249/A		(REV. CB 065)							
DEPT VL	CODE 340		SCALE 1:1	WEIGHT (kg.) 0.27	DRESSER DRG. No. 202596. (1244) PART No. 0259601.			IT. No. 102	
TITLE LOCK NUT					DRAWN	NAME E.ATHI ANNAVI.	SIGN	DATE 19/12/79	
					CHECKED	K. B.	K. B.	21.1.80	
					APPR	D. K.	22	25.1.80	
DIMENSIONS TO BE CONTROLLED WITHIN LIMITS AS SHOWN. MACHINING TOLERANCE ± 0.25 mm. UNLESS OTHERWISE SHOWN NON-MACHINING TOLERANCE $\pm$				CARD CODE	4-DRAWING NO. 4-V-9456-13150		15 16 REV 17 02		

FOR TOLERANCES OF UNTOLERANCED DIMENSIONS			ALL DIMENSIONS ARE IN MILLIMETRES. DURING MANUFACTURE REFER RELEVANT QCP/QP		
REV	DATE	ALTERED	G.V		
02	04.08.05	CHD & APPD	E.A		
96 CODE ADDED, DRG UPDATED AND REDRAWN IN ACAD. DCP NO:800498					

COMP.CODE: 93076049 OR 96415593

CORPORATE DRG ID
~~TP-DG-4-V-9904-13289~~

Size A4