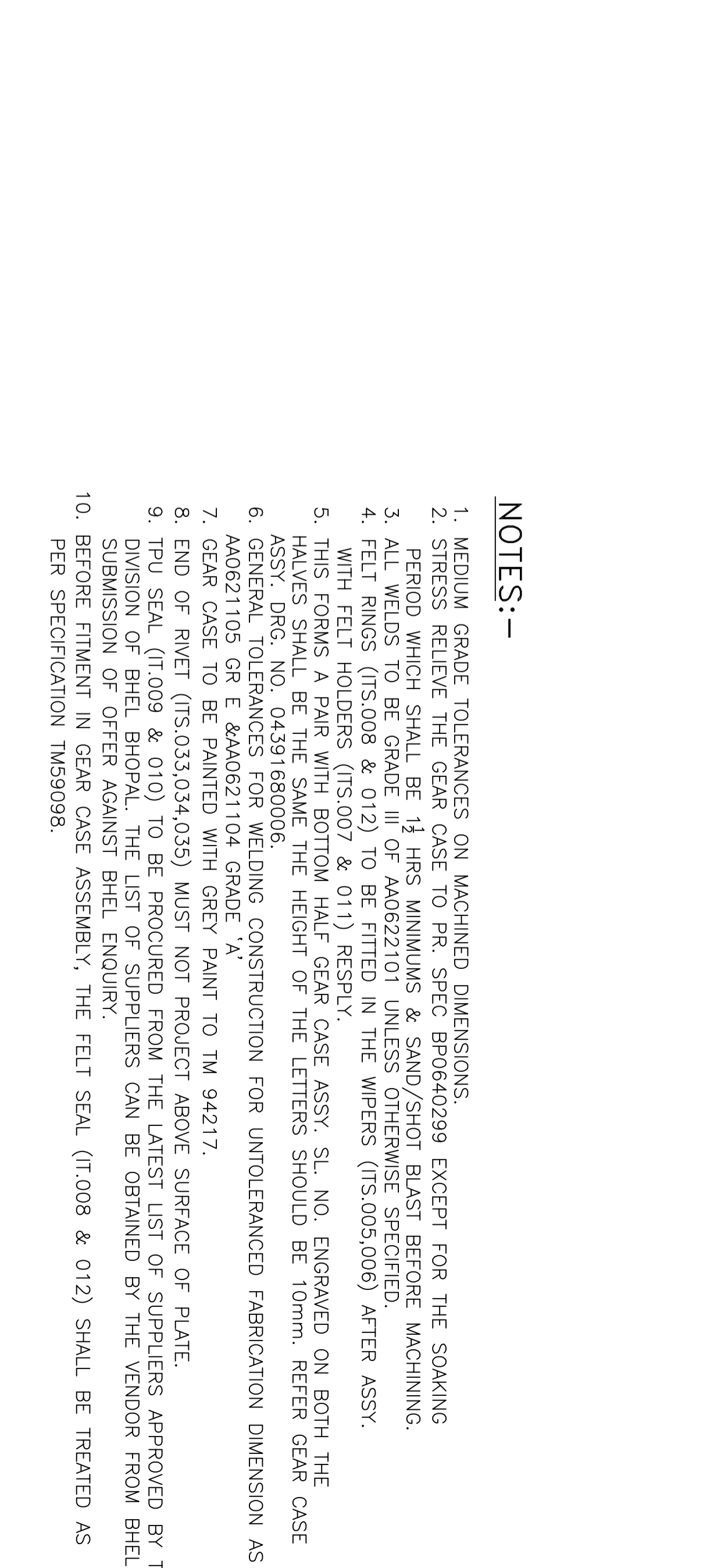
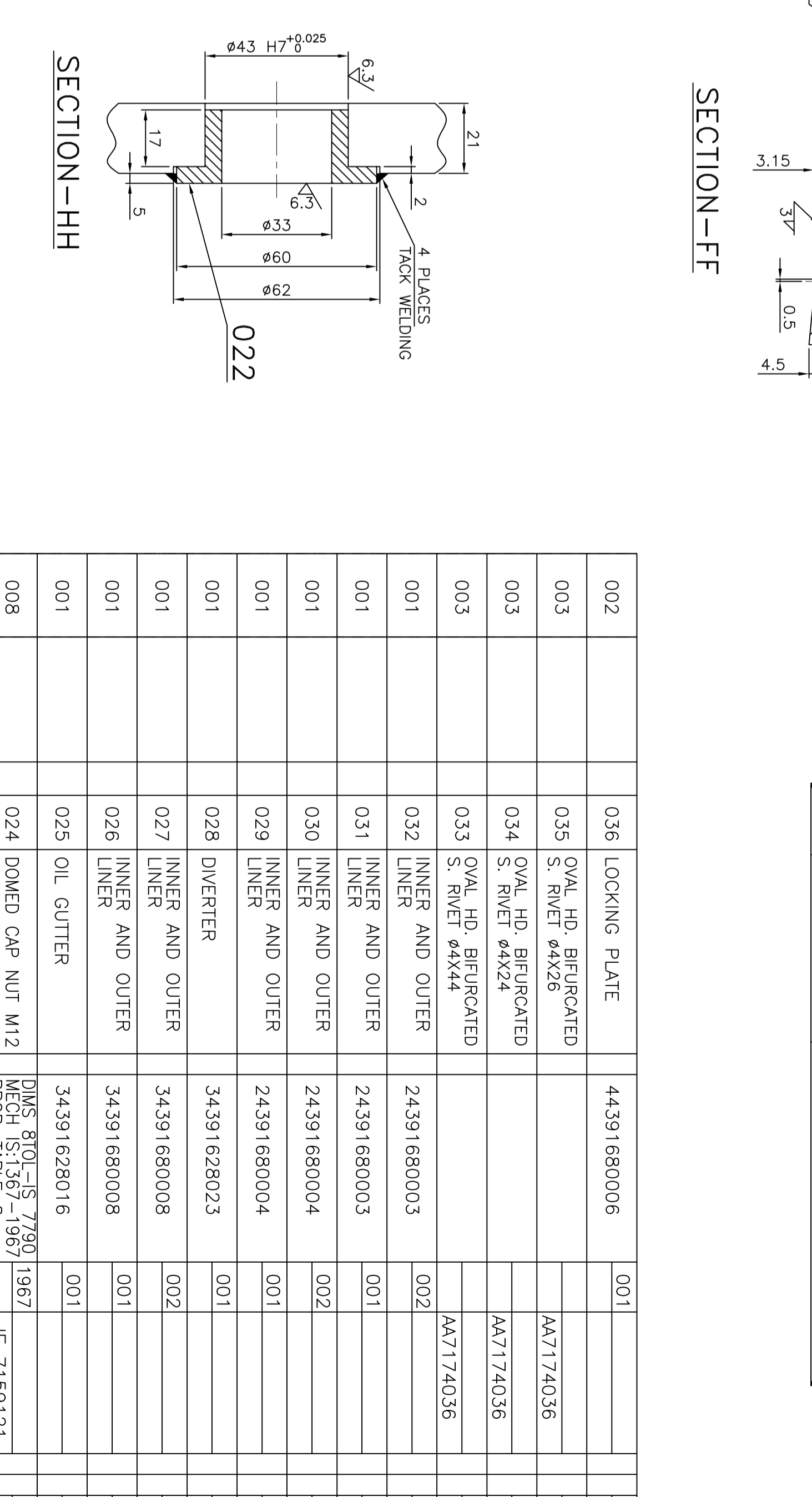
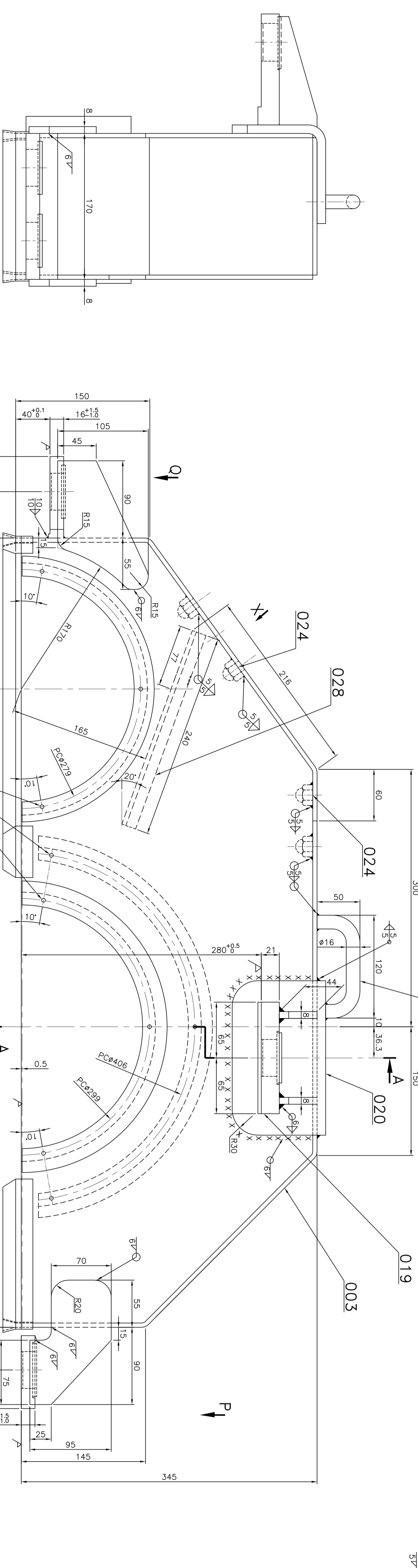


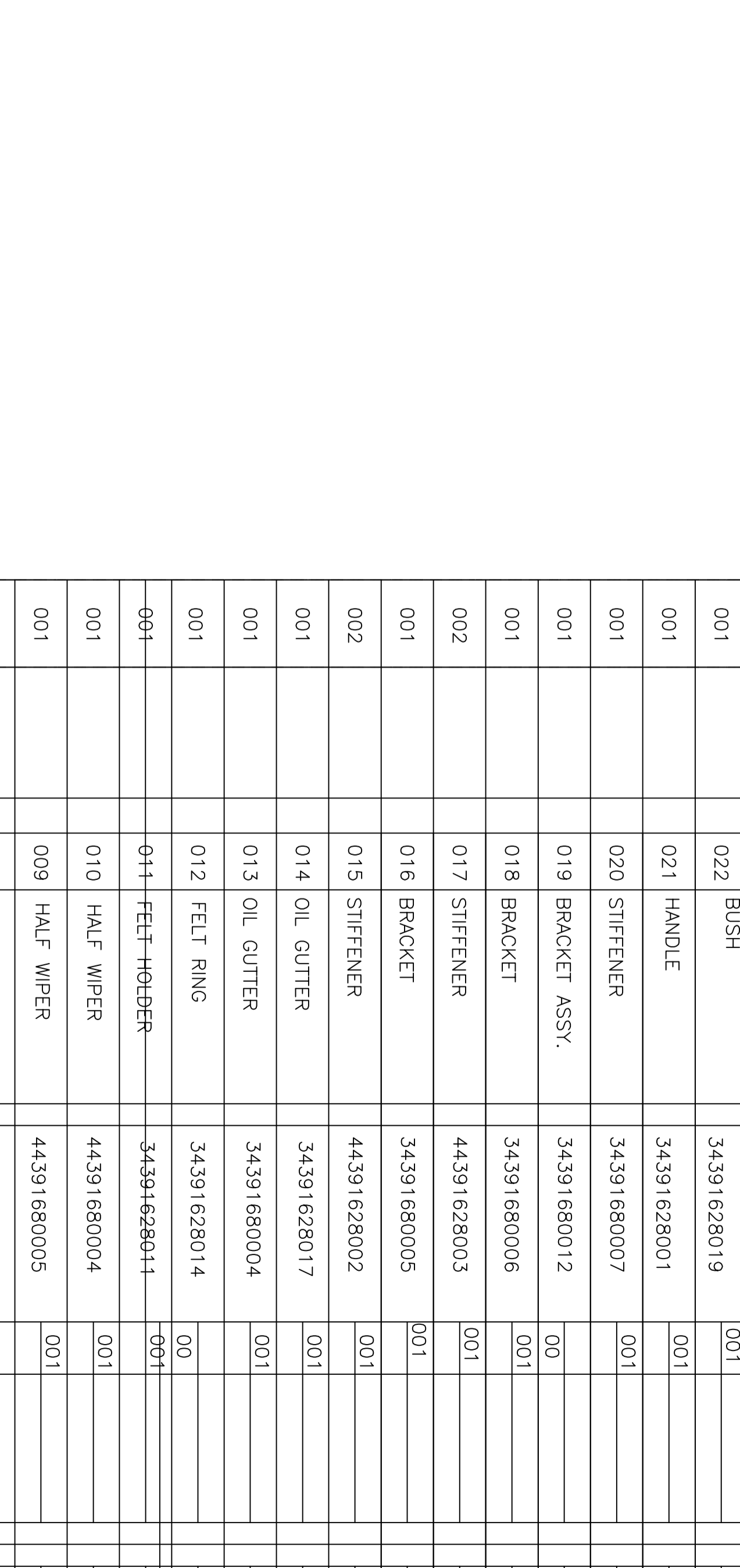
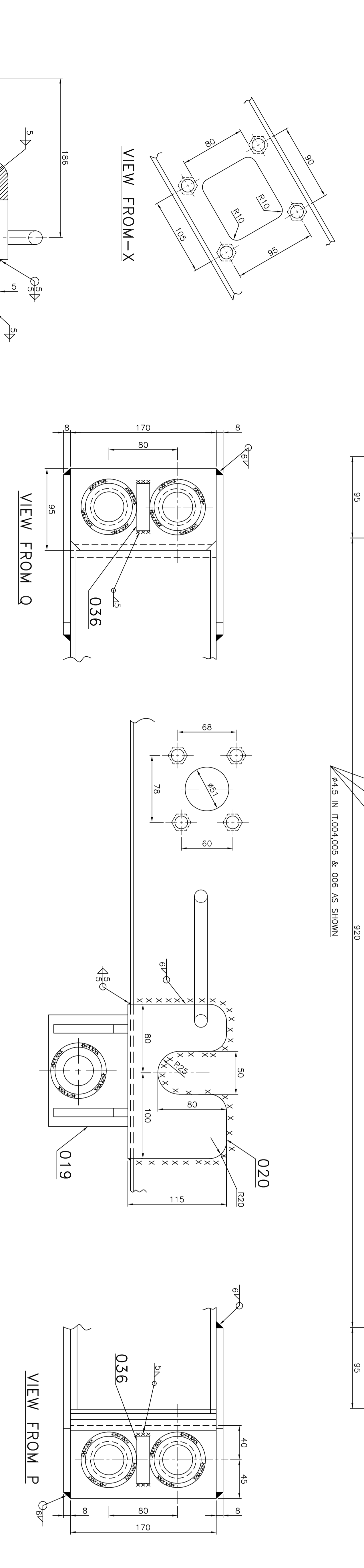
SECTION-GG



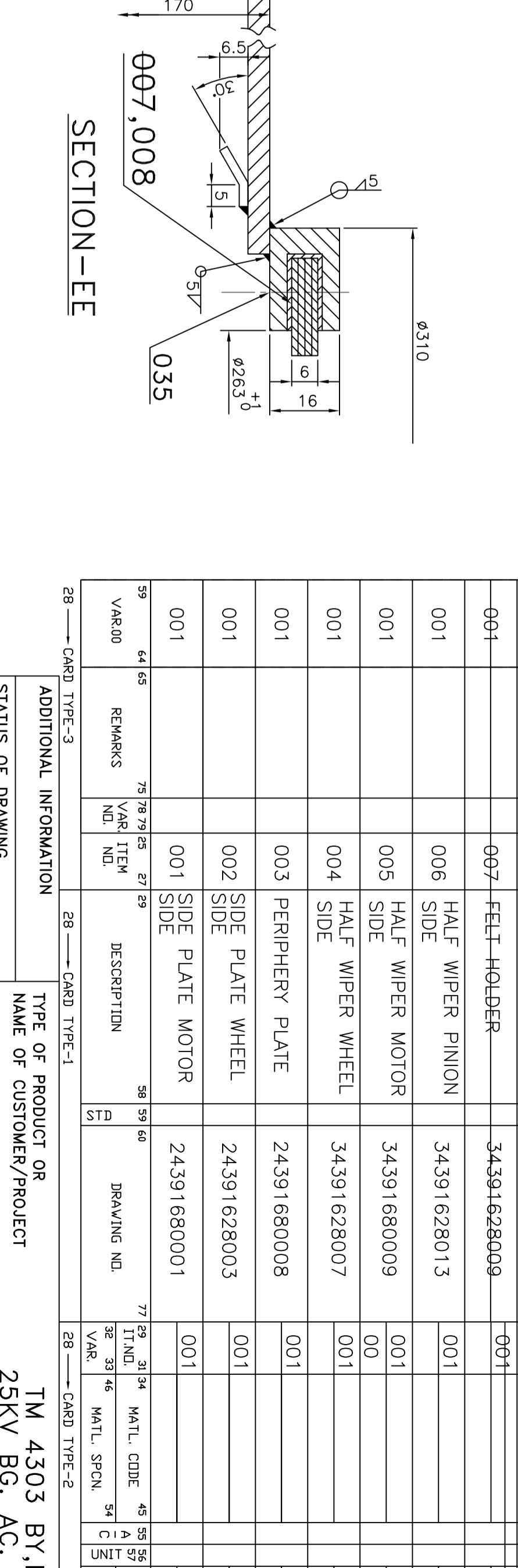
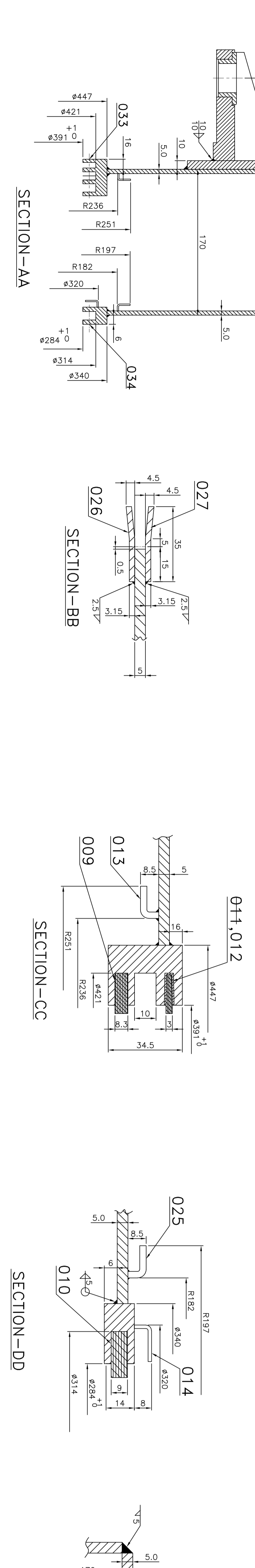
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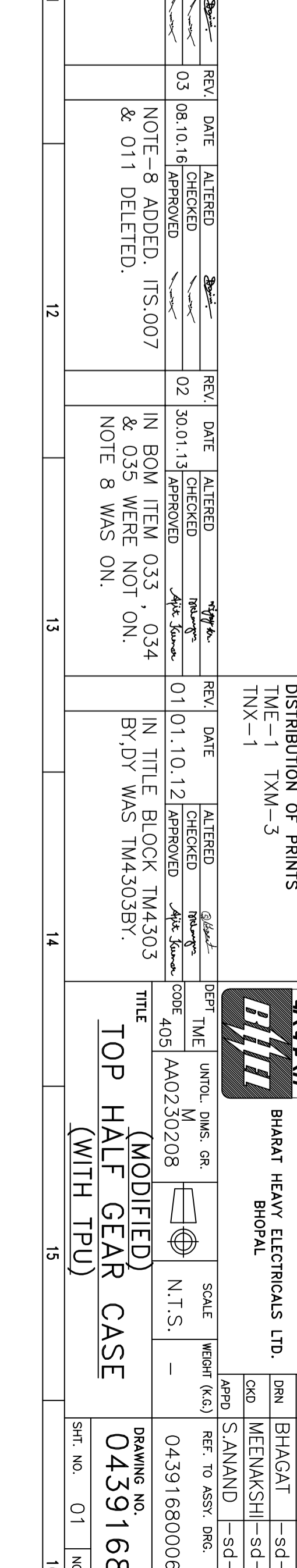
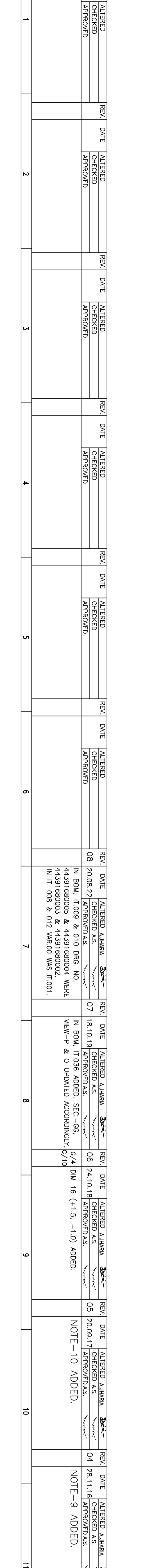
SECTION-GG



VIEW FROM X



SECTION-AA



SECTION-AA

TOOL LIST

NO.	TOOL NO.	DESCRIPTION
1	1574484	GEAR CASE CHECKING FIXTURE

NOTES:-

- MEDIUM GRADE TOLERANCES ON MACHINED DIMENSIONS UNLESS SPECIFIED OTHERWISE.
- STROD FINISH SHALL BE GRAD 125 MINIMUM & SAND/SHOT BLAST BEFORE MACHINING.
- ALL WELDS TO BE GRADE III OF AWS/E2101 UNLESS OTHERWISE SPECIFIED.
- FELT RINGS (015,008 & 012) TO BE FITTED IN THE WIPEES (015,005,006) AFTER ASSY.
- WITH FELT HOLDERS (015,007 & 011) RESPLY.
- THIS FORMS A PAIR WITH BOTTOM HALF GEAR CASE ASSY. S.L. NO ENGRAVED ON BOTH THE CASE ASSY. DRG. NO. 04391680006.
- GENERAL TOLERANCES FOR WELDING CONSTRUCTION FOR UNTOLEANCED FABRICATION DIMENSION AS PER AWS D1.1:05 GR E & AWS D1.1:04 GRADE 'X'.
- GEAR CASE TO BE PAINTED WITH GREY PAINT TO TM 94217.
- PAUSEL (01008 & 010) TO BE PROCURED FROM THE LATEST LIST OF SUPPLIERS APPROVED BY TRN.
- THE FELT RINGS (015,008 & 012) SHALL BE OBTAINED BY THE VENDOR FROM THE FURNISHER.
- PER SPECIFICATION 1859098.

NO.	REMARKS	DATE	BY	CHKD	APPD	REV	DATE	REASON
001								
002								
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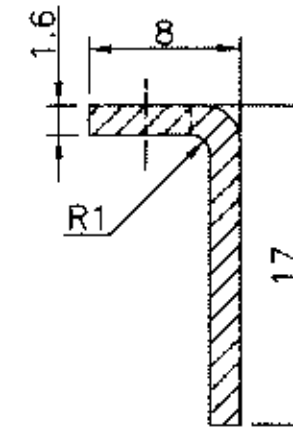
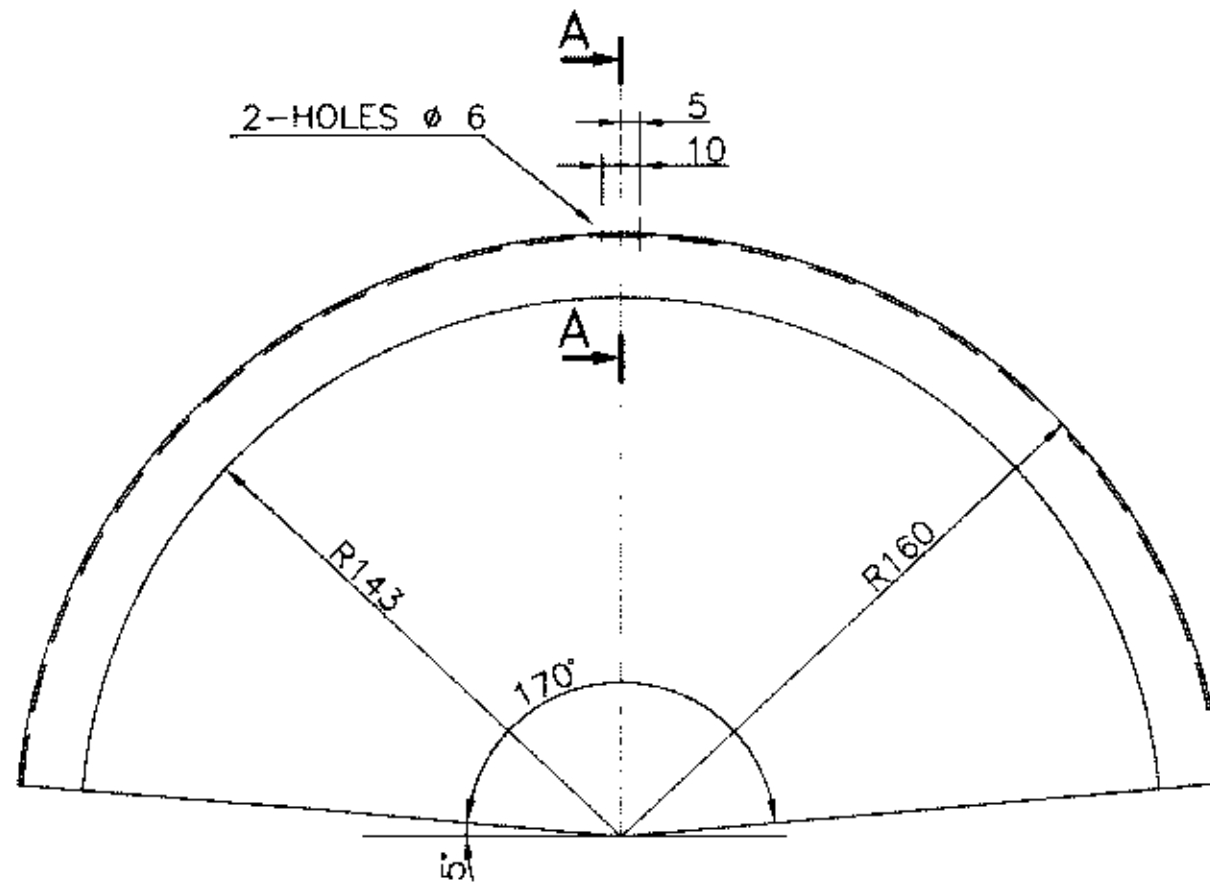
REVISIONS

NO.	DATE	BY	CHKD	APPD	REASON
01	01.10.12				INITIAL BLOCK
02	02.08.11				REVISION
03	03.07.11				REVISION
04	04.06.11				REVISION
05	05.05.11				REVISION
06	06.04.11				REVISION
07	07.03.11				REVISION
08	08.02.11				REVISION
09	09.01.11				REVISION
10	10.12.10				REVISION
11	11.11.10				REVISION
12	12.10.10				REVISION
13	13.09.10				REVISION
14	14.08.10				REVISION
15	15.07.10				REVISION
16	16.06.10				REVISION
17	17.05.10				REVISION
18	18.04.10				REVISION
19	19.03.10				REVISION
20	20.02.10				REVISION
21	21.01.10				REVISION
22	22.12.09				REVISION
23	23.11.09				REVISION
24	24.10.09				REVISION
25	25.09.09				REVISION
26	26.08.09				REVISION
27	27.07.09				REVISION
28	28.06.09				REVISION
29	29.05.09				REVISION
30	30.04.09				REVISION
31	31.03.09				REVISION
32	32.02.09				REVISION
33	33.01.09				REVISION
34	34.12.08				REVISION
35	35.11.08				REVISION
36	36.10.08				REVISION
37	37.09.08				REVISION
38	38.08.08				REVISION
39	39.07.08				REVISION
40	40.06.08				REVISION
41	41.05.08				REVISION
42	42.04.08				REVISION
43	43.03.08				REVISION
44	44.02.08				REVISION
45	45.01.08				REVISION
46	46.12.07				REVISION
47	47.11.07				REVISION
48	48.10.07				REVISION
49	49.09.07				REVISION
50	50.08.07				REVISION
51	51.07.07				REVISION
52	52.06.07				REVISION
53	53.05.07				REVISION
54	54.04.07				REVISION
55	55.03.07				REVISION
56	56.02.07				REVISION
57	57.01.07				REVISION
58	58.12.06				REVISION
59	59.11.06				REVISION
60	60.10.06				REVISION
61	61.09.06				REVISION
62	62.08.06				REVISION
63	63.07.06				REVISION
64	64.06.06				REVISION
65	65.05.06				REVISION
66	66.04.06				REVISION
67	67.03.06				REVISION
68	68.02.06				REVISION
69	69.01.06				REVISION
70	70.12.05				REVISION
71	71.11.05				REVISION
72	72.10.05				REVISION
73	73.09.05				REVISION
74	74.08.05				REVISION
75	75.07.05				REVISION
76	76.06.05				REVISION
77	77.05.05				REVISION
78	78.04.05				REVISION
79	79.03.05				REVISION
80	80.02.05				REVISION
81	81.01.05				REVISION
82	82.12.04				REVISION
83	83.11.04				REVISION
84	84.10.04				REVISION
85	85.09.04				REVISION
86	86.08.04				REVISION
87	87.07.04				REVISION
88	88.06.04				REVISION
89	89.05.04				REVISION
90	90.04.04				REVISION
91	91.03.04				REVISION
92					

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

34391628017



SECTION-AA

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INVENTORY NO. 14/16152
SIGN. & DATE. REL. DES. NO.

001		OIL GUTTER 1.6TKx25x475		AA1011715090 AA10115		KG 0.15	
VAR. CD	REMARKS	VAR. NO.	REV. NO.	DESCRIPTION	DRAWING NO.	MATL. CODE	UNIT WT.
ADDITION INFORMATION				TYPE OF PRODUCT			
STATUS OF DRAWING				NAME OF CUSTOMER/PROJECT			
DISTRIBUTION OF PRINT				TM 4303 AZ 25 KV BG AC EMU			
TME-1 TNX-1				BHARAT HEAVY ELECTRICALS LTD.			
TXM-3				BHOPAL			
REV. DATE				SCALE			
04 12.6.09				NTS			
DRAWING, UPDATED & DIGITIZED				WEIGHT (KG)			
				0.15			
TME				REF. ASSY. URL.			
405				04391628001			
				04391628002			
				DRAWING NO.			
				34391628017			
				SHEET NO. 01			
				NO. OF SHEET 01			

SIZE A3



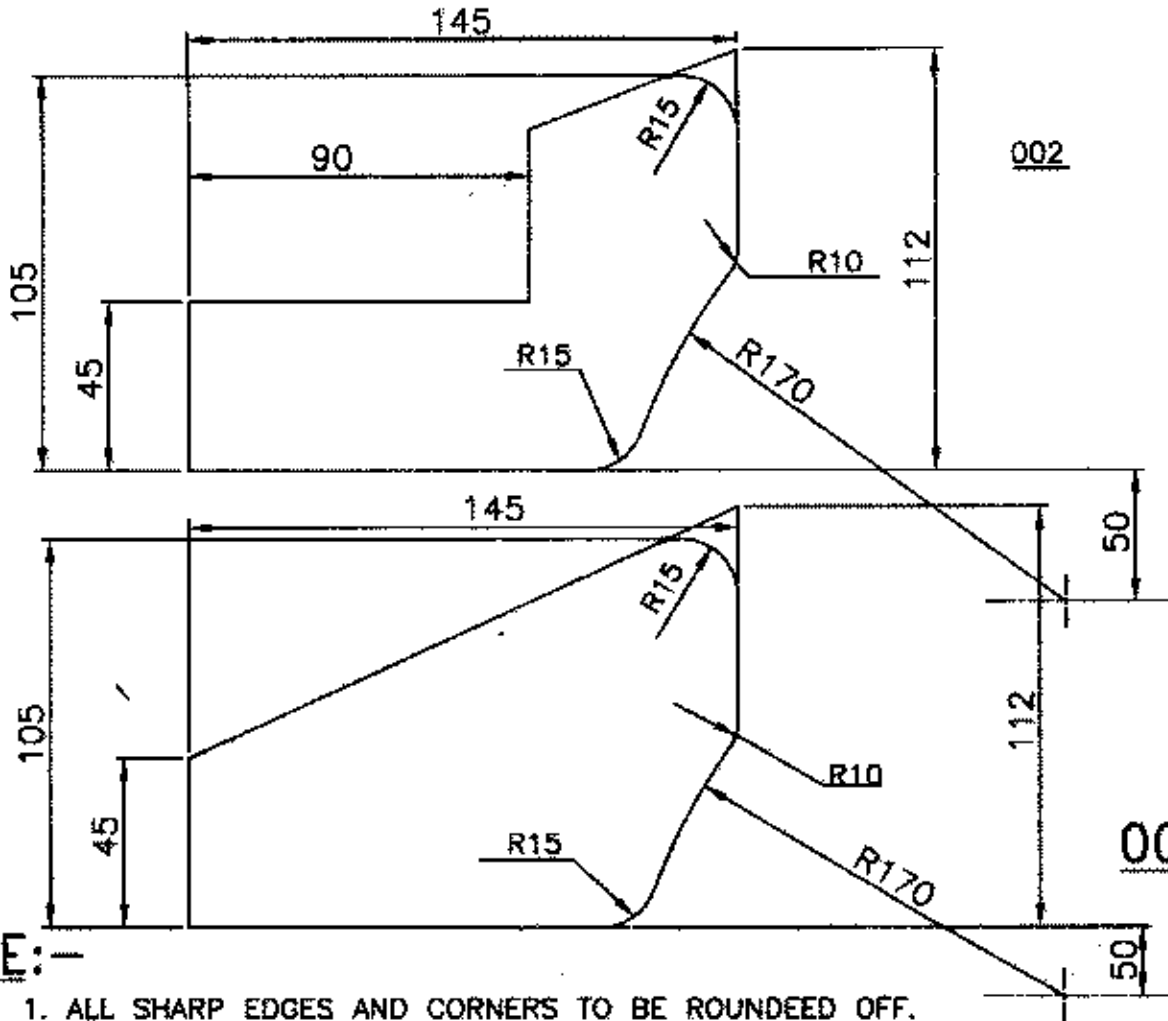
FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm) 7/203

138705/2024/HEP-TXM20500

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REV.	DATE	CHECKED	APPROVED	REV.	DATE	ALTERED F	ADDITIONAL INFORMATION
05	13.6.09						
				DRG. UPDATED & DIGITIZED		STATUS OF DRAWING	
						DISTRIBUTION OF PRINTS	
						TME-1 TXM-3 TNX-1	



NOTE:-

1. ALL SHARP EDGES AND CORNERS TO BE ROUNDEED OFF.

REF. DRG. NO.	ITEM NO.	DESCRIPTION	STD	MATERIAL CODE	MATERIAL SPECN.	UNIT	UNIT WT.	QTY.
							KG.	
002	002	STEEL PLATE 8TKx112x145	1	AA1011808056			1.02	
				AA10108				
001	001	STEEL PLATE 8TKx112x145	1	AA1011808056			1.02	
				AA10108				
REMARKS		28 --- CARD TYPE-3		26 --- CARD TYPE-1		28 --- CARD TYPE-2		

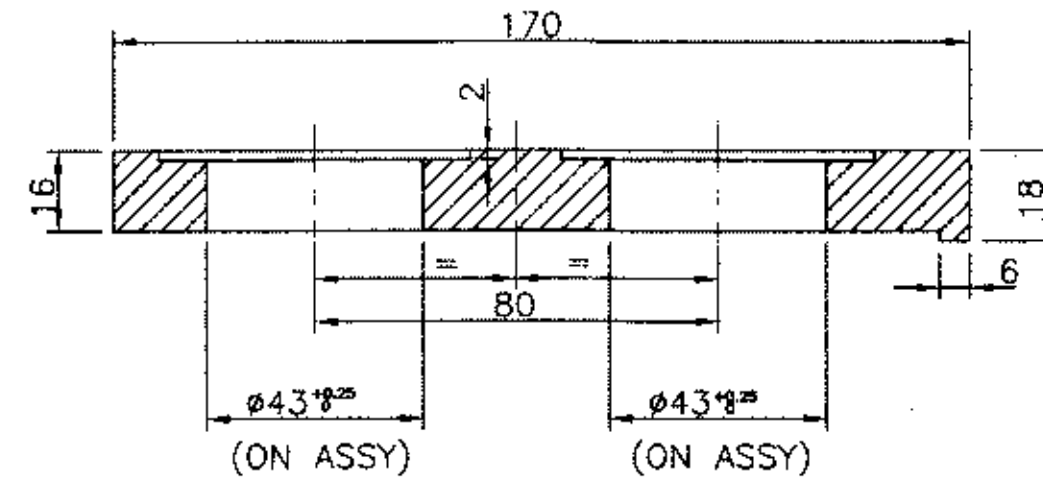
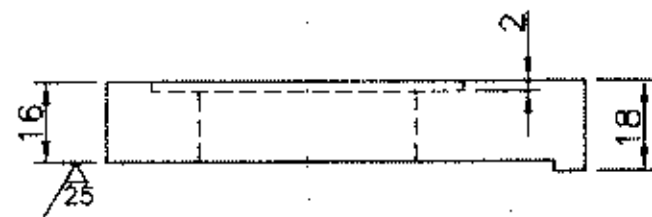
INVENTORY NO.	DEPT TME	UNTOLE DRG. OR	SCALE	WEIGHT (K.G.)	REV. TO APPY. DRG.	ITEM NO.	NO. OF
					04391628001	015	002
SIGN. & DATE	B4900700	M	NTS		04391628002	014	
TITLE					DRAWING NO.	REV.	
STIFFENER					44391628002	05	
TM4303AZ, BY 25KVBG AC EMU					SIT. No. 01	NO. OF SHE. 01	

FIRST ANGLE PROJECTION

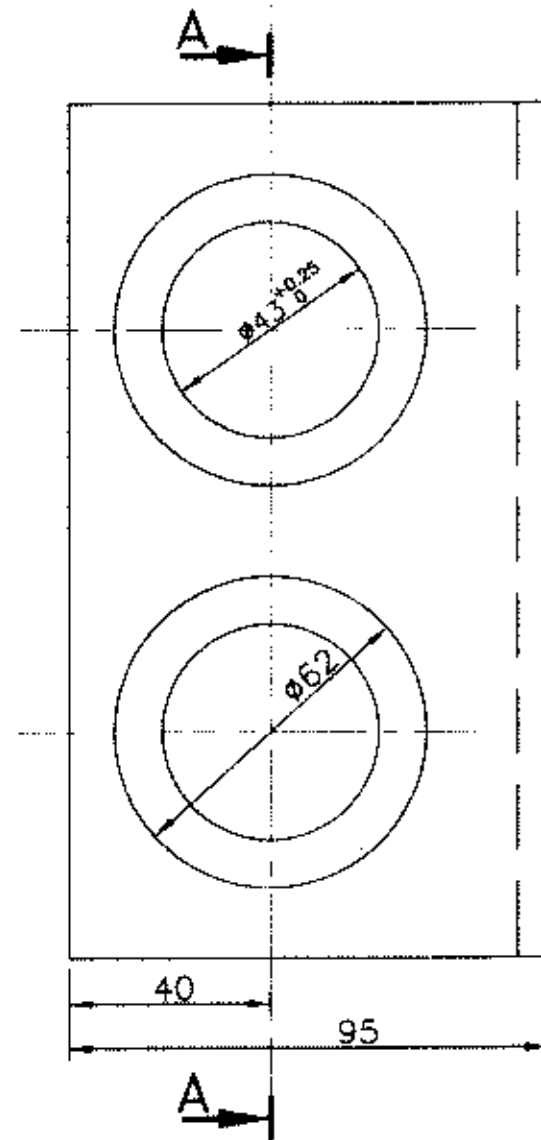
(ALL DIMENSIONS ARE IN mm)

34391680005

01 060




SECTION-AA



NOTE:-

- 1. ALL SHARP EDGES AND CORNERS TO BE ROUNDED OFF.

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R/WT. 2.10		001	STEEL PLATE 18TK x95x170	AA1011808129		KG	1.63
VAR. CO.	REMARKS	VAR. NO.	ITEM NO.	DESCRIPTION	DRAWING NO.	UNIT WT.	
ADDITIONAL INFORMATION				TYPE OF PRODUCT			
STATUS OF DRAWING				NAME OF CUSTOMER/PROJECT			
DISTRIBUTION OF DRAWING				TM 4303 BY 25 KV. BG. AC. EMU.			
TME-1 TNX-1 TXM-3				 BHARAT HEAVY ELECTRICALS LTD. BHO PAL SANTOSH Sd/- 30.06.99 D.K. Sd/- 01.07.99 MV Sd/- 01.07.99			
REV	DATE	ALTERED	F	DEPT	GRADE OF UNTO.	SCALE	WEIGHT (KG)
01.	9.6.09	CHECKED	mx	TME	D.M. <i>ms</i>	NTS	1.63
DRAWING UPDATED & DIGITIZED.				REF. TO ASSY. DRG. 04391680001 04391680002			
				DRAWING NO. 34391680005			
				SHEET NO. 01 NO. OF SHEET 01			

BRACKET

SIZE A3

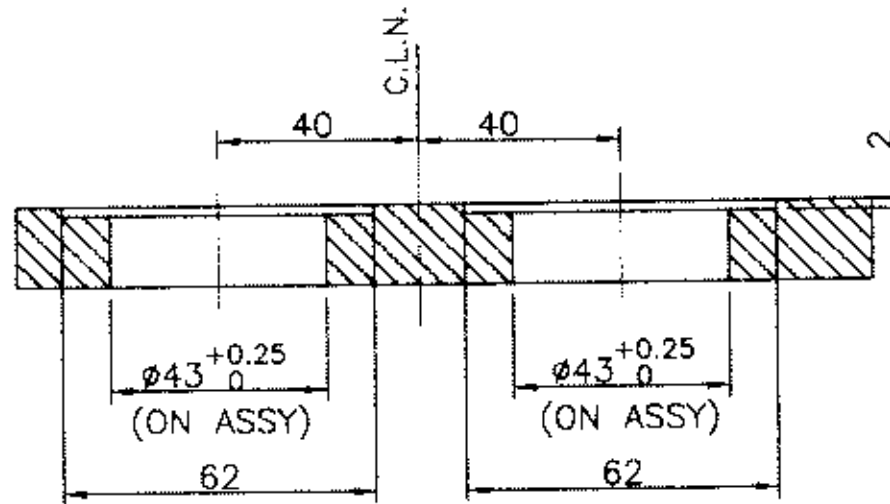
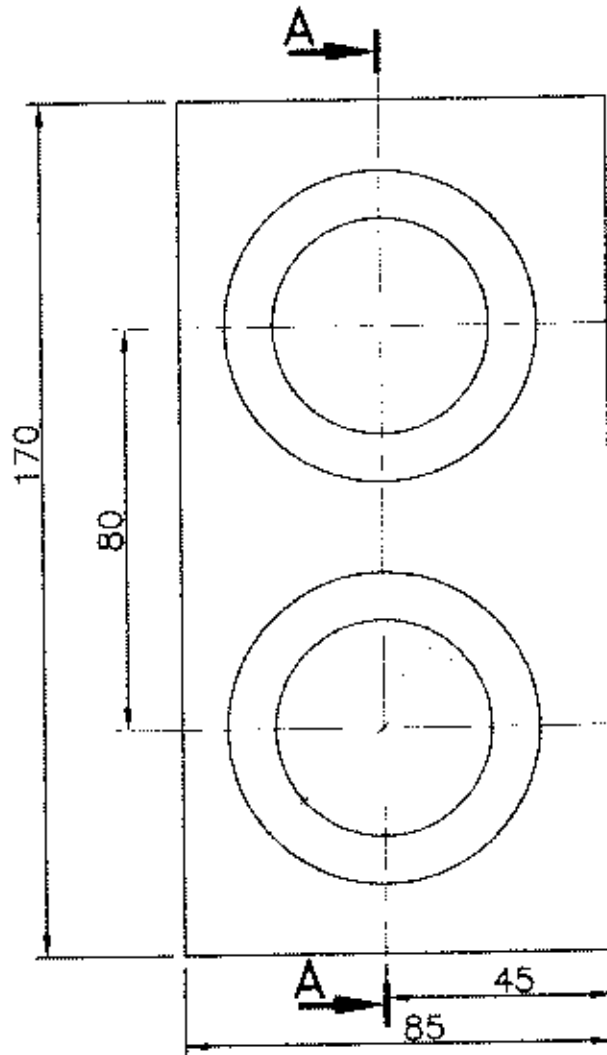
F-8K

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

34391680006

ON DEC



SECTION-AA

NOTE:-

1. ALL SHARP EDGES AND CORNERS TO BE ROUNDED OFF.

VAR. NO.	REMARKS	DATE	BY	DESCRIPTION	DRAWN BY	DATE	MATERIAL CODE	UNIT WT												
							AA1011808129 AA10108	KG 1.41												
							MATERIAL SPEC.													
ADDITION INFORMATION				NAME OF PRODUCT OR NAME OF CUSTOMER/PROJECT																
STATUS OF DRAWING				TM 4303 BY 25 KV. BG. AC. EMU.																
DISTRIBUTION OF PRINT				BPHARAT HEAVY ELECTRICALS LTD. BHOPAL																
TME-1 TNX-1 TXM-3				<table border="1"> <tr> <th>NAME</th> <th>DATE</th> <th>NO. OF</th> </tr> <tr> <td>SANTOSH</td> <td>Sd/-</td> <td>01.07.99</td> </tr> <tr> <td>D.K.</td> <td>Sd/-</td> <td>01.07.99</td> </tr> <tr> <td>MV</td> <td>Sd/-</td> <td>01.07.99</td> </tr> </table>					NAME	DATE	NO. OF	SANTOSH	Sd/-	01.07.99	D.K.	Sd/-	01.07.99	MV	Sd/-	01.07.99
NAME	DATE	NO. OF																		
SANTOSH	Sd/-	01.07.99																		
D.K.	Sd/-	01.07.99																		
MV	Sd/-	01.07.99																		
REV.	DATE	APPROVED	BY	SCALE	WEIGHT (kg)	REF. TO ASSY DWS	ITEM NO.	NO. OF												
01	9.6.09	APPROVED	<i>[Signature]</i>	TME 405	1.41	04391680001 04391680002	018 017	001												
DRAWING UPDATED & DIGITIZED.				DRAWING NO. 34391680006																
				TITLE BRACKET																
				SHEET NO. 01 NO. OF SHEET 01																

SIZE A3

F-88

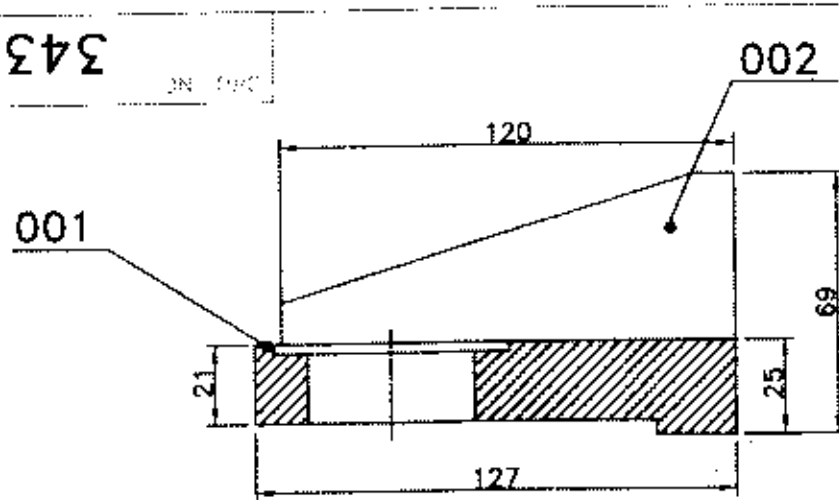
THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LTD. IT MUST NOT BE USED IN WHOLE OR IN PART FOR ANY PURPOSE WITHOUT THE WRITTEN PERMISSION OF THE COMPANY.

INVENTORY NO. DATE REF. Dwg. NO.

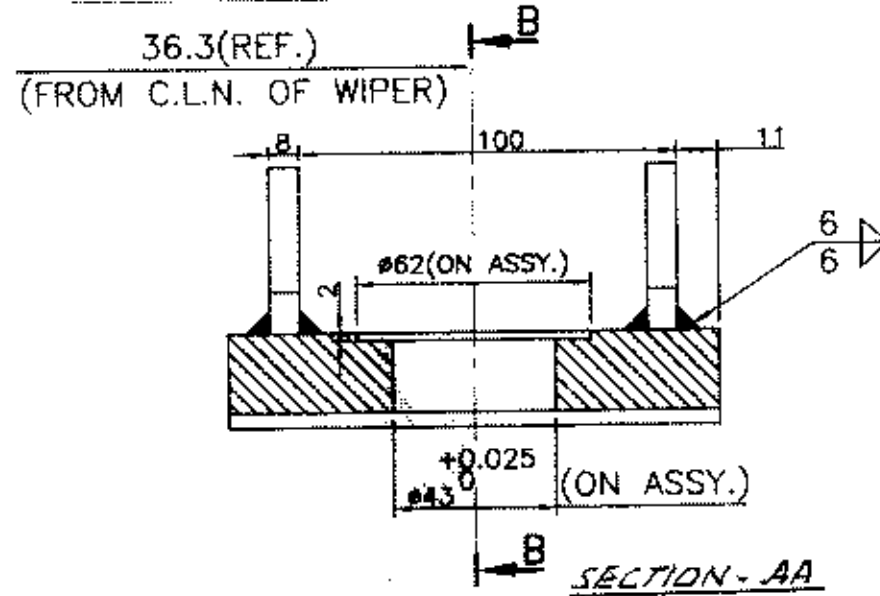
FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

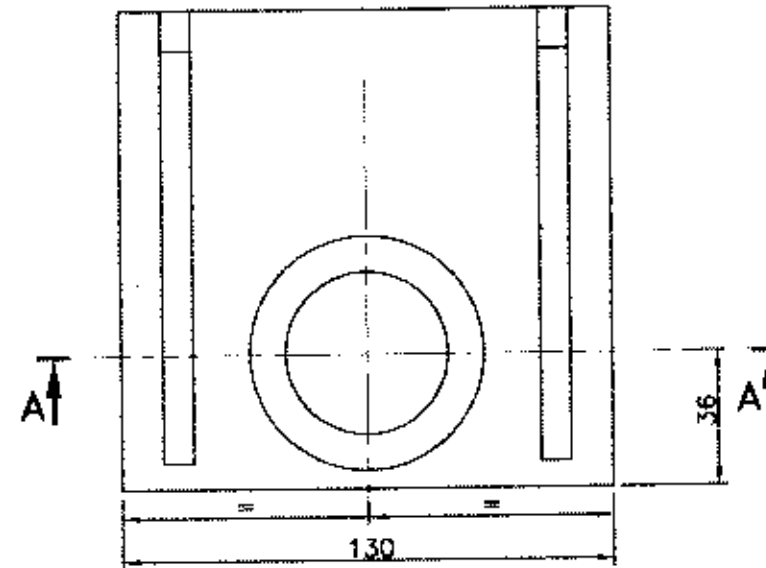
34391680012



SECTION-BB



SECTION-AA



NOTE:-

1. ALL SHARP EDGES AND CORNERS TO BE ROUNDED OFF.

002	002	RIB	44391680001	001	KG	0.15
001	001	PLATE	34391680011	001	KG	2.05
VAR. NO.	REMARKS	VAR. NO.	ITEM NO.	DESCRIPTION	QTY	DRAWING NO.

ADDITIONAL INFORMATION

STATUS OF DRAWING

DISTRIBUTION OF PRINT
TME-1 TNX-1
TXM-3

TYPE OF PRODUCT OF
NAME OF CUS. UNIT/PROJECT



BHARAT HEAVY ELECTRICALS LTD.
BHOPAL

TM 4303 BY
25 KV. BG. AC. EMU.

NAME	SIGN	DATE	NO. OF SHEET
SANTOSH	Sd/-	02.07.99	01
D.K.	Sd/-	05.07.99	
NS MV	Sd/-	05.07.99	

REV. DATE APPROVED BY CHECKED BY
01 21.07.09 APPROVED: *Spc*

REV. DATE APPROVED BY CHECKED BY
TME 405 21.07.09 APPROVED: *Spc*

GRADE OF CONTROL
AA0230208

WEIGHT (kg) 2.35
REF. TO ASSY. DRG. 04391680001
ITEM NO. 019
NO. OF SHEETS 002

DRAWING UPDATED & DIGITIZED

BRACKET

DRAWING NO. 34391680012
SHEET NO. 01
NO. OF SHEET 01

SIZE A3

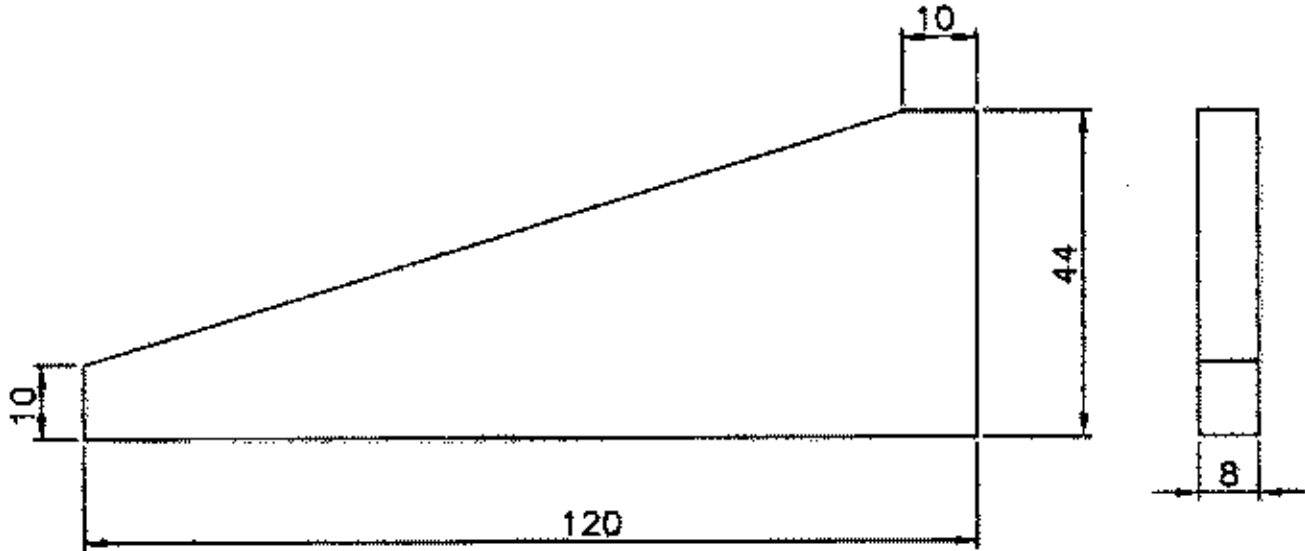
P. - 001

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DATE: 24.07.152
REV. DRG. NO.
SIGN. & DATE
REVISION NO.

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REV.	DATE	ALTERED	REV.	DATE	ALTERED	ADDITIONAL INFORMATION
		CHECKED	01	10.04.09	TYPE	
		APPROVED			APPROVED	
DRAWING UPDATED & DIGITIZED.						STATUS OF DRAWING
						DISTRIBUTION OF PRINTS
						TME-1 TNX-1 TXM-3



NOTE:-

1. ALL SHARP EDGES AND CORNERS TO BE ROUNDED OFF.

REMARKS	ITEM NO.	DESCRIPTION	STD	MATL. CODE	UNIT	UNIT WT. KG.
				MATL. SPCN.		QTY.
28 --- CARD TYPE-3	001	STEEL PLATE 8TKx44X120		AA1011B08056 AA10108		0.15

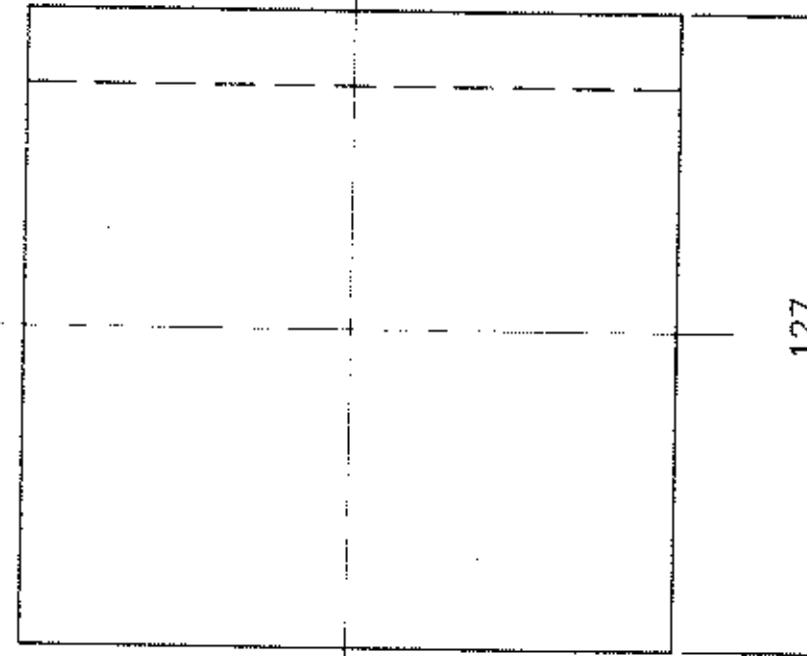
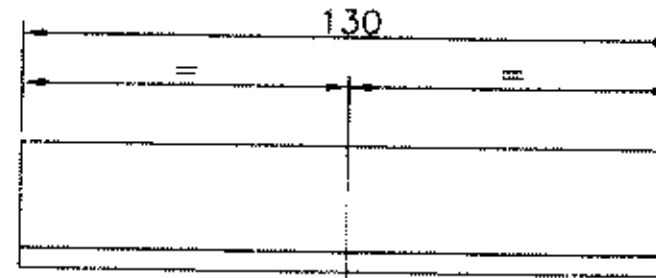
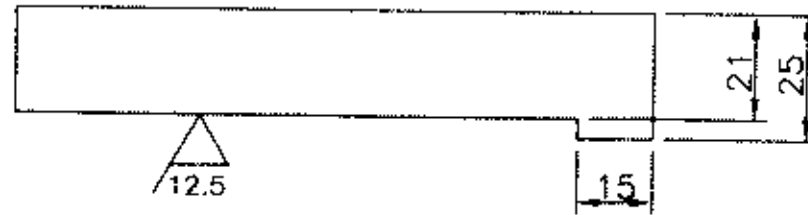
SIGN. & DATE	B4900700		BHARAT HEAVY ELECTRICALS LTD.			NO. OF
			BHOPAL			REV.
			DATE	BY	CHKD	
			02.07.99	-Sd-	SANTOSH	
			05.07.99	-Sd-	DK	
			05.07.99	-Sd-	MV NS	

INVENTORY NO.	REF. TME	INTER. ENG. NO.	SCALE	WEIGHT (K.G.)	REF. TO ASSY. DRG.	ITEM NO.	NO. OF ITEM
	008 405		NTS	0.15	34301680012	002	001
	TITLE					DRWG. NO.	REV.
RIB					44391680001	01	
TM4303 BY&DY					DRG. NO. 01	NO. OF DRG. 01	

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

34391680011



NOTES:-

- 1. ALL SHARP EDGES AND CORNERS TO BE ROUNDED OFF.

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INVENTORY NO. _____
SIGN & DATE _____

VAR. CD	REMARKS	VAR. NO.	ITEM NO.	DESCRIPTION	DRAWING NO.	PL. NO.	MAT. CODE	UNIT WT
	R/WT 3.26	001		STEEL PLATE 25TKx127X130		AA1011808153 AA10108	KG	2.05
ADDITION INFORMATION				TYPE OF PRODUCT		CARD TYPE 2		
STATUS OF DRAWING				NAME OF CUSTOMER/PROJECT		CARD TYPE 1		
DISTRIBUTION OF PRINT				BHARAT HEAVY ELECTRICALS LTD.		CARD TYPE 3		
TME-1 TNX-1				BHPAL		TM 4303 AZ		
TCX-1 FBM-4				BHPAL		25 KV. BG. AC. EMU.		
REV.	DATE	ALTERED	BY	DEPT.	GRADE OF LIMB.	SCALE	WEIGHT (kg)	REL. TO ASSY. DTD.
02	10.6.09	CHECKED	<i>M</i>	TME	SM	NTS	2.05	
DRAWING UPDATED & DIGITIZED.				CODE				
				405				
				TITLE				
				BASE PLATE				
				DRAWING NO.				
				34391680011				
				SHEET NO.	NO. OF SHEET			
				01	01			

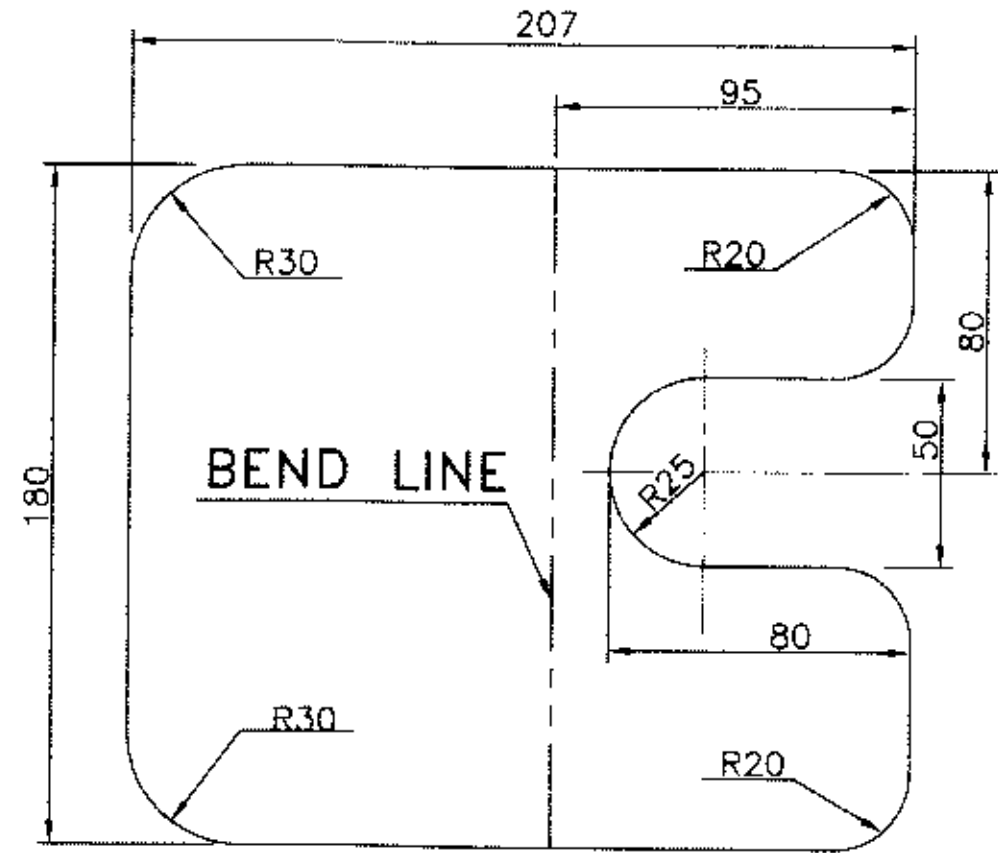
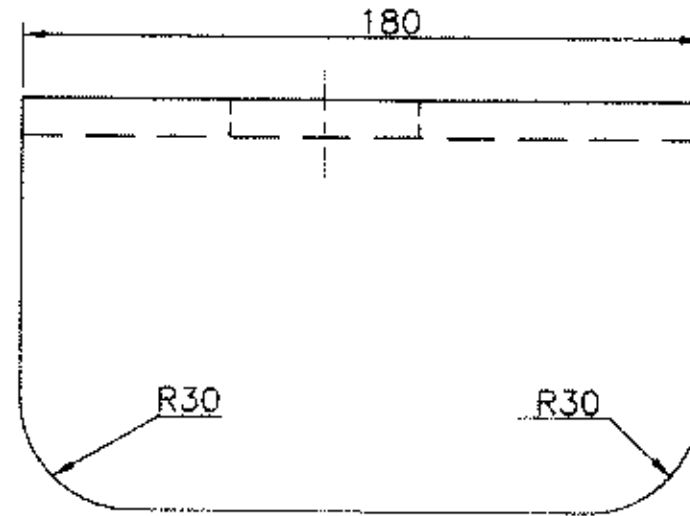
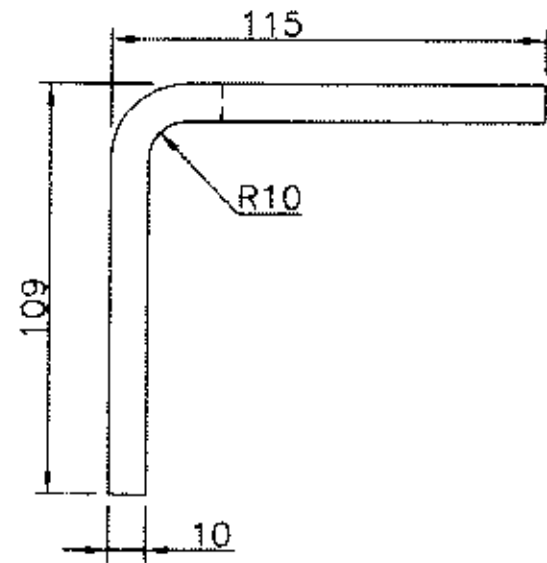
SIZE A3

FORM 100K

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

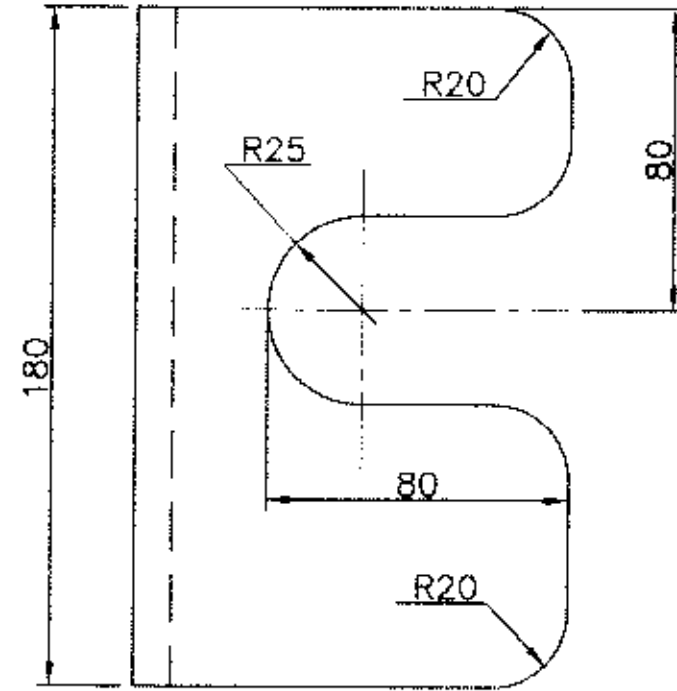
34391680007



DEVELOPED VIEW

NOTE:-

1. ALL SHARP EDGES AND CORNERS TO BE ROUNDED OFF.



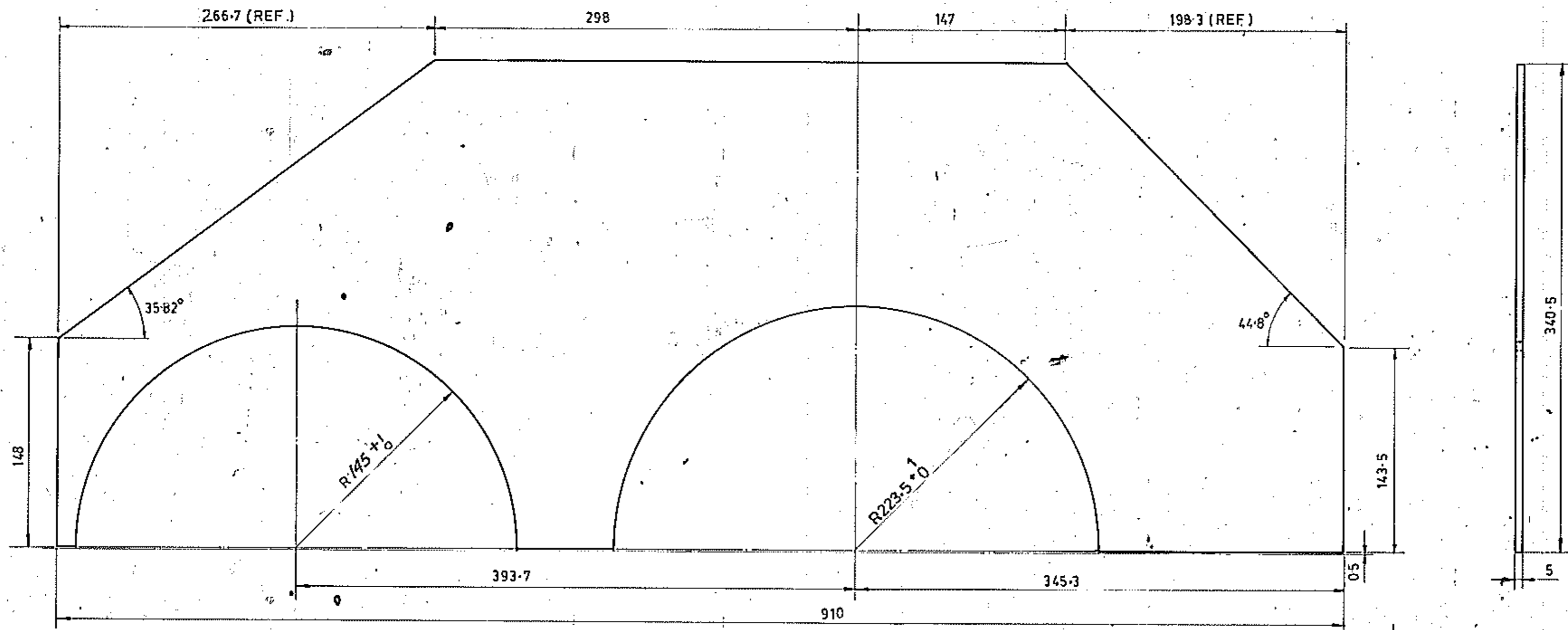
001		STEEL PLATE		AA1011808072		KG		2.2	
		10TK x180x207		AA10108					
VAR. NO.	REMARKS	VAR. NO.	ITEM NO.	DESCRIPTION	DRAWING NO.	LEN	MATL. CODE	UNIT WT.	ZONE
ADD-ON INFORMATION				TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT					
STATUS OF DRAWING				TM 4303 BY 25 KV. BG. AC. EMU.					
DISTRIBUTION OF PRINT				BHARAT HEAVY ELECTRICALS LTD. BHOPAL					
TME-1 TNX-1				SANTOSH Sd/- 29.06.99					
TXM-3				D.K. Sd/- 05.07.99					
				MV NS Sd/- 05.07.99					
REV	DATE	APPROVAL	DEPT	GRADE OF UNTOOL	SCALE	WEIGHT (kg)	REL. TO ASSY DRG.	ITEM NO.	NO. OF ITEMS
02	9.6.09	CHECKED APPROVED	TME	DRG. / T.M.	NTS	2.2	04391680001	020	001
DRAWING UPDATED & DIGITIZED.				STIFFENER					
				DRAWING NO. 34391680007					
				SHEET NO. 01 NO. OF SHEET 01					

SIZE A3

P. - MK

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DRG. NO. 2 439 16 80 001



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001	001	SIDE PLATE 57Hx X 340.5x910	AA1011808013	12.3
VAR 00	REMARKS	DESCRIPTION	DRAWING NO.	ZONE
50	64	75	80	85
25	27	29	34	36
31	32	33	35	37
38	39	40	41	42
43	44	45	46	47
48	49	50	51	52
53	54	55	56	57
58	59	60	61	62
63	64	65	66	67
70	71	72	73	74
75	76	77	78	79
80	81	82	83	84
85	86	87	88	89
90	91	92	93	94
95	96	97	98	99
100	101	102	103	104

ADDITIONAL INFORMATION		TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT	
STATUS OF DRAWING		TM 4303 BY 25 KV. BG. AC. EMU	
DISTRIBUTION OF PRINTS		BHARAT HEAVY ELECTRICALS LIMITED BHOPAL	
TME - 1, TXM - 3		ORGN. <i>Sankosh</i> SIGN. <i>A. Jind</i> DATE 29-6-99	
FBM - 4, TCX (FBM) - 1		CHD. DK	
TNX - 1		APPD. NS MV	
REV 01 DATE 3-3-03 ALTERED CHECKED		DEPT. TME GRADE OF UN. TOL. SCALE WEIGHT (Kg.) REF. TO ASSY. DRG. ITEM NO. NO. OF ITEMS	
DIM 266.7 WAS 366.7.		405 DIM TOL. 0.0125 NTS 10 0 439 16 80 001 001	
TITLE SIDE PLATE MOTOR SIDE		CARD CODE DRAWING NO. 2439 16 80 001	
SHEET NO. 01 NO. OF SHEETS 01		REV. 01	

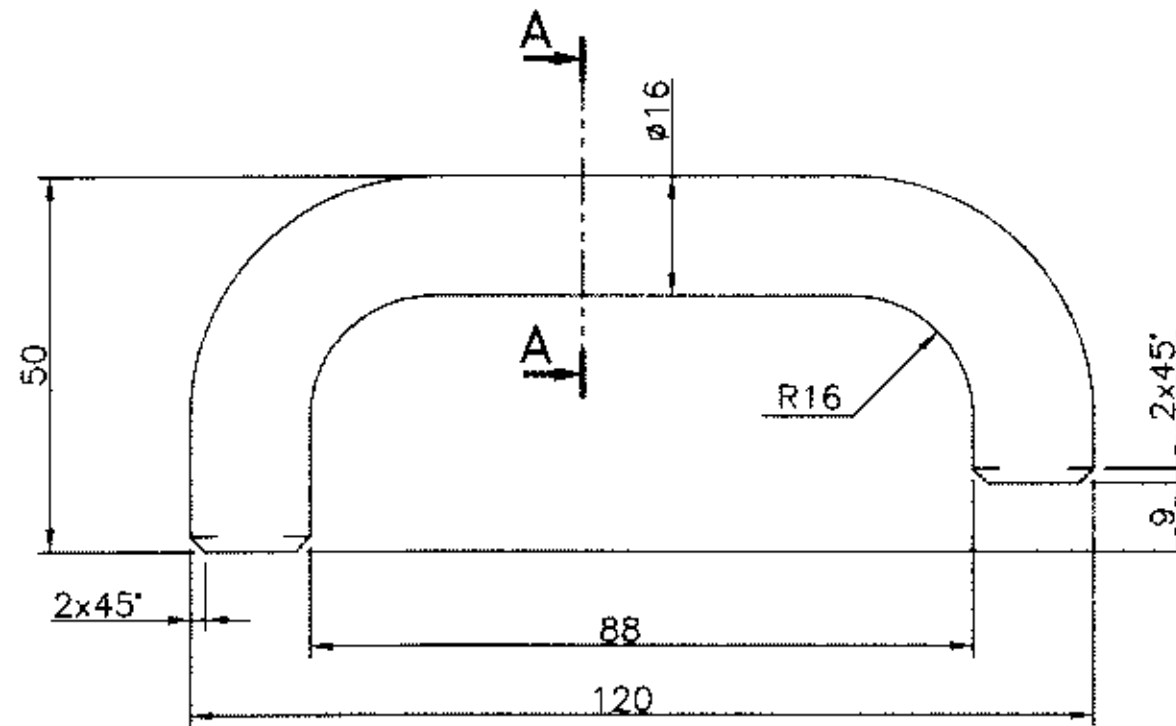
FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

34391628001


NOTE:-

- 1. ALL SHARP EDGES AND CORNERS TO BE ROUNDED OFF.



SECTION-AA

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

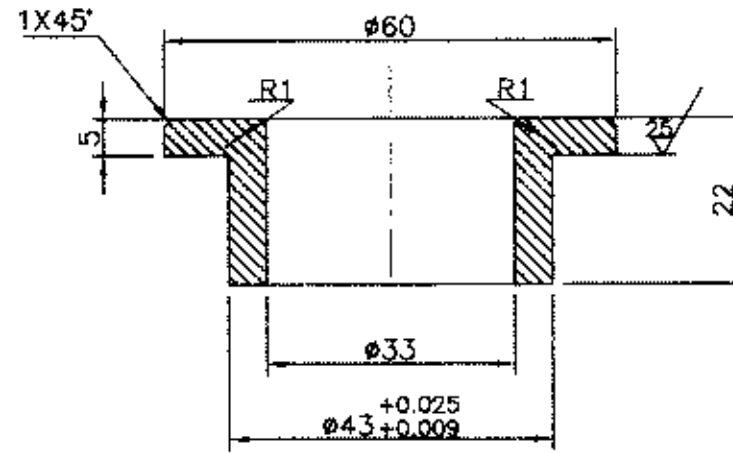
VAR. NO.	REMARKS	VAR. NO.	ITEM NO.	DESCRIPTION	DRAWING NO.	BP1010272071 BP10172	KG	0.25																
			001	HANDLE Ø16x158																				
ADDITION INFORMATION				TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT																				
STATUS OF DRAWING				TM 4303 AZ 25 KV BG AC EMU																				
DISTRIBUTION OF PRINT				 BHARAT HEAVY ELECTRICALS LTD. BHO PAL																				
TME-1 TNX-1 TXM-3				<table border="1"> <tr> <th>NAME</th> <th>PO</th> <th>QTY</th> <th>NO. OF PAGES</th> </tr> <tr> <td>BHADAURIA</td> <td>Sd/-</td> <td>21.08.89</td> <td></td> </tr> <tr> <td>SGD</td> <td>Sd/-</td> <td>22.08.89</td> <td></td> </tr> <tr> <td>AKD</td> <td>Sd/-</td> <td>23.08.89</td> <td></td> </tr> </table>					NAME	PO	QTY	NO. OF PAGES	BHADAURIA	Sd/-	21.08.89		SGD	Sd/-	22.08.89		AKD	Sd/-	23.08.89	
NAME	PO	QTY	NO. OF PAGES																					
BHADAURIA	Sd/-	21.08.89																						
SGD	Sd/-	22.08.89																						
AKD	Sd/-	23.08.89																						
REV	DATE	CHECKED	APPROVED	DEPT	SCALE	WEIGHT (kg)	REF. TO ASSY. Dwg.	ITEM NO.	NO. OF PAGES															
02	12.6.09	<i>me</i>	<i>ll</i>	TME 405	NTS	0.25	04391628001	021	001															
DRAWING. UPDATED & DIGITIZED.				TITLE: HANDLE DRAWING NO. 34391628001 SHEET NO. 01 / NO. OF SHEET 01																				

INVENTORY NO. | SERIAL & DATE | DIT/16152 REF. DPG. NO.

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

34391628019

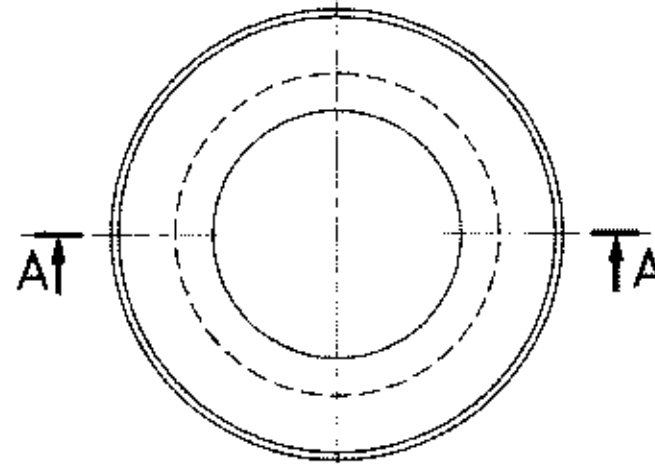



SECTION-AA

12.5 ALL OVER.

NOTE:-

- 1. ALL SHARP EDGES AND CORNERS TO BE ROUNDED OFF.



001	C.S ROUND #63x22	AA1020213949	KG	0.34							
AA10213											
VAR NO.	REMARKS	VAR NO.	ITEM NO.	DESCRIPTION	DRAWING NO.	UNIT WT					
						2 Y.					
ADDITION INFORMATION		TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT		TM 4303 AZ 25 KV BG AC EMU							
STATUS OF DRAWING		DISTRIBUTION OF PRINT		 BHARAT HEAVY ELECTRICALS LTD. BHOPAL							
TME-1 TNX-1 TXM-3		DIRM	NAME	DATE	NO. OF						
		OKD	BHADAURIA	Sd/-	19.08.89						
		APPD	SGD	Sd/-	22.08.89						
			AKD	Sd/-	23.08.89						
REV	DATE	CHECKED	APPROVED	DEL'T	GRADE OF UN. DL.	SCALE	WEIGHT (kg)	REF. TO ASSY. Dwg.	ITEM NO.	NO. OF ITEMS	
02	12.06.09	Checked	Approved	TME	405	AA0230208	NTS	0.34	04391628001	022	001
DRAWING UPDATED & DIGITIZED.				TITLE		BUSH		DRAWING NO.		34391628019	02
				SHEET NO.		01	NO. OF SHEETS		01		

SIZE A3

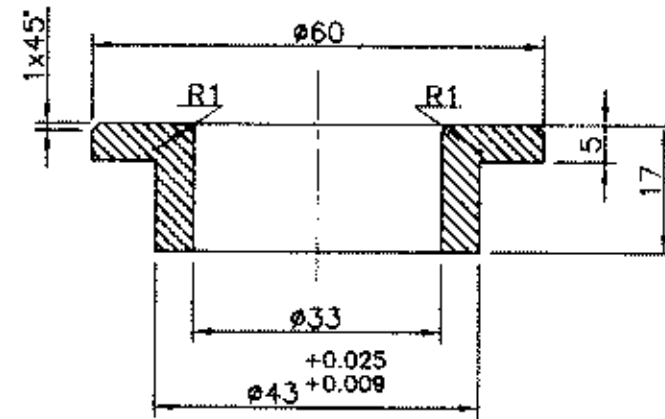
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DATE: 24/07/24
S.G. & DATE

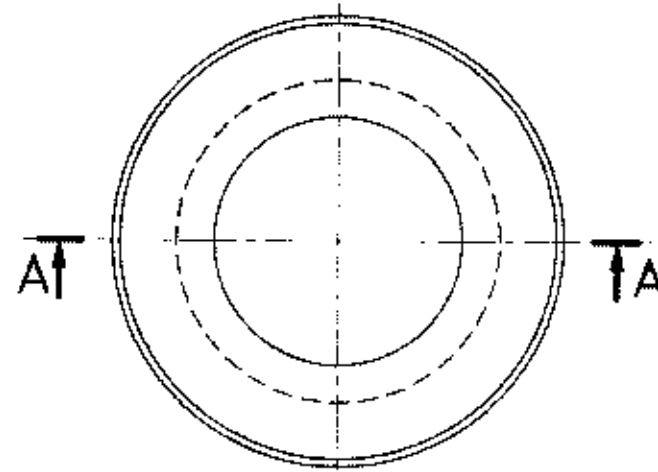
FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

34391628018



SECTION-AA



12.5/ ALL OVER.

NOTE:-

- 1. ALL SHARP EDGES AND CORNERS TO BE ROUNDED OFF.

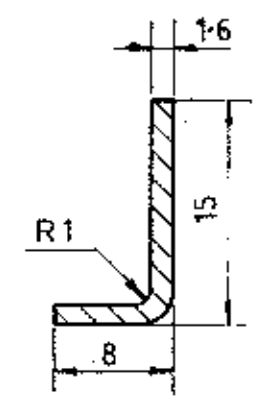
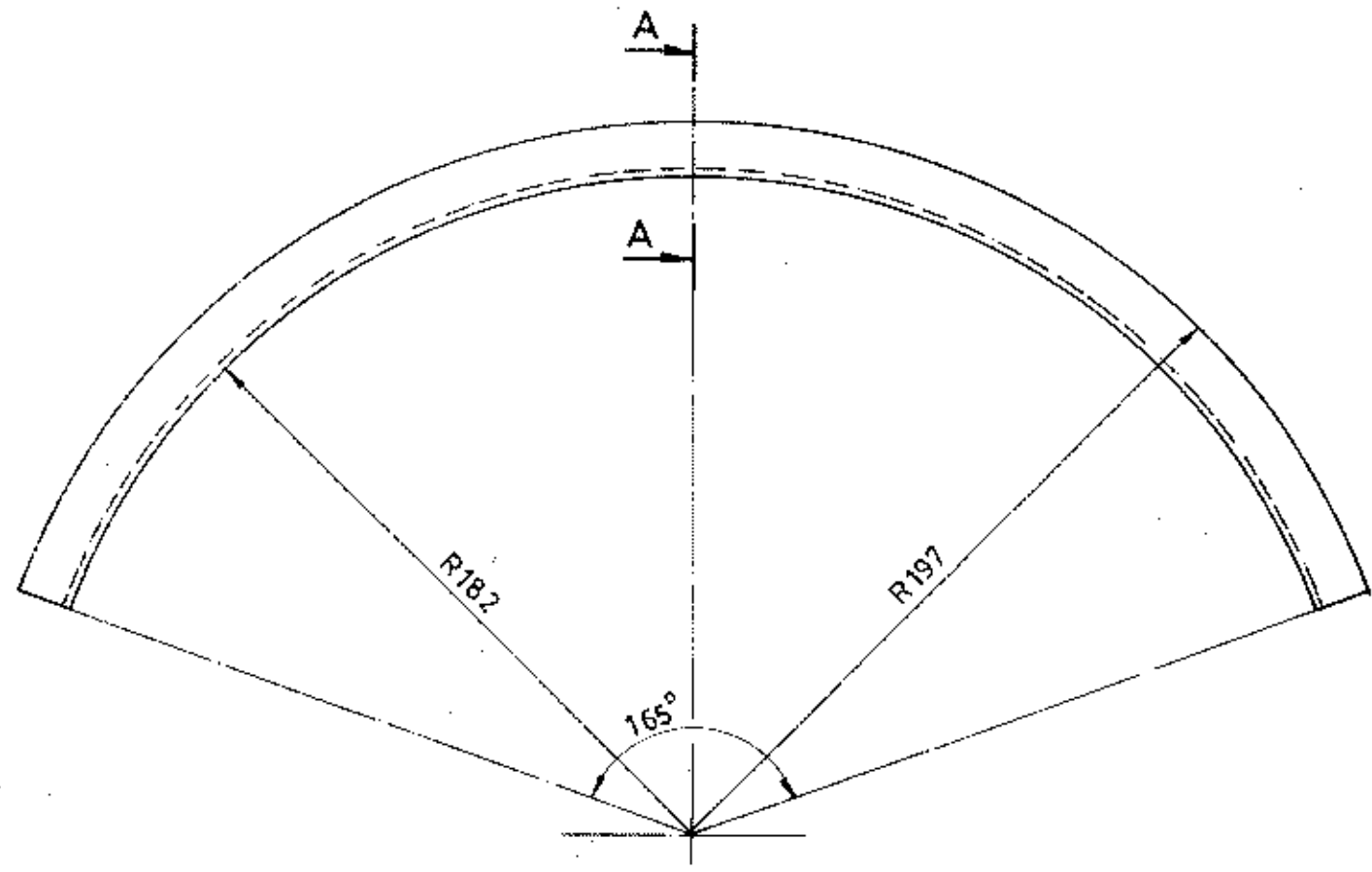
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DATE: 12/11/24
BY: P.D. SINGH
CHK: P.D. SINGH
INVENTORY NO.

R/WT.0.42	001	C.S ROUND Ø63x17	AA1020213949	KG	0.26
AA10213					
REVISION	REMARKS	DESCRIPTION	DRAWING NO.	MATERIAL CODE	UNIT WT.
				MATERIAL SPEC.	QTY.
ADDITION INFORMATION			TYPE OF PRODUCT		
STATUS OF DRAWING			NAME OF CUSTOMER/PROJECT		
DISTRIBUTION OF PRINT			TM 4303 AZ		
TME-1 TNX-1			25 KV BG AC EMU		
TCX-1			BHARAT HEAVY ELECTRICALS LTD.		
			BHOPAL		
REV	DATE	APPROVED	DEPT.	GRADE OF EMPLOY.	SCALE
03	12.6.09	<i>[Signature]</i>	TME	U.M. S.M.T	NTS
		CHECKED	CODE	AAQ230208	
		APPROVED			
DRAWING. UPDATED & DIGITIZED.			WEIGHT (kg)	NET TO ASSEMBLY	ITEM NO.
			0.26	04391628001	023
				04391628002	020
					001
			TITLE	DRAWING NO.	REV
			BUSH	34391628018	03
				01	01



DRG. No. 3 439 16 28 016



SECTION-AA
SCALE-2:1

58	64, 65	75	78 79	25	27	29	58	59	60	77	25	31	34	45	55	56	58	65	72
VAR. CO.	REMARKS	VAR. No.	ITEM No.	DESCRIPTION	STD.	DRAWING No.	IT. No.	MATL. CODE	MATL. SPECN.	UNIT	UNIT WT.	QTY.	AA1011715090	AA10115	kg	0.33			
CARD TYPE 3						CARD TYPE 1					CARD TYPE 2								

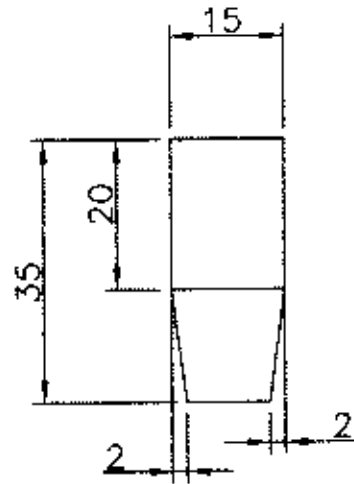
ADDITIONAL INFORMATION				TYPE OF PRODUCT TM 4303 AZ													
STATUS OF DRAWING				OR													
DISTRIBUTION OF PRINTS TME - 1, TNX-1 FBM - 4, TXM				NAME OF CUSTOMER/PROJECT 25KV. BG. AC. EMU													
DEPT. TME		GRADE OF UN. TOL.		SCALE 1:2		WEIGHT (Kg.) 0.33		REF. TO ASSY. DRG. 0 439 16 28 001-7		ITEM No. 013		75 77 No. OF ITEMS 001					
REV. 01 DATE 30-1-96 ALTERED [Signature] CHECKED [Signature]				DEPT. TME		GRADE OF UN. TOL. DIM. C/M/P #0230208		SCALE 1:2		WEIGHT (Kg.) 0.33		REF. TO ASSY. DRG. 0 439 16 28 001-7		ITEM No. 013		75 77 No. OF ITEMS 001	
DRG UPDATED.				TITLE OIL GUTTER				SCALE 1:2		WEIGHT (Kg.) 0.33		REF. TO ASSY. DRG. 0 439 16 28 001-7		ITEM No. 013		75 77 No. OF ITEMS 001	
				DRAWING No. 3 439 16 28 016				CARD CODE		SHEET No. 01		No. OF SHEETS 01					

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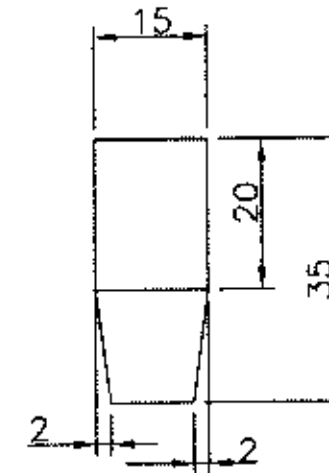
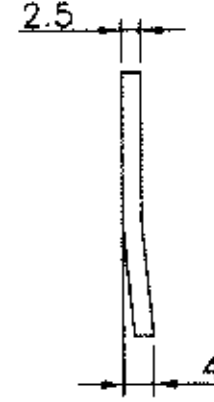
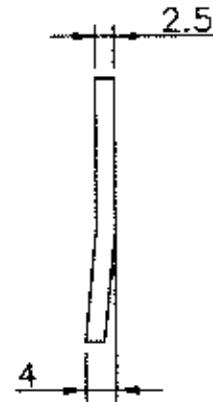
FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

34391680008



001



002

NOTE:-

1. ALL SHARP EDGES AND CORNERS TO BE ROUNDED OFF.

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002		STEEL SHEET 2.5TKx15X35	AA1011713128 AA10113	KG	0.05
001		STEEL SHEET 2.5TKx15X35	AA1011713128 AA10113	KG	0.05

VAR. NO.	REMARKS	VAR. NO.	ITEM NO.	DESCRIPTION	DRAWING NO.	MAT. CODE	UNIT	WT.

ADDITIONAL INFORMATION		TYPE OF PRODUCT OF		TM 4303 BY	
STATUS OF DRAWING		NAME OF CUSTOMER/PROJECT		25 KV. BG. AC. EMU.	
DISTRIBUTION OF DRAWING		BHARAT HEAVY ELECTRICALS LTD.		SANTOSH Sd/- 01.07.99	
TME-1 TNX-1		BHOPAL		D.K. Sd/- 01.07.99	
TXM-3				MV NS Sd/- 01.07.99	

REV.	DATE	AUTHOR	CHECKED	APPROVED	DEPT.	GRADE OF UNITS	SCALE	WEIGHT (KG)	REF. TO ASSEMBLY	LEV. NO.	NO. OF SHEETS
01	9.6.09				TME	2/M,7	NTS	-	04391680001	026 027	002

DRAWING UPDATED & DIGITIZED.

INNER AND OUTER LINER

DRAWING NO. 34391680008

SHEET NO. 01 NO. OF SHEET 01

SIZE A3

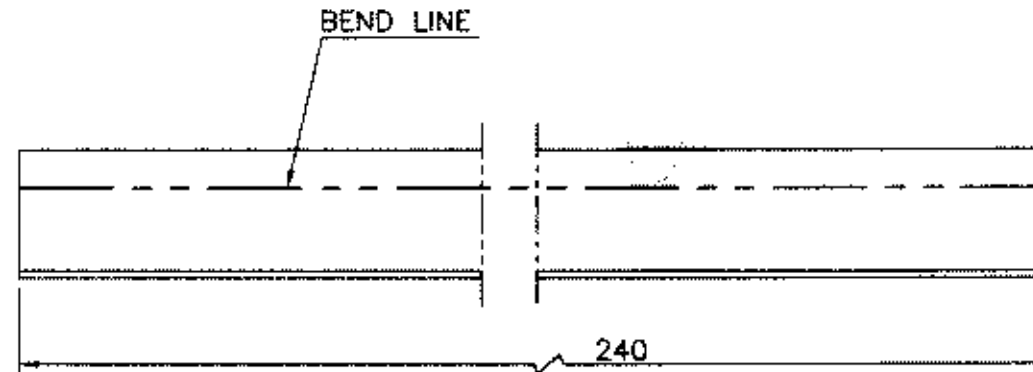
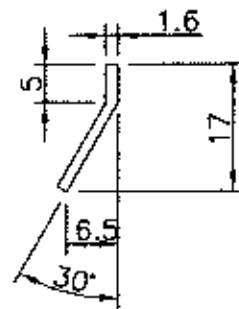
P. - BK

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

34391628023

DRG. NO.



NOTE:-

1. ALL SHARP EDGES AND CORNERS TO BE ROUNDED OFF.

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547/0152 REF. DRG. NO.
SIGN. & DATE
NEEN COPY NO.

VAR. NO.	REMARKS	VAR. NO.	ITEM NO.	DESCRIPTION	DRAWING NO.	AA1011715090	AA10115	KG	0.057
			001	M.S. SHEET 1.6TKx19x240					
ADD-ON INFORMATION				TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT					
STATUS OF DRAWING				TM 4303 AZ 25 KV BG AC EMU					
DISTRIBUTION OF PRINT				BHARAT HEAVY ELECTRICALS LTD. BHOPAL		DRN	BHADAURIA	Sd/-	22.08.89
TME-1 TXM-3 TNX-1						GRD	SGD	Sd/-	22.08.89
						APPR	AKD	Sd/-	23.08.89
REV	DATE	APPROVED	F	DEPT	GRADE OF UTOL.	SCALE	WEIGHT (kg)	REF. TO ASSY. DRG.	ITEM NO.
03	13.6.09	CHECKED	TME	TME	NTS	0.057		04391628001	028
		APPROVED	405						
DRAWING UPDATED & DIGITIZED.				DIVERTER					
				DRAWING NO.		34391628023		REV	
				SHEET NO.		01		NO. OF SHEET	
								01	

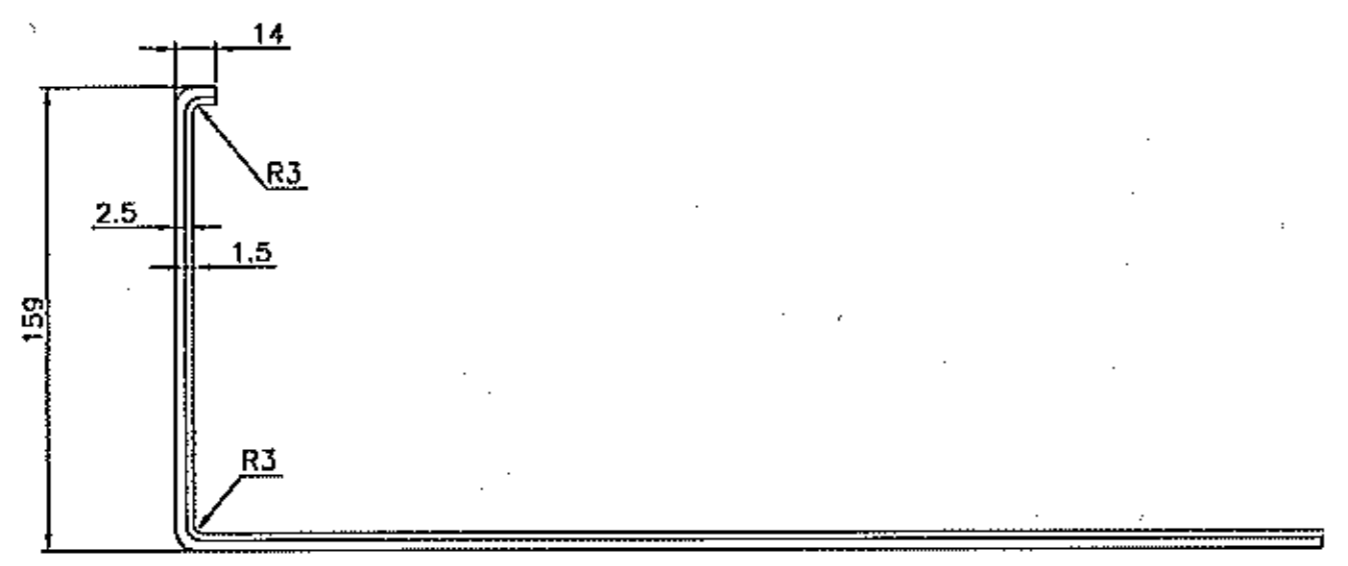
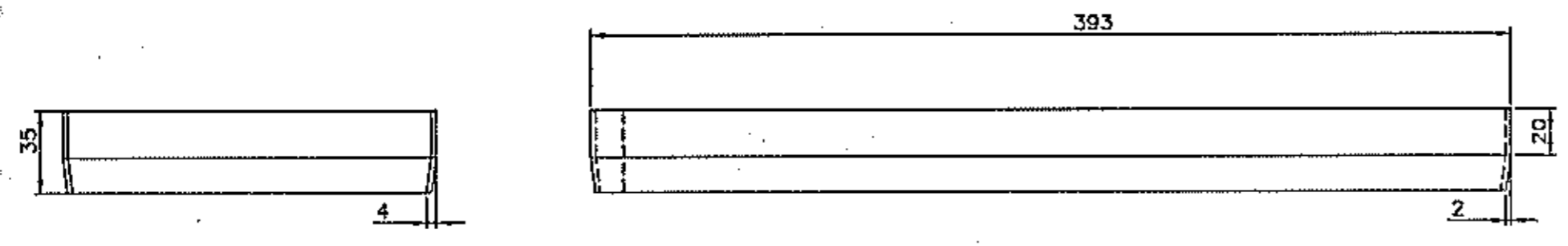
SIZE A3

21/203

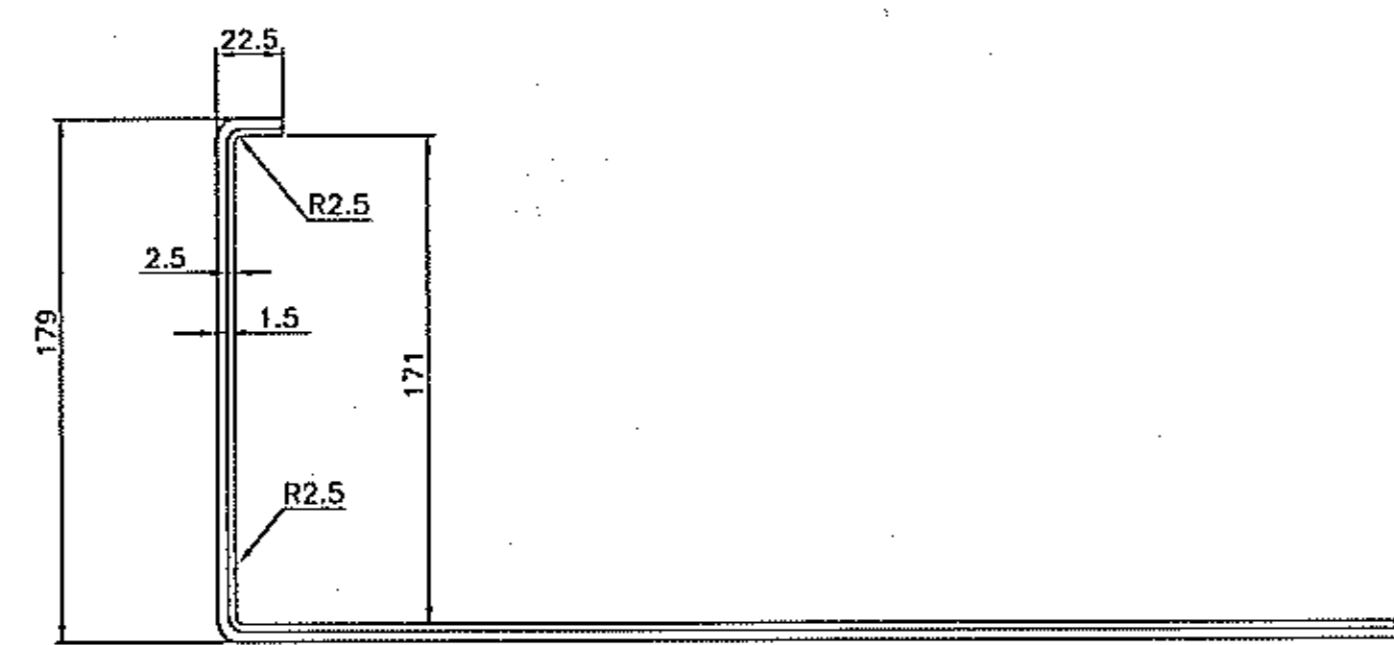
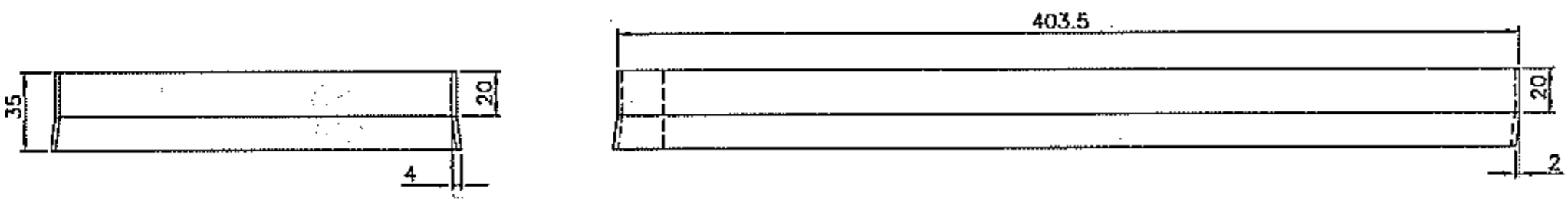
FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN mm)

24391680004
DRG. NO.

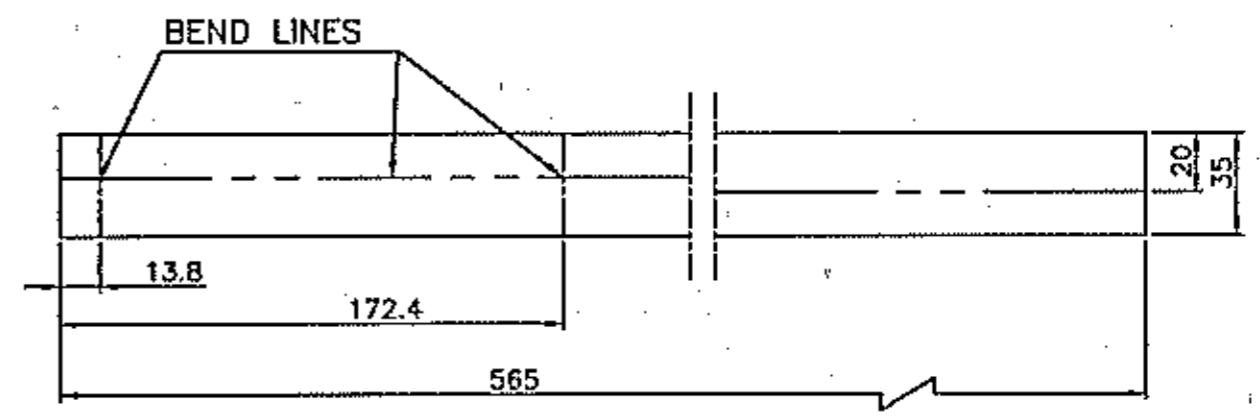
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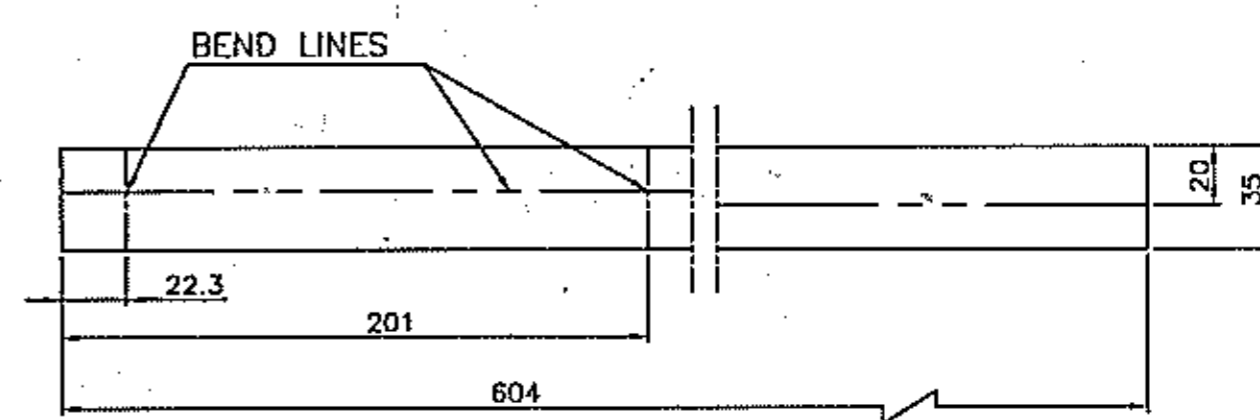
001



002



DEVELOPED VIEW



DEVELOPED VIEW

NOTE:-

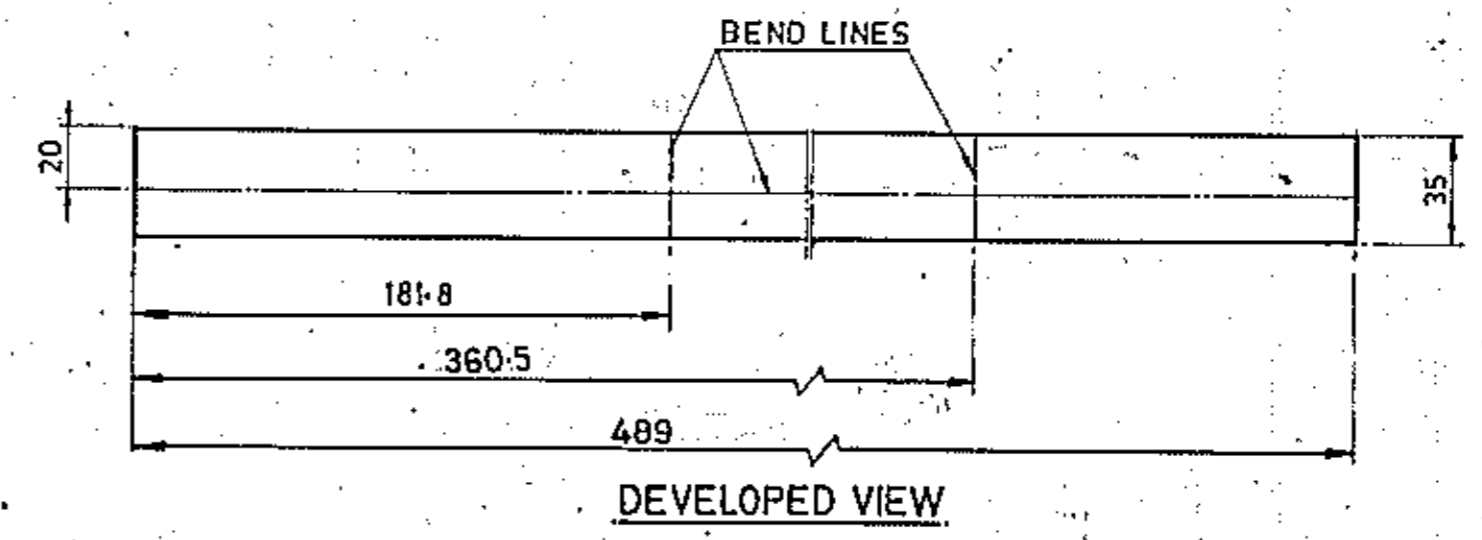
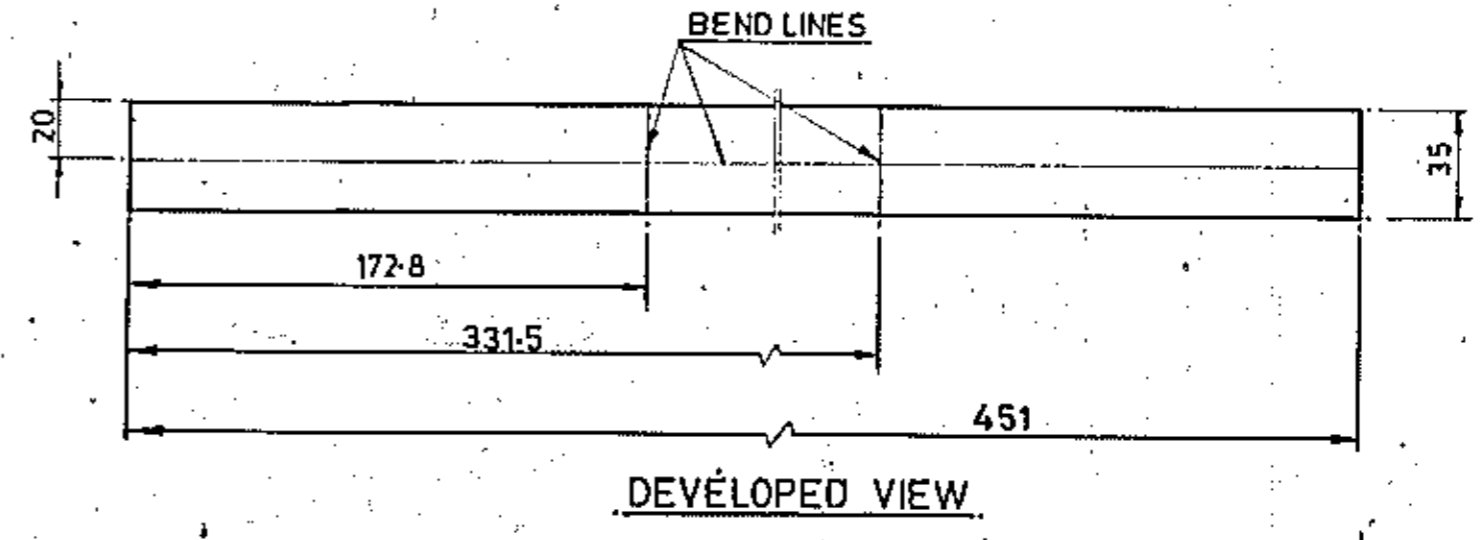
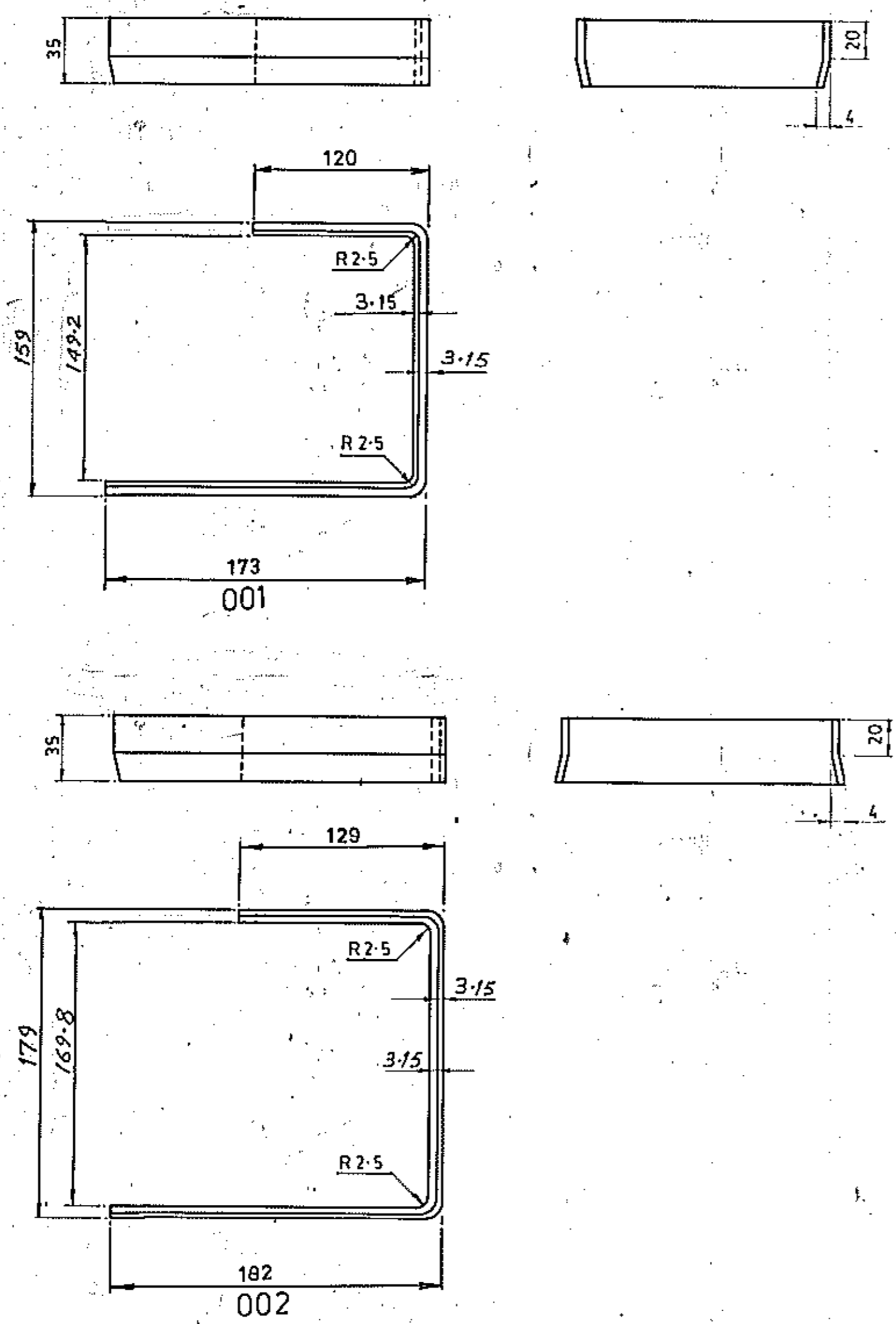
1. ALL SHARP EDGES AND CORNERS TO BE ROUNDED OFF.

VAR. NO.	REMARKS	VAR. NO.	ITEM NO.	DESCRIPTION	DRAWING NO.	UNIT WT.	QTY.	ZONE
		002		STEEL SHEET 2.15THKx35x604		0.47		
		001		STEEL SHEET 2.15TKHx35x565		0.49		

ADDITION INFORMATION		TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT		TM 4303 BY 25KV.BG.AC.EMU	
STATUS OF DRAWING		DISTRIBUTION OF PRINT		SIGN. & DATE	
TME-1 TXM-3 TNX-1		BPHARAT HEAVY ELECTRICALS LTD. BHOPAL		SANTOSH -SD- 24.06.99 D.K. -SD- 29.06.99 M.V. -SD- 29.06.99	
REV. 02	DATE 28.07.09	ALTERED CHECKED APPROVED	DEPT. TME	GRADE OF UNROL. COIL C/M/T	SCALE NTS
ZONE ORG.UPDATED & DIGITIZED			CODE 405	WIGHT (kg)	REF. TO ASSY. DRG. 04391680001
			TITLE INNER AND OUTER LINER	ITEM NO. 029 030	NO. OF ITEMS 002
			DRAWING NO. 24391680004	REV. 02	
			SHEET NO. 01	NO. OF SHEET 01	SIZE A2



DRG. NO. 2 439 16 80 003



NOTE :-
1. ALL SHARP EDGES AND CORNERS TO BE ROUNDED OFF.

001		002	STEEL SHEET 3.15 THK X 35 X 489	AA 1011713128	kg	0.42	0-6	
001		001	STEEL SHEET 3.15 THK X 35 X 451	AA 1011713128 AA 10113	kg	0.39	0-6	
VAR 00	REMARKS	VAR NO.	ITEM NO.	DESCRIPTION	DRAWING NO.	MATL. CODE MATL. SPECN.	UNIT WT. QTY.	ZONE

ADDITIONAL INFORMATION		TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT		TM 4303 BY	
STATUS OF DRAWING		NAME OF CUSTOMER/PROJECT		25 KV BG AC EMU	
DISTRIBUTION OF PRINTS TME-1 TXM-3, JNX-4 FBM-4		BHARAT HEAVY ELECTRICALS LIMITED Bhopal		DRN. NAME: Santosh	SIGN. DATE: 29-08-99
REV. DATE ALTERED RBY 01 22-7-04 CHECKED TME		DEPT. TME		CHD. DK	DATE: 29-6-99
ZONE IN BDM IT 001 WT 0.42 WAS 0.35 RTT 002 WT 0.39 WAS 0.33 TOTAL WT. 0.81 WAS 0.68		GRADE OF UN. TOL. DIM. TOL. 405		APPD. NS MY	DATE: 29.6.99
TITLE		SCALE		WEIGHT: Kg 0.81	
INNER AND OUTER LINER		REF. TO ASSY. DRG.		ITEM NO. 031	
DRAWING NO. 2 439 16 80 003		CARD CODE		NO. OF ITEMS 002	
SHEET NO. 01		NO. OF SHEETS 01		REV. 01	

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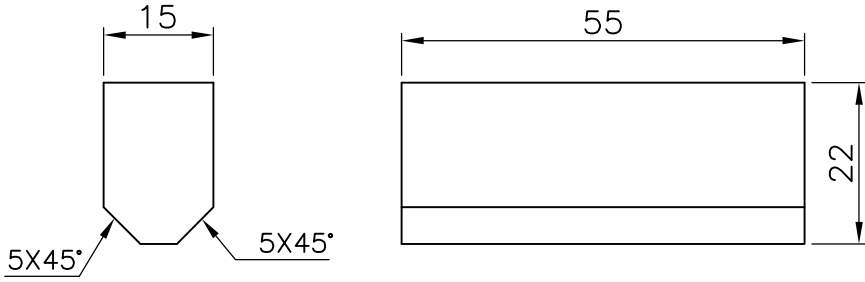
138705/2024/HEP-TXM20500

(ALL DIMENSIONS ARE IN mm)

FIRST ANGLE PROJECTION

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

REV.	DATE	ALTERED	REV.	DATE	ALTERED	ADDITIONAL INFORMATION
		CHECKED			CHECKED	
		APPROVED			APPROVED	
						STATUS OF DRAWING
						DISTRIBUTION OF PRINTS
						TME- 1 TXM- 4



REMARKS	ITEM NO.	DESCRIPTION	STD	MATL. CODE	MATL. SPECN.	UNIT	UNIT WT.	QTY.
	001	LOCKING PLATE 22TK.X15X55		AA10108		KG	0.14	

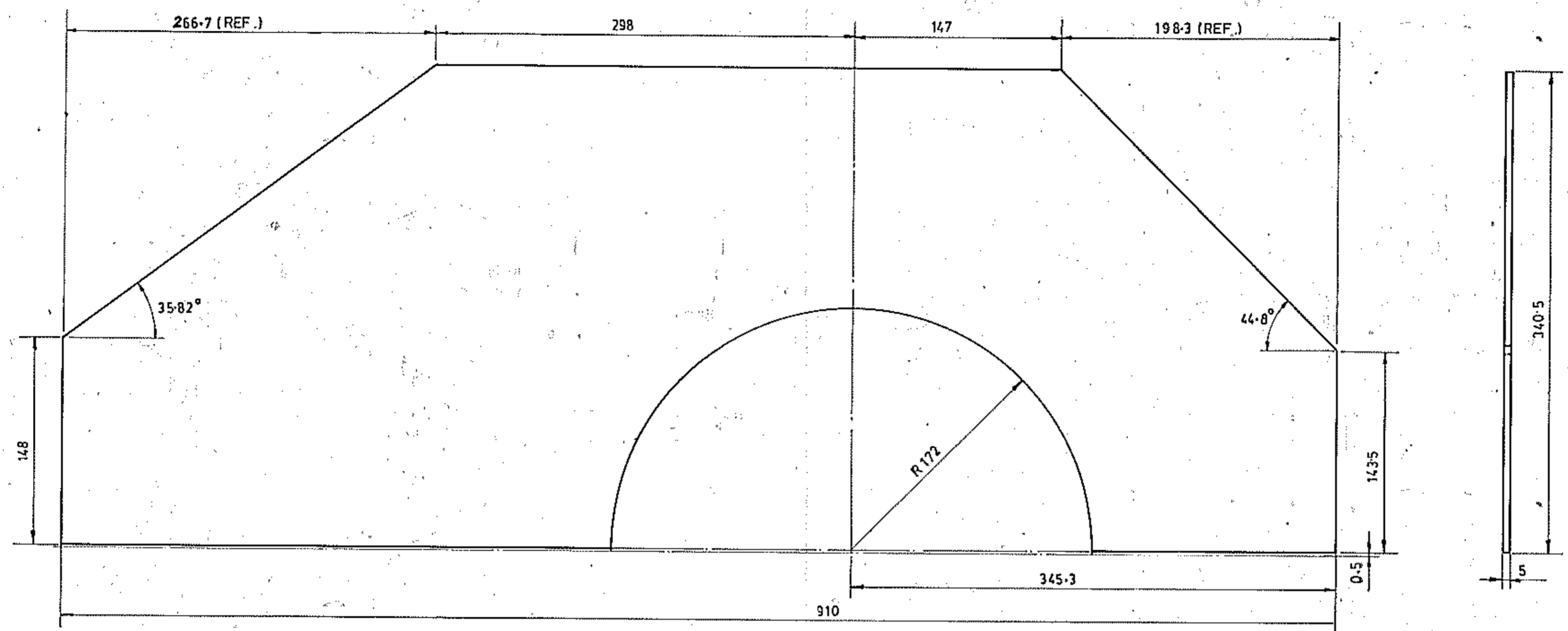
CARD TYPE 3 → 28 28 → CARD TYPE 1 28 → CARD TYPE 2

	BHARAT HEAVY ELECTRICALS LTD. BHOPAL		NAME	SIGN	DATE
	DRN.	A.JHARIA		18.10.19	
	CKD.	A.SHARMA		18.10.19	
APPD.	A.SHARMA		18.10.19		

DEPT. TME	UNTOL. DIMS. GR.	SCALE	WEIGHT(KG)	REF.TO ASSY.DRG.	ITEM NO.	NO.OF ITEM
CODE 405	DIMS Ø/M/F AA0230208	NTS	0.13	04391680004	036	001
TITLE				DRAWING NO.	REV	
LOCKING PLATE TM4303BY/DY				44391680006	00	
				SHT.NO 01	NO.OF.SHT. 01	

FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN mm.)

DRG. NO. 2 439 16 28 003



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INVENTORY NO. SIGN. & DATE REF. DRG. NO.

001	001	SIDE PLATE 5THK X 340 X 910	AA 1011808013	8-61
VAR CD	REMARKS	ITEM NO.	DRAWING NO.	ZONE

ADDITIONAL INFORMATION
 STATUS OF DRAWING
 DISTRIBUTION OF PRINTS
 TME - 1, TXM - 3
 TNX - 1

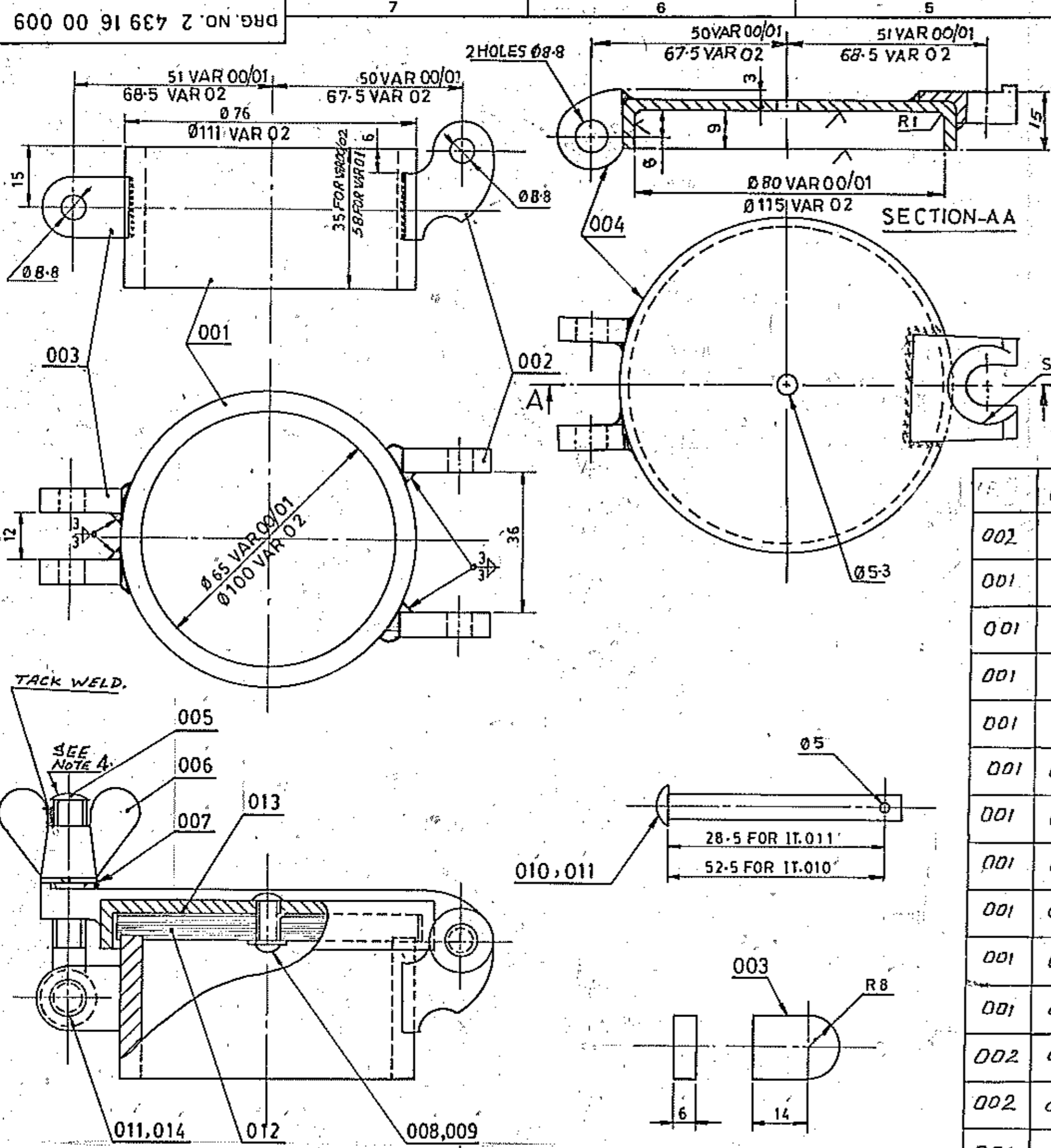
TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT
 TM 4303 AZ
 25KV. BG. AC. EMU

BHARAT HEAVY ELECTRICALS LIMITED
 Bhopal
 DRN. NAME: BHADOURIA, SIGN: [Signature], DATE: 22-8-27
 CHD. SGD, APPD. AKD, [Signature], 23-8-27

REV. DATE ALTD BY	REV. DATE ALTERED BY	DEPT. TME	GRADE OF UN. TOL.	SCALE	WEIGHT (Kg.)	REF. TO ASSY. DRG.	ITEM NO.
02 3-3-03 CKD	01 6-2-96 [Signature]	405	[Symbol]	1:2.5	8-61	0 439 16 28-001	002
F-7 DIM. 266.7 WAS 366.7	ZONE DRG. UPDATED.						

TITLE
 SIDE PLATE WHEEL SIDE
 CARD CODE
 DRAWING NO. 2 439 16 28 003
 SHEET NO. 01 NO. OF SHEETS 01

S.E.S. SIZE A2



- NOTES:**
1. ALL WELDS TO GRADE III OF CORPORATE STANDARD AA 062-21-01
 2. STYLE NO FOR LUG & TUBE ASSY TO ITS 001,002 & 003 IS 452156.
 3. FOR FABRICATED UNTOLERATED DIMENSIONS REFER AA 0621104 GR. A, AA 0621105 GR.E.
 4. AFTER ASSEMBLING THE WING NUT END OF IT.005 TO BE HAMMERED TO FORM MASHROOM TO LOCK. OR TACK WELD AT ONE PLACE.
 5. ST NO. 9094684012, FOR VAR. 00
 6. VAR. 02 IS FOR EXPORT ORDER TO BANGLADESH.

TOOL LIST

ITEM	TOOL	DESCRIPTION
01 TO 03	1456530	WELDING FIXTURE
01 TO 03	1456531	DRILL JIG
01 TO 03	145T904	DRILL JIG FOR HOLE Ø6.8

ITEM	QTY	UNIT	DESCRIPTION	DRAWING NO.	MATL. CODE	MATL. SPECN.	UNIT WT.	NO. OF ITEMS	ZONE
001			BODY 65 NOM BORE X 35 MED. WELDING ST. TUBE	AA10152					
002	002	002	SPLIT COTTER PIN STEEL 4x16	AA7171089			0.01		B-8
001	001	001	FELT 6TKx78 DIA	AA23121			0.28		C-7
001	001	001	DOUBLE CHROME LEATHER 3.8TK X 1/8				0.14		B-8
001	001	001	SNAP HD/STEEL RIVET Ø8x35	AA7174014			0.01		B-8
001	001	001	SNAP HD. STEEL RIVET Ø8x60	AA7174014			0.02		B-8
001	001	001	MACHINED WASHER 5.3 STEEL	AA7161001030			0.01		B-7
001	001	001	SNAP HD. RIVET Ø5 COPPER x 16	AA7174002			0.01		B-7
001	001	001	SUITABLE FOR M8 BOLT	AA7164005044			0.01		C-3
001	001	001	M8 DOUBLE COIL STEEL SPRING WASHER	AA7164005			0.02		C-3
001	001	001	WING NUT AB M8-A (MALL EABLE IRON)	AA7154120			0.01		D-8
001	001	001	SWING BOLT M8 x 50	BP724819A			0.01		D-8
001	001	001	STYLE NO 452127				0.50		D-6
002	002	002	COVER	34391601022	001		0.50		E-8
002	002	002	LUG 6TKX16 x 22 ST PL	AA1011808030			0.02		E-8
002	002	002	LUG	C450065	001		0.10		E-6
001	-	001	BODY 65 NOM. BORE X 35 MEDIUM WELDING ST. TUBE	AA10152			0.50		E-8

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E 4700318 REV. 10 REF. DRG. NO. SIGN & DATE INVENTORY NO.

REV	DATE	ALT	BY
08	9/12/07	CHD	Wf
IN BOM VAR 02 WAS NOT ON. DIM 67.5, 68.5 & Ø100, Ø115 & Ø111 WERE NOT ON. WITH VAR 02. NOTE 6 WAS NOT ON.			
05	30/01/11	CKD	Chid
IN BOM, IT. 4 DRG. NO. 34391601022 WAS 34391600006.			

REV	DATE	ALT	BY
4	25/1/19	CKD	Schub
NOTE 4 & 5 WERE NOT ON.			

REV	DATE	ALT	BY
3	14/5/14	CKD	Schub
NOTE 1 MODIFIED. IN BOM AA 0230208 WAS NOT ON. NOTE 3 WAS NOT ON.			

REV	DATE	ALT	BY
2	28-4-93	CKD	Chid
BOM UPDATED.			

ADDITIONAL INFORMATION

STATUS OF DRAWING: OIC YTM-3

DISTRIBUTION OF PRINTS: TNG-1

REV. 1 DATE 14-2-92 ALTERED BY M. Chid

ZONE MAT. SPEC. AA 10108 FOR IT. 3 WAS NOT ON.

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT TRACTION MOTOR 165/M & TM4906 AZ
BG. DE. LOCO

BHARAT HEAVY ELECTRICALS LIMITED Bhopal

DRN. NAME SIGN. DATE NO. OF VAR.
CHD. KDG. 20-6-87
APPD. KDG. 20-6-87

DEPT. TIME GRADE OF UN. TOL. SCALE WEIGHT (Kg) REF. TO ASSY. DRG. ITEM NO. NO. OF ITEMS
405 1:1 1.67 0 439 16 00 002 008

TITLE OIL FILLER UNIT (GEAR CASE)

CARD CODE DRAWING NO. 2 439 16 00 009 08

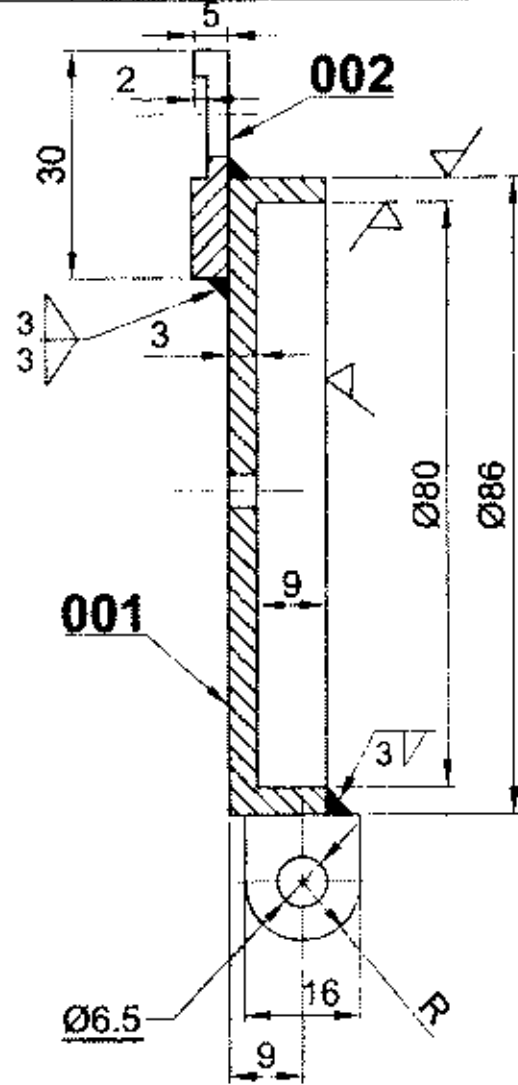
SHEET NO. 01 NO. OF SHEETS 01

SIZE A2

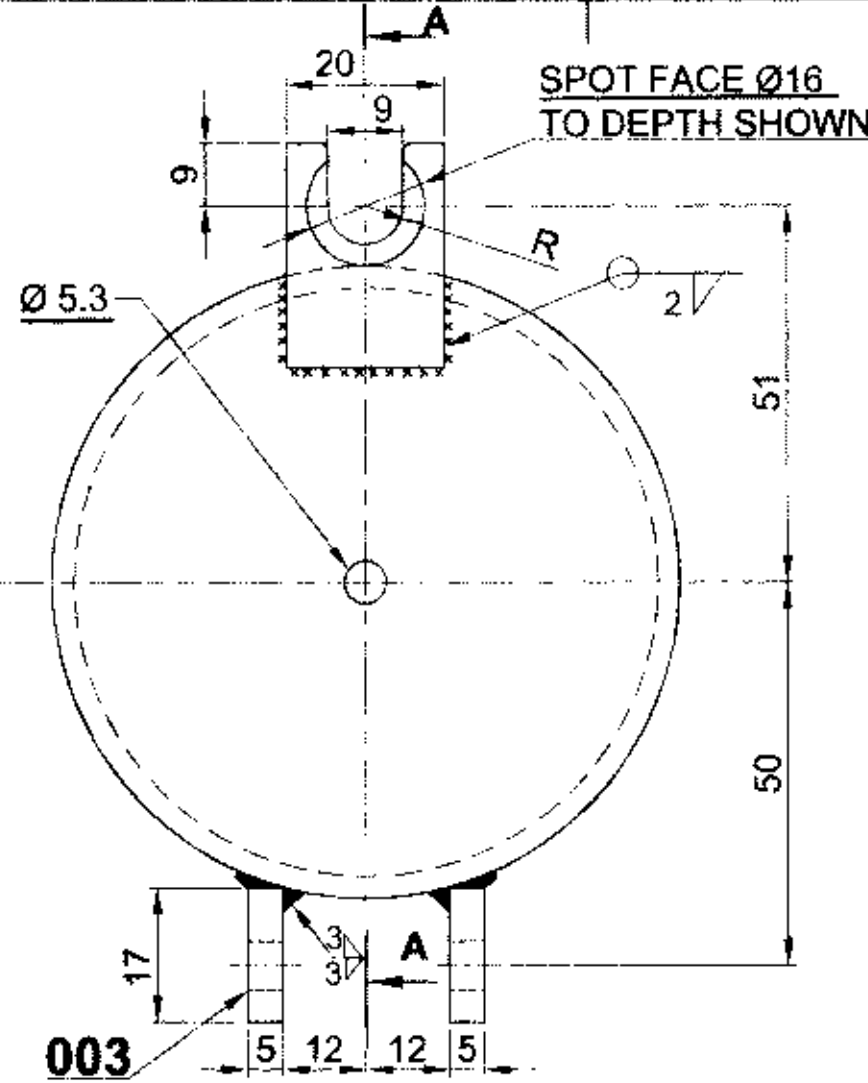
FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

DRG. NO. 3 439 16 01 022



SECTION - AA



NOTES :-

1. WELD TO BE OF GR IV AA 0622101.
2. THIS COMP. IS ALTERNATIVE TO CASTING TO DRG. 34391600006.
3. ALTERNATIVELY IT. 001 CAN BE MADE BY PRESSING 3.15 TK. STEEL PLATE TO I/D Ø80 AND 9 DEEP NO MACHINING IS REQUIRED.

VAR.00	REMARKS	VAR. NO.	ITEM NO.	DESCRIPTION	STD.	DRAWING NO.	28 31 IT. NO.	34 MATL. CODE	45	55 A	56-57 C	58 UNIT WT.	65 72
VAR.							VAR.	48 MATL. SPCN.	54	UNIT		QTY.	
			002	5 TK. X 16 X 17 LG. BLK. STEEL PLATE				AA10108				Kg	0.01
			001	5 TK. X 20 X 30 LG. BLK. STEEL FLAT				AA10108				Kg	0.02
	SEE NOTE 3		001	Ø90 X 15 LG BLK. STEEL BAR				AA10108				Kg	0.3

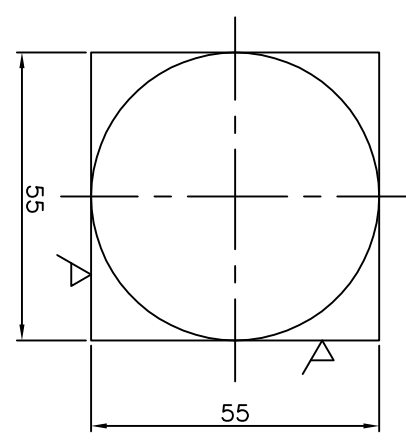
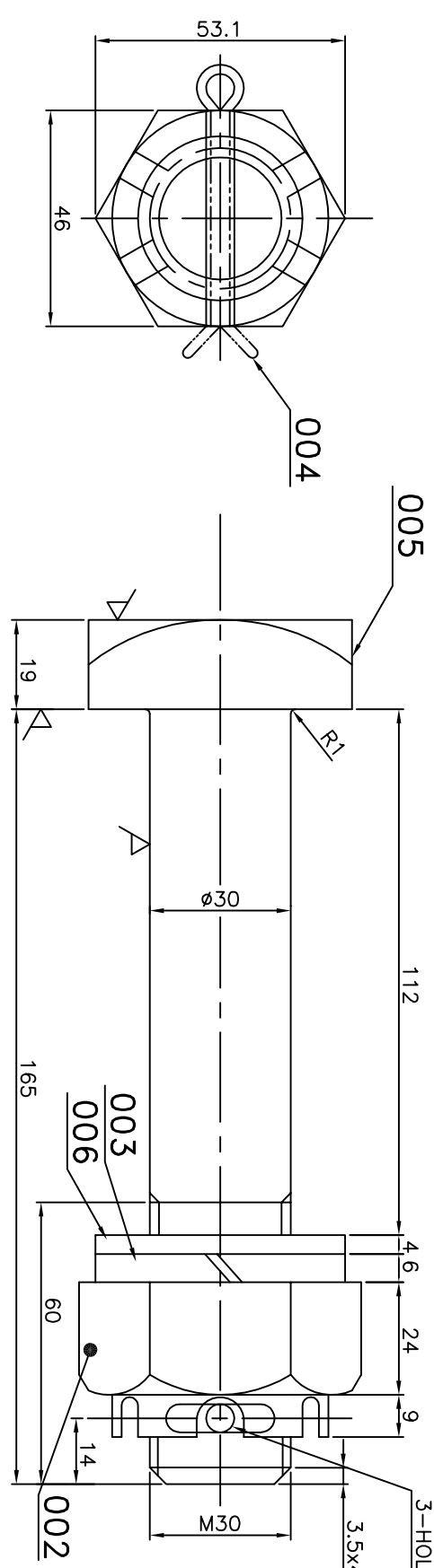
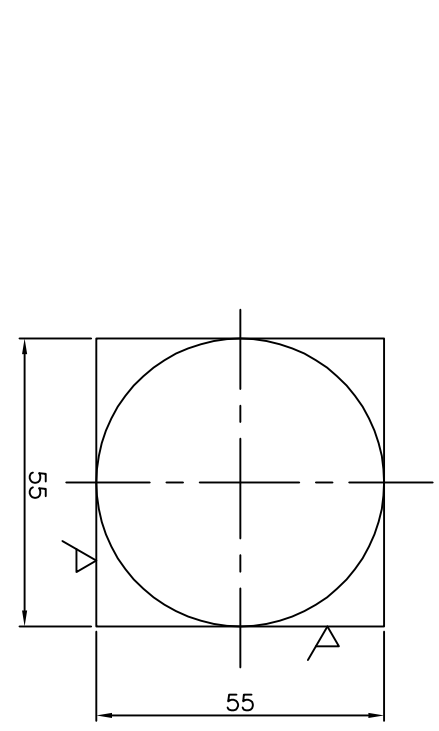
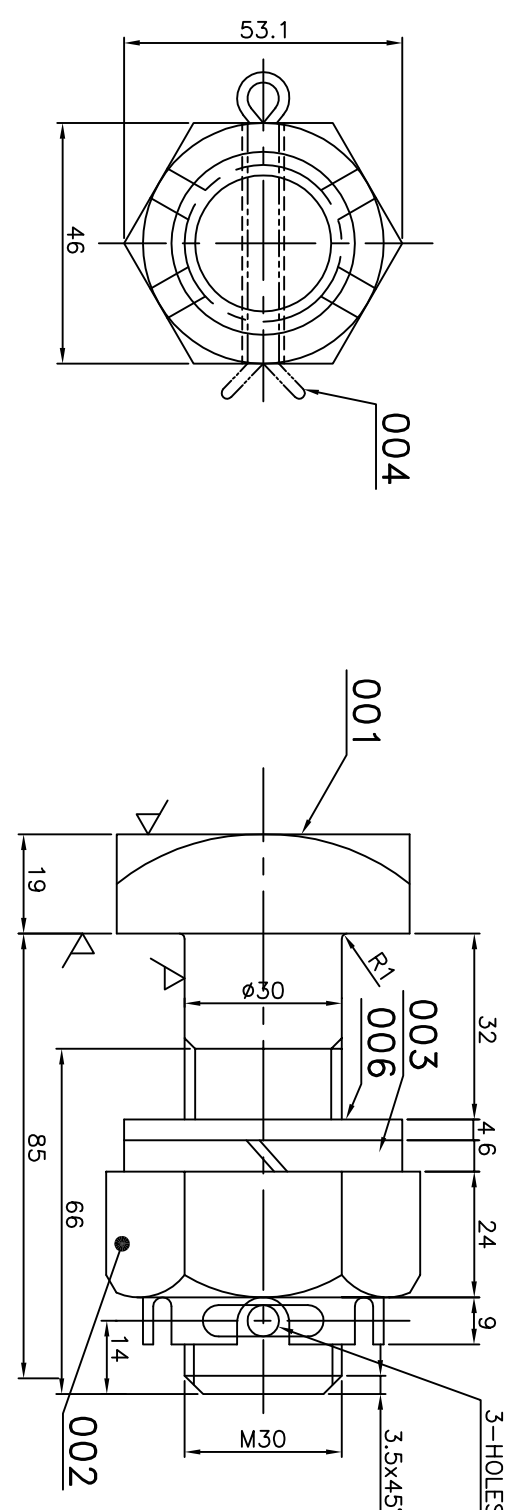
28 -- CARD TYPE-3		28 -- CARD TYPE-1		28 -- CARD TYPE-2																					
ADDITIONAL INFORMATION				TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT																					
STATUS OF DRAWING				TM 4601 AZ, TM-4906 AZ																					
DISTRIBUTION OF PRINTS				Bharat Heavy Electricals Ltd. Bhopal																					
TME -1 TNX -1 TXM -4				<table border="1"> <tr> <th>DRN</th> <th>NAME</th> <th>SIGN</th> <th>DATE</th> <th>NO. OF VAR.</th> </tr> <tr> <td>RKS</td> <td>RKS</td> <td>Sd</td> <td>26.10.96</td> <td rowspan="3">01</td> </tr> <tr> <td>CKD</td> <td>SGD</td> <td>Sd</td> <td>26.10.96</td> </tr> <tr> <td>APPD</td> <td>SKS</td> <td>Sd</td> <td>26.10.96</td> </tr> </table>				DRN	NAME	SIGN	DATE	NO. OF VAR.	RKS	RKS	Sd	26.10.96	01	CKD	SGD	Sd	26.10.96	APPD	SKS	Sd	26.10.96
DRN	NAME	SIGN	DATE	NO. OF VAR.																					
RKS	RKS	Sd	26.10.96	01																					
CKD	SGD	Sd	26.10.96																						
APPD	SKS	Sd	26.10.96																						
REV.	DATE	ALTERED CHECKED APPD.	REV.	DATE	ALTERED CHECKED APPD.	DEPT. T.M.E. CODE 405	UNTOL. DIMS. GR.	SCALE NTS	WEIGHT(K.G.) 0.4	REF. TO ASSY. DRG. 2 439 16 00 009	ITEM NO. 004	NO. OF ITEM 003													
DRAWING UPDATED & DIGITIZED.						TITLE		DRAWING NO.		REV.															
						FABRICATED OIL CAP ASSY.		3 439 16 01 022		01															
								SHT. NO. 01		NO. OF SHT. 01															

A3 SIZE

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138705/2024/HEP-TXM20500
INVENTORY NO. SIGN. & DATE REF. DRG. NO.

FIRST ANGLE PROJECTION
200829162872
DRG. NO.



FOR VAR.01

FOR VAR.00

NOTES:-

1. NUT TO BE ZINC PLATED TO AA0673603 & PASSIVATED TO AA0673604/PARKERISED.
2. ALTERNATIVE MATERIAL OF ITEM 001, 002 & 005 TO BE H.T.S. BAR CONFORMING TO MECHANICAL PROPERTIES OF 8.8 PROPERTY CLASS OF IS:1367.
3. ITEM 001 & 005 ARE TO BE 100% MCD TESTED TO BP0850178.
4. FOR ITEM 001 & 005 THREADS TO BE MANUFACTURED BY ROLLING PROCESS ONLY.

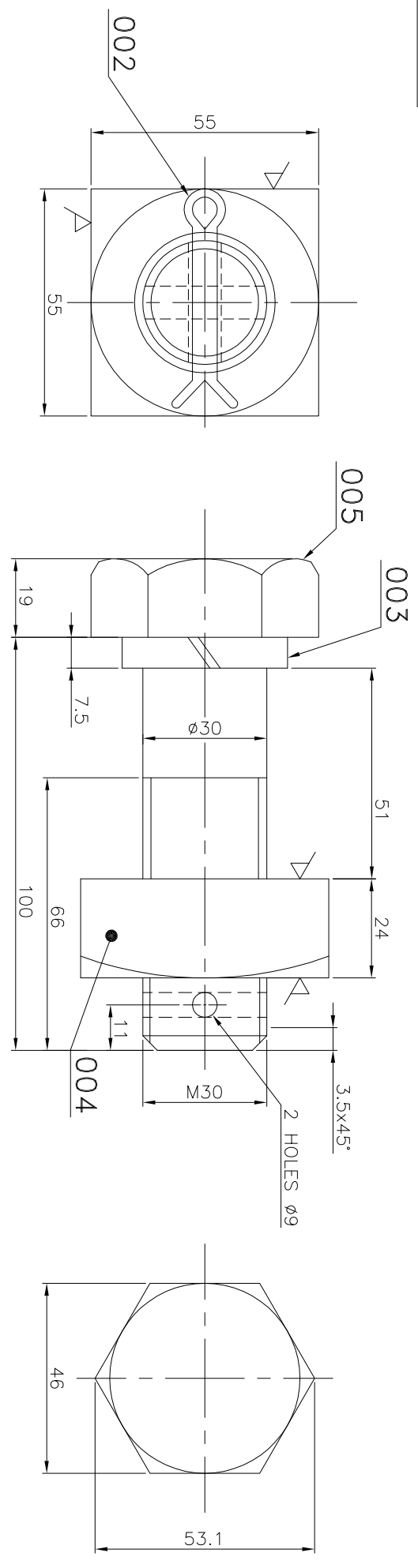
ITEM NO.	ITEM NO.	DESCRIPTION	DRAWING NO.	MATL. CODE	UNIT WT.	QTY.	ZONE
006	006	MACHINED WASHER M30		AA7161001	KG		
005	005	SQUAR. HEAD BOLT 56SQ.X184		AA10501	KG	2.2	
004	004	SPLIT PIN Ø6X55		AA7171089	KG	0.10	
003	003	SPRING WASHER M30		AA717400216	KG	0.07	
002	002	CASTEL NUT M30		AA7164002	KG	0.4	
001	001	SQUARE HEAD BOLT 56SQ.X104		AA10501	KG	1.4	

REV	DATE	ALTERED	CHECKED	APPROVED	ZONE
08	18.10.19	AKU	AS	AS	07
07	5.04.18	AKU	AS	AS	06
06	1.12.17	AKU	AS	AS	05
05	29.7.09	AKU	AS	AS	04
04		AKU	AS	AS	03
03		AKU	AS	AS	02
02		AKU	AS	AS	01
01		AKU	AS	AS	00

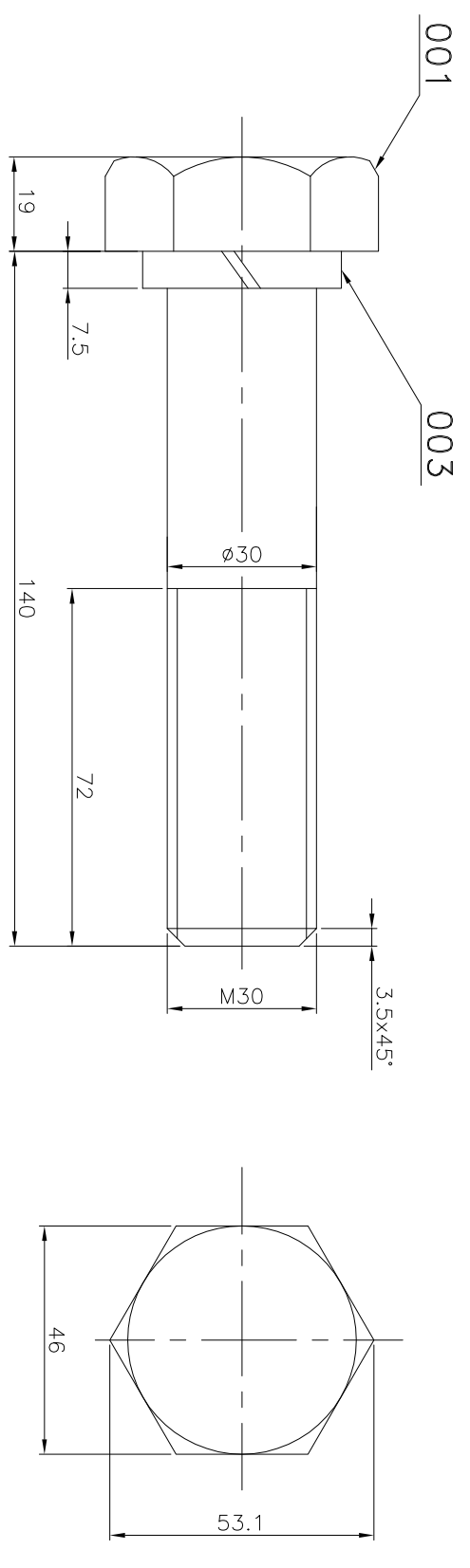
REV	DATE	ALTERED	CHECKED	APPROVED	ZONE
08	18.10.19	AKU	AS	AS	07
07	5.04.18	AKU	AS	AS	06
06	1.12.17	AKU	AS	AS	05
05	29.7.09	AKU	AS	AS	04
04		AKU	AS	AS	03
03		AKU	AS	AS	02
02		AKU	AS	AS	01
01		AKU	AS	AS	00

TM 4303 AZ
25KV.BG.AC.EMU
D.KHANGANI
SGD
AKD
34391628002
24391628002

SIZE A2



FOR VAR.00



FOR VAR.01

- NOTES:-**
1. ST.NO.BP9094715660.
 2. ALTERNATIVE MATERIAL OF ITEM-001, 004 & 005 TO BE H.T.S BAR CONFORMING TO MECHANICAL PROPERTIES OF 8.8 PROPERTY CLASS OF IS:1367.
 3. ITEM 001 & 005 ARE TO BE 100% MCD TESTED TO BP0850178.
 4. FOR ITEM 001 & 005 THREADS TO BE MANUFACTURED BY ROLLING PROCESS ONLY.

REV	DATE	ALTERED	CHKD	APPROVED	VAR	ITEM NO.	DESCRIPTION	UNIT	WT.	ZONE
001	01.12.17	CHECKED	AS	AS	01	001	SEE NOTE-2			
002	07.07.14	CHECKED	AS	AS	02	002	SPLIT PIN Ø6x40 STL	KG	0.4	
003	13.05.14	CHECKED	AS	AS	03	003	SPRING WASHER M30	KG	0.044	
004	19.07.21	CHECKED	AS	AS	04	004	HEXAGON HEAD BOLT 46 A/Fx159	KG	0.8	
005	15.02.12	CHECKED	AS	AS	05	005	HEXAGON HEAD BOLT 46 A/Fx119	KG	0.6	

ADDITION INFORMATION

REV	DATE	ALTERED	CHKD	APPROVED	VAR	ITEM NO.	DESCRIPTION	UNIT	WT.	ZONE
006	01.12.17	CHECKED	AS	AS	06	006	NOTE-1 WAS NOT ON.			
007	07.07.14	CHECKED	AS	AS	07	007	NOTE-3 & 4 ADDED.			
008	13.05.14	CHECKED	AS	AS	08	008	IN IT. 001 (FOR VAR.01), HOLE Ø6 DELETED.			
009	19.07.21	CHECKED	AS	AS	09	009	IN BOM IT. 003 SPRING LOCK WASHER WAS DISC LOCK.			

REV	DATE	ALTERED	CHKD	APPROVED	VAR	ITEM NO.	DESCRIPTION	UNIT	WT.	ZONE
001	01.12.17	CHECKED	AS	AS	01	001	NOTE-1 WAS NOT ON.			
002	07.07.14	CHECKED	AS	AS	02	002	NOTE-3 & 4 ADDED.			
003	13.05.14	CHECKED	AS	AS	03	003	IN BOM IT.003 SPRING LOCK WASHER M30 WAS SPRING WASHER M30.			
004	19.07.21	CHECKED	AS	AS	04	004	Ø9 & DIM.11 WERE Ø6 & 12.5 & DRG. DIGITIZED.			

TM 4303 AZ/BY/DY
25KV.BG.AC.EMU

BHARAT HEAVY ELECTRICALS LTD.
BHOPAL

FIXING BOLT FOR GEAR CASE(2)

DEPT. TIME: 405
 GRADE OF INTOL. DIM. C/M/F: AA0230208

SCALE: NTS

WEIGHT (kg): -

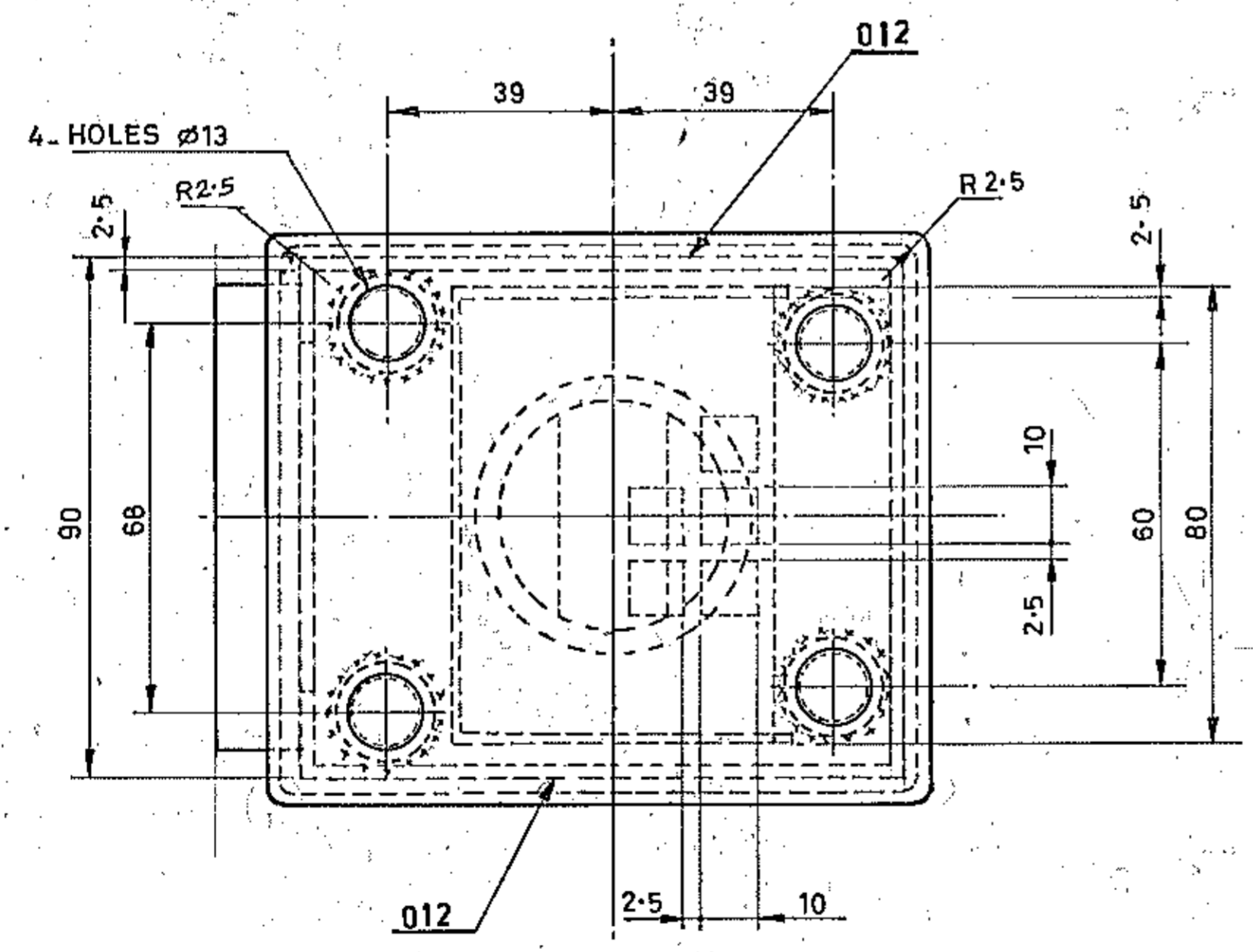
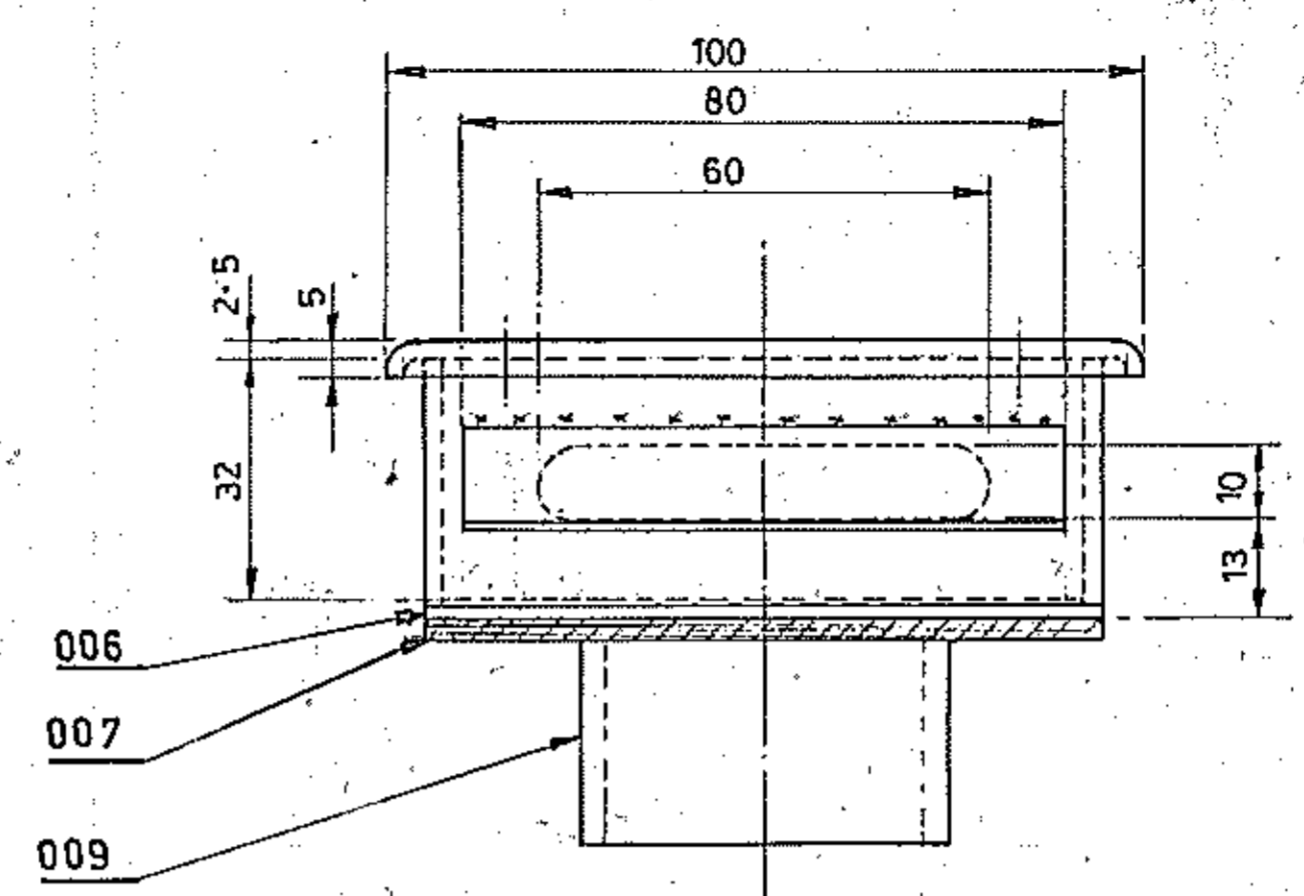
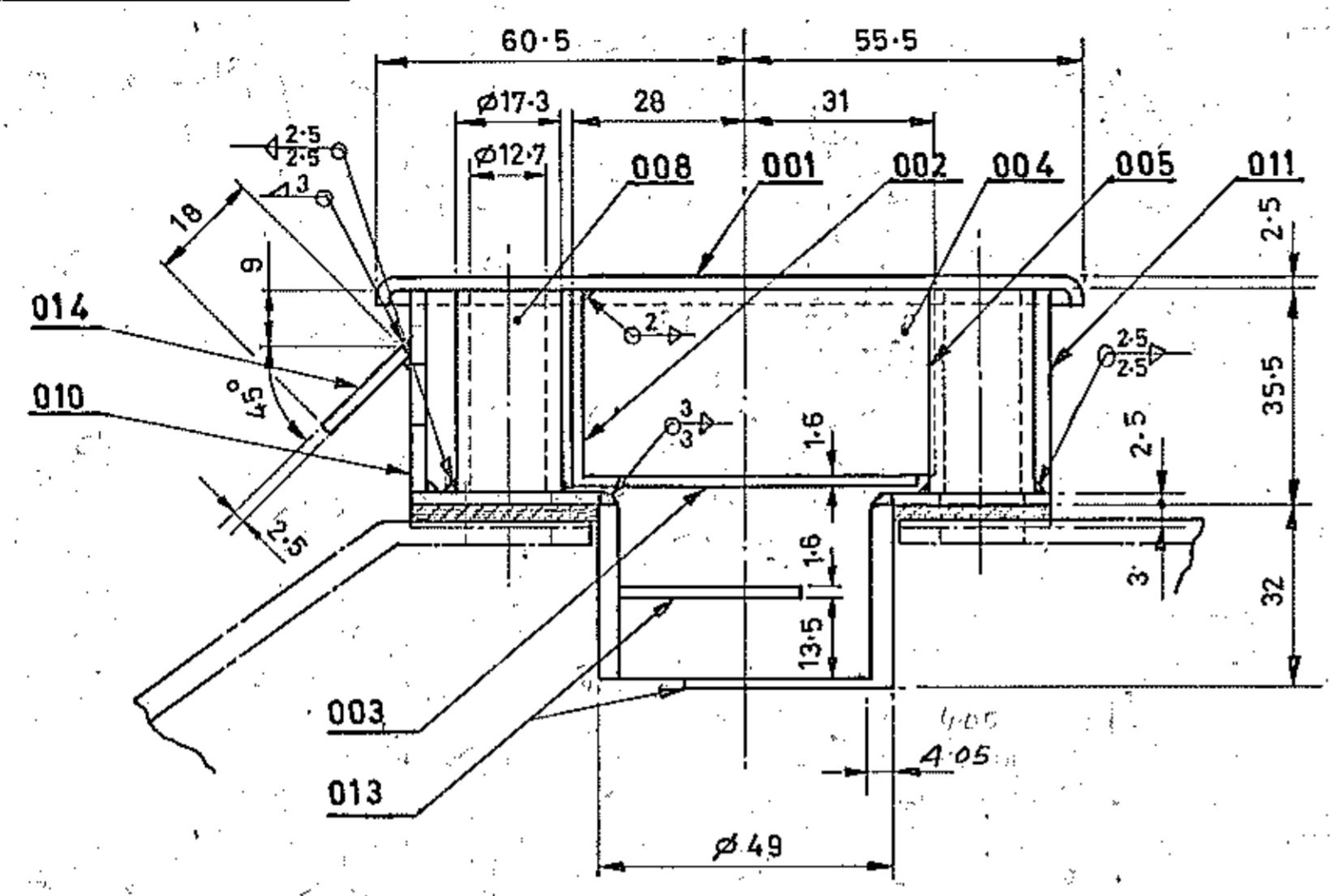
REF. TO ASSY. DRG.: 04391628003

DRAWING NO.: 24391628001

SHEET NO. 01 NO. OF SHEET 01

800 82 91 6372
DRG. NO. 24391628008

INVENTORY NO. SIGN. & DATE REF. DRG. NO. THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED. IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY.



ITEM NO.	VAR	DESCRIPTION	DRAWING NO.	UNIT	QTY	UNIT WT	ZONE
001		014 PLATE	24391628012	KG	0.04		F-8
002		013 PLATE	24391628012	KG	0.04		F-8
002		012 PLATE	24391628012	KG	0.07		F-5
001		011 PLATE	24391628012	KG	0.06		F-5
001		010 PLATE	24391628012	KG	0.06		F-8
001		009 M.S PIPE	24391628012	KG	0.15		F-5
004		008 M.S PIPE	24391628012	KG	0.04		F-7
001		007 GASKET	24391628012	KG	0.05		F-4
001		006 FLANGE	24391628012	KG	0.20		F-4
001		005 WIRE MESH	24391628012	KG	0.004		F-5
002		004 PLATE	24391628012	KG	0.05		F-6
001		003 PLATE	24391628012	KG	0.06		F-6
001		002 PLATE	24391628012	KG	0.06		F-6
001		001 BREATHER COVER	24391628012	KG	0.3		F-6

ADDITIONAL INFORMATION

STATUS OF DRAWING

DISTRIBUTION OF PRINTS
TME - 1, TXM - 4
TNX - 1, FBM - 4

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT
TM 4303 AZ
25 KV. BG. AC. EMU

BHARAT HEAVY ELECTRICALS LTD
BHOPAL
NAME: *Rudra* SIGN: *Rudra* DATE: 22-8-89
CHD: *SGD* SIGN: *SGD* DATE: 25-8-89
APPD: *SKS* SIGN: *Shukla* DATE: 13-9-89

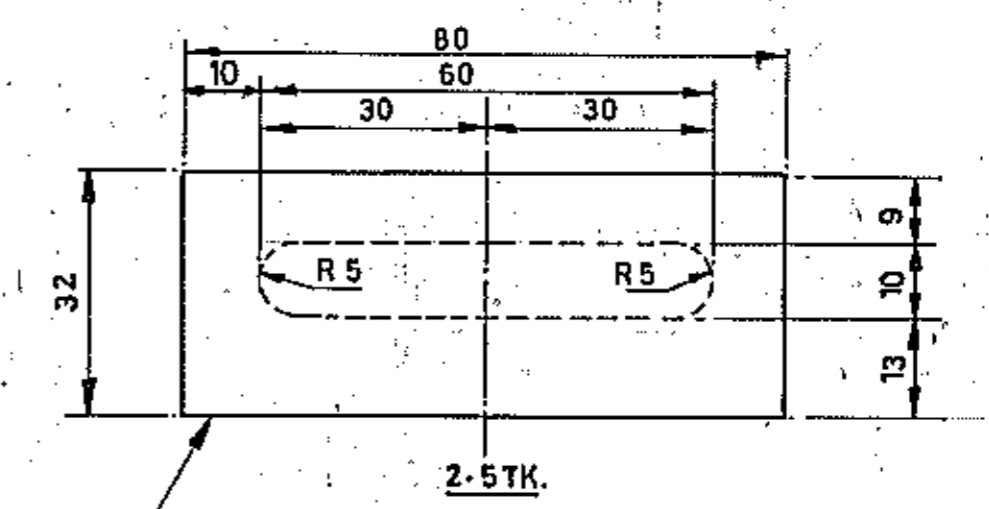
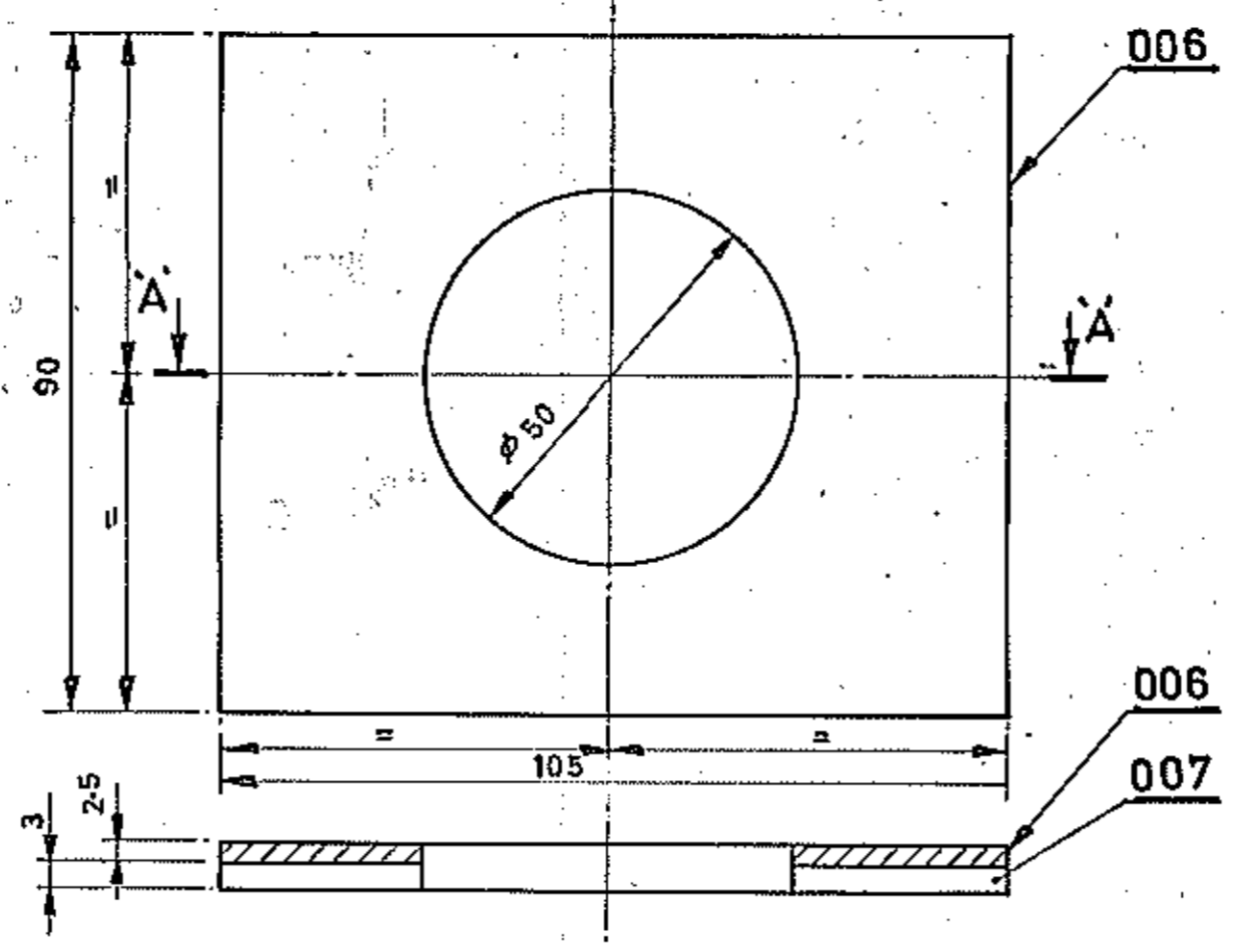
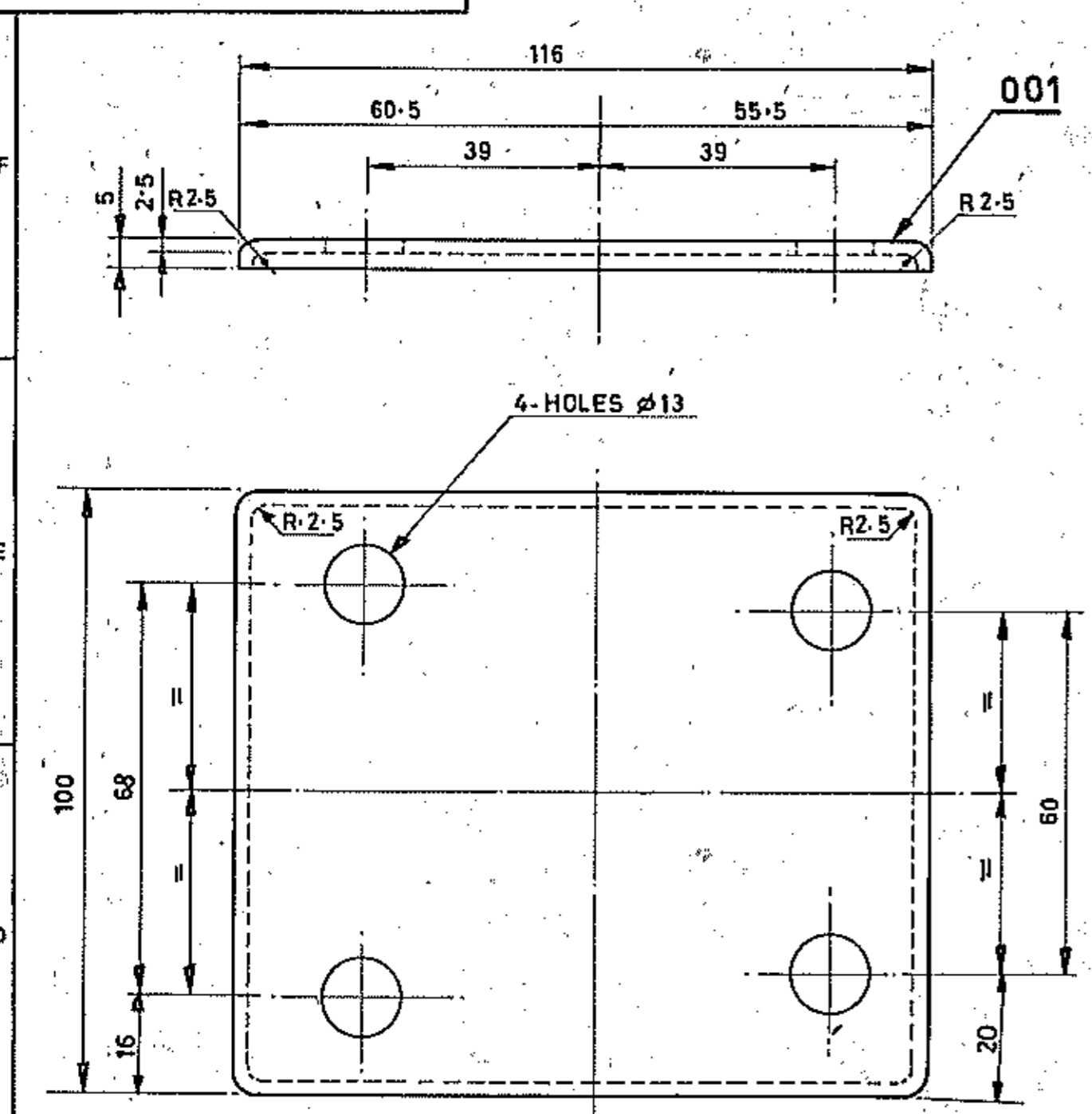
REV. 01 DATE 5-2-88 ALTERED BY *B. Gaud* CHECKED BY *B. Gaud*
ZONE DRG UPDATED

DEPT. TME GRADE OF UN.TOL. DIM. CTM/F 405
SCALE 1:1 WEIGHT (Kg) 1.41 REF. TO ASSY. DRG. 0 439 16 28 003
ITEM NO. 007 NO. OF ITEMS 014

TITLE
BREATHER ASSY FOR TOP HALF GEAR CASE
DRAWING NO. 2 439 16 28 008
SHEET NO. NO. OF SHEETS

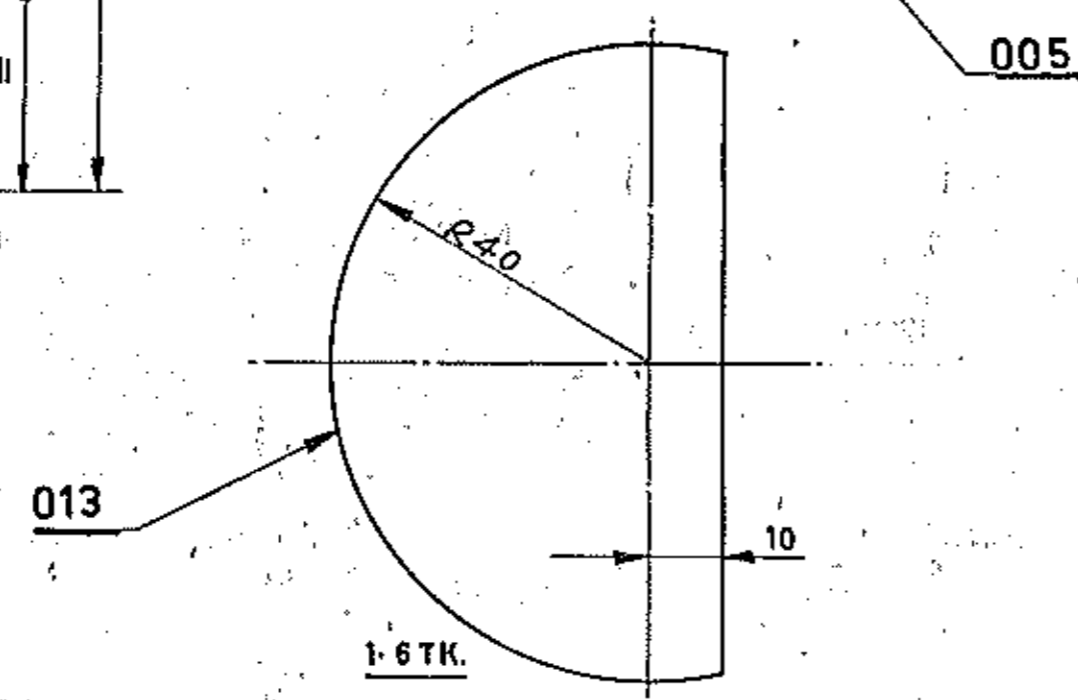
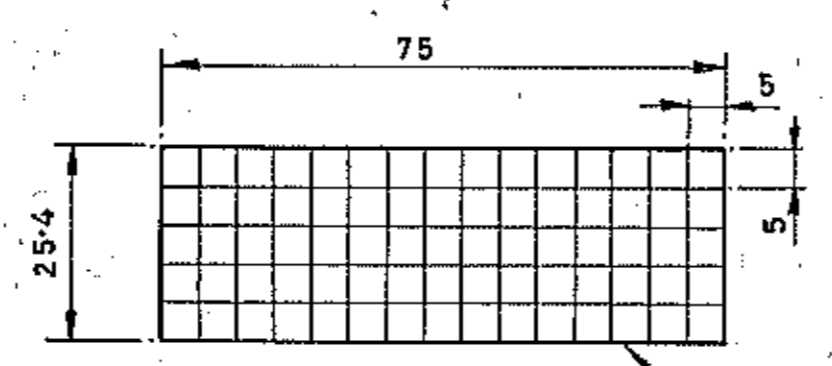
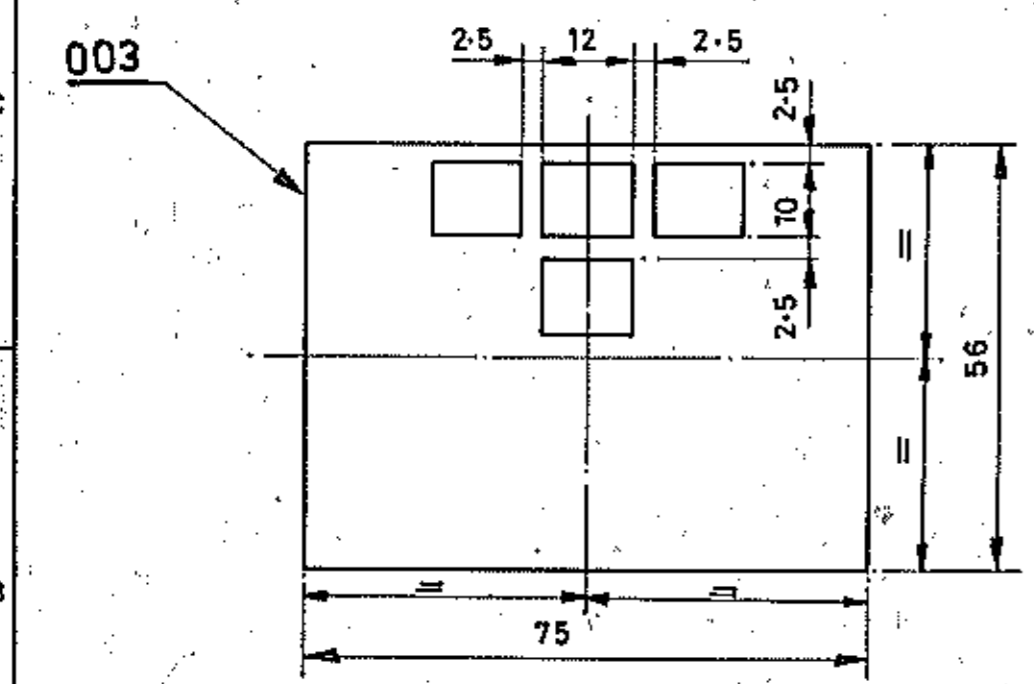
DRG NO. 24391628 012

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NOTE: 1. HARDNESS OF IT:007 TO BE 60±5 IRHD.

SECTION - AA



VAR 00	REMARKS	NO.	ITEM NO.	DESCRIPTION	DRAWING NO.	MATL. CODE	UNIT	UNIT WT.	QTY.	ZONE
001		014		PLATE, 2.5TK. X18x80		AA1011713128	KG	0.04		
001		013		PLATE, 1.6TK. XØ40		AA1011715090	KG	0.04		A-7
001		012		PLATE, 2.5TK. X32x100		AA1011713128	KG	0.07		
001		011		PLATE, 2.5TK. X32x90		AA1011713128	KG	0.06		
001		010		PLATE, 2.5TK. X32x90		AA1011713128	KG	0.06		F-3
001		009		M.S PIPE ØD 40.9x ØD 49x32		AA1011052571	KG	0.15		
001		008		M.S. PIPE ØD 127x ØD 175x30		AA1011052270	KG	0.04		
001		007		GASKET, 3.0TK. X90x105		AA59899	KG	0.05		F-3
001		006		FLANGE, 2.5TK X 90x105		AA1011713128	KG	0.20		F-3
001		005		WIRE MESH Ø1x25-4x75		IS 412	KG	0.004		B-5
001		004		PLATE, 2.5TK. X 33x59		AA1011713128	KG	0.05		
001		003		PLATE, 1.6TK X 56x75		AA1011715090	KG	0.06		C-1
001		002		PLATE 2.5TKx34.5x75		AA1011713128		0.06		
001		001		BREATHER COVER 2.5 TK. X 110x130		AA1011713128	KG	0.3		F-6

ADDITIONAL INFORMATION

STATUS OF DRAWING

DISTRIBUTION OF PRINTS

TME-1 TXN-4

TNX-1 FBM-4

TYPE OF PRODUCT TM 4303 AZ

OR

NAME OF CUSTOMER/PROJECT 25 KV. BG. AC. EMU.

BHARAT HEAVY ELECTRICALS LIMITED BHPAL

DRN. NAME. SIGN. DATE NO. OF

CHD. S.G.D. 28-8-24 VAR.

APPD. S.K.S. 13/9/24

REV. DATE ALTERED BY

01 30-1-96

DEPT. TME GRADE OF UN. TOL. SCALE WEIGHT (Kg.) REF. TO ASSY. DRG. ITEM NO. NO. OF

405

1:1

24391628008

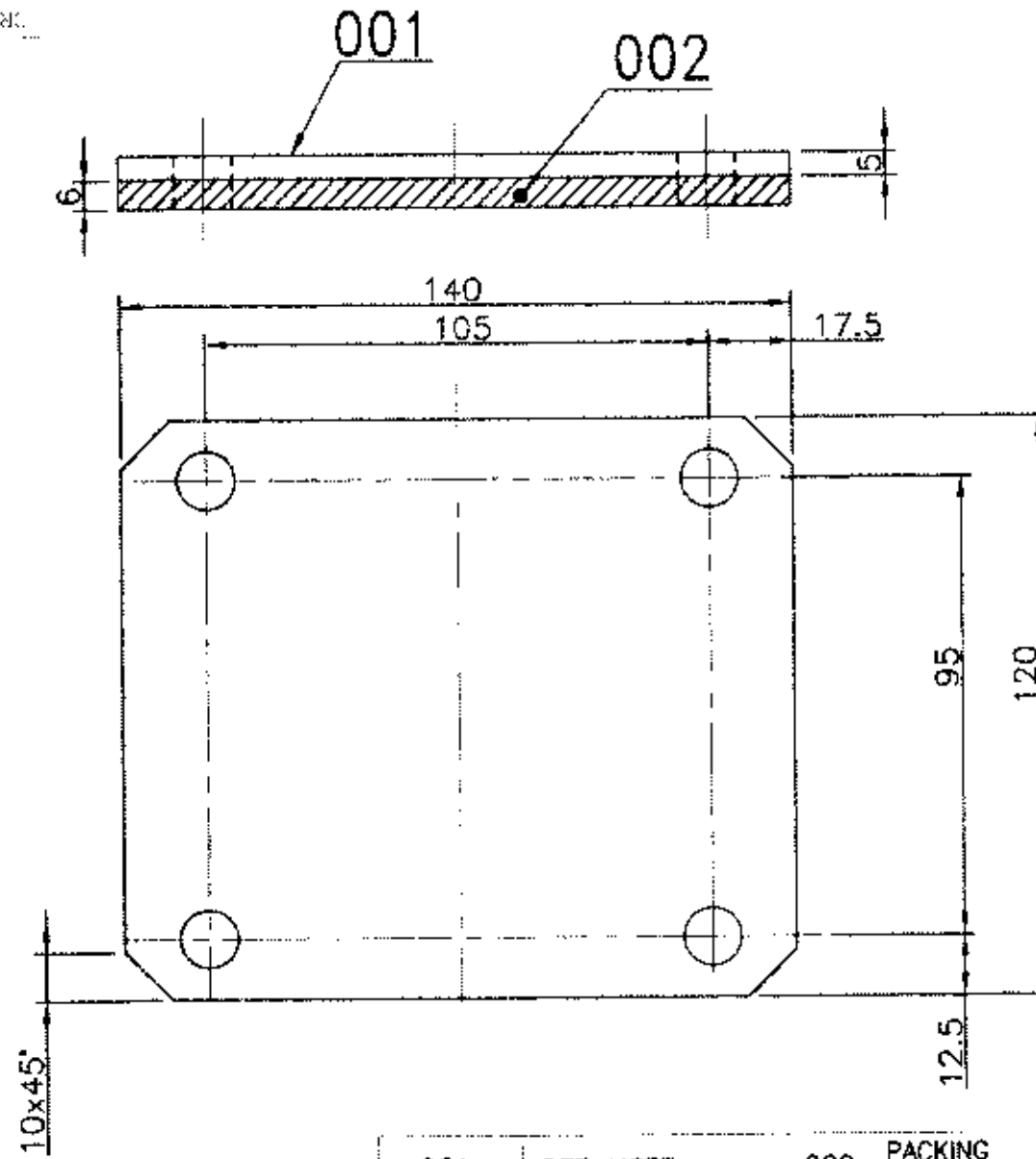
TITLE DRAWING NO. 24391628012

DETAIL OF BREATHER ASSY. CARD CODE

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

34391628028



NOTE:-

1. HARDNESS FOR IT.002 TO BE 60±5 IRHD.

001	SEE NOTE	002	PACKING 6TKx120x140	BP 59899	KG	0.05
001		001	PLATE 5TKx120x140	AA10113	KG	0.7
VAR. NO.	REMARKS	VAR. NO.	ITEM NO.	DESCRIPTION	DRAWING NO.	

ADDITIONAL INFORMATION

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT: **TM 4303 AZ
25 KV BG AC EMU**

DISTRIBUTION OF DRAWING: **TME-1 TNX-1
TXM-3**

BHARAT HEAVY ELECTRICALS LTD. BHOPAL

NAME	DATE	NO. OF
BHADARIA Sd/-	08.09.89	
SGD Sd/-	09.09.89	01
SKS Sd/-	13.09.89	

REV. 02 DATE 13.04.09

APPROVAL: *[Signature]*

DRG. UPDATED & DIGITIZED.

GRADE OF MATERIAL: **405**

SCALE: **1:1**

WEIGHT: **0.75**

REF. TO ASSY. DRG. NO. **04391628003**

DRAWING NO. **34391628028**

SHEET NO. **01** NO. OF SHEETS **01**

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

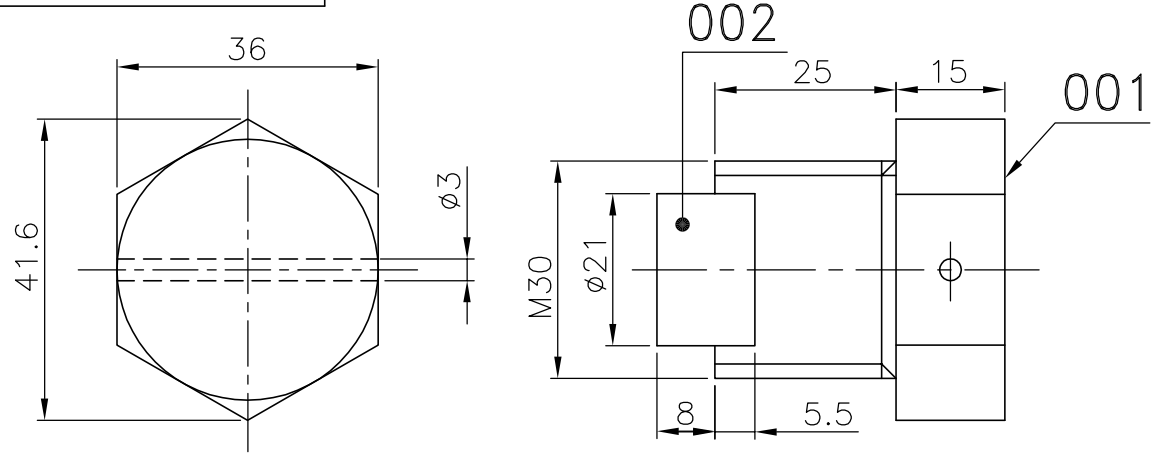
PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

SIZE A3

1-1 SKK

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REV. 03	DATE 11.03.13	ALTERED	REV. 02	DATE 10.04.09	ALTERED -sd-	ADDITIONAL INFORMATION
		CHECKED			CHECKED -sd-	
		APPROVED			APPROVED -sd-	
DRAWING UPDATED & DIGITIZED.			DRAWING UPDATED & DIGITIZED.			STATUS OF DRAWING
						DISTRIBUTION OF PRINTS
						TME-1 TXM-3 TNX-1
REV. 03	DATE 11.03.13	ALTERED <i>Atit Kumar</i>				
		CHECKED <i>Atit Kumar</i>				
		APPROVED <i>Atit Kumar</i>				
IN TITLE TM4303BY/DY WAS AZ. UNTOL. SPEC. AA0230208 WAS NOT ON.						



NOTES:-

1. ∇^{25} ALL OVER
2. CHARACTERISTIC OF MAGNET-
FORCE FOR HOLDING MAGNETISM_HC OVER 1500 Oe
RESIDUAL MAGNETIC FLUX DENSITY_BY OVER 2000 G.
MAXIMUM ENERGY (BXH) _MAX. OVER 0.8×10^6 G.Oe.
3. ITEM 001 & 002 MUST BE ADHERED BY EPOXY RESIN ADHESIVE. IT.003
4. ITEM 001 TO BE ZINC PLATED TO PASSIVATED TO AA0673603 & AA0673604.

	003	ADHESIVE ARALDITES											
					HE 5626								
	002	PERMANENT MAGNET $\phi 21 \times 8$			CAT RS 01602 FXD 100		KG.	0.01					
	001	DRAIN PLUG 36 A/Fx40			AA 1010172174 AA10112		KG.	0.25					
65	75	25	27	29	58	59	46	54	55	56	68	UNIT WT. KG.	71
REMARKS	ITEM NO.	DESCRIPTION			STD	MATL. CODE		A	C	UNIT	QTY.		
28	CARD TYPE-3		28	CARD TYPE-1		28							CARD TYPE-2



BHARAT HEAVY ELECTRICALS LTD.
BHOPAL

	NAME	SIGN	DATE	NO. OF VAR.
DRN	BHADAUARIA	-Sd-	24.08.89	
CKD	S.G.D.	-Sd-	25.08.89	
APPD	S.K.S	-Sd-	13.09.89	

DEPT TME	UNTOL. DIMS. GR. DIM ϕ /M/F		SCALE	WEIGHT (K.G.)	REF. TO ASSY. DRG.	ITEM NO.	NO. OF ITEM
CODE 405	AA0230208		NTS	-	04391628003	011	003
TITLE					DRAWING NO.	REV.	
MAGNETIC DRAIN PLUG					44391628005	03	
(TM 4303BY/DY) 25KV BG ACEMU, 1400 HP DEMU					SHT. No. 01	NO. OF SHT. 01	

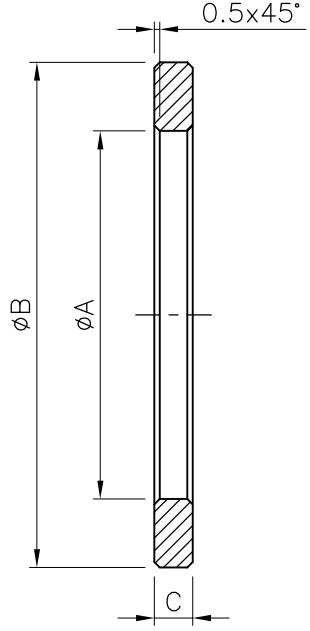
FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

138705/2024/HEP-TXM20500

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REV. 02	DATE 19.7.95	ALTERED -sd- CHECKED -sd- APPROVED -sd-	REV. 01	DATE 30.10.90	ALTERED -sd- CHECKED -sd- APPROVED -sd-	ADDITIONAL INFORMATION
ZONE	IT.002 WAS NOT ON.		ZONE	IN TABLE IT.001, A,B,C TOLERANCE WERE NOT ON.		STATUS OF DRAWING
						DISTRIBUTION TME-1, TXM-3 OF PRINTS TNX-1
REV. 03	DATE 5.10.96	ALTERED V.R.D. CHECKED -sd- APPROVED -sd-	REV. 04	DATE 28.3.22	ALTERED S.D.B. CHECKED A.S. APPROVED A.S.	
ZONE	IT.003 WAS NOT ON.		ZONE	IT.004 WAS NOT ON.		



IT.NO.	A	B	C	RM SIZE	MATL. CODE	REF. TO ASSY.	M/C TYPE
					MATL. SPEC.		
001	33.5 +1.0 -0.0	46 ±0.5	3.5 ±0.25	ø50x3.5	BP2290262056	04391400001 (11)	TM165,4906
					BP22962	04391441001 (11)	TM4601,4603
002	30.0 +0.5 -0.0	43 ±0.5	3.5 ±0.25	-	BP2290262056	04391455006 (30)	TA0659 AZ
					BP22962		
003	37	50	2.5		BP22962	34391641008	TM4601 AZ
004	31.0 +0.5 -0.0	43 ±0.5	2.5 ±0.15		BP22962	04391680006 (12)	TM4303 BY,DY
						04451609051 (19)	IM3302 AZ,BZ
						04451603001 (19)	IM3601 AZ

59	64	65	75	25	27	29	58	59	34	45	55	56	58	65
VAR00	REMARKS		ITEM NO.	DESCRIPTION			STD	MATL. CODE	MATL. SPCN.	A	C	UNIT	UNIT WT.	QTY.
28 → CARD TYPE-3			28 → CARD TYPE-1			28 → CARD TYPE-2								

	BHARAT HEAVY ELECTRICALS LTD.			NO. OF VAR.	
	DRN.	V.R.D.	-sd-		20/10/89
	CHD.	S.G.D.	-sd-		20/10/89
	APPD.	D.K.	-sd-		20/10/89

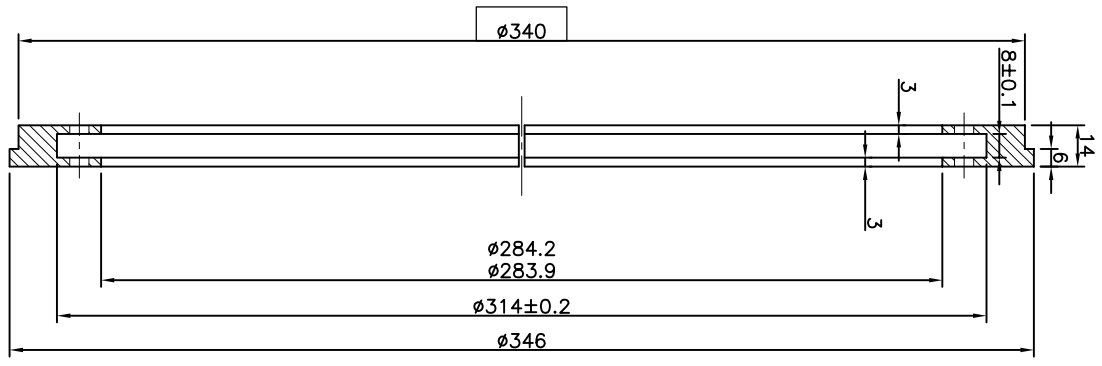
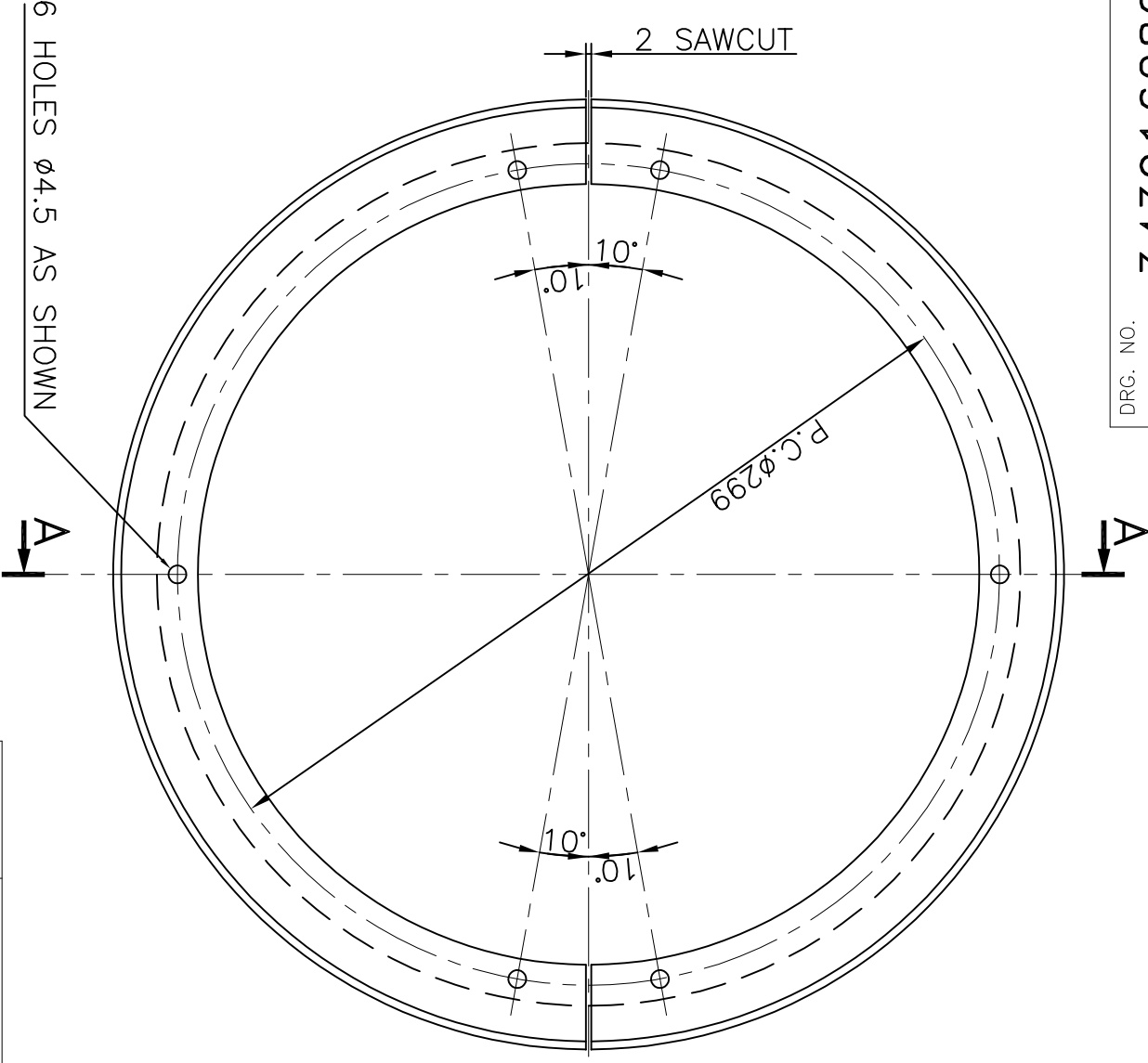
DEPT. TME	UNTOL. DIMS. GR.		SCALE	WEIGHT (K.G.)	REF. TO ASSY. DRG.	ITEM NO.	NO. OF ITEM
CODE 405			N.T.S.		-	-	004
TITLE					DRAWING NO.	REV.	
NYLON WASHER					C450156	04	
SHT. NO. 01			NO. OF SHT. 01				

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FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

DRG. NO. 700829162807



- NOTES:-**
1. DIAMETERS MARKED IN □ ARE TO BE MACHINED AFTER SAWING.
 2. RINGS TO BE MADE OUT OF 36TKx18 WIDEX1065 LG. STEEL PLATE TO AA10108 ROLLED TO 350 OUT-SIDE DIAMETER.
 3. RAW MATL. SIZE SHOWN IN NOTE 2 FOR IT.001 WILL MAKE 2 NOS. OF IT.001.

SECTION-AA

59	64	65	75	78	79	25	27	29	58	59	60	77	78	79	34	45	55	56	57	58	65	72	
VAR 00	SEE NOTES-2&3			001	BLK. STL. PLATE. 36TKx18x1065			STD.	DRAWING NO.			AA1011808188	AA10108	KG	1.9	MACH. CODE			A	UNIT WT.			5
	REMARKS			VAR NO.	ITEM NO.	DESCRIPTION						VAR	MATL. SPON.			QTY.			C	NO.			S
	CARD TYPE-3					CARD TYPE-1										CARD TYPE-2							

ADDITION INFORMATION

STATUS OF DRAWING

DISTRIBUTION OF PRINT

TME-1 TNX-1

TXM-4

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT

TM 4303 AZ

25 KV BG AC EMU

BHARAT HEAVY ELECTRICALS LTD. BHOPAL

DRN	BHADAURIA	Sd/-	21.08.89	73	NO. OF VAR
CKD	SGD	Sd/-	22.08.89	74	
APPD	AKD	Sd/-	23.08.89	75	



INVENTORY NO.	SIGN. & DATE	REF. DRG. NO.
		D4776152

REV	DATE	ALTERED	A.U.
04	31.01.18	CHECKED	RC
		APPROVED	RC

IN SEC-AA DIMS. 6 & Ø346 ADDED. 6 HOLES Ø4.5 ADDED.

REV	DATE	ALTERED
03	12.6.09	CHECKED
		APPROVED

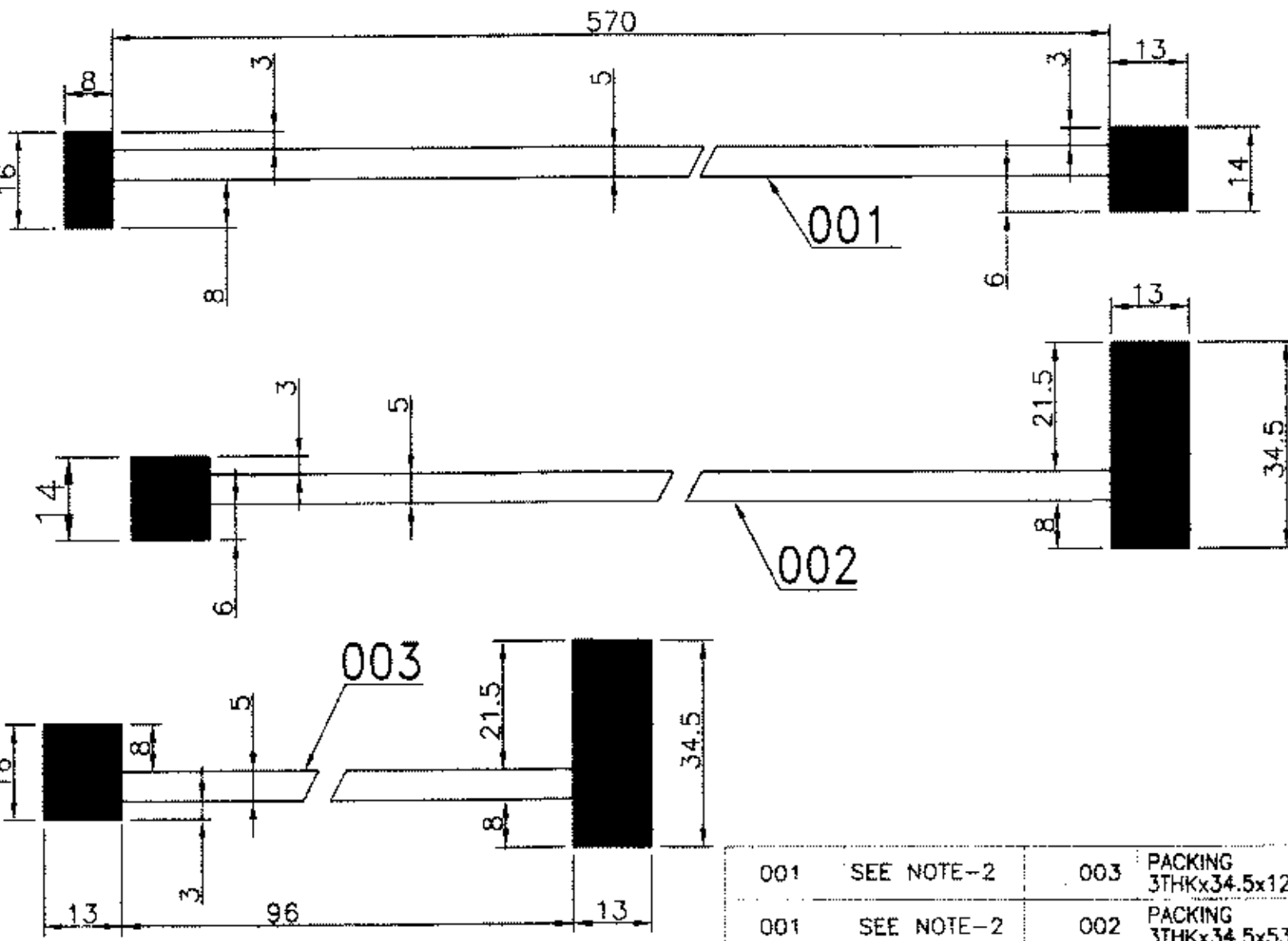
DRAWING. UPDATED & DIGITIZED.

DEPT.	TME	GRADE OF UNTOL.	SCALE	WGT (kg)	REF. TO ASSY. DRG.	NO. OF ITEMS
405	AA0230208	AA0230208	NTS	1.9	04391628001	004
TITLE			DRAWING NO.			
HALF WIPER WHEEL SIDE			34391628007			
SHEET NO.			NO. OF SHEET		REV.	
01			01		04	

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

34391628029



NOTES:-

1. ADHESIVE:-
THREE BOND 1521-FOR SMUDGED PART
THREE BOND 1215-FOR OTHER PART.
ALTERNATIVELY HE 5713 MAY BE USED THROUGHOUT.
2. WOOL FELT SHOULD BE EXTRA FIRM VARIETY.

VAR. NO.	REMARKS	VAR. NO.	ITEM NO.	DESCRIPTION	DRAWING NO.	MATERIAL CODE	MATERIAL SPECN	UNIT	WT.
001	SEE NOTE-2	003		PACKING 3THKx34.5x122		AA23121		KG	0.01
001	SEE NOTE-2	002		PACKING 3THKx34.5x536		AA23121		KG	0.02
001	SEE NOTE-2	001		PACKING 3THKx16x591		AA23121		KG	0.02

ADDITION INFORMATION		TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT		TM 4303 AZ 25 KV BG AC EMU						
STATUS OF DRAWING		DISTRIBUTION OF PRINT		BPHARAT HEAVY ELECTRICALS LTD. BHOPAL		DRN	D.K.	Sd/-	28.09.89	NO. OF VAR.
TME-1 TNX-1 TXM-3		FRIENDS		BPHARAT HEAVY ELECTRICALS LTD. BHOPAL		CHKD	SGD	Sd/-	03.10.89	-
DRAWING UPDATED & DIGITIZED.		TME		GRADE OF UNROL. I/P, C/M/T		APPR	AKD	Sd/-	04.10.89	
REV. 02		DATE 8.05.09		TME		SCALE NTS		WEIGHT (kg)		NO. TO ASSY. TO BE
				405				04391628003		ITEM NO.
										013
										NO. OF ITEMS
										003
										REV.
										02
										SHEET NO.
										01
										NO. OF SHEET
										01
										SIZE A3

**PACKINGS
(FOR TOP HALF GEAR CASE)**

**DRAWING NO.
34391628029**

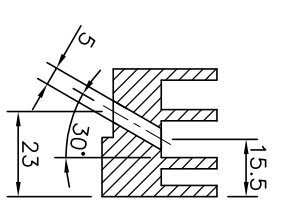
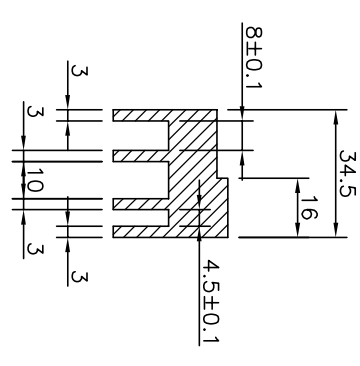
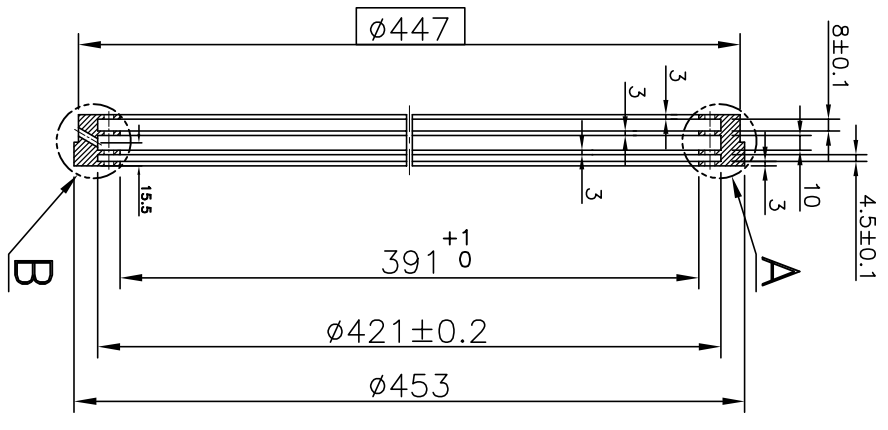
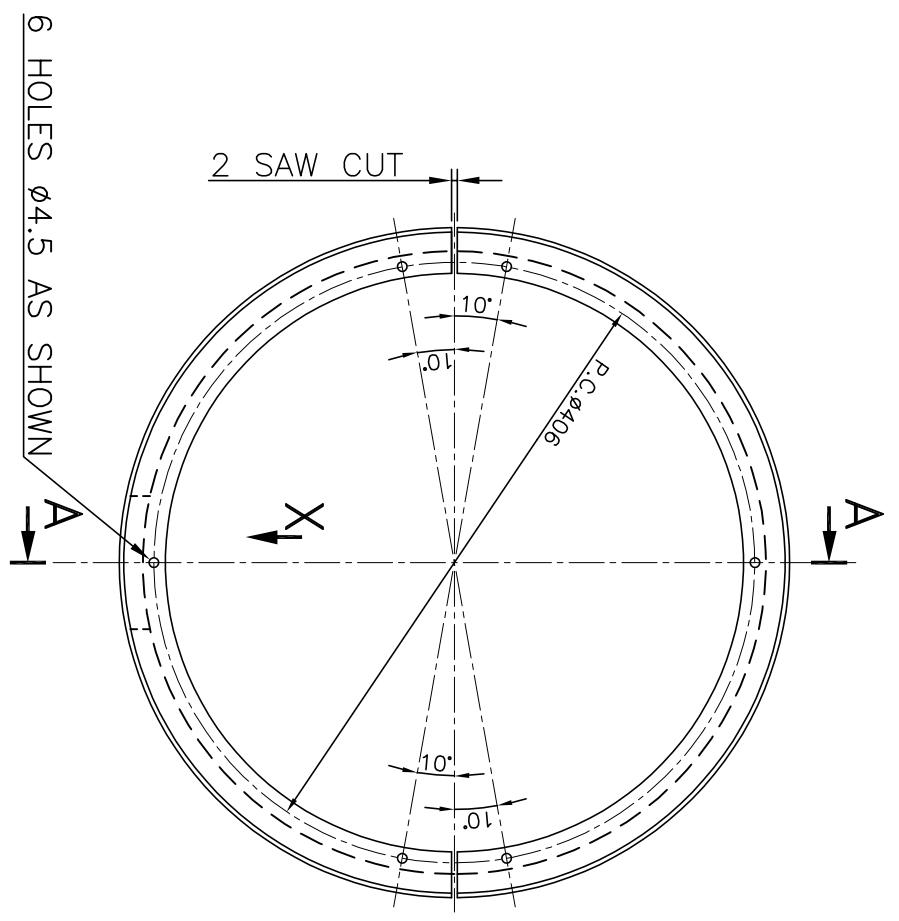
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FIRST ANGLE PROJECTION

6000891637c

DRG. NO.

(ALL DIMENSIONS ARE IN mm)



SECTION-AA

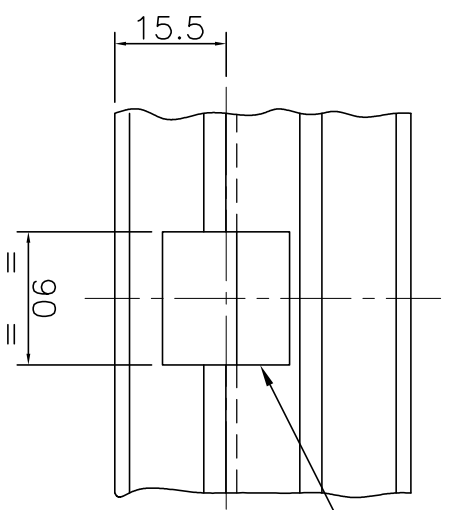
DETAIL-A

DETAIL-B

- NOTES:-**
1. DIMENSIONS MARKED IN □ ARE TO BE MACHINED AFTER SAWING.
 2. RINGS TO BE MADE OUT OF 36TKx45 WIDEX1404 LG. STEEL PLATE TO AA10108 ROLLED TO 455 OUT SIDE DIAMETER.
 3. RAW MATL. SIZE SHOWN IN NOTE 2 FOR IT.001 WILL MAKE 2 NOS. OF IT.001.

6 HOLES $\phi 4.5$ AS SHOWN

1 SLOT



VIEW-X

59	64	65	75	78	79	25	27	29	58	59	60	77	78	79	31	34	45	55	56	57	58	65	72
VAR 00	REMARKS	VAR NO.	VAR NO.	ITEM NO.	DESCRIPTION	STD	DRAWING NO.	VAR	MATL. CODE	MATL. SPON.	UNIT WT.	QTY.	ZONE										
	SEE NOTE-2&3 R/WT.17.9	001			PLATE 36TKx45x1404				AA1011808188		4.95												

REV	DATE	ALTERED	A.U.
04	31.01.18	CHECKED	RC
		APPROVED	RC

IN SEC.-AA, DIM $\phi 453$ ADDED. IN DETAIL-A, DIMS. 34.5 & 16 ADDED. 6 HOLES $\phi 4.5$ ADDED.

DISTRIBUTION OF PRINT
TME-1 TNX-1
TXM-3

REV	DATE	ALTERED	SD
02	23.10.12	CHECKED	RC
		APPROVED	RC

DETAIL-A WAS NOT ON.
DRAWING UPDATED & DIGITIZED.

REV	DATE	ALTERED	SD
03	26.12.17	CHECKED	RC
		APPROVED	RC

IN VIEW-X, 1 SLOT ADDED IN PLACE OF 2-HOLES $\phi 8$.

IN VIEW-X, 1 SLOT ADDED IN PLACE OF 2-HOLES $\phi 8$.

STATUS OF DRAWING
DRAWING UPDATED & DIGITIZED.

REV	DATE	ALTERED	SD
01	9.6.09	CHECKED	RC
		APPROVED	RC

DRAWING UPDATED & DIGITIZED.

INVENTORY NO.	SIGN. & DATE	REF. DRG. NO.
		D4776152

REV	DATE	ALTERED	SD
03	26.12.17	CHECKED	RC
		APPROVED	RC

IN VIEW-X, 1 SLOT ADDED IN PLACE OF 2-HOLES $\phi 8$.

STATUS OF DRAWING
DRAWING UPDATED & DIGITIZED.

STATUS OF DRAWING
DRAWING UPDATED & DIGITIZED.

REV	DATE	ALTERED	SD
01	9.6.09	CHECKED	RC
		APPROVED	RC

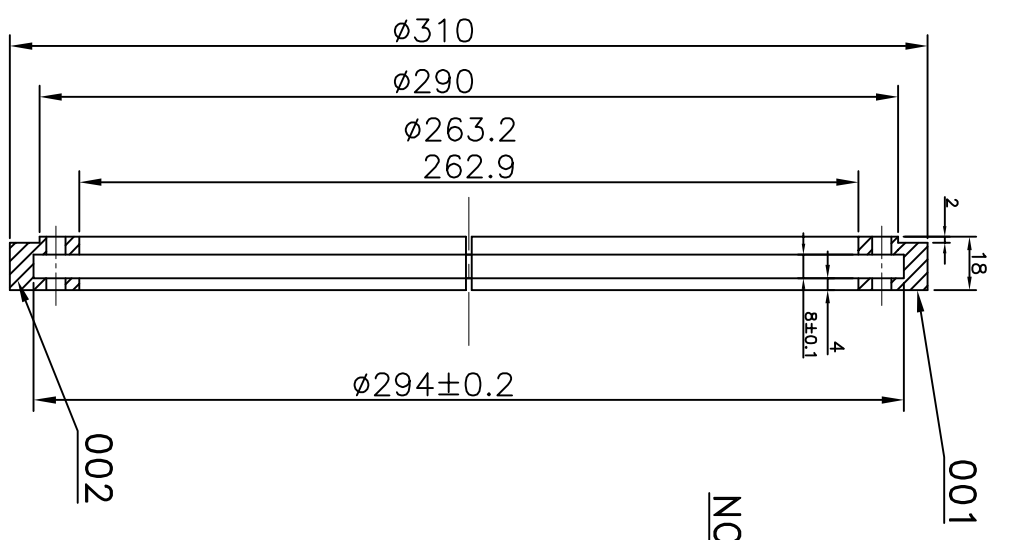
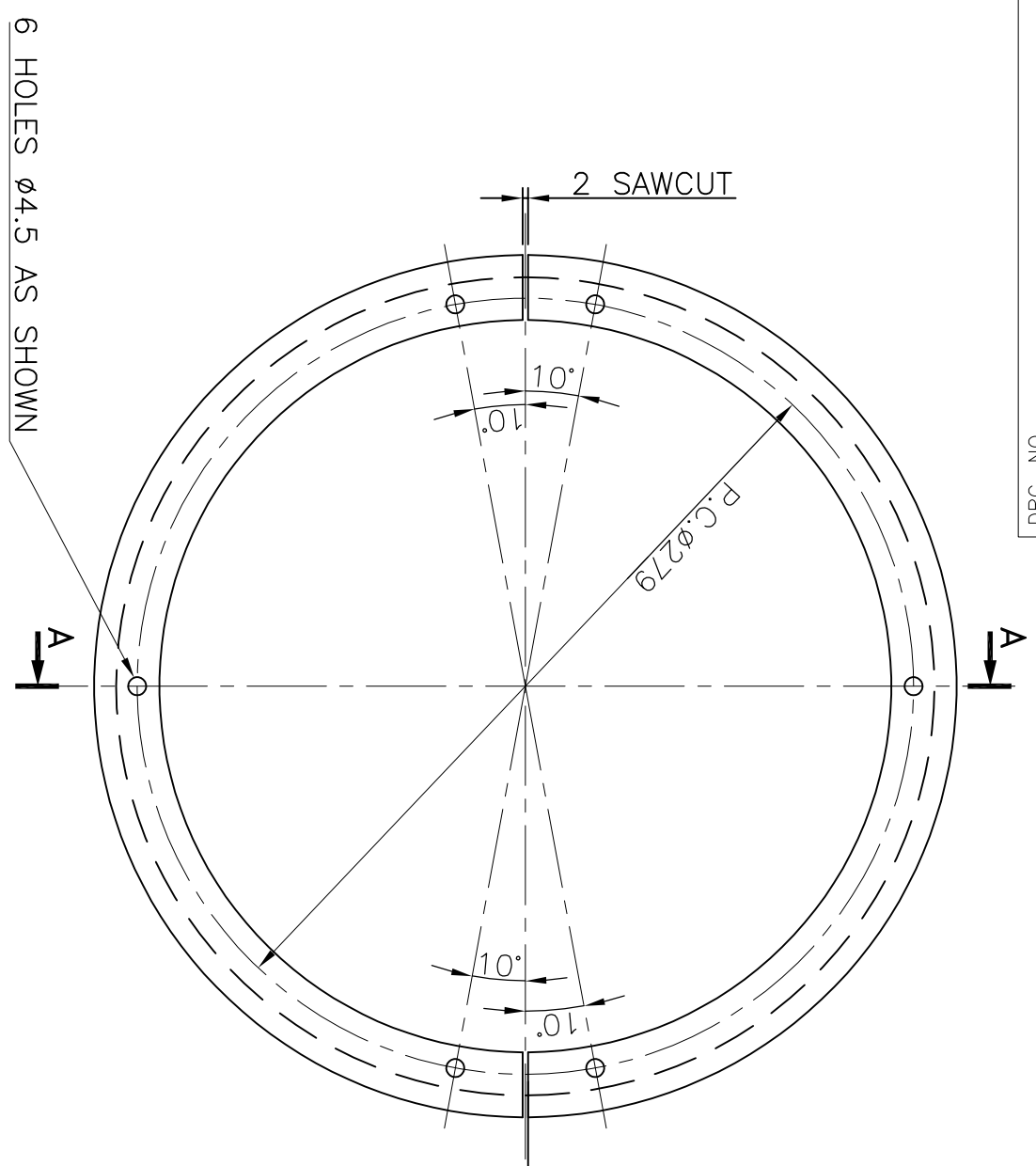
DRAWING UPDATED & DIGITIZED.

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FIRST ANGLE PROJECTION

3108291628013

DRG. NO.



- NOTES:-
1. DIAMETERS MARKED IN \square ARE TO BE MACHINED AFTER SAWING.
 2. RINGS TO BE MADE OUT OF 20TKx34 WIDE X978 LG. PLATE TO AA10108 ROLLED TO 320 OUT-SIDE DIAMETER.
 3. MATL. CALLED FOR IN NOTE-2 MAKES ONE EACH OF ITEM NO.001 AND 002.

25/ ALL OVER.

(ALL DIMENSIONS ARE IN mm)

INVENTORY NO. _____ SIGN. & DATE _____ REF. DRG. NO. D4776152

REV	DATE	ALTERED	A.U.	RC
06	31.01.18	CHECKED	RC	RC
		APPROVED	RC	RC

DIMS. $\phi 290$ & 2 ADDED.
DIMS. 18 WAS 16. 6 HOLES $\phi 4.5$ ADDED.

REV	DATE	ALTERED	A.U.	RC
05	25.07.11	CHECKED	-SD-	-SD-
		APPROVED	-SD-	-SD-

IN TITLE BLOCK HALF WIPER PINION SIDE WAS HALF WIPER MOTOR SIDE.

REV	DATE	ALTERED	A.U.	RC
04	03.07.09	CHECKED	-SD-	-SD-
		APPROVED	-SD-	-SD-

DRAWING UPDATED & DIGITIZED

VAR NO.	ITEM NO.	DESCRIPTION	ST.	DRAWING NO.	MATL. CODE	MATL. SPON.	UNIT WT.	QTY.	ZONE
59	64	65	75	78	79	25	27	29	
		SEE NOTE-3		002					
		SEE NOTE-2		001					
		HALF WIPER							
		HALF WIPER							

ADDITION INFORMATION

STATUS OF DRAWING

DISTRIBUTION OF PRINT

TME-1 TNX-1

TXM-4

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT

TM 4303 AZ

25 KV BG AC EMU

BHARAT HEAVY ELECTRICALS LTD.

BHOPAL

DRN BHADOURIA Sd/- 18.08.89

CKD SGD Sd/- 22.08.89

APPD AKD Sd/- 23.08.89

REF. TO ASSY. DRG. 04391628001

04391628002

ITEM NO. 006

NO. OF ITEMS 002

DEPT. TME

GRADE OF UNTOL. DIM. C/M/F

AA0230208

SCALE NTS

WIGHT (kg)

REF. TO ASSY. DRG. 04391628001

04391628002

ITEM NO. 006

NO. OF ITEMS 002

TITLE HALF WIPER PINION SIDE

DRAWING NO. 34391628013

SHEET NO. 01

NO. OF SHEET 01

510829162815

ON GRD

TRAFFIC GREEN PAINT
SPOT HERE

003

PUNCH 6 HOLES, 3 DIA.
THROUGH FELT (IT.001)
USING DRILLED & C'SK
HOLES IN IT. 002 AS
GUIDE

001

34°

17°

34°

34°

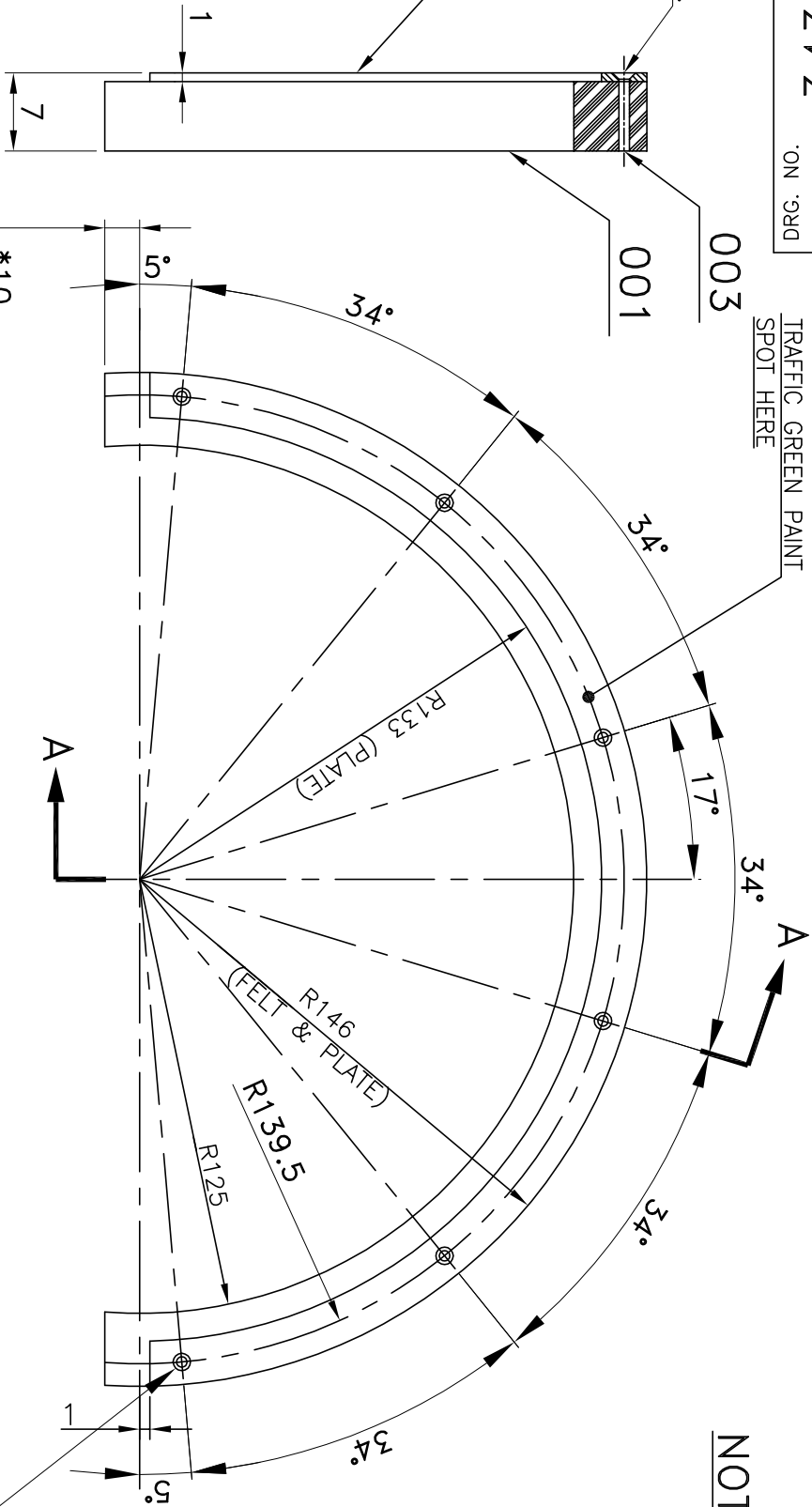
NOTES:-

- * THIS PART MUST BE CUT OFF AS PER REQUIREMENT OF GEAR CASE AFTER ASSY.
- WOOL FELT SHOULD BE EXTRA FIRM VARIETY.
- BEFORE FITMENT, THE FELT SEAL TO BE SOAKED IN OIL (SERVO SYSTEM-57 OF 10GL OR EQUIVALENT) HEATED AT 100°C FOR MIN.2 HOURS.-
- TOLERANCE ON UNTOLERATED DIMNS. TO BE ±0.5 EXCEPT ON THICKNESS.
- END OF RIVET MUST NOT PROJECT ABOVE SURFACE OF PLATE.

SEC.-AA

SEE NOTE-1

6 HOLES DRILL 3 AND C'SK
90°X0.75 DEEP IN IT. 002



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D4776152
REF. DRG. NO.

INVENTORY NO. SIGN. & DATE

REV	DATE	ALTERED	CHECKED	APPROVED	REV	DATE	ALTERED	CHECKED	APPROVED
04	21.02.13	ALTERED	CHECKED	DK	03	25.07.11	ALTERED	CHECKED	DK
06	08.10.16	ALTERED	CHECKED	AS	05	06.09.16	ALTERED	CHECKED	AS
08	02.01.18	ALTERED	CHECKED	AS	07	20.09.17	ALTERED	CHECKED	AS
10	21.12.22	ALTERED	CHECKED	AS	09	05.09.22	ALTERED	CHECKED	AS

REV	DATE	ALTERED	CHECKED	APPROVED	REV	DATE	ALTERED	CHECKED	APPROVED
04	21.02.13	ALTERED	CHECKED	DK	03	25.07.11	ALTERED	CHECKED	DK
06	08.10.16	ALTERED	CHECKED	AS	05	06.09.16	ALTERED	CHECKED	AS
08	02.01.18	ALTERED	CHECKED	AS	07	20.09.17	ALTERED	CHECKED	AS
10	21.12.22	ALTERED	CHECKED	AS	09	05.09.22	ALTERED	CHECKED	AS

006	SEE NOTE-2	001	FELT RING 6TKX21X445.5	001	001	001	001	001	001
003	FLAT HEAD, COPPER RIVET Ø3x7	002	GUIDE PLATE 1TK.XR133XR146	002	002	002	002	002	002
001	SEE NOTE-2	003	FELT RING 6TKX21X445.5	003	003	003	003	003	003

001	001	001	001	001	001	001	001	001	001
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

TM4303AZ, BY, DY
25 KV BG AC EMU/1400 HP DEMU



BHARAT HEAVY ELECTRICALS LTD.
BHOPAL

DEPT. TME
GRADE OF UNTOL. DIM. Ø/M/F
SCALE NTS
WEIGHT (kg) 0.14

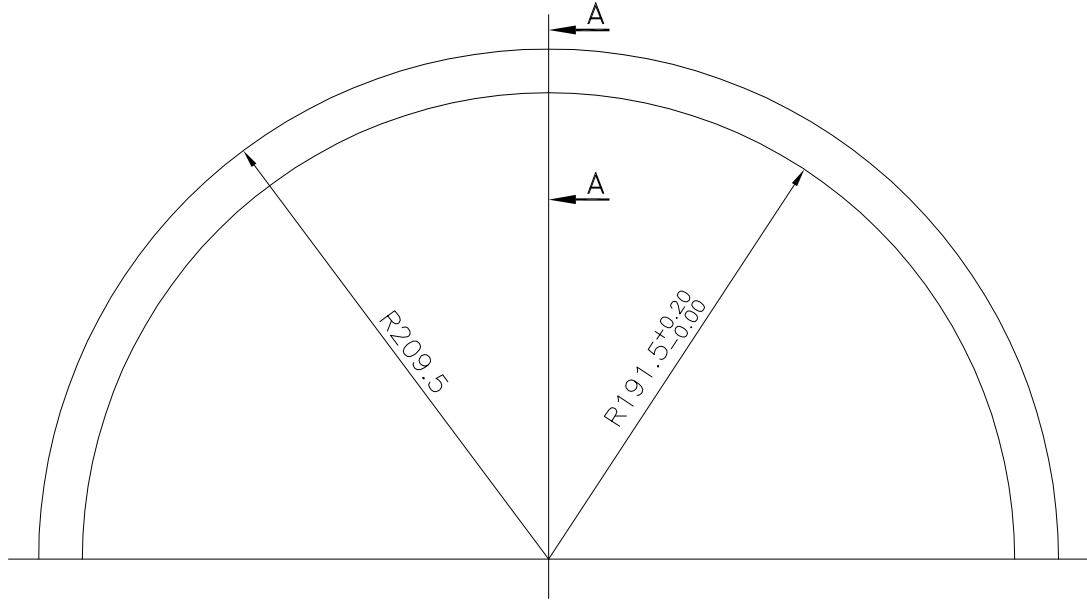
FELT RING

DRAWING NO. 34391628015
SHEET NO. 01 NO. OF SHEET 01

SIZE A3

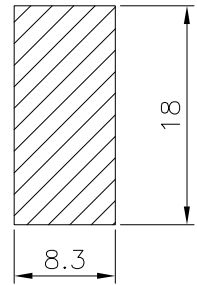
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REV.	DATE	ALTERED	REV.	DATE	ALTERED	ADDITIONAL INFORMATION
		CHECKED			CHECKED	
		APPROVED			APPROVED	
						STATUS OF DRAWING
						DISTRIBUTION OF PRINTS
						TME-1, TNX-1, TXM-3



NOTES:-

1. HALF WIPER RING TO BE USED IN TOP AND BOTTOM HALF GEAR CASE IN PLACE OF PTFE (SEALS) WIPERS.
2. HALF WIPER RING TPU (THERMO PLASTIC URETHANE) SHALL BE MADE OF POLYURETHANE (SEALING GRADE) OF M/S BAYER MATERIAL SCIENCE.



SECTION-AA

REF. DRG. NO.	001	HALF WIPER RING (TPU) 8.3 THK.	STD	MATL. CODE	A/C	UNIT	UNIT WT.
REMARKS	ITEM NO.	DESCRIPTION		MATL. SPECN.			QTY.

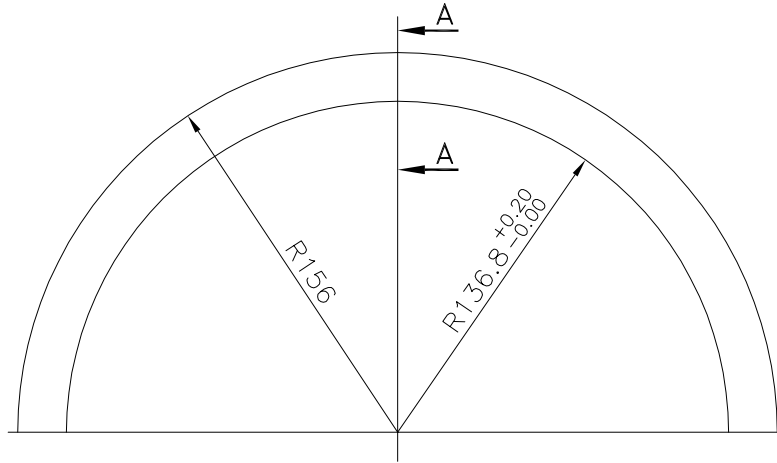
CARD TYPE 3 — 28 — CARD TYPE 1 — 28 — CARD TYPE 2

SIGN. & DATE		BHARAT HEAVY ELECTRICALS LTD. BHOPAL	DRN.	NAME	SIGN	DATE	NO.OF VAR.
			VIJAY	<i>Vijay kr.</i>	07/02/19		
			CKD.	A.S.	<i>[Signature]</i>	07/02/19	
			APPD.	A.S.	<i>[Signature]</i>	07/02/19	

INVENTORY NO.	DEPT. TME	UNTOL. DIMS. GR.		SCALE	WEIGHT(KG)	REF.TO ASSY.DRG.	ITEM NO.	NO.OF ITEM
	CODE 405			N.T.S.		—	—	001
	TITLE HALF WIPER RING (TPU) MOTOR END TM4303 BY/DY						DRAWING NO.	REV
						4 439 16 80 005	00	
						SHT.NO 01	NO.OF.SHT.	01

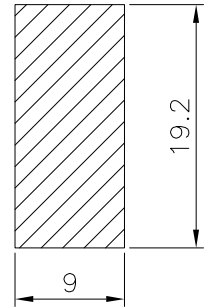
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REV.	DATE	ALTERED	REV.	DATE	ALTERED	ADDITIONAL INFORMATION
		CHECKED			CHECKED	
		APPROVED			APPROVED	
						STATUS OF DRAWING
						DISTRIBUTION OF PRINTS
						TME-1, TNX-1, TXM-3



NOTES:-

1. HALF WIPER RING TO BE USED IN TOP AND BOTTOM HALF GEAR CASE IN PLACE OF PTFE (SEALS) WIPERS.
2. HALF WIPER RING TPU (THERMO PLASTIC URETHANE) SHALL BE MADE OF POLYURETHANE (SEALING GRADE) OF M/S BAYER MATERIAL SCIENCE.



SECTION-AA

REF. DRG. NO.	001	HALF WIPER RING (TPU) 9 THK.	STD	MATL. CODE	A/C	UNIT	UNIT WT.
REMARKS	ITEM NO.	DESCRIPTION		MATL. SPECN.			QTY.

CARD TYPE 3 — 28 — CARD TYPE 1 — 28 — CARD TYPE 2 — 28

SIGN. & DATE		BHARAT HEAVY ELECTRICALS LTD. BHOPAL	DRN.	NAME	SIGN	DATE	NO.OF VAR.
			VIJAY	VIJAY	<i>VIJAY KR.</i>	07/02/19	
			CKD.	A.S.	<i>[Signature]</i>	07/02/19	
			APPD.	A.S.	<i>[Signature]</i>	07/02/19	

INVENTORY NO.	DEPT. TME	UNTOL. DIMS. GR.		SCALE	WEIGHT(KG)	REF. TO ASSY. DRG.	ITEM NO.	NO.OF ITEM
	CODE 405			N.T.S.		—	—	001
	TITLE HALF WIPER RING (TPU) WHEEL END TM4303 BY/DY						DRAWING NO. 4 439 16 80 004	REV 00
						SHT.NO 01	NO.OF.SHT.	01