
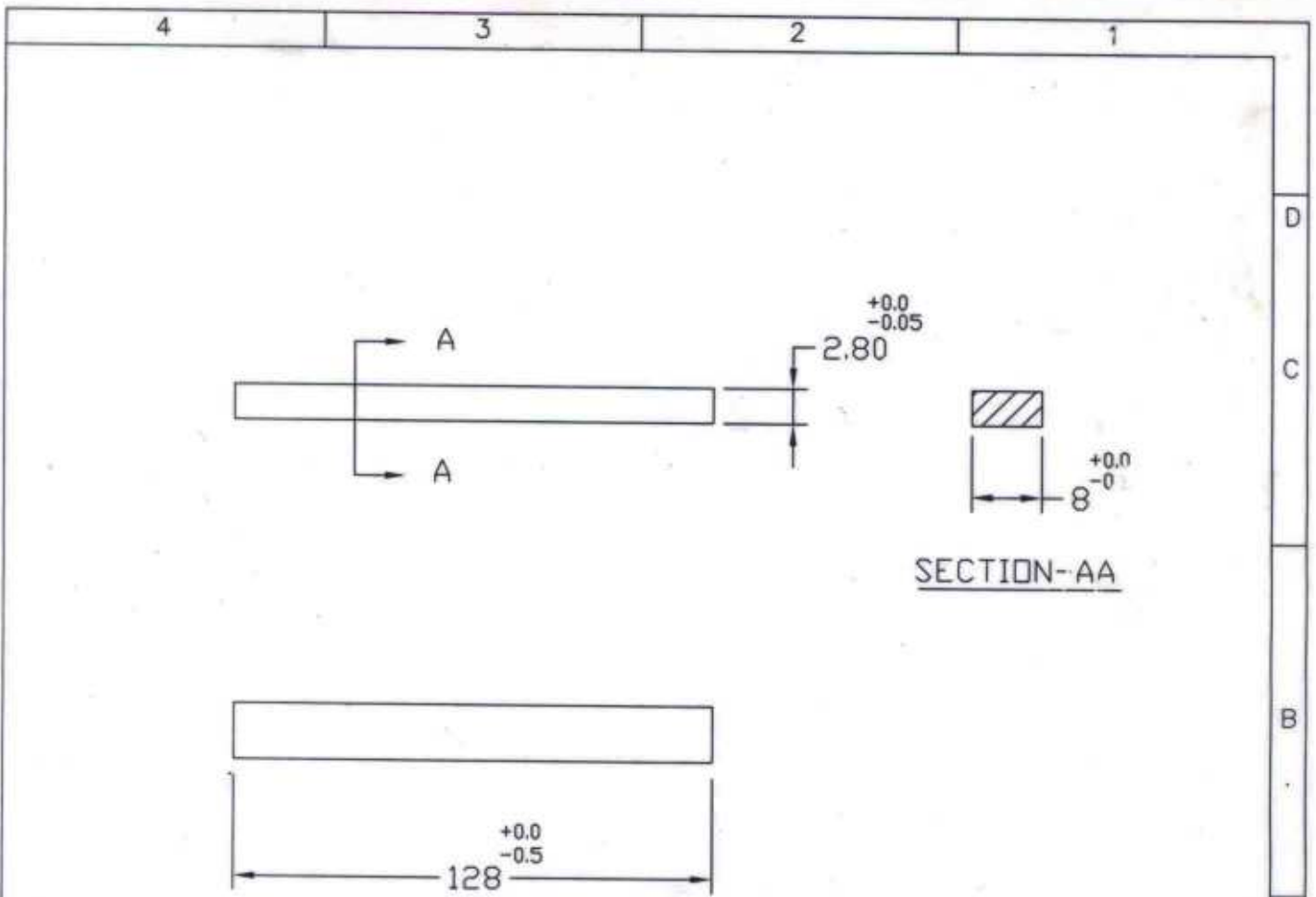


**NOTES :**


1. THE SIDE BARS SHOULD BE STRAIGHT/FLAT AND SHOULD BE FREE FROM BURRS AND SURFACE MARKS.
2. THE MAXIMUM DEVIATION ACCEPTABLE IN STRAIGHTNESS/FLATNESS IS 0.05 mm OVER THE ENTIRE LENGTH.
3. THE SURFACE FINISH SHALL BE NOT MORE THAN 5 MICRONS ON ALL SURFACES.

REF. DRG.									
RD-41015301-A-200		1	----	QTY REDUCED BY FOUR NOS		<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
QTY.	52 NOS.	REV NO.	ZONE	BRIEF RECORD		PPD	CHD	APD	
PART NO.	203	 <b>BHARAT HEAVY ELECTRICALS LTD.</b> <b>HEAVY PLATES &amp; VESSELS PLANT</b> VISAKHAPATNAM - 530012 (A.P)							
MATRL.	MDN347A	DRN	B. Uma 28/03/05	RESEARCH & DEVELOPMENT					
<b>NOTES:</b> 1. DRAWING NOT TO BE SCALED. 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.		CHD	KssRao 29/03/05	CUSTOMER : ADA, BANGALORE					
		APPROVED	A. Panigrahi 29/03/05	WORK ORD. NO.:		NO. OFF:			
		SCALE	NTS	YR OF C/D	SIZE	DRAWING NO.		REV	
				2004	A4	RD-41015301-P-203		1	



NOTES :

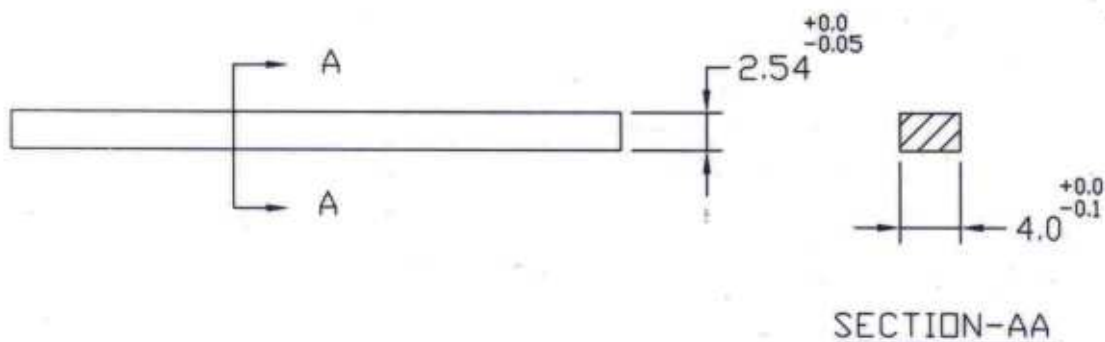
1. THE SIDE BARS SHOULD BE STRAIGHT/FLAT AND SHOULD BE FREE FROM BURRS AND SURFACE MARKS.
2. THE MAXIMUM DEVIATION ACCEPTABLE IN STRAIGHTNESS/FLATNESS IS 0.05 mm OVER THE ENTIRE LENGTH.
3. THE SURFACE FINISH SHALL BE NOT MORE THAN 5 MICRONS ON ALL SURFACES.

REF. DRG.									
RD-41015301-A-200									
QTY.	4 NOS.	REV NO.	ZONE	BRIEF RECORD	PPD	CHD	APD		
PART NO	203A	 <b>BHARAT HEAVY ELECTRICALS LTD.</b> <b>HEAVY PLATES &amp; VESSELS PLANT</b> VISAKHAPATNAM - 530012 (A.P)							
MATRL.	MDN347A	DRN	RESEARCH & DEVELOPMENT						
<u>NOTES:</u> 1. DRAWING NOT TO BE SCALED. 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.		CHD	CUSTOMER : ADA, BANGALORE						
		APPROVED	<b>PRECOOLER</b>						
		SCALE	<b>RAM AIR SIDE BAR-WIDE</b>						
			WORK ORD. NO.:			NO. OFF:			
		YR OF ORD	SIZE	DRAWING NO.		REV			
		2004	A4	RD-41015301-P-203A		0			

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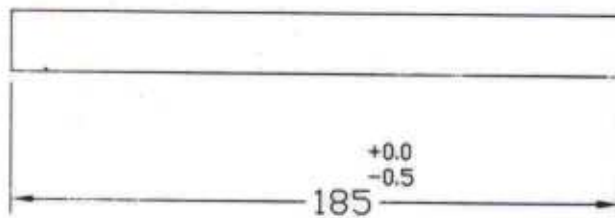
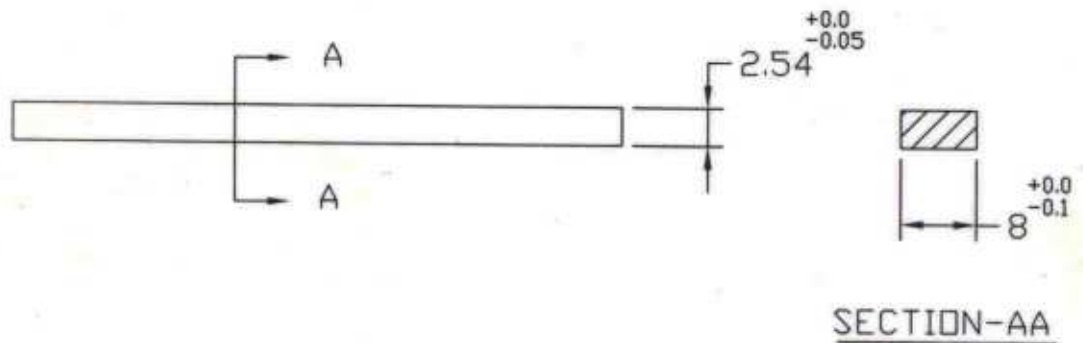
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NOTES :


1. THE SIDE BARS SHOULD BE STRAIGHT/FLAT AND SHOULD BE FREE FROM BURRS AND SURFACE MARKS.
2. THE MAXIMUM DEVIATION ACCEPTABLE IN STRAIGHTNESS/FLATNESS IS 0.05 mm OVER THE ENTIRE LENGTH.
3. THE SURFACE FINISH SHALL BE NOT MORE THAN 5 MICRONS ON ALL SURFACES.

REF. DRG.									
RD-41015301-A-200		1	----	QTY REDUCED BY FOUR NOS		<i>[Signature]</i>		<i>[Signature]</i>	
QTY. 76 NOS.		REV NO.	ZONE	BRIEF RECORD		PPD	CHD	APD	
PART NO. 205				<b>BHARAT HEAVY ELECTRICALS LTD.</b> <b>HEAVY PLATES &amp; VESSELS PLANT</b> VISAKHAPATNAM - 530012 (A.P)					
MATRL. MDN347A		DRN	B. Uma 28/03/05		RESEARCH & DEVELOPMENT				
NOTES:		CHD	KssRao 29/03/05		CUSTOMER : ADA, BANGALORE				
1. DRAWING NOT TO BE SCALED.		APPROVED	A. Panigrahi 29/03/05		WORK ORD. NO.:			NO. OFF:	
2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.		SCALE	NTS		YR OF ORD	SIZE	DRAWING NO.		REV
					2004	A4	RD-41015301-P-205		1



**NOTES :**

1. THE SIDE BARS SHOULD BE STRAIGHT/FLAT AND SHOULD BE FREE FROM BURRS AND SURFACE MARKS.
2. THE MAXIMUM DEVIATION ACCEPTABLE IN STRAIGHTNESS/FLATNESS IS 0.05 mm OVER THE ENTIRE LENGTH.
3. THE SURFACE FINISH SHALL BE NOT MORE THAN 5 MICRONS ON ALL SURFACES.

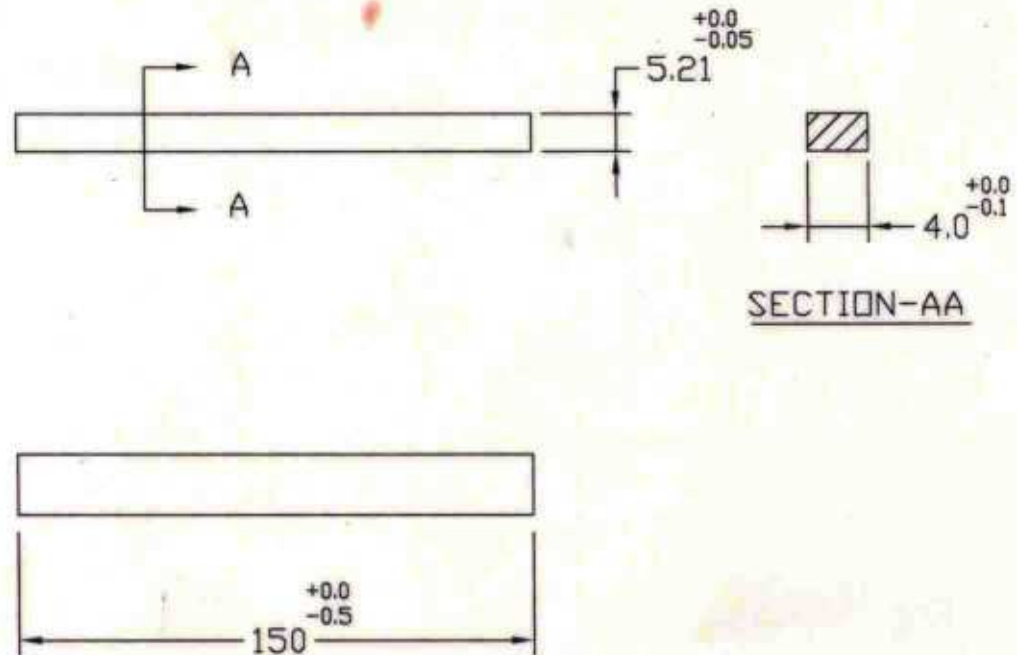
REF. DRG.								
RD-41015301-A-200								
QTY.	4 NOS.	REV NO.	ZONE	BRIEF RECORD	PPD	CHD	APD	
PART NO.	205A	 <b>BHARAT HEAVY ELECTRICALS LTD</b> <b>HEAVY PLATES &amp; VESSELS PLANT</b> VISAKHAPATNAM - 530012 (A.P)						
MATRL.	MDN347A	DRN	<i>S.V.S. Srinivas</i> 11/12/13		RESEARCH & DEVELOPMENT			
NOTES:		CHD	<i>A. Srinivas</i> 12/12/13		CUSTOMER : ADA, BANGALORE			
1. DRAWING NOT TO BE SCALED.		APPROVED	<i>A. Srinivas</i> 12/12/13		<b>PRECOOLER</b>			
2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.		SCALE	NTS		WORK ORD. NO.:		NO. OFF:	
					YR OF ORD	SIZE	DRAWING NO.	REV
					2004	A4	RD-41015301-P-205A	0

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NOTES :

1. THE SIDE BARS SHOULD BE STRAIGHT/FLAT AND SHOULD BE FREE FROM BURRS AND SURFACE MARKS.
2. THE MAXIMUM DEVIATION ACCEPTABLE IN STRAIGHTNESS/FLATNESS IS 0.05 mm OVER THE ENTIRE LENGTH.
3. THE SURFACE FINISH SHALL BE NOT MORE THAN 5 MICRONS ON ALL SURFACES.

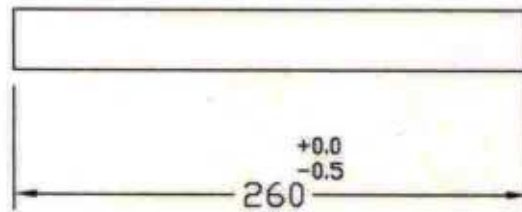
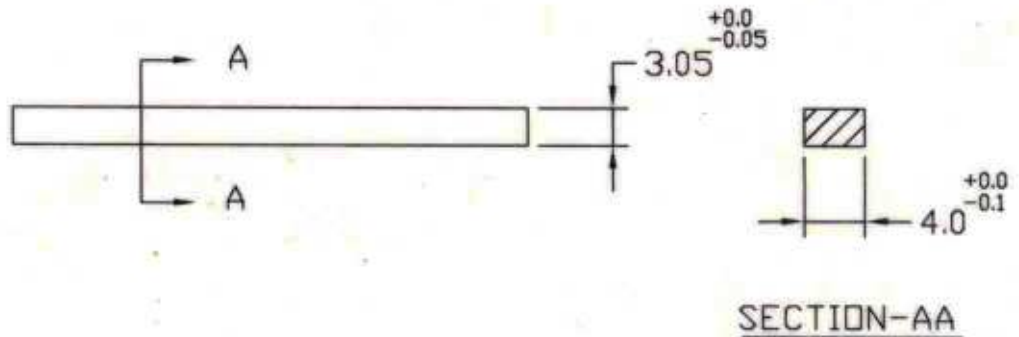
REF. DRG. RD-41013905-A-200	1	---	HEIGHT & QTY REVISED.	B. Uma	22.09.03	22/09/03	22/09/03
QTY. 64 NOS.	REV NO.	ZONE	BRIEF RECORD	PPD	CHD	APD	
PART No 203	<b>BHARAT HEAVY PLATE AND VESSELS LTD.</b> VISAKHAPATNAM - 530 012, INDIA						
MATRL. MDN347A	DRN	Sd/KSSRao 26-03-2002	RESEARCH & DEVELOPMENT				
NOTES: 1. DRAWING NOT TO BE SCALED 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.	CHD	Sd/A.Panigrahi 27-03-2002	CUSTOMER : ADA., BANGALORE				
	APPROVED	Sd/A.Panigrahi 27-03-2002	PRIMARY HEAT EXCHANGER RAM AIR SIDE BAR			WORK ORD. NO.	NO. OFF 3
	SCALE	NTS	YR OF ORD	SIZE	DRAWING NO.	REV	
			1996	A4	RD-41013905-P-203	1	

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NOTES :

1. THE SIDE BARS SHOULD BE STRAIGHT/FLAT AND SHOULD BE FREE FROM BURRS AND SURFACE MARKS.
2. THE MAXIMUM DEVIATION ACCEPTABLE IN STRAIGHTNESS/FLATNESS IS 0.05 mm OVER THE ENTIRE LENGTH.
3. THE SURFACE FINISH SHALL BE NOT MORE THAN 5 MICRONS ON ALL SURFACES.

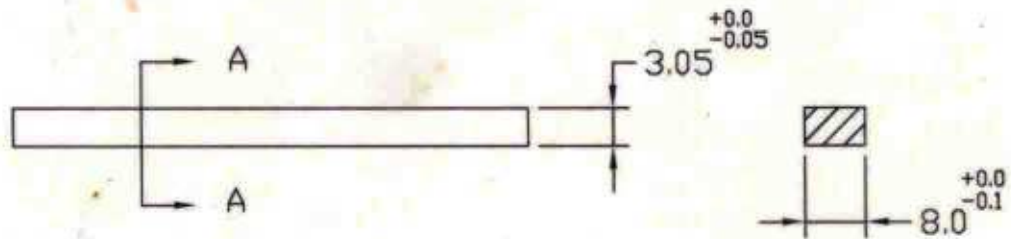
REF. DRG.	1	---	HEIGHT & QTY REVISED.	B.Uma		
RD-41013905-A-200	REV NO.	ZONE	BRIEF RECORD	22-09-03	22/09/03	22/09/03
QTY.	62 NOS.	<b>BHPU BHARAT HEAVY PLATE AND VESSELS LTD.</b>				
PART No	205	VISAKHAPATNAM - 530 012, INDIA				
MATRL.	MDN347A	DRN	Sd/KSSRao 26-03-2002	RESEARCH & DEVELOPMENT		
NOTES: 1. DRAWING NOT TO BE SCALED 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.	CHD	Sd/A.Panigrahi 27-03-2002	CUSTOMER : ADA ,BANGALORE			
	APPROVED	Sd/A.Panigrahi 27-03-2002	PRIMARY HEAT EXCHANGER		CHARGE AIR SIDE BAR	
	SCALE	NTS	WORK ORD. NO.	NO. OFF		
			YR OF ORD	SIZE	DRAWING NO.	REV
		1996	A4	RD-41013905-P-205	1	

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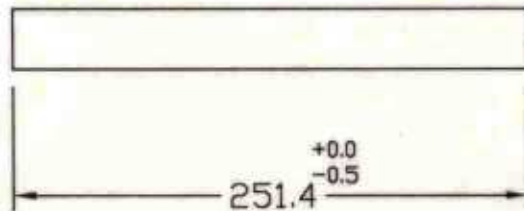
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SECTION-AA

NOTES :

1. THE SIDE BARS SHOULD BE STRAIGHT/FLAT AND SHOULD BE FREE FROM BURRS AND SURFACE MARKS.
2. THE MAXIMUM DEVIATION ACCEPTABLE IN STRAIGHTNESS/FLATNESS IS 0.05 mm OVER THE ENTIRE LENGTH.
3. THE SURFACE FINISH SHALL BE NOT MORE THAN 5 MICRONS ON ALL SURFACES.

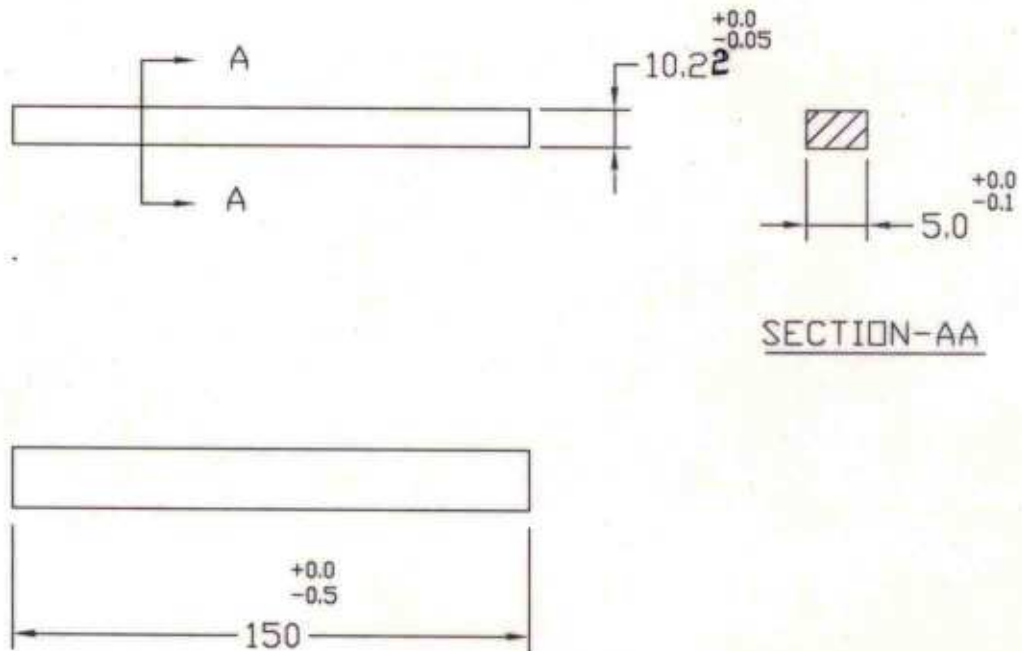
REF. DRG. RD-41013905-A-200	1	---	HEIGHT & QTY REVISED.	B. Uma 22-09-03	D. Jey 22/09/03	A. Jey 12/09/03
QTY. 31 NOS.	REV NO.	ZONE	BRIEF RECORD	PPD	CHD	APD
PART No 207	<b>BHPU BHARAT HEAVY PLATE AND VESSELS LTD.</b> VISAKHAPATNAM - 530 012, INDIA					
MATRL. MDN347A	DRN	Sd/KSSRao 26-03-2002	RESEARCH & DEVELOPMENT			
NOTES: 1. DRAWING NOT TO BE SCALED 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.	CHD	Sd/A.Panigrahi 27-03-2002	CUSTOMER : ADA, BANGALORE			
	APPROVED	Sd/A.Panigrahi 27-03-2002	PRIMARY HEAT EXCHANGER		CENTRAL SIDE BAR	
	SCALE	NTS	WORK ORD. NO.	NO. OFF		
			YR OF ORD	SIZE	DRAWING NO.	REV
		1996	A4	RD-41013905-P-207	1	

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### NOTES :

1. THE SIDE BARS SHOULD BE STRAIGHT/FLAT AND SHOULD BE FREE FROM BURRS AND SURFACE MARKS.
2. THE MAXIMUM DEVIATION ACCEPTABLE IN STRAIGHTNESS/FLATNESS IS 0.05 mm OVER THE ENTIRE LENGTH.
3. THE SURFACE FINISH SHALL BE NOT MORE THAN 5 MICRONS ON ALL SURFACES.

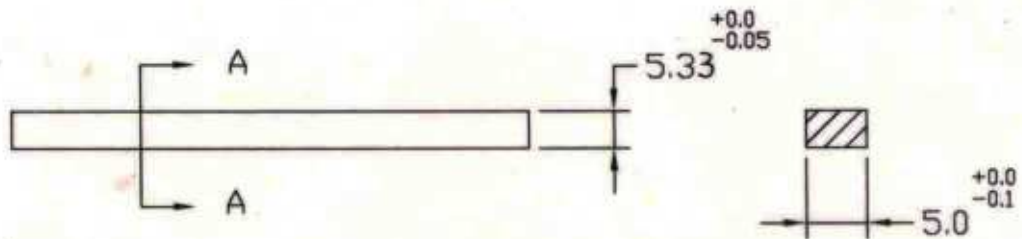
REF. DRG.	1	---	NOTE 3 CORRECTED.	B-uma	19-07-03	19/07/03	19/07/03
RD-41011201-A-200	REV NO.	ZONE	BRIEF RECORD	PPD	CHD	APD	
QTY.	46 NOS	<b>BHPV</b> BHARAT HEAVY PLATE AND VESSELS LTD.					
PART No.	203	VISAKHAPATNAM - 530 012, INDIA					
MATRL.	AA 3003 BS 4L59	DRN	B-uma 05.04.02	RESEARCH & DEVELOPMENT			
NOTES: 1. DRAWING NOT TO BE SCALED 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.	CHD	CHD	05/04/02	CUSTOMER : ADA, BANGALORE			
	APPROVED	APPROVED	05/04/02	SECONDARY HEAT EXCHANGER RAM AIR SIDE BAR			
	SCALE	SCALE	NTS	WORK ORD. NO.	NO. OFF.		13
				YR OF ORD	SIZE	DRAWING NO.	REV
				A4	RD-41011201-P-203	1	

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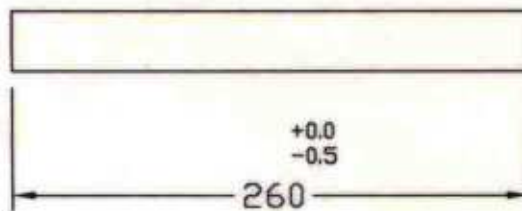
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SECTION-AA

NOTES :

1. THE SIDE BARS SHOULD BE STRAIGHT/FLAT AND SHOULD BE FREE FROM BURRS AND SURFACE MARKS.
2. THE MAXIMUM DEVIATION ACCEPTABLE IN STRAIGHTNESS/FLATNESS IS 0.05 mm OVER THE ENTIRE LENGTH.
3. THE SURFACE FINISH SHALL BE NOT MORE THAN 5 MICRONS ON ALL SURFACES.

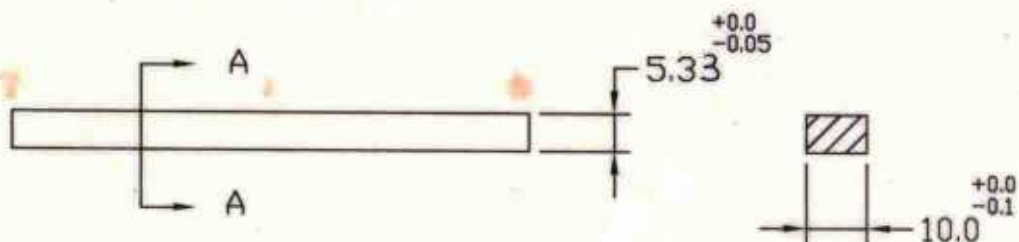
REF. DRG. RD-41011201-A-200	1	---	NOTE 3 CORRECTED.	B.un 19.07.03	PPD	CHD	APD
QTY. 42 NOS	<b>BHPV</b> BHARAT HEAVY PLATE AND VESSELS LTD.						
PART No. 205	VISAKHAPATNAM - 530 012, INDIA						
MATRL. AA 3003/ BS 4L59	DRN	B.un 05.04.02	RESEARCH & DEVELOPMENT				
NOTES: 1. DRAWING NOT TO BE SCALED 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.	CHD	CHD 05/04/02	CUSTOMER : ADA, BANGALORE				
	APPROVED	APPROVED 05/04/02	SECONDARY HEAT EXCHANGER			CHARGE AIR SIDE BAR	
	SCALE	NTS	WORK ORD. NO.	NO. OFF.			
			YR OF ORD	SIZE	DRAWING NO.		REV
			A4	RD-41011201-P-205		1	

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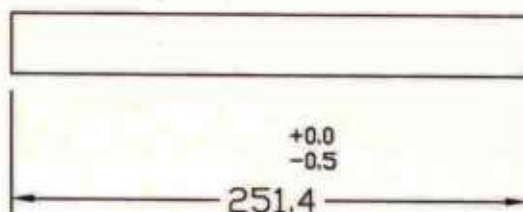
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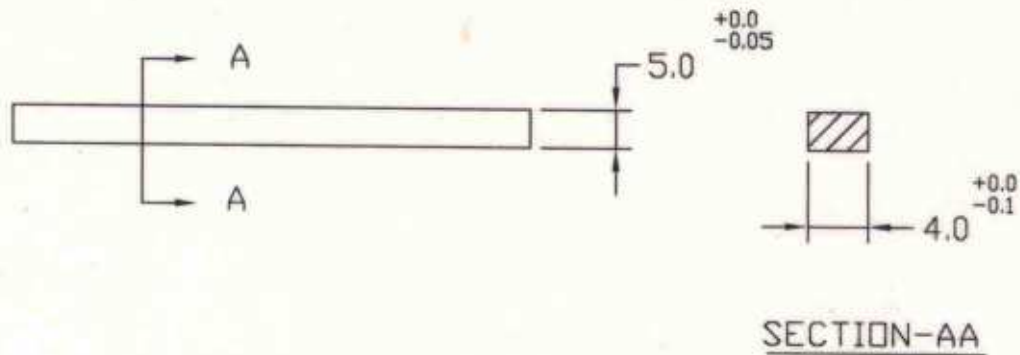


SECTION-AA

NOTES :

1. THE SIDE BARS SHOULD BE STRAIGHT/FLAT AND SHOULD BE FREE FROM BURRS AND SURFACE MARKS.
2. THE MAXIMUM DEVIATION ACCEPTABLE IN STRAIGHTNESS/FLATNESS IS 0.05 mm OVER THE ENTIRE LENGTH.
3. THE SURFACE FINISH SHALL BE NOT MORE THAN 5 MICRONS ON ALL SURFACES.

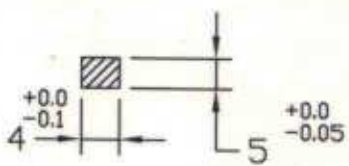
REF. DRG. RD-41011201-A-200	1	---	NOTE 3 CORRECTED.	B. U. 19.07.03	CHD 19/07/03	APD 19/07/03
QTY. 21 NOS	REV NO.	ZONE	BRIEF RECORD	PPD	CHD	APD
PART No. 207	<b>BHPV BHARAT HEAVY PLATE AND VESSELS LTD.</b> VISAKHAPATNAM - 530 012, INDIA					
MATRL. AA 3003/ BS 4L59	DRN	B. U. 05.04.02	RESEARCH & DEVELOPMENT CUSTOMER : ADA, BANGALORE			
NOTES: 1. DRAWING NOT TO BE SCALED 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.	CHD	CHD 05/04/02	SECONDARY HEAT EXCHANGER CENTRAL SIDE BAR			
	APPROVED	APD 05/04/02	WORK ORD. NO.	NO. OFF.		
	SCALE	NTS	YR OF ORD	SIZE	DRAWING NO.	REV
				A4	RD-41011201-P-207	1



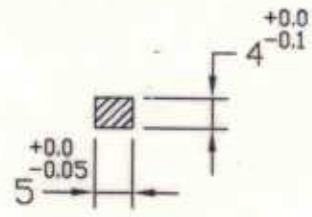
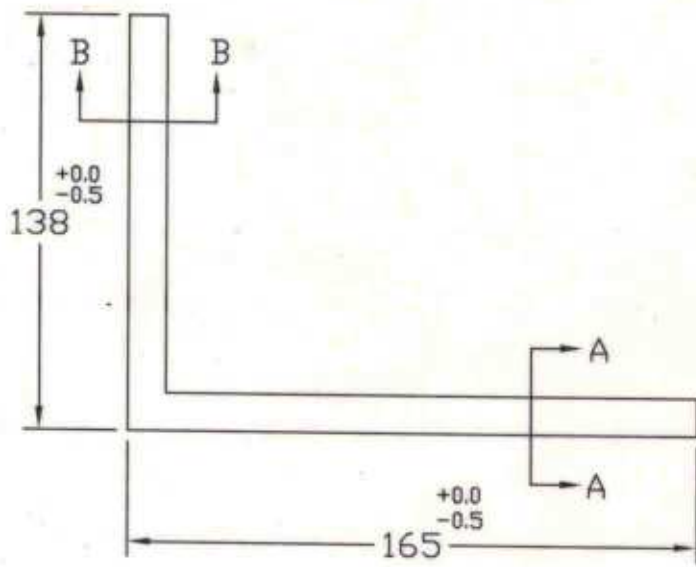
**NOTES :**

1. THE SIDE BARS SHOULD BE STRAIGHT/FLAT AND SHOULD BE FREE FROM BURRS AND SURFACE MARKS.
2. THE MAXIMUM DEVIATION ACCEPTABLE IN STRAIGHTNESS/FLATNESS IS 0.05 mm OVER THE ENTIRE LENGTH.
3. THE SURFACE FINISH SHALL BE NOT MORE THAN 5 MICRONS ON ALL SURFACES.

REF. DRG.								
RD-41013909-A-200	1	---	NOTE 3 CORRECTED.	B. Um	18.07.03	CHD	15/02/03	APD
QTY.	36 Nos.							
PART NO.	203	<b>BHPU BHARAT HEAVY PLATE AND VESSELS LTD.</b>						
		VISAKHAPATNAM - 530 012, INDIA						
MATRL.	AA-3003/ BS4L59	DRN	B. Um 10-04-02	RESEARCH & DEVELOPMENT				
				CUSTOMER : ADA, BANGALORE				
NOTES:		CHD	CHD 10/04/02	REHEATER HOT AIR SIDE BAR				
1. DRAWING NOT TO BE SCALED		APPROVED	A. 10/04/02	WORK ORD. NO.:			NO. OFF. :	
2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.		SCALE	NTS	YR OF ORD	SIZE	DRAWING NO.		REV
				1999	A4	RD-41013909-P-203		1



SECTION-BB



SECTION-AA

NOTES :

1. THE SIDE BARS SHOULD BE STRAIGHT/FLAT AND SHOULD BE FREE FROM BURRS AND SURFACE MARKS.
2. THE MAXIMUM DEVIATION ACCEPTABLE IN STRAIGHTNESS/FLATNESS IS 0.05 mm OVER THE ENTIRE LENGTH.
3. THE SURFACE FINISH SHALL BE NOT MORE THAN 5 MICRONS ON ALL SURFACES.

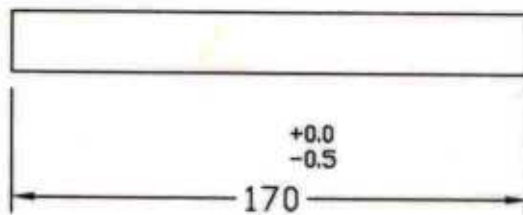
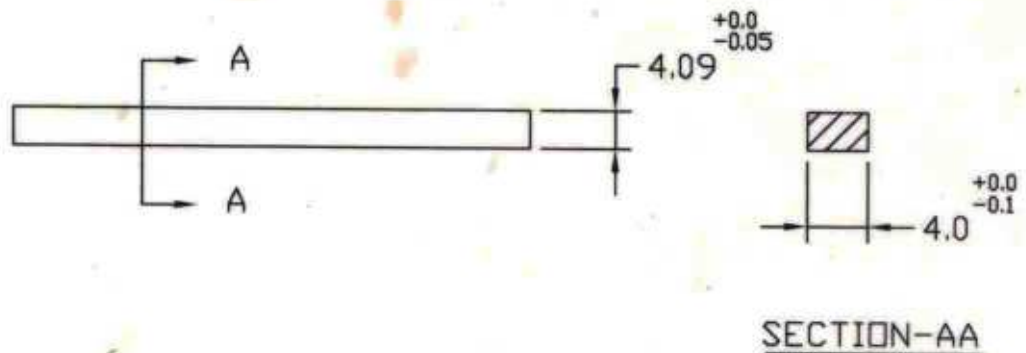
REF. DRG.									
RD-41013909-A-200		1	---	NOTE 3 CORRECTED.		B.U.	Chd	APD	
		REV NO.	ZONE	BRIEF RECORD		PPD	CHD	APD	
QTY.	36 Nos.	<b>BHPV BHARAT HEAVY PLATE AND VESSELS LTD.</b>							
PART NO.	205	VISAKHAPATNAM - 530 012, INDIA							
MATRL.	AA-3003/ BS4L59	DRN	B.U.	RESEARCH & DEVELOPMENT					
			10.04.02	CUSTOMER : ADA, BANGALORE					
		CHD	Chd	REHEATER					
			10/04/02	COLD AIR SIDE BAR					
NOTES: 1. DRAWING NOT TO BE SCALED 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.		APPROVED	APD	WORK ORD. NO.:			NO. OFF.:		
		SCALE	NTS	YR OF ORD	SIZE	DRAWING NO.		REV	
				1999	A4	RD-41013909-P-205		1	

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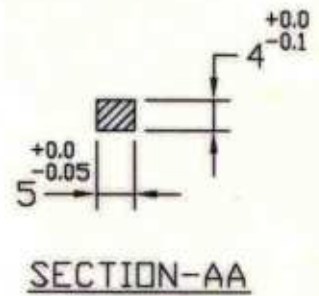
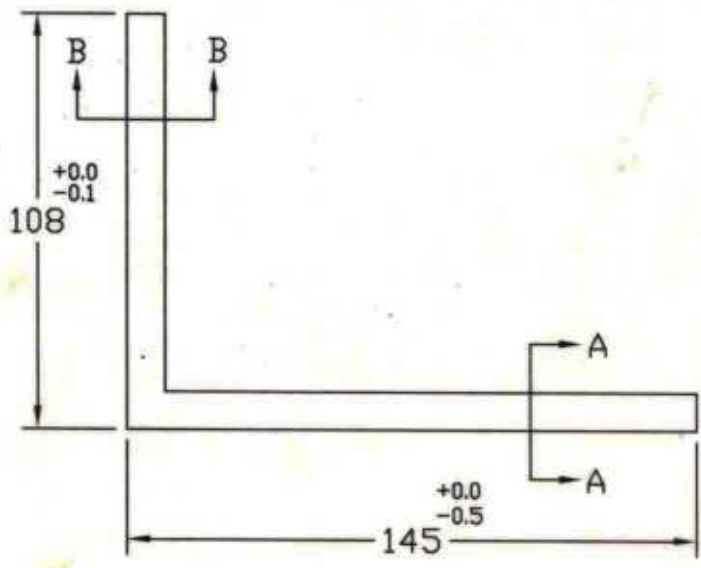
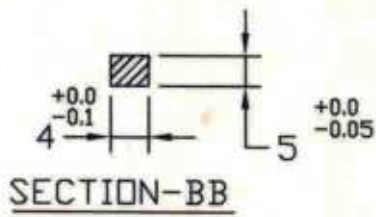
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### NOTES :

1. THE SIDE BARS SHOULD BE STRAIGHT/FLAT AND SHOULD BE FREE FROM BURRS AND SURFACE MARKS.
2. THE MAXIMUM DEVIATION ACCEPTABLE IN STRAIGHTNESS/FLATNESS IS 0.05 mm OVER THE ENTIRE LENGTH.
3. THE SURFACE FINISH SHALL BE NOT MORE THAN 5 MICRONS ON ALL SURFACES.

REF. DRG.								
RD-41013907-A-200		REV NO.	ZONE	BRIEF RECORD	PPD	CHD	APD	
QTY.	34 Nos.	<b>BHPV BHARAT HEAVY PLATE AND VESSELS LTD.</b>						
PART NO.	203	VISAKHAPATNAM - 530 012, INDIA						
MATRL.	AA 3003/ BS 4L59	DRN	B.uma 5.8.2000	RESEARCH & DEVELOPMENT				
NOTES:	1. DRAWING NOT TO BE SCALED. 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.	CHD	WSR 05/08/00	CUSTOMER : ADA, BANGALORE				
		APPROVED	B.uma 5/8/2000	CONDENSER COLD AIR SIDE BAR		WORK ORD. NO.	NO. OFF	2
		SCALE	NTS	YR OF ORD	SIZE	DRAWING NO.	REV	
				1996	A4	RD-41013907-P-203	0	



**NOTES :**

1. THE SIDE BARS SHOULD BE STRAIGHT/FLAT AND SHOULD BE FREE FROM BURRS AND SURFACE MARKS.
2. THE MAXIMUM DEVIATION ACCEPTABLE IN STRAIGHTNESS/FLATNESS IS 0.05 mm OVER THE ENTIRE LENGTH.
3. THE SURFACE FINISH SHALL BE NOT MORE THAN 5 MICRONS ON ALL SURFACES.

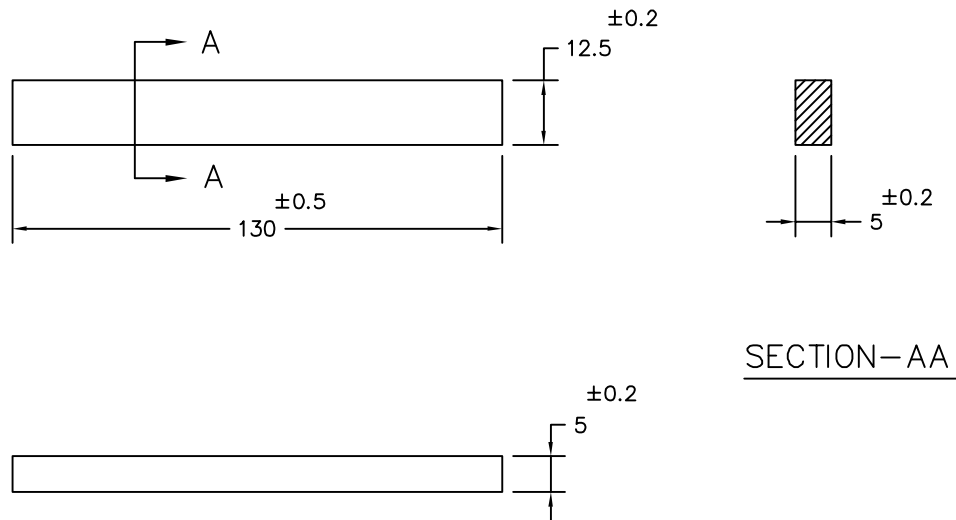
REF. DRG.								
RD-41013907-A-200		REV NO.	ZONE	BRIEF RECORD	PPD	CHD	APD	
QTY.	36 Nos.	<b>BHARAT HEAVY PLATE AND VESSELS LTD.</b> VISAKHAPATNAM - 530 012, INDIA						
PART NO.	205							
MATRL.	AA 3003/ BS 4L59	DRN	B.uma 5.8.2000	RESEARCH & DEVELOPMENT				
<b>NOTES:</b> 1. DRAWING NOT TO BE SCALED. 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.		CHD	CHD 05/08/00	CUSTOMER : ADA, BANGALORE				
		APPROVED	[Signature]	CONDENSER HOT AIR SIDE BAR				
		SCALE	NTS	WORK ORD. NO.	NO. OFF			
				YR OF ORD	SIZE	DRAWING NO.	REV	
				1996	A4	RD-41013907-P-205	0	


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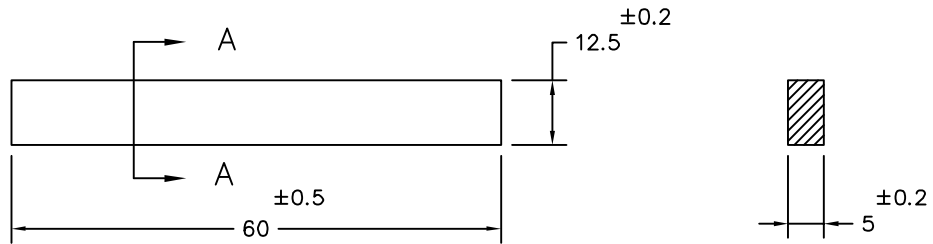
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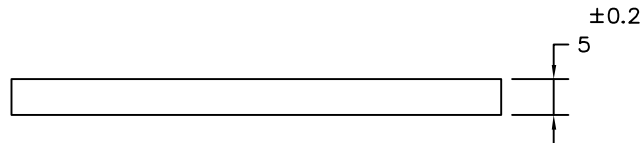
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REF. DRG.	1	---	MATRL. SPECN. AA 5083 INCLUDED. AS PER MOD No. MOD/CHE/001			
RD-41013911-A-100	REV NO.	ZONE	BRIEF RECORD	PPD	CHD	APD
QTY.	2 NOs.	 <b>BHARAT HEAVY ELECTRICALS LTD.</b> <b>HEAVY PLATES &amp; VESSELS PLANT</b> VISAKHAPATNAM - 530012, INDIA				
PART NO.	114					
MATRL.	AA 5083/ AA 5086	DRN	KSSRao 20.08.01	RESEARCH & DEVELOPMENT		
<b>NOTES:</b> 1. DRAWING NOT TO BE SCALED. 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.	CHD	KVRMURTHY 21.08.01	CUSTOMER : <b>HYD.OIL-IDG.OIL-FUEL COOLER (HE-1) SPACER BAR</b>			
	APPROVED	A.Panigrahi 21.08.01	WORK ORD. NO.:		NO. OFF:	
	SCALE	NTS	YR OF ORD	SIZE	DRAWING NO.	REV
				A4	RD-41013911-P-114	1



SECTION-AA



	3	---	MATRL. SPECN. AA 5083 INCLUDED. AS PER MOD No. MOD/CHE/001			
	2	C-2	BAR HEIGHT & QTY REVISED	KSSR 17.09.01	KVR 18.09.01	AP 18.09.01
REF. DRG.	1	C-2	BAR HEIGHT MODIFIED	KSSR 26.07.00	AP 31.07.00	AP 31.07.00
RD-41013911-A-100	REV NO.	ZONE	BRIEF RECORD	PPD	CHD	APD
QTY.	2 NOs.					
PART NO.	116					
MATRL.	AA 5083/ AA 5086					
	DRN	KSSRao	RESEARCH & DEVELOPMENT			
		29.04.00	CUSTOMER :			
	CHD	KVRMURTHY	<b>HYD.OIL-IDG.OIL-FUEL COOLER (HE-1)</b>			
		30.04.00	<b>RETURN HEADER MIDDLE BAR</b>			
	APPROVED	A.Panigrahi	WORK ORD. NO.:		NO. OFF:	
		01.05.00	YR OF ORD	SIZE	DRAWING NO.	REV
NOTES:	SCALE	NTS	A4	RD-41013911-P-116	3	
1. DRAWING NOT TO BE SCALED.						
2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.						



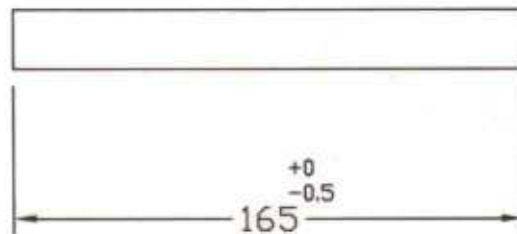
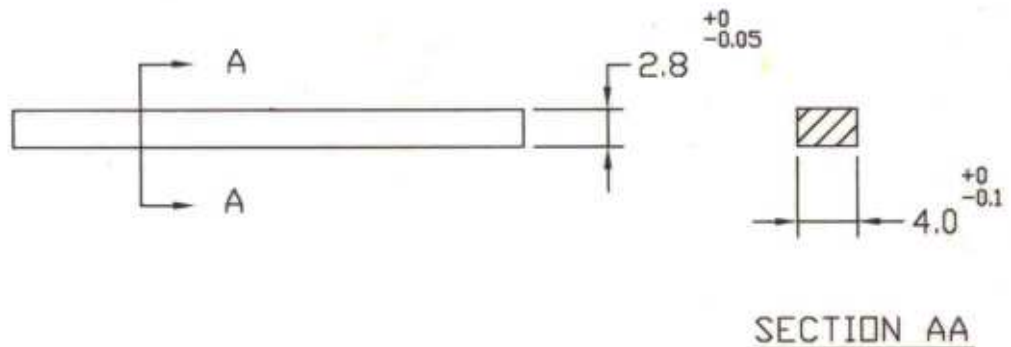
**BHARAT HEAVY ELECTRICALS LTD.**  
**HEAVY PLATES & VESSELS PLANT**  
VISAKHAPATNAM - 530012, INDIA

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### NOTES :

1. THE SIDE BARS SHOULD BE STRAIGHT/FLAT AND SHOULD BE FREE FROM BURRS AND SURFACE MARKS.
2. THE MAXIMUM DEVIATION ACCEPTABLE IN STRAIGHTNESS/FLATNESS IS 0.05 mm OVER THE ENTIRE LENGTH.
3. THE SURFACE FINISH REQMT. IS 5 TO 10 MICRONS ON ALL SURFACES.

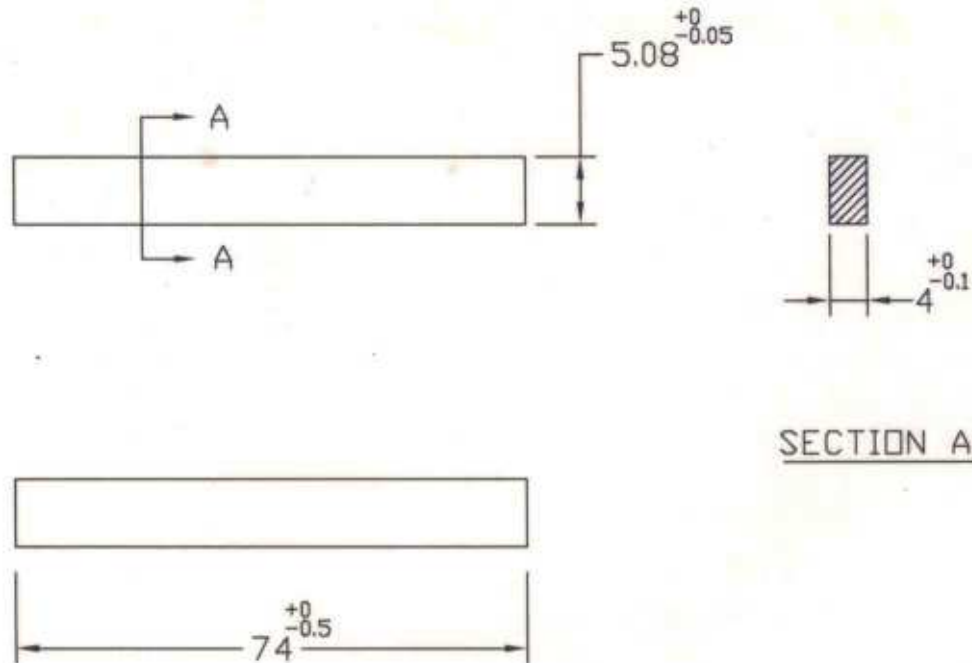
REF. DRG.No. RD-41013911-A-200		REV NO.	ZONE	BRIEF RECORD		PPD	CHD	APD
QTY.	8 Nos.	<b>BHPV</b> BHARAT HEAVY PLATE AND VESSELS LTD. VISAKHAPATNAM - 530 012, INDIA						
ITEM No.	203	RESEARCH & DEVELOPMENT						
MATRL.	AA 3003-0/ BS 4L59	DRN.	<i>U.S.K.</i> 17-09-01	CUSTOMER : M/s A.D.A., BANGALORE				
NOTES: 1. DRAWING NOT TO BE SCALED 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.	CHKD.	<i>[Signature]</i> 15/9/01	HYD.OIL-IDG OIL-FUEL COOLER(HE-1) FUEL SIDE BAR-HYD					
	APPROVED	<i>[Signature]</i> 18/09/01	WORK ORD. NO. 410139 11		NO. OFF			
	SCALE	NTS	YR OF DRD	SIZE	DRAWING NO.		REV	
			1999	A4	RD-41013911-P-203		0	

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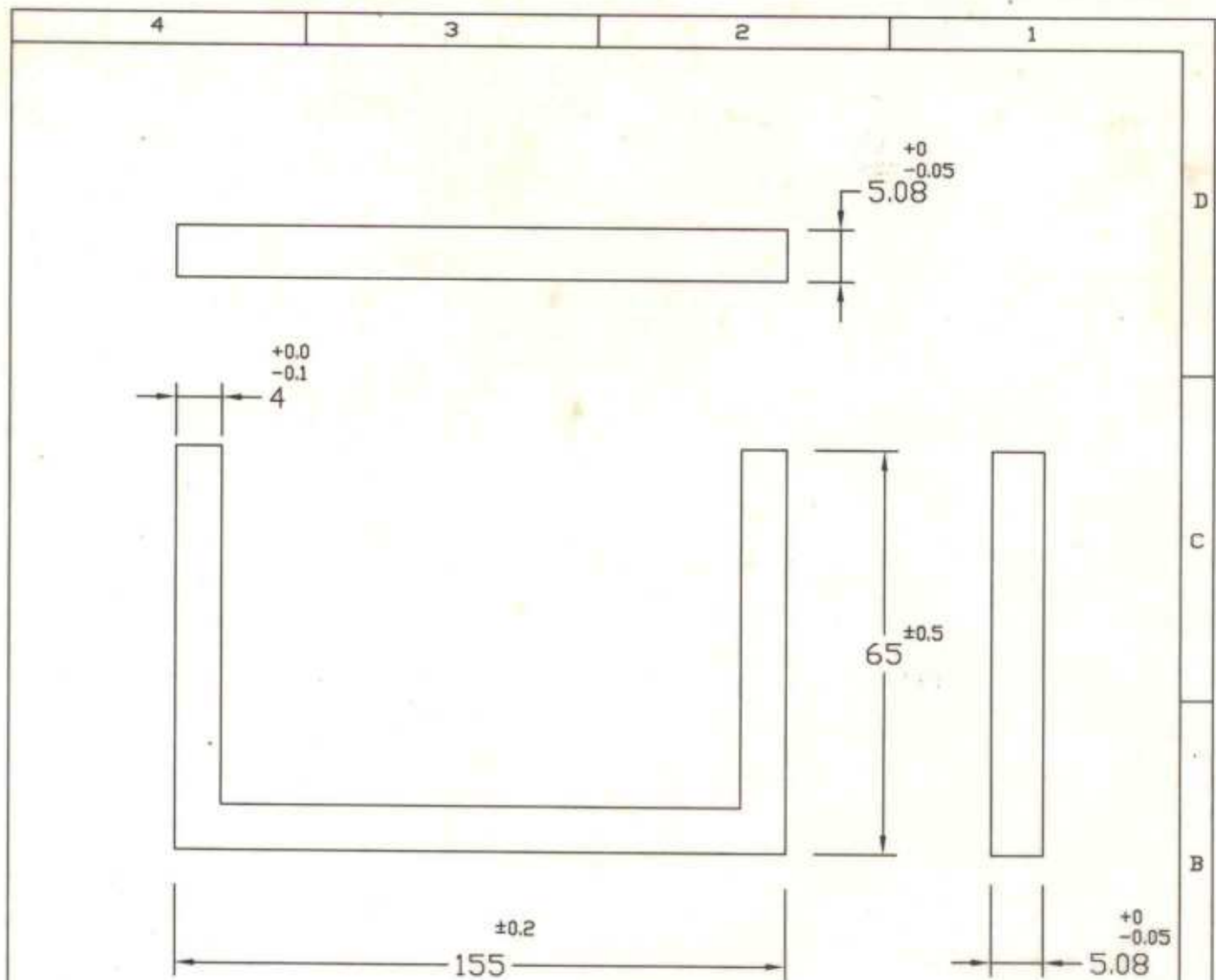
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NOTES :

1. THE SIDE BARS SHOULD BE STRAIGHT/FLAT AND SHOULD BE FREE FROM BURRS AND SURFACE MARKS.
2. THE MAXIMUM DEVIATION ACCEPTABLE IN STRAIGHTNESS/FLATNESS IS 0.05 mm OVER THE ENTIRE LENGTH.
3. THE SURFACE FINISH REQMT. IS 5 TO 10 MICRONS ON ALL SURFACES.

REF. DRG.No.									
RD-41013911-A-200		REV NO.	ZONE	BRIEF RECORD			PPD	CHD	APD
QTY.	3 Nos.	<b>BHPV</b> BHARAT HEAVY PLATE AND VESSELS LTD.							
ITEM No.	205	VISAKHAPATNAM - 530 012, INDIA							
MATRL.	AA 3003-0/ BS4L59	DRN.	U.S.M. 17-09-01	RESEARCH & DEVELOPMENT					
NOTES: 1. DRAWING NOT TO BE SCALED 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.		CHKD.	<i>[Signature]</i> 18/09/01	CUSTOMER : M/s A.D.A., BANGALORE					
		APPROVED	<i>[Signature]</i> 18/09/01	HYD.OIL-IDG OIL-FUEL COOLER (HE-1)			HYD OIL SIDE BAR		
		SCALE	NTS	WORK ORD. NO.	410139 11	NO. OFF			5
				YR OF ORD	SIZE	DRAWING NO.		REV	
				1999	A4	RD-41013911-P-205		0	



**NOTES :**

1. THE SIDE BARS SHOULD BE STRAIGHT/FLAT AND SHOULD BE FREE FROM BURRS AND SURFACE MARKS.
2. THE MAXIMUM DEVIATION ACCEPTABLE IN STRAIGHTNESS/FLATNESS IS 0.05 mm OVER THE ENTIRE LENGTH.
3. THE SURFACE FINISH REQMT. IS 5 TO 10 MICRONS ON ALL SURFACES.

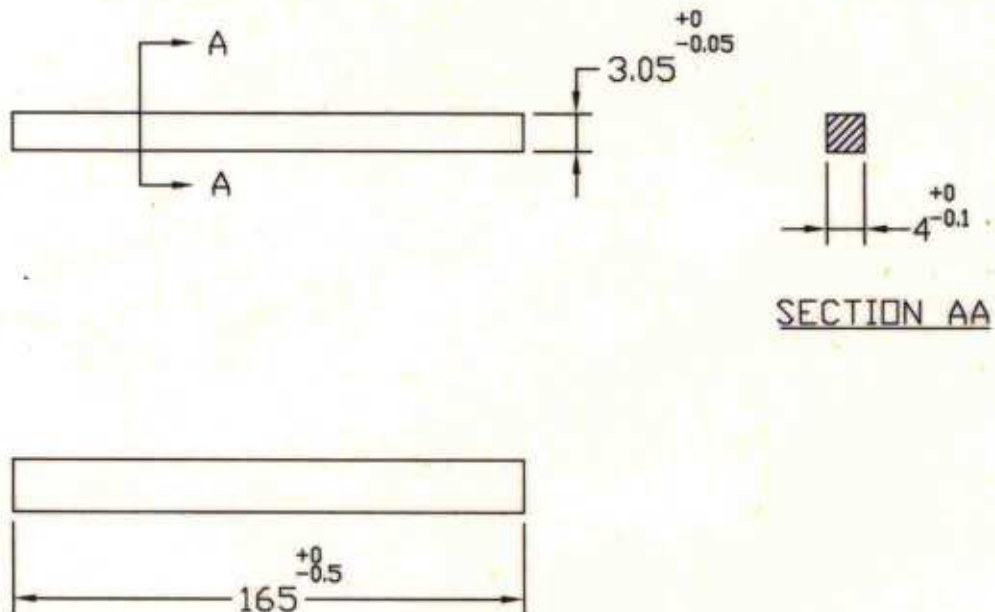
REF. DRG.No.									
RD-41013911-A-200		REV NO.	ZONE	BRIEF RECORD			PPD	CHD	APD
QTY.	3 Nos	<b>BHARAT HEAVY PLATE AND VESSELS LTD.</b> VISAKHAPATNAM - 530 012, INDIA							
ITEM No.	207								
MATRL.	AA 3003-0/ BS 4L59	DRN.	USA. 17-09-01	RESEARCH & DEVELOPMENT					
NOTES: 1. DRAWING NOT TO BE SCALED 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.		CHKD.	<i>[Signature]</i> 18/09/01	CUSTOMER : M/s A.D.A., BANGALORE					
		APPROVED	<i>[Signature]</i> 18/09/01	HYD.OIL-IDG OIL-FUEL COOLER (HE-1)			U-SHAPED SIDE BAR-HYD		
				WORK ORD. NO. 410139 11			NO. OFF 3		
			SCALE	NTS	YR OF ORD	SIZE	DRAWING NO.		REV
				1999	A4	RD-41013911-P-207		0	

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**NOTES :**

1. THE SIDE BARS SHOULD BE STRAIGHT/FLAT AND SHOULD BE FREE FROM BURRS AND SURFACE MARKS.
2. THE MAXIMUM DEVIATION ACCEPTABLE IN STRAIGHTNESS/FLATNESS IS 0.05 mm OVER THE ENTIRE LENGTH.
3. THE SURFACE FINISH REQMT. IS 5 TO 10 MICRONS ON ALL SURFACES.

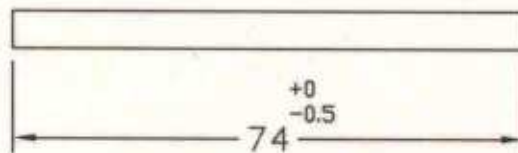
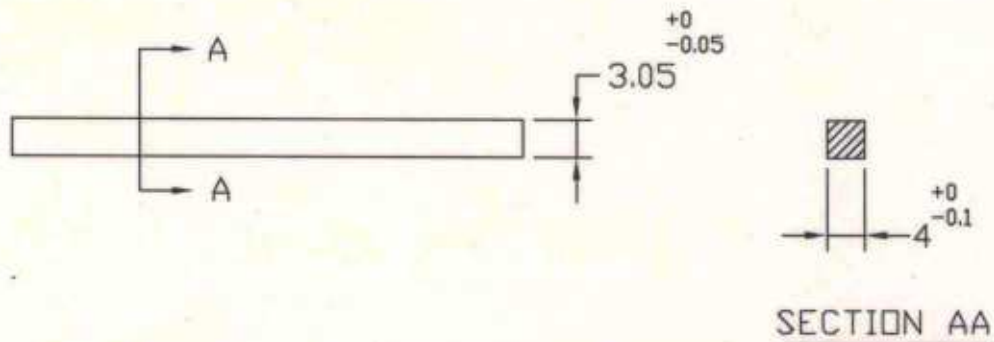
REF. DRG.No. RD-41013911-A-300		REV NO.	ZONE	BRIEF RECORD	PPD	CHD	APD
QTY.	14 Nos.	<b>BHPV</b> BHARAT HEAVY PLATE AND VESSELS LTD. VISAKHAPATNAM - 530 012, INDIA					
ITEM No.	303						
MATRL.	AA 3003-0/ BS 4L59	DRN.	U.S.N. 17-09-01	RESEARCH & DEVELOPMENT			
NOTES: 1. DRAWING NOT TO BE SCALED 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.	CHKD.	18/09/01		CUSTOMER : M/s A.D.A., BANGALORE			
	APPROVED	18/09/01		HYD.OIL-IDG.OIL-FUEL COOLER (HE-1) FUEL SIDE BAR-IDG		WORK ORD. NO. 410139 11	NO. OFF 5
	SCALE	NTS		YR OF ORD	SIZE	DRAWING NO.	REV
				1999	A4	RD-41013911-P-303	0

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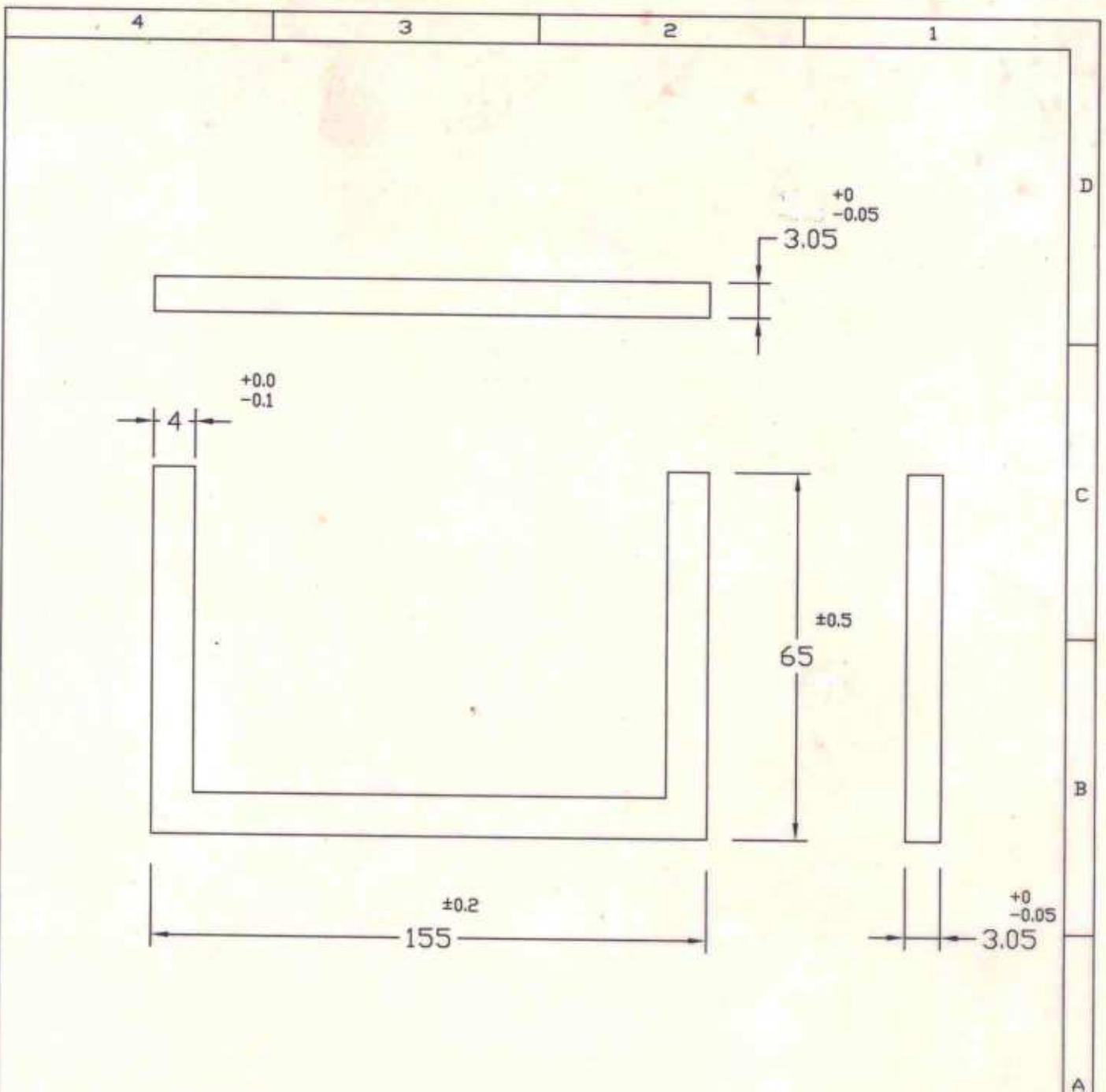
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NOTES :

1. THE SIDE BARS SHOULD BE STRAIGHT/FLAT AND SHOULD BE FREE FROM BURRS AND SURFACE MARKS.
2. THE MAXIMUM DEVIATION ACCEPTABLE IN STRAIGHTNESS/FLATNESS IS 0.05 mm OVER THE ENTIRE LENGTH.
3. THE SURFACE FINISH REQMT. IS 5 TO 10 MICRONS ON ALL SURFACES.

REF. DRG.No.									
RD-41013911-A-300		REV NO.	ZONE	BRIEF RECORD			PPD	CHD	APD
QTY.	6 Nos.	<b>ghpu</b> BHARAT HEAVY PLATE AND VESSELS LTD. VISAKHAPATNAM - 530 012, INDIA							
ITEM No.	305								
MATRL.	AA 3003-0/ BS 4L59	DRN.	<i>U.S.R.</i> 17-09-01	RESEARCH & DEVELOPMENT					
NOTES: 1. DRAWING NOT TO BE SCALED 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.		CHKD.	<i>[Signature]</i> 18/09/01	CUSTOMER : M/s A.D.A., BANGALORE					
		APPROVED	<i>[Signature]</i> 18/09/01	HYD.OIL-IDG.OIL-FUEL COOLER (HE-1)			IDG OIL SIDE BAR		
		SCALE	NTS	WORK ORD. NO.	410139 11	NO. OFF			
				YR OF ORD	SIZE	DRAWING NO.	REV		
			1999	A4	RD-41013911-P-305	0			



**NOTES :**

1. THE SIDE BARS SHOULD BE STRAIGHT/FLAT AND SHOULD BE FREE FROM BURRS AND SURFACE MARKS.
2. THE MAXIMUM DEVIATION ACCEPTABLE IN STRAIGHTNESS/FLATNESS IS 0.05 mm OVER THE ENTIRE LENGTH.
3. THE SURFACE FINISH REQMT. IS 5 TO 10 MICRONS ON ALL SURFACES.

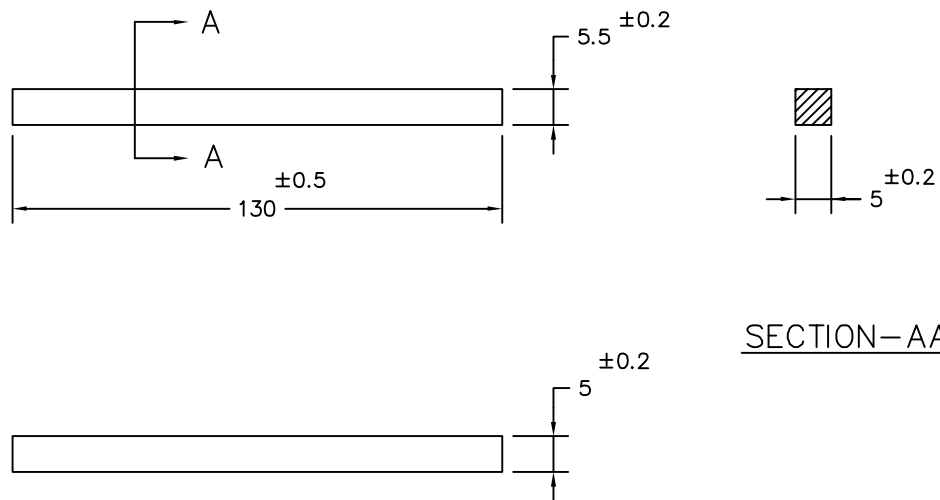
REF. DRG.No.									
RD-41013911-A-300		REV NO.	ZONE	BRIEF RECORD			PPD	CHD	APD
QTY.	6 Nos.	<b>BHARAT HEAVY PLATE AND VESSELS LTD.</b> VISAKHAPATNAM - 530 012, INDIA							
ITEM No.	307								
MATRL.	AA 3003-0/ BS4L59	DRN.	<i>17-09-01</i>	RESEARCH & DEVELOPMENT					
<b>NOTES:</b> 1. DRAWING NOT TO BE SCALED 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.		CHKD.	<i>18/9/01</i>	CUSTOMER : M/s A.D.A., BANGALORE					
		APPROVED	<i>18/09/01</i>	HYD.OIL-IDG OIL-FUEL COOLER(HE-1)			U-SHAPED SIDE BAR-IDG		
		SCALE	NTS	WORK ORD. NO.	410139 11	NO. OFF	3		
				YR OF ORD	SIZE	DRAWING NO.		REV	
		1999	A4	RD-41013911-P-307		0			

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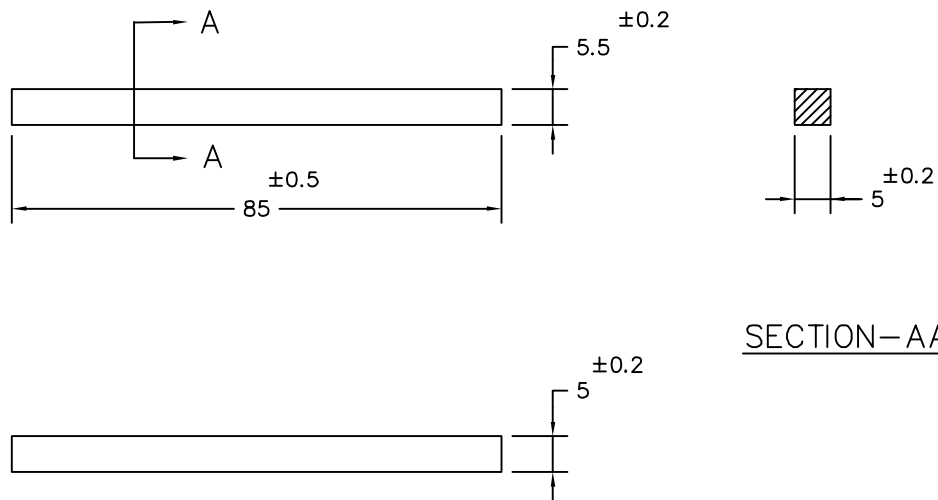
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SECTION-AA

REF. DRG.	1	---	MATRL. SPECN. AA 5083 INCLUDED. AS PER MOD No. MOD/CHE/001			
RD-41013912-A-100	REV NO.	ZONE	BRIEF RECORD	PPD	CHD	APD
QTY.	2 NOs.	 <b>BHARAT HEAVY ELECTRICALS LTD.</b> <b>HEAVY PLATES &amp; VESSELS PLANT</b> VISAKHAPATNAM - 530012, INDIA				
PART NO.	113					
MATRL.	AA 5083/ AA 5086	DRN	KSSRao 20.08.01	RESEARCH & DEVELOPMENT		
<b>NOTES:</b> 1. DRAWING NOT TO BE SCALED. 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.	CHD	KVRMURTHY 21.08.01	CUSTOMER : <b>GBX OIL-HYD.OIL-FUEL COOLER (HE-2) SPACER BAR</b>			
	APPROVED	A.Panigrahi 21.08.01	WORK ORD. NO.:		NO. OFF:	
	SCALE	NTS	YR OF ORD	SIZE	DRAWING NO.	REV
				A4	RD-41013912-P-113	1



SECTION-AA

	3	---	MATRL. SPECN. AA 5083 INCLUDED. AS PER MOD No. MOD/CHE/001			
	2	C-2	BAR HEIGHT & QTY REVISED	KSSR 17.09.01	KVR 18.09.01	AP 18.09.01
REF. DRG.	1	C-2	BAR HEIGHT MODIFIED	KSSR 26.07.00	AP 31.07.00	AP 31.07.00
RD-41013912-A-100	REV NO.	ZONE	BRIEF RECORD	PPD	CHD	APD
QTY.	2 NOs.					
PART NO.	116					
MATRL.	AA 5083/ AA 5086					
	DRN	KSSRao	RESEARCH & DEVELOPMENT			
	CHD	KVRMURTHY	CUSTOMER :			
	APPROVED	A.Panigrahi	<b>GBX OIL-HYD.OIL-FUEL COOLER (HE-2)</b>			NO. OFF:
	SCALE	NTS	<b>RETURN HEADER MIDDLE BAR</b>			REV
<b>NOTES:</b>			WORK ORD. NO.:		NO. OFF:	
1. DRAWING NOT TO BE SCALED. 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.			YR OF ORD	SIZE	DRAWING NO.	
			A4	RD-41013912-P-116		3



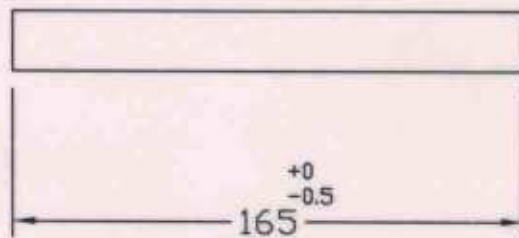
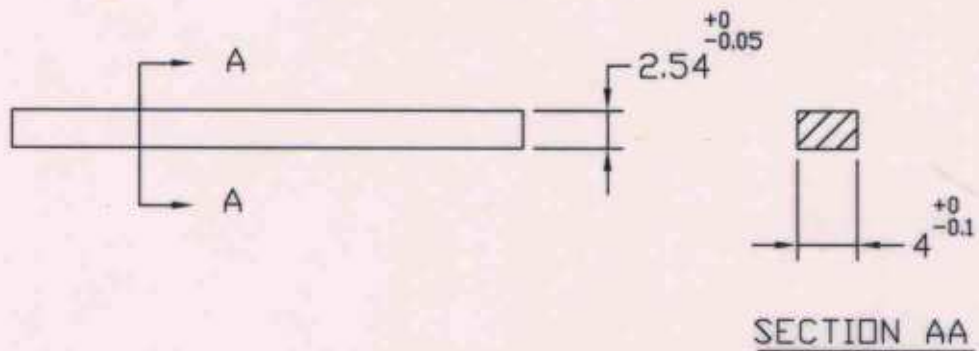
**BHARAT HEAVY ELECTRICALS LTD.**  
**HEAVY PLATES & VESSELS PLANT**  
VISAKHAPATNAM - 530012, INDIA

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NOTES :

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2. THE MAXIMUM DEVIATION ACCEPTABLE IN STRAIGHTNESS/FLATNESS IS 0.05 mm OVER THE ENTIRE LENGTH.
3. THE SURFACE FINISH REQMT. IS 5 TO 10 MICRONS ON ALL SURFACES.

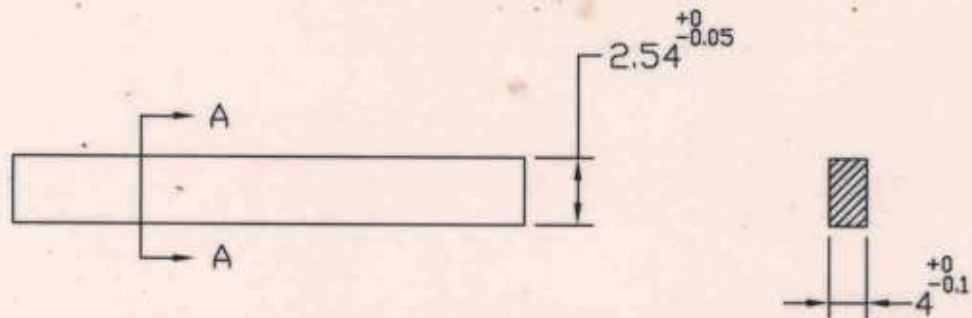
REF. DRG.									
RD-41013912-A-200		REV NO.	ZONE	BRIEF RECORD			PPD	CHD	APD
QTY.	14 Nos.	<b>BHPV</b> BHARAT HEAVY PLATE AND VESSELS LTD.							
ITEM No.	203	VISAKHAPATNAM - 530 012, INDIA							
MATL.	AA 3003-0/ BS 4159	DRN.	<i>CSN</i> 17-09-01	RESEARCH & DEVELOPMENT					
NOTES: 1. DRAWING NOT TO BE SCALED 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.		CHKD.	<i>[Signature]</i> 18/9/01	CUSTOMER : M/s A.D.A., BANGALORE					
		APPROVED	<i>[Signature]</i> 18/9/01	GBX OIL-HYD OIL-FUEL COOLER (HE-2)				FUEL SIDE BAR-GBX	
		SCALE	NTS	WORK ORD. NO. 410139 12		NO. OFF 8			
				YR OF ORD	SIZE	DRAWING NO.		REV	
			1999	A4	RD-41013912-P-203		0		

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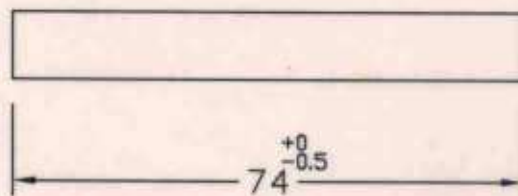
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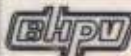
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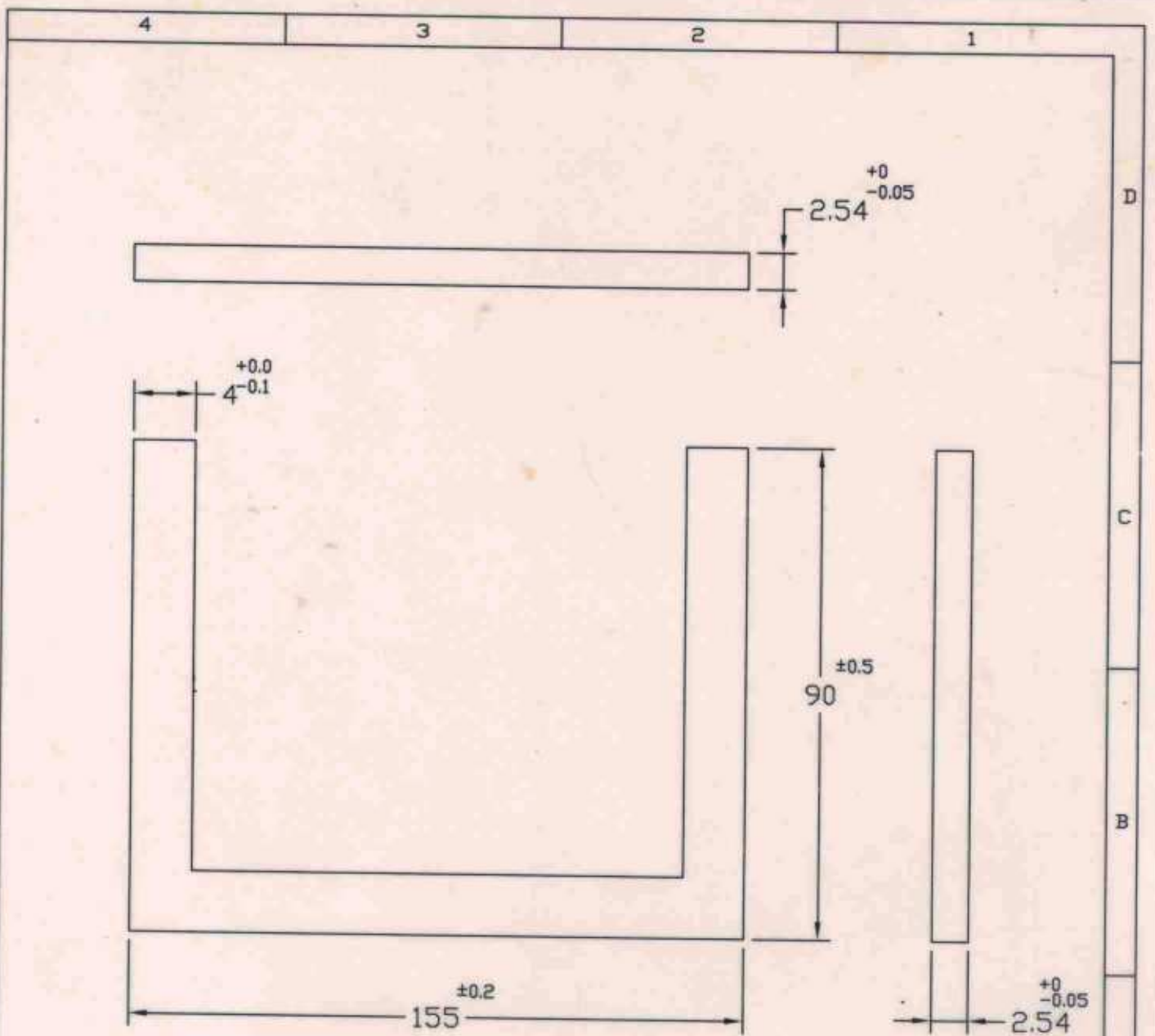


SECTION AA

NOTES :

1. THE SIDE BARS SHOULD BE STRAIGHT/FLAT AND SHOULD BE FREE FROM BURRS AND SURFACE MARKS.
2. THE MAXIMUM DEVIATION ACCEPTABLE IN STRAIGHTNESS/FLATNESS IS 0.05 mm OVER THE ENTIRE LENGTH.
3. THE SURFACE FINISH REQMT. IS 5 TO 10 MICRONS ON ALL SURFACES.

REF. DRG. RD-41013912-A-200		REV NO	ZONE	BRIEF RECORD	PPD	CHD	APD
QTY.	8 Nos.	 <b>BHARAT HEAVY PLATE AND VESSELS LTD.</b> VISAKHAPATNAM - 530 012, INDIA					
ITEM No.	205						
MATL.	AA 3003-0/ BS4L59	DRN.	<i>CSSP</i> 17-09-01	RESEARCH & DEVELOPMENT			
<u>NOTES:</u> 1. DRAWING NOT TO BE SCALED 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.	CHKD.	<i>[Signature]</i> 18/9/01	CUSTOMER : M/s A.D.A., BANGALORE				
	APPROVED	<i>[Signature]</i> 18/9/01	GBX OIL-HYD OIL-FUEL COOLER (HE-2)				
	SCALE	NTS	WORK ORD. NO. 410139 12		NO. OFF 8		
			YR OF ORD	SIZE	DRAWING NO.		REV
			1999	A4	RD-41013912-P-205		0



**NOTES :**

1. THE SIDE BARS SHOULD BE STRAIGHT/FLAT AND SHOULD BE FREE FROM BURRS AND SURFACE MARKS.
2. THE MAXIMUM DEVIATION ACCEPTABLE IN STRAIGHTNESS/FLATNESS IS 0.05 mm OVER THE ENTIRE LENGTH.
3. THE SURFACE FINISH REQMT. IS 5 TO 10 MICRONS ON ALL SURFACES.

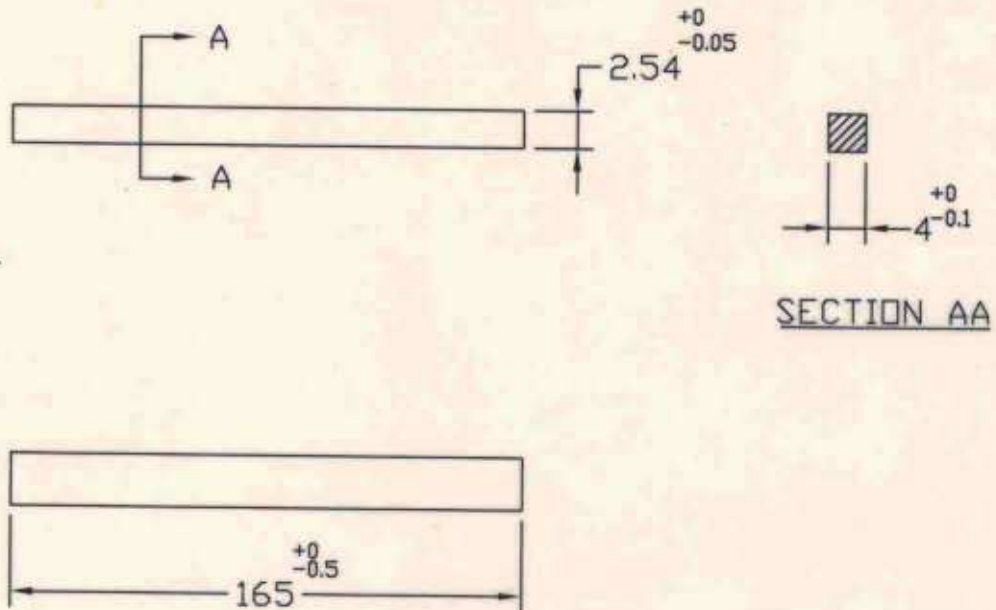
REF. DRG. RD-41013912-A-200		REV NO.	ZONE	BRIEF RECORD	PPD	CHD	APD
QTY.	8 Nos	<b>BHARAT HEAVY PLATE AND VESSELS LTD.</b> VISAKHAPATNAM - 530 012, INDIA					
ITEM No.	207						
MATL.	AA 3003-0/ BS 4L59	DRN.	<i>CesK.</i> 17-09-01	RESEARCH & DEVELOPMENT			
NOTES: 1. DRAWING NOT TO BE SCALED 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.		CHKD.	<i>[Signature]</i> 18/9/01	CUSTOMER : M/s A.D.A., BANGALORE			
		APPROVED	<i>[Signature]</i> 18/9/01	GBX OIL-HYD OIL-FUEL COOLER (HE-2) U-SHAPED SIDE BAR-GBX			
		SCALE	NTS	WORK ORD. NO. 410139 12	NO. OFF 8		
				YR OF ORD	SIZE	DRAWING NO.	REV
				1999	A4	RD-41013912-P-207	0

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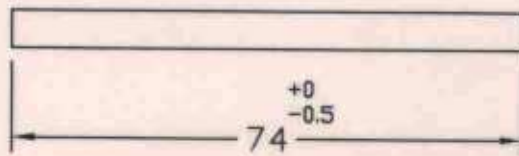
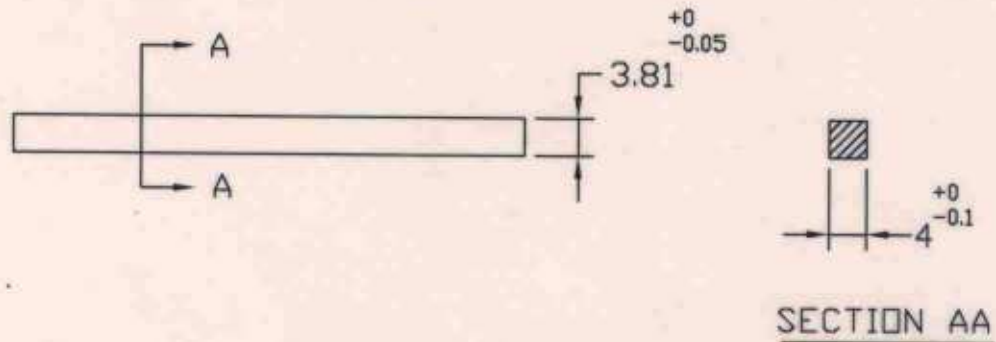
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NOTES :

1. THE SIDE BARS SHOULD BE STRAIGHT/FLAT AND SHOULD BE FREE FROM BURRS AND SURFACE MARKS.
2. THE MAXIMUM DEVIATION ACCEPTABLE IN STRAIGHTNESS/FLATNESS IS 0.05 mm OVER THE ENTIRE LENGTH.
3. THE SURFACE FINISH REQMT. IS 5 TO 10 MICRONS ON ALL SURFACES.

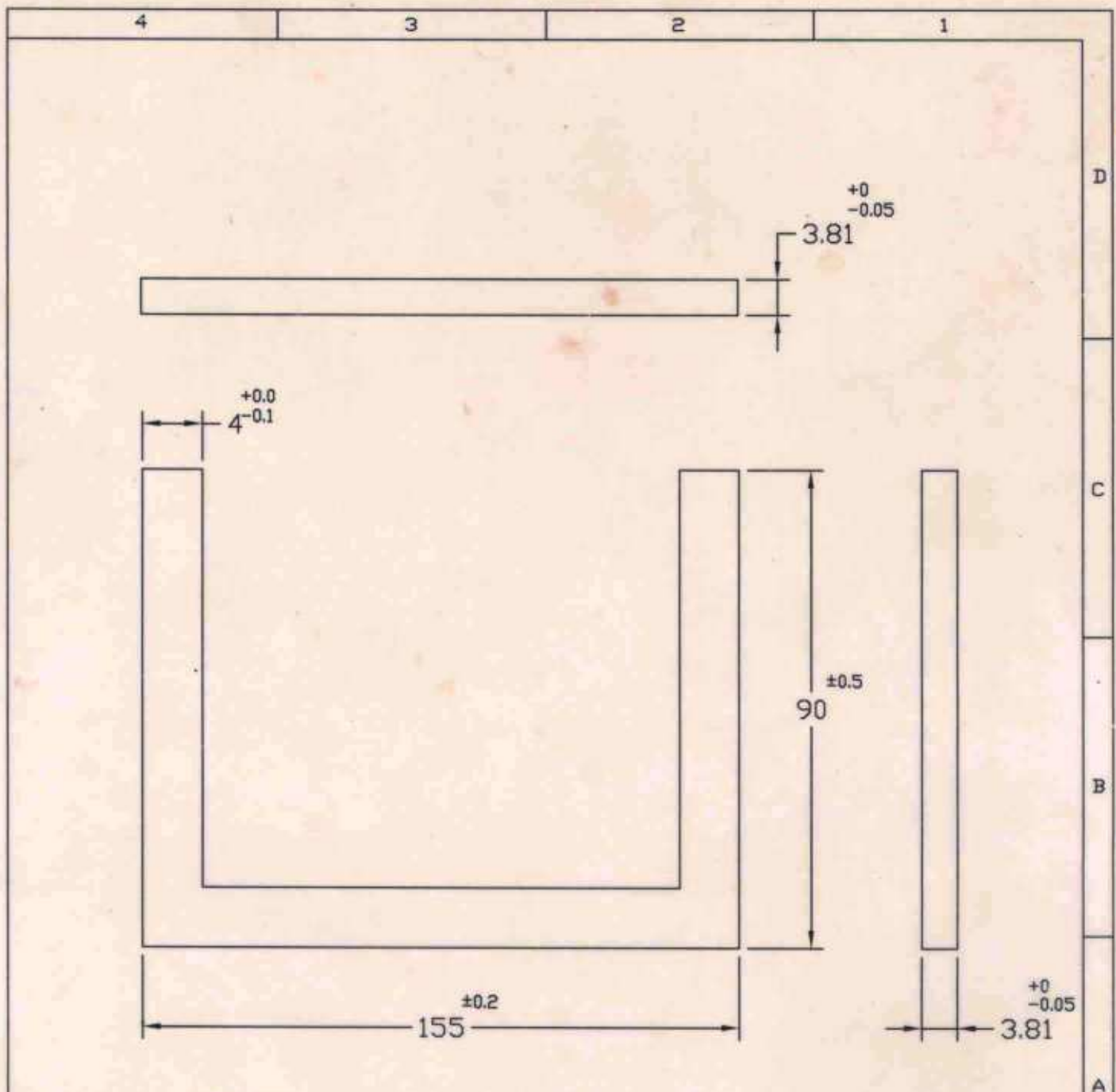
REF. DRG. RD-41013912-A-300		REV NO.	ZONE	BRIEF RECORD	PPD	CHD	APD
QTY.	12 Nos.	<b>BHARAT HEAVY PLATE AND VESSELS LTD.</b> VISAKHAPATNAM - 530 012, INDIA					
ITEM No.	303						
MATL.	AA 3003-0/ BS 4L59	DRN.	<i>Wsk</i> 17-09-01	RESEARCH & DEVELOPMENT			
NOTES: 1. DRAWING NOT TO BE SCALED 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.		CHKD.	<i>[Signature]</i> 18/9/01	CUSTOMER : M/s A.D.A., BANGALORE			
		APPROVED	<i>[Signature]</i> 18/9/01	GBX. OIL-HYD OIL-FUEL COOLER(HE-2)		FUEL SIDE BAR-HYD	
		SCALE	NTS	WORK ORD. NO.	410139 12	NO. OFF	8
				YR OF ORD	SIZE	DRAWING NO.	REV
			1999	A4	RD-41013912-P-303	0	



NOTES :

1. THE SIDE BARS SHOULD BE STRAIGHT/FLAT AND SHOULD BE FREE FROM BURRS AND SURFACE MARKS.
2. THE MAXIMUM DEVIATION ACCEPTABLE IN STRAIGHTNESS/FLATNESS IS 0.05 mm OVER THE ENTIRE LENGTH.
3. THE SURFACE FINISH REQMT. IS 5 TO 10 MICRONS ON ALL SURFACES.

REF. DRG.									
RD-41013912-A-300		REV NO.	ZONE	BRIEF RECORD		PPD	CHD	APD	
QTY.	5 Nos.	<b>BHARAT HEAVY PLATE AND VESSELS LTD.</b> VISAKHAPATNAM - 530 012, INDIA							
ITEM No.	305								
MATL.	AA 3003-0/ BS 4L59	DRN.	CSSR 17-09-01	RESEARCH & DEVELOPMENT					
NOTES: 1. DRAWING NOT TO BE SCALED 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.		CHKD.	<i>[Signature]</i> 18/9/01	CUSTOMER : M/s A.D.A., BANGALORE					
		APPROVED	<i>[Signature]</i> 18/9/01	GBX OIL-HYD OIL-FUEL COOLER (HE-2)			HYD OIL SIDE BAR		
		SCALE	NTS	WORK ORD. NO. 410139 12		NO. OFF 8			
				YR OF ORD	SIZE	DRAWING NO.		REV	
			1999	A4	RD-41013912-P-305		0		



**NOTES :**

1. THE SIDE BARS SHOULD BE STRAIGHT/FLAT AND SHOULD BE FREE FROM BURRS AND SURFACE MARKS.
2. THE MAXIMUM DEVIATION ACCEPTABLE IN STRAIGHTNESS/FLATNESS IS 0.05 mm OVER THE ENTIRE LENGTH.
3. THE SURFACE FINISH REQMT. IS 5 TO 10 MICRONS ON ALL SURFACES.

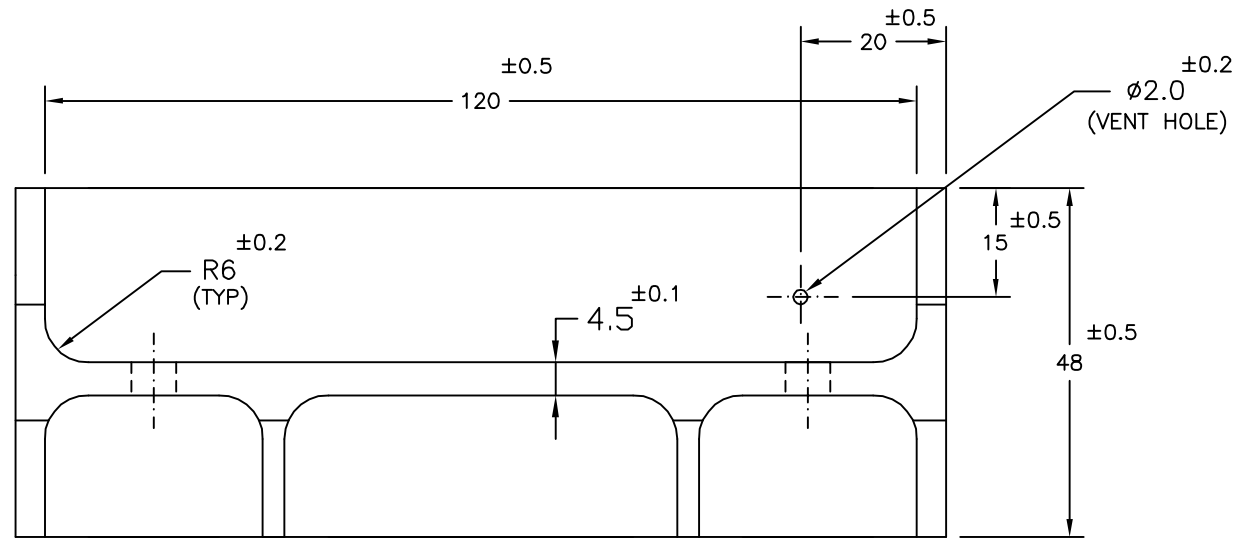
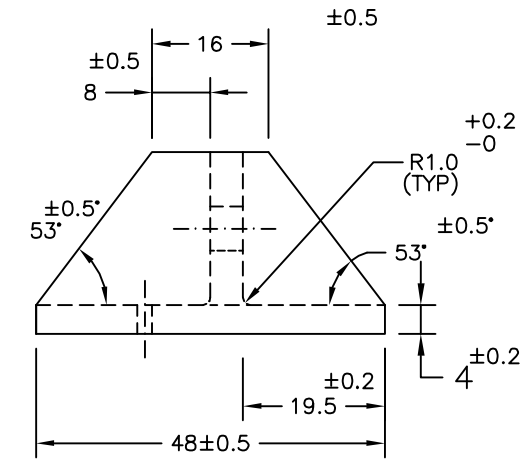
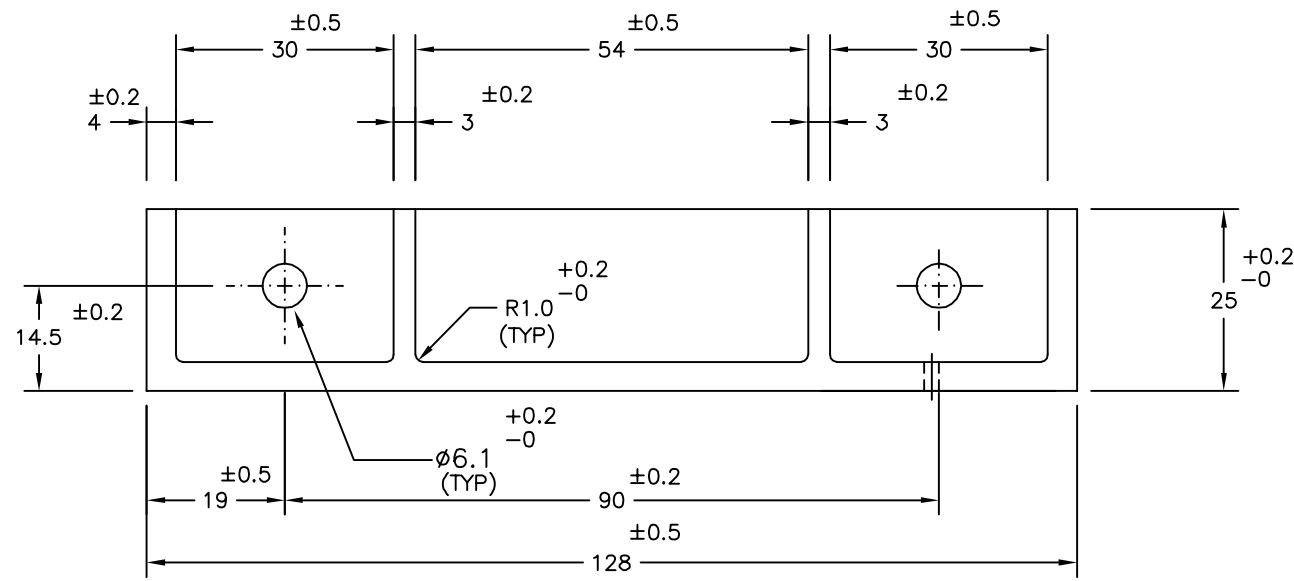
REF. DRG.										
RD-41013912-A-300		REV NO.	ZONE	BRIEF RECORD			PPD	CHD	APD	
QTY.	5 Nos.	<b>BHARAT HEAVY PLATE AND VESSELS LTD.</b> VISAKHAPATNAM - 530 012, INDIA								
ITEM No.	307									
MATL.	AA 3003-0/ BS4L59	DRN.	U.S.R. 17-09-01	RESEARCH & DEVELOPMENT						
<b>NOTES:</b> 1. DRAWING NOT TO BE SCALED 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.		CHKD.	<i>[Signature]</i> 12/9/01	CUSTOMER : M/s A.D.A., BANGALORE						
		APPROVED	<i>[Signature]</i> 18/9/01	GBX OIL-HYD OIL-FUEL COOLER (HE-2)						
		SCALE	NTS	U-SHAPED SIDE BAR-HYD			WORK ORD. NO. 410139 12		NO. OFF 8	
				YR OF ORD	SIZE	DRAWING NO.			REV	
		1999	A4	RD-41013912-P-307			0			

FORM NO. 0421/0

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DRAWING NOT TO BE SCALED

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED



NOTES:

1. BOLT HOLES ARE TO BE DRILLED ONLY AFTER ASSEMBLY AND WELDING OF THE BRACKET TO HEAT EXCHANGER.
2. ALL SURFACES TO BE MACHINED TO  $\nabla\nabla$  FINISH.
3. TOLERANCES INDICATED ARE NON-CUMULATIVE
4. ALL SHARP CORNERS SHALL BE ROUNDED OFF.

112	MOUNTING BRACKET-1	2	AA 5083/AA 5086	0.21
P.No.	DESCRIPTION	QTY. (NOS)	MATERIAL	WT(KG)



**BHARAT HEAVY ELECTRICALS LTD.**  
**HEAVY PLATES & VESSELS PLANT**  
 VISAKHAPATNAM - 530012, INDIA

DRN	B.Uma 03-10-1999	RESEARCH & DEVELOPMENT		
CHD	K.S.S.Rao 04-10-1999	CUSTOMER :		
APPROVED	A.Panigrahi 04-10-1999	<b>SECONDARY HEAT EXCHANGER</b> <b>MOUNTING BRACKET-1</b>		
SCALE	1:1			
ALL PROJECTIONS ARE FIRST ANGLE UNLESS OTHERWISE SPECIFIED		WORK ORDER NO :	NO OFF:	
		YEAR OF ORDER	SIZE	DRAWING No.
			A3	RD-41011201-P-112
				REV
				5

REV.NO	ZONE	BRIEF RECORD	PPD	CHD	APD
5	---	MATRL. SPECN. AA 5083 INCLUDED AS PER MOD No. MOD/CHE/001			
4	---	BRACKET HEIGHT, MOUNTING HOLE DISTANCE MODIFIED.	B.UMA 01.06.04	KSSR 01.06.04	AP 03.06.04
3	---	MIDDLE RIB THICKNESS INCREASED, CORNER RADII & TOLERANCES CORRECTED. VENT HOLE ADDED.	B.UMA 19.07.03	KVR 19.07.03	AP 19.07.03
2	---	TOLERANCES CORRECTED, NOTE :3 CHANGED	KSSR 03.04.02	KVR 03.04.02	AP 04.04.02
1	E7	ø6.5 MOUNTING HOLES SHIFTED BY 2.25 mm.	KSSR 22.10.00	AP 23.10.00	AP 23.10.00

REF. DRG. RD-41011201-A-100

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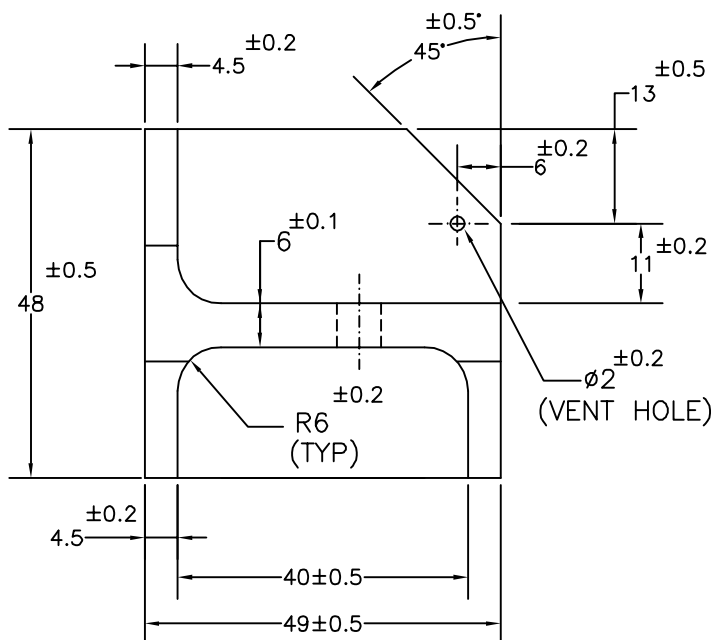
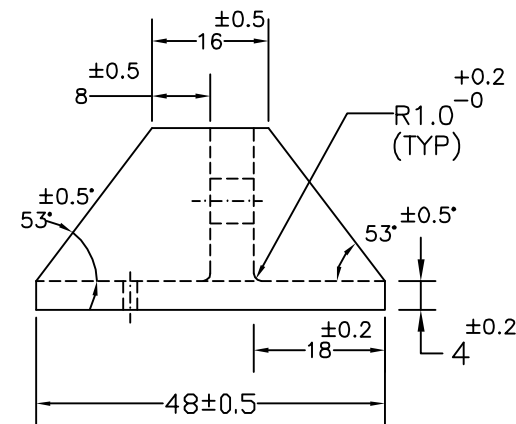
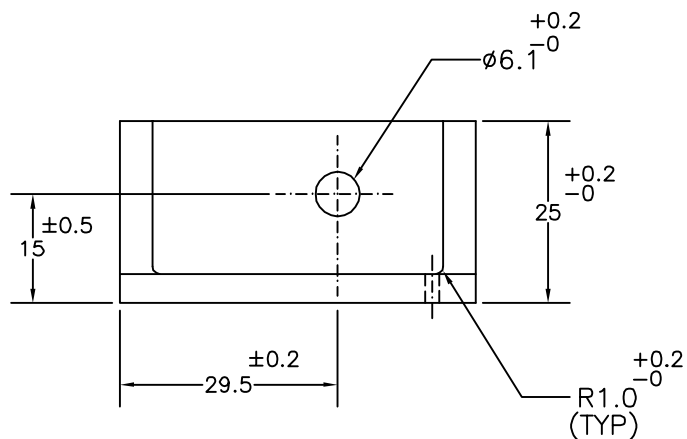
2

1

DRAWING NOT TO BE SCALED

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED

FORM NO. 0421/0



NOTES:

- 1. BOLT HOLES TO BE DRILLED ONLY AFTER ASSEMBLY AND WELDING OF THE BRACKET TO HEAT EXCHANGER.
- 2. ALL SURFACES TO BE MACHINED TO ∇∇ FINISH.
- 3. TOLERANCES INDICATED ARE NON-CUMULATIVE.
- 4. ALL SHARP CORNERS SHALL BE ROUNDED OFF.

113	MOUNTING BRACKET-2	1	AA 5083/AA 5086	0.050
P.No.	DESCRIPTION	QTY. (NOS)	MATERIAL	WT(KG)



**BHARAT HEAVY ELECTRICALS LTD.**  
**HEAVY PLATES & VESSELS PLANT**  
 VISAKHAPATNAM - 530012, INDIA

6	---	MATRL. SPECN. AA 5083 INCLUDED. AS PER MOD No. MOD/CHE/001			
5	---	BRACKET HEIGHT, MOUNTING HOLE DISTANCE MODIFIED.	B.UMA 01.06.04	KSSR 01.06.04	AP 03.06.04
4	---	RIB THICKNESSES INCREASED, CORNER RADII & TOLERANCES CORRECTED. VENT HOLE ADDED.	B.UMA 19.07.03	KVR 19.07.03	AP 19.07.03
3	---	ONE RIB REMOVED & 13 x 45° CUT INCORPORATED	B.UMA 06.11.02	KVR 07.11.02	AP 07.11.02
2	---	TOLERANCES CORRECTED, NOTE : 3 CHANGED.	KSSR 03.04.02	KVR 03.04.02	AP 04.04.02
1	E6	∅6.5 MOUNTING HOLE SHIFTED BY 2.25 mm	KSSR 22.10.00	AP 23.10.00	AP 23.10.00
REV.NO	ZONE	BRIEF RECORD	PPD	CHD	APD

DRN	B.Uma 04-10-1999	RESEARCH & DEVELOPMENT		
CHD	K.S.S.Rao 04-10-1999	CUSTOMER :		
APPROVED	A.Panigrahi 04-10-1999	<b>SECONDARY HEAT EXCHANGER</b> <b>MOUNTING BRACKET-2</b>		
SCALE	1:1			
ALL PROJECTIONS ARE FIRST ANGLE UNLESS OTHERWISE SPECIFIED		WORK ORDER NO :	NO OFF:	
		YEAR OF ORDER	SIZE	DRAWING No.
			A3	RD-41011201-P-113
				REV
				6

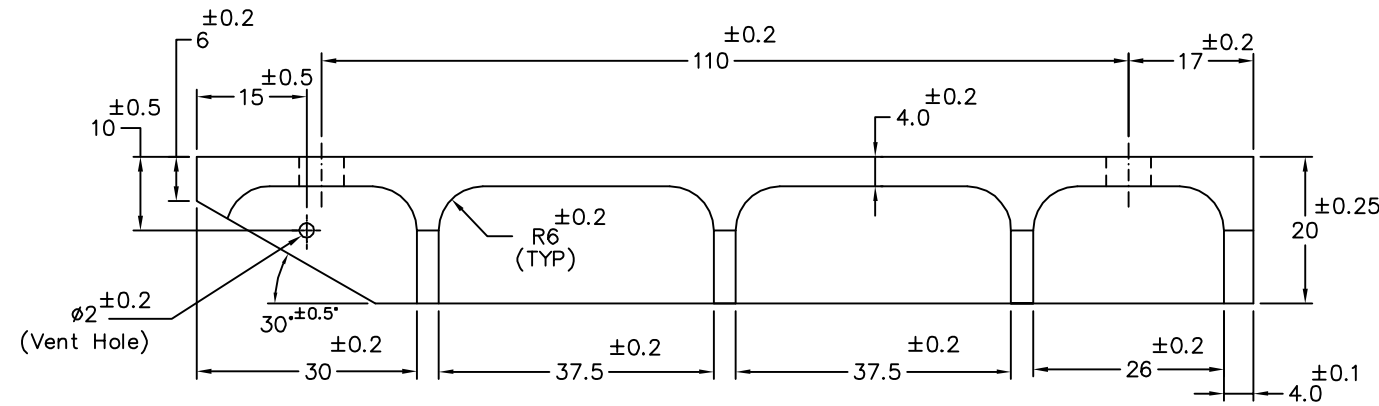
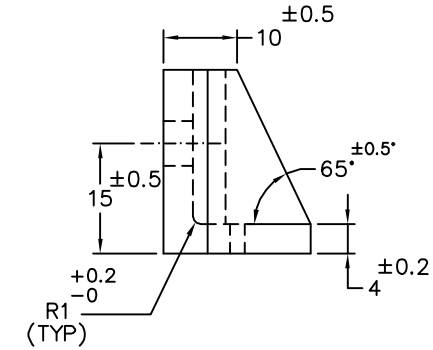
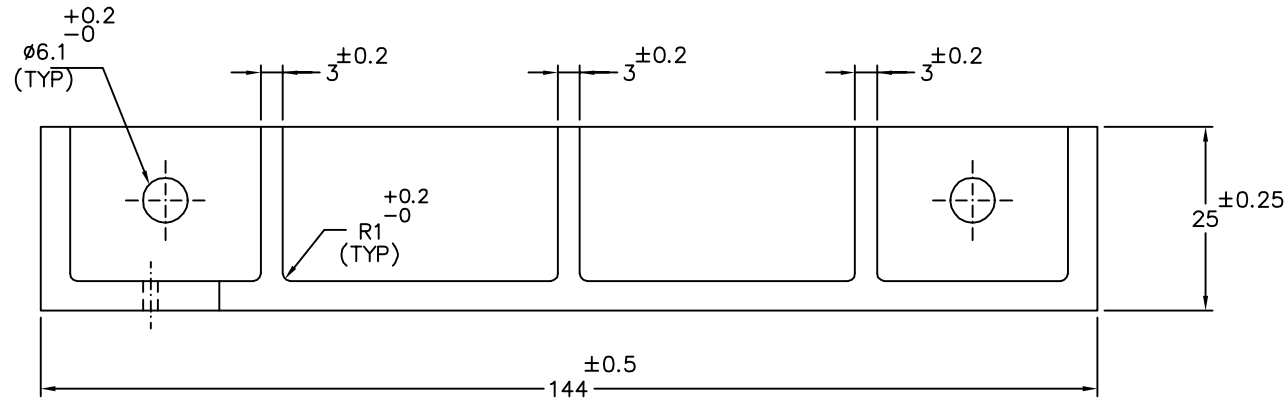
REF. DRG.  
RD-41011201-A-100

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FORM NO. 0421/0



NOTES:

1. BOLT HOLES ARE TO BE DRILLED ONLY AFTER ASSEMBLY AND WELDING OF THE BRACKET TO HEAT EXCHANGER.
2. ALL SURFACES TO BE MACHINED TO ∇∇ FINISH.
3. TOLERANCES INDICATED ARE NON CUMULATIVE
4. ALL SHARP CORNERS SHALL BE ROUNDED OFF.

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110	MOUNTING BRACKET	2	AA 5083/AA 5086	0.15
P.No.	DESCRIPTION	QTY. (NOS)	MATERIAL	WT(KG)



**BHARAT HEAVY ELECTRICALS LTD.**  
**HEAVY PLATES & VESSELS PLANT**  
 VISAKHAPATNAM - 530012, INDIA

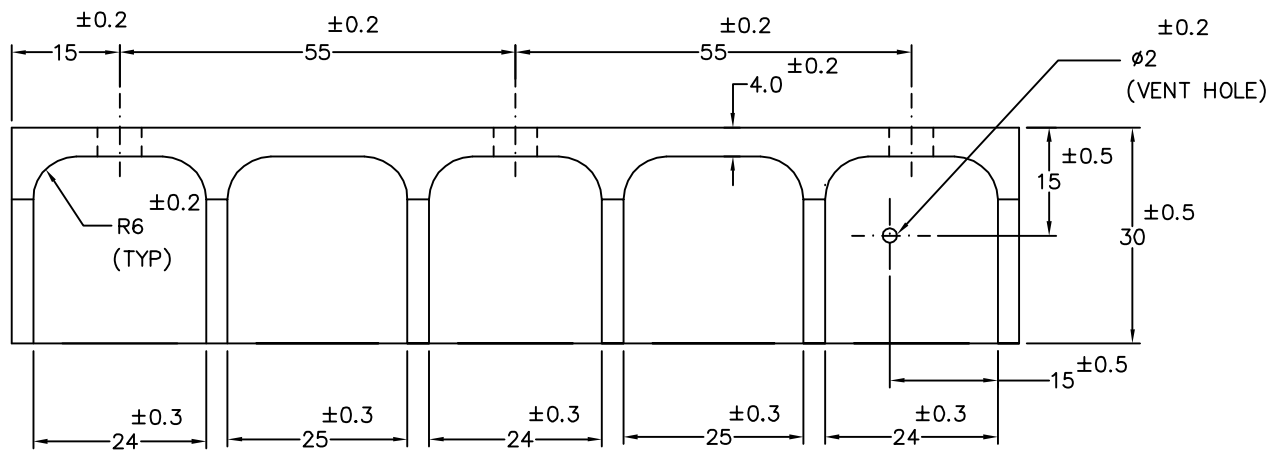
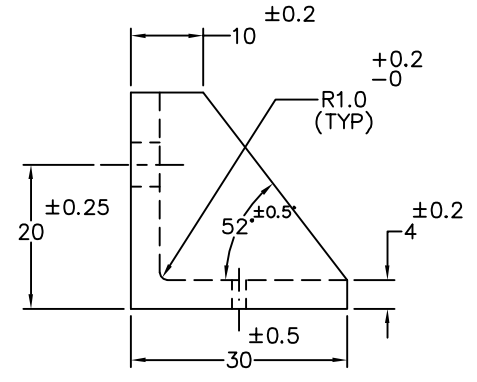
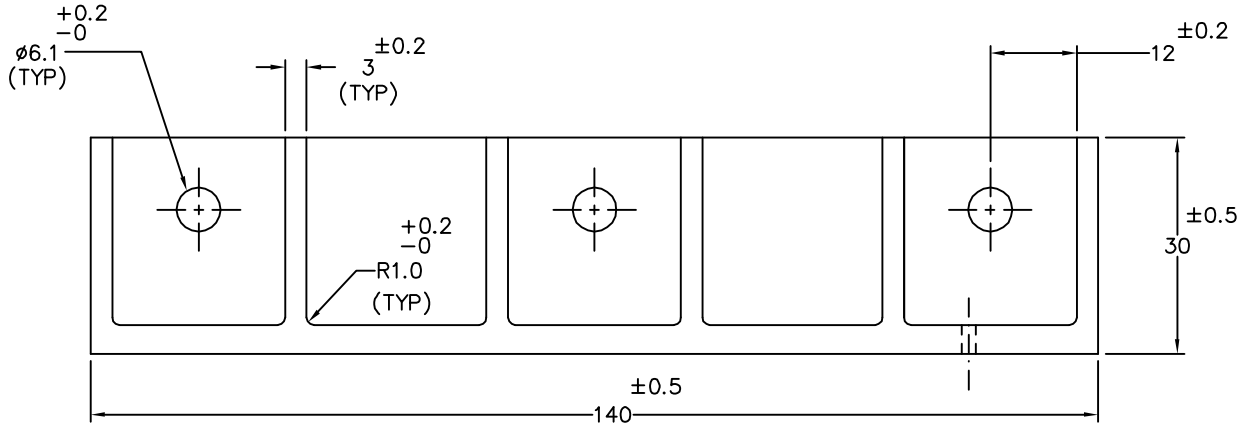
DRN	B.Uma 16.10.99	RESEARCH & DEVELOPMENT		
CHD	K.S.S.Rao 16.10.99	CUSTOMER:		
APPROVED	AP 18.10.99	<b>REHEATER MOUNTING BRACKET</b>		
SCALE	1:1			
ALL PROJECTIONS ARE FIRST ANGLE UNLESS OTHERWISE SPECIFIED		WORK ORDER NO :	NO OFF:	
		YEAR OF ORDER	SIZE	DRAWING No.
			A3	RD-41013909-P-110
				REV
				4

REF. DRG.	4	---	MATRL. SPECN. AA 5083 INCLUDED AS PER MOD No. MOD/CHE/001.	B.Uma 18.07.03	KVR 18.07.03	AP 21.07.03
RD-41013909-A-100	3	---	LENGTH REDUCED TO 144 MM, THIRD MOUNTING HOLE REMOVED, CORNER RADII CORRECTED AND VENT HOLE ADDED.	KSSR 18.10.02	KVR 18.10.02	AP 18.10.02
	2	---	LENGTH EXTENDED TO 189 MM & THIRD MOUNTING HOLE PROVIDED	KSSR 12.04.02	KVR 12.04.02	AP 14.04.02
	1	---	TOLERANCES INCORPORATED	PPD	CHD	APD
REV.NO	ZONE	BRIEF RECORD				

DRAWING NOT TO BE SCALED

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED

FORM NO. 0421/0



NOTE:

1. BOLT HOLES ARE TO BE DRILLED ONLY AFTER ASSEMBLY AND WELDING OF THE BRACKET TO HEAT EXCHANGER.
2. ALL SURFACES TO BE MACHINED TO ∇ FINISH.
3. TOLERANCES ARE NON CUMULATIVE.
4. ALL SHARP CORNERS SHALL BE ROUNDED OFF.

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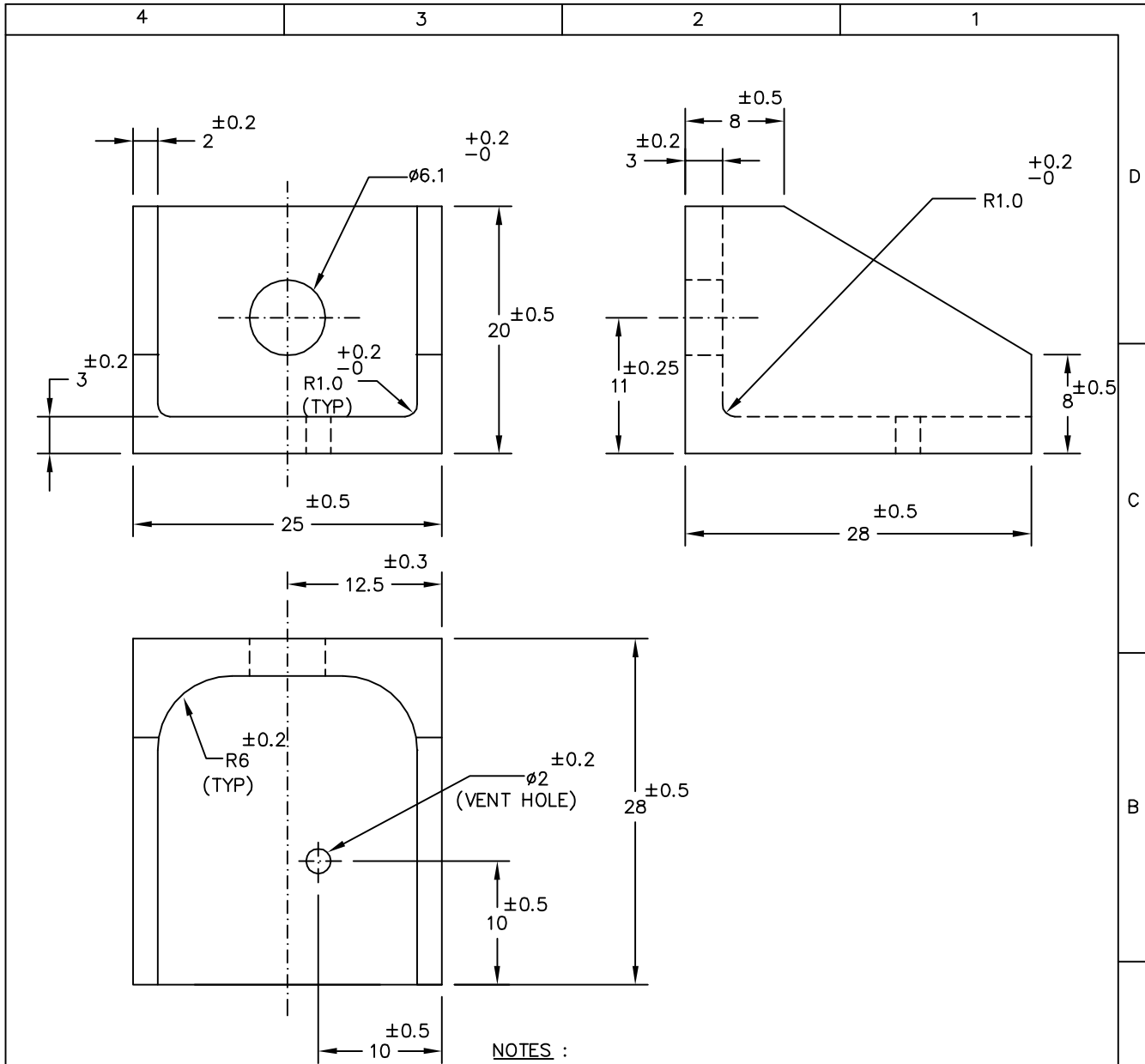
105	MOUNTING BRACKET	2	AA 5083/AA 5086	0.220
P.No.	DESCRIPTION	QTY. (NOS)	MATERIAL	WT(KG)

**BHARAT HEAVY ELECTRICALS LTD.**  
**HEAVY PLATES & VESSELS PLANT**  
 VISAKHAPATNAM - 530012, INDIA

DRN	B.Uma 18.10.99	RESEARCH & DEVELOPMENT		
CHD	K.S.S.Rao 18.10.99	CUSTOMER:		
APPROVED	A.Panigrahi 18.10.99	<b>CONDENSER MOUNTING BRACKET</b>		
SCALE	1:1			
ALL PROJECTIONS ARE FIRST ANGLE UNLESS OTHERWISE SPECIFIED		WORK ORDER NO :	NO OFF:	
		YEAR OF ORDER	SIZE	REV
			A3	3

REF. DRG.	RD-41013907-A-100	3	---	MATRL. SPECN. AA 5083 INCLUDED AS PER MOD No.: MOD/CHE/001	UMA 19.07.03	KVR 19.07.03	AP 20.07.03
		2	---	CORNER RADII AND TOLERANCES CORRECTED. VENT HOLE ADDED.	UMA 10.04.02	KVR 10.04.02	KSSR 10.04.02
		1	---	INCORPORATED TOLERANCES & DETAILS NOT SHOWN EARLIER	PPD	CHD	APD
REV.NO	ZONE	BRIEF RECORD			PPD	CHD	APD





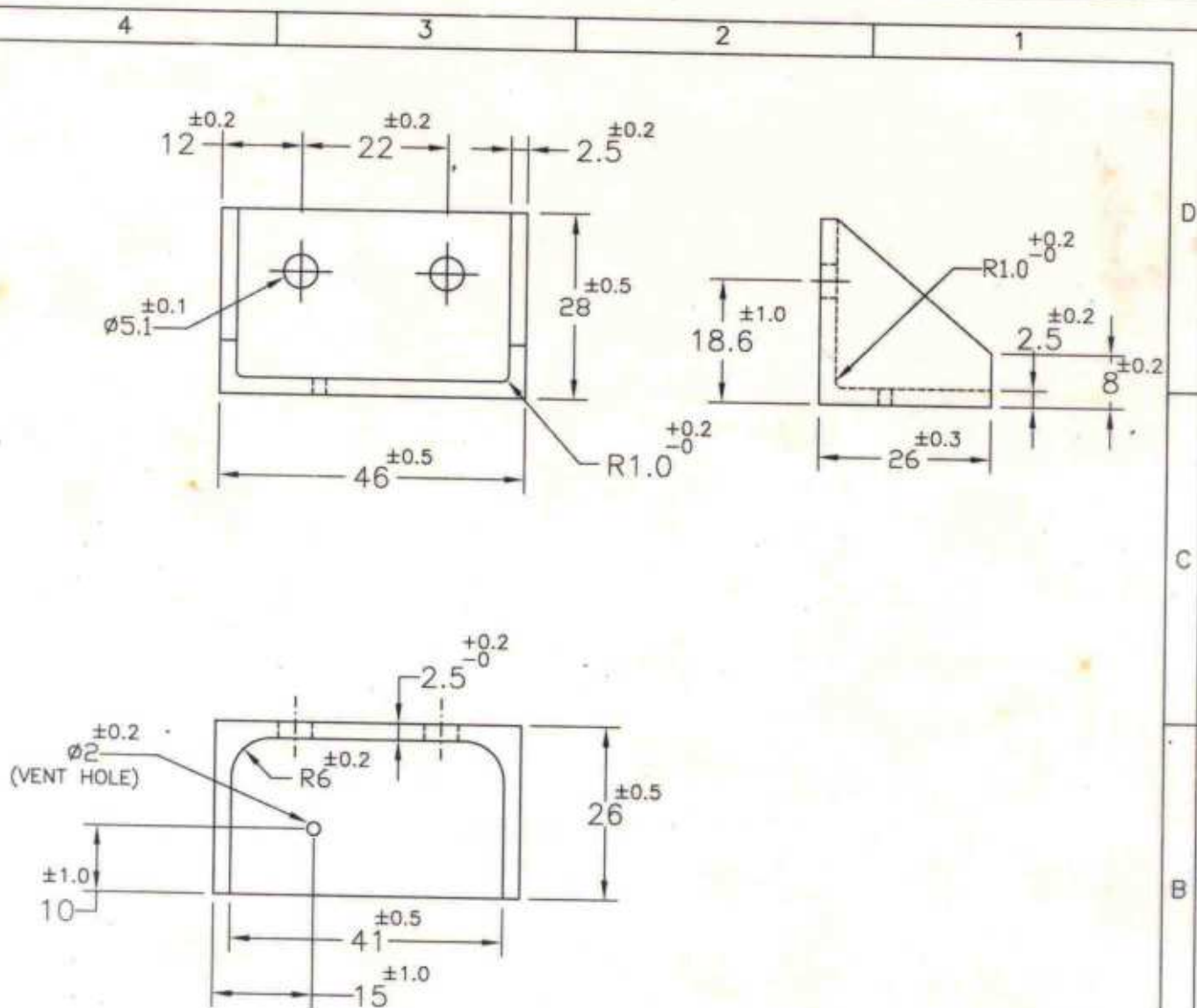
**NOTES :**

1. BOLT HOLES ARE TO BE DRILLED ONLY AFTER ASSEMBLY AND WELDING OF THE BRACKET TO HEAT EXCHANGER.
2. ALL SURFACES TO BE MACHINED TO ∇∇ FINISH.
3. TOLERANCES INDICATED ARE NON CUMULATIVE.
4. ALL SHARP CORNERS SHALL BE ROUNDED OFF.

4	---	MATRL. SPECN. AA 5083 INCLUDED. AS PER MOD No. MOD/CHE/001			
3	---	CORNER RADII CORRECTED, VENT HOLE ADDED	KSSR 11.11.03	KVR 11.11.03	AP 11.11.03
2	---	TOLERANCES ADDED & NOTE 2 DELETED	KSSR 17.09.01	KVR 18.09.01	AP 18.09.01
1	C-2,C-3	BRAC. HT & HOLE HT. CHANGED	KSSR 18.09.99	AP 20.09.99	AP 20.09.99
REF. DRG.	RD-41013911-A-100	REV NO.	ZONE	BRIEF RECORD	PPD CHD APD
QTY.	1 NO.				
PART NO.	113				
MATRL.	AA 5083/ AA 5086	DRN	KSSRao 05.07.99	RESEARCH & DEVELOPMENT	
<b>NOTES:</b> 1. DRAWING NOT TO BE SCALED. 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.	CHD	KVRMURTHY 06.07.99	CUSTOMER :		
	APPROVED	A.Panigrahi 20.07.99	<b>HYD.OIL-IDG.OIL-FUEL COOLER (HE-1)</b> <b>BRACKET-IDG SIDE</b>		
	SCALE	2:1	WORK ORD. NO.:	NO. OFF:	
			YR OF ORD	SIZE	DRAWING NO.
			A4	RD-41013911-P-113	4



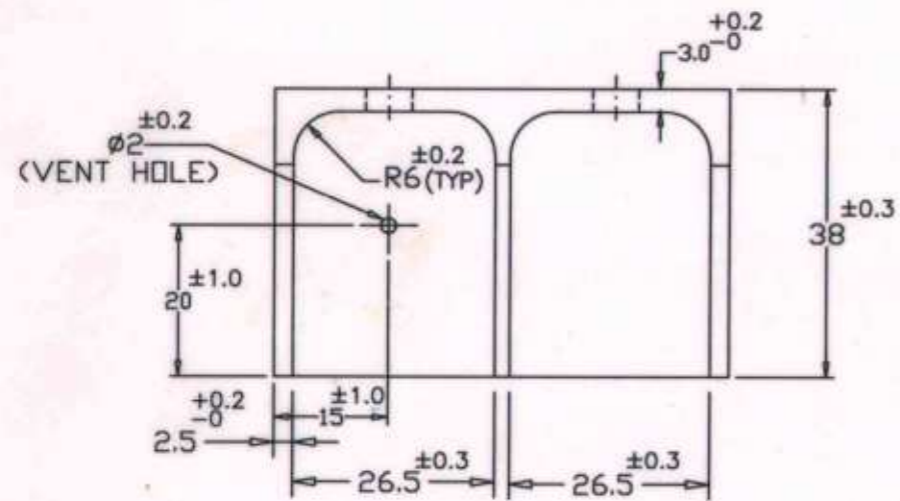
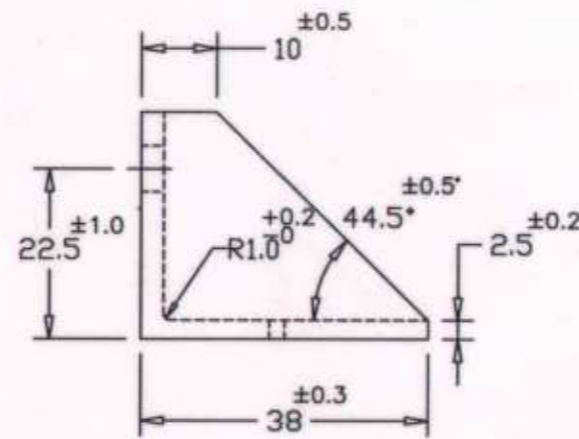
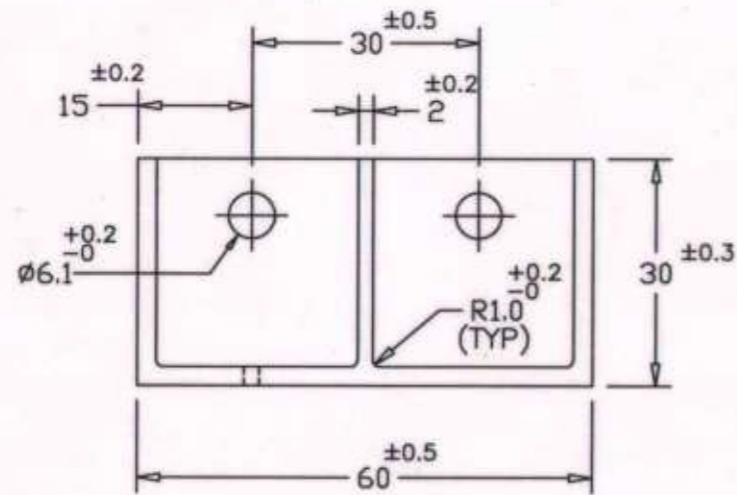




**NOTE:**

1. BOLT HOLES ARE TO BE DRILLED ONLY AFTER ASSEMBLY AND WELDING OF THE BRACKET TO HEAT EXCHANGER
2. ALL SURFACES TO BE MACHINED TO  $\nabla\nabla$  FINISH.
3. TOLERANCES INDICATED ARE NON CUMILATIVE.

REF. DRG.									
RD-41015301-A-100		REV NO.	ZONE	BRIEF RECORD	PPD	CHD	APD		
QTY.	2 NOS.	<b>BHPV BHARAT HEAVY PLATE AND VESSELS LTD.</b>							
PART NO.	10B	VISAKHAPATNAM - 530 012, INDIA							
MATRL.	MDN347A	DRN	B.uma 28.03.05	RESEARCH & DEVELOPMENT					
NOTES: 1. DRAWING NOT TO BE SCALED. 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.		CHD	CSA 29/03/05	CUSTOMER : ADA, BANGALORE					
		<b>PRECOOLER MOUNTING BRACKET</b>			WORK ORD. NO.: 41015301		NO. OFF: B		
		APPROVED	<i>[Signature]</i> 29/03/05	YR OF ORD	SIZE	DRAWING NO.	REV		
		SCALE	1:1	2004	A4	RD-41015301-P-108	0		



**NOTE:**

3. TOLERANCES INDICATED ARE NON CUMULATIVE.
2. ALL SURFACES TO BE MACHINED TO ∇∇ FINISH.
1. BOLT HOLES ARE TO BE DRILLED ONLY AFTER ASSEMBLY AND WELDING OF THE BRACKET TO HEAT EXCHANGER.

108B	MOUNTING BRACKET-2	1 No.	MDN 347A	0.12
P.No.	DESCRIPTION	QTY.	MATERIAL	WT(KG)



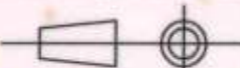
**BHARAT HEAVY PLATE & VESSELS LTD.**  
 (A Subsidiary of Bharat Yantra Nigam Limited)  
 VISAKHAPATNAM - 530 012 (A.P.)

DRN	K.S.S.RAO 08-10-99	RESEARCH & DEVELOPMENT
CHD	K.V.R 09-10-99	CUSTOMER : ADA, BANGALORE

APPROVED A.PANIGRAHI  
09-10-99

SCALE 1:1

ALL PROJECTIONS ARE FIRST ANGLE UNLESS OTHERWISE SPECIFIED



PRIMARY HEAT EXCHANGER MOUNTING BRACKET-2		WORK ORDER NO :	NO OFF:
YEAR OF ORDER	SIZE	DRAWING No.	REV
1996	A3	RD-41013905-P-108B	4

REV.NO	ZONE	BRIEF RECORD	PPD	CHD	APD
4	---	ADDITIONAL BOLT HOLE PROVIDED	B. Uma	KVR	AP
3	---	MOUNTING HOLE RIB THICKNESS INCREASED, CORNER RADII & TOLERANCES CORRECTED. VENT HOLE ADDED.	B.UMA	KVR	AP
2	---	INCORPORATED TOLERANCES NOT SHOWN EARLIER. NOTE - 3 ADDED.	KSSR	AP	AP
1	---	MATRL. SPEC. REVSD & TOLERANCES ADDED. NOTE ON GENERAL TOLERANCES DELETED.	KSSR	AP	AP

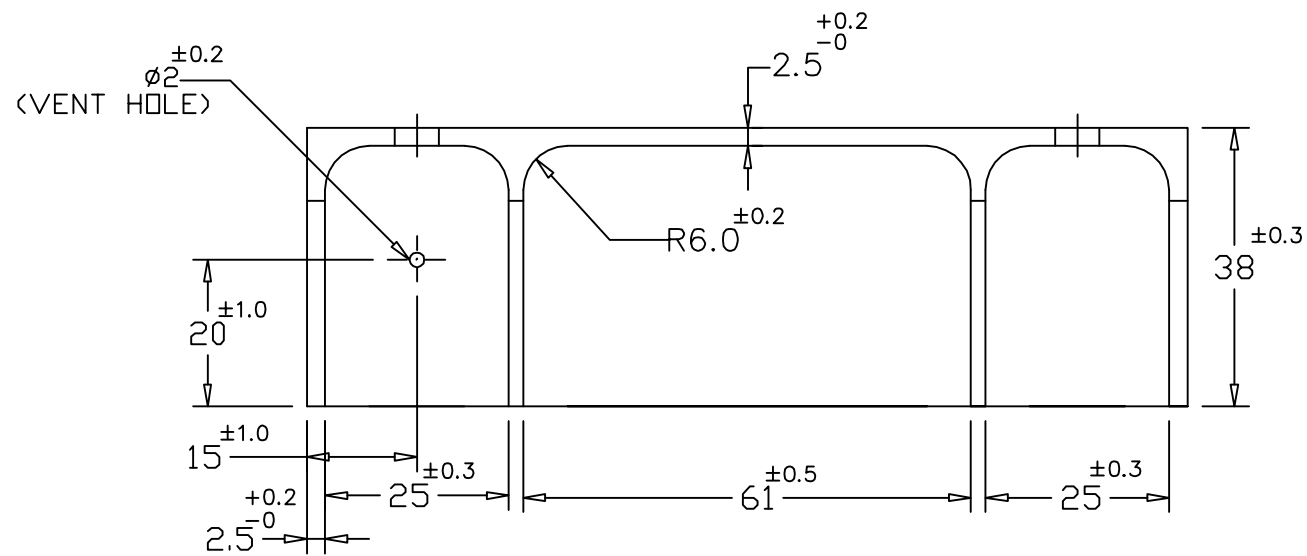
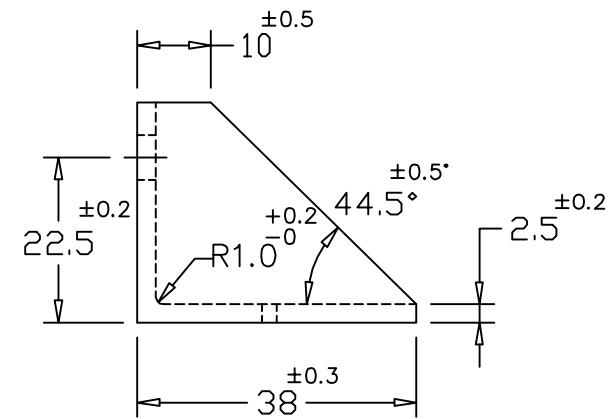
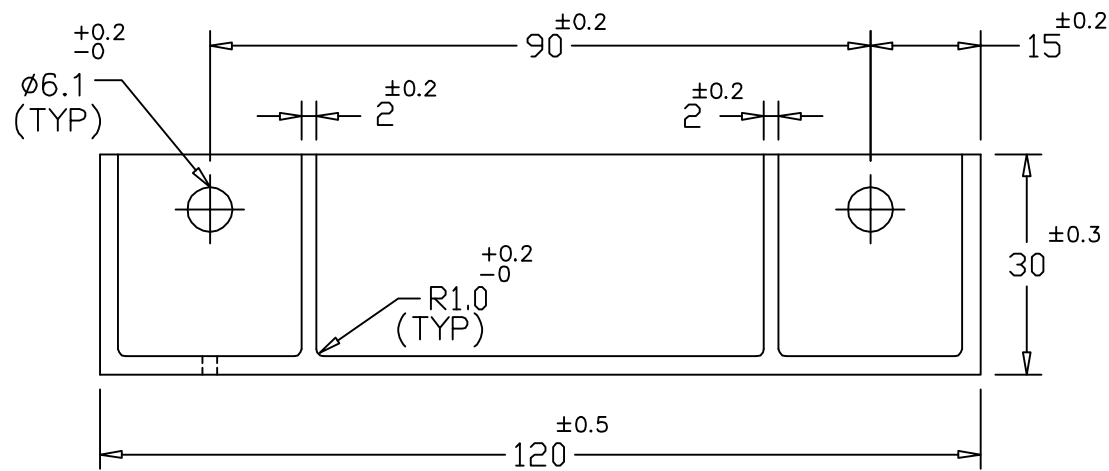
REF. DRG.  
RD-41013905-A-100

8 7

8 7 6 5 4 3 2 1

DRAWING NOT TO BE SCALED

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED



**NOTE:**

3. TOLERANCES INDICATED ARE NON CUMULATIVE.
2. ALL SURFACES TO BE MACHINED TO ∇∇ FINISH.
1. BOLT HOLES ARE TO BE DRILLED ONLY AFTER ASSEMBLY AND WELDING OF THE BRACKET TO HEAT EXCHANGER.

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FORM NO. 0421/O

108A	MOUNTING BRACKET-1	1No.	MDN 347A	0.21
P.No.	DESCRIPTION	QTY.	MATERIAL	WT(KG)



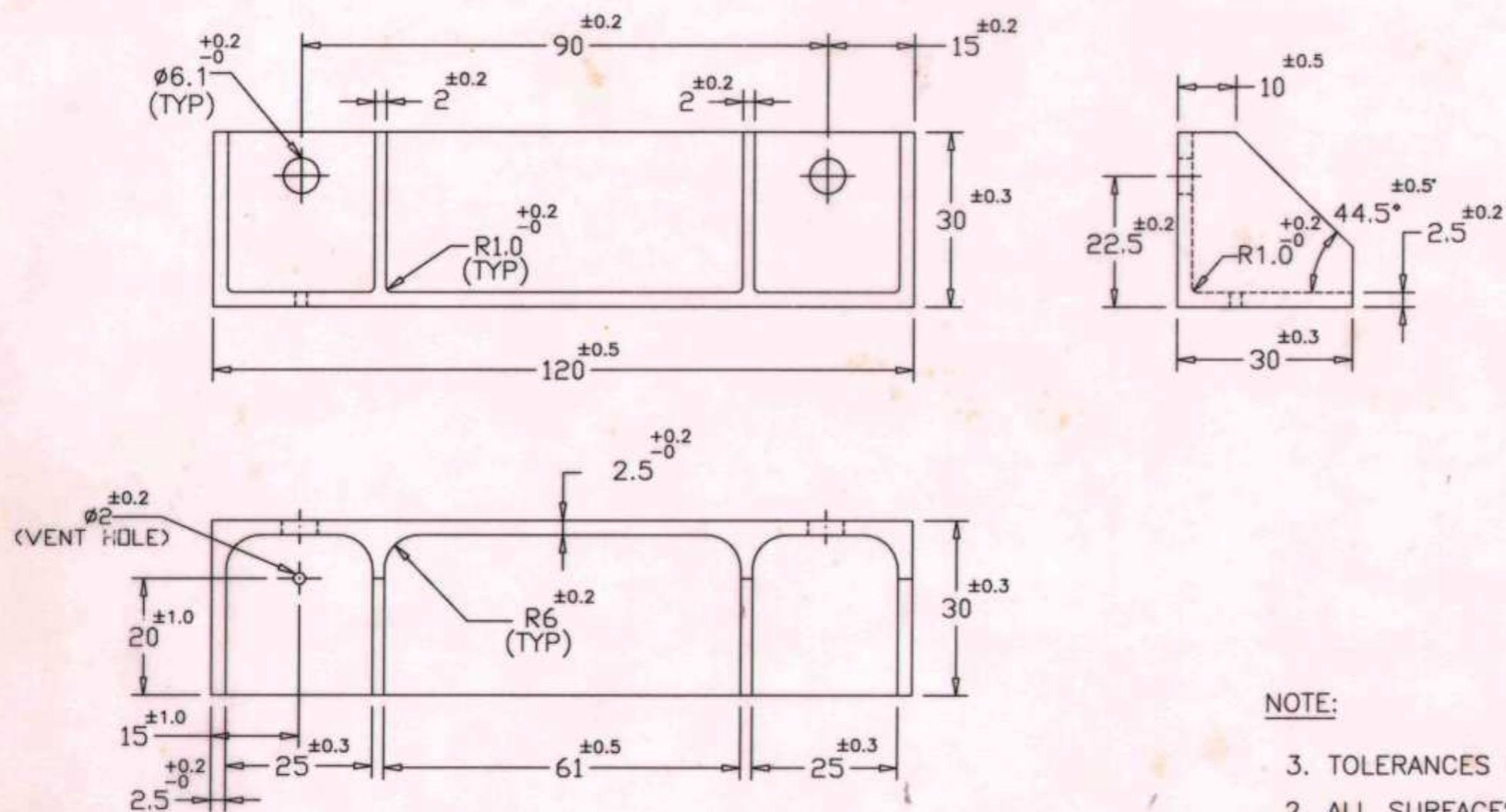
**BHARAT HEAVY PLATE & VESSELS LTD.**

(A Subsidiary of Bharat Yantra Nigam Limited)  
VISAKHAPATNAM - 530 012 (A.P.)

DRN	K.S.S.RAO 03-10-99	RESEARCH & DEVELOPMENT		
CHD	K.V.R 04-10-99	CUSTOMER : ADA, BANGALORE		
APPROVED	A.PANIGRAHI 04-10-99	<b>PRIMARY HEAT EXCHANGER MOUNTING BRACKET - 1</b>		
SCALE	1:1			
ALL PROJECTIONS ARE FIRST ANGLE UNLESS OTHERWISE SPECIFIED		WORK ORDER NO :	NO OFF:	
		YEAR OF ORDER	SIZE	DRAWING No.
		1996	A3	RD-41013905-P-108A
				REV
				3



REF. DRG.  
RD-41013905-A-100

REV.NO	ZONE	BRIEF RECORD	PPD	CHD	APD
3	---	CORNER RADII & TOLERANCES CORRECTED. VENT HOLE ADDED.			
2	---	INCORPORATED TOLERANCES NOT SHOWN EARLIER. NOTE - 3 ADDED.	KSSR	AP	AP
1	---	MATRL. SPEC REVSD. & TOLERANCES ADDED. NOTE ON GENERAL TOLERANCES DELETED.	15-03-02	16-03-02	16-03-02
			20-07-01	21-07-01	21-07-01



## NOTE:

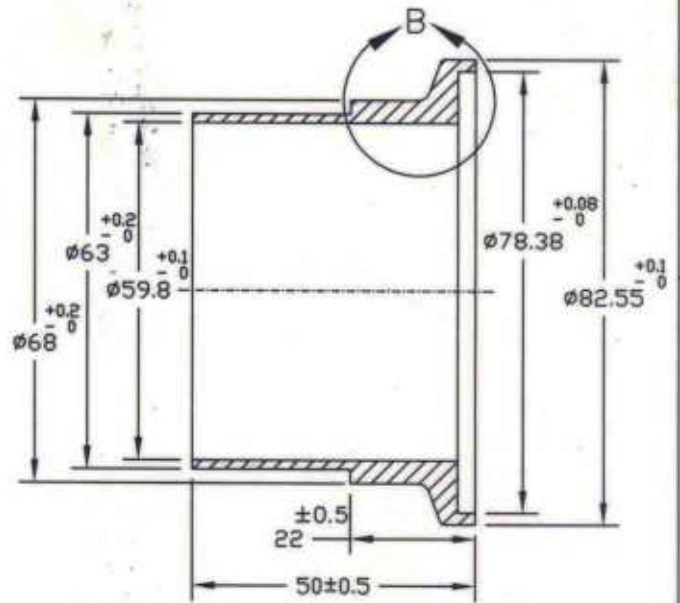
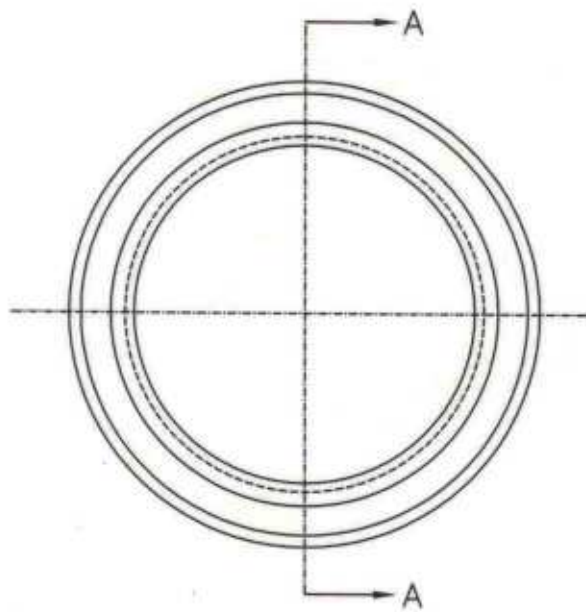
3. TOLERANCES INDICATED ARE NON CUMULATIVE.
2. ALL SURFACES TO BE MACHINED TO  $\nabla$  FINISH.
1. BOLT HOLES ARE TO BE DRILLED ONLY AFTER ASSEMBLY AND WELDING OF THE BRACKET TO HEAT EXCHANGER.

108C	MOUNTING BRACKET-3	1No.	MDN 347A	0.19
P.No.	DESCRIPTION	QTY.	MATERIAL	WT(KG)
 <b>BHARAT HEAVY PLATE &amp; VESSELS LTD.</b> (A Subsidiary of Bharat Yantra Nigam Limited) VISAKHAPATNAM - 530 012 (A.P.)				
DRN	K.S.S.RAO 20-07-01	RESEARCH & DEVELOPMENT		
CHD	K.V.R 21-07-01	CUSTOMER : ADA, BANGALORE		
APPROVED	A.PANIGRAHI 21-07-01	<b>PRIMARY HEAT EXCHANGER MOUNTING BRACKET - 3</b>		
SCALE	1:1	WORK ORDER NO : _____ NO OFF: _____		
ALL PROJECTIONS ARE FIRST ANGLE UNLESS OTHERWISE SPECIFIED		YEAR OF ORDER	SIZE	DRAWING No.
		1996	A3	RD-41013905-P-108C
REV		REV		1

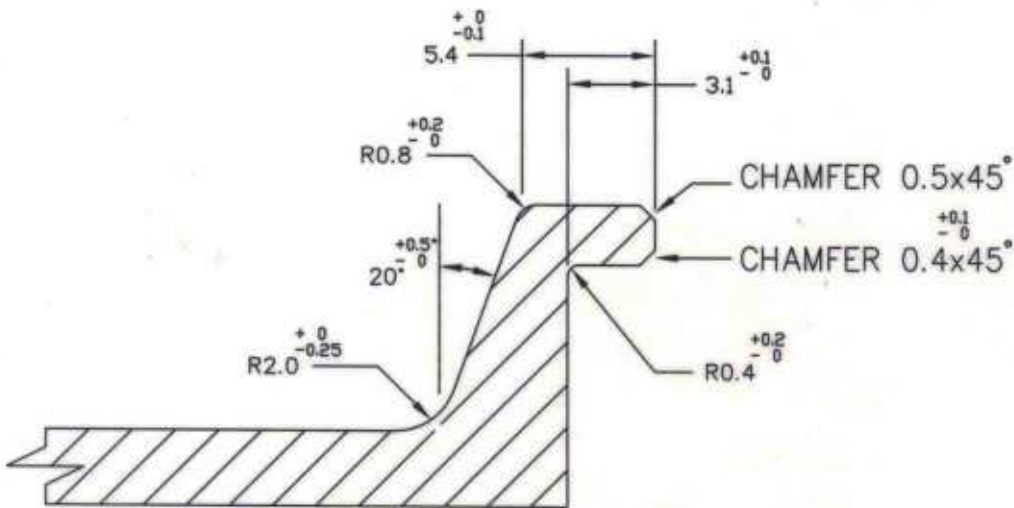
REF. DRG.

RD-41013905-A-100

REV.NO	ZONE	BRIEF RECORD	PPD	CHD	APD
1	---	CORNER RADII & TOLERANCES CORRECTED. VENT HOLE ADDED.	B. Uma	6-10-03	7-10-03



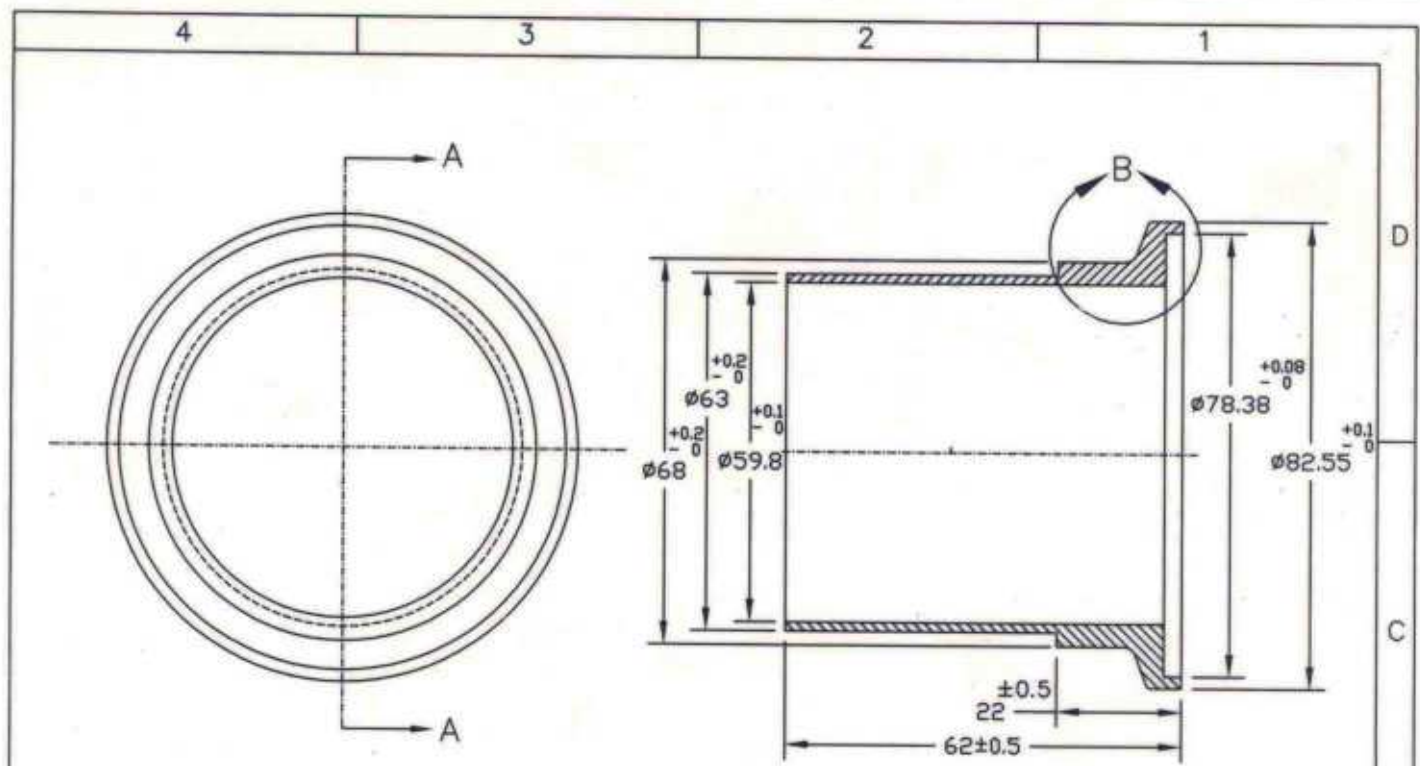
SECTION - AA



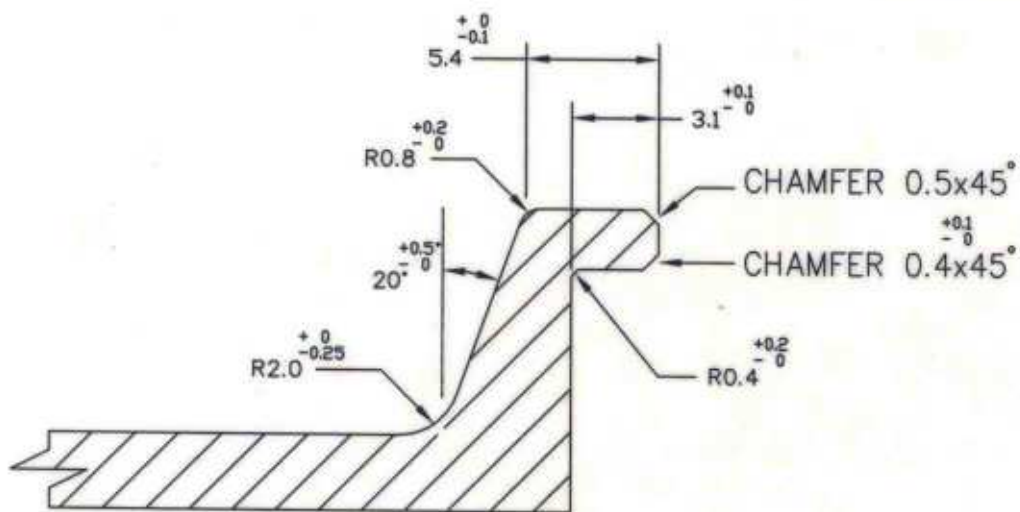
DETAIL - BB

1. THIS ITEM IS EQUIVALENT TO M/s INTERFLEX PART No. 1-2734-02-63-2E9
2. ALL SURFACES TO BE MACHINED TO  $\nabla\nabla$  FINISH

REF. DRG.									
RD-41015301-A-100		1	---	MATERIAL SPECIFICATION REVISED.		B.Uma	10.05.08	10/05/08	10/05/08
REV NO.		ZONE	BRIEF RECORD		PPD	CHD	APD		
QTY.	1 No.	<b>BHPU BHARAT HEAVY PLATE AND VESSELS LTD.</b>							
PART NO.	105	VISAKHAPATNAM - 530 012, INDIA							
MATRL.	MDN 347A	DRN	B.Uma	RESEARCH & DEVELOPMENT					
			28.03.05	CUSTOMER : ADA, BANGALORE					
NOTES:		CHD	KSSRao	PRECOOLER					
			29-03-05	BLEED AIR INLET CONNECTOR (63 SZ, FEMALE)					
1. DRAWING NOT TO BE SCALED.		APPROVED	A.Panigrahi	WORK ORD. NO.:			NO. OFF:		
2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.			29.03.05	YR OF ORD	SIZE	DRAWING NO.		REV	
		SCALE	NTS	2004	A4	RD-41015301-P-105		1	



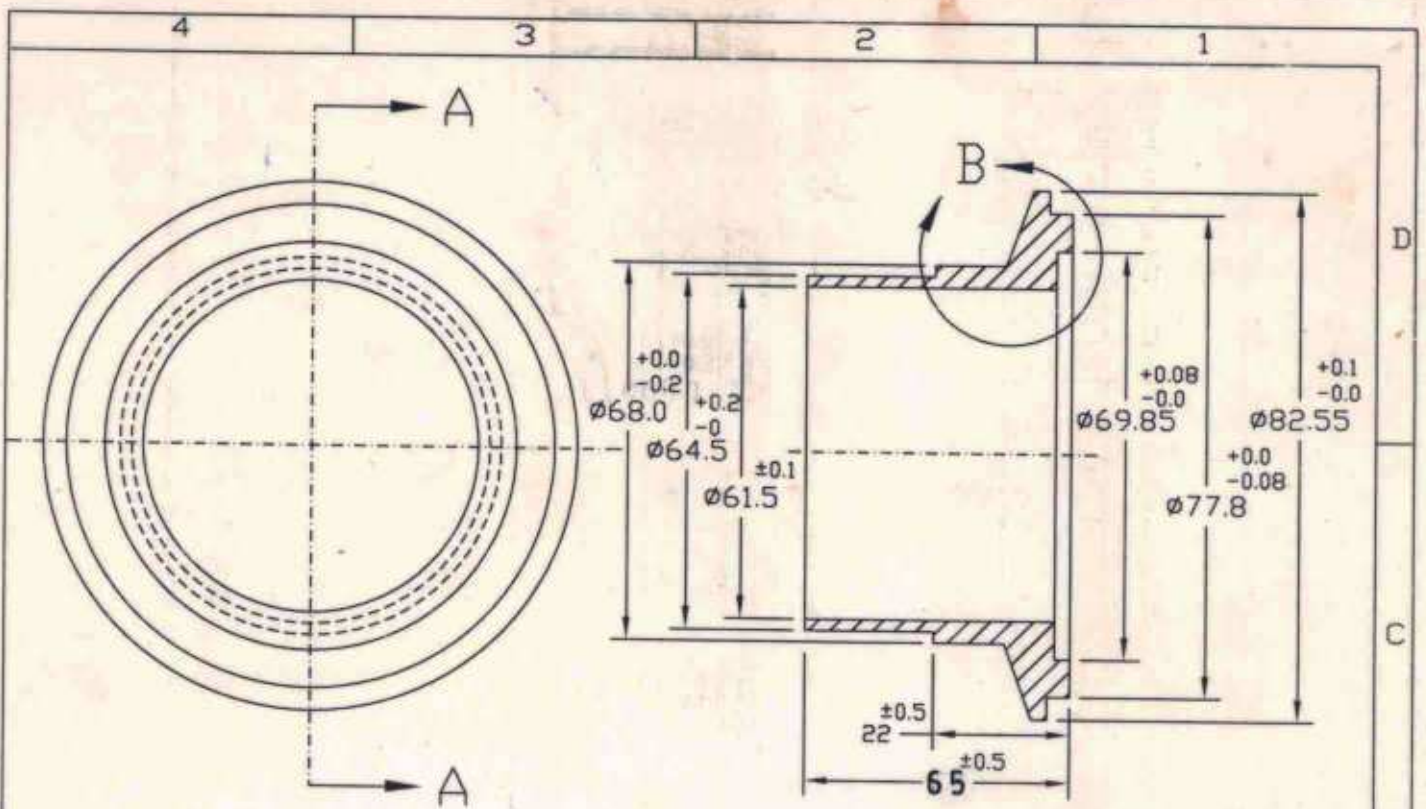
SECTION - AA



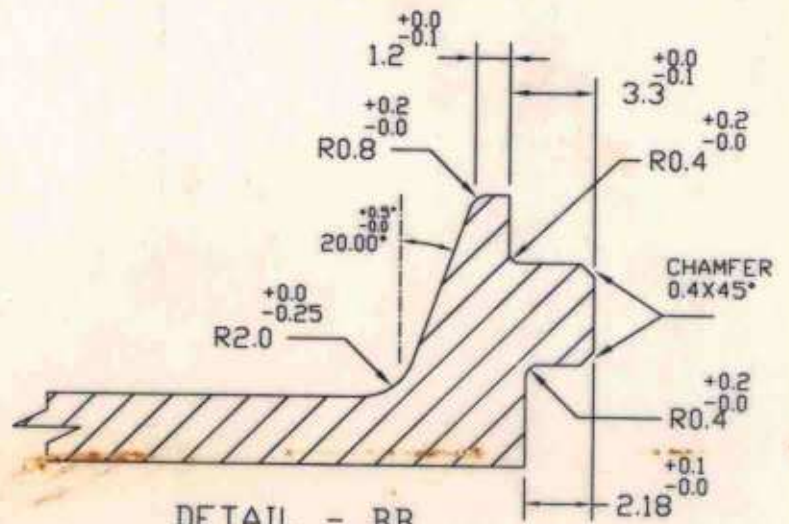
DETAIL - BB

1. THIS ITEM IS EQUIVALENT TO M/s INTERFLEX PART No. 1-2734-02-63-2E9
2. ALL SURFACES TO BE MACHINED TO  $\nabla\nabla$  FINISH

REF. DRG.									
RD-41015301-A-100		1	---	MATERIAL SPECIFICATION REVISED.		B.Uma 10.05.08	K.S.R. 10/05/08	APD	
QTY. 1 No.		REV NO.	ZONE	BRIEF RECORD		PPD	CHD	APD	
PART NO. 106		<b>BHPV BHARAT HEAVY PLATE AND VESSELS LTD.</b>							
MATRL. MDN 347A		VISAKHAPATNAM - 530 012, INDIA							
NOTES: 1. DRAWING NOT TO BE SCALED. 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.		DRN	B.Uma 28.03.05	RESEARCH & DEVELOPMENT					
		CHD	KSSRao 29-03-05	CUSTOMER : ADA, BANGALORE					
		APPROVED	A.Panigrahi 29.03.05	<b>PRECOOLER</b>					
		SCALE	NTS	BLEED AIR OUTLET CONNECTOR (63 SZ, FEMALE)					
		WORK ORD. NO.:			NO. OFF:				
		YR OF ORD	SIZE	DRAWING NO.			REV		
		2004	A4	RD-41015301-P-106			1		



SECTION - AA

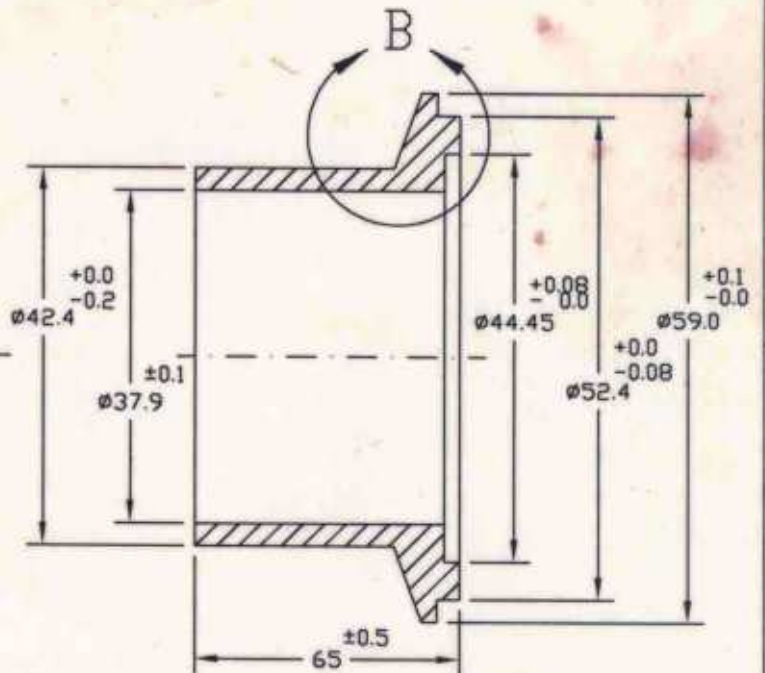
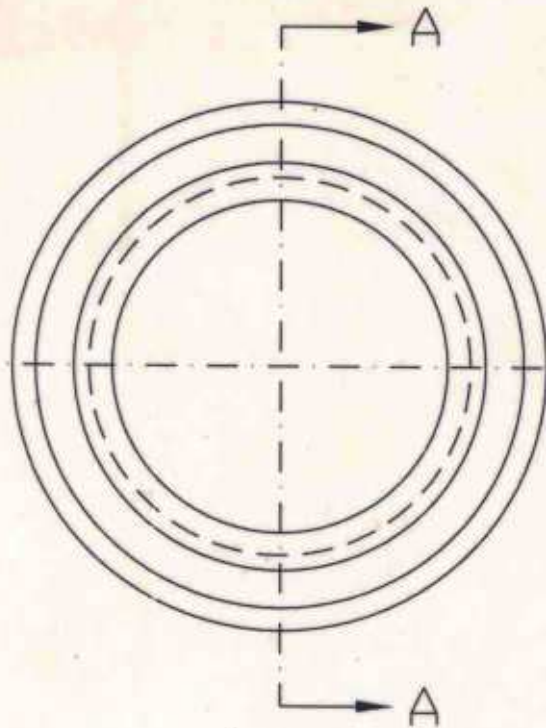


DETAIL - BB

NOTE :

1. THIS ITEM IS EQUIVALENT TO M/s INTERFLEX PART No. 1-2734-03-63-1E
2. ALL SURFACES TO BE MACHINED TO  $\nabla\nabla\nabla$  FINISH

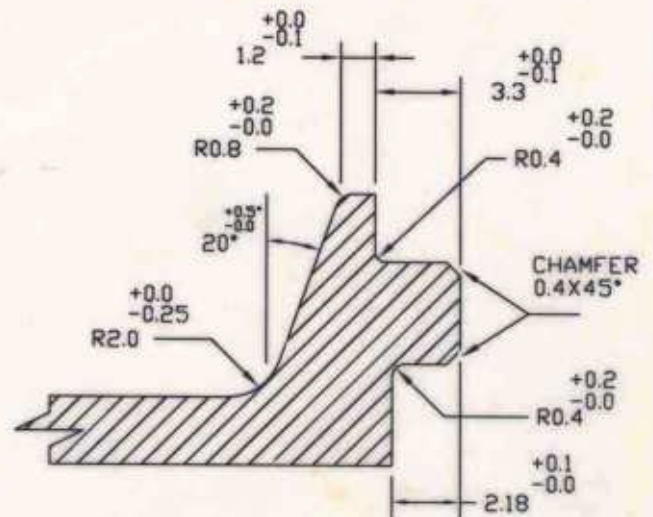
REF. DRG. RD-41013905-A-100		REV NO.	ZONE	BRIEF RECORD	PPD	CHD	APD
QTY.	IND	<b>BHARAT HEAVY PLATE AND VESSELS LTD.</b> VISAKHAPATNAM - 530 012, INDIA					
PART NO.	109D						
MATL.	MDN 347A	DRN	B.uma 16/10/02	RESEARCH & DEVELOPMENT			
NOTES: 1. DRAWING NOT TO BE SCALED 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.		CHD	CSM 16-10-02	CUSTOMER : ADA, BANGALORE			
		APPROVED	Ail 17-10-02	PRIMARY HEAT EXCHANGER CHARGE AIR OUTLET CONNECTOR		WORK ORD. NO.	NO. OFF
		SCALE	NTS	YR OF ORD	SIZE	DRAWING NO.	REV
					A4	RD-41013905-P-109D	0



SECTION - AA

REQMTS FOR THIS ITEM

SDG.ORD. NUMBER	PART NOS	PART NAME	QTY/EQPT
41013905	109C	CHARGE AIR BY-PASS PIPE CONNECTOR	1ND

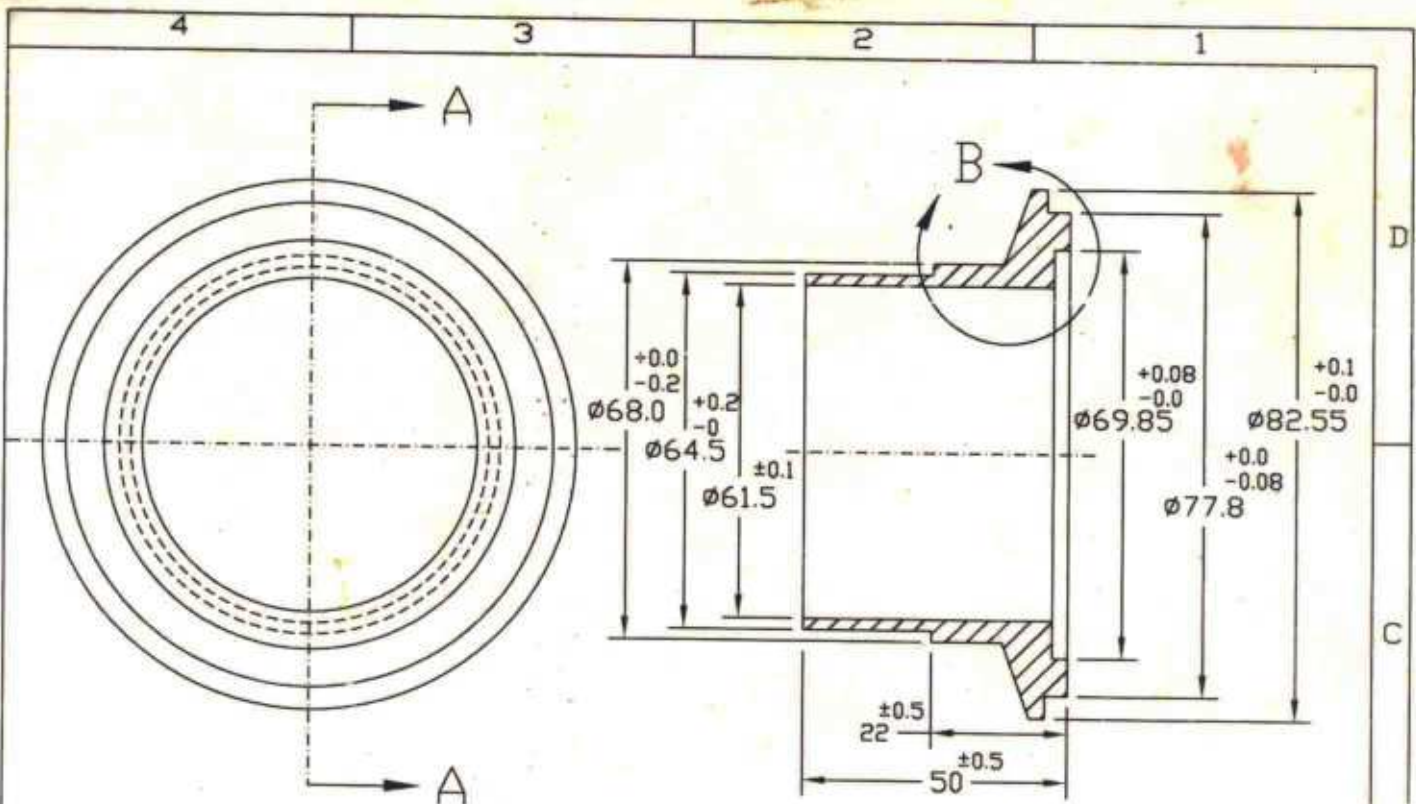


DETAIL - BB

NOTE :

1. THIS ITEM IS EQUIVALENT TO M/s INTERFLEX PART No. 1-2734-03-40-1E
2. ALL SURFACES TO BE MACHINED TO▽▽▽FINISH

REF. DRG.	REV NO.	ZONE	BRIEF RECORD	PPD	CHD	APD
RD-41013905-A-100	2	B4	REQMT.TABLE CORRECTED			
	1	B4	REQMT.TABLE ADDED			
QTY.	SEE TABLE	<b>BHPV</b> BHARAT HEAVY PLATE AND VESSELS LTD. VISAKHAPATNAM - 530 012, INDIA				
PART NO.	SEE TABLE					
MATL.	MDN 347A					
DRN	15/05/99					
NOTES:		CHD	15/05/99	RESEARCH & DEVELOPMENT		
1. DRAWING NOT TO BE SCALED		APPROVED	15/05/99	CUSTOMER : A.D.A., BANGLORE		
2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.		SCALE	NTS	WORK ORD. NO. SEE TABLE		NO. OFF 8
				YR OF ORD	SIZE	DRAWING NO.
					A4	RD-STD-F-006
						REV
						2



REQMTS FOR THIS ITEM

SDG.ORD. NUMBER	PART NOS	PART NAME	QTY/EQPT
41013905	109B	CHARGE AIR INLET CONNECTOR	1NO

NOTE :

1. THIS ITEM IS EQUIVALENT TO M/s INTERFLEX PART No. 1-2734-03-63-1E
2. ALL SURFACES TO BE MACHINED TO  $\nabla\nabla\nabla$  FINISH

3	----	FERRULE PROFILE MODIFIED	B.uma	Ush	Ail
2	B4	REQMT.TABLE CORRECTED	26/7/02	26/07/02	26/07/02
1	B4	REQMT.TABLE ADDED	KSSR 20-03-02	AP 21-03-02	AP 21-03-02
			KSSR 28-07-00	AP 31-07-00	AP 31-07-00
REV NO.	ZONE	BRIEF RECORD	PPD	CHD	APD

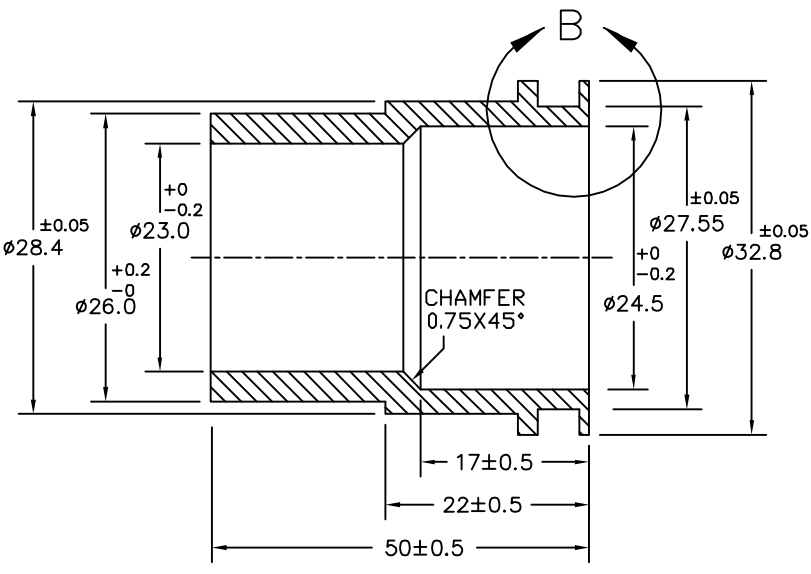
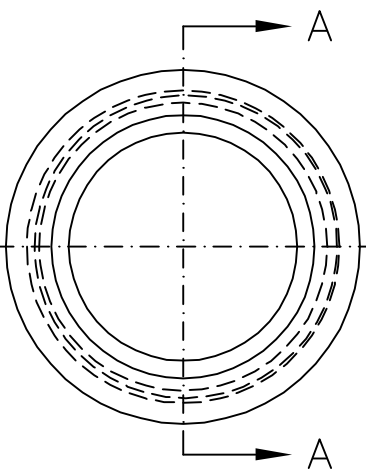
REF. DRG.  
RD-41013905-A-100

QTY. SEE TABLE  
PART NO. SEE TABLE  
MATL. MDN 347A

**BHPV** BHARAT HEAVY PLATE AND VESSELS LTD.  
VISAKHAPATNAM - 530 012, INDIA

DRN	B.uma 15/5/99	RESEARCH & DEVELOPMENT			
CHD	Ush 15/05/99	CUSTOMER : ADA, BANGALORE			
APPROVED	Ail 15/05/99	SS FERRULE-63 SZ, MALE			
SCALE	NTS	WORK ORD. NO.	SEE TABLE	NO. OFF	
		YR OF ORD	SIZE	DRAWING NO.	REV
			A4	RD-STD-F-008	3

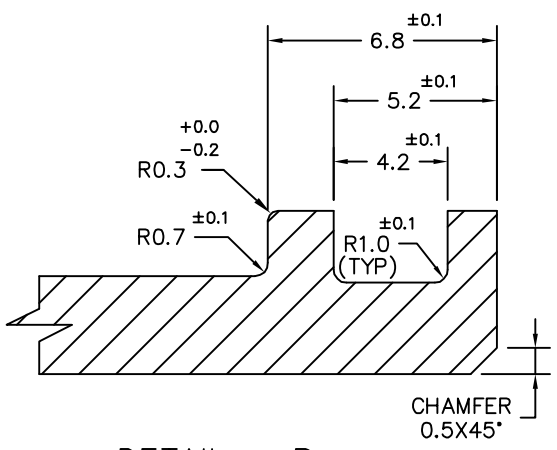
NOTES:  
1. DRAWING NOT TO BE SCALED  
2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.



SECTION - AA

REQMTS FOR THIS ITEM

EQPT.PART NUMBER	PART NO	PART NAME	QTY/EQPT
41013910	111	F.T.P. AIR I/O CONNECTOR	2NOS



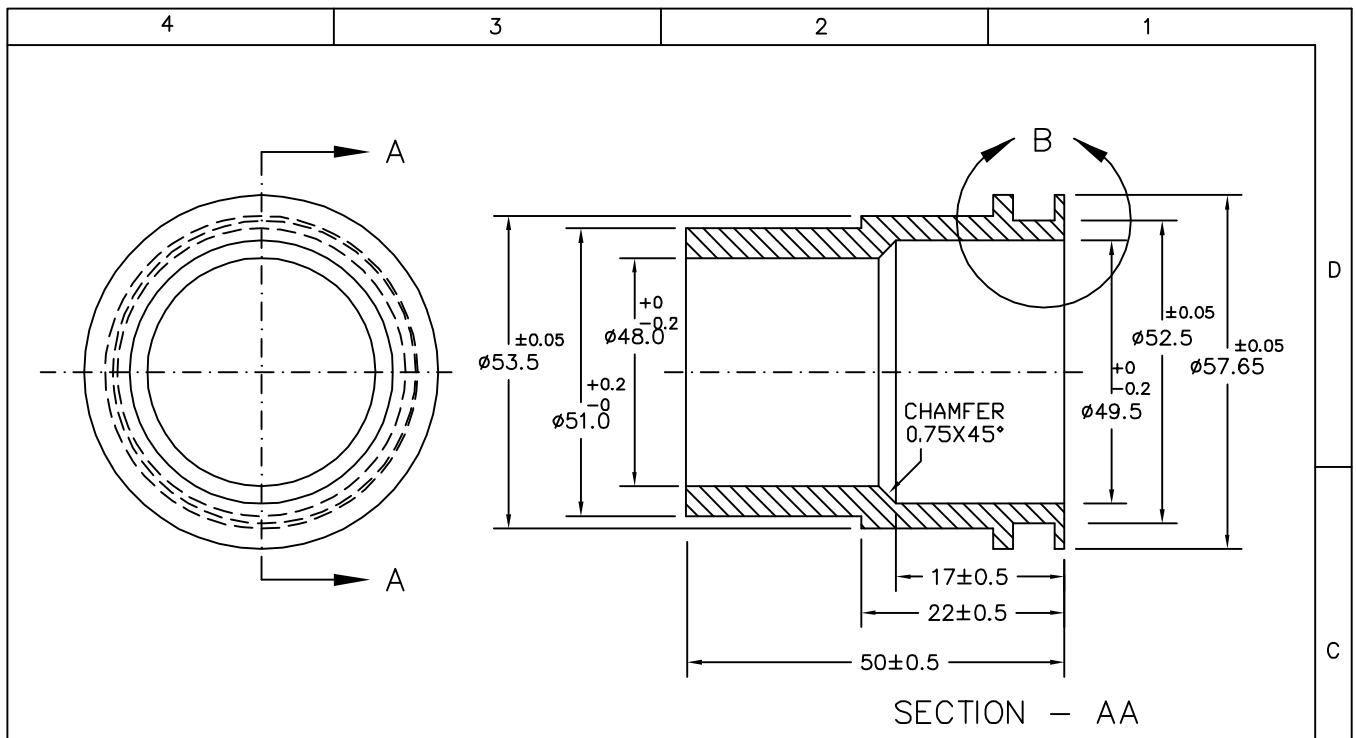
DETAIL - B

NOTE :

1. THIS ITEM IS EQUIVALENT TO M/s INTERFLEX MATRL. SPECN. AA 5083 INCLUDED PART No. 1-22609-02-25-E
2. ALL SURFACES TO BE MACHINED TO  $\nabla\nabla$  FINISH

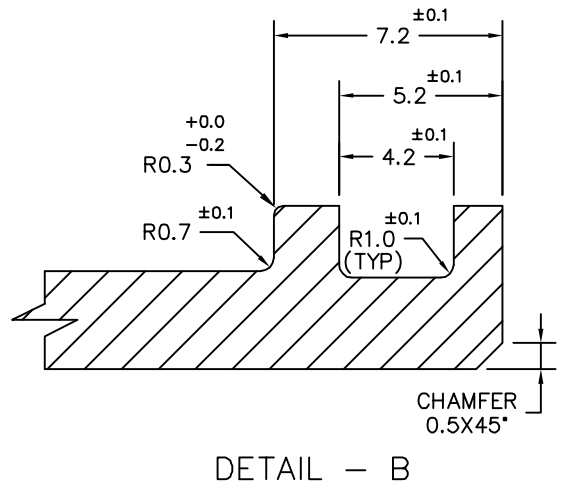
5	---	MATRL.SPECN. AA 5083 INCLUDED AS PER MOD No. MOD/CHE/001. W.O.No. RENAMED AS EQPT. PART No.			
4	---	REQMT TABLE CORRECTED	B.UMA 19.07.03	KVR 19.07.03	AP 19.07.03
3	C1-D4	FERRULE PROFILE MODIFIED	UMA 25.07.02	KSSR 26.07.02	AP 26.07.02
2	B-4	REQMT.TABLE MODIFIED	UMA 02.04.02	KSSR 02.04.02	AP 03.04.02
1	B-4	REQMT.TABLE ADDED	KSSR 28.07.00	AP 31.07.00	AP 31.07.00
REF. DRG.	RD-41011201-A-100	REV NO.	ZONE	BRIEF RECORD	PPD CHD APD

QTY.	SEE TABLE		<b>BHARAT HEAVY ELECTRICALS LTD.</b> <b>HEAVY PLATES &amp; VESSELS PLANT</b> VISAKHAPATNAM - 530012, INDIA			
PART NO.	SEE TABLE		RESEARCH & DEVELOPMENT			
MATRL.	AA 5083/ AA 5086	DRN	B.Uma 15.05.99	CUSTOMER :		
NOTE: ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.		CHD	KSSRao 15.05.99	<b>FERRULE-25 SZ</b>		
		APPROVED	A.Panigrahi 15.05.99	WORK ORD. NO.:	NO. OFF:	
		SCALE	NTS	YR OF ORD	SIZE	DRAWING NO.
					A4	RD-STD-F-001
					REV	
					5	




REQMTS FOR THIS ITEM

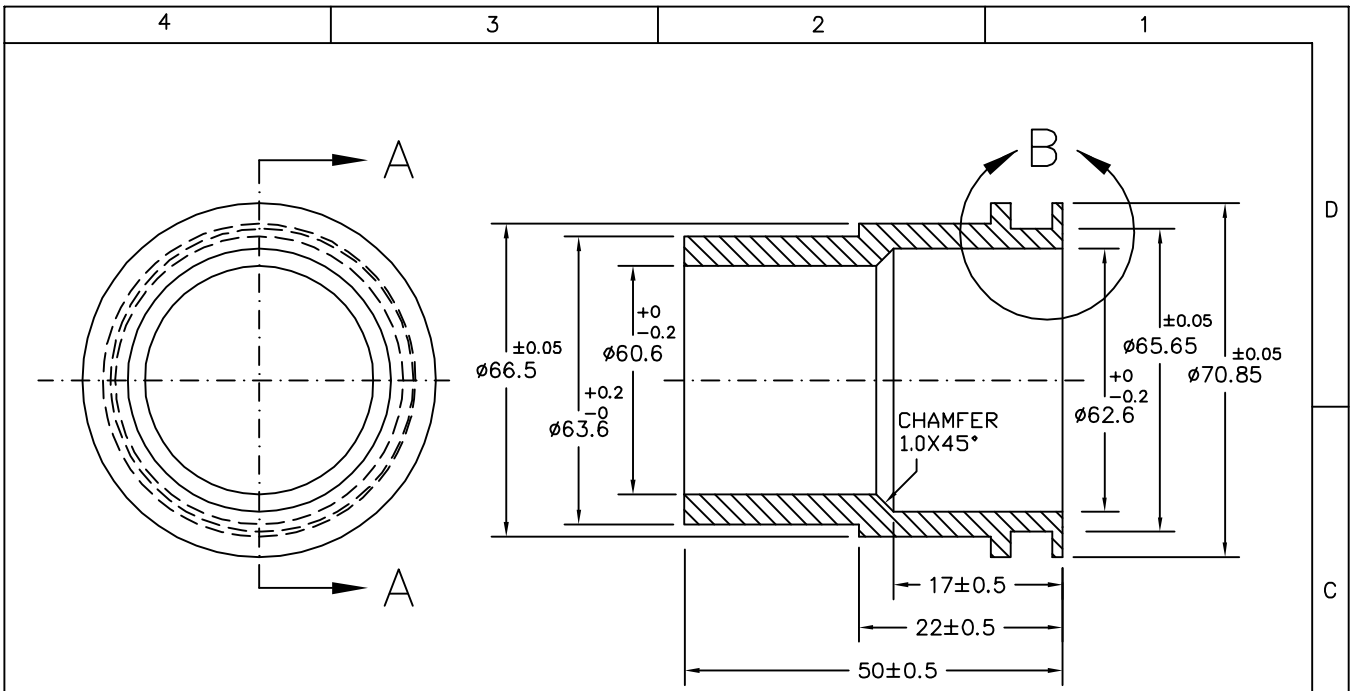
EQPT.PART NUMBER	PART NO	PART NAME	QTY/EQPT
41013910	110	CHARGE AIR I/O CONNECTOR	2 NOS
41013906	107	HOT AIR ENTRY /EXIT CONNECTOR	2 NOS
41013907	111	HOT AIR OUTLET CONNECTOR	1 NO
41013908	109B	AIR EXIT (AVIONICS) CONNECTOR	1 NO



NOTE :

1. THIS ITEM IS EQUIVALENT TO M/s INTERFLEX PART No. 1-22609-02-50-E
2. ALL SURFACES TO BE MACHINED TO ∇∇ FINISH

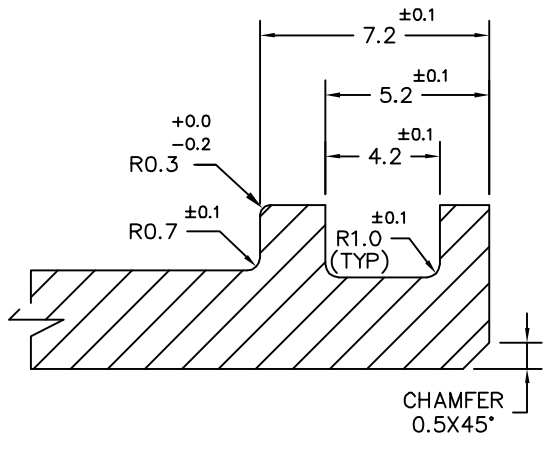
	5	---	MATRL.SPECN. AA 5083 INCLUDED AS PER MOD No. MOD/CHE/001. W.O.No. RENAMED AS EQPT. PART No.				
	4	---	REQMT TABLE CORRECTED	B.UMA 19.07.03	KVR 19.07.03	AP 19.07.03	
	3	C1-D4	FERRULE PROFILE MODIFIED	UMA 25.07.02	KSSR 26.07.02	AP 26.07.02	
REF. DRG. RD-41011201-A-100 RD-41013906-A-100 RD-41013907-A-100 RD-41013908-A-100	2	B-4	REQMT.TABLE MODIFIED	UMA 02.04.02	KSSR 02.04.02	AP 03.04.02	
	1	B-4	REQMT.TABLE ADDED	KSSR 28.07.00	AP 31.07.00	AP 31.07.00	
	REV NO.	ZONE	BRIEF RECORD	PPD	CHD	APD	
QTY.	SEE TABLE		 <b>BHARAT HEAVY ELECTRICALS LTD.</b> <b>HEAVY PLATES &amp; VESSELS PLANT</b> VISAKHAPATNAM - 530012, INDIA				
PART NO.	SEE TABLE						
MATRL.	AA 5083/ AA 5086	DRN	B.Uma 15.05.99	RESEARCH & DEVELOPMENT			
		CHD	KSSRao 15.05.99	CUSTOMER :			
NOTE: ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.		APPROVED	A.Panigrahi 15.05.99	<b>FERRULE-50 SZ</b>			
		SCALE	NTS	WORK ORD. NO.:	NO. OFF:		
				YR OF ORD	SIZE	DRAWING NO.	REV
					A4	RD-STD-F-002	5



SECTION - AA

REQMTS FOR THIS ITEM

EQPT. PART NUMBER	PART NO	PART NAME	QTY/ EQPT
41013906	103	COLD AIR EXIT CONNECTOR	1NO
41013907	108	HOT AIR INLET CONNECTOR	1NO
41013909	109	INLET/OUTLET CONNECTOR	4NOS



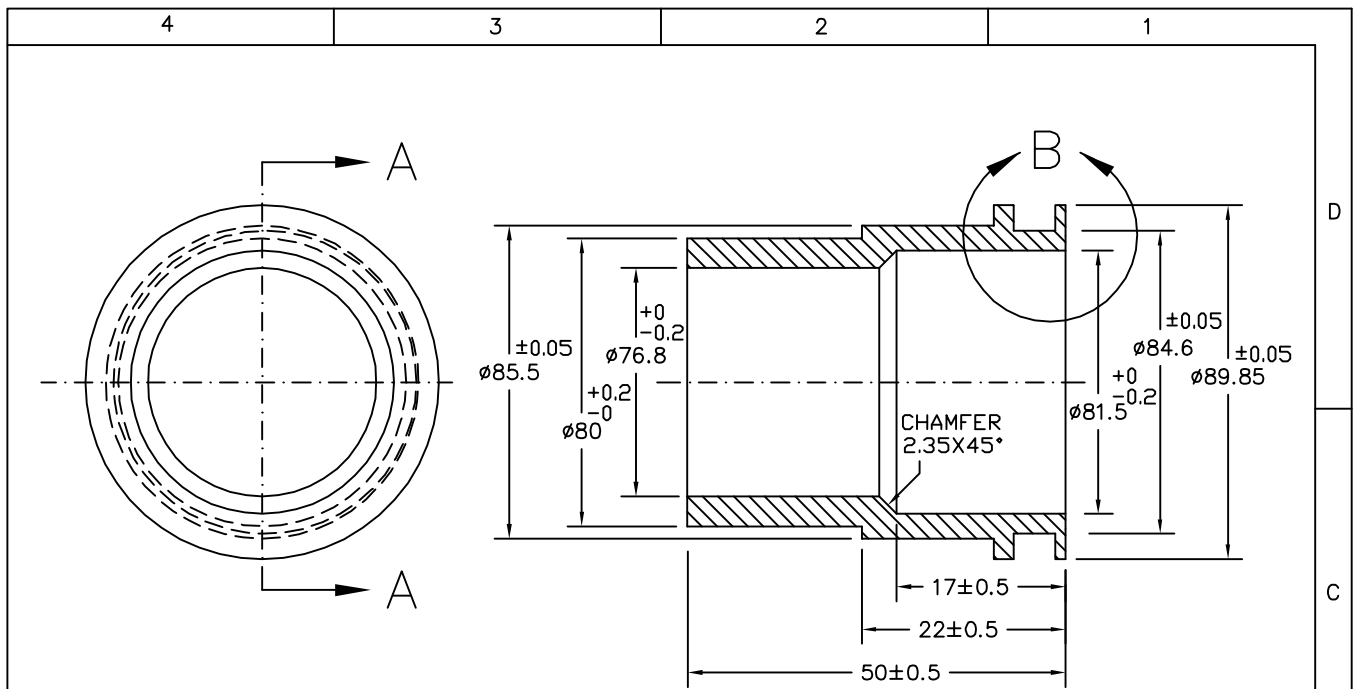
DETAIL - B

NOTE :

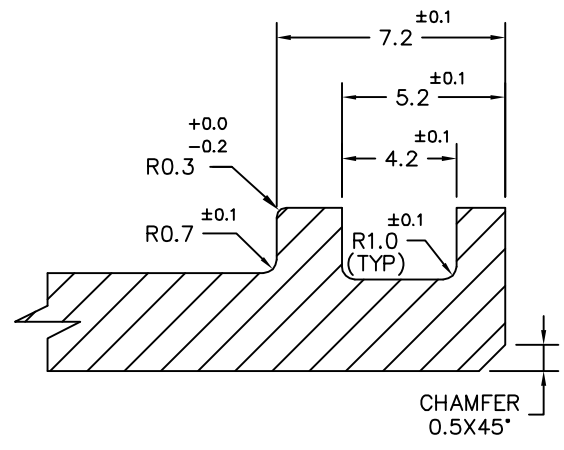
1. THIS ITEM IS EQUIVALENT TO M/s INTERFLEX PART No. 1-22609-02-63-E
2. ALL SURFACES TO BE MACHINED TO ∇∇ FINISH

REV NO.	ZONE	BRIEF RECORD	PPD	CHD	APD
5	---	MATRL.SPECN. AA 5083 INCLUDED AS PER MOD No. MOD/CHE/001. W.O.No. RENAMED AS EQPT. PART No.			
4	---	REQMT TABLE CORRECTED	B.UMA 19.07.03	KVR 19.07.03	AP 21.07.03
3	C1-D4	FERRULE PROFILE MODIFIED	UMA 25.07.02	KSSR 26.07.02	AP 26.07.02
2	B-4	REQMT.TABLE MODIFIED	UMA 02.04.02	KSSR 02.04.02	AP 03.04.02
1	B-4	REQMT.TABLE ADDED	KSSR 28.07.00	AP 31.07.00	AP 31.07.00

QTY. SEE TABLE				<b>BHARAT HEAVY ELECTRICALS LTD.</b> <b>HEAVY PLATES &amp; VESSELS PLANT</b> VISAKHAPATNAM - 530012, INDIA			
PART NO. SEE TABLE							
MATRL.	AA 5083/ AA 5086	DRN	B.Uma 15.05.99	RESEARCH & DEVELOPMENT			
NOTE: ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.		CHD	KSSRao 15.05.99	CUSTOMER :			
		APPROVED	A.Panigrahi 15.05.99	<b>FERRULE-63 SZ</b>			
		SCALE	NTS	WORK ORD. NO.:	NO. OFF:		
				YR OF ORD	SIZE	DRAWING NO.	REV
			A4	RD-STD-F-003	5		



SECTION - AA



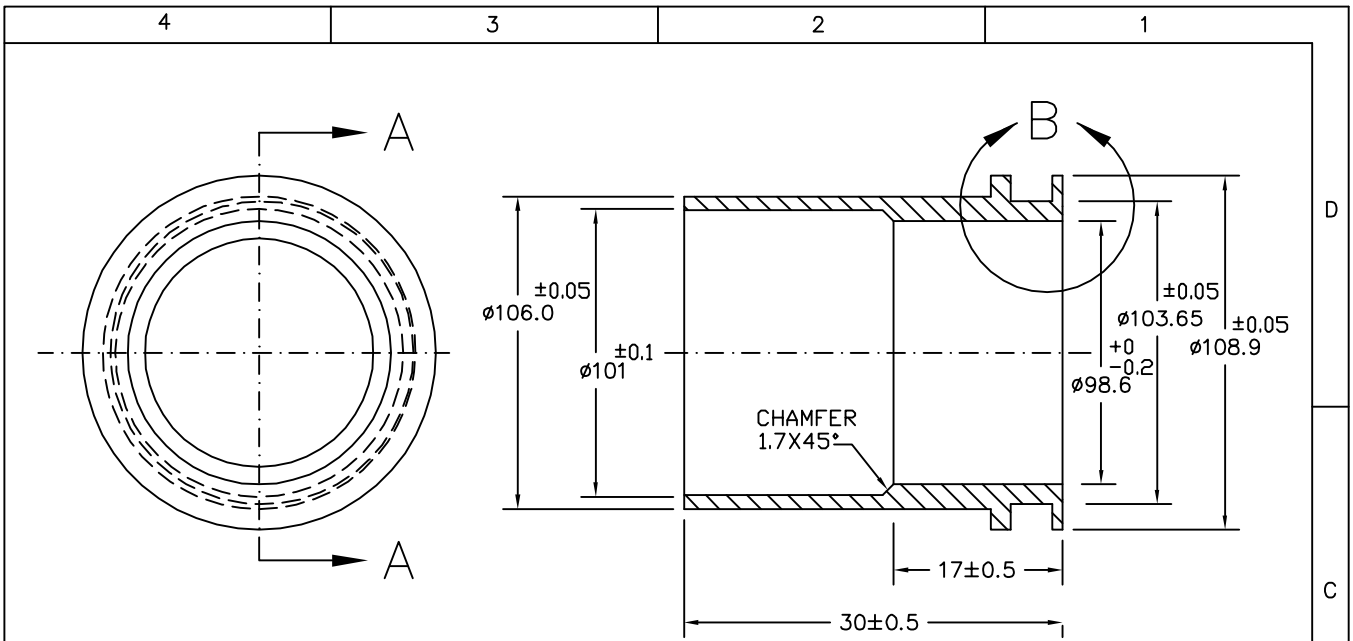
REQMTS FOR THIS ITEM

EQPT.PART NUMBER	PART NO	PART NAME	QTY/EQPT
41013907	113	COLD AIR OUTLET CONNECTOR	1 NO
41013908	107B	AIR ENTRY CONNECTOR	1 NO

- NOTE :**
1. THIS ITEM IS EQUIVALENT TO M/s INTERFLEX PART No. 1-22609-02-80-E
  2. ALL SURFACES TO BE MACHINED TO ∇∇ FINISH

REF. DRG.	REV NO.	ZONE	BRIEF RECORD	PPD	CHD	APD
RD-41013907-A-100 RD-41013908-A-100	5	---	MATRL.SPECN. AA 5083 INCLUDED AS PER MOD No. MOD/CHE/001. W.O.No. RENAMED AS EQPT. PART No.			
	4	---	REQMT TABLE CORRECTED	B.UMA 18.07.03	KVR 19.07.03	AP 21.07.03
	3	C1-D4	FERRULE PROFILE MODIFIED	UMA 25.07.02	KSSR 26.07.02	AP 26.07.02
	2	B-4	REQMT.TABLE MODIFIED	UMA 02.04.02	KSSR 02.04.02	AP 03.04.02
	1	B-4	REQMT.TABLE ADDED	KSSR 28.07.00	AP 31.07.00	AP 31.07.00

QTY. SEE TABLE				<b>BHARAT HEAVY ELECTRICALS LTD.</b> <b>HEAVY PLATES &amp; VESSELS PLANT</b> VISAKHAPATNAM - 530012, INDIA			
PART NO. SEE TABLE				RESEARCH & DEVELOPMENT CUSTOMER :			
MATRL. AA 5083/ AA 5086		DRN	B.Uma 15.05.99	<b>FERRULE-80 SZ</b>			
<b>NOTE:</b> ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.		CHD	KSSRao 15.05.99	WORK ORD. NO.:		NO. OFF:	
		APPROVED	A.Panigrahi 15.05.99	YR OF ORD	SIZE	DRAWING NO.	REV
		SCALE	NTS		A4	RD-STD-F-004	5



SECTION - AA

REQMTS FOR THIS ITEM

EQPT.PART NUMBER	EQPT NO	PART NAME	QTY/EQPT
41013907	103	COLD AIR INLET CONNECTOR	1 NO

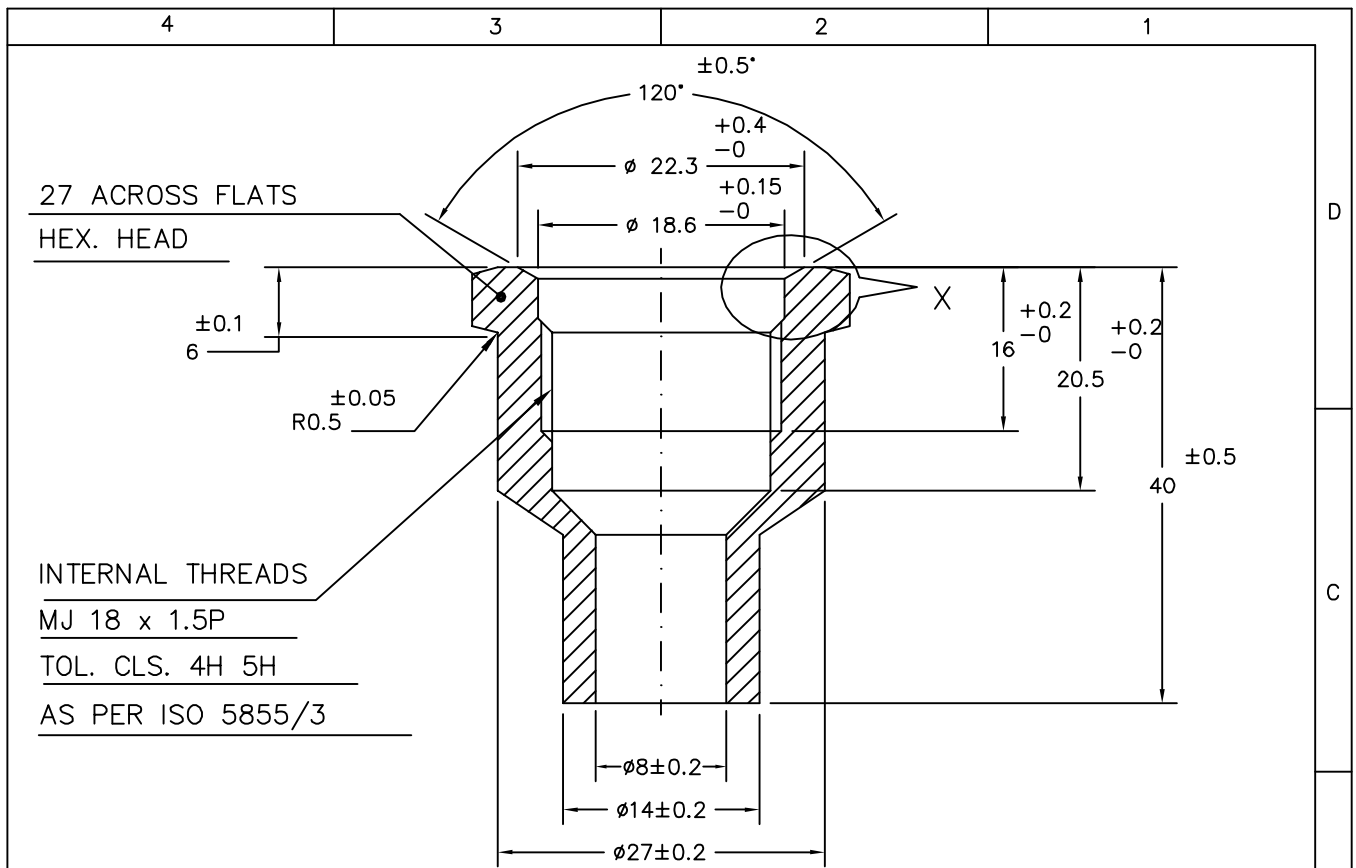
NOTE :

1. THIS ITEM IS EQUIVALENT TO M/s INTERFLEX PART No. 1-22609-02-100-E
2. ALL SURFACES TO BE MACHINED TO  $\nabla\nabla$  FINISH

DETAIL - B

REF. DRG. RD-41013907-A-100	5	---	MATRL.SPECN. AA 5083 INCLUDED AS PER MOD No. MOD/CHE/001. W.O.No. RENAMED AS EQPT. PART No.			
	4	---	REQMT TABLE CORRECTED FERRULE PROFILE MODIFIED	B.UMA 19.07.03	KSSR 19.07.03	AP 21.07.03
	3	C1-D4	FERRULE PROFILE MODIFIED	UMA 25.07.02	KSSR 26.07.02	AP 26.07.02
	2	B-4	REQMT.TABLE MODIFIED	UMA 02.04.02	KSSR 02.04.02	AP 03.04.02
	1	B-4	REQMT.TABLE ADDED	KSSR 28.07.00	AP 31.07.00	AP 31.07.00
REV NO.	ZONE	BRIEF RECORD	PPD	CHD	APD	

QTY.	SEE TABLE		<b>BHARAT HEAVY ELECTRICALS LTD.</b> <b>HEAVY PLATES &amp; VESSELS PLANT</b> VISAKHAPATNAM - 530012, INDIA				
PART NO.	SEE TABLE		RESEARCH & DEVELOPMENT				
MATRL.	AA 5083/ AA 5086	DRN	B.Uma 15.05.99	CUSTOMER :			
NOTE: ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.		CHD	KSSRao 15.05.99	<b>FERRULE-100 SZ</b>			
		APPROVED	A.Panigrahi 15.05.99	WORK ORD. NO.:		NO. OFF:	
		SCALE	NTS	YR OF ORD	SIZE	DRAWING NO.	REV
					A4	RD-STD-F-005	5



27 ACROSS FLATS  
HEX. HEAD

INTERNAL THREADS

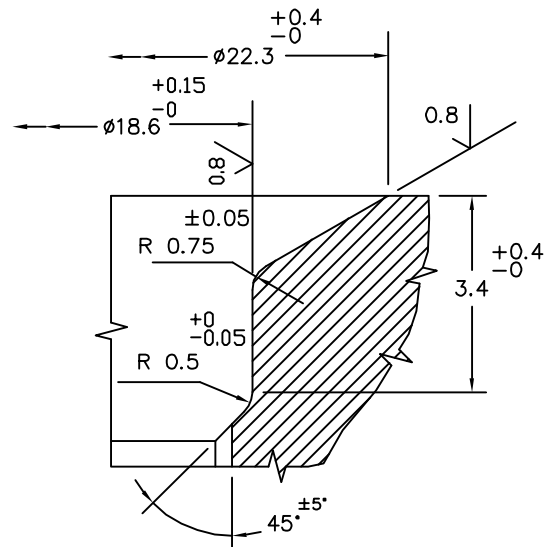
MJ 18 x 1.5P

TOL. CLS. 4H 5H

AS PER ISO 5855/3

REQMTS FOR THIS ITEM


EQPT.PART NUMBER	PART NOS.	PART NAME	QTY/EQPT
41013911	109	IDG. OIL INLET CONNECTOR	1 No.
41013912	108	GBX. OIL I/O CONNECTOR	2Nos.

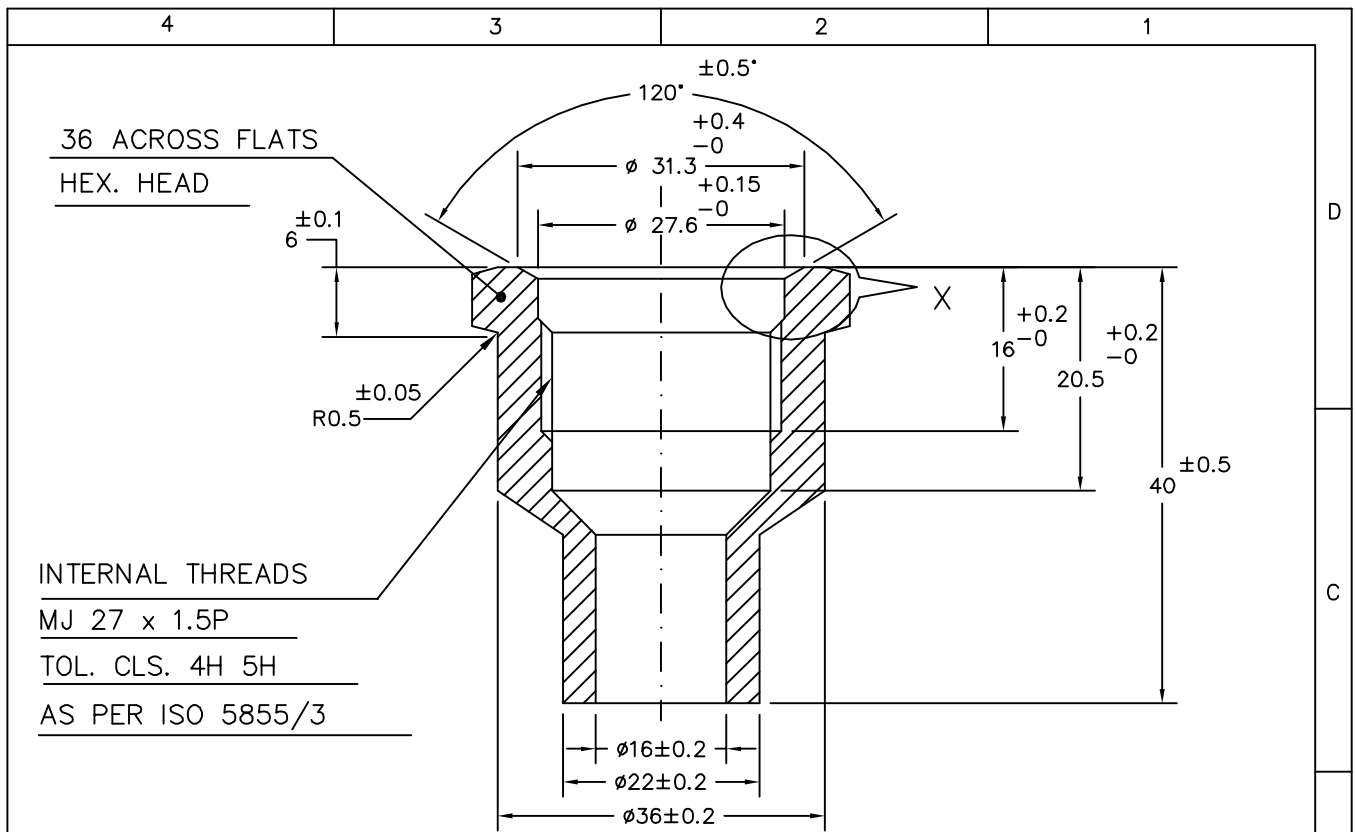


DETAIL-X

REV NO.	ZONE	BRIEF RECORD	PPD	CHD	APD
3	---	MATRL.SPECN. AA 5083 INCLUDED AS PER MOD No. MOD/CHE/001. W.O.No. AS EQPT.PART No.			
2	---	TOLERANCES ADDED & REQMT.TABLE REVISED	KSSR 17.09.01	KVR 18.09.01	AP 18.09.01
1	A4	REQMT. TABLE ADDED.	KSR 26.06.00	AP 26.06.00	AP 26.06.00


REF. DRG. RD-41013911-A-100 RD-41013912-A-100	 <b>BHARAT HEAVY ELECTRICALS LTD.</b> <b>HEAVY PLATES &amp; VESSELS PLANT</b> VISAKHAPATNAM - 530012, INDIA				
QTY. SEE TABLE	RESEARCH & DEVELOPMENT				
PART NO. SEE TABLE	CUSTOMER :				
MATRL. AA 5083/ AA 5086	DRN	KSSRao 03.06.99	<b>ISO 7320 DN 12 CONNECTOR PORT CONNECTION</b>		
NOTES: 1. DRAWING NOT TO BE SCALED. 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.	CHD	KVRMURTHY 04.06.99	WORK ORD. NO.:		
	APPROVED	A.Panigrahi 05.06.99	NO. OFF:		
	SCALE	NTS	YR OF ORD	SIZE	DRAWING NO.
				A4	RD-STD-C-001
					REV
					3

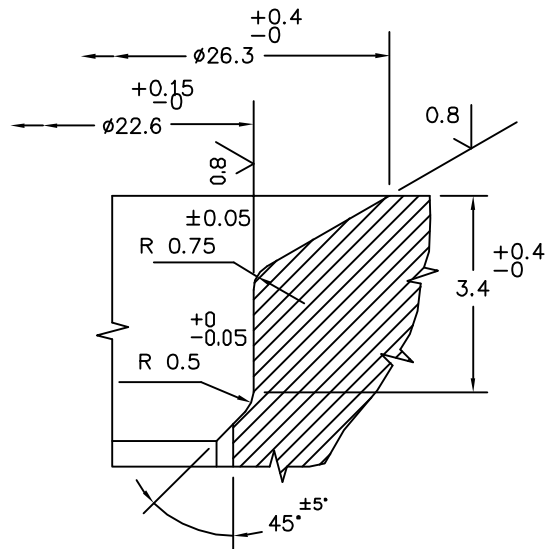
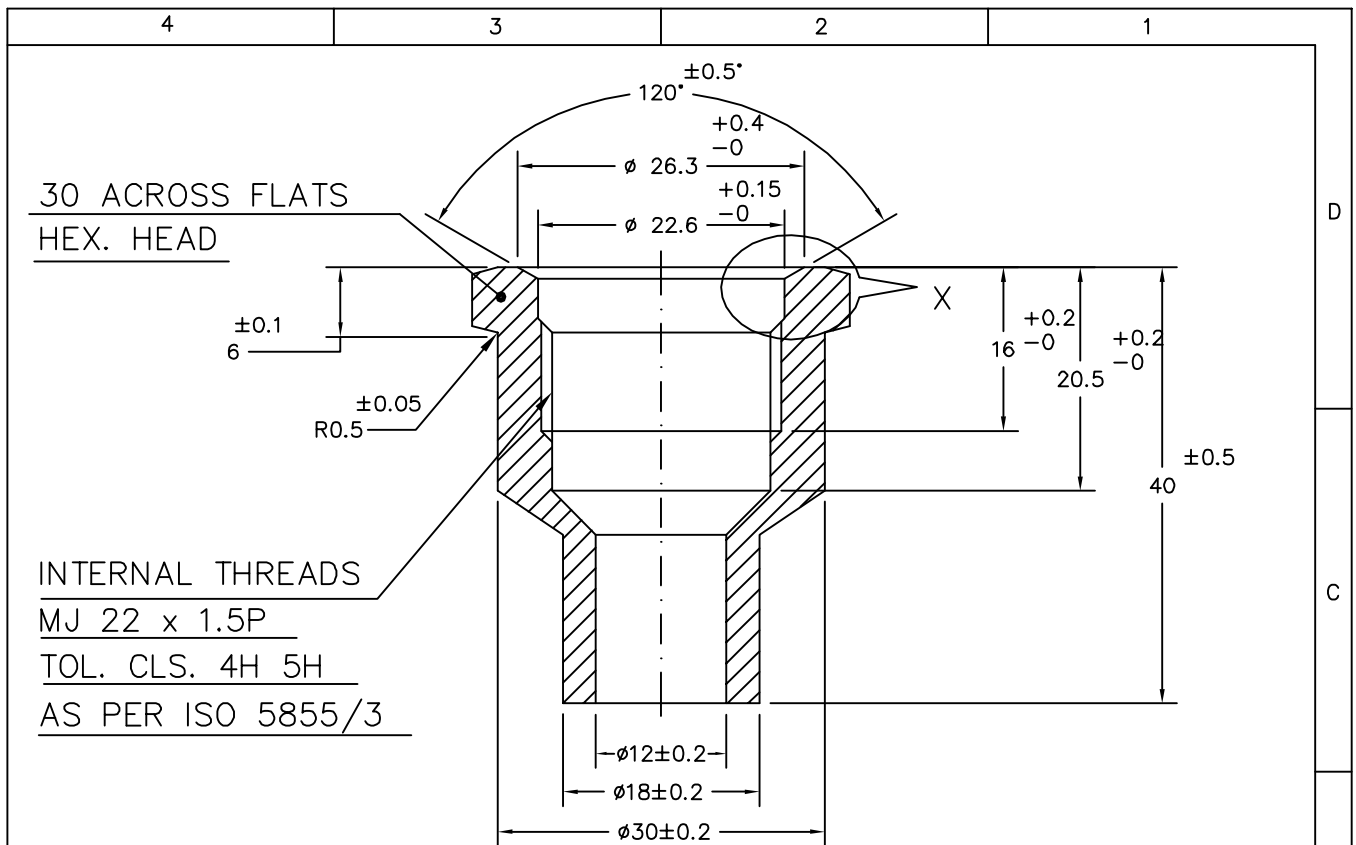


REQMTS FOR THIS ITEM

EQPT.PART NUMBER	PART NOS.	PART NAME	QTY/ EQPT
41013911	108	HYD. OIL I/O CONNECTOR	2Nos.
	111	FUEL I/O CONNECTOR	2Nos.
41013912	109	HYD. OIL I/O CONNECTOR	2Nos.
	110	FUEL I/O CONNECTOR	2Nos.
41014701	103	FUEL I/O CONNECTOR	2Nos.

REV NO.	ZONE	BRIEF RECORD	PPD	CHD	APD
4	---	MATRL.SPECN. AA 5083 INCLUDED AS PER MOD No. MOD/CHE/001. W.O.No. AS EQPT.PART No.			
3	---	REQRMT. TABLE REVISED.	B.Uma 24.03.03	KSSR 24.03.03	AP 24.03.03
2	---	TOLERANCES ADDED & REQMT.TABLE REVISED	KSSR 17.09.01	KVR 18.09.01	AP 18.09.01
1	A4	REQRMT. TABLE ADDED.	KSSR 26.06.00	AP 26.06.00	AP 26.06.00

REF. DRG. RD-41013911-A-100 RD-41013912-A-100 RD-41014701-A-100		 <b>BHARAT HEAVY ELECTRICALS LTD.</b> <b>HEAVY PLATES &amp; VESSELS PLANT</b> VISAKHAPATNAM - 530012, INDIA			
QTY.	SEE TABLE	DRN	KSSRao 03.06.99	RESEARCH & DEVELOPMENT	
PART NO.	SEE TABLE	CHD	KVRMURTHY 04.06.99	CUSTOMER :	
MATRL.	AA 5083/ AA 5086	APPROVED	A.Panigrahi 04.06.99	<b>ISO 7320 DN 20 CONNECTOR PORT CONNECTION</b>	
NOTES: 1. DRAWING NOT TO BE SCALED. 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.	SCALE	NTS	WORK ORD. NO.:	NO. OFF:	
			YR OF ORD	SIZE	DRAWING NO.
				A4	RD-STD-C-005



DETAIL-X

REQMTS FOR THIS ITEM

EQPT.PART NUMBER	PART NO.	PART NAME	QTY/EQPT
41013911	110	IDG. OIL OUTLET CONNECTOR	1 No.


REV NO.	ZONE	BRIEF RECORD	PPD	CHD	APD
3	---	MATRL.SPECN. AA 5083 INCLUDED AS PER MOD No. MOD/CHE/001. W.O.No. AS EQPT.PART No.			
2	---	TOLERANCES ADDED & REQMT.TABLE REVISED	KSSR 17.09.01	KVR 18.09.01	AP 18.09.01
1	A4	REQMT. TABLE ADDED.	KSR 26.06.00	AP 26.06.00	AP 26.06.00
REF. DRG.	RD-41013911-A-100				

QTY. SEE TABLE

PART NO. SEE TABLE

MATRL. AA 5083/  
AA 5086

NOTES:  
1. DRAWING NOT TO BE SCALED.  
2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.



**BHARAT HEAVY ELECTRICALS LTD.**  
**HEAVY PLATES & VESSELS PLANT**  
VISAKHAPATNAM - 530012, INDIA

RESEARCH & DEVELOPMENT

CUSTOMER :

**ISO 7320 DN 16 CONNECTOR**  
**PORT CONNECTION**

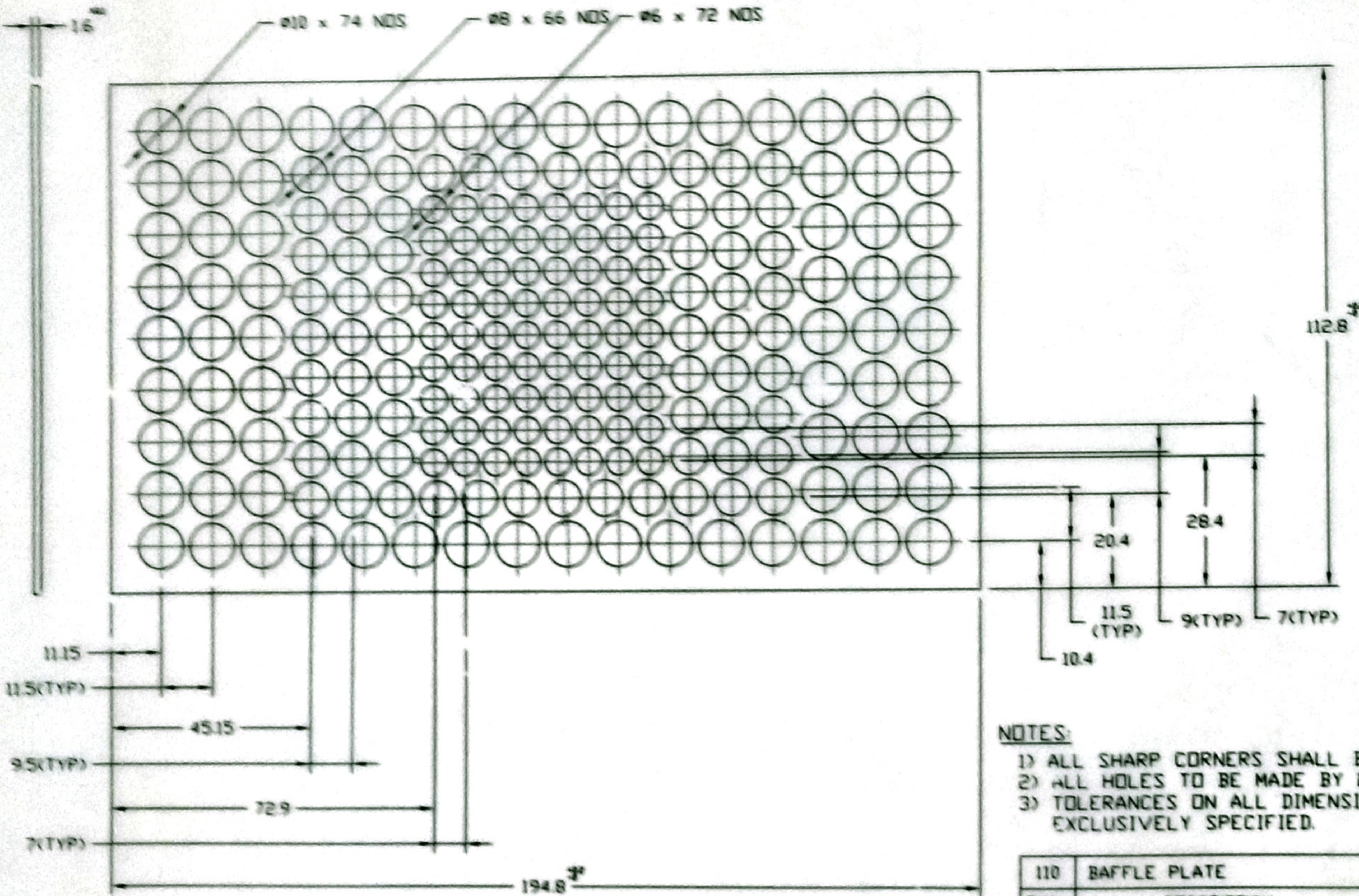
WORK ORD. NO.:

NO. OFF:

YR OF ORD	SIZE	DRAWING NO.	REV
	A4	RD-STD-C-003	3

DRAWING NOT TO BE SCALED

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED



**NOTES:**

- 1) ALL SHARP CORNERS SHALL BE ROUNDED OFF
- 2) ALL HOLES TO BE MADE BY LASER EB CUTTING
- 3) TOLERANCES ON ALL DIMENSIONS SHALL BE  $\pm 0.02$  MM UNLESS EXCLUSIVELY SPECIFIED.

110	BAFFLE PLATE	MDN 347A	1	0.135
P.No.	DESCRIPTION	MATERIAL	QTY (NOS)	WT (KG)



**BHARAT HEAVY ELECTRICALS LTD.**  
 HEAVY PLATES & VESSELS PLANT  
 VISAKHAPATNAM - 530 012 (A.P.)

DRN	<i>Siddhanta</i>	RESEARCH & DEVELOPMENT	
CHD	<i>Siddhanta</i>	CUSTOMER : ADA, BANGALORE	
APPROVED	<i>Siddhanta</i>	<b>PRECOOLER</b>	
SCALE	NTS	<b>BAFFLE PLATE</b>	
ALL PROJECTIONS ARE FIRST ANGLE UNLESS OTHERWISE SPECIFIED		WORK ORDER NO	
		NO OFF:	
YEAR OF ORDER	SIZE	DRAWING No	REV
2012	A3	RD-41015301-P-110	0

REF DRG NO.  
RD-41015301-A-100

REV NO	ZONE	BRIEF RECORD	PPD	CHD	APD

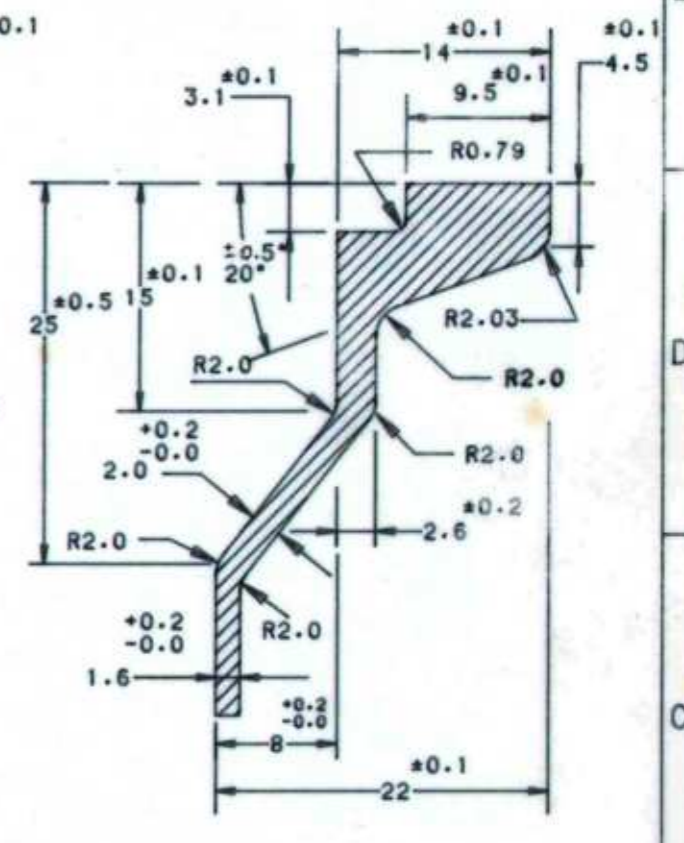
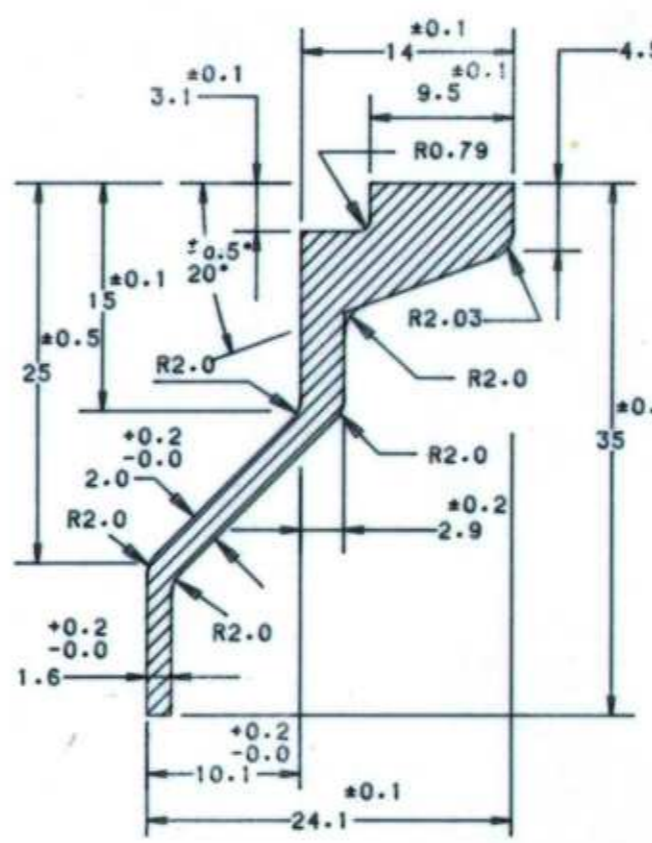
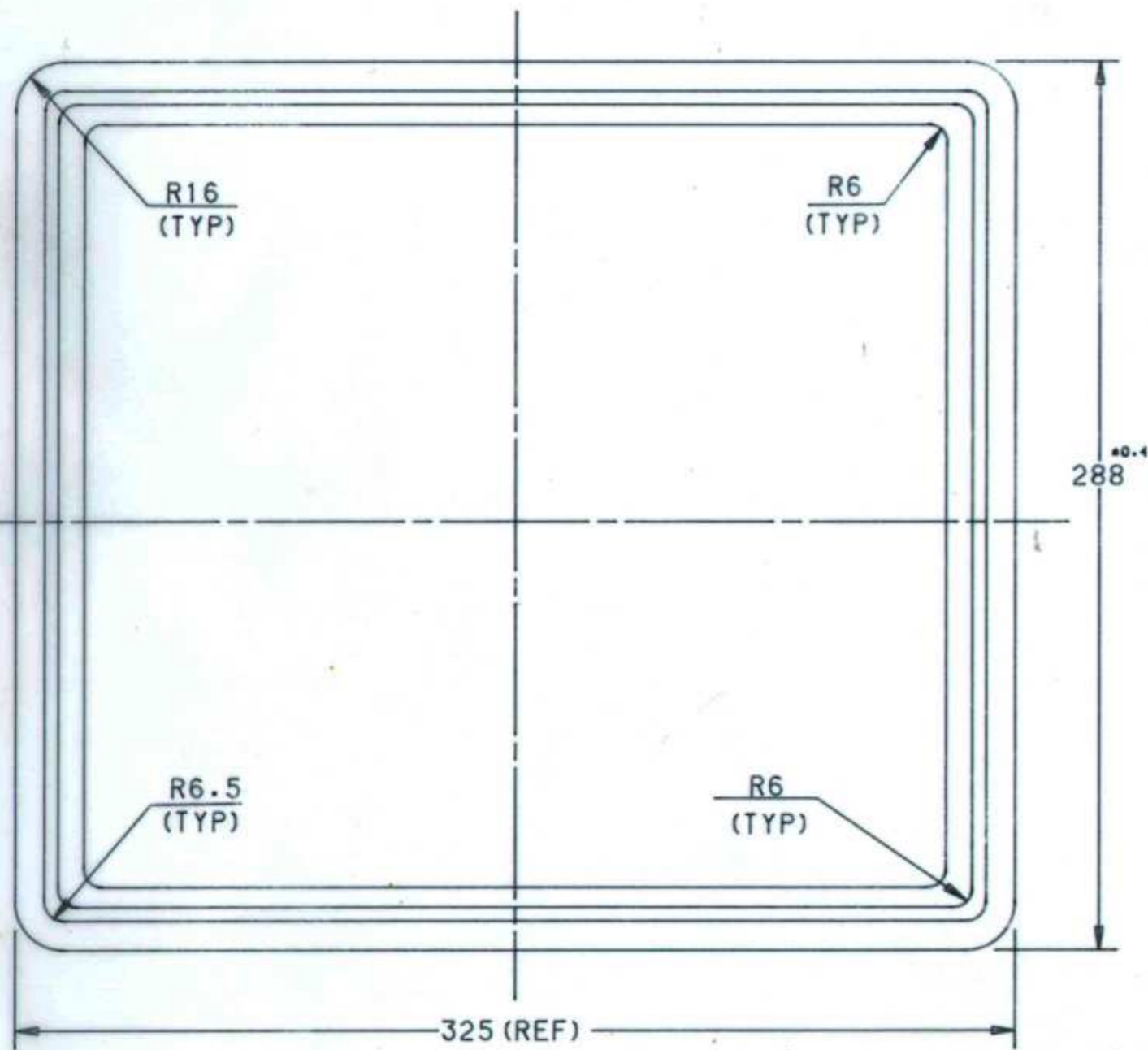
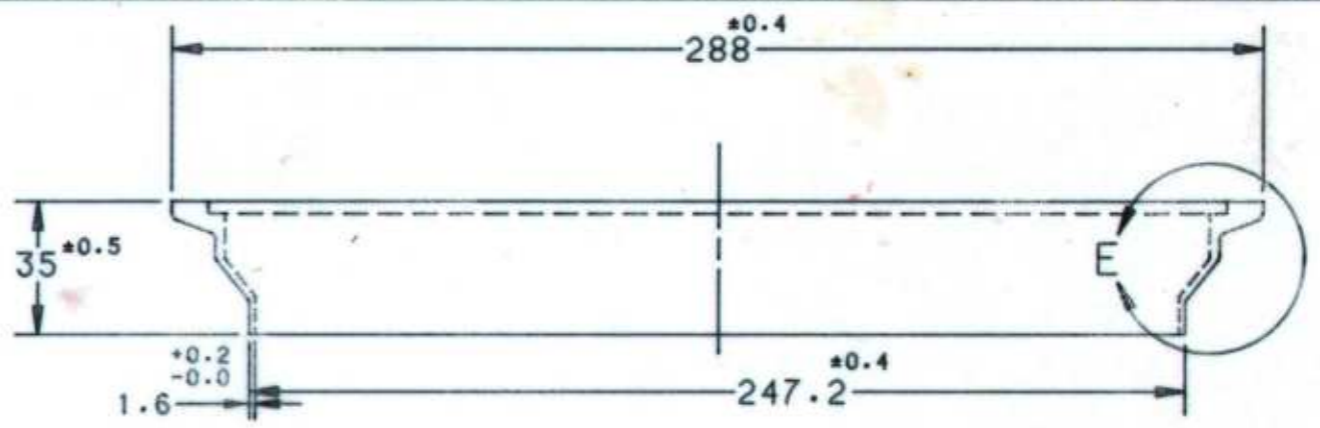
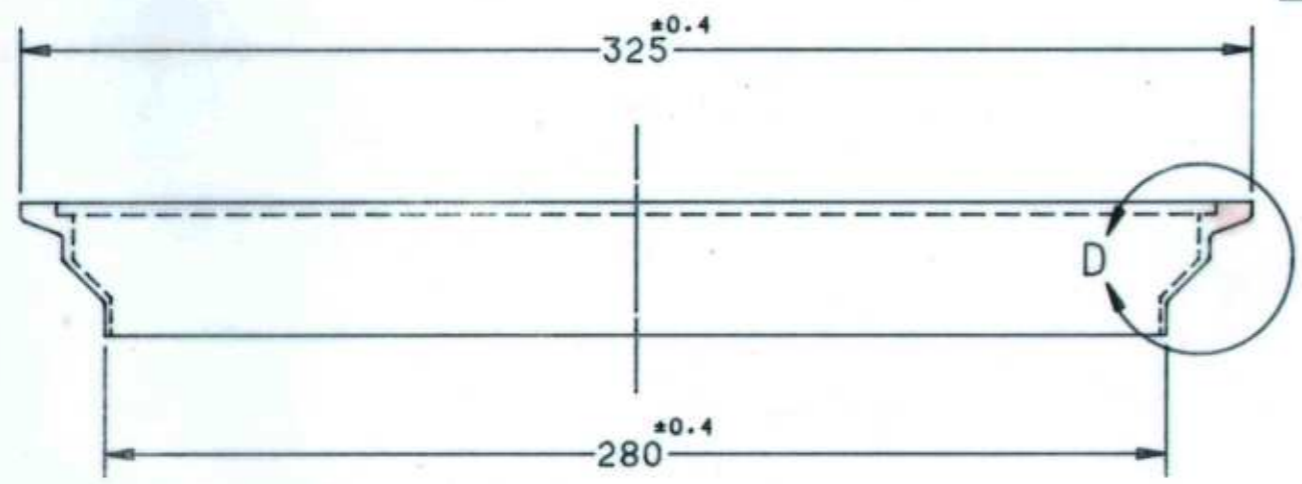


FORM NO. 0421/0

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DRAWING NOT TO BE SCALED

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE STATED.



DETAIL-D  
(SCALE 2:1)

DETAIL-E  
(SCALE 2:1)

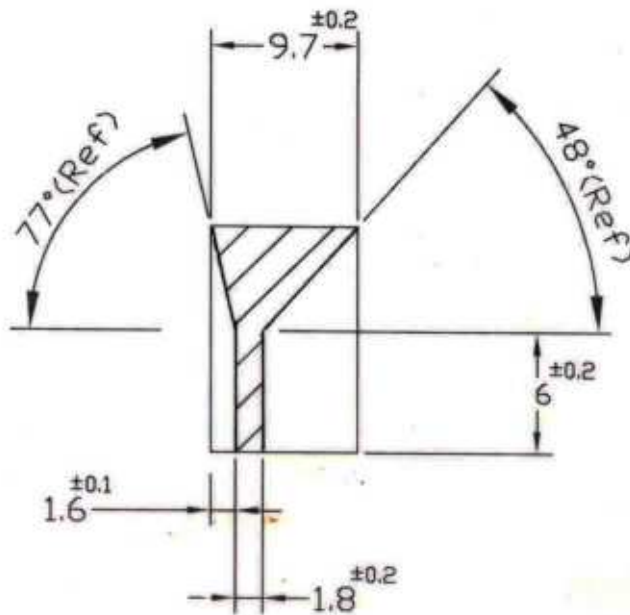
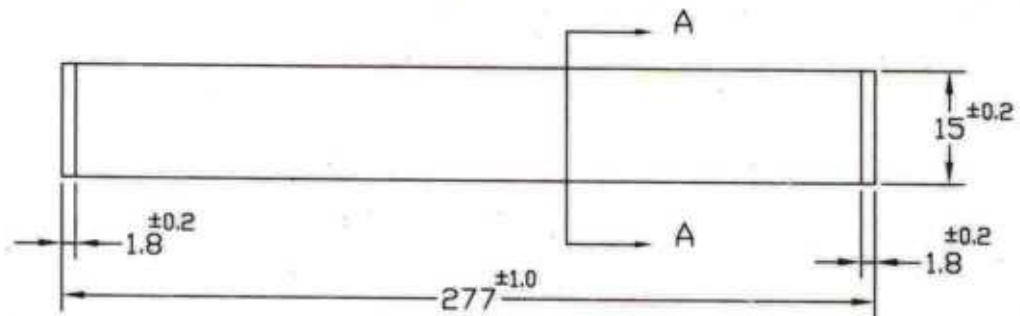
NOTE : (2) TOLERANCES INDICATED ARE NOT CUMULATIVE  
(1) ALL SURFACES TO BE MACHINED TO  $\nabla\nabla$  FINISH

115	RAM AIR FLANGE	2	MDN347A	2.4
P.NO	DESCRIPTION	QTY	MATERIAL	WT (KG)

**BHPV BHARAT HEAVY PLATE & VESSELS LTD.**  
(A subsidiary of Bharat Yatra Nigam Limited)  
VISAKHAPATNAM - 530 012 (A.P.)

DRN	<i>17-11-98</i>	RESEARCH & DEVELOPMENT
CHD.	<i>20-11-98</i>	CUSTOMER : ADA, BANGALORE
APPROVED	<i>20-11-98</i>	PRIMARY HEAT EXCHANGER
SCALE	1:2	RAM AIR FLANGE

REF. DRG. NO.	2	DIMENSIONAL TOLERANCES CORRECTED	ALL PROJECTIONS ARE FIRST ANGLE UNLESS OTHERWISE SPECIFIED.			WORK ORDER NO.	NO. OFF		
<i>RD-41013905-A-100</i>	1	MATRL. SPEC REVSD. & WT. ADDED	BUN	AP	AP	YEAR OF ORD	SIZE	DRAWING NO.	REV
8	7	BRIEF RECORD	DRN	CHD	APD	A3	RD-41013905-P-115	2	



SECTION-AA

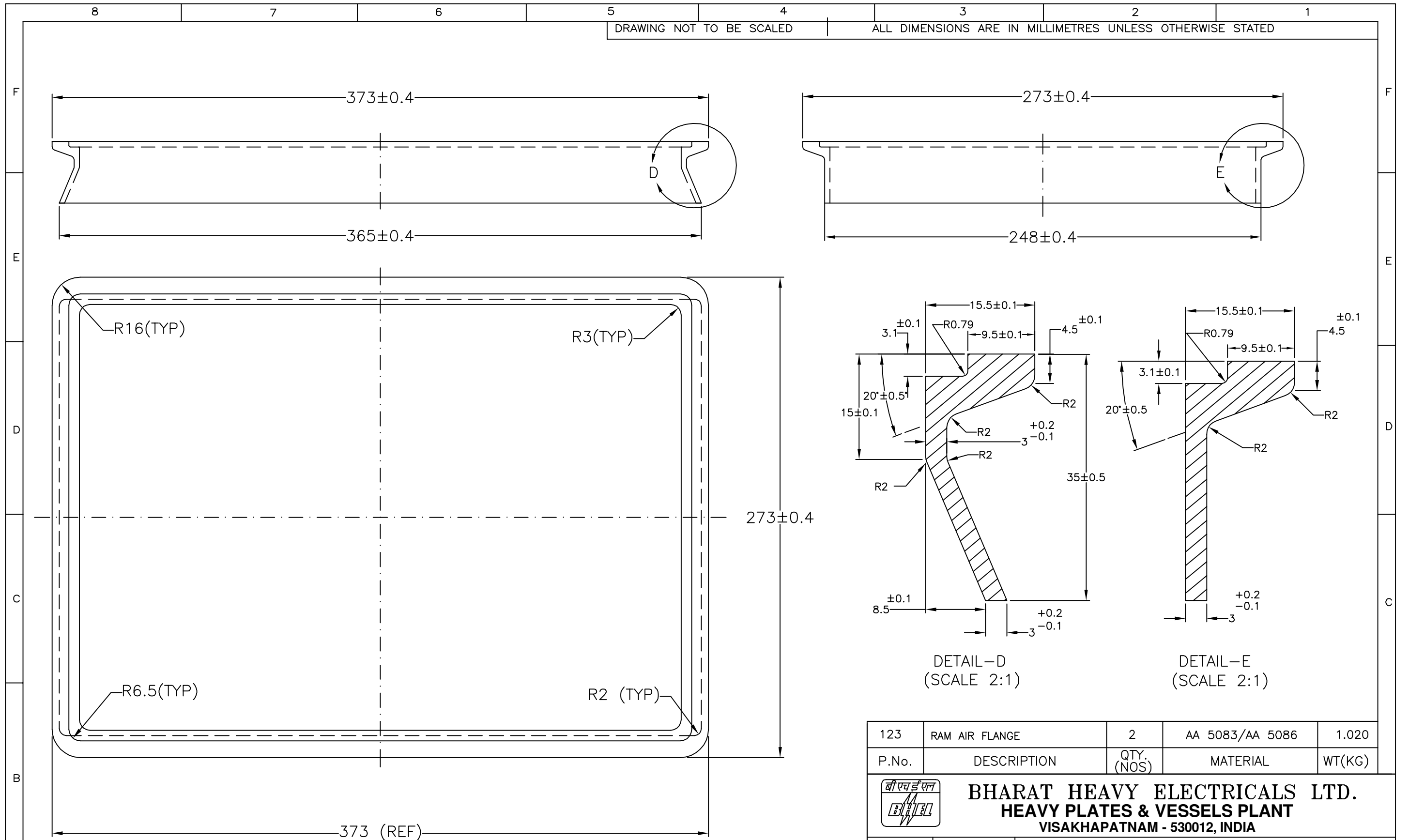
REF. DRG.									
RD-41013905-A-100		1	---	DIMENSIONS REVISED		B. Uma 10.12.02		 11/12/02	
QTY. 1No.		REV NO.	ZONE	BRIEF RECORD		PPD	CHD	APD	
PART NO. 110		<b>BHARAT HEAVY PLATE AND VESSELS LTD.</b> VISAKHAPATNAM - 530 012, INDIA							
MATRL. MDN 347A		DRN	B. Uma 20-04-01	RESEARCH & DEVELOPMENT					
NOTES:		CHD	K. V. Rao 21-04-01	CUSTOMER : ADA, BANGALORE					
1. DRAWING NOT TO BE SCALED		APPROVED	A. Panigrahi 21-04-01	WORK ORD. NO. 41013905			NO. OFF 3		
2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.		SCALE	NTS	YR OF ORD	SIZE	DRAWING NO.		REV	
				1996	A4	RD-41013905-P-110		1	

FORM NO. 0421/0

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DRAWING NOT TO BE SCALED

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED



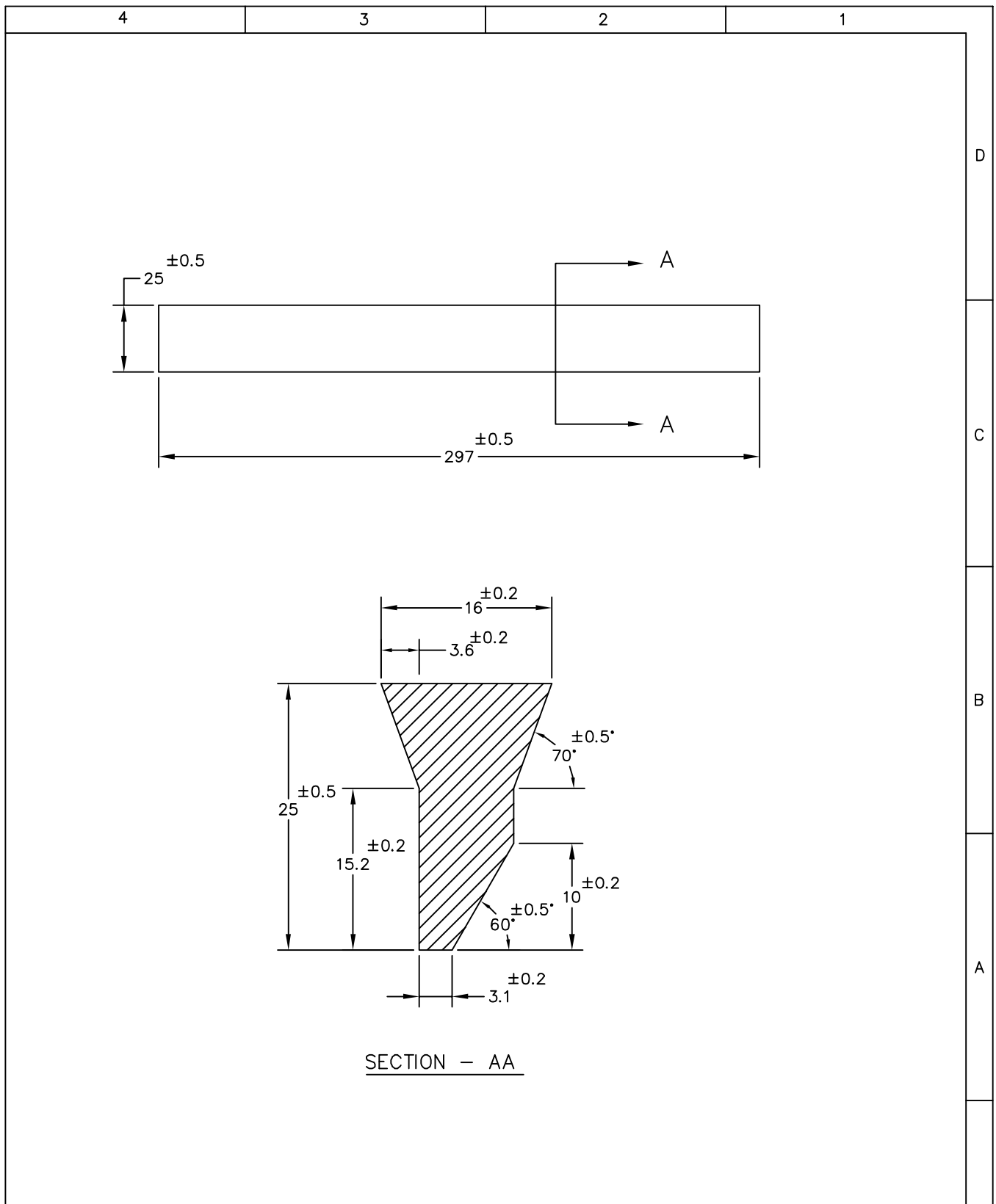
- NOTES :**
- (1) ALL SURFACES TO BE MACHINED TO ∇∇ FINISH.
  - (2) TOLERANCES INDICATED ARE NON CUMULATIVE.

123	RAM AIR FLANGE	2	AA 5083/AA 5086	1.020
P.No.	DESCRIPTION	QTY. (NOS)	MATERIAL	WT(KG)


**BHARAT HEAVY ELECTRICALS LTD.**  
**HEAVY PLATES & VESSELS PLANT**  
**VISAKHAPATNAM - 530012, INDIA**

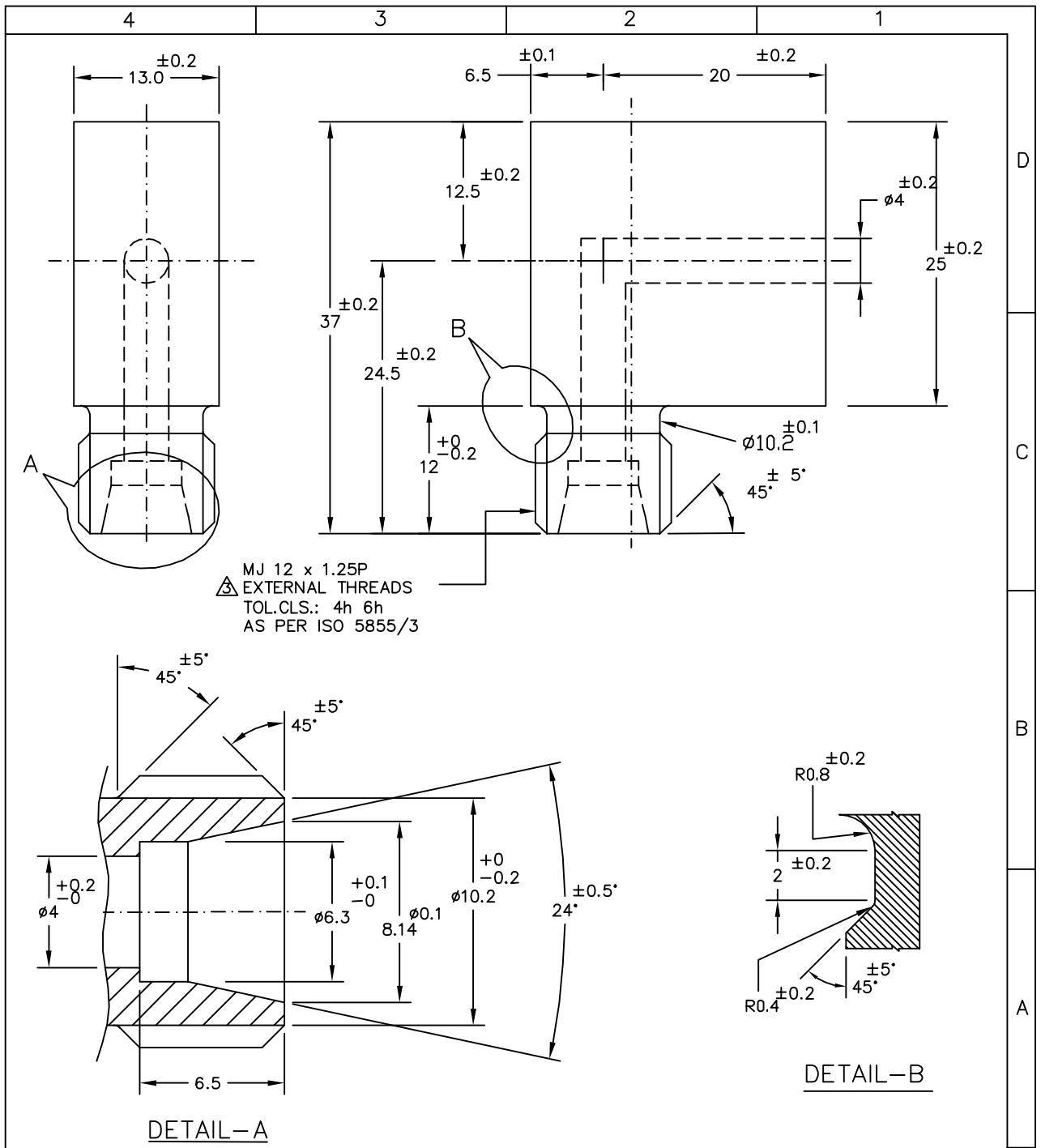
DRN	B.Uma 15.01.99	RESEARCH & DEVELOPMENT		
CHD	K.S.S.Rao 15.01.99	CUSTOMER :		
APPROVED	A.Panigrahi 21.01.99	<b>SECONDARY HEAT EXC HANGER</b> <b>RAM AIR FLANGE</b>		
SCALE	1:2			
ALL PROJECTIONS ARE FIRST ANGLE UNLESS OTHERWISE SPECIFIED		WORK ORDER NO	<b>RAM AIR FLANGE</b>	NO OFF:
		YEAR OF ORDER	SIZE	DRAWING No.
			A3	RD-41011201-P-123
				REV
				2

REF. DRG.	2	---	MATRL. SPECN. AA 5083 INCLUDED AS PER MOD No.: MOD/CHE/001	B.UMA 15.01.02	KVR 15.01.02	AP 16.01.02
RD-41011201-A-100	1	---	DIMENSIONAL TOLERANCES CORRECTED	PPD	CHD	APD
REV.NO	ZONE		BRIEF RECORD			



SECTION - AA


REF. DRG.	1	---	MATRL. SPECN. AA 5083 INCLUDED AS PER MOD No. MOD/CHE/001	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
RD-41011201-A-100	REV NO.	ZONE	BRIEF RECORD	PPD	CHD	APD
QTY.	1 NO	 <b>BHARAT HEAVY ELECTRICALS LTD.</b> <b>HEAVY PLATES &amp; VESSELS PLANT</b> VISAKHAPATNAM - 530012, INDIA				
PART No.	119					
MATRL.	AA 5083/ AA 5086	DRN	B.uma 01-08-2000	RESEARCH & DEVELOPMENT		
<b>NOTES:</b> 1. DRAWING NOT TO BE SCALED. 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.	CHD	KVR Murthy 01-08-2K	CUSTOMER :			
	APPROVED	AP 07-08-2K	WORK ORD. NO.:			NO. OFF:
	SCALE	NTS	YR OF ORD	SIZE	DRAWING NO.	REV
				A4	RD-41011201-P-119	1

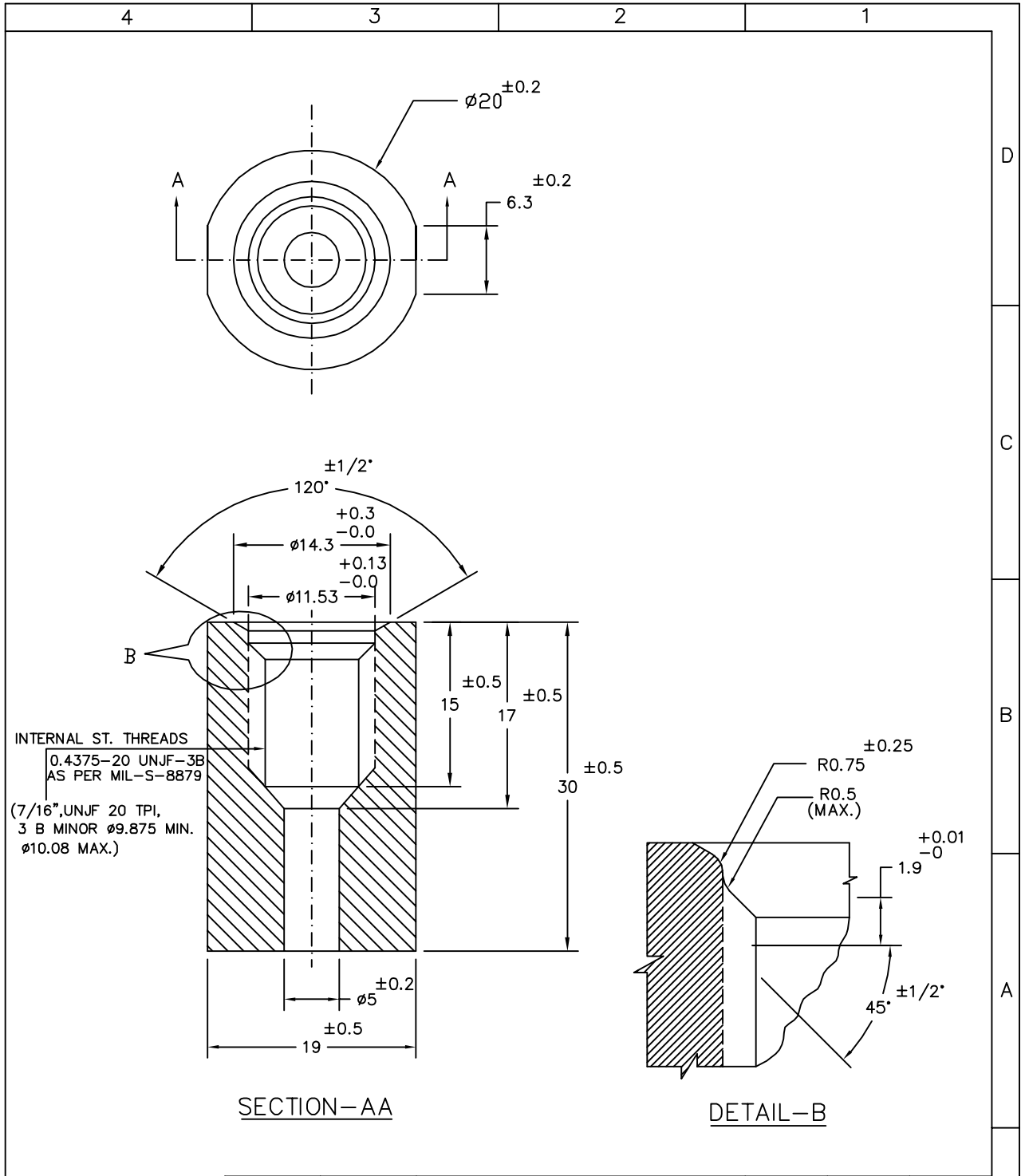



MJ 12 x 1.25P  
 EXTERNAL THREADS  
 TOL.CLS.: 4h 6h  
 AS PER ISO 5855/3

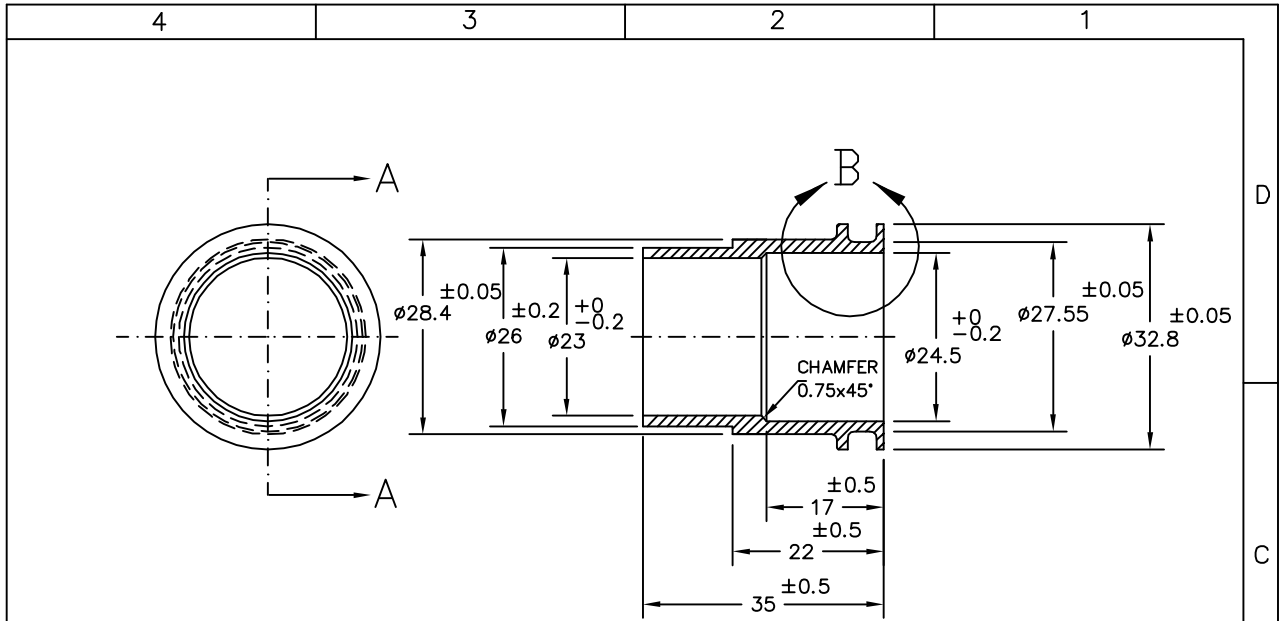
DETAIL-A

DETAIL-B

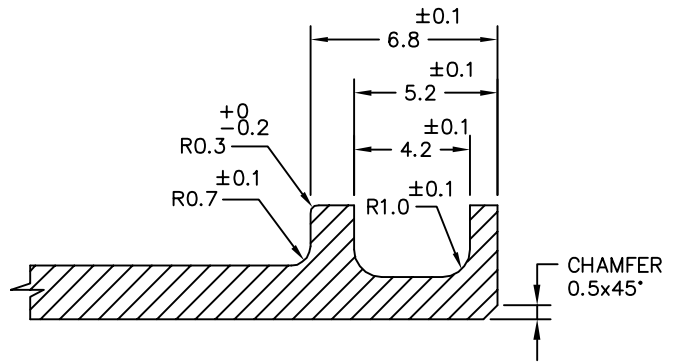
4	---	MATRL. SPECN. AA 5083 INCLUDED AS PER MOD No. MOD/CHE/001				
3	---	INTERFACE DETAILS REVISED	UMA 28.12.07	KSSR 28.12.07	AP 28.12.07	
2	---	THREAD PITCH REVISED	UMA 01.05.06	KSSR 01.05.06	AP 01.05.06	
1	---	MODIFIED CONNECTOR SHAPE, THREAD SHAPE	UMA 10.04.02	KVR 10.04.02	AP 11.04.02	
REF. DRG.	RD-41013907-A-100	REV NO.	ZONE	BRIEF RECORD	PPD CHD APD	
QTY.	1 NO.	 <b>BHARAT HEAVY ELECTRICALS LTD.</b> <b>HEAVY PLATES &amp; VESSELS PLANT</b> VISAKHAPATNAM - 530012, INDIA				
PART NO.	114					
MATRL.	AA 5083/ AA 5086	DRN	B.Uma 05.08.2000	RESEARCH & DEVELOPMENT		
<b>NOTES:</b> 1. DRAWING NOT TO BE SCALED. 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.		CHD	KVR MURTHY 05.08.2000	CUSTOMER :		
		APPROVED	A.Panigrahi 05.08.2000	<b>CONDENSER</b>		
		SCALE	2:1	<b>WATER DRAIN PORT-ISO 7320 DN 6</b>		
				WORK ORD. NO.:	NO. OFF:	
			YR OF ORD	SIZE	DRAWING NO.	REV
				A4	RD-41013907-P-114	4



REF. DRG.	RD-41013907-A-100	3	---	MATRL. SPECN. AA 5083 INCLUDED. AS PER MOD No. MOD/CHE/001			
		2	---	TOLERANCES INCORPORATED	UMA 03.01.02	KVR 03.01.02	ATR 03.01.02
		1	---	THREADING HT. REVISED	UMA 02.05.00	ATR 02.05.00	AP 04.05.00
QTY.	2 NOS	REV NO.	ZONE	BRIEF RECORD	PPD	CHD	APD
PART NO.	115	 <b>BHARAT HEAVY ELECTRICALS LTD.</b> <b>HEAVY PLATES &amp; VESSELS PLANT</b> VISAKHAPATNAM - 530012, INDIA					
MATRL.	AA 5083/ AA 5086	DRN	B.Uma 02.05.2000	RESEARCH & DEVELOPMENT			
NOTES: 1. DRAWING NOT TO BE SCALED. 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.		CHD	KVR MURTHY 02.05.2000	CUSTOMER : <b>CONDENSER PRESSURE TAPPING PORT</b>			
		APPROVED	A.T.Rao 04.05.2000	WORK ORD. NO.:		NO. OFF:	
		SCALE	2:1	YR OF ORD	SIZE	DRAWING NO.	REV
					A4	RD-41013907-P-115	3



SECTION-AA



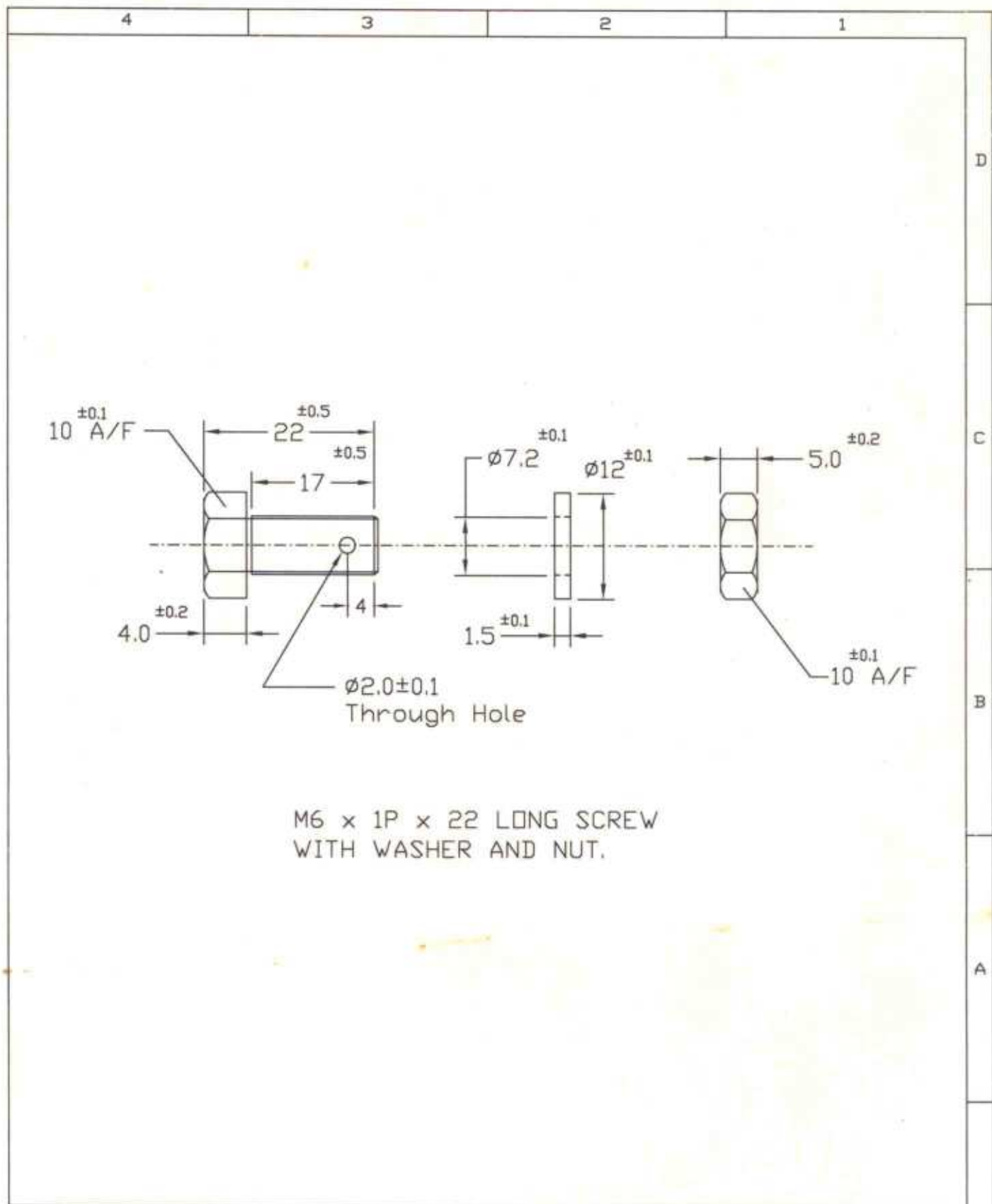
DETAIL-B

SCALE 4:1

**NOTE :**

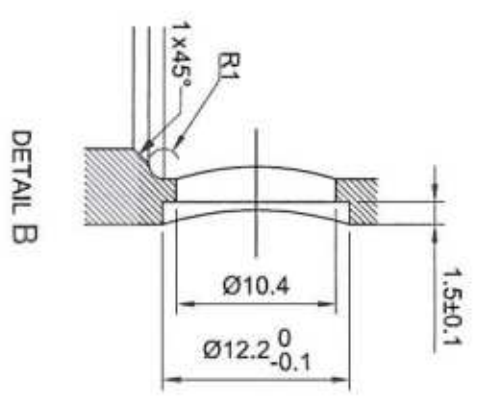
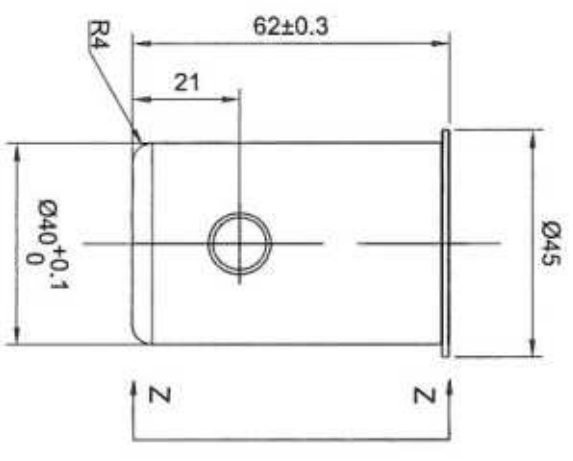
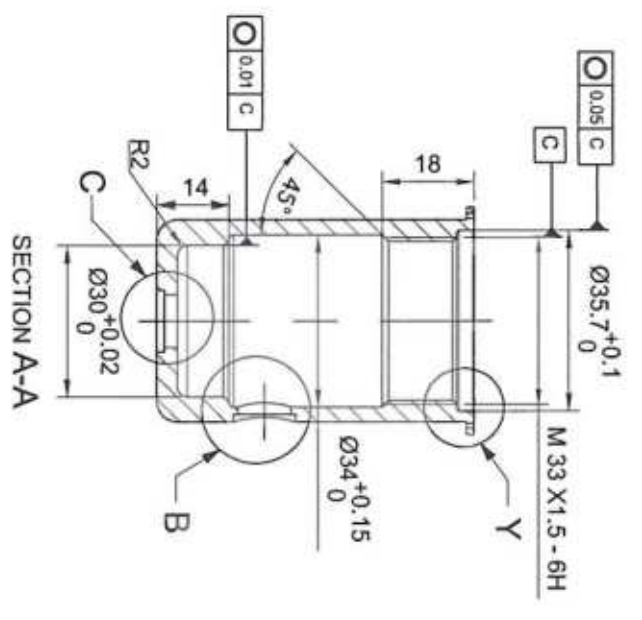
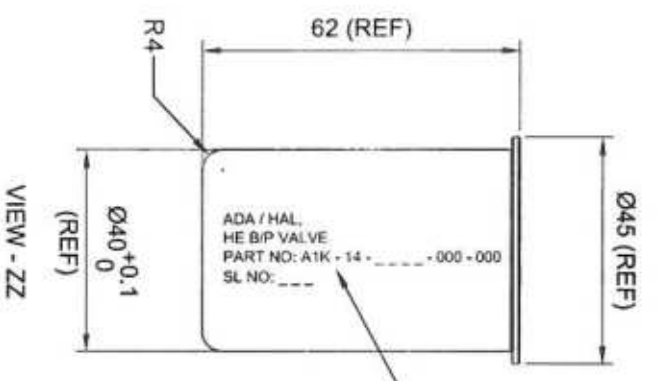
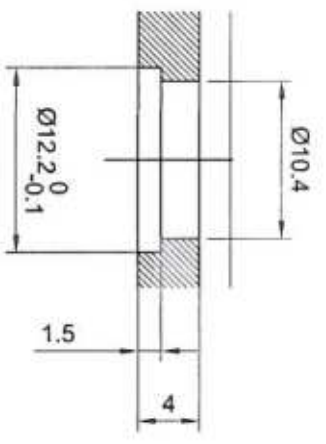
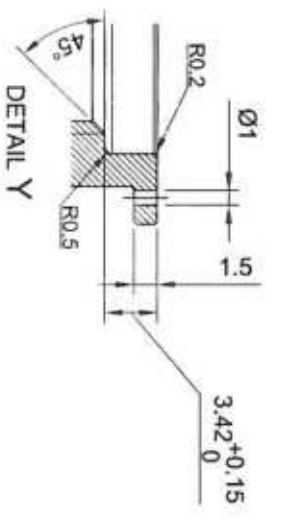
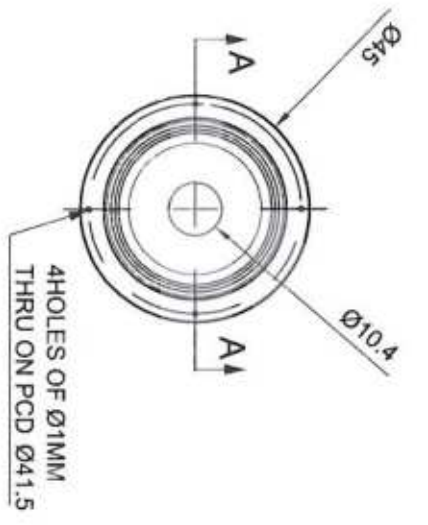
1. THIS ITEM IS EQUIVALENT TO M/s INTERFLEX PART No. 1-22609-02-25-E
2. ALL SURFACES TO BE MACHINED TO ∇∇ FINISH

REF. DRG.		1		---		MATRL. SPECN. AA 5083 INCLUDED. AS PER MOD No. MOD/CHE/001					
RD-41013907-A-100		REV NO.	ZONE	BRIEF RECORD		PPD	CHD	APD			
QTY.	1 NO										
PART NO.	116										
MATRL.	AA 5083/ AA 5086	DRN	B.Uma 01.05.06	RESEARCH & DEVELOPMENT							
<b>NOTES:</b> 1. DRAWING NOT TO BE SCALED. 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.		CUSTOMER :									
		CHD	KSSRao 01.05.06	<b>CONDENSER FADEC COLD AIR TAPPING PORT</b>							
		APPROVED	KSSRao 01.05.06	WORK ORD. NO.:				NO. OFF:			
		SCALE	1:1	YR OF ORD	SIZE	DRAWING NO.			REV		
					A4	RD-41013907-P-116			1		



M6 x 1P x 22 LONG SCREW  
WITH WASHER AND NUT.

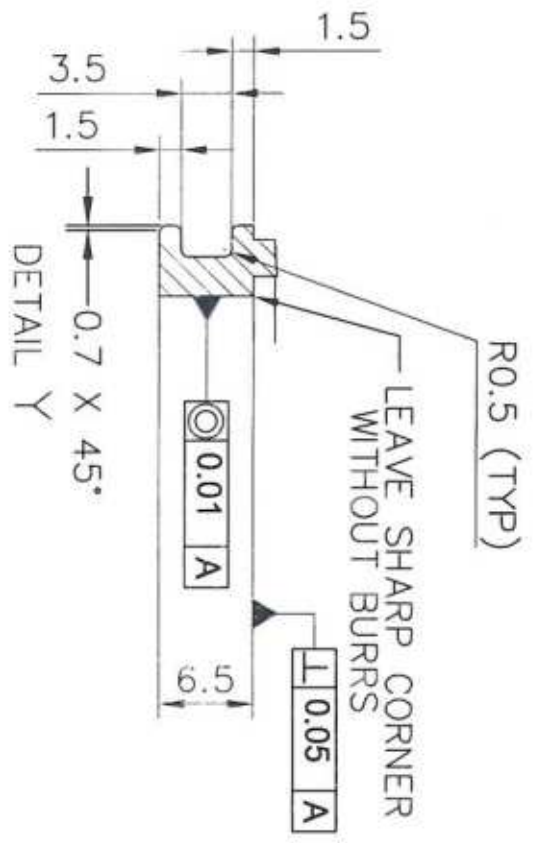
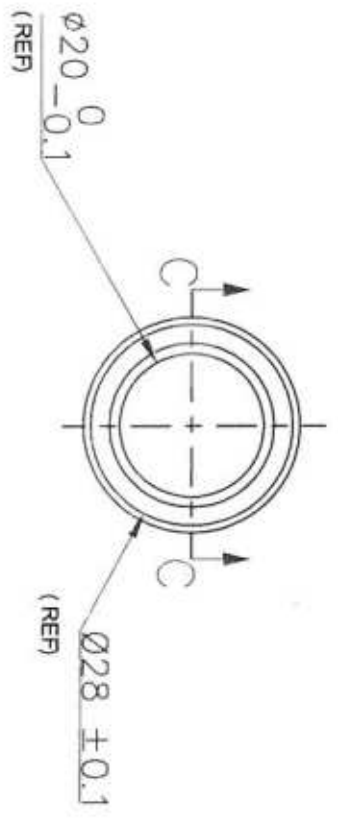
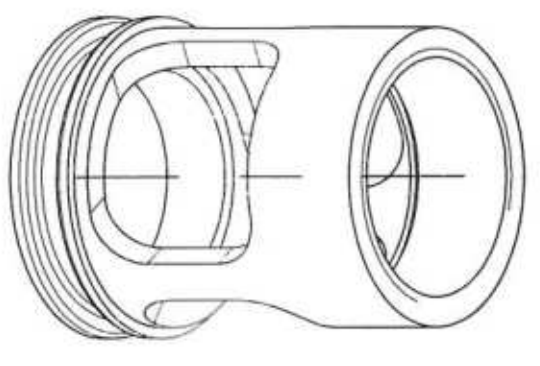
REF. DRG. RD-41013911-A-100 RD-41013912-A-100		REV NO.	ZONE	BRIEF RECORD	PPD	CHD	APD	
QTY.	2 Nos.	<b>BHARAT HEAVY PLATE AND VESSELS LTD.</b> VISAKHAPATNAM - 530 012, INDIA						
ITEM No.	122							
MATRL.	MDN 321A	DRN.	RESEARCH & DEVELOPMENT					
NOTES: 1. DRAWING NOT TO BE SCALED 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.		CHKD.	CUSTOMER : M/s A.D.A., BANGALORE					
		APPROVED	M6 SCREW WITH WASHER AND NUT			WORK ORD. NO. 410139 11, 12		NO. OFF
		SCALE	NTS		YR OF ORD	SIZE	DRAWING NO.	REV
					1999	A4	RD-STD-PBPV-005	0



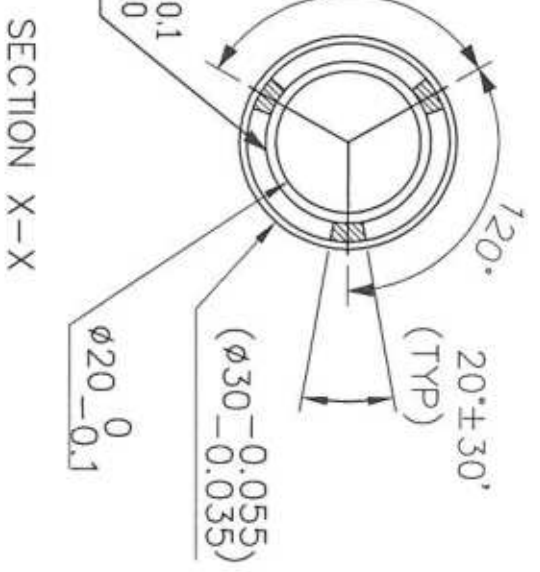
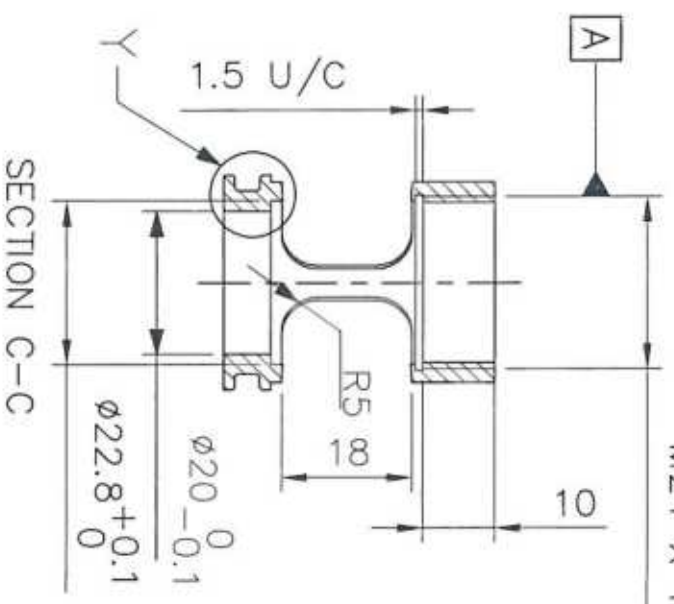
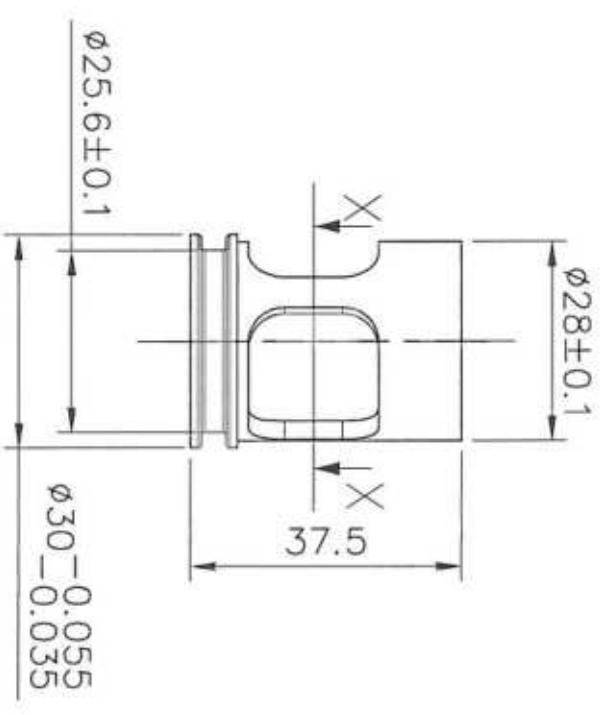
- NOTE:
1. CHAMFER AND DEBURR ALL SHARP CORNERS AND EDGES TO R0.2 & 0.2X45° RESPECTIVELY.
  2. ENGRAVE VALVE DETAILS AS PER MARKING SHOWN IN VIEW - ZZ.
  3. MARK PART NUMBER 4085 FOR HE-1 AND 5005 FOR HE-2 ON ENGRAVE DETAILS.
  4. CARRY OUT NDT 006 AND NDT 015 (OR) NDT AS PER BHEL -NDT- FPT - 07026 PROCEDURE.

REV NO.	ZONE	BRIEF RECORD
01	B1, D2, D4	1. Allowed to use AA 5083-H11X Material. 2. Detail - C and View - ZZ Added. 3. Note 2 modified as "Engrave valve details as per marking shown in View-ZZ". 4. Note 3 modified as "Mark part No. 4085 for HE-1 & 5005 for HE-2 on engrave details". 5. BHEL NDT - FPT - 07026 procedure is added in Note 4.

SCALE 1:1	ADA AERONAUTICAL DEVELOPMENT AGENCY (MIN. OF DEFENCE) BANGALORE, INDIA	DEC-1999	NAME SHUKLA ASH Engineer	SIGNATURE
SIZE: A3	MATERIAL AA 5083 H11X / AA6063 H11X	DRAWN	DR K V R MURTHY Sec F	
UNSPECIFIED TOLERANCES	GENERAL ± 0.3 mm MACHINED ± 0.15 mm ANGULAR ± 1/2°	CHECKED	Dr M A RAJU Sec F	
SURFACE ROUGHNESS CLASS	AS PRODUCED ROUGH ∇ 3.2 Microns MEDIUM ∇ 1.6 Microns FINE ∇ 0.8 Microns SPECIAL	QTY	APPROVED SANKARAJI MADHUS 08 & TD (CS)	
		REF. DRAWING NO.	DWG. NO.	REV. NO.
		01	A1K-14-4085-200-000	01
		BODY SHEET 1 OF 1		



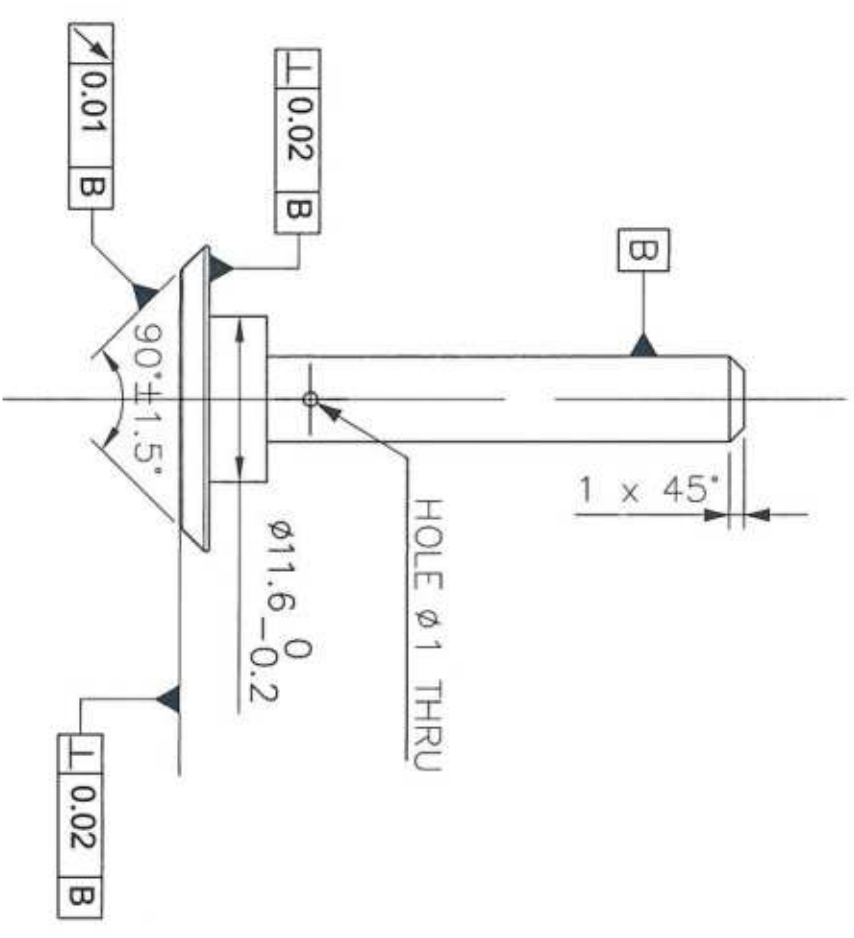
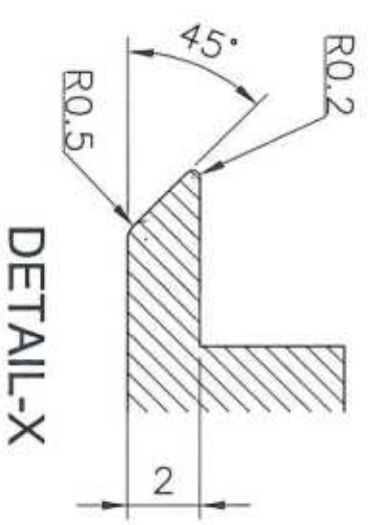
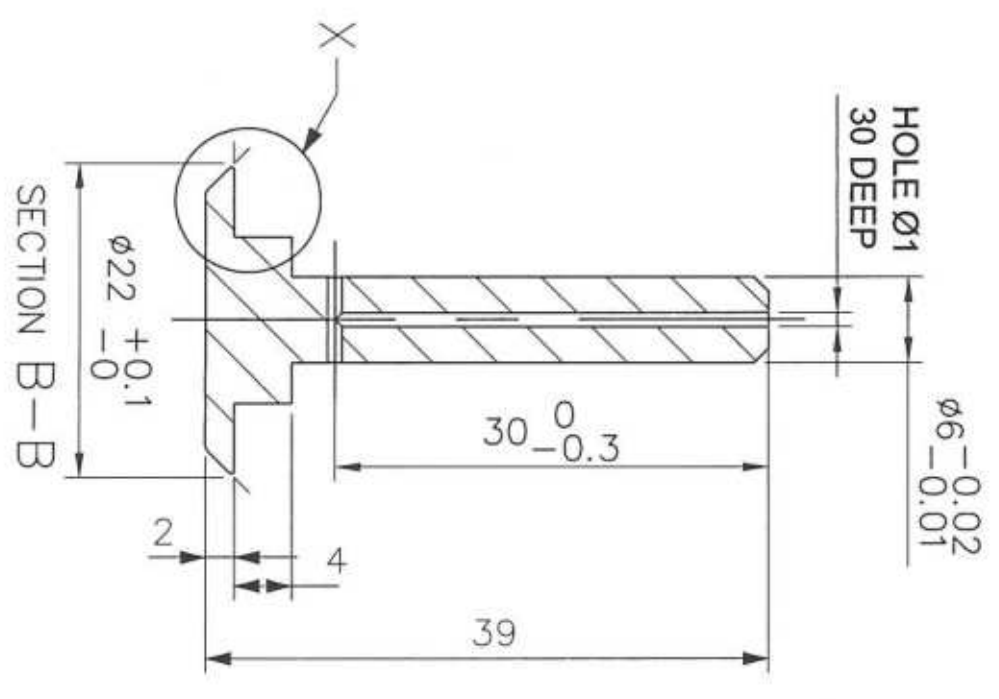
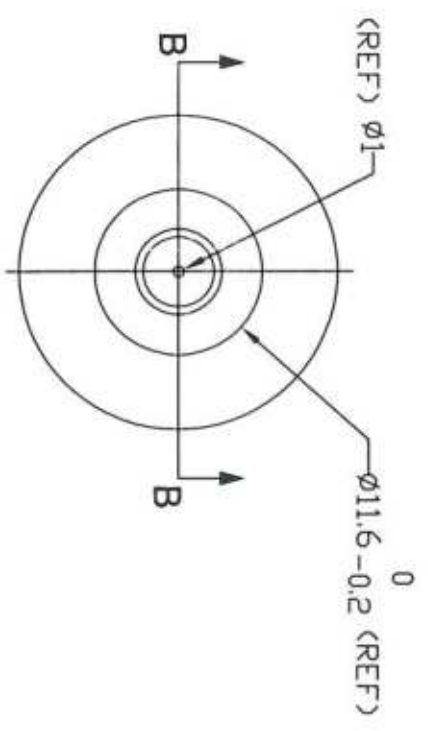
M24 X 1.5(LH)-6H



- NOTE:
1. CHAMFER AND DEBURR ALL SHARP CORNERS AND EDGES TO R0.2 / 0.2 X 45° RESPECTIVELY
  2. MARK THE PART NUMBER.
  3. CARRY OUT NDT 006 AND 015 (OR) BHEL-NDT-FPT-07026 Procedure.
  4. FINISH : ANODISE AS PER HPS 201 TYPE I, FINISH II.(OR) BHEL ANOD PROCEDURE - 001.
  5. ALLOWED TO USE AL. ALLOY BSL 168 - T6 511.

REV. NO.	ZONE	BRIEF RECORD	PPD	CHD	APD
01	B1 B6	1. Note 2 modified as " Mark the Part Number" in place of inspection stamp on tag. 2. BHEL-NDT-FPT-07026 procedure is added in Note 3 3. BHEL ANOD Procedure 001 is added in Note 4	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>

SCALE 1:1	ADA	AERONAUTICAL DEVELOPMENT AGENCY (MIN.OF.DEFENCE) BANGALORE, INDIA	DEC - 1999	NAME	SIGNATURE
SIZE : A3	MATERIAL	HE15A-ST-T6 / BSL 168-T6-511 (AA2014-T6-511)	DRAWN	SHAIK MD ASIF Engineer	<i>[Signature]</i>
UNSPECIFIED TOLERANCES	GENERAL ± 0.3 mm MACHINED ± 0.15 mm ANGULAR ± 1/2°	ALL DIMENSIONS ARE IN MM UNLESS SPECIFIED	CHECKED	DR K V R MURTHY Sc.F.	<i>[Signature]</i>
SURFACE ROUGHNESS (CLA)	AS PRODUCED ROUGH ∇ 3.2 Microns MEDIUM ∇ 1.6 Microns FINE ∇ 0.8 Microns SPECIAL	QTY	APPROVED	DR M A RAJU Sc.F.	<i>[Signature]</i>
		REF. DRAWING NO.	DWG. NO.	SANKARAJAH MADDA OS & TD (GS)	REV NO
		01	A1K-14-4085-300-000		01
		SHEET 1 OF 1	SEAT		



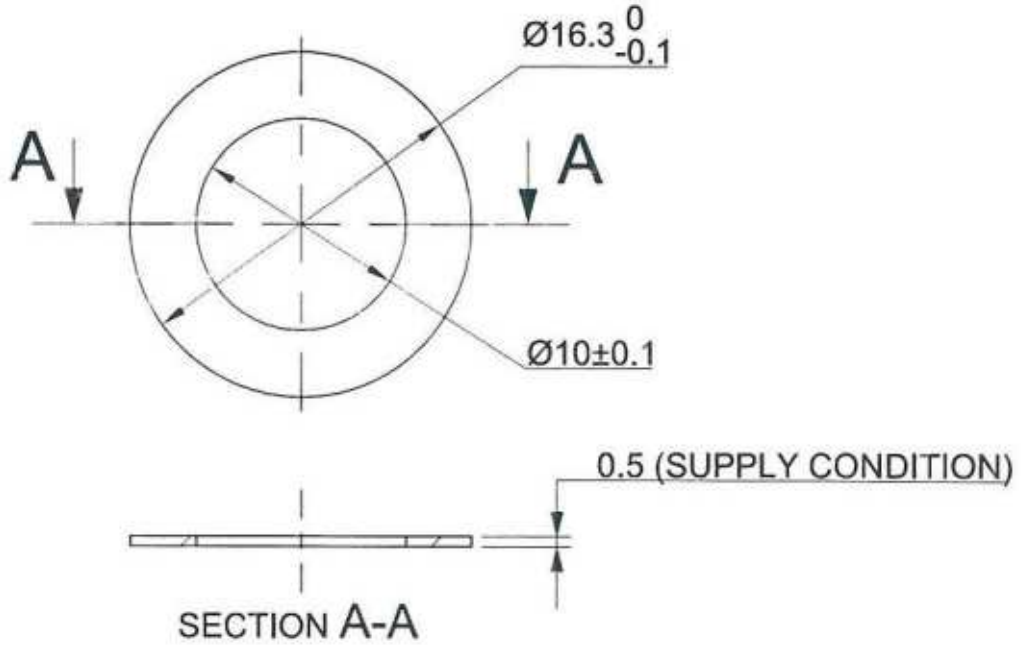
- NOTE:
1. BREAK CORNERS & SHARP EDGES TO R0.2 / 0.2 X 45° RESPECTIVELY.
  2. MARK THE PART NUMBER.
  3. CARRY OUT NDT AS PER 006 & FLUORESCENT DYE PENETRANT AS PER NDT 015 (OR) BHEL NDT - FPT-07026 PROCEDURE.

REV NO.	ZONE	BRIEF RECORD	PPD	CHD	APD
01	D4	1. Allowed to use MDN 321 / SS 321 material. 2. Note 2 modified as "Mark the Part Number" in place of inspection stamp on tag. 3. BHEL NDT-FPT-07026 procedure is added in Note 3.	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>

SCALE 1:1	ADA	AERONAUTICAL DEVELOPMENT AGENCY MIN. OF DEFENCE BANGALORE, INDIA	DEC - 1999	NAME	SIGNATURE
SIZE : A3	MATERIAL	MDN 321A / MDN 321 / SS 321	DRAWN	SHAIK MD ASIF Engineer	<i>[Signature]</i>
UNSPECIFIED TOLERANCES	GENERAL ± 0.3 mm MACHINED ± 0.15 mm ANGULAR ± 1/2°	ALL DIMENSIONS ARE IN MM UNLESS SPECIFIED	CHECKED	Dr K V R MURTHY Sc F	<i>[Signature]</i>
SURFACE ROUGHNESS CLASS	AS PRODUCED ROUGH ∇ 3.2 Microns MEDIUM ∇ 1.6 Microns FINE ∇∇∇ 0.8 Microns	QTY	APPROVED	Dr M A RAJU Sc F	<i>[Signature]</i>
	SPECIAL	SHEET 1 OF 1	DWG. NO.	SANKARAJAH MADAN OS & TD (GS)	<i>[Signature]</i>
			POP PET		REV NO
			A1K-14-4085-003-000		01



DWG.NO: A1K-I4-4085-008-000



**NOTE:**

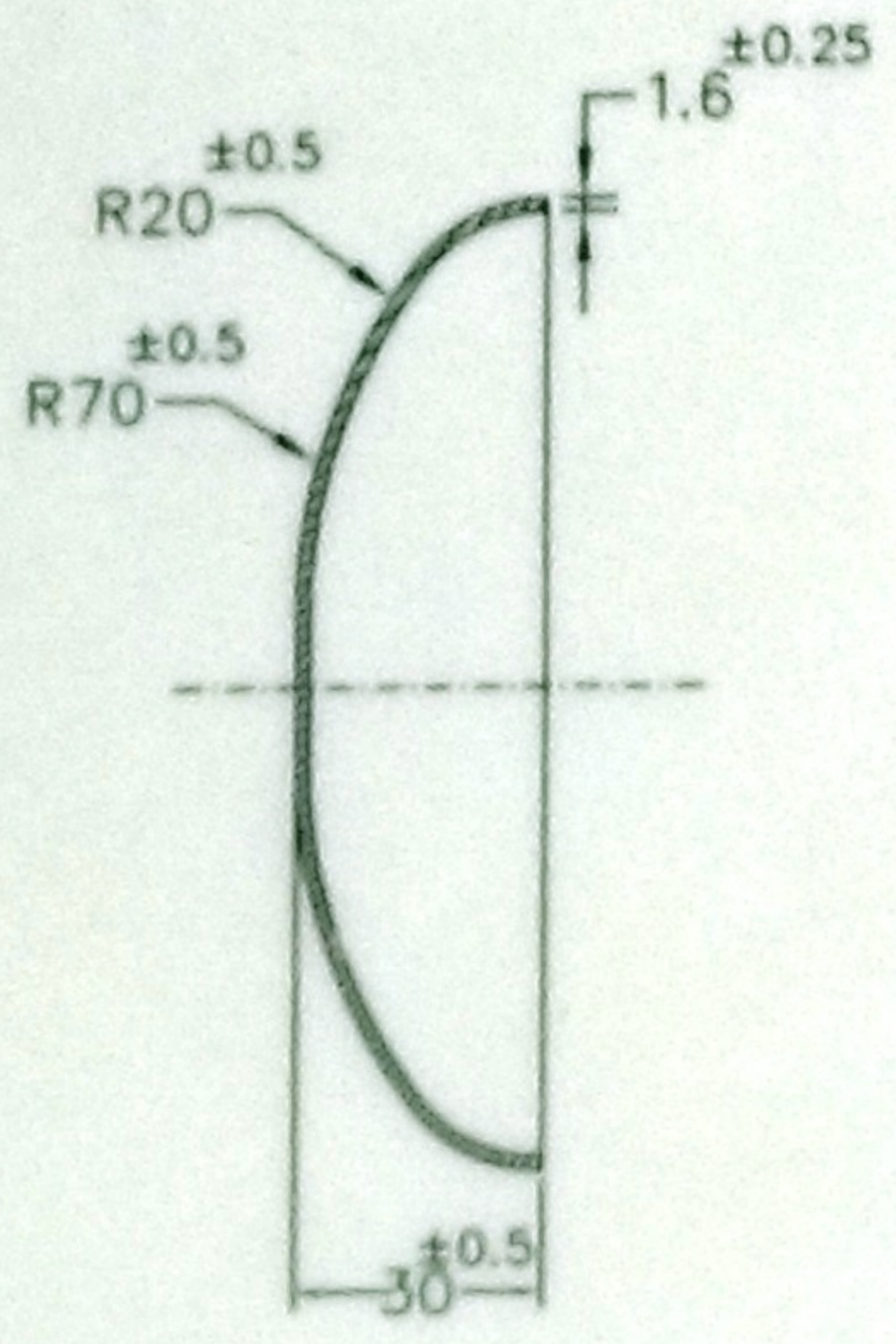
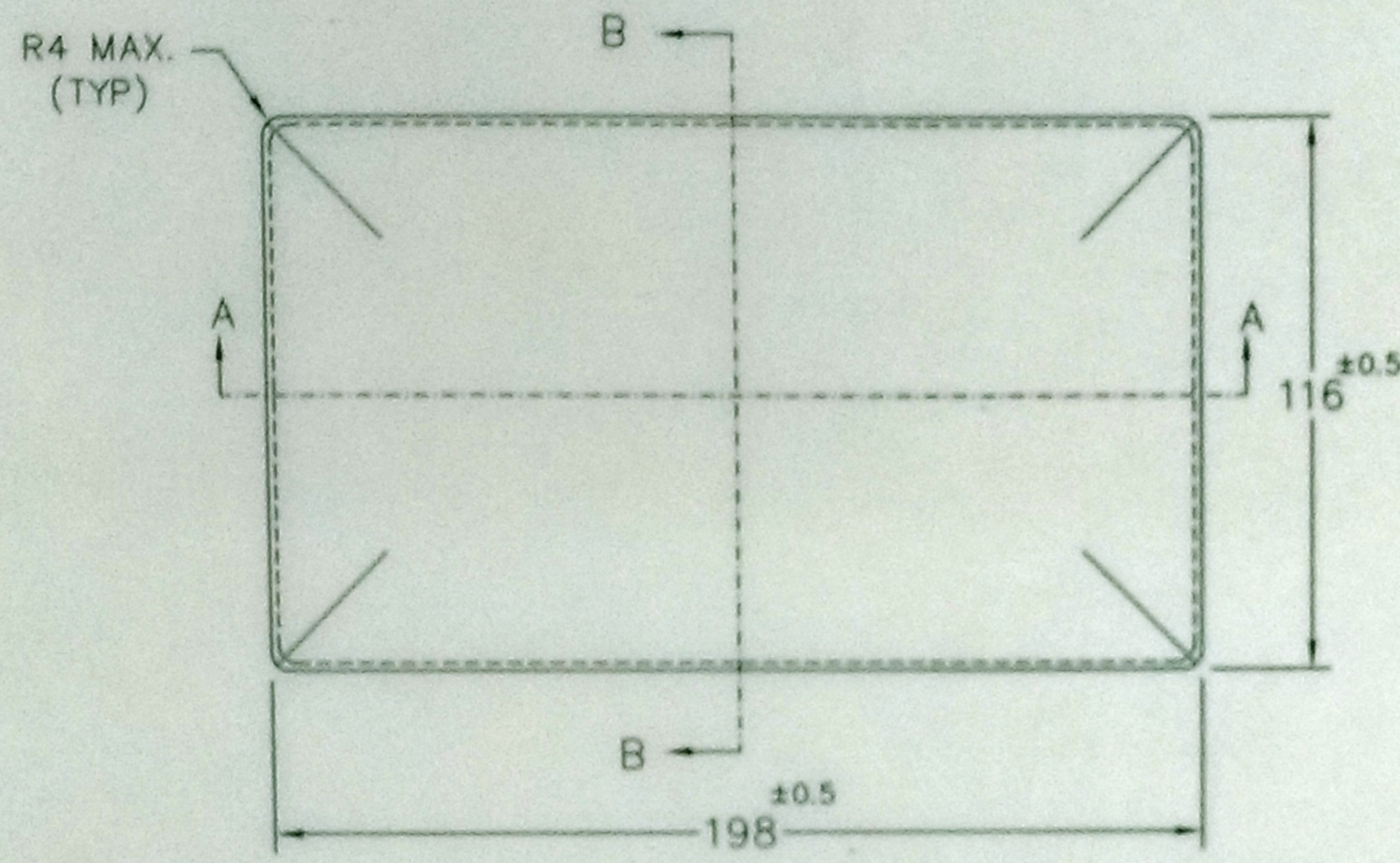
1. CHAMFER AND DEBURR ALL SHARP CORNERS AND EDGES
2. ADD 1 TO 8 NUMBERS AS REQUIRED TO MAINTAIN CRACKING PRESSURE IN SUB-ASSEMBLY A1K-I4-4085-300-000
3. ADD 1 TO 8 NUMBERS AS REQUIRED TO MAINTAIN CRACKING PRESSURE IN SUB-ASSEMBLY A1K-I4-5005-300-000

01	C3	1. Note 2 & 3 are modified to maintain Cracking pressure in sub assembly. 2. Allowed to use SS 321 material.	<i>Santosh</i>	<i>Mk Raja</i>	<i>[Signature]</i>
REV NO.	ZONE	BRIEF RECORD	PPD	CHD	APD
SCALE 1:1	<b>ADA</b> AERONAUTICAL DEVELOPMENT AGENCY (MIN.OF.DEFENCE) BANGALORE, INDIA		APR - 2000	NAME	SIGNATURE
SIZE : A4	MATERIAL	12KH18N10T / MDN 321-A / MDN 321/ SS 321	DRAWN	SHAIK MD ASIF Engineer	<i>Santosh</i>
UNSPECIFIED TOLERANCES	GENERAL ± 0.3 mm	ALL DIMENSIONS ARE IN MM UNLESS SPECIFIED	CHECKED	Dr K V R MURTHY Sc 'F'	<i>[Signature]</i>
	MACHINED ± 0.15 mm			Dr M A RAJU Sc 'F'	<i>Mk Raja</i>
ANGULAR ± 1/2°	QTY		REF. DRAWING NO.		APPROVED
SURFACE ROUGHNESS CLASS	AS PRODUCED	REFER NOTE	A1K-I4-4085-300-000	<i>[Signature]</i>	
	ROUGH ∇ 3.2 Microns	SHEET 1 OF 1		DWG.NO.	REV NO
	MEDIUM ∇∇ 1.6 Microns			A1K-I4-4085-008-000	01
	FINE ∇∇∇ 0.8 Microns				
	SPECIAL				
	<b>SPACER</b>				

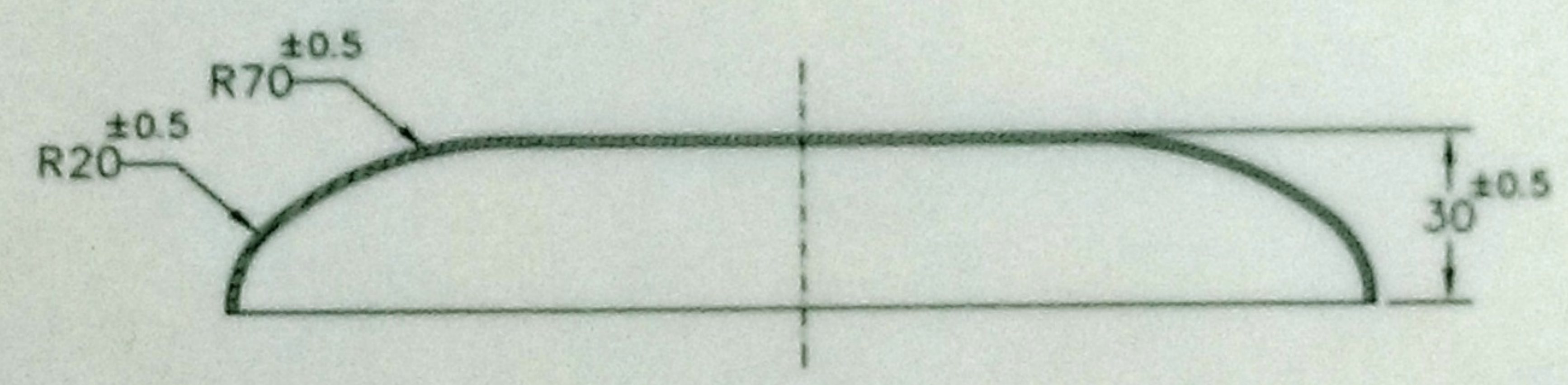
DRAWING NOT TO BE SCALED

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED

FORM NO. 0421/0



SECTION-BB



SECTION-AA

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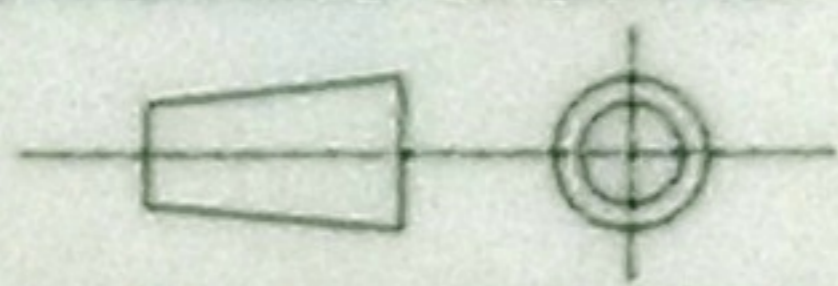
101	BLEED AIR I/O HEADER	2	MDN 347A	0.80
P.No.	DESCRIPTION	QTY.	MATERIAL	WT(KG)

**BHPV** BHARAT HEAVY PLATE & VESSELS LTD.  
 (A Subsidiary of Bharat Yantra Nigam Limited)  
 VISAKHAPATNAM - 530 012 (A.P.)

DRN	B.H. 28.03.05	RESEARCH & DEVELOPMENT			
CHD	K.S.S.P. 29-03-05	CUSTOMER : ADA, BANGALORE			
APPROVED	A.P. 29.03.05	<b>PRECOOLER</b> <b>BLEED AIR I/O HEADER</b>			
SCALE	NTS				
ALL PROJECTIONS ARE FIRST ANGLE UNLESS OTHERWISE SPECIFIED		WORK ORDER NO :	NO OFF:		
REV. NO	ZONE	YEAR OF ORDER	SIZE	DRAWING No.	REV
1	---	2004	A3	RD-41015301-P-101	1

REF. DRG. RD-41015301-A-100

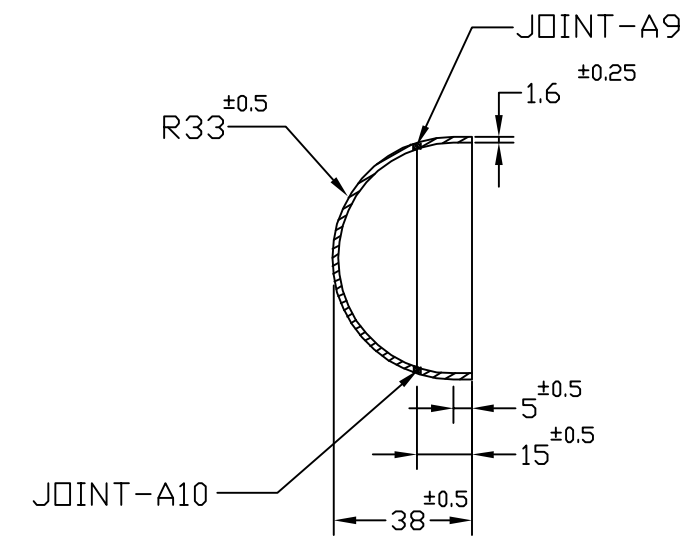
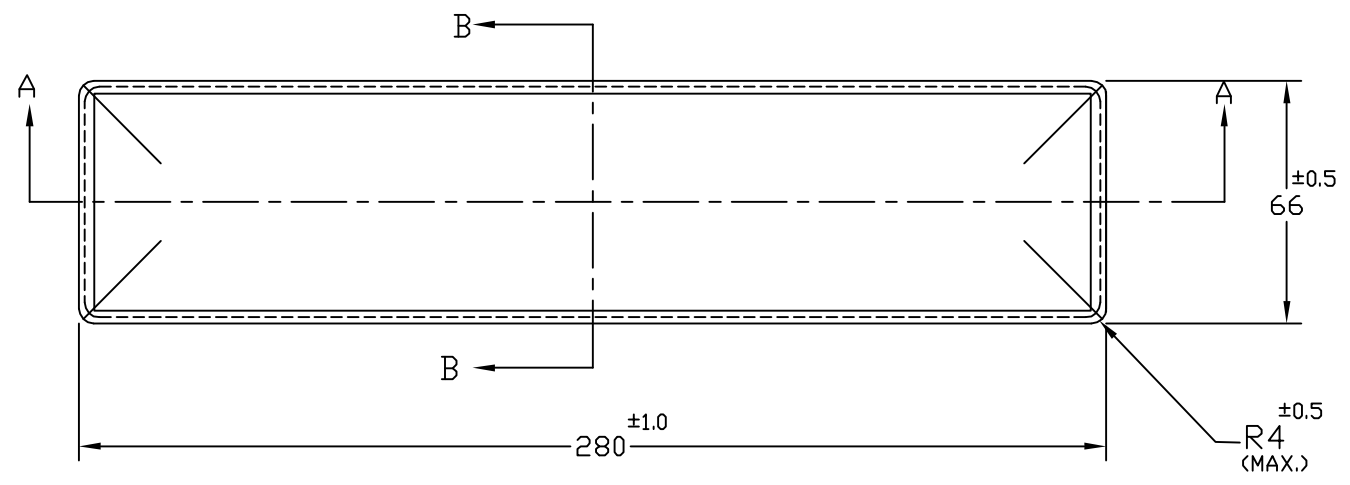
1	---	MATERIAL SPECIFICATION REVISED.	B. Um...	10-05-08	10/05/08
REV. NO	ZONE	BRIEF RECORD	PPD	CHD	APD



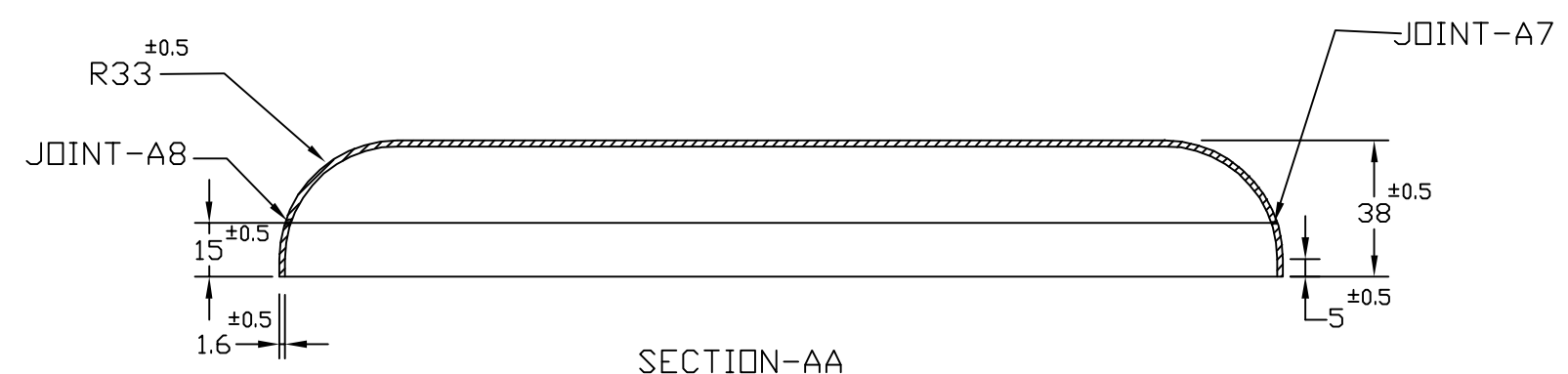
FORM NO. 0421/0

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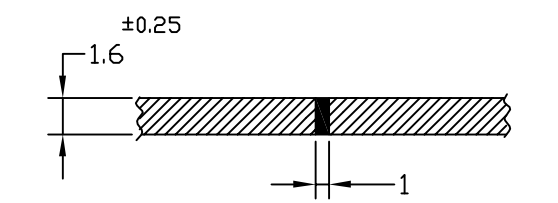
DRAWING NOT TO BE SCALED ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED



SECTION-BB



SECTION-AA



DETAILS OF JOINTS - A7, A8, A9, A10

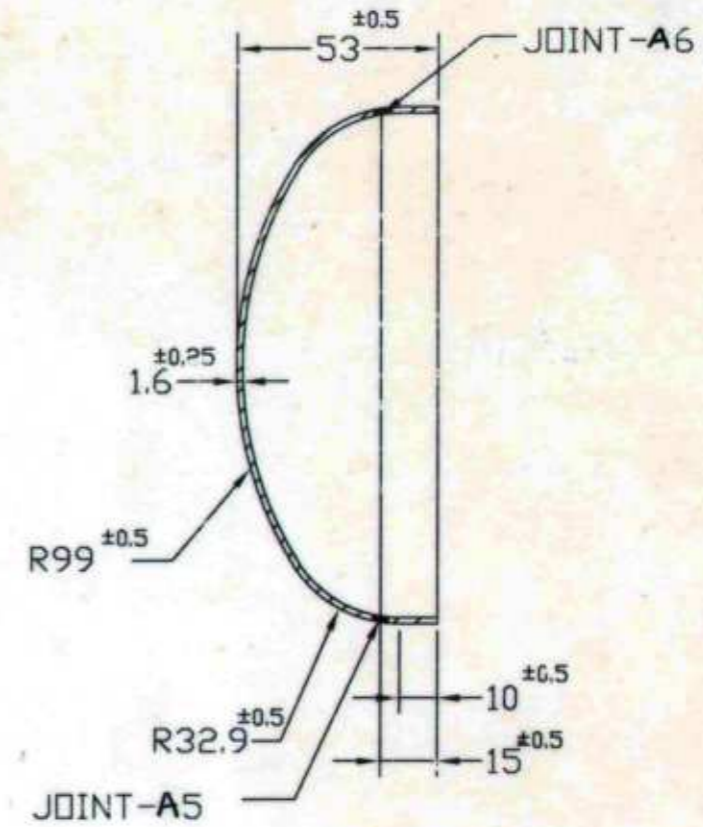
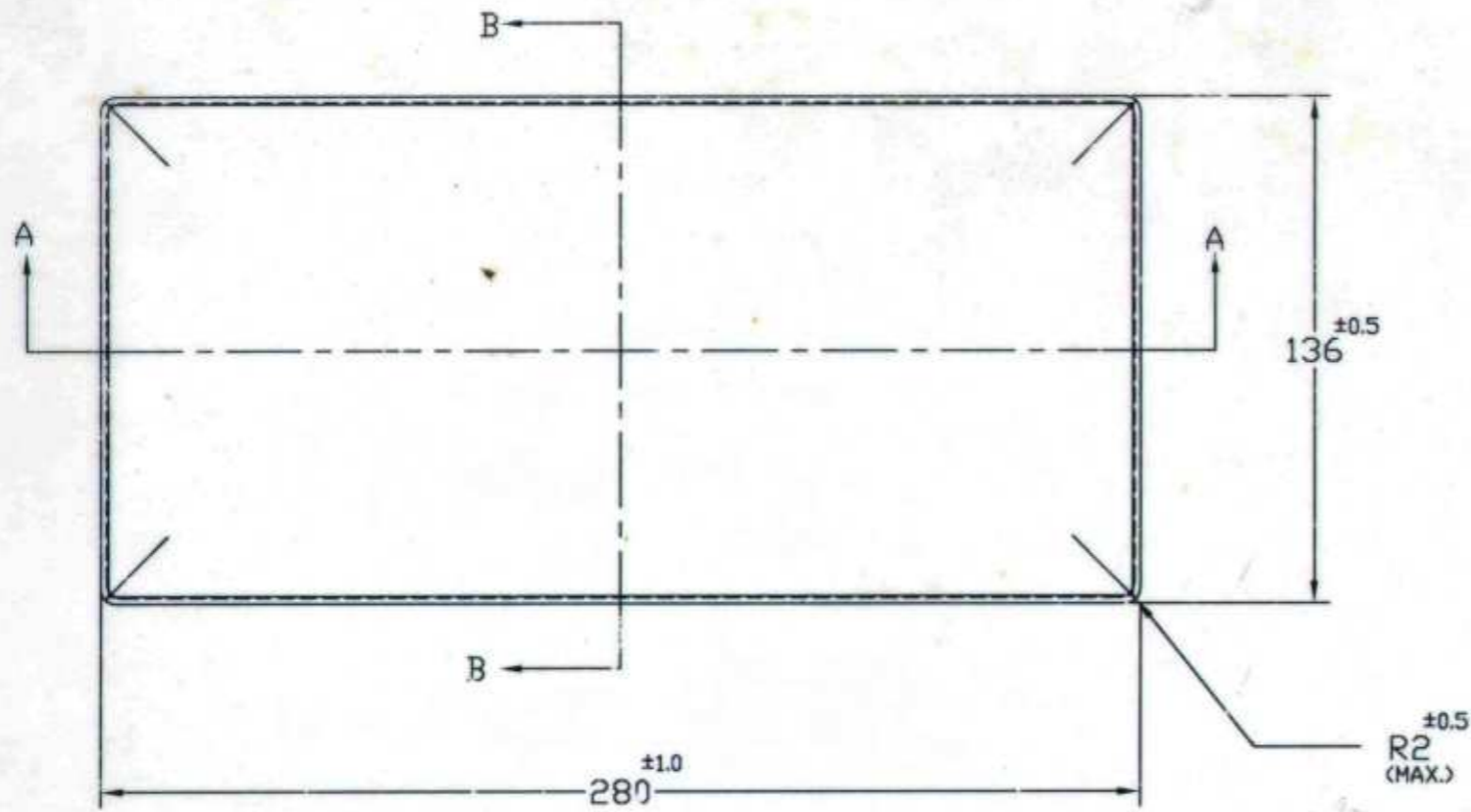
107	CHARGE AIR I/O HEADER	2	MDN 347A	0.9
P.No.	DESCRIPTION	QTY.	MATERIAL	WT(KG)

**BHPV** BHARAT HEAVY PLATE & VESSELS LTD.  
 (A Subsidiary of Bharat Yantra Nigam Limited)  
 VISAKHAPATNAM - 530 012 (A.P.)

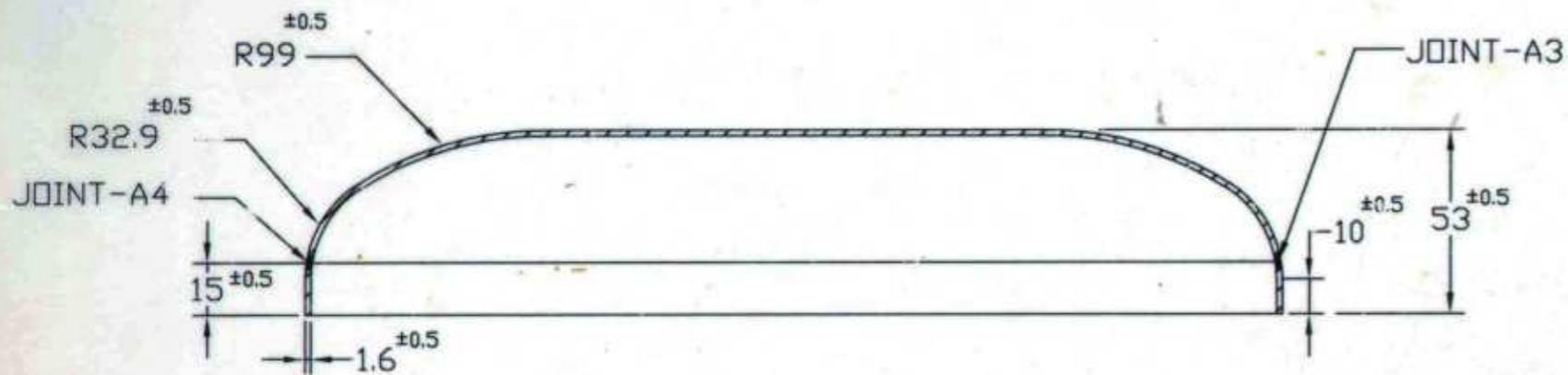
DRN		RESEARCH & DEVELOPMENT		
CHD		CUSTOMER : ADA, BANGALORE		
APPROVED		PRIMARY HEAT EXCHANGER		
SCALE	1:2	CHARGE AIR I / O HEADER		
ALL PROJECTIONS ARE FIRST ANGLE UNLESS OTHERWISE SPECIFIED		WORK ORDER NO :	NO OFF:	
		YEAR OF ORDER	SIZE	DRAWING No.
		1996	A3	RD-41013905-P-107
				REV
				3

REV.NO	ZONE	BRIEF RECORD	PPD	CHD	APD
3	---	INCORPORATED WELDING JOINT DETAILS			
2	---	INCORPORATED DETAILS NOT SHOWN EARLIER			
1	B1-B2	MATRL.SPEC. REVISED & WT ADDED			

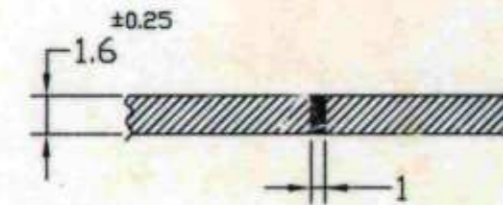
REF. DRG.  
RD-41013905-A-100



SECTION BB



SECTION-AA



DETAILS OF JOINTS-A3,A4,A5,A6

113	CHARGE AIR RETURN HEADER	1	MDN 347A	0.80
P.No.	DESCRIPTION	QTY.	MATERIAL	WT(KG)



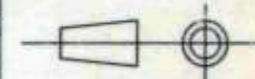
**BHARAT HEAVY PLATE & VESSELS LTD.**

(A Subsidiary of Bharat Yantra Nigam Limited)

VISAKHAPATNAM - 530 012 (A.P.)

DRN	B. Uma 15/10/98	RESEARCH & DEVELOPMENT
CHD	U.S.R. 16-10-98	CUSTOMER : ADA, BANGALORE
APPROVED	[Signature] 16/10/98	PRIMARY HEAT EXCHANGER
SCALE	1 : 2	CHARGE AIR RETURN HEADER

ALL PROJECTIONS ARE FIRST ANGLE UNLESS OTHERWISE SPECIFIED



REF. DRG.  
RD-41013905-A-100

REV.NO	ZONE	BRIEF RECORD	PPD	CHD	APD
3	---	WELDING JOINT DETAILS INCORPORATED	B. Uma 10/12/02	U.S.R. 10-12-02	[Signature] 10/12/02
2	---	INCORPORATED DETAILS NOT SHOWN EARLIER	KSSR 15-03-02	AP 16-03-02	AP 16-03-02
1	B1-B3	MATRL.SPEC. REVISED & WT ADDED	KSSR 14-11-98	AP 20-11-98	AP 20-11-98

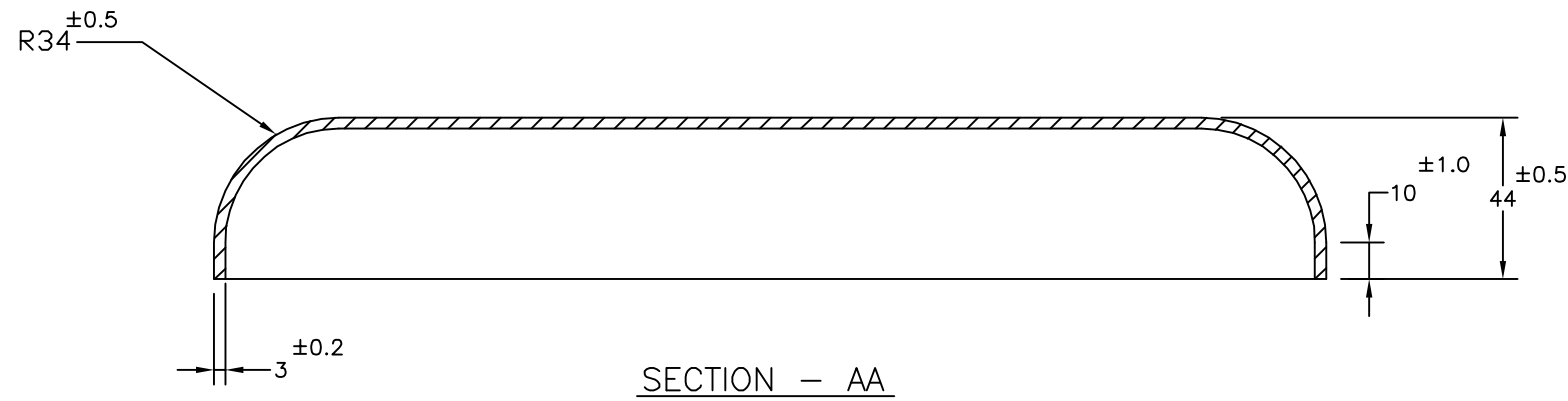
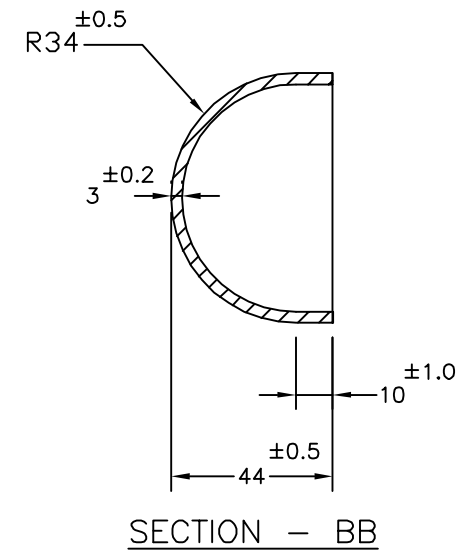
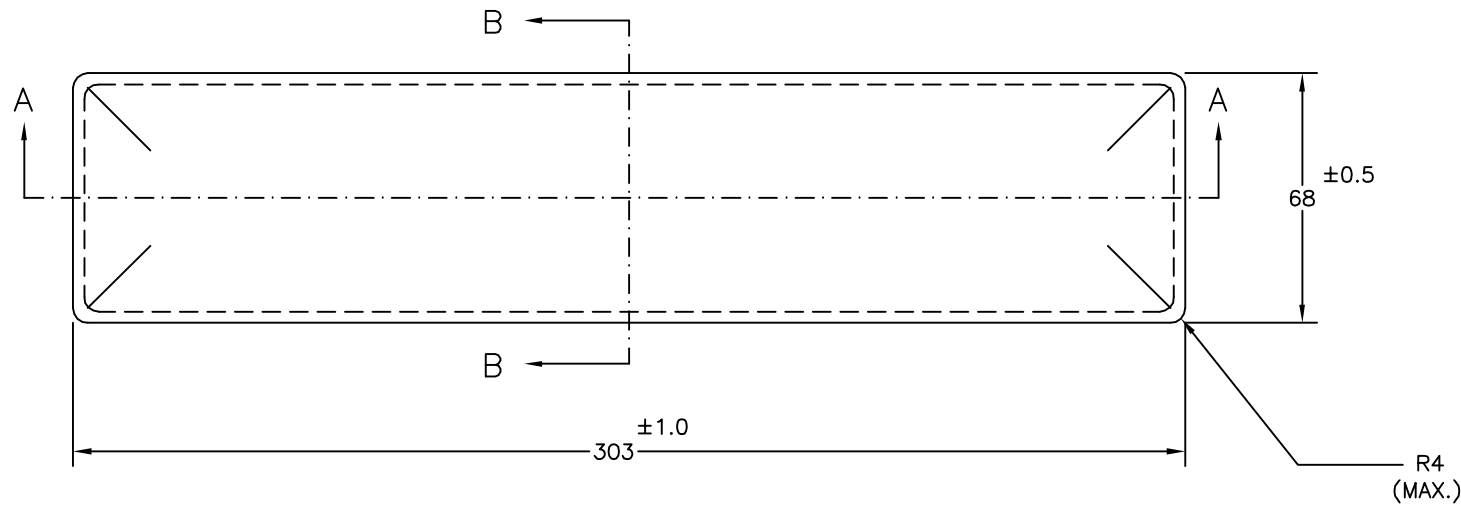
WORK ORDER NO :	NO OFF:		
YEAR OF ORDER	SIZE	DRAWING No.	REV
1996	A3	RD-41013905-P-113	3

FORM NO. 0421/0

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ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED



107	CHARGE AIR I/O HEADER	2	AA 5083/AA 5086	0.598
P.No.	DESCRIPTION	QTY. (NOS)	MATERIAL	WT(KG)



**BHARAT HEAVY ELECTRICALS LTD.**  
**HEAVY PLATES & VESSELS PLANT**  
 VISAKHAPATNAM - 530012, INDIA

DRN	B.Uma 14.11.1998	RESEARCH & DEVELOPMENT		
CHD	K.S.S.Rao 14.11.1998	CUSTOMER :		
APPROVED	AP 20.11.1998	<b>SECONDARY HEAT EXCHANGER</b> <b>CHARGE AIR I/O HEADER</b>		
SCALE	1:2			
ALL PROJECTIONS ARE FIRST ANGLE UNLESS OTHERWISE SPECIFIED		WORK ORDER NO :	NO OFF:	
		YEAR OF ORDER	SIZE	DRAWING No.
			A3	RD-41011201-P-107
				REV
				3

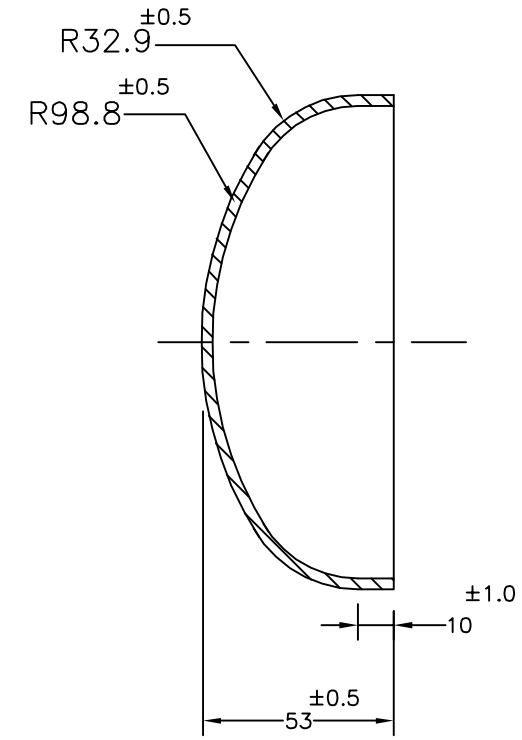
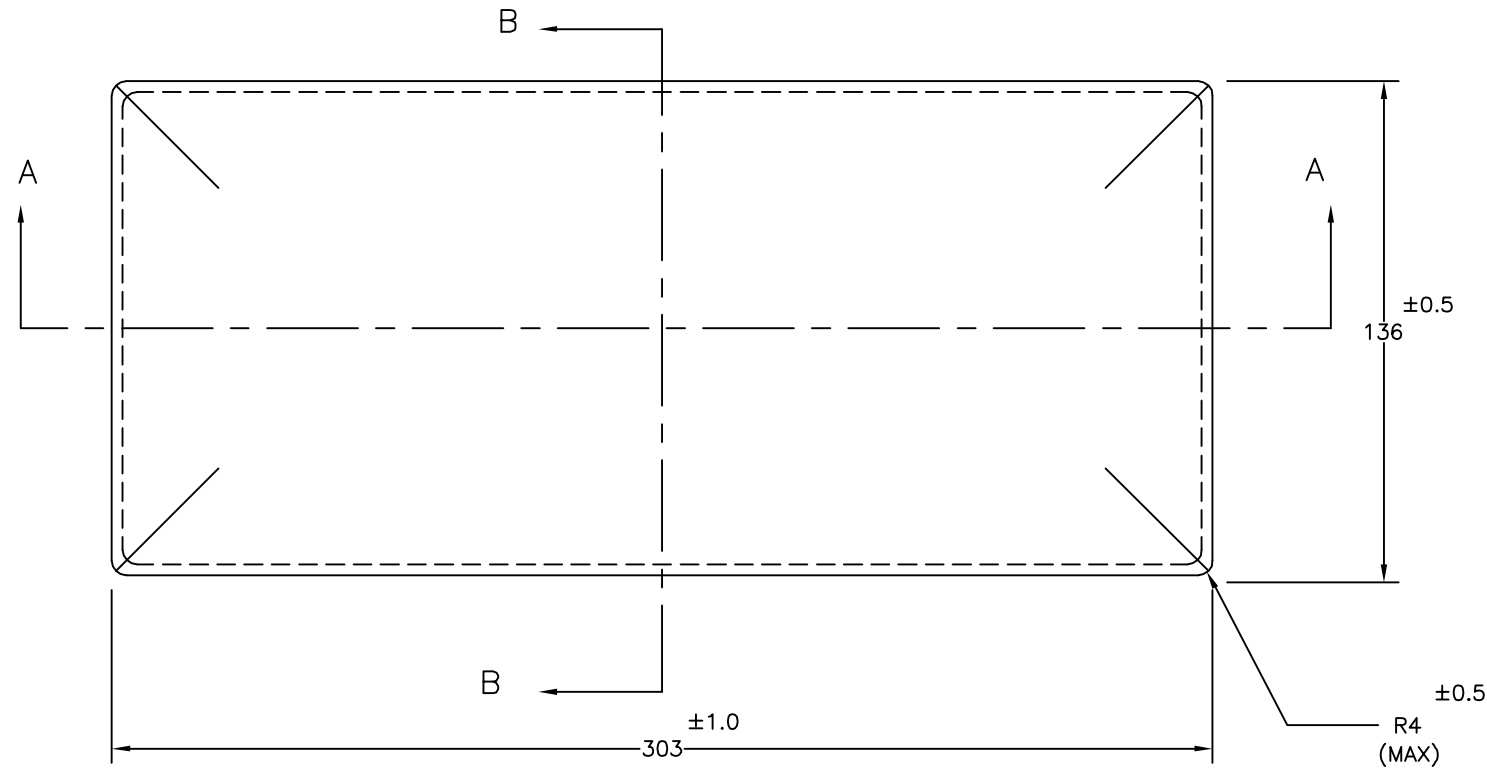
REF. DRG.	3	---	MATRL. SPECN. AA 5083 INCLUDED AS PER MOD No. MOD/CHE/001	B.UMA 19.07.03	KVR 19.07.03	AP 19.07.03	
RD-41011201-A-100	2	---	TOLERANCES CORRECTED	B.UMA 03.04.02	KSR 03.04.02	AP 04.04.02	
	1	---	INCORPARATED DETAILS NOT SHOWN EARLIER	PPD	CHD	APD	
REV.NO	ZONE	BRIEF RECORD			PPD	CHD	APD

FORM NO. 0421/0

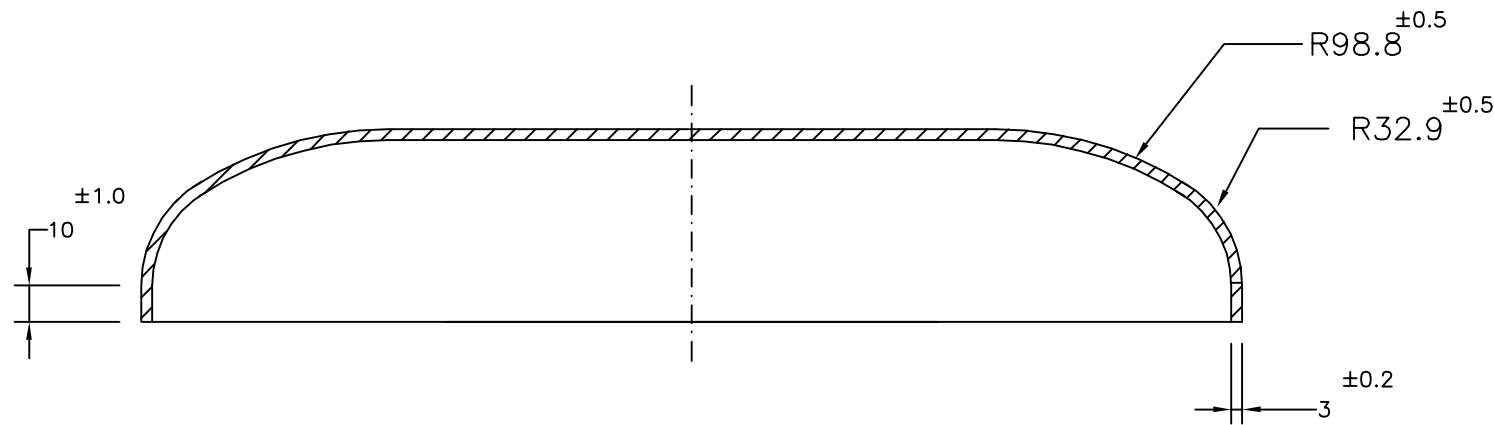
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DRAWING NOT TO BE SCALED

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED



SECTION - BB



SECTION - AA

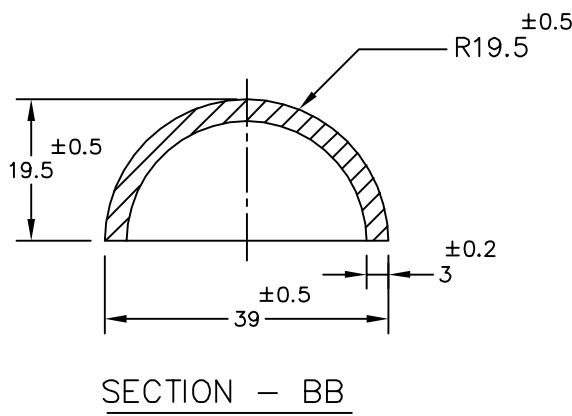
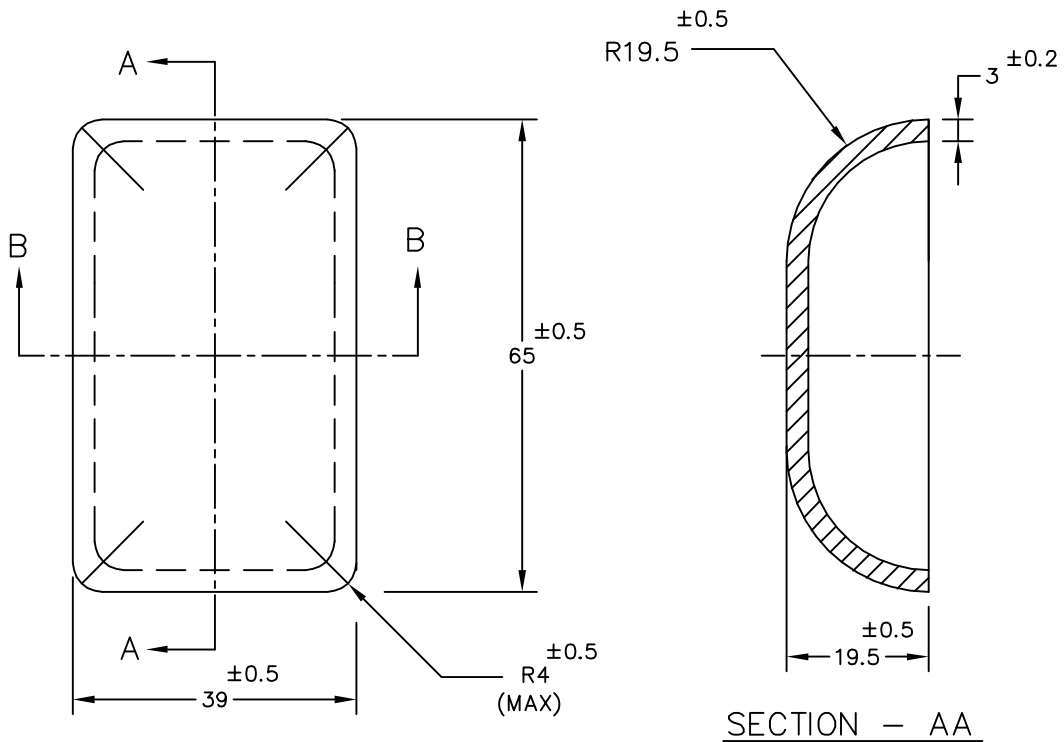
109	CHARGE AIR RETURN HEADER	1	AA 5083/AA 5086	0.525
P.No.	DESCRIPTION	QTY. (NOS)	MATERIAL	WT(KG)

**BHARAT HEAVY ELECTRICALS LTD.**  
**HEAVY PLATES & VESSELS PLANT**  
 VISAKHAPATNAM - 530012, INDIA  
 MATRL. SPECN. AA 5083 INCLUDED

DRN	B.Uma 14.11.1998	RESEARCH & DEVELOPMENT
CHD	K.S.S.Rao 14.11.1998	CUSTOMER :
APPROVED	AP 20.11.1998	<b>SECONDARY HEAT EXCHANGER</b>
SCALE	1:2	<b>CHARGE AIR RETURN HEADER</b>

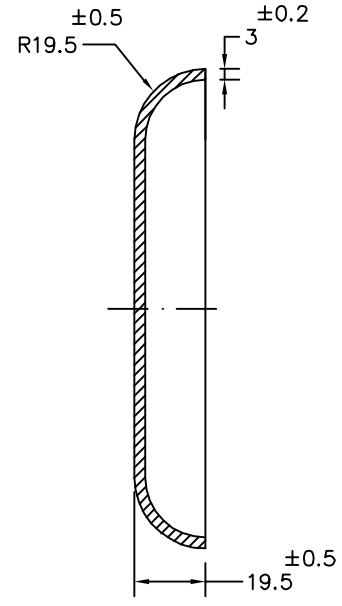
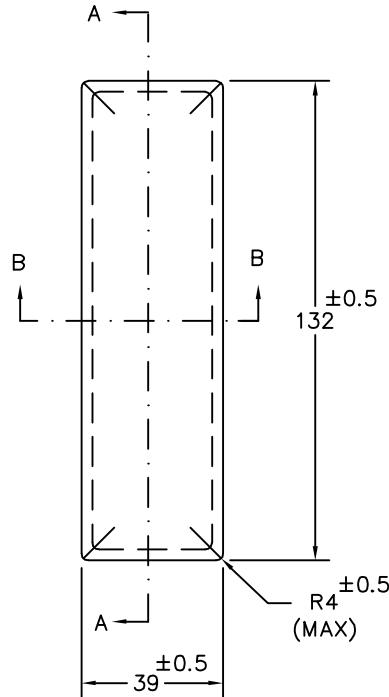
ALL PROJECTIONS ARE FIRST ANGLE UNLESS OTHERWISE SPECIFIED		WORK ORDER NO :	NO OFF:
YEAR OF ORDER	SIZE	DRAWING No.	REV
	A3	RD-41011201-P-109	3

REF. DRG.	RD-41011201-A-100	3	---	MATRL. SPECN. AA 5083 INCLUDED AS PER MOD No. MOD/CHE/001	UMA	KVR	AP
		2	---	TOLERANCES CORRECTED	19.07.03	19.07.03	19.07.03
		1	---	INCORPARATED DETAILS NOT SHOWN EARLIER	03.04.02	KSSR	AP
					04.04.02		04.04.02
REV.NO	ZONE	BRIEF RECORD			PPD	CHD	APD

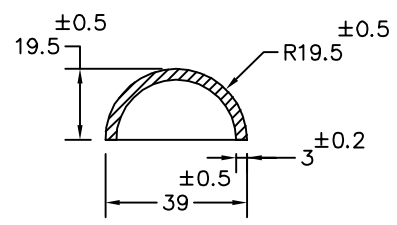


REF. DRG. RD-41011201-A-100	3	---	MATRL. SPECN. AA 5083 INCLUDED. AS PER MOD No. MOD/CHE/001				
	2	---	TOLERANCES CORRECTED	UMA 19.07.03	KVR 19.07.03	AP 19.07.03	
	1	---	REF.DRG.NO. ENTERED & MATL SPEC.REVSD.	UMA 04.04.02	KSSR 04.04.02	AP 04.04.02	
REV NO.	ZONE	BRIEF RECORD			PPD	CHD	APD

QTY.	2 NOS		<b>BHARAT HEAVY ELECTRICALS LTD.</b> <b>HEAVY PLATES &amp; VESSELS PLANT</b> VISAKHAPATNAM - 530012, INDIA			
PART NO.	115		RESEARCH & DEVELOPMENT CUSTOMER : <b>SECONDARY HEAT EXCHANGER</b> F.T.P. AIR I/O HEADER			
MATRL.	AA 5083/ AA 5086	DRN	B.Uma 14-11-98	WORK ORD. NO.: YR OF ORD    SIZE    DRAWING NO.    REV		
NOTES:	1. DRAWING NOT TO BE SCALED. 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.	CHD	KSSRao 14-11-98			
		APPROVED	A.Panigrahi 22-11-98	SCALE    1:1		
		SCALE	1:1			



SECTION - AA



SECTION - BB

REF. DRG. RD-41011201-A-100	3	---	MATL. SPECN. AA 5083 INCLUDED AS PER MOD No. MOD/CHE/001			
	2	---	TOLERANCES CORRECTED	B.UMA 19.07.03	KVR 19.07.03	AP 19.07.03
	1	---	REF.DRG No. ENTERED & MATL.SPEC.RVSD.	UMA 04.04.02	KSSR 04.04.02	AP 04.04.02
	REV NO.	ZONE	BRIEF RECORD	PPD	CHD	APD

QTY.	1 NO
PART NO.	117

	<b>BHARAT HEAVY ELECTRICALS LTD.</b> <b>HEAVY PLATES &amp; VESSELS PLANT</b> VISAKHAPATNAM - 530012, INDIA
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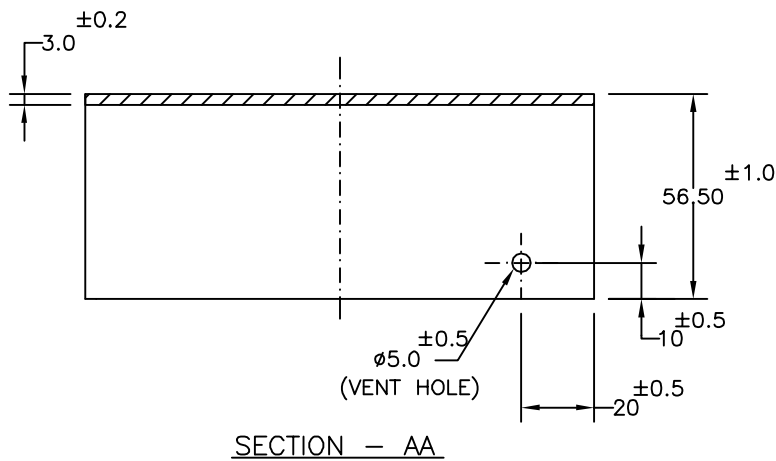
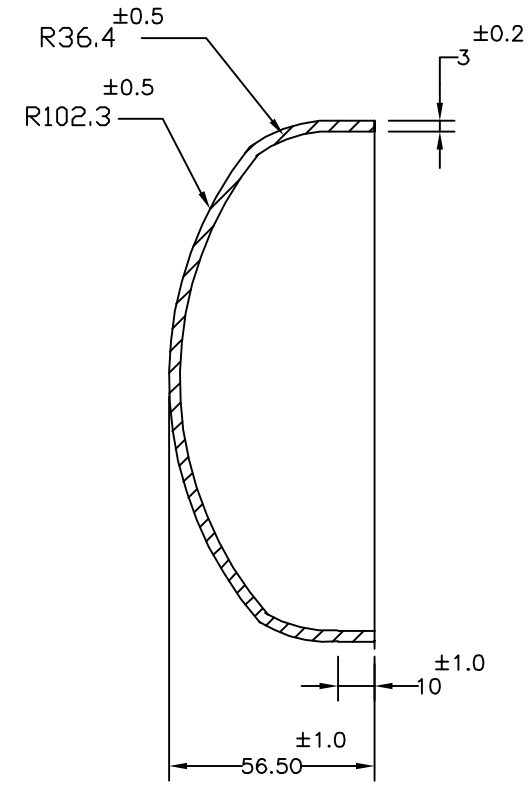
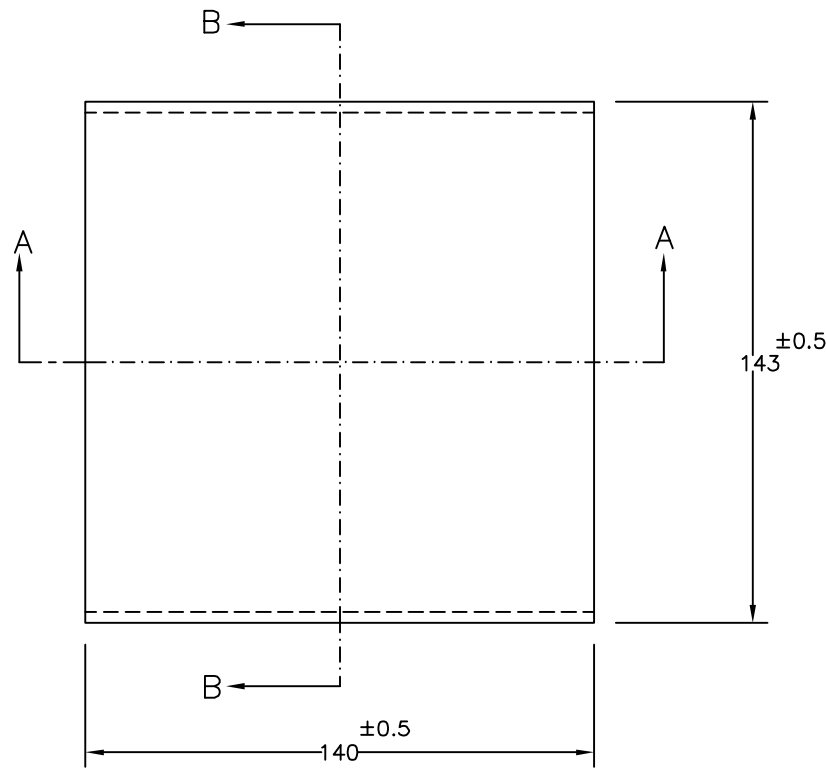
NOTE:  ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.	MATRL.	AA 5083/ AA 5086	DRN	B.Uma 14-11-98	RESEARCH & DEVELOPMENT			
			CHD	KSSRao 14-11-98	CUSTOMER :			
			APPROVED	A.Panigrahi 14-11-98	<b>SECONDARY HEAT EXCHANGER</b>			
			SCALE	1:2	<b>F.T.P.AIR RETURN HEADER</b>		WORK ORD. NO.:	NO. OFF:
					YR OF ORD	SIZE	DRAWING NO.	REV
					A4	RD-41011201-P-117	3	

FORM NO. 0421/0

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DRAWING NOT TO BE SCALED

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED



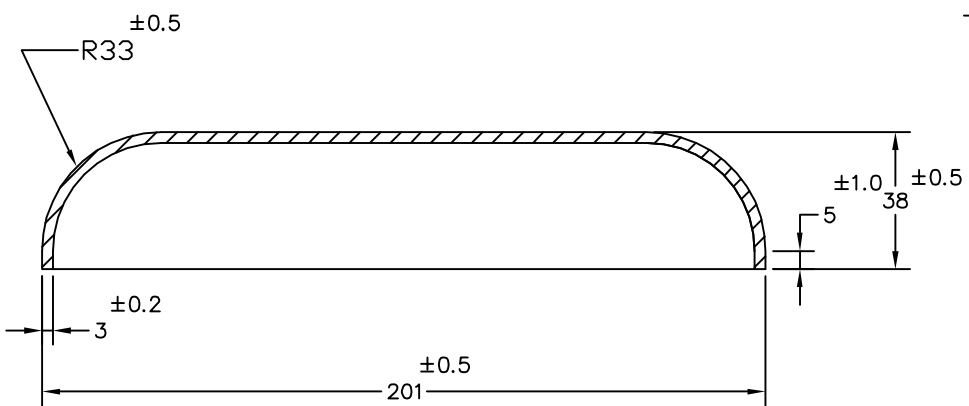
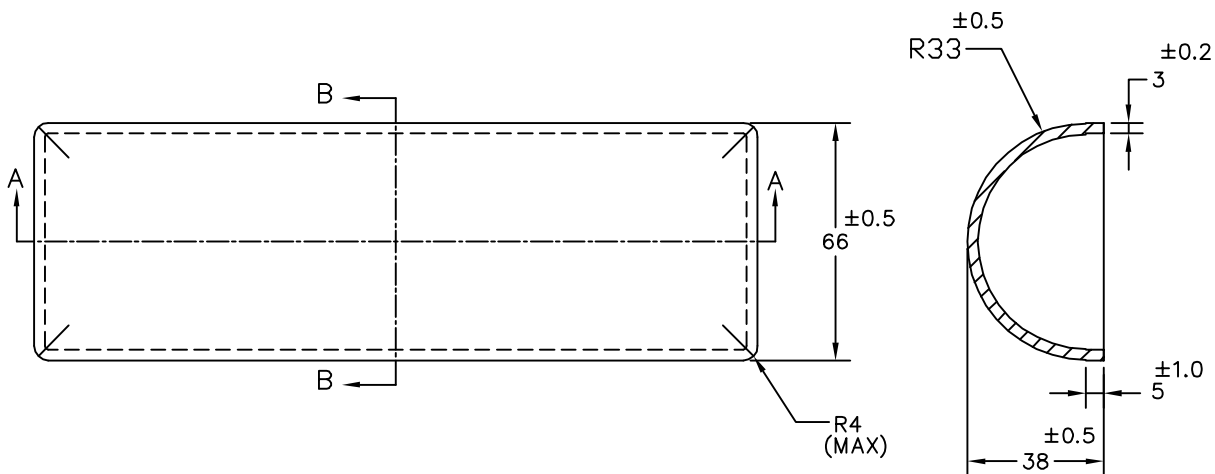
P.No.	DESCRIPTION	QTY. (NOS)	MATERIAL	WT(KG)
120	RETURN HEADER R.F.PAD	1	AA 5083/AA 5086	0.312

**BHARAT HEAVY ELECTRICALS LTD.**  
**HEAVY PLATES & VESSELS PLANT**  
**VISAKHAPATNAM - 530012, INDIA**

DRN	B.Uma 29.07.00	RESEARCH & DEVELOPMENT
CHD	K.S.S.Rao 29.07.00	CUSTOMER :
APPROVED	A.Panigrahi 31.07.2K	<b>SECONDARY HEAT EXCHANGER</b> <b>RETURN HEADER R.F.PAD</b>
SCALE	1:2	

ALL PROJECTIONS ARE FIRST ANGLE UNLESS OTHERWISE SPECIFIED		WORK ORDER NO :	NO OFF:
YEAR OF ORDER	SIZE	DRAWING No.	REV
	A3	RD-41011201-P-120	2

REF. DRG.	REV.NO	ZONE	BRIEF RECORD	PPD	CHD	APD
RD-41011201-A-100	2	---	MATRL. SPECN. AA 5083 INCLUDED AS PER MOD No. MOD/CHE/001	B.UMA 19.07.03	KVR 19.07.03	AP 19.07.03
	1	---	TOLERANCES CORRECTED, VENT HOLE ADDED			



SECTION-AA

SECTION-BB

	3	---	MATRL. SPECN. AA 5083 INCLUDED. AS PER MOD No. MOD/CHE/001			
	2	---	TOLERANCES CORRECTED.	UMA 18.07.03	KSSR 18.07.03	AP 21.07.03
REF. DRG.	1	---	MATL. SPEC. REVISED	UMA 11.04.02	KSSR 12.04.02	AP 12.04.02
RD-41013909-A-100	REV NO.	ZONE	BRIEF RECORD	PPD	CHD	APD
QTY.	<b>BHARAT HEAVY ELECTRICALS LTD.</b> <b>HEAVY PLATES &amp; VESSELS PLANT</b> VISAKHAPATNAM - 530012, INDIA					
PART NO.	2 NOS					
PART NO.	102					
MATRL.	AA 5083/ AA 5086	DRN	B.Uma 22.02.99	RESEARCH & DEVELOPMENT		
		CHD	KSSRao 22.02.99	CUSTOMER :		
		APPROVED	A.Panigrahi 24.02.99	<b>REHEATER</b>		
		SCALE	1:2	<b>COLD AIR INLET/OUTLET HEADER</b>		
				WORK ORD. NO.:	NO. OFF:	
				YR OF ORD	SIZE	DRAWING NO.
					A4	RD-41013909-P-102
						REV
						3

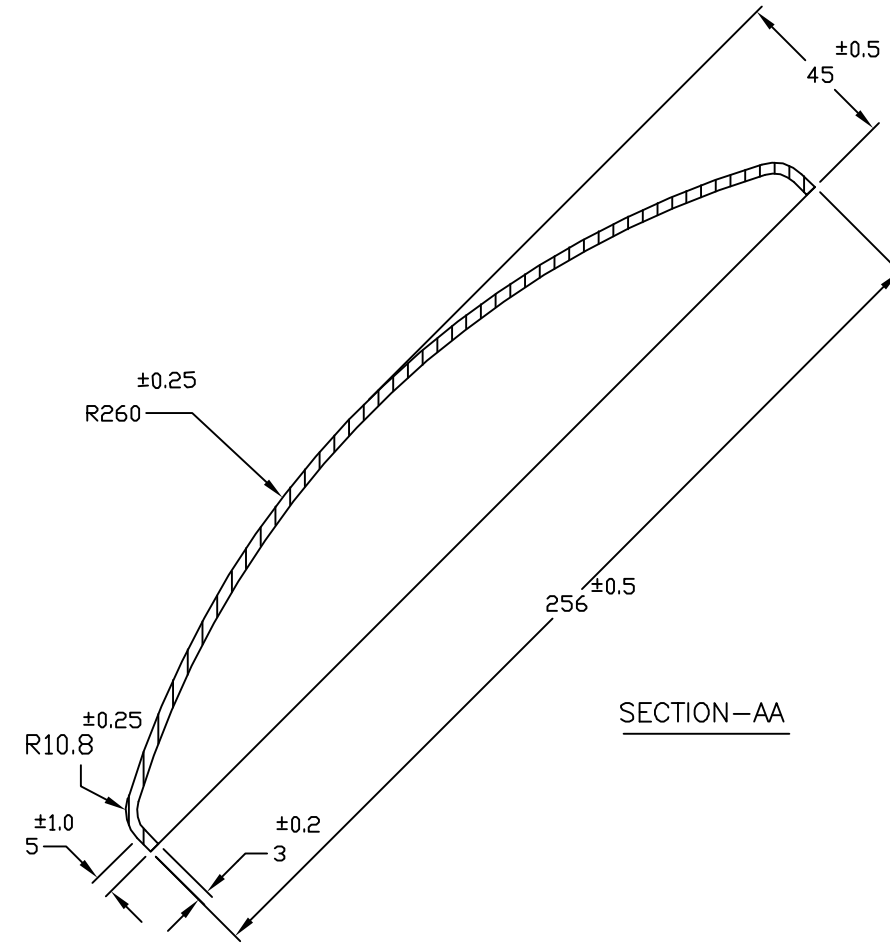
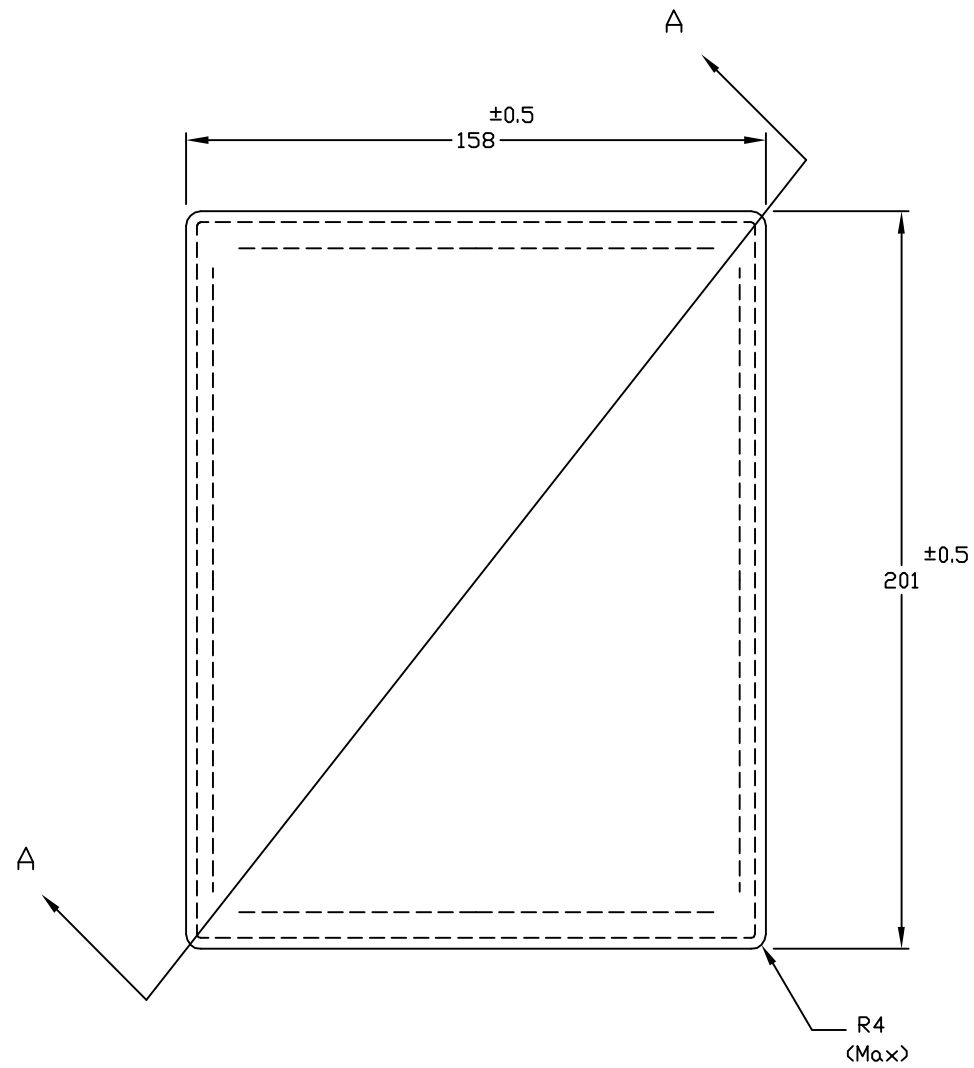
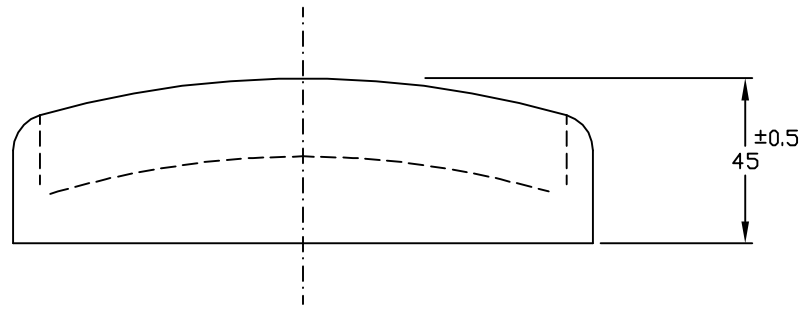
**NOTES:**  
 1. DRAWING NOT TO BE SCALED.  
 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.

FORM NO. 0421/0

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DRAWING NOT TO BE SCALED

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED

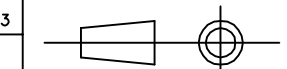


105	HOT AIR INLET HEADER	1	AA 5083/AA 5086	0.359
P.No.	DESCRIPTION	QTY. (NOS)	MATERIAL	WT(KG)

**BHARAT HEAVY ELECTRICALS LTD.**  
**HEAVY PLATES & VESSELS PLANT**  
 VISAKHAPATNAM - 530012, INDIA

DRN	B.Uma 22.02.99	RESEARCH & DEVELOPMENT			
CHD	K.S.S.Rao 22.02.99	CUSTOMER:			
APPROVED	AP 24.02.99	<b>REHEATER</b> <b>HOT AIR INLET HEADER</b>			
SCALE	1:2				
ALL PROJECTIONS ARE FIRST ANGLE UNLESS OTHERWISE SPECIFIED		WORK ORDER NO :	NO OFF:		
REV.NO	ZONE	YEAR OF ORDER	SIZE	DRAWING No.	REV
2	----		A3	RD-41013909-P-105	2

REF. DRG.	2	----	MATRL. SPECN. AA 5083 INCLUDED. AS PER MOD No. MOD/CHE/001	B.Uma 18.07.03	KVR 18.07.03	AP 21.07.03
RD-41013909-A-100	1	----	TOLERANCES CORRECTED.	PPD	CHD	APD
	REV.NO	ZONE	BRIEF RECORD			

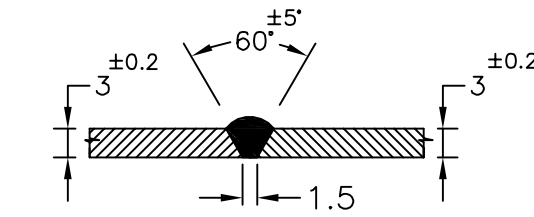
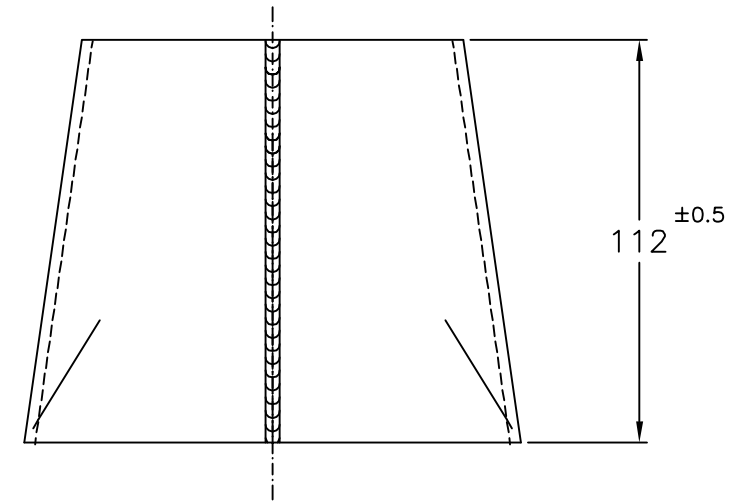
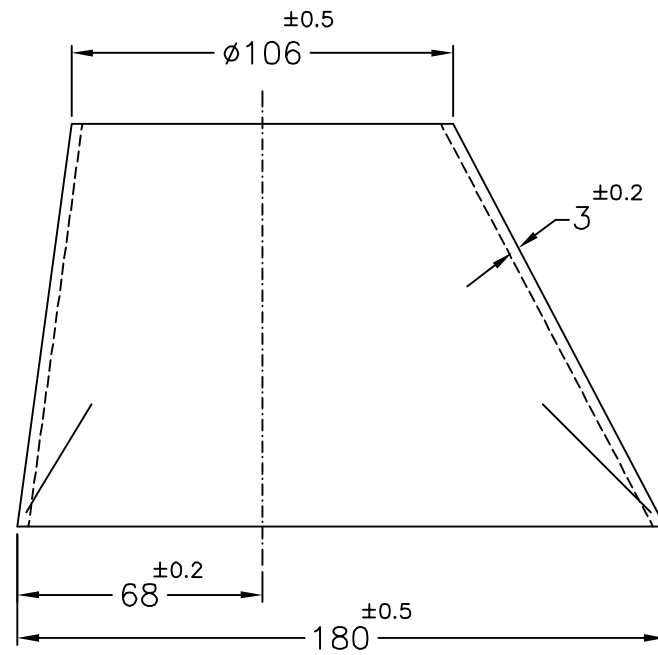


FORM NO. 0421/0

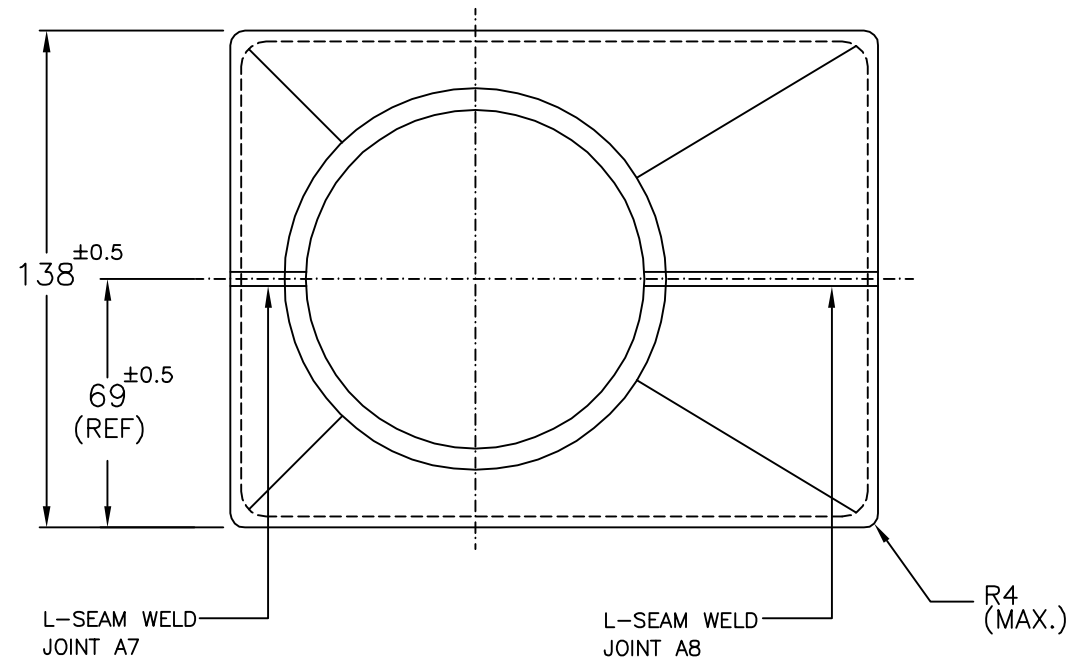
This drawing is the property of M/s BHEL-HPVP, VISAKHAPATNAM-530012 India, and is not to be traced or copied without permission

DRAWING NOT TO BE SCALED

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED



DETAILS OF L-SEAM WELD JOINTS A7,A8



NOTE:

1. THE PART MAY BE FORMED IN NOT MORE THAN TWO PIECES.
2. ALL L-SEAMS SHALL BE WELDED AFTER RECEIPT AT BHEL-HPVP

102	COLD AIR INLET DUCT	1	AA 5083/AA 5086	0.435
P.No.	DESCRIPTION	QTY. (NOS)	MATERIAL	WT(KG)



**BHARAT HEAVY ELECTRICALS LTD.**  
**HEAVY PLATES & VESSELS PLANT**  
**VISAKHAPATNAM - 530012, INDIA**

DRN	B.Uma 08.03.99	RESEARCH & DEVELOPMENT		
CHD	K.S.S.Rao 15.03.99	CUSTOMER:		
APPROVED	A.Panigrahi 19.03.99	<b>CONDENSER</b> <b>COLD AIR INLET DUCT</b>		
SCALE	1:2			
ALL PROJECTIONS ARE FIRST ANGLE UNLESS OTHERWISE SPECIFIED		WORK ORDER NO :	NO OFF:	
		YEAR OF ORDER	SIZE	REV
			A3	2

REF. DRG.	2	---	MATRL. SPECN. AA 5083 INCLUDED AS PER MOD No.:MOD/CHE/001			
RD-41013907-A-100	1	---	REF.DRG. No. & TOLERANCES INCORPORATED.	B.UMA 10.04.02	KVR 10.04.02	AP 10.04.02
REV.NO	ZONE	BRIEF RECORD		PPD	CHD	APD
8	7					

8

7

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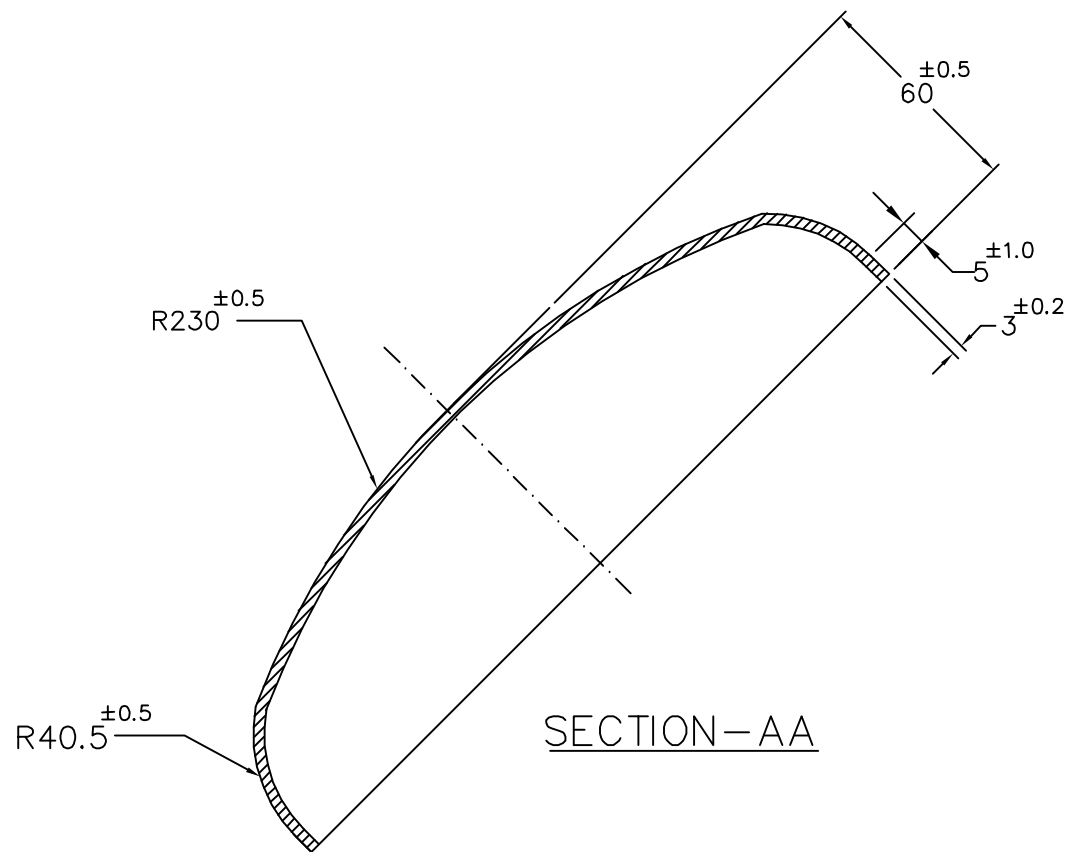
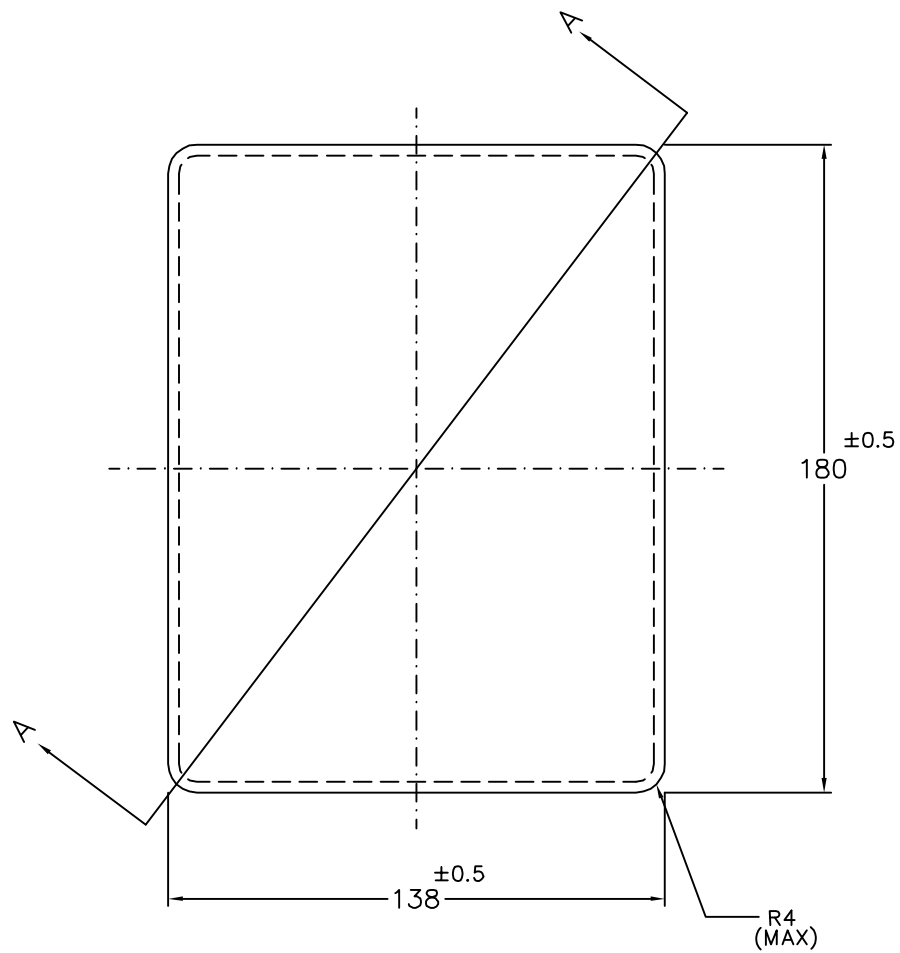
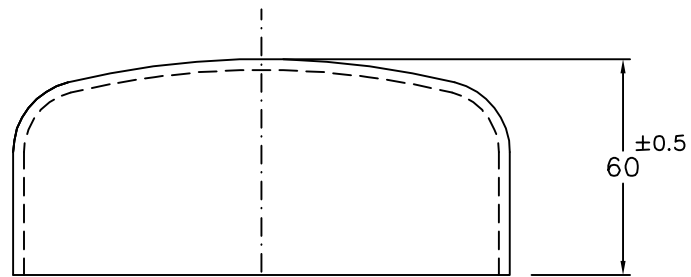
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DRAWING NOT TO BE SCALED

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED

FORM NO. 0421/0

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104	COLD AIR EXIT HEADER	1	AA 5083/AA 5086	0.375
P.No.	DESCRIPTION	QTY. (NOS)	MATERIAL	WT(KG)

**BHARAT HEAVY ELECTRICALS LTD.**  
**HEAVY PLATES & VESSELS PLANT**  
**VISAKHAPATNAM - 530012, INDIA**

DRN	B.Uma 05.01.99	RESEARCH & DEVELOPMENT
CHD	KVR 09.01.99	CUSTOMER:
APPROVED	AP 13.01.99	<b>CONDENSER</b>
SCALE	1:2	<b>COLD AIR EXIT HEADER</b>

ALL PROJECTIONS ARE FIRST ANGLE UNLESS OTHERWISE SPECIFIED		WORK ORDER NO :	NO OFF:
YEAR OF ORDER	SIZE	DRAWING No.	REV
	A3	RD-41013907-P-104	3

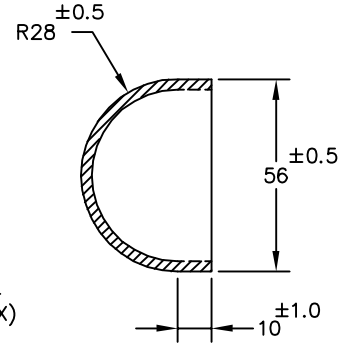
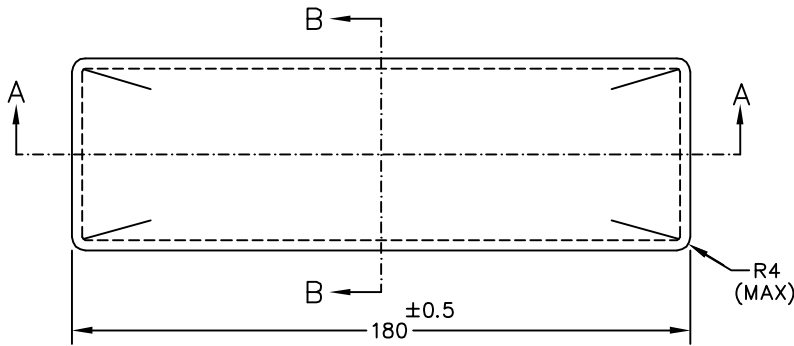
REV.NO	ZONE	BRIEF RECORD	PPD	CHD	APD
3	---	MATRL. SPECN. AA 5083 INCLUDED AS PER MOD No.: MOD/CHE/001			
2	---	TOLERANCES CORRECTED.	UMA 17.07.03	KVR 17.07.03	AP 21.07.03
1	---	INCORPORATED TOLERANCES & DETAILS NOT SHOWN EARLIER	UMA 10.04.02	KVR 10.04.02	KSSR 10.04.02

REF. DRG.  
RD-41013907-A-100

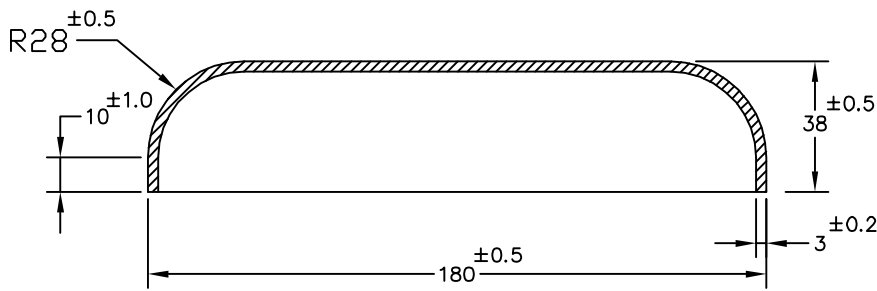
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7


4 3 2 1

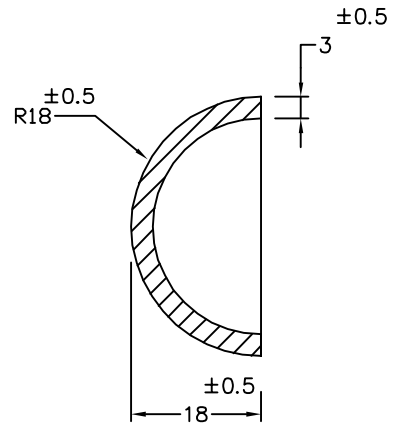
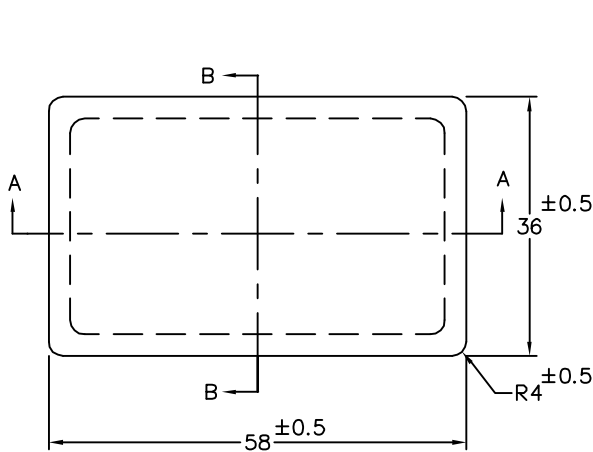


SECTION-BB

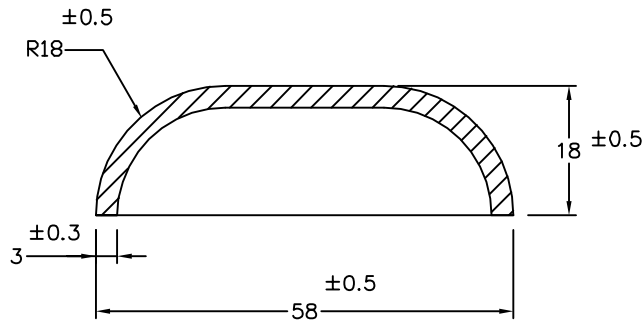


SECTION-AA


REF. DRG.		3	---	MATRL. SPECN. AA 5083 INCLUDED. AS PER MOD No.: MOD/CHE/001.			
RD-41013907-A-100		2	---	TOLERANCES CORRECTED.	UMA 19.07.03	KSSR 19.07.03	AP 21.07.03
		1	---	REF.DRG. NAME INCORPORATED	UMA 02.04.02	KVR 02.04.02	KSSR 03.04.02
QTY.	2 NOS	REV NO.	ZONE	BRIEF RECORD	PPD	CHD	APD
PART NO.	106	 <b>BHARAT HEAVY ELECTRICALS LTD.</b> <b>HEAVY PLATES &amp; VESSELS PLANT</b> VISAKHAPATNAM - 530012, INDIA					
MATRL.	AA 5083/ AA 5086	DRN	B.Uma 09.01.99	RESEARCH & DEVELOPMENT			
<b>NOTES:</b> 1. DRAWING NOT TO BE SCALED. 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.		CHD	KSSRao 09.01.99	CUSTOMER :  <b>CONDENSER HOT AIR I/O HEADER</b>			
		APPROVED	A.Panigrahi 10.01.99	WORK ORD. NO.:		NO. OFF:	
		SCALE	NTS	YR OF ORD	SIZE	DRAWING NO.	REV
					A4	RD-41013907-P-106	3

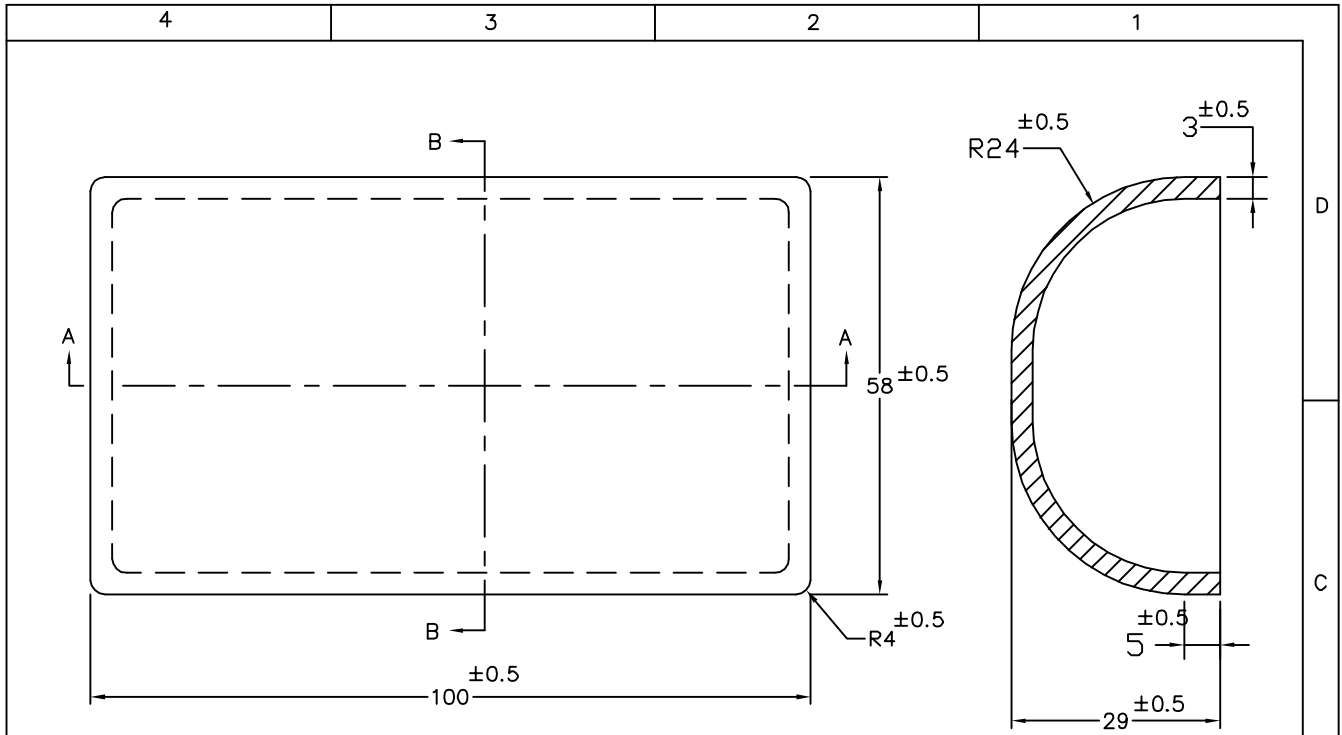


SECTION - BB

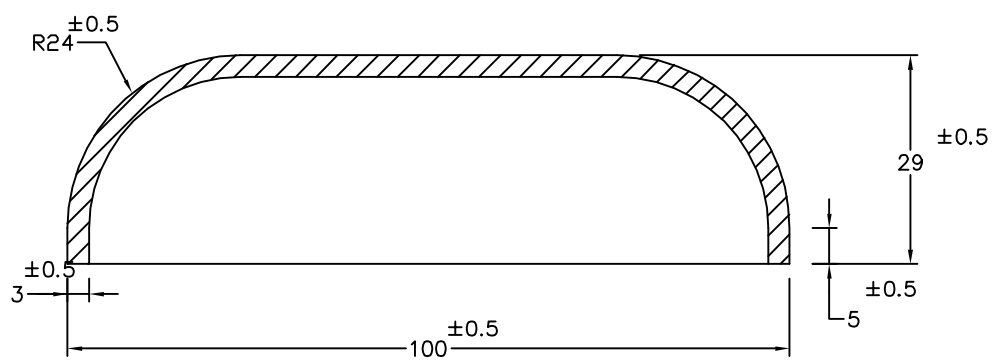


SECTION - AA


	2	---	MATRL. SPECN. AA 5083 INCLUDED AS PER MOD No. MOD/CHE/001			
REF. DRG.	1	---	REF.DRG. NO. ENTERED	KSSR 14.09.01	ATR 15.09.01	AP 15.09.01
RD-41013911-A-100	REV NO.	ZONE	BRIEF RECORD	PPD	CHD	APD
QTY.	1 NO.		 <b>BHARAT HEAVY ELECTRICALS LTD.</b> <b>HEAVY PLATES &amp; VESSELS PLANT</b> VISAKHAPATNAM - 530012, INDIA			
PART NO.	103		RESEARCH & DEVELOPMENT			
MATRL.	AA 5083/ AA 5086		DRN	CUSTOMER :		
NOTES: 1. DRAWING NOT TO BE SCALED. 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.			KSSRao	<b>HYD.OIL-IDG.OIL-FUEL COOLER (HE-1)</b> <b>FUEL INLET HEADER-HYD</b>		
			19.08.99			
			CHD	WORK ORD. NO.:		
			ATRao	NO. OFF:		
		20.08.99	APPROVED	YR OF ORD		SIZE
		A.Panigrahi	SCALE		DRAWING NO.	
		23.08.99	1:1		RD-41013911-P-103	
					REV	
					2	

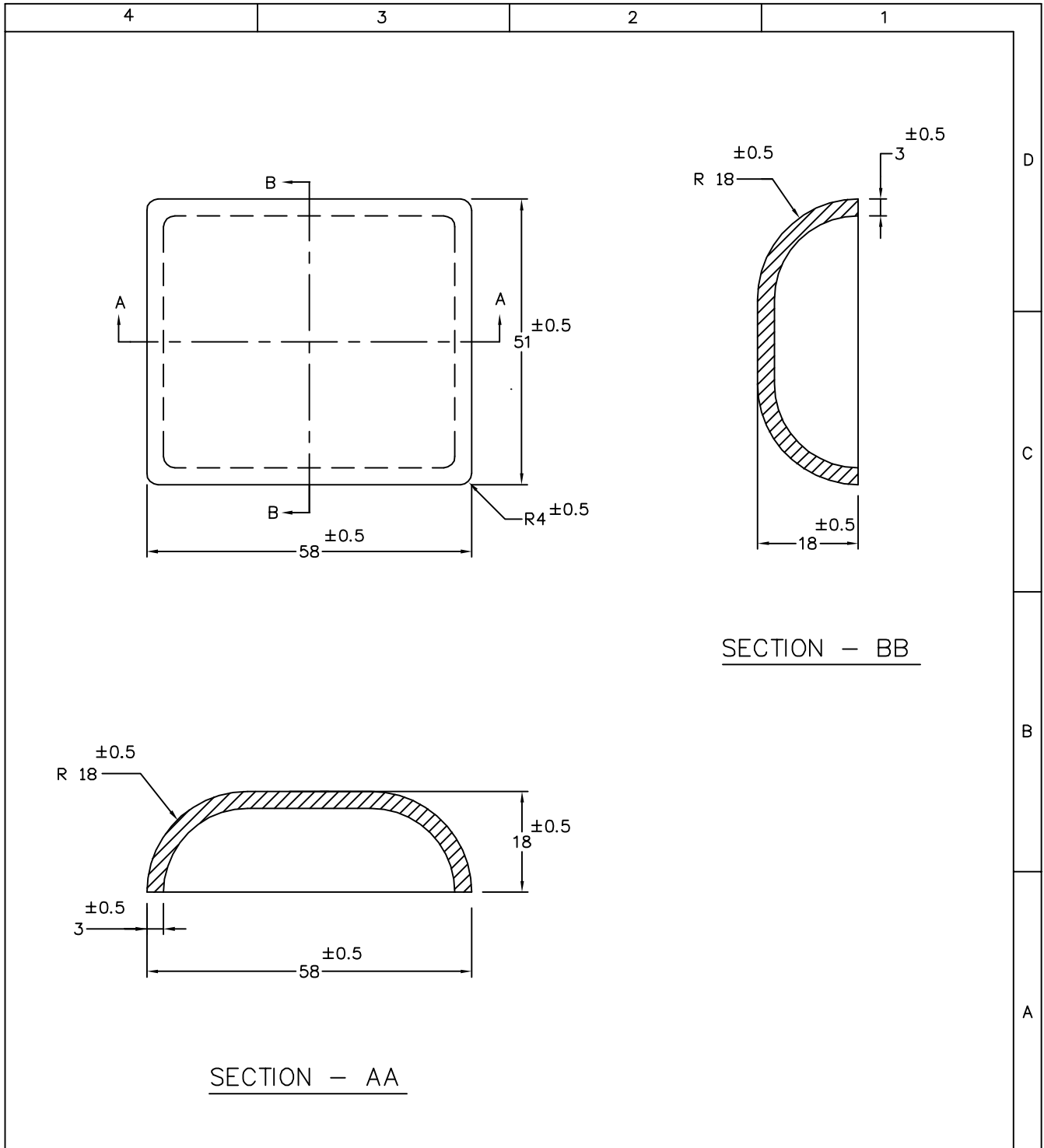


SECTION - BB

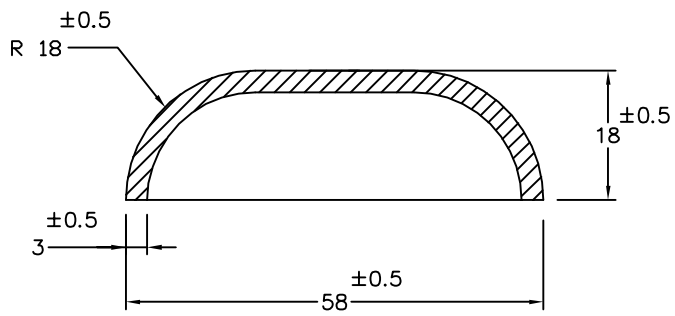


SECTION - AA


		3	---	MATRL. SPECN. AA 5083 INCLUDED. AS PER MOD No. MOD/CHE/001			
		2	---	REF.DRG. NO. ENTERED.	KSSR 14.09.01	ATR 15.09.01	AP 15.09.01
REF. DRG.		1	A-3,C-3	LENGTH INCREASED	KSSR 16.09.99	AP 20.09.99	AP 20.09.99
RD-41013911-A-100		REV NO.	ZONE	BRIEF RECORD	PPD	CHD	APD
QTY.	1 NO.	 <b>BHARAT HEAVY ELECTRICALS LTD.</b> <b>HEAVY PLATES &amp; VESSELS PLANT</b> VISAKHAPATNAM - 530012, INDIA					
PART NO.	104						
MATRL.	AA 5083/ AA 5086	DRN	KSSRao 19.08.99	RESEARCH & DEVELOPMENT			
<b>NOTES:</b> 1. DRAWING NOT TO BE SCALED. 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.		CHD	ATRao 20.08.99	CUSTOMER :			
		APPROVED	A.Panigrahi 23.08.99	WORK ORD. NO.:		NO. OFF:	
		SCALE	1:1	YR OF ORD	SIZE	DRAWING NO.	REV
					A4	RD-41013911-P-104	3



SECTION - BB



SECTION - AA

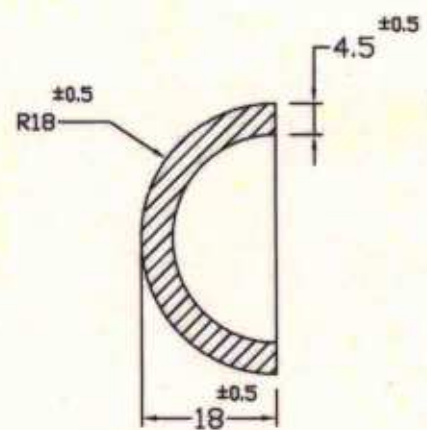
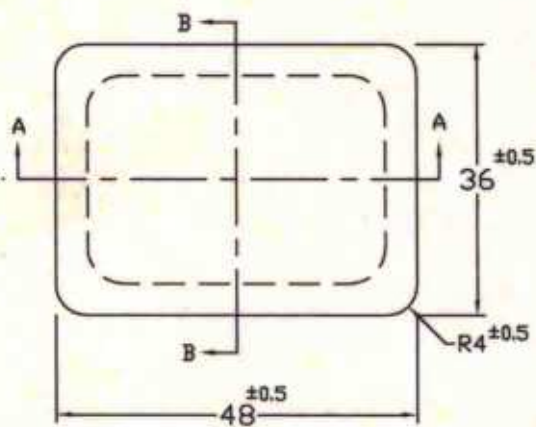
		3	---	MATRL. SPECN. AA 5083 INCLUDED AS PER MOD No. MOD/CHE/001			
		2	---	REF.DRG. NO. ENTERED	KSSR 14.09.01	ATR 15.09.01	AP 15.09.01
REF. DRG.		1	B-4,D-1	CROWN RADIUS ELIMINATED	KSSR 16.09.99	AP 20.09.99	AP 20.09.99
RD-41013911-A-100		REV NO.	ZONE	BRIEF RECORD	PPD	CHD	APD
QTY.	1 NO.	 <b>BHARAT HEAVY ELECTRICALS LTD.</b> <b>HEAVY PLATES &amp; VESSELS PLANT</b> <b>VISAKHAPATNAM - 530012, INDIA</b>					
PART NO.	105						
MATRL.	AA 5083/ AA 5086	DRN	KSSRao 19.08.99	RESEARCH & DEVELOPMENT			
<b>NOTES:</b> 1. DRAWING NOT TO BE SCALED. 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.		CHD	ATRao 20.08.99	CUSTOMER :			
		APPROVED	A.Panigrahi 23.08.99	WORK ORD. NO.:			NO. OFF:
		SCALE	1:1	YR OF ORD	SIZE	DRAWING NO.	REV
					A4	RD-41013911-P-105	3
				<b>HYD.OIL-IDG.OIL-FUEL COOLER (HE-1)</b> <b>FUEL OUTLET HEADER-IDG</b>			

4

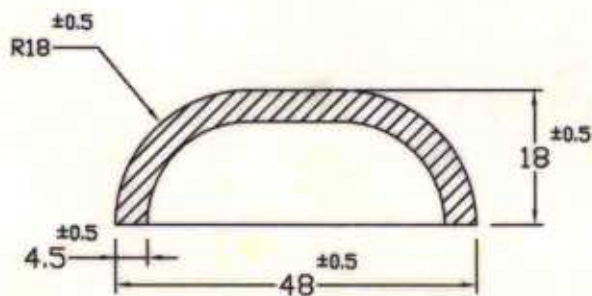
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2

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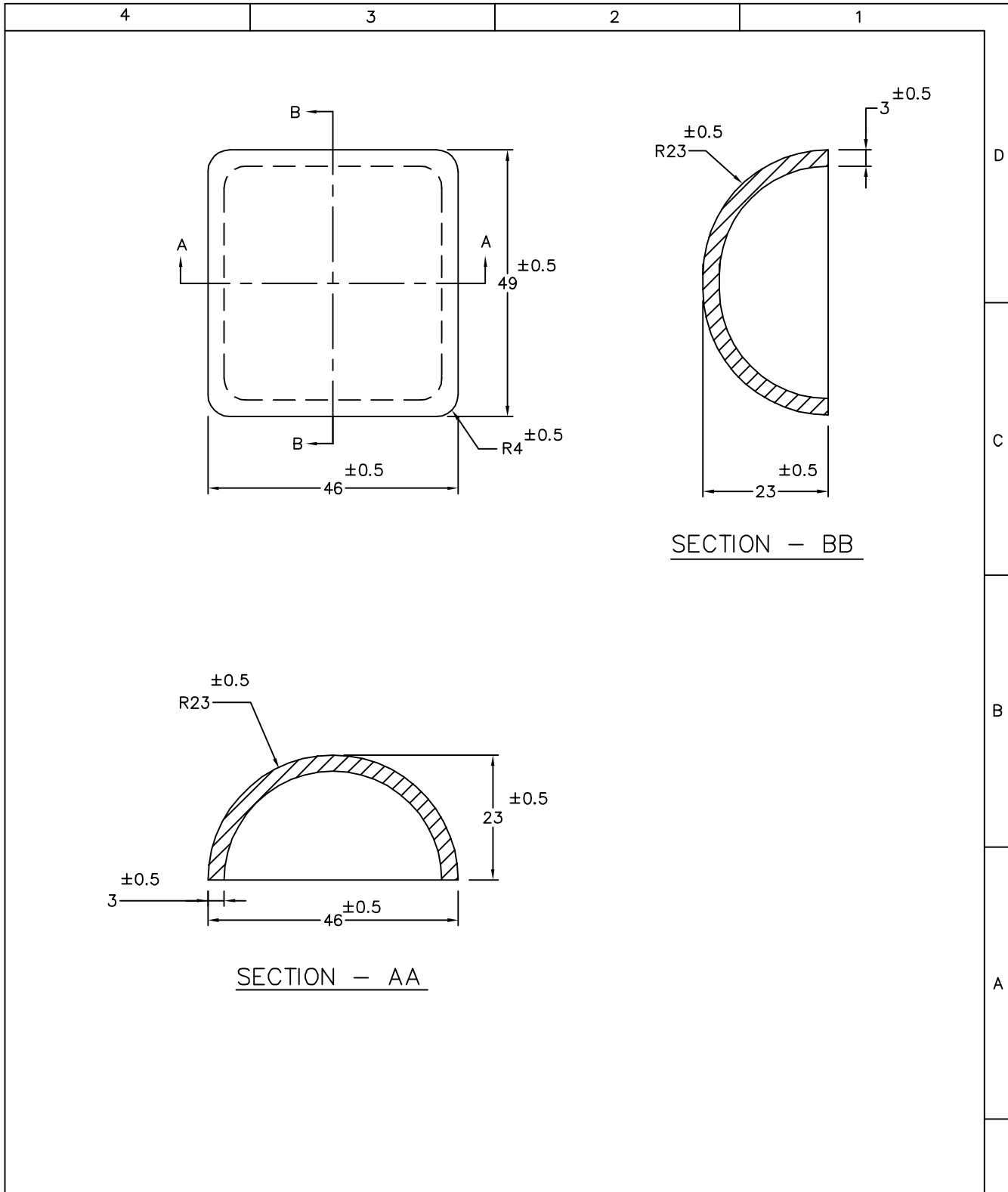


SECTION - BB




SECTION - AA

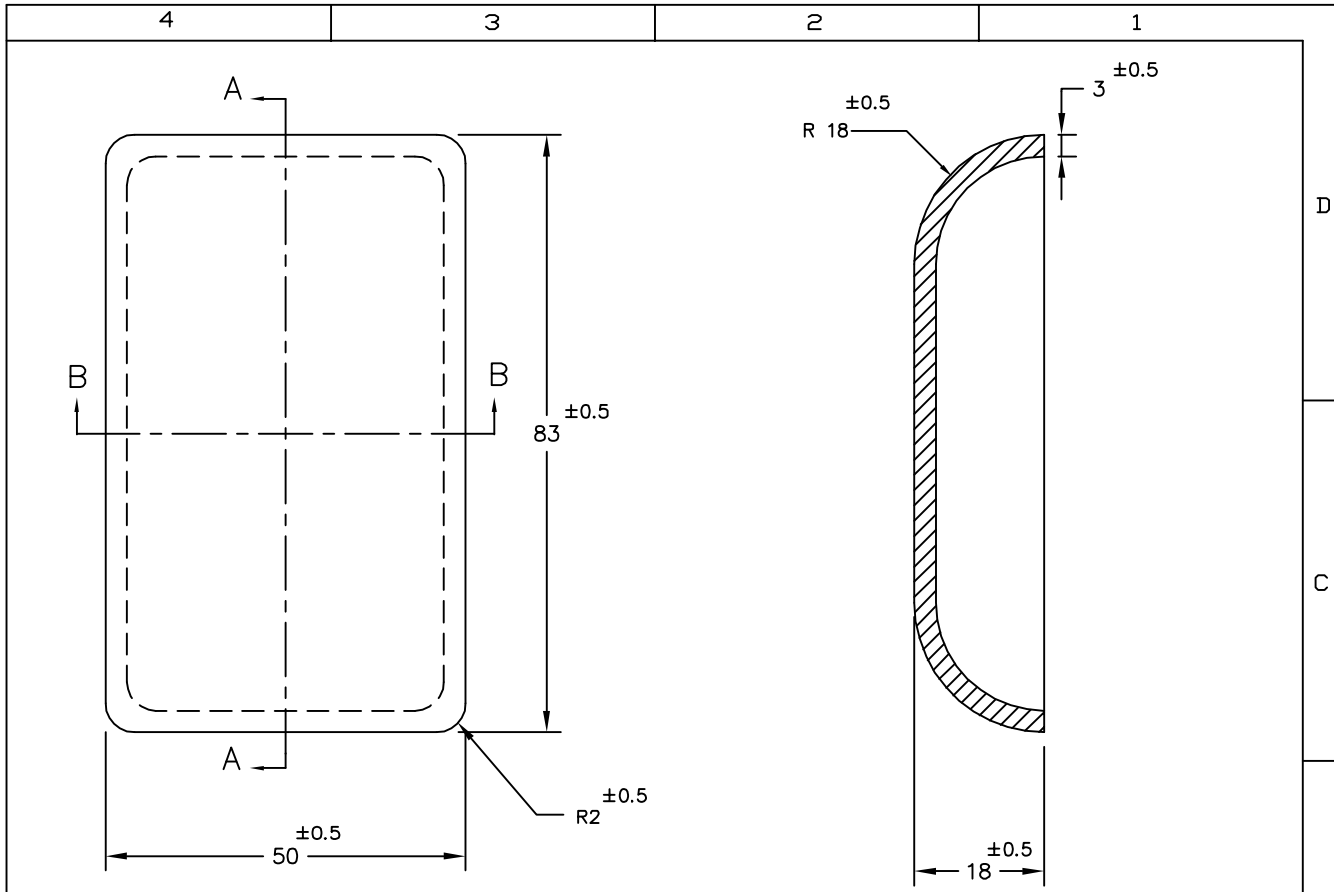
REF. DRG. RD-41013911-A-100	2	---	REF.DRG. ENTERED	CSDA 14-09-01	AP	AP
QTY. 2 Nos.	1	---	MATERIAL SPECN. CHANGED	KSR 16.09.99	AP 20.09.99	AP 20.09.99
ITEM No. 106	REV NO.	ZONE	BRIEF RECORD	PPD	CHD	APD
MATRL. AA 6061	<b>BHARAT HEAVY PLATE AND VESSELS LTD.</b> VISAKHAPATNAM - 530 012, INDIA					
NOTES: 1. DRAWING NOT TO BE SCALED 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.	DRN.	CSDA 19-08-99	RESEARCH & DEVELOPMENT			
	CHKD.	A. G. S. 20/08/99	CUSTOMER : M/s A.D.A., BANGALORE			
	APPROVED	A. G. S. 23/08/99	HYD OIL-IDG OIL-FUEL COOLER(HE-1) HYD OIL I/O HEADER			
	SCALE	N.T.S.	WORK ORD. NO. 410 139 11	NO. OFF		
			YR OF ORD	SIZE	DRAWING NO.	REV
			1999	A4	RD-41013911-P-106	2



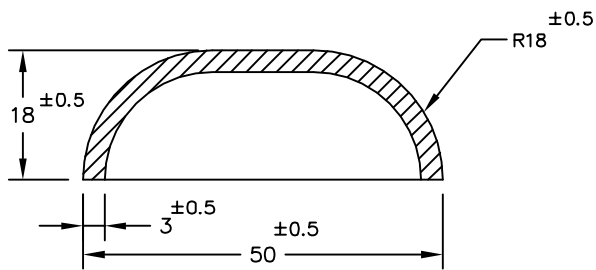
SECTION - AA

SECTION - BB


REF. DRG.	2	---	MATRL. SPECN. AA 5083 INCLUDED AS PER MOD No. MOD/CHE/001				
RD-41013911-A-100	1	---	REF.DRG. NO. ENTERED	KSSR 14.09.01	ATR 15.09.01	AP 15.09.01	
QTY.	2 NOs.	REV NO.	ZONE	BRIEF RECORD	PPD	CHD	APD
PART NO.	107	 <b>BHARAT HEAVY ELECTRICALS LTD.</b> <b>HEAVY PLATES &amp; VESSELS PLANT</b> <b>VISAKHAPATNAM - 530012, INDIA</b>					
MATRL.	AA 5083/ AA 5086	DRN	KSSRao 19.08.99	RESEARCH & DEVELOPMENT			
<b>NOTES:</b> 1. DRAWING NOT TO BE SCALED. 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.	CHD	ATRao 20.08.99	CUSTOMER : <b>HYD.OIL-IDG.OIL-FUEL COOLER (HE-1)</b> <b>IDG OIL I/O HEADER</b>				
	APPROVED	A.Panigrahi 23.08.99	WORK ORD. NO.:		NO. OFF:		
	SCALE	1:1	YR OF ORD	SIZE	DRAWING NO.	REV	
				A4	RD-41013911-P-107	2	

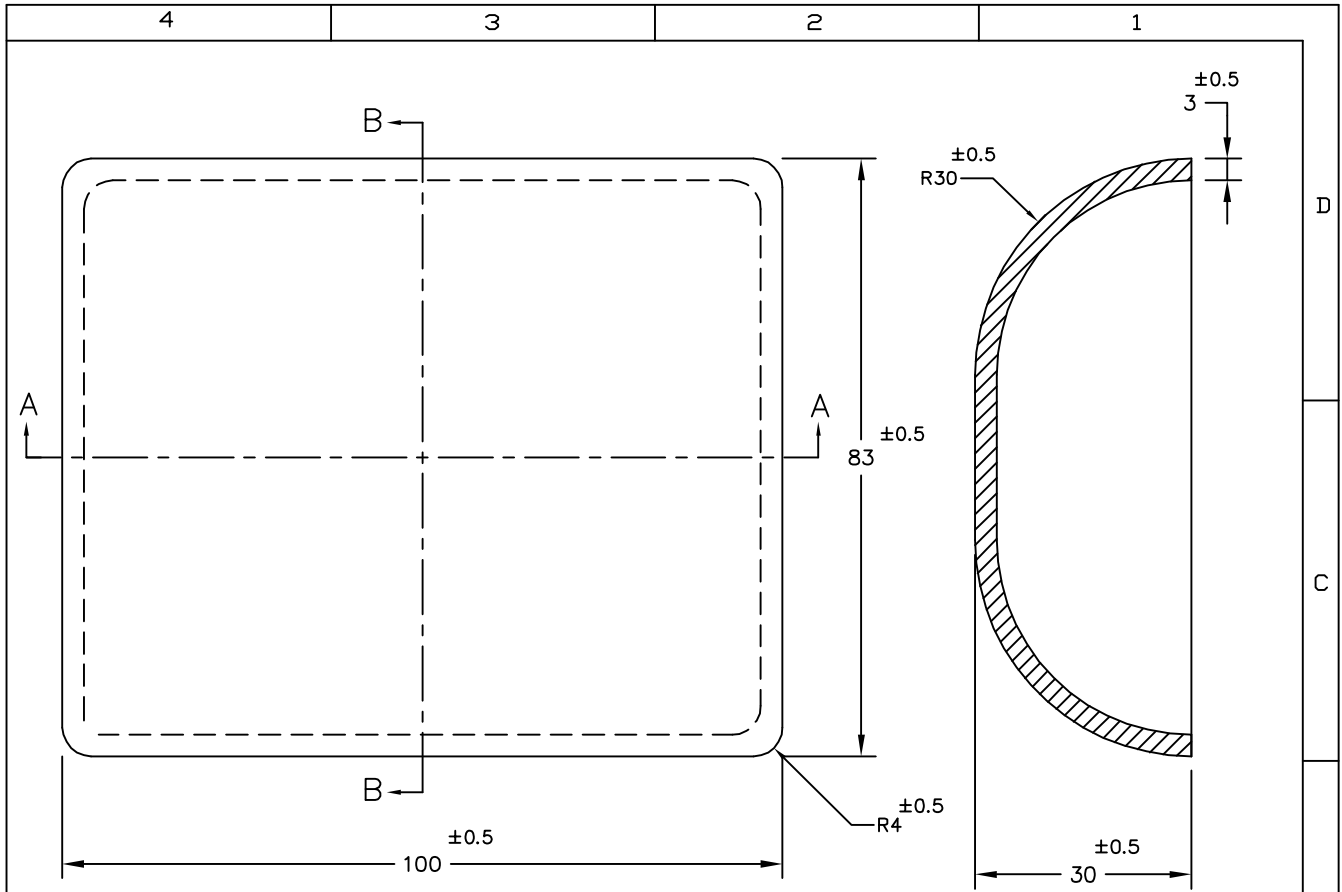


SECTION-AA

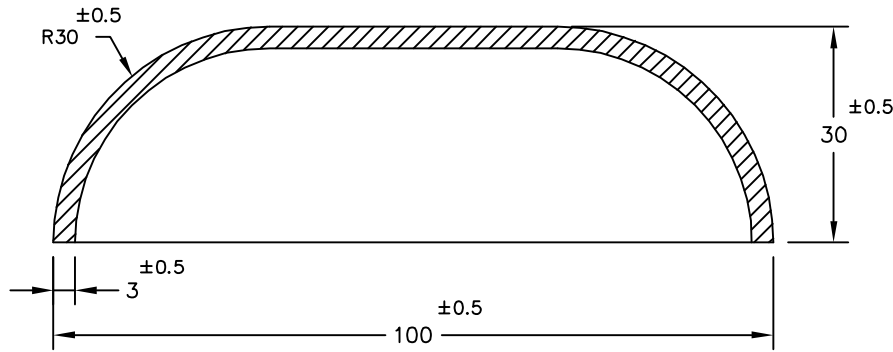


SECTION-BB

	3		MATRL. SPECN. AA 5083 INCLUDED AS PER MOD No. MOD/CHE/001				
	2	---	REF. DRG ENTERED	KSSR 18.09.01	ATR 18.09.01	AP 19.09.01	
REF. DRG.	1	B-3,D-2	CROWN RADIUS ELIMINATED	KSSR 18.09.99	AP 20.09.99	AP 20.09.99	
RD-41013912-A-100	REV NO.	ZONE	BRIEF RECORD	PPD	CHD	APD	
QTY.	1 NO.	 <b>BHARAT HEAVY ELECTRICALS LTD.</b> <b>HEAVY PLATES &amp; VESSELS PLANT</b> <b>VISAKHAPATNAM - 530012, INDIA</b>					
PART NO.	103						
MATRL.	AA 5083/ AA 5086	DRN	KSSRao 20.08.99	RESEARCH & DEVELOPMENT			
<b>NOTES:</b> 1. DRAWING NOT TO BE SCALED. 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.		CHD	ATRao 21.08.99	CUSTOMER : <b>GBX OIL-HYD.OIL-FUEL COOLER (HE-2) FUEL INLET HEADER-GBX</b>			
		APPROVED	A.Panigrahi 23.08.99	WORK ORD. NO.:		NO. OFF:	
		SCALE	1:1	YR OF ORD	SIZE	DRAWING NO.	REV
					A4	RD-41013912-P-103	3

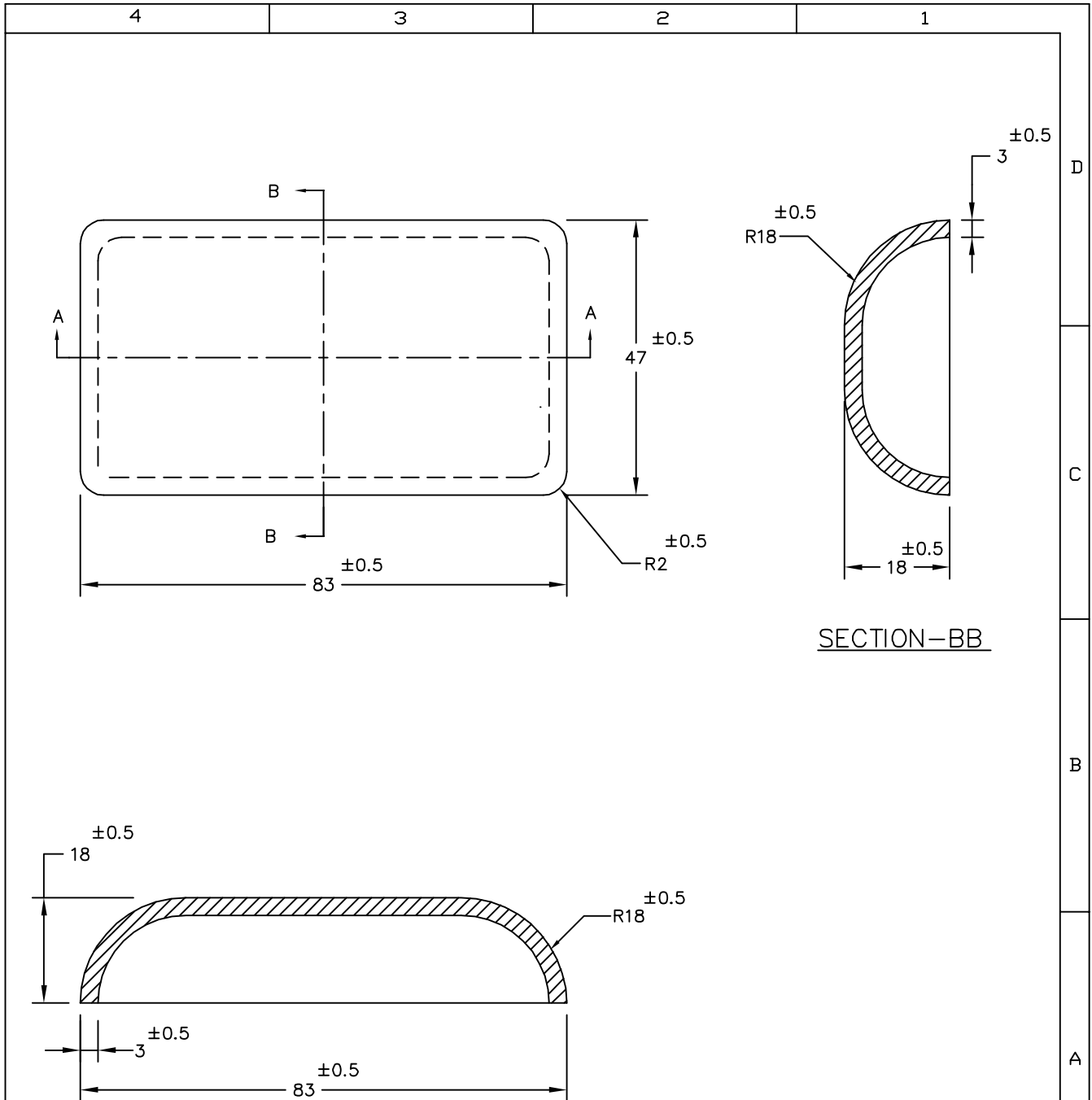


SECTION-BB




SECTION-AA

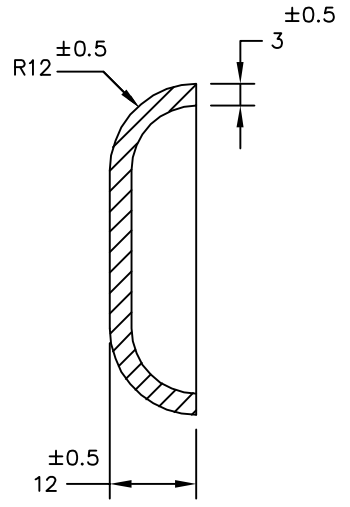
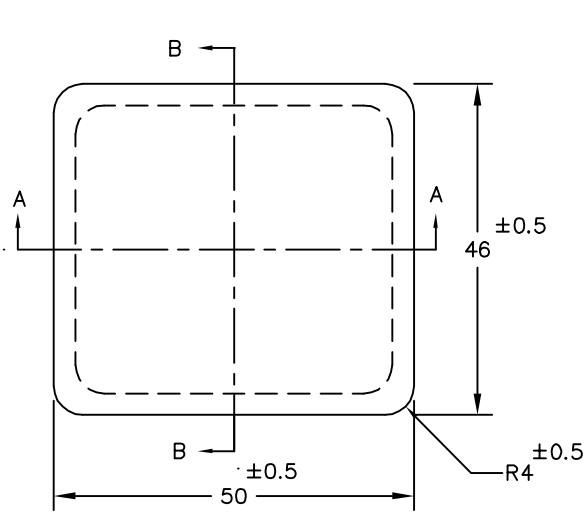
REF. DRG. RD-41013912-A-100	3		MATRL. SPECN. AA 5083 INCLUDED AS PER MOD No. MOD/CHE/001			
	2	---	REF. DRG ENTERED	KSSR 18.09.01	ATR 18.09.01	AP 19.09.01
	1	A-3,B-3 B-4,D-2	LENGTH CHANGED, CROWN RADIUS ELIMINATED	KSSR 18.09.99	AP 20.09.99	AP 20.09.99
	REV NO.	ZONE	BRIEF RECORD	PPD	CHD	APD
QTY.	1 NO.	<b>BHARAT HEAVY ELECTRICALS LTD.</b> <b>HEAVY PLATES &amp; VESSELS PLANT</b> <b>VISAKHAPATNAM - 530012, INDIA</b>				
PART NO.	104					
MATRL.	AA 5083/ AA 5086	DRN	KSSRao 20.08.99	RESEARCH & DEVELOPMENT		
NOTES: 1. DRAWING NOT TO BE SCALED. 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.		CHD	ATRao 21.08.99	CUSTOMER :		
		APPROVED	A.Panigrahi 23.08.99	<b>GBX OIL-HYD.OIL-FUEL COOLER (HE-2)</b>		
		SCALE	1:1	<b>FUEL INLET HEADER-GBX</b>		
				WORK ORD. NO.:	NO. OFF:	
			YR OF ORD	SIZE	DRAWING NO.	REV
				A4	RD-41013912-P-104	3



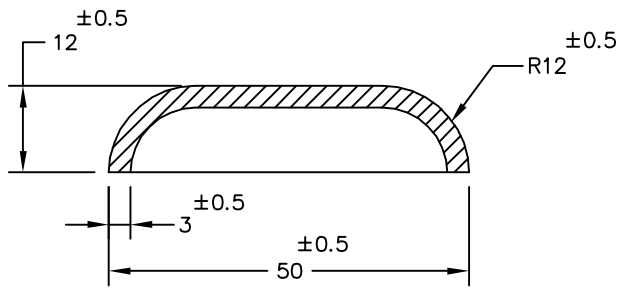
SECTION-AA

SECTION-BB


REF. DRG. RD-41013912-A-100	3		MATRL. SPECN. AA 5083 INCLUDED AS PER MOD No. MOD/CHE/001			
	2	---	REF. DRG ENTERED	KSSR 18.09.01	ATR 18.09.01	AP 19.09.01
	1	B-2,D-2	CROWN RADIUS ELIMINATED	KSSR 18.09.99	AP 20.09.99	AP 20.09.99
QTY.	1 NO.	 <b>BHARAT HEAVY ELECTRICALS LTD.</b> <b>HEAVY PLATES &amp; VESSELS PLANT</b> VISAKHAPATNAM - 530012, INDIA				
PART NO.	105					
MATRL.	AA 5083/ AA 5086	DRN	KSSRao 20.08.99	RESEARCH & DEVELOPMENT		
NOTES: 1. DRAWING NOT TO BE SCALED. 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.		CHD	ATRao 21.08.99	CUSTOMER :		
		APPROVED	A.Panigrahi 23.08.99	<b>GBX OIL-HYD.OIL-FUEL COOLER (HE-2)</b>		
		SCALE	1:1	<b>FUEL OUTLET HEADER-HYD</b>		
				WORK ORD. NO.:	NO. OFF:	
			YR OF ORD	SIZE	DRAWING NO.	REV
				A4	RD-41013912-P-105	3

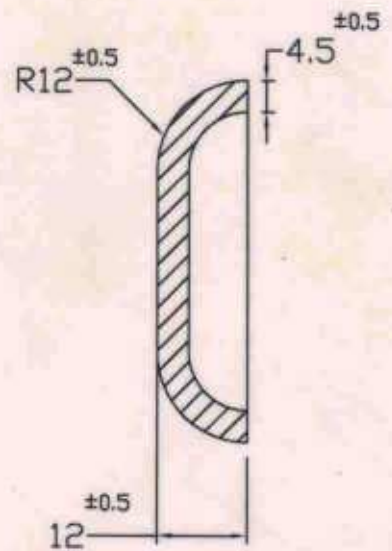
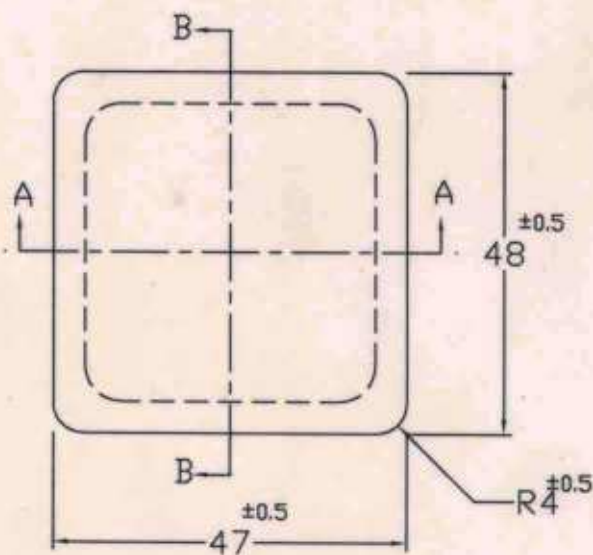


SECTION-BB

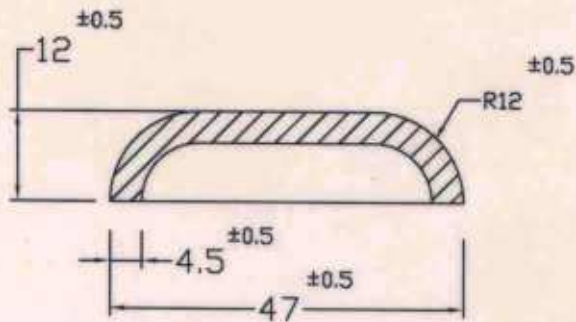


SECTION-AA

REF. DRG. RD-41013912-A-100	3		MATRL. SPECN. AA 5083 INCLUDED AS PER MOD No. MOD/CHE/001			
	2	---	REF. DRG ENTERED	KSSR 18.09.01	ATR 18.09.01	AP 19.09.01
	1	A-3,D-3	LENGTH CHANGED	KSSR 18.09.99	AP 20.09.99	AP 20.09.99
QTY.	2 NOs.	 <b>BHARAT HEAVY ELECTRICALS LTD.</b> <b>HEAVY PLATES &amp; VESSELS PLANT</b> VISAKHAPATNAM - 530012, INDIA				
PART NO.	106					
MATRL.	AA 5083/ AA 5086	DRN	KSSRao 20.08.99	RESEARCH & DEVELOPMENT		
NOTES: 1. DRAWING NOT TO BE SCALED. 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.		CHD	ATRao 21.08.99	CUSTOMER :		
		APPROVED	A.Panigrahi 23.08.99	<b>GBX OIL-HYD.OIL-FUEL COOLER (HE-2)</b>		
		SCALE	1:1	<b>GBX OIL I/O HEADER</b>		
				WORK ORD. NO.:	NO. OFF:	
			YR OF ORD	SIZE	DRAWING NO.	REV
				A4	RD-41013912-P-106	3



SECTION - BB



SECTION - AA

REF. DRG.		2	---	REF.DRG. ENTERED	KSR	AP	AP
RD-41013912-A-100		1	---	MATERIAL SPECN. CHANGED	18.09.99	20.09.99	20.09.99
QTY. 2 Nos		REV NO.	ZONE	BRIEF RECORD	PPD	CHD	APD
ITEM No. 107		<b>BHPV BHARAT HEAVY PLATE AND VESSELS LTD.</b> VISAKHAPATNAM - 530 012, INDIA					
MATL. AA 6061							
NOTES: 1. DRAWING NOT TO BE SCALED 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.		DRN.	KSR	RESEARCH & DEVELOPMENT	CUSTOMER : M/s ADA, BANGALORE		
		CHKD.	A.S.N.	GBX OIL-HYD OIL-FUEL COOLER (HE-2)			
		APPROVED	20-08-99	HYD OIL I/O HEADER			
		SCALE	NTS	WORK ORD. NO. 410 139 12	NO. OFF 8		
		1999	A4	DRAWING NO.	REV		
				RD-41013912-P-107	2		