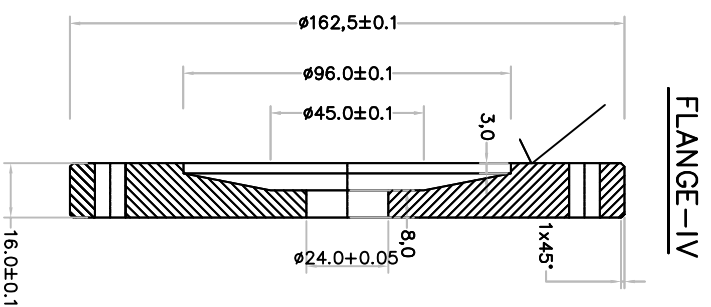


1914 3C11 35 4 3D RD
DRG.

FIRST ANGLE PROJECTION

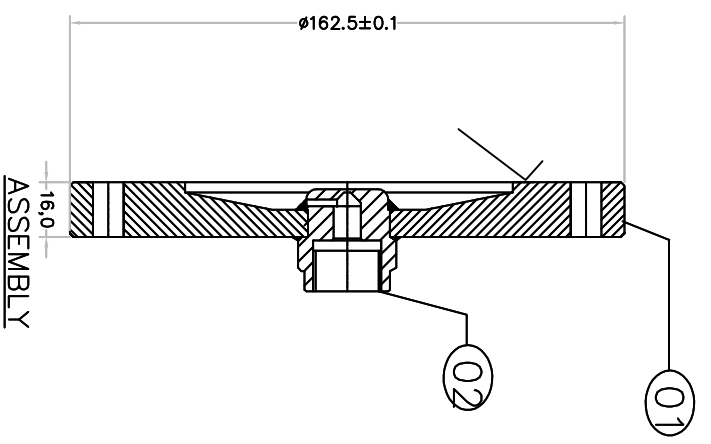
(ALL DIMENSIONS ARE IN mm)



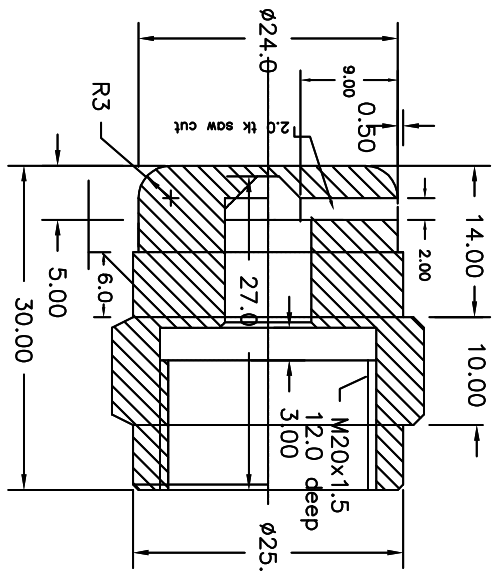
FLANGE-IV

8 NO., 9.2 CLEAR HOLES
@140±0.07 PCD WITH 0.4X45° C/F

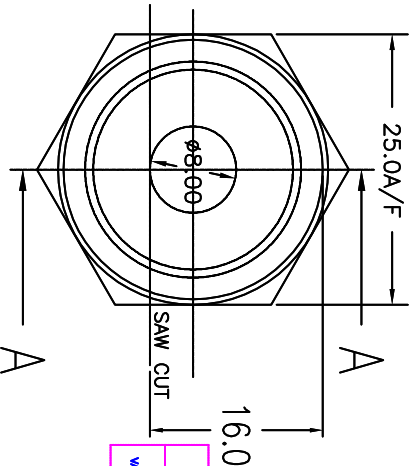
(~1.6)



ASSEMBLY



SECTION AA



GAS STUD (2)

ALL SHARP EDGES SHALL BE MACHINED TO 0.4X45°.
MARKED SURFACE SHALL BE FINISHED TO RA0.8

FINAL ON 12/05/11

VAR. NO	REMARKS	VAR. ITEM NO.	DESCRIPTION	DRAWING NO.	ITEM NO.	MTL. CODE	MNTL. SPECN.	UNIT	QTY.
02			GAS STUD			SS-304L			01
01			FLANGE - IV			SS-304L			01

CGSM-145

REV.	DATE	ALTERED	ZONE	REV.	DATE	ALTERED	ZONE
		CHECKED				CHECKED	

TYPE OF PRODUCT: NAME OF CUSTOMER: BHARAT HEAVY ELECTRICALS LTD. HYDERABAD

SCALE: NTS

WEIGHT(KG): 2.5

DRAWING NO.: RD DG 4 35 1133 4161

SHEET NO.: 1

NO. OF SHEETS: 1

DATE: 02.01.08

APPD: MMR/RO

DRN: KSR/RO

CHK: AL

NO. OF ITEMS: 01

REV.:

GAS VALVE COVER

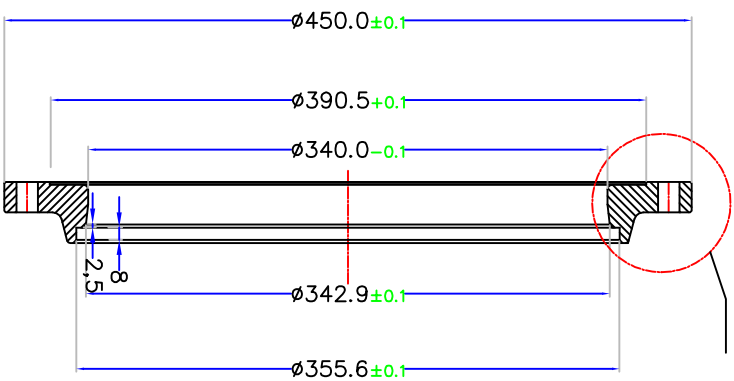
RD DG 4 35 0519 1020

RD DG 4 35 1133 4161

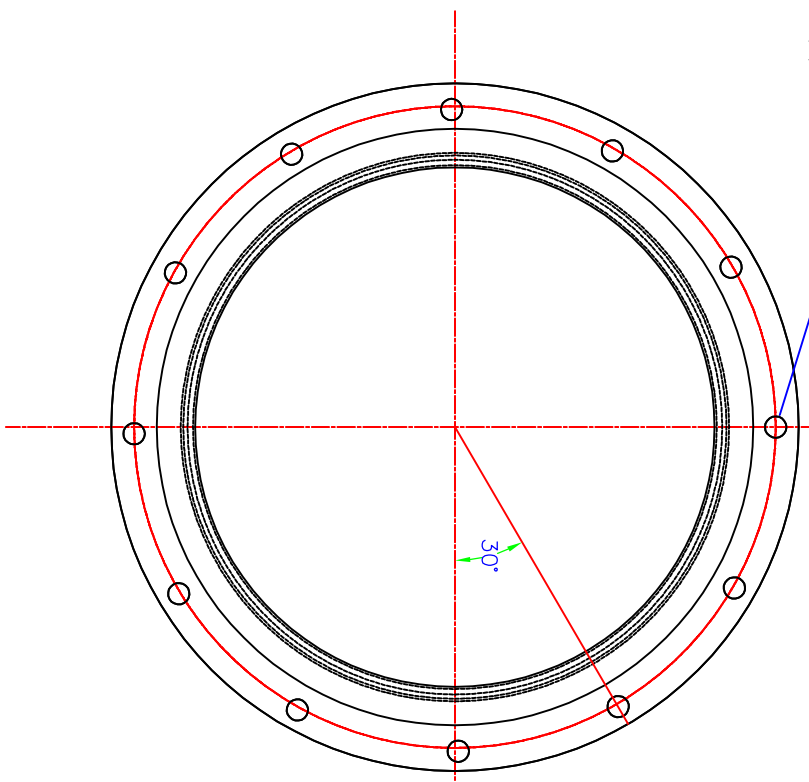
2102 L150 534 RDDG
NO. DRG.

FIRST ANGLE PROJECTION

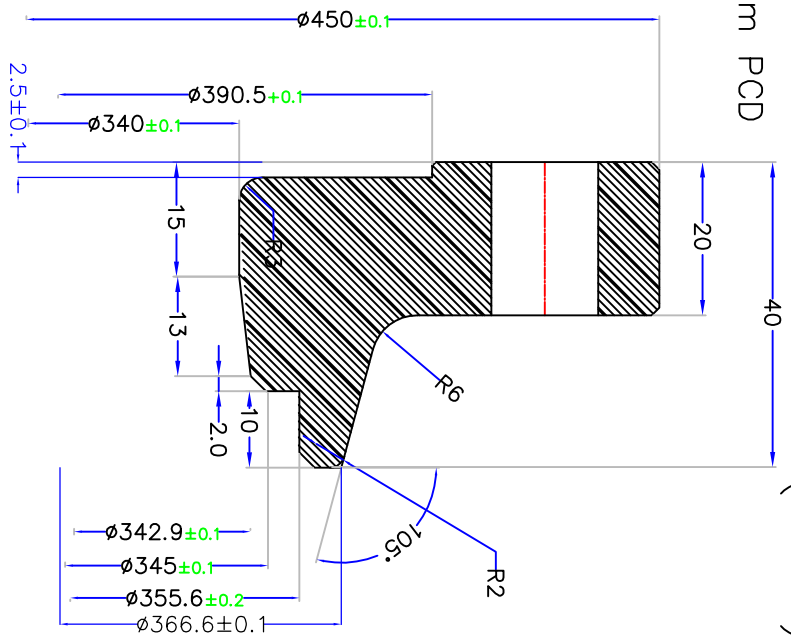
(ALL DIMENSIONS ARE IN mm)



VIEW 'A'



12 Nos. ϕ 14mm clear holes @420 \pm 0.1mm PCD



ENLARGED VIEW 'A'

(~1.6)

- Note:
1. Sealing area shall be polished to RA 0.8 or better.
 2. ϕ 14.0 holes shall be chamfered uniformly (0.8x45°).
 3. PCD and flange centre shall be concentric within \pm 0.05
 4. Finished flange shall be degreased and packed in 125 micron poly bag and sealed.
 5. Component shall be Machined to dimensions after welding to spherical pipe

VAR. NO	REMARKS	VAR. ITEM NO.	DESCRIPTION	DRAWING NO.	ITM. NO.	MTL. CODE	UNIT	QTY.
01			BLOCK	ϕ 710.0x55.0		SS-304L	2	

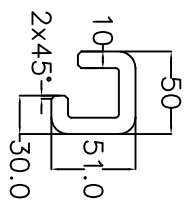
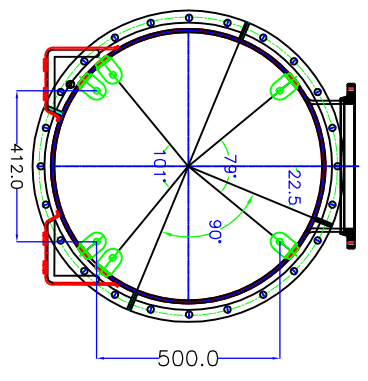
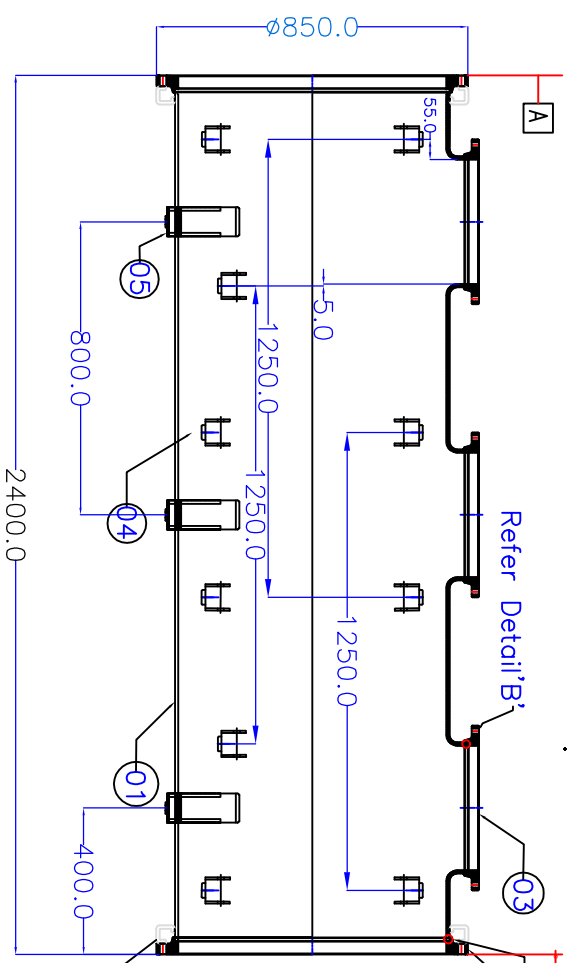
TYPE OF PRODUCT: GSM-245
 NAME OF CUSTOMER: BHARAT HEAVY ELECTRICALS LTD. HYDERABAD
 DEPT. CODE: C/M/J
 SCALE: NTS
 WEIGHT(KG):
 DRAWING NO. RDDG435 0519 1050
 CARD CODE RDDG435 0517 2012
 SHEET NO. NO. OF SHEETS

REV.	DATE	ALTERED CHECKED	ZONE	REV.	DATE	ALTERED CHECKED	ZONE

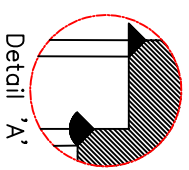
0101-6150-3245-GDG
DRG. NO.

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)



Detail 'C'
(Qty. = 08)



1. The Root should be Homogeneous and Continuous.
2. Pressure Test as per Enclosed Specification.
3. Tested Assemblies to be Degreased, sand Blasted and Powder Coated on Outside.
4. Electro Polish inside Surface.
5. Machineing of flanges shall be done after Welding.
6. The PCD of flanges shall be within Tolerances.
7. Pipe and Flanges should be TIG/MIG welded with suitable Electrode.

VAR. NO.	REMARKS	VAR. ITEM NO.	DESCRIPTION	STD	DRAWING NO.	ITNO.	MTL. CODE	MNTL. SPECN.	VAR	UNIT	WT.	QTY.	ZONE
		05	Support Bracket		RDDG435-1130-4130		SS-304L				06		
		04	Bracket		RDDG435-0519-1014		SS-304L				09		
		03	FLANGE II		RDDG435-0519-1013		SS-304L				02		
		02	FLANGE I		RDDG435-0519-1012		SS-304L				03		
		01	Busbar Pipe		RDDG435-0519-1011		SS-304L				01		

REV. DATE ALTERED

TYPE OF PRODUCT
NAME OF CUSTOMER
GSM-245

BHARAT HEAVY ELECTRICALS LTD.
HYDERABAD

DRN. NAME: SA DATE: 01.05.13
CND. SA VNR: 01.05.13
APPD. MMRAO PER. TO: 01.05.13

SCALE: NTS WEIGHT(KG):

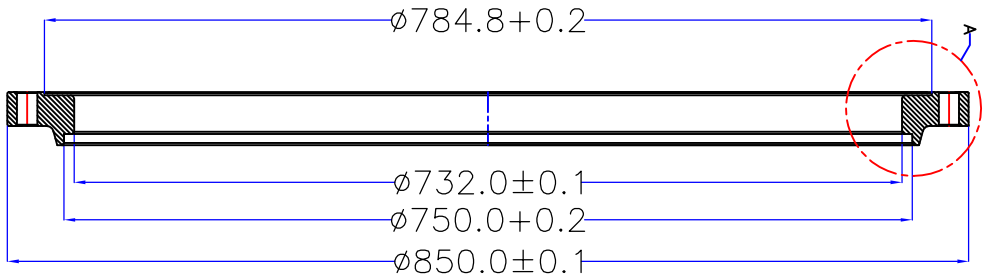
DRAWING NO. RDDG435-0519-1010

ZONE	CHECKED	REV.	DATE	ALTERED	ZONE	ZONE	ZONE	ZONE	ZONE

TITLE	CARD CODE	DRAWING NO.	SHEET NO.	NO. OF SHEETS
Busbar Enclosure		RDDG435-0519-1010	1	

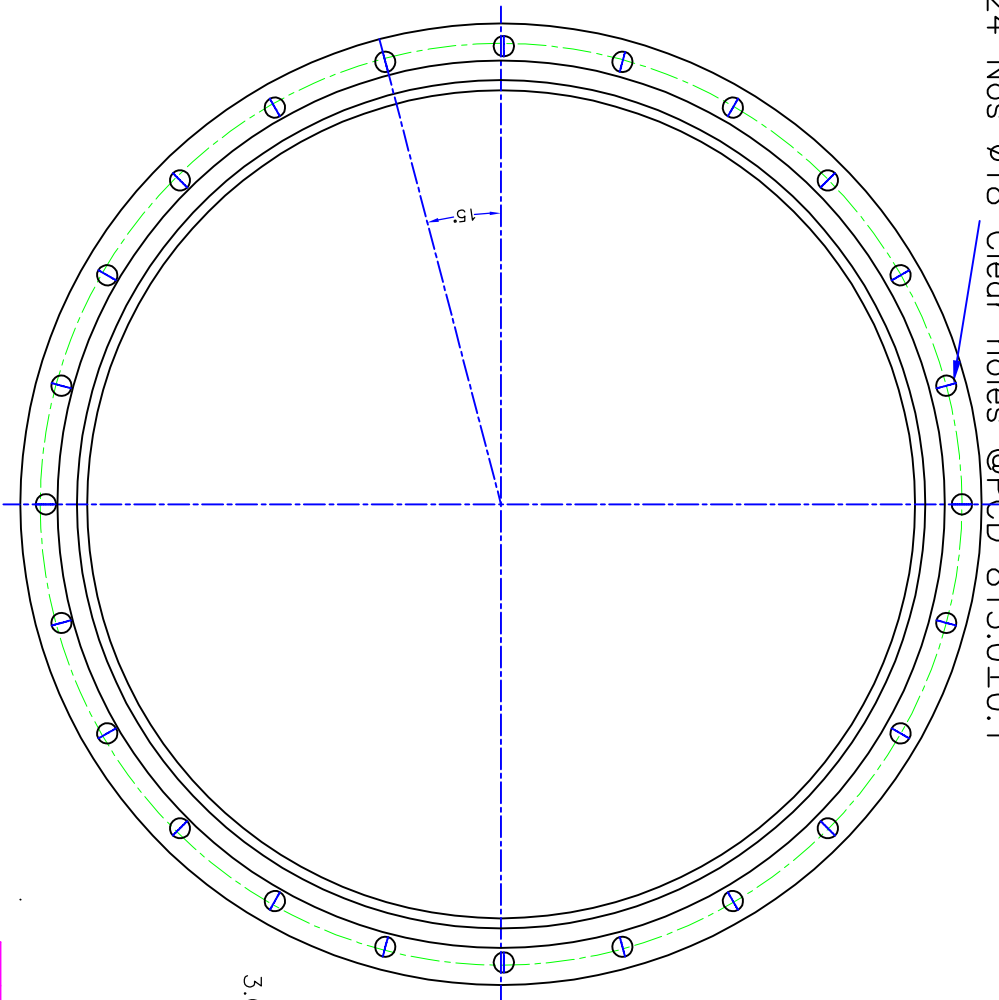
INVENTORY NO.	SIGN. AND DATE	REF. DRG. NO.
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12101-6150-03 RDDG435
DRG. NO.

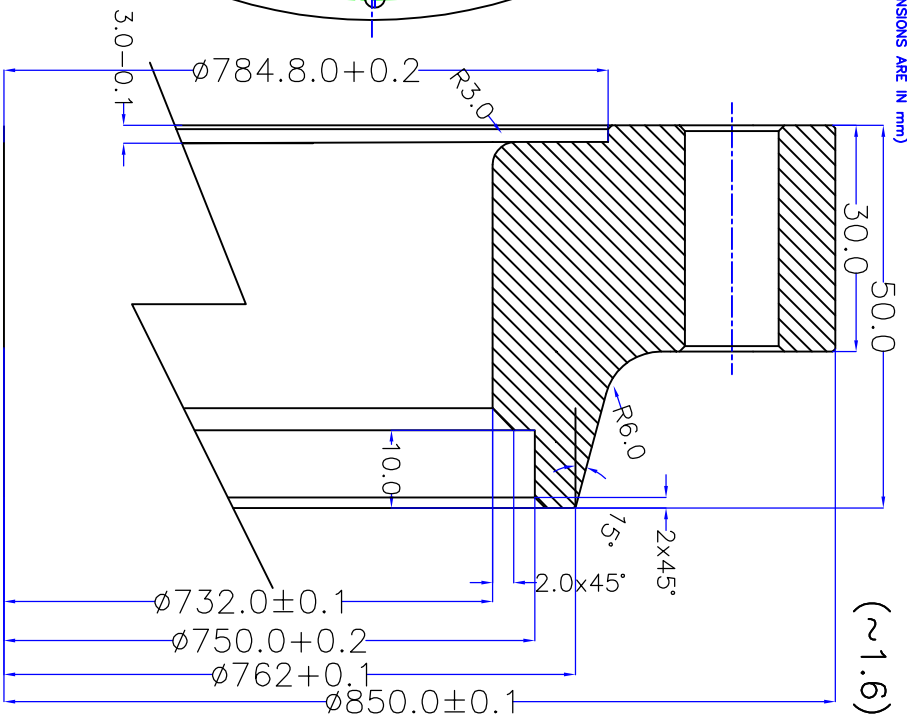


24 Nos $\phi 18$ Clear holes @PCD 815.0 ± 0.1

FIRST ANGLE PROJECTION



(ALL DIMENSIONS ARE IN mm)



ENLARGED VIEW OF 'A'

(~1.6)

VAR. NO.	REMARKS	VAR. NO.	ITEM NO.	02	FLANGE	ϕ 900X55mm	SS-304	MTL. CODE	SA	UNIT WT.	01
VAR. NO.	REMARKS	VAR. NO.	ITEM NO.								

TYPE OF PRODUCT
NAME OF CUSTOMER
GSM-245

DEPT. TOL. DIM. C/A/F SCALE WEIGHT(KG) DWN. NAME SA. SIGN. DATE NO. OF
BHARAT HEAVY ELECTRICALS LTD.
 HYDERABAD
 MMR/RAO
 RDDG435-0519-1010
 RDDG435-0519-1012

REV.	DATE	ALTERED	REV.	DATE	ALTERED	ZONE	ZONE
		CHECKED			CHECKED		
DWT. TOL. DIM. C/A/F SCALE WEIGHT(KG) DWN. NAME SA. SIGN. DATE NO. OF FLANGE I RDDG435-0519-1012 SHEET NO. NO. OF SHEETS							

INVENTORY NO.	SIGN. AND DATE	REF. DRG. NO.
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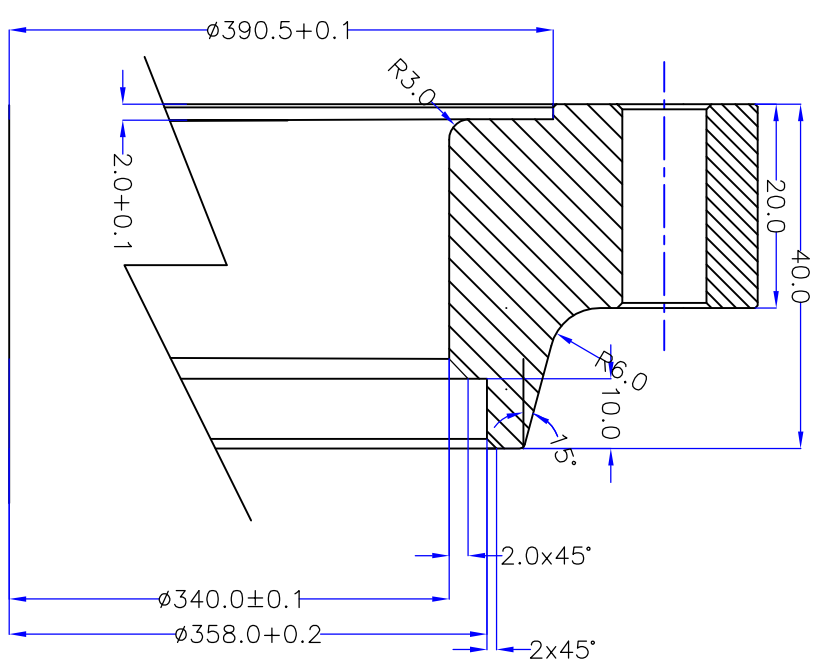
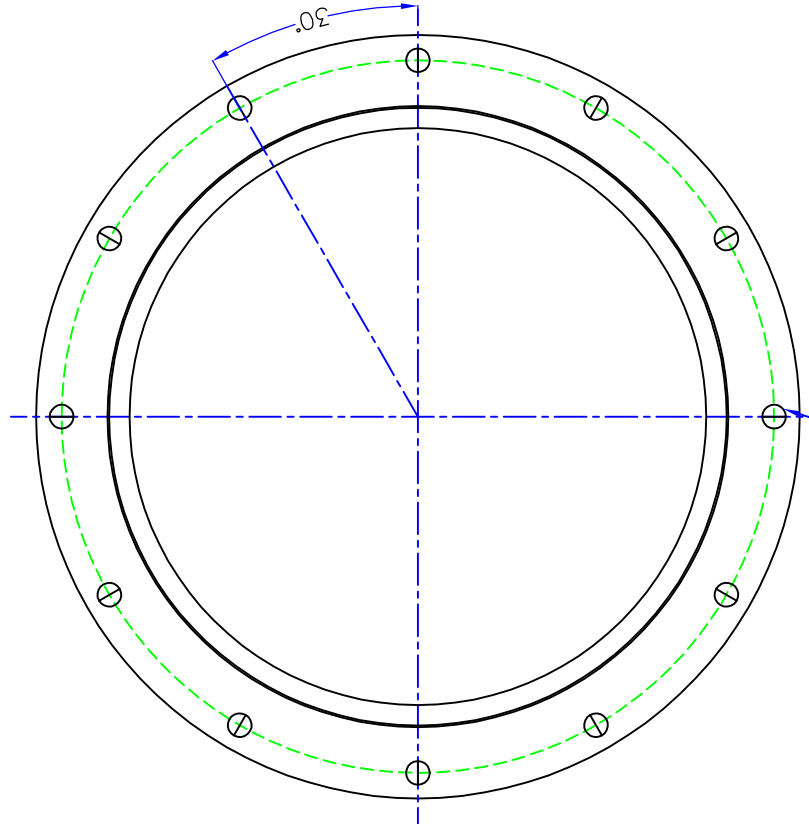
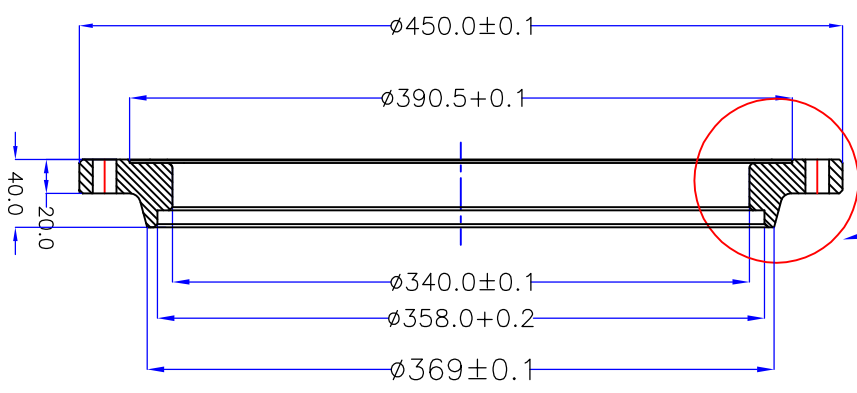
DRG. NO. RDDG435-0519-1013

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

(~1.6)

12 Nos $\phi 14$ Clear holes @PCD 420.0 ± 0.1



ENLARGED VIEW 'A'

VAR. NO.	REMARKS	VAR. ITEM NO.	02	FLANGE	DESCRIPTION	$\phi 500 \times 45 \text{mm}$	DRAWING NO.	SS-304L	MATL. CODE	SS	UNIT WT.	01
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REV.	DATE	ALTERED	REV.	DATE	ALTERED
ZONE		CHECKED	ZONE		CHECKED

TYPE OF PRODUCT: **GSM-245**

NAME OF CUSTOMER: **BHARAT HEAVY ELECTRICALS LTD. HYDERABAD**

DEPT. CODE: **NTS**

SCALE: **1:1**

WEIGHT(KG): **01**

DRAWING NO.: **RDDG435-0519-1013**

CARD CODE: **RDDG435-0519-1013**

SHEET NO.: **1**

NO. OF SHEETS: **1**

DATE: **01.05.13**

APPROVED BY: **MMRAO**

DESIGNED BY: **SA**

CHECKED BY: **SA**

DRAWN BY: **SA**

ITEM NO.: **01**

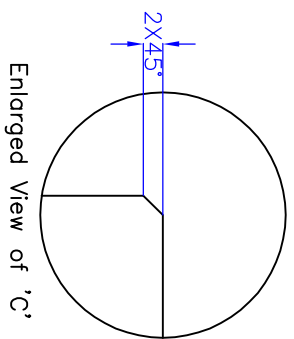
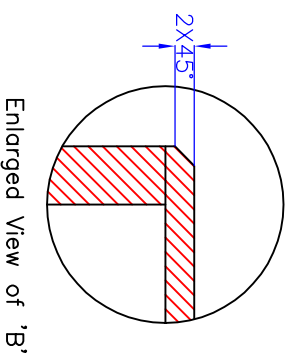
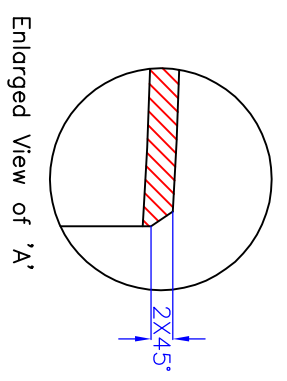
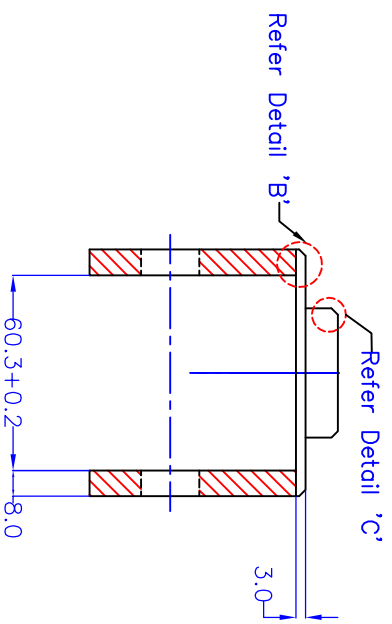
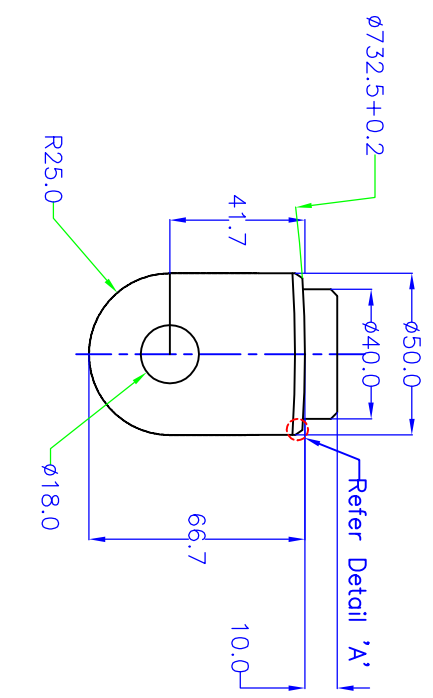
FLANGE II

1101-6150-5349DDR
NO. DRG

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

(~1.6)



VAR. NO.	REMARKS	VAR. ITEM NO.	DESCRIPTION	DRAWING NO.	IT. NO.	MATL. CODE	UNIT WT.

REV.	DATE	ALTERED	REV.	DATE	ALTERED
		CHECKED			CHECKED

GSM-245

TYPE OF PRODUCT: **BRACKET**

NAME OF CUSTOMER: **BHARAT HEAVY ELECTRICALS LTD. HYDERABAD**

DEPT. CODE: **NTS**

SCALE: **1:1**

WEIGHT(KG): **01**

DRN NAME: **MMRAO**

SA: **SA**

REF. TO: **RDDG435-0519-1010**

DATE: **01.05.13**

ITEM NO.: **1**

CARD CODE: **RDDG435-0519-1014**

SHEET NO.: **1**

NO. OF SHEETS: **1**

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

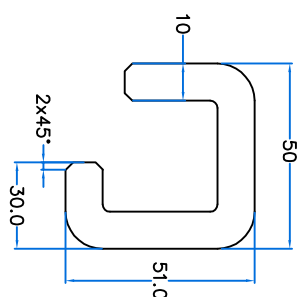
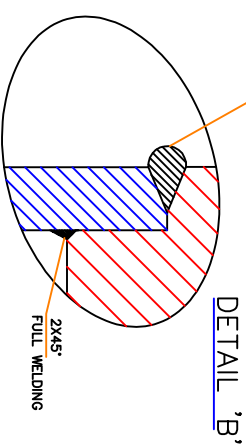
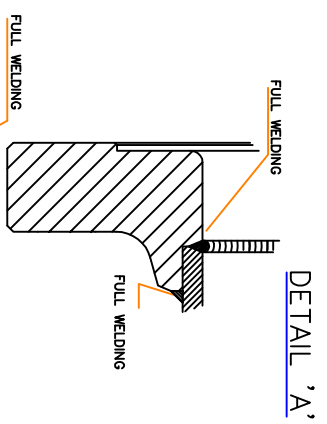
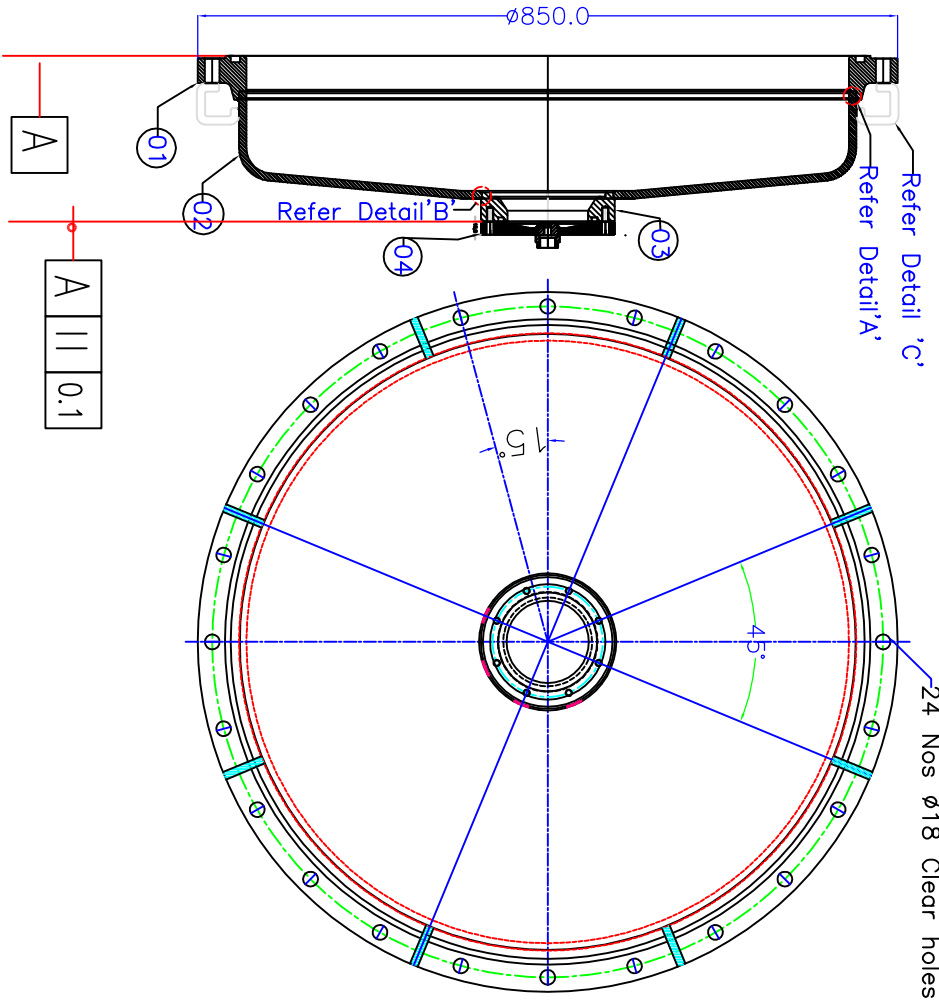
INVENTORY NO. SIGN. AND DATE REF. DRG. NO.

0201-6150-5949DDR
ON 984

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

(~1.6)



VAR. NO.	REMARKS	VAR. ITEM NO.	DESCRIPTION	IS	DRAWING NO.	ITANO.	MATL. CODE	MATL. SPECN.	UNIT WT.	QTY.	ZONE
04	GAS VALVE COVER	RDDG 435 1133 4161					SS-304L		01		
03	FLANGE VI	RDDG435 1133 4320					SS-304L		01		
02	DISH	RDDG435 0519 1022					SS-304L		01		
01	FLANGE I	RDDG435 0519 1021					SS-304L		01		

GSM-245

1. Dish and Flanges should be TIG/MIG welded with suitable SS Electrode.
2. The Root and Flanges should be homogeneous and continuous.
3. pressure test as per enclosed specification.
4. Tested Assemblies to be Degreased, Sand blasted and Powder coated on outside.
5. Electropolish on inside surface.
6. Lifting Lugs should be fully welded to Flange and Dish.

INVENTORY NO.	SIGN. AND DATE	REF. DRG. NO.
---------------	----------------	---------------

REV.	DATE	ALTERED	ZONE
		CHECKED	

TYPE OF PRODUCT
NAME OF CUSTOMER

BHARAT HEAVY ELECTRICALS LTD.
HYDERABAD

SCALE: **NTS**

WEIGHTING: **1**

DRW. NO.	NAME	SIGN.	DATE	NO. OF
01.05.13	SA		01.05.13	01

APPD. **MIRRAO**

DRAWING NO. **RDDG435-0519-1020**

CARD CODE **RDDG435-0519-1020**

TITLE **DISHED END ASSY.**

SHEET NO. **1** NO. OF SHEETS

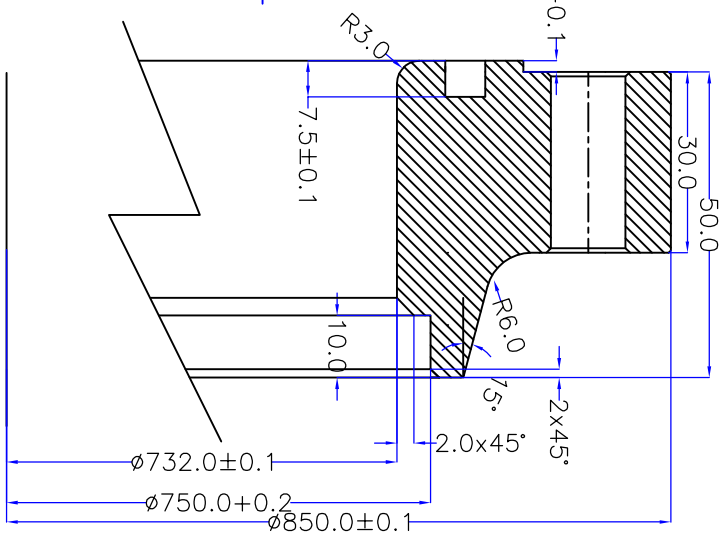
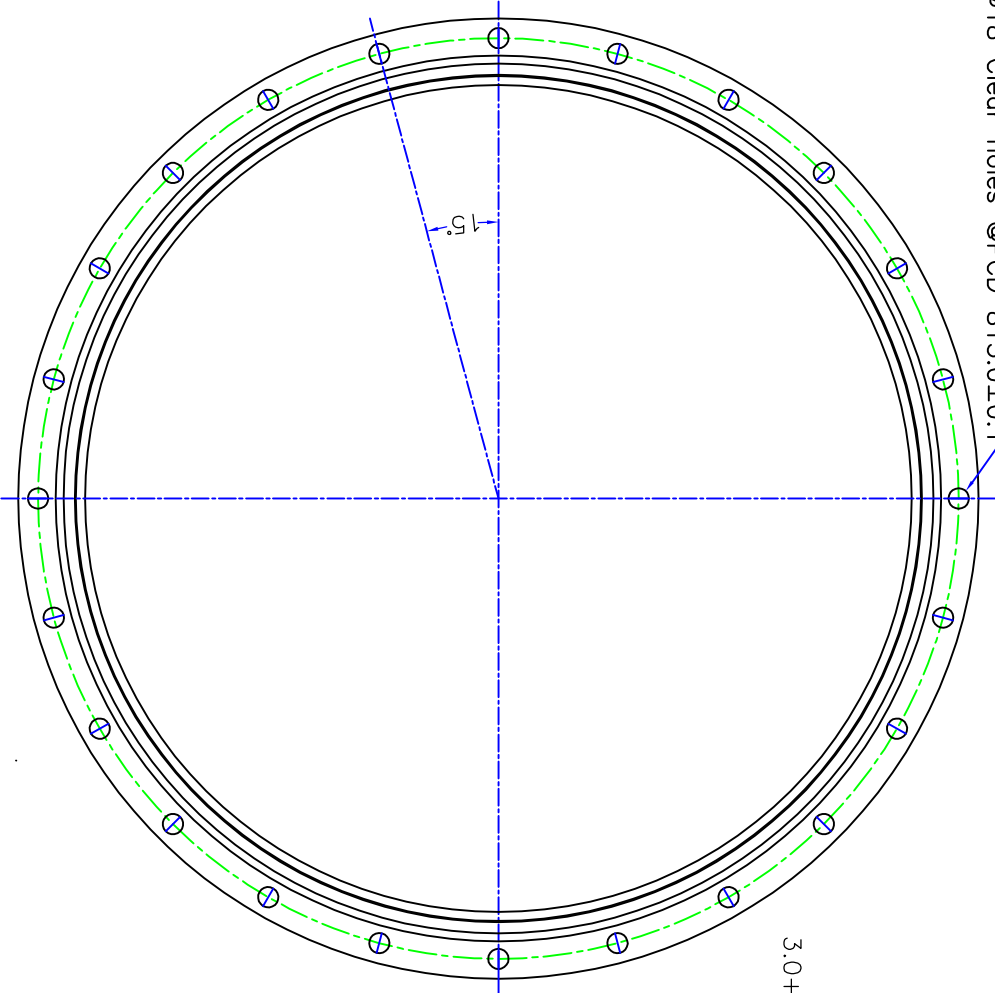
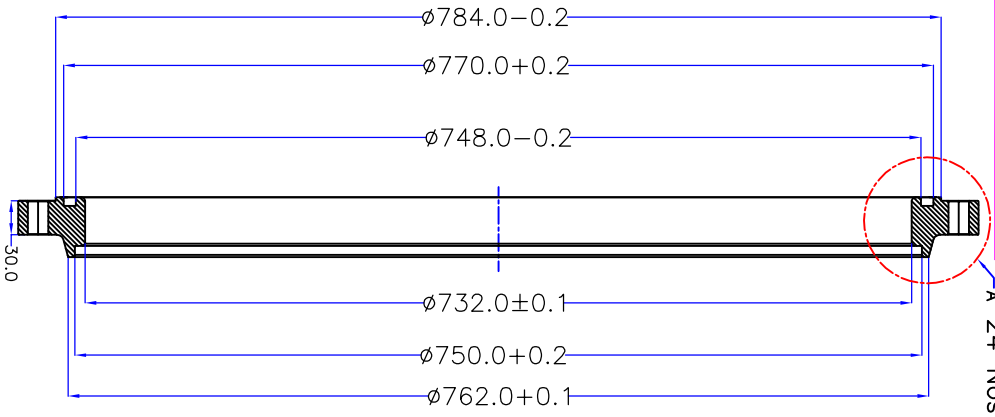
INVENTORY NO.	SIGN. AND DATE	REF. DRG. NO.
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1201-6150-35+9DDDD
DRG. NO.

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

(~1.6)



1. O-Ring groove shall be finished in RA0.8.

VAR. NO.	REMARKS	VAR. NO.	ITEM NO.	DESCRIPTION	DRAWING NO.	IT. NO.	MTL. CODE	A	C	E	UNIT WT.	QTY.	ZONE
02	FLANGE			Ø 900x55mm			SS-304				01		

TYPE OF PRODUCT: GSM-245
NAME OF CUSTOMER: BHARAT HEAVY ELECTRICALS LTD. HYDERABAD

DRN. NAME: SA
CHKD. SA
APPRD. MMRAO
DATE: 01.05.13
NO. OF SHEETS: 01

DEPT. CODE: 01
SCALE: NTS
WEIGHT(KG):
DRAWING NO.: RDDG435-0519-1020
SHEET NO.: 1

REV.	DATE	ALTERED CHECKED	REV.	DATE	ALTERED CHECKED	ZONE	ZONE

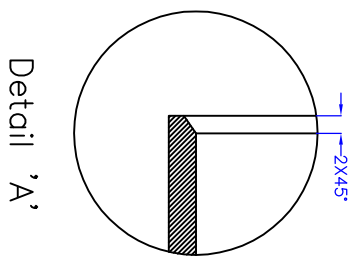
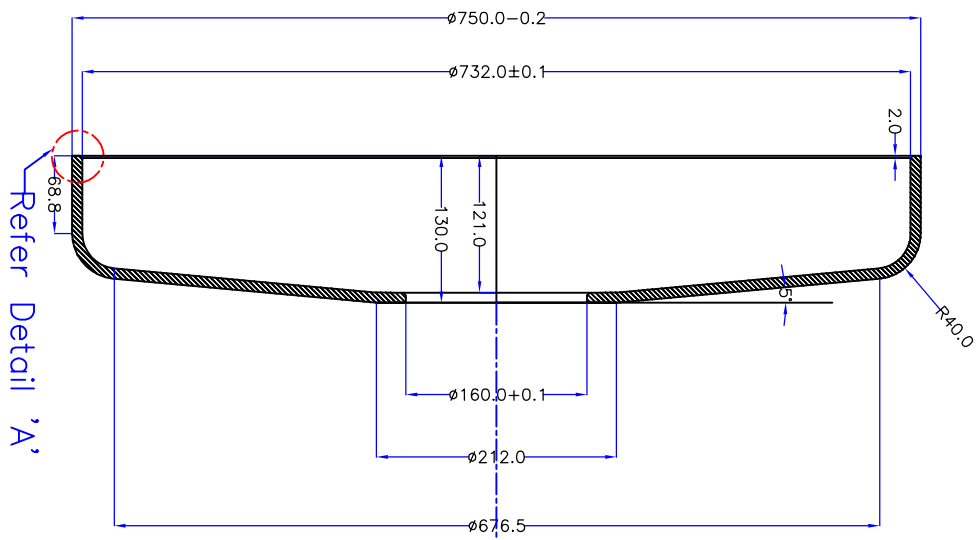
CARD CODE: RDDG435-0519-1021
SHEET NO.: 1

7201-6150-SC49GDD
DRG. NO.

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

(~1.6)



VAR. NO.	REMARKS	VAR. ITEM NO.	DESCRIPTION	ST	DRAWING NO.	IT. NO.	MTL. CODE	UNIT WT.	QTY.	ZONE
							SS-304		01	
							MTL. SPECN.			

TYPE OF PRODUCT
NAME OF CUSTOMER
GSM-245

DEPT. CODE
GRADE OF TOL. DIM. C/A/F
SCALE
WEIGHT(KG)
DNR NAME
SA
SA
MIRAO
APPD. REF. TO
RDDG435-0519-1020

BHARAT HEAVY ELECTRICALS LTD.
HYDERABAD
NO. OF SHEETS
DATE
01.05.13
01.05.13
01.05.13
NO. OF SHEETS
1

Dish
CARD CODE
RDDG435-0519-1022
SHEET NO.
NO. OF SHEETS

INVENTORY NO.	SIGN. AND DATE	REF. DRG. NO.
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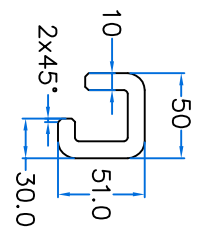
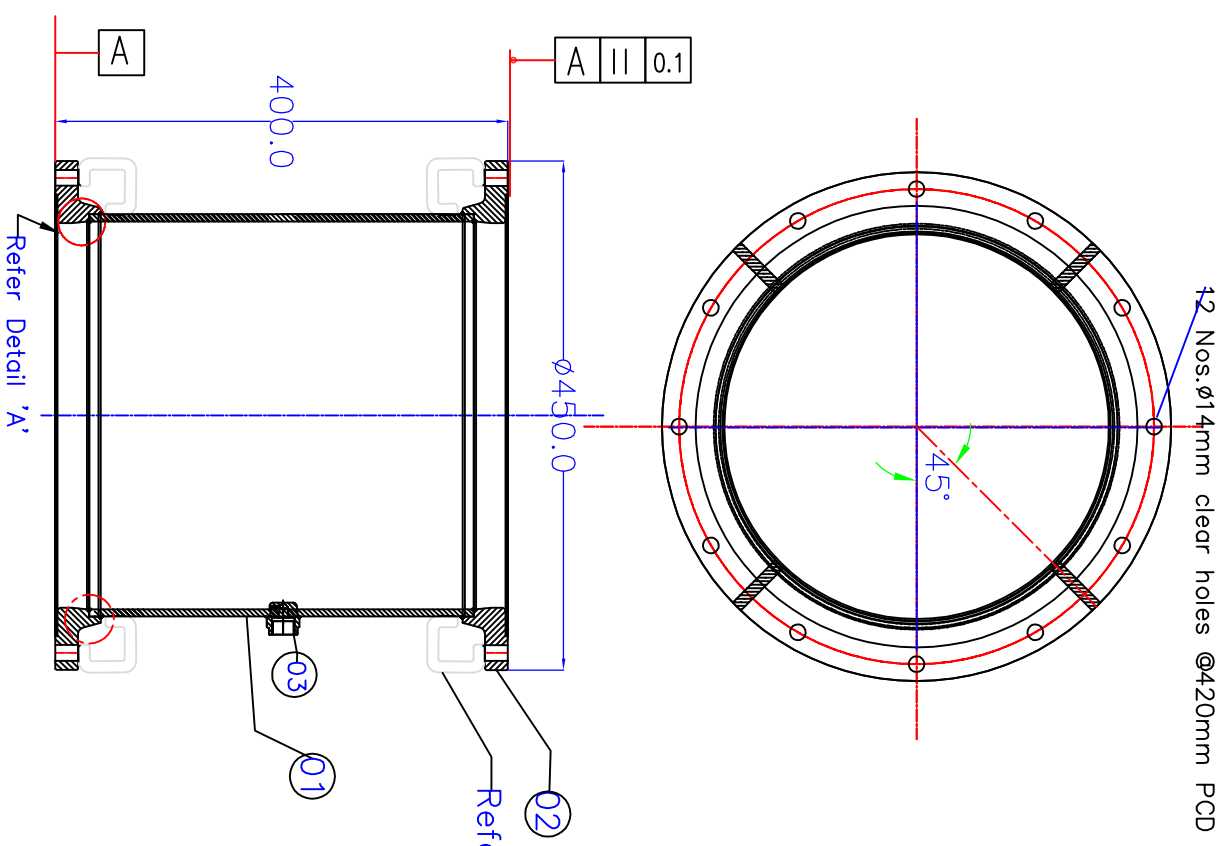
REV.	DATE	ALTERED CHECKED	ZONE

REV.	DATE	ALTERED CHECKED	ZONE

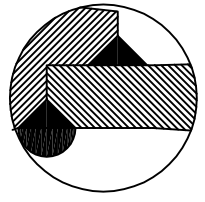
1501-6150-32425
DRG. NO. RDDG435

FIRST ANGLE PROJECTION

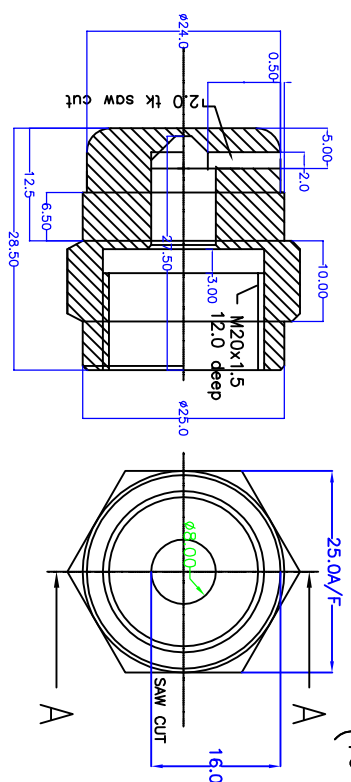
(ALL DIMENSIONS ARE IN mm)



Detail 'B'
(Qty. = 08)



Detail 'A'



GAS STUD(03)

(~1.6)

1. PIPE AND FLANGES SHOULD BE TO BE TIG/MIG WELDING WITH SUITABLE ELECTRODE.
2. THE ROOT SHOULD BE HOMOGENEOUS AND CONTINUOUS.
3. PRESSURE TEST AS PER SPECIFICATION.
4. TESTED ASSEMBLIES TO BE DEGREASED, SAND BLASTED AND POWDER COATED ON OUTSIDE SURFACE.
5. ELECTRO POLISH ON INSIDE SURFACE.

VAR. NO.	REMARKS	VAR. NO.	ITEM NO.	DESCRIPTION	DWG. NO.	IT. NO.	MATL. CODE	UNIT	QTY.
03	GAS STUD						SS-304L		01
02	FLANGE						SS-304L		02
01	St. PIPE						SS-304L		01

TYPE OF PRODUCT
NAME OF CUSTOMER
GSM-245

BHARAT HEAVY ELECTRICALS LTD.
HYDERABAD

REV.	DATE	ALTERED CHECKED	ZONE	REV.	DATE	ALTERED CHECKED	ZONE

DEPT. CODE	GRADE OF C/A/F	SCALE	WEIGHT(KG)	DRN. NAME	SIGN.	DATE	NO. OF
		NTS		SA		01.05.13	VAR.
				MMRAO		01.05.13	01

CARD CODE	DRAWING NO.	SHEET NO.	NO. OF SHEETS
	RDDG435-0519-1050	1	

St. Enclosure

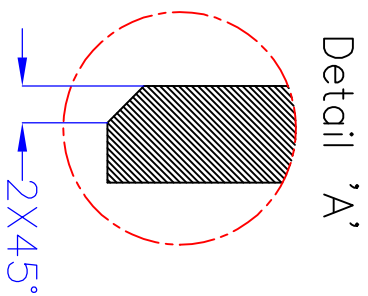
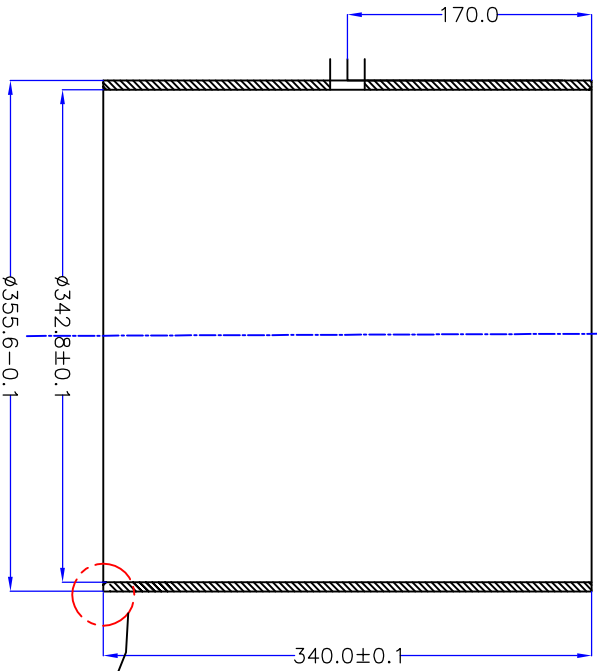
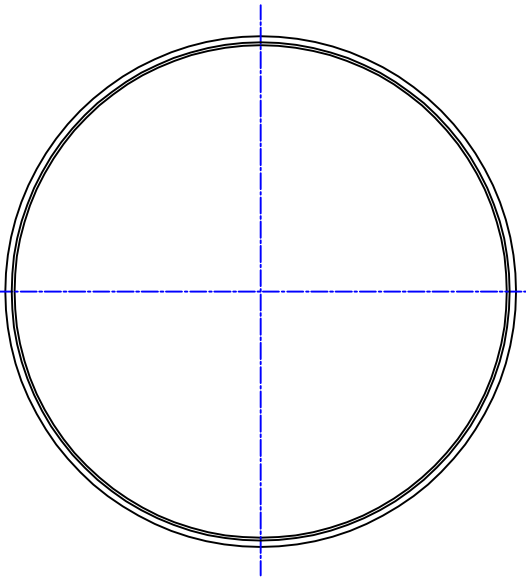
1501-19150-0519-1051

DRG. NO.

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

(~1.6)



1. Standard seamless Tube is preferable.

Refer Detail 'A'

VAR. NO.	REMARKS	VAR. NO.	ITEM NO.	DESCRIPTION	QTY.	UNIT	WT.	ZONE
01	St. Enclosure						01	

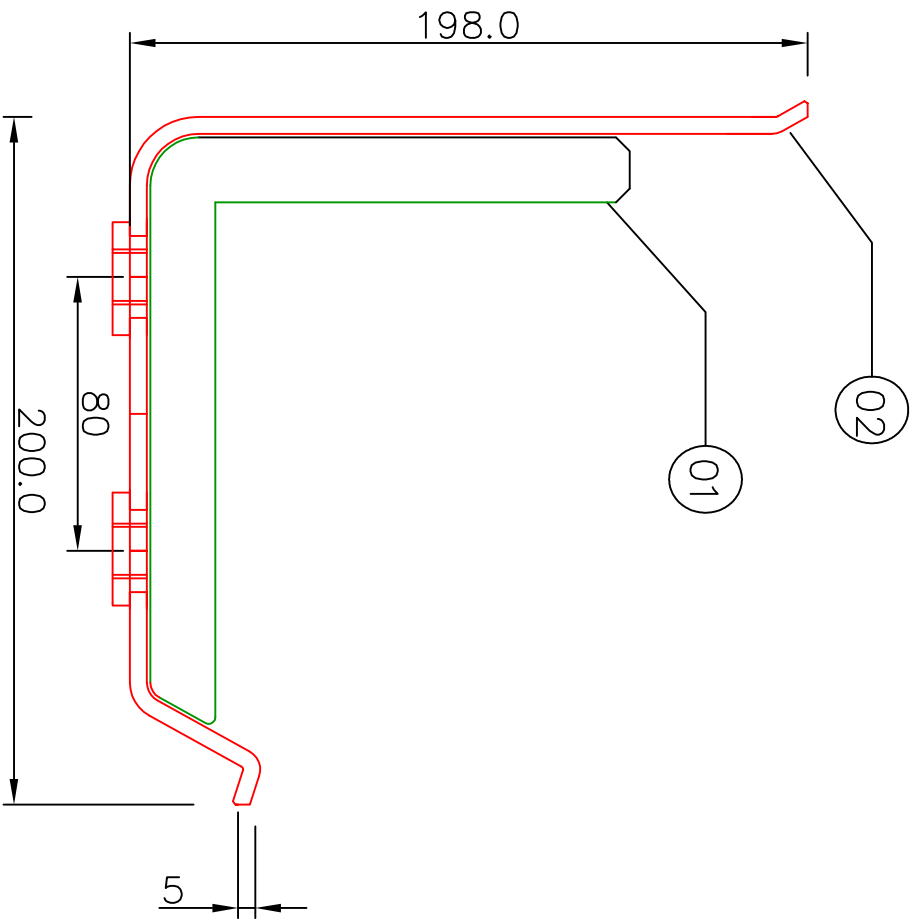
TYPE OF PRODUCT		NAME OF CUSTOMER	
GSM-245		BHARAT HEAVY ELECTRICALS LTD. HYDERABAD	

DRN. NAME	SA	SIGN.	DATE	NO. OF
01.05.13	SA		01.05.13	VAR.

DEPT. CODE	GRADE OF TOL. DIM. C/A/F	SCALE	WEIGHT(KG)	REF. TO	NO. OF
	NTS			RDDG435-0519-1050	ITEMS

TITLE	CARD CODE	DRAWING NO.	REV.
St. Pipe		RDDG435-0519-1051	1

REV.	DATE	ALTERED	ZONE
		CHECKED	



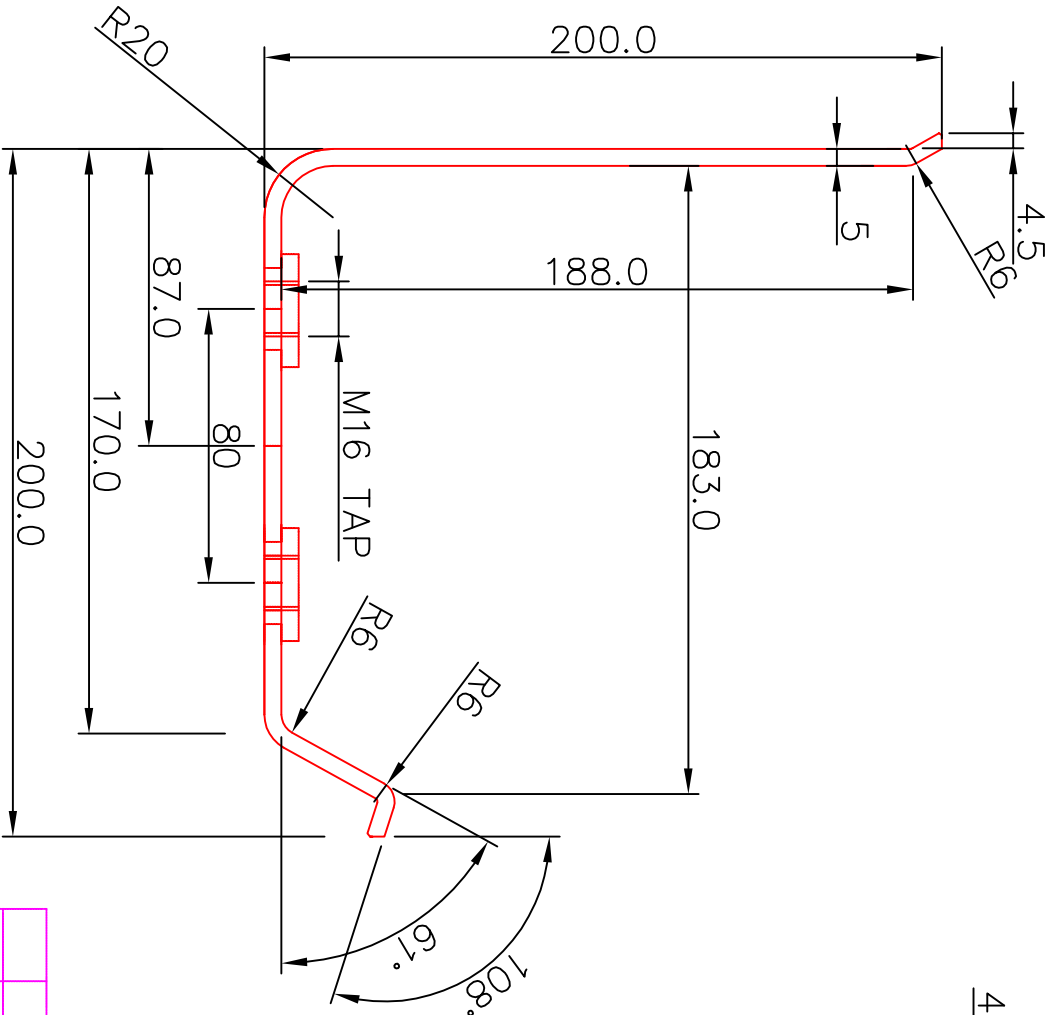
1. ALL SHARP EDGES SHALL BE MACHINED TO 0.4x45°
2. PIPE AND FLANGE TO BE TIG / MIG WELDING WITH SUITABLE SS ELECTRODE
3. THE ROOT SHOULD BE HOMOGENEOUS AND CONTINUOUS.

VAR. NO.	REMARKS	VAR. NO.	ITEM NO.	DESCRIPTION	DRWG. NO.	IT. NO.	MTL. CODE	MNTL. SPECN.	UNIT WT.	QTY.	ZONE
02				SUPPORT BRACKET	RD DG 4 35 1133 41309		SS-304		01		
01				SUPPORT PLATE	RD DG 4 35 1133 4130A		SS-304		02		

TYPE OF PRODUCT
NAME OF CUSTOMER
CGSM-145

DEPT. CODE	GRADE OF TOL. DIM. C/A/F	SCALE	WEIGHT(KG)	DRN. NAME	SIGN.	DATE	NO. OF
		NTS		KSRRAO		04.01.12	VAR.
				AL		04.01.12	
				MMRRAO		04.01.12	

REV.	DATE	ALTERED CHECKED	REV.	DATE	ALTERED CHECKED	TITLE	CARD CODE	DRWG. NO.	SHEET NO.	NO. OF SHEETS
						SUPPORT BRACKET ASSY.		RD DG 4 35 1133 4130		



ALL SHARP EDGES SHALL BE MACHINED TO 0.4x45°

VAR. NO.	REMARKS	VAR. NO.	ITEM NO.	SS SHEET	DESCRIPTION	ISS	DRAWING NO.	ITANO.	MATL. CODE	A	C	UNIT WT.	QTY.	ZONE
				01					SS-304			04		

TYPE OF PRODUCT: CGSM-145
NAME OF CUSTOMER: BHARAT HEAVY ELECTRICALS LTD. HYDERABAD

DRN: KSRAD, AL, MNRAD
CND: AL, MNRAD
APPD: MNRAD
DATE: 04.01.12, 04.01.12, 04.01.12

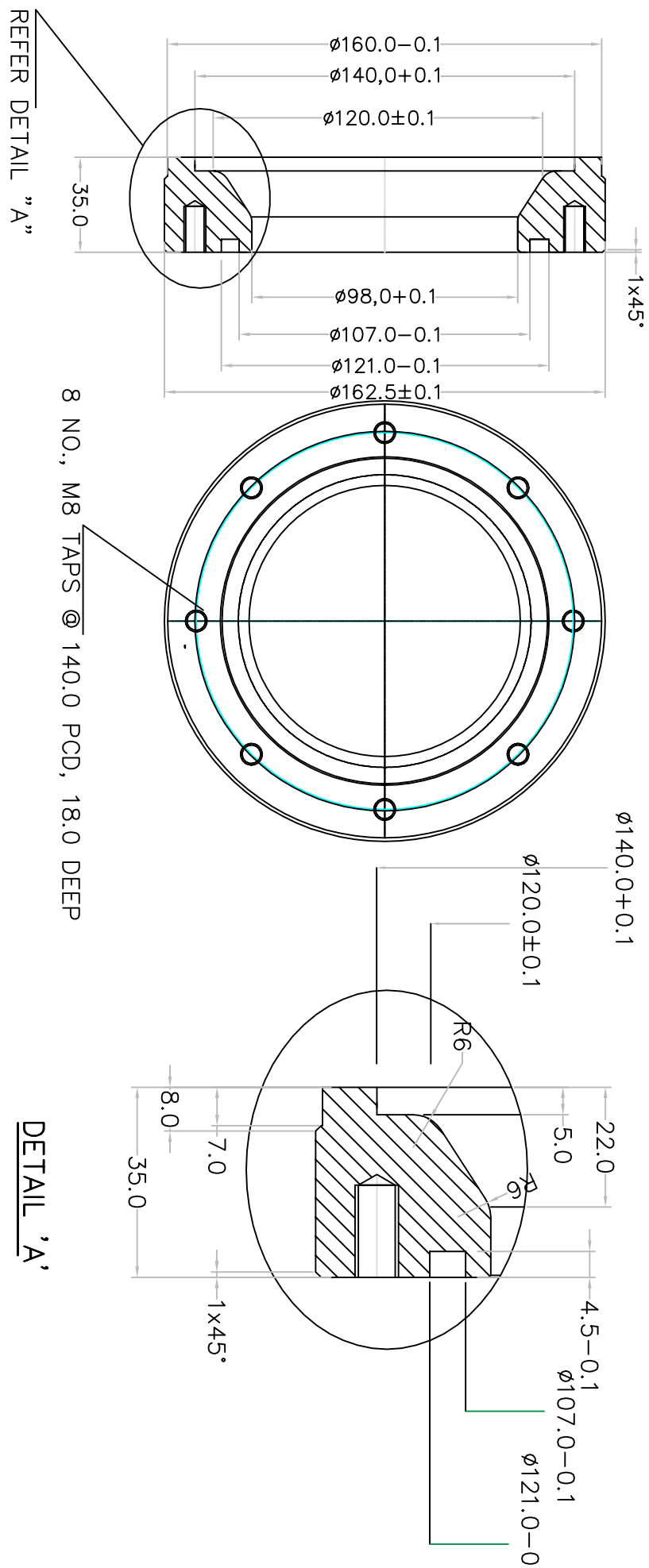
DEPT. CODE: NTS
SCALE: NTS
WEIGHT(KG):
DWT. CODE: NTS
GRADE OF TOL. DIM. C/A/F: NTS

TITLE: SUPPORT BRACKET
CARD CODE: RD DG 4 35 1133 4130B
DRAWING NO.: RD DG 4 35 1133 4130B
SHEET NO.:
NO. OF SHEETS:

INVENTORY NO.	SIGN. AND DATE	REF. DRG. NO.
---------------	----------------	---------------

REV.	DATE	ALTERED	ZONE
		CHECKED	

REV.	DATE	ALTERED	ZONE
		CHECKED	



M8 TAP SHALL NOT BE MORE THAN 18.0 DEEP.
ALL SHARP EDGES SHALL BE MACHINED TO 0.4X45°.

VAR. NO.	REMARKS	VAR. ITEM NO.	DESCRIPTION	DRAWING NO.	ITAN.	MATL. CODE	UNIT WT.
01	FLANGE - VI				SS-304L		01

TYPE OF PRODUCT: CGSM-145

NAME OF CUSTOMER: BHARAT HEAVY ELECTRICALS LTD. HYDERABAD

GRADE OF C/M/F: 3.0

SCALE: 3.0

WEIGHT(KG): 3.0

DRAWING NO.: RD DG 4 35 1133 4320

SHEET NO.: 1

NO. OF SHEETS: 1

DATE: 26/12/09

VAR. NO.: 01

REV. NO.: 01

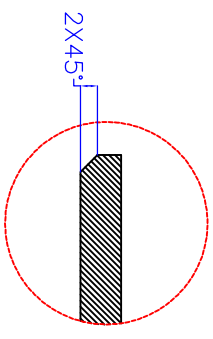
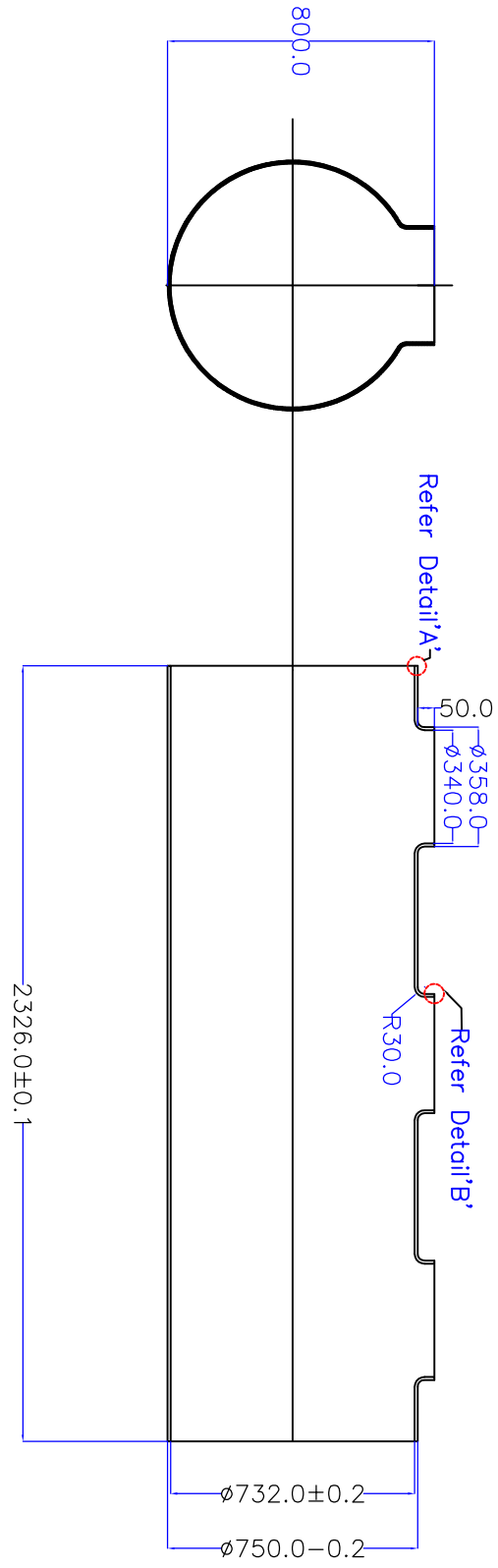
REV.	DATE	ALTERED CHECKED	ZONE	REV.	DATE	ALTERED CHECKED	ZONE

1101-19-150-0519-1011
DRG. NO. RDDG435-0519-1011

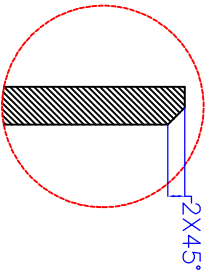
FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

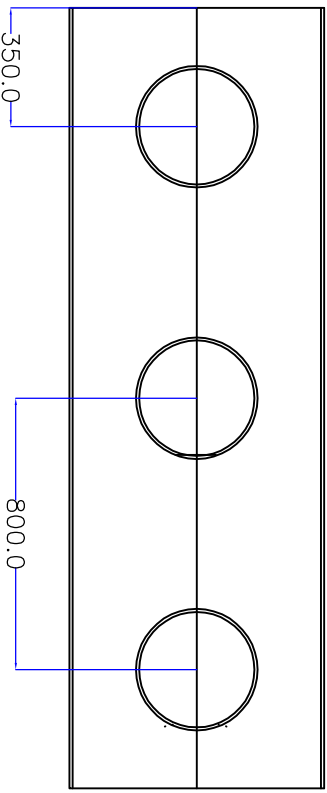
(~1.6)



Enlarged View of 'A'



Enlarged view of 'B'



VAR. NO.	REMARKS	VAR. ITEM NO.	DESCRIPTION	DATE	IT. NO.	MATL. CODE	MATL. SPECN.	UNIT WT.	QTY.	ZONE
01	Busbar Enclosure	800X2300				SS-304L			01	

TYPE OF PRODUCT: GSM-245
NAME OF CUSTOMER: BHARAT HEAVY ELECTRICALS LTD. HYDERABAD

DPT. CODE: C/M/T
SCALE: NTS
WEIGHT(KG):
DIN NAME: SA
S.A. SA
MNRAO
APPD. 01.05.13
CND. 01.05.13
01

REV.	DATE	ALTERED CHECKED	ZONE	REV.	DATE	ALTERED CHECKED	ZONE	TITLE	CARD CODE	DRAWING NO.	SHEET NO.	NO. OF SHEETS
								Busbar Pipe		RDDG435-0519-1011	1	