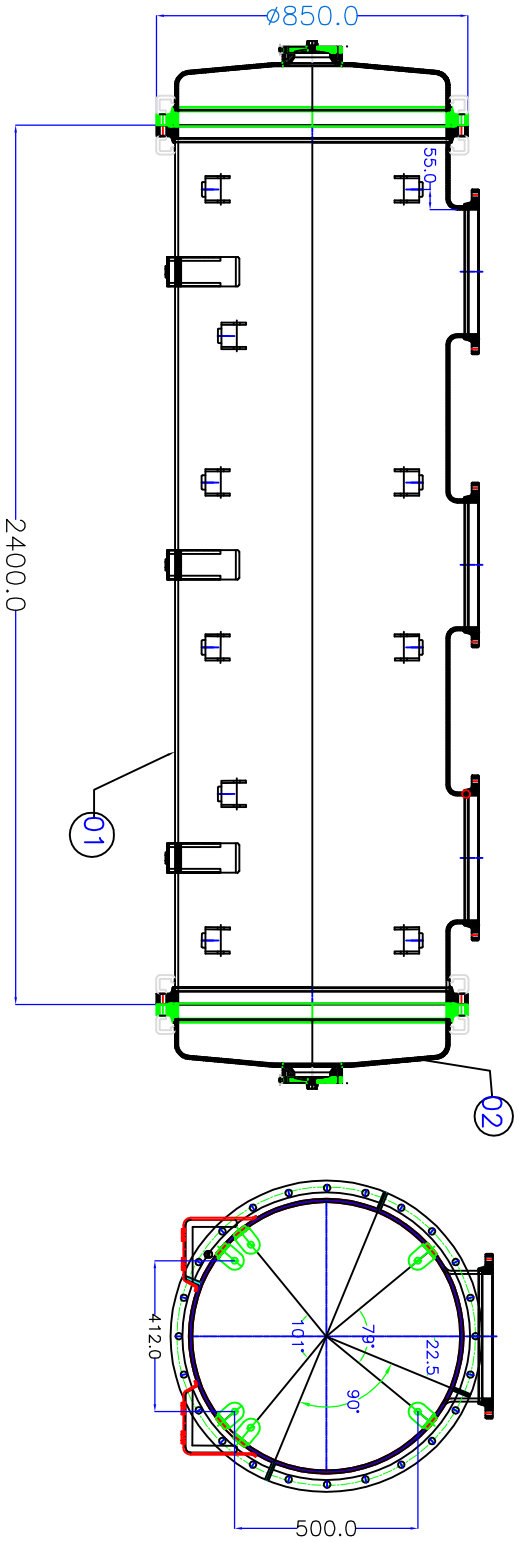


0001-6150-524GDD  
 DRG. NO.

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)



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. NO.	ITEM NO.	DESCRIPTION	STD	DRAWING NO.	ITANO.	MATL. CODE	A	E	C	UNIT WT.	QTY.	ZONE
02	Dished End					RDDG435-0519-1020		SS-304L					02	
01	Busbar Enclosure					RDDG435-0519-1010		SS-304L				01		

TYPE OF PRODUCT  
 NAME OF CUSTOMER  
**GSM-245**

REV. DATE ALTERED

REV. DATE ALTERED



**BHARAT HEAVY ELECTRICALS LTD.**  
 HYDERABAD

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

DRW. NAME  
 SA  
 DNO  
 SA  
 APPD. MMRAO  
 REF. TO  
 RDDG435-0519-1000

ZONE	CHECKED	REV.	DATE	ALTERED	ZONE	CARD CODE	DRAWING NO.	SHEET NO.	NO. OF SHEETS
						RDDG435-0519-1000			

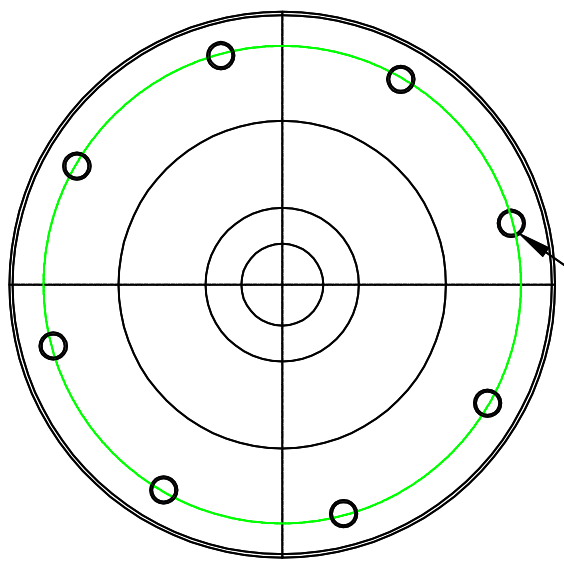
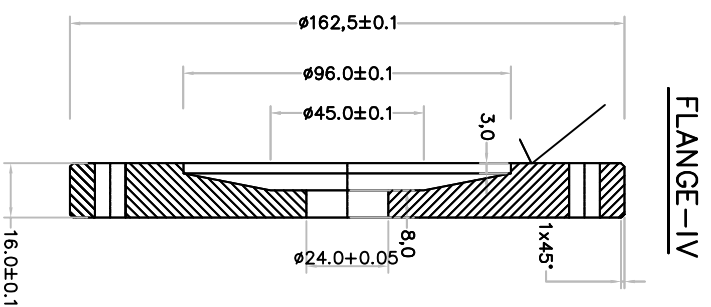
INVENTORY NO. SIGN. AND DATE REF. DRG. NO.

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

1914 3E11 35 4 3D RD  
DRG. NO.

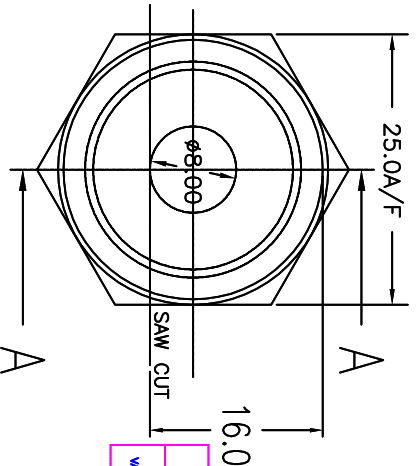
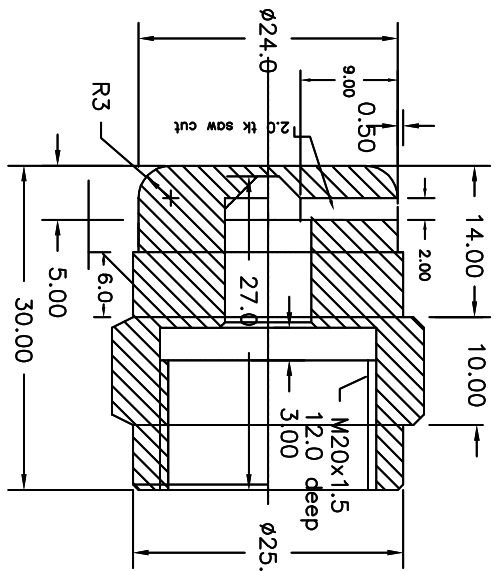
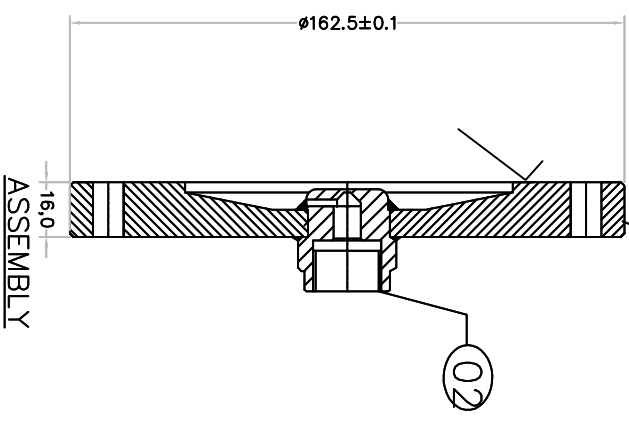
FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)



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

(~1.6)



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**

DRN.	CHKD.	APPD.	REV. TO	DATE
KSRKAO	AL	MNRKAO		26.12.06
				02.01.08
				09.01.08

CARD CODE: **RD DG 4 35 0519 1020**

DRAWING NO.: **RD DG 4 35 1133 4161**

SHEET NO.: **1**

NO. OF SHEETS: **1**

GAS STUD (2)

SECTION AA

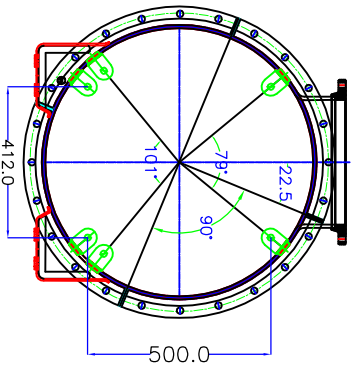
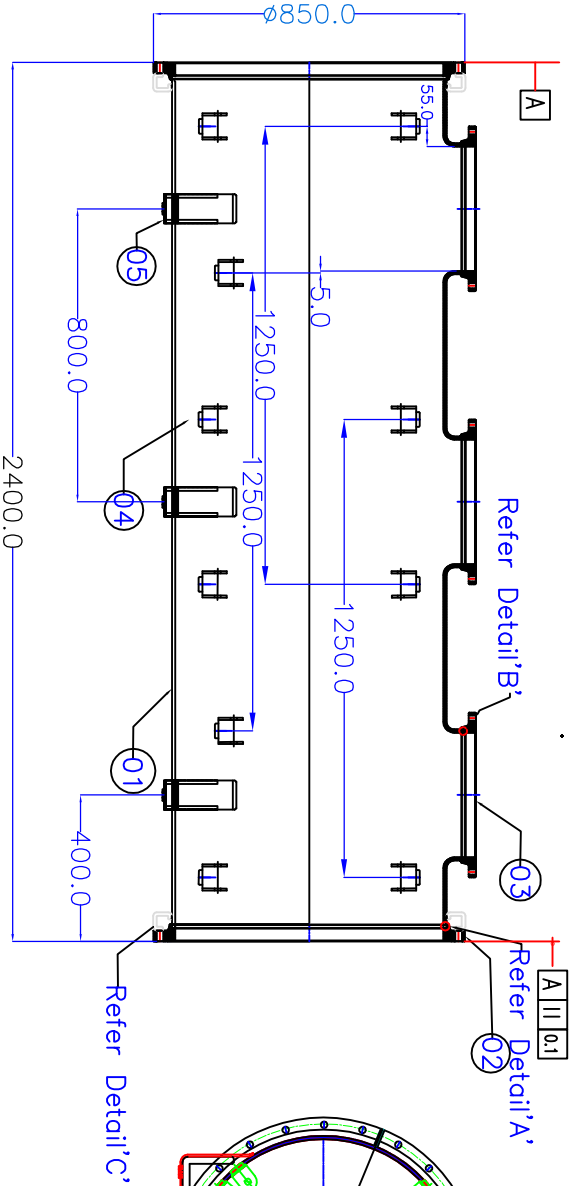
FLANGE-IV

ASSEMBLY

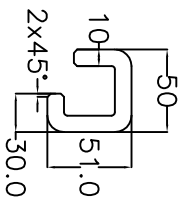
02

01

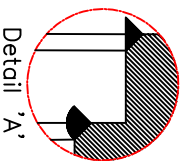




Detail 'B'



Detail 'C'  
(Qty. = 08)



Detail 'A'

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 shallbe 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		

TYPE OF PRODUCT  
NAME OF CUSTOMER

GSM-245

REV. DATE ALTERED



BHARAT HEAVY ELECTRICALS LTD.  
HYDERABAD

NAME: SA  
DATE: 01.05.13  
VAR. NO.: 01

DEPT. GRADE OF TOL. DIM. C/A/F  
SCALE WEIGHT(KG)  
MNS

CDR SA  
APPD. MMRAO  
RDDG435-0519-1000  
RDDG435-0519-1010  
DRAWING NO.  
SHEET NO. NO. OF SHEETS

PSGSG 2013- 14/014	<b>Process Specification For Bus Bar Enclosure &amp; Straight Enclosure</b>	Drg. No.	RDDG435 0519 1000 RDDG435 0519 1050
		Date	04.07.2013
		Product	GSM-245

<b>1.0</b>	<b>APPLICATION:</b>
	Busbar and Straight Enclosure are a part of gas insulated switchgear equipment. The gas pressure in these metal enclosures are maintained at 0.5 MPa. This leak tight assembly shall meet following specification.
<b>2.0</b>	<b>DRAWINGS:</b>
	1. Busbar Enclosure Assembly Main Assembly Drawing : RDDG435-0519-1000
	Component/Part Drawings:
	i) Busbar Enclosure Main Assembly Drawing: RDDG435-0519-1010 Component/Part Drawings: RDDG435-0519-1011 RDDG435-0519-1012 RDDG435-0519-1013 RDDG435-0519-1014 RDDG435-1130-4130
	ii) Dished End Main Assembly Drawing: RDDG435-0519-1020 Component/Part Drawings: RDDG435-0519-1021 RDDG435-0519-1022 RDDG435-1133-4320 RDDG435-1133-4161
	2) St. Enclosure Assembly Main Assembly Drawing : RDDG435-0519-1050
	Component/Part Drawings: RDDG435-0519-1051 RDDG435-0517-2012
<b>3.0</b>	<b>QUANTITY:</b>
	1. Busbar Enclosure: 1 No. 2. St. Enclosure : 1 No.
<b>Page 1/4</b>	
PSGSG 2013-14/014	SIGNATURE

PSGSG 2013- 14/014	<b>Process Specification For Bus Bar Enclosure &amp; Straight Enclosure</b>	Drg. No.	RDDG435 0519 1000 RDDG435 0519 1050
		Date	04.07.2013
		Product	GSM-245

PSGSG 2013-14/014	SIGNATURE	
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PSGSG 2013- 14/014	<b>Process Specification For Bus Bar Enclosure &amp; Straight Enclosure</b>	Drg. No.	RDDG435 0519 1000 RDDG435 0519 1050
		Date	04.07.2013
		Product	GSM-245

4.0	SPECIFICATIONS:	Vendor's compliance
4.1	<b>Material:</b> Low Carbon Austenitic stainless steel confirming to AISI-304.	
4.2	Standard seamless or ERW (straight/ spiral) tubular sections shall be used for construction, where ever applicable in design. Fabricated / drawn sections can be used for other areas not confirming to standard pipe schedules.	
4.3	Drawn profiles, to size, only shall be used for direct welding with the flanges. No smithy is allowed for formation/ matching of profiles in view of defect inception. Pipe and flanges shall be TIG / MIG welded with suitable SS electrode.	
4.4	The welded sections shall be sized as per drawing and verified /tested using Dye Penetration (D.P.) technique or x-ray at all stages of welding. Inside edges/weld shall be fused to obtain near smooth weld surface.	
4.5	The flanges shall be manufactured to drawings and welded as per instructions to the shells maintaining parallelism of faces and perpendicularity as prescribed. Machining shall be done after welding only. Job will not be accepted in case there is any parallelity/perpendicularity error of PCDs of flanges.	
4.6	The flange sealing surfaces shall be polished to RA 0.8 or better and the bolting holes shall be machined fine, using jig borer/ CNC milling, and shall have uniform chamfer. The tolerances, wherever not mentioned in the drawing, shall be within 0.1°. Any sharp corners shall be removed as per the drawing. Wherever not specified in the drawing, a chamfer of 0.5x45° shall be provided at the sharp corners and edges	
Page 2/4		

PSGSG 2013- 14/014	<b>Process Specification For Bus Bar Enclosure &amp; Straight Enclosure</b>	Drg. No.	RDDG435 0519 1000 RDDG435 0519 1050
		Date	04.07.2013
		Product	GSM-245

<p><b>4.7</b></p> <p><b>4.8</b></p> <p><b>4.9</b></p> <p><b>4.10</b></p> <p><b>4.11</b></p> <p><b>4.12</b></p> <p><b>4.13</b></p> <p><b>Page 3/4</b></p>	<p>Weld splatter, if any, shall be removed by chipping or grinding on completion of the weld.</p> <p>Dye penetration report shall be generated and submitted to BHEL.</p> <p>The tested assembly should be cleaned, degreased and prepared for pressure test. The assembly shall be tested at 8.5 bar pressure for 4 hours and pressure drop shall be recorded and communicated to BHEL. In case of pressure drop a course leak check shall be performed. The leak shall be rectified and the test repeated to satisfaction. Components indicating drop in pressure during this test will not be accepted. The arrangement shall be kept at 13 bar for 15 minutes prior to this test to verify pressure withstanding capabilities specified in drawing.</p> <p>Component shall be electro chemical polished on the inside surface.</p> <p>The assemblies further shall be sandblasted on the outer surface and powder coated (&gt; 50 Micron) to shade as specified on drawing. During this operation all flanges shall be masked at the sealing surfaces and at the rim.</p> <p>The dimensional checks and the leak test shall be carried out in presence of BHEL inspector. It is preferable to have first stage inspection after assembling the first module at supplier's works.</p> <p>The accepted component shall be packed in wooden boxes with suitable covers on the flanges to prevent transit damages. A thick polyethylene cover shall be used to seal to component from ingress of moisture and water. For transit time higher than a week, adequate quantity of moisture absorbent shall also be placed with the component.</p>	
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PSGSG 2013- 14/014	<b>Process Specification For Bus Bar Enclosure &amp; Straight Enclosure</b>	Drg. No.	RDDG435 0519 1000 RDDG435 0519 1050
		Date	04.07.2013
		Product	GSM-245

<b>4.14</b>	<p>Following certificates shall be furnished for acceptance of the component:</p> <p>1 Material certificate, 2 Material test certificate , 3 Stage wise DP / X-ray tests 4 Pressure withstand test report 5 Electro-polishing schedule</p> <p>A certified copy of above documents shall be sent along with the delivery note.</p>	
<b>4.15</b>	Components / fittings required for pressure test shall be arranged by supplier only.	
<b>4.16</b>	<p><b>Qualifying Requirements:</b></p> <p>The supplier shall be of national repute with proven record and should have supplied similar enclosures. Supplies reference list shall be provided along with the offer.</p>	
<b>4.17</b>	<p><b>Performance Guarantee :</b></p> <p>Supplier shall provide Guarantee certificate for the equipment to ensure reliability of the equipment for a period of not less than 12 months from the date of dispatch.</p>	
<b>4.18</b>	<p><b>Any Other information:</b></p> <p>In case of doubts please contact BHEL for clarifications. Supplier can furnish any other/additional information, considering overall requirements.</p>	
<b>Page 4/4</b>		