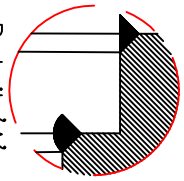


Detail 'C'
(Qty. = 36)



Detail 'B'



Detail 'A'

1. The Welding 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. Machining 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	DRAWING NO.	IT. NO.	MATL. CODE	UNIT	QTY.	ZONE
		01		Linkage Housing Pipe	RDDG435-046-1021		SS-304L		01	
		02		Flange II	RDDG435-0617-095		SS-304L		02	
		03		Flange III	RDDG435-046-1022		SS-304L		02	
		04		FLANGE IV	RDDG435-046-1023		SS-304L		02	
		05		SS Plate	RDDG435-046-1024		SS-304L		02	

INVENTORY NO.	SIGN. AND DATE	REF. DRG. NO.
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TYPE OF PRODUCT: **GSM-400 V2**
 NAME OF CUSTOMER: **BHARAT HEAVY ELECTRICALS LTD. HYDERABAD**

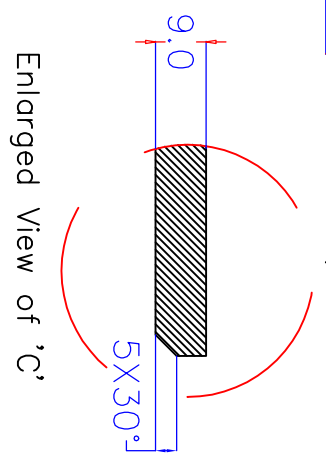
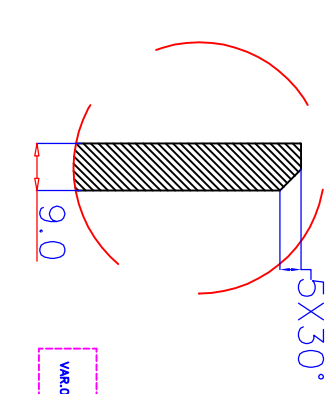
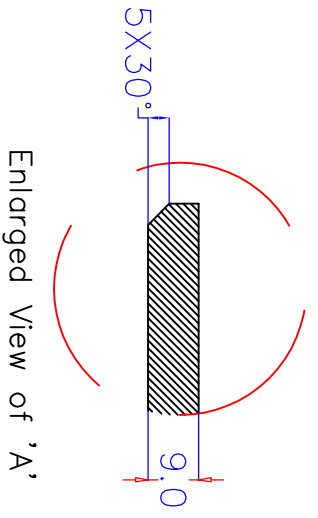
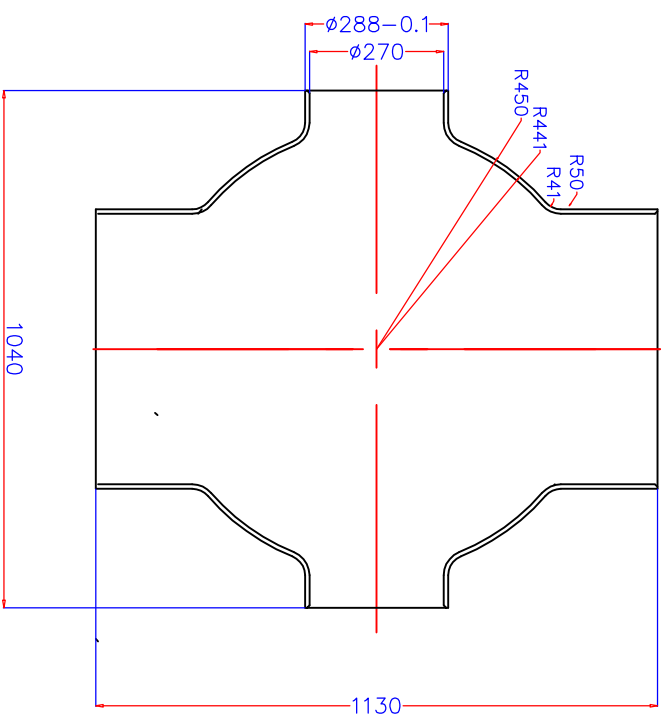
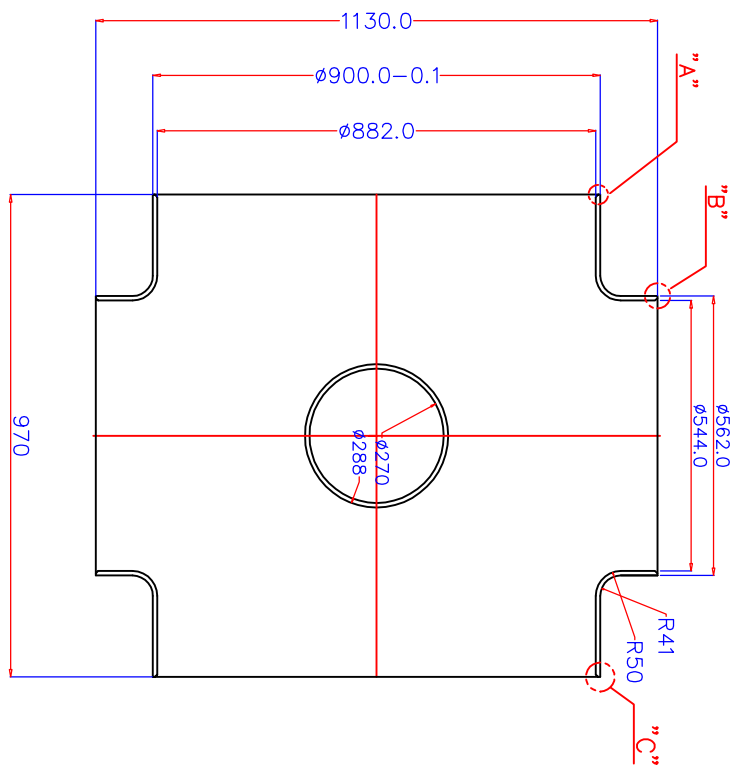
REV.	DATE	ALTERED	REV.	DATE	ALTERED
ZONE		CHECKED	ZONE		CHECKED

DEPT.	SCALE	WEIGHT(KG)	DRAWING NO.	NO. OF SHEETS
CODE	NTS		RDDG435-046-1000	1

TITLE: **Linkage Housing**

DRN. NAME	SIGN.	DATE	NO. OF
SA SA		12.12.13	VAR.
APPD. MMRAD		12.12.13	ITEM
REP. TO			NO. OF
RDDG435-046-1000			ITEMS

CARD CODE: RDDG435-046-1020



VAR. NO.	ITEM NO.	DESCRIPTION	DRAWING NO.	IT. NO.	MATL. CODE	A	UNIT	QTY.	ZONE
	01	CB PIPE	1000X1150		SS-304L		01		

TYPE OF PRODUCT: GSM-400 V2
NAME OF CUSTOMER: BHARAT HEAVY ELECTRICALS LTD.

DEPT.: HYDERABAD
SCALE: NTS
DRAWING NO.: RDDG435-046-1020

TITLE: Linkage Housing Pipe
CARD CODE: RDDG435-046-1021
SHEET NO.: NO. OF SHEETS

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

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

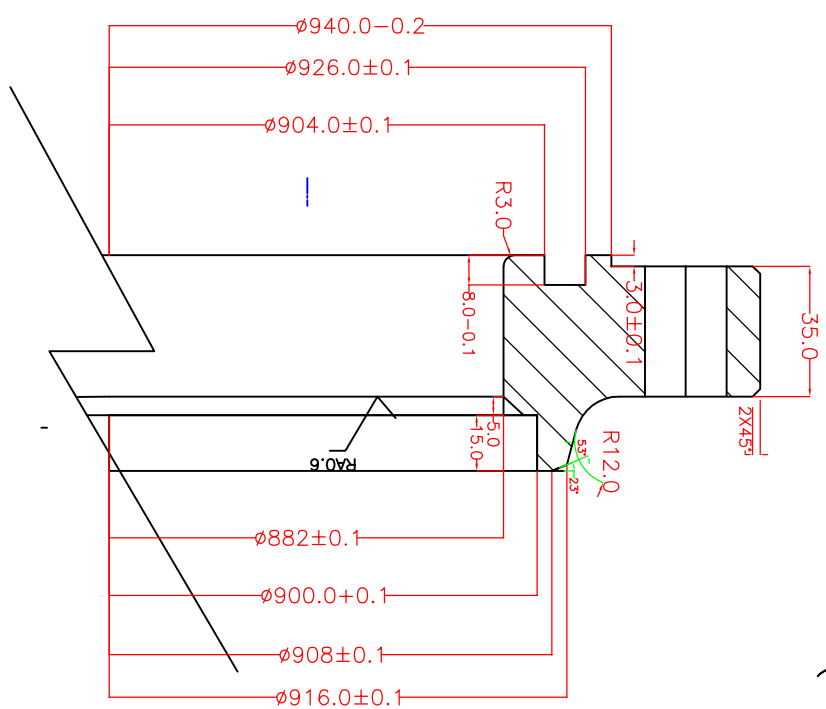
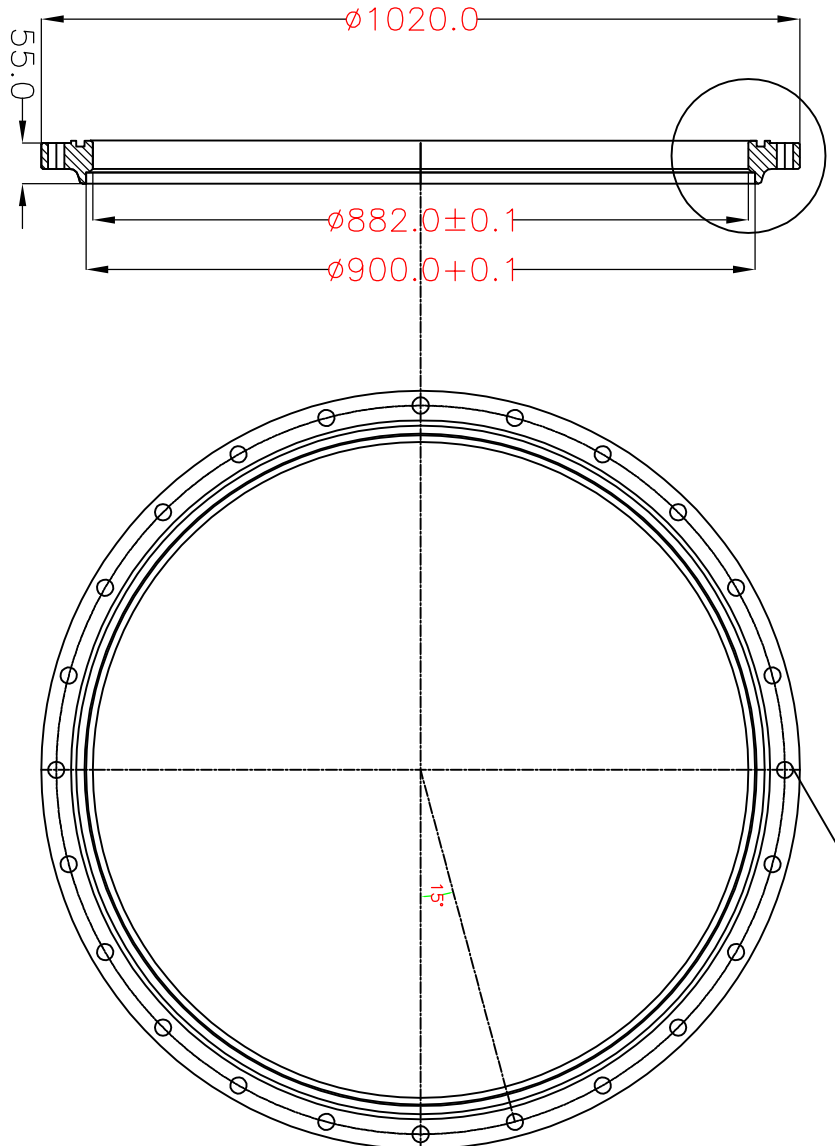
REV.	DATE	ALTERED	REV.	DATE	ALTERED
ZONE		CHECKED	ZONE		CHECKED

NO. OF	DATE	SIGN.	NO. OF
ITEMS	12.12.13	SA	01
NO. OF	12.12.13	SA	01

FIRST ANGLE PROJECTION
24 No. $\phi 22.0$ Holes @ 980 ± 0.05 PCD

(ALL DIMENSIONS ARE IN mm)

(~1.6)



ENLARGED VIEW OF 'A'

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

VAR. NO.	REMARKS	VAR. NO.	ITEM NO.	DESCRIPTION	QTY.	DRAWING NO.	FL. NO.	MATL. CODE	A/C	UNIT WT.	QTY.	NO. OF
01	FLANGE III			$\phi 1030 \times 60$ mm				SS-304L				01

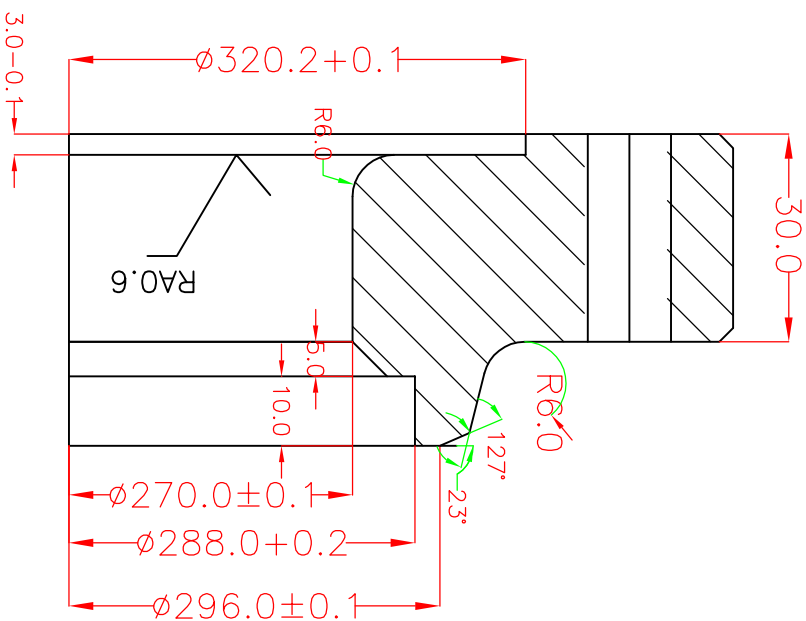
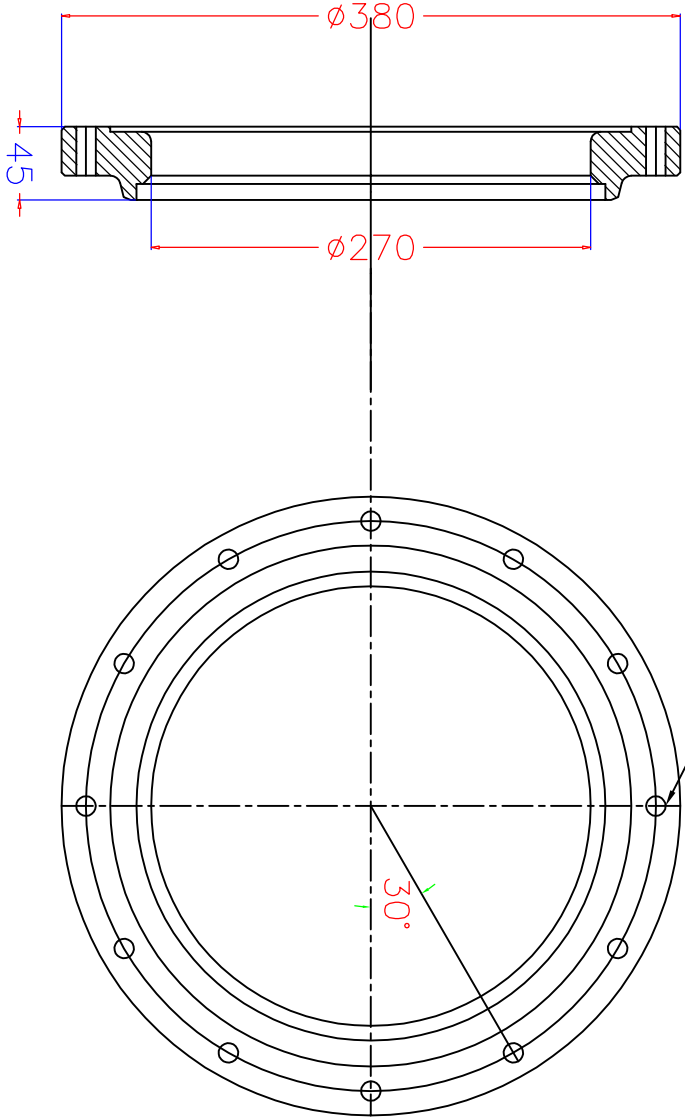
GSM-245

TYPE OF PRODUCT		NAME OF CUSTOMER	
BHARAT HEAVY ELECTRICALS LTD.		HYDERABAD	
DRN. NO.	NAME	SIGN.	DATE
12.12.13	SA		12.12.13
APPD. TO	MMRAO		12.12.13
REF. TO	RDDG435-046-1020	ITEM NO.	NO. OF
		1	01

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

DEPT.	GRADE OF	SCALE	WEIGHT(KG)	CARD CODE	DRAWING NO.	REV.
	TOL. DIM. C/M/F	NTS			RDDG435-046-1022	
TITLE			FLANGE III			
SHEET NO.			NO. OF SHEETS			

12 Nos. $\phi 12.0$ clear holes @ 350.0 ± 0.05 PCD



ENLARGED VIEW 'A'

- Note:**
1. Sealing area shall be polished to RA 0.8 or better.
 2. $\phi 12.0$ holes shall be chamfered uniformly (0.8x45°).
 3. PCD and flange centre shall be concentric within ± 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

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

VAR. NO.	REMARKS	VAR. NO.	ITEM NO.	DESCRIPTION	QTY.	DRAWING NO.	IT. NO.	MATL. CODE	MATL. SPECN.	A/C/S	UNIT WT.	QTY.	ZONE
			01	Flange IV		$\phi 380.0 \times 45.0$		SS-304L		1			

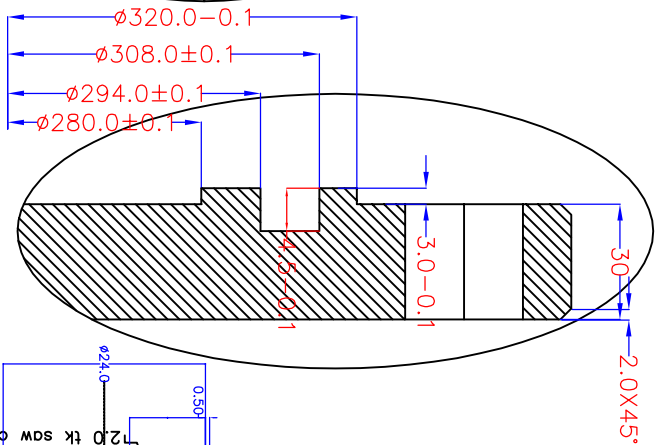
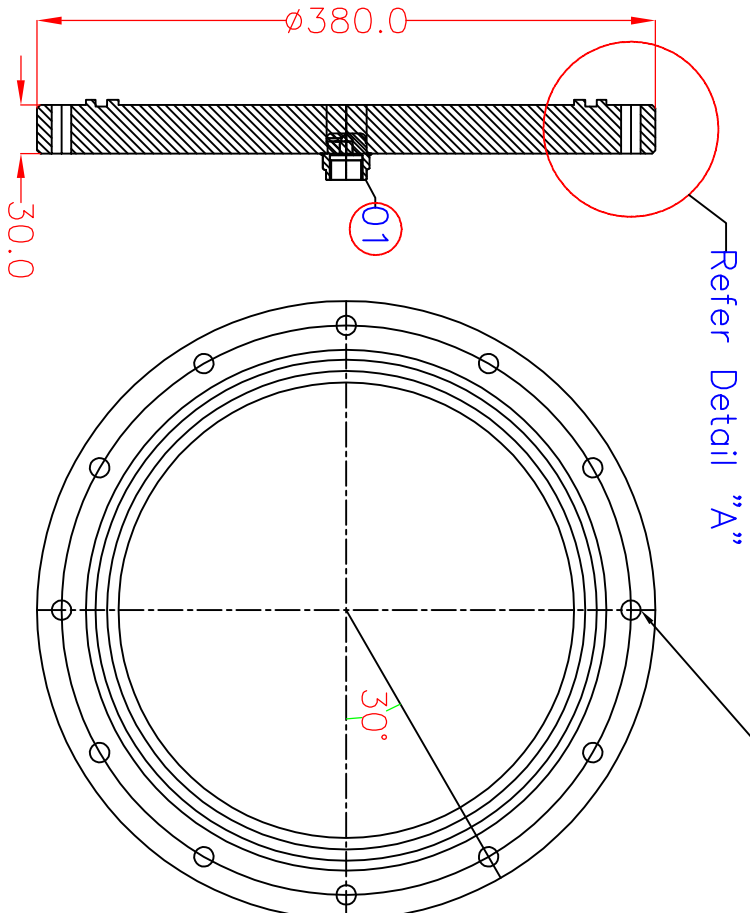
REV.	DATE	ALTERED CHECKED	REV.	DATE	ALTERED CHECKED
ZONE			ZONE		

TYPE OF PRODUCT		NAME OF CUSTOMER		SCALE		WEIGHT(KG)	
GSM-400 V2		BHARAT HEAVY ELECTRICALS LTD. HYDERABAD		NTS			

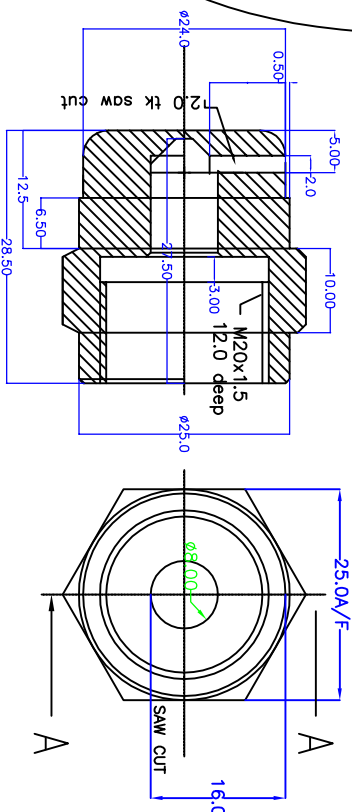
DEPT.	GRADE OF TOL. DIM. C/M/F	SCALE	WEIGHT(KG)	CARD CODE	DRAWING NO.	SHEET NO.	NO. OF SHEETS
				RDDG435 046 1020	RDDG435 046 1023		

APPD.	CHKD.	DRN.	NAME	SIGN.	DATE	NO. OF VAR.	NO. OF ITEMS
MMR/AD	SA	SA	SA		12.12.13	12.12.13	01

12 Nos. $\phi 12$ clear holes @PCD 350 ± 0.1



Detail 'A'



GAS STUD(01)

Note:

- $\phi 12.0$ holes shall be chamfered uniformly (0.8x45°).
- PCD and plate centre shall be concentric within ± 0.05
- Finished platee shall be degreased and packed in 125 micron poly bag and sealed.
- Component shall be Machined to dimensions after welding to spherical pipe

VAR. NO.	REMARKS	VAR. NO.	ITEM NO.	DESCRIPTION	DRAWING NO.	VAR.	IT. NO.	MATL. CODE	UNIT WT.	QTY.
			01	Gas Stud				SS-304L	01	
				SS Plate	$\phi 380.0 \times 30.0$			SS-304L	01	

TYPE OF PRODUCT
NAME OF CUSTOMER
GSM-400 V2



BHARAT HEAVY ELECTRICALS LTD.
HYDERABAD

DRN	NAME	SIGN.	DATE	NO. OF
SA	SA		12.12.13	VAR.
APPD	MMR/AO		12.12.13	ITEM NO.

DEPT. CODE	GRADE OF C/M/F	SCALE	WEIGHT(KG)	REF. TO	DRAWING NO.	CARD CODE	SHEET NO.	NO. OF SHEETS
		N1S			RDDG435 046 1020	RDDG435 046 1024		

INVENTORY NO.	SIGN. AND DATE	REF. DRG. NO.
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PSGSG 2013- 14/018	Process Specification For Linkage Housing	Drg. No.	RDDG435 046 1020
		Date	12.12.2013
		Product	GSM-400 V2

1.0	<p>APPLICATION: Circuit Breaker Enclosure is a part of gas insulated switchgear equipment. The gas pressure in this metal enclosure is maintained at 0.8 MPa. This leak tight assembly shall meet following specification.</p>
2.0	<p>DRAWINGS:</p> <p>i) Linkage Housing Main Assembly Drawing: RDDG435-046-1020</p> <p>Component/Part Drawings: RDDG435-046-1021 RDDG435-046-1022 RDDG435-046-1023 RDDG435-046-1024 RDDG435-0617-0951</p>
3.0	<p>QUANTITY:</p> <p>i) Linkage housing : 1 Nos.</p>

PSGSG 2013- 14/018	Process Specification For Linkage Housing	Drg. No.	RDDG435 046 1020
		Date	12.12.2013
		Product	GSM-400 V2

4.0	SPECIFICATIONS:	Vendor's compliance
4.1	Material: i) Low Carbon Austenitic stainless steel confirming to AISI-304L for Circuit Breaker Enclosure.	
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 and 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- 14/018	Process Specification For Linkage Housing	Drg. No.	RDDG435 046 1020
		Date	12.12.2013
		Product	GSM-400 V2

<p>4.7</p> <p>4.8</p> <p>4.9</p> <p>4.10</p> <p>4.11</p> <p>4.12</p> <p>4.13</p> <p>Page 3/4</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 10 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 15 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 (> 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- 14/018	Process Specification For Linkage Housing	Drg. No.	RDDG435 046 1020
		Date	12.12.2013
		Product	GSM-400 V2

4.14	<p>Following certificates shall be furnished for acceptance of the component:</p> <ol style="list-style-type: none"> 1 Material certificate, 2 Material test certificate, 3 Stage wise DP / X-ray tests 4 Pressure withstand test report 5 Electro-polishing schedule <p>A certified copy of above documents shall be sent along with the delivery note.</p>	
4.15	Components / fittings required for pressure test shall be arranged by supplier only.	
4.16	<p>Qualifying Requirements:</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>	
4.17	<p>Any Other information:</p> <p>In case of doubts please contact BHEL for clarifications. Supplier can furnish any other/additional information, considering overall requirements.</p>	
Page 4/4		