



BHARAT HEAVY ELECTRICALS LIMITED
TIRUCHIRAPPALLI - 620 014, INDIA.
QUALITY ASSURANCE DEPARTMENT

STANDARD QUALITY PLAN FOR SPIRAL WOUND GASKET

SQP:SD:22 Rev No: 00

Page: 1 of 3

Prepared By
Quality Assurance

ABDUR RAHMAN SULTAN

Abdur Rahman Sultan 19.12.2016

Reviewed by	Signature
Quality Assurance (G. PANNERSSELVAN)	<i>G. Pannersselvan</i> 19/12/16
Engineering (N. KATHIRVEL)	<i>N. Kathirvel</i> 19/12/16
Material Management (SACHIN SANKI)	<i>Sachin Sanki</i> 19.12.16
Quality Control (T. CHITHAMBARARAJAN)	<i>T. Chithambararajan</i> 19.12.16

Rev No	Date	Approved by	Signature
00	19/12/2016	AGM / QA & BE	<i>Reinoburajan</i> 19/12/16

Record of Revisions

Rev No	Details of Revision	Remarks
00	Fresh Issue	

		MANUFACTURER'S NAME & ADDRESS: BHEL, TIRUCHIRAPPALLI APPROVED SUPPLIERS	STANDARD QUALITY PLAN							QWI NO:SQP:SD:22 REV NO: 00 DATE: 19/12/2016 PAGE: 2 OF 3			
			PRODUCT: SPIRAL WOUND GASKET										
			SUB-SYSTEM: Steam Generator and Auxiliaries										
SL. NO	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY			REMARKS
					M	C/N				M	C	N	
1	2	3	4	5	M	C/N	7	8	9	D*	**	10	11

1.0	RAW MATERIAL:													
1.1	Winding Material SS304/SS304L (0.2mm)	Physical & Chemical Properties	A	ASTM A240 AISI 304/304L	Per heat/ Batch No.		ASTM A240 AISI 304/304L	ASTM A240 AISI 304/304L	Material Test Certificate	√	P	V	-	
1.2	Ring Material SS304/SS304L (3.00mm) Centering Ring/Inner	Physical & Chemical Properties	A	ASTM A240 AISI 304/304L	Per heat/ Batch No.		ASTM A240 AISI 304/304L	ASTM A240 AISI 304/304L	Material Test Certificate	√	P	V	-	
1.3	Filler Material Graphite (0.60mm)	Physical & Chemical Properties	A	Manufacturer's Standard	Per heat/ Batch No.		Manufacturer's Standard and BHEL Specification	Manufacturer's Standard and BHEL Specification	Material Test Certificate	√	P	V	-	
2.0	INPROCESS CONTROLS & FINAL INSPECTION:													
2.1	Visual Examination	Visual	A	No damage	100%	10%	BHEL drawing, BHEL Specification and ASME B16.20	BHEL drawing, BHEL Specification and ASME B16.20	Inspection Report	√	P	W	-	
2.2	Dimension Check	Dimensional conformity	A	Measurement	100%	10%	BHEL drawing, BHEL Specification and ASME B16.20	BHEL drawing, BHEL Specification and ASME B16.20	Inspection Report	√	P	W	-	
2.3	Compression and Recovery test	Testing	A	Gasket thickness, No buckling	One Gasket per pressure rating		BHEL drawing, BHEL Specification and ASME B16.20	BHEL drawing, BHEL Specification and ASME B16.20	Test Certificate	√	P	W	-	
2.4	Metal Strip	Chemical composition	A	Conformance to specification	100%	10%	BHEL drawing, BHEL Specification and ASME B16.20	BHEL drawing, BHEL Specification and ASME B16.20	IR	√	P	W	-	

LEGEND: * RECORDS IDENTIFIED WITH "TICK" (√) SHALL BE ESSENTIALLY INCLUDED BY THE SUPPLIER IN QA DOCUMENTATION;
**** M:** MANUFACTURER, **C:** BHEL QC/BHEL AIA, **N:** CUSTOMER; **P:** PERFORM. **W:** WITNESS, **V:** VERIFICATION; **CLASS:** A - CRITICAL ; B - MAJOR ; C - MINOR;
MTC- Manufacturer's Test Certificate; IR- Inspection/Test Report; COC: Certificate of Compliance; ALC: Approved Lab Test Certificate

		MANUFACTURER'S NAME & ADDRESS: BHEL, TIRUCHIRAPPALLI APPROVED SUPPLIERS		STANDARD QUALITY PLAN							QWI NO:SQP:SD:22 REV NO: 00 DATE: 19/12/2016 PAGE: 3 OF 3		
				PRODUCT: SPIRAL WOUND GASKET									
				SUB-SYSTEM: Steam Generator and Auxiliaries									
SL. NO	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY			REMARKS
										M	C	N	
1	2	3	4	5	M	C/N	7	8	9	D*	**	10	11

4.0	MARKING, PACKING AND PRESERVATION:													
4.2	Marking/ Identification	Marking & Tagging with Po No., Size, Quantity, Flange size, Pressure class, Material, Manufacturer's name or trademark	A	Visual	100%	100%	BHEL Specification & Purchase Order, ASME B 16.20	BHEL Specification & Purchase Order, ASME B 16.20	IR	√	P	V	-	
4.3	Packing & Preservation	Tightness & Stability	A	Visual	100%	100%	BHEL Specification & Purchase Order, ASME B 16.20	BHEL Specification & Purchase Order, ASME B 16.20	IR	√	P	V	-	
5.0	CERTIFICATION													
5.1	Data Folder	Completeness of documentation	A	Review of documents	100%	100%	Purchase Order, BHEL Spec, Approved datasheet		IR	√	P	V	-	

Notes:

1. Customer verification stages specified above shall be followed. Any witness stages shall be as specified/indicated in BHEL PO.
2. The construction features of the spiral wound gasket shall be as per BHEL Technical specification and ASME B16.20.

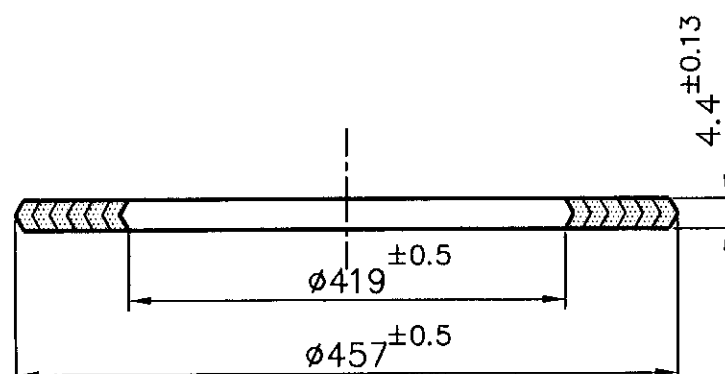
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MTC- Manufacturer's Test Certificate; IR- Inspection/Test Report; COC: Certificate of Compliance; ALC: Approved Lab Test Certificate

89820-921-40-3
DRAWING NO:

FOR TOLERANCES OF UNTOLERANCED
DIMENSIONS DURING MANUFACTURE
REFER PLANT STD.NO TP 023 0299

NOTES: -

- FOR QUALITY REQUIREMENTS REFER THE TECHNICAL SPECIFICATION .
- THE SPIRAL WOUND GASKET SHALL WITHSTAND A SERVICE PRESSURE AND SERVICE TEMP AS GIVEN BELOW:
 - SERVICE PRESSURE : 220 Kg/cm²
SERVICE TEMPERATURE : 375°C } DURING OPERATION.
 - SERVICE PRESSURE : 330 Kg/cm²
SERVICE TEMPERATURE : 50°C } DURING HYDRO TEST.
- MATERIAL : AISI 304 WITH SPIRAL WOUND GRAFOIL FILLED.



VARIANT NUMBER	ITEM NUMBER	DESCRIPTION	STD	DRAWING NUMBER	ITEM NO	MATERIAL CODE	A/C/P	UNIT	UNIT WEIGHT
		SPIRAL WOUND GASKET (CIRCULAR GRAFOIL FILLED)				96-187-066			1.000
					VAR NO	MATERIAL SPECN		DI	QUANTITY

REV	DATE	ALTERED :
01		CHD & APPD:
ZONE		

CAUTION: The information on this document is the property of BHARAT HEAVY ELECTRICALS LTD. It must not be used directly or indirectly in any way detrimental to the interest of the company.

TYPE OF PRODUCT
OR NAME OF
CUSTOMER/PROJECT



355-055

Bharat Heavy Electricals Ltd
UNIT: HIGH PRESSURE BOILER PLANT
TIRUCHIRAPALLI - 620014

DEPT

CODE

ALL
DIMENSIONS
ARE IN MM

PROJECTION



SCALE

N.T.S

WEIGHT (Kg)

1.000

DRN

CHD

APPD

NAME

C.P

R.J.B

I.K.S

SIGNATURE

[Signature]

[Signature]

[Signature]

DATE

28.07-04

28.07-04

28.07-04

REF TO ASSY / OLD DWG

TITLE
SPIRAL WOUND GASKET
(CIRCULAR GRAFOIL FILLED)

DRAWING NO :

3-04-126-02368

REV

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CAUTION:

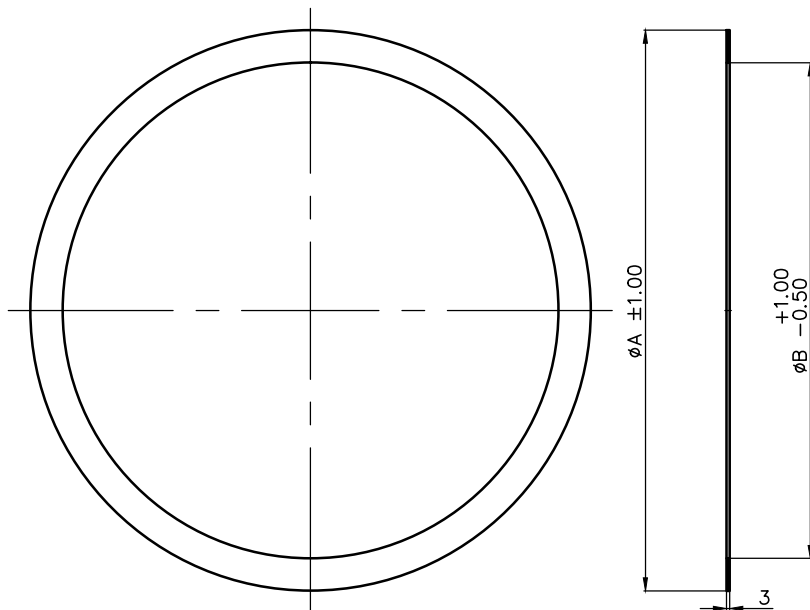
REV	DATE	ALTERED :
01		CHD & APPD :

FOR TOLERANCES OF UNTOLERANCED
DIMENSIONS DURING MANUFACTURE
REFER PLANT STD. NO TP 023 0299

GASKET

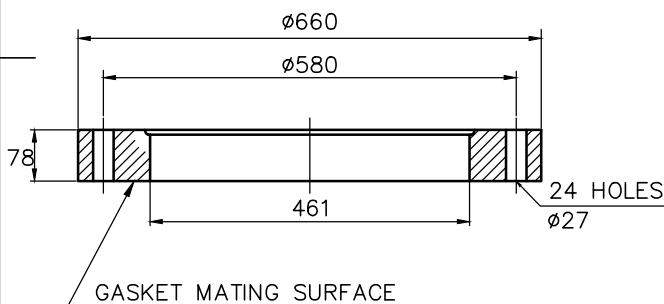
NOTE:

OFFERED GASKET SHALL MATCH WITH
THE RESPECTIVE FLANGE SHOWN.

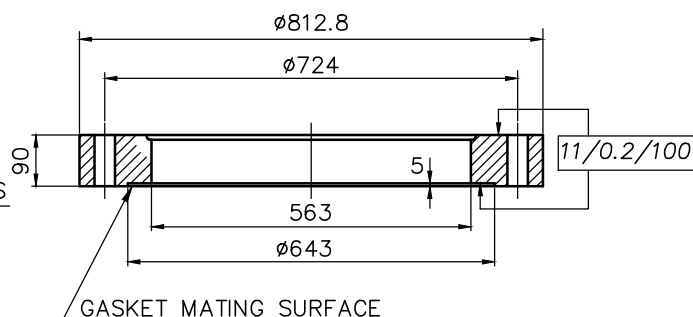


FLANGE DETAILS

FOR VARIANT-01



FOR VARIANT-02



570	640	02	SPIRAL WOUND GASKET FOR 60 SQ.M HEATER	961870110000		6.800
				TFS 1007		01
457	517	01	SPIRAL WOUND GASKET FOR 30, 40, 50 SQ.M HEATER	961870100000		5.800
				TFS 1007		01
B	A	VARIANT NUMBER	DESCRIPTION	STD	MATERIAL CODE	UNIT WEIGHT
					MATERIAL SPECN	QUANTITY



355-056

Bharat Heavy Electricals Ltd
UNIT: HIGH PRESSURE BOILER PLANT
TIRUCHIRAPALLI - 620014

DRN	NAME VIKAS SETHI	SIGNATURE -sd-	DATE 22.06.15
CHD	VENKATESHWARLU	-sd-	22.06.15
APPD	G SARAVANA KUMAR	-sd-	22.06.15

DEPT PE(FB)	ALL DIMENSIONS ARE IN MM	PROJECTION 	SCALE NTS	WEIGHT (Kg) -	REF TO ASSY / OLD DWG 4-42-030-02048 4-42-030-03939
CODE 129					
TITLE SPIRAL WOUND GASKET - 1 (OIL SIDE)				DRAWING NO : 4-42-030-04077	REV 00

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CAUTION:

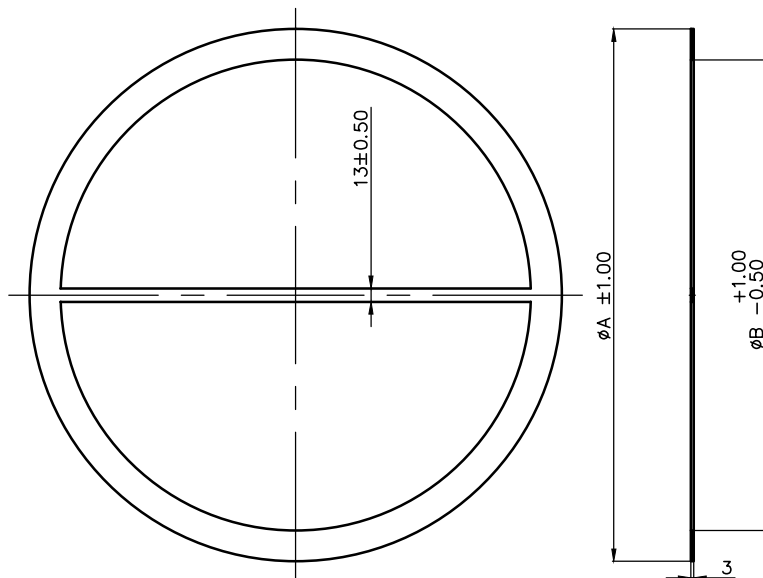
REV	DATE	ALTERED :
01		CHD & APPD :

FOR TOLERANCES OF UNTOLERANCED
DIMENSIONS DURING MANUFACTURE
REFER PLANT STD. NO TP 023 0299

GASKET

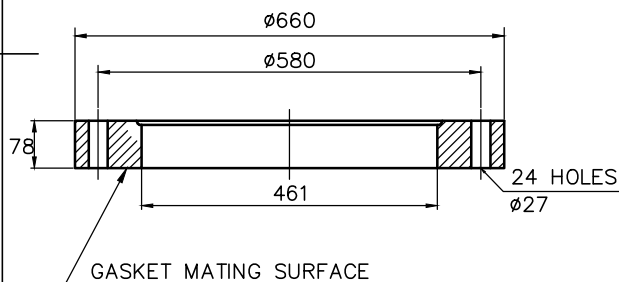
NOTE:

OFFERED GASKET SHALL MATCH WITH
THE RESPECTIVE FLANGE SHOWN.

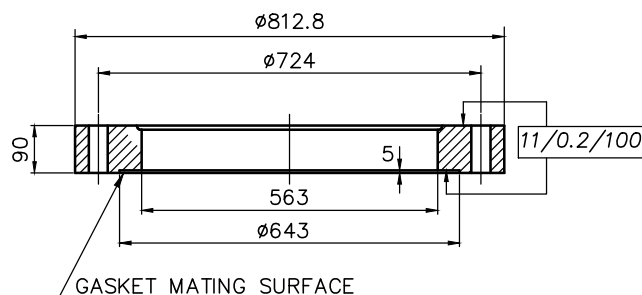


FLANGE DETAILS

FOR VARIANT-01



FOR VARIANT-02



570	640	02	SPIRAL WOUND GASKET FOR 60 SQ.M HEATER	961870130000	6.800
				TFS 1007	01
457	517	01	SPIRAL WOUND GASKET FOR 30, 40, 50 SQ.M HEATER	961870120000	5.800
				TFS 1007	01
B	A	VARIANT NUMBER	DESCRIPTION	STD	UNIT WEIGHT
				MATERIAL SPECN	QUANTITY



355-056

Bharat Heavy Electricals Ltd
UNIT: HIGH PRESSURE BOILER PLANT
TIRUCHIRAPALLI - 620014

DRN	NAME	SIGNATURE	DATE
CHD	VIKAS SETHI	-sd-	22.0615
APPD	VENKATESHWARLU	-sd-	22.0615
	G SARAVANA KUMAR	-sd-	22.0615

DEPT PE(FB)	ALL DIMENSIONS ARE IN MM	PROJECTION 	SCALE NTS	WEIGHT (Kg) -	REF TO ASSY / OLD DWG 4-42-030-02049 4-42-030-03940
CODE 129					
TITLE SPIRAL WOUND GASKET - II (STEAM SIDE)				DRAWING NO : 4-42-030-04078	REV 00