

ITEM: SUPPLY OF MS CASING AS PER ANNEXURE No. A/10082597_10082603_10082606/07.10.2023**Offer Evaluation: ITEMWISE****Technical PQR, Drawings, Work Instruction & QAP: AS ATTACHED****Quantity: As per AS ATTACHED BOQ****BILL OF MATERIAL (BOM):**

Sr. No.	BHEL Item Code	Description of Item/Specification	Quantity	UOM	Technical Specification/ Drawings/QAP
10	EL9791600279	CASING FOR VALVE OUTLET 3-986-99-08500	56	EA	AS ATTACHED
20	EL9791600325	CASING/VALVE ADAPTER DRG. 3 986 99 08520	56	EA	
30	EL9791600350	CASING/VALVE OUTLET SPOOL 39869908550/00	56	EA	

- Bidder to provide signed & Sealed GEM BID, Technical PQR, Drawings, Work Instruction, QAP & Annexure No. **A/10082597_10082603_10082606/07.10.2023** with their offer.
- To get MSE preference, bidder to choose MSE purchase preference on GEM portal during offer submission otherwise purchase preference shall not be applicable.
- To get MII preference, bidder to choose MII purchase preference on GEM portal and bidder to submit signed local content declaration otherwise purchase preference shall not be applicable.
- Item shall be manufactured as per attached drawing.
- Delivery Schedule: **Material shall be supplied to BHEL SBD MP Stores, Bangalore as per following manner:**
 - Item wise 50% qty of each item to be supplied within 45 days from the date of PO;**
 - Balance 50% qty of each item to be supplied within 75 days from the date of PO.**
- Delivery location: BHEL SBD MP Stores Bangalore-560012 as per GeM consignee.
- Price basis: **Price shall be firm till completion of the contract. No PVC is applicable.**
- Payment terms: Hundred Percent (100%) of basic price of the material supplied as per PO, along with 100% taxes & duties (as applicable) shall be payable on pro-rata as per following manner
 - 45 days for Micro & Small Enterprises (MSEs)
 - 60 days for Medium Enterprises
 - 90 days for Non-MSME

from the date of receipt of goods at BHEL SBD and receipt of complete documents at BHEL SBD as specified in Clause No. 9 below subject to acceptance of materials. [i.e. date of acceptance of material or date of submission of complete set of documents (whichever is later) shall be considered for reckoning the due date of payment.]
- Documents to be Submitted by Vendor for payment:
 - Original GST compliant invoice. (Original for Buyer copy)
 - Copy of LR/ Delivery Challan for local supplier in place of LR
- Invoice to be made as per the prevailing GST format only. TDS Deductions applicable as per GST Law & TDS certificate shall be issued by BHEL in line with the latest amendment in GST Law.

11. LD/Penalty: As per GeM general T&C.
12. Guarantee period: As per GeM general T&C
13. Technical PQR- requirement i.e. Years of Past Experience of 02 years as per technical PQR
14. Past Experience shall be supply of 14% of bid quantity.
15. Minimum Average Annual Turnover of the Bidders: shall be 26 lakhs for last three FY.
16. Inspection, sample and Quality Clearance: As per attached QAP

BOQ FOR 10082597_10082603_10082606							
Item Number	Item Code	Item Description	Quantity	UOM	Unit Price (Inclusive of TAX) [PI mention only QUOTED or NOT QUOTED]	Applicable GST %	HSN Code
1	EL9791600279	CASING FOR VALVE OUTLET 3-986-99-08500	56	EA			
Note: CASING TO BE SUPPLIED AS PER DRG NO: 39869908500 AND CORRESPONDING PAINTING SCHEME. WELD SL NO'S OF 56 NOS SHALL BE FROM S23-13 TO S23-68							
2	EL9791600325	CASING/VALVE ADAPTER DRG. 3 986 99 08520	56	EA			
Note: CASING TO BE SUPPLIED AS PER DRG NO: 39869908520 AND CORRESPONDING PAINTING SCHEME. WELD SL NO'S OF 56 NOS SHALL BE FROM S23-69 TO S23-124							
3	EL9791600350	CASING/VALVE OUTLET SPOOL 39869908550/00	56	EA			
Note: CASING TO BE SUPPLIED AS PER DRG NO: 39869908550 AND CORRESPONDING PAINTING SCHEME. WELD SL NO'S OF 56 NOS SHALL BE FROM S23-125 TO S23-180							

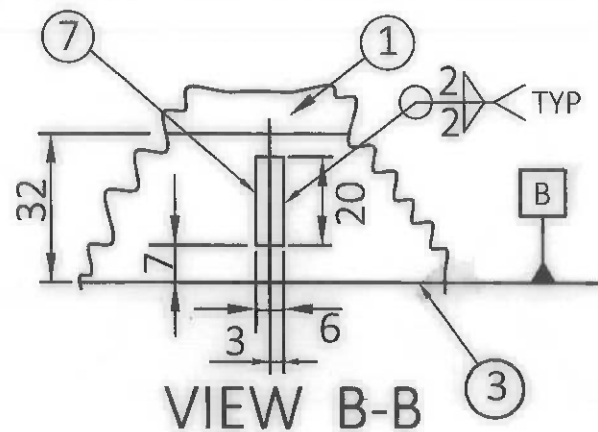
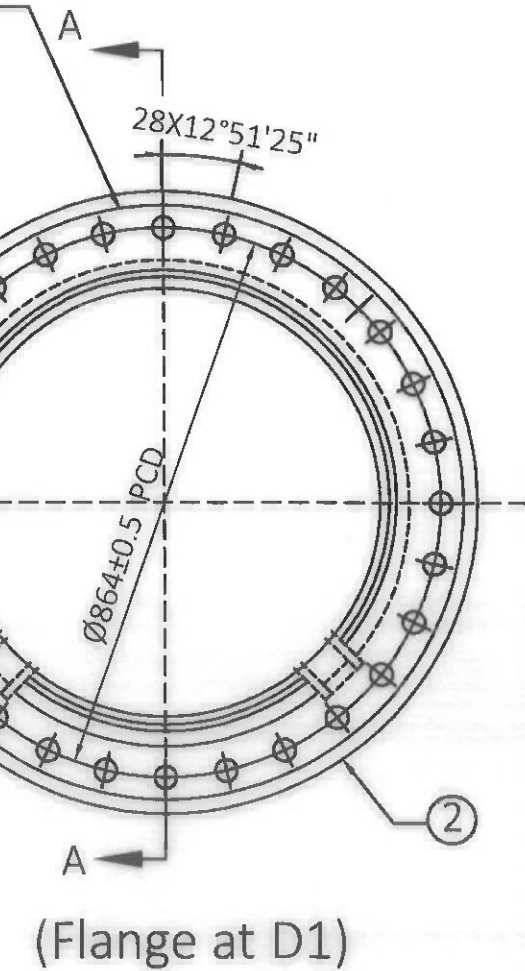
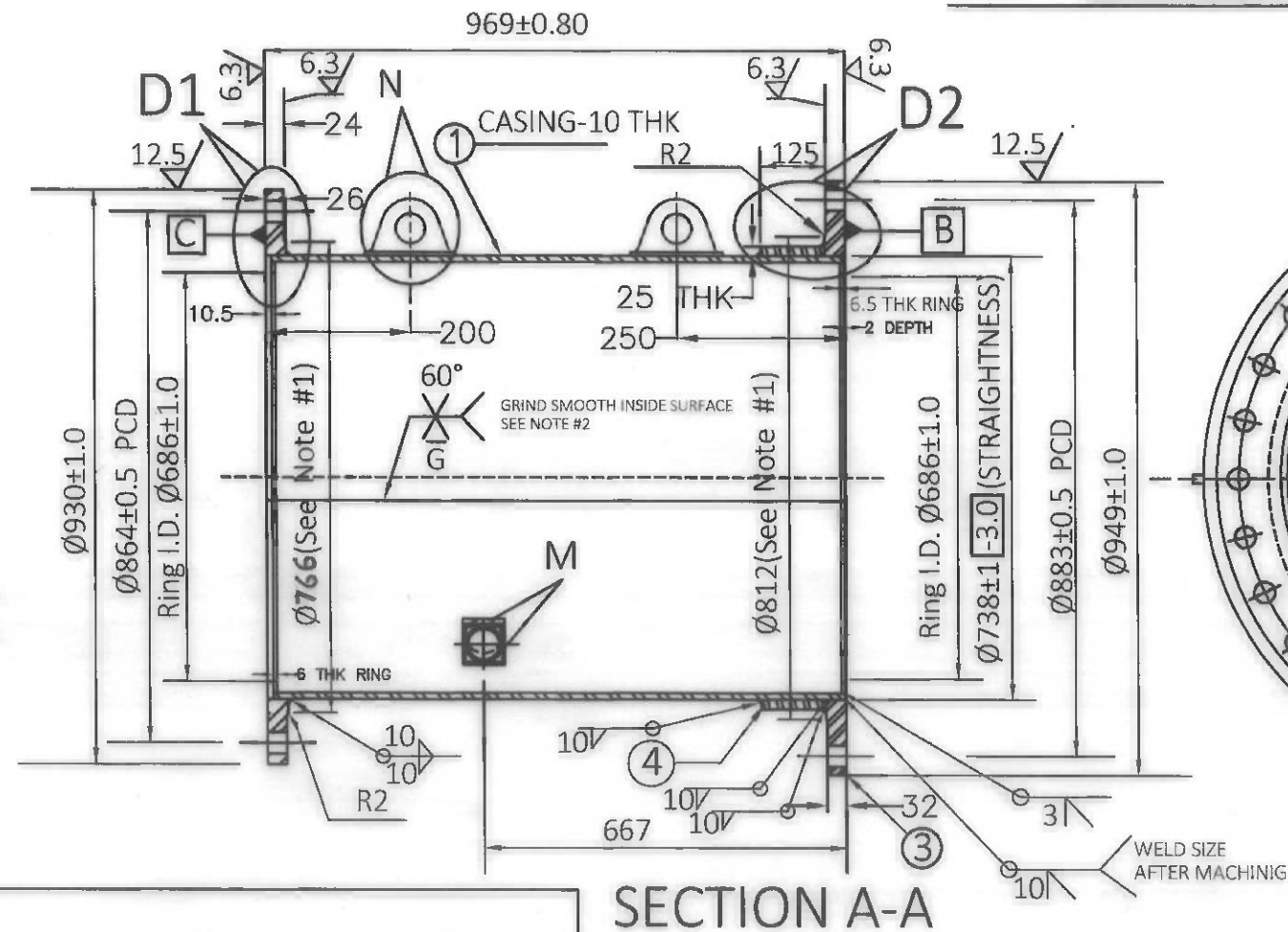
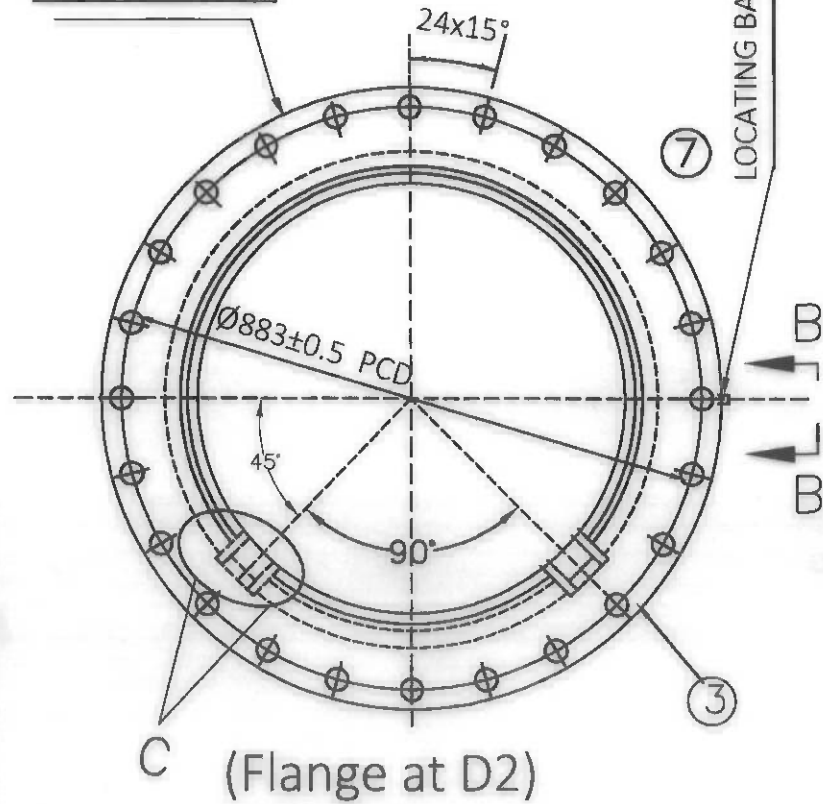
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REV

00580-66-986-E

DRG No.

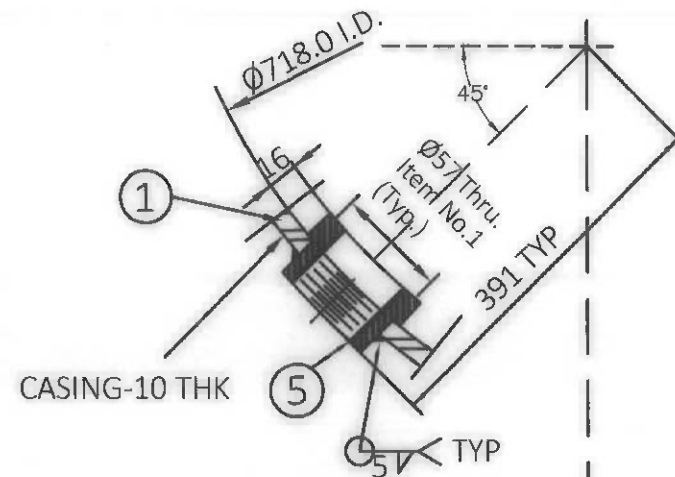
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24 Holes $\varnothing 33$ thru. Eq spaced on PCD $\varnothing 883 \pm 0.5$
 $\perp \varnothing 65 \times 0.8$ deep max. (FAR SIDE)
 (See Note.1)

 $\varnothing 1.5 \text{ M B A M}$


VIEW B-B

Locating Bar
 6Sq.X20 Long
 [Paint W/ Contrasting colour]



Detail-C

Name of Customer/Project



BHARAT HEAVY ELECTRICALS LTD.,
 ELECTROPORCELAINS DIVISION
 BANGALORE - 560 012

NAME	SIGN	DATE
DRN Jaivin A Varghese		10-06-2018
CHD J.Felix		10-06-2018
APPD J.Felix		10-06-2018

DEPT	GRADE OF TOL DIM	SCALE	WEIGHT (kg)	REF TO ASSY.DRG	ITEM No.	No. OF ITEMS
CODE	C/M/F	N.T.S.	(Approx)	3-986-99-08490		
TITLE			CARD CODE	DRAWING No.		REV.
M.S.Casing for Valve Outlet 27"				3-986-99-08500		00
				SHEET No. 1	No. OF SHEETS 2	

SUPERSEDES DRG. No.

SHT.24 SIZE A3 420 x 297

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN mm.

REV	DATE	ALTERED	CHECKED	REV	DATE	ALTERED	CHECKED	REV	DATE	ALTERED	CHECKED	DEPT	GRADE OF TOL DIM	SCALE	WEIGHT (kg)	REF TO ASSY.DRG	ITEM No.	No. OF ITEMS
00																		
00580-66-986-3																		
DRG No.																		
See note 1																		
End Detail-D1																		
Not to scale																		
End Detail-D2																		
Not to scale																		
Lug Detail-N																		
Detail-M																		
3mm Thick Box around O.D. of Half Coupling																		
4 corners to be covered by welding 3mm thk.sheet, flush with Top edge of Half coupling (Fillet size-3)																		
Note:-																		
1. The shop may c'bore holes or machine the flange to dimension shown.																		
2. Splice welds that are not specified on the drg. are to be complete penetration welds. The typical joint is a double bevel groove weld. Complete penetration groove weld types are also acceptable.																		
3. For Construction Material refer Table.																		
4. For welding refer AWS:D 1.1.																		
5. All supplies to conform CLN:QP:01/00.																		
6. Drill Jig & Fixture should be used for drilling holes to locate them accurately within tolerance indicated. Orientation of drilled holes to be as shown on both flanges (Also in relation to each other)																		
7. Lugs to be welded with lug pad at approximate location shown in total length.																		
8. Final machining of bolted flanges to be done after fabrication to meet all the requirement viz. flatness, perpendicularity, parallelism & straightness.																		
9. 2mm GI sheet is to be bolted to flanges with suitable bolts, nuts - 8 sets per Flange.																		
10. General Painting & Guidelines as per CE:1501:20. Casing vendor to refer "ANNEXURE" issued separately which is project specific.																		
11. No Paint Shall be applied on inside surface of the casing.																		
12. All inside welds to be flush ground.																		
13. Total weight of valve outlet is 357.5kgs. Refer BOM for details.																		
Total weight includes wt of G.I. sheets and fasteners.																		
* REFER DRG: 4 986 99 08660																		
10 G.I.SHEET D2* Dim.(#949X#740*2THK) STANDARD 1 4.3																		
9 G.I.SHEET D1* Dim.(#930X#740*2THK) STANDARD 1 3.9																		
8 Bolts & Nuts M16 X 60LG, M16 STANDARD 16sets 0.125																		
7 Locating Bar As shown M.S. as per IS:2062 E250 Gr.BR. 1 0.01																		
6 Inner Ring 6 thk. As shown M.S. as per IS:2062 E250 Gr.BR- Semi Killed 2 1.7																		
5 Half Coupling ASME B16.11, 1 1/2" NPT CL 3000 STANDARD CARBON STEEL- SA 105 2 0.2																		
4 Plate for sleeve 25Thk As shown M.S. as per IS:2062 E250 Gr.BR- Fully Killed 1 59.0																		
3 Flange-D2 As shown M.S. as per IS:2062 E250 Gr.BR- Fully Killed 1 65.5																		
2 Flange-D1 As shown M.S. as per IS:2062 E250 Gr.BR- Fully Killed 1 44.5																		
1 Casing 10 thk. Including Lugs As shown M.S. as per IS:2062 E250 Gr.BR- Semi Killed 1 174.5																		
- Valve Outlet - - 1																		
Item No. Description Specification Material Qty. No. Approx. Unit Wt. (kgs.)																		
Bharat Heavy Electricals Ltd.,																		
ELECTROPORCELAINS DIVISION																		
BANGALORE - 560 012																		
NAME SIGN DATE																		
DRN Jaivin A.Varghese 10-06-2018																		
CHD J.Felix 10-06-2018																		
APPD J.Felix 10-06-2018																		
DEPT GRADE OF TOL DIM SCALE WEIGHT (kg) REF TO ASSY.DRG																		
CODE C/M/F N.T.S. (Approx) 3-986-99-08490																		
TITLE CARD CODE DRAWING No. REV.																		
M.S.Casing for Valve Outlet 27" 3-986-99-08500 00																		
SHEET No. 2 No. OF SHEETS 2																		

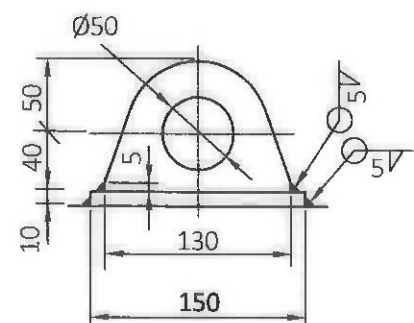
SUPERSEDES DRG. No.

SHT.24 SIZE A3 420 x 297

ALL DIMENSIONS ARE IN mm.

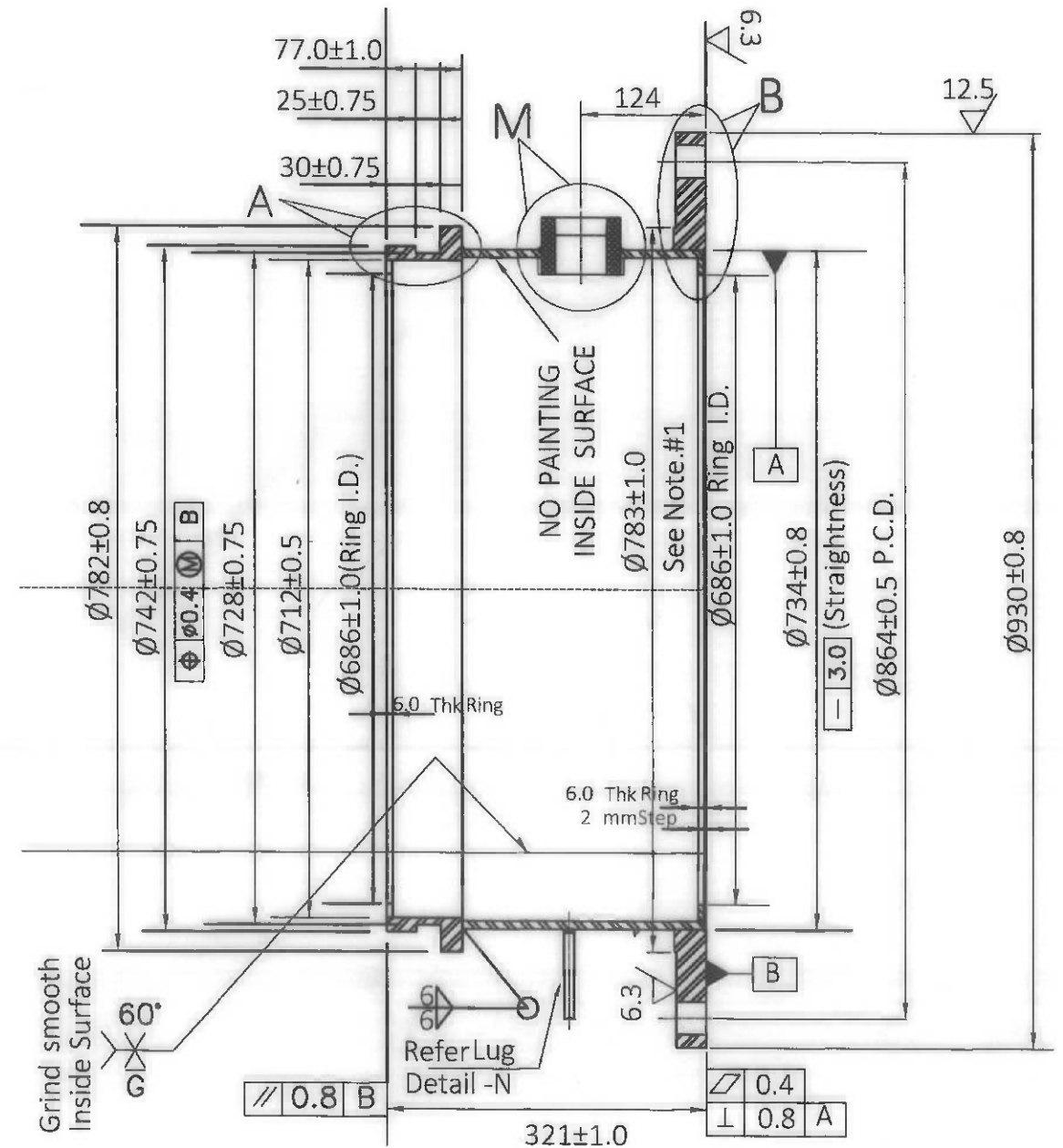
DRG No.

INVENTORY No.







Lug Detail-N

Ø1.5 MB A



BHARAT HEAVY ELECTRICALS LTD.,
ELECTROPORCELAINS DIVISION
BANGALORE - 560 012

	NAME	SIGN	DATE
DRN	Jaivin A.Varghese		27-07-2018
CHD	J.Felix		27-07-2018
APPD	J.Felix		27-07-2018

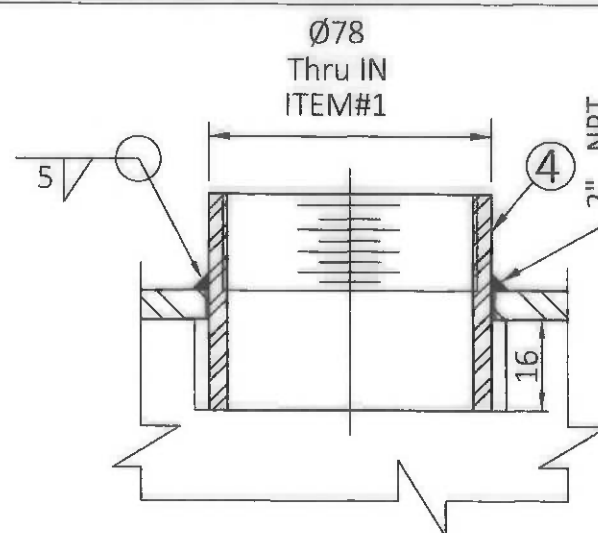
DEPT	GRADE OF TOL DIM		SCALE	WEIGHT (kg)	REF TO ASSY.DRG	ITEM No.	No. OF ITEMS
CODE	C/M/F		Not to Scale	(Approx)	3-986-99-08510		
TITLE				CARD CODE	DRAWING No.		REV.
M.S.Casing For Valve Adapter					3-986-99-08520		00
					SHEET No. 1	No. OF SHEETS 2	

SUPERSEDES DRG. No.

SHT.24 SIZE A3 420 x 297

ALL DIMENSIONS ARE IN mm.

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1. The shop may c'bore holes or machine the flange to dimension shown.
2. Splice welds that are not specified on the drg. are to be complete penetration welds. The typical joint is a double bevel groove weld. Complete penetration groove weld types are also acceptable.
3. For Construction Material refer Table.
4. For welding refer AWS:D 1.1.
5. All supplies to conform CLN:QP:01/00.
6. Drill Jig & Fixture should be used for drilling holes to locate them accurately within tolerance indicated. Orientation of drill holes should be as shown in relation to Half Coupling
7. Lug to be welded with lug pad at an approximate center of total length.
8. Final machining of bolted flanges to be done after fabrication to meet all the requirement viz. flatness, perpendicularity, parallelism & straightness.
9. 2mm GI sheet is to be bolted to flange with suitable bolts nuts - 8 sets per Flange. (Ref. Drg.4-986-99-08660 Item#1)
10. General Painting & Guidelines as per CE:1501:20. Casing vendor to refer "ANNEXURE" issued separately which is project specific.
11. No Paint Shall be applied on inside surface of the casing.
12. All inside welds to be flush ground.
13. Total wt. of Valve Adapter is 124.5 kgs. Refer BOM for details.
12. Total Wt. includes Wt. of G.I.sheet of fasteners.


7	G.I.SHEET Det-B	Dim.(Ø930XØ734*2THK)	STANDARD	1	3.9
6	Bolts & Nuts	M16 X 60LG , M16	STANDARD	8 sets	0.125
5	Inner Ring 6 thk.	As shown	IS:2062 E250 Gr.BR-Semi Killed	1	1.65
4	Half Coupling ASME B16.11, 2" NPT CL 3000	STANDARD	CARBON STEEL- SA 105	1	1.0
3	C' TYPE RING	As shown	IS:2062 E250 Gr.BR-Fully Killed	1	27
2	Bolted Flange	As shown	IS:2062 E250 Gr.BR-Fully Killed	1	54.75
1	Casing 8 thk.	As shown	IS:2062 E250 Gr.BR-Semi Killed	1	35
—	Valve Adapter	—		1	—
Item No.	Description	Specification	Material	Qty. No.	Approx. Unit Wt. (kgs.)

Name of Customer/Project	
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BHARAT HEAVY ELECTRICALS LTD.,
ELECTROPORCELAINS DIVISION
BANGALORE - 560 012

	NAME	SIGN	DATE
DRN	Jaivin A.Varghese		27-07-2018
CHD	J.Felix		27-07-2018
APPD	J.Felix		27-07-2018

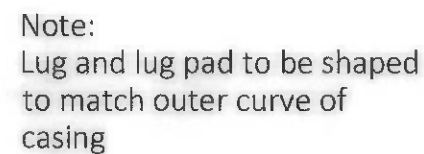
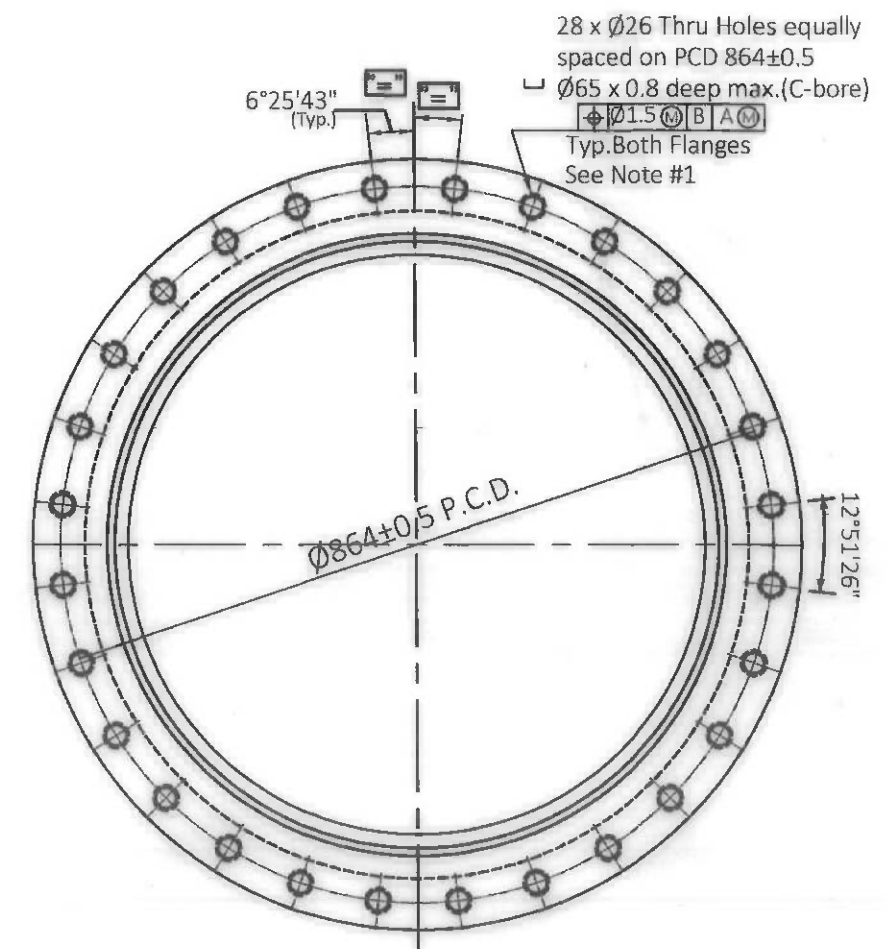
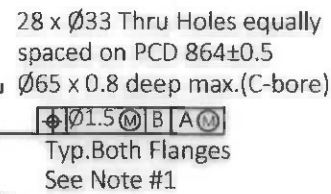
DEPT	GRADE OF TOL DIM		SCALE Not to Scale	WEIGHT (kg) (Approx)	REF TO ASSY.DRG 3-986-99-08510	ITEM No.	No. OF ITEMS
CODE	C/M/F						
TITLE M.S.Casing For Valve Adapter					CARD CODE	DRAWING No. 3-986-99-08520	
						REV. 00	
					SHEET No. 2	No. OF SHEETS 2	

SUPERSEDES DRG. No. _____



SHT.24 SIZE A3 420 x 297


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BHARAT HEAVY ELECTRICALS LTD.,
ELECTROPORCELAINS DIVISION
BANGALORE - 560 012

	NAME	SIGN	DATE
DRN	Jaivín A.Varghese	5d/-	10-07-2018
CHD	J.Felix		10-07-2018
APPD	J.Felix		10-07-2018

DEPT	GRADE OF		SCALE	WEIGHT (kg)	REF TO ASSY.DRG	ITEM	No. OF	
CODE	TOL DIM		Not to Scale	Refer SHT.2/2 (Approx)	3-986-99-08540	No.	ITEMS	
TITLE M.S. Casing for VALVE OUTLET SPOOL HP-1103 BOWL MILLS					CARD CODE	DRAWING No. 3-986-99-08550		REV. 00
					SHEET No. 1	No. OF SHEETS 2		

SUPERSEDES DRG. No.

SHT.24 SIZE A3 420 x 297

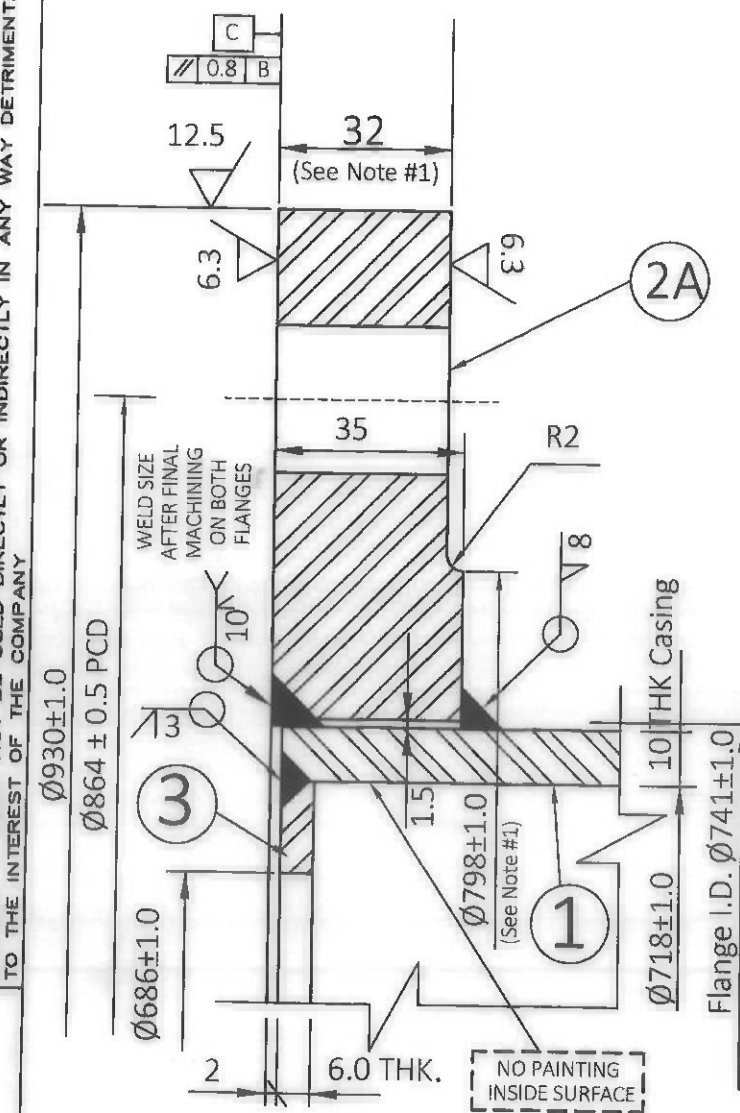
3-986-99-08550
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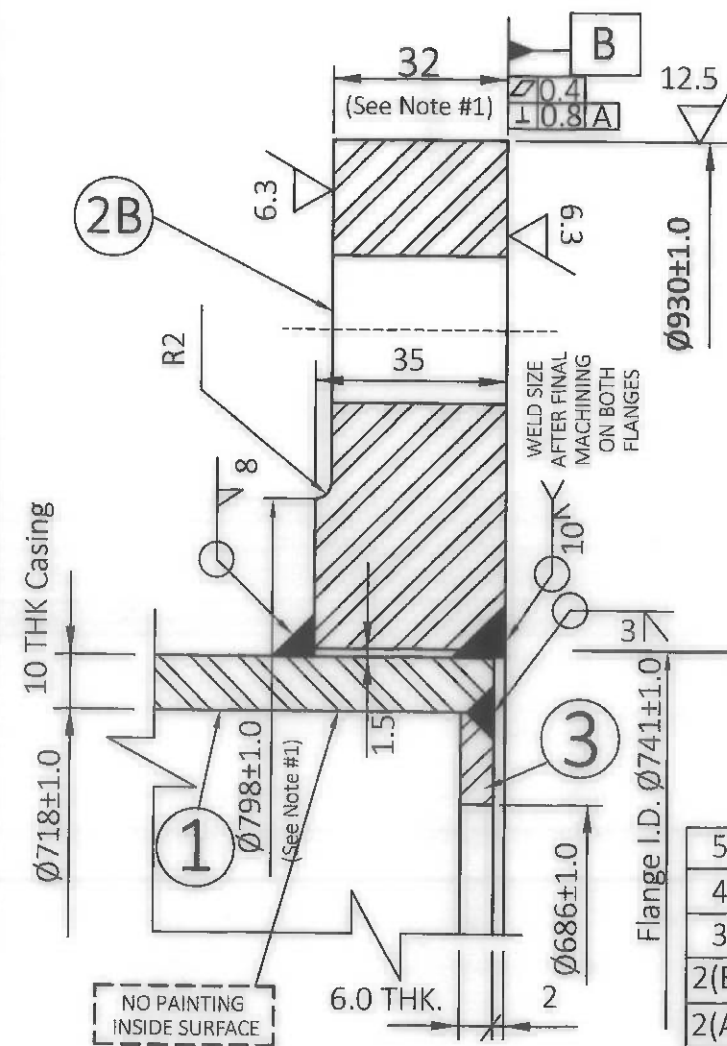
SIGN AND DATE REF. DRG. No.

INVENTORY No.

REV	DATE	ALTERED	REV	DATE	ALTERED
		CHECKED			CHECKED



DETAIL-A



DETAIL-B

Note:-

1. The shop may counter bore holes or machine the flange to dimension shown. (Machining option shown in this drawing)
2. Splice welds that are not specified on the drg. are to be complete penetration welds. The typical joint is a double bevel groove weld. Alternate Complete penetration groove weld types are also acceptable.
3. All welds shall be in accordance with AWS D1.1 OR ASME Section IX Unless Otherwise Specified
4. All supplies to conform CLN:QP:01/00.
5. Drill Jig & Fixture should be used for drilling holes to locate them accurately within tolerance indicated. ORIENTATION OF DRILLED HOLES SHOULD BE AS INDICATED FOR BOTH FLANGES AND IN RELATION TO EACH OTHER.
6. Lug to be welded with lug pad at an approximate center of total length, in the orientation shown.
7. Final machining of Bolted flanges to be done after fabrication to meet all the requirement viz. flatness, perpendicularity, parallelism & straightness.
8. GI sheet to be bolted to flanges with suitable bolts - nuts 16 sets (8sets per flange). (Ref.Drg No: 4-986-99-08660 Item#1)
9. General Painting & Guidelines as per CE:1501:20. For details please refer painting scheme (Attached as Annexure) which is project specific. At casing stage mandatory surface preparation by casing vender before painting as per this painting specification.
10. No paint shall be applied on the inside surface of casing.
11. All inside welds to be flush ground.
12. For Construction Material refer Table.
13. Total wt. of Valve Adapter is 198.0 kgs. Refer BOM for details.

5	G.I.SHEET	Dim.(930/686 * 2thk)	STANDARD	2	4.8
4	Bolt & Nut	M16 X 60LG , M16	STANDARD	16sets	0.125
3	Inner Ring 6 thk.	As shown	IS:2062 E250 Gr.BR- Semi Killed	2	1.7
2(B)	Bolted Flange	As shown	IS:2062 E250 Gr.BR- Fully Killed	1	60.0
2(A)	Bolted Flange	As shown	IS:2062 E250 Gr.BR- Fully Killed	1	58.0
1	Casing 10 thk including lug.	As shown	IS:2062 E250 Gr.BR- Semi Killed	1	65.0
-	Valve Adapter	-	-	1	-
Item No.	Description	Specification	Material	Qty. No.	Approx. Unit Wt. (kgs.)

Name of Customer/Project

BHARAT HEAVY ELECTRICALS LTD.,
ELECTROPORCELAINS DIVISION
BANGALORE - 560 012

NAME	SIGN	DATE
DRN Jaivin A.Varghese	Sd/-	10-07-2018
CHD J.Felix		10-07-2018
APPD J.Felix		10-07-2018

DEPT	GRADE OF TOL DIM C/M/F	SCALE Not to Scale (Approx)	WEIGHT (kg)	REF TO ASSY.DRG 3-986-99-08540	ITEM No.	No.OF ITEMS
CODE						
TITLE	M.S. Casing for VALVE OUTLET SPOOL			CARD CODE	DRAWING No. 3-986-99-08550	REV. 00
	HP 1103 BOWL MILLS				SHEET No. 2	No.OF SHEETS 2

SUPERSEDES DRG. No.

SHT.24 SIZE A3 420 x 297



BHARATH HEAVY ELECTRICALS LIMITED
ELECTROPORCELAINS DIVISION
BANGALORE 560 012

WORK INSTRUCTIONS FOR CERALIN ENGINEERING

ISSUE : 05

SEC : CE-1501-20

REV : 01

DATE : 25.09.2023

Page : 1 of 2

PROCEDURE FOR PAINTING

1.0 SCOPE

1.1 This procedure covers the requirements of primer and finish painting for Ceramic lined products for In-land applications.

1.2 Special contractual requirements, if any, shall be indicated in the respective Drawings/QP/ML

2.0 GENERAL

2.1 This procedure specifies the painting requirements provide adequate surface protection of components up to a period of One year under good storage conditions at Site.

2.2 Periodic re-preservation is required if components are kept under prolonged storage in open air beyond one year.

2.3 The maximum spreading capacity for a normal painting is given below (for estimation purpose only).

Scheme	Sq.M/Litre
--------	------------

Primer	6
--------	---

Primer	6
--------	---

3.0 SPECIFICATION OF PAINTS:

3.1 For Primer: Zinc Chrome Red Oxide Alkyd primer as per IS 2074.

For finishing paints: Synthetic Enamel Alkyd as per IS 2932.

3.2 The approved brands of paint, Rust preventive fluid and weld able primer are to be used.

4.0 SURFACE PREPARATION

4.1 Surface of components shall be thoroughly cleaned before the application of primer paint by either cotton waste or steel wool or scrubber. The surfaces shall be free from dust, rust, weld, slag, spatters, oil, grease etc.

PREPARED BY:

VINOD M
ADVANCED CERAMICS

APPROVED BY:

RAVI MULLUR
ADVANCED CERAMICS



BHARATH HEAVY ELECTRICALS LIMITED
ELECTROPORCELAINS DIVISION
BANGALORE 560 012

WORK INSTRUCTIONS FOR CERALIN ENGINEERING	ISSUE : 05
	SEC : CE-1501-20 REV : 01 DATE : 25.09.2023 Page : 2 of 2

5.0 APPLICATION OF PAINT

5.1 Surface, prepared as mentioned above shall be applied with one coat of Red oxide Zinc chrome (to IS 2074)

5.2 Over the primer, one coat of Smoke Grey's Synthetic enamel long oil Alkyd paint or red oxide (as specified for final condition) is to be applied on the other surface of Ceralin lined products where specified.

5.3 All the lifting lugs are to be painted yellow (as per IS 2932).

6.0 GENERAL:

6.1 Paint shall be used as supplied by the supplier without any addition of thinner.

6.2 Paint shall be thoroughly stirred before application. Paints can either be applied on surface by brushing or spraying using compressed air uniformly. The thickness of the paint shall not be less than 35 microns.

6.3 If any brand calls for special mixing of paints, it shall be according to the instruction of paint manufacture.

6.4 Adequate drying time is to be allowed after each coat before next coat of paint.

6.5 No painting is required in case of Stainless steel, Aluminium and Galvanized components, unless otherwise specified in contracts.

6.6 For all machined components, rust preventive fluids of approved make shall be used.

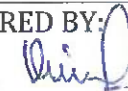

6.7 All weld edge preparation for site welding (like weld able edge flanges) shall be applied with one coat of welding primer De-oxaluminat or equivalent.

6.8 Wherever required, paints and rust preventive protection can be removed using commercial solvents. For rust preventive : Acetone, Carbon tetra chloride (CTC) or Tri-chloride ethylene

6.9 For all paints : Alkaline paint strippers solvent based paint strippers available in the market.

7.0 INSPECTION

7.1 Surface preparation, primer coating, finish coating shall be checked at appropriate stages by executing agency before proceeding to next operation.

PREPARED BY:  VINOD M ADVANCED CERAMICS	APPROVED BY:  RAVI MULLUR ADVANCED CERAMICS
---	---

ADV CERAMICS



Bharat Heavy Electricals Limited

(A GOVERNMENT OF INDIA UNDERTAKING)

SOLAR BUSINESS DIVISION

Prof. C.N.R.Rao Circle, Science Institute Post,
Malleshwaram, BANGALORE – 560 012 INDIA

Website: www.bhelceramics.com

TECHNICAL PRE-QUALIFICATION REQUIREMENT (TECHNICAL PQR)

TENDER DESCRIPTION: MS CASING FABRICATION

Date: 25.09.2023

SL NO.	BHEL QUALIFICATION REQUIREMENT	SUPPORTING DOCUMENTS/MATERIALS TO BE SUBMITTED BY THE BIDDER	BIDDER'S CONFIRMATION
1.	Casing Supplied Should be accompanied with Test Certificate of MS Steel as per Drg Specification.	Test Certificate during bulk supply of material	Agreed/ Not Agreed
2.	Vendor must have supplied minimum 5 Tonnes of MS Casings / Fabrication of MS Plates to BHEL/Other customers within last two years of Tender date.	Vendor Should provide documentary evidence by way of PO & Invoice etc.	Provided/ Not provided
3.	Vendor need to confirm that casing will be supplied as per BHEL Drg and specification	Endorsement on BHEL Drg.	Provided/ Not provided
4.	Vendor need to provide Compliance to attached QP: CLN:QP:01/00 & Work Instructions Doc-CE-1501-20 R01	Endorsement on BHEL QP & Work Instructions	Provided/Not provided

VINOD M

Sr. MANAGER/ ADV. CERAMICS

RAVI MULLUR

AGM/ ADV. CERAMICS

BHEL : EPD
CERALIN : ENGINEERING

CONTROLLED
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No. 02

QUALITY PLAN FOR CERALIN

ITEM : FABRICATED STEEL COMPONENTS
QP No: CLN:QP:01/00
DATE OF ISSUE : 09-03-1994

[Signature]
9/3/94
S.S. DUBEY
Manager/Ceralin

PREPARED BY

[Signature]
A.S. NAGARAJA
SY MANAGER CERALIN
APPROVED BY

COPY

No. 02

BHEL : EPD
CERALIN : ENGINEERING

QUALITY PLAN FOR CERALIN
QP No : CLN:QP:01/00
DATE OF ISSUE : 09-03-1994
PAGE NO : 1 OF 1

PAGE NO : 1 OF 1										
SL NO	COMPONENT AND OPERATION	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORM	FORMAT OF RECORD	AGENCY	REMARKS
1	2	3	4	5	6	7	8	9	10	11
1.0 MATERIAL										
1.1	Plates/Flats *	a)% Carbon	Maj	Chem	One Sample/consignment	IS : 2062 (Grade A)	Ref Col 7	Test report	QUALITY/ SUB-	Tests to be taken up by BHEL or sub-contractor whosoever buys the material and correlated Test reports to be maintained by BHEL/ Sub-contractor
		b)Mech.properties (UTS, % EL & Bending)	Maj	Mech	One Sample/consignment	IS : 2062 (Grade A)	Ref Col 7	Test report	CONTRACTOR	
2.0 COMPONENTS										
2.1	FABRICATED CASINGS / FLANGES	a)welding procedure specification	Maj	PQR	Once	AWS D 1.1 WP-CL-001	Ref Col 7	PQR/BHEL	QUALITY	Records of Qualification to be maintained by BHEL/Sub-contractor for verification
		b) WELDERS QUALIFICATIONS	Maj	Performance qualification test	Once	AWS D 1.1	Ref Col 7	Qualification Cert.	QUALITY	Qualification tests shall be done by BHEL/DNV/LRIS
		c)Liquid Penetrant Inspection of Weld joints	Maj	NDT	100%	WP:CER:002	Ref Col 7	Inspection Report	QUALITY/ SUB- CONTRACTOR) BHEL shall verify the records) at vendor's works and carryout) checks on min.10% of the samples) selected at random for the lot/) as appropriate))))))
		d)Dimensions	Maj	Phy	100 %	Drawing	Ref Col 7	Inspection Report		
		e) Tolerance	Maj	Phy	100 %	CLN:CASING:TOL Rev 01	Ref Col 7	Inspection Report		
		f)Weld Quality finish	Maj	Vis	100 %	WP:CL:001 Rev 02	Ref Col 7	Inspection Report		

Conc. 6
A.S. NAGARAJA

A.S. NAGARAJA