

BHEL:: BAP :: RANIPET :PURCHASE DEPARTMENT

ANNEXURE-A

SNO	Material Code	DESCRIPTION	Specification	TDC	Drawing	Nos	Delivery Period	QUOTED OR NOT QUOTED (To be filled by supplier)
1	920370202253	DRIVE FLANGE 1	P500NH	TDC RTF 307 Rev 06	2-55-328-02253	12	90 Days from GeM contract date	
2	920370202254	THRUST DISC 1	P355NH		2-55-328-02254	16		
3	920370202255	CONN RING 1	P355NH		2-55-328-02255	17		
4	920370202933	DRIVE FLANGE 2	P460NH		2-55-335-02933	20		
5	920370202934	THRUST DISC 2	P355NH		2-55-335-02934	20		
6	920370202991	DRIVE FLANGE 3	P460NH		25532802991	2		
7	920370202995	THRUST DISC 3	P355NH		2-55-328-02995	2		
8	920370403150	LOAD RING1 1624X1316X281	P500NH		4553150	40		
9	920370403326	LOAD RING2 960X770XT208	P500NH		4-55-216-03413	16		
10	920370403960	SUPP.RING1 1620X1430X170	P355NH		4-52-262-03960	24		
11	920374289300	IMP BUSH1 288X202X111	P355NH		4552893	640		
12	920374803644	SUP RING2 0578X0500X174	P355NH		45503644	40		
13	920374810200	WELD IN HUB1 516X238X229	P500NH		4552950	40		
14	920374810700	WELD IN HUB2 325X135X182	P500NH		4552954	16		
15	920374813309	HUB1 OD0593XID0277XTH0249	P500NH		45503309	2		
16	920374851300	SUP RING3 0992X0892X310	P355NH		45502962	32		
17	920374853327	SUP RING4 574X498XT208	P355NH		45503327	16		
18	920374860000	HUB2 280X105X175TH	P460NH		4-55-02474	10		
19	920374903645	LOAD RING3 0894X0768X174	P460NH		45503645	40		
20	920374993310	LOAD RING4 OD1608XID1324XTH30	P500NH		45503310	2		
21	920431692068	THRUST DISC 4	P355NH		2-55328-02068	2		

Note:

1. Price shall be quoted on "per No" basis. **Quoted prices shall be inclusive of all the taxes. Price to be quoted only on "FOR Destination" basis. Qty Tolerance not applicable.**

2. Offer for partial quantity is not acceptable and such offers will not be considered for further process.

3. Annexure A, TDC, Drg, SDDR and MII-Local content Declarations are to be duly signed, scanned and uploaded during submission of offer.

4. Documents sought vide the Additional Terms and Conditions such as 1. Experience criteria, 2. Audited Bidder Turnover for last 03 years, 3. OEM certificate, 4. OEM last 03 years turnover, 5. ISO 9001:2015 certificate are also to be submitted.

5. Offer to be submitted through GeM portal only.

6. **For availing MSE status and MII-Local content Class I preference, the same has to be opted** and documents are to be submitted in GeM portal while submitting offer.

7. Payment term will be as follows-

For MSE Vendors – within 45 days of issue of consignee receipt –cum-acceptance certificate(CRAC).

For Non-MSE Vendors – within 90 days of issue of consignee receipt –cum-acceptance certificate (CRAC).

8. Bidder has to submit sealed and signed copy of all the documents attached under " **Buyer added Bid Specific Additional Scope of Work**".

9. Incase of any clarification, kindly email to nanbu@bhel.in / kroy@bhel.in & contact @ 04172 284431 / 284447 between 0930 hrs to 1730 hrs

SDGM/Purchase

Pre-Qualification Requirement (PQR) for supply of *SUPPORT RING1620X1430X170 P355NH*

Offers from Bidders meeting all the below Pre-Qualification criteria concurrently will only be qualified to participate in this Tender Enquiry. Other Offers will summarily be rejected.

SI No.	Pre- Qualification Criteria	Documentary Evidence to be submitted by Bidder	Bidders' Remarks/ Comment/ Confirmation
1	Bidder should be a Manufacturer of SUPPORT RING 1620X1430X170 P355NH and supply shall be as per specification without any deviation.	Registration certificate / Certificate of incorporation /Udyam Registration Certificate	
2	Bidder should have previously supplied SUPPORT RING 1620X1430X170 P355NH or similar item. Proof of earlier supply P.O, Invoices should be submitted along with the offer. Offers without these documents will not be considered.	Purchase order copies with related Invoice/ GRN/ SRV details.	
3	Bidders shall not have been black-listed / kept on hold / given Business holiday for a specified period by any Public Sector Undertaking or Government Departments/any other units of BHEL.	Self-declaration to be submitted by bidder.	

Declaration: All the information given above are true to the best of our knowledge and belief.

SIGN AND SEAL OF AUTHORIZED PERSON

Pre-Qualification Requirement (PQR) for supply of “Drive Flange , Impeller Ring Hub Disc, Load Ring and Support Ring”

Offers from Bidders meeting all the below Pre-Qualification criteria concurrently will only be qualified to participate in this Tender Enquiry. Other Offers shall be summarily rejected.


Sl. No.	Pre- Qualification Criteria	Documentary Evidence to be submitted by Bidder	Bidders' Remarks/ Comment/ Confirmation
1	Bidder should be Manufacturer of Carbon steel/Alloy steel forging by open/ring rolling forging process. Supplier should be able to supply as per BHEL Drawings and specification without any deviation.	1-Registration certificate /Certificate of incorporation / Udyog Aadhar/ Udyam Registration Certificate etc. 2- Proof of inhouse Forging facilities, furnace and testing facilities.	
2	Bidder should have previously supplied Carbon Steel /Alloy Steel Forgings of same weight or higher than the tendered items.	(i)Purchase order copies with related Invoice/ GRN/ SRV/ Performance Certificate and (ii)Corresponding Test report & Dimension report	

- BHEL reserves the right to verify information / confirmation furnished by seeking additional documents, Proofs etc.
- BHEL reserves the right to visit supplier's /bidders' works for technical evaluation of their manufacturing capability.
- Compliance to all the above Pre-qualification requirements is mandatory. In absence of PQR compliance bidder's offer are liable for rejection.

Declaration:

We understand that all the proofs/documents submitted by our firm for all the above points are subject to verification and in case BHEL finds any discrepancy in any of the document/s submitted by us like fake/false/forged documents, Certificates or information, action may be taken against our firm as per extant guidelines of BHEL.

Bidder's Seal & Signature


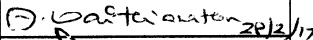
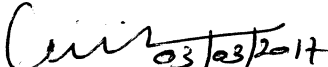

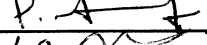
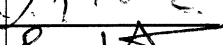
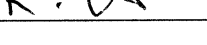
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Technical Delivery Conditions

For

Impeller Components

(Made of Forged Steel)

Prepared by	Reviewed by	Reviewed by	Signature of Reviewer	Approved by
 RK Madhu	ENGG (Fans)	A Vaithinathan		 03/23/2017 (Head/QA)
	QC (Proc)	R Kesavan		
	MPLG	P Annamalai		
	PUR	T Valluvan		
	QA	R Arunachalam		



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1.0 SCOPE

- 1.1 This TDC specifies the requirements for the supply of proof machined condition fan forgings.
- 1.2 This TDC is in line with EN 10222-4 for P355NH/QH, AM004 REV'C'(DIN 17103)for 1.8937 of WSTE 500/P500NH, DIN EN 10028-3 for 1.8935 of P460NH, ASTM A 592 for SA 592 Gr F additional requirements are incorporated in This TDC.
- 1.3 In accordance with the dimensions in the drawing of the purchaser, the forgings (load ring, welded-in hub etc.) shall be supplied in the pre-machined condition.


1.4 Applicable standards value alone to be taken for Material properties.

2.0 MATERIAL: WSTE 500/ P500 NH, 1.8937- AM004 REV C(DIN 17103)

2.1 CHEMICAL COMPOSITION

As-received condition: Products having a thickness of >100mm are quenched and tempered whereas products with a thickness of ≤100 mm are normalized.

Chemical composition of the steels as determined by ladle analysis															
Steel grade	Percentage by mass														
Material Designation	Material number	C ≤	Si	Mn	P ≤	S ≤	N ≤	Al total ¹ ≤	Cr ≤	Cu ≤	Mo ≤	Ni ≤	Nb ≤	V ≤	Nb+v ≤
StE 500	1.8907		0.10	1.10	0.035	0.030	0.020	0.02	0.30	0.20	0.10	1.00	0.05	0.22	0.22
WSTE 500	1.8937	0.21	To	To	0.035	0.030				(¹)	(²)	(³)			
TStE 500	1.8917		0.60	1.70	0.030	0.025									
1.If copper is added as an alloying element, the maximum molybdenum content by mass may be 0,70%. 2. For thickness exceeding 150mm, the maximum molybdenum content shall be 0,15%. 3. For thickness exceeding 150mm, the maximum nickel content shall be 1,20%															

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2.2 Mechanical properties: As per below Table

To be determined on longitudinal (L) or transverse (T) specimens at room temperature, except for the impact energy, which shall be determined at -20°C.

For forged and rolled stock	Definitive Product Thickness (d) in [mm]				
	≤ 50	51 - 100	101- 150	151- 375	376- 600
Tensile strength R _m [N/mm ²]	610-780		540-740		
Yield point R _{eH} min. [N/mm ²]	480	450	430	410	390
Fracture elongation L min. in (%) T	17			16	
	16			15	
Impact energy min. on ISO-V specimens at -20°C [J=Nm] mean value from Three (3) individual specimens T	39				
	21				

3.0 MATERIAL: P355NH/QH, EN 10222-4


As-received condition: Normalized (N) or Quenched(QT)

Chemical composition: by cast analysis, Weight in (%), as per below table

3.1 CHEMICAL COMPOSITION

Ruling thickness	C Max.	Mn	Si	P Max.	S Max.	Al # Total		N Max.	Cr Max.	Cu Max.	Mo Max.	Nb Max.	Ni Max	V Max	Nb+ V
tr ≤ 400 (in mm)	0.20	0.90-1.65	0.10-0.50	0.025	0.015	Min. 0.02	Max. 0.06	0.02	0.30	0.20	0.08	0.05	0.30	0.10	0.12

Minimum Al level need not apply when Nb, V and Ti are used to control N content.

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3.2 Mechanical properties:

To be determined on longitudinal (L) or transverse (T) specimens at room temperature, except for the impact energy, which shall be determined at -20°C.

For forged stock	Definitive Product Thickness (d) in [mm]					
	$t_r \leq 16$	$16 < d \leq 35$	$35 < d \leq 70$	$70 < d \leq 100$	$100 < d \leq 250$	$250 < d \leq 400$
Tensile strength R_m [N/mm ²]	490 to 630			470 to 630		
Yield point R_{eH} min. [N/mm ²]	355	355	335	315	295	275
Fracture elongation L min. in [%]	23			21		
	21			19		
Impact energy min. on ISO-V specimens at -20°C	40			47		
T [J=Nm] mean value from Three (3) individual specimens	-			27		


*For Rod & Rounds (d) =Diameter

*For Rectangular bar (d) = thickness

Note 1. For product thickness $d \leq 100$ mm heat treatment condition is normalized while for $d \leq 400$ it is quenched and tempered.

Note 2. For P355NH/QH, hot tensile test shall be done at 150°C. Yield strength shall be as per

Material standard. For FD & PA Fan application and counter weight for all axial Fans hot tensile test not applicable.

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4.0 MATERIAL: **P460NH (1.8935) DIN EN 10028-3**


4.1 Chemical composition: As per below table

C Max.	Si Max.	Mn	Ni Max.	P Max.	S Max.	Cr Max.	Mo Max.	V Max.	N Max.	Nb Max.	Ti Max.	Al Max.	Cu Max.	Nb+Ti +V
0.20	0.6	1.1-1.7	0.8	0.025	0.015	0.30	0.1	0.20	0.025	0.05	0.03	0.02	0.70	< 0.22

4.2 Mechanical properties:

To be determined on longitudinal (L) or transverse (T) specimens at room temperature, except for the impact energy, which shall be determined at -20°C.

For forged stock	Definitive Product Thickness (d) in [mm]			
	d ≤ 16	16 < d ≤ 60	60 < d ≤ 100	
Tensile strength R _m [N/mm ²]	560 to 730	570 to 720	540-710	
Yield point R _{eH} min. [N/mm ²]	d ≤ 16	16 < d ≤ 40	40 < d ≤ 60	60 < d ≤ 100
	460	445	430	400
Fracture elongation min. in [%]	16-19			
Impact energy (J) min. L on ISO-V specimens at -20°C T [J=Nm] mean value from Three (3) individual specimens	40-45 27-30			

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5.0 MATERIAL: SA 592 Gr F, ASTM A 592

5.1 CHEMICAL COMPOSITION

5.1.1 The chemistry shall be as per respective specification.

5.2 MECHANICAL PROPERTIES

5.2.1 Tensile strength, yield strength, % elongation at room temperature shall be carried out melt wise / heat treatment batch wise.

5.2.1.1 Tensile test results shall meet the specification requirements.

Tensile requirements as per below table -

	Product thickness ($t \leq 65$ mm)	Product thickness ($65 < t \leq 100$ mm)
Tensile strength, min [N/mm ²]	795 to 930	725 to 930
Yield strength, min [N/mm ²]	690	620
Elongation min, %	18	17
Reduction of area, min, %	45	40

Note: The maximum thickness of forging under this specification (ASTM A592) shall be 100mm for grade F.


5.2.2 Hot tensile test shall be carried out melt wise for impeller ring forgings only.

5.2.2.1 In case of SA 592 Gr. F, Hot tensile test shall be done at 400°C. Yield strength shall be 560 Mpa upto 65mm and 510 Mpa above 65mm.

5.2.2.2 Impact test: This test shall be conducted on 3 ISO V specimen melt wise / HT batch wise.

5.2.2.3 In case of SA 592 Gr F impact test shall be conducted at 0°C. Lateral expansion opposite to notch shall not be less than 0.38 mm. Impact energy in joules shall be also be reported.

5.2.2.4 The ring for the mechanical testing shall be extended to accommodate the test specimen as per ASTM A 668.

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6.0 FORGINGS

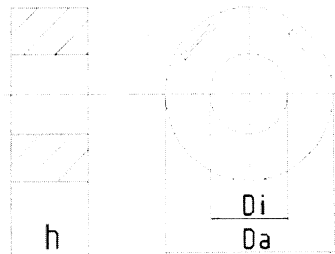
- 6.1 The forging shall be made from fully killed steel of fine grain practice. Suggested minimum forging reduction ratio of 4:1 from starting piece to finished forgings must be ensured.
- 6.2 Weld repairs are prohibited.
- 6.3 Impeller ring forgings may also be produced by ring rolling process.
- 6.4 The acceptance of our purchase order shall constitute your agreement to the following conditions:
- Chemical composition (ladle analysis) for each heat.
 - Tensile strength, yield point, and fracture elongation shall be determined on at least one (1) specimen from each lot. Depending on the size of the part to be examined, removal of the specimens shall be in horizontal (L) or transverse (T) direction.
 - The impact energy shall be determined on three (3) ISO-V impact specimens at -20°C from each lot to be delivered.


The mean value derived from three (3) tests shall constitute the test result. The lowest individual value may not be below 2/3 of the required minimum value. Specimens may be taken in longitudinal or transverse direction.

7.0 Definitive Thickness of Product and Sampling.

The definitive product thickness for fixing of the mechanical properties is determined by means of below table. For this purpose, the component dimensions indicated in the purchase order have to be used.

Regarding sampling and preparation of specimens please observe the below table.

Component	Definitive Product Thickness d	Positions of specimens
Load ring Support ring Welding hub	$\text{for } h > \frac{Da - Di}{2}$ $d = 1.5 \cdot \frac{Da - Di}{2}$ $\text{otherwise } d = 1.5 \cdot h$	
The specimen sections are to be taken from the extensions of the forgings which have a diameter and cross section which corresponds to the respective forging at the time of heat treatment. The specimen must not be separated before final termination of the heat treatment. The positions of the specimens are as shown above.		

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8.0 NON-DESTRUCTIVE TESTING

8.1 All the forgings shall be ultrasonically tested radially and axially as per ASTM A 388.

8.2 ACCEPTANCE CRITERIA

Forgings Length	Radial Scanning	Axial Scanning
≤ 1 meter	3 mm equivalent reflector size by DGS method	3 mm equivalent reflector size by DGS method
> 1 meter	3 mm equivalent reflector size by DGS method	One or more discontinuities resulting in complete loss of back wall reflection to 10% of the full scale height not attributing to geometric configuration when tested by back wall echo method are not acceptable.

9.0 MARKING AND PRESERVATION

9.1 All forgings shall be marked with specification, melt No. and supplier's emblem/Name legibly by hard stamping on the material surface. This area shall be framed with white paint for easy identification.


9.2 Forgings shall be applied with rust preventive coating.

10.0 INSPECTION & TEST CERTIFICATE

10.1 The items manufactured within India, shall be subjected to inspection by BHEL or authorized agency.


10.2 The supplier shall furnish the test certificate in English as per EN 10204. It shall contain the following information.

- a) PO No.
- b) Specification and grade
- c) Size, No. and weight
- d) Melt No.
- e) Heat treatment particulars
- f) Chemical composition - melt wise
- g) Mechanical properties
- h) TDC No.




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11.0 Record of Revisions

Rev No.	Clause Revised	Revision made	Date
00	---	original issue	27.06.94
01	1.1 1.3 2.0,2.1,2.4,3.1 2.2.1 2.3.2 2.4.2 4.2 7.2	StE500 V spec added hub disc & body forgings included New clause added Editorial Correction Forgings reduction ratio included Clause revised Impeller ring hot tensile strength empowered ASTM A 668 is included in place of ASTM 370 Packing requirements in case of Imported forgings added	25.12.94
02	2.3 & 3.2 1.2,2.1,1,2.3.2, 2.3.3	Change of name of WstE355V to P355NH/QH is and Corresponding Standard is included. Deleted & other clause numbers altered accordingly. clause modified	26.12.00
03	---	Totally modified	02.05.02
04	2.0 & 5.4 3.0 4.2.1.1 6.2	1. Required contents from TFN: 359, Rev:02, Dt: 17.02.2014 added. 2. For material P355NH/QH as per EN10222-4 chemical & mechanical properties added. 3. Tensile requirements for SA592 Gr.F-Table added. 4. NDT acceptance criteria revised.	05.08.14
05	---	1. Header changed. 2. P460NH (1.8935) added.	27.07.15
06	2.0	Chemical composition revised and definitive thickness of product & sampling added as per AM004 Rev C.	28.02.17

 Ranipet		MANUFACTURER'S NAME & ADDRESS BHEL/ BHEL APPROVED SOURCE		STANDARD QUALITY PLAN				PROJECT: AS PER PO.							
				ITEM: FAN Impeller Forgings as per TDC:RTF:307/Latest Rev.		QP. NO.: FAN: 321 Rev No. :00 Date: 06.03.2020 Page 1 of 2									
SL NO	COMPONENT & OPERATION	CHARACTERISTICS	CLASS OF CHECK	TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENTS	ACCEPTANCE NORMS	FORMAT OF RECORD		Agency			REMARKS	
					6							M	B	C	
1	2	3	4	5	M	B/C	7	8	9	D	10			11	

1.0	RAW MATERIAL													
1.1	Raw Material Identification	Chemical Properties	Major	Chemical Analysis	Each Heat	Each Heat	Drawing /BHEL Spec/PO		Mill TC	√	P	V	-	Verification of Mill TC
1.2	Soundness	UT	Major	Ultrasonic Testing	100 %	100 %	Drawing /BHEL Spec/PO		Mill TC	√	P	V	-	
2.0	IN PROCESS INSPECTION													
2.1	Forging as per Drawing	Measurement of Reduction Ratio	Major	Measurement	Each forging	Each forging	As per TDC/ Forging Drawing/ Size	As per TDC/ P.O.	Report	√	P	-	-	-
2.2	Heat Treatment	HT Cycle	Major	Visual	Each Lot	Each Lot	As per TDC/ PO	As per TDC/ P.O.	HT Chart	√	P	V	-	
2.3	Test Piece Marking	Workmanship	Minor	Visual	Each Heat	Each Heat	As per Specification	As per Specification	Check Report		P	W	-	Test Piece shall be identified by BHEL/BHEL TPI
2.4	Chem. & Mechanical Test	Chemical Properties & Mechanical Properties	Major	Chem & Mech Properties as per TDC	Each Heat / Melt	Each Heat / Melt	As per TDC/ Drawing/ PO	As per TDC/ Drawing/ P.O.	Lab Test Report	√	P	W	-	-
3.0	INSPECTION AFTER PROOF MACHINING													
3.1	Surface Defects	NDT- MPI	Major	MT Testing	100%	100%	No Surface Cracks Acceptable/ ASME Sec V		MT Report	√	P	W	-	-
3.2	Internal Defects	NDT-UT	Major	Ultrasonic Testing	100%	100%	TDC/ ASTM A388/SA388		UT Report	√	P	W	-	-
4.0	FINAL INSPECTION & PACKING													
4.1	Final Inspection	Dimensions	Major	Measurement	100%	100%	As per P.O./Drawing / TDC		DR	√	P	W	-	-


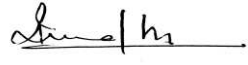

M – Manufacturer / Subvendor, B - BHEL /BHEL Authorized Inspection Agency, C - Customer, P - perform, HT- Heat Treatment. V - Verification of reports, COC – Certificate of compliance. W - Witness, TC - Test certificate, DR – Dimensional report "D" – Record, identified with tick (√) shall be essentially included by Supplier in QA documentation. UT- Ultrasonic test., MPI/MT – Magnetic Particle testing	Prepared by	Reviewed by	Approved by
	 Sanjib Pandit (AE/QA)	 Rakesh Kumar Madhu (Dy Manager / QA)	 K C Gandhiparimalam (DGM/QA)

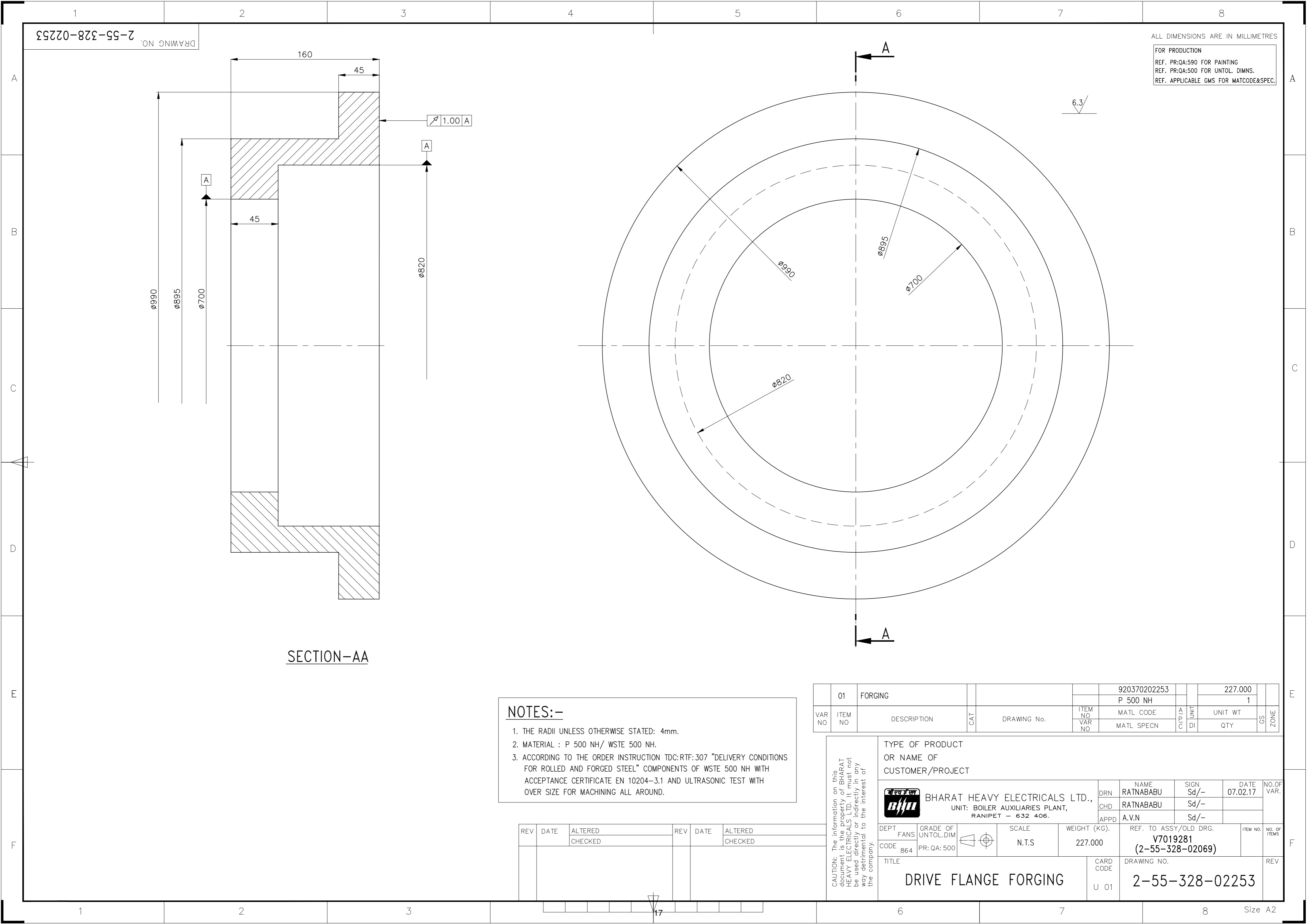
 Ranipet		MANUFACTURER'S NAME & ADDRESS BHEL/ BHEL APPROVED SOURCE		STANDARD QUALITY PLAN ITEM: FAN Impeller Forgings as per TDC:RTF:307/Latest Rev.				QP. NO.: FAN: 321 Rev No. :00 Date: 06.03.2020 Page 2 of 2		PROJECT: AS PER PO.			
SL NO	COMPONENT & OPERATION	CHARACTERISTICS	CLASS OF CHECK	TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENTS	ACCEPTANCE NORMS	FORMAT OF RECORD		Agency		REMARKS
					6								
1	2	3	4	5	M	B/C	7	8	9	D	10		11
4.2	Identification Packing & Preservations	Identification of all items, Preservation	Minor	Identification, Verification & Preservation.	100%	100%	As per P.O Drawing/Specification	COC	√	P	V	-	-

Note: 1. Latest version of standards & Specification shall be applied.
2. Materials shall be procured in compliance to Functional Technical Specification.
3. Gauges and measuring instruments with valid calibration only shall be used.
5. Inspection / Inspection waiver / approval by BHEL does not absolve Supplier's responsibility for conformity of the specification as per the terms of PO.
4. BHEL /BHEL Authorized representatives shall have the right to witness the necessary inspection and testing of goods mentioned in the PO.
5. In case of Vendor Drawing, it needs approval by BHEL Engineering.
6. This QP Shall be read along with relevant PO, BHEL TDC/Drawing.

Record of revision

Rev no	Date	Description
00	06.03.2020	Original Issue

M – Manufacturer / Subvendor, B - BHEL /BHEL Authorized Inspection Agency, C - Customer, P - perform, HT- Heat Treatment. V - Verification of reports, COC – Certificate of compliance. W - Witness, TC - Test certificate, DR – Dimensional report “D” – Record, identified with tick (√) shall be essentially included by Supplier in QA documentation. UT- Ultrasonic test., MPI/MT – Magnetic Particle testing	Prepared by	Reviewed by	Approved by
	 Sanjib Pandit (AE/QA)	 Rakesh Kumar Madhu (Dy Manager / QA)	 K C Gandhiparimalam (DGM/QA)



DRAWING NO. 2-55-328-02253

ALL DIMENSIONS ARE IN MILLIMETRES

FOR PRODUCTION
REF. PR:QA:590 FOR PAINTING
REF. PR:QA:500 FOR UNTOL. DIMNS.
REF. APPLICABLE GMS FOR MATCODE&SPEC.

SECTION-AA

NOTES:-

1. THE RADII UNLESS OTHERWISE STATED: 4mm.
2. MATERIAL : P 500 NH/ WSTE 500 NH.
3. ACCORDING TO THE ORDER INSTRUCTION TDC:RTF:307 "DELIVERY CONDITIONS FOR ROLLED AND FORGED STEEL" COMPONENTS OF WSTE 500 NH WITH ACCEPTANCE CERTIFICATE EN 10204-3.1 AND ULTRASONIC TEST WITH OVER SIZE FOR MACHINING ALL AROUND.

REV	DATE	ALTERED	REV	DATE	ALTERED
		CHECKED			CHECKED

01	FORGING			920370202253		227.000	
				P 500 NH		1	
VAR NO	ITEM NO	DESCRIPTION	CAT	DRAWING No.	ITEM NO VAR NO	MATL CODE MATL SPECN	UNIT DI
							UNIT WT QTY

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

BHARAT HEAVY ELECTRICALS LTD.,

UNIT: BOILER AUXILIARIES PLANT,

RANIPET - 632 406.

DRN
CHD
APPD

RATNABABU
RATNABABU
A.V.N

Sd/-
Sd/-
Sd/-

DATE
07.02.17

NO.OF
VAR.

DEPT
FANS

GRADE OF
UNTOL.DIM

SCALE
N.T.S

WEIGHT (KG).
227.000

REF. TO ASSY/OLD DRG.
V7019281
(2-55-328-02069)

ITEM NO.
REV

NO. OF
ITEMS

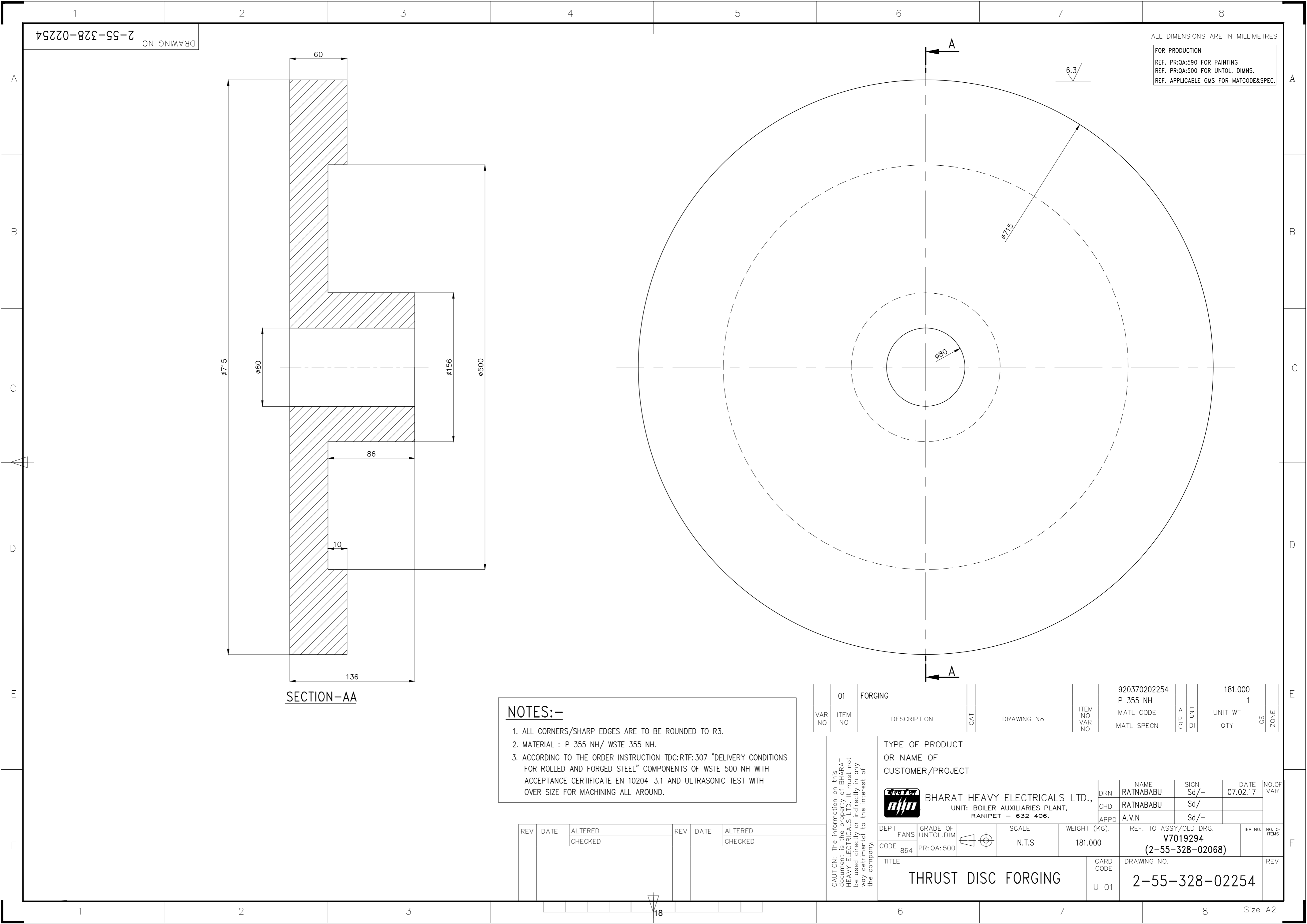
TITLE
DRIVE FLANGE FORGING

CARD
CODE
U 01

DRAWING NO.
2-55-328-02253

REV

File No. BAP/315/2024-BAP-9751_FANS (Computer No. 123469)
Generated from eOffice by N Anbalagan, Addl_E-II(NA)-9750_SU-BAP, Addl_E-II, BAP-BOILER AUXILIARIES PLANT on 16/12/2024 09:19 am



SECTION-AA

NOTES:-

1. ALL CORNERS/SHARP EDGES ARE TO BE ROUNDED TO R3.

2. MATERIAL : P 355 NH/ WSTE 355 NH.

3. ACCORDING TO THE ORDER INSTRUCTION TDC:RTF:307 "DELIVERY CONDITIONS FOR ROLLED AND FORGED STEEL" COMPONENTS OF WSTE 500 NH WITH ACCEPTANCE CERTIFICATE EN 10204-3.1 AND ULTRASONIC TEST WITH OVER SIZE FOR MACHINING ALL AROUND.

REV	DATE	ALTERED	REV	DATE	ALTERED
		CHECKED			CHECKED

01	FORGING			920370202254		181.000	
				P 355 NH		1	
VAR NO	ITEM NO	DESCRIPTION	CAT	DRAWING No.	ITEM NO VAR NO	MATL CODE MATL SPECN	A UNIT C DI
							UNIT WT QTY

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.

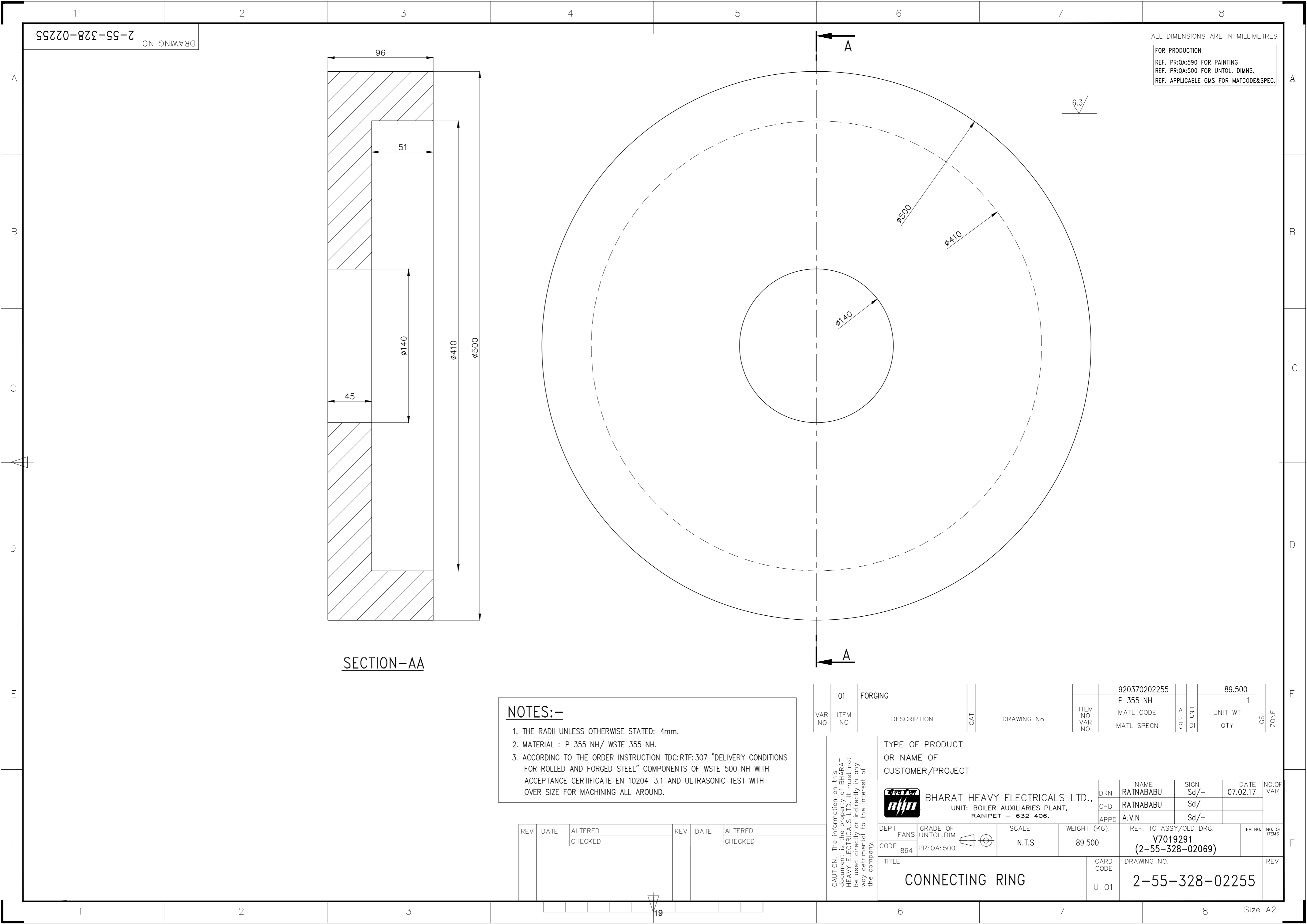
TYPE OF PRODUCT
OR NAME OF
CUSTOMER/PROJECT

BHARAT HEAVY ELECTRICALS LTD.,
UNIT: BOILER AUXILIARIES PLANT,
RANIPET - 632 406.

DRN	NAME	SIGN	DATE	NO.OF VAR.
CHD	RATNABABU	Sd/-	07.02.17	
APPD	A.V.N	Sd/-		

DEPT FANS	GRADE OF UNTOL.DIM	SCALE	WEIGHT (KG).	REF. TO ASSY/OLD DRG.	ITEM NO.	NO. OF ITEMS
CODE 864	PR: QA: 500	N.T.S	181.000	V7019294 (2-55-328-02068)		
TITLE THRUST DISC FORGING				CARD CODE U 01	DRAWING NO. 2-55-328-02254	REV

File No. BAP/315/2024-BAP-9751_FANS (Computer No. 123469)
Generated from eOffice by N Anbalagan, Addl_E-II(NA)-9750_SU-BAP, Addl_E-II, BAP-BOILER AUXILIARIES PLANT on 16/12/2024 09:19 am



ALL DIMENSIONS ARE IN MILLIMETRES

FOR PRODUCTION
REF. PR:QA:590 FOR PAINTING
REF. PR:QA:500 FOR UNTOL. DIMNS.
REF. APPLICABLE GMS FOR MATCODE&SPEC.

SECTION-AA

NOTES:-

- 1. THE RADII UNLESS OTHERWISE STATED: 4mm.
- 2. MATERIAL : P 355 NH/ WSTE 355 NH.
- 3. ACCORDING TO THE ORDER INSTRUCTION TDC:RTF:307 "DELIVERY CONDITIONS FOR ROLLED AND FORGED STEEL" COMPONENTS OF WSTE 500 NH WITH ACCEPTANCE CERTIFICATE EN 10204-3.1 AND ULTRASONIC TEST WITH OVER SIZE FOR MACHINING ALL AROUND.

REV	DATE	ALTERED	REV	DATE	ALTERED
		CHECKED			CHECKED

01	FORGING			920370202255		89.500	
				P 355 NH		1	
VAR NO	ITEM NO	DESCRIPTION	CAT	DRAWING No.	ITEM NO VAR NO	MATL CODE MATL SPECN	A P C DI
							UNIT QTY

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

BHARAT HEAVY ELECTRICALS LTD.,
UNIT: BOILER AUXILIARIES PLANT,
RANIPET - 632 406.

DRN	NAME	SIGN	DATE	NO.OF VAR.
CHD	RATNABABU	Sd/-	07.02.17	
APPD	A.V.N	Sd/-		

DEPT FANS	GRADE OF UNTOL.DIM	SCALE	WEIGHT (KG).	REF. TO ASSY/OLD DRG.	ITEM NO.	NO. OF ITEMS
CODE 864	PR: QA: 500	N.T.S	89.500	V7019291 (2-55-328-02069)		

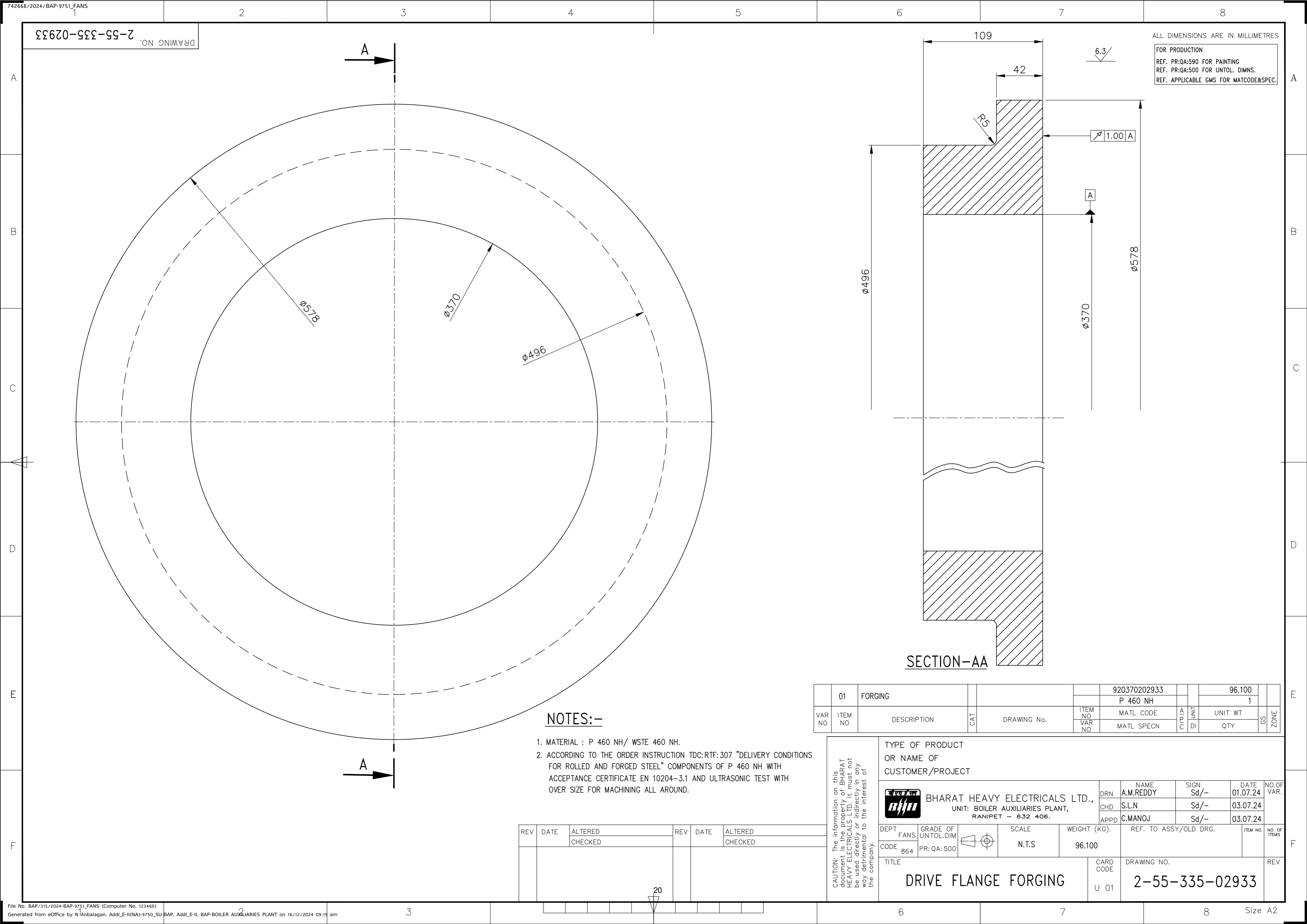
TITLE
CONNECTING RING

CARD
CODE
U 01

DRAWING NO.
2-55-328-02255

REV

File No. BAP/315/2024-BAP-9751_FANS (Computer No. 123469)
Generated from eOffice by N Anbalagan, Addl_E-II(NA)-9750_SU-BAP, Addl_E-II, BAP-BOILER AUXILIARIES PLANT on 16/12/2024 09:19 am



2-55-335-02933
DRAWING NO.

ALL DIMENSIONS ARE IN MILLIMETRES

FOR PRODUCTION
REF. PR:QA:590 FOR PAINTING
REF. PR:QA:500 FOR UNTOL. DIMNS.
REF. APPLICABLE GMS FOR MATCODE&SPEC.


SECTION-AA

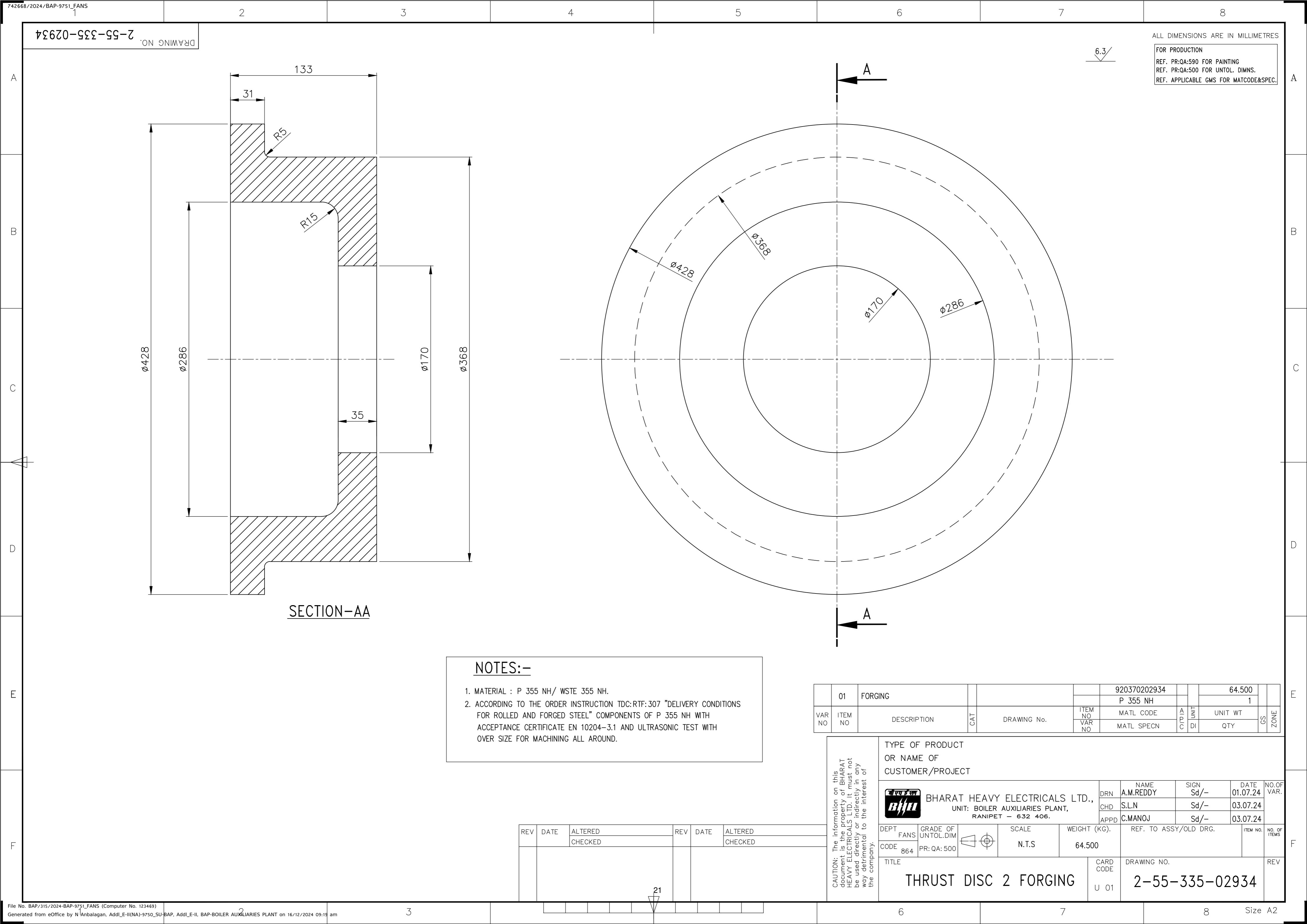
NOTES:-

- 1. MATERIAL : P 460 NH/ WSTE 460 NH.
- 2. ACCORDING TO THE ORDER INSTRUCTION TDC:RTF:307 "DELIVERY CONDITIONS FOR ROLLED AND FORGED STEEL" COMPONENTS OF P 460 NH WITH ACCEPTANCE CERTIFICATE EN 10204-3.1 AND ULTRASONIC TEST WITH OVER SIZE FOR MACHINING ALL AROUND.

REV	DATE	ALTERED	REV	DATE	ALTERED
		CHECKED			CHECKED

01	FORGING		920370202933		96.100
			P 460 NH		1
VAR NO	ITEM NO	DESCRIPTION	CAT	DRAWING No.	ITEM NO VAR NO
					MATL CODE
					MATL SPECN
					UNIT
					UNIT WT
					QTY
					GS
					ZONE

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT		DRN	NAME	SIGN	DATE	NO.OF VAR.
 BHARAT HEAVY ELECTRICALS LTD., UNIT: BOILER AUXILIARIES PLANT, RANIPET - 632 406.		CHD	S.L.N	Sd/-	03.07.24	
		APPD	C.MANOJ	Sd/-	03.07.24	
		REF. TO ASSY/OLD DRG.				ITEM NO.
DEPT FANS	GRADE OF UNTOL.DIM	SCALE	WEIGHT (KG).			
CODE 864	PR: QA: 500	N.T.S	96.100			
TITLE				CARD CODE	REV	
DRIVE FLANGE FORGING				U 01	2-55-335-02933	



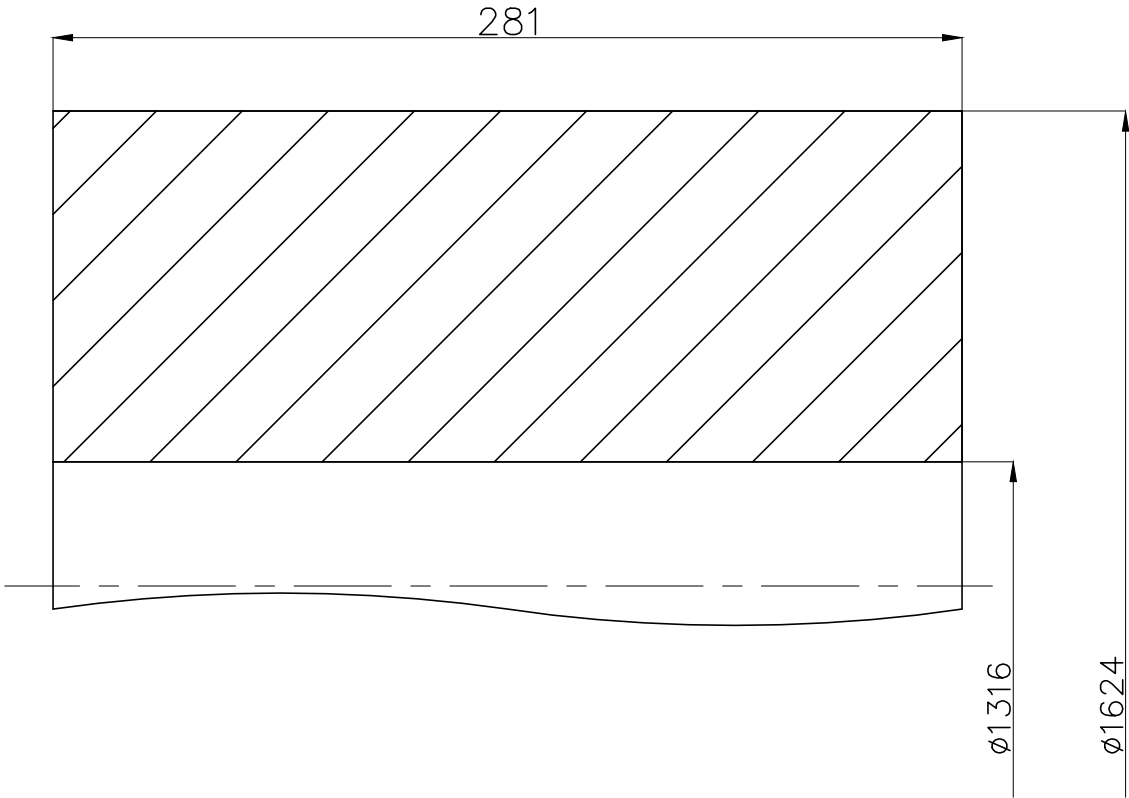
CAUTION: The information on this document is the property of BHARAT HEAVY ELECTRICALS LTD. It must not be used directly or indirectly in any way detrimental to the interest of the company.



REV	DATE	ALTERED
		CHECKED

ALL DIMENSIONS ARE IN MILLIMETRES

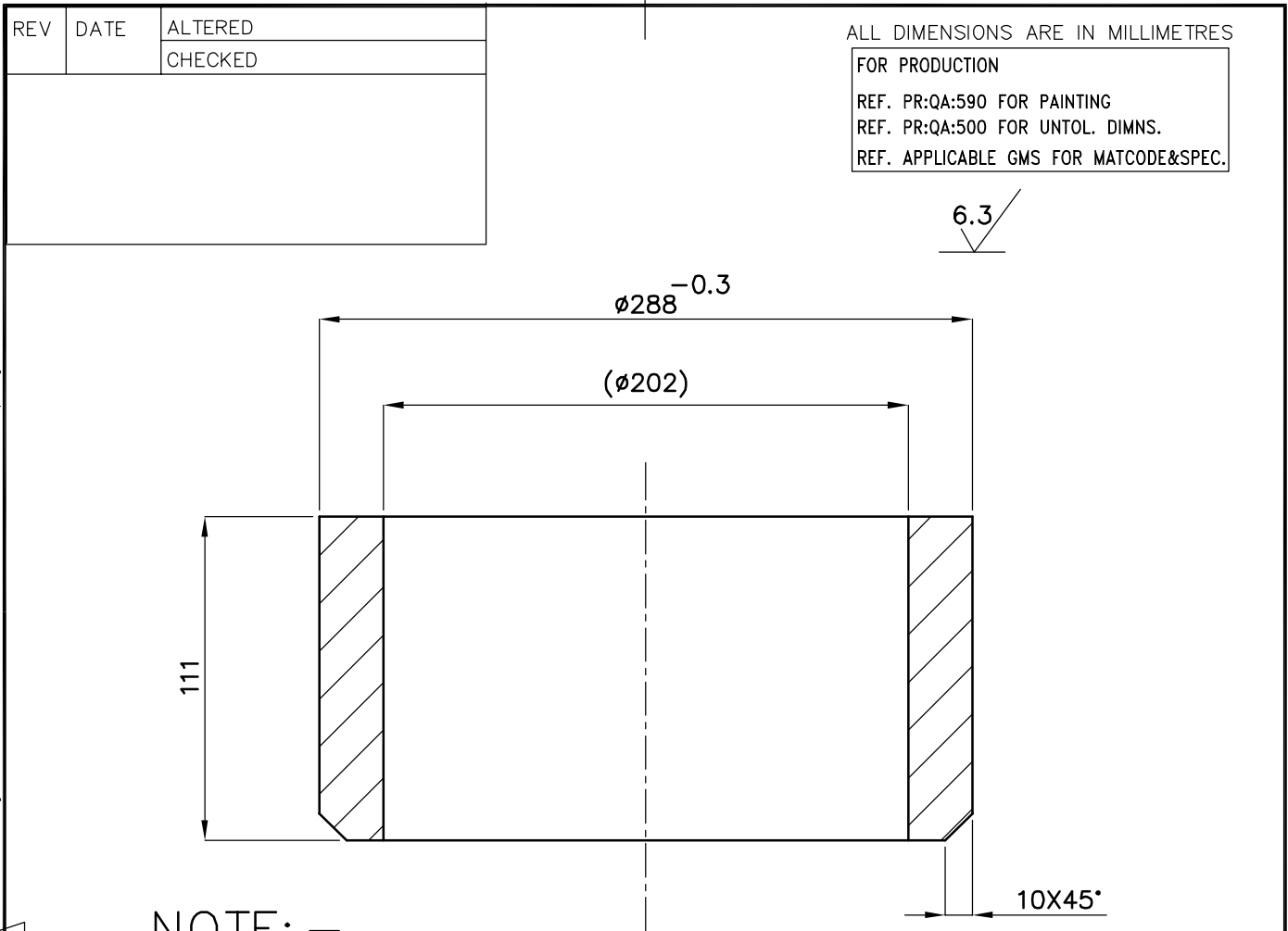
FOR PRODUCTION
REF. PR:QA:590 FOR PAINTING
REF. PR:QA:500 FOR UNTOL. DIMNS.
REF. APPLICABLE GMS FOR MATCODE&SPEC.

6.3



		01	LOAD RING				P500 NH			1568.8					
										1					
VAR NO	ITEM NO	DESCRIPTION			CAT	DRAWING No.		NO VAR NO	MATL CODE		A UNIT	UNIT WT		CS	ZONE
									MATL SPECN		DI	QTY			
<div><div></div><div><div>BHARAT HEAVY ELECTRICALS LTD.,</div><div>UNIT: BOILER AUXILIARIES PLANT.</div><div>RANIPET - 632 406.</div></div></div>							DRN	NAME		SIGN		DATE		NO.OF VAR.	
							CHD	CABRIEL				04.02.17			
							APPD	RATNABABU							
								A.V.N							
DEPT FANS		GRADE OF UNTOL.DIM			SCALE		WEIGHT (KG).		REF. TO ASSY/OLD DRG.			ITEM NO.	NO. OF ITEMS		
864		PR: QA: 500			N.T.S		1568.8		V7019268						
TITLE							CARD CODE	DRAWING NO.						REV	
LOAD RING							U 01	4-55-328-03150							


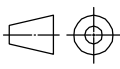
Size A4



01. ACCORDING TO THE ORDER INSTRUCTION TFN NO 359" DELIVERY CONDITIONS FOR ROLLED AND FORGED STEEL COMPONENTS OF P355 NH WITH ACCEPTANCE TEST CERTIFICATE EN 10204-3.1B AND ULTRASONIC TEST WITH OVER SIZE FOR MACHINING ALL ROUND.

02. WEIGHT OF ROUGH FORGING: 28.800 Kg

01	IMPELLER BUSHING (FORGING)		920374289300			28.800	
			P355NH			1	
ITEM NO.	DESCRIPTION	STD	MATL. CODE	A	UNIT	UNIT WT.	
			MATL. SPECN.	C		DI	QTY

		BHARAT HEAVY ELECTRICALS LTD., UNIT: BOILER AUXILIARIES PLANT, RANIPET - 632 406.		DRN	NAME P.SHAKI.O/L	SIGN Sd/-	DATE 04.11.14	NO.OF VAR
				CHD	MAHESH	Sd/-	04.11.14	
				APPD	A.V.N	Sd/-	04.11.14	
DEPT FANS	GRADE OF UNTOL.DIM		SCALE	WEIGHT (KG).	REF. TO ASSY./OLD DRG.		ITEM NO.	NO. OF ITEMS
CODE 864	PR: QA: 500		N.T.S.	28.800	V7011066			
TITLE IMPELLER BUSHING (FORGING)				CARD CODE U 01	DRAWING NO. 4-55-227-02893			REV

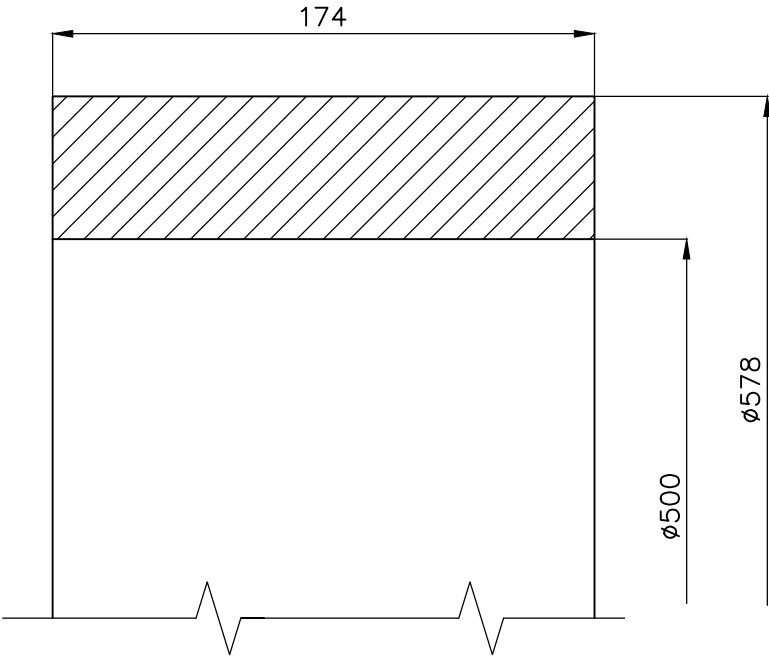
CAUTION: The information on this document is the property of BHARAT HEAVY ELECTRICALS LTD. It must not be used directly or indirectly in any way detrimental to the interest of the company.

REV	DATE	ALTERED
		CHECKED

ALL DIMENSIONS ARE IN MILLIMETRES

FOR PRODUCTION
REF. PR:QA:590 FOR PAINTING
REF. PR:QA:500 FOR UNTOL. DIMNS.
REF. APPLICABLE GMS FOR MATCODE&SPEC.


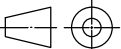
6.3



NOTES:

- 01. THIS ITEM IS TO BE FURTHER MACHINED IN IMPELLER HUB ASSY.
- 02. WEIGHT OF SUPPORT RING (ROUGH FORGING)=90.200 Kgs.
- 03. REFER TDC RTF: 307 FOR DELIVERY CONDITIONS.

01	FORGING	920374803644			54.000
		P355NH			1
ITEM NO.	DESCRIPTION	MATL. CODE	A	UNIT	UNIT WT.
		MATL. SPECN.	C	DI	QTY

<div></div> <div>BHARAT HEAVY ELECTRICALS LTD., UNIT: BOILER AUXILIARIES PLANT, RANIPET — 632 406.</div>				<div>NAME A.M.REDDY</div> <div>DRN</div>		<div>SIGN sd/—</div>		<div>DATE 01.07.24</div>		<div>NO.OF VAR</div>									
				<div>S.L.N</div> <div>CHD</div>		<div>sd/—</div>		<div>03.07.24</div>											
				<div>C.MANOJ</div> <div>APPD</div>		<div>sd/—</div>		<div>03.07.24</div>											
<div>DEPT FANS</div>		<div>GRADE OF UNTOL.DIM</div>		<div></div>		<div>SCALE N.T.S.</div>		<div>WEIGHT (KG). 54.000</div>		<div>REF. TO ASSY./OLD DRG.</div>				<div>ITEM NO.</div>		<div>NO. OF ITEMS</div>			
<div>CODE 864</div>		<div>PR: QA: 500</div>																	
<div>TITLE SUPPORT RING</div>								<div>CARD CODE U 01</div>		<div>DRAWING NO. 4-55-335-03644</div>								<div>REV</div>	

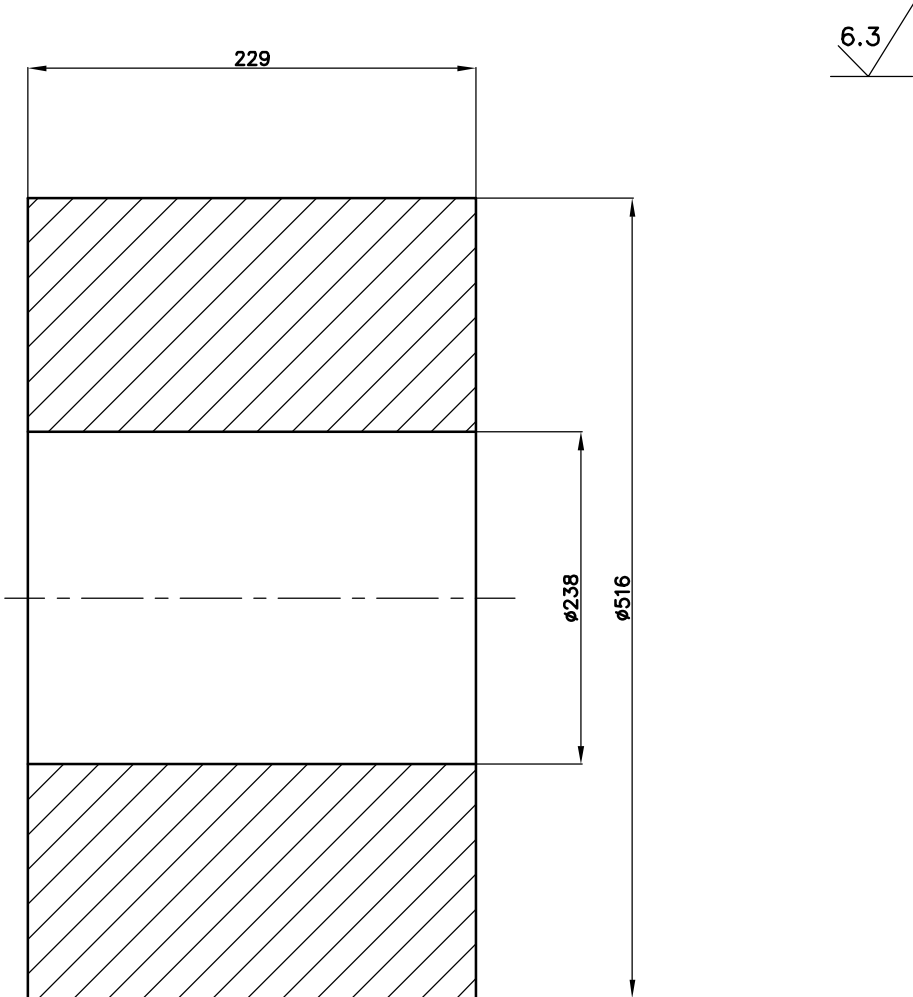
CAUTION: The information on this document is the property of BHARAT HEAVY ELECTRICALS LTD. It must not be used directly or indirectly in any way detrimental to the interest of the company.

REV	DATE	ALTERED
		CHECKED


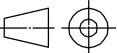
ALL DIMENSIONS ARE IN MILLIMETRES

FOR PRODUCTION

REF. PR:QA:590 FOR PAINTING
REF. PR:QA:500 FOR UNTOL. DIMNS.
REF. APPLICABLE GMS FOR MATCODE&SPEC.



01	HUB FORGING	920374810200	P	295.900
		P500 NH		1
ITEM NO.	DESCRIPTION	MATL. CODE	A	UNIT
		MATL. SPECN.	C	DI
				QTY

		BHARAT HEAVY ELECTRICALS LTD., UNIT: BOILER AUXILIARIES PLANT, RANIPET – 632 406.		DRN	NAME SRINATH.S	SIGN Sd/–	DATE 4.5.15	NO.OF VAR
				CHD	MAHESH	Sd/–	4.5.15	
				APPD	A.V.N	Sd/–	4.5.15	
DEPT FANS	GRADE OF UNTOL.DIM		SCALE N.T.S.	WEIGHT (KG). 295.900	REF. TO ASSY./OLD DRG. V7015553		ITEM NO.	NO. OF ITEMS
CODE 864	PR: QA: 500							
TITLE WELD IN HUB (RAW PART)				CARD CODE U 01	DRAWING NO. 4–55–328–02950			REV

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REV	DATE	ALTERED
		CHECKED

ALL DIMENSIONS ARE IN MILLIMETRES

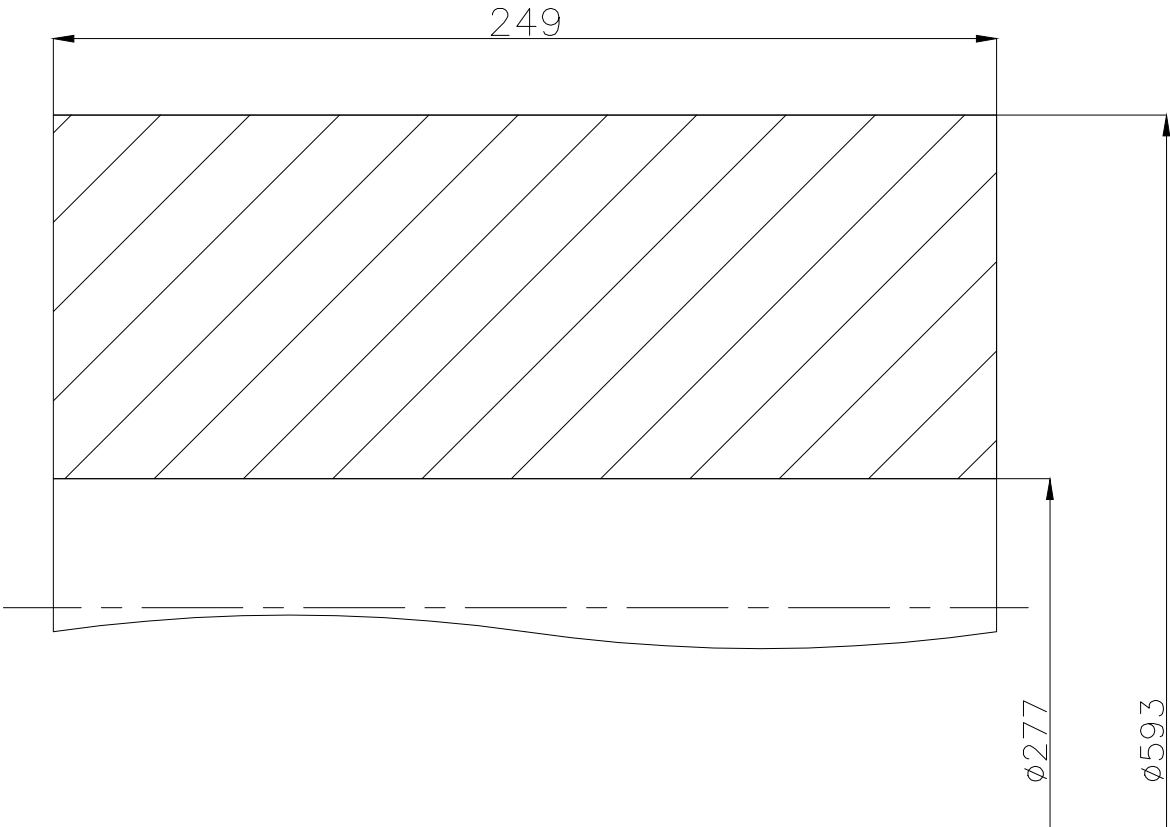
FOR PRODUCTION

REF. PR:QA:590 FOR PAINTING

REF. PR:QA:500 FOR UNTOL. DIMNS.



REF. APPLICABLE GMS FOR MATCODE&SPEC.

6.3



NOTES: –

1.REFER TDC:RTF:307/05 FOR DELIVERY CONDITIONS

		01	HUB						422.100						
									1						
VAR NO	ITEM NO	DESCRIPTION			CAT	DRAWING No.	NO VAR NO	MATL CODE	A UNIT	UNIT WT	CS	ZONE			
								MATL SPECN	DI	QTY					
<div>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.</div> <div>BHARAT HEAVY ELECTRICALS LTD., UNIT: BOILER AUXILIARIES PLANT. RANIPET – 632 406.</div>						DRN	NAME	SIGN	DATE	NO.OF VAR.					
						CHD	RATNABABU		11.04.19						
						APPD	A.V.N		12.04.19						
DEPT	FANS	GRADE OF UNTOL.DIM		SCALE	WEIGHT (KG).	REF. TO ASSY/OLD DRG.				ITEM NO.	NO. OF ITEMS				
864	864	PR: QA: 500		N.T.S	422.1	V7022680									
TITLE						CARD CODE	DRAWING NO.			REV					
HUB (WELD)						U 01	4-55-328-03309								

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.

REV	DATE	ALTERED
		CHECKED

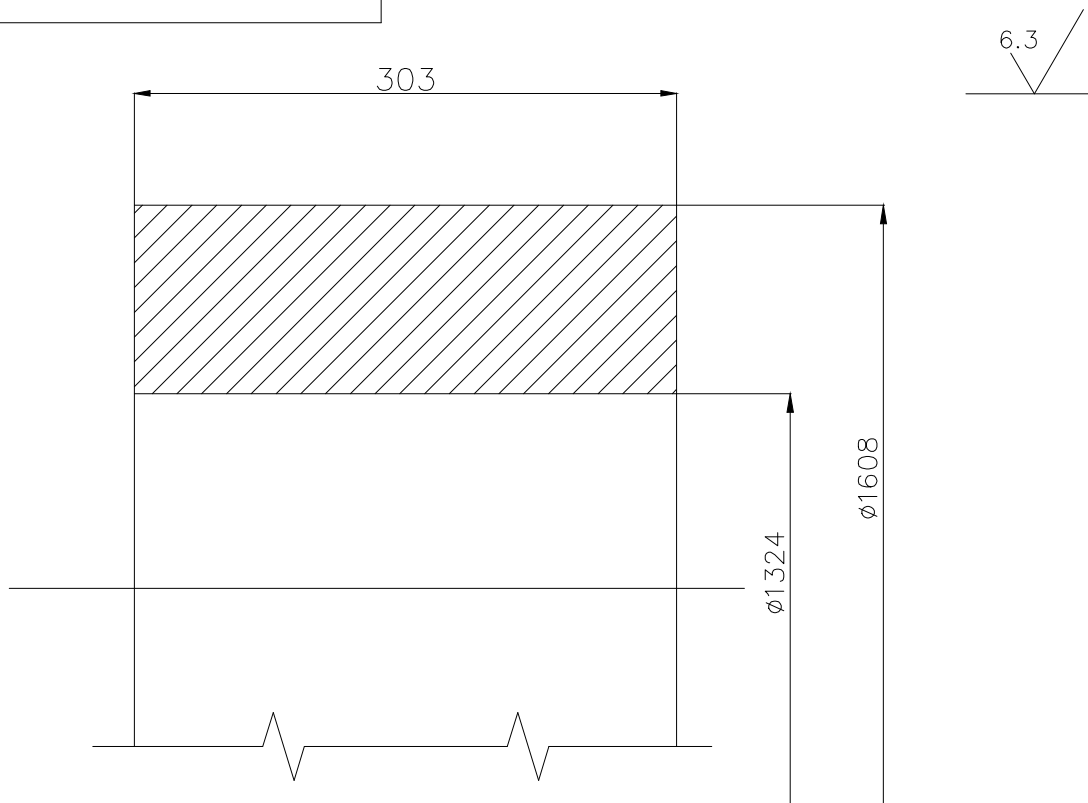
ALL DIMENSIONS ARE IN MILLIMETRES

FOR PRODUCTION

REF. PR:QA:590 FOR PAINTING

REF. PR:QA:500 FOR UNTOL. DIMNS.

REF. APPLICABLE GMS FOR MATCODE&SPEC.



NOTES: -

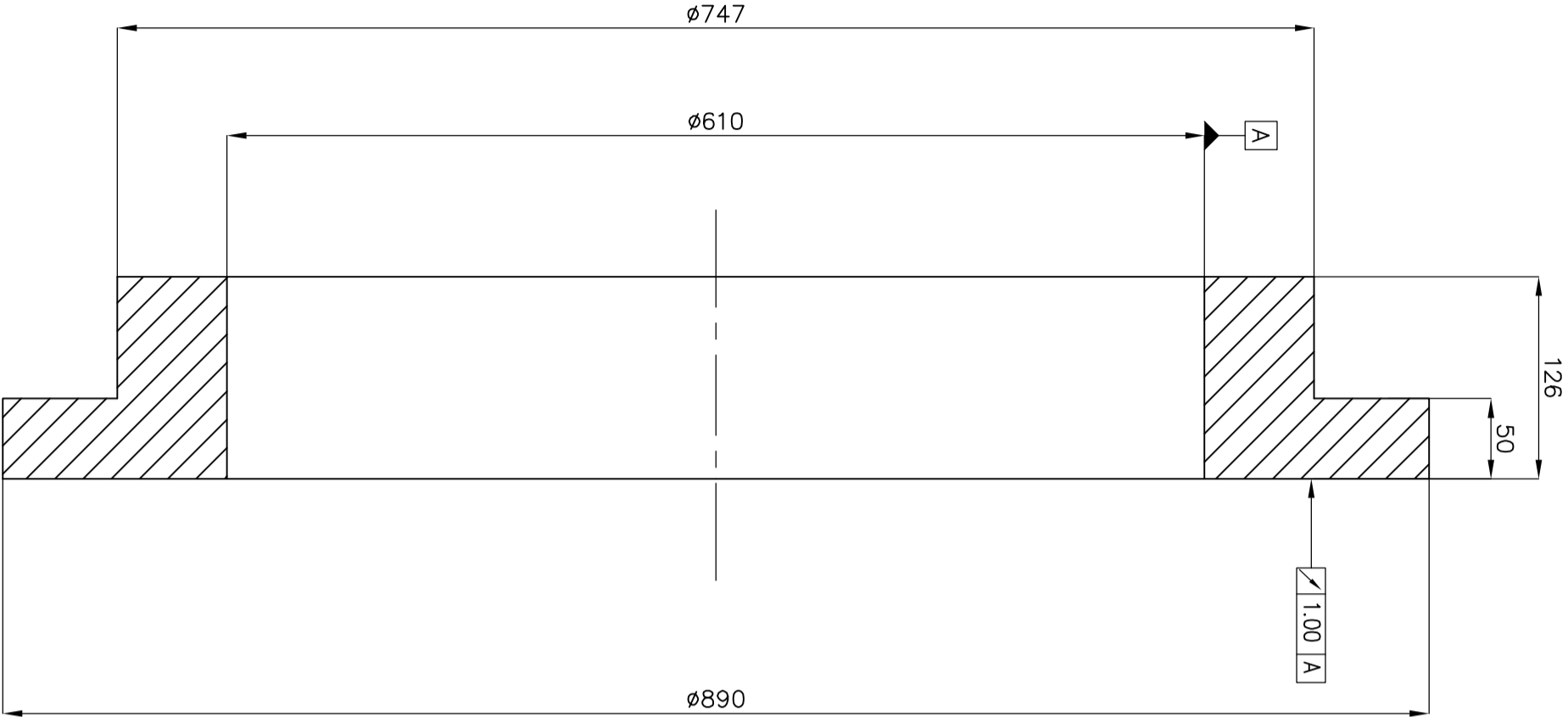
1.REFER TDC:RTF:307/05 FOR DELIVERY CONDITIONS

01	LOAD RING (FORGING)				1555.600
			P500NH		1
ITEM NO.	DESCRIPTION	STD	MATL. CODE	A	UNIT WT.
			MATL. SPECN.	C	QTY

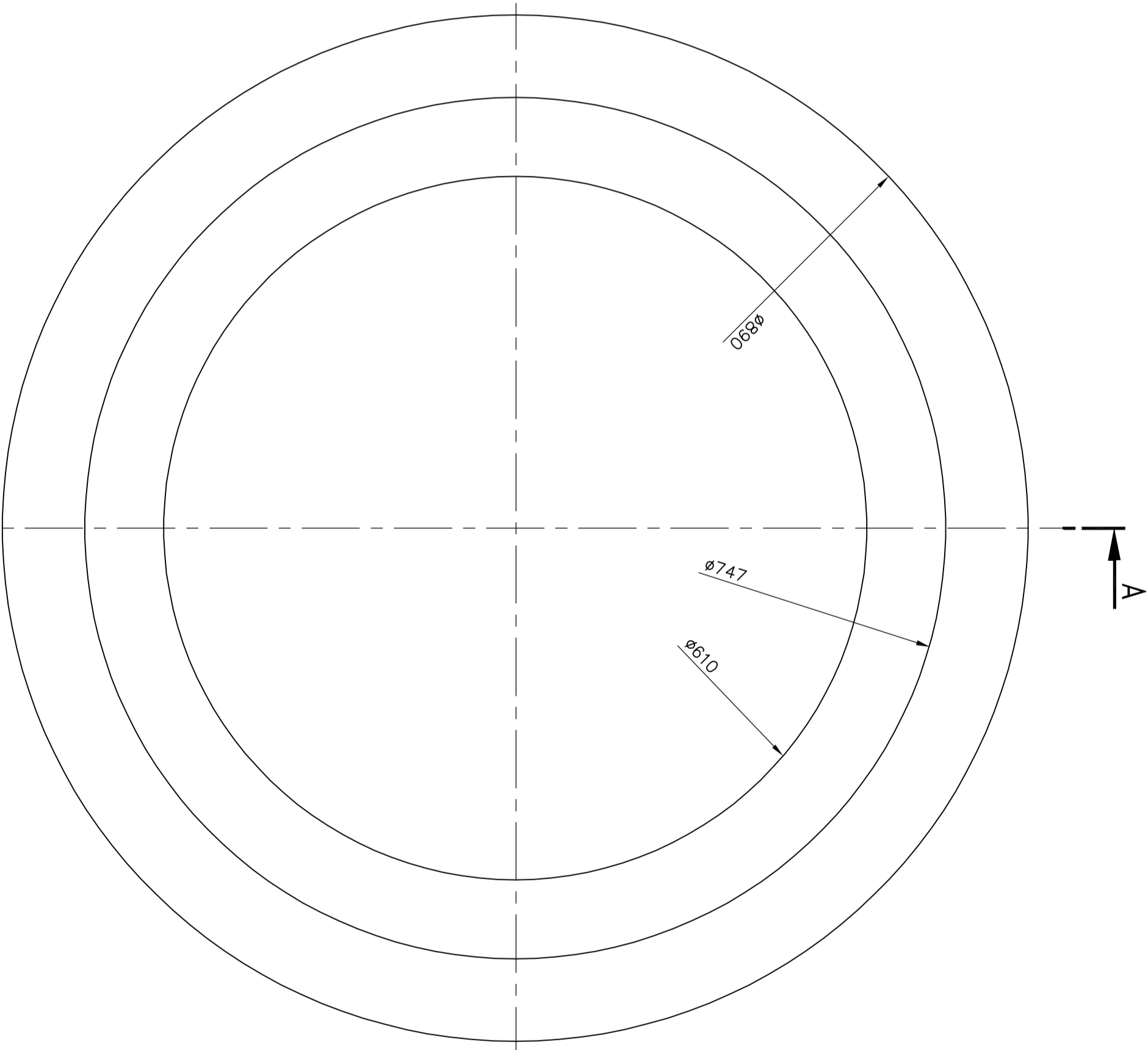


BHARAT HEAVY ELECTRICALS LTD.,
UNIT: BOILER AUXILIARIES PLANT,
RANIPET - 632 406.

DEPT FANS	GRADE OF UNTOL.DIM	SCALE	WEIGHT (KG).	NAME	SIGN	DATE	NO.OF VAR
CODE 864	PR: QA: 500	N.T.S.	1555.600	RATNABABU	-SD/-	10.04.19	
				RATNABABU	-SD/-	12.04.19	
				APPD A.V.N	-SD/-	12.04.19	
				REF. TO ASSY./OLD DRG.			
				V7022691			
				ITEM NO.			NO. OF ITEMS
TITLE	LOAD RING (FORGING)			CARD CODE	DRAWING NO.		REV
				U 01	4-55-328-03310		



SECTION-AA



NOTES:-

1. THE RADI UNLESS OTHERWISE STATED: 4mm.
2. MATERIAL : P460 NH/ WSTE 460 NH.
3. ACCORDING TO THE ORDER INSTRUCTION TDC:RTI:307 "DELIVERY CONDITIONS FOR ROLLED AND FORGED STEEL" COMPONENTS OF P460 NH WITH ACCEPTANCE CERTIFICATE EN 10204-3.1 AND ULTRASONIC TEST WITH OVER SIZE FOR MACHINING ALL AROUND.

VAR NO	ITEM NO	DESCRIPTION	CAT	DRAWING No.	ITEM NO	VAR NO	MATL SPECN	920370202991	P460 NH	216.500	1	ZONE
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BHARAT HEAVY ELECTRICALS LTD.,
UNIT: BOILER AUXILIARIES PLANT,
RAIPUR - 632 406.

TYPE OF PRODUCT
OR NAME OF
CUSTOMER/PROJECT

DEPT FANS GRADE OF PR: QA-500

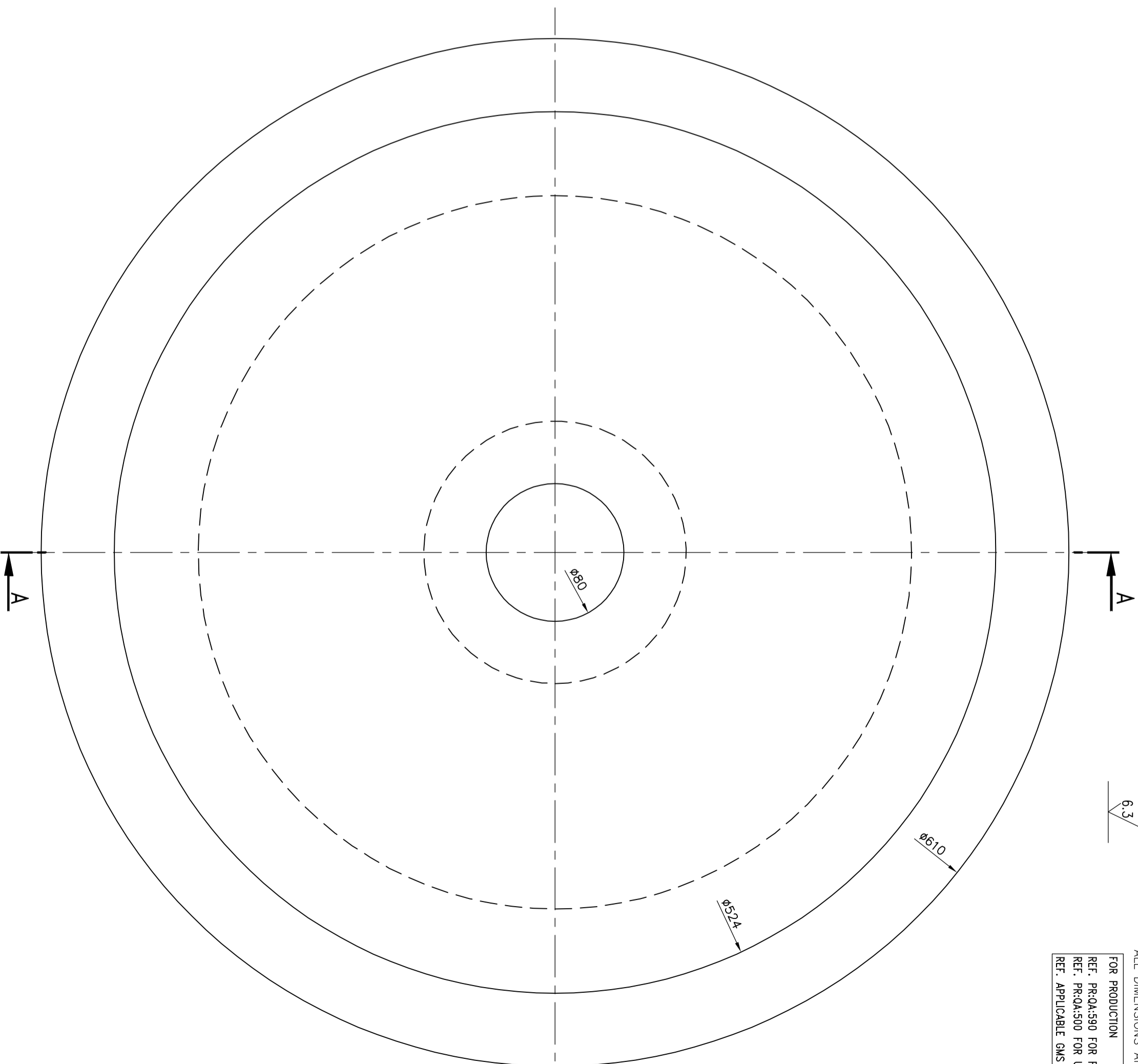
SCALE N.T.S

WEIGHT (KG) 216.500

DRIVE FLANGE FORGING

DRN	A.M.REDDY	SIGN	Sd/-	DATE	25.11.24	NO OF VARS
CHD	SLN	SIGN	Sd/-	DATE	26.11.24	
APPD	C.MANOU	SIGN	Sd/-	DATE	27.11.24	

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NOTES:-

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BHARAT HEAVY ELECTRICALS LTD.
UNIT: **BOILER AUXILIARIES PLANT,**
RANIPET - 632 406.

BEV	DATE	AI TERPEN	BEV	DATE	AI TERPEN

REV	DATE	REV	DATE
	ALTERED CHECKED		ALTERED CHECKED

TITL

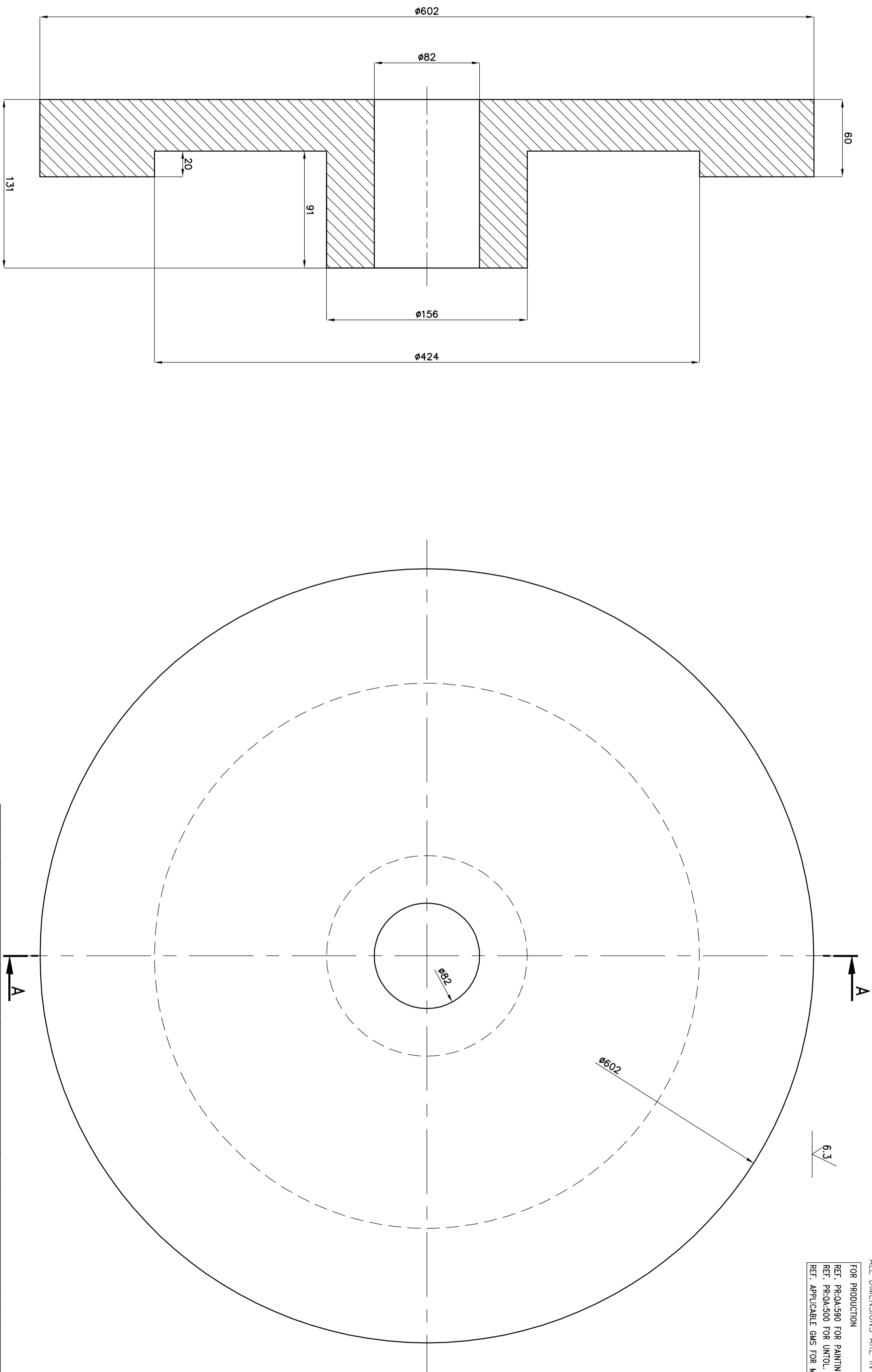
THRUST DISC FORGING

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2-55-328-02995

ALL DIMENSIONS ARE IN MILLIMETRES

FOR PRODUCTION
REF. PR:QA:590 FOR PAINTING
REF. PR:QA:500 FOR UNTOL. DIMS.
REF. APPLICABLE GMS FOR MATCODE&SPEC.





SECTION-AA

- NOTES:-**
1. ALL CORNERS/SHARP EDGES ARE TO BE ROUNDED TO R3.
 2. MATERIAL : P 355 NH/ WSTE 355 NH.
 3. ACCORDING TO THE ORDER INSTRUCTION TDC-RTF-307 "DELIVERY CONDITIONS FOR ROLLED AND FORGED STEEL" COMPONENTS OF WSTE 500 NH WITH ACCEPTANCE CERTIFICATE EN 10204-3.1 AND ULTRASONIC TEST WITH OVER SIZE FOR MACHINING ALL AROUND.

01	FORGING				920431692068			194.000	
VAR NO	ITEM NO	DESCRIPTION	CAT	DRAWING No.	ITEM NO	MATL CODE	MATL SPECN	UNIT WT	GS
						P 355 NH		1	ZONE

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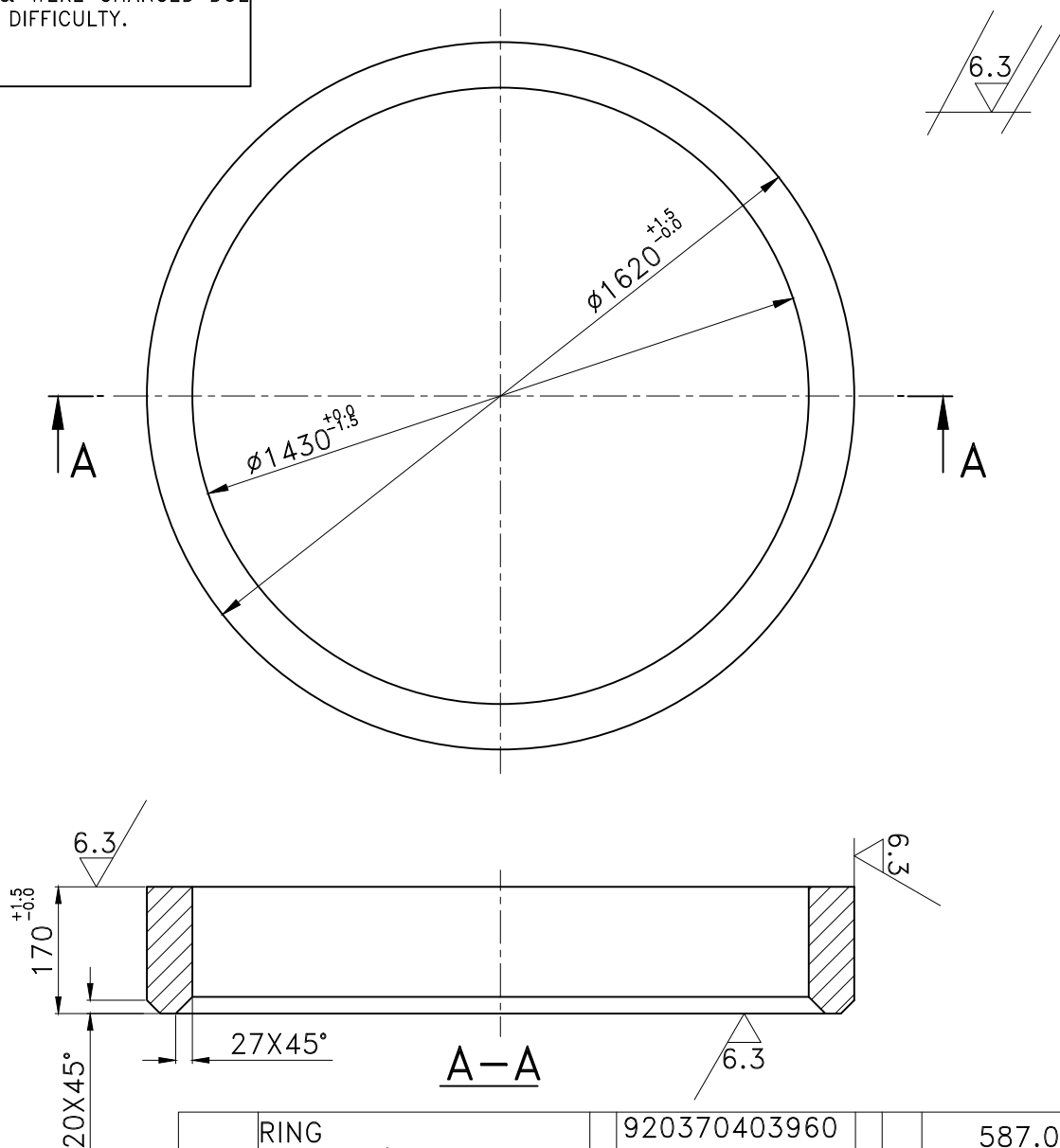
		BHARAT HEAVY ELECTRICALS LTD., UNIT: BOILER AUXILIARIES PLANT, RANIPET - 632 406.				NAME		SIGN	DATE	NO OF VAR.	
DEPT FANS CODE 864	GRADE OF UNIT,CL, DIM PR. Q.A: 500		SCALE N.T.S	WEIGHT (KG.) 194.000	REF. TO ASSY/OLD DRG.	ITEM NO.	NO. OF ITEMS	D/RN	MAHESH	Sd/-	19.09.15
								CHD	MAHESH	Sd/-	19.09.15
								APPD	A.N/N	Sd/-	19.09.15
TITLE THRUST DISC FORGING					CARD CODE U 01		DRAWING NO. 2-55-328-02068		REV		

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REV	DATE	ALTERED	PRASANTA
01	03.04.17	CHECKED	K THANIKA
MAT CODE WAS 920376470000, MAT SPECIFICATION WAS AISI 1040-1050 & WERE CHANGED DUE TO WELDING DIFFICULTY.			

ALL DIMENSIONS ARE IN MILLIMETRES

FOR PRODUCTION
REF.: PRQA : 590 FOR PAINTING
REF.: PRQA : 500 FOR UNTOL. DIMNS.



	RING OD1620/ID1430; 170		920370403960			587.00
			P355NH/QH			
VAR NO.	DESCRIPTION	STD	MATL. CODE	A	UNIT	UNIT WT.
			MATL. SPECN.	C		DI



BHARAT HEAVY ELECTRICALS LTD.,
UNIT: BOILER AUXILIARIES PLANT.
RANIPET - 632 406.

DRN	PRASANTA		06/02/16	NO. OF VAR.
CHD	RSB			
APPD	RSB			

DEPT AP	GRADE OF UNTOL.DIM PR:QA:500	SCALE NTS	WEIGHT (KG). 587.00	REF. TO ASSY/OLD DRG. -----	ITEM NO.	NO. OF ITEMS
TITLE SUPPORT RING 294/850 BEARING				CARD CODE U 01	DRAWING NO. 4-52-262-03960	REV 01

Size A4

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REV	DATE	ALTERED
		CHECKED

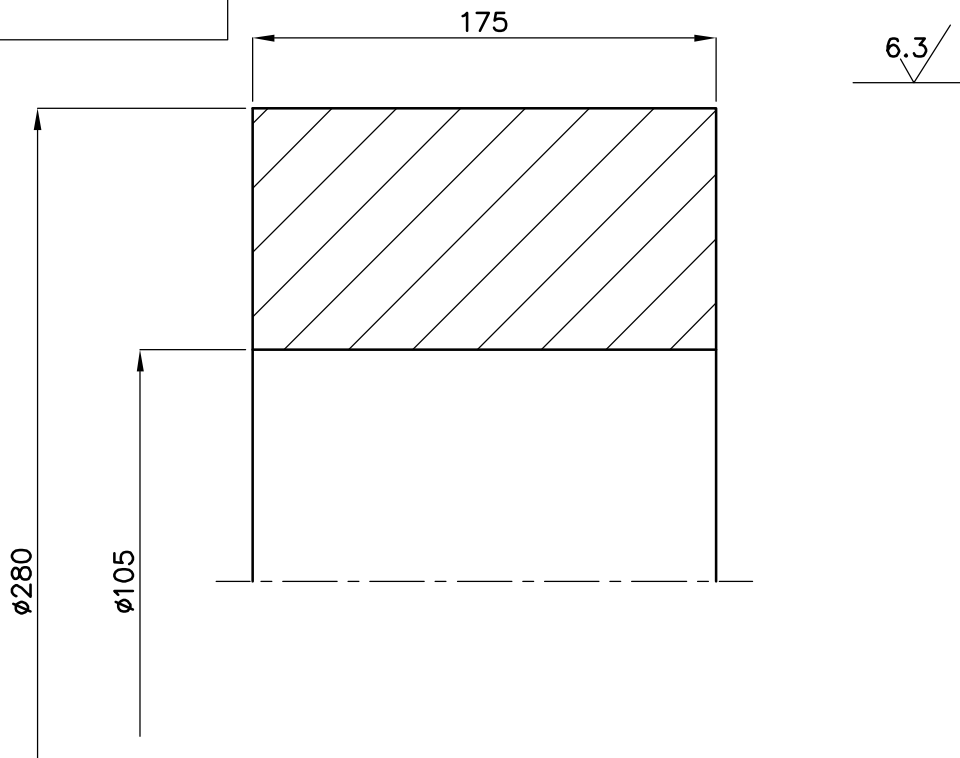
ALL DIMENSIONS ARE IN MILLIMETRES

FOR PRODUCTION

REF. PR:QA:590 FOR PAINTING

REF. PR:QA:500 FOR UNTOL. DIMNS.


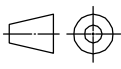
REF. APPLICABLE GMS FOR MATCODE&SPEC.



01).DELIVERY NOTE: –

ACCORDING TO THE ORDER INSTRUCTION TFN NO:359 DELIVERY CONDITIONS

01	FORGING	920374860000	72.700
		P460 NH	1
ITEM NO.	DESCRIPTION	MATL. CODE	UNIT WT.
		MATL. SPECN.	QTY

		BHARAT HEAVY ELECTRICALS LTD.,		DRN	NAME	SIGN	DATE	NO.OF VAR
		UNIT: BOILER AUXILIARIES PLANT,		CHD	P.SHAKI.O/L			
		RANIPET – 632 406.		APPD	MAHESH			
DEPT	GRADE OF		SCALE	WEIGHT (KG).	REF. TO ASSY./OLD DRG.		ITEM NO.	NO. OF ITEMS
FANS	UNTOL.DIM		N.T.S.	72.700	V7009327			
CODE	PR: QA: 500							
864								
TITLE				CARD CODE	DRAWING NO.			REV
FORGED HUB				U 01	4-55-215-02474			

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REV	DATE	ALTERED
		CHECKED

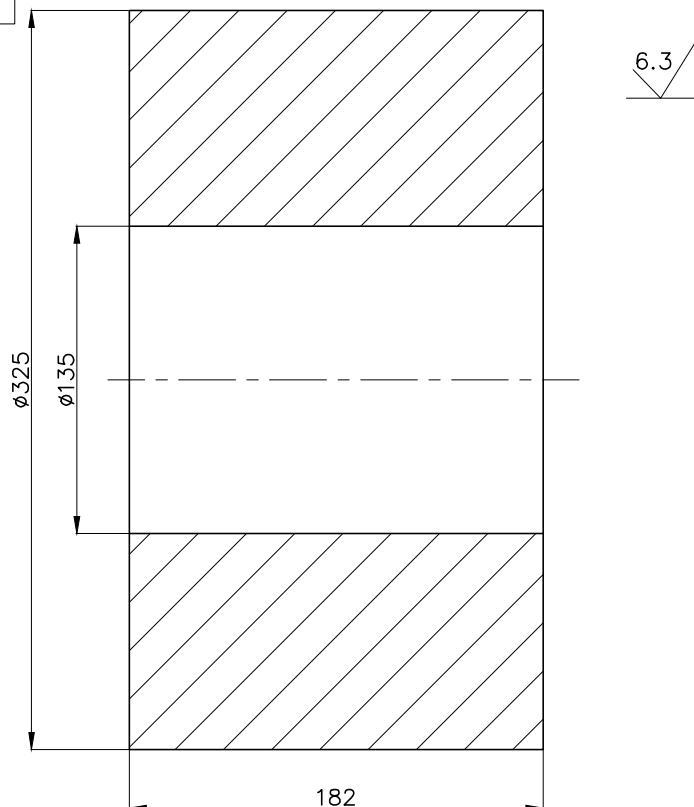
ALL DIMENSIONS ARE IN MILLIMETRES

FOR PRODUCTION

REF. PR:QA:590 FOR PAINTING

REF. PR:QA:500 FOR UNTOL. DIMNS.

REF. APPLICABLE GMS FOR MATCODE&SPEC.



NOTES:

01. ACCORDING TO THE ORDER INSTRUCTION AM 004 " DELIVERY CONDITIONS FOR ROLLED AND FORGED STEEL COMPONENTS OF WSTE 500-NH/P500NH" WITH ACCEPTANCE TEST CERTIFICATE EN 10204-3.1B AND ULTRASONIC TEST WITH OVER SIZE FOR MACHINING ALL ROUND.
02. THIS ITEM IS TO BE FURTHER MACHINED IN IMPELLER ASSY.

01	HUB FORGING			P		98.1
			P500 NH			1
ITEM NO.	DESCRIPTION	STD	MATL. CODE	A	UNIT	UNIT WT.
			MATL. SPECN.	C	DI	QTY



BHARAT HEAVY ELECTRICALS LTD.,
UNIT: BOILER AUXILIARIES PLANT,
RANIPET - 632 406.

DRN	NAME S.SRINATH	SIGN Sd/-	DATE 4.5.15	NO.OF VAR
CHD	A.V.N	Sd/-	4.5.15	
APPD	A.V.N	Sd/-	4.5.15	

DEPT FANS	GRADE OF UNTOL.DIM PR: QA: 500		SCALE N.T.S.	WEIGHT (KG). 98.1	REF. TO ASSY./OLD DRG. V7015821	ITEM NO.	NO. OF ITEMS
CODE 864							
TITLE WELD IN HUB (RAW PART)	CARD CODE U 01	DRAWING NO. 4-55-216-02954	REV				

Size A4

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REV	DATE	ALTERED
		CHECKED

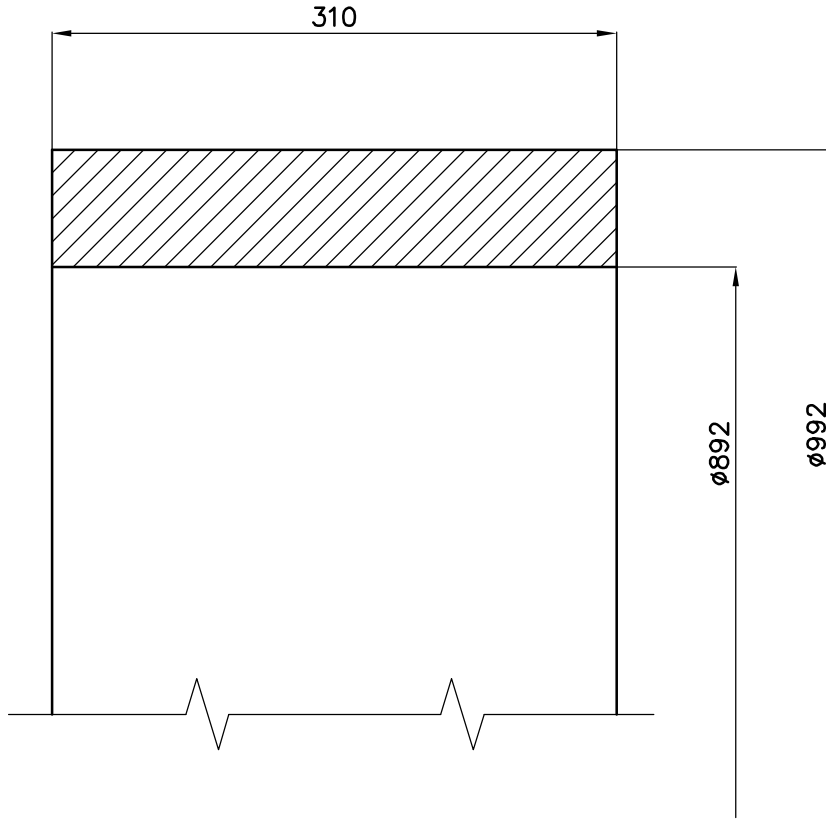
ALL DIMENSIONS ARE IN MILLIMETRES

FOR PRODUCTION


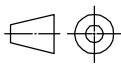
REF. PR:QA:590 FOR PAINTING

REF. PR:QA:500 FOR UNTOL. DIMNS.

REF. APPLICABLE GMS FOR MATCODE&SPEC.



01	FORGING	920374851300		365.900
		P355NH		1
ITEM NO.	DESCRIPTION	MATL. CODE	A	UNIT WT.
		MATL. SPECN.	C	QTY

		BHARAT HEAVY ELECTRICALS LTD., UNIT: BOILER AUXILIARIES PLANT, RANIPET - 632 406.		DRN	NAME DHANA	SIGN -SD/-	DATE 15.05.15	NO. OF VAR
				CHD	MAHESH	-SD/-	15.05.15	
				APPD	A.V.N	-SD/-	15.05.15	
DEPT FANS	GRADE OF UNTOL. DIM		SCALE N.T.S.	WEIGHT (KG). 365.900	REF. TO ASSY./OLD DRG. V7013253		ITEM NO.	NO. OF ITEMS
CODE 864	PR: QA: 500				DRAWING NO. 4-55-227-02962		REV	
TITLE SUPPORT RING (FORGING)				CARD CODE U 01				

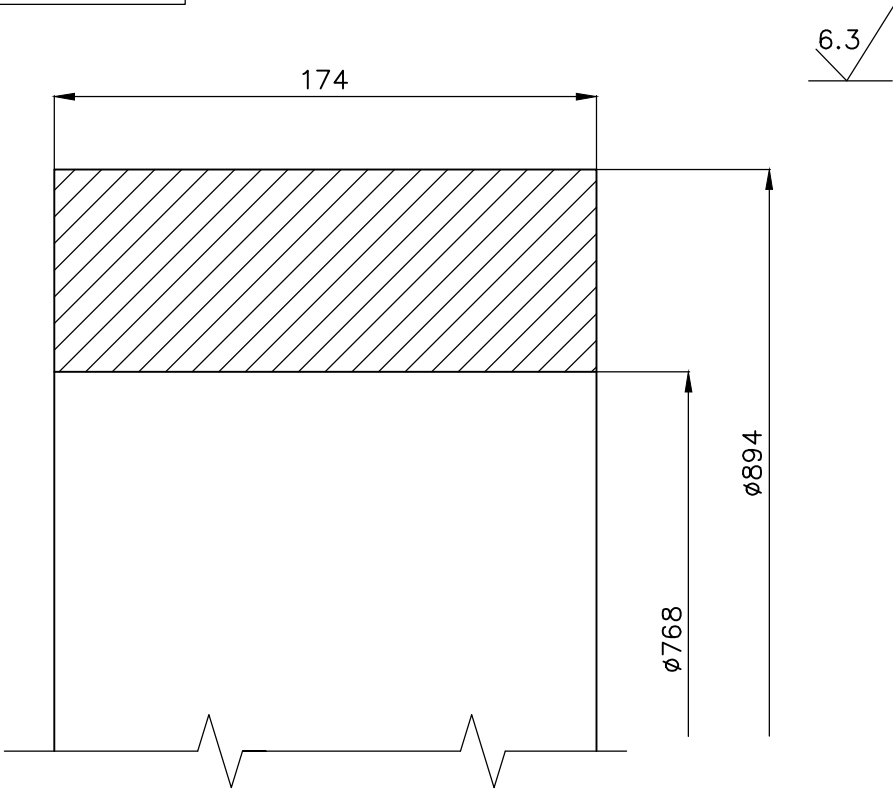
Size A4

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REV	DATE	ALTERED
		CHECKED

ALL DIMENSIONS ARE IN MILLIMETRES


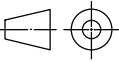
FOR PRODUCTION
REF. PR:QA:590 FOR PAINTING
REF. PR:QA:500 FOR UNTOL. DIMNS.
REF. APPLICABLE GMS FOR MATCODE&SPEC.



NOTES:

- 01. THIS ITEM IS TO BE FURTHER MACHINED IN IMPELLER HUB ASSY.
- 02. WEIGHT OF LOAD RING (ROUGH FORGING)=224.650 Kgs.
- 03. REFER TDC RTF: 307 FOR DELIVERY CONDITIONS.

01	FORGING	920374903645		167.000
		P 460 NH		1
ITEM NO.	DESCRIPTION	MATL. CODE	A	UNIT WT.
		MATL. SPECN.	C	QTY

		BHARAT HEAVY ELECTRICALS LTD., UNIT: BOILER AUXILIARIES PLANT, RANIPET - 632 406.		DRN	NAME A.M.REDDY	SIGN sd/-	DATE 01.07.24	NO.OF VAR
			CHD	S.L.N	sd/-	03.07.24		
			APPD	C.MANOJ	sd/-	03.07.24		
DEPT FANS	GRADE OF UNTOL.DIM		SCALE N.T.S.	WEIGHT (KG). 167.000	REF. TO ASSY./OLD DRG.		ITEM NO.	NO. OF ITEMS
CODE 864	PR: QA: 500							
TITLE LOAD RING				CARD CODE U 01	DRAWING NO. 4-55-335-03645			REV

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REV	DATE	ALTERED C.MANOJ
01	24.02.22	CHECKED K.K.N
MATL SPECN ALTD AS SHOWN IN BOM.		

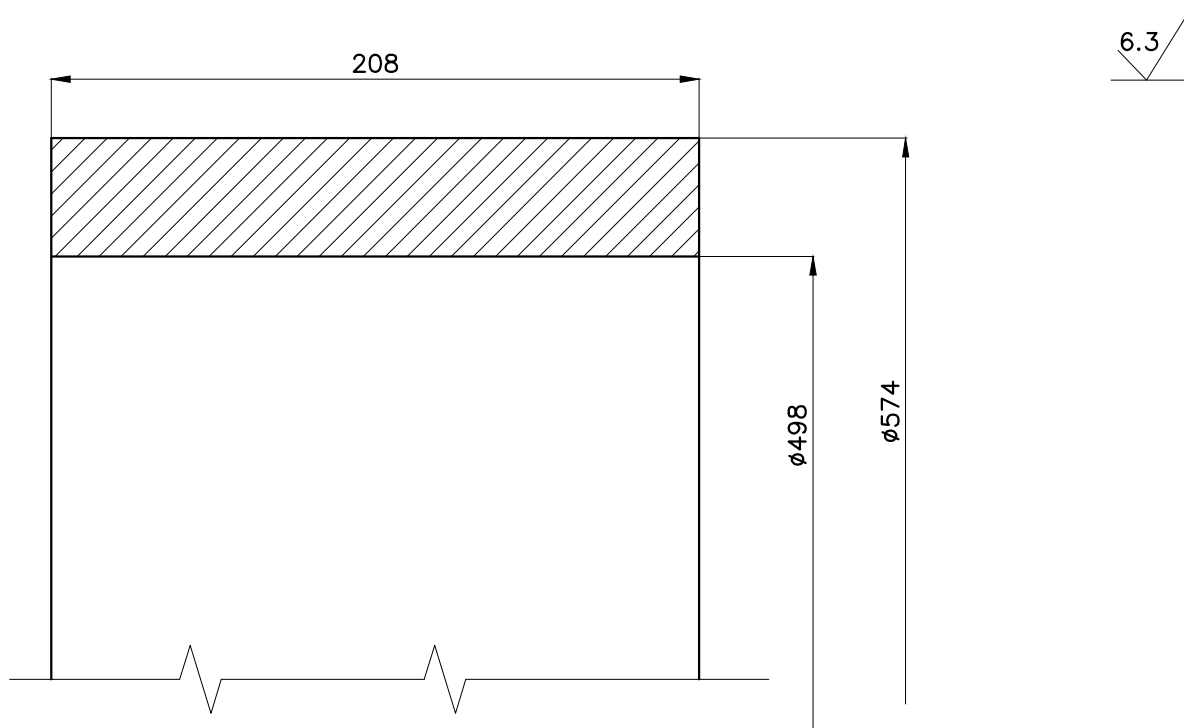
ALL DIMENSIONS ARE IN MILLIMETRES

FOR PRODUCTION

REF. PR:QA:590 FOR PAINTING

REF. PR:QA:500 FOR UNTOL. DIMNS.

REF. APPLICABLE GMS FOR MATCODE&SPEC.




NOTES:

01).DELIVERY

ACCORDING TO THE ORDER INSTRUCTION TFN 359 DELIVERY CONDITIONS FOR ROLLED AND FORGED STEEL COMPONENTS OF WSTE 500–NH/P500NH” WITH ACCEPTANCE TEST CERTIFICATE EN 10204–3.1B AND ULTRASONIC TEST WITH OVER SIZE FOR MACHINING ALL ROUND.

02).THIS ITEM IS TO BE FURTHER MACHINED IN IMPELLER ASSY.

01	FORGING				104.500
					1
ITEM NO.	DESCRIPTION	STD	MATL. CODE	A UNIT	UNIT WT.
			MATL. SPECN.	C DI	QTY

		BHARAT HEAVY ELECTRICALS LTD.,		DRN	NAME	SIGN	DATE	NO.OF VAR
		UNIT: BOILER AUXILIARIES PLANT,		CHD	RATNABABU		17.04.19	
		RANIPET – 632 406.		APPD	RATNABABU		19.04.19	
DEPT	FANS	GRADE OF UNTOL.DIM	SCALE	WEIGHT (KG).	REF. TO ASSY./OLD DRG.		ITEM NO.	NO. OF ITEMS
CODE	864	PR: QA: 500	N.T.S.	104.5000	V7022767/V7022844			
TITLE				CARD CODE	DRAWING NO.			REV
SUPPORT RING (FORGING)				U 01	4-55-216-03327			01

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REV	DATE	ALTERED
		CHECKED

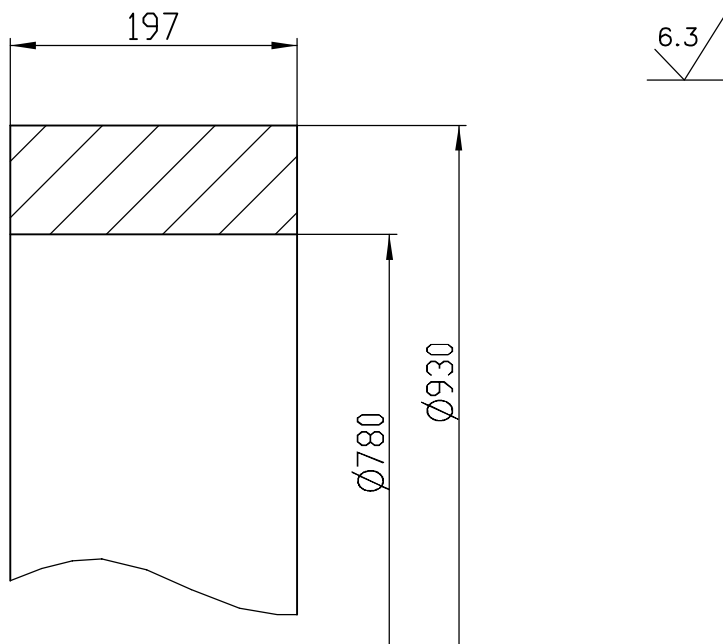
ALL DIMENSIONS ARE IN MILLIMETRES

FOR PRODUCTION

REF. PR:QA:590 FOR PAINTING

REF. PR:QA:500 FOR UNTOL. DIMNS.

REF. APPLICABLE GMS FOR MATCODE&SPEC.




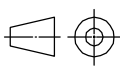
DELIVERY:-

ACCORDING TO THE ORDER INSTRUCTION AM 004 "TECHNICAL CONDITIONS OF SUPPLY FOR IMPELLER COMPONENTS OF FORGED STEEL" WITH ACCEPTANCE TEST CERTIFICATE EN 10204-3.1 AND ULTRASONIC TEST

NOTES:

01. REFER TDC RTF:307/05 FOR DELIVERY CONDITIONS.
02. WEIGHT OF PROOF MACHINED PART IS 421 Kgs.

	01	LOAD RING		4-55-216-03326				311.500		
								1		
VAR NO	ITEM NO	DESCRIPTION	CAT	DRAWING No.	NO VAR NO	MATL CODE	A UNIT	UNIT WT	GS	ZONE
						MATL SPECN	DI	QTY		

<div></div>				BHARAT HEAVY ELECTRICALS LTD., UNIT: BOILER AUXILIARIES PLANT, RANIPET — 632 406.		DRN	NAME A.M.REDDY	SIGN —SD/—	DATE 18.10.19	NO.OF VAR
						CHD	A.M.REDDY	—SD/—	18.10.19	
						APPD	A.V.N	—SD/—	18.10.19	
DEPT FANS	GRADE OF UNTOL.DIM		SCALE	WEIGHT (KG).	REF. TO ASSY./OLD DRG.				ITEM NO.	NO. OF ITEMS
CODE 864	PR: QA: 500		N.T.S.	311.500	V7022843					
TITLE				CARD CODE	DRAWING NO.				REV	
LOAD RING (FORGING)				U 01	4-55-216-03413					

Size A4

TECHNICAL CONFIRMATION / DEVIATION REPORT

Sl.No	Description	BHEL's requirement	Supplier's comments
01	Sizes	Item wise size quoted in line with our requirement to be confirmed. Any deviation item wise to be mentioned.	
02	Specification	Quoted specification in line with our requirement to be confirmed. In case of offer with equivalent material grade, then copy of the entire specification of that equivalent grade shall be sent along with the techno-commercial bid without fail.	
03	TDC	Clause wise confirmation in line with our TDC to be confirmed. In case of any deviation, clause wise to be mentioned in the below SDDR.	
04	Specification deviation disposition report (SDDR)	Below SDDR to be filled & submit without fail. <u>(Even if no deviation is taken, NIL report to be submitted).</u>	

SPECIFICATION DEVIATION DISPOSITION REPORT			
Specn		Item	
Enq.No & Date			
Vendor Name			
TDC			
No	Clause	Details Of Deviation With Reason	Disposition By BHEL
Signature Of Vendor			Reviewed By
<p style="text-align: center;">“ AGREED DEVIATION “ if any to be incorporated in the PO in the event of order.</p>		APPROVED BY	

DATE:

SIGNATURE WITH SEAL

*(To be submitted In the company letter head by supplier)

Declaration of Local Content by Local supplier

Subject: Public Procurement (Preference to Make In India)

References:

Preference to Make in India including counter offering will be as per the Public Procurement (Preference to Make in India), Order 2017 available in the following links <https://dipp.gov.in/public-procurements>

http://dipp.nic.in/sites/default/files/publicProcurement_MakeinIndia_15June2017.pdf

http://dipp.nic.in/sites/default/files/Revised-PPP-MII-Order-2017_28052018.pdf

https://dipp.gov.in/sites/default/files/PPP-MII%20Order%20dt%2029th%20May%2019_0.pdf

<https://dipp.gov.in/sites/default/files/PPP%20MII%20Order%20dated%204th%20June%202020.pdf>

We hereby declare with reference to above subject and references that

M/s ----- (Tick whichever is applicable as below)

"Class-I local supplier" meeting the requirement of minimum local content equal to 50% (fifty percent) or more defined in the above government notification for the goods and services

(or)

"Class-II local Supplier" meeting the requirement of local content 20% to less than 50% (fifty percent) defined in the above government notification for the goods and services

(or)

Non Local supplier (If not belonging to Class-I & Class-II)

Please mention the details against the following:

Enquiry no:----- dated. -----

Type of Supplier (Class-I/Class-II)

Product:-----

Project:.....

Details of location at which local value addition will be made is as follows: _____

We also understand that the false declarations will be in breach of the code of Integrity under rule 175(1)(i)(h) of the General financial rules for which a bidder or its successors can be debarred for up to two years as per Rule 151(iii) of the General Financial Rules along with such other actions as may be permissible under law.

Authorized Signature M/s-----

(Signature and seal)

Place:.....

Date:.....

Clause on IP in the tender

Integrity Pact (IP)

- (a) IP is a tool to ensure that activities and transactions between the Company and its Bidders/ Contractors are handled in a fair, transparent and corruption free manner. Following Independent External Monitors (IEMs) on the present panel have been appointed by BHEL with the approval of CVC to oversee implementation of IP in BHEL.

SI	IEM	Email
1.	Shri Otem Dai, IAS (Retd.)	iem1@bhel.in
2.	Shri Bishwamitra Pandey, IRAS (Retd.)	iem2@bhel.in
3.	Shri Mukesh Mittal, IRS (Retd.)	iem3@bhel.in

- (b) The IP as enclosed with the tender is to be submitted (duly signed by authorized signatory) along with techno-commercial bid (Part-I, in case of two/ three part bid). Only those bidders who have entered into such an IP with BHEL would be competent to participate in the bidding. In other words, entering into this Pact would be a preliminary qualification.
- (c) Please refer Section-8 of IP for Role and Responsibilities of IEMs. In case of any complaint arising out of the tendering process, the matter may be referred to any of the above IEM(s). All correspondence with the IEMs shall be done through email only.

Note:

No routine correspondence shall be addressed to the IEM (phone/ post/ email) regarding the clarifications, time extensions or any other administrative queries, etc on the tender issued. All such clarification/ issues shall be addressed directly to the tender issuing (procurement) department's officials whose contact details are provided below:

Details of contact person(s):

(1)
Name: _____
Deptt: _____
Address: _____
Phone: (Landline/ Mobile) _____
Email: _____
Fax: _____

(2)
Name: _____
Deptt: _____
Address: _____
Phone: (Landline/ Mobile) _____
Email: _____
Fax: _____

INTEGRITY PACT**Between**

Bharat Heavy Electricals Ltd. (BHEL), a company registered under the Companies Act 1956 and having its registered office at "BHEL House", Sri Fort, New Delhi - 110049 (India) hereinafter referred to as "The Principal", which expression unless repugnant to the context or meaning hereof shall include its successors or assigns of the ONE PART

and

_____, (description of the party along with address), hereinafter referred to as "The Bidder/ Contractor" which expression unless repugnant to the context or meaning hereof shall include its successors or assigns of the OTHER PART

Preamble

The Principal intends to award, under laid-down organizational procedures, contract/s for _____

_____ (hereinafter referred to as "Contract"). The Principal values full compliance with all relevant laws of the land, rules and regulations, and the principles of economic use of resources, and of fairness and transparency in its relations with its Bidder(s)/ Contractor(s).

In order to achieve these goals, the Principal will appoint panel of Independent External Monitor(s) (IEMs), who will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.

Section 1- Commitments of the Principal

- 1.1 The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles: -
 - 1.1.1 No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.
 - 1.1.2 The Principal will, during the tender process treat all Bidder(s) with equity and reason. The Principal will in particular, before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential/ additional information through which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.
 - 1.1.3 The Principal will exclude from the process all known prejudiced persons.
- 1.2 If the Principal obtains information on the conduct of any of its employees which is a penal offence under the Indian Penal Code 1860 and Prevention of Corruption Act 1988 or any other statutory penal enactment, or if there be a substantive suspicion in this regard, the Principal will inform its Vigilance Office and in addition can initiate disciplinary actions.

Section 2 - Commitments of the Bidder(s)/ Contractor(s)

- 2.1 The Bidder(s)/ Contractor(s) commit himself to take all measures necessary to prevent corruption. The Bidder(s)/ Contractor(s) commits himself to observe the following principles during participation in the tender process and during the contract execution.

- 2.1.1 The Bidder(s)/ Contractor(s) will not, directly or through any other person or firm, offer, promise or give to the Principal or to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any material, immaterial or any other benefit which he/ she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.
- 2.1.2 The Bidder(s)/ Contractor(s) will not enter with other Bidder(s) into any illegal or undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.
- 2.1.3 The Bidder(s)/ Contractor(s) will not commit any penal offence under the relevant Indian Penal Code (IPC) and Prevention of Corruption Act; further the Bidder(s)/ Contractor(s) will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.
- 2.1.4 Foreign Bidder(s)/ Contractor(s) shall disclose the name and address of agents and representatives in India and Indian Bidder(s)/ Contractor(s) to disclose their foreign principals or associates. The Bidder(s)/ Contractor(s) will, when presenting his bid, disclose any and all payments he has made, and is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.
- 2.2 The Bidder(s)/ Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.
- 2.3 The Bidder(s)/ Contractor(s) shall not approach the Courts while representing the matters to IEMs and shall await their decision in the matter.

Section 3 - Disqualification from tender process and exclusion from future contracts

If the Bidder(s)/ Contractor(s), before award or during execution has committed a transgression through a violation of Section 2 above, or acts in any other manner such as to put his reliability or credibility in question, the Principal is entitled to disqualify the Bidder(s)/ Contractor(s) from the tender process, terminate the contract, if already awarded, exclude from future business dealings and/ or take action as per the separate "Guidelines on Banning of Business dealings with Suppliers/ Contractors", framed by the Principal.

Section 4 - Compensation for Damages

- 4.1 If the Principal has disqualified the Bidder (s) from the tender process before award / order acceptance according to Section 3, the Principal is entitled to demand and recover the damages equivalent to Earnest Money Deposit/ Bid Security.
- 4.2 If the Principal is entitled to terminate the Contract according to Section 3, or terminates the Contract in application of Section 3 above, the Bidder(s)/ Contractor (s) transgression through a violation of Section 2 above shall be construed breach of contract and the Principal shall be entitled to demand and recover from the Contractor an amount equal to 5% of the contract value or the amount equivalent to Security Deposit/ Performance Bank Guarantee, whichever is higher, as damages, in addition to and without prejudice to its right to demand and recover compensation for any other loss or damages specified elsewhere in the contract.

Section 5 - Previous Transgression

- 5.1 The Bidder declares that no previous transgressions occurred in the last 3 (three) years with any other company in any country conforming to the anti-corruption approach or with any other Public Sector Enterprise in India that could justify his exclusion from the tender process.
- 5.2 If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason or action can be taken as per the separate "Guidelines on Banning of Business dealings with Suppliers/ Contractors", framed by the Principal.

Section 6 - Equal treatment of all Bidder (s)/ Contractor (s) / Sub-contractor (s)

- 6.1 The Principal will enter into Integrity Pacts with identical conditions as this Integrity Pact with all Bidders and Contractors.
- 6.2 In case of Sub-contracting, the Principal Contractor shall take the responsibility of the adoption of Integrity Pact by the Sub-contractor(s) and ensure that all Sub-contractors also sign the Integrity Pact.
- 6.3 The Principal will disqualify from the tender process all Bidders who do not sign this Integrity Pact or violate its provisions.

Section 7 - Criminal Charges against violating Bidders/ Contractors/ Subcontractors

If the Principal obtains knowledge of conduct of a Bidder, Contractor or Subcontractor, or of an employee or a representative or an associate of a Bidder, Contractor or Subcontractor which constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the Vigilance Office.

Section 8 -Independent External Monitor(s)

- 8.1 The Principal appoints competent and credible panel of Independent External Monitor (s) (IEMs) for this Integrity Pact. The task of the IEMs is to review independently and objectively, whether and to what extent the parties comply with the obligations under this Integrity Pact.
- 8.2 The IEMs are not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the CMD, BHEL.
- 8.3 The IEMs shall be provided access to all documents/ records pertaining to the Contract, for which a complaint or issue is raised before them as and when warranted. However, the documents/ records/ information having National Security implications and those documents which have been classified as Secret/ Top Secret are not to be disclosed.
- 8.4 The Principal will provide to the IEMs sufficient information about all meetings among the parties related to the Contract provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the IEMs the option to participate in such meetings.

- 8.5 The advisory role of IEMs is envisaged as that of a friend, philosopher and guide. The advice of IEMs would not be legally binding and it is restricted to resolving issues raised by a Bidder regarding any aspect of the tender which allegedly restricts competition or bias towards some Bidders. At the same time, it must be understood that IEMs are not consultants to the Management. Their role is independent in nature and the advice once tendered would not be subject to review at the request of the organization.
- 8.6 For ensuring the desired transparency and objectivity in dealing with the complaints arising out of any tendering process or during execution of Contract, the matter should be examined by the full panel of IEMs jointly, who would look into the records, conduct an investigation, and submit their joint recommendations to the Management.
- 8.7 The IEMs would examine all complaints received by them and give their recommendations/ views to the CMD, BHEL at the earliest. They may also send their report directly to the CVO, in case of suspicion of serious irregularities requiring legal/ administrative action. Only in case of very serious issue having a specific, verifiable Vigilance angle, the matter should be reported directly to the Commission. IEMs will tender their advice on the complaints within 30 days.
- 8.8 The CMD, BHEL shall decide the compensation to be paid to the IEMs and its terms and conditions.
- 8.9 IEMs should examine the process integrity, they are not expected to concern themselves with fixing of responsibility of officers. Complaints alleging mala fide on the part of any officer of the Principal should be looked into by the CVO of the Principal.
- 8.10 If the IEMs have reported to the CMD, BHEL, a substantiated suspicion of an offence under relevant Indian Penal Code / Prevention of Corruption Act, and the CMD, BHEL has not, within reasonable time, taken visible action to proceed against such offence or reported it to the Vigilance Office, the IEMs may also transmit this information directly to the Central Vigilance Commissioner, Government of India.
- 8.11 After award of work, the IEMs shall look into any issue relating to execution of Contract, if specifically raised before them. As an illustrative example, if a Contractor who has been awarded the Contract, during the execution of Contract, raises issue of delayed payment etc. before the IEMs, the same shall be examined by the panel of IEMs. Issues like warranty/ guarantee etc. shall be outside the purview of IEMs.
- 8.12 However, the IEMs may suggest systemic improvements to the management of the Principal, if considered necessary, to bring about transparency, equity and fairness in the system of procurement.
- 8.13 The word 'Monitor' would include both singular and plural.

Section 9 - Pact Duration

- 9.1 This Integrity Pact shall be operative from the date this Integrity Pact is signed by both the parties till the final completion of contract for successful Bidder, and for all other Bidders 6 months after the Contract has been awarded. Any violation of the same would entail disqualification of the bidders and exclusion from future business dealings.
- 9.2 If any claim is made/ lodged during currency of this Integrity Pact, the same shall be binding and continue to be valid despite the lapse of this Pact as specified above, unless it is discharged/ determined by the CMD, BHEL.

Section 10 - Other Provisions

- 10.1 This Integrity Pact is subject to Indian Laws and exclusive jurisdiction shall be of the competent Courts as indicated in the Tender or Contract, as the case may be.
- 10.2 Changes and supplements as well as termination notices need to be made in writing.
- 10.3 If the Bidder(s)/ Contractor(s) is a partnership or a consortium or a joint venture, this Integrity Pact shall be signed by all partners of the partnership or joint venture or all consortium members.
- 10.4 Should one or several provisions of this Integrity Pact turn out to be invalid, the remainder of this Integrity Pact remains valid. In this case, the parties will strive to come to an agreement to their original intentions.
- 10.5 Only those bidders/ contractors who have entered into this Integrity Pact with the Principal would be competent to participate in the bidding. In other words, entering into this Integrity Pact would be a preliminary qualification.
- 10.6 In the event of any dispute between the Principal and Bidder(s)/ Contractor(s) relating to the Contract, in case, both the parties are agreeable, they may try to settle dispute through Mediation before the panel of IEMs in a time bound manner. In case, the dispute remains unresolved even after mediation by the panel of IEMs, either party may take further action as the terms & conditions of the Contract. The fees/ expenses on dispute resolution through mediation shall be shared by both the parties. Further, the mediation proceedings shall be confidential in nature and the parties shall keep confidential all matters relating to the mediation proceedings including any settlement agreement arrived at between the parties as outcome of mediation. Any views expressed, suggestions, admissions or proposals etc. made by either party in the course of mediation shall not be relied upon or introduced as evidence in any further arbitral or judicial proceedings, whether or not such proceedings relate to the dispute that is the subject of mediation proceedings. Neither of the parties shall present IEMs as witness in any Alternative Dispute Resolution or judicial proceedings in respect of the dispute that was subject of mediation.

For & On behalf of the Principal
(Office Seal)

Place _____

Date _____

Witness: _____
(Name & Address) _____

For & On behalf of the Bidder/ Contractor
(Office Seal)

Witness: _____
(Name & Address) _____
