

## **SECTION-F   PART-1**

### **TECHNICAL SPECIFICATIONS OF ALL THE ITEMS**

**Item Code:** - **710102172**

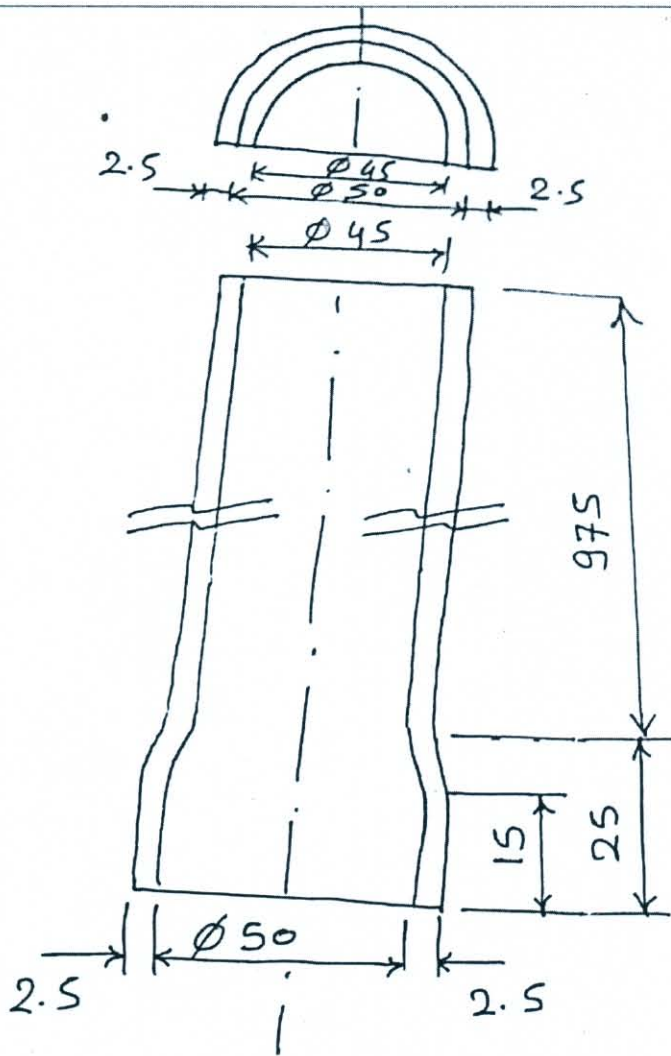
**Item Description:-** SS 310 S Shield type: A; L=1 MTR, Style – A, (As per Attached Drawing)

#### **Terms and Conditions**

1. MOC of material is as follows:
  - a. SS Shield :SS310S
2. Party shall submit the complete chemical analysis as per material specification in NABL approved laboratory and all test certificate shall be submitted along with supply.
3. GIPCL reserve the right to get the material tested through NABL accredited laboratory at random and result of the same shall be remain binding to both.
4. GIPCL reserve the right to inspect the material BY PMI (Positive metal identification) Method at random and result of the same shall be remain binding to both.
5. Party Shall Get Sample approved prior affecting the Bulk Supply.

ITEM CODE: 710102172 : SS 310S SHIELD TYPE :A, L=1M

all dimensions  
are in mm.



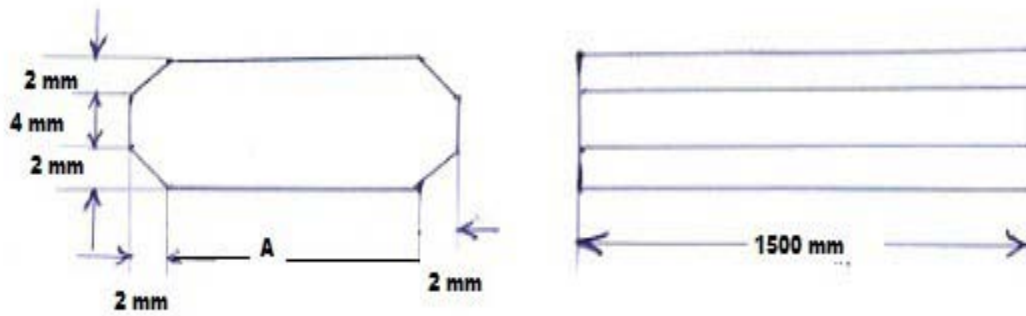
STYLE-A

MOC : SS 310S

# GUJARAT INDUSTRIES POWER COMPANY LIMITED

## TECHNICAL SPECIFICATIONS

1. Fins flat material should be of **IS 2062 Fe 410 Gr -A**.
2. It should be manufactured according to drawing provided, as per GIPCL i.e chamfering at four corners of entire length of fins flat (1500mm)
3. Its straightness should be checked & verified by straightness gauge, as no bending is allowed.
4. Party must submit MOC test certificate from Govt. approved metal test laboratory of fins flat.
5. Bidder shall get sample approved prior affecting the bulk supply.
6. Detailed dimensions shall be as per below drawing and table.



Sl.No	SAP ITEM CODE	DESCRIPTION	VALUE OF "A", mm
1	710104147	FINS FLAT-SIZE:19MM WIDTH,1.5 MTR LENGTH, 8MM THICK	15
2	710104149	FINS FLAT-SIZE:20MM WIDTH,1.5 M LEN, 8MM THICK	16
3	710104150	FINS FLAT-SIZE:21MM WIDTH,1.5 M LEN, 8MM THICK	17
4	710104152	FINS FLAT-SIZE:23MM WIDTH,1.5 M LEN, 8MM THICK	19
5	710104154	FINS FLAT-SIZE:25MM WIDTH,1.5 M LEN, 8MM THICK	21
6	710104155	FINS FLAT-SIZE:16MM WIDTH,1.5 M LEN, 8MM THICK	12
7	710104156	FINS FLAT-SIZE:17MM WIDTH,1.5 M LEN, 8MM THICK	13

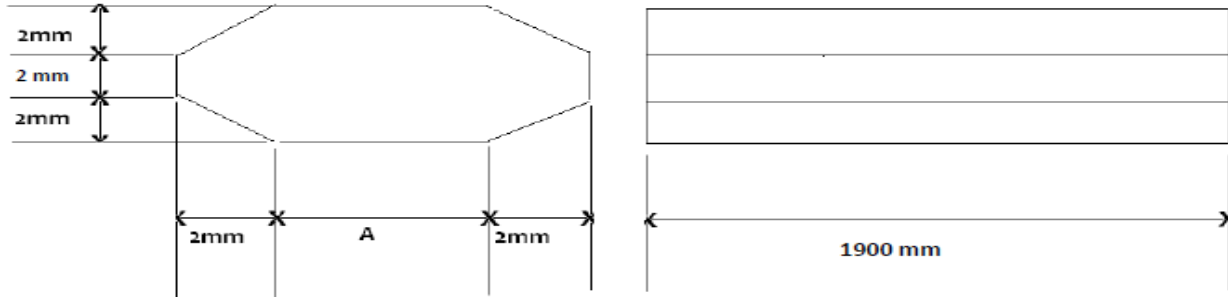
# Gujarat Industries Power Company Ltd.

## TECHNICAL SPECIFICATION

**ITEM CODE:-** 710104158- FINS FLAT-SIZE:53MM WIDTH,L-1900MM,6MM

710104159- FINS FLAT-SIZE:83MM WIDTH,L-1900MM,6MM

**REF. DRAWING NO:-**



MOC:	
Item Code:710104158	A 576 Gr.1065
Item Code:710104159	A 576 Gr.1015

## TECHNICAL & COMMERCIAL TERMS:-

1. MOC of material is as :

Sr. No	SAP ITEM CODE	DESCRIPTION	VALUE OF "A", mm	MOC
1	710104158	FINS FLAT-SIZE:53MM WIDTH,L-1900MM,6MM	49	A 576 GR. 1065
2	710104159	FINS FLAT-SIZE:83MM WIDTH,L-1900MM,6MM	79	A 576 GR. 1015

2. Party shall submit the complete chemical analysis as per material specification in NABL approved laboratory and all test certificate shall be submitted along with supply.
3. GIPCL reserve the right to get the material tested through NABL accredited laboratory at random and result of the same shall be remain binding to both.
4. GIPCL reserve the right to inspect the material BY PMI (Positive metal identification) Method at random and result of the same shall remain binding to both.
5. It should be manufactured according to drawing provided, as per GIPCL i.e. chamfering at four corners of entire length of fins flat (1900mm)
6. Its straightness should be checked & verified by straightness gauge, as no bending is allowed.
7. Party shall get sample approved prior affecting the bulk supply.

**Gujarat Industries Power Company Ltd.**

**TECHNICAL SPECIFICATIONS**

**Item Code:** 710111008 - COMBUSTOR NOZZLE HEAD PART NO. 1  
710111009 - COMBUSTOR NOZZLE BOLT PART NO. 3  
710111010 - COMBUSTOR NOZZLE GUIDE PIPE PART NO. 2

**Ref. Drawing No:** D1910900/0L00277 Rev: 01

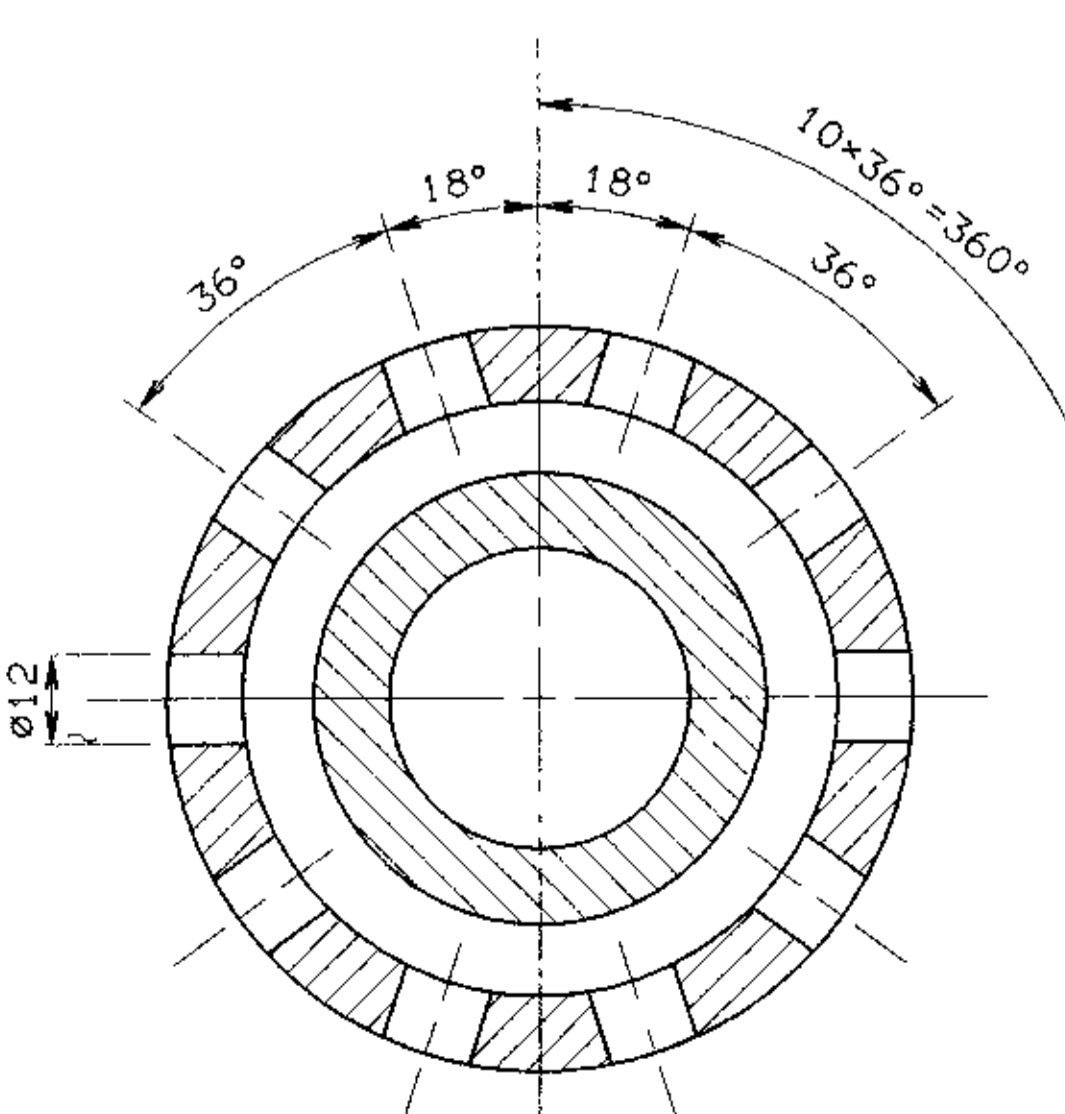
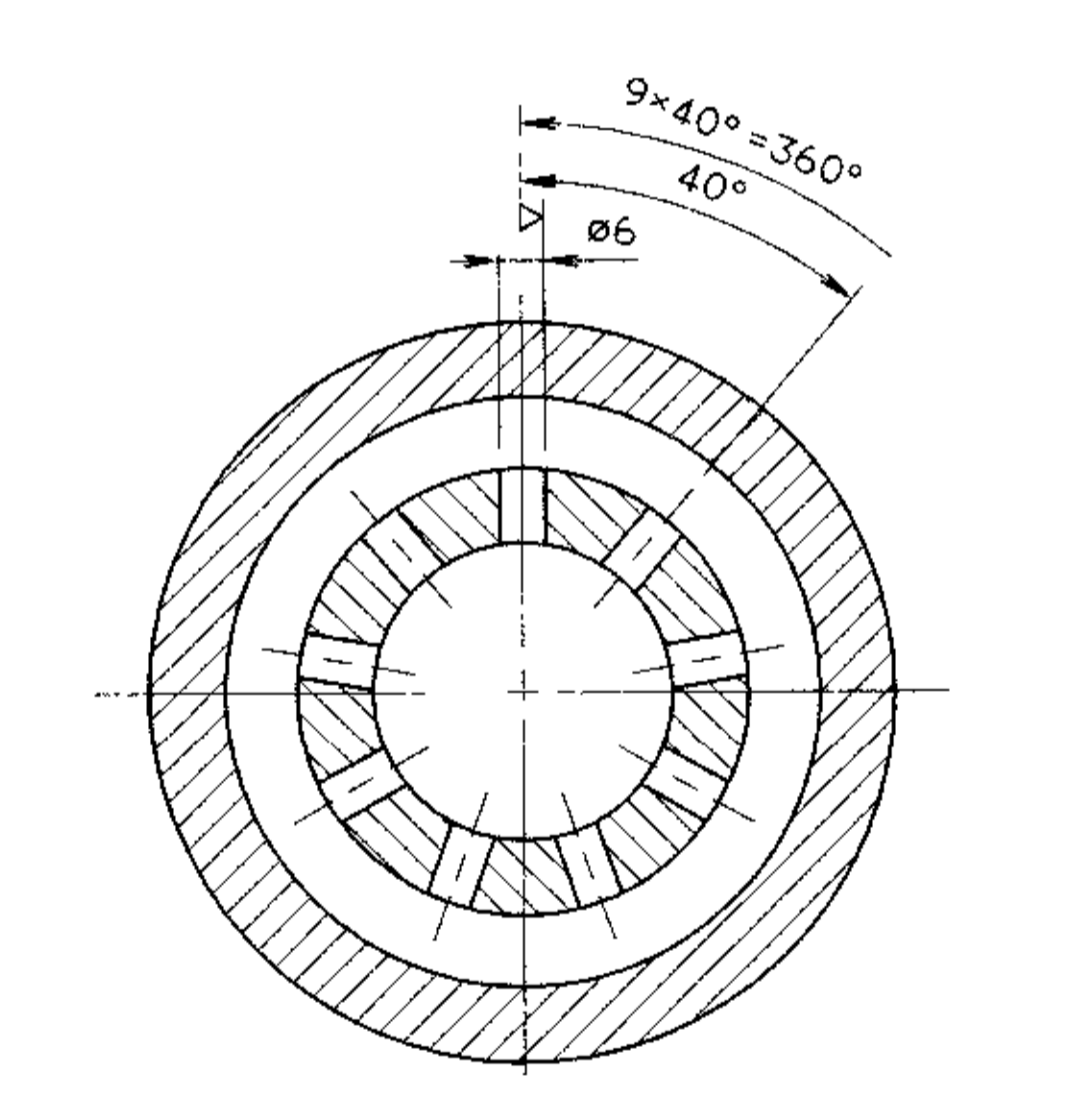
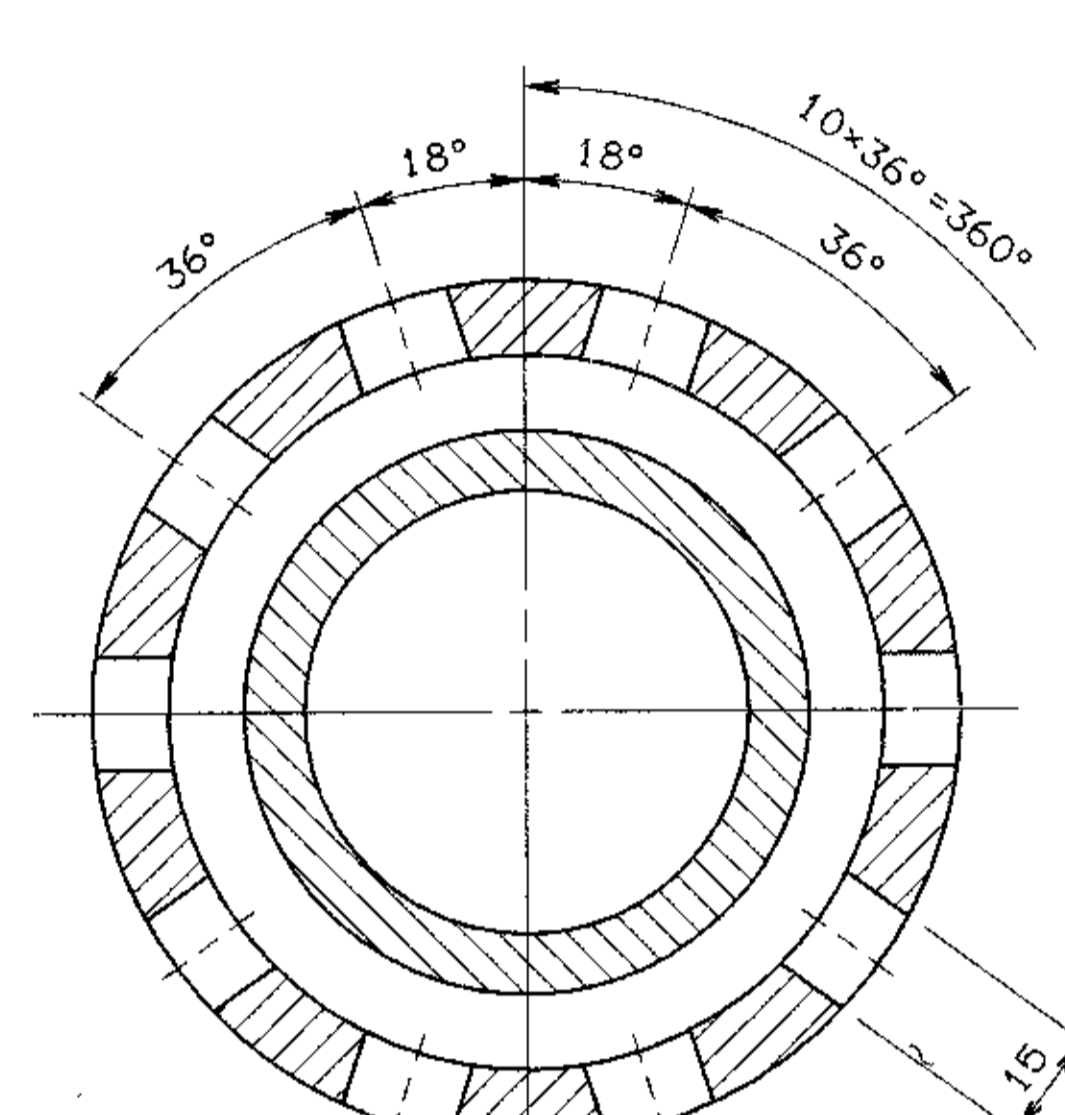
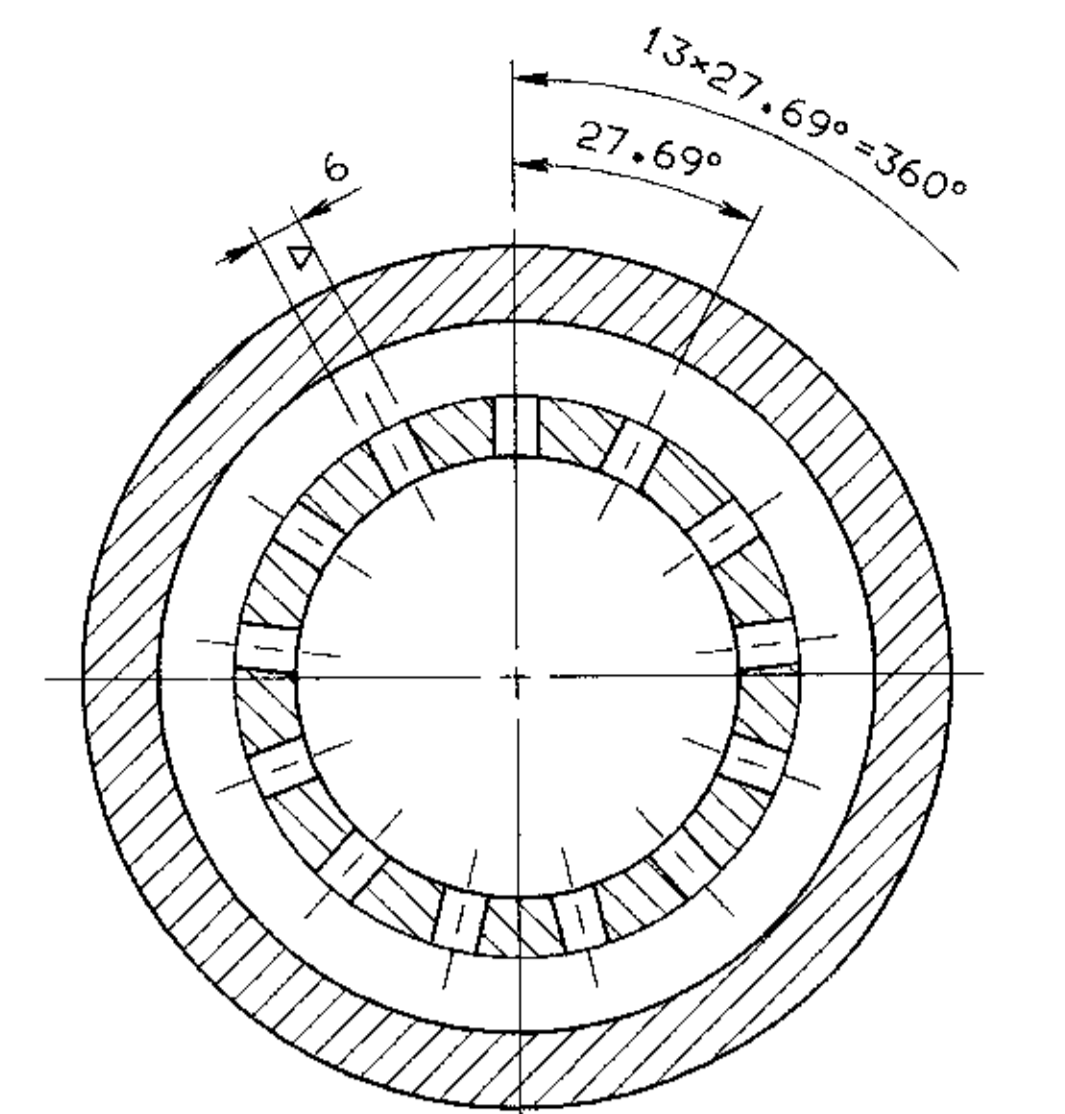
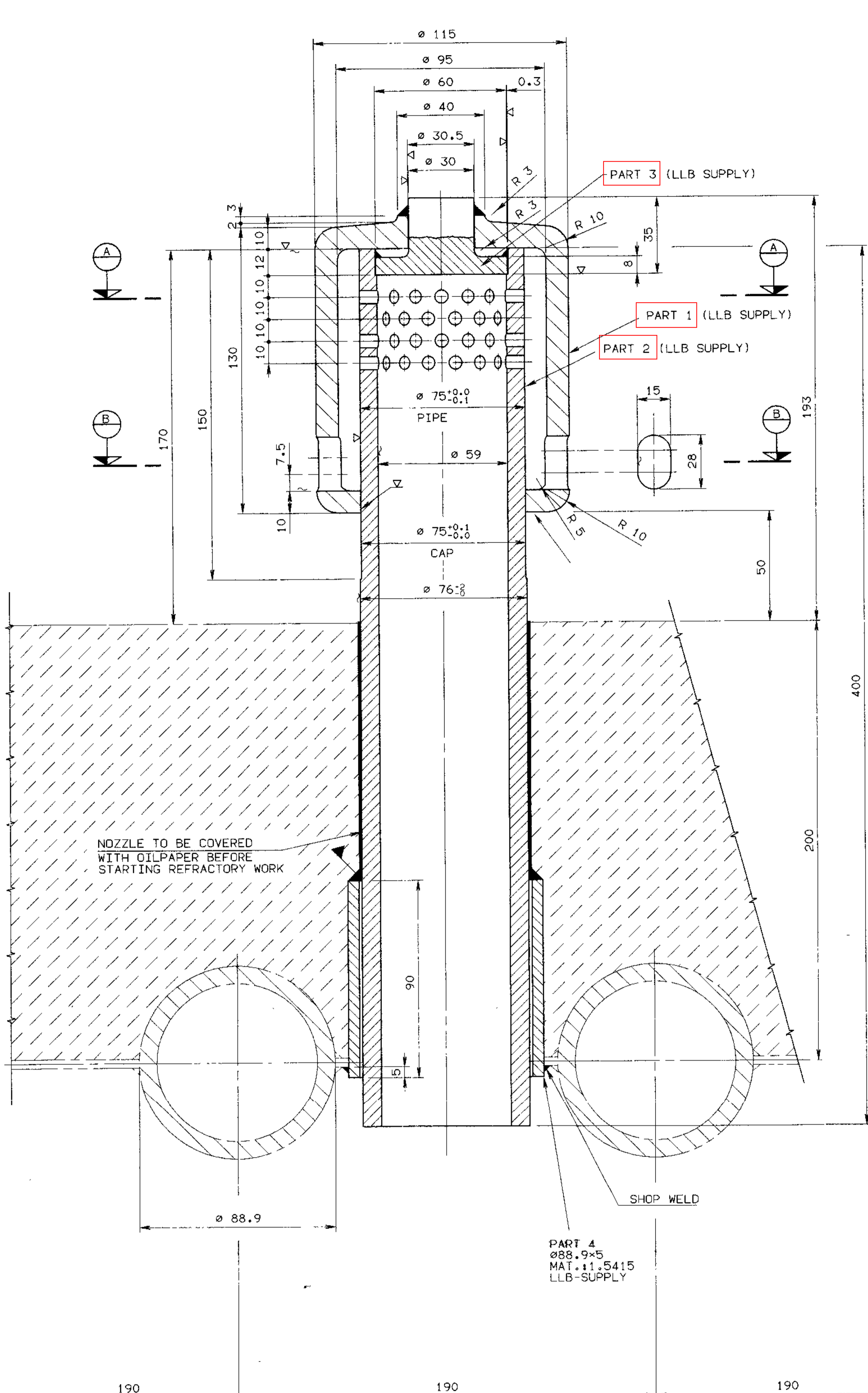
**Terms and Conditions.**

1. MOC of material is as follows:
  - a. Combustor nozzle head : DIN standard 1.4848 or equivalent
  - b. Combustor nozzle bolt : DIN standard 1.4848 or equivalent
  - c. Combustor nozzle guide pipe: DIN standard 1.4828 or equivalent.
2. Party shall submit the complete chemical analysis as per material specification in NABL approved laboratory and all test certificate shall be submitted along with supply.
3. GIPCL reserve the right to get the material tested through NABL accredited laboratory at random and result of the same shall be remain binding to both.
4. GIPCL reserve the right to inspect the material BY PMI (Positive metal identification) Method at random and result of the same shall be remain binding to both.
5. **Vendor identification mark** shall be clearly visible on casting of nozzle part itself.
6. PMI of 01 Nos. of each part of nozzle assembly shall be carried out from each heat lot for material chemical composition identification and report of same shall be submitted to GIPCL.
7. **Guarantee period:** Guarantee period shall be 12 month from the date of installation or 18 months from the date of receipt of material at site.
8. Quality Assurance plan (QAP) attached herewith for above items as Annexure-B
9. Above referred drawings are attached herewith.
10. Party Shall Get Sample approved prior affecting the Bulk Supply.

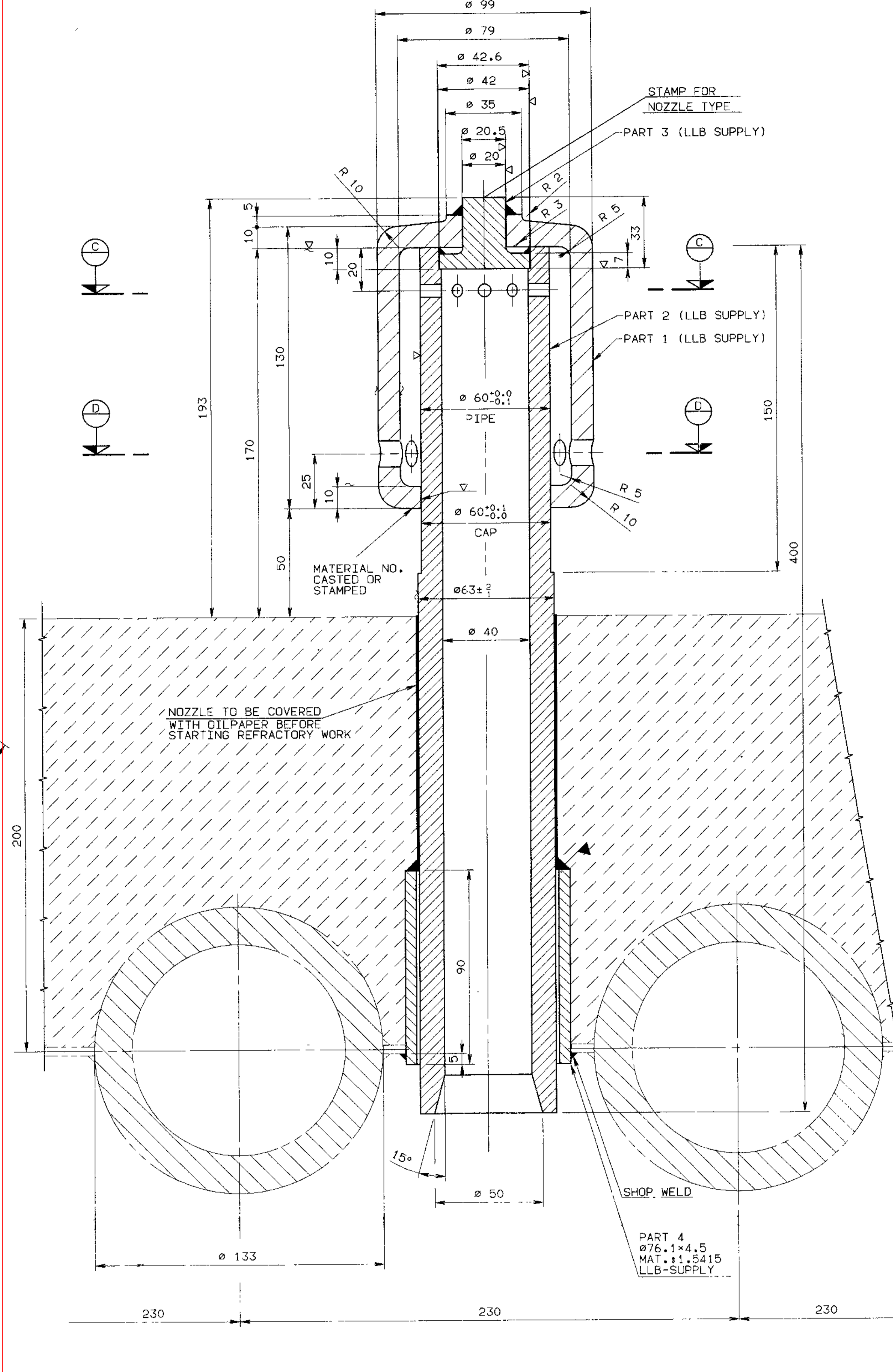
ITEM CODE NO:- 710111008, 710111009, 710111010 COMBUSTOR NOZZLE HEAD, BOLT,GUIDEPIPE

QUALITY ASSURANCE PLAN FOR INCOMING, INPROCESS & FINAL INSPECTION FOR COMBINED NOZZLE BHEL DRG. NO. D1910900/OL00277 / REV. 1.							QAP No.	Q-004		
							Rev.No.	1		
							Date	22/08/16		
							Page No.	1 of 1		
SR. NO.	MATERIAL DESCRIPTION	CHARACTERISTICS	PARAMETER TO BE CHECKED	QUANTUM OF CHECK	REF. DOCUMENT	ACCEPTANCE CRITERIA	AGENCY			REMARKS
							M	C	TPI	
<b>INCOMING INSPECTION</b>										
1	Raw Material	Critical	To verify chemical composition of material. Verify Test Cert. & Heat No.	100%	Standard	DIN Standard 1.4848 (For Cap and Bolt) DIN Standard 1.4828 (For Guidepipe)	√			After co-relation with Heat No.
2	Dimension checking	Critical	Dimension.	100%	BHEL Drg. No. D1910900/OL00277	As per DRG.	√			
<b>FINAL ASSLY. / TESTING &amp; FINAL INSPECTION.</b>										
1	Dimensional Finishing.	Completeness, Dimension.	Visual Inspection Dimensions.	100%	As per DRG.	As per DRG.	√	√		Final Inspection Report to be submitted.
2	Chemical Analysis	Critical	Chemical Composition(Major Alloying Elements_Cr,Mo,NI)	One Sample of Each Heat	As per Material Specification	As per Material Specification DIN 1.4848 for Cap and Bolt and 1.4828 for Guidepipe	√			
3	Hardness	Critical	Hardness	10%	Standard	As per Material Specification DIN 1.4848 for Cap and Bolt and 1.4828 for Guidepipe	√			
M		Manufacturer			C			Client		
TPI		Third Party Inspection.			W			Witness		





NOZZLE FOR COMBUSTOR



NOZZLE FOR SEAL POT

	COMBUSTOR		SEAL POT	
	PER UNIT	PER BOILER (1)	PER UNIT	PER BOILER (2)
NUMBER OF NOZZLES	740	740	38	76
MATERIAL PART 1	1.4848		1.4837	
MATERIAL PART 2	1.4828		1.4825	
MATERIAL PART 3	1.4848		1.4828	
MATERIAL PART 4	1.5415		1.5415	
NOZZLE TYPE	A			
PART 1				
NUMBER OF ROWS	1		1	
NUMBER OF HOLES	10		10	
DIAMETER	15 x 28		12	
PART 2				
NUMBER OF ROWS	4		1	
NUMBER OF HOLES	13		9	
DIAMETER	6		6	
KKS NO.	HHC 01 BN 001		HDC 01/02 BN 001	

ABOVE FIGURES REPRESENT ONE BOILER UNIT ONLY.

THE FOLLOWING TABLE REFLECTS THE TOTAL QUANTITY OF NOZZLES AND EXPANSION SLEEVES INCL. SPARES FOR THE TOTAL PLANT CONSISTING OF TWO (2) BOILER.

	NOZZLES INCL. CAPS (PART 1, 2 AND 3)			DIMENSION	EXPANSION SLEEVES (PART 4)			
	QTY.	SPARES PER YEAR	TOTAL		QTY.	SPARE	TOTAL	
COMBUSTOR	1480	15	148	1643	Ø88.9x5x90	1480	15	1495
TYPE A	730	10	73	813				
TYPE B	1182	13	118	1313				
TYPE C	54	2	5	61	Ø76.1x4.5x90	1810	30	1840
TYPE D	320	5	32	357				

PART 1, 2 AND 3 TO BE ASSEMBLED AND WELDED BY VENDOR (EXCEPT SPARE NOZZLES). IN CASE OF THE SPARE NOZZLES ONLY PART 2 AND 3 HAVE TO BE WELDED. THE CAPS AND NOZZLE PIPES WILL BE SHIPPED LOOSE WITH SUFFICIENT QUANTITY OF WELDING RODS FOR REPLACEMENT DURING INSTALLATION AND/OR 3 YEAR OPERATION IF NECESSARY.

DETAILS FOR NOZZLE TYPE "B", "C" AND "D" SEE DWG. NO. D1910900-0L-00278

FIELD WELD

DRAWN: JAHN CHECKED: SLN APPROVED: DRBRO DATE: 13.05.96 G. D. 10.04.96 (Rev.) Date: Changed (Rev.) Date: Changed (Rev.) Date: Changed	CHANGE NO. OF NOZZLES / MAT. OF EXP. SLEEVES ISSUED FOR INDUSTRY Kind of Revision:	TITLE: CFB-BOILER 2x 125Mw PLANT COMBUSTOR AND SEAL POT NOZZLE LB - Document No.: D1910900.00277 SCALE: 1/1 BHEL DRG No.:	REV. 1 1910900.00277.00.AA. 01 30.05.96 JAHN
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LLB JOB No. ZW - 19109 - 00 CUSTOMER M/s. GUJARAT INDUSTRIES POWER COMPANY LTD., BARODA CONSULTANT M/s. TATA CONSULTING ENGINEERS - BANGALORE. PROJECT SURAT LIGNITE POWER PROJECT 2 x 125 MW, CFB BOILER 390 t/h; 132 Kg/Ca <sup>2</sup> (oil); 540°C BHARAT HEAVY ELECTRICALS LIMITED BOILER PLANT UNIT TIRUCHIRAPPALLI - 620 014 Lurgi Lentjes Babcock Energietechnik GmbH	BHEL CUSTOMER No. 5105 & 5106 SURAT LIGNITE POWER PROJECT 2 x 125 MW, CFB BOILER 390 t/h; 132 Kg/Ca <sup>2</sup> (oil); 540°C BHARAT HEAVY ELECTRICALS LIMITED BOILER PLANT UNIT TIRUCHIRAPPALLI - 620 014 Lurgi Lentjes Babcock Energietechnik GmbH
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# **Gujarat Industries Power Company Ltd.**

## **TECHNICAL SPECIFICATIONS**

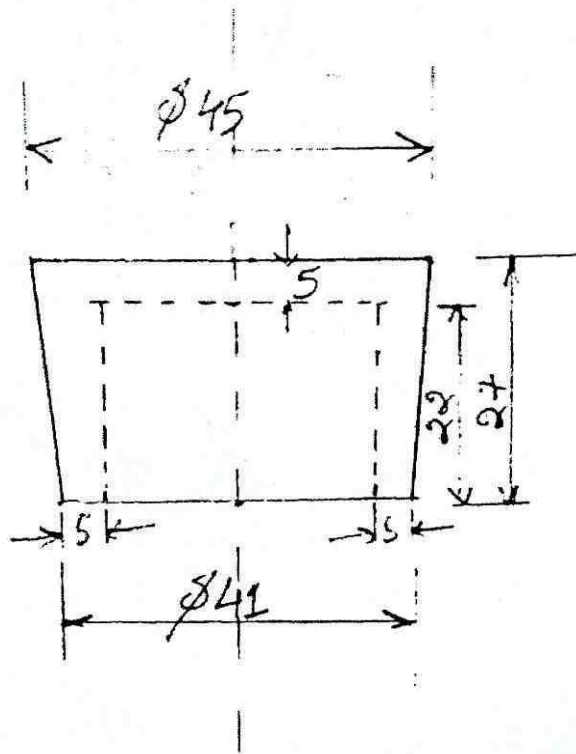
**Item Code:** 710401014 and 710401015-Aph Tube Dummy

### **Terms and Conditions**

1. MOC of material shall be Mild Steel (MS).
2. Drawing is attached herewith.
3. Party Shall Get Sample approved prior affecting the Bulk Supply.



DUMMY FOR APH TUBE-50.8X4.00MM ITEM CODE-710401015



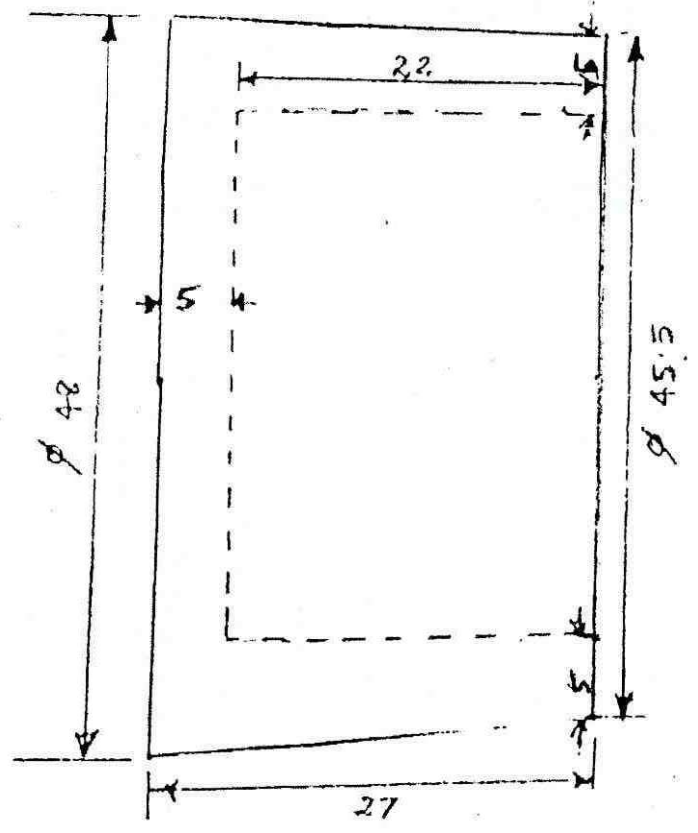
710401015

DUMMY FOR APH TUBE 50.8 X 4.00 MM

- All dimensions are in mm.
- Material M.S.
- Weight - 295 gms approx.

DUMMY FOR APH TUBE -50.8X2.08MM ITEM CODE-710401014

Drawing



All dimensions are in mm

Material - M.S.

Weight - 215 gms approx

Z-Item Code -

710401014

**Gujarat Industries Power Company Ltd.**

**TECHNICAL SPECIFICATIONS**

**Item Code:** 711002043FRG - LIG. CONV. SINGLE LINK ASSEMBLY.

**Ref. Drawing No:** As per attached drawing

**Terms and Conditions**

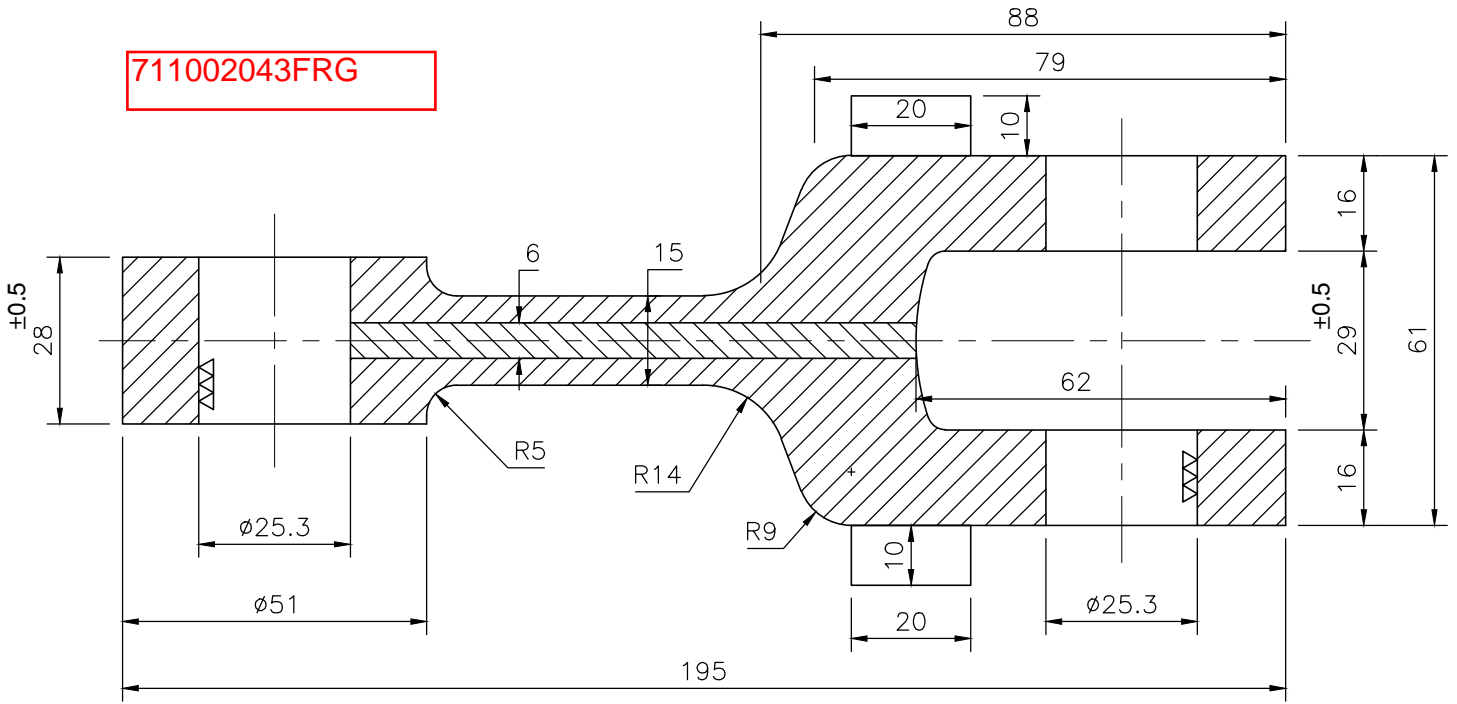
1. Party shall submit the complete chemical analysis as per material specification in NABL approved laboratory and all test certificate shall be submitted along with supply.
2. GIPCL reserve the right to get the material tested through NABL accredited laboratory at random and result of the same shall be remain binding to both.
3. GIPCL reserve the right to inspect the material BY PMI (Positive metal identification) Method at random and result of the same shall be remain binding to both.
4. **Guarantee period:** Guarantee period shall be 12 month from the date of installation or 18 months from the date of receipt of material at site.
5. Quality Assurance plan (QAP) attached herewith for above items.
6. Interchangeability with the existing spares is insisted by M/S GIPCL.
7. Pre dispatch inspection is insisted by company.
8. Above referred drawings are attached herewith.
9. Party Shall Get Sample approved prior affecting the Bulk Supply.



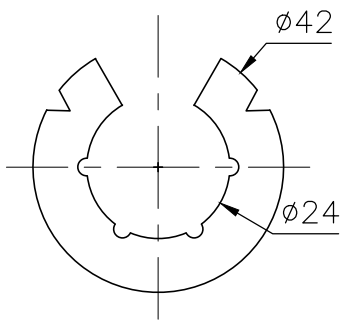
**ITEM CODE:- 711002043 FRG**

QUALITY ASSURANCE PLAN FOR INCOMING, INPROCESS & FINAL INSPECTION FOR LIGNITE CONVEYOR. AS PER YOUR DRG. NO.							QAP No.	Q-004		
							Rev.No.	0		
							Data	21.12.2011		
GIPCL/SLPP							Page No.	1 of 1		
REVIEWED BY			APPROVED BY (APIL)							
SR. NO.	MATERIAL DESCRIPTION	CHARACTERISTICS	PARAMETERED TO BE CHECKED	QUANTUM OF CHECK	REF. DOCUMENT	ACCEPTANCE CRITERIA	AGENCY			REMARKS
							M	C	TPI	
<b>(1) INCOMING INSPECTION FOR LINKS.</b>										
1	Raw Material Billet	Critical Make: Lloyds/ISMT make or	To verify chemical composition of raw material. Verify Test Cert. & Heat No.	100%	Standard	Standard 20 MnCr5	√		√	After co-relation with Heat No.
2	Raw Material Billet	critical	UT and spark test	100%	standard				*	
3	Forgings.	Critical	After forging, verify ch. Comm & witness of forgings.	100%	Standard	20 MnCr5	√		√	Forging witness by TPI be maintained.
4	Link forging	critical	breaking load test	10-%/batch	above 65tonns	Above 65 tonns			*	
5	Link forging	tempering	Surface hardning/case depth	100%	standard	50-55HRC/max0.7mm			*	
6	Link forging	critical	MPI test	10%	Standard				*	
4	Dimension	Critical	Dimension	100%	AI Drg.	AI Drg.	√		√	
<b>(2) INCOMING INSPECTION FOR FLIGHT BAR.</b>										
1	Raw Material	Critical	Ch. Testing	Random	Stanbdrd	IS2062GradeA	√		√	
2	U.T.	Critical	U.T. Test	100%	Standard	Standard.	√		√	Witness by TPI
3	Dimension.	Critical	Dimension.	100%	Standard	Standard	√		√	
<b>(3) INCOMING INSPECTION FOR PIN.</b>										
1	Raw Material	Critical	To verify chemical composition of material. Verify Test Cert. Heat No.	100%	Standard	Standard X20Cr13	√		√	
2	Case Hardness	Critical	By Ultrasonic hand tstr.	Random	Standard	40 to 45HRC	√	√		
3	Dimension checking	Critical	Dimension	100%	Drg. No.	As per AI DRg.	√	√	√	
<b>(4) WELDING LINK WITH FLIGHT.</b>										
1	Welding	Critical	Dismilah steel Welding	100%	Standard	Standard	√		√	Use welding electrode std.
2	Bend Test	Critical	Standard	Random	Standard	Standard	√		√	
<b>(5) INCOMING INSPECTION FOR CIRCLIP.</b>										
1	Raw Material	Critical	Ch. Composition	100%	Standard	S.S. 304	√		√	Checking from Sheet.
2	Dimension	Critical	Suitable for Pin	100%	Standard	S.S. 304				
<b>FINAL ASSLY. / TESTING &amp; FINAL INSPECTION.</b>										
1	Dimension	Critical	As per Drg.	100%	As per Drg.	As per Drg.		√	√	Final Inspection Report to be submitted.
							M	Manufacturer		
							TPI	Third Party Inspection.		
							C	Client		
							W	Witness		

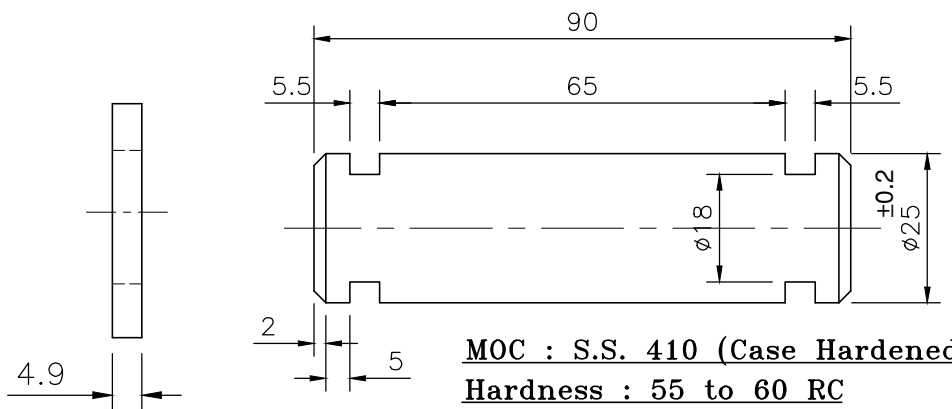
711002043FRG



**PLAIN LINK : FORGING 20Mncrs, Case Hardening S0-SS RC up to 0.8-1.0mm Thick**



**CIRCLIP**



**MOC : S.S. 410 (Case Hardened)**  
**Hardness : 55 to 60 RC**  
**0.8 TO 1.0mm THICK**

	SIGN.	DATE
DGN.		
DRN.	HCC	05.07.2014
CHD.		
TRD.		
APP.		

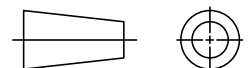
SCALE : N.T.S.

ALL DIMENSIONS  
 ARE IN M.M.

**MODIFIED**  
**LIG. CONV. PLAIN LINK**  
**& CHAIN**

MATERIAL :

**GIPCL-SLPP**

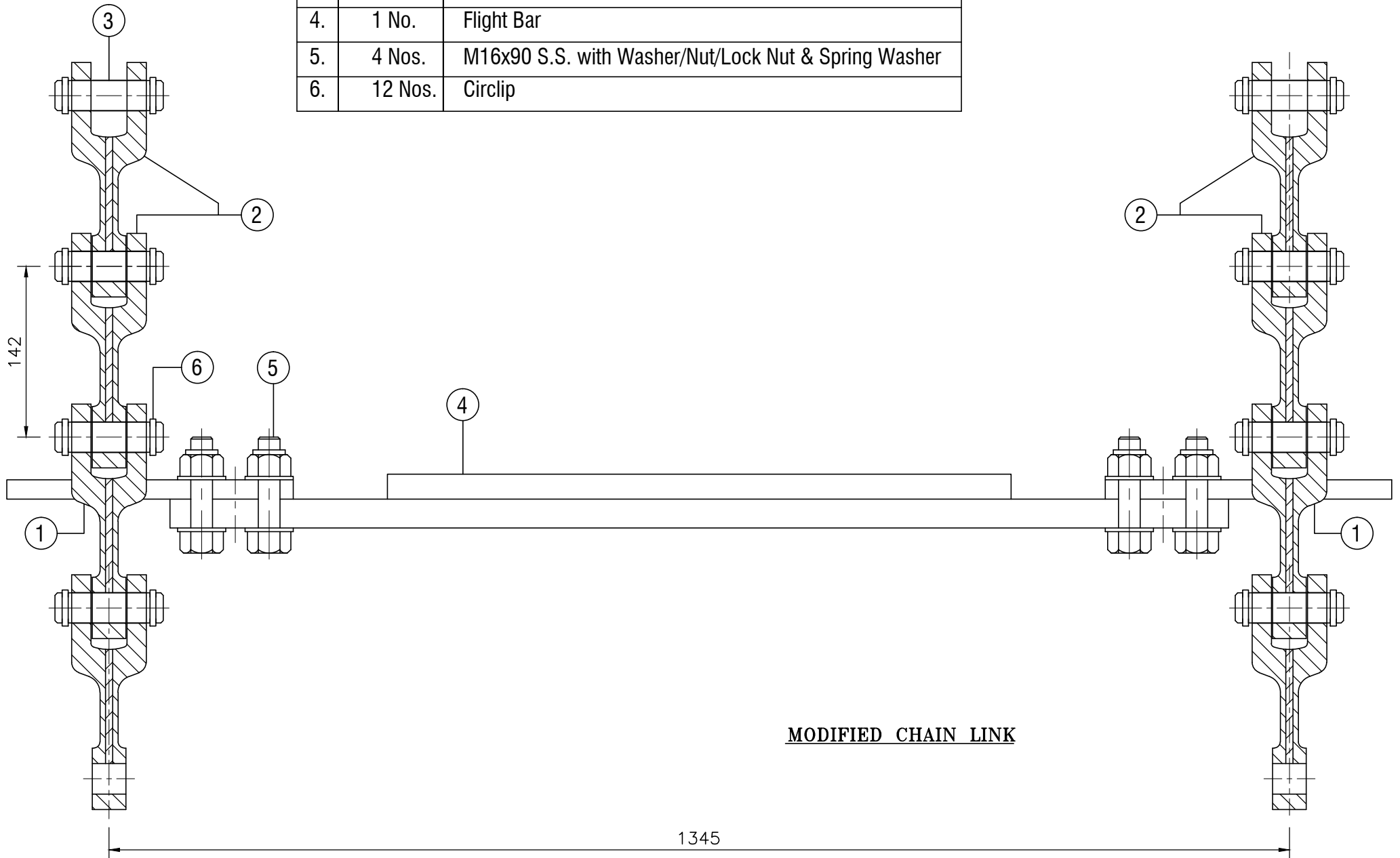


QTY. : 1 NOS.

DRG. NO./  
 PART NO. AMI-HCC-01

711002043FRG

1.	2 Nos.	Flighted Links
2.	4 Nos.	Plain Links
3.	6 Nos.	Pin
4.	1 No.	Flight Bar
5.	4 Nos.	M16x90 S.S. with Washer/Nut/Lock Nut & Spring Washer
6.	12 Nos.	Circlip

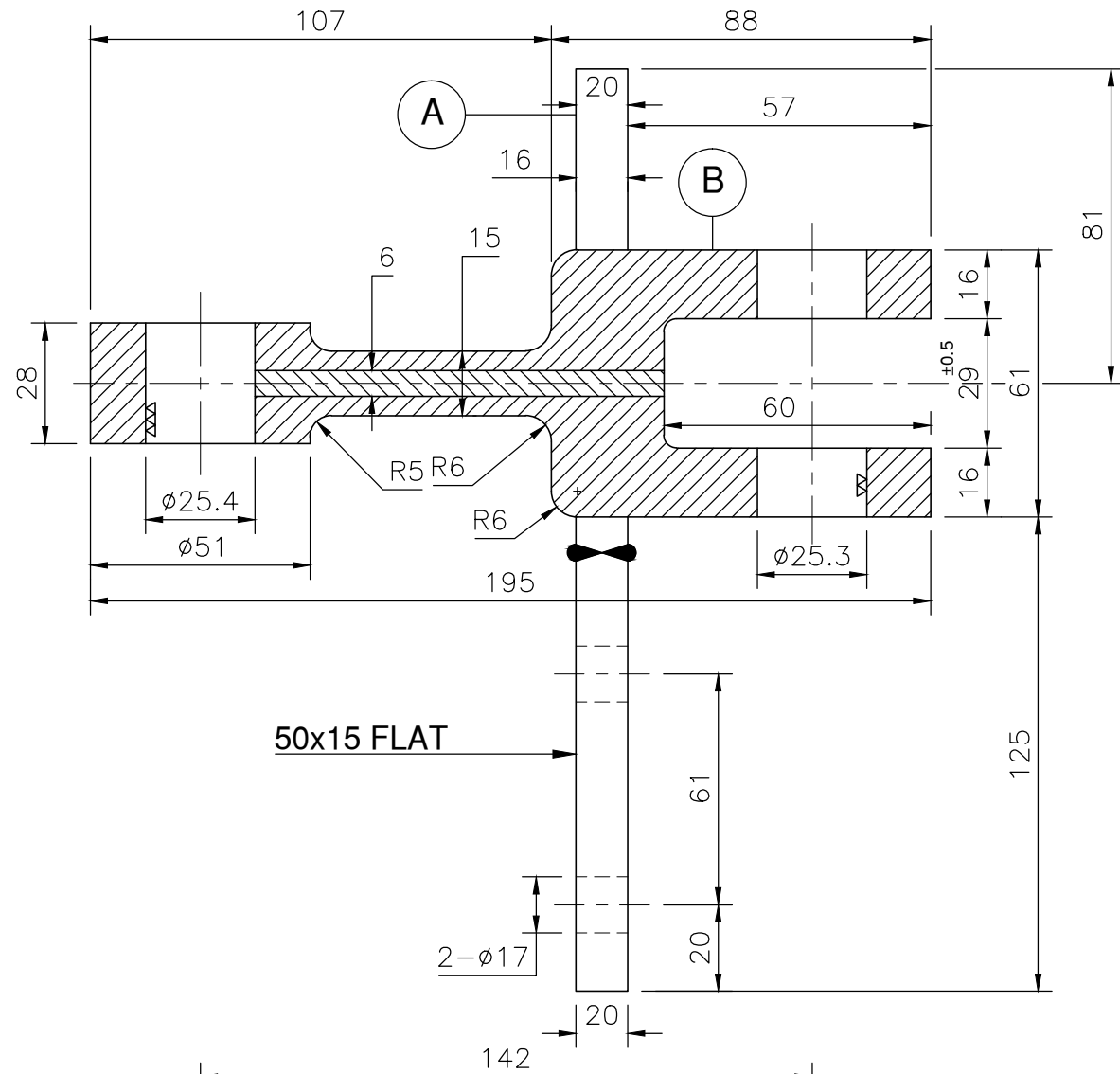


MODIFIED CHAIN LINK

1345



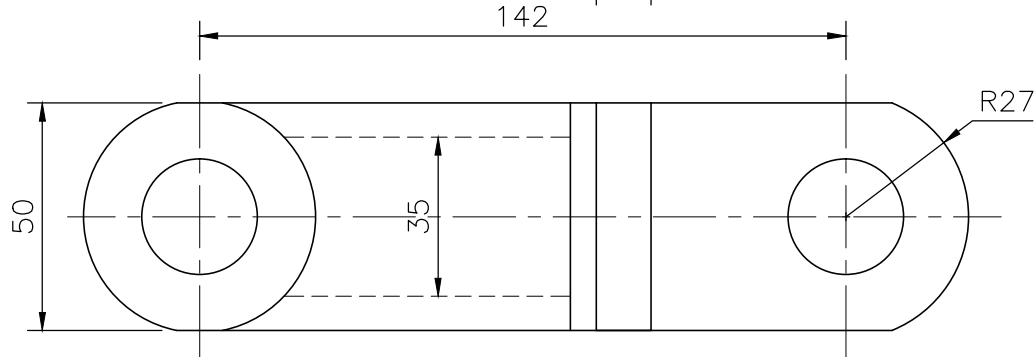
711002043FRG



NOTE :-

PART (A) & (B) ARE SINGLE PIECE FORGING

**FORGE LINK WITH FLIGHT**  
**MOC : FORGING 50 to 55 RC**  
**up to 0.8 TO 1.0mm THICK**



	SIGN.	DATE
DGN.		
DRN.	HCC	05.07.2014
CHD.		
TRD.		
APP.		

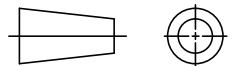
SCALE : N.T.S.

ALL DIMENSIONS  
ARE IN M.M.

**MODIFIED  
LINK WITH  
FLIGHT BAR**

MATERIAL :

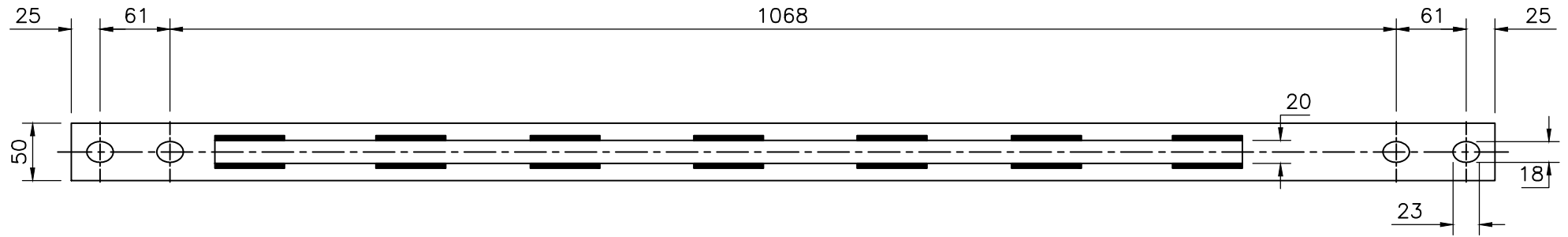
GIPCL-SLPP



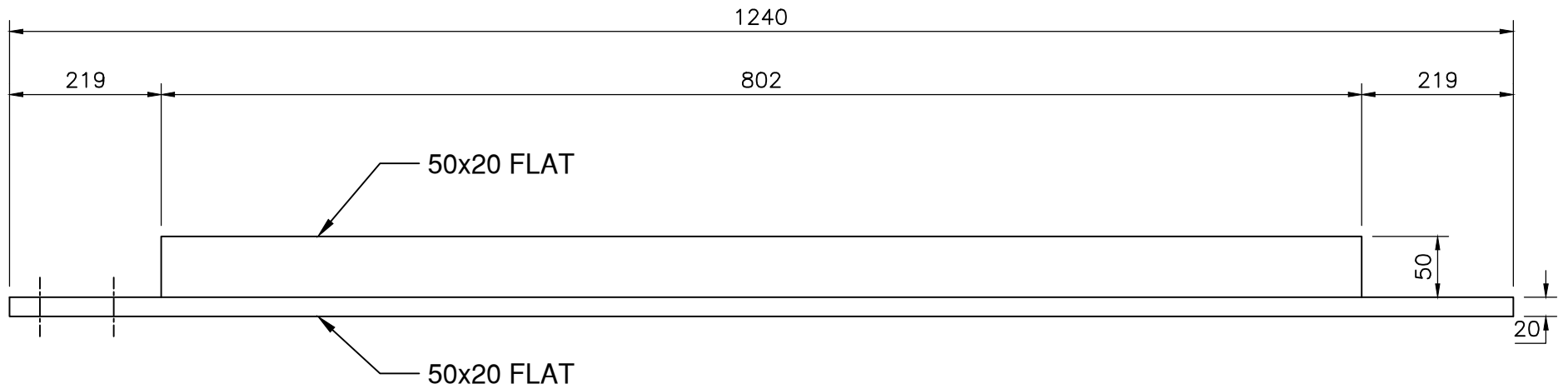
QTY. : 1 NOS.

DRG. NO./  
PART NO. AMI-HCC-01

711002043FRG



**TOP VIEW**



**FRONT VIEW**

**MOC : IS 2062 Gr.-A**

	SIGN.	DATE	<b>MODIFIED FLIGHT BAR</b>	<b>GIPCL-SLPP</b>
DGN.				
DRN.	HCC	05.07.2014		
CHD.				
TRD.				
APP.				
SCALE : N.T.S.				QTY. : 1 NOS.
ALL DIMENSIONS ARE IN M.M.			MATERIAL : IS-2062 Gr.-A	DRG. NO./ PART NO. AMI-HCC-B01

**Gujarat Industries Power Company Ltd.**

**TECHNICAL SPECIFICATION**

**ITEM CODE:-** 710704069 - DIFFUSER PLATE DIA 330 SUB TYPE DN33

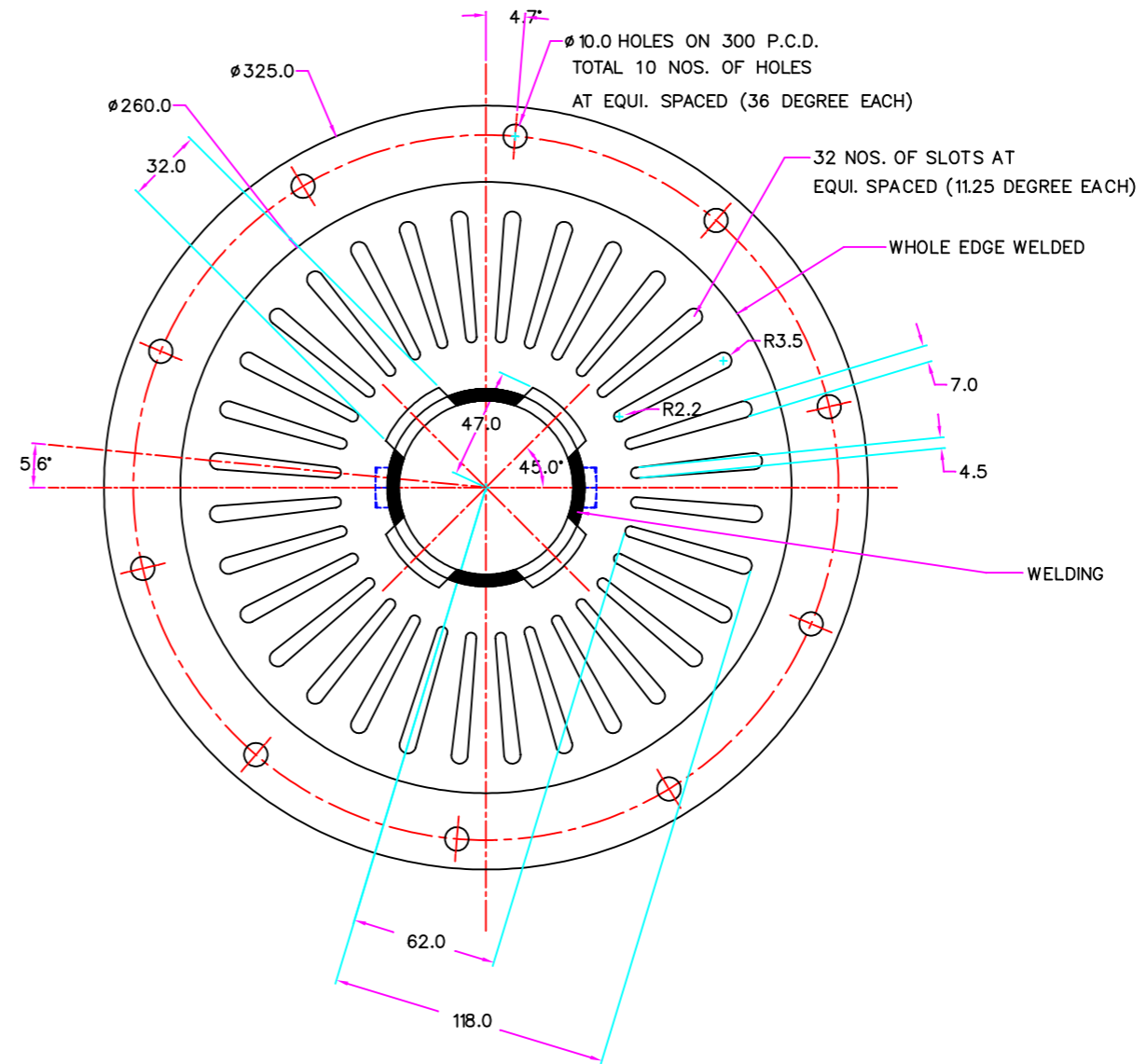
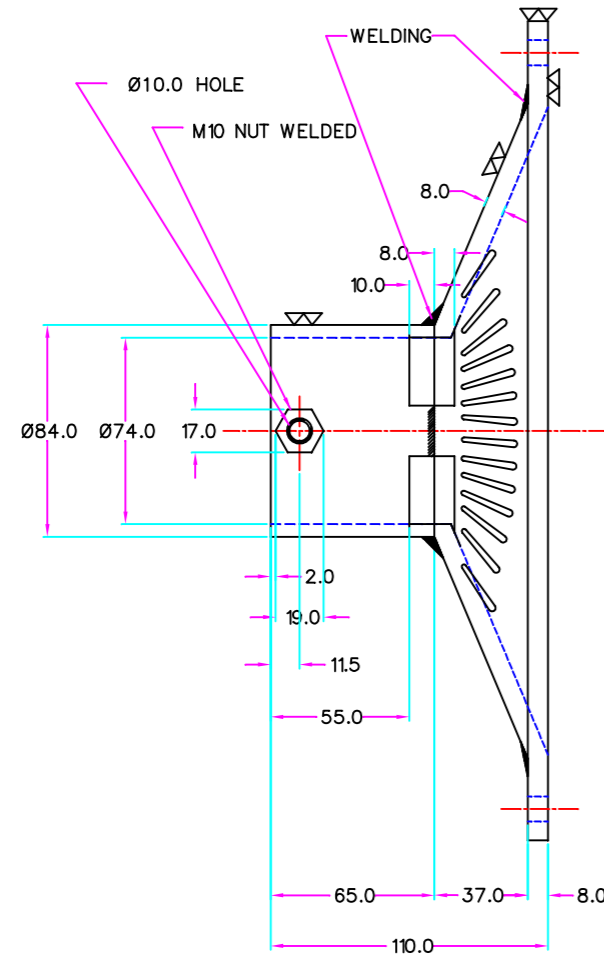
**REF. DRAWING NO:-** GIPCL/SLPP/PH-1/M/BLR/SM/0042

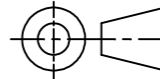
**Technical & Commercial Terms**

1. MOC of material shall be SS310
2. Party shall submit the complete chemical analysis as per material specification in NABL approved laboratory and all test certificate shall be submitted along with supply.
3. GIPCL reserve the right to get the material tested through NABL accredited laboratory at random and result of the same shall be remain binding to both.
4. GIPCL reserve the right to inspect the material BY PMI (Positive metal identification) Method at random and result of the same shall be remain binding to both.
5. **Guarantee period:** Guarantee period shall be 12 month from the date of installation or 18 months from the date of receipt of material at site.
6. **Above referred drawings are attached herewith.**
7. **Party Shall Get Sample approved prior affecting the Bulk Supply.**



ALL DIMENSIONS ARE IN M.M. UNLESS OTHERWISE STATED.



2					
1	DIFFUSER				SS 310
No. Sr.	DESCRIPTION	QTY.	SIZE	MATERIAL	
	NAME	INITIAL & DATE	Department	Pattern No.	Net Wt.(Kg)
DESIGNED BY			MECH. B.M.D.		
DRAWN BY	Minesh J.Thakkar	05-08-2016			
CHECKED BY	KashyapThakkar				
STANDARD BY			 SCALE- 1:2.5 DWG.No.: GIPCL/SLPP/PH-1/M/BLR/SM/0042		
APPROVED BY	P.U.Bhatt				

2					
1		△			
No.	REVISION	MARKED	DATE	CHECKED	APPD.

Gujarat Industries Power Co. Ltd.  
 (4x125MW Surat Lignite Power Plant)  
 P.O.:Nani Naroli  
 Tal.:Mangrol  
 Dist.: Surat- 394 110

TITLE  
**DIFFUSER**

SHEET 1 OF 1 REVISION- R 0