

DESIGN PARAMETERS

LOAD : 14300 KG

TEMPERATURE : 596 °C

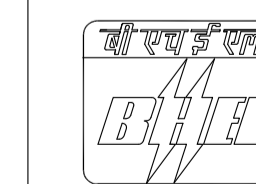
HYDRO LOAD : 41825 KG

NOTES: -

FOR NOTES REFER DRG. No. 4-80-800-34106

VAR NO.	ITEM NO.	DESCRIPTION	QTY	DRAWING NO.	ITEM NO.	MATL CODE	A	UNIT	UNIT WT.	G.S.	ZONE
VAR NO.	ITEM NO.	DESCRIPTION	QTY	DRAWING NO.	VAR NO.	MATL SPECN	C	DI	QTY.		
	09	RIB PL.65x649x1777		28083012996		159421610000		C	227.662		
						SA387GR91			4		
	08	SPACER RING		48083260239		153391730000		C	0.34		
						SA182F22			8		
	07	SPLIT PIN		4170410063		417041006300			0.037		
									4		
	06	LOAD PIN WASHER		4140856000		414080005600			0.405		
									4		
	05	STUD WASHER		4140848000		414080004800			0.284		
									16		
	04	NUT M48		4132448000		413245004800			1.24		
									32		
	03	STUD M48x380		48083078134		150391690000			5.026		
						SA193B16			8		
	02	LOAD PIN DIA 49x257		48083265601	7	153391430000		C	3.680		
						SA105			2		
	01	CLAMP PL.65x285x3859		28083012996		159421610000		C	561.148		
						SA387GR91			2		

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT



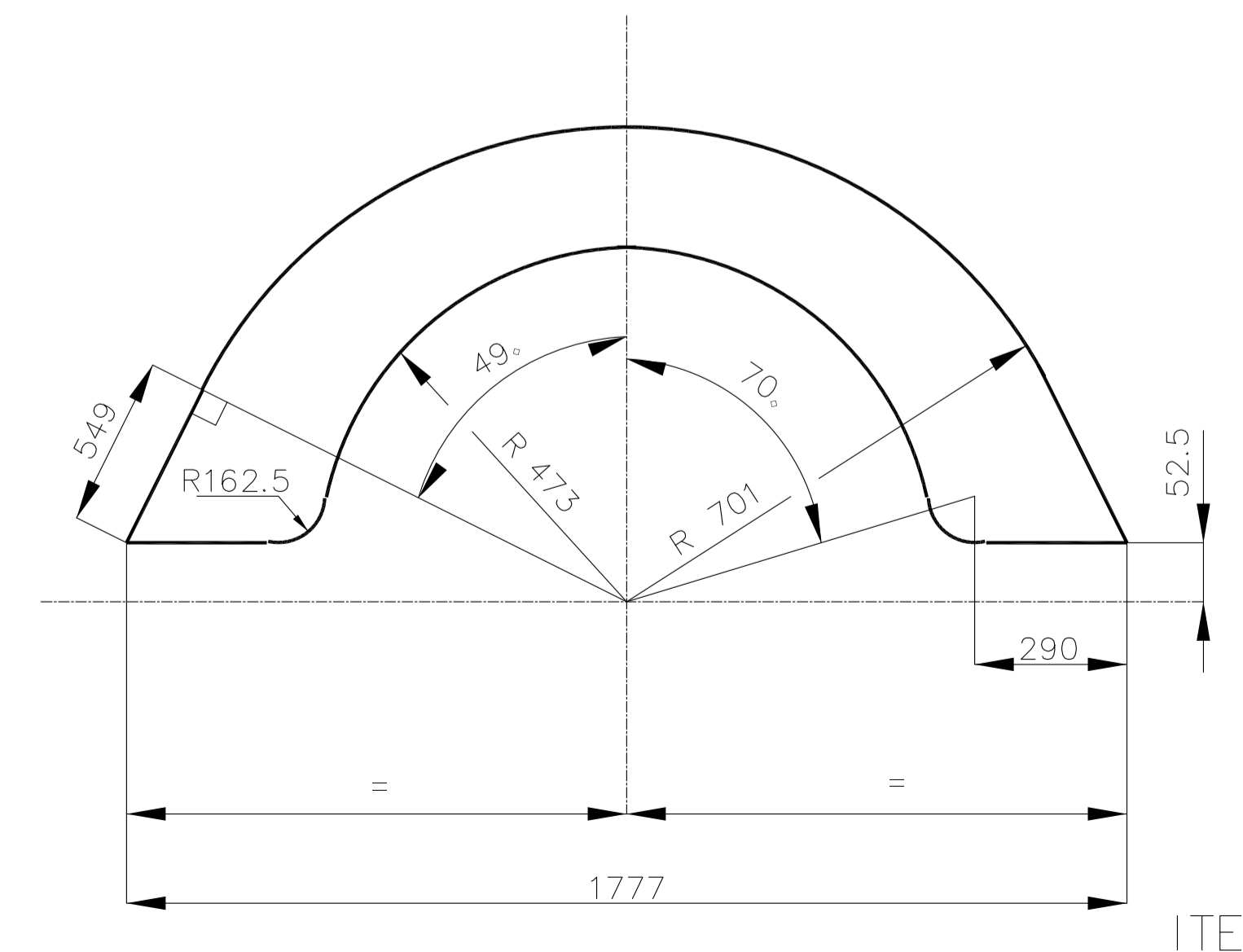
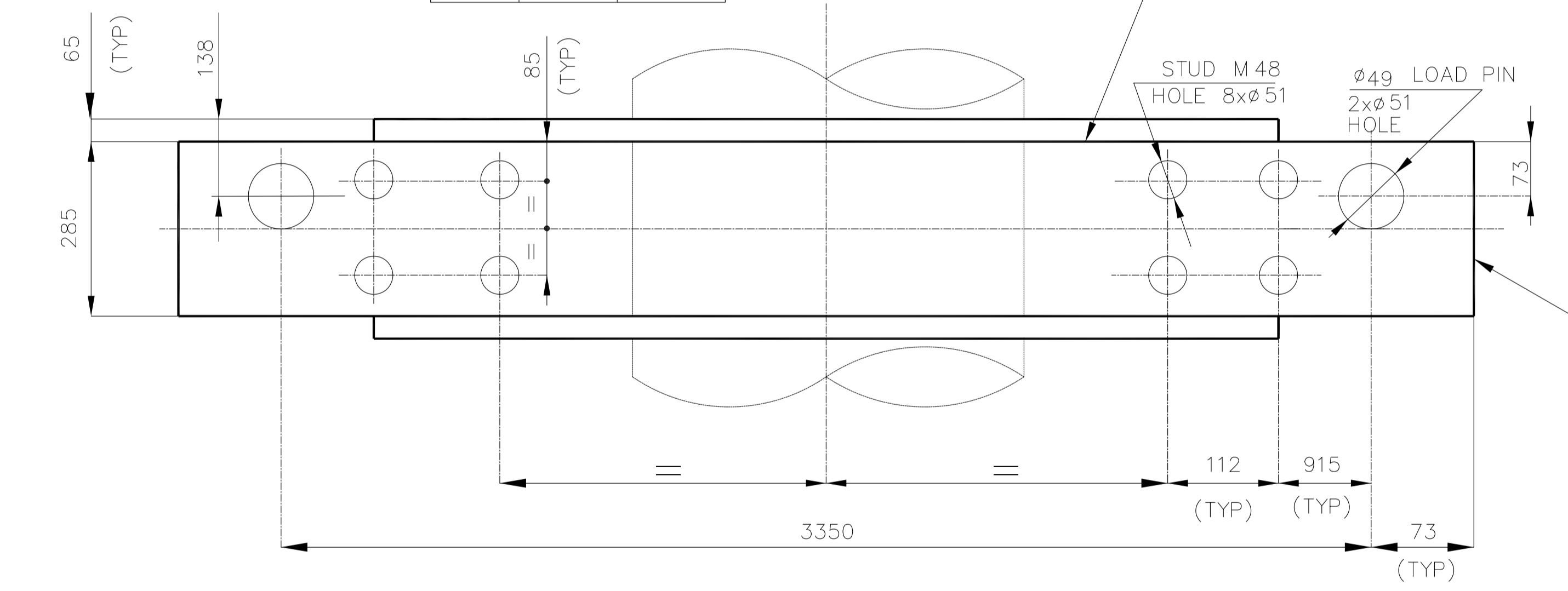
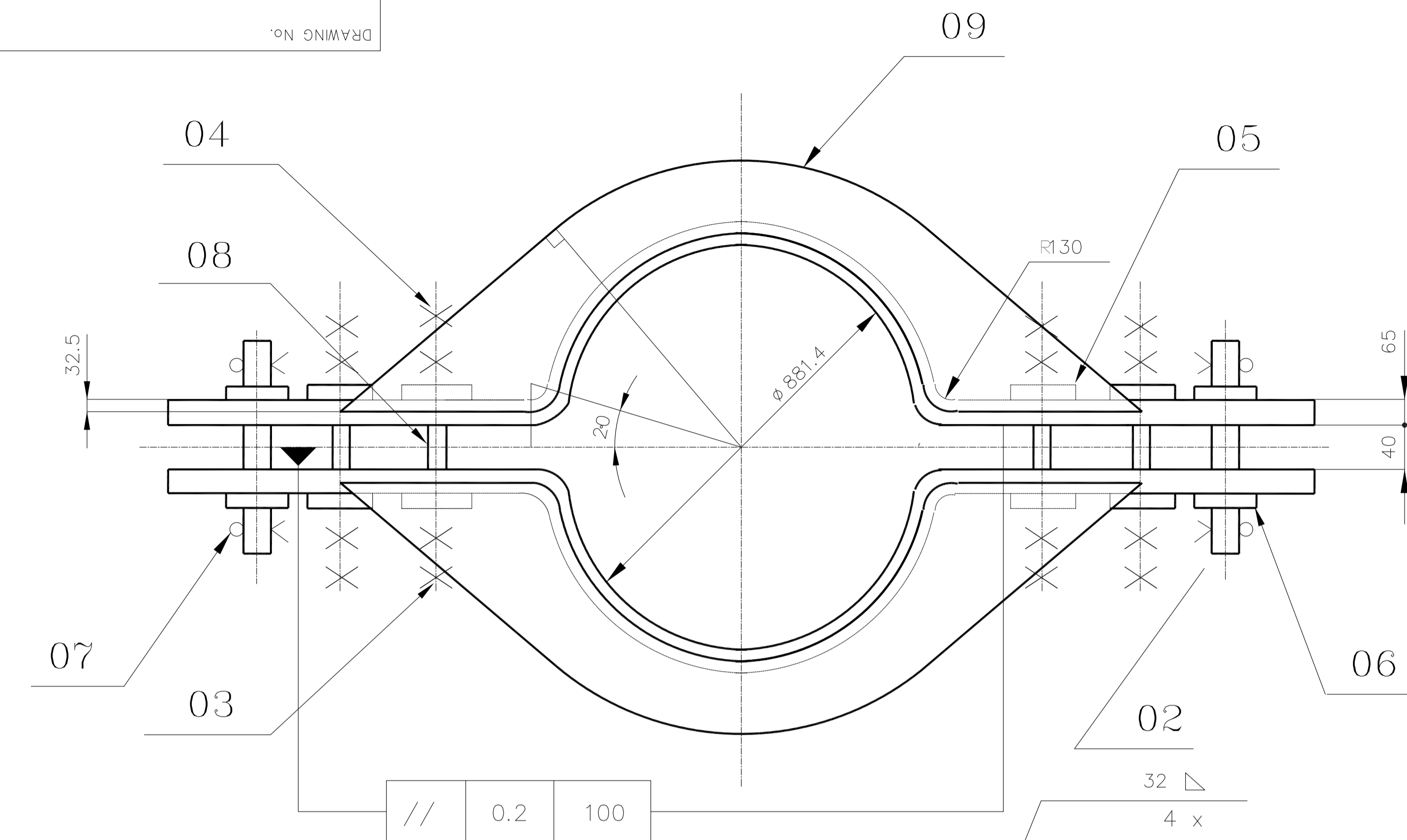
BHARAT HEAVY ELECTRICALS LTD.,
PIPING CENTRE, CHENNAI

DRN	NAME	SIGN	DATE	NO OF ITEMS
JAGAN			30.06.14	
CHD	SARAVANAN C		30.06.14	
APPD	K V R		30.06.14	

REV	DATE	ALTERED
01		CHECKED
ZONE		

DEPT.	GRADE OF UN TOL. DIM	SCALE	WEIGHT (Kg)	REF TO ASSY / OLD DRG.	ITEM No.
	C/M/F	NTS	2129.224		

TITLE	CARD CODE	DRAWING No.	REV
RISER CLAMP FOR PIPE OD 864 (AS) DBT-3350 LOAD-14300 KG	U 01	2-80-830-12996	00

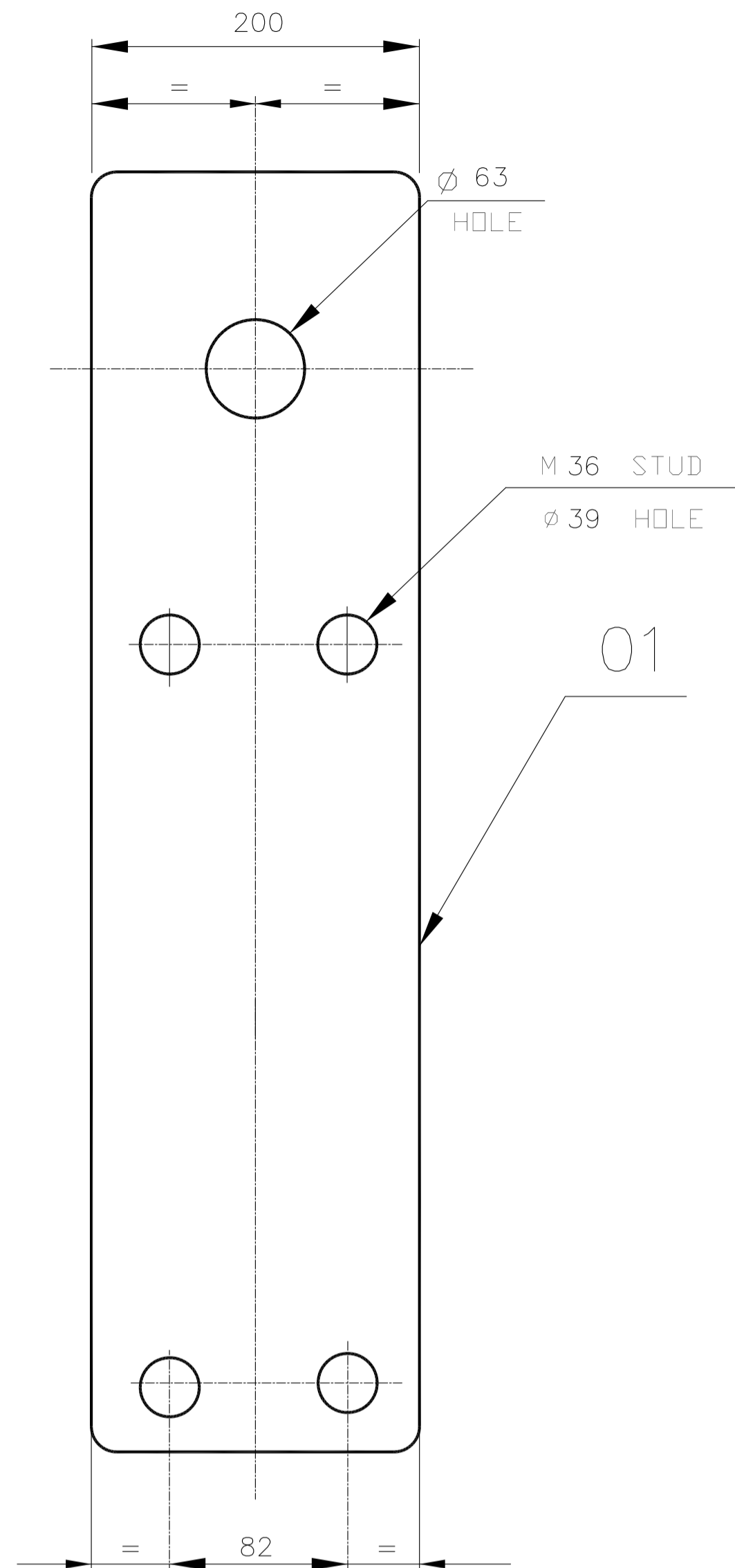
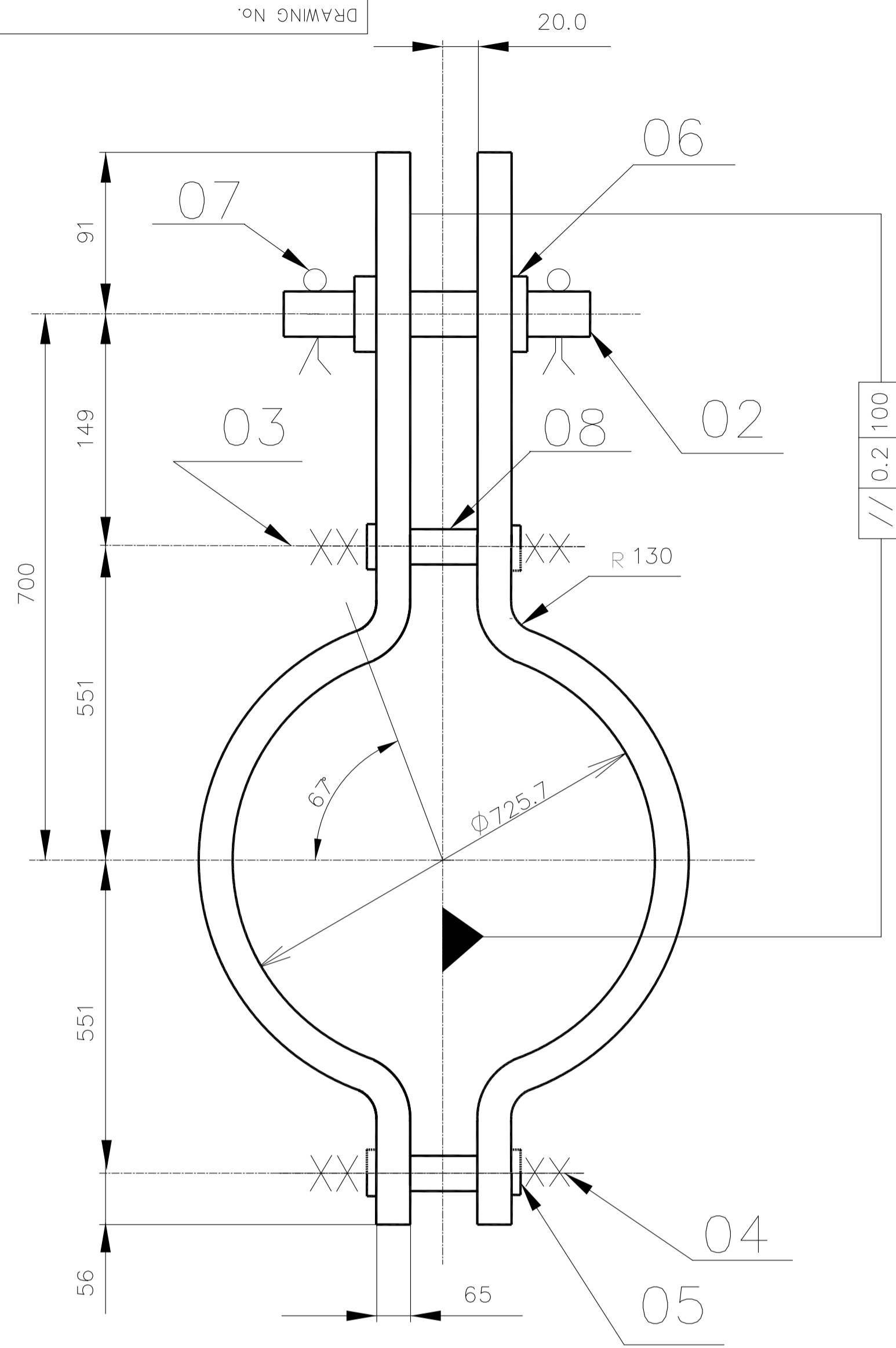


ITEM NO 09

05-228/C

2-80-830-12976

DRAWING No.



12.5

NOTES:

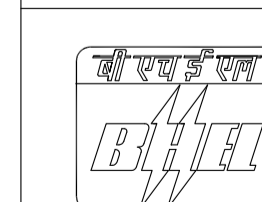
1.0 FOR NOTES REFER DRAWING No. 4-80-800-34106

DESIGN PARAMETERS

LOAD : 12000 KG
 TEMPERATURE : 596 °C
 HYDRO LOAD : 20864 KG

VAR NO.	ITEM NO.	DESCRIPTION	QTY	DRAWING NO.	ITEM NO.	MATL CODE	A	UNIT	UNIT WT.	G.S.	ZONE
					VAR NO.	MATL SPECN	C	DI	QTY.		
	08	SPACER RING	2	48092337402		153392420000	C		0.26		
						SA182F12			2		
	07	SPLIT PIN		4170410080		417041008000			0.047		
									2		
	06	LOAD PIN WASHER		4140872000		414080007200			0.543		
									2		
	05	STUD WASHER	5	4-80-999-99026		159422650000			0.087		
									8		
	04	NUT M36	5	4-80-999-99045		413244003600			0.43		
									16		
	03	STUD M36x350		48092177474		150391670000			2.800		
						SA193B16			4		
	02	LOAD PIN DIA 61x240	3	48092177494		153391430000	C		5.800		
						SA105			1		
	01	CLAMP PL.65x200x1679		28083012976		159421610000	C		171.425		
						SA387GR91			2		

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT



BHARAT HEAVY ELECTRICALS LTD.,
 PIPING CENTRE, CHENNAI

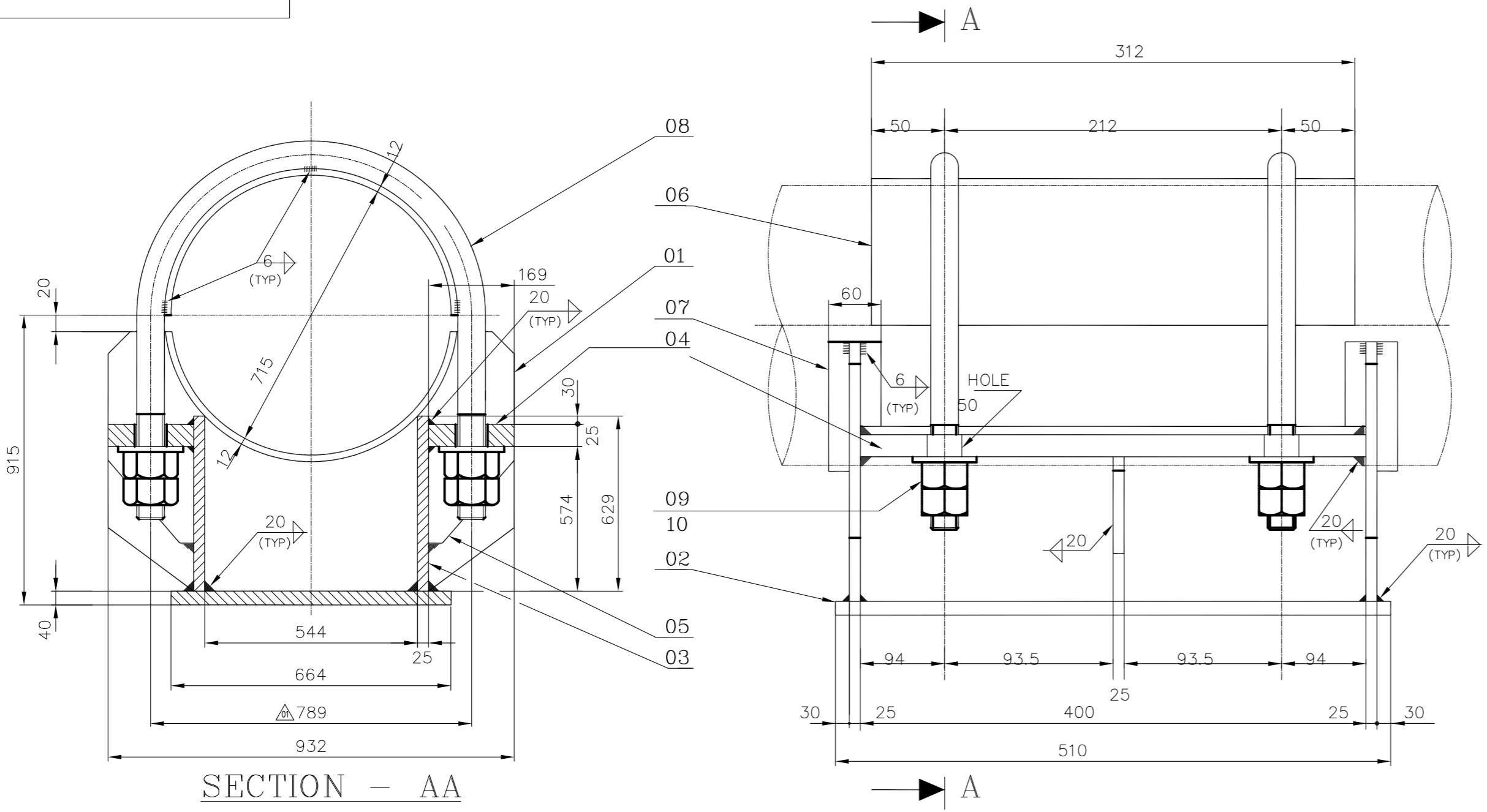
DRN	NAME	SIGN	DATE	NO OF ITEMS
JAGAN			30.06.14	
CHD	SARAVANAN C		30.06.14	
APPD	K V R		30.06.14	

01	29.06.15	ALTERED	P SURESH
		CHECKED	M MANO
ZONE		ITEM NO.05	MATERIAL CODE CHANGED.

DEPT.	GRADE OF UN TOL. DIM	SCALE	WEIGHT (Kg)	REF TO ASSY / OLD DRG.	ITEM No.
	C/M/F	NTS	369.126		

REVISIONS MARKED AS

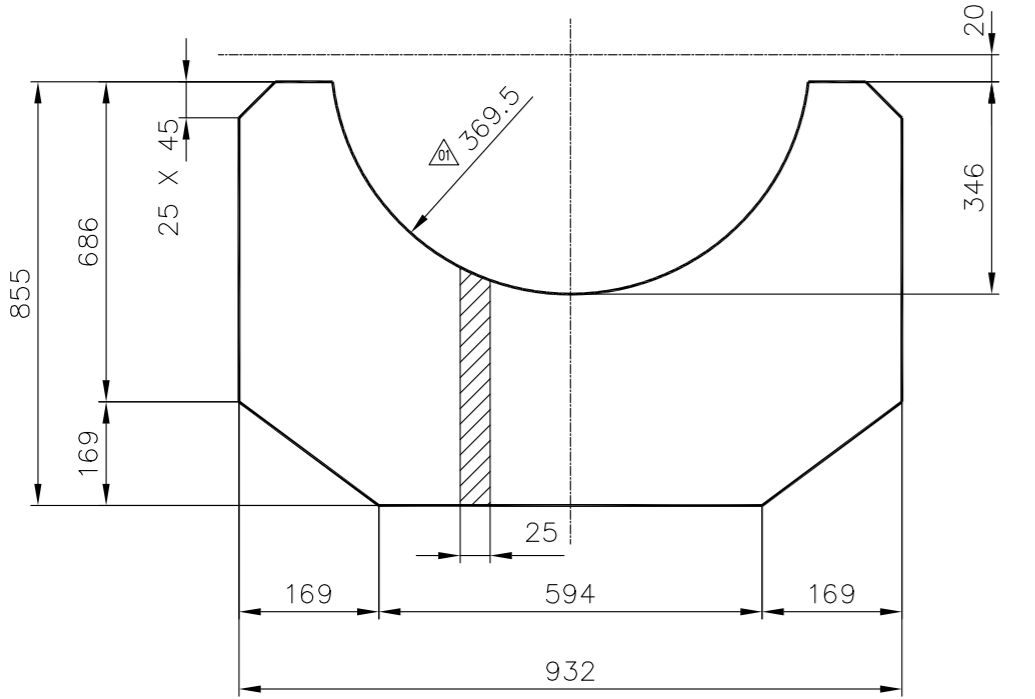
TITLE	CARD CODE	DRAWING No.	REV
HORIZONTAL PIPE CLAMP PIPE OD 711 (AS) LOAD-12000 KG	U 01	2-80-830-12976	01



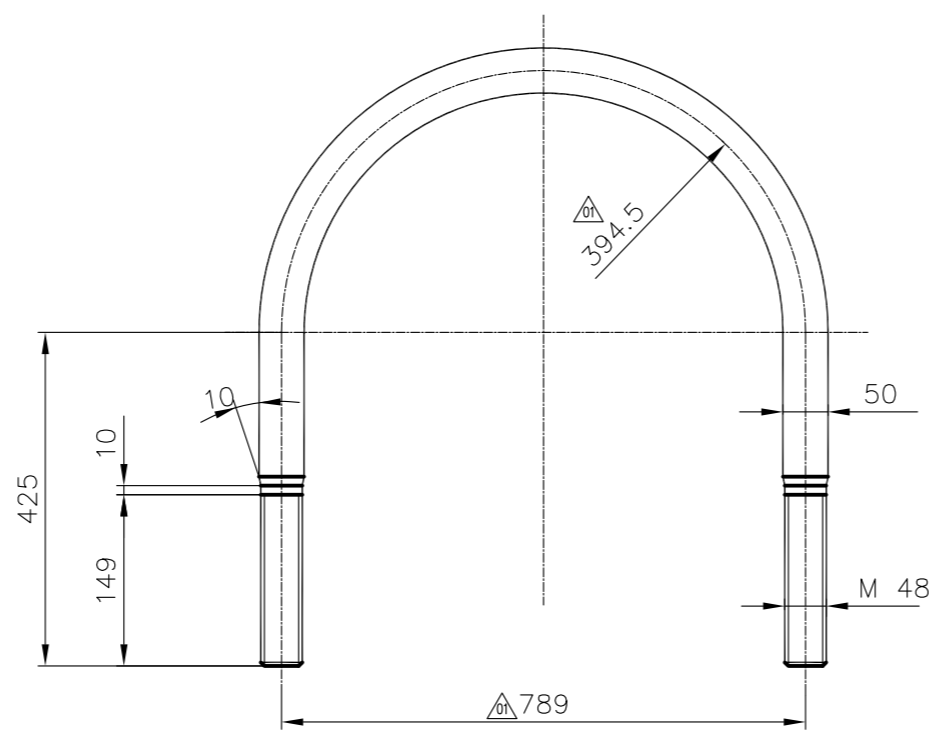
NOTES: -

1.0 FOR NOTES REFER DRAWING No. 4-80-800-34106

DESIGN LOAD : 10000KG
DESIGN TEMP. : 596 °C

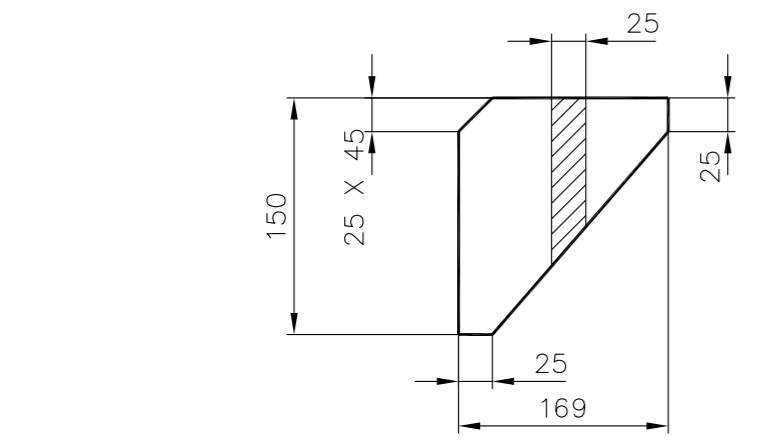


ITEM No.01



ITEM No.08

NOTES: -
01. METRIC SCREW THREADS AS PER IS: 4218.



ITEM No.05

REV	DATE	ALTD	LALIT-SD.-	REV	DATE	ALTD	LALIT-SD.-
02	25.08.12	CHD	C.S-SD.-	01	10.08.12	CHD	C.S-SD.-
ZONE WEIGHT REVISED FOR ITEM NOS 02, 06 & 07.				ZONE DIMENSIONS REVISED IN DRG.			
REVISION IS INDICATED AS				REVISION IS INDICATED AS			

ITEM NO.	DESCRIPTION	DRAWING NO.	NO. VAR NO.	MATL CODE	MATL SPECN	A	C	UNIT WT.	QTY.
10	PUNCHED WASHER A48	41408 48000	-	414080004800	SA387Gr22CL2			0.284	4
09	NUT M48 X5	4-80-999-99290	03	413195004800	SA194Gr7	C		1.240	8
08	'U' ROD M48 ROD DIA50 ; L=2077	2-80-830-11021		153394040000	SA182F91	C		32.011	2
07	PAD PLATE-2 PL 12THKX60X1090	2-80-830-11021		159421550000	SA387Gr91CL2	C		6.123	2
06	PAD PLATE-1 PL 12THKX312X1130	2-80-830-11021		159421550000	SA387Gr91CL2	C		33.253	1
05	STIFFNER PLATE PL 25THKX169X150	2-80-830-11021		159421560000	SA387Gr91CL2	C		3.147	2
04	FIXING PLATE PL 25THKX169X400	2-80-830-11021		159421560000	SA387Gr91CL2	C		12.496	2
03	VERTICAL PLATE PL 25THKX629X400	2-80-830-11021		159421560000	SA387Gr91CL2	C		49.376	2
02	BOTTOM PLATE PL 40THKX664X510	2-80-830-11021		159422720000	SA387GR22CL2	C		106.333	1
01	SIDE PLATE PL 25THKX855X932	2-80-830-11021		159421560000	SA387Gr91CL2	C		112.343	2

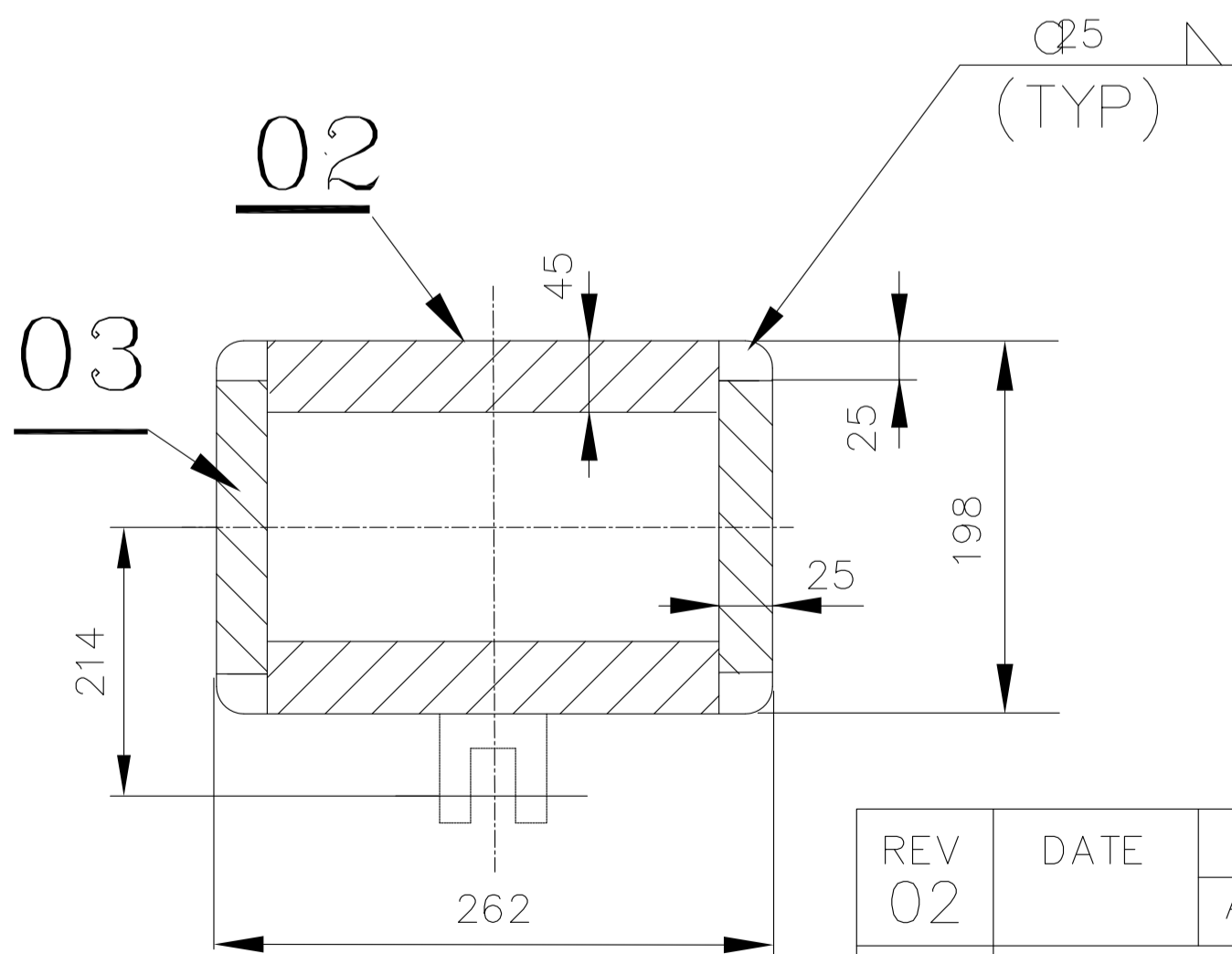
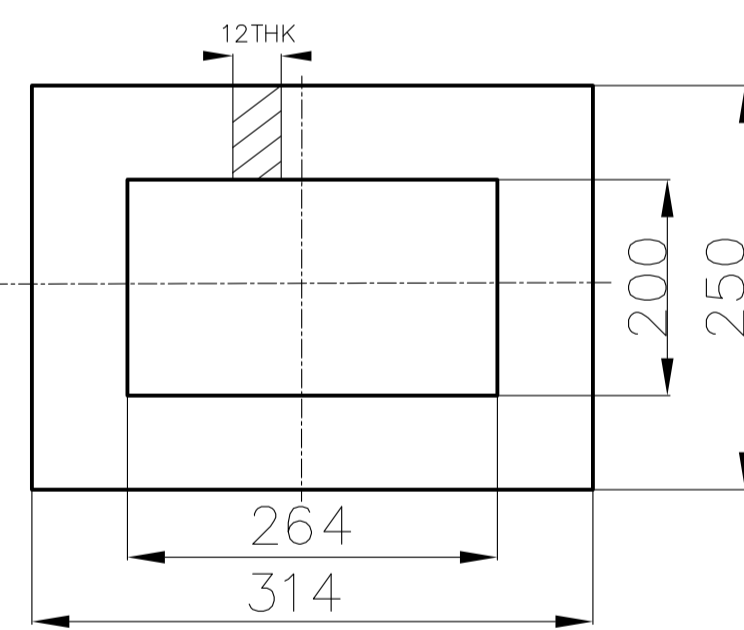
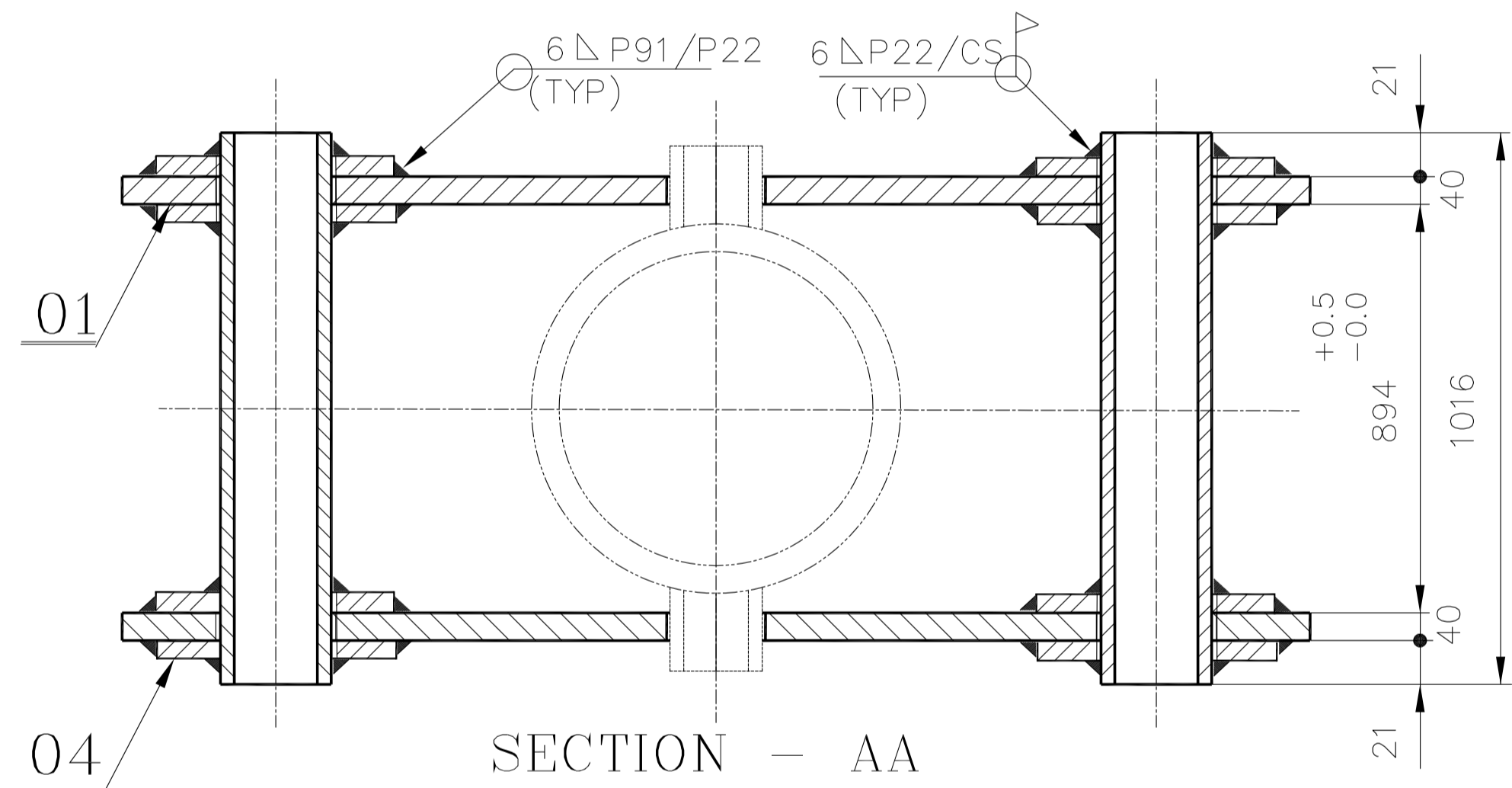
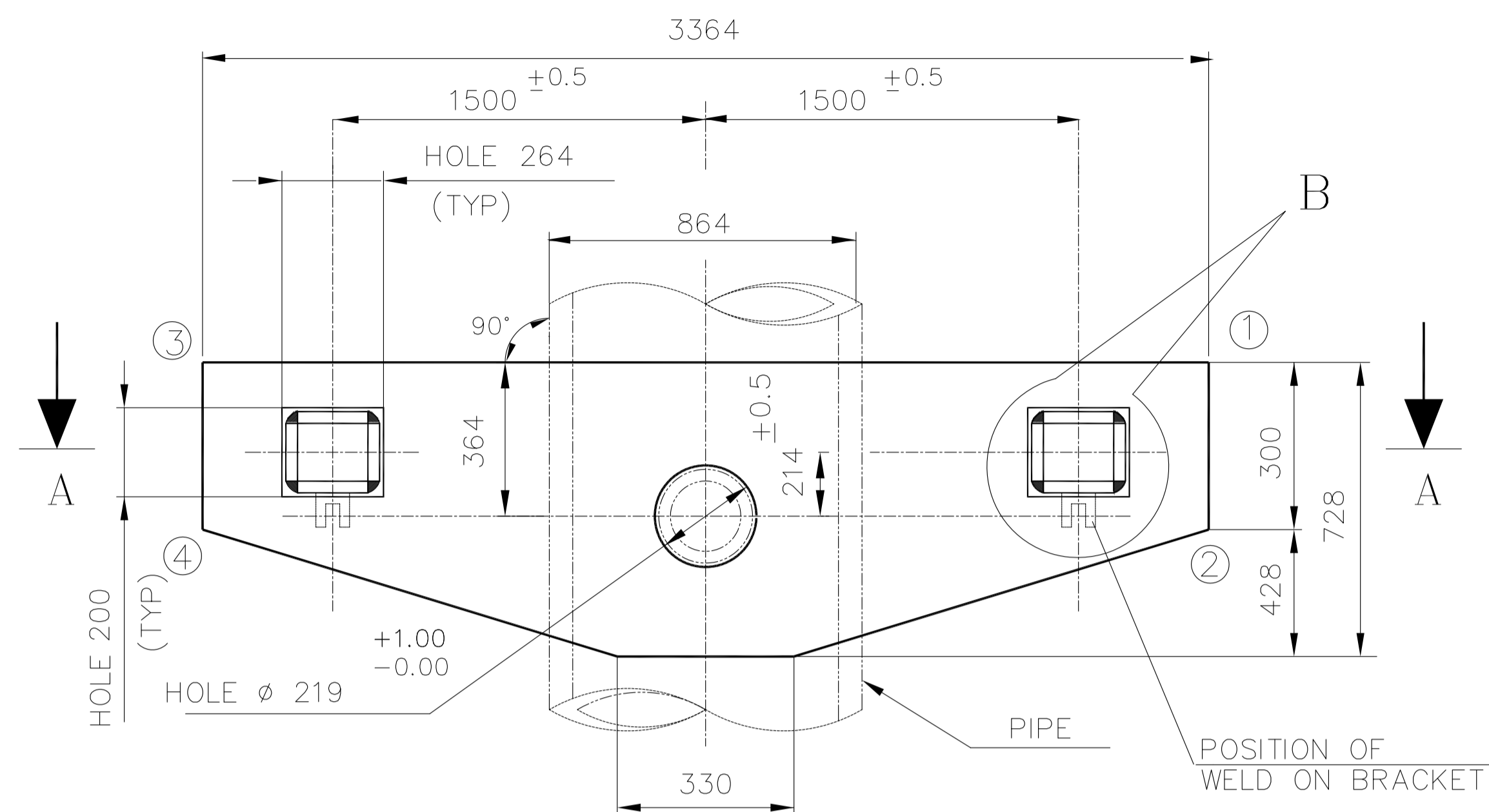
TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT

	BHARAT HEAVY ELECTRICALS LTD.,				DRN	LALIT	SIGN	-Sd-	DATE	22.09.2011	NO OF ITEMS
	PIPING CENTRE, MADRAS				CHD	SARAVANAN.C	SIGN	-Sd-	DATE	22.09.2011	
					APPD	SARAVANAN.C	SIGN	-Sd-	DATE	22.09.2011	

DEPT.	GRADE OF UN TOL DIM	SCALE	WEIGHT (Kg).	NAME OF ORIGINAL ORGANISATION	ITEM No.
CODE	C/M/F	NTS			
TITLE			CARD CODE	DRAWING No.	REV
SHOCK ABSORBER CLAMP FOR PIPE OD711 P91 90KN			U 01	2-80-830-11021	02

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DRAWING No
3-80-921-31204

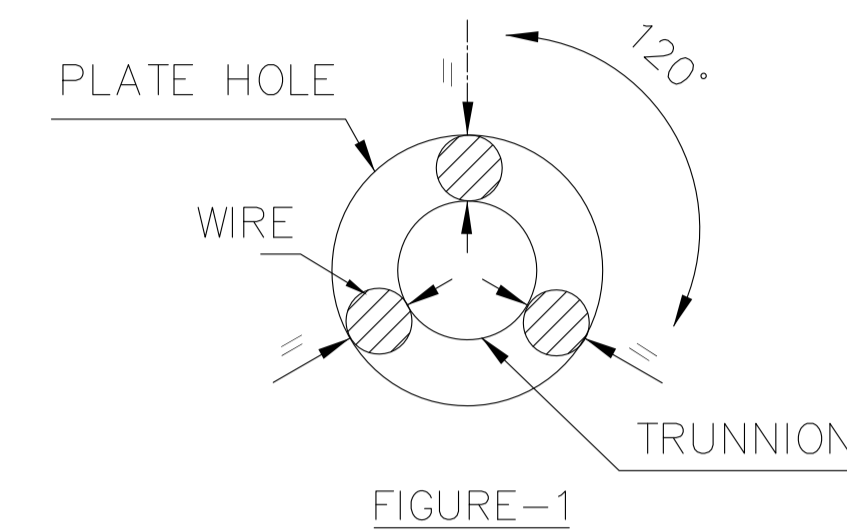


A. NOTES FOR PRODUCTION

- 1,THE CLAMP PLATE & BOX PLATE ARE TO BE TACK WELDED AT SHOP AND SENT AS A SINGLE DESPATCHABLE UNIT,
- 2,W.O NO & DU NO ARE TO BE MARKED IN BOTH THE CLAMP PLATE AS WELL AS IN BOTH THE BOXES BEFORE DESPATCH.
- 3,REQUIRED SURFACE FINISH IS
 - a , FOR HOLE: 6.3 μm
 - b, OTHER MACHINED SURFACE :12.5 μm

B. NOTES FOR ERECTION

- 1,BEFORE TACK WELDING OF PLATE WITH BOX,THE FOLLOWING ARE TO BE ENSURED
 - a,UNIFORM GAP BETWEEN PLATE HOLE AND TRUNNION ALONG THE CIRCUMFERENCE AS SHOWN IN FIGURE -1, THIS COULD BE ENSURED BY INSERTING THIN SHEETS OF SUITABLE THICKNESS OR WIRES OF SUITABLE DIAMETER AT 3 PLACES 120° APART.
 - b,PARALLELITY OF THE TWO PLATES BY MEASURING THE INNER SURFACE TO INNER SURFACE DIMENSION AT THE FOUR CORNER POINTS ((1)-(4)) OF THE PLATES MARKED IN THE DRG.ALL THE FOUR MEASUREMENT SHALL BE TO THE DIMENSIONS GIVEN IN THE DRAWING TAKING IN TO CONSIDERATION THE TOLERANCE.
- 2, BEFORE FINAL WELDING OF BOXES TO PLATE, ROTATION OF CLAMP ABOUT TRUNNIONS IS TO BE ENSURED.
- 3,LOCATION OF WELD ON BRACKET SHALL BE AS INDICATED IN THIS DRAWING. ORIENTATION OF WELD ON BRACKET SHALL BE AS PER THE GUIDELINES GIVEN IN THE ERECTION NOTES FOR PIPING HANGERS AND SUPPORTS (DRG.NO. 4-80-999-99321)
- 4,CORRECT ELECTRODE TO BE USED FOR WELDING PLATE WITH BOX CONSIDERING PLATE & BOX MATL.SPECIFICATION.



VAR NO.	ITEM NO.	DESCRIPTION	DRAWING NO.	ITEM NO.	MATERIAL CODE	A	UNIT WT.
				VAR NO.	MATERIAL SPEC.	C	QTY.
	04	STOPPER PLATE 12 x 250 x 314	3-80-921-31204		159422690000 SA387GR22CL2	C	7.39
	03	BOX PLATE 2 25 x 148 x 1016	3-80-921-31204		159421140000 SA 515 Gr70	C	29.51
	02	BOX PLATE 1 45 x 212 x 1016	3-80-921-31204		159421180000 SA 515 Gr70	C	76.087
	01	CLAMP PLATE 40 x 728 x 3364	3-80-921-31204		159421570000 SA387GR91CL2	C	520.12

- 1.DESIGN LOAD : 300 KN
- 2.MEDIUM TEMP : 596 °C
- 3.WELD ON BRACKET : 250 KN
- 4.TRUNNION SIZE : 218 ±0.08
- 5.HYDRO LOAD : 300 KN

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT

TAG No.

	BHARAT HEAVY ELECTRICALS LTD.,		DRN	NAME	SIGN	DATE	NO OF ITEMS
	PIPING CENTRE,		CHD	YOGESH		08.01.14	
	CHENNAI 600 017		APPD	DEEPAK		08.01.14	

REV	DATE	ALTERED	APPROVED	REV	DATE	ALTERED	APPROVED
02				01			
ZONE				ZONE			

DEPT.	GRADE OF UN TOL. DIM		SCALE	WEIGHT (Kg).	REF TO ASSY / OLD DRG	ITEM No.
CODE	C/M/F			1462.628		
TITLE			CARD CODE	DRAWING No.		REV
TRUNNION CLAMP (PIPE OD 864)			U 01	3-80-921-31204		00

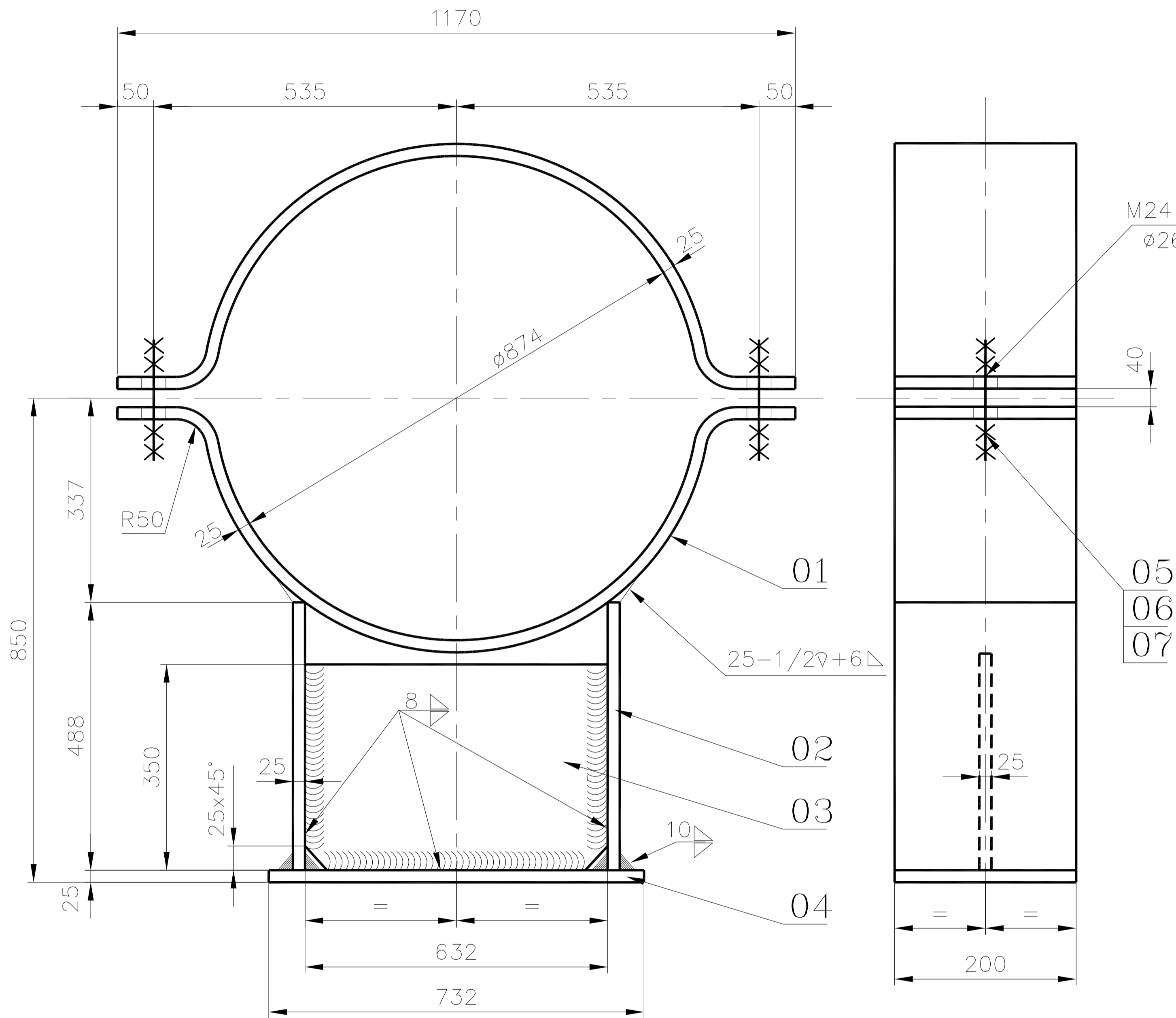
2-80-830-13002

DRAWING NO

NOTES

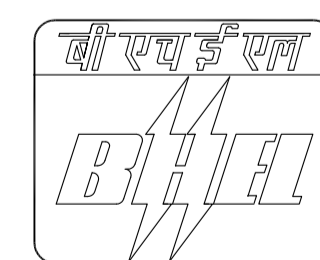
FOR NOTES REFER DRAWING NO.4-80-800-34106

LOAD: 170KN, TEMP. 596°C



ITEM NO.	DESCRIPTION	DRAWING NO.	ITEM NO.	MATERIAL CODE	A/C	UNIT WT.
VAR NO.				MATERIAL SPEC.		QTY.
07	PUNCHED WASHER A24	4-80-999-99026	03	15 942 265 0000 SA 387 GR22		0 031 4
06	HEX NUT M24	41324 24000		41 324 000 2400 SA 194 GR7		0 110 8
05	STUD M24X3.0 L=220	4-80-999-99320		94 822 242 2600 SA 193 B16		0 660 2
04	BOTTOM PLATE PL 25X200X732	2-80-830-13002		15 942 270 0000 SA 387 GR22CL2	C	28 742 1
03	STIFFNER PLATE PL 25X350X632	2-80-830-13002		15 942 156 0000 SA 387 GR91CL2	C	43 410 1
02	SIDE PLATE PL 25X200X488	2-80-830-13002		15 942 156 0000 SA 387 GR91CL2	C	19 154 2
01	PIPE CLAMP PL 25X200X1582	2-80-830-13002		15 942 156 0000 SA 387 GR91CL2	C	61 896 2

TYPE OF PRODUCT
OR NAME OF
CUSTOMER/PROJECT



BHARAT HEAVY ELECTRICALS LTD.,
PIPING CENTRE, MADRAS

DRN	NAME	SIGN	DATE	NO OF ITEMS
	JAGAN		27.06.14	
CHD	SARAVANAN C		27.06.14	
APPD	K V R		27.06.14	

REV	DATE	ALTERED CHECKED	DEPT.	GRADE OF UN TOL DIM	SCALE	WEIGHT (Kg).	NAME OF ORIGINAL ORGANISATION	ITEM No.
ZONE			CODE	C/M/F	N.T.S	234.973		
			TITLE	BEARING CLAMP FOR PIPE OD 864 (P91)		CARD CODE	DRAWING No.	REV
						U 01	2-80-830-13002	00

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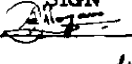

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REV	DATE	ALTERED
01	2-6-95	APPROVED R Chandra Sekhar

NOTES 3.0 & 9.0 REVISED

NOTES:

- 1.0 PIPE CLAMPS SHALL BE MANUFACTURED FROM FLATS OR FROM PLATES SHEARED ALONG THE GRAINS AND THE EDGES DRESSED OFF SHARP CORNERS.
- 2.0 ALL HOLES SHALL BE MATCH DRILLED BY ASSEMBLING THE HALF CLAMPS.
- 3.0 MANUFACTURE AND INSPECTION SHALL BE AS PER QCP:06 01
- 4.0 CLAMP WIDTH, DISTANCE OF HOLES FROM EDGE & DISTANCE BETWEEN HOLES SHALL BE MAINTAINED WITH TOLERANCE OF ± 1 mm.
- 5.0 CLAMP SHALL BE SUPPLIED IN ASSEMBLED CONDITION WITH FASTENERS PROPERLY TIGHTENED.
- 6.0 FOR RIBS ANGLES ARE INDICATED ONLY FOR REFERENCE/INFORMATION AND SHALL NOT BE TAKEN FOR MARKING PURPOSES SINCE THEY ARE ROUNDED OFF.
- 7.0 HEIGHT OF RIB ALONG LINE JOINING CENTRE OF CLAMP AND CENTRE OF MINOR RADIUS IS ALSO GIVEN ONLY FOR REFERENCE PURPOSES.
- 8.0 TOP AND BOTTOM RIBS SHALL NOT BE INTERCHANGED.
- 9.0 SUBSTITUTION OF PLATE MATERIAL SA 387 Gr22(P) IN PLACE OF SA 387 GR 12(P) IS ACCEPTABLE. DA DA
- 10.0 ALLOY STEEL CLAMPS SHALL HAVE FINAL COATING OF WHITE PAINT.

	BHARAT HEAVY ELECTRICALS LTD., UNIT: HIGH PRESSURE BOILER PLANT. TIRUCHIRAPALLI 620014.		DRN	NAME	SIGN	DATE	NO OF VAR
			CHD	MOGAN.S		May 92	
			APPD	RC SEKAR	R Chandra Sekhar	May 92	
DEPT	GRADE OF UNTOL DIM	SCALE	WEIGHT (KG).	REF. TO ASSY./OLD DRG.		ITEM NO	NO. OF ITEMS
CODE	C / M / F		2.1				
TITLE			CARD CODE	DRAWING NO.		REV	
MANUFACTURING NOTES FOR CLAMPS			U 01	4-80-800-34106		01	