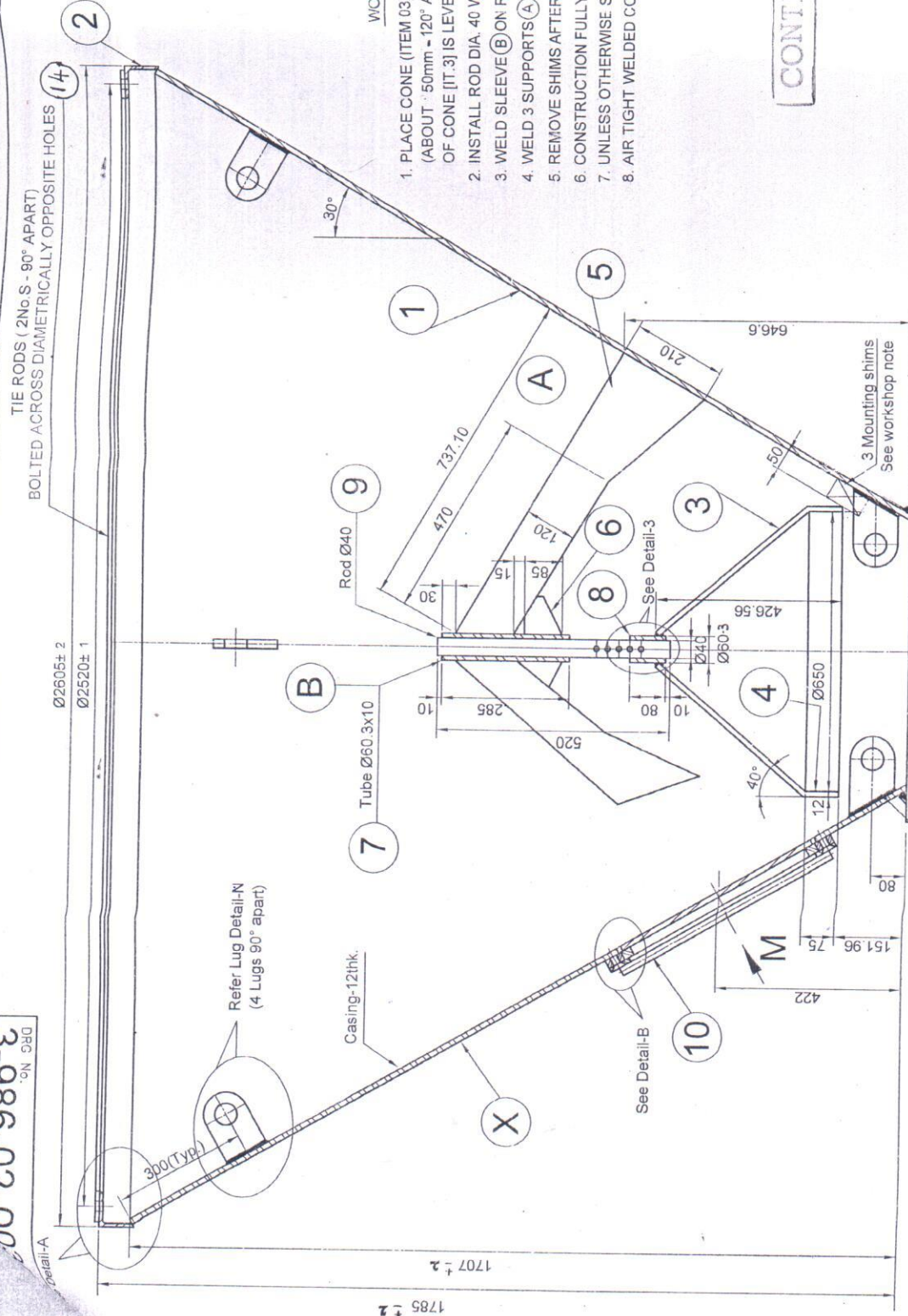


DRG NO. 3-986-02-00

ALL DIMENSIONS ARE IN mm.



WORKSHOP NOTE

1. PLACE CONE (ITEM 03) ON 3 SHIMS OF SAME THICKNESS. (ABOUT 50mm - 120° APART) MAKING SURE THAT LOWER PART OF CONE [IT.3] IS LEVELED HORIZONTAL.
2. INSTALL ROD DIA. 40 WITH ITS BOLT LIKE SHOWN.
3. WELD SLEEVE (B) ON ROD.
4. WELD 3 SUPPORTS (A) ON CONE (ITEM 01) AND SLEEVE (B) (ITEM 07).
5. REMOVE SHIMS AFTER FINAL ADJUSTMENT.
6. CONSTRUCTION FULLY WELDED.
7. UNLESS OTHERWISE SPECIFIED Δ5.
8. AIR TIGHT WELDED CONSTRUCTION ENSURED BY DP TEST.

CONTROLLED COPY

Name of Customer/Project

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

DRN	S. Murali	NAME	SIGN	DATE	09-08-2009
CHD	J. Felix	REF TO ASSY. DRG	EL-DG-3-986-02-00350	ITEM No. OF ITEMS	11-08-2009
APPD	R. M. [Signature]	WEIGHT (kg)	Refer SOM (Approx)	24-10-2009	

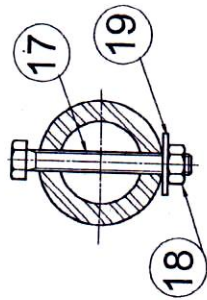
DEPT	CODE	SCALE	N.T.S.	TITLE	CASING FOR INTERNAL CONE
REV	DATE	ALTERED	CHECKED	DATE	REV.
01	02-09-15				01
MATERIAL SPEC. CORRECTED. IN SHIT. 5/6, NOTE 9 MODIFIED, REFER RR-2213.					

(TWO LUGS DIAMETRICALLY OPPOSITE) REFER LUG DETAIL-N1
MAINTAIN LUG AXIS PARALLEL TO BASE OF CONE

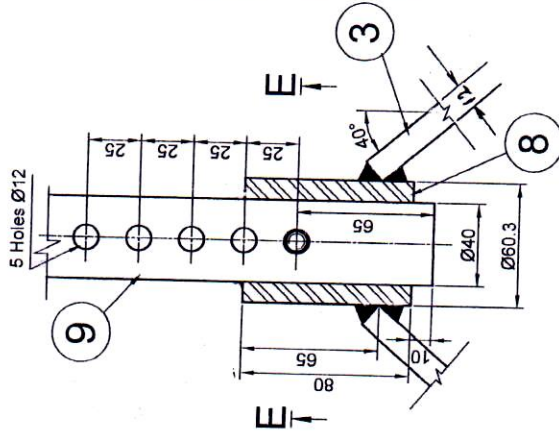
Bottom plate to be TACK WELDED To base of Large Cone.

FIRST ANGLE PROJECTION

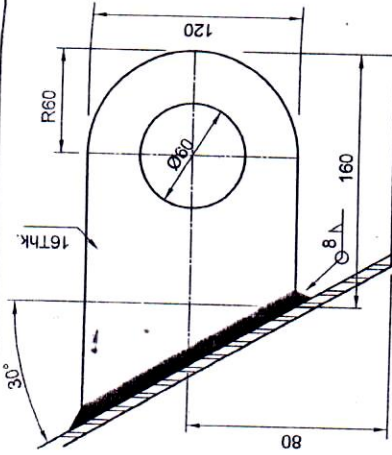
3-986-02-00351



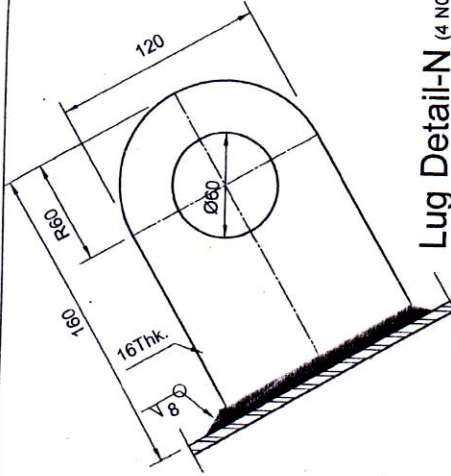
SECTION-EE



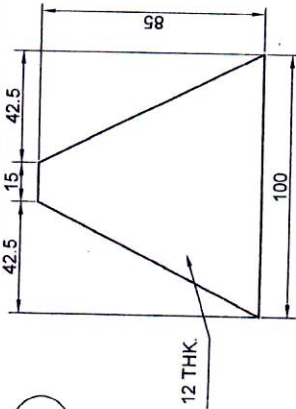
DETAIL-3



Lug Detail-N1 (2 NOS)



Lug Detail-N (4 NOS)

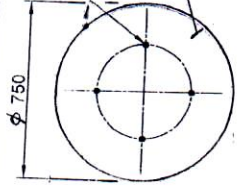


6

REV	DATE	ALTERED	CHECKED

REV	DATE	ALTERED	CHECKED

20



4 HOLES Ø20 EQ
SPACED ON P.C.D.400

10 THK

ALL DIMENSIONS ARE IN mm.

CONTROLLING COPY

NOTE: ASTM-A514 GR-B : HIGH YIELD STRENGTH,
QUENCHED AND TEMPERED STEEL
(REF SPEC: HY 10576 REV.01)

Item No.	Description	Specification	Qty	Material	Approx. Unit Wt. (Kgs.)
21	Hexagonal Nut - M20				
20	Bottom Plate	10thk - φ 750	1	M.S. conforming to IS:2062-E250-04	34.5
19	Washer Punched A 11 - ST	To suit M10 Bolt	1	IS: 2016 - Type - A	0.06
18	Nut Hex. P M10 - 8	To suit M10 Bolt	1	IS: 1364 - cl. 8	0.001
17	Hex. Hd. Bolt M10x80	M10 x 80	1	IS: 1364 - cl. 8	0.06
16	CSK Hd. Screw with Hex. Soc. M16	M16x30	8	IS: 6761 - cl. 8	0.04
15	Lifting Lugs	As shown	6	M.S. conforming to IS:2062-E250-04A	1.85
14	Tie Rod	6thk x ISA5050xL2585	2	STANDARD M.S. ANGLE	Refer Note-16
13	Flange-IV	As shown	1	ALLOY STEEL-ASTM-A514-GR-B	9.0
12	Flange-III	As shown	1	ALLOY STEEL-ASTM-A514-GR-B	14.0
11	Door Frame	As shown	1	ALLOY STEEL-ASTM-A514-GR-B	4.0
10	Handle (Round)	Ø20 x 550 Long	2	HOT ROLLED / FORGED CARBON STEEL GR. 15 C 8 - IS: 1570 - 70 - NORMALISED	1.4
9	Support Rod	Ø40 x 520 Long	1	HOT ROLLED / FORGED CARBON STEEL GR. 15 C 8 - IS: 1570 - 70 - NORMALISED	5.0
8	Sleeve-2	Tube Ø60.3x10x80L	1	CARBON STEEL SEAMLESS	0.95
7	Sleeve-1	Tube Ø60.3x10x285L	1	PIPE FOR HIGH TEMPR SERVICE - ASME SA 106, Gr B	3.4
6	Support Plate-2	12 thk.	3	ALLOY STEEL - ASTM-A514 Gr B	0.44
5	Support Plate-1	12 thk.	3	ALLOY STEEL - ASTM-A514 Gr B	9.2
4	Ring	12 thk.	1	ALLOY STEEL - ASTM-A514 Gr B	14.6
3	Inverted Cone	12 thk.	1	ALLOY STEEL - ASTM-A514 Gr B	46.2
2	Flange	As shown	1	M.S. conforming to IS:2062-E250-04GR	75.0
1a	Door (Cutout from Item No.1)	12 thk.	1	ALLOY STEEL-ASTM-A514-GR-B	—
1	Cone	12 thk.	1	ALLOY STEEL-ASTM-A514-GR-B	925.0

BILL OF MATERIAL

TABLE - 1

Name of Customer/Project

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



DEPT	GRADE OF TOL DIM C/A/N/F	SCALE	WEIGHT (kg)
		N.T.S.	Refer BOM (Approx)

CARD CODE

CASING
FOR INTERNAL CONE

DRAWING No.

3-986-02-00351

REV.

01

SHEET No. 2

No. OF SHEETS 6

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REF. DRG. No.

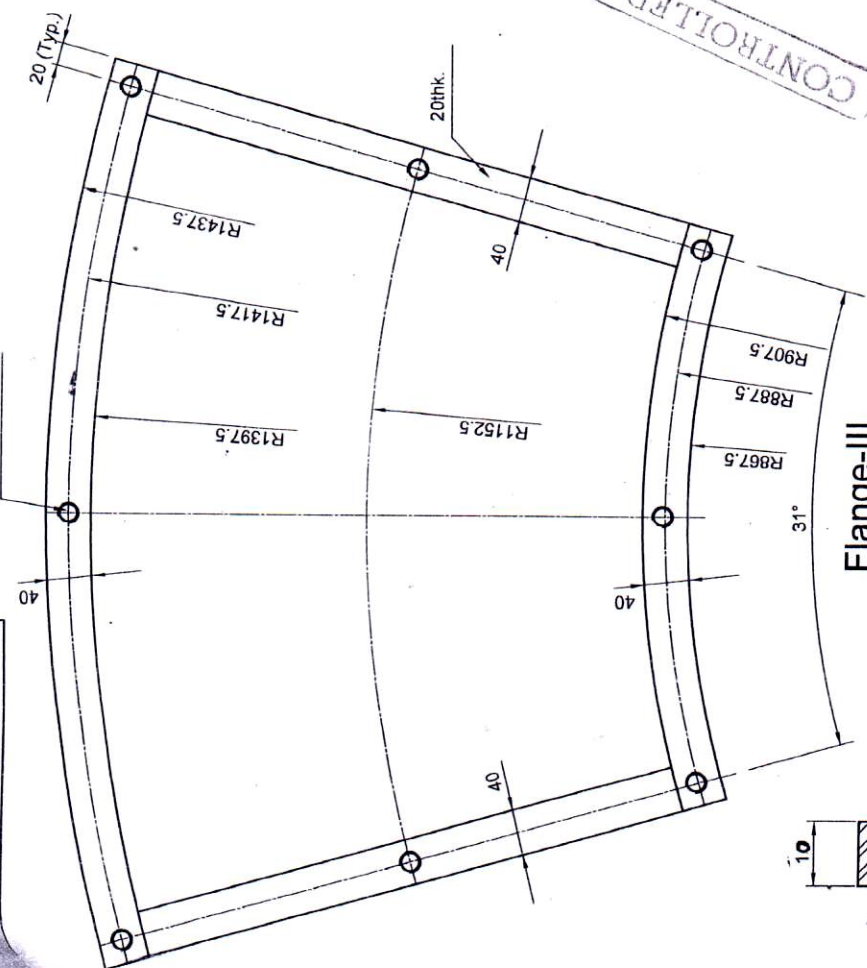
SIGN AND DATE

INVENTORY No.

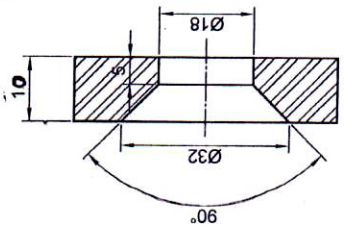
FIRST ANGLE PROJECTION

DRG No. 00-20-986-3

ALL DIMENSIONS ARE IN mm.

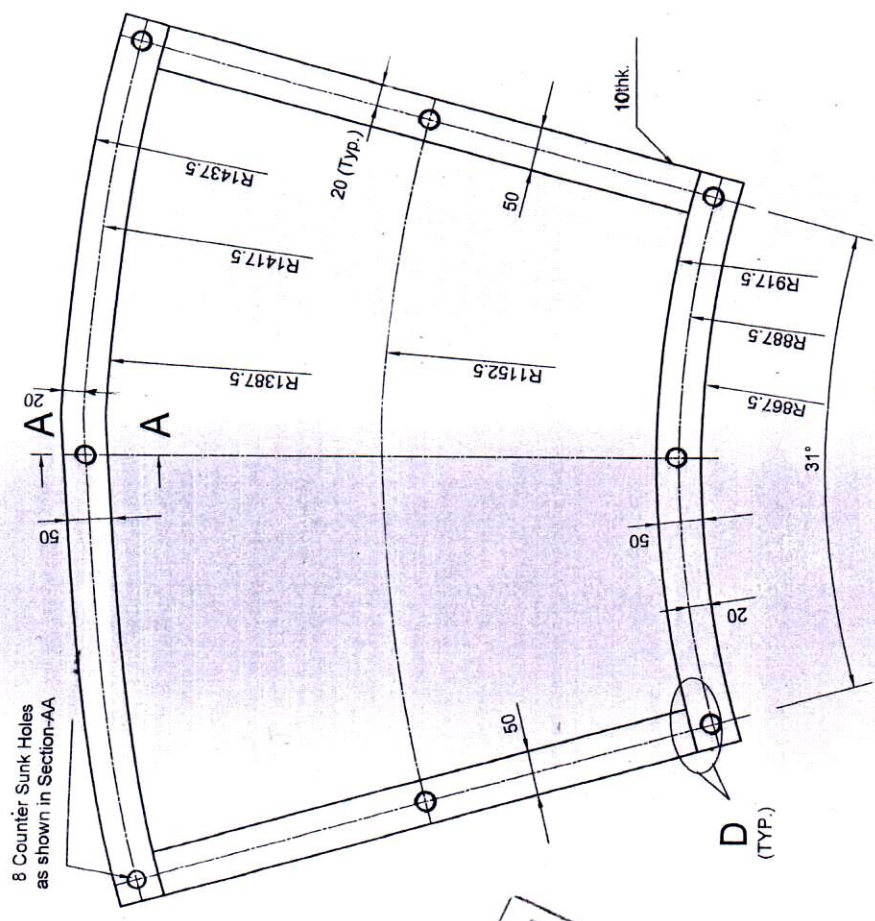


Flange-III
(TO BE WELDED TO INTERNAL CONE BODY AROUND DOOR)



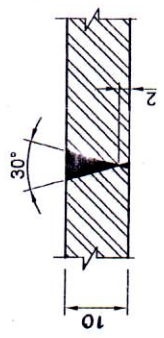
SECTION-AA

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Flange-IV
(TO BE BOLTED TO FLANGE - III)

8 Counter Sunk Holes as shown in Section-AA



WELD DETAIL-D

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REF. DRG. No.

SIGN AND DATE

INVENTORY No.

REV	DATE	ALTERED	CHECKED

REV	DATE	ALTERED	CHECKED

REV	DATE	ALTERED	CHECKED

Name of Customer/Project

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

DRN	S.Murthi	NAME	SIGN	DATE	09-08-2009
CHD	J.Felix	REF TO ASSY.DRG	EL-DG-3-986-02-00350	ITEM No.	3-986-02-00351
APPD	R. Murthy	WEIGHT (kg)	N.T.S.	SCALE	560 012
		Refer BOM (Approx)			
		CARD CODE	3-986-02-00351 01		
		DRAWING No.	3-986-02-00351 01		
		REV.	1		
		SHEET No.	4	No. OF SHEETS	6

CASING
FOR INTERNAL CONE

SUPERSEDES DRG. No.

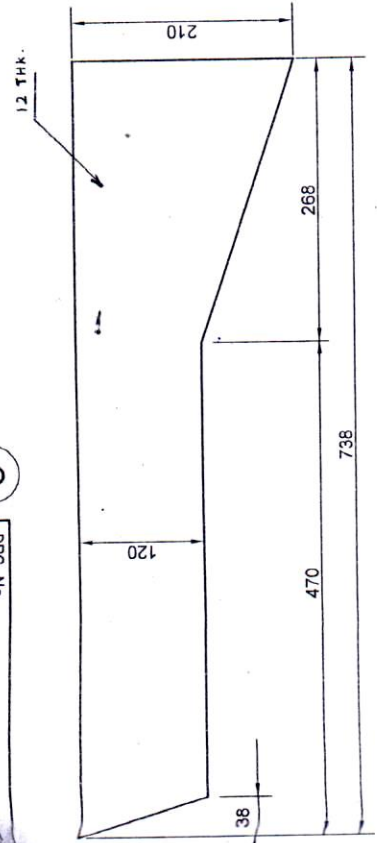
SHT.24 SIZE A3 420 x 297

ALL DIMENSIONS ARE IN mm.

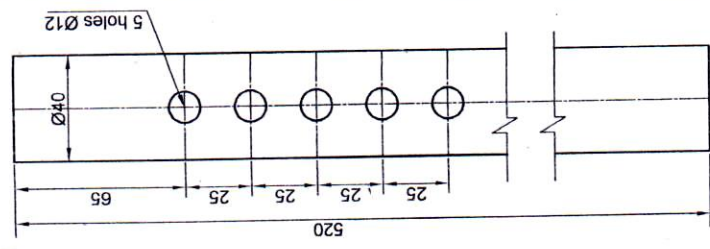
FIRST ANGLE PROJECTION

DRG NO. 986-3-20-00

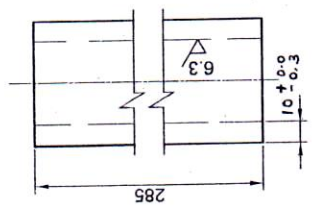
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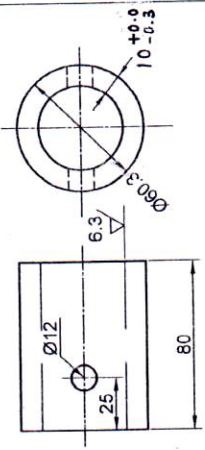
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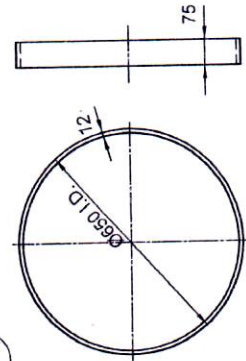
7



8



4



Note:-

1. Tolerance on casing thickness as per IS:1852:1979 Clause 9.3.
2. Lifting Lugs to be fixed 4nos at top as shown. [90° apart] 2nos at bottom [180° apart]
3. Diameters to be concentric to each other. Axial shift should be within 2mm when checked with a plumb Bob at the point indicated with cone placed against a layout.
4. For welding refer AWS:D 1.1.
5. All supplies to conform QP No.CLN:QP:01/00.
6. Two M.S. Angles ISA 50x50x6thk. to be provided as tie rods as shown.
7. Weld Seams: All welded seams must be smooth.
8. Weld beads on only the Outside surface of Large cone to be flush ground. Weld beads on Inside surface of Large Cone NOT to be flush ground.
9. Other weld beads not to be flush ground. Large cone to be fabricated with not more than 4 vertical joints. (vertical joint is flat running from minor dia to major dia).
10. Casing to be cleaned & free from rust. No paint to be applied on Large Cone outer surface. Red oxide to be painted on all other surfaces. Top flange [It: 12 & 13]. Apply Bituminous rust preventive paint. Painting as per CE:1501:20
11. Unspecified tolerances on linear dimensions ±1mm. This tolerance not for thickness of plate.
12. Parallelity between Top & Bottom surfaces should be maintained. Tolerance 2mm.
13. Weld fillet size where not specified should be min. 8.
14. Air tight welded construction with full penetration of welded fillets. To be checked with D.P. Test. Proper edge preparation of plates to be ensured for welding.
15. The flanges (Door & Internal Cone) will be Counter Drilled after scribing and forming but before welding of internal cone flange.
16. Total wt. of cone is 1183 kgs. Refer BOM for details. Wt. of 2 Tie rods is 22.0 kgs.
17. Red Oxide: Use ready mixed, air drying, Red Oxide Zinc Phosphate primer.

CONTROLLED COPY

Name of Customer/Project



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

DEPT CODE



SCALE N.T.S.

WEIGHT (kg) Refer BOM (Approx)

REF TO ASSY.DRG EL-DG-3-986-02-00350

DRN	NAME	SIGN	DATE
S.Murli			09-08-2009
J.Felix			12-08-2009
R.M.M			24-10-2009

REV	DATE	ALTERED CHECKED	REV	DATE	ALTERED CHECKED

REV	DATE	ALTERED CHECKED	INVENTORY No.

TITLE
CASING FOR INTERNAL CONE

CARD CODE

DRAWING No. **3-986-02-00351**

REV. 01
SHEET No. 5 No. OF SHEETS 6

SUPERSEDES DRG. No.

SH.T.24 SIZE A3 420 x 297

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REF. DRG. No.

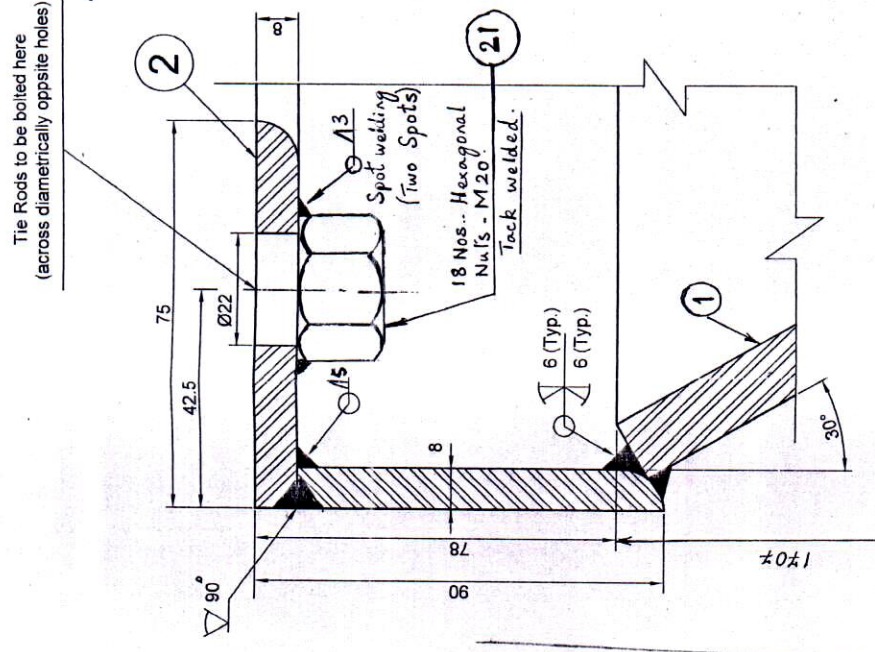
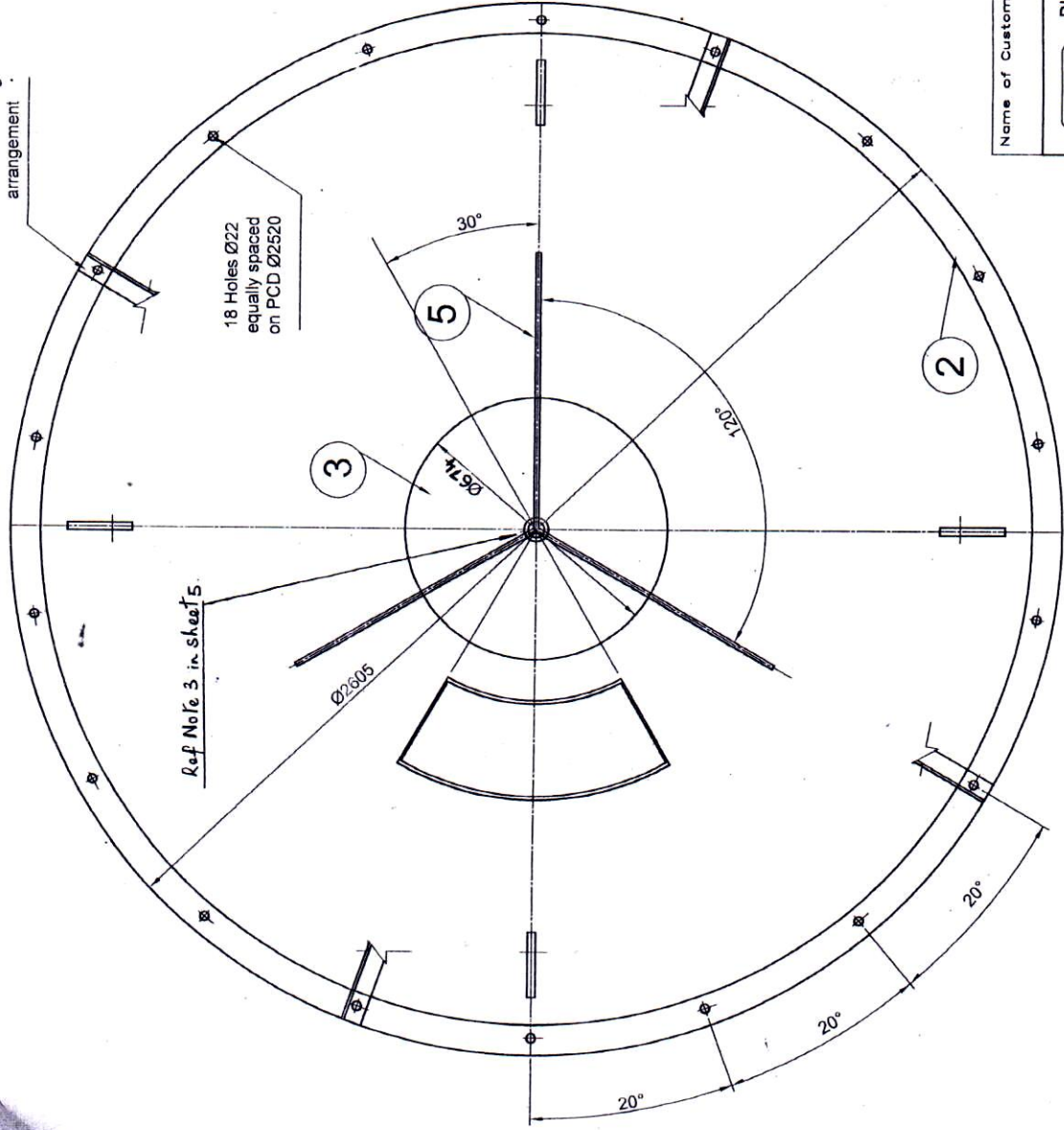
SIGN AND DATE

FIRST ANGLE PROJECTION

DRG NO. 3-986-02-00

ALL DIMENSIONS ARE IN MM.

Refer Detail-A for Tie Rod Fastening arrangement



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DETAIL-A

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SIGN AND DATE		REF. DRG. No.		INVENTORY No.	
REV	DATE	ALTERED	CHECKED	REV	DATE
Name of Customer/Project		BHARAT HEAVY ELECTRICALS LTD., ELECTROPORCELAINS DIVISION BANGALORE - 560 012		REV. 01	
DRN	S.Murthi	DATE	09-08-2009	DRAWING No. 3-986-02-00351	
CHD	J.Felix	REF TO ASSY.DRG	EL-DG-3-986-02-00350	No. OF SHEETS 6	
APPD	R.M. (K.Y)	WEIGHT (kg)	560.012	SHEET No. 6	
		SCALE	N.T.S.	No. OF SHEETS 6	
		GRADE OF TOL DIM C/M/F		No. OF SHEETS 6	
		Refer BOM (Approx)		No. OF SHEETS 6	
		TITLE	CASING FOR INTERNAL CONE	No. OF SHEETS 6	
		CARD CODE		No. OF SHEETS 6	
				No. OF SHEETS 6	

SUPERSEDES DRG. No.

SHT.24 SIZE A3 420 x 297