

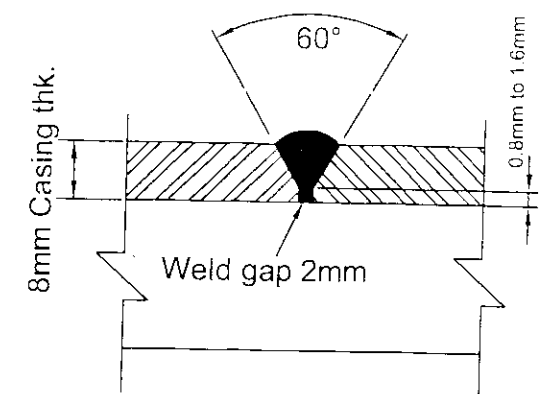
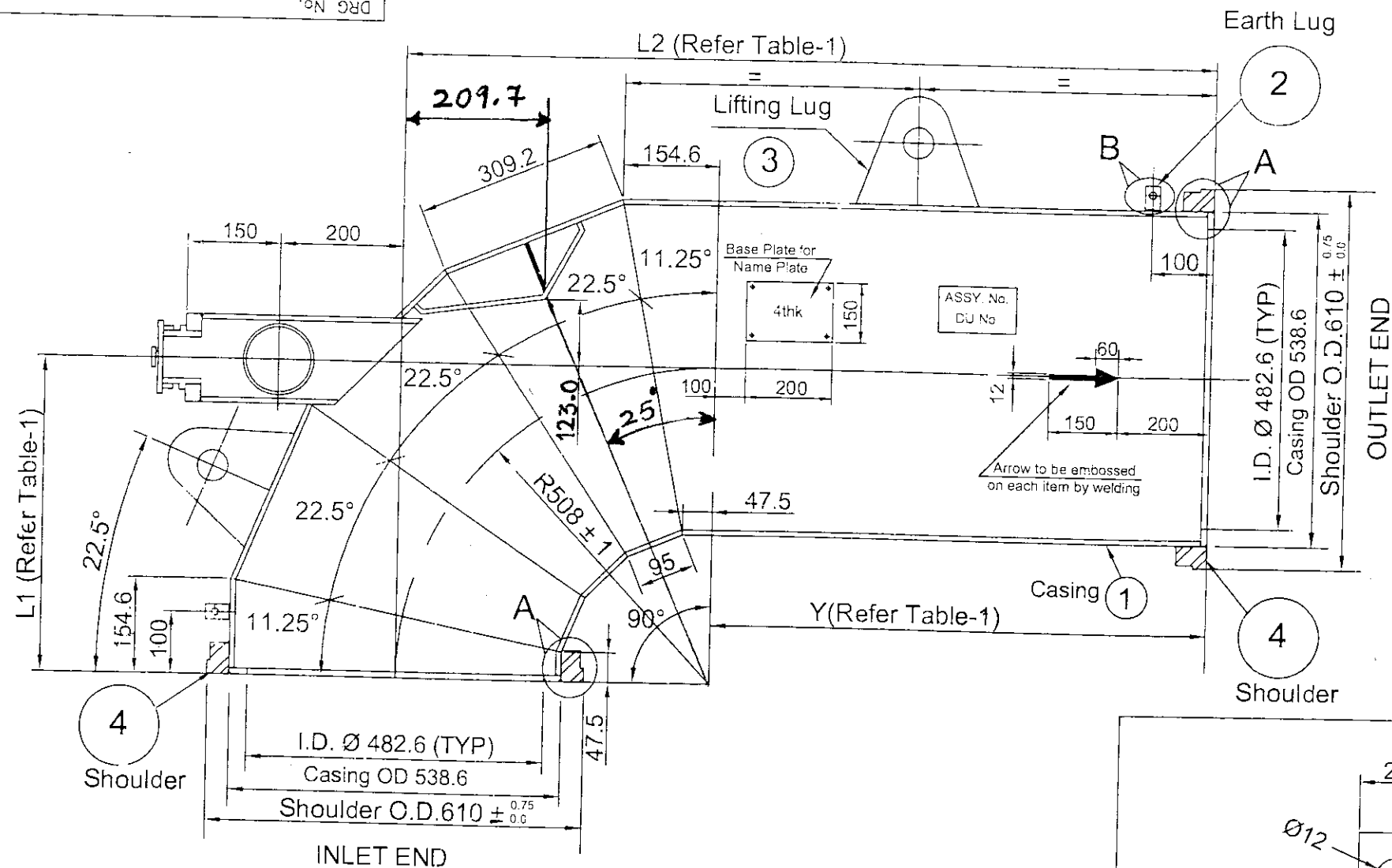
ALL DIMENSIONS ARE IN mm.

3-986-01-10221

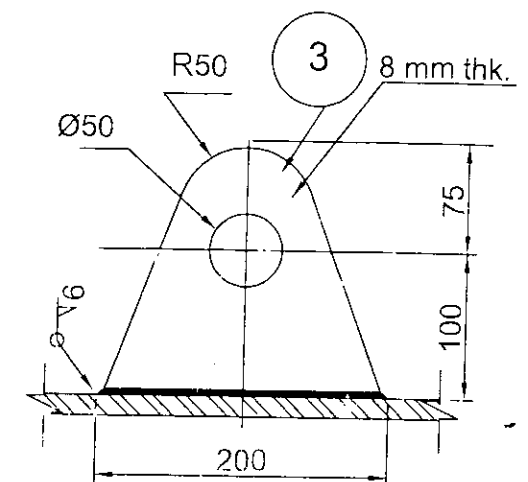
SIGN AND DATE	REF. DRG. No.

SIGN AND DATE

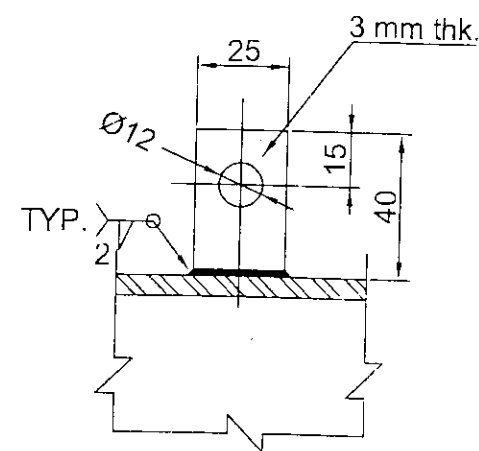
INVENTORY No.



EDGE PREPARATION WELDING DETAIL



DETAIL OF LIFTING LUG



EARTH LUG DETAIL-B

9	Stub	Refer Detail	IS:2062 - 2011 E250 BR KILLED STEEL	1 No.	1.6	
8	Breather Valve	Refer Detail	ASTM A216 GR WC8	1 No.	-	Not In Casing Vendor Scope
7	Peep Hole With stub	Refer Detail	Peep Hole with stub - ASME std.	1 No.	10.0	
6	Kicker Block	Refer Detail	IS:2062 - 2011 E250 BR KILLED STEEL	1 No.	20.0	
5	Stopper Ring	10 mm Thk.	IS:2062 - 2011 E250 BR KILLED STEEL	2 No.	3.5	
4	Shoulder	ID:540, OD:610	IS:2062 - 2011 E250 BR KILLED STEEL	2 No.	-	FREE Issue By BHEL To Vendor
3	Lifting Lug	8 mm Thk.	IS:2062 - 2011 E250 BR KILLED STEEL	2 No.	1.3	
2	Earth Lug	3 mm Thk.	IS:2062 - 2011 E250 BR KILLED STEEL	2 No.	0.02	
1	Casing	8 mm Thk.	IS:2062 - 2011 E250 BR KILLED STEEL	1 No.	Refer Table-1	
SL No.	Description	Size	Material	Qty. per Bend	Wt. / Piece (Kgs.)	Remarks

TABLE-2

NAME OF CUSTOMER/PROJECT



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

	NAME	SIGN	DATE
DRN	Kaushik.K		2-12-2016
CHD	M.Vinod		05/12/16
APPD	Felix.J		06/12/16

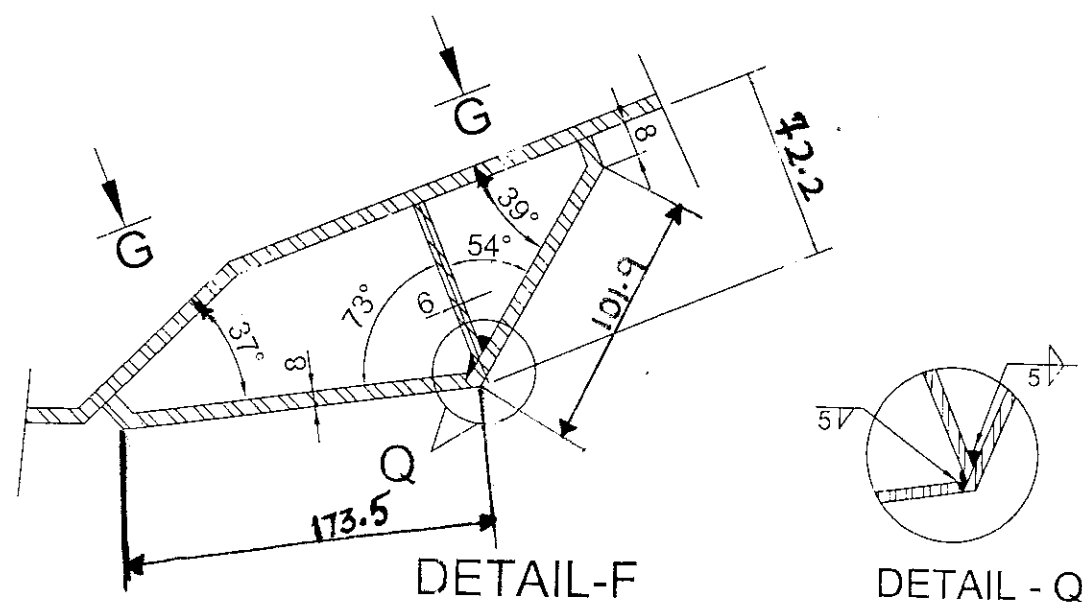
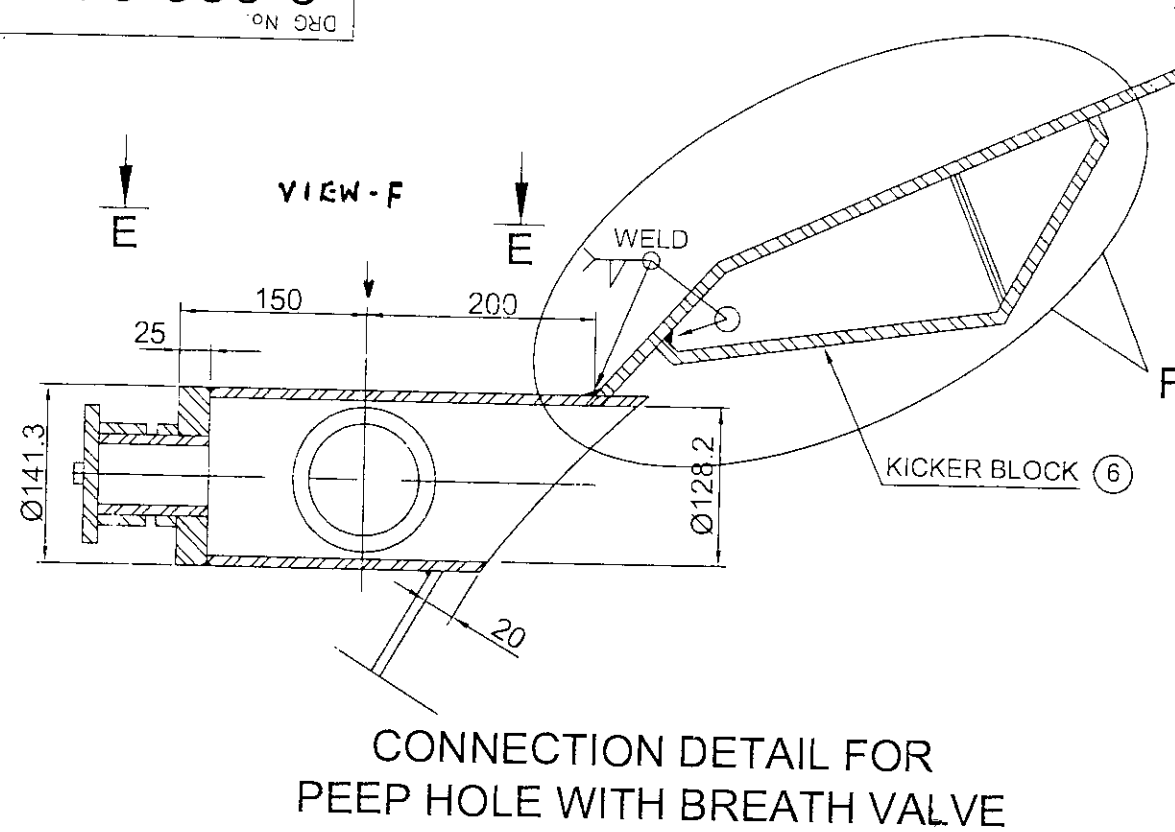
DEPT	GRADE OF TOL DIM		SCALE	WEIGHT (kg)	REF TO ASSY.DRG	ITEM	No. OF ITEMS
CODE	C/M/F		N.T.S	Refer Note-10 (Approx)	EL-DG-3-986-01-10220 (550A-01)	No.	
TITLE				CARD CODE	DRAWING No.		REV.
CASING FOR BENDS 500NB DETAIL (V-V)					3-986-01-10221		01
					SHEET No. 1	No. OF SHEETS 4	

SUPERSEDES DRG. No.

SHT.24 SIZE A3 420 x 297

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN mm.

REV 01
3-986-01-10221
DRG No.

29	CLCP-130	F1-11 & F4-11	508	2508.2	2000.2	V	V	291.7
28	CLCP-129	E6-10 & E7-10	508	2341.0	1833.0	V	V	274.2
27	CLCP-128	H6-13 & H7-13	508	2323.7	1815.7	V	V	272.4
26	CLCP-127	G6-12 & G7-12	508	2322.5	1814.5	V	V	272.3
25	CLCP-126	C6-8 & C7-8	508	2281.3	1773.3	V	V	268.0
24	CLCP-125	B6-7 & B7-7	508	2210.7	1702.7	V	V	260.6
23	CLCP-124	E5-10 & E8-10	508	2189.9	1681.9	V	V	258.4
22	CLCP-123	D6-9 & D7-9	508	1843.0	1335.0	V	V	222.1
21	CLCP-122	C1-8, C4-8, D1-9 & D4-9	508	1787.3	1279.3	V	V	216.3
20	CLCP-121	C5-8 & C8-8	508	1680.7	1172.7	V	V	205.1
19	CLCP-120	E2-10 & E3-10	508	1669.9	1161.9	V	V	204.0
18	CLCP-119	E1-11 & E4-11	508	1629.1	1121.1	V	V	199.7
17	CLCP-118	B2-9 & B3-9	508	1588.4	1080.4	V	V	195.5
16	CLCP-117	C2-8 & C3-8	508	1588.0	1080.0	V	V	195.4
15	CLCP-116	A2-7 & A3-7	508	1587.9	1079.9	V	V	195.4
14	CLCP-115	D2-9 & D3-9	508	1587.8	1079.8	V	V	195.4
13	CLCP-114	G1-11 & G4-11	508	1430.1	922.1	V	V	178.9
12	CLCP-113	F6-11 & F7-11	508	1407.2	899.2	V	V	176.5
11	CLCP-111	F5-12 & F8-12	508	1277.3	769.3	V	V	162.9
10	CLCP-110	F2-12 & F3-12	508	1277.1	769.1	V	V	162.9
9	CLCP-109	A6-7 & A7-7	508	1272.8	764.8	V	V	162.5
8	CLCP-108	A5-7 & A8-7	508	1272.4	764.4	V	V	162.4
7	CLCP-107	B1-9 & B4-9, B5-9 & B8-9	508	1272.1	764.1	V	V	162.4
6	CLCP-106	A1-7 & A4-7	508	1271.9	763.9	V	V	162.4
5	CLCP-105	D5-9 & D8-9	508	1252.5	744.5	V	V	160.3
4	CLCP-104	G2-11 & G3-11	508	1222.7	714.7	V	V	157.2
3	CLCP-103	G5-11 & G8-11	508	1209.1	701.1	V	V	155.8
2	CLCP-102	H5-11 & H8-11	508	1208.8	700.8	V	V	155.8
1	CLCP-101	H1-11 & H4-11	508	1124.8	616.8	V	V	147.0
Var. No.	DU No.	Assembly No.	L1	L2	Y (mm)	End connection inlet side	End connection outlet side	Weight kg/Bend

TABLE - 1

NAME OF CUSTOMER/PROJECT

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

NAME	SIGN	DATE
DRN Kaushik.K		2-12-2016
CHD M.Vinod		05/12/16
APPD Felix.J		06/12/16

DEPT	GRADE OF TOL DIM C/M/F	SCALE	WEIGHT (kg) Refer Note-10 (Approx)	REF TO ASSY.DRG	ITEM No.	No. OF ITEMS
		N.T.S.		EL-DG-3-986-01-10220 (550A-01)		

TITLE	CARD CODE	DRAWING No.	REV.
CASING FOR BENDS 500NB DETAIL (V-V)		3-986-01-10221	01

SHEET No. 2 No. OF SHEETS 4

SUPERSEDES DRG. No.

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REF. DRG. No.

SIGN AND DATE

INVENTORY No.

REV	DATE	ALTERED	REV	DATE	ALTERED	REV	DATE	ALTERED
		CHECKED			CHECKED			CHECKED

ALL DIMENSIONS ARE IN mm.

3-986-01-10221

INVENTORY No.

WELD
TYP. 

CUT TO SUIT
TYPICAL PROFILE FORMATION

WELD
TYP. > 7 6

VIEW - GG

Technical drawing of a shoulder on a casing. The drawing shows a cross-section of a casing with a shoulder. The casing has an outer diameter (O.D.) of 538.6. The shoulder has an inner diameter (i.d.) of 540 and an outer diameter (O.D.) of 610 with a tolerance of $\pm 0.75 / -0.0$. A gap of 0.7 is shown between the casing and the shoulder. The shoulder height is 28, and the casing thickness is 10. A detail view '4' shows a fillet with a radius of 5. The text 'TYP.' is also present.

Detail-A

5 STOPPER RING
10 THK

5x45°

0.7

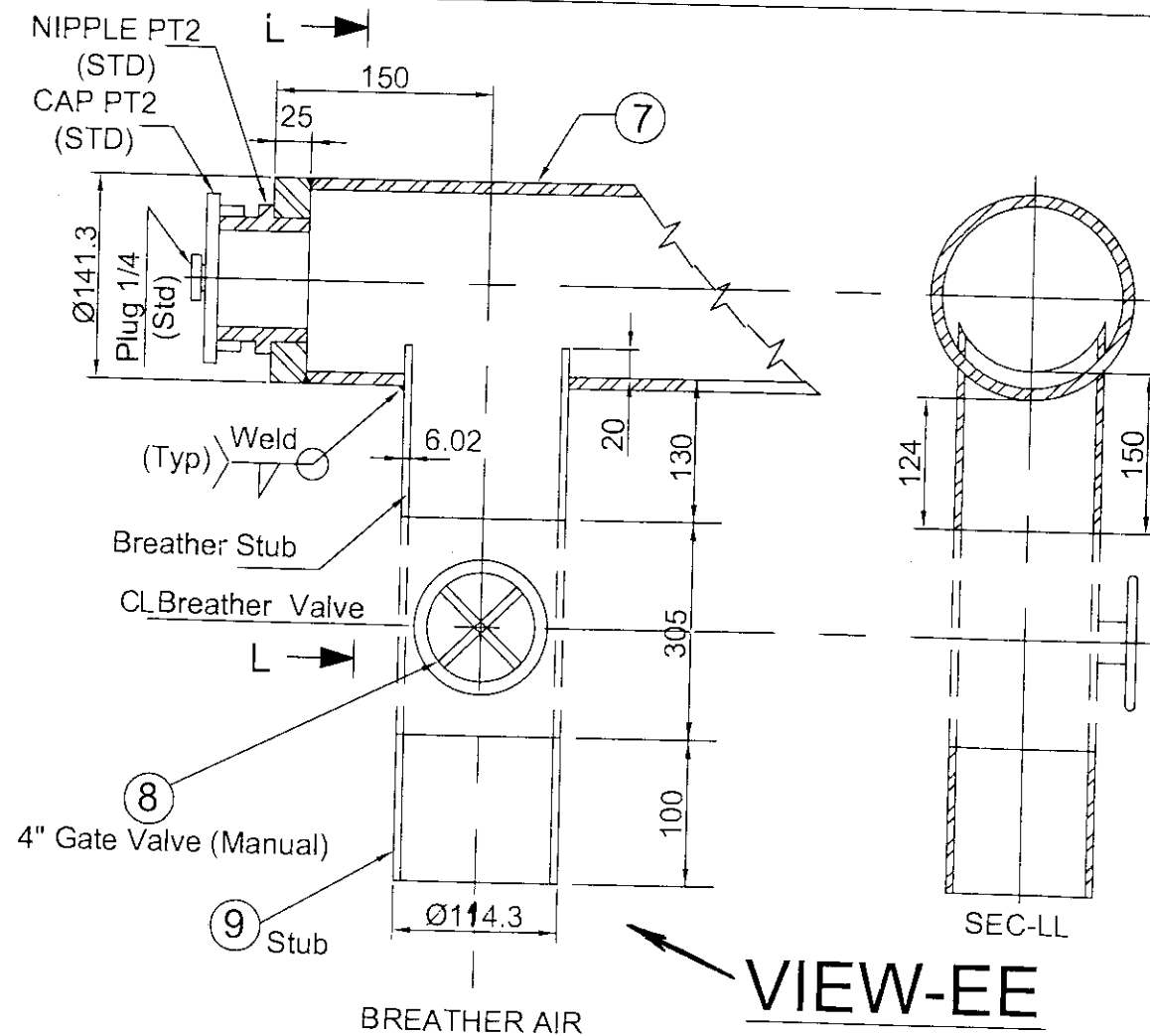
SHOULDER

5

60°

G 60°

Detail-D



VIEW-EE



BHEL

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

	NAME	SIGN	DATE
DRN	Kaushik.K		2-12-2016
CHD	M.Vinod		05/12/16
APPD	Felix.J		06/12/16

DEPT	GRADE OF TOL DIM		SCALE	WEIGHT (kg)	REF TO ASSY.DRG	ITEM No.	No.OF ITEMS
CODE	C/M/F		N.T.S.	Refer Note-10 (Approx)	EL-DG-3-986-01-10220 (550A-01)		
TITLE				CARD CODE	DRAWING No.		REV.
CASING FOR BENDS 500NB DETAIL (V-V)					3-986-01-10221		01
					SHEET No. 3	No.OF SHEETS 4	

SUPERSEDES DRG. No.

SHT.24 SIZE A3 420 x 297

REV
01

3-986-01-10221

DRG No.

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NOTE:-

1. FOR CONSTRUCTION MATERIAL REFER TABLE-2
2. DURING ASSY. LONGITUDINAL WELDING BETWEEN SEGMENTS TO BE STAGGERED.
3. ALL SUPPLIES TO CONFORM CLN:QP:01/00. WELDING AS PER WP:CL001A & AWS:D 1.1.
4. DIMENSIONS INDICATED ARE FINISHED SIZE ONLY.
5. ASSEMBLY No., DU No., AND ARROW HEAD TO BE WELD DEPOSITED OVER CASING AS SHOWN, AS PER CE:1501:21, REFER TABLE-1 FOR DU NO, & ASSY NO. DETAILS FOR EACH VARIANT .
6. BASE PLATE FOR NAME PLATE TO BE WELDED ON TO CASING, AT LOCATION SHOWN, FOR BASE PLATE & WELDING DETAILS REF DRG : 4 986 99 07720
7. FACE ANGLES TO BE MATCHED DURING ASSY.
8. ALL OVER MACHINING 6.3, FOR STOPPER RINGS.
9. V- VICTAULIC COUPLING SHOULDER.
10. FOR CASING Wt. REFER TABLE -1
FOR Wt. OF LIFTING LUG, STOPPER RINGS, KICKER BLOCK, STUB, PEEP HOLE WITH STUB & EARTH LUG, REFER TABLE-2.
11. WHERE "Y" IS GREATER THAN 1000, ONE CIRCUMFERENTIAL JOINT IS ALLOWED ON "Y", OUTSIDE SEGMENT TOWARDS OUTLET END. THIS JOINT SHOULD NOT FOUL WITH LUG.
12. SURFACE PREPARATION AND PAINTING: REF PAINTING SCHEME DOC. No. : PS- L&T - ~~KHARGONE~~ BENDS/PIPES .
13. OVERALL BEND TOLERANCE:-
 - a]. AXIAL SHIFT: ± 3 MM
 - b]. RADIAL SHIFT: ± 3 MM
 - c]. OUT OF SQUARENESS: ± 3 MM.
14. CONTROL DURING WELDING OF SHOULDER TO CASING :-
 - a] OVALITY OF CASING ON OUTER DIAMETER TO BE MAINTAINED WITHIN 1.0 mm
 - b] WELDING OF SHOULDER TO CASING AS PER DETAIL-A, TO BE DONE IN SUCH A WAY AS TO ENSURE THAT DISTORTION OF COLLAR IS LIMITED SUCH THAT DIM. $\varnothing 610$ mm IS STRICTLY WITHIN THE RANGE SPECIFIED IN SHEET 3 OF 4.
VENDOR TO DO THE NEEDFUL TO ACHIEVE 14(a) AND 14(b).
15. ALL PARTS HAVE TO BE 6mm FILLET WELDED, IF NOT SPECIFIED.
16. ITEM-9 TO BE TACK WELDED TO BREATHER STUB. BREATHER VALVE WILL BE WELDED AT SITE .

NAME OF CUSTOMER/PROJECT



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

NAME	SIGN	DATE
DRN Kaushik.K		2-12-2016
CHD M.Vinod		05/12/16
APPD Felix.J		06/12/16

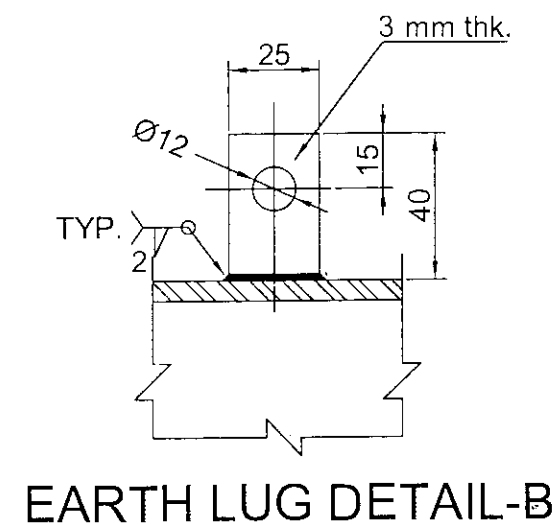
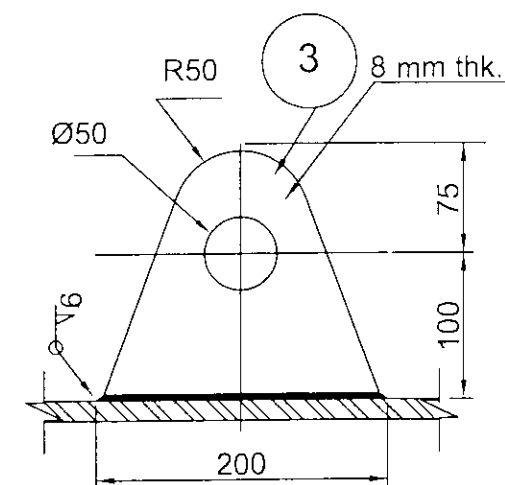
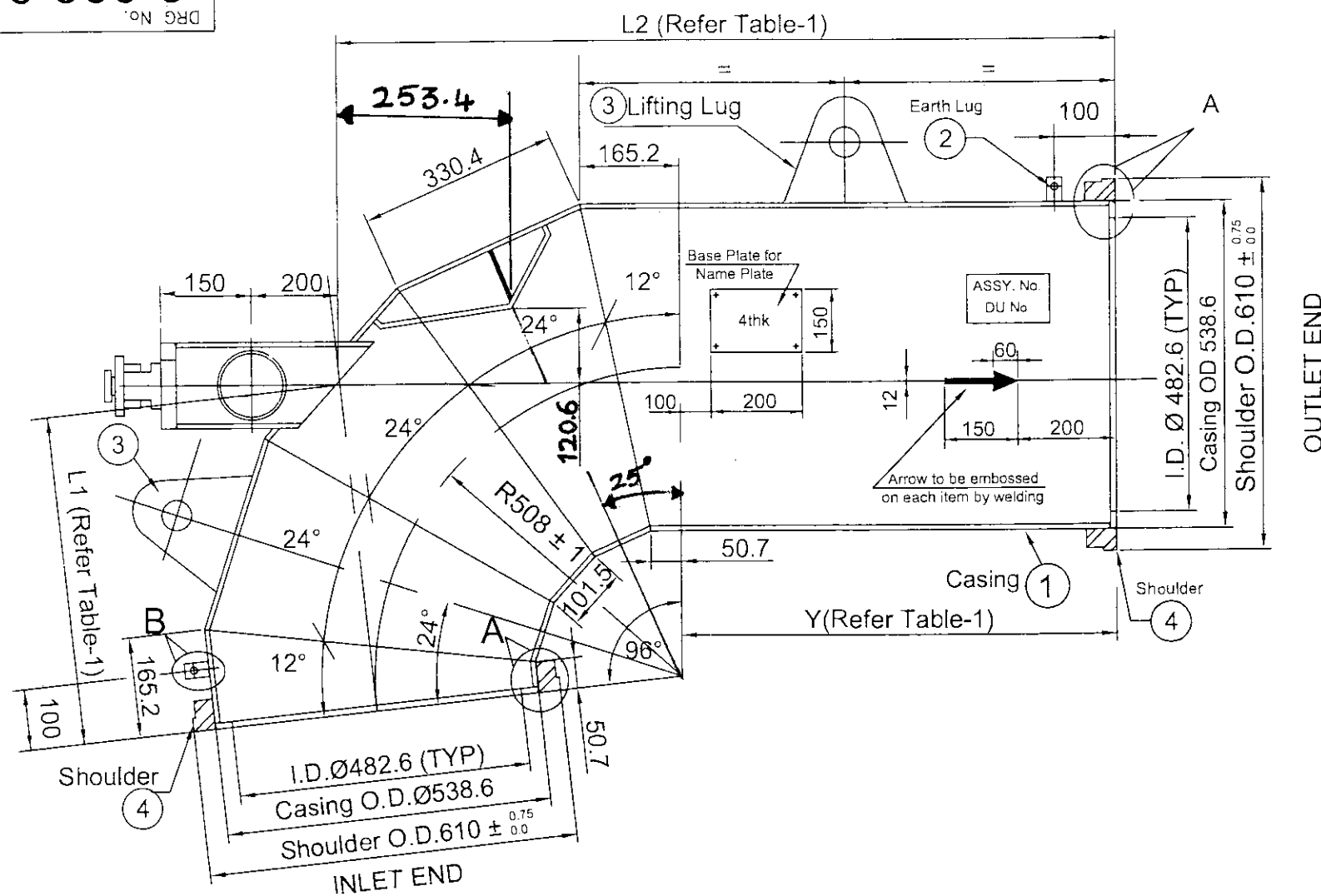
DEPT	GRADE OF TOL DIM	SCALE	WEIGHT (kg)	REF TO ASSY.DRG	ITEM No.	No.OF ITEMS
CODE	C/M/F	N.T.S.	Refer Note-10 (Approx)	EL-DG-3-986-01-10220 (550A-01)		
TITLE	CARD CODE	DRAWING No.	REV.			
CASING FOR BENDS 500NB DETAIL (V-V)		3-986-01-10221	01			
		SHEET No. 4	No.OF SHEETS 4			

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN mm.

REV
013-986-01-10231
DRG No.

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9	Stub	Refer Detail	IS:2062 - 2011 E250 BR KILLED STEEL	1 No.	1.6	
8	Breather Valve	Refer Detail	ASTM A216 Gr. WC6	1 No.	-	Not in Casing Vendor Scope
7	Peep Hole with Stub	Refer Detail	Peep Hole with stub - ASME std.	1 No.	10.0	
6	Kicker Block	Refer Detail	IS:2062 - 2011 E250 BR KILLED STEEL	1 No.	20.0	
5	Stopper Ring	10 mm Thk.	IS:2062 - 2011 E250 BR KILLED STEEL	2 No.	3.5	
4	Shoulder	ID:540, OD:610	IS:2062 - 2011 E250 BR KILLED STEEL	2 No.	-	FREE Issue By BHEL To Vendor
3	Lifting Lug	8 mm Thk.	IS:2062 - 2011 E250 BR KILLED STEEL	2 No.	1.3	
2	Earth Lug	3 mm Thk.	IS:2062 - 2011 E250 BR KILLED STEEL	2 No.	0.02	
1	Casing	8 mm Thk.	IS:2062 - 2011 E250 BR KILLED STEEL	1 No.	Refer Table-1	
SL No.	Description	Size	Material	Qty. per Bend	Wt. / Piece (Kgs.)	Remarks

TABLE - 2

1	CLCP-112	H2-10 & H3-10	564.3	1281.7	717.4	V	V	163.1
Var. No.	DU No.	Assembly No.	L1	L2	Y	End connection inlet side	End connection outlet side	Qty. Nos

TABLE - 1

NAME OF CUSTOMER/PROJECT

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

DRN	NAME	SIGN	DATE
CHD	Kaushik.K		2-12-2016
APPD	M.V.nod		05/12/16
	Felix.J		06/12/16

DEPT	GRADE OF TOL DIM	SCALE	WEIGHT (kg)	REF TO ASSY.DRG	ITEM No.	No. OF ITEMS
CODE	C/M/F	N.T.S.	Refer Note-10 (Approx)	EL-DG-3-986-01-10230 (550A-02)		
TITLE	CARD CODE			DRAWING No.		REV.
CASING FOR BENDS 500NB DETAIL (V-V)				3-986-01-10231		01
				SHEET No. 1	No. OF SHEETS 3	

SUPERSEDES DRG. No.

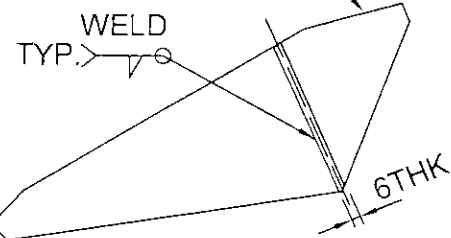
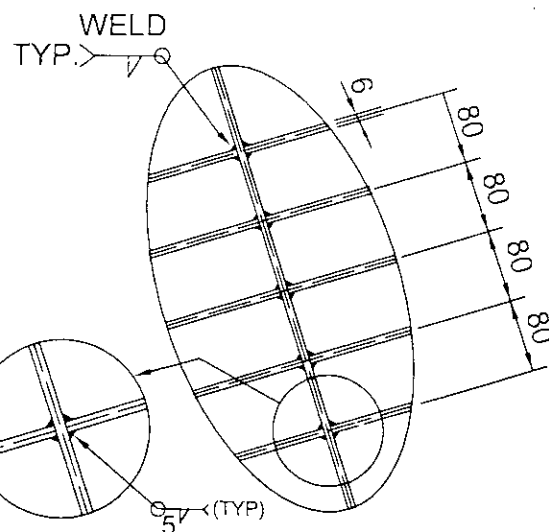
SHT.24 SIZE A3 420 x 297

FIRST ANGLE PROJECTION

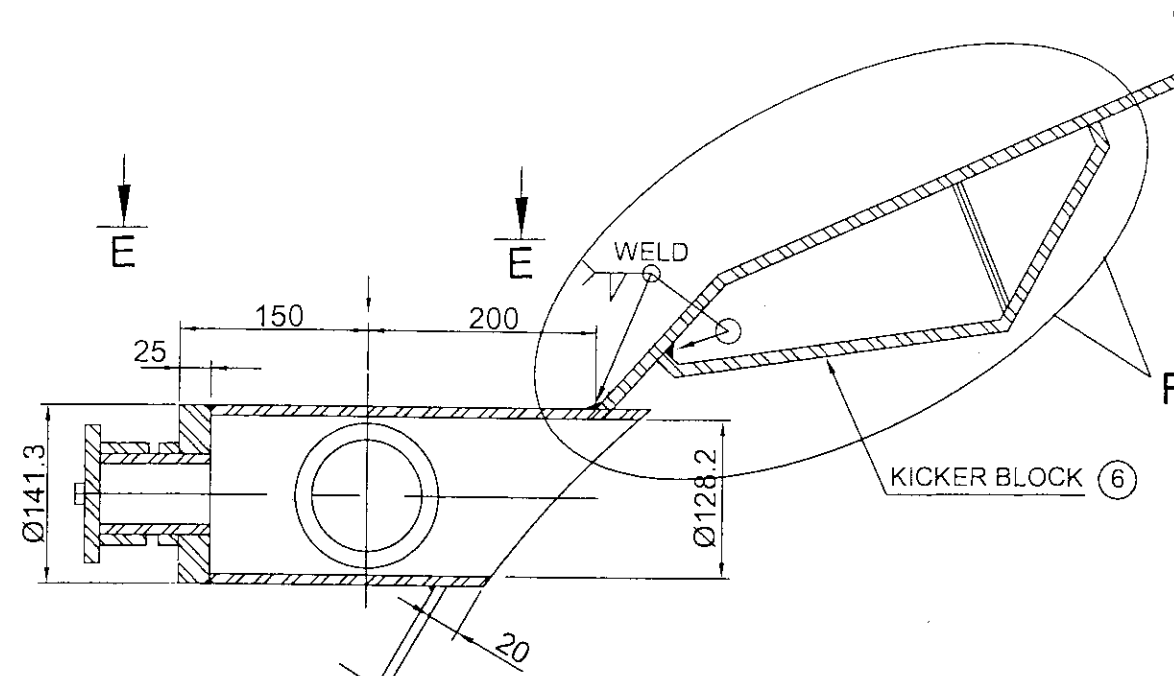
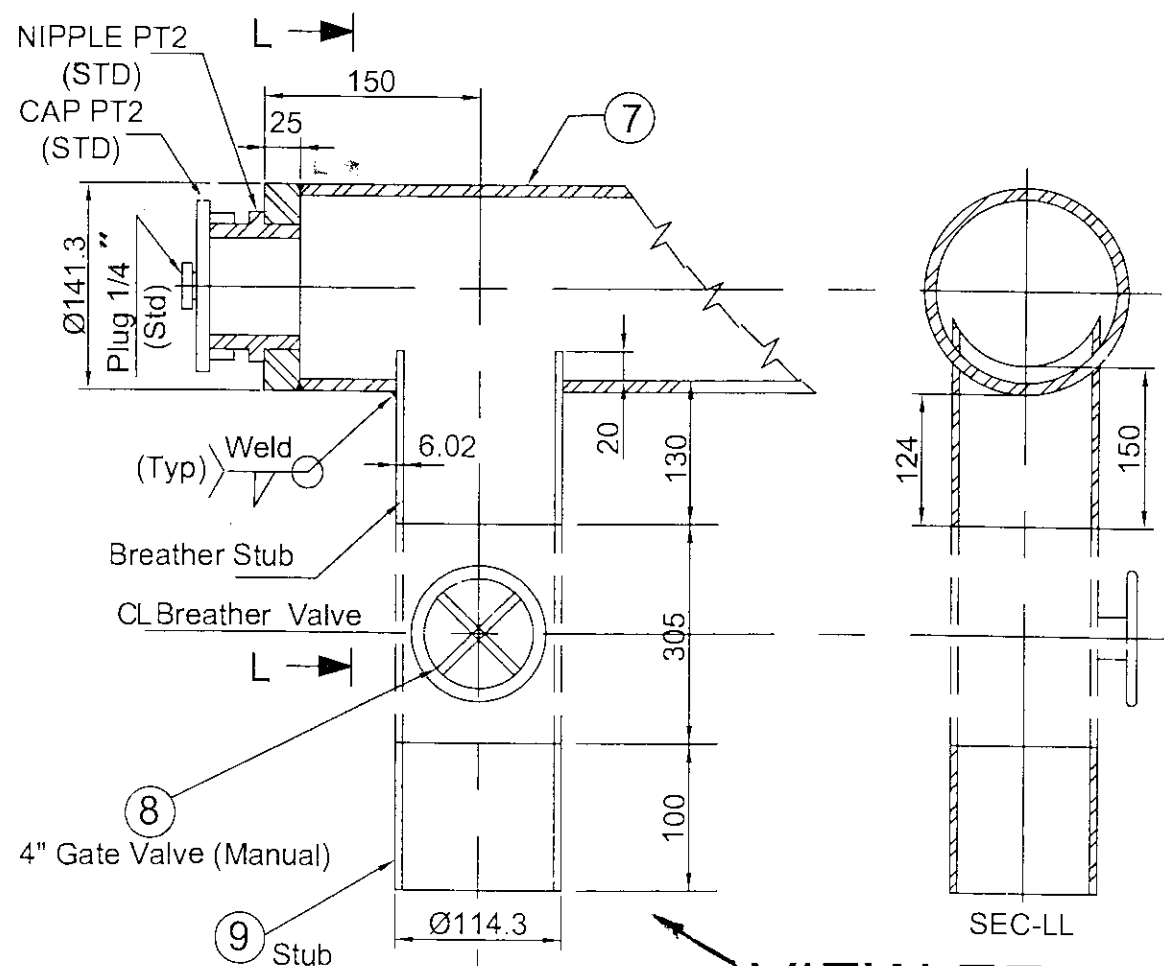
ALL DIMENSIONS ARE IN mm.

13201-10-986-3

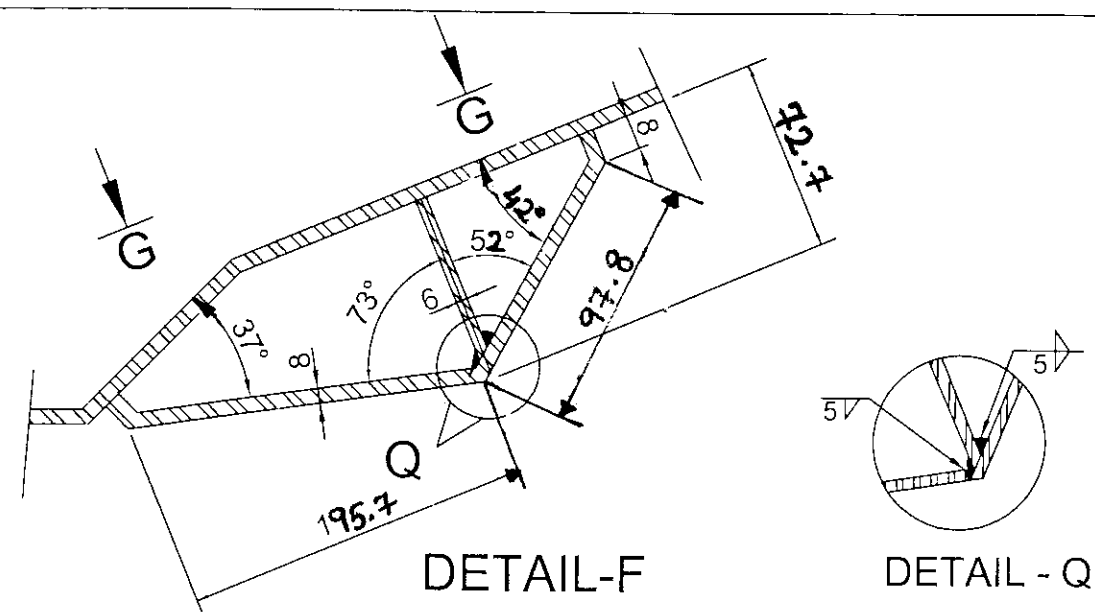
DRG No.

THIS PROFILE FORMATION
MADE BY CUT TO SUITCUT TO SUIT
TYPICAL PROFILE FORMATION

VIEW - GG

CONNECTION DETAIL FOR
PEEP HOLE WITH BREATH VALVE

VIEW-EE



DETAIL-F

DETAIL - Q

NAME OF CUSTOMER/PROJECT

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

	NAME	SIGN	DATE
DRN	Kaushik.K		2-12-2016
CHD	M.Vinod		05/12/16
APPD	Felix.J		06/12/16

DEPT	GRADE OF TOL DIM	SCALE	WEIGHT (kg)	REF TO ASSY.DRG	ITEM No.	No.OF ITEMS
CODE	C/M/F	N.T.S.	Refer Note-10 (Approx)	EL-DG-3-986-01-10230 (550A-02)		
TITLE	CASING FOR BENDS 500NB DETAIL (V-V)	CARD CODE	DRAWING No.	3-986-01-10231	REV.	01
			SHEET No.	2	No.OF SHEETS	3

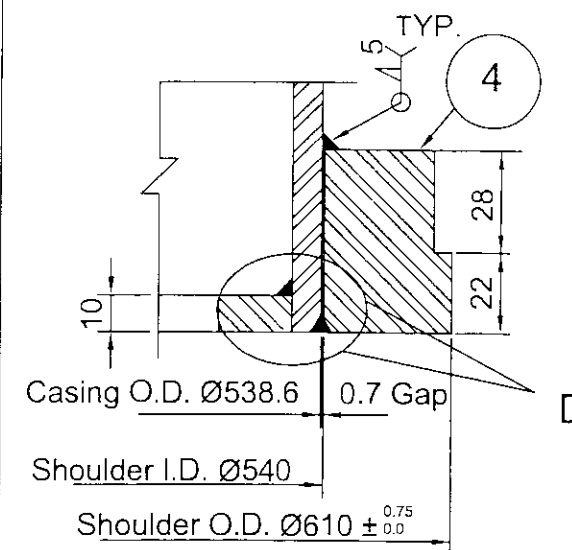
SUPERSEDES DRG. No.

SHT.24 SIZE A3 420 x 297

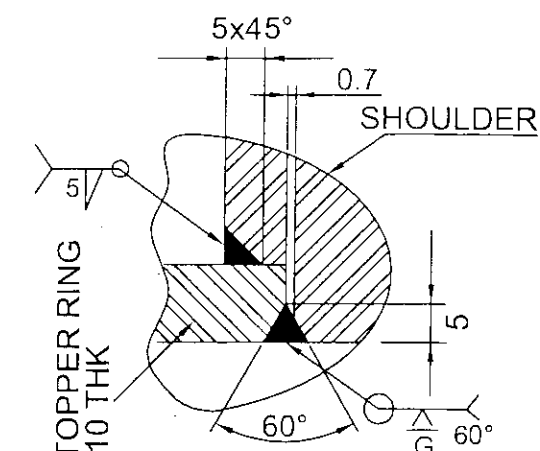
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RC No. 3-986-01-10231
REV 01

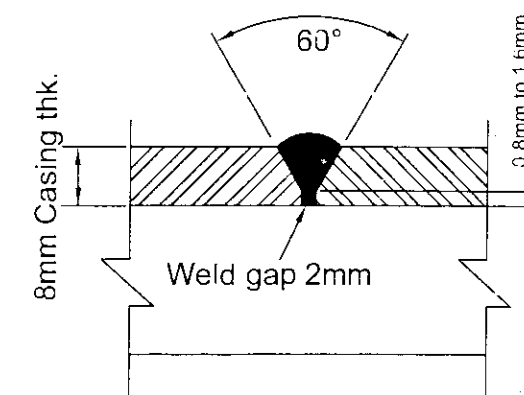
1. FOR CONSTRUCTION MATERIAL REFER TABLE-2
2. DURING ASSY. LONGITUDINAL WELDING BETWEEN SEGMENTS TO BE STAGGERED.
3. ALL SUPPLIES TO CONFORM CLN:QP:01/00. WELDING AS PER WP:CL001A & AWS:D 1.1.
4. DIMENSIONS INDICATED ARE FINISHED SIZE ONLY.
5. ASSEMBLY No., DU No., AND ARROW HEAD TO BE WELD DEPOSITED OVER CASING AS SHOWN, AS PER CE:1501:21, REFER TABLE-1 FOR DU NO, & ASSY NO. DETAILS FOR EACH VARIANT
6. BASE PLATE FOR NAME PLATE TO BE WELDED ON TO CASING, AT LOCATION SHOWN, FOR BASE PLATE & WELDING DETAILS REF DRG : 4 986 99 07720
7. FACE ANGLES TO BE MATCHED DURING ASSY.
8. ALL OVER MACHINING 6.3, FOR STOPPER RINGS.
9. V- VICTAULIC COUPLING SHOULDER.
10. FOR CASING Wt. REFER TABLE -1
FOR Wt. OF LIFTING LUG, STOPPER RINGS, KICKER BLOCK, STUB, PEEP HOLE WITH STUB & EARTH LUG, REFER
11. WHERE "Y" IS GREATER THAN 1000, ONE CIRCUMFERENTIAL JOINT IS ALLOWED ON "Y", OUTSIDE SEGMENT TOWARDS OUTLET END. THIS JOINT SHOULD NOT FOUL WITH LUG.
12. SURFACE PREPARATION AND PAINTING: REF PAINTING SCHEME DOC. No. : PS- L&T-KHAR60NE BENDS/PIPES.
13. OVERALL BEND TOLERANCE:-
 - a]. AXIAL SHIFT: ± 3 MM
 - b]. RADIAL SHIFT: ± 3 MM
 - c]. OUT OF SQUARENESS: ± 3 MM.
14. CONTROL DURING WELDING OF SHOULDER TO CASING :-
 - a] OVALITY OF CASING ON OUTER DIAMETER TO BE MAINTAINED WITHIN 1.0 mm
 - b] WELDING OF SHOULDER TO CASING AS PER DETAIL-A, TO BE DONE IN SUCH A WAY AS TO ENSURE THAT DISTORTION OF COLLAR IS LIMITED SUCH THAT DIM. $\varnothing 610$ mm IS STRICTLY WITHIN THE RANGE SPECIFIED IN SHEET 3 OF 3.
VENDOR TO DO THE NEEDFUL TO ACHIEVE 14(a) AND 14(b).
15. ALL PARTS HAVE TO BE 6mm FILLET WELDED, IF NOT SPECIFIED.
16. ITEM: 9 TO BE TACK WELDED TO BREATHER STUB . BREATHER VALVE WILL BE WELDED AT SITE.



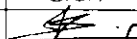
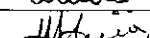
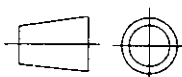
Detail-A



Detail-D



EDGE PREPARATION WELDING DETAIL.

NAME OF CUSTOMER/PROJECT									
		BHARAT HEAVY ELECTRICALS LTD., ELECTROPORCELAINS DIVISION BANGALORE - 560 012				NAME	SIGN	DATE	
					DRN	Kaushik.K		2-12-2016	
					CHD	M.Vinod		05/12/16	
					APPD	Felix.J		06/12/16	
DEPT	GRADE OF		SCALE	WEIGHT (kg)	REF TO ASSY.DRG		ITEM	No. OF	
CODE	TOL DIM								N.T.S.
C/M/F				(Approx)	(550A-02)				
TITLE CASING FOR BENDS 500NB DETAIL (V-V)				CARD CODE	DRAWING No.			REV.	
					3-986-01-10231			01	
					SHEET No.	3	No. OF SHEETS	3	

SUPERSEDES DRG. No.

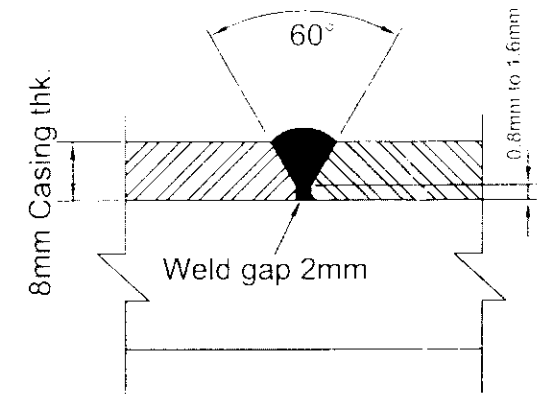
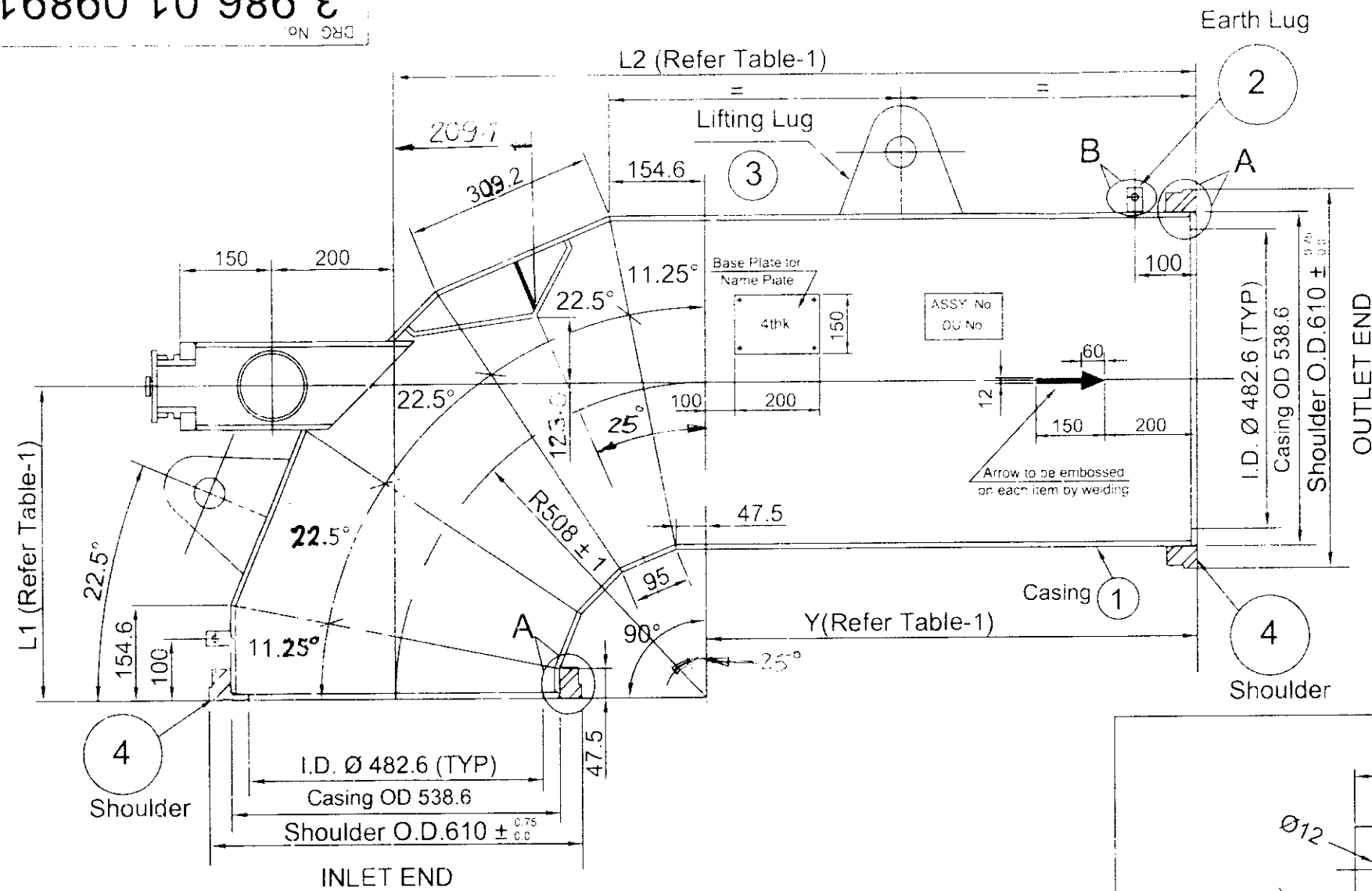
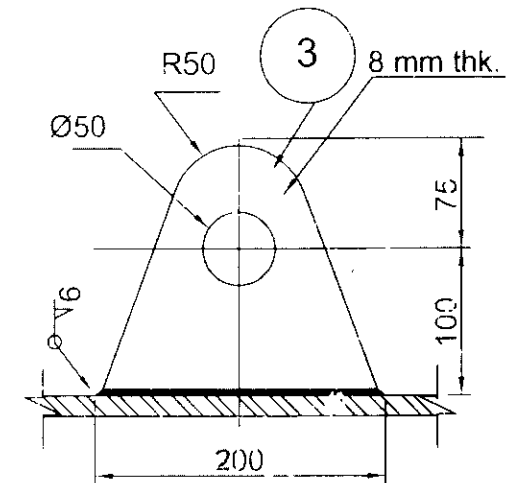
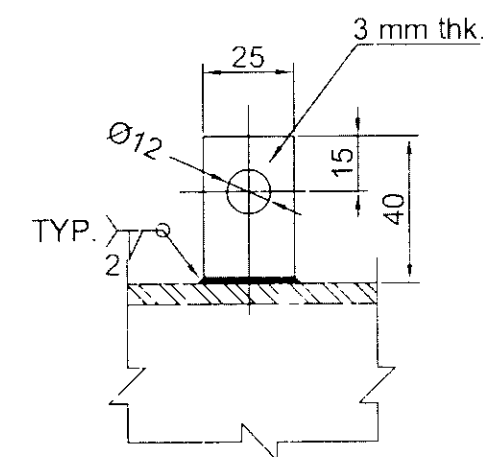
SHT.24 SIZE A3 420 x 297

10
REV

16860-10-986-3

DRG No.

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EDGE PREPARATION
WELDING DETAILDETAIL OF
LIFTING LUG

EARTH LUG DETAIL-B

9	Stub	Refer Detail	IS 2062 - 2011 E250 BR KILLED STEEL	1 No.	1.6	
8	Breaker Valve	Refer Detail	ASTM A 216 Gr. WC	1 No.	-	Not In Casing Vendor Scope
7	Peep Hole With stub	Refer Detail	Peep Hole with stub - ASME std.	1 No.	10.0	
6	Kicker Block	Refer Detail	IS 2062 - 2011 E250 BR KILLED STEEL	1 No.	20.0	
5	Stopper Ring	10 mm Thk.	IS 2062 - 2011 E250 BR KILLED STEEL	2 No.	3.5	
4	Shoulder	ID:540, OD:610	IS 2062 - 2011 E250 BR KILLED STEEL	2 No.	-	FREE Issue By BHEL To Vendor
3	Lifting Lug	8 mm Thk.	IS 2062 - 2011 E250 BR KILLED STEEL	2 No.	1.3	
2	Earth Lug	3 mm Thk.	IS 2062 - 2011 E250 BR KILLED STEEL	2 No.	0.02	
1	Casing	8 mm Thk.	IS 2062 - 2011 E250 BR KILLED STEEL	1 No.	Refer Table-1	
SL No	Description	Size	Material	Qty. per Bend	Wt. / Piece (Kgs)	Remarks

TABLE - 2

NAME OF CUSTOMER/PROJECT

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

DRN	NAME	SIGN	DATE
CHD	Kaushik K		12-10-2016
APPD	M Vinod		25-11-16
	Felix J		28-11-16

REV	DATE	ALTERED	REV	DATE	ALTERED
01	23.2.17	CHECKED	01	23.2.17	CHECKED

DEPT	GRADE OF TOL DIM	SCALE	WEIGHT (kg)	REF TO ASSY DRG	ITEM No.	No. OF ITEMS
CODE	C/M/F	N.T.S.	Refer Note-10 (Approx)	EL-DG-3-986-01-09890 (550A-01)		
TITLE				DRAWING No.		REV.
CASING FOR BENDS 500NB DETAIL (V-V)				3-986-01-09891		01
				SHEET No	1	No. OF SHEETS
						4

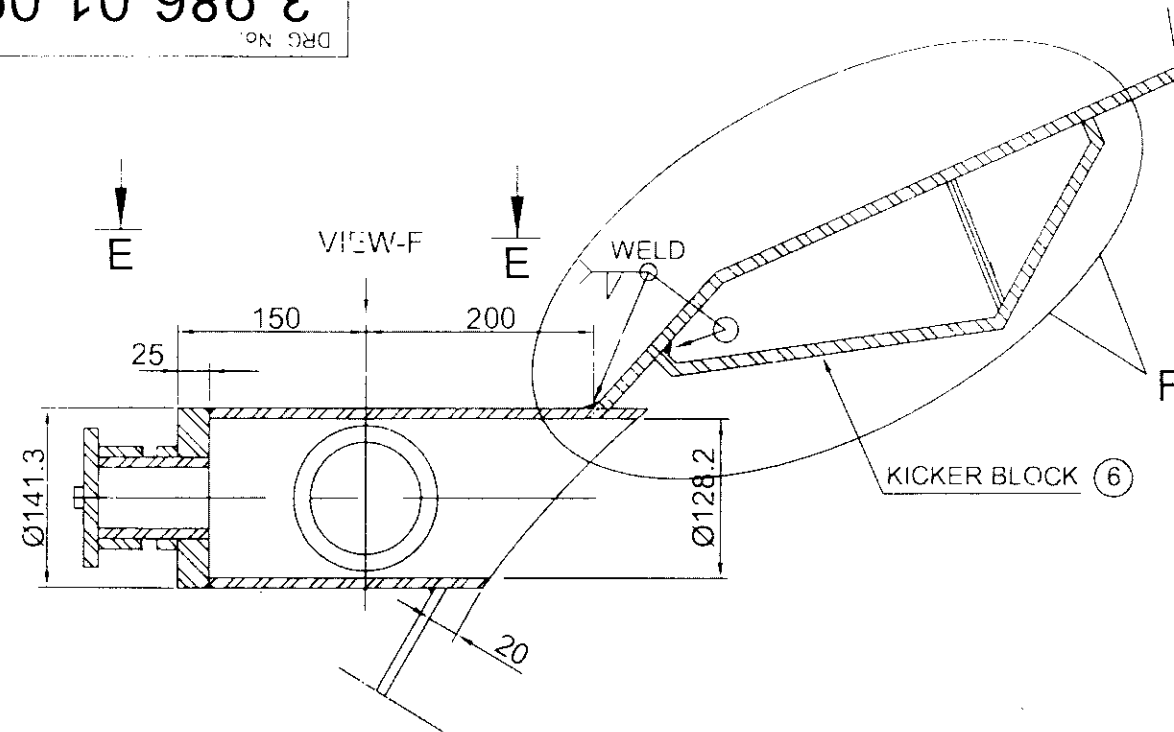
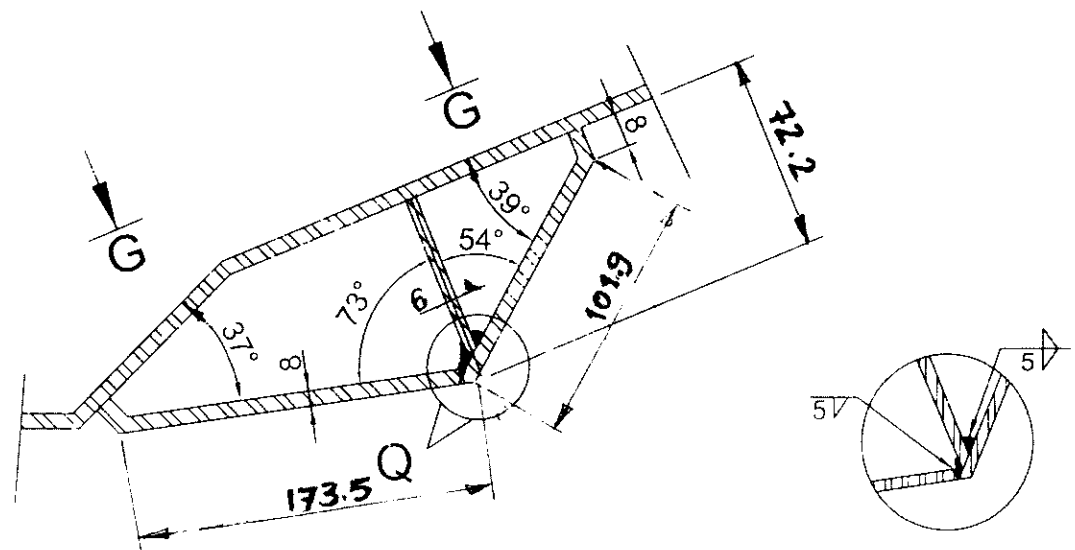
FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN mm

REV 01

16860-10-986-3

DRG No.

CONNECTION DETAIL FOR
PEEP HOLE WITH BREATH VALVE

DETAIL-F

DETAIL - Q

29	CLCP-130	F1-11 & F4-11	508	2508.2	2000.2	V	V	2	291.7
28	CLCP-129	F6-10 & E7-10	508	2341.0	1833.0	V	V	2	274.2
27	CLCP-128	H6-13 & H7-13	508	2323.7	1815.7	V	V	2	272.4
26	CLCP-127	G6-12 & G7-12	508	2322.5	1814.5	V	V	2	272.3
25	CLCP-126	C6-8 & C7-8	508	2281.3	1773.3	V	V	2	268.0
24	CLCP-125	B6-7 & B7-7	508	2210.7	1702.7	V	V	2	260.6
23	CLCP-124	E5-10 & E8-10	508	2189.9	1681.9	V	V	2	258.4
22	CLCP-123	D6-9 & D7-9	508	1843.0	1335.0	V	V	2	222.1
21	CLCP-122	C1-8 C4-8 D1-9 & D4-9	508	1787.3	1279.3	V	V	4	216.3
20	CLCP-121	C5-8 & C8-8	508	1680.7	1172.7	V	V	2	205.1
19	CLCP-120	E2-10 & E3-10	508	1669.9	1161.9	V	V	2	204.0
18	CLCP-119	E1-11 & E4-11	508	1629.1	1121.1	V	V	2	199.7
17	CLCP-118	B2-9 & B3-9	508	1588.4	1080.4	V	V	2	195.5
16	CLCP-117	C2-8 & C3-8	508	1588.0	1080.0	V	V	2	195.4
15	CLCP-116	A2-7 & A3-7	508	1587.9	1079.9	V	V	2	195.4
14	CLCP-115	D2-9 & D3-9	508	1587.8	1079.8	V	V	2	195.4
13	CLCP-114	G1-11 & G4-11	508	1430.1	922.1	V	V	2	178.9
12	CLCP-113	F6-11 & F7-11	508	1407.2	899.2	V	V	2	176.5
11	CLCP-111	F5-12 & F8-12	508	1277.3	769.3	V	V	2	162.9
10	CLCP-110	F2-12 & F3-12	508	1277.1	769.1	V	V	2	162.9
9	CLCP-109	A6-7 & A7-7	508	1272.8	764.8	V	V	2	162.5
8	CLCP-108	A5-7 & A8-7	508	1272.4	764.4	V	V	2	162.4
7	CLCP-107	B1-9 & B4-9, B5-9 & B8-9	508	1272.1	764.1	V	V	4	162.4
6	CLCP-106	A1-7 & A4-7	508	1271.9	763.9	V	V	2	162.4
5	CLCP-105	D5-9 & D8-9	508	1252.5	744.5	V	V	2	160.3
4	CLCP-104	G2-11 & G3-11	508	1222.7	714.7	V	V	2	157.2
3	CLCP-103	G5-11 & G8-11	508	1209.1	701.1	V	V	2	155.8
2	CLCP-102	H5-11 & H8-11	508	1208.8	700.8	V	V	2	155.8
1	CLCP-101	H1-11 & H4-11	508	1124.8	616.8	V	V	2	147.0
Var. No.	DU No.	Assembly No.	L1	L2	Y (mm)	End connection inlet side	End connection outlet side	Qty. Nos	Weight kg/Bend

TABLE - 1

NAME OF CUSTOMER/PROJECT

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

	NAME	SIGN	DATE
DRN	Kaushik K		12-10-2016
CHD	M.Vinod		
APPD	Felix J		28/11/16

DEPT	GRADE OF TOL DIM C/M/F	SCALE N.T.S.	WEIGHT (kg) Refer Note-10 (Approx)	REF TO ASSY.DRG EL-DG-3-986-01-09890 (550A-01)	ITEM No.	No. OF ITEMS
CODE						
TITLE	CASING FOR BENDS 500NB DETAIL (V-V)			DRAWING No.	3-986-01-09891	
				SHEET No.	2	No. OF SHEETS 4

SUPERSEDES DRG. No.

SHT.24 SIZE A3 420 x 297

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REF. DRG. No.

SIGN AND DATE

INVENTORY No.

REV	DATE	ALTERED	REV	DATE	ALTERED	REV	DATE	ALTERED
		CHECKED			CHECKED			CHECKED

ALL DIMENSIONS ARE IN mm.

3-986-01-09891

DRG No.

WELD

(TYP)

6THK

CUT TO SUIT
TYPICAL PROFILE FORMATION

WELD
TYP. →

80
80
80
80

5V (TYP)

VIEW - GG

Technical drawing of a shoulder detail showing a cross-section of a casing and a shoulder. The casing has an outer diameter (O.D.) of 538.6. The shoulder has an inner diameter (I.D.) of 540 and an outer diameter (O.D.) of 610 ± 0.75. A 0.7 gap is indicated between the casing and the shoulder. Dimensions 10, 22, and 28 are shown for the shoulder's geometry. A detail view '4' is shown with a 5x magnification.

Detail-A

Technical drawing of a mechanical part with the following dimensions and labels:

- 5x45°**: Dimension at the top left corner.
- 0.7**: Dimension for a small hole or feature.
- SHOULDER**: Label pointing to the upper horizontal section.
- 5**: Dimension for the vertical height of the shoulder.
- 60°**: Dimension for the angle of the lower section.
- 5 STOPPER RING 10 THK**: Label pointing to the central vertical feature.
- G 60°**: Label pointing to the bottom right corner.

Detail-D

INVENTORY NO.

VIEW-EE

NAME OF CUSTOMER/PROJECT



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

	NAME	SIGN	DATE
DRN	Kaushik K		12-10-2016
CHD	M.Vinod		20/10/16
APPD	Felix J		28/10/16

DEPT	GRADE OF TOL DIM		SCALE N T S	WEIGHT (kg) Refer Note-10 (Approx)	REF TO ASSY.DWG EL-DG-3-986-01-0989U (550A-01)	ITEM No.	No. OF ITEM
CODE	C/M/F						
TITLE CASING FOR B.ENDS 500NB DETAIL (V-V)				CARD CODE	DRAWING No. 3-986-01-09891		REV. 01
					SHEET No. 3	No. OF SHEETS 4	

SUPERSEDES DRG. No.

SHT.24 SIZE A3 420 x 297

FIRST ANGLE PROJECTION

REV
10

16860-10-986-E

DRG No

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NOTE:-

1. FOR CONSTRUCTION MATERIAL REFER TABLE-2
2. DURING ASSY. LONGITUDINAL WELDING BETWEEN SEGMENTS TO BE STAGGERED.
3. ALL SUPPLIES TO CONFORM CLN:QP:01/00. WELDING AS PER WP:CL001A & AWS:D 1.1.
4. DIMENSIONS INDICATED ARE FINISHED SIZE ONLY.
5. ASSEMBLY No., DU No., AND ARROW HEAD TO BE WELD DEPOSITED OVER CASING AS SHOWN, AS PER CE:1501:21, REFER TABLE -1 FOR DUNG. & ASSY NO. DETAILS FOR EACH VARIANT.
6. BASE PLATE FOR NAME PLATE TO BE WELDED ON TO CASING, AT LOCATION SHOWN, FOR BASE PLATE & WELDING DETAILS REF DRG : 4 986 99 07720
7. FACE ANGLES TO BE MATCHED DURING ASSY.
8. ALL OVER MACHINING 6.3 FOR STOPPER RINGS.
9. V- VICTAULIC COUPLING SHOULDER.
10. FOR CASING Wt. REFER TABLE -1
FOR Wt. OF LIFTING LUG, STOPPER RINGS, KICKER BLOCK, STUB, PEEP HOLE WITH STUB & EARTH LUG, REFER TABLE -2.
11. WHERE "Y" IS GREATER THAN 1000, ONE CIRCUMFERENTIAL JOINT IS ALLOWED ON "Y", OUTSIDE SEGMENT TOWARDS OUTLET END. THIS JOINT SHOULD NOT FOUL WITH LUG.
12. SURFACE PREPARATION AND PAINTING: REF PAINTING SCHEME DOC. No. : PS- L&T - TANDA. BENDS.
13. OVERALL BEND TOLERANCE:-
 - a). AXIAL SHIFT: ± 3 MM
 - b). RADIAL SHIFT: ± 3 MM
 - c). OUT OF SQUARENESS: ± 3 MM.
14. CONTROL DURING WELDING OF SHOULDER TO CASING :-
 - a) OVALITY OF CASING ON OUTER DIAMETER TO BE MAINTAINED WITHIN 1.0 mm
 - b) WELDING OF SHOULDER TO CASING AS PER DETAIL-A, TO BE DONE IN SUCH A WAY AS TO ENSURE THAT DISTORTION OF COLLAR IS LIMITED SUCH THAT DIM. $\varnothing 610$ mm IS STRICTLY WITHIN THE RANGE SPECIFIED IN SHEET 3 OF 4.
VENDOR TO DO THE NEEDFUL TO ACHIEVE 14(a) AND 14(b).
15. ALL PARTS HAVE TO BE 6MM FILLET WELDED, IF NOT SPECIFIED.

16. ITEM-9 TO BE TACK WELDED TO BREATHER STUB. BREATHER VALVE WILL BE WELDED AT SITE.

SIGN AND DATE REF. DRG. No.

INVENTORY No.

REV	DATE	ALTERED	REV	DATE	ALTERED	REV	DATE	ALTERED
		CHECKED			CHECKED			CHECKED

NAME OF CUSTOMER/PROJECT



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

DEPT	GRADE OF TOL DIM	SCALE	WEIGHT (kg)	REF TO ASSY.DRG	ITEM No.	No. OF ITEMS
CODE	C/M/F	NTS	Refer Note-10 (Approx)	EL-DG-3-986-01-09890 (550A-01)		
TITLE			CARD CODE	DRAWING No.		REV.
CASING FOR BENDS 500NB DETAIL (V-V)				3-986-01-09891		01
				SHEET No. 4	No. OF SHEETS 4	

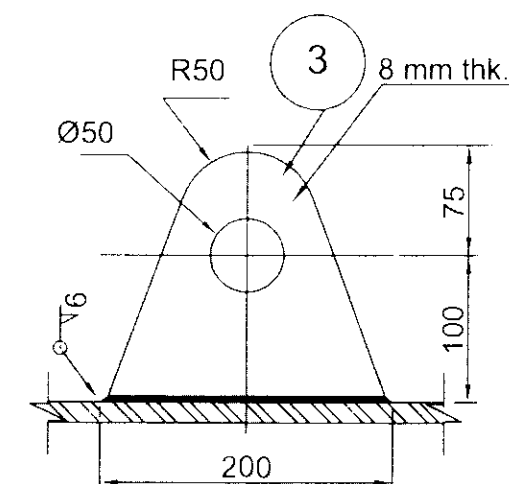
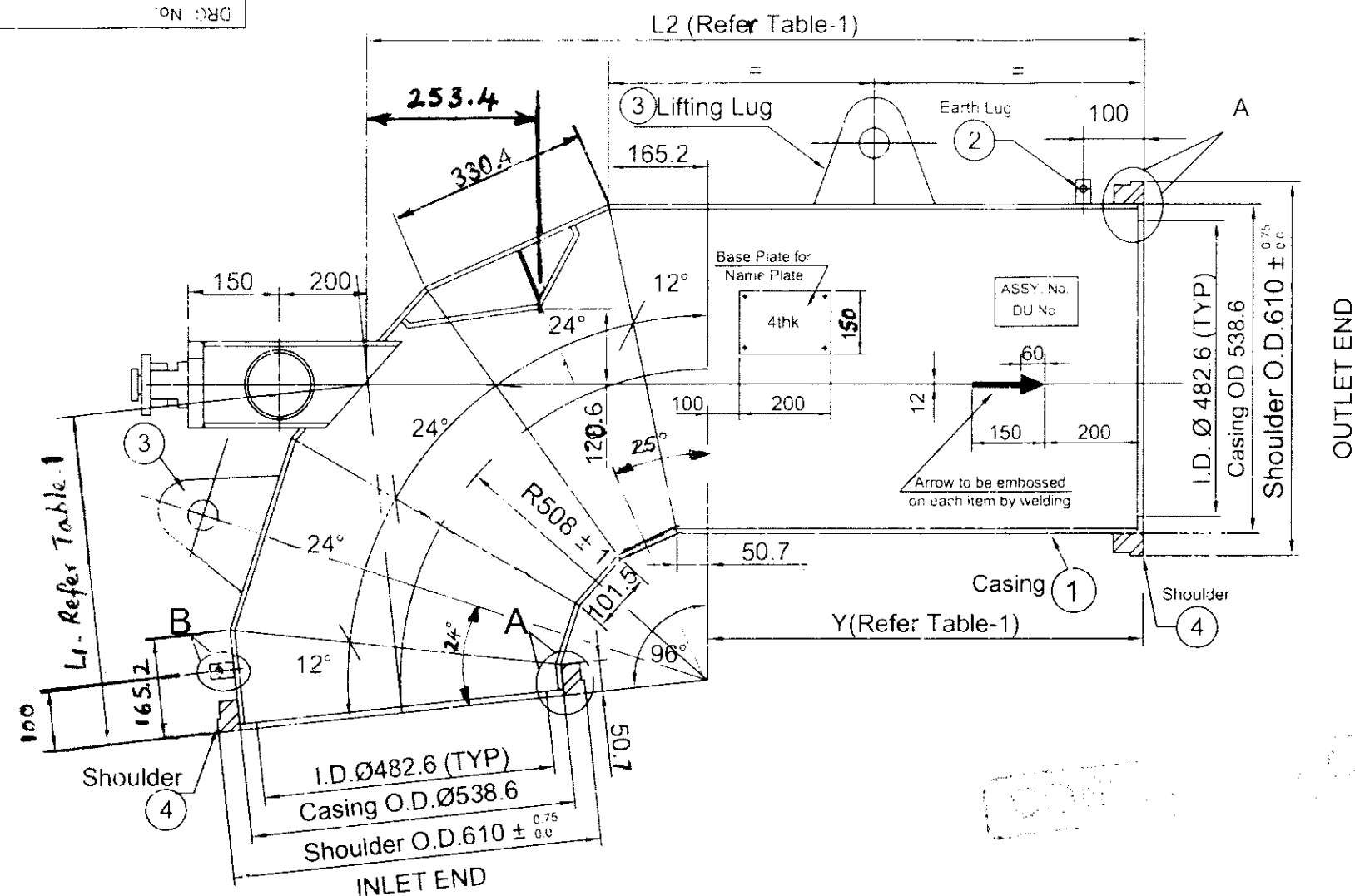
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SHT.24 SIZE A3 420 x 297

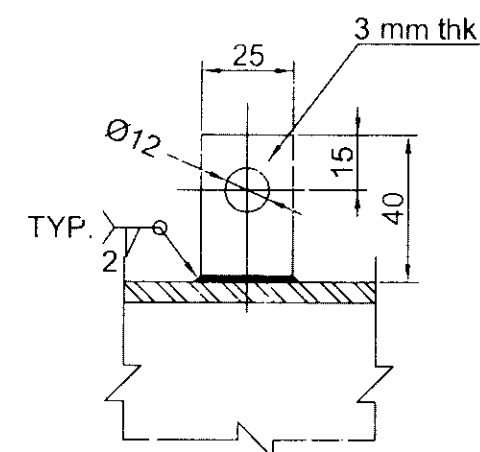
ORG. NO.

SIGN : NO DATE

INVENTORY No.



DETAIL OF LIFTING LUG



EARTH LUG DETAIL B

1	CLCP-112	H2-10 & H3-10	564.3	1281.7	717.4	V	V	2	163.1
Var. No.	DU No.	Assembly No.	L1	L2	Y	End connection inlet side	End connection outlet side	Qty. Nos	Weight kg/Bend

TABLE - 1

NAME OF CUSTOMER/PROJECT	
--------------------------	--



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

	NAME	SIGN	DATE
DRN	Kaushik K		12-10-2016
CHD	Dr Vinod		15/10/16
APPD	Felix J		20.10.16

DEPT	GRADE OF		SCALE	WEIGHT (kg)	REF TO ASSY.DRG	ITEM No.	No.OF ITEMS
CODE	TOL DIM C/M/F		N.I.S	Refer Note-10 (Approx)	EL-DG-3-986-01-09900 (550A-02)		

CASING FOR BENDS 500NB
DETAIL (V-V)

CARD CODE	DRAWING No.		REV.
	3-986-01-09901		01
	SHEET No.	No. OF SHEETS	
	1	3	

SUPERSEDES DRG. No

SHT.24 SIZE A3 420 x 297

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN mm.

REV 10

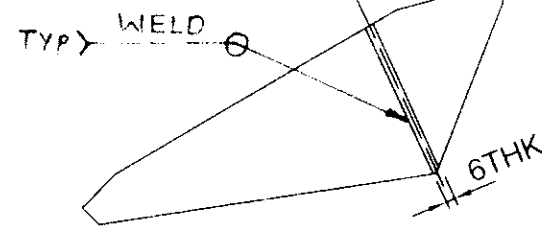
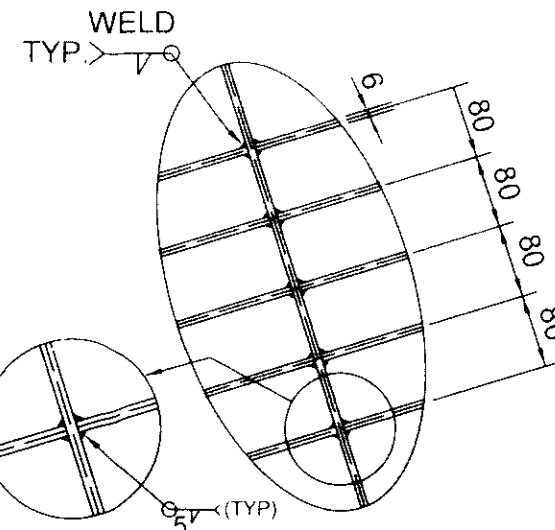
10660-10-986-3

DRG No.

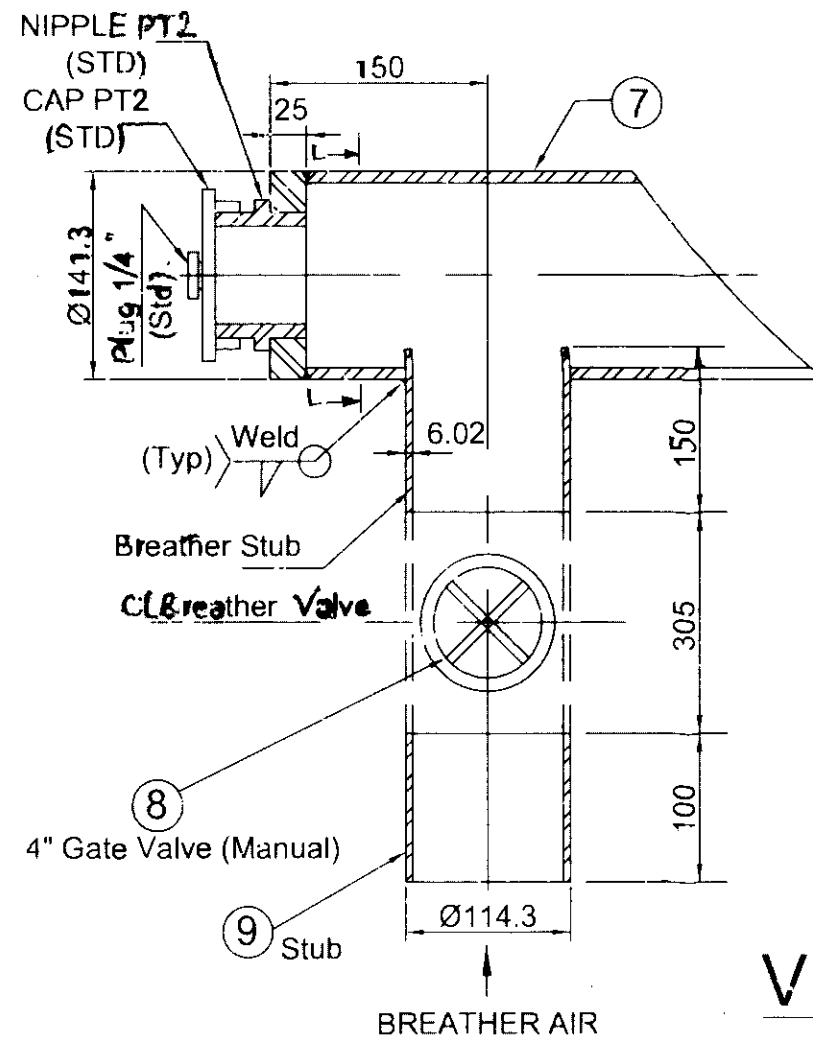
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SIGN AND DATE

INVENTORY No.

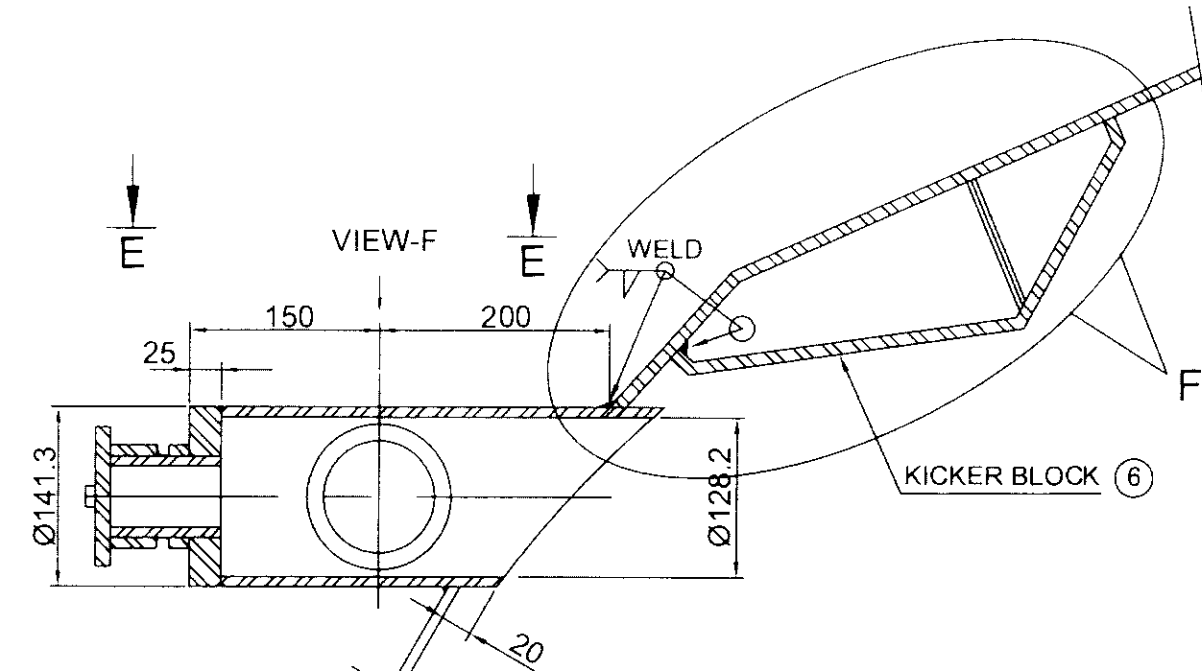
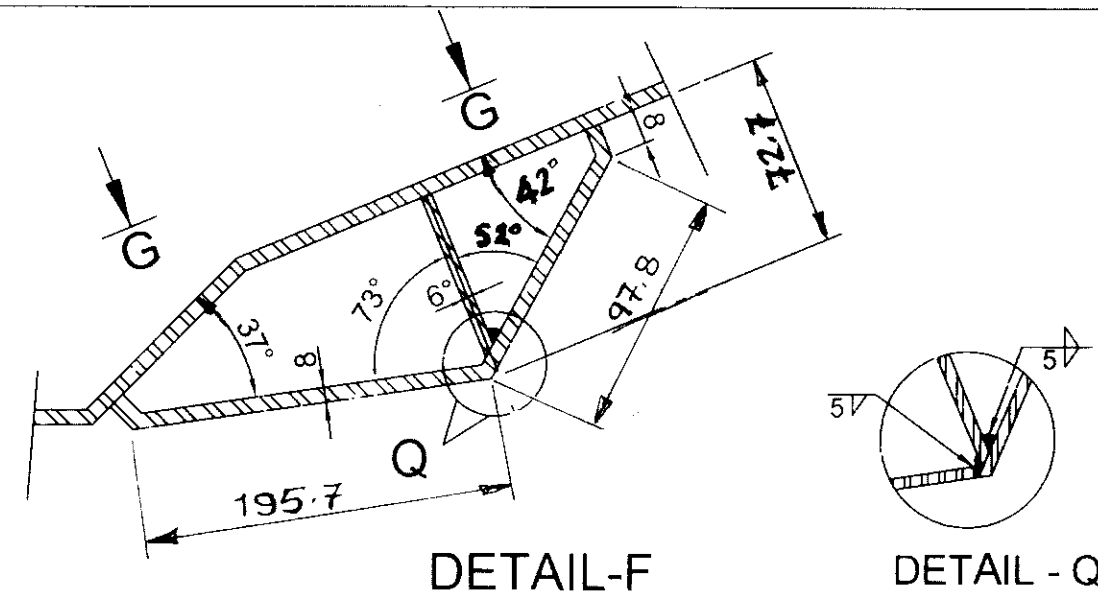
THIS PROFILE FORMATION
MADE BY CUT TO SUITCUT TO SUIT
TYPICAL PROFILE FORMATION

VIEW - GG



SEC-LL

VIEW-EE

CONNECTION DETAIL FOR
PEEP HOLE WITH BREATH VALVE

NAME OF CUSTOMER/PROJECT

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

NAME	SIGN	DATE
DRN Kaushik.K		12-10-2016
CHD A. Vinod		25/11/16
APPD Felix.J		28/11/16

DEPT	GRADE OF TOL DIM		SCALE	WEIGHT (kg)	REF TO ASSY.DRG	ITEM No.	No.OF ITEMS
CODE	C/M/F		N.T.S.	Refer Note-10 (Approx)	EL-DG-3-986-01-09900 (550A-02)		
TITLE CASING FOR BENDS 500NB DETAIL (V-V)				CARD CODE	DRAWING No.		REV.
					3-986-01-09901		01
					SHEET No.	2	No.OF SHEETS 3

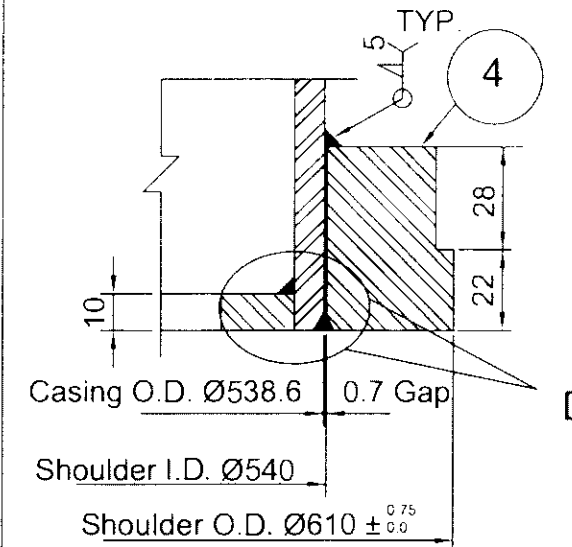
SUPERSEDES DRG. No

SHT.24 SIZE A3 420 x 297

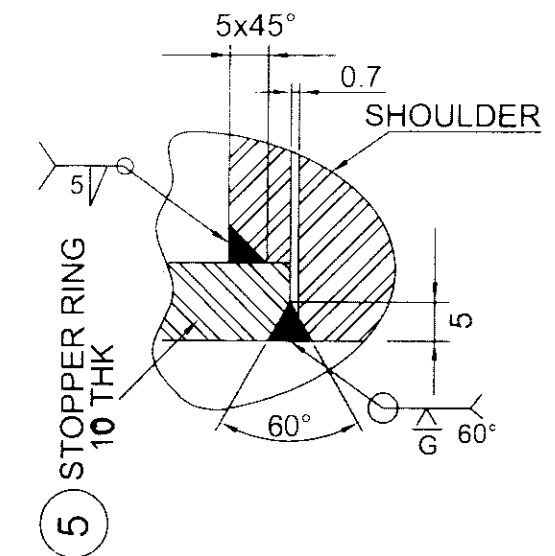
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REV
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DRG No.

NOTE:-

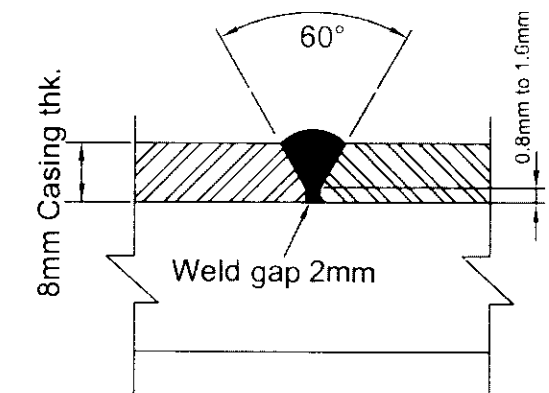
1. FOR CONSTRUCTION MATERIAL REFER TABLE-2
2. DURING ASSY. LONGITUDINAL WELDING BETWEEN SEGMENTS TO BE STAGGERED.
3. ALL SUPPLIES TO CONFORM CLN:QP:01/00. WELDING AS PER WP:CL001A & AWS:D 1.1.
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6. BASE PLATE FOR NAME PLATE TO BE WELDED ON TO CASING, AT LOCATION SHOWN, FOR BASE PLATE & WELDING DETAILS REF DRG : 4 986 99 07720
7. FACE ANGLES TO BE MATCHED DURING ASSY.
8. ALL OVER MACHINING 6.3 FOR STOPPER RINGS.
9. V- VICTAULIC COUPLING SHOULDER.
10. FOR CASING Wt. REFER TABLE -1
FOR Wt. OF LIFTING LUG, STOPPER RINGS, KICKER BLOCK, STUB, PEEP HOLE WITH STUB & EARTH LUG, REFER TABLE -2
11. WHERE "Y" IS GREATER THAN 1000, ONE CIRCUMFERENTIAL JOINT IS ALLOWED ON "Y", OUTSIDE SEGMENT TOWARDS OUTLET END. THIS JOINT SHOULD NOT FOUL WITH LUG.
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13. OVERALL BEND TOLERANCE:-
 - a). AXIAL SHIFT: ± 3 MM
 - b). RADIAL SHIFT: ± 3 MM
 - c). OUT OF SQUARENESS: ± 3 MM.
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 - b) WELDING OF SHOULDER TO CASING AS PER DETAIL-A, TO BE DONE IN SUCH A WAY AS TO ENSURE THAT DISTORTION OF COLLAR IS LIMITED SUCH THAT DIM. $\phi 610$ mm IS STRICTLY WITHIN THE RANGE SPECIFIED IN SHEET 3 OF 3.
VENDOR TO DO THE NEEDFUL TO ACHIEVE 14(a) AND 14(b).
15. ALL PARTS HAVE TO BE 6MM FILLET WELDED, IF NOT SPECIFIED.
16. ITEM:9 TO BE TACK WELDED TO BREATHER STUB. BREATHER VALVE WILL BE WELDED AT SITE.



Detail-A



Detail-D

EDGE PREPARATION
WELDING DETAIL

NAME OF CUSTOMER/PROJECT



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

	NAME	SIGN	DATE
DRN	Kaushik K		12-10-2016
CHD	M Vinod		25/11/16
APPD	Felix J		28/11/16

DEPT	GRADE OF TOL DIM	SCALE	WEIGHT (kg)	REF TO ASSY.DRG	ITEM No.	No. OF ITEMS
CODE	C/M/F	NTS	Refer Note-10 (Approx)	EL-DG-3-986-01-09900 (550A-02)		
TITLE	CARD CODE	DRAWING No.	REV.			
CASING FOR BENDS 500NB DETAIL (V-V)		3-986-01-09901	01			
		SHEET No. 3	No. OF SHEETS 3			