RAIL COACH FACTORY, KAPURTHALA

Office of the
Principal Chief Electrical Engineer
Date:- 03.04.2024

No. : RCF/HSQ/ED/LHB/2008

Chief Electrical Service Engineer

1. Central Railway, CST, Mumbai-400 001
2. Eastern Railway, Fairlie Place , Kolkata-700 001
3. East Central Railway, Dighi, Distt.- Vaishali, Hajipur-844 101
4. East Coast Railway, Chandra Shekharpur, Bhubneshwer-751 016
5. Northern Railway, Baroda House, New Delhi-110 001
6. North Central Railway, Hastings Road, Prayagraj — 211 001
7. North Eastern-Railway, Gorakhpur-273 001
8. North East Frontier Railway., Maligaon, Guwahati-781 001
9. North Western Railway, Jaipur-302 006
10. Southern Railway, Park Town, Chennai-800 003
11. South Central Railway, Rail Nilayam Secundrabad-500 371
12. South Eastern Railway, Garden Reach, Kolkata-700 043
13. South East Central Railway, Bilaspur-495 004
14. South Western Railway, 4th Floor, DRM Office, Sh. Laxmi Narayan Complex, Station Road Hubli-580 020
15. Western Railway Church Gate, Mumbai-400 02
16. West Central Railway, Jabalpur-482 001
17. Chief Elect. Design Engineer, Integral Coach Factory, Chennai
18. Chief Elect. Design Engineer, Modern Coach Factory, Raebareli

Sub: Coach Alteration Instructions for modifications to be carried out in LHB EOG AC 2T and 3T Coaches for segregation of 110V DC +VE and –VE at all levels and provision of Cage Clamp Terminals with Glass Fuses for enhanced Fire Safety.

As per the feedback received from Zonal Railways, modification in LHB EOG AC 2T and 3T Coaches for segregation of 110V DC +VE and –VE at all levels and provision of Cage Clamp Terminals with Glass Fuses for enhanced Fire Safety, a CAI no. **ED/CAI/033** Dated 03.04.2024 is being issued for implementation by all Zonal Railways. Production Units may also take necessary action for implementation in new coaches, wherever applicable.

DA: As above

Dy.CEE/DP
For Principal Chief Elect. Engineer

Copy to :-

CEDE :- For kind information

RAIL COACH FACTORY, KAPURTHALA

CAI N O.: ED/CAI/033 Dated: 02.04.2024

COACH ALTERATION INSTRUCTION SHEET FOR SEGREGATION OF 110V DC (+VE & –VE) AT ALL LEVELS, AND PROVISION OF CAGE CLAMP TERMINALS WITH GLASS FUSES FOR ENHANCED FIRE SAFETY IN LHB EOG AC 2T & 3T COACHES

RAIL COACH FACTORY, KAPURTHALA

CAI No. :- ED/CAI/033, Dated :- 02.04.2024

This Coach Alteration Instruction Sheet has been issued for segregation of 110V DC +VE & –VE cables at all levels and provision of Cage Clamp Terminals with Glass Fuses for enhanced fire safety in LHB EOG AC Coaches wherein following steps are to be taken for modifications in the coach:

Step-1: Removal/Dismantle of Electrical Accessories from Coach:

1. <u>Roof /Sidewall Arrangement :</u>

a) Disconnections/Removal of WAGO type Connectors :

i. Disconnect all the wiring circuits i.e. circuits for Light's, Night Light's, AEL's, BRL's (2T Coaches) from WAGO terminals provided in Switch Board Cabinet.

ii. Disconnect all the wiring circuits i.e. circuits for Light's, Night light's, AEL's, BRL's (2T Coaches) from the WAGO type connectors provided in each Cabin/Doorway/Corridor Area of the Coach .

iii. Dismantle the WAGO type strips provided for interconnections of wiring in each Cabin as well as in Door-way Area.

iv. Removal of 110V AC & DC wiring from the PVC conduits installed in the sidewall (Cabin Side) & the tray arrangement provided in the roof (Corridor Side) of the coach.

v. Removal of 2 Nos. Dia. 20 mm PVC Rigid conduits from Side wall by removing the conduit clamps from side-wall.

vi. Disconnect all the Accident Emergency Light's (AEL) provided in Corridor & Doorway Area on both ends and Berth Reading Lights (2T Coaches).

vii. Dismantling of all the Berth Reading Lights provided in LHB AC 2T Coaches by removing the hardware.

viii. Removal of AC/DC wiring for Pantry and Lavatories Lights from the 40 mm PVC Rigid conduits provided on Cabin side.

ix. Removal of Cable Tray Arrangement including AC/DC wiring from the tray provided in Corridor Area.

Step-2 Modifications required in Under-frame/Roof /Sidewall Arrangement of LHB EOG AC 3-Tier Coaches:

a) Modifications in Under frame Area:-

1. Segregation of 110V DC +VE & -VE Cables is already being done in existing LHB Coaches as the output cables from 4.5 KW RBC i.e. 110V DC +VE, +VE & -VE are routed to SBC, Battery Fuse Box (+VE) and Battery Fuse Box (-VE) respectively via. different polyamide conduits, hence no change is required in under-frame wiring.

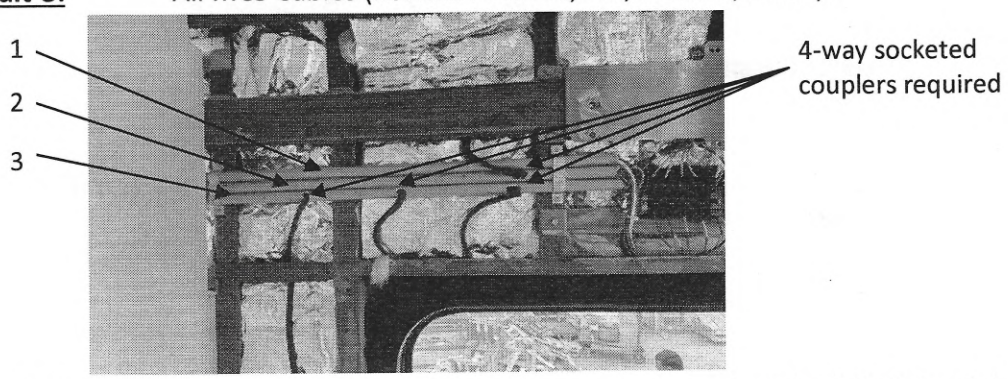
b) Modification in Side Wall Area :-

1. 01 no. additional hole of dia. 04 mm shall be made from the existing bottom side hole at C-C 88 mm for provision of the triple conduit clamp to Drawing No. ***LP76001, Alt-'c', Item-16.***
2. 01 no. additional PVC Rigid Conduit shall be laid above the existing 02 nos. PVC Rigid Conduits on the sidewall for Jumper wiring and clamping of the same shall be done with the help of triple conduit clamp as shown below. Wiring shall be routed from SBC to Cage clamp terminals via. these 03 nos. PVC Rigid Conduits as per following details:-

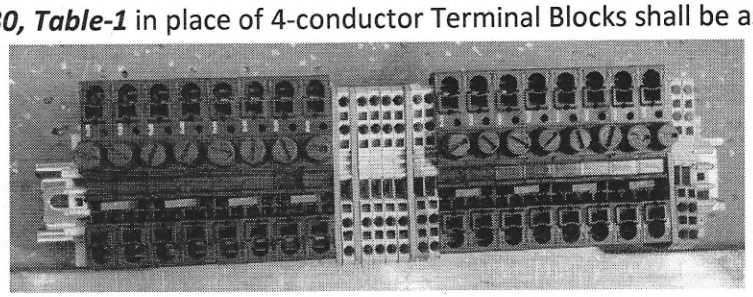
Conduit -1: All DC -VE & Earthing Cables (i.e. 110V DC FLD-, FLS-, NL-, ALARM-, PE (Light))

Conduit -2: All DC +VE Cables (i.e. 110V DC FLD+, FLS+, NL+, ALARM-I+, ALARM-II+ (Loop))

Conduit-3: All MCS Cables (i.e. 110V AC Ph., Ph., Neutral, Earth).



3. Due to increase in size of Cage Clamp Terminals provided, the length of PVC Conduit for Jumper wiring shall be reduced by 250 mm (approx). i.e. from 1700 mm to 1450 mm (08 Nos.) & 1000 mm to 800 mm (02 Nos.).
4. 4-Way socketed couplers on the PVC conduits as per Drawing no. ***SKED-947*** shall be provided in each cabin area for passing of MCS and DC +VE wiring at locations for cables exit to switches.
5. Provision of Cage Clamp Terminals with Glass Fuses similar to LHB Non AC Coaches as per ***EDML-230, Table-1*** in place of 4-conductor Terminal Blocks shall be as follows :-

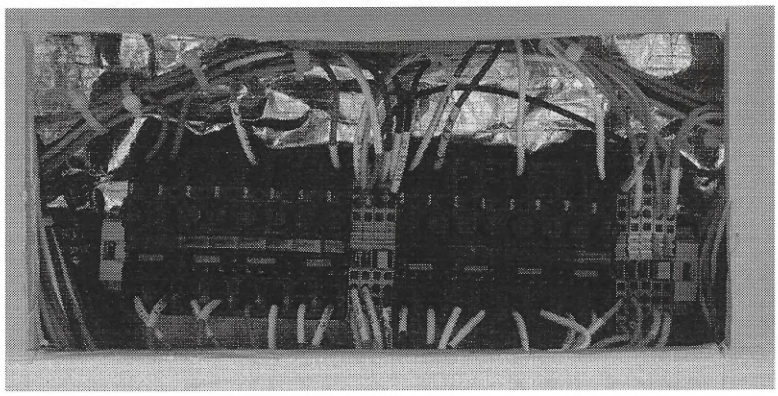


6. Din Rail of length 300 mm shall be mounted at 15 mm below the existing terminal strip mounting location for accessibility on the same WAGO Bracket. Accordingly, connections shall be done.

Cage Clamp Terminals with connections (Cabin-5)

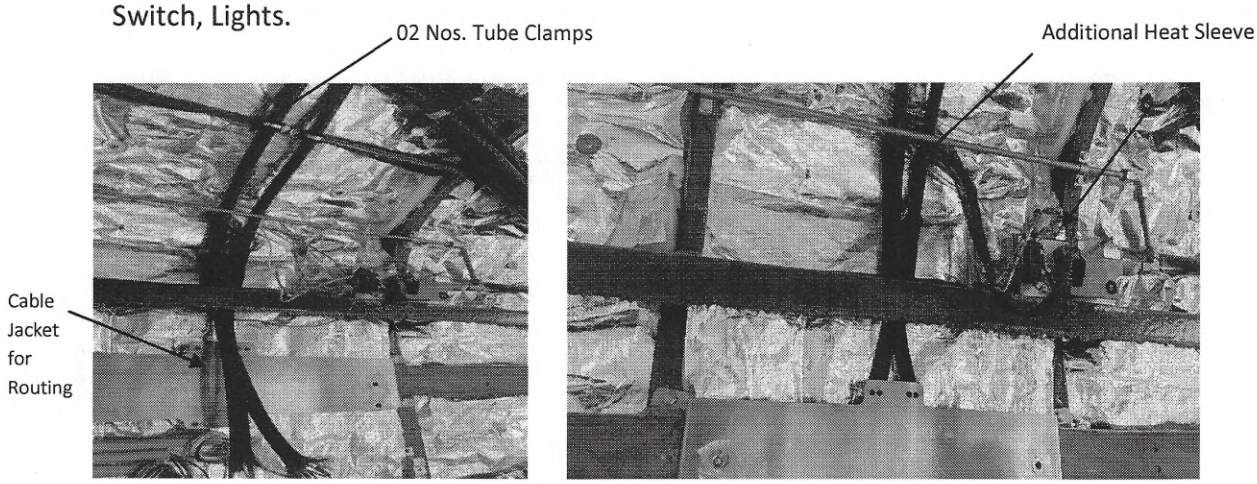
Length of Din Rail = 300 mm

Length of WAGO = 270 mm



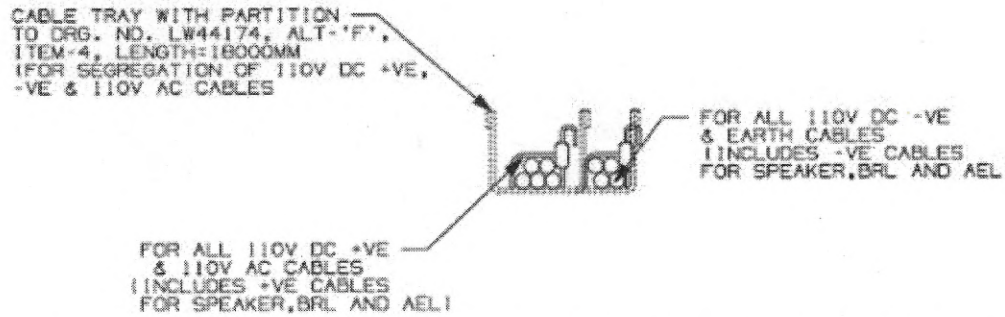
c) Modifications in Roof Area:

1. Segregation of 110V DC +VE & -VE shall be done in Branch Wiring by providing extra NW-12 flexible conduit, however due to only 01 No. Cable drop hole in Cant-rail for passing of NW-12 Conduit, branch wiring shall be done with Cable Jackets from the hole to Terminal Strip for easy routing of cables through 01 no. hole. These two Conduits shall be clamped with 02 nos. Tube clamps at the roof. Additional sleeve shall be used for routing of cables separately from conduit to equipment i.e. Limit Switch, Lights.



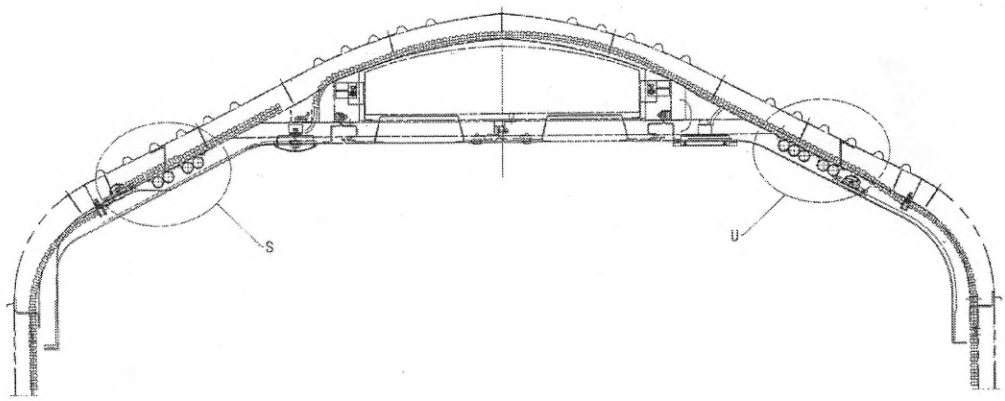
2. The existing cable tray arrangement to Drawing No. LW44174, Item-6, Length = 18000 mm shall be replaced with Drawing No. LW44174, **Item-4,** Length = 18000mm with provision of partition between Cable tray for segregation of DC +VE & -VE, AC cables in Roof.

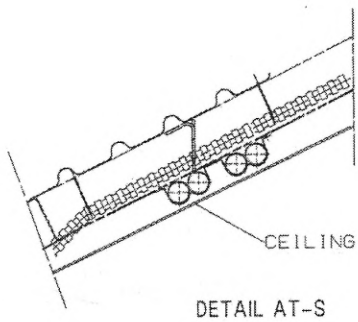
3. The segregation of 110V DC +VE & -VE wiring shall be done for Speaker Circuit, AEL Circuit with AC Circuit Cables and 110V DC +VE Cables on one side and 110V DC –VE and Earth Cables on other side with the help of partition in Cable Tray being provided in the Corridor Area.



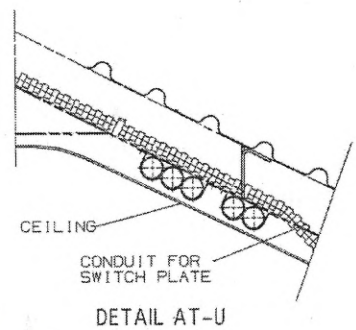
4. Lavatory wiring from PP end to NPP end shall also contemplated in dia. 40 mm PVC Rigid Conduits. The cables as provided in conduits dia. 40 mm in Roof is as under:

- 02 conduits for RMPU wiring
- One no. conduits with all DC +VE cables
- One no. conduits with all DC -VE cables
- One no. conduit with AC cables (including pantry wiring)





DETAIL AT-S



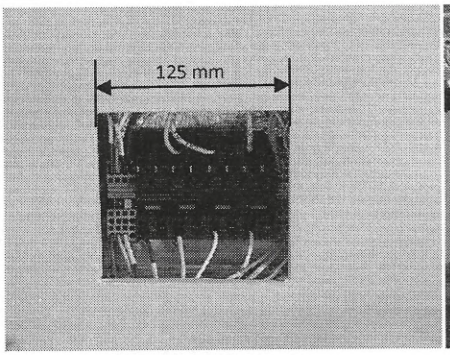
DETAIL AT-U

Details for 04 Nos. Conduits:-
02 Nos. for RMPU Cables
01 No. for UIC Cable
01 No. for Temperature Sensor Cables

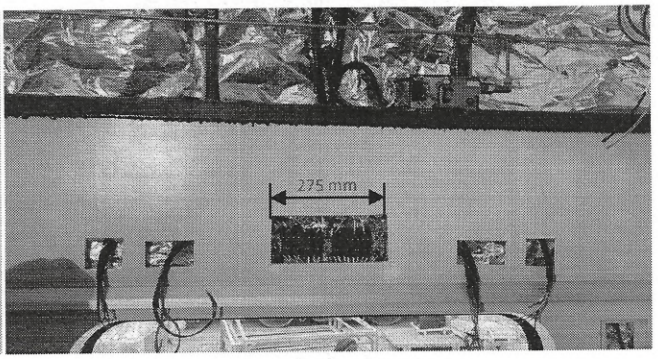
Details for 05 Nos. Conduits:-
02 Nos. for RMPU Cables
01 No. for Pantry Equipments Cable (3-Ø, 415V AC + 3Ø, 110V AC (if req.))
01 No. for Lav. Wiring (110V DC +VE)
01 No. for Lav. Wiring (110V DC –VE)

d) Modifications in FRP Panels :

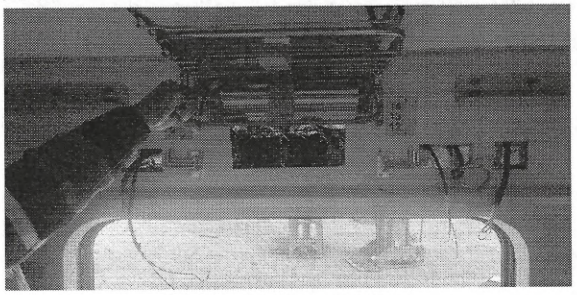
1. As the length of the Cage Clamp Terminals is 270 mm approximately, the cut-out on the FRP panel behind mirror shall be modified to 275 mm (lengthwise) in-place of existing 125 mm to accommodate the Cage Clamp Terminals keeping the center at the same of the cutout at the same location. The FRP Panel shall be fixed on the sidewall and Mirror along with Luggage rake with no infringement shall occur.



Existing Cut out



Extended cutout


Behind Mirror View

e) Modifications in Lav. Wiring :

110V DC +VE & -VE branch cables in Lavatory Area shall also be segregated with the provision of cable jackets wherever required.

f) For further reference, sketch no. SKED-938 & SKED-942 has been prepared and is enclosed.

g) Additional Modifications required in LHB EOG AC 2T Coaches :

For Segregation of 110V DC +VE and –VE Cables in LHB EOG AC 2T Coaches, same modifications as advised above are to be followed and in addition to above, following are also required:-

1. For BRL Lights, Jumper wiring is done through Cable tray in the Roof Area of the Corridor Side which will be replaced by cable tray arrangement with partition to drawing no. LW44174, Item-4 for segregation of DC +VE & -VE Cables. Jumper wiring shall be terminated at the same terminals used in existing coaches.
2. Branch wiring for the BRL shall be segregated in the different conduits with the provision of Glass fuse integrated in the Berth Reading Light itself. The Drawings for Berth Reading Lights are as per following details :-

SN	Item description	Drawing no.
1	Berth Reading Light with USB Charging Socket Type A & C with inbuilt 1.0 Amp Glass Fuse (For Longitudinal)	LW76419, Alt-'a'
2	Berth Reading Light with USB Charging Socket Type A & C with inbuilt 1.0 Amp Glass Fuse (For Upper Berth)	LW76420, Alt-'a'
3	Berth Reading Light with USB Charging Socket Type A & C with inbuilt 1.0 Amp Glass Fuse (For Transverse LHS Berth)	LW76421, Alt-'a'
4	Berth Reading Light with USB Charging Socket Type A & C with inbuilt 1.0 Amp Glass Fuse (For Transverse RHS Berth)	LW76422, Alt-'a'

Step-3: For other wiring details, Please refer schematic details for the coach as follows:-

SN	Drawing description	Drawing no.
1	Schematic Diagram of Roof for AC 3-Tier EOG LHB type Coaches	LE70202, Alt-'c'
2	Schematic Diagram of Roof for AC 2-Tier EOG LHB type Coaches	LW70212, Alt-'c'

SET OF CAGE CLAMP TERMINALS WITH GLASS FUSES FOR LHB EOG AC 2T & 3T COACHES

Table-1 :- For LHB EOG AC 3-Tier Coaches

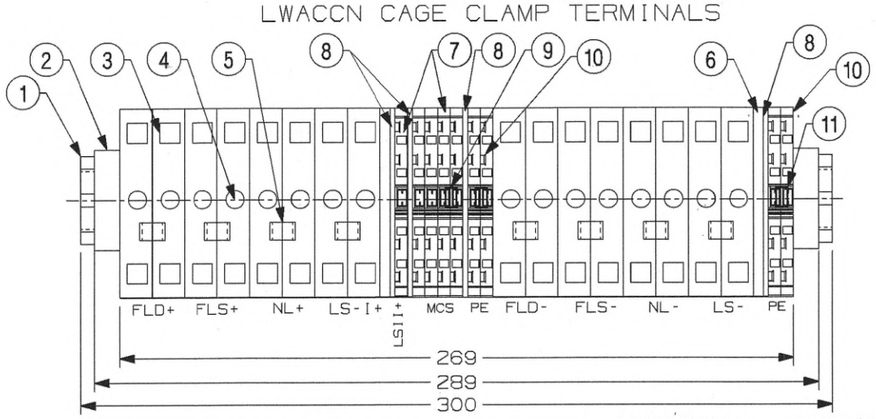
SN	ITEM DESCRIPTION	DRG./SPEC NO.	UNIT	QTY.	REMARKS
1.	Set of Cage Clamp Terminals with Glass fuses (Layout as per SKED-938)	**Steel Rail:** Length=300mm Cat. No. 210-112 (01 No.) **Screw less End Stop:** Cat. No. 249-117 (02 Nos.) **Cage Clamp Terminals :** Cat. No. 282-122 (16 Nos.) **Glass Fuse :** 5x20 mm, 1A IEC127-74 (16 Nos.) **Adjacent Jumper Insulated:** Cat. No. 282-402 (08 Nos.) Cat. No. 280-402 (01 No.) Cat. No. 280-422 (02 Nos.) **End & Intermediate Plate :** Cat. No. 282-311 (02 Nos.) Cat. No. 280-334 (02 Nos.) Cat. No. 280-315 (02 Nos.) **4-conductor through terminal block:** Cat. No. 280-833 (05 Nos.) **4-conductor Ground terminal block:** Cat. No. 280-837 (04 Nos.) of M/s WAGO/Phoenix/ Weidmuller or equivalent approved make	1	9	For compartment lighting/mobile charging points in transverse berths/chain pull alarm circuit
2.	4-Conductor terminal strip 2.5 sq.mm. (3-pole)	Cat. No. 261-203 of M/s WAGO/Phoenix/Weidmuller or equivalent approved make	1	9	For Mobile Charging Points in Longitudinal Berths
3.	Flat Connecting Complete (with bracket to Drg. No. CC72431)	CC72428	1	2	For PA System (Vestibule Area)

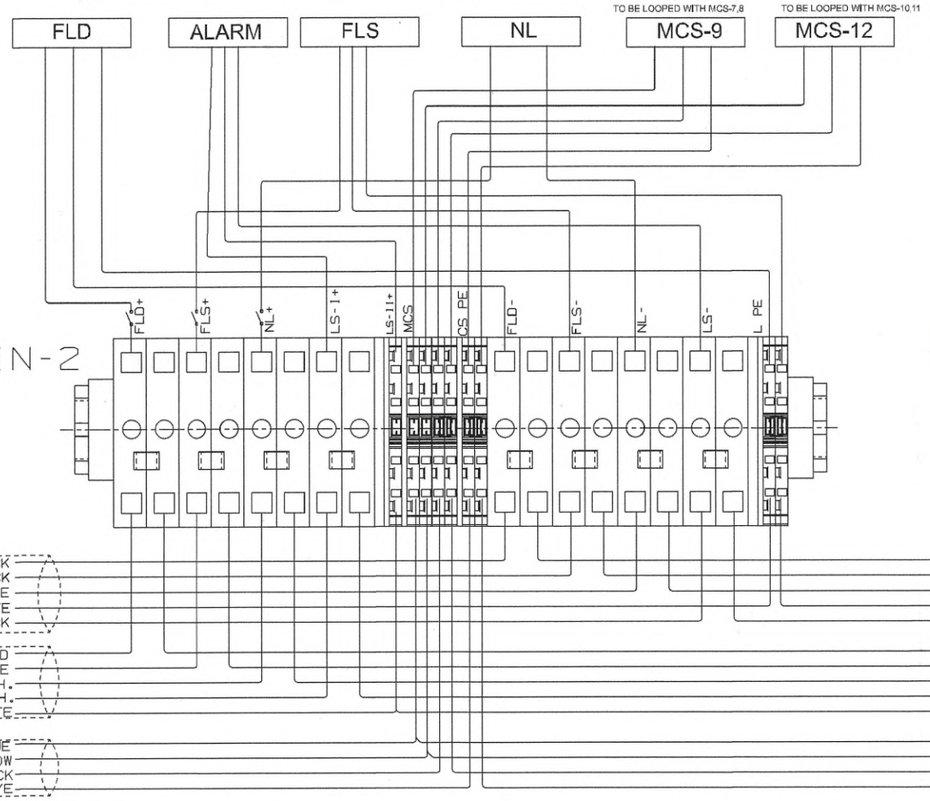
Table-2 :- For LHB EOG AC 2-Tier Coaches

SN	ITEM DESCRIPTION	DRG./SPEC NO.	UNIT	QTY.	REMARKS
1.	Set of Cage Clamp Terminals with Glass fuses (Layout as per SKED-938)	**Steel Rail:** Length=300mm Cat. No. 210-112 (01 No.) **Screw less End Stop:** Cat. No. 249-117 (02 Nos.) **Cage Clamp Terminals :** Cat. No. 282-122 (16 Nos.) **Glass Fuse :** 5x20 mm, 1A IEC127-74 (16 Nos.) **Adjacent Jumper Insulated:** Cat. No. 282-402 (08 Nos.) Cat. No. 280-402 (01 No.) Cat. No. 280-422 (02 Nos.) **End & Intermediate Plate :** Cat. No. 282-311 (02 Nos.) Cat. No. 280-334 (02 Nos.) Cat. No. 280-315 (02 Nos.) **4-conductor through terminal block:** Cat. No. 280-833 (05 Nos.) **4-conductor Ground terminal block:** Cat. No. 280-837 (04 Nos.) of M/s WAGO/Phoenix/ Weidmuller or equivalent approved make	1	9	For compartment lighting/mobile charging points in transverse berths/chain pull alarm circuit
2.	4-Conductor terminal strip 2.5 sq.mm (10-pole)	Cat. No. 261-210 of M/s WAGO/Phoenix/Weidmuller or equivalent approved make	1	9	For Berth Reading Lights
3.	4-Conductor terminal strip 2.5 sq.mm (3-pole)	Cat. No. 261-203 of M/s WAGO/Phoenix/Weidmuller or equivalent approved make	1	9	For Mobile Charging Points in Longitudinal Berths
4.	Flat Connecting Complete (with bracket to Drg. No. CC72431)	CC72428	1	2	For PA System (Vestibule Area)

ALT.NO	ALT.DATE	ZONE	ALTERATIONS	AUTHORITY

LWACCN CAGE CLAMP TERMINALS





BILL OF MATERIAL

SN	ITEM	PART NO./STANDARD	QTY./CABIN	REMARKS
1	STEEL RAIL, L=300MM	210-112 OF M/S WAGO OR EQUIV.	01 NO.	FOR MTG. OF TERMINALS
2	SCREWLESS END STOP	249-117 OF M/S WAGO OR EQUIV.	02 NOS.	
3	CAGE CLAMP TERMINAL	282-122 OF M/S WAGO OR EQUIV.	16 NOS.	FOR 110V DC +VE LIGHT, 110V DC -VE LIGHT, LS-I+, LS- (ALARM CKT.)
4	GLASS FUSE, 5X20MM, 1A	IEC127-74	16 NOS.	
5	ADJACENT JUMPER INSULATED	282-402 OF M/S WAGO OR EQUIV.	08 NOS.	
6	END & INTERMEDIATE PLATE	282-311 OF M/S WAGO OR EQUIV.	02 NOS.	
7	4-CONDUCTOR THROUGH TERMINAL BLOCK	280-833 OF M/S WAGO OR EQUIV.	05 NOS.	FOR LS-II+ (ALARM CKT.), PH.,PH.,NEUTRAL (MCS CKT.)
8	END & INTERMEDIATE PLATE, ORANGE	280-315 OF M/S WAGO OR EQUIV.	04 NOS.	
9	ADJACENT JUMPER INSULATED	280-402 OF M/S WAGO OR EQUIV.	01 NO.	
10	4-CONDUCTOR GROUND TERMINAL BLOCK	280-837 OF M/S WAGO OR EQUIV.	04 NOS.	FOR PE (MCS CKT.) PE (LIGHT CKT.)
11	ADJACENT JUMPER INSULATED	280-422 OF M/S WAGO OR EQUIV.	02 NOS.	

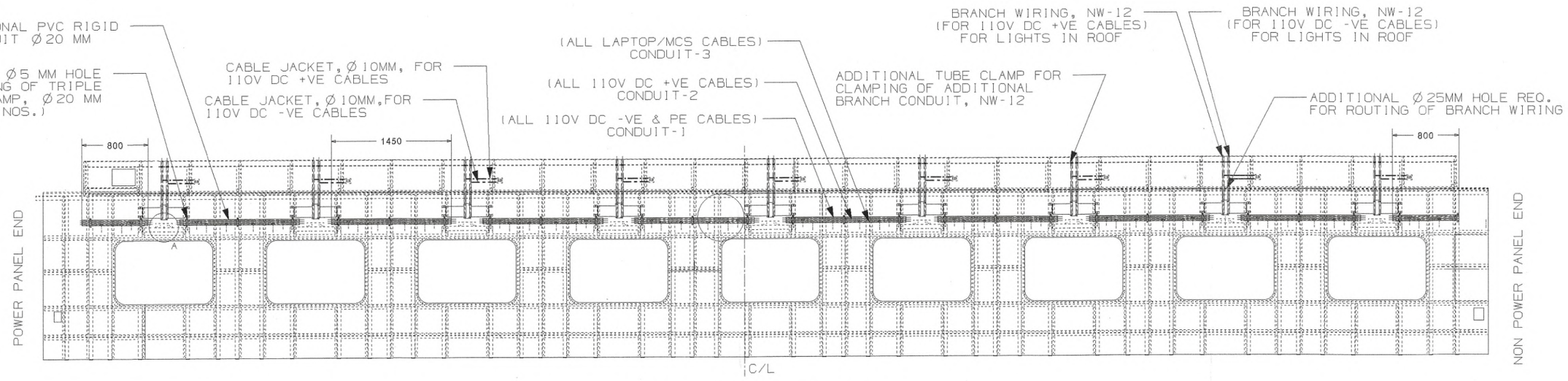
DETAIL DRGS STARTING WITH "LI" ARE INTERNAL REFERENCE LISTS ONLY AND ARE NOT FOR ISSUE

ANY MANUAL ALTERATION SHALL AUTOMATICALLY RENDER THIS DRAWING INVALID.

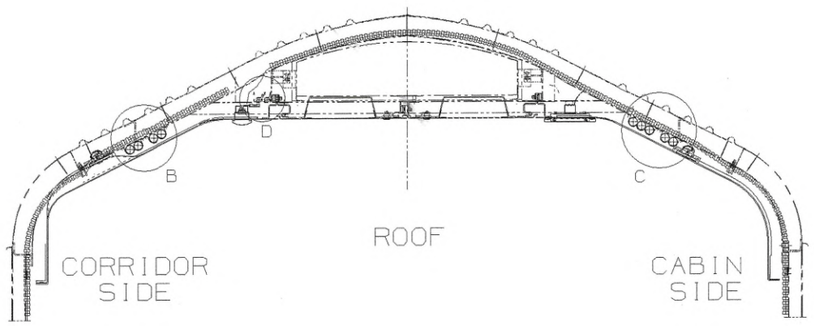
FOR UNTOLERANCED DIMENSIONS REFER MDG0008 | DATE OF FIRST ISSUE 23/02/2024

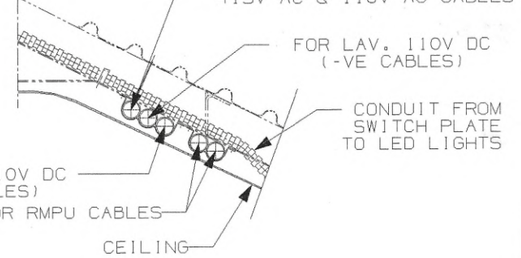
WELD LENGTH	ITEM	DESCRIPTION & DIMENSIONS	OPASSLY	DETAIL DRG	MATL. & SPEC.	REMARKS
NIL M	GROUP	ELECTRICAL	SUPERSEDES: NIL			
WEIGHT	FILE	D:\JASWINDER\AC COACHES WAGO\SKED-938.prt				
NIL KG	CAGE CLAMP TERMINALS WITH GLASS FUSES FOR CABIN AREA OF LHB EOG AC 3-T COACHES			SCALE	SSE/ED	
S.AREA					CHD	
NIL M^2					DRN	
~~LENGTH / DIA~~	RAIL COACH FACTORY, KAPURTHALA			REF.DRG.No.	NIL	
NIL M	~~WIDTH / THICK~~	रेल कोच फैक्टरी कपूरथला	IRS	PL NO.	NIL	
NIL M	HEIGHT			DRG.NO.	SKED-938	
NIL M	SEE/D&D	DY.CEE/D&D		ALT. NIL	SIZE A2	SHEET 1/1

ALT.NO	ALT.DATE	ZONE	ALTERATIONS	AUTHORITY

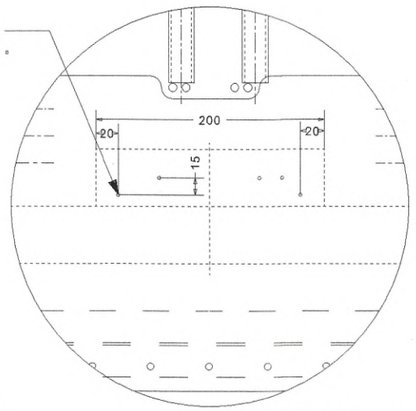


SIDE-WALL (CABIN SIDE)

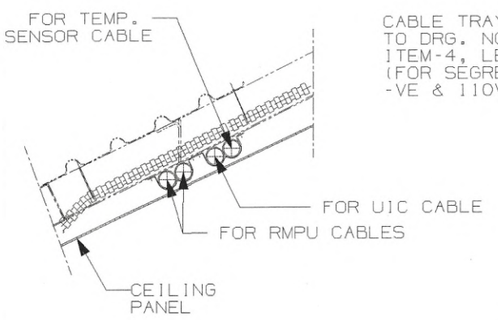




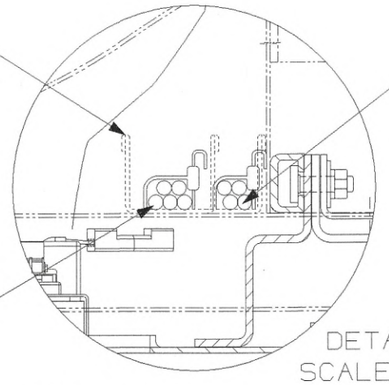
DETAIL-C



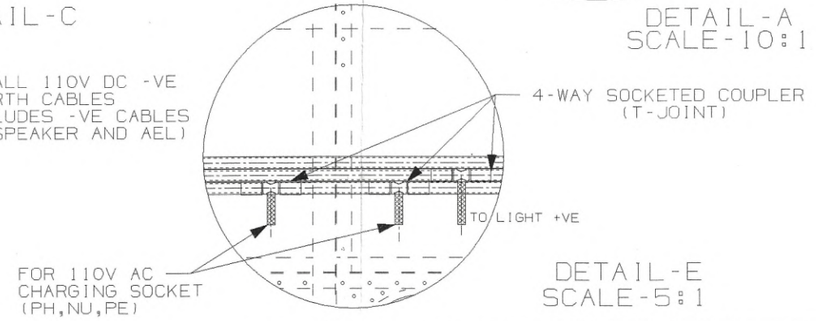
DETAIL-A
SCALE-10:1



DETAIL-B



DETAIL-D
SCALE-16:1



DETAIL-E
SCALE-5:1

4. CUT-OUT IN FRP PANEL BEHIND MIRROR TO DRG. NO. LE44215, ALT-'J' SHALL BE INCREASED FROM 125MM(L)X125MM(W) TO 275MM(L)X125MM(W) FOR ACCOMODATING CAGE CLAMP TERMINALS.
3. REFERENCE CONNECTION DIAGRAM SHALL BE AS PER SKED-938.
2. CAGE CLAMP TERMINALS WITH GLASS FUSES SHALL BE PROVIDED AS PER SKED-938.

NOTE:- 1. ALL DIMENSIONS IN MM.

ANY MANUAL ALTERATION SHALL AUTOMATICALLY RENDER THIS DRAWING INVALID.

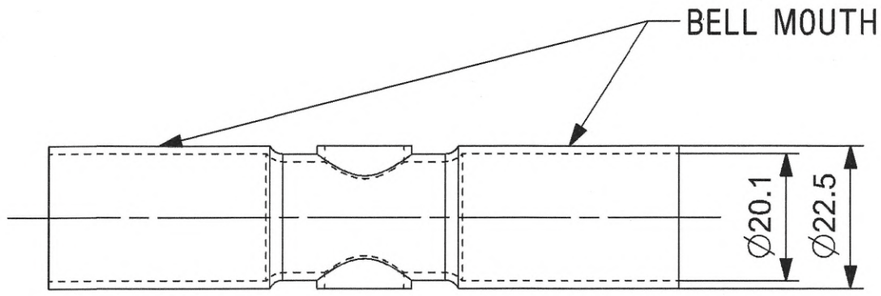
FOR UNTOLERANCED DIMENSIONS REFER MDG0008

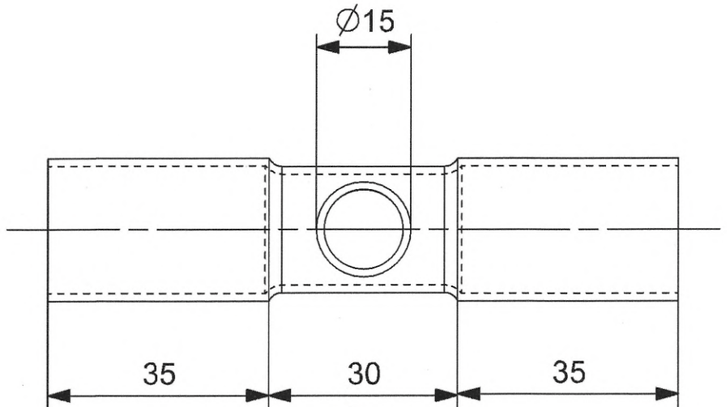
DETAIL DRGS STARTING WITH "LI" ARE INTERNAL REFERENCE LISTS ONLY AND ARE NOT FOR ISSUE.

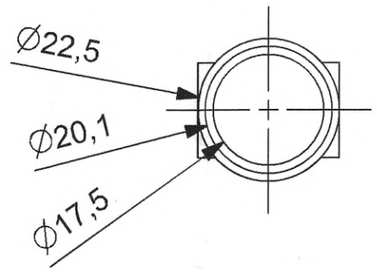
DATE OF FIRST ISSUE 28/02/2024

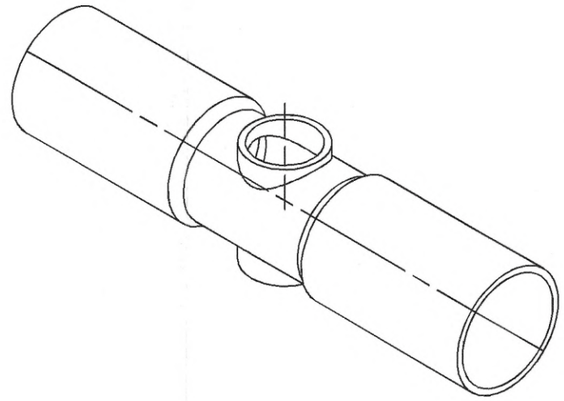
WELD LENGTH	ITEM	DESCRIPTION & DIMENSIONS	QPASSLY	DETAIL DRG	MATL. & SPEC.	REMARKS
NIL M			NIL	NIL	NIL	NIL
NIL M	GROUP	ELECTRICAL	SUPERSEDES:		NIL	
WEIGHT	FILE	D:\JASWINDER\AC COACHES WAGO\SKED-942.prt				
NIL KG	MOD. REQ. IN SIDEWALL & ROOF ARRGT. OF LHB EOG AC 3T/2T COACHES FOR THE PROVISION OF CAGE CLAMP TERMINALS & DC +VE/-VE SEGRAGATION				SCALE	SSE/ED
S.AREA						CHD
NIL M^2						DRN
~~LENGTH/DIA~~						
NIL M	RAIL COACH FACTORY, KAPURTHALA				REF.DRG.No. LE74409, ALT-NIL	
~~WIDTH/THICK.~~						
NIL M	रेल कोच फैक्ट्री कपूरथला IRS				PL NO. NIL	
HEIGHT						
NIL M	SEE/D&D	DY.CEE/D&D			DRG.NO. SKED-942	
					ALT. NIL SIZE A1 SHEET 1/1	

ALT.NO	ALT.DATE	ZONE	ALTERATIONS	AUTHORITY
NIL	NIL	NIL	NIL	NIL









ISOMETRIC VIEW

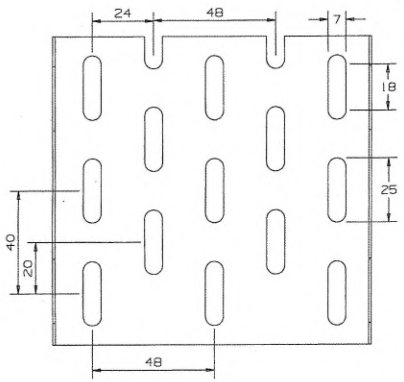
THIS DRAWING IS THE INTELLECTUAL PROPERTY OF RAIL COACH FACTORY, KAPURTHALA. THIS DRAWING SHOULD NOT BE REPRODUCED, ALTERED, USED FOR MANUFACTURING OF COMPONENTS, SOLD OR TRANSFERRED WITHOUT PERMISSION FROM CHIEF DESIGN ENGINEER, RAIL COACH FACTORY, KAPURTHALA.

NOTE:-
1. ALL DIMENSIONS ARE IN MM.
2. SOCKETED COUPLER SHALL GENERALLY CONFORMS TO IS:9537, PART-III

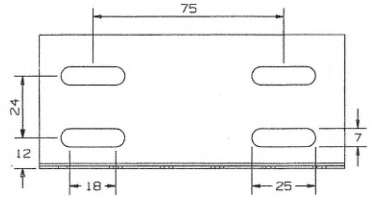
DETAIL DRGS STARTING WITH "LI" ARE INTERNAL REFERENCE LISTS ONLY AND ARE NOT FOR ISSUE.
THIS IS A COMPUTER GENERATED DRAWING. ANY MANUAL ALTERATION SHALL AUTOMATICALLY RENDER IT INVALID.
FOR UNTOLERANCED DIMENSIONS REFER MDG0008 | DATE OF FIRST ISSUE | 28/03/2024

WELD LENGTH	ITEM	DESCRIPTION & DIMENSIONS	QPASSLY	DETAIL DRG	MATL. & SPEC.	REMARKS
NIL M				NIL	NIL	NIL
WEIGHT	GROUP	ELECTRICAL	SUPERSEDES: NIL			
NIL KG	FILE	Z:\SKED-947.prt				
S.AREA		4-WAY SOCKETED TYPE COUPLER FOR 20 MM DIA RIGID CONDUIT FOR LHB EOG AC COACHES			SCALE	SSE/ED
NIL M²						CHD
~~LENGTH / DIA~~						DRN
NIL M		RAIL COACH FACTORY, KAPURTHALA			REF.DRG.NO.	NIL
~~WIDTH / THICK~~		रेल कोच फैक्टरी कपूरथला IRS			PL NO.	NIL
NIL M					DRG.NO.	SKED-947
HEIGHT		SEE/D&D	DY.CEE/D&D		ALT. NIL	SIZE A3 SHEET 1/1
NIL M						

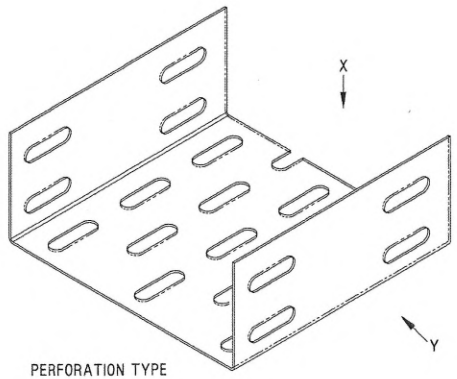
ALT.NO	ALT.DATE	ZONE	ALTERATIONS	AUTHORITY
e	22/08/2023	ALL	TITLE OF THE DRAWING WAS CABLE DUCTS WHICH HAS BEEN MODIFIED TO CABLE TRAYS.	DIC NO. MD230062
f	19/01/2024	ALL	ITEM-11 ADDED, DRG & BOM UPDATED ACCORDINGLY.	MD230084



VIEW FROM X



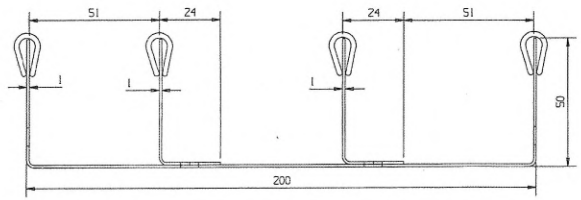
VIEW FROM Y



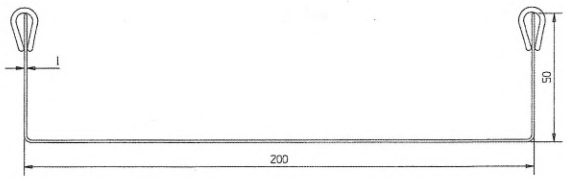
PERFORATION TYPE

NOTE:-

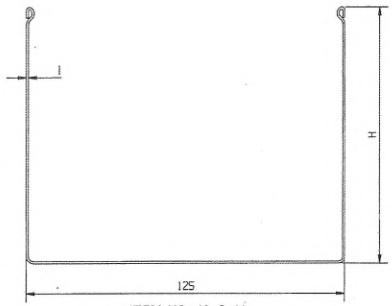
1. For ease of mounting and cable ventilation, cable trays will be perforated as shown in details at 'X' and 'Y'.
2. preferable lenth of cable tray will 3000 mm
3. All aluminum parts will be anodised or powder coated.
4. Edge beedings are required to protect the damage of electrical cables and shall be of hard PVC.
5. All partitions should be properly fastened.



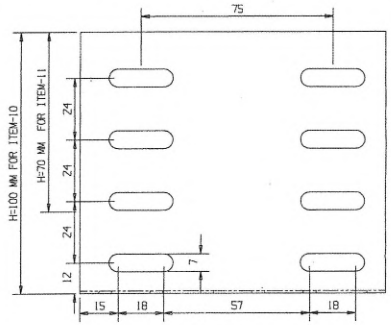
ITEM NO. 1



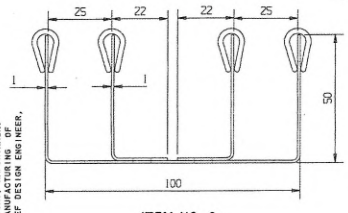
ITEM NO. 2



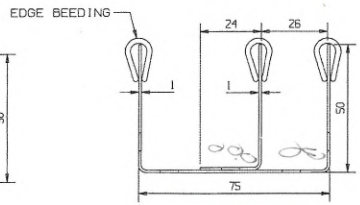
ITEM NO. 10 & 11



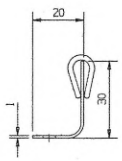
VIEW FROM Y
FOR ITEM NO. 10 & 11



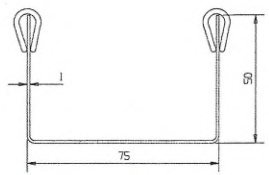
ITEM NO. 3



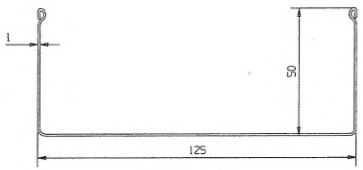
ITEM NO. 4



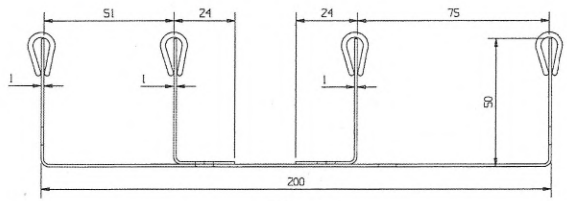
ITEM NO. 5



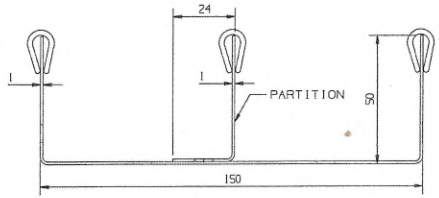
ITEM NO. 6



ITEM NO. 7



ITEM NO. 8



ITEM NO. 9

11	CABLE TRAY IXHX12S, H=70MM	1	NIL	IS: 6911-92 GR.304	STAINLESS STEEL
10	CABLE TRAY IXHX12S, H=100MM	1	NIL	IS: 6911-92 GR.304	STAINLESS STEEL
9	CABLE TRAY WUTH PARTITION	1	NIL	IS: 737-86 GR. 31000 H2	ALUMINUM
8	CABLE TRAY WITH PARTITION IXS0X200	1	NIL	IS: 737-86 GR. 31000 H2	ALUMINUM
7	CABLE TRAY IXS0X12S	1	NIL	IS: 6911-92 GR.304	STAINLESS STEEL
6	CABLE TRAY	1	NIL	IS: 737-86 GR. 31000 H2	ALUMINUM
5	ANGLE FOR PARTITION IX20X30	1	NIL	IS: 737-86 GR. 31000 H2	ALUMINUM
4	CABLE TRAY WITH PARTITION IXS0X75	1	NIL	IS: 737-86 GR. 31000 H2	ALUMINUM
3	CABLE TRAY WITH PARTITION IXS0X100	1	NIL	IS: 737-86 GR. 31000 H2	ALUMINUM
2	CABLE TRAY	1	NIL	IS: 737-86 GR. 31000 H2	ALUMINUM
1	CABLE TRAY WITH PARTITION	1	NIL	IS: 737-86 GR. 31000 H2	ALUMINUM

WELD LENGTH	ITEM	DESCRIPTION & DIMENSIONS	QPASSLY	DETAIL DRG	MATL. & SPEC.	REMARKS
NIL M	GROUP	CABLE TRAY ARRANGEMENT	SUPERSEDES:	LW44174 ALT e		
WEIGHT	FILE	\\10.12.17.2\shell\JITU\LW44174f.prt(3D)				
NIL KG						
S.AREA						
NIL M²						
~~LENGTH/DIA~~						
NIL M						
~~WIDTH/THICK~~						
NIL M						
HEIGHT						
NIL M						

CABLE TRAYS

FOR LHB TYPE COACHES

RAIL COACH FACTORY, KAPURTHALA

रेलकोच फैक्टरी कपूरथला

IRS

SCALE	$SE/REC	
1:1	CHD	PRDP
	DRN	JITU
REF.DRG.No.	NIL	
PL NO.	NIL	
DRG.NO.	LW44174	
ALT. f	SIZE A1	SHEET 1/1

ADE/SME | DY.CME | CDE

ENTERED INTO DATA BASE

24 JAN 2024

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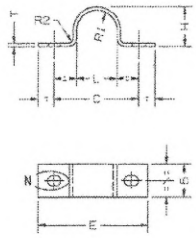
DETAIL DRGS STARTING WITH "LI" ARE INTERNAL REFERENCE LISTS ONLY AND ARE NOT FOR ISSUE.

FOR UNTOLERANCED DIMENSIONS REFER MDG0008

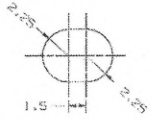
DATE OF FIRST ISSUE: 26/09/2001 CGM BY

12

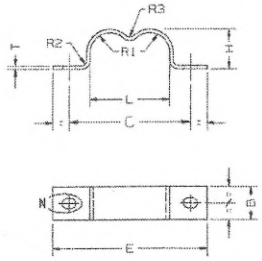
ALT.NO	ALT.DATE	ZONE	ALTERATIONS	AUTHORITY
c	31/08/22	ALL	NOTE-2 UPDATED	DIC NO. 23002208229



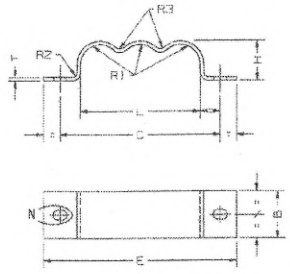
CLAMP FOR SINGLE CONDUIT



DETAIL AT 'N'



CLAMP FOR DOUBLE CONDUITS



CLAMP FOR TRIPPLE CONDUITS

TABLE-1 FOR SINGLE CONDUIT

ITEM NO.	DESCRIPTION	CONDUITS SIZE AS PER SPEC. NO.9537(PART-3)1993.		DIMENSIONS OF CLAMP							
		NOMINAL SIZE	OUTER DIA	R1	T	B	C	E	H	R2	L
1	CLAMP Ø16	16	16	8.5	1.5	14	38	50	17	2	17
2	CLAMP Ø20	20	20	10.5	1.5	14	43	57	21	2	21
3	CLAMP Ø25	25	25	13	1.5	14	43	57	26	2	26
4	CLAMP Ø32	32	32	16.5	1.5	14	49	63	33	2	33
5	CLAMP Ø40	40	40	20.5	1.5	14	57	71	41	2	41
6	CLAMP Ø50	50	50	25.5	1.5	14	67	81	51	2	51
7	CLAMP Ø63	63	63	32	1.5	14	80	94	64	2	64

TABLE-2 FOR DOUBLE CONDUITS

ITEM NO.	DESCRIPTION	CONDUITS SIZE AS PER SPEC. NO.9537(PART-3)1993.		DIMENSIONS OF CLAMP								
		NOMINAL SIZE	OUTER DIA	R1	T	B	C	E	H	R2	R3	L
9	CLAMP 2XØ16	16	16	8.5	1.5	14	52	68	17	2	2.5	34
9	CLAMP 2XØ20	20	20	10.5	1.5	14	58	80	21	2	3.5	42
10	CLAMP 2XØ25	25	25	13	1.5	14	70	85	26	2	3.5	52
11	CLAMP 2XØ32	32	32	16.5	1.5	14	82	98	33	2	5	66
12	CLAMP 2XØ40	40	40	20.5	1.5	14	100	118	41	2	6.5	82
13	CLAMP 2XØ50	50	50	25.5	1.5	14	120	135	51	2	8.5	102
14	CLAMP 2XØ63	63	63	32	1.5	14	148	165	64	2	10	128

TABLE-3 FOR TRIPPLE CONDUITS

ITEM NO.	DESCRIPTION	CONDUITS SIZE AS PER SPEC. NO.9537(PART-3)1993.		DIMENSIONS OF CLAMP								
		NOMINAL SIZE	OUTER DIA	R1	T	B	C	E	H	R2	R3	L
15	CLAMP 3XØ16	16	16	8.5	1.5	20	88	82	17	2	2.5	51
16	CLAMP 3XØ20	20	20	10.5	1.5	20	98	102	21	2	3.5	63
17	CLAMP 3XØ25	25	25	13	1.5	20	98	110	26	2	3.5	78
18	CLAMP 3XØ32	32	32	16.5	1.5	20	115	130	33	2	5	98
19	CLAMP 3XØ40	40	40	20.5	1.5	20	140	155	41	2	6.5	123
20	CLAMP 3XØ50	50	50	25.5	1.5	20	175	190	51	2	8.5	153
21	CLAMP 3XØ63	63	63	32	1.5	20	212	230	84	2	10	192

NOTE:- 1. ALL DIMENSIONS ARE IN MM.

2. FOR ALL ITEMS, MATERIAL SHALL BE CONFORMING TO SPEC.NO. IS:5986-2011,FE-235 AND SHALL BE HOT DIP GALVANIZED AS PER IS:277 2018.

3. CLAMPS AND THE HOLE ETC SHALL BE SMOOTHEND TO REMOVE ALL SHARP EDGES.

DETAIL DRGS STARTING WITH "LI" ARE INTERNAL REFERENCE LISTS ONLY AND ARE NOT FOR ISSUE

ANY MANUAL ALTERATION SHALL AUTOMATICALLY RENDER THIS DRAWING INVALID.

FOR UNTOLERANCED DIMENSIONS REFER MDG0008 | DATE OF FIRST ISSUE | 31/08/2022

WELD LENGTH	ITEM	DESCRIPTION & DIMENSIONS	QPA&SLY	DETAIL DRG	MATL. & SPEC.	REMARKS
NIL			NIL	NIL	NIL	NIL
NIL M	GROUP	ELECTRICAL	SUPERSEDES:	LP7600) ALT b		
WEIGHT	FILE	Z:\YKDS\lp7600)c.prt				
NIL KG		CLAMPS			SCALE	SSE/ED
S.AREA		(FOR LHB TYPE COACHES)				CHD
NIL M²					DRN	YKDS
LENGTH / DIA		RAIL COACH FACTORY, KAPURTHALA			REF.ORG.No.	NIL
NIL M					PL NO.	NIL
WIDTH / THICK		रेल कोच फैक्टरी कपूरथला IRS			DRG.NO.	LP76001
NIL M					ALT.	c
HEIGHT		SEE/D&D		DY.CEE/D&D	SIZE	A2
NIL M					SHEET	1/1