

भारत सरकार Government of India
रेल मंत्रालय Ministry of Railways
रेलवे बोर्ड Railway Board

No. 2021/M(C)/141/2Pt2

(E-File No.3377119)
New Delhi, Dated- 08.05.2025

General Managers,
All Zonal Railways

Sub: Maintenance practices of bio-toilets in Railway coaches.

Ref : (i) RB L.No. 2021/M(C)/141/2Pt2 dated 15.12.2022

(ii) RB L.No. 2021/M(C)/141/2Pt.-2 dated 26.05.2023

During review of maintenance and upkeep of coach toilets with Zonal Railways, it has emerged that concerted actions on choking of toilets, presence of inorganic garbage in first chamber of bio-tank, misalignment of S-trap and sporadic leakage from the rubber gaskets/sealing mechanism may further improve the overall functionality of bio-toilets. This aspect will also enhance the experience of on board passengers. Towards this objective, Zonal Railways are advised to take the following actions:

1. F-type bracket for clamping the S-Trap in accordance to ICF Drawing no. 32963203 be used. This is likely to contribute to precise alignment and secure fitment of S-trap provided while retaining flexibility. Also, when placed correctly, this will provide robust vertical and horizontal restraint, mitigating the risk of dislodgement due to vibrations or dynamic loads during train operations. Pictures of the F-type mounting arrangement are attached as **(Annexure A)**.
2. Installation of Cage in Commode Chute just below Water Column be carried out for both Indian and Western-style toilets to prevent ingress of foreign objects into the bio-digester tank thereby protecting from potential blockages and damage. The design and placement of this cage should conform to schematic drawing, ensuring compatibility with existing chute configurations, attached as **(Annexure B)**.
3. Stringent Use of Correct Hose Material and Sealing Mechanisms, including circlips, to the prescribed specifications and composition is a must. Recommended inspection practices, including record keeping, be put in place wherever the supply of such items is in the scope of supply of the agency to whom such work has been outsourced.
4. Further, the instructions issued vide letters at reference are to be followed scrupulously by Zonal Railways.

DA: Annexure A- Pictures of the F-type clamp mount.
Annexure B- Schematic drawing of SS cage.

20.21.2025
(ऐश्वर्य सचान)
निदेशक/ यांत्रिक इंजी. को.
रेलवे बोर्ड

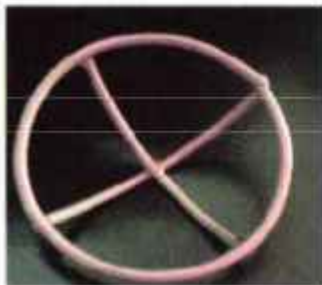
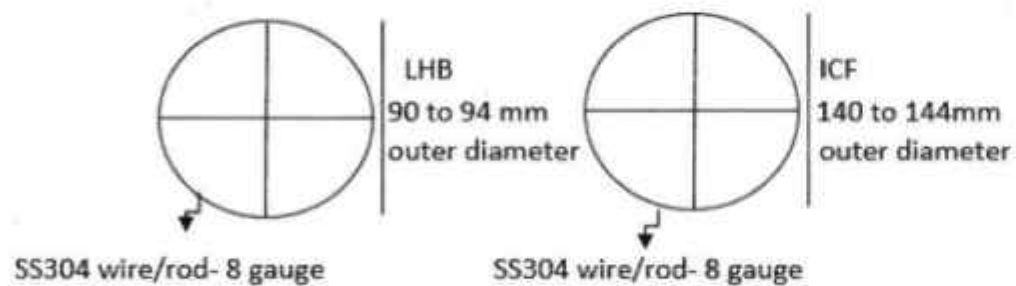
C/- PCMEs/ All Zonal Railways - for kind information and necessary action.

Annexure A to L.No. 2021/M(C)/141/2Pt2 dt 08.05.2025 - Pictures of the F-type clamp mount



Annexure B to L.No. 2021/M(C)/141/2Pt2 dt 08.05.2025 – Schematic drawing of SS Cage

Indicative Drawing of SS-strainer for fitment in S-Trap



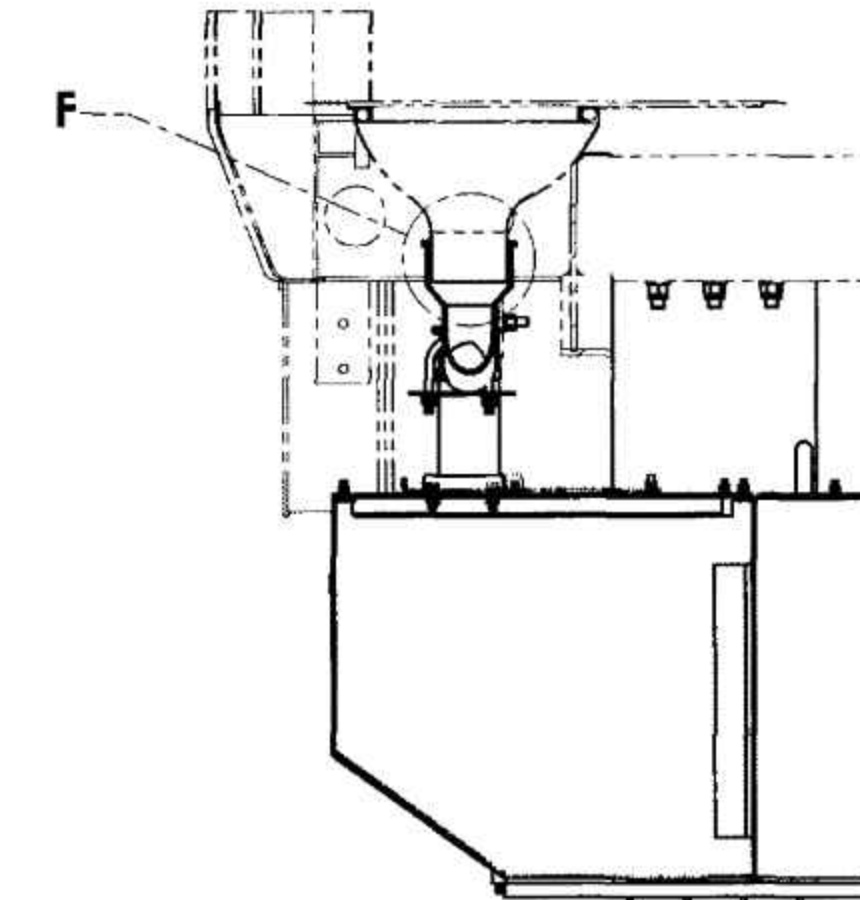
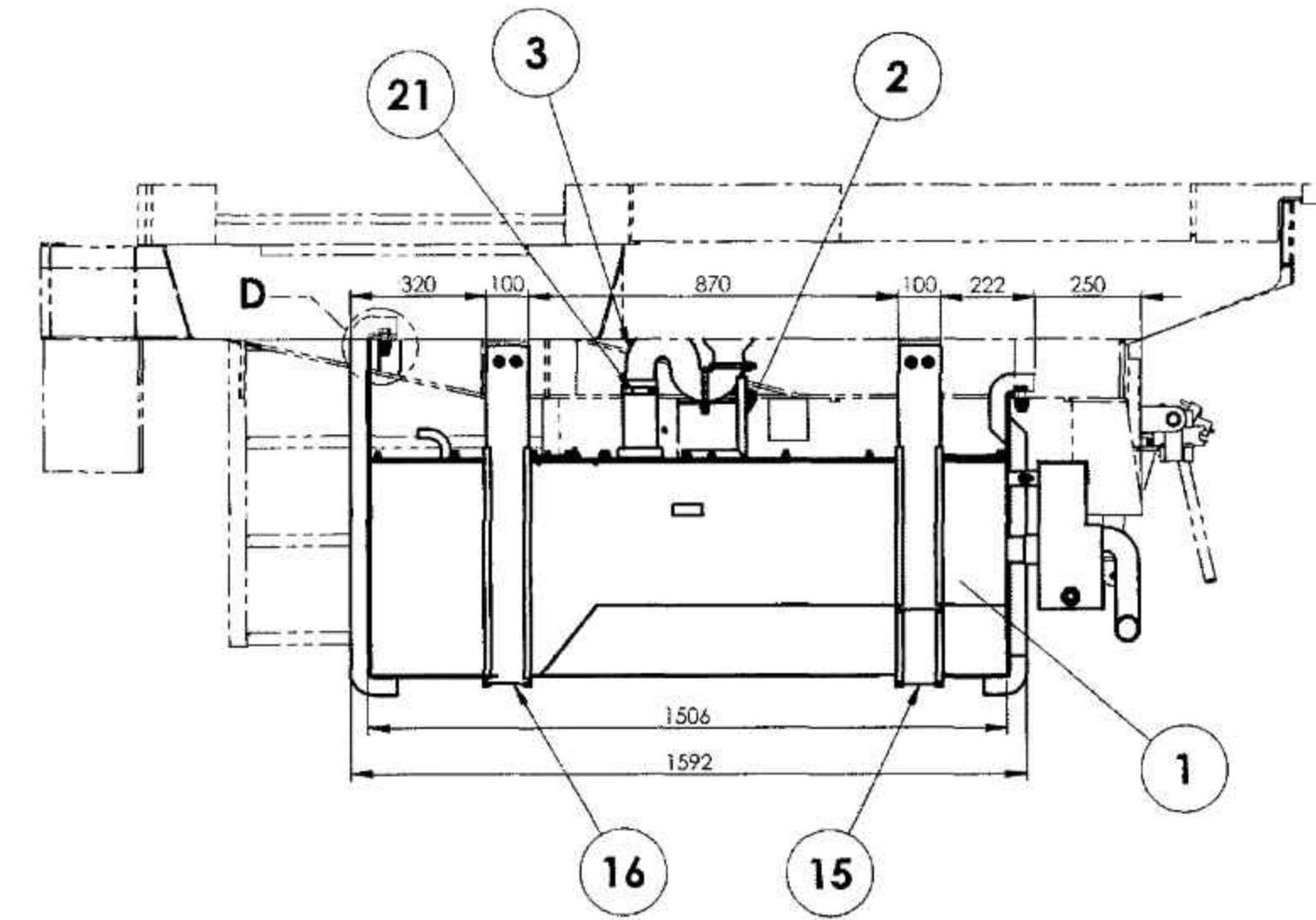
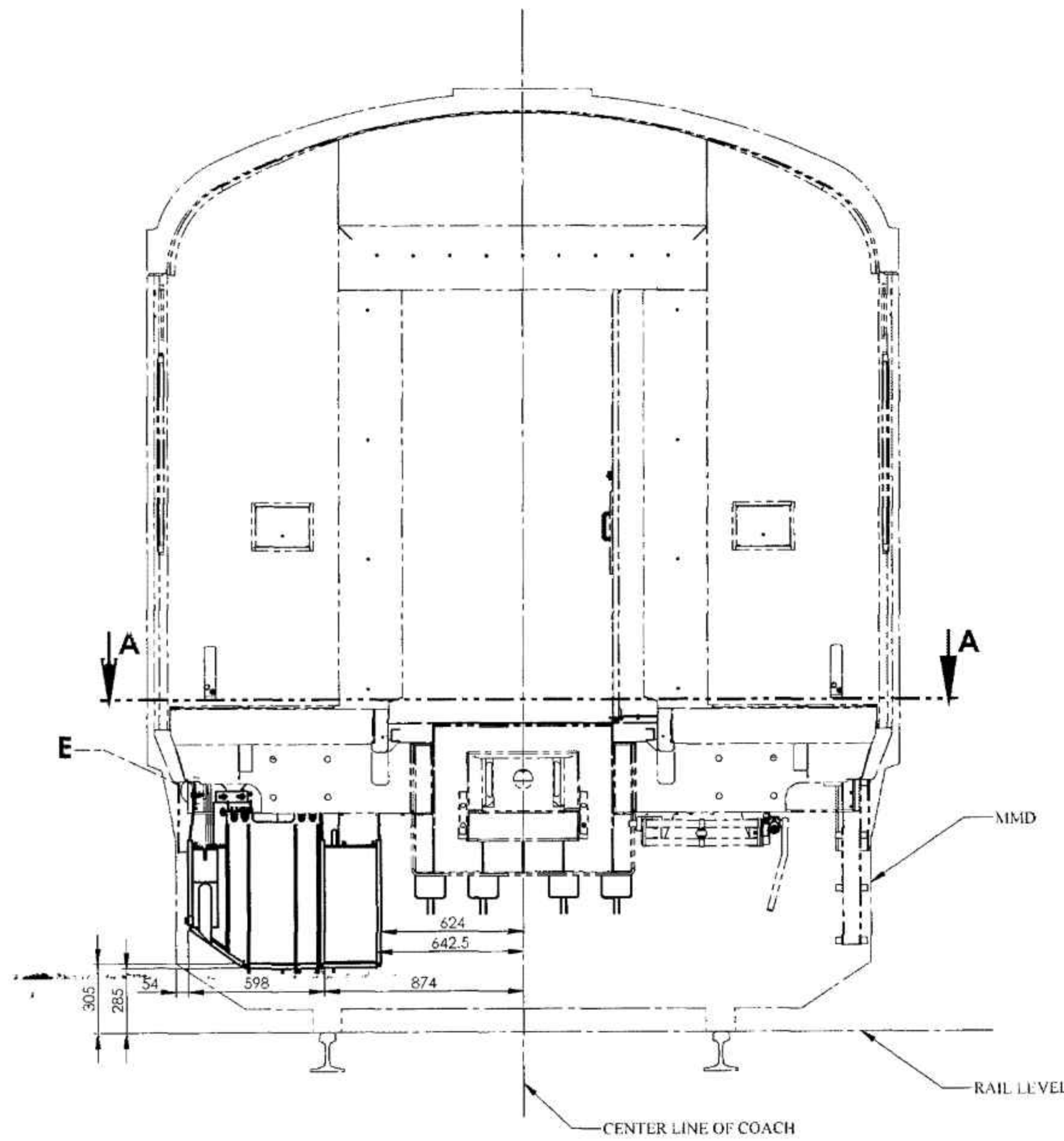
20.2124

32963203

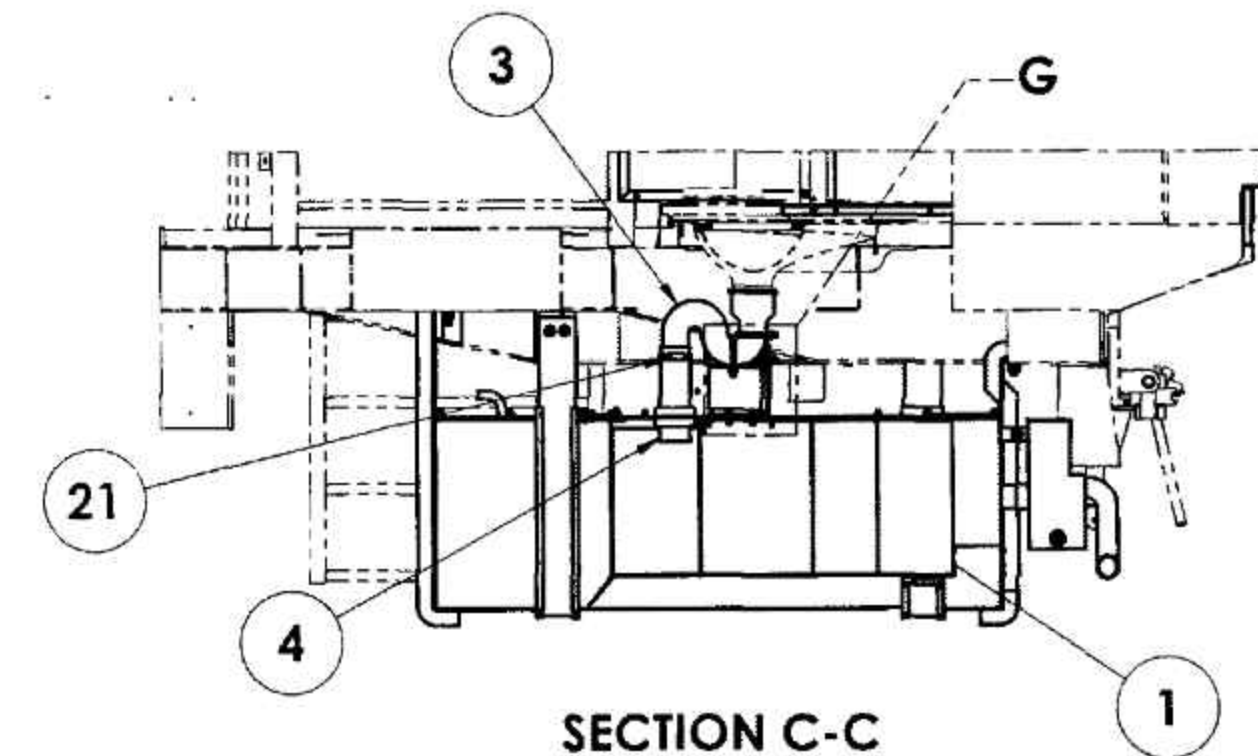
▽ ROUGH MACHINED
▽▽ FINISH MACHINED
▽▽▽ FINE FINISH MACHINED

① ROUGH CLEANED
② BURRS REMOVED
③ CHAMFERED

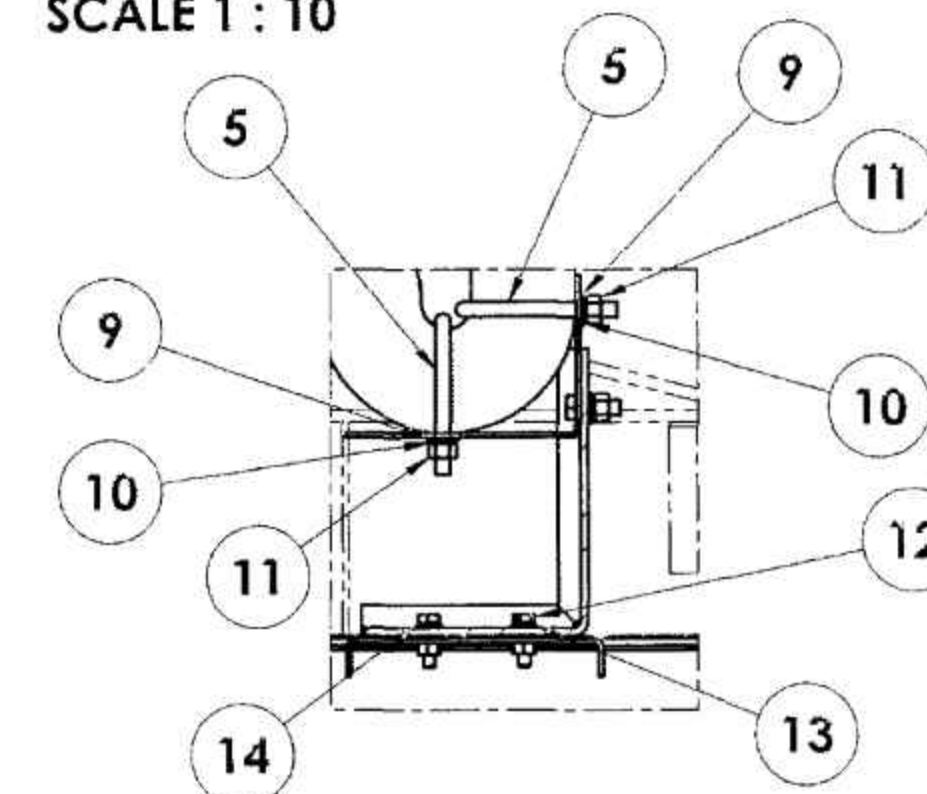
REVISIONS				APPROVED & DATE
ALT.	ZONE	DESCRIPTION		
a		1) DIM. & MATERIAL SPEC. OF ITEM-4 ALTD. FROM PREVIOUS DRAWING. DIM. 80MM IS 1556-260 TO RUBBER HOSE. NOMINAL DIA 83.81 IN 1493-2001, TYPE-B. 2) MOUNTING OF ITEM-4 ALTD. 3) ITEM-2 ALTD. 4) REF. DRG. OF ITEM-4 ALTD. AS PER REF. DRG. NO. 32963202, AT-4. WHEN SUPPLIED ACCORDINGLY.		-SD-
b		DIMENSION OF ITEM-4 ALTD. FROM NOMINAL DIA 83.81 TO 80MM.		-SD-
c		NOTE-2 UPDATED AND NOTE-3 ADDED.		-SD-
d		ONLY FOR ITEMS 6, 7 & 8 ALTD. FROM 12 & 10 TO 7 & 4. 7 & 4 SHALL BE UNBRAKE OR TVS. UPDATE D.S. PER DRG. NO. 32963202, AT-4.		



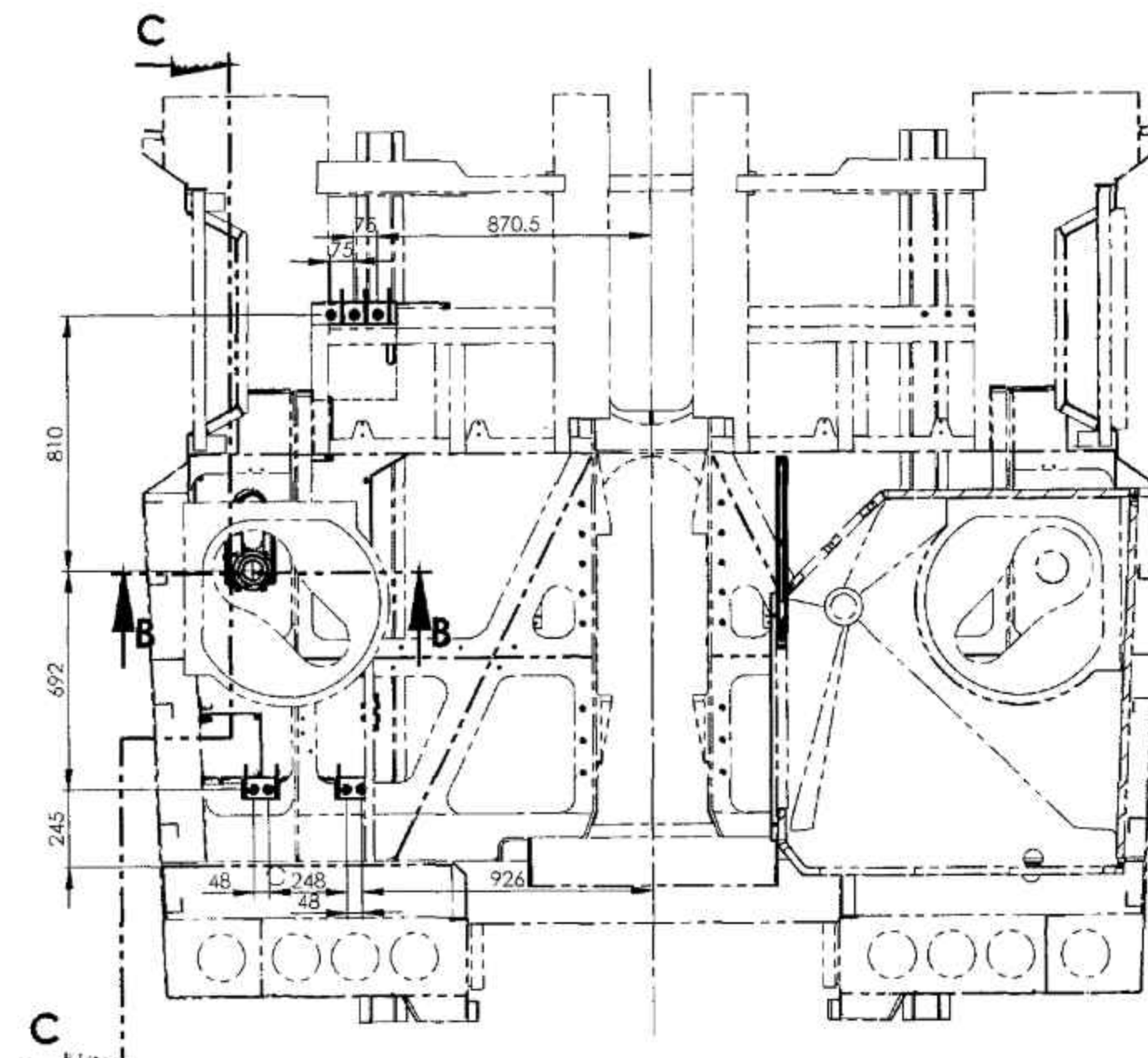
SECTION B-B
SCALE 1 : 10



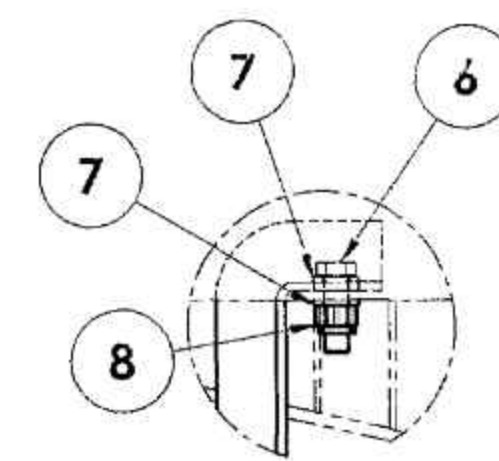
SECTION C-C
SCALE 1 : 20



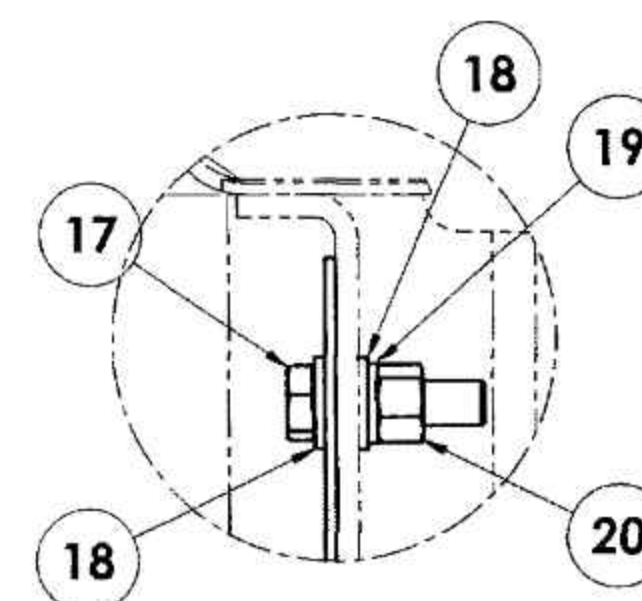
DETAIL G
SCALE 1 : 5



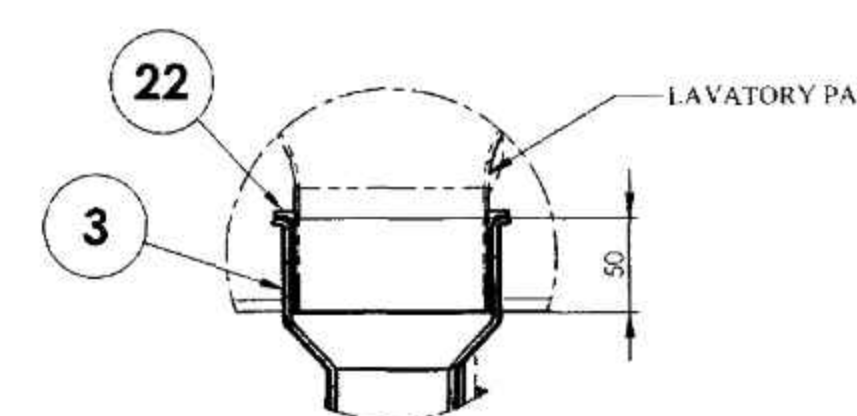
SECTION A-A
SCALE 1 : 20



DETAIL D
SCALE 1 : 5



DETAIL E
SCALE 1 : 2



DETAIL F
SCALE 1 : 4

NOTE:
1. FITMENT OF ITEM-4 SHALL BE DONE AS PER PROCEDURE DEFINED IN CAUSE NO. 7 OF S-15265-2003.
2. MANUFACTURER OF ITEMS 6, 7 & 8 SHALL BE UNBRAKE OR TVS OR TUFF OR DLF ONLY.
3. TIGHTENING TORQUE OF ITEM-6 SHALL BE 170NM.

ITEM NO.	DESCRIPTION	DIMENSIONS	ITEM NO.	DESCRIPTION	DIMENSIONS	ITEM NO.	DESCRIPTION	DIMENSIONS	ITEM NO.	DESCRIPTION	DIMENSIONS
1	RUBBER SEAL FOR 100MM LAVATORY PAN	100MM	22	RDSO/CG-16014		1	RUBBER SEAL FOR 100MM LAVATORY PAN	100MM	22	RDSO/CG-16014	
2	SS HOSE CLAMP	80MM	21	IS:4767-84		2	SS HOSE CLAMP	80MM	21	IS:4767-84	
3	PLAIN WASHER	14	20	IS:1364(PART-2)2002, TAB-1		3	PLAIN WASHER	14	20	IS:1364(PART-2)2002, TAB-1	
4	PLAIN WASHER	14	19	IS:3063-1994, TAB-1, TYPE-B		4	PLAIN WASHER	14	19	IS:3063-1994, TAB-1, TYPE-B	
5	PLAIN WASHER	14	18	IS:2016-1967, TAB-2, TYPE-A		5	PLAIN WASHER	14	18	IS:2016-1967, TAB-2, TYPE-A	
6	PLAIN WASHER	14	17	IS:1364(PART-2)2002, TAB-1		6	PLAIN WASHER	14	17	IS:1364(PART-2)2002, TAB-1	
7	PLAIN WASHER	14	16	IS:1364(PART-2)2002, TAB-1		7	PLAIN WASHER	14	16	IS:1364(PART-2)2002, TAB-1	
8	PLAIN WASHER	14	15	IS:3063-1994, TAB-1, TYPE-B		8	PLAIN WASHER	14	15	IS:3063-1994, TAB-1, TYPE-B	
9	PLAIN WASHER	14	14	IS:2016-1967, TAB-2, TYPE-A		9	PLAIN WASHER	14	14	IS:2016-1967, TAB-2, TYPE-A	
10	PLAIN WASHER	14	13	IS:1364(PART-2)2002, TAB-1		10	PLAIN WASHER	14	13	IS:1364(PART-2)2002, TAB-1	
11	PLAIN WASHER	14	12	IS:1364(PART-2)2002, TAB-1		11	PLAIN WASHER	14	12	IS:1364(PART-2)2002, TAB-1	
12	PLAIN WASHER	14	11	IS:3063-1994, TAB-1, TYPE-B		12	PLAIN WASHER	14	11	IS:3063-1994, TAB-1, TYPE-B	
13	PLAIN WASHER	14	10	IS:2016-1967, TAB-2, TYPE-A		13	PLAIN WASHER	14	10	IS:2016-1967, TAB-2, TYPE-A	
14	PLAIN WASHER	14	9	IS:1364(PART-2)2002, TAB-1		14	PLAIN WASHER	14	9	IS:1364(PART-2)2002, TAB-1	
15	PLAIN WASHER	14	8	IS:3063-1994, TAB-1, TYPE-B		15	PLAIN WASHER	14	8	IS:3063-1994, TAB-1, TYPE-B	
16	PLAIN WASHER	14	7	IS:2016-1967, TAB-2, TYPE-A		16	PLAIN WASHER	14	7	IS:2016-1967, TAB-2, TYPE-A	
17	PLAIN WASHER	14	6	IS:1364(PART-2)2002, TAB-1		17	PLAIN WASHER	14	6	IS:1364(PART-2)2002, TAB-1	
18	PLAIN WASHER	14	5	IS:3063-1994, TAB-1, TYPE-B		18	PLAIN WASHER	14	5	IS:3063-1994, TAB-1, TYPE-B	
19	PLAIN WASHER	14	4	IS:2016-1967, TAB-2, TYPE-A		19	PLAIN WASHER	14	4	IS:2016-1967, TAB-2, TYPE-A	
20	PLAIN WASHER	14	3	IS:1364(PART-2)2002, TAB-1		20	PLAIN WASHER	14	3	IS:1364(PART-2)2002, TAB-1	
21	PLAIN WASHER	14	2	IS:3063-1994, TAB-1, TYPE-B		21	PLAIN WASHER	14	2	IS:3063-1994, TAB-1, TYPE-B	
22	PLAIN WASHER	14	1	IS:2016-1967, TAB-2, TYPE-A		22	PLAIN WASHER	14	1	IS:2016-1967, TAB-2, TYPE-A	

GROUP	DESCRIPTION	DIMENSIONS	ITEM NO.	DESCRIPTION	DIMENSIONS	ITEM NO.	DESCRIPTION	DIMENSIONS	ITEM NO.	DESCRIPTION	DIMENSIONS
GROUP: 6-3											
SCALE	1:50										
ALT.	ALT.										
d	DRN										
MOUNTING OF IR-DRDO BIO-DIGESTER SYSTEM ON LHB COACHES (LH)											
INDIAN RAILWAY STANDARDS											
INTEGRAL COACH FACTORY, CHENNAI - 600088											
SHEET 1 OF 1											
32963203											
A1											

"JOINTLY DEVELOPED BY IR & DRDO"

REF.DRG.NO:M005710

23-04-2025 07-04-2017
DATE OF LATEST ALT. DATE OF FIRST ISSUE
NAME/SIG

32963204

▽ ROUGH MACHINED	① ROUGH CLEANED
▽▽ FINISH MACHINED	② BURRS REMOVED
▽▽▽ FINE FINISH MACHINED	③ CHAMFERED

REVISIONS			
ALT.	ZONE	DESCRIPTION	APPROVED & DATE

THIS DRAWING IS MIRROR OF DRG NO. 32963203 WITH CURRENT ALTERATION

ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE SPECIFIED. FOR UNTOLERANCED DIMENSIONS AND ROUGHNESS VALUES, REFER DRAWING NO ICF/STD-9-0-001.
ANY MANUAL ALTERATION SHALL AUTOMATICALLY RENDER THIS DRAWING INVALID. WELDING SYMBOLS ARE AS PER IS: 813-1986.
WEIGHT GIVEN IN DRAWING IS FOR INDICATIVE PURPOSE ONLY

"JOINTLY DEVELOPED BY IR & DRDO"

REF.DRG.NO.MI005711. ALT-NIL

	04-2017	
DATE OF LATEST ALT.	DATE OF FIRST ISSUE	A.M.E./S.M.E.

GROUP: 6-3	SURFACE AREA IN Sq.m.:	WT/ASSY IN Kgs:			
MOUNTING OF IR-DRDO BIO-DIGESTER SYSTEM ON LHB COACHES (RH)		SCALE 1:1	SSE/D CHD		
		ALT.	ALTD		
				DRN	ILAMPOZHILAN
		INDIAN RAILWAY STANDARDS INTEGRAL COACH FACTORY, CHENNAI - 600088		SHEET 1 OF 1	32963204 A3

AAA63681

▽ ROUGH MACHINED
▽▽ FINISH MACHINED
▽▽▽ FINE FINISH MACHINED

① ROUGH CLEANED
② BURRS REMOVED
③ CHAMFERED

REVISIONS

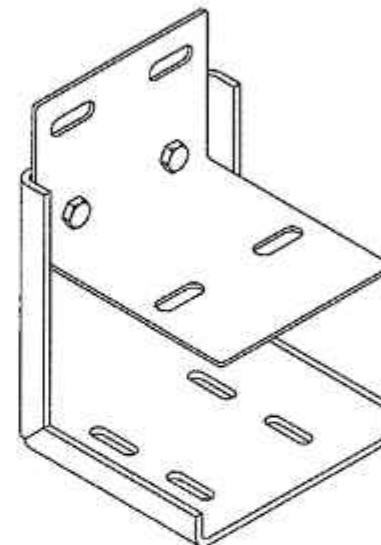
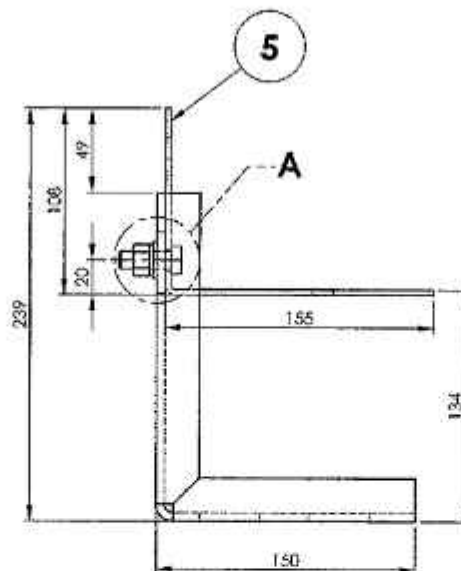
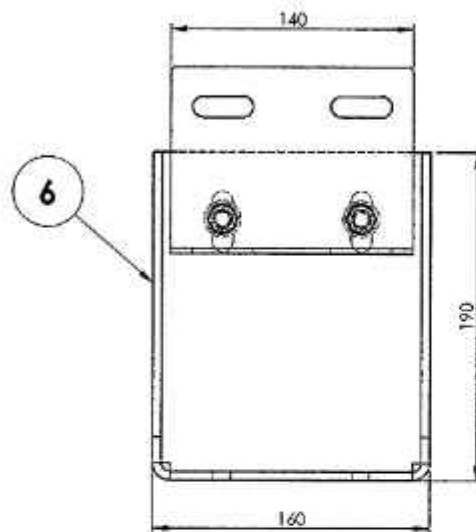
ALT.

ZONE

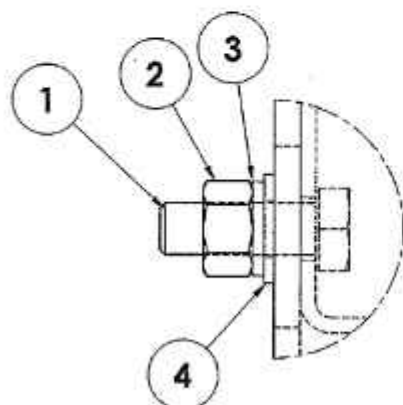
DESCRIPTION

APPROVED &
DATE

DRAWING UPDATED.



ISO METRIC VIEW



DETAIL A
SCALE 1 : 1

1	CHANNEL		6	AAA63680		2.44	
1	PLATE		5	AAA63679		0.82	
2	PLAIN WASHER	11	4	IS:2016-1967, TAB-2, TYPE-A	AISI-304		
2	SPRING LOCK WASHER	B10	3	IS:3063-1994 TAB-1A, TYPE-B	AISI-304		
2	HEXAGON NUT	M10	2	IS:1364(PT-3)/2002, TAB-1	IS:1367(PT-14/SEC-2)/2002, A2-70, TAB-2		
2	HEX HEAD SCREW	M10 x 30	1	IS:1364(PT-2)/2002, TAB-1	IS:1367(PT-14/SEC-1)/2002, A2-70, TAB-2		
QTY.	DESCRIPTION	DIMENSIONS	ITEM NO.	REF.DRGS.	MATL	WT/UNIT IN KGS	REMARKS

GROUP: 6-3

SURFACE AREA IN Sq.m.:

WT/ASSY IN Kgs:

BRACKET

SCALE
1:5

SSE/D
CHD

Signature: P. M.

ALT.
a

ALTD
DRN

ILAMPOZHILAN

ILAMPOZHILAN

INDIAN RAILWAY STANDARDS

ORIGINAL COACH FACTORY, CHENNAI - 600036

SHEET
1 OF 1

AAA63681

A3

9-11-2017	07-04-2017	
DATE OF LATEST AIZ.	DATE OF FIRST ISSUE	AME/SWE

Signature Not
Verified

Digitally signed by D
JANARDHANA SAIDU

Date: 2025.05.19

Reason: IREPS

Location: New Delhi

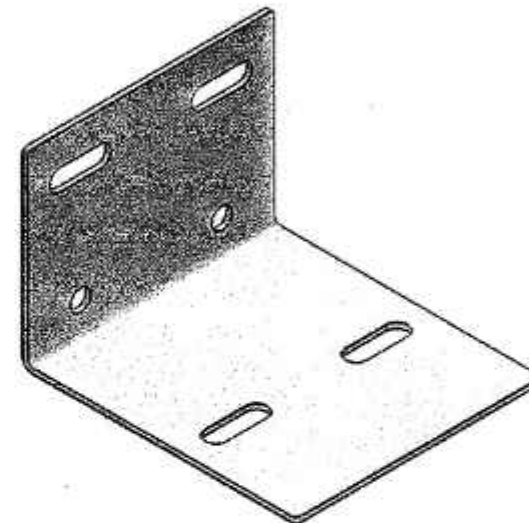
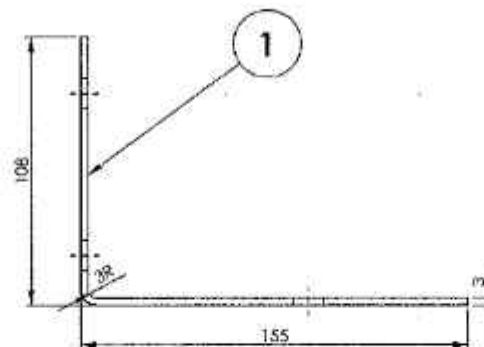
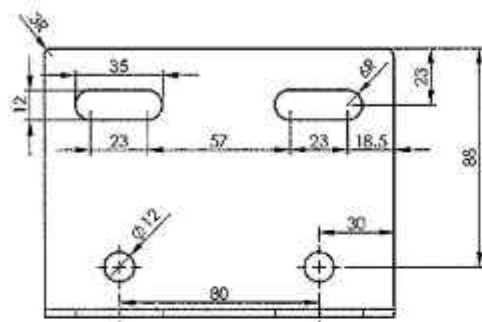
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REF.DRG.NO.

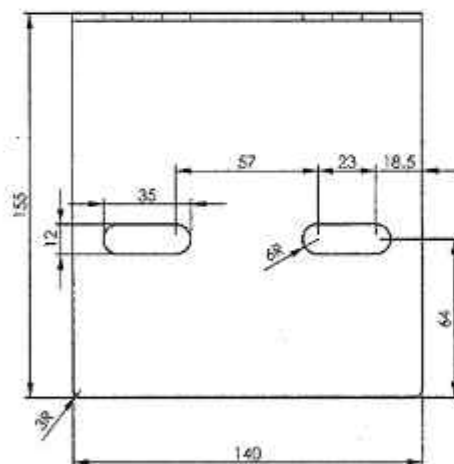
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▽ ROUGH MACHINED	① ROUGH CLEANED
▽▽ FINISH MACHINED	② BURRS REMOVED
▽▽▽ FINE FINISH MACHINED	③ CHAMFERED

REVISIONS			
ALT.	ZONE	DESCRIPTION	APPROVED & DATE



ISO METRIC VIEW



1	PLATE	3X140X258	1		AS1-316L	0.82	
QTY.	DESCRIPTION	DIMENSIONS	ITEM NO.	REF. DRGS	MATL.SPEC.	WT/UNIT IN KGS	REMARKS
GROUP: 6-3		SURFACE AREA IN Sq.m.:			WT/ASSY IN Kgs:		
PLATE					SCALE	SSE/D	Smooth Pass P.M.
					1:2	CHD	
					ALT.	ALTD	
					DRN	ILAMPOZHILAN	
INDIAN RAILWAY STANDARDS				SHEET 1 OF 1			
INTEGRAL COACH FACTORY, CHENNAI - 600088					AAA63679		A3

"JOINTLY DEVELOPED BY IR & DRDO"

REF.DRG.NO.:-

-	-04-2017	DATE OF LATEST ALT.	page 2 of 3
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Signature Not Verified

Digitally signed by D JANARDHANA NAIDU

Date: 2025.09.10

09:38:33 IST


Reason: IREPS-CRIS

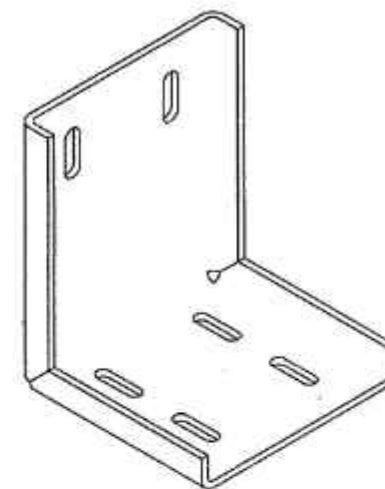
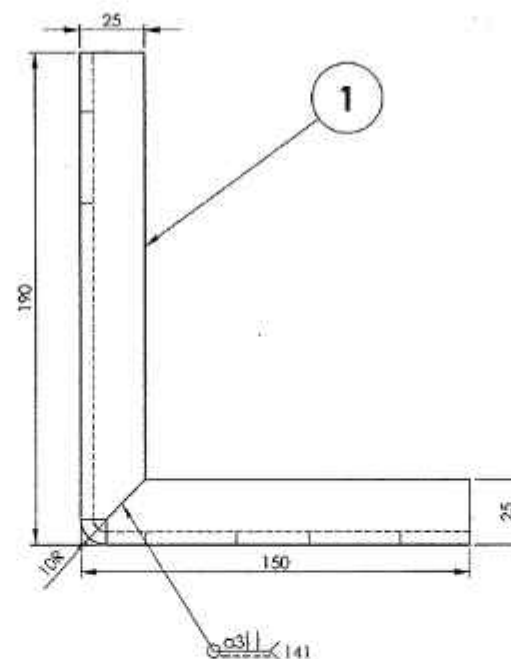
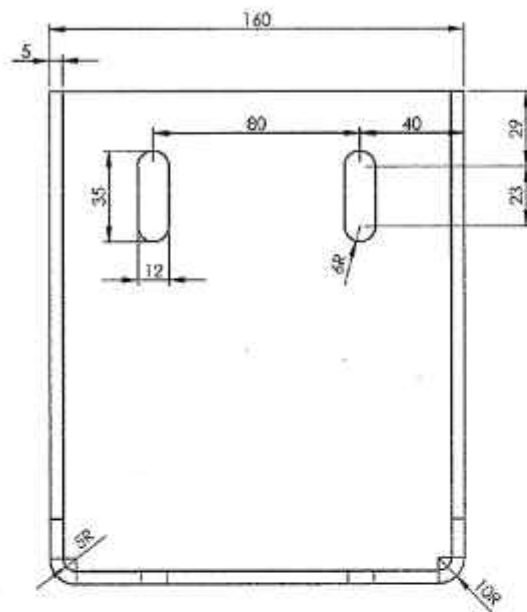
Location: New Delhi

AAA63680

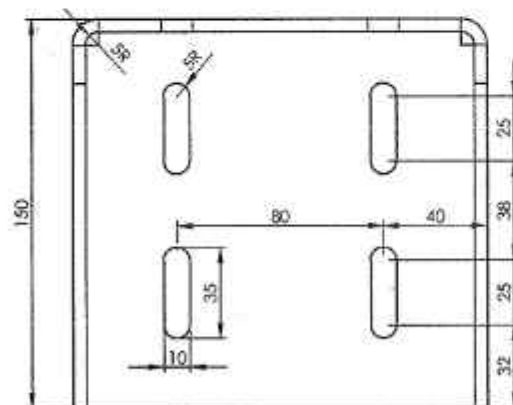
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▽▽ FINISH MACHINED	○ BURRS REMOVED
▽▽▽ FINE FINISH MACHINED	○ CHAMFERED


REVISIONS

ALT.	ZONE	DESCRIPTION	APPROVED & DATE
8		CHANNEL LIP SIZE ALTD. FROM 20mm TO 25mm. RM SIZE ALTD. ACCORDINGLY.	



ISO METRIC VIEW



1	CHANNEL	5X194X332	1		AISI-316L	2.44	
QTY.	DESCRIPTION	DIMENSIONS	ITEM NO.	REF. DRGS	MATL.SPEC.	WT/UNIT IN KGS	REMARKS
GROUP: 4-3		SURFACE AREA IN Sq.m.:			WT/ASSY IN Kgs:		
CHANNEL					SCALE	SSE/D	Suresh Rao P.M.
					1:5	CHD	
					ALT.	ALTD	ILAMPOZHILAN
					8	DRN	ILAMPOZHILAN
INDIAN RAILWAY STANDARDS				SHEET 1 OF 1			
INDIAL COACH FACTORY, CHENNAI - 600088					AAA63680		A3

"JOINTLY DEVELOPED BY IR & DRDO"

9 -11-2017

07-04-2017

DATE OF LATEST ALT.

DATE OF FIRST ISSUE

ANALYSIS

REF.DRG.NO.-

2

page 3 of 3

4

5

6

7

8



प्रधानकार्यालय/Headquarters Office
यांत्रिकशाखा/Mech. Engg. Dept.
चेन्नई/Chennai 600 003
Date 22.08.2022

No: M/WS/87/DRG/LHB COACHES

**CWM/GOC, CWM/CW/PER, CWM/LW/PER
Sr.DME/MAS, TPJ, MDU, TVC, PGT, SA**

Sub: Modification to pipe laying for waste water.

Ref: 1. ICF letter No. ICF/QMS/MDM/File/F015 dated 09.08.2022
(ICF CAI No. B-2022/04)
2. PCME/S.Rly TSO No. 2/2022 circulated by this office letter of even No.
dated 18.07.2022

In continuation of this office letter cited above, ICF CAI No. B-2022/04 dated 09.08.2022 vide under reference (1) along with its enclosures in connection with Modification to pipe laying for waste water are enclosed herewith for reference and necessary action please.

The description and details of Modification mentioned in the ICF's CAI cited above should be included in the list of Coach Modification available in the records as follows:

S.No.	Details	Remarks
1	ICF CAI No.	B-2022/04
2	S.Rly.Modification No.	CMI/X/BG/ICF/LHB/5-2022
3	Description	Modification to pipe laying for waste water
4	Drawing No.	MI006005 ALT-a ANX-2, 32963262 Alt-Nil & AAB63571 Alt-Nil
5	Modification	<p><u>Guide lines for rectification and installation of modified pipe laying for waste water in LHB coaches</u></p> <p>This coach alteration instruction is applicable only for those coaches in which, wash basin outlet drain pipe length is less than 1100mm</p> <p>If any corrosion is evident on structural member it should be repaired as per the procedure laid down in RDSO maintenance manual RDSO/2011/CG/CMI-01 (latest version). There are two options to carry out rectification and modification work as mentioned in the drawing 32963262 Alt-nil. Any one of the option can be followed for rectification work.</p> <p><u>OPTION-I</u></p> <p>1. Replace the shorter length pipe of less than 1100 mm, with the pipe (item-I) as per the drawing MI006005 Alt-a ANX-2</p> <p>2. Maintain the height 30 mm above the lavatory floor below wash basin as mentioned in the drawing No. 32963262 Alt-nil.</p> <p>3. Insert the flexible hose from the wash basin into the drain outlet pipe.</p>

2382454/2025/O/o SR.CDO/SRC/KGP/SER

		<u>OPTION-2</u> 1. Remove the shorter length pipe from the assembly. Weld one additional flat to drg. No. AAB63571 Alt-nil with the existing support bracket as shown in the drawing No. 32963262 Alt-nil 2.Reinstall the existing shorter length pipe and clamp maintaining the height 30 mm above the lavatory floor below wash basin as mentioned in the drawing No. 32963262 Alt-nil. 3.Put the braided rubber hose over the shorter length pipe from the bottom keeping a minimum 30 mm overlap & maintaining the distance from rail level to the bottom end of hose. Braided hose shall be tightly secured to the pipe with hose clip as mentioned in the drawing No. 32963262 Alt-nil. 4.Insert the flexible hose from the wash basin into the existing drain outlet pipe.
6	Reason for Modification	In order to avoid corrosion of under frame below lavatory due to water spillage from lavatory wash basin.
7	Coaches Concerned	All LHB coaches with end lavatories having outlet pipe length shorter than 1100mm

It is advised that this Coach Alteration Instructions shall be implemented during POH/IOH/Sick Line attention.

The painted number of coaches thus modified should be advised to this office every month without fail.

Encl: As above

Digitally Signed by
 Venkatachalapathy G
 Date: 23-08-2022 10:31:29
 Reason: Approved
 (G VENKATACHALAPATHY)
 Dy.CME/HQ

Copy to: CRSE/Chg. - For kind information please

सवारी डिब्बा कारखाना / **INTEGRAL COACH FACTORY**चेन्ने / **CHENNAI - 600 038.**

Telefax: 044-26261872 / Railway : 46808

Email: dycmed3icf@gmail.com

No. ICF/QMS/MDM/File/F015

Office of the GM/ Mech. Designs

Date: 09-08-2022

Coach Alteration Instruction

- 1 CAI No. : **B-2022/04**
- 2 Group : Lavatory Wash basin drain outlet
- 3 Description : Modification to pipe laying for waste water
- 4 Drawing No. : As per Annexure-B
- 5 Modification : As per Annexure-B
- 6 Reason for Modification : In order to avoid corrosion of under frame below lavatory due to water spillage from lavatory wash basin.
- 7 Coaches concerned : All LHB coaches with end lavatories having outlet pipe length shorter than 1100 mm.
- 8 Implementation stage : During POH
- 9 Category of CAI :

A	B
	√

Tick A or B as applicable

A- Modifications shall be implemented immediately by user Rlys.

B- Modifications shall be implemented by user Rlys as and when convenient


(S.MUTHU KUMAR)

Dy. CME/Design-III

For General Manager (Mech.)/ Design

Encl : Drawings as per Annexure-B
 Copy to: Mailing list as per Annexure-A

Annexure-A**The General Manager/ Mechanical,
Mechanical Branch, HQ Office:**

1. Central Railway, Mumbai CST-400 001
2. Western Rly., Churchgate, Mumbai-400 020
3. Eastern Rly., Fairlie Place, Kolkata-700 001
4. South Eastern Rly., Garden Reach, Kolkata-700 043
5. Northern Rly., Baroda House, New Delhi-110 001
6. North Eastern Rly., Gorakhpur-273 001
7. North East Frontier Rly., Maligaon, Guwahati-781 011
8. Southern Railway, Park Town, Chennai-600 003
9. South Central Railway, Rail Nilayam, Secunderabad-500 371
10. West Central Railway, Jabalpur-482 001
11. East Central Railway, Hajipur-844 101
12. North Central Railway, Allahabad-211 001
13. North West Railway, Jaipur-302 001
14. East Coast Railway, Bhubaneswar-751 016
15. South East Central Railway, Bilaspur-495 004
16. South Western Railway, Hubli-580 023

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- II. EDME (W), Railway Board, New Delhi-110 001
- III. Director General/ Carriage, RDSO, Manak Nagar, Lucknow-226 011
- IV. The General Manager (Mech.), Rail Coach Factory, Kapurthala-144 602

V. The Chief Workshop Manager, Carriage & Wagon Workshop,

1. Matunga, Central Railway, Mumbai-400 019
2. Bhopal, West Central Railway, Nishatpura, M.P.-462 001
3. Lilluah, Eastern Railway, Howrah-711 204
4. Gorakhpur, North Eastern Railway-273 001
5. New Bongaigaon, North East Frontier Railway-783 381
6. Perambur, Southern Railway, Chennai-600 023
7. Golden Rock, Tiruchirapalli-620 004
8. Ashokapuram, South Western Railway, Mysore South-570 008
9. Tirupati, South Central Railway-517 506
10. Hubli, South Western Railway-580 020
11. Mancheswar, East Coast Railway, Bhubaneswar-751 017
12. Kharagpur, South Eastern Railway-721 301
13. Lower Parel, N.M.Joshi Marg, Western Railway, Mumbai-400 013
14. Jagadhari, Northern Railway-135 003
15. Alambagh, Northern Railway, Lucknow-226 005
16. Lallaguda, South Central Railway, Secunderabad-500 017
17. Western Railway, Ajmer, Rajasthan
18. North East Frontier Railway, Dibrugarh, Assam-786 001

Annexure-B**Guide lines for rectification and installation of modified pipe laying for waste water in LHB coaches**

This coach alteration instruction is applicable only for those coaches in which, wash basin outlet drain pipe length is less than 1100mm

If any corrosion is evident on structural member it should be repaired as per the procedure laid down in RDSO maintenance manual RDSO/2011/CG/CMI-01 (latest version). There are two options to carry out rectification and modification work as mentioned in the drawing 32963262 Alt-nil. Any one of the option can be followed for rectification work.

OPTION-1

1. Replace the shorter length pipe of less than 1100 mm, with the pipe (item-1) as per the drawing MI006005 Alt-a ANX-2
2. Maintain the height 30 mm above the lavatory floor below wash basin as mentioned in the drawing No. 32963262 Alt-nil.
3. Insert the flexible hose from the wash basin into the drain outlet pipe.

OPTION-2

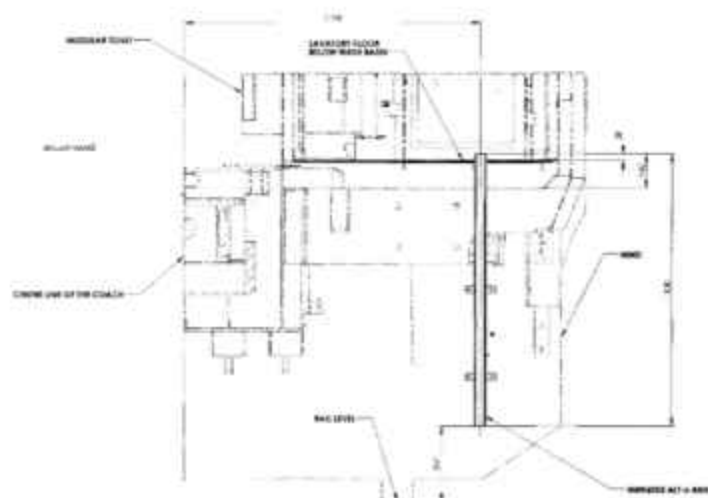
1. Remove the shorter length pipe from the assembly. Weld one additional flat to drg. No. AAB63571 Alt-nil with the existing support bracket as shown in the drawing No. 32963262 Alt-nil .
2. Reinstall the existing shorter length pipe and clamp maintaining the height 30 mm above the lavatory floor below wash basin as mentioned in the drawing No. 32963262 Alt-nil.
3. Put the braided rubber hose over the shorter length pipe from the bottom keeping a minimum 30 mm overlap & maintaining the distance from rail level to the bottom end of hose. Braided hose shall be tightly secured to the pipe with hose clip as mentioned in the drawing No. 32963262 Alt-nil.
4. Insert the flexible hose from the wash basin into the existing drain outlet pipe.

Encl: 3 drawings as mentioned above.

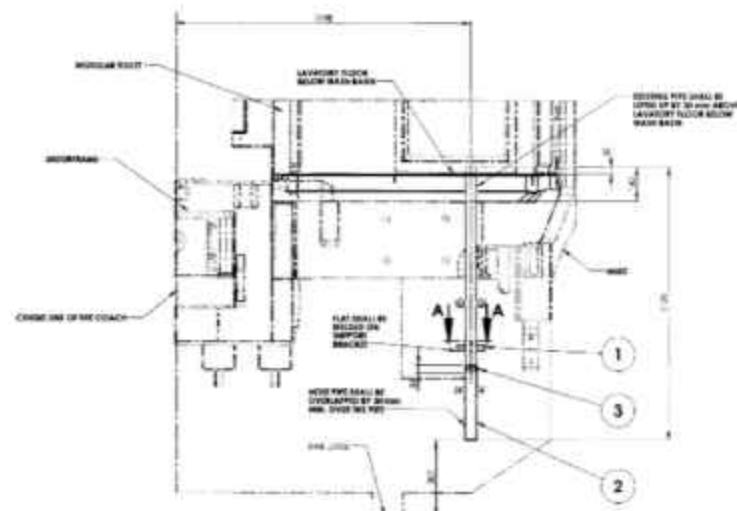

SSE/D

32963262

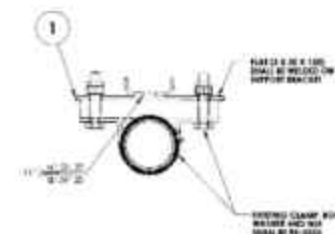
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1. WORKSHEET NO.	2. PROJECT NO.	3. SHEET NO.	4. DATE	5. REVISION	6. APPROVAL
1. WORKSHEET NO.	2. PROJECT NO.	3. SHEET NO.	4. DATE	5. REVISION	6. APPROVAL



AS PER DRG. NO. MID04005 ALT-g ANX-2

OPTION-1

MODIFICATION TO PIPE LAYING FOR WASTE WATER WITH HOSE

OPTION-2SECTION A-A
SCALE 1:2**NOTE:**

1. CITY MENTIONED IS FOR LAVATORY ONLY.
2. ITEM 1 SHALL BE WELDED TO THE EXISTING SUPPORT BRACKET AT 100mm ABOVE RAIL LEVEL AS MENTIONED IN OPTION 2.
3. LENGTH OF BRANDED RUBBER HOSE PIPE (ITEM 2) SHALL BE DECIDED AT SITE MAINTAINING THE HEIGHT FROM RAIL LEVEL & OVERLAPPING OF MINIMUM 30mm OVER THE 10 TYPE.

1. WORKSHEET NO.	2. PROJECT NO.	3. SHEET NO.	4. DATE	5. REVISION	6. APPROVAL
1. WORKSHEET NO.	2. PROJECT NO.	3. SHEET NO.	4. DATE	5. REVISION	6. APPROVAL
1. WORKSHEET NO.	2. PROJECT NO.	3. SHEET NO.	4. DATE	5. REVISION	6. APPROVAL

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	REMARKS
1	BRANDED RUBBER HOSE PIPE 100mm	1	MT	
2	BRANDED RUBBER HOSE PIPE 100mm	1	MT	

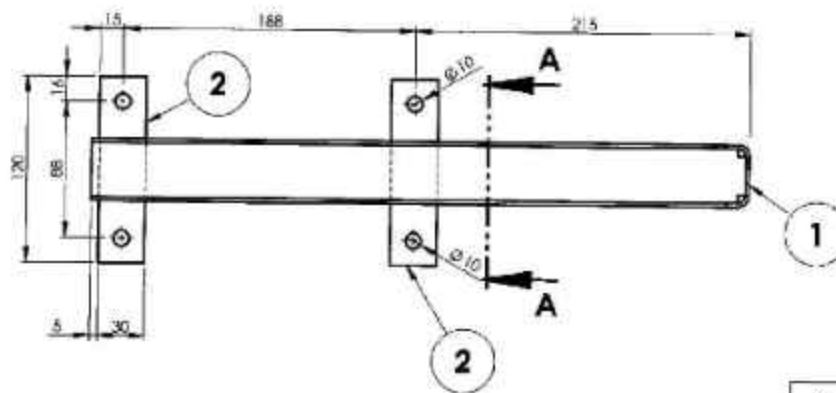
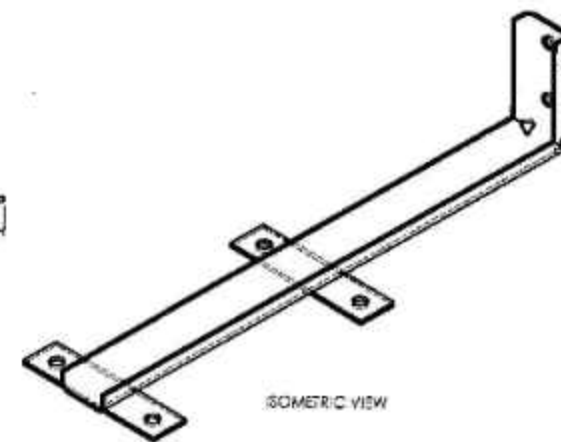
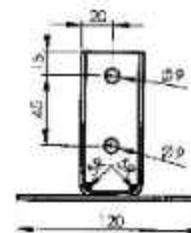
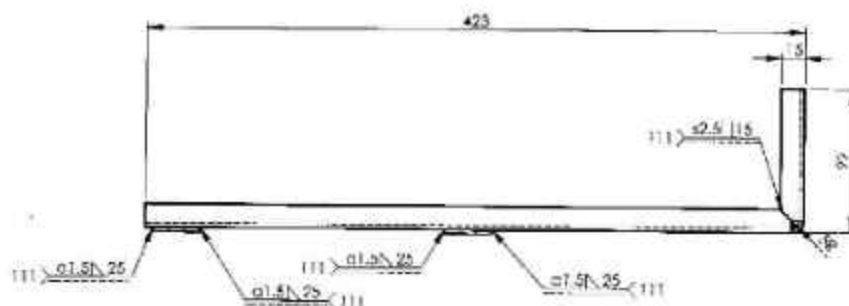
MODIFICATION TO PIPE LAYING FOR WASTE WATER (CAI PURPOSE ONLY)		INDIAN RAILWAY STANDARD	32963262	A1
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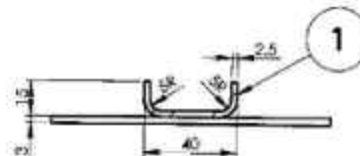
AAB63571

V ROUGH-MACHINED	(C) ROUGH-DIAPHRAGM
W FINE-MACHINED	(D) SURF'S REMOVED
XXX FINE FINISH MACHINED	(E) CHAMFERED


REVISIONS			
ALT.	ZONE	DESCRIPTION	APPROVED & DATE



NOTE:
1. ALL SHARP CORNERS TO BE ROUNDED OFF.



SECTION A-A
SCALE 1 : 2

2	FLAT	3 x 30 x 120	2		AISI 304	0.06	
1	BRACKET	2.5 x 40 x 610	1		AISI 304	0.40	
QTY.	DESCRIPTION	DIMENSIONS	ITEM NO.	REF.DRGS.	MATL	WT/UNIT IN KGS	REMARKS
GROUP 1:-			SURFACE AREA IN Sq.m.: 0.079		WT/ASSY IN Kgs:		
SUPPORT BRACKET COMPLETE					SCALE	SSE / ?	Suresh Rao P.H.
					1:5	C/D	
					ALT.	ALTE	
					DRN	K. J. Karpuzian	
INDIAN RAILWAY STANDARDS ORIGINAL MACHINE FACTORY, CHENNAI - 600028					SHEET		
					1 OF 1		
					AAB63571		A3

RAIL COACH FACTORY, KAPURTHALA

(Coach Alteration Instruction No. CAI/RCF/MECH/LHB/061)

MD46111

Date: As Signed

1. **Description:** Retro fitment of Additional water filling arrangement in LHB type Coaches.
2. **Ref** : As per instructions of MTRS during visit to RCF on Dt 29.03.2024.
3. **Reason for alteration:** To increase the water filling rate in LHB Coaches.

4. Coach type & Applicability of Drawing No :

S.No	Coach Type	Applicable Drawing No	Description	QPC	Fig
1	LWACCW/L WACCN/ LWCBAC	LE63279	Additional side filling arrangement for water tank (2X685L) for LHB coaches.	01	Fig-1 & Fig-2
		LE63280	Additional side filling arrangement for water tank (450L) for LHB coaches.	01	
2	LWSCN /LWACCNE (Economy)	LE63279	Additional side filling arrangement for water tank (2X685L) for LHB coaches.	01	Fig-1 & Fig-3
		LE63281 Alt-a	Additional side filling arrangement for water tank (1X685L) for LHB coaches.	01	
3	LWFAC/ LWSCZAC/ LWFCZAC	LE63279	Additional side filling arrangement for water tank (2X685L) for LHB coaches	01	Fig-1



Fig-1

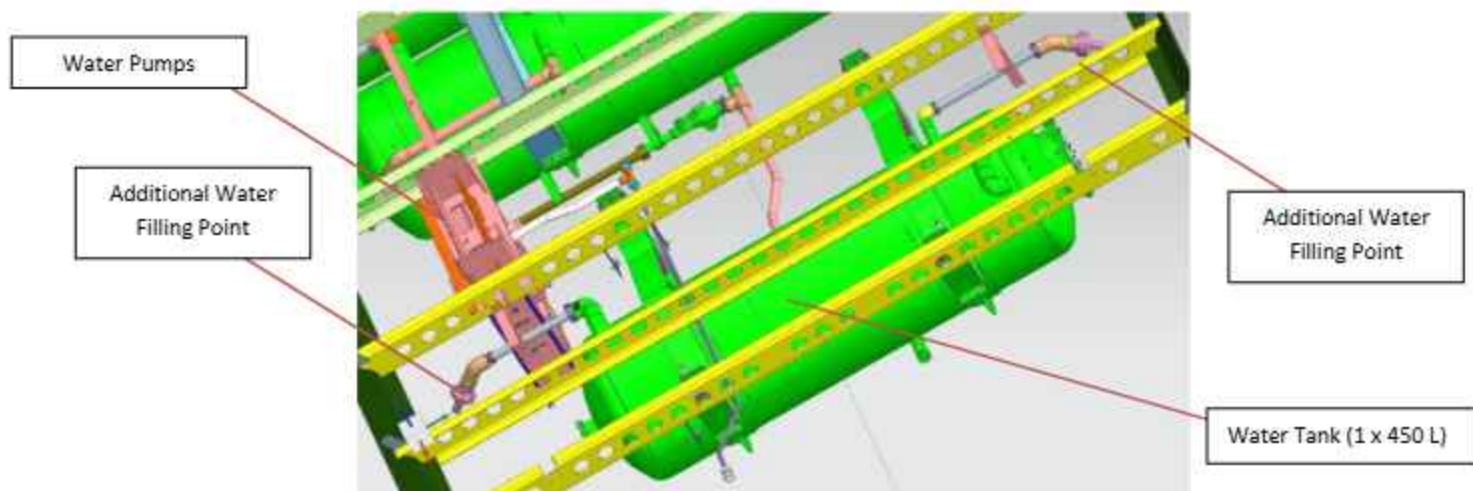


Fig-2

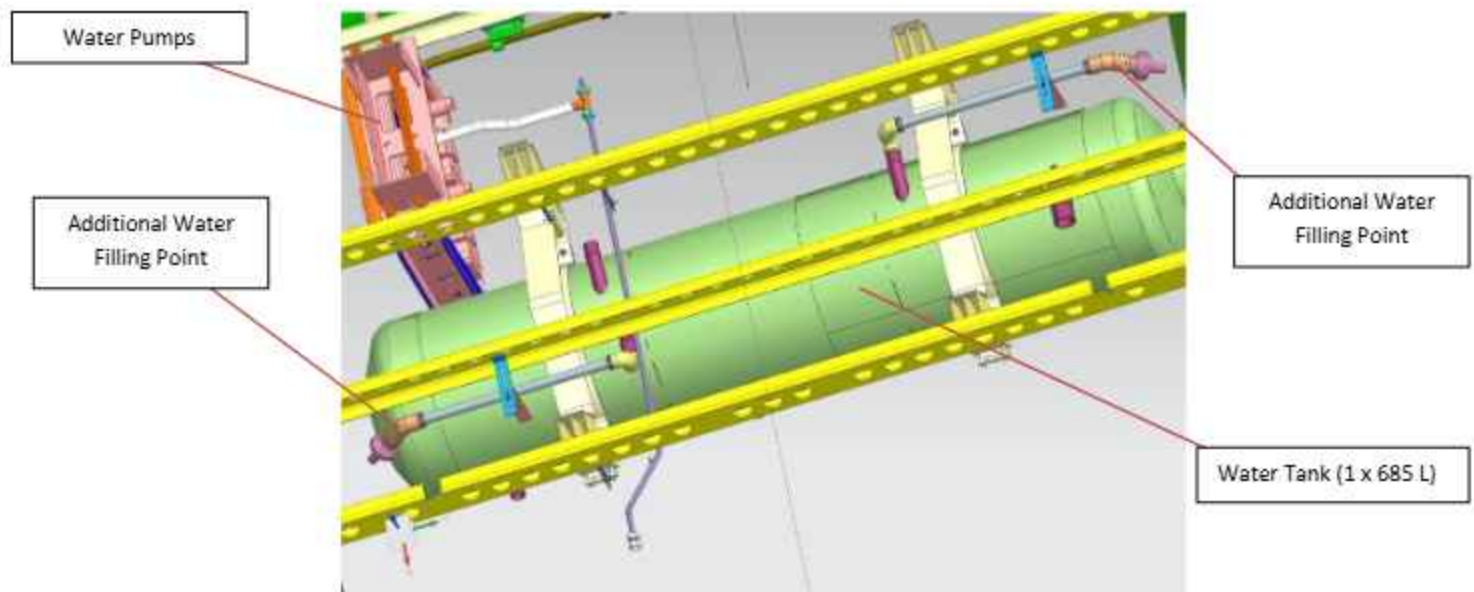


Fig-3



Fig-4 (Water Filling arrangements fitted on LHB ACCN Coach)

5. To be carried out:

A	✓ B
Tick A or B as applicable	

A. Modifications shall be implemented immediately by user Rlys.

B. Modifications shall be implemented by user Rlys. as and when convenient.

6. Special Instructions:

- i. Additional side filling arrangements for water tanks (2x685) should be implemented at the 32 bore overflow point, where overflow from one end of the lavatories occurs. This will involve the installation of a horizontal 15 bore check valve to check water flow in the overflow pipe during tank filling. On the opposite end, a side filling connection should be established at the existing 32 bore point, which is currently plugged.
- ii. For all filling arrangements outlined above, 25 bore stainless pipes must be utilized, along with appropriate hex bushings (32x25 bore, 40x25 bore, and 50x25 bore) as per the provided drawings.
- iii. To secure the pipes, 25 bore clamps are to be employed. Flats and brackets need to be welded onto the underframe at suitable locations, in accordance with the provided drawings.

Enclosure: Drawing Nos: LE63279, LE63280, LE63281 alt-a & LE63282

JUGAL KISHOR Digitally signed by JUGAL KISHOR
Date: 2024.05.10 12:41:38 +05'30'
For General Manager (Mech.)

Copy to:

All Principal Chief Mechanical Engineers of IR
All Chief workshop Engineers of IR

Principal Chief Mechanical Engineers :

1. Central Railway, Mumbai CST-400 001
2. W. Railway Churchgate, Mumbai - 400 020
3. Northern Railway, Baroda House, New Delhi- 110 001
4. N.E. Railway Gorakhpur., Gorakhpur-273 001
5. N.F. Railway Maligaon, Guwahati- 781 011
6. S. Railway, Park Town, Chennai- 600 003
7. S. C. Railway, Rail Nilayam, Secunderabad- 500 371

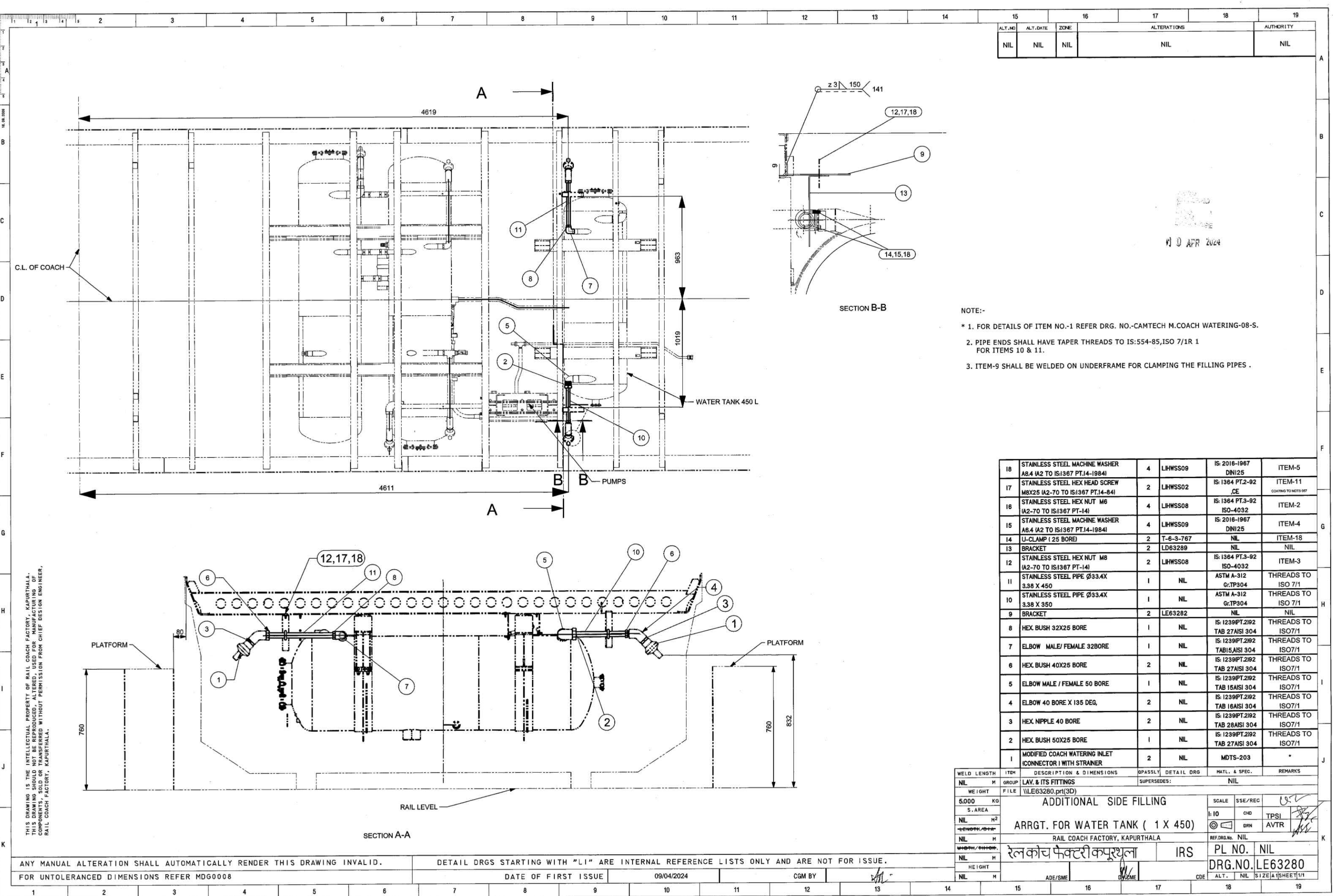
8. S. E. Railway, Garden Reach, Kolkata-700 043
9. Eastern Railway, Fairlie Place, Kolkata-700 001
10. E. Coast. Railway, Bhubhaneswar- 751 016
11. North Central Railway, Allahabad – 211 001
12. North West Railway, Jaipur – 302 001
13. S. E. Central Railway, Bilaspur- 495 004
14. S. W. Railway, Hubli – 580 023
15. West Central Railway, Jabalpur- 482 001
16. East Central Railway, Hazipur- 844 101

Chief Works Engineer:

1. Central Railway, Matunga, Mumbai- 400 019
2. Bhopal, West Central Railway Nishatpura, MP-462 001
3. Lilluah, Eastern Railway, Howrah- 711 204
4. Alambagh, Northern Railway, Lucknow- 226 005
5. Jagadhari, Northern Railway,- 135 003
6. Gorakhpur N. E. Railway- 273 001
7. New Bongaigaon N. East Frontier Railway- 783 381
8. Perambur, Southern Railway, Chennai- 600 023
9. Golden Rock, Southern Railway, Trichy- 620 004
10. Ashokpuram, Southern Railway, Mysore South- 570 008
11. Lallagudda, S. C. Railway Secunderabad- 500 017
12. Hubli, South Western Railway- 580 020
13. Tirupati, S. C. Railway - 517 506
14. Mancheswar, East Coast Railway, Bhubhaneswar- 751 017
15. Kharagpur, S. E. Railway- 721 301
16. Lower Parel, N.M.Joshi Marg, Western Railway, Mumbai- 400 013
17. Western Railway, Ajmer, Rajasthan
18. North East Frontier Railway, Dibrugarh, Assam-786 001

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DG/Carriage, RDSO, Manak Nagar, Lucknow- 226 011
 EDME (Coaching), Railway Board, New Delhi-110 001
 EDME (W), (Coaching), Railway Board New Delhi-110 001



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

0 APR 2024

NOTE:-

- * 1. FOR DETAILS OF ITEM NO.-1 REFER DRG. NO.-CAMTECH M.COACH WATERING-08-S.
- 2. PIPE ENDS SHALL HAVE TAPER THREADS TO IS:554-85,ISO 7/1R 1 FOR ITEMS 10 & 11.
- 3. ITEM-9 SHALL BE WELDED ON UNDERFRAME FOR CLAMPING THE FILLING PIPES .

18	STAINLESS STEEL MACHINE WASHER A8.4 (A2 TO IS:1367 PT.14-1984)	4	LIHSS09	IS: 2016-1967 DIN125	ITEM-5
17	STAINLESS STEEL HEX HEAD SCREW M8X25 (A2-70 TO IS:1367 PT.14-84)	2	LIHSS02	IS: 1364 PT.2-92 CE	ITEM-11 COATING TO METER SET
16	STAINLESS STEEL HEX NUT M6 (A2-70 TO IS:1367 PT-14)	4	LIHSS08	IS: 1364 PT.3-92 ISO-4032	ITEM-2
15	STAINLESS STEEL MACHINE WASHER A8.4 (A2 TO IS:1367 PT.14-1984)	4	LIHSS09	IS: 2016-1967 DIN125	ITEM-4
14	U-CLAMP (25 BORE)	2	T-6-3-767	NIL	ITEM-18
13	BRACKET	2	LD63289	NIL	NIL
12	STAINLESS STEEL HEX NUT M8 (A2-70 TO IS:1367 PT-14)	2	LIHSS08	IS: 1364 PT.3-92 ISO-4032	ITEM-3
11	STAINLESS STEEL PIPE Ø33.4X 3.38 X 450	1	NIL	ASTM A-312 Gr:TP304	THREADS TO ISO 7/1
10	STAINLESS STEEL PIPE Ø33.4X 3.38 X 350	1	NIL	ASTM A-312 Gr:TP304	THREADS TO ISO 7/1
9	BRACKET	2	LE63282	NIL	NIL
8	HEX BUSH 32X25 BORE	1	NIL	IS: 1239PT.2192 TAB 27AISI 304	THREADS TO ISO7/1
7	ELBOW MALE/ FEMALE 32BORE	1	NIL	IS: 1239PT.2192 TAB15AISI 304	THREADS TO ISO7/1
6	HEX BUSH 40X25 BORE	2	NIL	IS: 1239PT.2192 TAB 27AISI 304	THREADS TO ISO7/1
5	ELBOW MALE / FEMALE 50 BORE	1	NIL	IS: 1239PT.2192 TAB 15AISI 304	THREADS TO ISO7/1
4	ELBOW 40 BORE X 135 DEG.	2	NIL	IS: 1239PT.2192 TAB 16AISI 304	THREADS TO ISO7/1
3	HEX NIPPLE 40 BORE	2	NIL	IS: 1239PT.2192 TAB 28AISI 304	THREADS TO ISO7/1
2	HEX BUSH 50X25 BORE	1	NIL	IS: 1239PT.2192 TAB 27AISI 304	THREADS TO ISO7/1
1	MODIFIED COACH WATERING INLET CONNECTOR WITH STRAINER	2	NIL	MDTS-203	*

WELD LENGTH	ITEM	DESCRIPTION & DIMENSIONS	QPASSLY	DETAIL DRG	MATL. & SPEC.	REMARKS
NIL	M	GROUP	LAY. & ITS FITTINGS	SUPERSEDES:	NIL	
WEIGHT	FILE	FILE	FILE	FILE	FILE	FILE
5.000	KG					
S. AREA						
NIL	M ²					
LENGTH	M					
NIL	M					
WIDTH	M					
NIL	M					
HEIGHT	M					
NIL	M					

ADDITIONAL SIDE FILLING

ARRGT. FOR WATER TANK (1 X 450)

RAIL COACH FACTORY, KAPURTHALA

रेलकोच फैक्टरी कपूरथला

IRS

PL NO. NIL

DRG.NO. LE63280

SCALE

1:10

CHD

TPSI

AVTR

REF.DRG.No.

NIL

ALT.

NIL

SIZE

A1

SHEET

1/1

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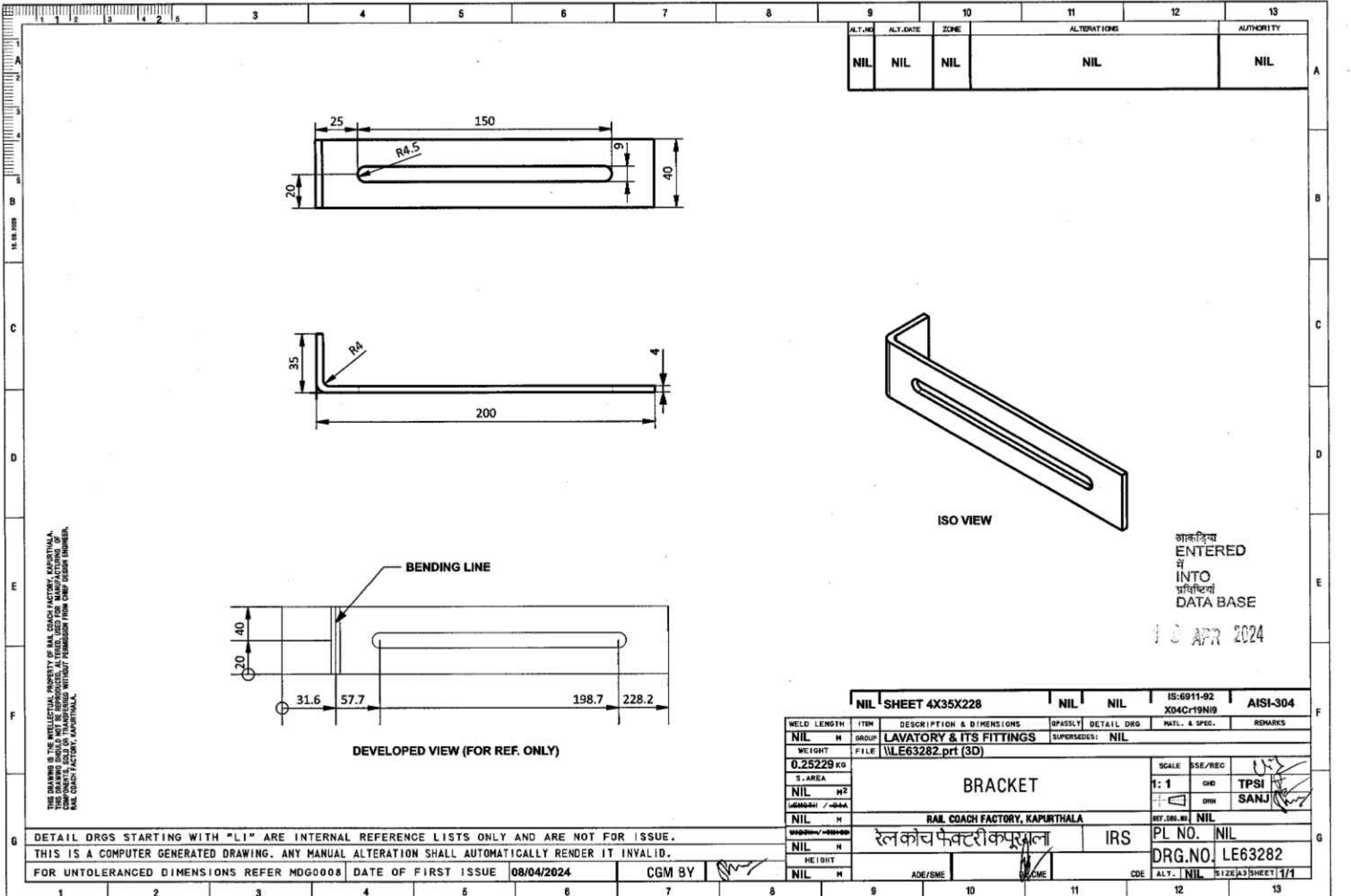
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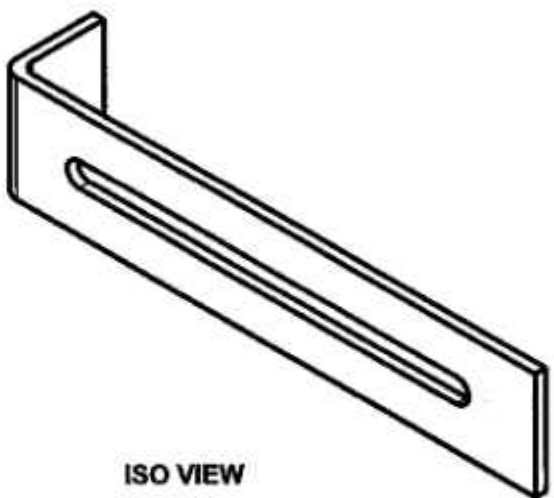
ADP/SME

DWG/ME

CDE



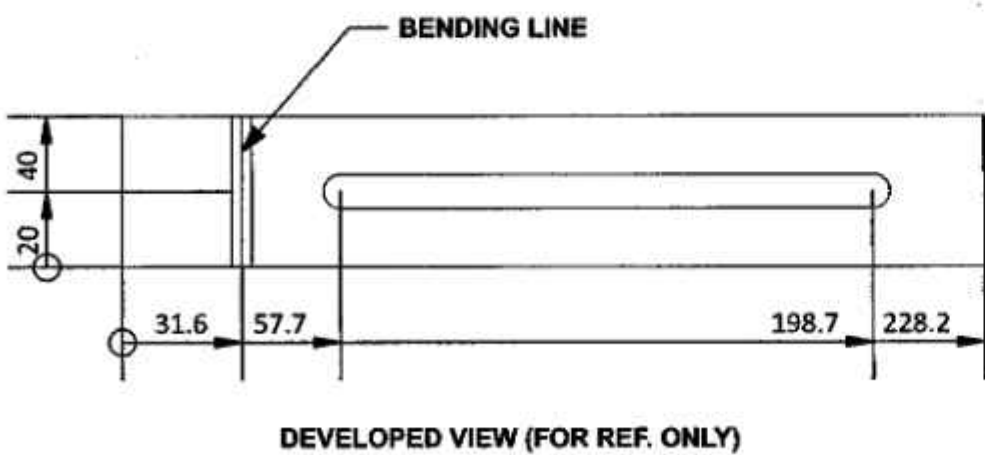
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ISO VIEW

आकृति
ENTERED
में
INTO
प्रतिष्ठित
DATA BASE

13 APR 2024



DEVELOPED VIEW (FOR REF. ONLY)

NIL SHEET 4X35X228		NIL NIL		IS:6911-92 X04Cr19Ni9	AISI-304
WELD LENGTH	ITEM	DESCRIPTION & DIMENSIONS		QPASSLY	DETAIL DRG
NIL	M	LAVATORY & ITS FITTINGS		SUPERSEDES:	NIL
WEIGHT	FILE	\\LE63282.prt (3D)			
0.25229 KG		BRACKET		SCALE	SSE/REC
S. AREA				1:1	CHD
NIL	M2				CHN
LENGTH / -B-A					
NIL	M	RAIL COACH FACTORY, KAPURTHALA		REF. DRG. NO.	NIL
WIDTH / -B-B		रेल कोच फैक्टरी कपूरथला		PL NO.	NIL
NIL	M	IRS		DRG. NO.	LE63282
HEIGHT				ALT.	NIL
NIL	M	ADE/SME		CDE	SIZE A3 SHEET 1/1

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RAIL COACH FACTORY, KAPURTHALA
(Coach Alteration Instruction)
CAI/RCF/MECH/LHB/099

MD46221

Date: 17/05/2025

SN	Description	Details
1.	Description	MODIFICATION IN CHAIN LOCKING ARRGT. OF MIDDLE BERTH FOR LSCN AND LACCN COACHES
2.	Coach type affected	LHB SCN and LHB ACCN Coaches
3.	Reason for Modification	Complaints received from User Railways regarding failure of locking arrgt. of chain of the middle berth and falling of the middle berth.
4.	Drawing No.	1. AE61480 Alt-'f' 2. LE61219 Alt-'e' 3. LH61194 Alt-nil 4. C/CF-79 5. MI008248 Alt-nil 6. MI008249 Alt-nil 7. MI008250 Alt-nil
1.	Modification	<p>1. In LSCN coaches:</p> <p>i) Both old chains of middle berth are to be replaced with the new chain arrgt. to drawing no. AE61480 Alt-'f'.</p> <p>ii) New Pin Brackets to drg. No. MI008248 Alt-nil are to be screwed on the middle berth as per fixing arrgt. drawing no. MI008249 Alt-nil.</p> <p>2. In LACCN coaches:</p> <p>i) Both old chains of middle berth are to be replaced with the new chain arrgt. to drawing no. LE61219 Alt-'e'.</p> <p>ii) New Pin Brackets to drg. No. MI008248 Alt-nil are to be screwed on the middle berth as per fixing arrgt. drawing no. MI008250 Alt-nil.</p>
1.	Implementation Stage	Immediate effect.
2.	Category of CAI	<div style="display: flex; align-items: center;"> <input checked="" type="checkbox"/> A <input type="checkbox"/> B </div> <p>Tick A or B as applicable.</p>

A. Modifications shall be implemented immediately by user Railways.

B. Modifications shall be implemented by user Railways as & when convenient.


For General Manager (Mech)

Encls: (06 drgs as listed above)

All Principal Chief Mechanical Engineers:

1. Central Railway, Mumbai CST-400 001
2. W. Railway Churchgate, Mumbai - 400 020
3. Northern Railway, Baroda House, New Delhi- 110 001
4. N.E. Railway Gorakhpur. Gorakhpur-273 001
5. N.F. Railway Maligaon, Guwahati- 781 011
6. S. Railway, Park Town, Chennai- 600 003
7. S. C. Railway, Rail Nilayam, Secunderabad- 500 371i
8. S. E. Railway, Garden Reach, Kolkata-700 043
9. Eastern Railway, Fairlie Place, Kolkata-700 001
10. E. Coast. Railway, Bhubaneswar- 751 016
11. North Central Railway, Allahabad — 211 001
12. Northwest Railway, Jaipur — 302 001
13. S. E. Central Railway, Bilaspur- 495 004
14. S. W. Railway, Hubli 580 023
15. West Central Railway, Jabalpur- 482 001
16. East Central Railway, Hazipur- 844 101

All Chief Works Engineers:

1. Central Railway, Matunga, Mumbai- 400 019
2. Bhopal, West Central Railway Nishatpura, MP-462 001
3. Lilluah, Eastern Railway, Howrah- 711 204
4. Alambagh, Northern Railway, Lucknow- 226 005
5. Jagadhari, Northern Railway, - 135 003
6. Gorakhpur N. E. Railway- 273 001
7. New Bongaigaon N. East Frontier Railway- 83 381 8, Perambur, Southern Railway, Chennai- 600 023
8. Golden Rock, Southern Railway, Trichy- 620 004
9. Ashokpuram, Southern Railway, Mysore South- 570 008
10. Lallagudda, S. C. Railway Secunderabad- 500 017
11. Hubli, South Western Railway- 580 020
12. Tirupati, S. C. Railway - 517 506
13. Mancheswar, East Coast Railway, Bhubaneswar- 751 017
14. Kharagpur, S. E. Railway- 721 301
15. Lower Parcel, N.M. Joshi Marg, Western Railway, Mumbai- 400 013
16. Western Railway, Ajmer, Rajasthan
17. North East Frontier Railway, Dibrugarh, Assam-786 001

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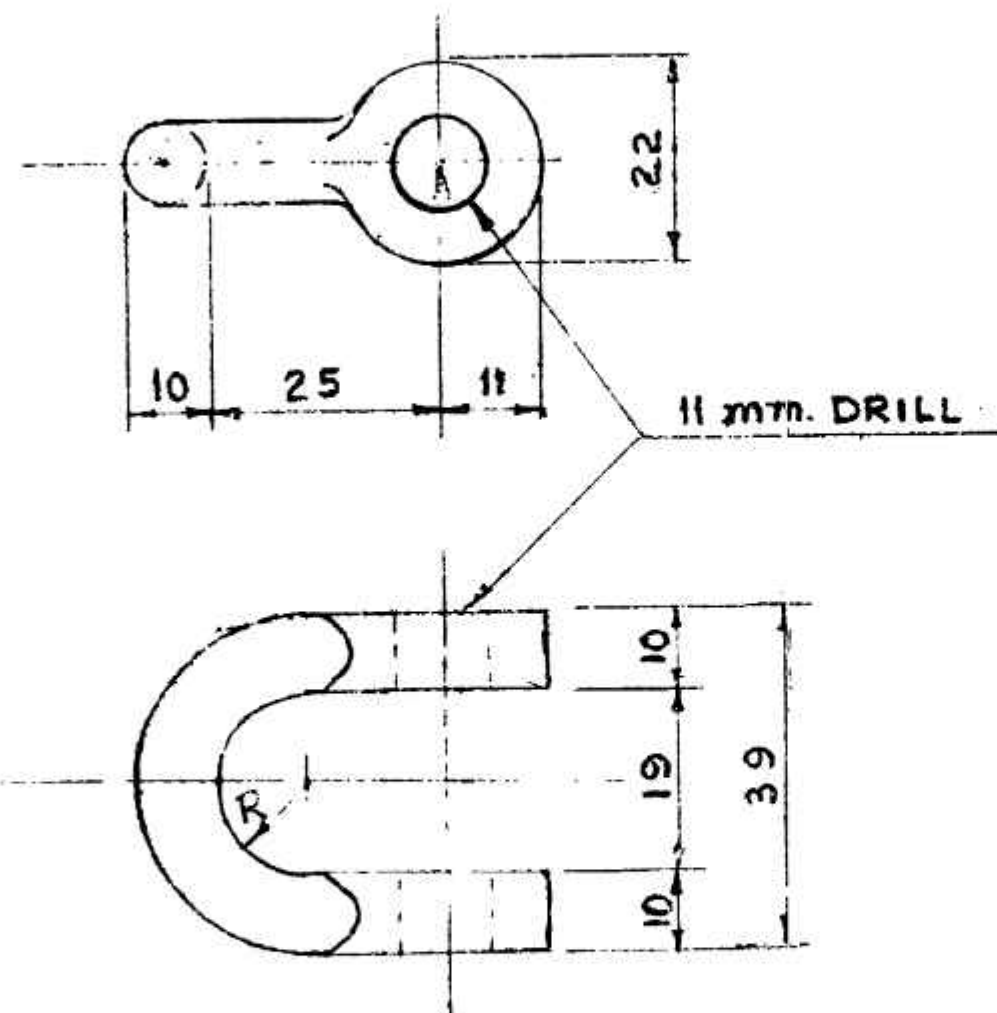
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2. EDME (Coaching), Railway Board, New Delhi-110 001
3. EDME (W), (Coaching), Railway Board New Delhi-110 001
4. GM (Mech), Modern Coach Factory, Rae Bareilly-229120
5. GM (Mech), Integral Coach Factory, Chennai-600038

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FOR UNTOLERANCED DIMENSIONS REFER MDG0008	DATE OF FIRST ISSUE	08/10/1998	COM BY

CDA

TRD

STAMP 3 mm TYPE IRS C/CF-79"

FREELY INTERCHANGEABLE
WITH IRS C-79

CA/CF-122	INTER BERTHCHAIN	
CA/CF-121	INTER BERTH CHAIN	
CA/CF-30	UPPER BERTHCHAIN	
WHERE USED	ASSEMBLY	OFF

I. R. S.

C/CF-79

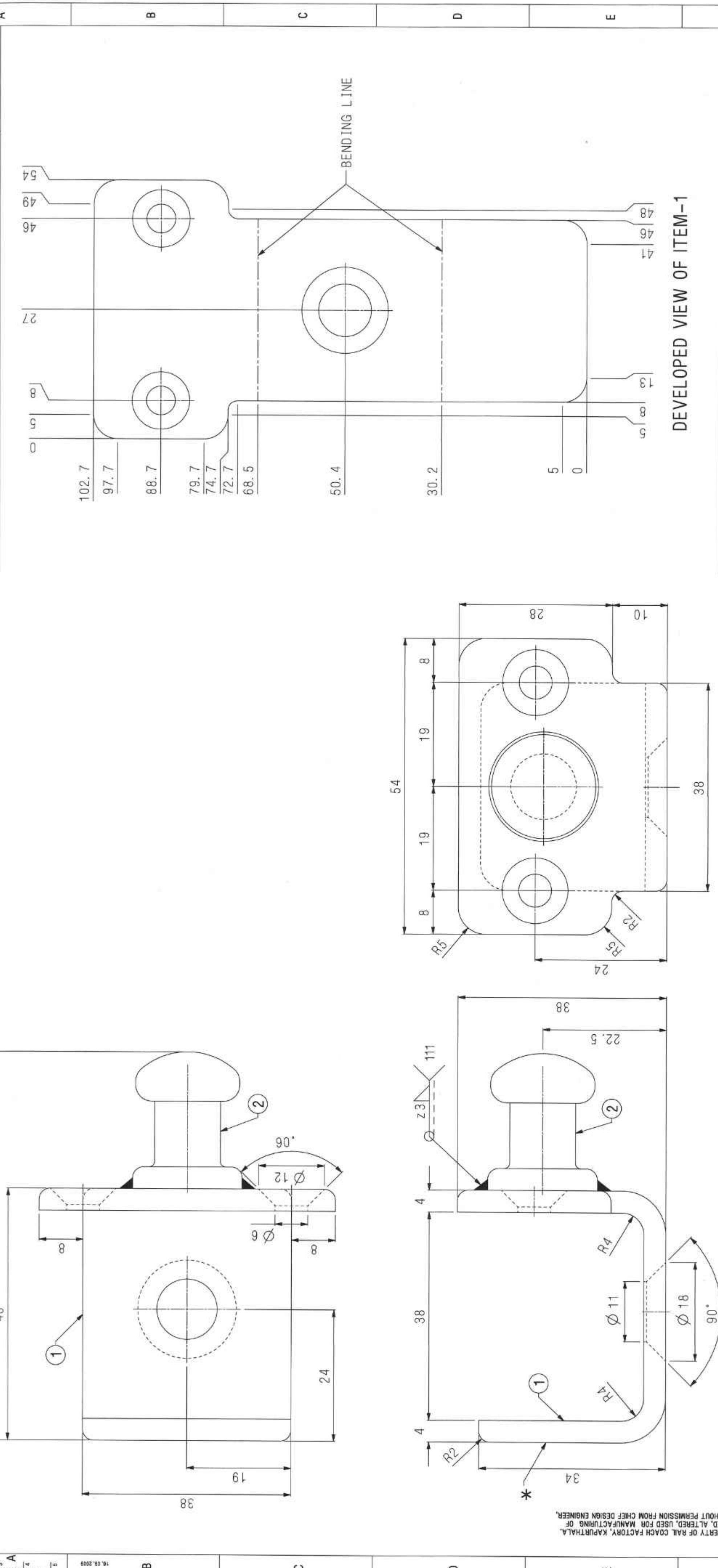
MTL. STEEL
SPEC. NO. IRS M-3TREAT
WEIGHT

DESCRIPTION

SHACKLE

C/CF-79

1	2	3	4	5	6	7	8	9	10	11	12	13
ALT.NO		ALT.DATE		ZONE		ALTERATIONS		AUTHORITY				
NIL		NIL		NIL		NIL		NIL		NIL		



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		15/05/2025		CGM BY					
NOTE :-									
1. ALL SHARP CORNERS TO BE ROUNDED OFF.									
2. ASSEMBLY TO BE POWDER COATED TO IS: 13871-2002, GR-C, TO COLOUR CODE AS PER THE INTERIOR COLOUR SCHEME OF THE COACH.									
3. MANUFACTURER'S NAME AND DATE OF MANUFACTURE TO BE STAMPED AT THE LOCATION MARKED THUS * IN THE LETTER HEIGHT OF 5mm.									
4. STAINLESS STEEL ELECTRODE OF SAME COMPOSITION TO BE USED FOR WELDING.									
5. WELDED AREA OF STAINLESS STEEL ITEMS SHOULD BE PICKLED & PASSIVATED BEFORE SURFACE FINISH.									
RAIL COACH FACTORY, KAPURTHALA.									
THIS DRAWING IS THE INTELLECTUAL PROPERTY OF RAIL COACH FACTORY, KAPURTHALA. IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM.									

2		PIN		1		LH61194		NIL		NIL		NIL	
1		BRACKET 4X54X103		1		NIL		RD50/SPEC C-K201, X2C-N112		NIL		NIL	
ITEM		DESCRIPTION & DIMENSIONS		OPASSLY		DETAIL		DRG		MATL. & SPEC.		REMARKS	
GROUP		SEATS & BERTHS		SUPERSEDES: NIL									
FILE		\\MIO08248.prt (3D)											
WELD LENGTH		M		0.167									
NIL		M		S.AREA									
NIL		M2		LENGTH / D+H									
LENGTH / D+H		M		NIL									
W+H+H / H+H+H		M		NIL									
HEIGHT		M		NIL									
NIL		M		NIL									
SCALE		SSE/REC		2:1									
REF.DRG.No.		NIL		NIL									
PL NO.		NIL		NIL									
DRG.NO.		MIO08248		MIO08248									
ALT.		NIL		NIL									
SIZE		A2		A2									
SHEET		1/1		1/1									

NOTE :-

- ALL SHARP CORNERS TO BE ROUNDED OFF.
- ASSEMBLY TO BE POWDER COATED TO IS: 13871-2002, GR-C, TO COLOUR CODE AS PER THE INTERIOR COLOUR SCHEME OF THE COACH.
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- STAINLESS STEEL ELECTRODE OF SAME COMPOSITION TO BE USED FOR WELDING.
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DETAIL DRGS STARTING WITH "LI" ARE INTERNAL REFERENCE LISTS ONLY AND ARE NOT FOR ISSUE										ANY MANUAL ALTERATION SHALL AUTOMATICALLY RENDER THIS DRAWING INVALID.										DATE OF FIRST ISSUE										CGM BY										FOR UNTOLERANCED DIMENSIONS REFER MDG0008										15/05/2025										15/05/2025																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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भारत सरकार - रेल मंत्रालय
अनुसंधान, अभिकल्प और मानक संगठन
लखनऊ - 226 011
EPBX (0522) 2451200
Fax (0522) 2458500



Government of India - Ministry of Railways
Research Designs & Standards Organisation
Lucknow - 226 011
DID (0522) 2450115
DID (0522) 2465310



No. MC/LHB/Brake

Date: 20.02.2024

PCMEs

All Zonal Railways & PUs

Sub: Provision of Protection Cover over Passenger Emergency Alarm Pull Box (PEAPB) in LHB Coaches.

Ref: (i) RDSO letter no. MC/LHB/Brake dated 27.07.2023.
(ii) ICF letter no. MD/DSS/Brakes/1038 dated 19.02.2024

Vide reference (i) above, RDSO has issued drawing (Drg no. RDSO/CG/DRG/23003 alt. 0) to Railways/PUs for protection cover for passenger emergency alarm pull box to prevent unintentional operation of PEAPBs by public.

Zonal Railways have reported that the sharp edge of above approved drawing need to be modified to avoid inconvenience to passengers. In view of this, RDSO had modified and circulated a draft drawing to Zonal Railways for feedback.

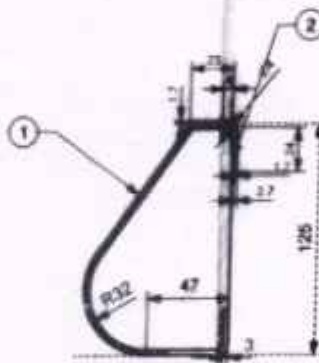
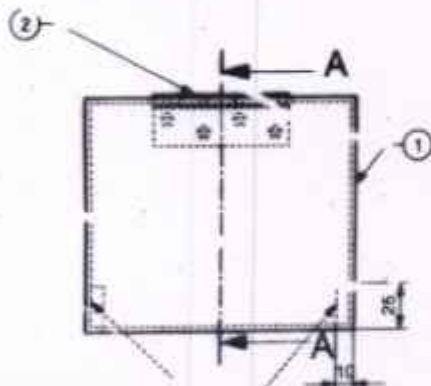
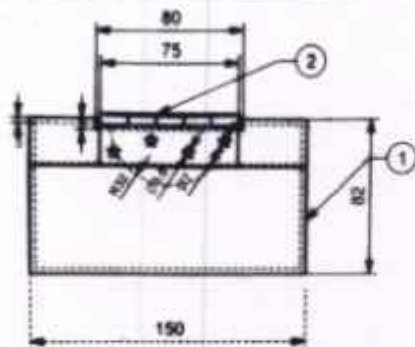
Now, as per feedback received from ICF after fitment trial vide letter at ref (ii), the above drawing of protection cover for passenger emergency alarm pull box has been revised as drg. no. RDSO/CG/DRG/23003 alt. 1 and the same is enclosed for further necessary action.

DA: As above.

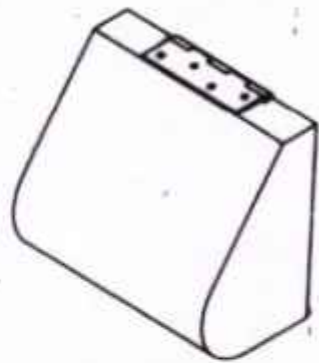
(Sudhir Singh)
Director/E&S and Brakes
for Director General/Carriage

Copy to:

DME (Coaching), Railway Board - for kind inf. pls.



SECTION A-A



ISO VIEW

VELCRO LOOP TO BE PASTED.

NOTE:-

1. ALL DIMENSIONS ARE IN MM.
2. HINGE SHOULD BE BONDED WITH INDUSTRIAL ADHESIVE.
3. TO BE FIXED WITH TMT PANEL USING PLEXUS WA 800 OR SIMILAR BLUE.
4. VELCRO HOOK TO BE PASTED ON THE PANEL AT SUITABLE LOCATIONS TO FASTEN WITH THE VELCRO LOOP ON THE COVER.

2	HINGE	1							
1	BOX COVER	1							
ITEM DESCRIPTION & DIMENSIONS									
SUPERSEDED BY:-									
INDIAN RAILWAYS									
SUPERSEDES:-									
LHB TYPE COACHES									
PROTECTION COVER FOR PASS. EMERGENCY ALARM PULL AND									
B.G. R.O.S.O. (C.S.)									
RDSO/CG/DRG/23003									

SL. NO.	ITEM NO.	DESCRIPTION	QTY.	DATE
1				



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अनुसंधान अभिकल्प और मानक संगठन
लखनऊ - 226 011
EPBX (0522) 2451200
Fax (0522) 2458500



Government of India - Ministry of Railways
Research Designs & Standards Organisation
Lucknow - 226 011
DID (0522) 2450115
DID (0522) 2465310



No. MC/LHB/Brake

Date: 27.07.2023

PCMEs
All Zonal Railways & PUs


Sub: Provision of Protective Cover over Passenger Emergency Alarm Pull Box (PEAPB) in LHB Coaches.

Vide reference to subject above, Railways have reported about the punctuality loss in LHB trains due to the unintentional operation of PEAPBs by passengers, as sometimes people take it as support to goto/get down from upper berths, place hand bags over it and sometimes people rest their legs on the handle. This results in detention of trains causing inconvenience to large number of passengers.

To protect Pull Box from this unintentional operation, Railways/PUs are requested to place a transparent cover of polycarbonate or similar transparent material hinged to the panel over all PEAPBs in all type of LHB Coaches as per the enclosed reference drawing (Drg. No- RDSO/CG/DRG/23003) to avoid such problem in LHB Coaches.

This is for kind information and necessary action please.

DA: As above.

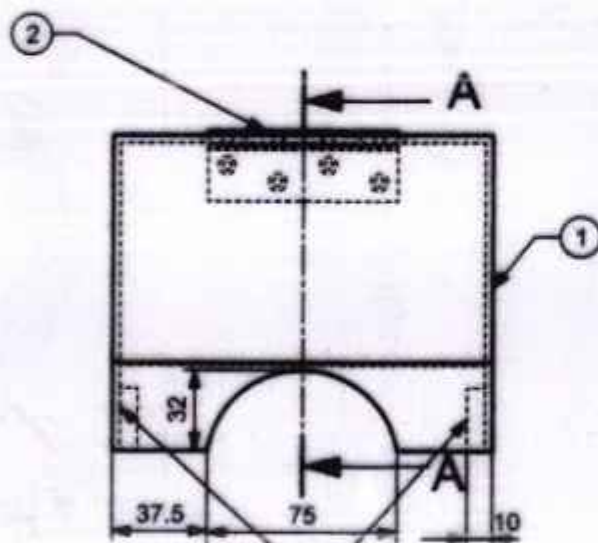
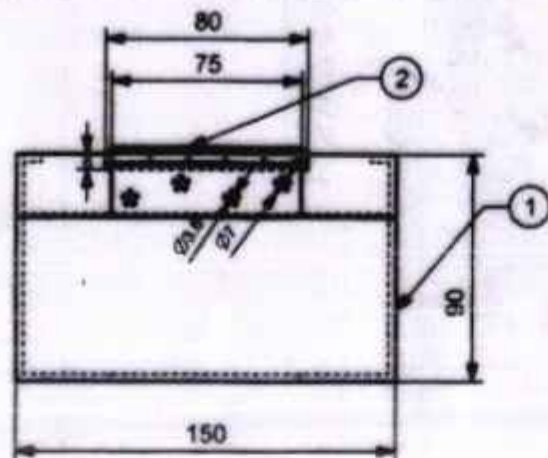

(Sudhir Singh)

Jt. Director/E&S and Brakes
for Director General/Carriage

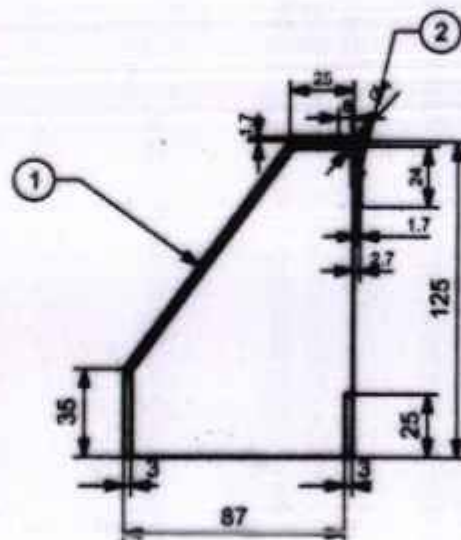
Copy to:

DME (Coaching), Railway Board - for kind inf. pls.

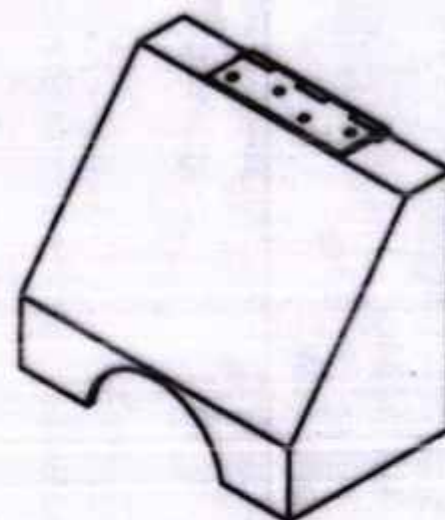




VELCRO LOOP TO BE PASTED.



SECTION A-A



ISO VIEW

NOTE:-

1. ALL DIMENSIONS ARE IN MM.
2. BOX SHOULD BE BONDED WITH INDUSTRIAL ADHESIVE.
3. TO BE FIXED WITH FRP PANEL USING PLEXUS MA 310 OR SIMILAR GLUE.
4. VELCRO HOOK TO BE PASTED ON THE PANEL AT SUITABLE LOCATIONS TO FASTEN WITH THE VELCRO LOOP ON THE COVER.

2	HINGE	1							
1	BOX COVER	1							
ITEM	DESCRIPTION & DIMENSIONS	NO. OF	REF.	DRG.	R.D.S.O. NO.	REL. & SEC.	REMARKS		

	SUPERSEDED BY:-			INDIAN RAILWAYS		
ASSEMBLY DRS.	SUPERSEDES:-			LHB TYPE COACHES		
REFERENCE:-	SCALE	P	<input checked="" type="checkbox"/>	PROTECTION COVER FOR PASS. EMERGENCY ALARM PULL BOX		
		C	<input checked="" type="checkbox"/>			
		D	<input checked="" type="checkbox"/>			
		J.S.	EXS/01/23			
CDIC NO. 1-	B.G.	R.D.S.O. I.C.G. I		RDSO/CG/DRG/23003		

ALT.	ITEM	URL	DESCRIPTION	QTY.	DATE
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Rail Coach Factory, Kapurthala

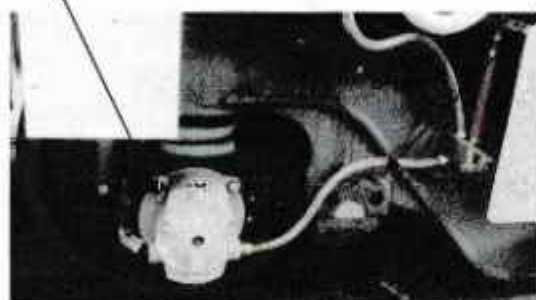
CAI No.: ED/CAI/031 Dated: 20.03.2024

This Coach Alteration Instruction Sheet has been issued for modifications to be carried out in Wheel Set Earthing Equipment (WSEE) to spec. EDTS101 in LHB EOG Coaches on the basis of feedback received from Users Railways. It covers modifications in front cover and brush holder assembly mounting arrangement by provision of SS inserts. The detailed step by step procedure is as under:

Step-1: Removal of Wheel Set Earthing Equipment (WSEE) from Coach Bogie :

- i. Disconnecting the earthing cable to drawing No. LW71245 Alt.-'d' from Bogie to WSEE by removing hardware.
- ii. Unfastening of mounting bolts M16X45mm of earthing device housing from bogie axle in order to dismantle the WSEE from bogie axle.

Mounting bolts



Earthing cable



- iii. Opening the cover of earthing device housing by removing the Hex. Hd. Cap screw of Size M8X20mm .

Cover Fasteners



- iv. Removal of the earthing cable connections from carbon brush holder assembly to drawing no. LW71237 by removing hardware of size M10x20mm.

EARTHING CABLE

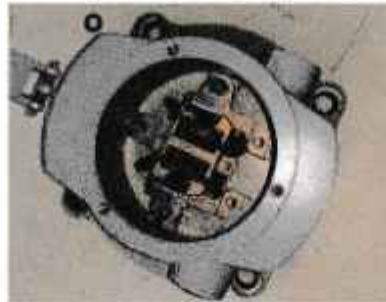


ED/CAI/031	0	20.03.24	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	Page 1 of 4
Doc. No.	Rev.	Date	SSE/CAD	SEE/D&D	DYCEE/D&D	Page

Rail Coach Factory, Kapurthala

CAI No.: ED/CAI/031 Dated: 20.03.2024

- v. Removal of complete Carbon brush holder assembly to drawing no. LW71237 by removing the Hex. Hd. Nylock Nut of size M8.



Step-2: Modifications required in WSEE Housing as per ref. drawing no. SKED 945

- i. Removal of the helicoil spring from the existing 03 nos. mounting holes provided in WSEE housing for fixing of front cover with special tool.



Helicoil spring

- ii. Modifying the existing 3nos. mounting holes to M12 threaded hole suitable for SS bush to drawing no. SKED 945 in housing for WSEE to Drawing no. LW71233. The PCD of 160mm at 120deg. shall be maintained to ensure proper fixing of cover during assembly.
- iii. Fixing of the threaded SS bush (AISI 304) in threaded holes with use of Loctite Red 271 Thread locker of 3M make and SS bush shall be tested for any movement during screwing and unscrewing of M8 Stud after the specified period of 30min (min).

Step-3: Modifications required for fixing of Carbon brush Holder Assembly as per ref. drawing no. SKED 945.

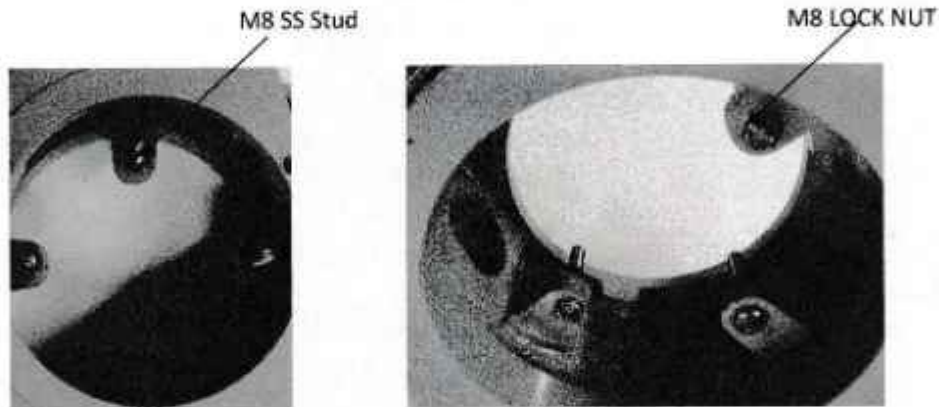
- i. The Stainless steel Stud of size M8x40mm (3nos.) provided for fixing of Carbon brush holder assembly shall be removed.
- ii. Removal of the helicoil spring from the existing 03 nos. mounting holes provided in WSEE housing for fixing of Brush Holder assembly with special tool.
- iii. Modifying the existing 3nos. mounting holes to M12 threaded hole suitable for SS bush (AISI 304) to drawing no. SKED 945 in collars for mounting of brush assembly to drawing No. inside WSEE housing to drawing no. LW71233.

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Rail Coach Factory, Kapurthala

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- iv. Fixing of the threaded SS bush (AISI 304) in threaded holes with use of Loctite Red 271 Thread locker of 3M make and SS bush shall be tested for any movement during screwing & unscrewing of M8 Stud after the specified period of 30min (min).
- v. Provide the Stainless steel Stud (AISI 304) of size M8x55mm (02nos.) & M8x50mm (01no.) at the existing locations with use of Loctite Red 271 Thread locker of 3M make.
- vi. Provide the M8 SS locknut (AISI 304) at the bottom side of the studs with use of Loctite Red 271 Thread locker of 3M make as per drawing SKED 945.



- vii. Fixing of the Carbon Brush holder assembly to drawing no. LW71237 properly at the existing location.

Step-4: Reassembling of Wheel Set Earthing Equipment (ref. drawing no. SKED 945)

- i. Fixing of the carbon brush holder assembly to drawing no. LW71237 properly at the existing location with M8 SS Studs, lock Nut etc.
- ii. Connecting the earthing cable to drawing no. LW71245 in Carbon Brush assembly properly with M10x20 Bolt, torque 30N/m.
- iii. Fixing of front cover assembly with Allen Bolt of size M8, torque 25N/m.
- iv. Fixing of the complete WSEE assembly on the bogie axle with M16x45 Bolt, torque 170N/m.
- v. Connecting the earthing cable to drawing no. LW71245 with Bogie frame properly.

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CAI No.: ED/CAI/031 Dated: 20.03.2024

a). Bill of Material required for modifications:

Sno.	Item description	Ref. Spec./Drg.	QPA	Remarks
1.	Stainless Steel Bush, L=18mm, Thread size M12x1.75(outside)/M8X1.25 (inside) (Mat. AISI 304) to match with M8 Allen screw)	SKED 945	03	For fastening of cover with housing
2.	Stainless Steel Bush, L=15mm, Thread size M12x1.75(outside)/M8X1.25 (inside) (Mat. AISI 304) to match with M8 Allen screw)	SKED 945	02	For mtg. brush holder assembly.
3.	Stainless Steel Bush, L=10mm, Thread size M12x1.75(outside)/M8X1.25 (inside) (Mat. AISI 304) to match with M8 Allen screw)	SKED 945	01	For mtg. brush holder assembly.
4.	Stainless Steel Stud M8x55mm (Mat. AISI 304)	SKED 945	02	For mtg. brush holder assembly.
5.	Stainless Steel Stud M8x50mm (Mat. AISI 304)	SKED 945	01	For mtg. brush holder assembly.
6.	Stainless Steel Lock nut, M8	SKED 945	03	For mtg. brush holder assembly.
7.	Loctite Solution, 3M make (6ml/50ml)	Red 271 Thread locker	01	-

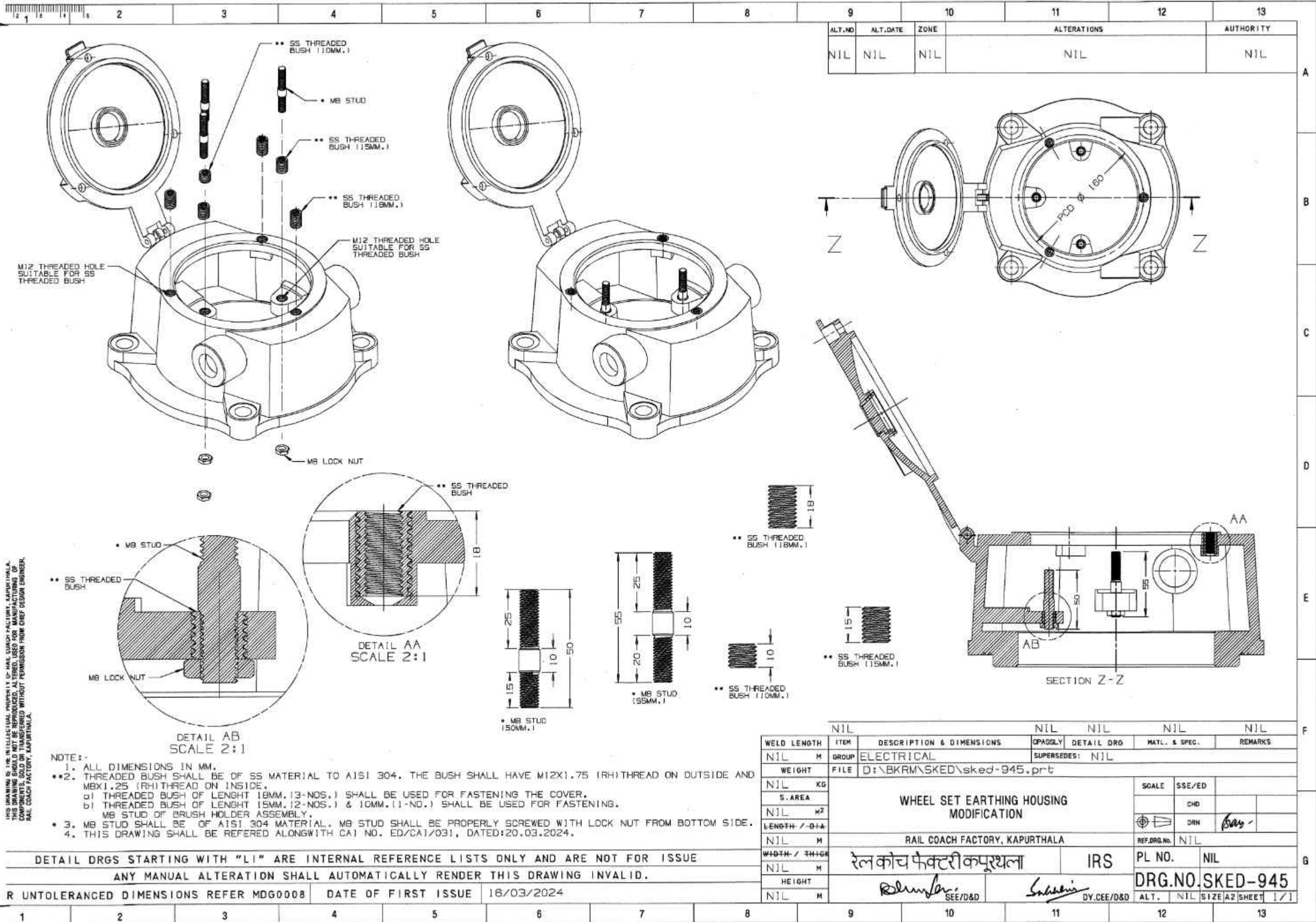
b). Special Tools Required:

1. Torque Wrench with Allen key M8 adapter and M8 Hex. HD. adapter
2. Helicoil Extraction Tool Size M8.

c. Enclosures:

Sno.	Ref. Specification/Drawing no	Description
1	EDTS 101 REV. C, AM. 1& 2 Cor.1 to Cor.8	Spec. for WSEE.
7	SKED 945	WSEE Modifications.

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NOTE:-

1. ALL DIMENSIONS IN MM.
2. THREADED BUSH SHALL BE OF SS MATERIAL TO AISI 304. THE BUSH SHALL HAVE M12X1.75 (RH) THREAD ON OUTSIDE AND MBX1.25 (RH) THREAD ON INSIDE.
 - a) THREADED BUSH OF LENGTH 18MM. (3-NOS.) SHALL BE USED FOR FASTENING THE COVER.
 - b) THREADED BUSH OF LENGTH 15MM. (2-NOS.) & 10MM. (1-NO.) SHALL BE USED FOR FASTENING.
3. MB STUD SHALL BE OF AISI 304 MATERIAL. MB STUD SHALL BE PROPERLY SCREWED WITH LOCK NUT FROM BOTTOM SIDE.
4. THIS DRAWING SHALL BE REFERED ALONGWITH CAI NO. ED/CAI/D31, DATED:20.03.2024.

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

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R UNTOLERANCED DIMENSIONS REFER MDG0008

DATE OF FIRST ISSUE 16/03/2024

NIL			NIL		NIL		NIL			
WELD LENGTH	ITEM	DESCRIPTION & DIMENSIONS	CPASSLY	DETAIL DRG	MATL. & SPEC.	REMARKS				
NIL	M	GROUP	ELECTRICAL							
WEIGHT			FILE							
D:\BKR\SKED\sked-945.prt										
NIL	KG	WHEEL SET EARTHING HOUSING MODIFICATION				SCALE	SSE/ED			
S. AREA						CHD				
NIL	M ²							DRN	Day	
LENGTH / DIA										
NIL	M									
RAIL COACH FACTORY, KAPURTHALA						REF.DRG.No.	NIL			
WIDTH / THICK			रेल कोच फैक्टरी कपूरथला			PL NO.		NIL		
NIL	M	IRS			DRG.NO.		SKED-945			
HEIGHT			SEE/D&D			ALT.		NIL		
NIL	M	DY.CEE/D&D			SIZE A2		SHEET 1/1			

Rail Coach Factory, Kapurthala

Ammendment-1 to CAI No.: ED/CAI/031 Dated: 20.03.2024

This Amendment -1 to Coach Alteration Instruction no. **ED/CAI/031 dated 20.03.2024** is being issued for updation of various clauses at Step-2 & Step 3 with addition of procedure to carry out the modifications already advised in Wheel Set Earthing Equipment (WSEE) to spec. EDTs101 in LHB EOG Coaches. This updation is being done in reference to MOM with W/Rly. The revision in respective clauses at Step-2 & Step- 3 is as under:

Step-2: Modifications required in WSEE Housing as per Ref. drawing no. SKED 945

- i. Removal of the helicoil spring from the existing 03 nos. mounting holes provided in WSEE housing for fixing of front cover with special tool.
- ii. Modifying the existing 3nos. mounting holes to M12 threaded hole suitable for SS bush to drawing no. SKED 945 in housing for WSEE to Drawing no. LW71233. The PCD of 160mm at 120deg. shall be maintained to ensure proper fixing of cover during assembly.
- iii. Fixing of the threaded SS bush (AISI 304) in threaded holes with use of Loctite Red 271 Thread locker of 3M make and SS bush shall be tested for any movement during screwing and unscrewing of M8 Stud after the specified period of 30min (min).

For above referred modifications regarding provision of SS bushes as per ref. drawing SKED 945 , the procedure mentioned as per Annexure-A shall be followed.

Step-3: Modifications required for fixing of Carbon brush Holder Assembly:

a). Option-1

- i. The Stainless steel Stud of size M8x40mm (3nos.) provided for fixing of Carbon brush holder assembly shall be removed.
- ii. Removal of the helicoil spring from the existing 03 nos. mounting holes provided in WSEE housing for fixing of Brush Holder assembly with special tool.
- iii. Modifying the existing 3nos. mounting holes to M12 threaded hole suitable for SS bush (AISI 304) to drawing no. SKED 945 in collars for mounting of brush assembly to drawing No. inside WSEE housing to drawing no. LW71233.

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Rail Coach Factory, Kapurthala

Ammendment-1 to CAI No.: ED/CAI/031 Dated: 20.03.2024

- iv. Fixing of the threaded SS bush (AISI 304) in threaded holes with use of Loctite Red 271 Thread locker of 3M make and SS bush shall be tested for any movement during screwing & unscrewing of M8 Stud after the specified period of 30min (min).
- v. Provide the Stainless steel Stud (AISI 304) of size M8x55mm (02nos.) & M8x50mm (01no.) at the existing locations with use of Loctite Red 271 Thread locker of 3M make.
- vi. Provide the M8 SS locknut (AISI 304) at the bottom side of the studs with use of Loctite Red 271 Thread locker of 3M make as per drawing SKED 945.

For above referred modifications regarding provision of SS bushes as per ref. drawing SKED 945, the procedure mentioned as per Annexure-A shall be followed.

b). Option-2

- a. Provide the Stainless steel Hex. Head Bolt (AISI 304) of size M8x50mm (03nos.) at the existing hole locations after removal of Stud of size M8x40mm (3nos.) already provided for fixing of Carbon brush holder assembly.
- b. After placing brush holder assembly, the fixing of SS M8 Nylock Nut with use of Loctite Red 271 Thread locker of 3M make shall be ensured.

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ANNEXURE-A


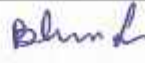
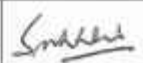
Procedures for Drilling and Tapping of Holes.

A) Procedure for Jig Mounting for Cover Fastening Drill :

- i. Remove Helicoil inserts already present in the holes before drilling Holes for Cover mtg. in the WSEE Housing.
- ii. Housing of the WSE shall be fastened on the mounting plate of drill machine (Pedestal type)-(Drill machine capacity – 25 mm manual drill method).
- iii. Fitment of the Jig for Cover fastening drill on the face of the Housing and match with the existing holes.
- iv. Use of drill (Tool size – 10.3mm) – depth of drill 21mm.
- v. Make slight chamfer on the top of the each drill to facilitate thread tapping.
- vi. Use of thread tapping tool size M12 x 1.75 (RH) on all 03 drills.
- vii. Removal of the burrs before applying Red thread locker 271 on the 03 threaded holes provided for fastening of the cover with the Housing.
- viii. Use of Red thread locker 271 on the outside thread of the SS inserts before fastening.
- ix. Use of bolt (size M8) to fasten the SS inserts with the 03 threaded holes of the Housing.
- x. **Ref. drawing SKED-987 for Jig arrangement for drilling of holes in the front cover.**

B). Procedure for Jig Mounting for the Brush Holder in the Housing

- i. Remove Helicoil inserts already present in the holes before drilling Holes for Brush Holder mounting in the Housing.
- i. Fasten the Housing with the mounting plate of the drill machine (Drill machine capacity – 25 mm manual drill method).
- ii. Fit the Jig for Brush Holder mounting fastening drill on the face of the Housing and match with the existing holes.

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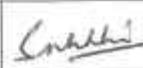
Rail Coach Factory, Kapurthala

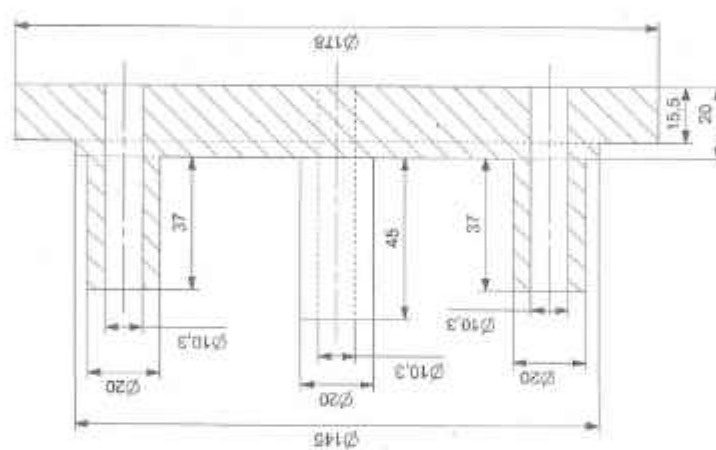
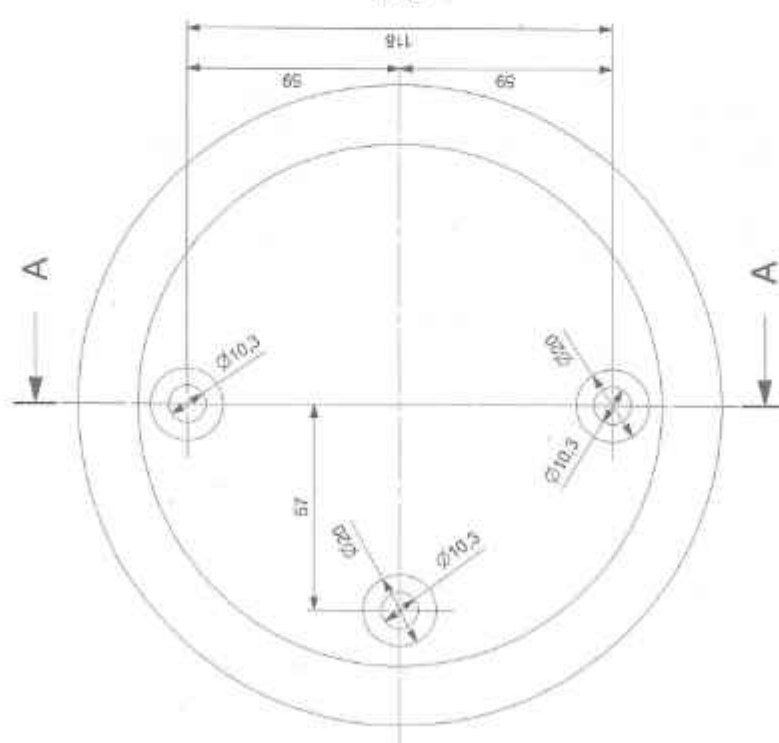
Ammendment-1 to CAI No.: ED/CAI/031 Dated: 20.03.2024

- iii. Use of drill (Tool size – 10.3mm) – through threaded holes.
- iv. Make a slight chamfer on the top of each drill to facilitate thread tapping.
- v. Use of thread tapping tool size M12 x 1.75 (RH) on all 03 drills.
- vi. Removal of the burrs before applying red thread locker 271 on the 03 threaded holes for mounting of the Brush Holder in the Housing.
- vii. Use of red thread locker 271 on the outside thread of the SS inserts before fastening.
- viii. Use of bolt (Size M8) to fasten the SS inserts with the 03 threaded holes of the Housing.
- ix. **Ref. drawing SKED-988 for Jig arrangement for drilling of holes in the Collars for mounting of the Brush Holder in the Housing**

ENCLOSURES:

- 1. SKED-987
- 2. SKED-988

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2. MATERIAL OF JIE: EN-8.
1. ALL DIMENSIONS IN MM.

L. A.

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OR UNTOLERANCED DIMENSIONS REFER HOG0000	DATE OF FIRST ISSUE	1900202025
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भारत सरकार - रेल मंत्रालय
अनुसंधान अभिकल्प और मानक संगठन
लखनऊ - 226 011
EPBX (0522) 2451200
Fax (0522) 2458500

Government of India-Ministry of Railways
Research Designs & Standards Organisation
Lucknow - 226 011
DID (0522) 2450115
DID (0522) 2465310



No. MC/LHB/Brake

Date: 27.07.2020

Principal Chief Mechanical Engineer,

1. Central Railway, Chhatrapati Shivaji Terminus, Mumbai - 400 001	2. East Coast Railway, Chandrasekharpur, Bhubaneswar - 751 016
3. Eastern Railway, Fairlie Place, Kolkata - 700 001	4. North Central Railway, Allahabad - 211 001
5. Northern Railway, Baroda House, New Delhi - 110 001	6. North Western Railway, Jaipur - 302 006
7. Southern Railway, Park Town, Chennai - 600 003	8. West Central Railway, Jabalpur - 482 008
9. South Central Railway, Rail Nilayam, Secunderabad - 500 071	10. South Western Railway, Hubli - 580 023
11. South Eastern Railway, Garden Reach, Kolkata - 700 043	12. South East Central Railway, Bilaspur - 495 004
13. North Eastern Railway, Gorakhpur - 273 001	14. Western Railway, Churchgate, Mumbai - 400 020
15. Northeast Frontier Railway, Maligaon, Guwahati - 781 011	16. East Central Railway, Hajipur - 844 101
17. Konkan Railway Corp. Ltd. Corporate office, Belapur Bhawan, Navi, Mumbai - 400 614	

Sub: Poor brake power in LHB Coaches fitted with M/s Faiveley Transport brake system.

Ref: i). This office letter of even no. dated 09.07.2019.
ii). Southern Railway letter no. M/CW/271/USF/S.Rly dated 09.11.2019.
iii). This office letter of even no. dated 04.12.2019.
iv). Southern Railway letter no. Nil dated 03.06.2020.

Vide this office letter at reference (i) above, Zonal Railways were requested to ensure proper **arrangement & dimensions of linkages and lubrication in articulation points of quick release valve (QRV)** linkages. It was advised since Railways reported problem of poor brake power (continuous venting of CR pressure) in LHB Coaches due to sticking up of DV manual release handle (i.e. *Operating lever is not regaining original position after brief pull for BC & CR pressure venting*) in M/s Faiveley Transport's Distributor Valves.


In continuation to above, Southern Railway vide their letter at ref (ii), informed regarding modification done in quick release mechanism by replacement of existing lever & linkage arrangement with wire rope mechanism in consultation with M/s FTRTIL. It was also informed that the performance of wire rope mechanism is found satisfactory in the LHB Coaches and recommended that the existing resetting arrangement may be replaced with wire rope arrangement. In continuation to this, vide ref (iii), Southern Railway was advised to go ahead with the provision of wire rope mechanism against existing linkage arrangement.

Now, Southern Railway vide ref (iv) has reported that they have carried out this modification in LHB Coaches with M/s FTRTIL brake system. It is functioning satisfactorily and no poor brake power cases (due to stuck-up of QRV) were reported till date after carrying out this modification.

In view of the above and satisfactory performance reported by Southern Railway for modified coaches with wire rope mechanism, ZRs are advised to implement this modification i.e. provision of wire rope mechanism for QRV of DV in LHB coaches fitted with M/s FTRTIL brake system. An indicative detail for the same is enclosed herewith as Annexure. It is also advised to ensure the proper routing & interface to reduce the force needed to pull the QRV.

This is for information & necessary action please.

DA: A/a.


(Shailendra Kr. Sharma)
Jt. Director/E&S and Brake
for Director General/Carriage

Copy to:

M/s Faiveley Transport Rail Technologies India Pvt. Ltd., Plot No. 3A, Apparel Park cum Industrial Area, Katha, Bhatoli, Baddi, Solan (H.P.) - To associate with ZRs for implementation of the aforesaid modification.

INDICATIVE ARRANGEMENT FOR WIRE ROPE MODIFICATION

- Wire rope diameter: **5mm (approx.)**
- Wire rope length: **1000 mm (approx.)** on Brake Panel side
- Wire rope length: **3500 mm (approx.)** on Opposite side of Brake Panel
- Three nos. metallic rings encircled in 'Green' color are to be provided on coach suitably by Railway for the accommodation of wire rope.



Wire rope arrangement (Brake Panel side)



Wire rope arrangement (opposite side of brake panel)