

UNDER SPECIFICATION

NO. CLW/MS/3/111

ALT	①	②	③	④	⑤				
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ENCLOSURES :

DRG. NOS.: $\left. \begin{array}{l} 1209-09,133-021. \\ 1209-09,133-022. \\ 1209-09,233-023 \\ 1209-09,133-071. \end{array} \right\} \textcircled{1}$

TOTAL NO. OF SHEETS: 5

ALT	①	②	③			
SHEETS						

SPECIFICATION FOR

INTERLOCK LOCK ASSLY. - FINISHED PRODUCT USED
IN ENTRANCE DOORS AND MACHINE ROOM DOORS OF
3-PHASE WAG-9 & WAP-5 ELECTRIC LOCOMOTIVES OF
INDIAN RAILWAYS

ISSUED BY :

DY.CHIEF ELECTRICAL ENGINEER (CON)/TU-I
 CHITTARANJAN LOCOMOTIVE WORKS
 CENTRE FOR DESIGN & DEVELOPMENT
 CHITTARANJAN - 713331
 WEST BENGAL.

PREPD. BY 9. No. 24 12.6.24	CHKD BY 23/6/24	REVIEWED BY R. S. / TU 23/6/24	APPROVED BY DY. CEE/ CON/TU-I	WAG-9 (CO-CO) WAP-5 SPECIFICATION FOR INTERLOCK LOCK ASSLY.	CENTRE for D & D CHITTARANJAN LOCOMOTIVE WORKS CHITTARANJAN-713331 NO. CLW/MS/3/111 ① ② ③ ④ DATE- 23-06-2000 ⑤
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TECHNICAL SPECIFICATION FOR INTERLOCK LOCK ASSLY. - FINISHED PRODUCT USED IN ENTRANCE DOORS AND MACHINE ROOM DOORS OF 3-PHASE WAG-9 & WAP-5 ELECTRIC LOCOMOTIVES OF INDIAN RAILWAYS.

1. **Scope :-** This specification covers the minimum requirement of manufacturing, Assly., inspection and supply condition of Complete Interlock assly. to be used for Cab Entrance doors and Machine Room doors of WAG-9 3-phase Freight loco and WAP-5 Passenger electric locomotives of Indian Railways.
2. **Scope of Supply :-** Interlock Lock Assly. to be supplied in a set per loco. A set consist of 2 Nos. L.H., 2 nos. R.H./to Assly Drg.No. 1209-09.133-021 & 2 nos. to Drg.No. 1209-09.133-071 as indicated in the Annexure-'A'.

3. **General :-** These type of interlocks are used in Rail Vehicles to avoid pilfrages of valuable equipments and fittings of loco, when driver is out from the cabin of loco at station or on line. Its operational system is such which can be closed from outside and be opened only by operating key whereas in the same time, if driver or Asstt. Driver or any working staff is inside the loco, can easily open the door by operating the lock handle from inside the loco without using key i.e it gives total security to driver on the line.

4. **Technical Requirement :**
 4.1 Aluminium - Nickel - Bronze (Al-Ni-Bronze) as a raw material to be used for body i.e. Cam housing, connector housing etc. (Cu - 80%, Ni - 9%, Fe - 1%, Al - 10%) (T.S. 620 MPa) TO BS SPEC. HC-502

4.2 If component casted, shall be highly corrosion resistant and to uneffective of acid as well.

4.3 Cams shall be of forged steel conforming to IS:1875 Cl-III and shall have accurate geometry.

4.4 Sleeve, ring etc. shall be of steel conforming to IS:5517 20 C15, which are hardened as shown in drg.

4.5 Body (housing) shall be chrome plated.

4.6 Hardwares shall be of stainless steel conforming to IS:1367 A2-70. (Part-1/4)

4.7 Casting shall be free from cracks, flows, rough jogs, blow holes and other harmful defects.

PREPD. BY	CHKD BY	REVIEWED BY	APPROVED BY	SPECIFICATION FOR	CENTRE for D & D
g Natta 22.5.24	[Signature]	[Signature]	[Signature]	INTERLOCK LOCK ASSLY. FOR WAG/9 & WAP/5 Locos. WAP4 (5)	CHITTARANJAN LOCOMOTIVE WORKS CHITTARANJAN-713331
SE:-D/SSE/DEG	SME/D&D	DY. CEE/CON/TU-I			NO. CLW/MS/3/111 (1) (2) ALT NO. (1) (2) (3) (4) (5)

- 4.8 All individual components shall be manufactured with appropriate material and maintain the correct geometry to its functional characteristics.
- 4.9 Heat treatment to be done wherever stipulated in the drg.
- 4.10 Anti-corrosive treatment, wherever necessary, to be done e.g. ~~ph~~ passivation etc.
- 4.11 Metal shall not be effected/corroded when exposed in 100% relative humidity or max. atmospheric temperature 80 deg.C and heavy rainfall, vibration shocks upto ~~50~~ ⁵⁰ m/sq.S. as per ~~Ec77~~ ^{Ec77}
- 4.12 Proper alignment of Camsetc, are to be done to achieve proper and requisite contact and locking characteristics.
- 4.13 Any component fails or cracked or wearout within warranty period shall be replaced free of cost by the supplier immediately.
- 4.14 Operating key shall be interchangeable which can open all the four cab doors with one key. ^{It applies for multiple sets too.}
_{The levers shall be made accordingly.}
- 5. Manufacture :
 - 5.1 Lock Body (housing) shall be casted/die stamped from Al-Ni-Bronze metal. _{to Bs specm. HC-502.}
 - 5.2 Proper and smooth casting to be done. If die stamped shall not have any cracks.
 - 5.3 Stages, sharp edges ^{burs} etc. are to be removed.
 - 5.4 After casting/Die stamping, components shall be cleaned and scratchless chrome polished.
 - 5.5 Hardening and tempering to be done as specified in the individual drawing.
 - 5.6 Total weight of Assly. of Interlock Assly. shall not exceed 6 Kgs ± 2%.
 - 5.7 Lock for Machine Room - ^{1.5} Kgs. ± 1% ^{max.}
 - 5.8 Machining, case hardening, tempering etc. to be done properly as per standard/stipulated in the drawing.

① 5.8 Latch (Ref.29) to be assembled which shall have a travel ¹² ~~min~~ ^{mm}.

PREPD. BY	CHKD BY	REVIEWED BY	APPROVED BY	SPECIFICATION FOR INTERLOCK LOCK ASSLY. for WAG-9 EWAP/S Locos WAP-4	CENTRE for D & D CHITTARANJAN LOCOMOTIVE WORKS CHITTARANJAN-713331
J. N. S. 22.6.24	[Signature] 23/6/24	[Signature] 23/6/24	[Signature] 23/6/24	WAG-9 EWAP/S Locos WAP-4 ⑤	NO. CLW/MS/3/111 ALT NO. ① ② ③ ④ ⑤
SE/DIG	SSE/D24	SME/DEA	DY. CEE/CON/TU-1		

6. Inspection & Testing :

6.1 Inspection for prototype sample shall be done by authorized representative of C-D&D/CLW at manufacturer's works Premises. Any defect/failure noticed during inspection shall immediately be replaced/rejected.

6.2 Material test certificates (chemical & physical) to be submitted during inspection. All the tests conducted during inspection shall be arranged and borne by the supplier.

6.3 Manufacturer shall give guarantee of material with its internal quality control regulation. Test piece can also be collected by purchaser for further chemical and metallurgical test. All aspects of workmanship, design and material will be covered by the guarantee with satisfactory performances of the product as well as warranty of the material for at least 10 years.
SEE PAGE 5.

②

6-4

7. Quality Assurance : As per ISO 9000.

8. Labelling/Marking :

Manufacturer shall label with followings :

- i) Date, Month & Year of manufacturing.
- ii) Manufacturer's Name with Trade Mark to be embossed.

9. Packing & Delivery :

9.1 Protective packaging to be done which suitable for the transport and storage under the climatic and environmental condition mentioned, which will prevent any damages to the material during handle, transit and storage. *Storage period shall be considered 24 months at least.*

9.2 The product shall be given preventive coating to avoid scratches, damage etc.

9.3 Tenderer shall have to submit their machining and plant facilities document along with the tender bid.

9.4 Only successful tenderer will get the detail component drgs. for manufacture.

9.5 Lock Assly. shall be supplied as a complete unit in a set. Any improvement required or done for better product may get approve before manufacturing, by E-DeD Authority.

PREPD. BY	CHKD BY	REVIEWED BY	APPROVED BY	SPECIFICATION FOR	CENTRE for D & D
J. NAGA 22.6.27	<i>[Signature]</i> 23/6/24	<i>[Signature]</i> 25/6/24	<i>[Signature]</i> 22/6	INTERLOCK LOCK ASSLY. <i>For</i> WAG/9E'WAP/5 Locos. WAP4 ⑤	CHITTARANJAN LOCOMOTIVE WORKS CHITTARANJAN-713331
SE/01G	SSE/024	SME/020	DY. CEE/ CON/TU-F		NO. CLW/MS/3/111 ALT NO. ① ② ③ ④ ⑤

ANNEXURE - A

Sheet - 5

Of Spec.No. CLW/MS/3/111

INTERLOCK ASSLY FOR WAG-9 & WAP-5 LOCO

<u>Sl. No.</u>	<u>Description</u>	<u>CLW Drg.No.</u>	<u>Qty/Loco</u>
1.	Interlock assly for Cab side Door.	1209-09.133-021 LH&RH.	2 Nos. - LH.
1.1	Sectional Drg. for Interlock Assly.	1209-09.133-022 & 1209-09.233-023	2 Nos. - RH
2.	Lock Assly for Machine Room Door.	1209-09.133-071	2 Nos.

(2)

6.4 (i) PRIOR TO PROTOTYPE INSPECTION CLW'S REPRESENTATIVE WILL BE DEPUTED TO SEAL THE SAMPLE PIECE OF THE MATERIAL SPECIFIED FOR TEST IN THE GOVT. APPROVED/RDSO APPROVED TEST LABS. THE LAB. TEST REPORT SHOULD BE PRODUCED AT THE TIME OF PROTOTYPE INSPECTION.

(ii)

STANDARD FASTENERS OF M/S TVS, M/S LPS, M/S UNBREAKO AND M/S KUNDAN.

(iii) THE SPRING WASHERS OF M/S FORBES MAKE ONLY TO BE USED.

(3)

6.5. INTERLOCK ASSEMBLIES & THE FOLLOWING ITEMS OF DOOR & DOOR ACCESSORIES ARE TO BE PURCHASED FROM & FITTED BY THE SAME VENDOR IN A SET.

<u>SL.NO.</u>	<u>ITEM</u>	<u>DRG.NO.</u>	<u>SPECN.</u>	<u>QTY/LOCO</u>
1.	DOOR CATCH ASSLY	1209-09.433-019	-	6
2.	DOOR LATCH ASSLY	1209-09.233-018	-	4
3.	CAB DOOR L.H.	1209-09.133-003	CLW/MS/3/	2
4.	CAB DOOR R.H.	1209-09.133-004	O13	2
5.	MACHINE ROOM DOOR	1209-09.133-044		2

6.6 THIS SPECN. IS ALSO APPLICABLE FOR WAP4 CREW FRIENDLY LOCO. (5)

<u>PREPD. BY</u> J No. Gt. 22.6.24	<u>CHKD BY</u> 23/6/24	<u>REVIEWED BY</u> R. S. S.	<u>APPROVED BY</u> hul not to	<u>SPECN. FOR INTERLOCK ASSLY</u> (FOR CAB SIDE DOOR & MACHINE ROOM DOOR) WAG 9 & WAP/S LOCOS. (5) WAP4	<u>CENTRE for D & D</u> CHITTARANJAN LOCOMOTIVE WORKS CHITTARANJAN-713331
<u>SE/DIG.</u> SSE/DIG/SMC/DED	<u>DY. CEE/CON/TUE</u>	<u>NO. CLW/MS/3/111</u> dt-23-6-24	<u>ALT NO.</u> ① ② ③ ④ ⑤		

ALTERATION RECORD SHEET

ALT. NO	DATE	DESCRIPTION	REASON	INITIAL BY DY.CEE/CON/TU
①	18-1-2001	IN PARA 5.8 TRAVEL LENGTH 12 WAS 17mm.DRG. Nos. 1209-09-133-021, 1209-09-133-022, 1209-09-233-023 & 1209-09-133-071 TO BE FOLLOWED AS PER ALT. ①	ALTERATION DONE AS PER ORIGINAL SAMPLE OF INTER LOCK ASSLY. BY THE INSTRUCTION OF DY.CEE/CON/TU-1	<i>hml</i> 18/1
②	21.3.2002	CLAUSE 6.4 ADDED	AS DECIDED BY COMPETENT AUTHORITY VIDE LETT. NO. C-D&D/TOT/ III DT. 18-2-02	<i>P. Meena</i>
③		CLAUSE 6.5 ADDED	AS DECIDED BY COMPETENT AUTHORITY VIDE CEE/L'S APPRO VAL ELDD/3610 P. IV DT. 11-08-03	<i>hml</i> 19/8/03
④	12.07.05	CLAUSE 6.5 DELETED	AS DECIDED BY COMP. AUTHY DY CEE/DI'S APPROVAL DT. 2.6.05	<i>hml</i>
⑤	23.12.06	CLAUSE 6.6 ADDED.	AS DECIDED BY COMP. AUTHY. VIDE CEE, LOCAL'S APPROVAL ELDD/3610 DT. 9-12-06	<i>hml</i>
PREP. BY:	CHECKED BY:	CLW SPECN. NO. CLW/MS/III SPECIFICATION FOR INTER LOCK LOCK ASSLY. WAG9, WAP5, WAP7, WAP4	REVIEWED BY:	APPROVED BY:
<i>hml</i> 18/11/06	<i>hml</i> 18/11/06		<i>hml</i> 18/11/06	<i>hml</i> 18/11/06