#### File No.RDSO-TMM0RGM(RG36)/1/2023-O/o PED/TMM/RDSO



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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



Date : .....01.2024 दिनांक : .....01.2024

Chief Engineer (CPOH Workshop), Ahmedabad

Principal IRTMTC, PipalGaon, Prayagraj -211011

CPOH Workshop, Prayagraj, Rayanapadu, Kachrapara

Chief Workshop Manager (Track Machines)

No. :- TM/RGM/RMM संख्या :- टीएम/आरजीएम/आरएमएम

II- मुख्य अभियंता (सी.पी.ओ.एच. कार्यशाला) अहमदाबाद III- मुख्य कार्यशाला प्रबन्धक (टैक मशीन)

सी.पी.ओ.एच. कार्यशाला प्रयागराज, रायनापाडु, कंचरापारा

V- प्रधानाचार्य भा.रे.रे.प.म.प्र.के. पीपलगांव प्रयागराज -211011

Detailed addresses are enclosed herewith.

विषय : रेल मिलिंग मशीन (लिन्सिंगर) की निरीक्षण जांच सूची।

Sub : Inspection Check list of Rail Milling Machine (Linsinger).

रेल मिलिंग मशीन (लिन्सिंगर) की निरीक्षण जाँच सूची की मसौदा एवं अनंतिम क्रमशः पत्र सं टीएम/आरजीएम/आरएमएम दिनांक 05.09.2023 द्वारा 30 दिनों के लिये और टीएम/आरजीएम/आरएमएम दिनांक 26.10.2023 द्वारा 15 दिनों के लिये सभी क्षेत्रिय रेलवे, सी.पी.ओ.एच. कार्यशालाओं एवं भा.रे.रे.प.म.प्र.के. प्रयागराज को टिप्पणी हेतु जारी किया गया था जिसके उपरांत अभी तक कोई टिप्पणी प्राप्त नहीं हुई है। अब रेल मिलिंग मशीन (लिन्सिंगर) की निरीक्षण जाँच सूची अंतिम रूप में तैयार की गई है जिसकी प्रति आपके सूचनार्थ तथा मशीन के कर्मचारियों, जो फील्ड में कार्य कर रहे है के मार्ग दर्शन हेतु संलग्न है। यद्यपि उपरोक्त सूची बनाते समय सभी सावधानियाँ बरती गई है, फिर भी यदि कोई त्रुटि हो तो, कृपया अपने सुझावों/ टिप्पणियों को ईमेल / पत्राचार द्वारा अधोहस्ताक्षरी को अवगत करायें।

Draft and Provisional inspection check list of Rail Milling Machine (LINSINGER) was circulated to all zonal railways, CPOHs and IRTMTC/PRYJ vide letter no. TM/RGM/RMM dated 05.09.2023 for 30 days and vide letter no. TM/RGM/RMM dated 26.10.2023 for 15 days respectively, for seeking comments/suggestions. But, no suggestions/comments were received. Now, Inspection Check list of Rail Milling Machine (LINSINGER) has been finalized. A copy of the same is enclosed herewith for your information and guidance of the machine staff working in the field. However, every care has been taken during preparation of the above said list, discrepancy noticed, if any, may be brought to the knowledge of the undersigned for further improvement, by email/post.

Email address: <a href="mailto:hmtmmrdso@gmail.com">hmtmmrdso@gmail.com</a>

DA: As above

JAINENDR Digitally signed by JAINENDRA A KUMAR KUMAR SINGH Date: 2024.01.22 SINGH 17:33:40 +05'30'

जैनेन्द्र कुमार सिंह (Jainendra Kumar Singh) निदेशक/ ट्रैक मशीन (Director/Track Machine)

# File No.RDSO-TMM0RGM(RG36)/1/2023-O/o PED/TMM/RDSO

I-	मुख्य अभियन्ता (ट्रैक मशीन)	Chief Engineer (Track Machines)		
	मध्य रेलवे, सीएसटी, मुम्बई- ४०० ००१	Central Railway, CST, Mumbai - 400 001.		
2.0	पूर्व रेलवे, फैयरली प्लेस, कोलकाता ७००००१	Eastern Railway, Fairlie Place, Kolkata-700 001.		
3.0	उत्तर रेलवे, बड़ौदा हाउस, नयी दिल्ली - 110 001	Northern Railway, Baroda House, New Delhi -110 001.		
	उत्तर पूर्व रेलवे, गोरखपुर-273012	North Eastern Railway, Gorakhpur-273 012.		
5.0	उत्तर पूर्व सीमान्त रेलवे, मालीगांव, गुवाहाटी - 781011	Northeast Frontier Railway, Maligaon, Guwahati -781 011.		
6.0	दक्षिण रेलवे, पार्क टाउन, चेन्नई-600003	Southern Railway, Park Town, Chennai - 600 003.		
	दक्षिण मध्य रेलवे, रेल निलयम, सिकन्दराबाद - 500 371	South Central Railway, Rail Nilayam, Secunderabad -500 371.		
8.0	दक्षिण पूर्व रेलवे, गार्डन रीच, कोलकाता -700 043	South Eastern Railway, Garden Reach, Kolkata - 700043		
9.0	पश्चिम रेलवे, चर्चगेट, मुम्बई ४०० ०२०	Western Railway, Churchgate, Mumbai - 400 020		
	उत्तर पश्चिम रेलवे, जयपुर-302001	North Western Railway, Jaipur-302 001.		
	पूर्व मध्य रेलवे, हाजीपुर-844 101	East Central Railway, Hazipur-844 101		
	दक्षिण पश्चिम रेलवे, हबली - 580023	South Western Railway, Hubli-580 023		
	उत्तर मध्य रेलवे, प्रयागराज २११००१	North Central Railway, Prayagraj -211 001		
	पूर्व तटीय रेलवे, भुवनेश्वर 751 001	East Coast Railway, Bhubaneshwar-751 001		
	पश्चिम मध्य रेलवे, जबलपुर - 482001	West Central Railway, Jabalpur-482 001		
	दक्षिण पूर्व मध्य रेलवे, बिलासपुर-४९५००४	South East Central Railway, Bilaspur-495 004		
II-	मुख्य कार्यशाला प्रबन्धक (ट्रैंक मशीन)	Chief Workshop Manager (Track Machines)		
1.0	सी.पी.ओ.एच. कार्यशाला, पो॰ धूमनगंज, प्रयागराज- 211011	CPOH Workshop, PO. Dhoomanganj, Prayagraj -211011		
2.0	सी.पी.ओ.एच. कार्यशाला, दक्षिण मध्य रेलवे, रायनापाडु विजयवाडा, जिला कृष्णा, आन्ध्रप्रदेश- 521241	CPOH Workshop,South Central Railway, Rayanapadu, Vijaywada, DistKrishna, Andhra Pradesh-521241		
3.0	सी.पी.ओ.एच. कार्यशाला, पूर्व रेलवे, भूतबागान रेलवे कॉलोनी, कंचरापारा, पी.एस- बिजपुर पो॰- कचरापारा, पश्चिम बंगाल - 743145	CPOH Workshop, Eastern Railway, Bhutbagan Railway Colony, Kanchrapara, P.S Bizpur, P.O Kanchrapara, West Bengal - 743145		
4.0	मुख्य अभियन्ता, सी.पी.ओ.एच. कार्यशाला, पश्चिम रेलवे, मंडल रेल प्रबंधक कार्यालय, चामुंडा माता मंदिर के पास, मरोड़ा रोड, पो०- सैजपुर बोधा, अहमदाबाद- 382345	Chief Engineer. C.P.O.H, Western Railway, Divisional Office, Near Chamunda Mata Mandir, Naroda Road, P.O. –Saijpur Bogha, Ahmedabad-382345		
III-	प्रधानाचार्य भा. रे.रे. प. म.प्र.के. पीपलगांव	Principal, IRTMTC,PipalGaon, Prayagraj - 211011		
	प्रयागराज - 211011			



Government of India - Ministry of Railways

# **Research Designs and Standards Organisation**





भारत सरकार रेल मंत्रालय GOVERNMENT OF INDIA MINISTRY OF RAILWAYS

Inspection Check List of Rail Milling Machine (LINSINGER) रेल मिलिंग मशीन (लिन्सिंगर) की निरीक्षण जांच सूची

> REPORT NO. TM- 277 रिपोर्ट संख्या टीएम – 277 जनवरी – 2024 JANUARY – 2024

इंफ्रास्ट्रक्चर निदेशालय (रेलपथ मशीन एंव मानीटरिंग) अनुसंधान अभिकल्प और मानक संगठन, लखनऊ—226011

DIRECTORATE OF INFRASTRUCTURE (TRACK MACHINE & MONITORING) RESEARCH DESIGNS & STANDARDS ORGANISATION, LUCKNOW-226011

#### **PREFACE**

Any machine can only be kept in good condition by regular inspection of its various assemblies at different levels of inspections. To ensure that the components of On-Track machines are properly working & being maintained and the documentation of the same is being done properly, Multi tiered Inspection of "On-Track" machines is also required. For this purpose, IRTMM-2019 includes the duties of different inspecting authorities from Dy. CE/TMC to SSE/TMC with the objective to monitor the health of machines and to ensure that the concerned officials are carrying out their duties satisfactorily. For the guidance of the inspecting authorities, RDSO is dealing with the preparation and issuing the list of items to be inspected for a particular type of machine.

In this context, the Inspection check list of Rail Milling Machine (LINSINGER) is prepared on the basis of instructions as recommended in OEM manual and IRTMM-2019.

While every care has been taken to make the Inspection check list quite exhaustive, there will always be a scope for further improvement. Suggestions from the Railways in this regard will be welcome and may be sent to the undersigned for future improvement.

(Jainendra Kumar Singh) Director/Track Machine-VI RDSO/Lucknow-226011

JANUARY - 2024

# Inspection Check List for Rail Milling Machine (LINSINGER)

Name & Designation of Inspecting Official	:
Date of Inspection	:
Machine No.	:
Base Station/Division/Zone	:
Location of working	:
Block hours	:
Progress	:

Sr. No.	Items	Remarks given by inspecting officer
1.0	General :	
1.1	Name of Machine In charge	
1.2	Machine make	
1.3	Year of manufacturing	
1.4	Last attention given to engine by Service Engg.	
1.5	Last attention given to machine by Service Engg.	
1.6	First POH of Machine done on	
1.7	Last IOH of M/C done on	
1.8	Next IOH of M/C due on	
1.9	Last POH of M/C done on	
1.10	Next POH of M/C due on	
1.11	Last POH of Camp Car done on	
1.12	Next POH of Camp Car due on	
1.13	All log book filled properly	
1.14	Pending Maintenance Schedule and its	
	reason in Schedule I,II,III,IV,V,VI,VII	
1.15	Failure register updated	
1.16	Reserve stock of consumables and spare parts	


Sr. No.	Items	Prevailing Condition				
1.17	General cleanliness of the machine	Ok		To be cleaned		
1.18	Function of all locking devices	Working		Not working		
1.19	Condition of Camp Car	Satisfactory		Poor		
1.20	Condition of machine base stabling siding	Satisfactory		Poor		
1.21	Condition of rest house at stabling station if available	Satisfactory		Poor		
1.22	Provision of water & electric supply at stabling station	Available		Not available		
1.23	Pre and Post work for machine operation being done.	Yes		No		
1.24	Back-up system of machine	Working		Not working		
1.25	Condition of tools & plants (spanner, wrench etc.)	Ok		Deficient		
1.26	Material available at site {as per critical spares parts list of Rail Inspection Vehicle Harsco) issued by RDSO/LKO	Yes		No		
1.27	Condition of Gen-set of Camping Car if available.	Ok		To be attended		
History o	of Machine:					

Sr. No.	Items	Prevailing Condition						
2.0	0 ENGINE (Caterpillar C32 T2, 895 kW at 1800 RPM)							
2.1	Engine hours on date	Date	ERH					
2.2	Starting problem	Yes	No					
2.3	Condition of Emergency Stop/ Reset Button	ОК	Not ok					
2.4	Condition of Self starter	Satisfactory	to be attended					
2.5	Condition of Genset	Satisfactory	to be attended					
2.6	Condition of Compressor	Satisfactory	to be attended					
2.7	Condition of smoke	White	Black					
		Normal						
2.8	Leakage in Head gasket	Yes	No					
2.9	Electrolyte level in batteries	Ok	Less					
2.10	Specific gravity of electrolyte (min. 240)	Ok	Less					
2.11	Battery Charging System	Satisfactory	To be attended					
2.12	Condition of battery terminal	Ok	To be repaired					
2.13	Measure Each Battery Voltage & Record	Ok	Less					
2.14	Check V- belts condition and tension	Ok	To be tightened					
2.15	Condition of Engine/coolant hoses	Ok	To be replaced					
2.16	Any leakage in water hoses	Yes	No					
2.17	Leakage in fuel pump and injectors and fuel supply system	Yes	No					
2.18	Last overhauling of engine done on	Dated	ERH					
2.19	Last overhauling of air compressor	Dated	ERH					
2.20	Last change/repair of self starter done on	Dated	ERH					
2.21	Last change/repair of alternators done on	Dated	ERH					
2.22	Last overhauling of water pump done on	Dated	ERH					
2.23	Last change of batteries done on	Dated	ERH					

Sr. No.	Items	Preva		ailing Condition			
2.24	RPM of the Engine (Rated 1500	0)	Actual				
2.25	Clean/Change air filter element Hrs duration)	(250	Dated			ERH	
2.26	Change Engine Oil (250 Hrs duration)		done			Not done	
2.27	Any abnormal sound		Yes			No	
2.28	Overall condition of engine		Ok			Not Satist	factory
3.0	Mechanical						
3.1	Torque arm pivot	Greasir	ng/Lubrication		Done		Not done
3.2	Brake linkages	Greasir	ng/Lubrication		Done		Not done
3.3	Brake lever Pivot	Greasir	ng/Lubrication		Done		Not done
3.4	Bogie king pin Pivots	Greasir	ng/Lubrication		Done		Not done
3.5	All locking device	Greasir	ng/Lubrication		Done		Not done
3.6	Driving Axle gear box flange covers	Greasir	ng/Lubrication		Done		Not done
3.7	Working of rail profile system	Satisfactory		to be attended			
3.8	Working of trailing profile measurement system (TPMU)	Satisfac	ctory [		to be attended		
3.9	Working of Mobile rail measuring device	Satisfactory		to be atte	ended		
3.10	Working of Milling unit	Satisfactory		to be atte	ended		
3.11	Working of Grinding unit	Satisfac	ctory		to be atte	ended	
3.12	Condition of tool change equipment.	Satisfac	ctory [		to be atte	ended	
3.13	Condition of Copy finger	Satisfac	ctory		to be atte	ended	
3.14	Condition of Chip brushes.	Satisfac	ctory		to be atte	ended	
3.15	Condition of conveyor belt	Satisfac	ctory		to be atte	ended	
3.16	Condition of grinding dust suction	Satisfac	ctory [		to be atte	ended	
3.17	Condition of milling chips suction	Satisfactory		Satisfactory to be attended		ended	
3.18	Condition of rail inspection equipments.	Satisfactory		to be attended			
3.19	Condition of cameras if available	Satisfac	ctory		to be atte	ended	
F	Remarks:						

Sr. No.	Items	Prevailing Condition			
4.	Hydraulic				
4.1	General condition.	Ok		Leaking (location):	
4.2	Hose Clamping.	Proper		Improper	
4.3	Stock of hoses with the machine.	Adequate		Less	
4.4	Working of hyd. Pumps and Motors.	Ok		Need attention	
4.5	Working of hyd. cylinders.	Ok		Need attention	
4.6	Condition of hydraulic coolers.	Satisfactory		to be attended	
4.7	Condition of Pressure Gauges	Satisfactory		to be attended	
4.8	Condition of Filters.	Satisfactory		to be attended	
4.9	Condition of accumulator if available.	Satisfactory		to be attended	
5.	Electrical and Electronics				
5.1	Safety circuit for Engine.	Ok		Need attention	
5.2	Safety circuit for driving.	Ok		Need attention	
5.3	Condition of head & marker lights	Ok		Need attention	
5.4	Condition of flasher lights, horns.	Ok		Need attention	
5.5	Condition of Transducers, solenoids.	Ok		Need attention	
5.6	Condition of switches (joysticks), electrical cables & limit switches.	Ok		Need attention	
	electrical cables & limit switches.	Part no			
5.7	Locking indication of machines	Ok		Need attention	
5.8	Battery terminals condition.	Petroleum jelly		Done	
F 	Remarks:				

Sr. No.	Items	Prevailing Condition			
6.	Pneumatic				
6.1	Condition of Air Compressor	Ok	To be changed		
6.2	Condition of water separator and air Dryer	Ok	To be changed		
6.3	Working of Pneumatic Horns	Ok	To be changed		
6.4	Working of Pneumatic Hoses	Ok	To be changed		
6.5	Condition of Pneumatic cylinders	Ok	To be changed		
6.6	Condition and clearance of all brake shoes	Ok	To be changed		
6.7	Condition of Hand brake	Ok	To be attended		
6.8	Main reservoir pipe air pressure (Max. 9.8 bar)	Ok	Less		
6.9	Safety valve air pressure (Max. 12 bar)	Ok	Less		
F	Remarks:				

Sr. No.	Items	Prevailing Condition			
7.0	UNDER FRAME INSPECTION				
7.1	Visual Inspection of centre pivot mounting Bolts and Mounting of Suspension system Bogie Frame etc.	Ok		To be attended	
7.2	Check condition of head stock/sole bar of centre buffer coupler.	Ok		To be attended	
7.3	Visual Inspection of wheels and under gear for any infringement.	Ok		To be attended	
7.4	Inspection of Brake hanger bracket, torque support, cardan shaft hanger brackets for damages	Ok		To be attended	
7.5	Check condition of the screw coupling/CBC coupling and replace if required.	Ok		To be attended	
7.6	Visually examine the wheel tyre profile and crack with tyre profile gauge as mention in procedure for inspection of wheels (On Track Machines) issued by RDSO report no. TM-170	Ok		To be attended	
R 	emaks:				

8.0 8.1 8.2	Safety Items and Staff Matter: Safety equipment as per Annexure-I		 Condition	
8.2	Safety equipment as per Appeyure-I			
	Oalety equipment as per Annexure-i	Complete	Deficient	
	Working of locking indicator of different units	Ok	Not ok	
8.3	Competency certificate of the Operator	Current	Expired	
8.4	Working of safety Emergency Braking System of the machine	Ok	Defective	
8.5	Condition of parking brake	Ok	Defective	
8.6	Ultrasonic testing of axles of machine shall be done between 40,000 to 45,000 kms of running or three years, whichever	Done	Not done	
	is earlier.	Date		
8.7	Fire extinguisher	Current	Expired (Date)	
8.8	Strength of staff	Full	deficient	
8.9	General condition of the machine	Excellent	V. Good	
		Good	Average	
8.10	Group performance	Excellent	V. Good	
		Good	Average	
8.11	Cost awareness	Excellent	V. Good	
		Good	Average	
8.12	Safety awareness	Excellent	V. Good	
		Good	Average	
8.13	Staff due for Medical	Yes	No	
8.14	Last break down	Dated	 	ERH
R 	emaks:			

Signature of inspecting authority

# **List of Safety Equipment's**

## Annexure - I

	Annexure – I				
S. No.	Description	Quantity			
1.	Detonators in a tin case	1 box			
2.	H.S. flag red	2 nos.			
3.	H.S. flag green	1 nos.			
4.	H.S. Tri colour lamps	2 nos.			
5.	Chain & Padlock	1 set.			
6.	Clamp with Padlock	2 nos.			
7.	Jack 20t capacity with traverse.	1 no*.			
8.	Crow bars	4 nos.			
9.	Wooden blocks off sizes	8 nos.			
10.	Gauge cum level	1 no.			
11.	Rail thermometer (dial type)	1 no.			
12.	Banner flag	2 nos.			
13.	Portable Control Phone	1 no			
14.	Walkie Talkie	1 set			
15.	First Aid Box	1 no each cabin			
16.	Skids	2 nos.			
17.	Working time table of section where	1 copy			
	machine working				
18.	G&SR book with upto date amendment	1 copy			
	slips				
19.	4 cell flasher light	1 no.			
20.	Petromax /LPG lamps	1 no.			
21.	Safety helmets	For each Machine staff			
22.	Protective clothing, safety shoes and	For each Machine staff			
	safety gloves				
23.	Track Machine Manual	1 no.			
24.	Accident Manual	1 no.			
25.	Fire extinguisher	1 no each cabin			
26.	Hooter (manual)	2nos			
27.	Hydraulic Hand Pump	1 no.			
28.	Emergency pneumatic/Hydraulic hose of	1 no.			
	sizes suiting to different machines				
	(complete with end fittings)				

### Note:-

- 1. Inspecting official should wear the safety items 22 to 23 while doing the inspection.
- 2. \* Proposal is sent to Railway board vide letter no. TM/HM/1, VOL-2, dt.22/08/2019 for approval of jack, machine wise.

#### **Annexure-II**

#### **GENERAL SAFETY NOTES**

- 1. The machine is to be operated according to existing Indian Railways Rules & Regulations.
- 2. The safety of yourself and other people is most important consideration in the operation and maintenance of the machine.
- 3. Remember, the machine is a working unit, carrying delicate instruments. Therefore, the machine should not be driven at excessive speed over bad track or crossing.
- 4. Always keep your eyes open for other men working close to the machine.
- 5. Do not forget to look out for signals, switches and track obstructions.
- 6. Make sure that all protection equipment and safety devices are in place on the machine and in working order especially when it is being driven from site to site.
- 7. Always keep the machine clean. Excessive oil or grease on the machine can cause you to slip and fall and is also to potential fire hazard.
- 8. Always lock the machine before you leave. Make sure that the machine is protected in accordance with railway regulations.
- 9. Whenever you have the opportunity while waiting to get out on a job, do some of the smaller maintenance job, such as tightening loose nuts and bolts and cleaning the machine.
- 10. Do not permit unauthorized persons to operate the machine.
- 11. It is prohibited to use fire on or near the machine.
- 12. Do not tow the machine if the final drive is engaged.

# **ACKNOWLEDGEMENT**

Following officer and staff have made their valuable contributions in finalization of inspection check list for Rail Milling Machine (LINSINGER)

## RDSO:-

1.	SHRI	RAKESH TIWARI	ARE/HM/TM
2.	SHRI	SURENDRA KUMAR	SSRE/RGM/TM
3.	SHRI	PRINCE KUMAR	SSE/RGM/TM
4.	SHRI	NEERAJ SINGH	JRE/RGM/TM