

# File No. RDSO-TMM0HM(H069)/1/2022-0/o PED/TMM/RDSO

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

Research Designs & Standards Organisation Lucknow - 226 011 DID (0522) 2450115 DID (0522) 2465310



संख्याः टीएम / एच एम / एमडीय / पार्ट- ॥।

दिनांक -As signed

-	मुख्य अभियन्ता (ट्रैक मशीन)सभी क्षेत्रिय रेलवे	Chief Engineer (Track Machines) All Zonal Railways
II-	मुख्य कार्यशाला प्रबन्धक (ट्रैक मशीन) सी.पी.ओ.एच. कार्यशाला प्रयागराज , रायनापाडु, कंचरापारा, अहमदाबाद,	Chief Workshop Manager (Track Machines) CPOH Workshop, Prayagraj, Rayanapadu, Kachrapara, Ahmedabad
III-	प्रधानाचार्य भा.रे.रे.प.म.प्र.के. पीपलगांव प्रयागराज—211011	Principal, IRTMTC, PipalGaon, Prayagraj-211011
	Details of addresses are enclosed herewith.	

विषय: एम डी यू प्लाज़र मॉडल एम एफ एस - 120 (मशीन सं. 1201 – 1208 हेतु मान्य) मशीन की

निरीक्षण जॉच सुची।

Sub: Inspection check list of MDU Plasser model MFS-120 machine (applicable for

machine no. 1201-1208).

एम डी यू प्लाज़र मॉडल एम एफ एस - 120 (मशीन सं. 1201 - 1208 हेत् मान्य) मशीन की निरीक्षण जॉच सूची का मसौदा ओ• ई• एम• द्वारा प्रदत्त अनुरक्षण कैटेलॉग एवम् फील्ड में कार्यरत कर्मचारियों के सुझावों के आधार पर तैयार कर पत्र सं TM/HM/MDU/Pt-III दिनांक 10.10.2023 द्वारा 30 दिनों के लिए और अनंतिम निरीक्षण जॉच सूची पत्र सं TM/HM/MDU /Pt-III दिनांक 01.01.2024 द्वारा 15 दिनों के लिए सभी क्षेत्रीय रेलवे, सी.पी.ओ.एच. एवं भा.रे.रे.प.म.प्र.के. को जारी किया गया था। परन्तु क्षेत्रीय रेलवे, सी.पी.ओ. एच. एवं भा.रे.रे.प.म.प्र.के से अभी तक कोई भी सुझाव / टिप्पणी प्राप्त नहीं हुई है। अब निरीक्षण जॉच सूची अतिंम रूप से तैयार किया गया है, जिसकी एक प्रति आपके सूचनार्थ एवम फील्ड में कार्यरत कर्मचारियों के मार्गदर्शन हेतू संलग्न है। यद्यपि उपरोक्त सूची बनाते समय सभी सावधानियां बरती गई है, फिर भी यदि कोई त्रुटि हों तो कृपया सुधार हेत् अपने सुझावों / टिप्पणियों को ई-मेल / पत्राचार द्वारा अधोहस्ताक्षरी को अवश्य भेजे।

On the basis of maintenance manuals provided by OEM and suggestions received from field staff, draft inspection check list of MDU Plasser model MFS-120 machine (applicable for machine no. 1201-1208) had been prepared and circulated to all zonal railways, C.P.O.Hs & IRTMTC vide letter no, TM/HM/MDU/Pt.-III dated: 10.10.2023 for 30 days and further provisional inspection check list circulated vide letter no, TM/HM/MDU/Pt.-III dated: 01.01.2024 for 15 days. No comments have been received from zonal railways, C.P.O.Hs & IRTMTC till date. Now the inspection check list has been finalized. A copy of the same is enclosed herewith for your kind information and guidance of the machine staff working in the field. Although every care has been taken during preparation of above said list, however the discrepancy noticed, if any, may kindly be brought to the knowledge of the undersigned for further improvement by email/post.

Email address: hmtmmrdso@gmail.com

संलग्नक : उपरोक्त |

**AMAR** DEV

Digitally signed by AMAR DEV MAURYA Date: 2024.02.28 MAURYA 15:45:08 +05'30'

(अमर देव मौर्य)

निदेशक रेलपथ मशीन – III

# File No.RDSO-TMM0HM(H069)/1/2022-O/o PED/TMM/RDSO

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	781011	
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भारत सरकार रेल मंत्रालय

# GOVERNMENT OF INDIA MINISTRY OF RAILWAYS

# INSPECTION CHECK LIST FOR MUCK DISPOSAL UNIT (MDU) (Non retractable conveyor) (Applicable for machine no. 1201-1208)



TM Report no. TM-304 February - 2024

अनुसंधान अभिकल्प और मानक संगठन लखनऊ RESEARCH DESIGNS & STANDARDS ORGANISATION LUCKNOW- 226 011

### **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 the 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 officials concerned 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 Check list for Inspection of Muck Disposal Unit (MDU) model MFS-120 (applicable for machine no. 1201-1208) is prepared as recommended by OEM. While every care has been taken to make the Inspection Check List quite exhaustive, there will always be scope for further improvement. Suggestions from the railways in this regard will be welcome and may be sent to the undersigned for future improvement.

फ़रवरी-2024

(A.D.Maurya)
DirectorTrack Machine-III
RDSO/Lucknow-226011

# Muck Disposal Unit (MDU) (Non retractable conveyor) (Machine no. 1201-1208)

Name & Designation of Inspecting Official :

Date of Inspection :

Machine No. :

Base Station /division :

Location of working :

Block hours :

Progress :

1.	General :	
S. No	Items	Remarks given by inspecting officer
1.1.	Name of Machine In charge	
1.2.	Machine make	
1.3.	Year of manufacturing	
1.4.	First POH of Machine done on	
1.5.	Last IOH of M/C done on	
1.6.	Next IOH of M/C due on	
1.7.	Last POH of M/C done on	
1.8.	Next POH of M/C due on	
1.9.	Last POH of camping coach done on	
1.10.	Next POH of camping coach due on	
1.11.	All log books filled properly	
1.12.	Pending Maintenance Schedule	
	(I,II,III,IV,V,VI & VII ) and reasons for delay	

History of Machine:	

S.no	Items	Prevailing Condition			
2.	Engine (CUMMINS) QSB 6.7 141 KW with diesel fuel particulate filter @2300 rpm	Engine h	ours on	date-	
2.1.	Over-hauling of the Engine As per Main. Schedule	Due		Not due	
2.2.	Starting problem	No		Required attention	
2.3.	Condition of smoke	White		Black	
		Normal		Blue	
2.4.	Engine temperature during working a. CUMMINS ) QSB 6.7 Optimum	Actual	°C		
	75°c to 85° c b. Thermostat working	Ok		Required attention	
2.5.	Leakage in Head gasket	No		Yes	
				(Head no)	
2.6.	Compressor leakage	Yes		No 🗆	
2.7.	Belt condition and tension	Ok		Need attention	
2.8.	Leakage of water from water pump, seal hose and radiator	No		Need attention	
2.9.	RPM of the Engine (rated 2300)	Actual Ok		Need	
				attention	
	Tightness of engine mounting bolts	Ok		Need attention	
2.11.	Engine oil pressure				
	CUMMINS QSB 6.7 Minimum 1.5 Kg/cm² at idle rpm Minimum 2.5 Kg/cm² at rated rpm after 2 hours working	Actual Actual			
2.12.	Overall condition of Engine	Ok		Need attention	
Remar	·ks:-				

S.N.	Items	Prevailing Condition		
3.	Working Condition			
3.1.	Infringement ,if any	Yes	No	
3.2.	Hydraulic oil leakage from circuit	Location	<u>I</u>	
3.3.	Air leakage from circuit	Location		
3.4.	Overall condition of the Machine health	Excellent	Very good	
3.5.	Application of brakes	Good Satisfactory	Average  Need attention	
3.6.	Emergency backup system	Functioning	Need attention	
3.7.	Clearance between brake shoes and wheel (max.3-5mm)	Satisfactory	Need attention	
3.8.	Overall Machine working performance	Satisfactory	Need attention	
4.	Conveyor belt			
4.1.	Condition of Hydraulic hoses	Satisfactory	Need attention	
4.2.	Tightness of all nuts and bolts	Satisfactory	Need attention	
4.3.	Condition of cables for any damage	Satisfactory	Need attention	
4.4.	Check all moving parts for proper greasing	Satisfactory	Need attention	
4.5.	Condition of leakage through valve seals	Satisfactory	Need attention	

S. No.	Items	Agent / Description	F	Prevailin	g Condition
5.	Oil/water/level in Tank/Co	ntainer			
5.1.	Hydraulic oil	Shell Tellus S2 V68 250 Ltrs	OK		Need top up
5.2.	Diesel Fuel tank	HSD 1350 Ltrs	OK		Need top up
5.3.	Engine Lube oil changed on due date (After every 500 hrs)	CI4+ Premium Blue 15W40	Yes		No
5.4.	Engine cooling agent	DCA4 (Premix) 50 Ltrs	OK		Need top up
5.5.	Grease	Grease Shell Gadus S2 or equivalent	OK		Need top up
5.6.	Hopper Belt Gearbox	Shell Spirax G80W-90 4x4 Ltrs	OK		Need top up
5.7.	Air Oiler	Shell Tellus S2 V68 250 ml	OK		Need top up
5.8.	Chain Lubricant	Shell Spirax G80W-90 57 Ltrs	OK		Need top up
5.9.	Pump Gearbox	Servo CF4 15W40 4 Ltrs	OK		Need top up
6.	Filters		l		
6.1.	Cleaning of Air Cleaner filte (Cleaned after every 200 and otherwise change afte	hrs or on dirt indication	Done		Not done
6.2.	Change of air cleaner inner ( after every 1000 engine hi		Done		Not done
6.3.	Change of air drier filter of (after every 500 engine hr		Done		Not done
6.4.	Change of engine oil filters (After every 500 hrs )	,	Done		Not done
6.5.	Change of diesel filters (To be done after every 500)	) hrs)	Done		Not done
6.6.	Change of suction filter (after every 500 hrs or on c	hoke indication)	Done		Not done
6.7.	Change of return line filter (after every 500 hrs or on c	hoke indication)	Done		Not done

S. No.	Items	Agent / Description	Prevailing Condition		
7.	Lubrication (Oiling & Grea	sing as per maintenance	e schedu	le)	
7.1.	All balls and socket pivot point	Oil by Servo system- 100	Done		Not done
7.2.	Brake linkage, brake lever bearing & Brake rod	Grease Shell Alvania RL2	Done		Not done
8.	Electrical and Electronics				
8.1.	Condition of battery termina	ls	Ok		Need attention
8.2.	Condition of batteries		Ok		Not satisfactory
8.3.	Electrolyte level in batteries embedded in electrolyte)	(Plates should be	Ok		Need top up
8.4.	Specific gravity of electrolyte	e (min 1.24)	Ok		Less
8.5.	Condition of self starter		Ok		Need attention
8.6.	Condition of alternator		Ok		Need attention
8.7.	Safety circuit for Engine		Ok		Need attention
9.	Gauges and meters worki	ng status			
9.1.	Condition of Engine Oil Pres	ssure gauge	Ok		Need attention
9.2.	Condition of Engine Temper	rature gauge	Ok		Need attention
9.3.	Condition of Battery chargin	g meter	Ok		Need Attention
9.4.	Condition of Battery voltage	e meter	Ok		Need attention
9.5.	Condition of Pneumatic pres	ssure gauge	Ok		Need Attention
9.6.	Condition of Hydraulic oil pr	essure gauge	Ok		Need Attention
9.7.	Condition of Hydraulic oil te	mperature gauge	Ok		Need Attention

S. No.	Items	Prevailing Condition			
10.	Pneumatic				
10.1.	Condition of brake shoe (worn out)	Satisfactory		To be Replaced	
10.2.	Condition of pneumatic hoses	Satisfactory		To be Replaced	
11.	Hydraulic Pressure and Operation				
11.1.	System Pressure 240 bar	OK		To be adjusted	
11.2.	Air pressure 7.5-8.5 Kg/cm <sup>2</sup>	OK		To be adjusted	
11.3.	Hydraulic Oil Temperature after working of machine for 2 hrs. (Max limit 76°c)	°C			
12.	Under Frame Inspection				
12.1.	Under Frame				
12.1.1.	Condition of centre pivot mounting Bolts and Mounting of Suspension system ,Bogie frame etc.	Ok		To be attended	
12.1.2.	Condition of shock absorber-	Ok		To be attended	
12.1.3.	Condition of centre pivot cover.	Ok		To be attended	
12.1.4.	Condition of centre buffer coupler head stock/sole bar.	Ok		To be attended	
12.2.	Bogie frame & Wheels				
12.2.1.	Visual and Physical inspection of wheel shall be done at a frequency of once in a year or after every 1000 engine running hours whichever is earlier.	Done		Not done	
12.2.2.	Visual Inspection of wheels and under gear for any infringement.	Ok		To be atter	nded
12.2.3.	Condition of all the welding locations.	Ok		To be atter	nded
12.2.4.	Condition of the suspension brackets.	Ok		To be atter	nded

12.3.	Brake Rigging		
12.3.1.	Condition of the rubbing plates.	Ok	To be attended
12.3.2.	Condition of brake beams breakages/ damages.	Ok [	To be attended
12.3.3.	Condition of brake hanger bracket, torque support for damages.	Ok [	To be attended
12.4.	Draw Gear		
12.4.1.	Condition of the screw coupling/CBC coupling and replace if required.	Ok [	To be attended
12.4.2.	Condition of draw hook, draw bars, rubber pads for damages.	Ok	To be attended
12.4.3.	Wear at any section on draw hook (should not exceed 10 mm).	Ok [	To be attended
12.4.4.	Wear on screw coupling shackle pins, trunion pins, shackle/link holes and draw hook holes (should not exceed 3mm).	Ok [	To be attended
12.4.5.	Condition of draw beam and locking pins on it.	Ok [	To be attended
12.4.6.	Condition of draft key locking pins.	Ok [	To be attended
12.5.	Buffing Gear		
12.5.1.	Condition of 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
12.5.2.	Condition of corrosion of sole bar and other under frame member with track tight or inspection lamp.	Ok [	To be attended
12.5.3.	Condition of the buffers casing for cracks/damages.	Ok [	To be attended
12.6.	Running Gear and Wheels		
12.6.1.	Condition of axle box covers.	Ok	To be attended
12.6.2.	Condition of wheel tread for shattered rim, spread rim, shelled tread, thermal cracks, heat checks	Ok	To be attended
12.6.3.		Done	Not done

13.	Safety Items and Staff Matter:			
13.1.	Safety equipment as per Annexure-I	Available	Deficient	
13.2.	Working of safety Emergency Braking System of the machine	Ok	Defective	-
13.3.	Competency certificate of SSE/JE	Current	Expired	
13.4.	Strength of staff.	Full	deficient	_
13.5.	Staff availing rest on due date.	Yes	No	
13.6.	Staff amenities (As per latest correction slip).	Available	deficient	
13.7.	Safety awareness.	Excellent	V. Good	_
		Good	Average	
13.8.	Staff due for Medical.	Yes	No	
13.9.	Condition of machine base siding.	Satisfactory	Not satisfactory	

Signature of inspecting authority

### **List of Safety Equipments**

S.N.	Description	Quantity	Sta	itus
1.	Detonators in a tin case	1 box	Available	Deficient
2.	H.S. flag red	2 nos.	Available	Deficient
3.	H.S. flag green	1 nos.	Available	Deficient
4.	H.S. Tri Colour lamps/LED lamps	2 nos.	Available	Deficient
5.	Chain & Padlock	1 set	Available	Deficient
6.	Point Clamp with Padlock	2 nos.	Available	Deficient
7.	Tail lamp	1 no.	Available	Deficient
8.	50 t jack traverse type*	1 no.	Available	Deficient
9.	20 t jack traverse type*	1 no.	Available	Deficient
10.	Crow bars	2nos.	Available	Deficient
11.	Wooden blocks off sizes	8 nos.	Available	Deficient
12.	Banner flag	2 nos.	Available	Deficient
13.	Walki talki with frequency of SM, Guard and Loco Pilots	1 nos.	Available	Not available
14.	First Aid Box	1 no	Available	Deficient
15.	Skids	4 nos.	Available	Not available
16.	Working time table of section where machine working	1 copy	Available	Not available
17.	G&SR book with up to date amendment slips	1 copy	Available	Not available
18.	4 cell flasher light/ LED torch,6watt	1 no.	Available	Not available
19.	LED Petromax	1 no.	Available	Not available
20.	Safety helmets	Each Machine staff	Available	Deficient
21.	Protective clothing, safety shoes and safety gloves	Each Machine staff	Available	Deficient
22.	Track Machine Manual with up to date correction slips	1 no.	Available	Not available
23.	Accident Manual with up to date correction slips	1 no.	Available	Not available
24.	Fire extinguisher	1 no.(in each cabin)	Available	Deficient
25.	Hooter (Manual/ Remote)	2 nos.	Available	Not available
26.	Emergency pneumatic/Hydraulic hose off sizes	1 no.	Available	Not available
27.	Machine specific equipment (if any)	1 set	Available	Deficient

Note-\* Proposal is sent to Railway board vide letter no. TM/HM/1, VOL-2 dated 22/08/2019 for approval of jack (machine wise).

### **GENERAL SAFETY NOTES**

- 1. The machine has to be operated according to existing Indian Railways rules and regulations.
- 2. The safety of all machine staff is most important in the operation and maintenance of the machine.
- 3. Always alert the men working close to the machine.
- 4. Do not forget to look out for signals and obstructions on track.
- 5. Make sure that all protection equipment and safety devices are in place on the machine and in working order especially when it is being transferred from site to site.
- 6. Always keep the machine clean. Excessive oil or grease on the machine can make surface slippery and is also potential to fire hazard.
- 7. Always lock the machine before leaving. Make sure that the machine is protected in accordance with Railways regulations.
- 8. Wherever there is an opportunity while waiting to go out for a job, do some of the smaller maintenance job, such as tightening loose nut & bolts and cleaning the machine.
- 9. Do not permit unauthorized persons to operate the machine.
- 10. It is prohibited to use fire on or near the machine.
- 11. Always wear proper dress, safety shoes and helmet while operation of the machine.

## **ACKNOWLEDGEMENT**

Following officers and staff have made their valuable contributions in preparation of Inspection Check List for MUCK DISPOSAL UNIT (MDU) (non retractable conveyor).

### **RAILWAYS**

1.	SRI	Rajiv Shinde	SSE/TM/KYN/CR
RDSO			
1.	S/SRI	Rakesh Tiwari	ARE/TM
2.	67 67	A.K.Srivastava	SSE/TM
3.	67 67	Ravi Kumar	SSRE/Engg