



भारत सरकार  
रेल मंत्रालय

**GOVERNMENT OF INDIA  
MINISTRY OF RAILWAYS**

**INSPECTION CHECK LIST  
OF  
MULTIPURPOSE TRACK TAMPING MACHINE  
(UNIMAT COMPACT - M)**

**REPORT NO. TM- 105  
(Rev.1)**

**MARCH-2021**

अनुसंधान अभिकल्प और मानक संगठन लखनऊ – 226011  
**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 for Multipurpose Track Tamping Machine (Unimat Compact - M) Rev.-1 is prepared as recommended by OEM and suggestions obtained from machine staff.

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.

March - 2021

(Om Prakash)  
Director/Track Machine-III  
RDSO/Lucknow-226011

# MAINTENANCE SCHEDULE MANUAL FOR MULTI PURPOSE TRACK TAMPING MACHINE (UNIMAT COMPACT - M)

**Name & Designation of Inspecting Official :**

**Date of Inspection :**

**Machine No. :**

**Base Station/division :**

**Location of working :**

**Block hours :**

**Progress :**

Sr. No	Items	Remarks given by inspecting officer
<b>1.0</b>	<b>General :</b>	
1.1	Name of supervisor	
1.2	Machine make	
1.3	Year of manufacturing	
1.4	Last attention given to engine by Service Eng.	
1.5	Last attention given to machine by Service Eng.	
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 camping coach done on	
1.12	Next POH of camping coach 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	

**History of Machine:**-----  
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Sr. No	Items	Prevailing Condition	
1.17	General cleanliness of the machine	Ok <input type="checkbox"/>	To be cleaned <input type="checkbox"/>
1.18	Function of locking devices	Working <input type="checkbox"/>	Not working <input type="checkbox"/>
1.19	Condition of camping coach	Satisfactory <input type="checkbox"/>	Poor <input type="checkbox"/>
1.20	Condition of machine base stabling siding	Satisfactory <input type="checkbox"/>	Poor <input type="checkbox"/>
1.21	Condition of rest house at stabling station if available	Satisfactory <input type="checkbox"/>	Poor <input type="checkbox"/>
1.22	Provision of water & electric supply at stabling station	Available <input type="checkbox"/>	Not available <input type="checkbox"/>
1.23	Pre and Post work for machine operation being done.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
1.24	Back-up system of machine	Working <input type="checkbox"/>	Not working <input type="checkbox"/>
1.25	Condition of tools & plants (spanner, wrench etc.)	Ok <input type="checkbox"/>	To be replaced <input type="checkbox"/>
1.26	Material available at site {as per critical spares parts list of Multipurpose Track Tamping Machine (Unimat Compact - M)) issued by RDSO/LKO}	Yes <input type="checkbox"/>	No <input type="checkbox"/>
1.27	Condition of Genset of Camping Coach if available	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>

**History of Machine:**-----  
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Sr. No	Items	Prevailing Condition	
<b>2.0</b>	<b>Engine CUMMINS NTA 855L-BC 339 BHP@2100 RPM</b>		
2.1	Engine hours on date	Date.....	_____ ERH
2.2	Starting problem	Yes <input type="checkbox"/>	No <input type="checkbox"/>
2.3	Condition of Self starter	Satisfactory <input type="checkbox"/>	to be attended <input type="checkbox"/>
2.4	Condition of Compressor	Satisfactory <input type="checkbox"/>	to be attended <input type="checkbox"/>
2.5	Condition of smoke	White <input type="checkbox"/> Normal <input type="checkbox"/>	Black <input type="checkbox"/>
2.6	Leakage in Head gasket	Yes <input type="checkbox"/> Head no .....	No <input type="checkbox"/>
2.7	Electrolyte level in batteries	Ok <input type="checkbox"/>	Less <input type="checkbox"/>
2.8	Specific gravity of electrolyte (min. 1240)	Ok <input type="checkbox"/>	Less <input type="checkbox"/>
2.9	V- belts condition and tension	Ok <input type="checkbox"/>	To be tightened <input type="checkbox"/>
2.10	Condition of Engine Hoses	Ok <input type="checkbox"/>	To be replaced <input type="checkbox"/>
2.11	Leakage in water hoses	Yes <input type="checkbox"/>	No <input type="checkbox"/>
2.12	Leakage in fuel pump and injectors and fuel supply system	Yes <input type="checkbox"/>	No <input type="checkbox"/>
2.13	Battery Charging System	Satisfactory <input type="checkbox"/>	To be attended <input type="checkbox"/>
2.14	Condition of battery terminal	Ok <input type="checkbox"/>	To be repaired <input type="checkbox"/>
2.15	Air brake pressure (Max. 3.8 bar)	Ok <input type="checkbox"/>	Less <input type="checkbox"/>
2.16	Last overhauling of engine done on	Dated _____	.....ERH
2.17	Last overhauling of air compressor	Dated _____	.....ERH
2.18	Last change/repair of self starter done on	Dated _____	.....ERH
2.19	Last change/repair of alternators done on	Dated _____	.....ERH
2.20	Last overhauling of water pump done on	Dated _____	.....ERH
2.21	Last change of batteries done on	Dated _____	.....ERH
2.22	Calibration of fuel injection pump (to be done after every 2000 hrs)	done <input type="checkbox"/>	due <input type="checkbox"/>
2.23	RPM of the Engine (Rated 2100)	Actual-----	
2.24	Calibration of Fuel Injectors (to be done after every 2000 hrs)	done <input type="checkbox"/>	due <input type="checkbox"/>

Sr. No	Items	Prevailing Condition	
2.25	Change of Air Cleaner filters (1000 Hrs duration)	Dated <input type="checkbox"/>	ERH <input type="checkbox"/>
2.26	Change of engine Lub. oil (300 Hrs duration)	done <input type="checkbox"/>	Not done <input type="checkbox"/>
2.27	Change of lub oil filter (300 Hrs duration)	done <input type="checkbox"/>	Not done <input type="checkbox"/>
2.28	Engine oil pressure	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
	a) 1.5 Kg/cm <sup>2</sup> at idle rpm b) 2.5 Kg/ cm <sup>2</sup> on load after 2 hours working	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
2.29	Engine temperature after two hours working (Optimum range 75 <sup>0</sup> C to 85 <sup>0</sup> C)	.....°C	
2.30	Any abnormal sound	Yes <input type="checkbox"/>	No <input type="checkbox"/>
2.31	Overall condition of engine	Ok <input type="checkbox"/>	Not Satisfactory <input type="checkbox"/>

Remarks: -.....  
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Sr. No.	Items	Description	Prevailing Condition	
3.0	Oil/Water Level in Tank / Container			
3.1	Hydraulic oil tank	Shell Tellus-68 or equivalent	Ok <input type="checkbox"/>	Less <input type="checkbox"/>
3.2	Radiator	Coolant	Ok <input type="checkbox"/>	Less <input type="checkbox"/>
3.3	ZF gear box	API CF4 15W 40	Ok <input type="checkbox"/>	Less <input type="checkbox"/>
3.4	Diesel tank	HSD oil	Ok <input type="checkbox"/>	Less <input type="checkbox"/>
3.5	Distribution gear box	SAE -90 or equivalent	Ok <input type="checkbox"/>	Less <input type="checkbox"/>
3.6	Engine lube oil	15 W40 API CF4 or equivalent	Ok <input type="checkbox"/>	Less <input type="checkbox"/>
3.7	Axle gear boxes	SAE -90 or equivalent	Ok <input type="checkbox"/>	Less <input type="checkbox"/>
3.8	Vibration shaft main bearing of Tamping Unit	Shell Tellus-68 or equivalent	Ok <input type="checkbox"/>	Less <input type="checkbox"/>
3.9	Hydraulic oil tanks for tamping unit arm bearing	Shell Tellus-68 or equivalent	Ok <input type="checkbox"/>	Less <input type="checkbox"/>
3.10	Hydraulic oil tanks for lubrication of guide column	Shell Tellus-68 or equivalent	Ok <input type="checkbox"/>	Less <input type="checkbox"/>
3.11	Air oiler	15 W40 API CF4or equivalent	Ok <input type="checkbox"/>	Less <input type="checkbox"/>
4.0	Lubrication ( As per schedule )			
4.1	Tamping Bank			
4.1.1	Pivot of Tamping tool adjusting cylinders	Greasing	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
4.1.2	Tamping unit sliding bushes	Greasing	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
4.1.3	35 mm pins of tamping cylinders	Greasing	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
4.1.4	Guide bushes of front, middle and rear feeler rods	15 W40 API CF4 or equivalent	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
4.1.5	Guide rod of front towel lining cord wire companions system	15 W40 API CF4 or equivalent	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
4.1.6	Rollers & Guide rod of middle feeler	15 W40 API CF4 or equivalent	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
4.1.7	Guide rollers of both side leveling cord cord wire	15 W40 API CF4 or equivalent	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
4.1.8	Guide bushes of middle feeler	15 W40 API CF4 or equivalent	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
4.1.9	Vibration shaft main bearing	Shell Tellus-68 or equivalent	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
4.1.10	Tamping arm bearings	Greasing	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
4.2	Lifting/Lining Unit:			
4.2.1	Lifting unit sliding guide column	Greasing	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
4.2.2	Lining rollers	Greasing	Done <input type="checkbox"/>	Not done <input type="checkbox"/>

Sr. No.	Items	Description	Prevailing Condition	
4.2.3	Hook up & down guide bush	Greasing	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
4.2.4	Hook in/out guide rods & bush	Greasing	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
4.2.5	Lining cylinder pivot	Greasing	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
4.2.6	Longitudinal guide assembly	Greasing	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
<b>4.3</b>	<b>Cardon Shaft:</b>			
4.3.1	Engine to ZF gear box	Greasing	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
4.3.2	ZF to Distributor gear box	Greasing	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
4.3.3	Distributor gear box to axle gear box	Greasing	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
4.3.4	Axle 2 to Axle 1	Greasing	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
4.3.5	U. J. cross and spline joints.	Greasing	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
<b>4.4</b>	<b>Miscellaneous</b>			
4.4.1	Torque arm pivot	Greasing	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
4.4.2	Brake linkages	Greasing	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
4.4.3	All pivot joints of Trolleys.	Greasing	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
4.4.4	Brake lever Pivot	Greasing	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
4.4.5	Bogie king pin Pivots	Greasing	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
4.4.6	Chord displacement assembly	Greasing	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
4.4.7	Battery terminals	Petroleum jelly	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
4.4.8	All locking device	Greasing	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
4.4.9	Driving Axle gear box flange covers	Greasing	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
4.4.10	System Pressure	150 bar	Ok <input type="checkbox"/>	Less <input type="checkbox"/>
4.4.11	Vibration Pressure	185 bar	Ok <input type="checkbox"/>	Less <input type="checkbox"/>
4.4.12	Squeezing Pressure	90-130 bar	Ok <input type="checkbox"/>	Less <input type="checkbox"/>
4.4.13	Accumulator Pressure	85 bar	Ok <input type="checkbox"/>	Less <input type="checkbox"/>
4.4.14	Condition of hyd. Pumps and Motors	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>	
4.4.15	Condition of hyd. cylinders.	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>	
4.4.16	Condition of cabin & axle support cylinders.	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>	
4.4.17	Condition of Tamping Banks.	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>	



Sr. No.	Items	Prevailing Condition			
4.4.18	Last replacement of hyd. Suction filters(Every 500 hrs.)	Replaced timely	<input type="checkbox"/>	Due	<input type="checkbox"/>
4.4.19	Last replacement of hyd. Return filters. (Every 200 hrs.)	Replaced timely	<input type="checkbox"/>	Due	<input type="checkbox"/>
4.4.20	Last replacement of servo filters (Every 200 hrs.)	Replaced timely	<input type="checkbox"/>	Due	<input type="checkbox"/>
4.4.21	Last replacement of proportional filter (Every 200 hrs.)	Replaced timely	<input type="checkbox"/>	Due	<input type="checkbox"/>
4.4.22	Last replacement of ZF filter (Every 500 hrs.)	Replaced timely	<input type="checkbox"/>	Due	<input type="checkbox"/>

Remarks: -.....  
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Sr. No	Items	Prevailing Condition	
<b>5.</b>	<b>Hydraulic Hoses:</b>		
5.1	General condition	Ok <input type="checkbox"/>	Leaking (location): .....
5.2	Clamping	Proper <input type="checkbox"/>	Improper <input type="checkbox"/>
5.3	Stock of hoses with the machine	Adequate <input type="checkbox"/>	Less <input type="checkbox"/>
5.4	Stock of hose fittings	Adequate <input type="checkbox"/>	Less <input type="checkbox"/>
<b>6.</b>	<b>Electrical and Electronics</b>		
6.1	Safety circuit for Engine	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
6.2	Safety circuit for driving	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
6.3	Condition of head & marker lights	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
6.4	Condition of flasher lights, horns	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
6.5	Condition of Transducers, solenoids	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
6.6	Condition of switches (joysticks), Electrical cables & limit switches.	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
6.7	Condition of Servo, Proportional & Logic valves	Ok <input type="checkbox"/>	To be changed <input type="checkbox"/>
6.8	Requirement of PCB if any	Part no. ....	
6.9	Locking indication of machines	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
<b>7.</b>	<b>Pneumatic</b>		
7.1	Pneumatic working pressure (7.0 bar)	Ok <input type="checkbox"/>	To be adjusted <input type="checkbox"/>
7.2	Condition of Air unloader	Ok <input type="checkbox"/>	To be changed <input type="checkbox"/>
7.3	Condition of water separator and air oiler	Ok <input type="checkbox"/>	To be changed <input type="checkbox"/>
7.4	Condition of Pn. Horns	Ok <input type="checkbox"/>	To be changed <input type="checkbox"/>
7.5	Condition of Pn. Hoses & its reserve stock.	Ok <input type="checkbox"/>	To be changed <input type="checkbox"/>
7.6	Condition of Pneumatic cylinders	Ok <input type="checkbox"/>	To be changed <input type="checkbox"/>
7.7	Condition and clearance of all brake shoes	Ok <input type="checkbox"/>	To be changed <input type="checkbox"/>
7.8	Condition of air cooling coil	Ok <input type="checkbox"/>	To be changed <input type="checkbox"/>
<b>8.</b>	<b>Block Working:</b>		
8.1	Location of the block	Km/TP .....	
8.2	Block section & up & down rd		
8.3	Pre & post tamping operations	Being done <input type="checkbox"/>	Not done <input type="checkbox"/>
8.4	Condition of tamping tools	Ok <input type="checkbox"/>	To be changed <input type="checkbox"/>
8.5	Condition of both hooks toe	Ok <input type="checkbox"/>	To be changed <input type="checkbox"/>
8.6	Condition of ballast	Caked <input type="checkbox"/>	Clean <input type="checkbox"/>
8.7	Duration of block	(From ..... to.....)=.....ERH	
8.8	Progress	.....KM	

Sr. No	Items	Prevailing Condition	
8.9	Depth of clean cushion (min. required 150 mm)	.....MM	
<b>9.0</b>	<b>UNDER FRAME INSPECTION</b>		
<b>9.1</b>	<b>UNDER FRAME</b>		
9.1.1	Visual Inspection of centre pivot mounting Bolts and Mounting of Suspension system ,Bogie Frame etc.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
9.1.2	Examine the shock absorber for damages.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
9.1.3	Visual Inspect centre pivot cover.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
9.1.4	Check condition of head stock/sole bar of centre buffer coupler.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
<b>9.2</b>	<b>BOGIE FRAME &amp; WHEELS</b>		
9.2.1	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 <input type="checkbox"/>	Not done <input type="checkbox"/>
9.2.2	Visual Inspection of wheels and under gear for any infringement.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
9.2.3	Visually inspect all the welding locations.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
9.2.4	Visually check the suspension brackets.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
<b>9.3</b>	<b>Brake Rigging</b>		
9.3.1	Examine brake beams breakages/ damages.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
9.3.2	Inspection of Brake hanger bracket , torque support, cardan shaft hanger brackets for damages	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
<b>9.4</b>	<b>Draw Gear</b>		
9.4.1	Check condition of the screw coupling/CBC coupling and replace if required.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
9.4.2	Examine draw hook, draw bars, rubber pads for damages	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
9.4.3	Ensure that wear at any section on draw hook should not exceed 10 mm.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
9.4.4	Ensure that wear on screw coupling shackle pins, trunion pins, shackle/link holes and draw hook holes should not exceed 3 mm.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
9.4.5	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 <input type="checkbox"/>	To be attended <input type="checkbox"/>

Sr. No	Items	Prevailing Condition	
<b>9.5</b>	<b>Buffing Gear</b>		
9.5.1	Visually examine the buffers casing for cracks/damages.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
9.5.2	Examine for corrosion of sole bar and other under frame member with track light or inspection lamp.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
<b>10.0</b>	<b>Safety Items and Staff Matter:</b>		
10.1	Safety equipment as per Annexure-I	Complete <input type="checkbox"/>	Deficient <input type="checkbox"/>
10.2	Working of locking indicator of different units	Ok <input type="checkbox"/>	Not ok <input type="checkbox"/>
10.3	Competency certificate of the Operator	Current <input type="checkbox"/>	Expired <input type="checkbox"/>
10.4	Working of safety Emergency Braking System of the machine	Ok <input type="checkbox"/>	Defective <input type="checkbox"/>
10.5	Strength of staff	Full <input type="checkbox"/>	deficient <input type="checkbox"/>
10.6	General condition of the machine	Excellent <input type="checkbox"/>	V. Good <input type="checkbox"/>
		Good <input type="checkbox"/>	Average <input type="checkbox"/>
10.7	Group performance	Excellent <input type="checkbox"/>	V. Good <input type="checkbox"/>
		Good <input type="checkbox"/>	Average <input type="checkbox"/>
10.8	Cost awareness	Excellent <input type="checkbox"/>	V. Good <input type="checkbox"/>
		Good <input type="checkbox"/>	Average <input type="checkbox"/>
10.9	Safety awareness	Excellent <input type="checkbox"/>	V. Good <input type="checkbox"/>
		Good <input type="checkbox"/>	Average <input type="checkbox"/>
10.10	Staff due for Medical	Yes <input type="checkbox"/>	No <input type="checkbox"/>
10.11	Last break down	Dated .....	.....ERH

Remaks:.....  
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**Signature of inspecting authority**

## List of Safety Equipments

S. No.	Description	Quantity	Available Yes (√)/No (x)
1.	Detonators in a tin case	1 box	
2.	H.S. flag red	2 nos.	
3.	H.S. flag green	1 no.	
4.	H.S. Tri colour lamps/LED torch	2 nos.	
5.	Chain & Padlock	1 set	
6.	Switch Clamp with Padlock (point clamp)	2 nos.	
7.	50 t jack with traverse*	1 no.	
8.	20 t jack with traverse*	1 no.	
9.	Crow bars	2 nos.	
10.	Wooden blocks of different sizes	8 nos.	
11.	Rail thermometer (dial type)	1 no.	
12.	Banner flag	2 nos.	
13.	Walkie Talkie with same frequency of SM, guard and loco pilots	2 nos.	
14.	Portable telephone	1 no.	
15.	First Aid Box	1 no.	
16.	Skids	4 nos.	
17.	Working time table of section where machine working	1 copy	
18.	G&SR book with up to date amendment slips	1 copy	
19.	4 cell flasher light/ LED torch, 6 watt (rechargeable)	1 no.	
20.	Safety helmets	For each Machine staff	
21.	Protective clothing, safety shoes and safety gloves	For each Machine staff	
22.	High visibility warning clothes	For each Machine staff	
23.	Track Machine Manual with up to date correction slip	1 no.	
24.	Accident Manual	1 no.	
25.	Fire extinguisher	1 no.	
26.	Hooter (Manual/Remote)	2 nos.	
27.	Hydraulic Hand Pump	1 no.	
28.	Tail Lamp	1 no.	
29.	Emergency pneumatic/Hydraulic hose off sizes (complete with end fittings)	1 set	
* List of jacks sent to Railway Board vide letter no. TM/HM/01 Vol-II dated:-22.08.2019 for approval.			

**Note:** Inspecting official should wear the protective equipment when doing the inspection of machine.

## ACKNOWLEDGEMENT

Following officer and staff have made their valuable contributions in finalization of inspection check list for Multipurpose Track Tamping Machine (Unimat Compact - M)

### **RAILWAYS:-**

1. Shri Ram Saran Verma SSE/TMC/NCR
2. Shri Manoj Kumar Gupta SSE/TMC/WCR

### **RDSO:-**

1. Shri Muslim Ahmad ARE/TM
2. Shri V.P. Srivastava SSE/TM
3. Shri Surendra Kumar SSRE/TM