



भारत सरकार
रेल मंत्रालय

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS

वर्कसाइट टैम्पिंग मशीन वी०पी०आर(02 M) की निरीक्षण जांच सूची
(फ्लैट कार रहित)
“कलुगापुटमाश”

Inspection Check List for Worksite Tamping Machine, VPR-02M
(without flat car)
“kalugaputmash”

रिपोर्ट संख्या—टी.एम.—183
Report No.TM - 183

मार्च—2015
March -2015

अनुसंधान अभिकल्प और मानक संगठन
लखनऊ—226011
RESEARCH DESIGNS & STANDARDS ORGANISATION
LUCKNOW- 226 011

Inspection of Worksite Tamping Machine,VPR-02M

Name & Designation of Inspecting Official :

Date of Inspection :

Machine No. :

Base Station /division :

Working between stations : From-----To-----

Location of working : Km-----To Km -----

Block hours :

Progress :

1. General :

S. No	Items	Remarks given by inspecting officer
I.	Name of supervisor	
II.	Machine make	
III.	Year of manufacturing	
IV.	First POH of Machine done on	
V.	Last IOH of M/C done on	
VI.	Next IOH of M/C due on	
VII.	Last POH of M/C done on	
VIII.	Next POH of M/C due on	
IX.	Last POH of camping coach done on	
X.	Next POH of camping coach due on	
XI.	All log book filled properly	
XII.	Pending Maintenance Schedule and reasons Schedule I,II,III,IV,V,VI,VII	

History of Machine:-----

S.No.	Items	Prevailing Condition	
2.	Mode of Working		
I.	Pre Tamping Operations being Done	Yes <input type="checkbox"/>	No <input type="checkbox"/>
II.	Post Tamping Operations being Done	Yes <input type="checkbox"/>	No <input type="checkbox"/>
III.	Depth of Clean Cushion under Sleeper (required min. is 150 mm)	Ok <input type="checkbox"/>	Less <input type="checkbox"/>
IV.	Condition of Ballast	Caked <input type="checkbox"/>	Clean <input type="checkbox"/>
V.	Lining working mode	smoothing <input type="checkbox"/>	design <input type="checkbox"/>
VI.	Levelling working mode	proportional <input type="checkbox"/>	design <input type="checkbox"/>
VII.	Method of input data	Manual <input type="checkbox"/>	computer <input type="checkbox"/>
VIII.	Parameter measured by computer	Yes <input type="checkbox"/>	No <input type="checkbox"/>
3.	Staff		
I.	Strength of staff	Full <input type="checkbox"/>	Deficient <input type="checkbox"/>
II.	Safety awareness	Excellent <input type="checkbox"/> Good <input type="checkbox"/>	V. Good <input type="checkbox"/> Average <input type="checkbox"/>
III.	Competency certificate of operator	Current <input type="checkbox"/>	Expired <input type="checkbox"/>
IV.	Staff due for Medical	Yes <input type="checkbox"/>	No <input type="checkbox"/>
V.	Staff due for training	Yes <input type="checkbox"/>	No <input type="checkbox"/>
VI.	Staff availing rest on due date	Yes <input type="checkbox"/>	No <input type="checkbox"/>
VII.	Staff amenities(As per latest correction slip)	Available <input type="checkbox"/>	deficient <input type="checkbox"/>
VIII.	Condition of machine base siding	Satisfactory <input type="checkbox"/>	Not satisfactory <input type="checkbox"/>

Remarks.

4.Safety Items:				
S. No.	Items	Prevailing Condition		
I.	Safety equipment as per Annexure-I	Available	<input type="checkbox"/>	deficient <input type="checkbox"/>
II.	Working of safety Emergency Braking System of the machine	Ok	<input type="checkbox"/>	Defective <input type="checkbox"/>
III.	Fire extinguisher	Date	<input type="checkbox"/>	Date expired <input type="checkbox"/>
IV.	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"/>
V.	Ultrasonic testing of axles of machine shall be done between 40,000 to 45,000 kms of running engine hours or three years, whichever is earlier.	Done	<input type="checkbox"/>	Not done <input type="checkbox"/>

5.Oil/water/level in tank/container				
S. No.	Items	Agent/Description	Prevailing Condition	
I.	Hydraulic oil	Shell Tellus T-46	OK	<input type="checkbox"/> Need top up <input type="checkbox"/>
II.	Radiator	Water with coolant	OK	<input type="checkbox"/> Need top up <input type="checkbox"/>
III.	Transmission gear box	SWA 32	OK	<input type="checkbox"/> Need top up <input type="checkbox"/>
IV.	Fuel	HSD Oil	OK	<input type="checkbox"/> Need top up <input type="checkbox"/>
V.	Intermediate drive shaft Housing	SAE-90	OK	<input type="checkbox"/> Need top up <input type="checkbox"/>
VI.	Reduction Gear Box	SAE-90	OK	<input type="checkbox"/> Need top up <input type="checkbox"/>
VII.	Engine lube oil	15W-40 CF4 Premium blue	OK	<input type="checkbox"/> Need top up <input type="checkbox"/>
VIII.	Funk/pump gear box	SAE90	OK	<input type="checkbox"/> Need top up <input type="checkbox"/>
IX.	Driving Axle Gear Box I	SAE-90	OK	<input type="checkbox"/> Need top up <input type="checkbox"/>
X.	Driving Axle Gear Box II	SAE-90	OK	<input type="checkbox"/> Need top up <input type="checkbox"/>
XI.	Compressor lube oil (if used)	SP-100	OK	<input type="checkbox"/> Need top up <input type="checkbox"/>

Remarks.

6. Lubrication (Oiling & Greasing as per Maintenance Schedule)

S.No.	Item	Agent / Description	Prevailing Condition	
6.1 Tamping units				
I.	Vibration shaft main bearing LHS	Grease shell alvania RL2	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
II.	Vibration shaft main bearing RHS	Grease shell alvania RL2	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
III.	Tamping unit guide column LHS	Grease shell alvania RL2	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
IV.	Tamping unit guide column RHS	Grease shell alvania RL2	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
V.	Connecting rod bearing of squeezing cylinder lateral shifting cylinder, adjusting cylinder, lifting cylinder, frame slewing cylinder and slewing pin	Grease shell alvania RL2	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
VI.	Tamping unit guiding plate and deflection pulley	Grease shell alvania RL2	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Note- If machine is equipped with auto greasing unit for some part/section working of it should be ensured time to time				
6.2 Lifting and lining units				
I.	Lifting cylinder pivot	ShellTellus-100	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
II.	Clamp bolt & Clamp	Grease shell alvania RL2	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
III.	Locking device of lifting/ lining unit	ShellTellus-100	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
IV.	Lining roller LHS	Grease shell alvania RL2	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
V.	Lining roller RHS	Grease shell alvania RL2	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
6.3 Cardon shaft				
I.	Engine to transmission gear box	Grease shell alvania RL2	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
II.	transmission gear box to Intermediate shaft drive	Grease shell alvania RL2	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
III.	Intermediate shaft drive to Driving axles I	Grease shell alvania RL2	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
IV.	Axles I to Axles II	Grease shell alvania RL2	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
V.	Axles III to Axles IV	Grease shell alvania RL2	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
VI.	Engine to funk gear box	Grease shell alvania RL2	Done <input type="checkbox"/>	Not done <input type="checkbox"/>

6.4 Miscellaneous				
S.No.	Item	Agent / Description	Prevailing Condition	
I.	Sensing rod , guide bush and deflection pulley of Measuring bogie	Grease shell alvania RL2	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
II.	Torque arm pivot	Grease shell alvania RL2	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
III.	Gear box flange cover of driving and idle bogies	Grease shell alvania RL2	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
IV.	All balls and socket pivot point	Grease shell alvania RL2	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
V.	Sensing feeler rod, tensioning trolley, guide bush and chord displacement assembly of Front tension bogie.	Grease shell alvania RL2	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
VI.	Brake linkage, brake lever bearing & Brake rod	Grease shell alvania RL2	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
VII.	Guide rod & lateral plate of measuring trolley	Oil Servo system- 100	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
VIII.	Lateral guide & guide rod of lining trolley	Grease shell alvania RL2	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
IX.	Suspension of machine bogie	Grease shell alvania RL2	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
7. Gauges and meters working status				
I.	RPM meter in Working Cabin		Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
II.	RPM meter in Front Cabin		Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
III.	Speedometer/Tachometer working Cabin		Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
IV.	Speedometer/Tachometer front Cabin		Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
V.	Engine Oil Pressure meter		Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
VI.	Engine Temperature meter		Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
VII.	Transmission gear oil pressure gauge		Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
VIII.	Transmission gear oil temperature meter		Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>

Remarks.

8. Engine Model no.:

Engine hours on date-

S.no	Items	Prevailing Condition	
I.	Last Over-hauling of the Engine	Date-	ERH-
II.	Over-hauling of the Engine as per Main. Schedule	Due <input type="checkbox"/>	Not due <input type="checkbox"/>
III.	Starting problem	No <input type="checkbox"/>	Required attention <input type="checkbox"/>
IV.	Condition of smoke	White <input type="checkbox"/> Normal <input type="checkbox"/>	Black <input type="checkbox"/>
V.	Engine temperature during working after 2 hrs. Optimum 75 °c to 85°c	Actual ----- °C	
		Ok <input type="checkbox"/>	Required attention <input type="checkbox"/>
VI.	Leakage in Head gasket	No <input type="checkbox"/>	Yes <input type="checkbox"/> (Head no.-)
VII.	Compressor leakage	Yes <input type="checkbox"/>	No <input type="checkbox"/>
VIII.	Belt condition and tension	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
IX.	Leakage of water from water pump, seal hose and radiator	No <input type="checkbox"/>	Required attention <input type="checkbox"/>
X.	RPM of the Engine (rated 2100)	Actual---	
		Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
XI.	Engine Oil Pressure a)Pressure at rated RPM 3 to 7 kg/cm ² b)Pressure at idle RPM 1 to2 kg/cm ²	Actual--- Actual---	
XII.	Change of Engine oil (after every 300 hrs.)	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
XIII.	Cleaning of Air Cleaner filters outer (1no) (Cleaned after every 250hrs or on dirt indication and change after 500hrs)	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
XIV.	Change of air cleaner inner (1no) (after every 500hrs)	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
XV.	Change of engine oil filters (1no) (after every 300 hrs)	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
XVI.	Change of diesel filters (2nos) (To be done after every 300 hrs)	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
XVII.	Overall condition of Engine	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>

Remarks

9. Electrical and Electronics

S.no	Items	Prevailing Condition			
I.	Condition of battery terminals	Ok	<input type="checkbox"/>	Need attention	<input type="checkbox"/>
II.	Condition of batteries	Ok	<input type="checkbox"/>	Not satisfactory	<input type="checkbox"/>
III.	Electrolyte level in batteries (Plates should be embedded in electrolyte)	Ok	<input type="checkbox"/>	Need top up	<input type="checkbox"/>
IV.	Specific gravity of electrolyte (min 1.24)	Ok	<input type="checkbox"/>	Less	<input type="checkbox"/>
V.	Battery charging meter	Ok	<input type="checkbox"/>	Need attention	<input type="checkbox"/>
VI.	Battery voltage meter	Ok	<input type="checkbox"/>	Need attention	<input type="checkbox"/>
VII.	Condition of alternator	Ok	<input type="checkbox"/>	Need attention	<input type="checkbox"/>
VIII.	Condition of Depth transducer LHS	Ok	<input type="checkbox"/>	Need attention	<input type="checkbox"/>
IX.	Condition of Depth transducer RHS	Ok	<input type="checkbox"/>	Need attention	<input type="checkbox"/>
X.	Condition of lining transducer	Ok	<input type="checkbox"/>	Need attention	<input type="checkbox"/>
XI.	Condition of measuring transducer	Ok	<input type="checkbox"/>	Need attention	<input type="checkbox"/>
XII.	Condition of Height transducer LHS	Ok	<input type="checkbox"/>	Need attention	<input type="checkbox"/>
XIII.	Condition of Height transducer RHS	Ok	<input type="checkbox"/>	Need attention	<input type="checkbox"/>
XIV.	Working of lining galvanometer	Ok	<input type="checkbox"/>	Need attention	<input type="checkbox"/>
XV.	Working of X- Level galvanometer (1nos)	Ok	<input type="checkbox"/>	Need attention	<input type="checkbox"/>
XVI.	Working of Lifting indication voltmeter LHS	Ok	<input type="checkbox"/>	Need attention	<input type="checkbox"/>
XVII.	Working of Lifting indication voltmeter RHS	Ok	<input type="checkbox"/>	Need attention	<input type="checkbox"/>
XVIII.	Safety circuit for Engine	Ok	<input type="checkbox"/>	Need attention	<input type="checkbox"/>
XIX.	Safety circuit for Driving	Ok	<input type="checkbox"/>	Need attention	<input type="checkbox"/>
XX.	Lights (head light & back light etc.)	Working	<input type="checkbox"/>	To be attended	<input type="checkbox"/>

Remarks

10. Pneumatic

I.	Air Oiler working properly	Yes	<input type="checkbox"/>	Need attention	<input type="checkbox"/>
II.	Water separator working properly	Yes	<input type="checkbox"/>	Need attention	<input type="checkbox"/>
III.	Working of dip cup	Yes	<input type="checkbox"/>	Need attention	<input type="checkbox"/>
IV.	Clearance between brake shoes and wheel	Ok	<input type="checkbox"/>	To be changed	<input type="checkbox"/>
V.	Working of brake application	Satisfactory	<input type="checkbox"/>	To be changed	<input type="checkbox"/>
VI.	Working of unloader valve	Satisfactory	<input type="checkbox"/>	Need attention	<input type="checkbox"/>
VII.	Locking system of lifting/lining units	Satisfactory	<input type="checkbox"/>	Need attention	<input type="checkbox"/>
VIII.	Locking system of tamping units	Satisfactory	<input type="checkbox"/>	Need attention	<input type="checkbox"/>
IX.	Locking system of lining trolley	Satisfactory	<input type="checkbox"/>	Need attention	<input type="checkbox"/>
X.	Locking system of middle feeler trolley	Satisfactory	<input type="checkbox"/>	Need attention	<input type="checkbox"/>
XI.	Locking system of front feeler trolley	Satisfactory	<input type="checkbox"/>	Need attention	<input type="checkbox"/>
XII.	Locking system of measuring feeler trolley	Satisfactory	<input type="checkbox"/>	Need attention	<input type="checkbox"/>
XIII.	Pneumatic pressure meter (system)	Ok	<input type="checkbox"/>	Need attention	<input type="checkbox"/>
XIV.	Pneumatic brake pressure (3.8 bar)	Ok	<input type="checkbox"/>	Need attention	<input type="checkbox"/>
XV.	Change of air dryer filter if used (2nos) (after every 500hrs or at least once a year)	Done	<input type="checkbox"/>	Not done	<input type="checkbox"/>
XVI.	Pneumatic leakage from circuit	Location -----			

Remarks-----

11. Hydraulic Pressure and Operation

Sl no.	Items	Prevailing Condition	
		Recommended value	Actual value
I.	System Pressure	130-140 bar	
II.	High Pressure System	150 bar	
III.	Squeezing pressure for concrete sleepers	110 -140 bar	
IV.	Accumulator pressure	85 ±5 bar	
V.	Vibration pressures	150-170 bar	
VI.	Hydraulic. working brake pressure	110-140 bar	
VII.	Air pressure	6--7 bar	
VIII.	Hydraulic Oil Temperature after working of machine for 2 hrs. (Max limit 76 ^o c)	----- °C	
IX.	Change of Servo valve filter (2nos) (after every 250hrs or on choke indication)	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
X.	Change of Servo valve button filter (6nos) (after every 250hrs or on choke indication)	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
XI.	Change of pressure line filter (2no) (after every 250hrs or on choke indication)	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
XII.	Change of return filter (1nos) (after every 500hrs or on choke indication)	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
XIII.	Hydraulic oil pressure meters	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
XIV.	Hydraulic driving pressure meter (working)	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>

Remarks-----

12. Miscellaneous:

SI no.	Items	Prevailing Condition	
I.	Condition of tamping bank	Noisy <input type="checkbox"/>	Smooth <input type="checkbox"/>
II.	Condition of tamping tools	Ok <input type="checkbox"/>	To be replaced <input type="checkbox"/>
III.	Change of transmission gear box filter (1no) (after every 500hrs or on choke indication)	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
IV.	Adjustment of track lifting roller height LHS	Ok <input type="checkbox"/>	To be adjusted <input type="checkbox"/>
V.	Adjustment of track lifting roller height RHS	Ok <input type="checkbox"/>	To be adjusted <input type="checkbox"/>
VI.	Correction of alignment	Satisfactory <input type="checkbox"/>	Need attention <input type="checkbox"/>
VII.	Performance of Tamping unit up/down	Satisfactory <input type="checkbox"/>	Need attention <input type="checkbox"/>
VIII.	Performance of Lifting & Levelling	Satisfactory <input type="checkbox"/>	Need attention <input type="checkbox"/>
IX.	Condition of brake shoes	Ok <input type="checkbox"/>	To be changed <input type="checkbox"/>
X.	Hydraulic leakage from circuit	Location -----	
XI.	No. of tamping arms developed play	Nos.	
XII.	Actual no. of tools with which machine is working	Nos.	
XIII.	Condition of machine working tools (Spanner set etc.)	Satisfactory <input type="checkbox"/>	To be replaced <input type="checkbox"/>
XIV.	Spares available at site (as per Critical spares parts list)	Available <input type="checkbox"/>	deficient <input type="checkbox"/>
XV.	Overall condition of the Machine health	Excellent <input type="checkbox"/> Very good <input type="checkbox"/>	Good <input type="checkbox"/> Average <input type="checkbox"/>
XVI.	Overall Machine working performance	Satisfactory <input type="checkbox"/>	Need attention <input type="checkbox"/>

Remarks

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 nos.	
4.	H.S. Tri colour lamps	2 nos.	
5.	Chain & Padlock	1 set	
6.	Clamp with Padlock	2 nos.	
8.	10 t jack	1 no.	
9.	Crow bars	4 nos.	
10.	Wooden blocks off sizes	8 nos.	
11.	Gauge cum level	1 no.	
12.	Rail thermometer (dial type)	1 no.	
13.	Banner flag	2 nos.	
14.	Portable Control Phone	1 no	
15.	First Aid Box	1 no	
16.	Skids	2 nos.	
18.	Working time table of section where machine working	1 copy	
19.	G&SR book with up to date amendment slips	1 copy	
20.	4 cell flasher light	1 no.	
21.	Petromax /LPG lamps	1 no.	
22.	Safety helmets	All Machine staff	
23.	Protective clothing, safety shoes and safety gloves	All Machine staff	
24.	Track Machine Manual	1 no.	
25.	Accident Manual	1 no.	
26.	Fire extinguisher	1 no.	
27.	Hooter (manual)	2 nos.	
28.	Hydraulic Hand Pump	1 no.	
29.	Emergency pneumatic/Hydraulic hose of sizes suiting to different machines(complete with end fittings)	1 no.	

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

ACKNOWLEDGEMENT

Following officers and staff have made their valuable contributions in finalization of the Inspection Check List for Worksite Tamping Machine, VPR-02M

RAILWAYS

- | | | |
|--------|-------------|-------------|
| 1. SRI | Rais Ahmad | SSE/ TMC/NR |
| 2. “ | S.N. Pandey | SSE/TMC/NR |
| 3. “ | R.P. Singh | SSE/TMC/ECR |

RDSO

- | | | |
|--------|-----------------|---------|
| 1. SRI | Muslim Ahmad | ARE/TM |
| 2. “ | A.N.Srivastava, | SSRE/TM |
| 3. “ | D.G.Sharma | SSE/TM |