



भारत सरकार
रेल मंत्रालय

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS

INSPECTION CHECK LIST FOR TRACK LAYING EQUIPMENT (SIMPLEX)

(S.No. – S.No. - 21091–21116 & 22117-22118 Contract no.-2019/track-III/MC/7-20-1-2020)



रिपोर्ट संख्या टी एम . 292
REPORT NO.TM 292

April-2024

इंफ्रास्ट्रक्चर निदेशालय (रेलपथ मशीन एवं मानीटरिंग)
अनुसंधान अभिकल्प और मानक संगठनए 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 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.

The Inspection check list report no.292 is updated on the basis of experience/suggestions received from different zonal railways and OEM manual. The suggestion and feedback from NCR, NR & NER has been taken & incorporated in this Inspection check list report no.292 for inspection purpose of Track Laying Equipment (Simplex).

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.

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

April-2024

INSPECTION CHECK LIST FOR TRACK LAYING EQUIPMENT (SIMPLEX)

Name & designation of Inspecting Official :

Date of inspection :

Machine no. :

Base station/Division :

Location of working :

Block Hours :

Progress :

ITEMS TO BE Checked

S. No.	Item	Remarks given by Inspecting Authority	
1.1	Name of supervisor		
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	Yes <input type="checkbox"/>	No <input type="checkbox"/>
1.12	Dt. Of commissioning		
1.13	Last visit date of Engine Service Engineer		

History of Machine : -----

2. ENGINE (Duetz)			
S.No.	ITEM	PREVAILING CONDITIONS	
2.1	Engine model & no.		
2.2	Engine Hours		
2.3	Over-hauling of the Engine as per Main. Schedule	Due <input type="checkbox"/>	Not due <input type="checkbox"/>
2.4	Starting problem	No <input type="checkbox"/>	Required attention <input type="checkbox"/>
2.5	Condition of smoke	White Normal	Black <input type="checkbox"/>
2.6	Engine temperature on load after two hour working.	Actual ----- °C	
		Within limit <input type="checkbox"/>	Abnormal <input type="checkbox"/>
2.7	Leakage in head-gasket	No <input type="checkbox"/>	Yes <input type="checkbox"/> (Head no.-)
2.8	Self-starter	Working <input type="checkbox"/>	Not Working <input type="checkbox"/>
2.9	Belt tension	Ok <input type="checkbox"/>	To be Tighten <input type="checkbox"/>
2.10	Belt condition	Ok <input type="checkbox"/>	Damaged <input type="checkbox"/> Belt no.-----
2.11	Condition of battery terminals	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
2.12	R.P.M. of the engine:	Actual-----	
2.13	Engine oil pressure in idle run- Minimum 0.8 kg/cm ² Maximum 2.0 kg/cm ²	Actual-----	
2.14	Engine oil pressure in normal working (Engine worm)	Actual-----	
2.15	Last change of air cleaner done on	Date Engine hrs.	
2.16	Change of engine oil {Done after every 100 Engine hours(For oil Grade HDTYPE 4/ oil Grade HD TYPE 5)}	Done <input type="checkbox"/>	Not Done <input type="checkbox"/>
2.17	Change of engine oil filters {Done after every 100 Engine hours(For oil Grade HD TYPE 4/ oil Grade HD TYPE 5) }	Done <input type="checkbox"/>	Not Done <input type="checkbox"/>

2.18	Change of Pre filter element (100 Hrs. duration)	Done <input type="checkbox"/>	Not Done <input type="checkbox"/>
------	---	-------------------------------	-----------------------------------

S.No.	ITEM	PREVAILING CONDITIONS	
2.19	Change of Micro filter element (100 Hrs. duration)	Done <input type="checkbox"/>	Not Done <input type="checkbox"/>
2.20	Last change of batteries done on	Dated Engine hrs	
2.21	Alternator/battery charging system	Ok <input type="checkbox"/>	Not Satisfactory <input type="checkbox"/>
2.22	Last calibration of fuel injection pump done on	Dated Engine hrs	
2.23	Last calibration of fuel injectors done on	Dated Engine hrs	
2.24	Last attention given by the Service Engineer to engine	Dated Engine hrs	
2.25	Whether Working Gauges are functional		
	a) R.P.M & Engine Hours.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
	b) Lube oil pressure	Yes <input type="checkbox"/>	No <input type="checkbox"/>
	c) Lube oil Temperature	Yes <input type="checkbox"/>	No <input type="checkbox"/>
	d) Battery charging	Yes <input type="checkbox"/>	No <input type="checkbox"/>
	Any abnormal sound	Yes <input type="checkbox"/>	No <input type="checkbox"/>
2.26	Functioning of engine safety circuit –		
	a) Low lub. oil pressure safety device	Working <input type="checkbox"/>	Not Working <input type="checkbox"/>
3. OIL LEVELS			
3.1.	HSD OIL	Ok <input type="checkbox"/>	Need Top up <input type="checkbox"/>
3.2.	Engine lub oil Multi grade oil equivalent to SAE 15W40	Ok <input type="checkbox"/>	Need Top up <input type="checkbox"/>
4. HYDRAULIC			
4.1.	Level of Hydraulic oil in tank equivalent to SAE 68 /HLP68N	Ok <input type="checkbox"/>	Need Top up <input type="checkbox"/>
4.2.	Quality Check of hydraulic oil (After every 1000 hrs.)	Due <input type="checkbox"/>	Not due <input type="checkbox"/>
4.3.	Lifting pressure (100-150 bar)	Ok <input type="checkbox"/>	To be adjusted <input type="checkbox"/>

4.4.	Forward and reverse Driving pressure (250-270 bar)	Ok <input type="checkbox"/>	To be adjusted <input type="checkbox"/>
4.5.	Brake pressure (30-50 bar)	Ok <input type="checkbox"/>	To be adjusted <input type="checkbox"/>

S.No.	ITEM	PREVAILING CONDITIONS	
4.6.	Hoses required to be changed	(no. & sizes)	
4.7.	Stock of hoses with the machine	Adequate <input type="checkbox"/>	Less <input type="checkbox"/>
4.8.	Stock of hose fittings for emergency.	Adequate <input type="checkbox"/>	Less <input type="checkbox"/>
4.9.	Leakage in hydraulic system	No <input type="checkbox"/>	To be attended <input type="checkbox"/>
5. CHAINS			
5.1	Condition of simplex chain	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
5.2	Condition of Duplex chain	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
5.3	Condition of Drive chain	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
5.4	Tightness of simplex chain	Ok <input type="checkbox"/>	To be tighten <input type="checkbox"/>
5.5	Tightness of Duplex chain	Ok <input type="checkbox"/>	To be tighten <input type="checkbox"/>
5.6	Tightness of Drive Chain	Ok <input type="checkbox"/>	To be tighten <input type="checkbox"/>
5.7	Condition of chain locks	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
6. Miscellaneous			
6.1	Working Lights	Working <input type="checkbox"/>	To be attended <input type="checkbox"/>
6.2	Flasher Lights	Working <input type="checkbox"/>	To be attended <input type="checkbox"/>
6.3	Braking system	Satisfactory	To be attended <input type="checkbox"/>
6.4	Condition of brake shoes	Satisfactory <input type="checkbox"/>	To be attended <input type="checkbox"/>
6.5	Clearance of brake shoes	Satisfactory <input type="checkbox"/>	To be adjusted <input type="checkbox"/>
6.6	Condition of oil coolers	Clean <input type="checkbox"/> Leaking <input type="checkbox"/>	Clogged <input type="checkbox"/>
6.7	Electrolyte level in batteries	Ok <input type="checkbox"/>	To be recouped <input type="checkbox"/>

6.8	Specific gravity of electrolyte (min1260)	Ok <input type="checkbox"/>	Less <input type="checkbox"/>
6.9	Condition of tools for machine maintenance	Satisfactory <input type="checkbox"/>	To be replaced <input type="checkbox"/>

S.No.	ITEM	PREVAILING CONDITIONS	
6.10	General cleanliness of the machine	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
6.11	Gauge of auxiliary track(3400mm)	Ok <input type="checkbox"/>	To be adjusted <input type="checkbox"/>
6.12	Spacing of supporting block/sleeper under AT rails (should be within two meter)	Ok <input type="checkbox"/>	rectified <input type="checkbox"/>
6.13	Availability of spares (as per Annexure- II)	Complete <input type="checkbox"/>	Deficient <input type="checkbox"/>
7. SAFETY ITEMS			
7.1	Safety equipments as per Annexure-I	Available <input type="checkbox"/>	Deficient <input type="checkbox"/>
7.2	Competency certificate of theOperator	Valid <input type="checkbox"/>	Deficient <input type="checkbox"/>
8. BLOCK WORKING			
8.1	Location of the block working	KM/TP	
8.2	Duration of block	(hrs/minutes)	
8.3	Output of work	Meters	
8.4	Machine protection is beingdone by PWI/Machine	Yes <input type="checkbox"/>	No <input type="checkbox"/>
9. STAFF			
9.1	Strength of staff as per IRTMMM March 2019.	Full <input type="checkbox"/>	Deficient <input type="checkbox"/>
9.2	Safety awareness	Excellent <input type="checkbox"/>	Deficient <input type="checkbox"/>
		Good <input type="checkbox"/>	Average <input type="checkbox"/>
9.3	Staff due for medical	Yes <input type="checkbox"/>	No <input type="checkbox"/>

Remarks

.....

.....

.....

.....

Signature of Inspecting authority

ANNEXURE-I

LIST OF SAFETY & PROTECTIVE EQUIPMENTS

*List of jacks sent to railway bd. vide I no.TM/HM/1, Vol-II dated 22.08.2019 for approval which is

S. NO.	DESCRIPTION	QUANTITY
1.	Red hand signal flags	2 Nos.
2.	Green hand signal flags	1 No.
3.	Tri- colour hand signal lamps/LED torch	2 Nos.
4.	Chain with Padlock	2 Nos.
5.	Fire Extinguisher	One per cabin
6.	Hooter (Manually Controlled)	2 Nos.
7.	Jack 10 t* traverse type	2 Nos.
8.	Wooden Blocks	4 Nos.
9.	Crow bars	4 Nos.
10.	Hydraulic hand pump	1 No.
11.	Emergency Hydraulic hose off size suiting with end fittings.	As per requirement
12.	Wire rope with close loops at both ends 2 meters and 9 meters long one of each length.	As per requirement
13.	Machine Specific Equipment if any.	As per requirement
14.	Fog signals (detonators) in a tin case.	10 Nos.
15.	A copy of working time table of this section where the machine is working.	1 No.
16.	G & SR book with up to date amendment slips.	1 No.
17.	4 cells flasher light LED lamp cum flasher light (rechargeable).	1 No.
18.	Banner flags	2 Nos.
19.	First aid Box	1 No.
20.	Skids	2 Nos.
21.	Safety Helmet	All machine staff
22.	Protection clothing, safety shoes and safety gloves.	All machine staff
23.	Walkie talkie with frequency of SM, guard and loco pilots.	2 Nos.
24.	Track machine manual with up to date correction slips.	1 No.
25.	Accident Manual	1 No.
26.	Tail Lamp	1 No.

*List of jacks sent to railway bd. vide I no.TM/HM/1, Vol-II dated 22.08.2019 for approval which is awaited

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

ANNEXURE-II

LIST OF THE SPARE TO BE KEPT IN MACHINE'S STORE

S. NO.	DESCRIPTION OF PART	PART NO.	QUANTITY	POSITION DURING INSPECTION
1.	a) V-Belt	A-45	One	
	b) V- Belt	A-51	One	
2.	HSD Oil Filter	34.032.30.0	One no.	
3.	Lube Oil Filter	06.040.10.0	one nos.	
4.	Air Cleaner Assembly	06.086.10.0	one no.	
5.	Lube Oil	Multi grade oil equivalent to SAE 15W40	60 lts.	
6.	Distilled water for battery		Lit. 10	
7.	Hyd. Oil equivalent to -SAE-68		One barrel	
8.	Grease RR-3 or equivalent		10 kgs.	
9.	Emery paper/cloth fine		Two	
10.	Suction filter element	237.01.01.010	Two	
11.	High pressure filter element	237.01.08.01	one no.	
12.	Return line filter element	237.01.09.01	One no.	
13.	Hyd. Pipe	NO.	5 M with end fittings	
14.	-do-	: 06	-do-	
15.	-do-	: 08	-do-	
16.	-do-	: 10	-do-	
17.	Hyd. Pipe	: 16	-do-	
18.	-do-	: 20	-do-	
19.	-do-	SAE R5-24	5M with end fittings	
20.	Working light bulbs		Six	
21.	Self-starter		One	
22.	Simplex chain/ Duplex chain / Drive chain		1 set each	
23.	Chain lock		Six	
24.	Star coupling		One	
25.	Seal set for all hydraulic cylinders		One set each	
26.	Brake shoe		04 no.	
27.	Emergency pipe for lifting bridge of second machine	No. 8	10 meters	
28.	Hydraulic pressure gauge.		01 no.	
29.	Hydraulic working pump		01 no.	

ACKNOWLEDGEMENT

Following officers and staff have made their valuable contributions for preparation of the Inspection Check List for SQRS (**S.No. – 21091–21116 & 22117-22118**).

RAILWAY :

- | | | |
|----|----------------------|-------------|
| 1. | Shri R.S. Pandey | SSE/TM /NCR |
| 2. | “ Punit Kumar Shukla | SSE/TM/NR |
| 3. | “ Lal Babu Sharma | SSE/TM/NER |
| 4. | “ Vinay Mauriya | SSE/TM/NER |

R.D.S.O.

- | | | |
|----|-------------------|---------|
| 1. | Shri A.D.Maurya | DTM-III |
| 2. | “ R.K.Tiwari | ARE/TM |
| 3. | “ Prem Kumar | SSRE/TM |
| 4. | “ D.G.Sharma | SSE/TM |
| 5. | “ V.P. Srivastava | SSE/TM |

)