



**GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS**

**INSPECTION CHECK LIST
FOR
DYNAMIC TRACK STABILISER (METEX)**



**REPORT No- 230
May - 2020**

**RESEARCH DESIGNS AND STANDARDS ORGANISATION
LUCKNOW-226011**

INSPECTION CHECK LIST FOR DYNAMIC TRACK STABILIZER (DSP-C8T) (METEX)

Name & Designation of Inspecting Official : _____

Date of Inspection : _____

Machine No. : _____

Base Station / Division : _____

Working between Station : From.....To.....

Location Km: : From.....To.....

Block Hours : _____

Progress: : _____

1.0 General :

S.No.	Item	Remark by Inspecting official	
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 book Filled properly		
1.12	Pending Maintenance Schedule and its reasons in schedule I,II,III,IV,V,VI,VII		
1.13	Failure register updated		
1.14	Reserve stock of consumable and spare parts		
S.No.	Item	Prevailing Condition	
1.15	General cleanness of the machine	Ok <input type="checkbox"/>	To be cleaned <input type="checkbox"/>
1.16	Function of locking devices	Working <input type="checkbox"/>	Not working <input type="checkbox"/>
1.17	Condition of camping coach	Satisfactory <input type="checkbox"/>	Poor <input type="checkbox"/>
1.18	Condition of machine base stabling siding	Satisfactory <input type="checkbox"/>	Poor <input type="checkbox"/>
1.19	Condition of rest house at stabling station if available	Satisfactory <input type="checkbox"/>	Poor <input type="checkbox"/>
1.20	Provision of water and electric supply at stabling station	Available <input type="checkbox"/>	Not available <input type="checkbox"/>

S.No.	Item	Prevailing Condition	
1.21	Pre and post attention being done during DGS working	Yes <input type="checkbox"/>	No <input type="checkbox"/>
1.22	Back-up system of machine	Satisfactory <input type="checkbox"/>	Need attention <input type="checkbox"/>
1.23	Condition of tools and plants (spanner, wrench etc.)	Ok <input type="checkbox"/>	To be Replace <input type="checkbox"/>
1.24	Materials available at site as per critical spare parts list of DGS (Metex) issued by RDSO/ LKO	Yes <input type="checkbox"/>	No <input type="checkbox"/>
1.25	Condition of Genset/Welding plant	Satisfactory <input type="checkbox"/>	Poor <input type="checkbox"/>

History of Machine:

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S. No.	Item	Prevailing Condition	
2.0	Engine:- Model No. N14L2 CUMMINS		
2.1	Engine Hours: Date.....		
2.2	Starting problem	Yes <input type="checkbox"/>	No <input type="checkbox"/>
2.3	Condition of smoke	White <input type="checkbox"/> Black <input type="checkbox"/>	Normal <input type="checkbox"/>
2.4	Max. Engine temperature after 2 hrs working (Optimum range 75° c to 85° c)	° c	
2.5	Leakage in head-gasket	Yes <input type="checkbox"/> Cylinder no.....	No <input type="checkbox"/>
2.6	Electrolyte level in all batteries	Ok <input type="checkbox"/>	Need top up <input type="checkbox"/>
2.7	Specific gravity of electrolyte (1240)	Ok <input type="checkbox"/>	Less <input type="checkbox"/>
2.8	All V-Belts condition & tension	Ok <input type="checkbox"/>	To be tightened <input type="checkbox"/>
2.9	Condition of engine hoses	Ok <input type="checkbox"/>	To be replaced <input type="checkbox"/>
2.10	R.P.M. of the engine (2100)	Actual.....	
2.11	Engine oil pressure Min.1.5 Kg/sq. cm at idle Min.2.5 Kg/sq. cm at rated speed	Actual	
2.12	Battery charging	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
2.13	Change of air cleaner filters (Done after every 500 hrs.)	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
2.14	Change of engine oil , (to be done after every 300hrs but 1st time 100hrs)	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
2.15	Change of engine oil filters (after every 300 hrs but first time 100 hrs)	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
2.16	every change of diesel filters (To be done on after 300 hrs.)	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
2.17	Change of water coolant filter (To be done on after every 300 hrs.)	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
2.18	Condition of self starter	Ok <input type="checkbox"/>	Not satisfactory <input type="checkbox"/>
2.19	Condition of Alternator	Ok <input type="checkbox"/>	Not satisfactory <input type="checkbox"/>
2.20	Condition of air compressor	Ok <input type="checkbox"/>	Not satisfactory <input type="checkbox"/>
2.21	Condition of batteries	Ok <input type="checkbox"/>	Not satisfactory <input type="checkbox"/>
2.22	Last date of battery replacement	Date.....	Engine hrs.....
2.23	Electrolyte level of batteries	Ok <input type="checkbox"/>	Need top-up <input type="checkbox"/>
2.24	Condition of radiator	Ok <input type="checkbox"/>	Not satisfactory <input type="checkbox"/>
2.25	Condition of water separator of fuel supply system	Ok <input type="checkbox"/>	Not satisfactory <input type="checkbox"/>
2.26	overhauling of the engine as per maintenance schedule of OEM	Done <input type="checkbox"/>	Not done <input type="checkbox"/>

S. No.	Item	Prevailing Condition	
2.27	Calibration of fuel injection pump. (to be done after 2000 hrs.)	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
2.28	Calibration of fuel injectors. (to be done after 2000 hrs.)	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
2.29	Last attention of engine by the Service Engineer	Date E. hrs.....	
2.30	Any abnormal sound from engine	Yes <input type="checkbox"/>	No <input type="checkbox"/>
2.31	Whether Working Gauges are functional		
	a) R.P.M.	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
	b) Oil pressure	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
	c) Temperature (water, lube oil and hyd. Oil)	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
	d) Battery charging (Ampere & volt meter)	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
	e) Pneumatic gauge	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
2.32	Functioning of machine safety circuit	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
2.33	Engine high temperature safety circuit	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
2.34	Engine low lube oil pressure safety circuit	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
3.0	Oil/Water Levels in Tank/Container:		
3.1	Hydraulic oil (HLP 68 or equivalent)	Ok <input type="checkbox"/>	Need top up <input type="checkbox"/>
3.2	Radiator (Coolant)	Ok <input type="checkbox"/>	Need top up <input type="checkbox"/>
3.3	Diesel oil (HSD)	Ok <input type="checkbox"/>	Need top up <input type="checkbox"/>
3.4	Engine oil (API CF4 15W40 or equivalent)	Ok <input type="checkbox"/>	Need top up <input type="checkbox"/>
3.5	ZF gear box (T-46)	Ok <input type="checkbox"/>	Need top up <input type="checkbox"/>
3.6	Axle gear box (C-90)	Ok <input type="checkbox"/>	Need top up <input type="checkbox"/>
3.7	Vibration unit (C-90)	Ok <input type="checkbox"/>	Need top up <input type="checkbox"/>
3.8	Drive intermediate shaft (C-90)	Ok <input type="checkbox"/>	Need top up <input type="checkbox"/>
4.0	Power Transmission & Stabilizing unit		
4.1	Check oil Leakage in gear boxes	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
4.2	Check condition of mounting of all gear boxes	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
4.3	Check greasing of all cardon shafts	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
4.4	Greasing of all gear boxes flange covers	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>

S. No.	Item	Prevailing Condition	
4.5	Greasing of radiator fan, all ball & socket joints etc.	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
4.6	Check condition of all cardon shafts	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
4.7	Check condition of torque support & pivot.	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
4.8	Check condition of brake shoes, linkages & clearance.	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
4.9	Function of ZF gear box	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
4.10	Engaging/disengaging indicator of stabilizing unit	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
4.11	Condition of stabilizing unit, vibration wheels, side supports rollers, all hydraulic cylinders.	Satisfactory <input type="checkbox"/>	Not Satisfactory <input type="checkbox"/>
5.0 Pneumatic and hydraulics			
5.1.	Condition of all Pneumatic cylinders	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
5.2.	Condition of pneumatic horns & cooling coil	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
5.3.	Condition of air unloader	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
5.4.	Condition of Pneumatic hoses	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
5.5.	Condition all Pneumatic solenoid valves	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
5.6.	Condition of air dryer	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
5.7.	Condition of water separator	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
5.8.	Condition of air oiler	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
5.9.	Condition of hydraulic hoses	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
5.10.	Condition of hydraulic Pumps & motors	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
5.11.	Condition of hydraulic accumulator	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
5.12.	Condition of hydraulic cylinders	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
5.13.	Condition of hydraulic valves	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
6.0 Under Gear Inspection			
6.1	Under Frame		
6.1.1	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"/>

S. No.	Item	Prevailing Condition	
6.1.2	Examine the shock absorber for damages	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
6.1.3	Check condition of head stock/sole bar of centre buffer Coupler	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
6.1.4	Check condition of head stock/sole bar of centre buffer Coupler	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
6.1.5	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"/>
6.2	Bogie frame & wheels		
6.2.1	Visual Inspection of wheels and under gear for any infringement	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
6.2.2	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"/>
6.2.3	Visually inspect all the welding locations.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
6.2.4	Visually check the suspension brackets.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
6.3	Brake Rigging		
6.3.1	Visually check the rubbing plates	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
6.3.2	Examine brake beams breakages/ damages.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
6.3.3	Inspection of Brake hanger bracket , torque support , cardan shaft hanger brackets for damages	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
6.4	Draw Gear		
6.4.1	Check condition of the screw coupling and replace if required.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
6.4.2	Examine draw hook ,draw bars, rubber pads for damages	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
6.4.3	Ensure that wear at any section on draw hook should not exceed 10 mm.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>

S. No.	Item	Prevailing Condition	
6.4.4	Ensure that wear on screw coupling shackle pins, trunion pins, shackle/link holes and draw hook holes should not exceed 3mm.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
6.4.5	Check condition of draw beam and locking pins on it.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
6.4.6	Examine visually draft key locking pins	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
6.5	Buffing Gear		
6.5.1	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"/>
6.5.2	Examine for corrosion of sole bar and other under frame member with track tight or inspection lamp.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
6.5.3	Visually examine the buffers casing for cracks/damages.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
6.6	Running Gear and wheels		
6.6.1	Visually inspect axle box covers.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
6.6.2	Inspect wheel tread for shattered rim, spread rim, shelled tread, thermal cracks, heat checks	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
6.6.3	Ultrasonic testing of axles of machine shall be done between 40,000 to 45,000 kms of running or three years, whichever is earlier.	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
7.0	General		
7.1	All locking devices	Working <input type="checkbox"/>	Not working <input type="checkbox"/>
7.2	Check any leakage of hydraulic oil	Yes (Location.....) <input type="checkbox"/>	No <input type="checkbox"/>
7.3	Condition of machine working tools Satisfactory/unsatisfactory (Spanner set etc.)	Ok <input type="checkbox"/>	To be replaced <input type="checkbox"/>
7.4	Safety equipments as per Annexure-I	Ok <input type="checkbox"/>	Deficient <input type="checkbox"/>
7.5	Competency certificate of the Operator	Ok <input type="checkbox"/>	Due <input type="checkbox"/>

S. No.	Item	Prevailing Condition	
7.6	Check emergency Braking System	Satisfactory <input type="checkbox"/>	Not satisfactory <input type="checkbox"/>
7.7	Check parking braking system	Satisfactory <input type="checkbox"/>	Not satisfactory <input type="checkbox"/>
7.8	Condition of oil coolers	Ok <input type="checkbox"/>	To be cleaned <input type="checkbox"/>
7.9	Hydraulic oil temperature after working of machine for 2 hrs	85°C.....Actual.....	
7.10	Pre & post stabilizing operations being done	Satisfactory <input type="checkbox"/>	Not satisfactory <input type="checkbox"/>
7.11	Condition of all filler rods & sensing wheels	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
8.0	Hydraulic and pneumatic pressure and temperature		
8.1	Vertical pressure	20-100 bar	
8.2	Gauge holding pressure	20-30 bar	
8.3	Vibration pressure	250 bar	
8.4	Working pressure	100-175 bar	
8.5	Cooling pressure	50 bar	
8.6	Vibrating frequency for Concrete sleepers	30-33 Hz	
8.7	Pneumatic pressure	7-8 bar	
8.8	Maximum Hydraulic pressure	85°C	
9.0	Electrical		
9.1	Function of all locking devices	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
9.2	Function of horns , lights	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
9.3	Function of all electric gauges	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
9.4	Function of all transducer & pendulums	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
9.5	Defective/released PCB available with machine	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
9.6	Inspect all electrical connections	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
9.7	Function of remote switch of vibration unit	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>

S. No.	Item	Prevailing Condition	
10.0	Staff :		
10.1	Strength of staff	Full <input type="checkbox"/>	Deficient <input type="checkbox"/>
10.2	Group performance	Excellent <input type="checkbox"/> Good <input type="checkbox"/>	V. Good <input type="checkbox"/> Average <input type="checkbox"/>
10.3	Safety awareness	Excellent <input type="checkbox"/> Good <input type="checkbox"/>	V. Good <input type="checkbox"/> Average <input type="checkbox"/>
10.4	Staff due for medical	Yes <input type="checkbox"/>	No <input type="checkbox"/>
10.5	General condition of the machine	Excellent <input type="checkbox"/> Good <input type="checkbox"/>	V. Good <input type="checkbox"/> Average <input type="checkbox"/>
10.6	Pending maintenance schedule and reasons	Ok <input type="checkbox"/>	Need top up <input type="checkbox"/>
10.7	Safety equipment as per annexure-I	Complete <input type="checkbox"/>	Deficient <input type="checkbox"/>
	Any other remarks by Inspecting Officer :		

Annexure - I

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 color Lamps/LED torch	2 nos.	
5.	Chain & Padlock	1 set	
6.	Switch Clamp with Padlock	2 nos.	
7.	20 t jack with traverse	2 nos.	
8.	Crow bars	4 nos.	
9.	Wooden blocks of different sizes	8 nos.	
10.	Rail thermometer (dial type)	1 no.	
11.	Banner flags	2 nos.	
12.	Walky talky with same frequency of SM,guard and loco pilots	2 nos.	
13.	Portable telephone	1 no.	
14.	First Aid kit	1 no	
15.	Skids	4 nos.	
16.	Working time table of section where machine working	1 copy	
17.	G&SR book with up to date amendment slips	1 copy	
18.	Petromax	1 no.	
19.	4 cell flasher light/ LED torch,6watt() (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	2 nos.	
26.	Hooter (Manually/ 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 no.	

Note:

- I Inspecting official should wear the safety items 20 to 22 while doing the inspection.

ACKNOWLEDGEMENT

Following officers and staff have made their valuable contributions in finalization of the Inspection Check List for Dynamic Track Stabilizer DSP C8T (METEX)

Railways:

- | | | | |
|----|------|------------------------|--------------|
| 1. | Shri | Ram Babu Yadav | SSE/ TMC/NCR |
| 2. | " | Rakesh Kumar Kathariya | MCM/TMC/NCR |

RDSO:

- | | | | |
|----|-------|------------------------|---------|
| 1. | S/Sri | Muslim Ahmad | ARE/TM |
| 2. | " | Prem Kumar | SSRE/TM |
| 3. | " | Ved Prakash Srivastava | SSE/TM |