



भारत सरकार
रेल मंत्रालय

**GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS**

**CHECK LIST FOR INSPECTION
OF
TAMPING EXPRESS MACHINE
(09-3X)**

Report No. TM --106

January –2007

**RESEARCH DESIGNS & STANDARDS ORGANISATION
LUCKNOW- 226 011**

Name & Designation of Inspecting Official :
Date of Inspection :
Machine No. :
Base Station :

ITEMS TO BE CHECKED

S.no.	Items	Agent / Description	Prevailing Conditions
1.	Oil / Water Levels in tank / container:		
i)	Hydraulic oil	Servo System – 68 or equivalent	Ok / Less
ii)	Radiator	Water with coolant	Ok / Less
iii)	ZF Gear Box	API CF-4 15W40 or equivalent	Ok / Less
iv)	Diesel Oil	HSD	Ok / Less
v)	Satellite Gear Box	SAE-90 or equivalent	Ok / Less
vi)	Intermediate Gear Box	SAE-90 or equivalent	Ok / Less
vii)	Reduction Gear Box	SAE-90 or equivalent	Ok / Less
viii)	Engine lube oil	API CF-4 15W40 or equivalent	Ok / Less
ix)	Funk Gear Box	API CF-4 15W40 or equivalent	Ok / Less
x)	Axle Gear Box	SAE-90 or equivalent	Ok / Less

S. no.	Items	Agent / Description	Prevailing Conditions
2.	Lubrication (As per maintenance schedule)		
2.1	Tamping Bank:		
i)	Tamping Unit Guide Column	Grease	Done / Not done
ii)	Tamping arm bearing (55 mm pin)	Servo System-68	Done / Not done
iii)	Connecting rod pin (35 mm pin)	Grease	Done / Not done
iv)	All balls and socket joints	Lube oil	Done / Not done
2.2	Lifting/ Lining Unit:		
i)	Clamp Pivot	Grease	Done / Not done
ii)	Lifting Unit Guide Column	Grease	Done / Not done
iii)	Lining rollers	Grease	Done / Not done
iv)	Clamp Housing	Grease	Done / Not done
v)	Lifting cylinder pivots	Lube oil	Done / Not done
2.3	Cardon Shaft:		
i)	Engine to ZF Gear Box	Grease	Done / Not done
ii)	ZF to Distributor Gear Box	Grease	Done / Not done
iii)	Engine to pump distributor Gear Box	Grease	Done / Not done
iv)	Distributor Gear Box to axle I	Grease	Done / Not done
v)	Distributor Gear Box to intermediate shaft	Grease	Done / Not done
vi)	Intermediate shaft to axle II	Grease	Done / Not done
vii)	Working drive reduction gear box to ZF gear box.	Grease	Done / Not done
2.4	Miscellaneous:		
i)	Middle feeler rod	Grease	Done / Not done
ii)	Torque arm pivot	Grease	Done / Not done
iii)	Brake linkages	Grease	Done / Not done
iv)	Kingpin pivot of both the bogies.	Grease	Done / Not done
v)	Hand brake gear	Grease	Done / Not done
vi)	Axle gear box flange cover	Grease	Done / Not done

S. no.	Items	KTA –1150	Prevailing Conditions	NTA-855	Prevailing Conditions
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3. Engine:

i)	Starting problem	Yes / No		Yes / No	
ii)	Condition of smoke	White/Black/Normal		White/Black/Normal	
iii)	Engine temperature after two hrs. working	°C		°C	
iv)	Leakage in Head gasket	No / Yes (Head no.)		No / Yes (Head no.)	
v)	Belt tension	Ok / To be tightened		Ok / To be tightened	
vi)	Leakage in engine hoses	Yes/No		Yes/No	
vii)	Leakage from water pump	Yes/No		Yes/No	
viii)	Condition of battery terminals	Ok /To be attended		Ok /To be attended	
ix)	RPM of the Engine	Actual		Actual	
x)	Engine oil pressure	Actual		Actual	
	a) 1.5 Kg/cm ² at idle speed				
	b) 2.5 Kg/ cm ² on load after 2 hours working				
xi)	Last change of Air Cleaners	Dated Engine hrs		Dated Engine hrs	
xii)	Last change of engine oil	Dated Engine hrs		Dated Engine hrs	
xiii)	Last change of engine oil filters	Dated Engine hrs		Dated Engine hrs	
xiv)	Last change of diesel filters	Dated Engine hrs		Dated Engine hrs	
xv)	Last Charging/Change of batteries	Dated Engine hrs		Dated Engine hrs	

S. no.	I t e m s	KTA –1150	Prevailing Conditions	NTA-855	Prevailing Conditions
xvi)	Last repair / change of self starter	Dated Engine hrs		Dated Engine hrs	
xvii)	Last repair / change of alternators	Dated Engine hrs		Dated Engine hrs	
xviii)	Last over-hauling of the Engine	Dated Engine hrs		Dated Engine hrs	
xix)	Last calibration of fuel injection pump	Dated Engine hrs		Dated Engine hrs	
xx)	Last calibration of Fuel Injectors	Dated Engine hrs		Dated Engine hrs	
xxi)	Whether working gauges are in order				
a)	R.P.M.	Yes/No		Yes/No	
b)	Oil Pressure	Yes/No		Yes/No	
c)	Temperature	Yes/No		Yes/No	
d)	Battery charging	Yes/No		Yes/No	

S. no.	I t e m s	Prevailing Conditions
4.	General:	
i)	Requirement of PCB if any	Part no.
ii)	Condition of tamping bank	Noisy / Smooth
iii)	Condition of tamping tool	Ok / To be Replaced
iv)	No. of tamping arms developed play	
v)	Infringement of tamping tools with one another	Yes/No
vi)	Actual no. of tools with which machine is working	Nos.
vii)	Leakage in hydraulic system	Yes/No
viii)	Working of all locking devices	Satisfactory / To be attended
ix)	Air Oiler working properly	Yes/No
x)	Water separator working properly	Yes/No
xi)	Lights (head light & back light etc.)	Working /To be attended
xii)	Braking system	Satisfactory / To be attended
xiii)	Condition of brake shoes	Ok / To be changed
xiv)	Clearance between brake shoes and wheel	Ok /To be adjusted
xv)	Condition of machine working tools (Spanner set etc.)	Satisfactory / To be replaced
xvi)	Hydraulic Oil Temperature after working of machine for 2 hrs.	°C
xvii)	Condition of Oil Coolers	Clean/Clogged
xviii)	Function of satellite axle support cylinders	Ok / Leaking
xix)	Track lifting roller height	Ok / To be adjusted
xx)	Electrolyte level in batteries	Ok / Less
xxi)	Play in torque arm pivots	Ok/ To be attended
xxii)	Change of ZF gear box oil & filter	Dated: Engine hours
xxiii)	Change of Servo valve filter	Dated: Engine hours
xxiv)	Change of proportional valve filter	Dated: Engine hours
xxv)	Tamping arm bearing (55 mm pin) leakage and no. of bearing leaking.	No / Yes (Nos)
5.	Safety Items:	
i)	Safety equipment as per Annexure-II	Available/Deficient
ii)	Working of safety system of the machine	Ok / Defective
iii)	Competency certificate of operator	Current/Expired
iv)	Fire extinguisher	Ok/ To be replaced

S. no.	I t e m s	Prevailing Conditions	
6.	During Block Working:		
i)	Location of block working	Km / TP	
ii)	Pre and post tamping operations being done	Yes/No	
iii)	Duration of block	Hrs	Min.
iv)	Output of work	Sleeper	Km
v)	Depth of tamping tool (clearance between the bottom edge of the sleeper and top of tamping tool blade)	Normal 15 mm	Actual
vi)	Condition of ballast	Caked/Clean	
vii)	Depth of clean cushion under sleeper (required min. is 150 mm)	mm	
7.	Staff:		
i)	Strength of staff	Full / Deficient	
ii)	Group Performance	Excellent / V. Good /Good / Average	
iii)	Cost awareness	Excellent / V. Good /Good / Average	
iv)	Safety awareness	Excellent / V. Good /Good / Average	
v)	Staff due for Medical		
vi)	All log books filled properly	Yes/No	
8.	Hydraulic Pressure (bars)	Rated	Actual
i)	System Pressure	140 bar	
ii)	High Pressure System for squeezing	150 bar	
iii)	Counter Pressure for small squeezing cylinder	50 bar	
iv)	Squeezing Pressure for concrete sleepers	110 – 120 bar	
v)	ZF Oil Pressure	10 - 15 bar	
vi)	Boost/Charge Pressure	30 bar	
vii)	Accumulator pressure		
a)	High	85 bar (Max)	
b)	Working	85 bar (Max.)	
viii)	Vibration pressure	150 bar	
ix)	Air Pressure	6 – 7 kg / cm ²	
9.	Pending Maintenance Schedule and reasons.		
10.	Availability of spares and tools as per annexure -I	Complete/Deficient	
11.	Any other remarks by Inspecting Officer:		

Signature of Inspecting Officer

LIST OF SPARES TO BE KEPT IN MACHINE'S STORE

S. No.	DESCRIPTION	PART No.	QUANTITY
1.	Seal kit	HLS.DS.401	02 Nos
2.	Screw	M16x35	04 Nos
3.	Washer	16MM	04 Nos
4.	Piston	2E35.303	01 No
5.	Threaded pin	M6x18	02 Nos
6.	Grease nipple small		10 Nos
7.	Piston Screw	2E36.48	02 Nos
8.	Flap cylinder	2E34.1508	02 Nos
9.	Seal kit	HZ2002.080.040	02 Nos
10.	Seal kit	HZ201.080	02 Nos
11.	Hex bolt	M16x50	04 Nos
12.	Washer	16MM	04 Nos
13.	Cylinder pin	20M6x4	02 Nos
14.	Hex socket head cap screw	M16x110	04 Nos
15.	Spring washer	16MM	10 Nos
16.	Hex nut	16MM	05 Nos
17.	Screw	M16x35	06 Nos
18.	Hex socket head cap screw	M8x25	02 Nos
19.	Nut	UD65.1177	01 No
20.	Tamping tools		01 Set
21.	Seal kit	UD50.100DS	01 No
22.	Hex socket head cap screw	M16x35	04 Nos
23.	Meggi spring	730273-MG650-54	04 Nos
24.	Diesel filters		One set
25.	Lube oil filter		One set
26.	Hydraulic filters		One set
27.	Air filter		One set
28.	Lube oil	API CF4 15W40	50 lit.
29.	Gear oil	SAE 90	20 lit.
30.	Hydraulic oil		One barrel

List of Safety Equipments

S.No.	Description	Quantity
1.	Detonators	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 & Pad lock	1 set
6.	25 t jack with traverser	1 no.
7.	Crow bars	2 nos.
8.	Wooden blocks off sizes	8 nos.
9.	Banner flag	2 nos.
10.	Portable Control Phone	1 no
11.	First Aid Box	1 no
12.	Skid	4 nos.
13.	Working time table	01 no.
14.	G& SR Manual	01 no.
15.	Fire extinguisher	02 nos.
16.	Flasher light	02 nos

ACKNOWLEDGEMENT

Following officers and staff have made their valuable contributions in finalization of the Inspection Check List for Tamping Express Machine (09-3X).

RAILWAYS

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|----|--------|---------------|--------------|
| 1 | S/SRI. | Mohd. Zuber | SSE/NCR |
| 2. | “ | Ratnesh Kumar | JE/T/TMC/NCR |

RDSO

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|----|--------|-----------------|------------|
| 1. | S/Shri | A.K. Pandey | DTM-V |
| 2. | “ | H.C.Pandey | DD/TM |
| 3. | “ | M.N.Siddiqui, | SE/Engg/TM |
| 4. | “ | A.N. Shrivastva | SRE/TM |
| 5. | “ | Prem Kumar | SREI/TM |