

DIRECTORATE GENERAL BORDER ROADS
GENERAL MAINTENANCE INSTRUCTION NO. 82
ON
MAINTENANCE AND LUBRICATION
OF
GENERATING SET 30 KVA KOMATSU

Introduction :-

1. Regular servicing and preventive maintenance are essential to prolong the life of the equipment, ensure timely repairs to arrest defects from developing into majors ones, to work the equipment effectively at all times, minimize inopportune breakdowns and downtime losses.

Aim :-

2. (a) To enumerate the details of periodic and preventive maintenance and lubrication of GENERATING SET 30 KVA KOMASTU.
- (b) Issue CHECK CARD for use by Mobile Maintenance Team.

Action By :-

3. (a) User Units :- To carry out periodic Inspection, regular servicing and preventive maintenance tasks as laid down.
- (b) Field Workshops (GREF) :-
 - (i) To check the 'Record of Maintenance and Lubrication' in the log book of the eqpt during its inspection and repairs, if carried out as per Maintenance and Lubrication schedules given in this instruction.
 - (ii) Advise user units in respect of any discrepancy noticed.

Details:-

4. Details of Maintenance and Lubrication along with the periodicity have been tabulated in Appendix 'A' to this instruction.

PREVENTIVE MAINTENANCE FOR GENERATING SET 30 KVA KOMATSU

S/No.	Item/Assys	Maintenance Instruction	Lubrication	No of points
1	2	3	4	5

10 HOURS TASK

1	General	(a) Check oil, water or gas for leaks (b) Check for exhaust smoke colour, noise or vibration (c) Read all gauges & meters (d) Check all bolts and nuts if loose or deficient		
2	Engine oil	Check oil level and top up if necessary according to temp range	Engine oil	1
3	Radiator	(a) Check water level, top water (b) Clean core (c) Use antifreeze if generator working at freezing temp	Ethylene Glycol	1
4	Fuel Tank	(a) Refill at the end of previous day. (b) Open fuel tank drain cork before starting engine to drain off water and sediments accumulated in tank.	Diesel	1
5	Generator	Keep the generator clean from dust and dirt accumulation oil and grease or any other foreign matters		

Note:-

Engine and Air cleaner- Oil grades

(a)	Up to 32 ⁰ C	-	Use SAE 40
(b)	0 ⁰ C to 32 ⁰ C	-	Use SAE 30
(c)	-20 ⁰ to -0 ⁰ C	-	Use SAE 20

Transmission – Oil Grades

(a)	Up to 32 ⁰ C	-	Use Grease No. 2
(b)	0 ⁰ C to 32 ⁰ C	-	Use Grease No. 1
(c)	-20 ⁰ to -0 ⁰ C	-	Use Grease No. 1

S/No.	Item/Assys	Maintenance Instruction	Lubrication	No of points
1	2	3	4	5

60 HOURS TASK

1	General	Carry out 10 hours tasks		
2	Oil filter	Drain from the bottom through drain cork	Engine oil	1
3	Fuel filter	Drain from the bottom through drain cork	Diesel	1
4	Air cleaner	(a) Remove dust on collector cap (b) Clean centrifugal type separator (c) Clean inside oil both filter gauge (d) Replace oil	Engine oil	1
5	Water pump	(a) Lubricate with grease (b) Check and adjust fan belt		
6	FIP and Governor	Check oil level and top up	Engine oil	2
7	Hour meter	Refill oil hole	Engine oil	1
8	Electric wiring	Check electric wiring connections and tightness if necessary		
9	Radiator of water and oil	(a) Check leakage of water and oil (b) Clean core		
10	Battery	(a) Check corrosion of terminal (b) Qty of electrolyte		

S/No.	Item/Assys	Maintenance Instruction	Lubrication	No of points
1	2	3	4	5

250 HOURS TASK

1	General	Carry out 10 hours and 60 hours tasks		
2	Engine sump/oil filter	(a) Change engine oil/while hot (b) Clean or replace oil filter element	Engine oil	1
3	Cooling system	(a) Warm up engine (b) Drain water from Radiator and engine drain cork (c) Refill water with filter	Water	1
4	Inlet and Exhaust valve	Check and adjust valve clearance		
5	Governor and FIP	Change oil	Engine oil	2
6	Injector	(a) Check injection pressure i.e 120 kg/cm ² (b) Injector to be cleaned and adjusted		

7	Fuel filter	Clean filter assys and element or replace element	Diesel	1
8	Cylinders	Check compression pressure		
9	Front Base	Refill grease	Grease	1
10	Hour meter	Refill grease cap	Grease	1
11	Charging Generator and starter motor	(a) Clean dirty communtator (b) Check brush contact, wear of brush, pressure of brush spring, Replace worn parts (c) Adjust communator to specification as under : (i) Clutch Gap 0.5 mm (ii) Serviceability 0.3 mm (iii) Engage switch in contact point gap to be maintained 2.3 mm		
12	Voltage regulator	Check contact point		

S/No.	Item/Assys	Maintenance Instruction	Lubrication	No of points
1	2	3	4	5

500 HOURS TASK

1	Generator	Carry out 10,60, and 250 hours Task
2	Fuel filter	Replace element
3	Oil filter	Replace oil filter element
4	Radiator	Wash cooling system with washing soda solution
5	Tachometer Elbow	Refill grease

Note:-

Lubricant

(a)	Up to 32 ⁰ C	-	Use SAE 40
(b)	0 ⁰ C to 32 ⁰ C	-	Use SAE 30
(c)	-20 ⁰ to -0 ⁰ C	-	Use SAE 20

Grease

(a)	Up to 32 ⁰ C	-	Use Grease No. 2
(b)	0 ⁰ C to 32 ⁰ C	-	Use Grease No. 1
(c)	-20 ⁰ to -0 ⁰ C	-	Use Grease No. 1

S/No.	Item/Assys	Maintenance Instruction	Lubrication	No of points
1	2	3	4	5

1000 HOURS TASK

1	Generator	Carry out 10,60, 250, 500 hours Task
2	Engine oil sump	(a) Clean inside (b) Wash section part and screen
3	Fuel tank	Clean fuel tank
4	Generator starting motor	Refill grease

Note:-

Lubricant

(a)	Up to 32 ⁰ C	-	Use SAE 40
(b)	0 ⁰ C to 32 ⁰ C	-	Use SAE 30
(c)	-20 ⁰ to -0 ⁰ C	-	Use SAE 20

Grease

(a)	Up to 32 ⁰ C	-	Use Grease No. 2
(b)	0 ⁰ C to 32 ⁰ C	-	Use Grease No. 1
(c)	-20 ⁰ to -0 ⁰ C	-	Use Grease No. 1

CHECK CARD : PREVENTIVE MAINTENANCE
(ORIGINAL/DUPLICATE)

- | | |
|--------------------|---------------------------|
| 1. Project | 4. Make & Type GENERATING |
| 2. Task Force..... | 5. SET 30 KVA KOMATSU |
| 3. Unit | 6. BA/EM NO. |
| | 7. Location |

Action
After carrying out the preventative maintenance Task, IC Mobile maintenance team will enter its date in the month's column below and initial.

Srl No.	Tasks	J	F	M	A	M	J	J	A	S	O	N	D
1	08 Hours												
	(a)												
	(b)												
	(c)												
	(d)												
	(e)												
	(f)												
	(g)												
	(h)												
	(j)												
2	100 Hours												
	(a)												
	(b)												
	(c)												
3	250 Hours												
	(a)												
	(b)												
4	500 Hours												
	(c)												
5	1000 Hours												
6	2000 Hours												

Signature of SO1/SO2 EME Project

Date

Remarks

Note : Column 'J' to 'D' stands for months of the year.