

DIRECTORATE GENERAL OF BORDER ROADS
GENERAL MAINTENANCE INSTRUCTION NO.97
ON
MAINTENANCE AND LUBRICATION
OF
SISCO STONE CRUSHER

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 major ones, to work equipment efficiently at all times, minimize breakdown and downtime losses.

Aim

2. (a) To enumerate the details of periodic and preventive maintenance and lubrication of SISCO Stone Crusher.
(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 equipment 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/short comings noticed.
(c) Mobile Maintenance Team. To ensure that proper maintenance is carried out and report accordingly to OC Field Workshop (GREF) for necessary action.

Details

4. Details of maintenance and Lubrication alongwith the periodicity have been tabulated in Appendix 'A' to this instruction.

- END -

Dated 20 Oct 73

PREVENTIVE MAINTENANCE : SISCO STONE CRUSHER

Srl No.	Item/Assembly	Maintenance Instructions	Lubricant	No. of Page
1	2	3	4	5

10 HOURS MAINTENANCE TASK

- | | | | | |
|----|----------------|--|--------|--|
| 1. | General | (a) Check oil, Water or gas for leaks.

(b) Check exhaust smoke.
(c) Check all gauges and meters.
(d) Check all bolts and nuts if loose or deficient | | |
| 2. | Engine sump | Check and top up oil level to the 'MAX' mark on the dipstick. | SAE 20 | |
| 3. | Air Cleaner | Clean under very dusty condition. | | |
| 4. | Fuel Tank | Drain Sediments and water from sediment trap drain plug. | | |
| 5. | Cooling system | (a) Check water level in radiator and top up.
(b) Check the radiator cap is properly tightened.
(c) Check fan belt tension. | | |

Crusher Side

- | | | | | |
|-------|---|------------------------------------|--|--------------|
| No. 1 | 6. Jaw stock bearing | Check up grease lubrication | | Grease |
| No. 2 | 7. Drive pinion bearing | Bearing lubrication to be checked. | | Grease |
| | 8. Main drive gear bearing | Check grease lubrication. | | Grease No. 3 |
| No. 2 | 9. Rotary screen drive gear and bevel gear. | Check grease lubrication. | | Grease |

10. Main drive belt Check tension and adjust if loose
11. Belt Fastener Check up belt fastener are fitted property.

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1	2	3	4	5
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Electrical System

12. Battery (a) Check level of distilled water, Distilled Water. 6
if low to be topped up.
- (b) Check up vent holes. If Blocked make free. 6
- (c) Check up terminals for cleanness and proper fitting Mineral Jelly 2
- (d) Check up battery position safe with cardle.
13. Wiring and Connection Check up all electrical wiring for discontinuity, short circuit.
14. Tyre Pressure Check up all tyre pressure with 6
6 pressure gauge.

Note :-

1. Oil Grades
- (a) Above 85°F - Use SAE 30
- (b) 40°F to 85°F - Use SAE 20
- (c) Below 40°F - Use SAE low.

10 HOURS MAINTENANCE TASK

1. General Carry out 10 Hours maintenance task.
2. Engine (a) Clean air cleaner under SAE 30. Moderately dusty condition.
- (b) Clean cylinder, cylinder Head and injector finning undr Very dusty condition.

- (c) Wipe engine and base plate clean.
- (d) Check lubricating oil leaks and tight nuts and fitting as necessary.
- 3. Cooling System.
 - (a) Clean Radiator core.
 - (b) Grease water pump bearing.

Grease No.3

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1	2	3	4	5
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|------|---|---|-------------|--|
| | <u>Crusher Side</u> | | | |
| | 4. Main drive bearings and Rottery screen Bearings. | Remove old grease and fill up cups with new grease. | Grease No.2 | |
| No.2 | 5. Rottery screen drive gear and beval gear. | Clean gears and lubricants | Grease | |

Note :-

1. Oil Grades
 - (a) Above 85°F - Use SAE 30
 - (b) 40°F to 85°F - Use SAE 20
 - (c) Below 40°F - Use SAE 10W

250 HOURS MAINTENANCE TASK

1. General Carry out 10 Hours and 100 Hrs maintenance task.
2. Engine SAE 30.
 - (a) Drain lubricating oil, Flush out system and refill.
 - (b) Clean crank case breather element.
3. Inlet and Exhaust valve.
 - (a) Check valve clearance and adjust. if necessary (Clearance valve To Rocker 0.015" or 0.28 mm)
4. Oil filter Clean filter element
5. Fuel filter Clean fuel filter

- | | | | |
|-----|-----------------------|---|--------|
| 6. | Radiator | Drain water, flush with washing soda and refill with clean water. | |
| 7. | Injector | Check injector spray and clean if necessary. | |
| 8. | Fuel | Oil level to be checked, if low to be topped up. | |
| | SAE 30 Injection Pump | | |
| 9. | Blower | Check blower belt tension | |
| 10. | Dynamo | Lubricative dynamo bearing with few drops of oil. | SAE 30 |

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1	2	3	4	5
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Note :-

1. Oil Grades
 - (a) Above 85°F - Use SAE 30
 - (b) 40°F to 85°F - Use SAE 20
 - (c) Below 40°F - Use SAE 10W

500 HOURS MAINTENANCE TASK

1. General Carry out 10 , 100 and 250 Hrs maintenance task.
2. Engine
 - (a) Decarbonise if engine shows Loss of compression or blow by piston, But do not disturb otherwise.
 - (b) Adjust tappet clearances.
 - (c) Change oil filter element.
 - (d) Wash engine interior with paraffin or fuel oil.
 - (e) Clean cooling fins and oil cooler element if necessary.

Crusher Side

3. Jaw plate
 - (a) Check serviceability of jaw plates.
 - (b) Check jaw plate adjusting, if loose to be Tightened.
4. Mounting Check mounting bolt and tight if loose any.

Bolt

5. Main drive belt and Belt fastners. Check serviceability of belt fastener and adjust tension.

6. **Electrical System**

- (a) Dynamo Grease no.2 2 Replace bearing with fresh grease
- (b) Starter motor SAE 30 1 Lubricate bearing with few oil drops.

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Note :-

1. Oil Grades
- (a) Above 85°F - Use SAE 30
- (b) 40°F to 85°F - Use SAE 20
- (c) Below 40°F - Use SAE 10W

1,500 HOURS MAINTENANCE TASK

1. General Carry out 10, 100, 250 and 500 Hrs maintenance task.
2. Engine
- (a) Decarbonise engine.
- (b) Clean inlet manifold and exhaust system.
- (c) Clean all colling fins and oil coblet element.
3. Blower Examine blower blades and clean.
4. Governor Check free working of governor linkage.

5. **Fuel System**

- (a) Fuel tank Remove fuel tank, clean interior and strainers.
- (b) Fuel Filter Change fuel filter element.
- (c) Injector
- (a) Clean injector nozzle or replace with serviced one.
- (b) Check injector pressure setting.
- (d) Fuel Pump Check fuel pump timing and balancing.

6. **Crusher Side**
- No.2 (a) Jaw stock (a) Dismantle jaw stock and check up for Grease Bearings. Bearings and pack up with fresh grease.
- (b) Rottery Lubricate with fresh grease.
Grease No.2
screen drive
pinion bearings.
- (c) All shaft and Check all shafts and bearings for bearings. Serviceability and if necessary replace.
- (d) Wheel Grease up all wheel bearings.
Grease No.2
bearings.

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1	2	3	4	5
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7. **Electrical System**

- (a) Starter motor. Inspect bursh and commuator.
- (b) Dynamo Clean commutator and change the brush if worn out.

3,000 HOURS MAINTENANCE TASK

1. General Carry out 10, 100, 250, 500 and 1,000 Hrs maintenance task.
2. Blower Check blower bearing for wear and lubrication.

53000 HOURS MAINTENANCE TASK

1. General maintenance task. Carry out 10, 100, 250, 500, 1,000 and 5,000 Hrs
2. Engine (a) Check big and main bearings.
(b) Inspect cam shaft bearing and tappets.
(c) Change valve spring.

CHECK CARD : PREVENTIVE MAINTENANCE
(ORIGINAL/DUPLICATE)

1. Project _____ 4. Make & Type : SISCO Action :
 of Eqpt STONE After
 carrying out the
 2. Tsk Force _____ CRUSHER preventive
 Maintenance Task, Mobile
 Maintenance
 3. Unit _____ 5. BA/EM No. _____ Team will enter
 its date in the months
 column
 6. Location _____ below and initial.

Srl No.	Task	J	F	M	A	M	J	J	A	S	O	N	D
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1. **10 Hours**
 (a)
 (b)
 (c)
 (d)
 (e)
2. **100 Hours**
 (a)
 (b)
 (c)
 (d)
 (e)
3. **250 Hours**
 (a)
 (b)
 (c)
 (d)
 (e)
4. **500 Hours**
 (a)
 (b)
 (c)
 (d)
 (e)
5. **1,500 Hours**
6. **3,000 Hours**
7. **5,000 Hours**

Signature of SO-1/SO-2 EME (Project) _____

Date _____

Remarks _____

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