

DIRECTOR GENERAL BORDER ROADS
GENERALS MAINTENANCE INSTRUCTION NO. 80
ON
MAINTENANCE AND LUBRICATION
OF
AIR COMPRESSOR ATLAS COPCO 160 CFM

Introduction:-

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

Aim :-

- a) To enumerate the details of periodic and preventive maintenance and lubrication of AIR COMPRESSOR ATLAS COPCO 160 CFM.
- b) Issue CHECK CARD for use by Mobile Maintenance Team.

Action by

- 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 noticed.

Details

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

/DGBR GMI No. 80/

/Dated: 20 JAN 73/

CHECK CARD : PREVENTIVE MAINTENANCE
(ORIGINAL/DUPLICATE)

- | | | |
|--------------------|---|--|
| 1. Project | 4. Make & Type - <u>AIR COMPRESSOR</u> | Action After Carrying out the preventative maintenance Task, Mobile maintenance team will enter its date in the months column below and initial. |
| 2. Task Force..... | of eqpt <u>ATLAS COPCO 160 CFM</u> | |
| 3. Unit | 5. BA/EM NO. | |
| | 6. Location | |

| Srl No. | Tasks | J | F | M | A | M | J | J | A | S | O | N | D |
|---------|-------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | <u>Daily (08 Hours)</u> | | | | | | | | | | | | |
| | (a) | | | | | | | | | | | | |
| | (b) | | | | | | | | | | | | |
| | (c) | | | | | | | | | | | | |
| | (d) | | | | | | | | | | | | |
| | (e) | | | | | | | | | | | | |
| | (f) | | | | | | | | | | | | |
| | (g) | | | | | | | | | | | | |
| | (h) | | | | | | | | | | | | |
| | (j) | | | | | | | | | | | | |
| | (k) | | | | | | | | | | | | |
| 2 | (<u> </u> Hours) | | | | | | | | | | | | |
| | (a) | | | | | | | | | | | | |
| | (b) | | | | | | | | | | | | |
| | (c) | | | | | | | | | | | | |
| | (<u> </u> Hours) | | | | | | | | | | | | |
| | (a) | | | | | | | | | | | | |
| | (b) | | | | | | | | | | | | |
| (c) | | | | | | | | | | | | | |
| 3 | (<u> </u> Hours) | | | | | | | | | | | | |
| | (a) | | | | | | | | | | | | |
| | (<u> </u> Hours) | | | | | | | | | | | | |
| | (<u> </u> Hours) | | | | | | | | | | | | |
| | (<u> </u> Hours) | | | | | | | | | | | | |
| | (<u> </u> Hours) | | | | | | | | | | | | |

Signature of SO1/SO2 EME Project

Date

Remarks

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

PREVENTIVE MAINTENANCE FOR AIR COMPRESSOR ATLAS COPCO 160 CFM

| S/No. | Item/Assys | Maintenance Instruction | Lubricant | No of points |
|-------|------------|---|------------|--------------|
| 1 | 2 | 3 | 4 | 5 |
| | | <u>EVERYDAY OR 08 HOURS TASK</u> | | |
| 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 | a) Keep engine clean and tidy b) Check water in radiator and top up if necessary c) Check oil level in sump and top up if necessary | Engine oil | 1 1 |
| 3 | Compressor | a) Drain condensed water from the regulating valve b) Check the oil pressure and the inter cooler pressure c) When starting check that the regulating valve works correctly | | 1 2 1 |

Note :-

Lubricants

1. Engine Oil (Grades)

- | | | | |
|-----|---------------|---|----------------|
| (a) | Above 27* C | - | Use SAE 30 |
| (b) | 0*C to 27* C | - | Use SAE 20/20W |
| (c) | -18*C to 0* C | - | Use SAE 10/10W |

2. The same H.D. Oil should be used for both Engines and compressor.

| | | | | |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|

50 HOURS TASK

1. Engine Carry out 8 hours task
2. Fan Belt Check adjustment. It should be $\frac{3}{4}$ "
3. Batteries Top up with distilled water
- Compressor
4. Air Filter
 - a) Clean the air filter by rinsing them in fuel oil and dry them by air blast
 - b) Fill fresh engine oil upto the level. Engine Oil

Note:-Lubricants1. Engine Oil (Grades)

- | | | |
|-----------------|---|----------------|
| a) Above 27°C | - | Use SAE 30 |
| b) 0°C to 27°C | - | Use SAE 20/20W |
| c) -18°C to 0°C | - | Use SAE 10/10W |

2. The same H.D. oil should be used for both the engine compressor.

3. If the equipment operates under very dusty condition air filter of the compressor should be cleaned more frequent.

100 HOURS TASK

1.
 - a) Carry out 8 hours task
 - b) Carry out 50 hours task

Engine

2. Fuel lift Pump Clean pre-filter
3. Air Cleaner Examine and replenish oil Engine Oil
4. Fuel Pump Top up camshaft chamber with engine oil Engine Oil

| | | | | |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|

Lubricants1. Engine Oil Grades

- | | | |
|-----------------|---|----------------|
| a) Above 27°C | - | Use SAE 30 |
| b) 0°C to 27°C | - | Use SAE 20/20W |
| c) -18°C to 0°C | - | Use SAE 10/10W |

The same H.D. Oil should be used for both Engine and Compressor.

250 HOURS TASK

- | | |
|----|-----------------------------|
| 1. | a) Carry out 8 hours task |
| | b) Carry out 50 hours task |
| | c) Carry out 100 hours task |

Engine

- | | | | | |
|----|--------------------|---|--------------|---|
| 2. | Oil Pump | Drain oil from sump and refill | Engine Oil | 1 |
| 3. | Battery | Clear and treat terminals | | 1 |
| 4. | Dynamo | Refil grease on dynamo | Grease No. 2 | 1 |
| 5. | Fuel Filter | Clean felt element of primary fuel filter in dual filter by immersing in fuel oil and blowing by air at below 14.7 lbs/sq in. | | |
| 6. | Element Oil Filter | Renew element | | |

Lubricants & Grease1. Engine Oil Grades

- | | | |
|-----------------|---|----------------|
| a) Above 27°C | - | Use SAE 30 |
| b) 0°C to 27°C | - | Use SAE 20/20W |
| c) -18°C to 0°C | - | Use SAE 10/10W |

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
|---|---|---|---|---|

2. Grease (Grade)

- a) Above 10⁰ C - Grease No. 2
 b) Below 10⁰ C - Grease No. 1

500 HOURS TASK

1. a) Carry out 8 Hours task
 b) Carry out 50 Hours task
 c) Carry out 100 Hours task
 d) Carry out 250 Hours task

Engine

2. Air Cleaner Remove clean and attend to air cleaner
 3. Sump Clean strainer in sump
 4. Injectors Clean and check
 5. Fuel Oil Filter Cleanr gauge trap in fuel oil filter

Compressor

6. Concentric Check and clean concentric valves.
 7. Blow off valve Check and drain blow off valve on the inter cooler
 8. Pressure regulator a) Check and clean pressure regulator
 b) Check connections fittings and control tighten all loose nuts bolts and screws.

1000 HOURS TASK

- a) Carry out 8 Hours task
 b) Carry out 50 Hours task
 c) Carry out 100 Hours task
 d) Carry out 500 Hours task

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
|---|---|---|---|---|

Engine

| | | | | |
|----|---------------|---|----|---|
| 1. | Fuel Tank | Clean fuel tank in portable installation | | 1 |
| 2. | Fuel Filters | Renew elements in dual fuel filter | | 2 |
| 3. | Dynamo | Inspect commutator & brushes | | 1 |
| 4. | Cylinder Head | Remove cylinder head cover and check oil flow to valve rocker shaft assembly. | | 1 |
| 5. | Valves | Examine valve springs and tappets | 12 | |
| 6. | Timing | Check Fuel injection and valve timing and reset if necessary | | 2 |

Compressor

| | | | |
|-----------------|---------------------------------------|------------|---|
| Lubricating Oil | Change the compressor lubricating oil | Engine Oil | 1 |
|-----------------|---------------------------------------|------------|---|

Lubricants1. Engine Oil Grades

- | | | |
|-----------------|---|----------------|
| a) Above 27°C | - | Use SAE 30 |
| b) 0°C to 27°C | - | Use SAE 20/20W |
| c) -18°C to 0°C | - | Use SAE 10/10W |

The same H.D. Oil should be used for both Engine and Compressor.

1500 HOURS TASK

- Carry out 8 hours task
- Carry out 50 hours task
- Carry out 100 hours task
- Carry out 250 hours task
- Carry out 500 hours task
- Carry out 1000 hours task

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
|---|---|---|---|---|

- | | | | |
|----|----------------|---|--------|
| 2. | <u>Chassis</u> | Lubricate the wheel nuts and the torsion shaft bearings of the chassis. | Grease |
|----|----------------|---|--------|

Note :-

Lubricants and Greases

1. Grease (Grades)

- | | | |
|----------------------------|---|--------------|
| a) Above 10 ⁰ C | - | Grease No. 2 |
| b) Below 10 ⁰ C | - | Grease No. 1 |

3000 HOURS TASK

- | | | | |
|----|------------------|--|-----------------|
| 1. | | <ul style="list-style-type: none"> a) Carry out 8 Hours task b) Carry out 50 Hours task c) Carry out 100 Hours task d) Carry out 250 Hours task e) Carry out 500 Hours task f) Carry out 1000 Hours task g) Carry out 1500 Hours task | |
| 2. | Compressor | Check the compressor main bearing and crank shaft clearance and also the gudgeon pin bearings. | |
| 3. | Valves | Inspect the compressor valves | |
| 4. | Fuel miser Cable | Lubricate the fuel miser speed governor cable Cable with graphite paste. | Graphite grease |