

DIRECTORATE GENERAL BORDER ROADS
GENERAL MAINTENANCE INSTRUCTION NO.112

ON

MAINTENANCE AND CARE
OF

CRANK CASE BREATHER

Introduction

1. Regular servicing and preventive maintenance of Crank case Breather are essential to prolong the life of Engine.

Aim

2. Cleaning the Crank case Breather is important scheduled maintenance Procedure. Unfortunately it is too often overlooked or neglected with harmful results to the Engine. With the increasing use of Turbo charged Engines, this neglect could lead to expensive failure as explained in Appendix 'A' to this instruction.

Action by

3. (a) **User Unit.** To carry out the maintenance at regular intervals as recommended by the manufacturer.
- (b) **Filed Workshop (GREF).** To check that proper maintenance is carried out by the user units at regular intervals and advise units accordingly.
- (c) **Mobile Maintenance Team.** To check and clean the Crank case Breather, if found dirty/clogged and report to OC Filed Workshop (GREF) accordingly.

Details

4. As per Appendix 'A' to this instruction.

DETAILS

CRANK CASE BREATHER

1. During normal engine combustion a highly corrosive acid-based gas is formed. This gas is also moisture laden, normally a gallon of water being formed for every gallon of fuel burnt. Most of the combustion gases are expelled through exhaust system. However, it is normal for a small part of these combustion gases to slip past the piston rings into the Crank case. As piston rings experience normal wear, this amount increases.
2. It is the function of the Crank case Breather to remove these harmful vapors from the Crank Case before these can condense in the lubricating oil. If the breather system is clogged, not only will these corrosive acids and moisture condense in the oil, but an abnormal pressure will be built up inside the Crank case. This pressure may force out at various points on the engine that normally would not leak. Such locations are at front and rear Crankshaft oil seals, Valve covers, Push rod side covers, Distributor shaft and out of the Crank case Breather pipe. In case of excessive oil consumption a clogged breather should be the first things to look for.
3. The most important item affected by a clogged breather is the Turbocharger. The Turbocharger oil seals are of compression type. A pressure balance is required between the Air intake, Exhaust and Oil pressure to assure proper sealing. If either of these are disrupted, the seals will leak regardless of their serviceable condition. Increased Crank case pressure is caused by a clogged breather. It restricts the Turbo charger oil return line. This back pressure forces oil through the seals and into the intake and exhaust sides of the Turbo charger. In addition to this, any sludge picked up may be forced into the Turbo charger resulting in premature failure of the bearings.
4. To avoid costly failure of this type, clean the Crank case Breather at the intervals as recommended by the manufacturer in the Operator's Manual.