

DORECTPRATE GENERAL BORDER ROADS
GENERAL MAINTENANCE INSTRUCTION NO 45
PRESERVATION OF LAID UP ENGINES PERKINS P6, P4, P3 DIESEL

Aim. To lay down instructions for the preservation of PERKINS DIESEL engine, if vehicle /equipment which is powered by a PERKINS engine is to be laid-up for several months, so that it suffers from no ill effects during the idle period. These instructions will be read in conjunction with GMI No 41.

The following procedure is recommended for the preservation of a PERKINS engine, as soon as the veh/eqpt is to be withdrawn from use:-

- a) Thoroughly clean all external parts of the engine.
- b) Run the engine until well-warmed through. Stop the engine and drain lubricating oil sump.
- c) Drain water from radiator and engine cylinder block.
- d) Remove and clean gauge strainer in sump and renew oil filter element.
- e) Clean out engine breather.
- f) Fill sump to correct level with clean, new lubricating oil or with a suitable preservative fluid.
- g) Remove atomizers and spray into cylinder bores a ¼ pint of lubricating oil divided between the cylinders.
- h) Replace atomizers and turn engine slowly over compressions.
- j) Remove air cleaner and any intake pipe which may be fitted between the air cleaner and venture. Carefully seal venture orifice with waterproofed adhesive tape or some other suitable medium.
- k) Remove exhaust pipe and seal opening in manifold as in (j)
- l) Disconnect battery and store in fully charged condition. Before storing the battery, terminals should be treated by Mineral Jelly to prevent corrosion.

Fuel System:-

3.
 - a) The Fuel system may either be drained and charged with a suitable preservative or alternatively, it may left primed with normal oil.
 - b) Where the latter course is taken, it should be noted that deterioration of the fuel oil may be occasioned during the month the veh/eqpt is idle.
 - c) If this occurs, the fuel oil may become contaminated with a wax like substance which will quickly clog the fuel filtering arrangement once the engine is returned to service.
 - d) Therefore, before recommencing operations in respect of a unit primed with normal fuel oil which lain idle for several months, it is recommended the fuel tank be drained and the interior of the tank thoroughly cleaned. The fuel oil drained off should be discarded as unfit for further use.

- e) Fuel oil contained in the remainder of the fuel system should also be dispelled and the paper element the final fuel filter renewed, following which the system may then be recharged with fresh clean fuel oil.

Lubricating System:-

4. Where a preservative is used in the lubricating oil sump, this should be drained off and replaced by normal lubricant prior to restarting the engine at the end of the storage period. In the case of a preservative being utilized to charge the fuel system this need not necessarily be drained off before returning the engine to services. Therefore, where a preservative is used in this respect , the relevant manufactures of the fluid should be contacted seeking their guidance as to whether their product should be drained away prior to re-starting the engines.

Periodical Maintenance:-

5. The periodical maintenance in respect of the following is given at Appendices mentioned against each:-

- a) For Vehicles - Appendix 'A'
- b) For Tractors - Appendix 'B'
- c) For Industrial - Appendix 'C'

HQ DGBR GMI No 45
DATED 26 OCT 1971

PERIODICAL MAINTENANCE (VEHICLE)

DAILY

- a) Check water in radiator.
- b) Check oil level in sump.

Every 1,000 Miles or 1,600 Km

- a) Check adjustment of fan belt
- b) Top up batteries with distilled water.

Every 2,000 miles or 3,200 km

- a) Drain oil from sump and renew.
- b) Clean element in lubricating oil filter
- c) Clean pre-filter to fuel lift pump.
- d) Clean air cleaner and replenish oil to correct level in Air Cleaner.

Every 4,000 miles or 6,400 Km

- a) Clean and treat battery terminals.
- b) Clean felt element of primary filter in Dual fuel filter.

Every 10,000 Miles or 16,000 Km

- a) Clean out crankcase ventilation pipe.]
- b) Clean gauge trap in fuel oil filter (when fitted)
- c) Clean strainer in sump
- d) Renew lube. Oil filter element.
- e) Clean lube. Oil filter pipe strainer

Every 20,000 Miles or 32,000 Km

- a) Inspect commutator and brushes of dynamo
- b) Renew both elements in dual fuel filter
- c) Examine valve springs and tappets
- d) Check oil flow to valve rocker shaft assembly.
- e) Clean and check atomizers.
- f) Check fuel injection and valve timing and reset if necessary:-

Note:- The time for cleaning the air cleaner depends on operating conditions therefore under extremely dusty conditions, the time limit recommended above for cleaning should be decreased.

The correct maintenance of the air cleaner will greatly assist in reducing bore wear thereby extending the life of the engine.

Appendix 'B' to HQ DGBR GMI No 45
Dated 26 Oct 1971

PERIODICAL MAINTENANCE (TRACTOR)

DAILY

- a) Check water in radiator.
- b) Check oil level in sump (Make the tractor is on level ground)

EVERY 50 HOURS

- a) Check fan belt adjustment.
- b) Clean air cleaner and renew oil (See note)
- c) Top up batteries with distilled water.
- d) Ensure that cylinder head cover nuts are tight.

EVERY 125 HOURS

- a) Drain oil from sump and renew
- b) Clean element lube. Oil filter

EVERY 250 HOURS

- a) Clean strainer in sump.
- b) Flush radiator with clean water.
- c) Clean and treat battery terminals.
- d) Clean gauze element in water trap type filter (when fitted).
- e) Clean fuel lift pump pre-filter (When fitted)
- f) Renew element in lubricating oil filter.
- g) Clean felt element (primary) of dual fuel filter

EVERY 500 HOURS

- a) Clean and check atomizers.
- b) Clean gauze trap in fuel oil filter (When fitted)

EVERY 1,000 HOURS

- a) Drain fuel tank, remove and clean.
- b) Inspect commutator and brushes of dynamo
- c) Examine valve springs and tappets.
- d) Inspect valve rocker shaft assembly for lubrication
- e) Renew both elements in dual fuel filter.

Notes:- _____ The time for cleaning the air cleaner depending operating conditions therefore under extremely dusty conditions, the time limit recommended above for cleaning should be decreased.

The correct maintenance of the air cleaner will greatly assist in reducing bore wear, thereby extending the of the engine.

Appendix 'C' to HQ DGBR GMI No 45.
Dated 26 Oct 1971

PERIODICAL MAINTENANCE (INDUSTRIAL)

DIALY

- a) Check water in radiator.
- b) Check oil level in sump

EVERY 50 HOURS

- a) Check fan belt adjustment
- b) Top up batteries with distilled water.

EVERY 100 HOURS

- a) Clean pre-filter to fuel lift pump (When fitted)
- b) Examine air cleaner and replenish oil (See note)

EVERY 250 HOURS

- a) Drain oil from sump and refill
- b) Clean and treat battery terminals
- c) Refill greaser on dynamo (when fitted)
- d) Renew element in lubricating oil filter
- e) Clean felt element (Primary) of dual fuel filter

EVERY 500 HOURS

- a) Remove, clean and attend to air cleaner (See Note)
- b) Clean strainer in sump.
- c) Clean and check atomizers
- d) Clean gauze trap in fuel oil filter (When fitted)

EVERY 1000 HOURS

- a) Clean fuel tank in portable installation
- b) Renew both elements of dual fuel filter.
- c) Inspect commutator and brushes in dynamo
- d) Check oil flow to valve rocker shaft assembly
- e) Examine valve springs and tappets.

Note:- The time period for cleaning the air cleaner depends on operating conditions therefore, under extremely dusty conditions, the time limit recommended above for cleaning should be decreased.

The correct maintenance of the air cleaner will greatly assist in reducing bore wear, thereby extending the life of the engine.

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