Small Engine Lubrication

Systems &
Specifications

Small Engine Lubrication

- Oil is necessary for the operation of your engine
- Without lubrication the pistons would seize and bearings would burn out
- The better the lubrication, the more power you will get.
- Engine life also depends upon how well the engine is lubricated.

Small Engine Lubrication

- Proper Lubrication will ensure your engine last longer because of the following reasons;
  - Oil reduces friction between moving parts
  - It provides a cushion between moving parts and keeps them apart
  - Oil reduces heat by reducing friction
  - Oil cleans
  - Oil prevents corrosion

Small Engine Lubrication

- Proper Lubrication will ensure your engine last longer because of the following reasons;
  - Some oils have special rust inhibitors for this purpose
  - Oil helps seal piston rings to help prevent blow by
  - Oil helps increase power output by reducing friction

Small Engine Lubrication

- There are many reasons why you should ensure that your small engine has proper lubrication;
  - Few small engines have an oil filter that would remove metal particles, dirt and sludge therefore it must be changed regularly
  - The oil in small gas engines runs hotter than oil in a water cooled engine, therefore it oxidizes and breaks down faster

Small Engine Lubrication

- There are many reasons why you should ensure that your small engine has proper lubrication;
  - Most small engines operate close to the ground so dirt and dust is more likely to enter the crankcase
  - Most small engines have no oil pressure gauge or warning light to show when pressure is low

Small Engine Lubrication

- There are many reasons why you should ensure that your small engine has proper lubrication;
  - The amount of oil availabe to small gas engines is relatively small
  - Small engines usually operate at maximum power output thus exerting extreme pressures
  - Small engines are lightweight thus vibrating more which adds to the bearing load

Small Engine Lubrication

- There are many reasons why you should ensure that your small engine has proper lubrication;
  - Few small engines are given a warm up period before a load is applied thus damage due to friction occurs early
  - Most small engines are used for intermittent service.

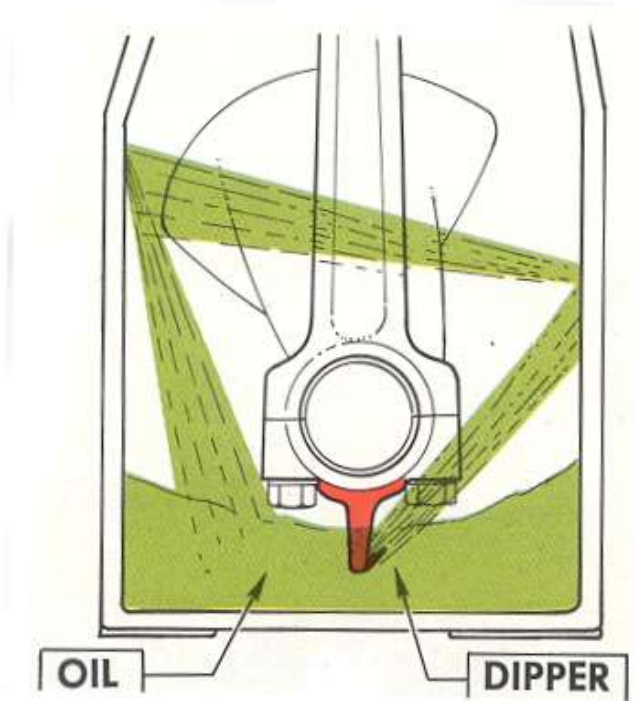
Types of Lubrication Systems

- All four cycle engines are lubricated from an oil reservoir (sump) but there are variations in the methods used to pick up the oil and splash it around
- There are basically ***four types of lubrication systems*** in small four stroke cycle engines and they are as follows;

Types of Lubrication Systems

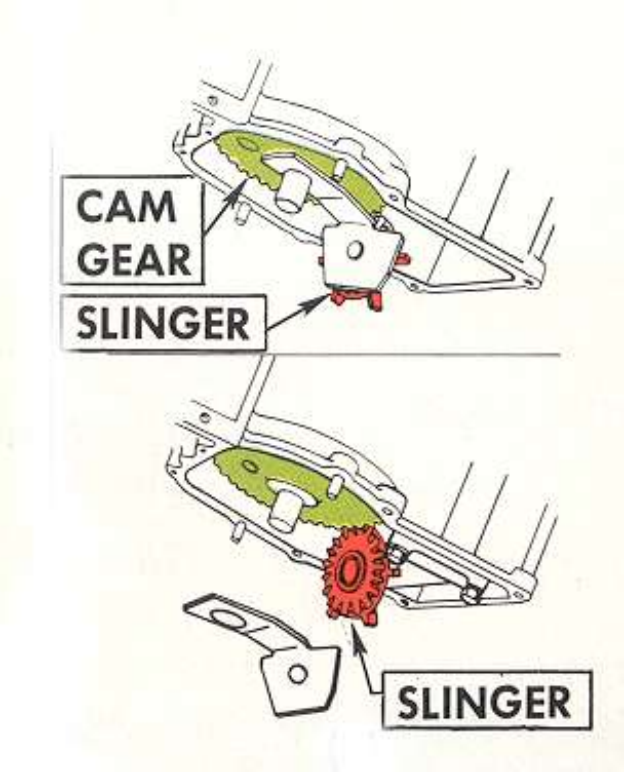
- Dipper and Sump
- Slinger
- Pump and Dipper
- Pump and Pressure System

Dipper and Sump



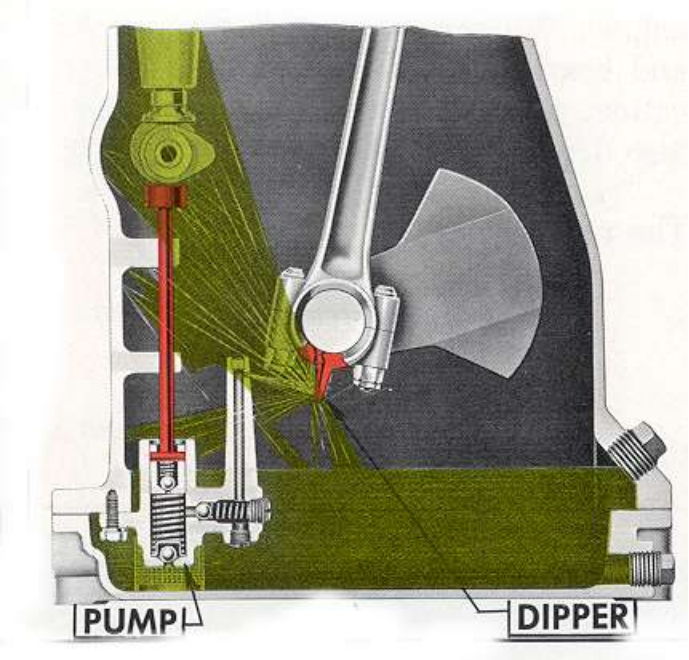
- As the crankshaft turns, oil is picked up from the sump by a dipper attached to the rod bearing cap, and is splashed about inside the crankcase
- This is one of the more common types

Slinger



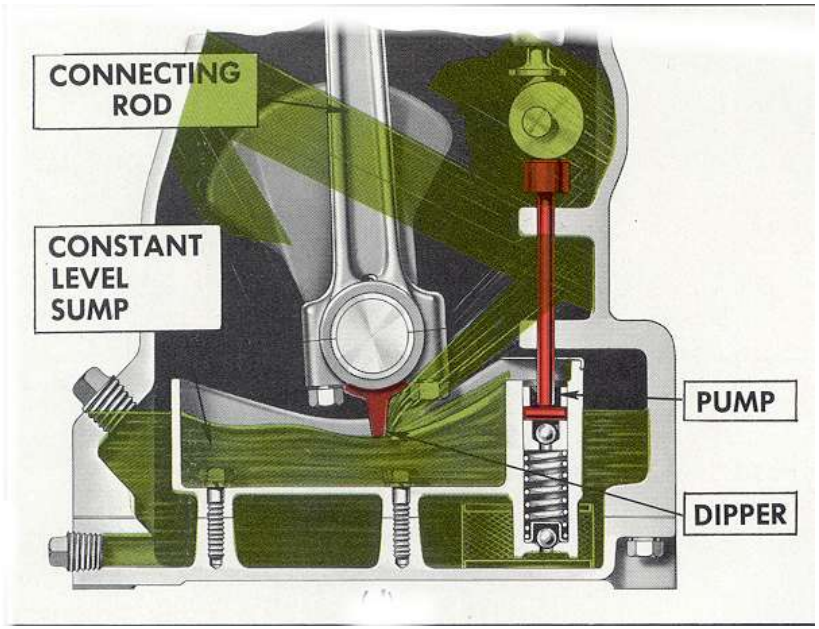
- Oil is picked up from the oil sump by a rotating slinger, and it is splashed about inside the crankcase.
- The slinger is driven by the cam gear.

Pump and Dipper



- Oil is pumped from the oil sump and sprayed onto a dipper; then it is splashed about inside the crankcase
- In another variation of this,oil is pumped into a constant level sump. Then it is picked up by a dipper and splashed about the crankcase.

Pump and Dipper



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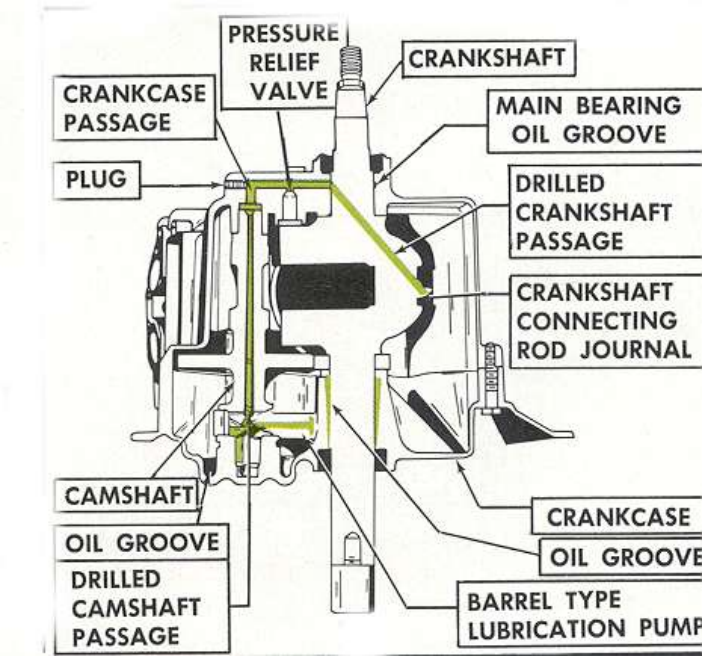
Pump and Pressure System



- Oil is pumped from the oil sump through drilled passageways to the bearings
- The pressure is kept constant by a relief valve

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