Small Engine Lubrication

Systems & Specifications
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
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
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
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 available 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.
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- 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 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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