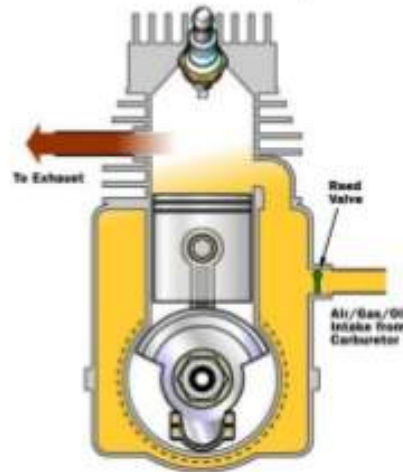


Internal Combustion Engines

– two stroke –

1. Power / Exhaust

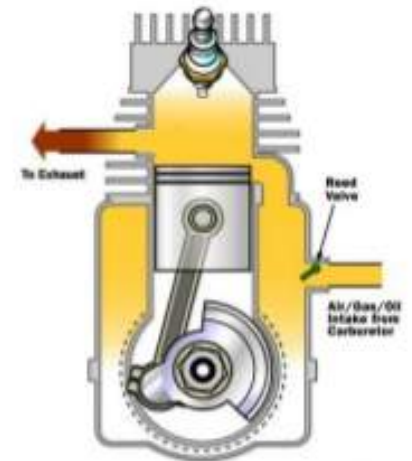
- a. ignition
- b. piston moves downward compressing fuel-air mixture in the crankcase
- c. exhaust port opens



Fuel-intake position of a two-stroke engine

2. Intake / Compression

- a. inlet port opens
- b. compressed fuel-air mixture rushes into the cylinder
- c. piston upward movement provides further compression



Compression action of a two-stroke engine

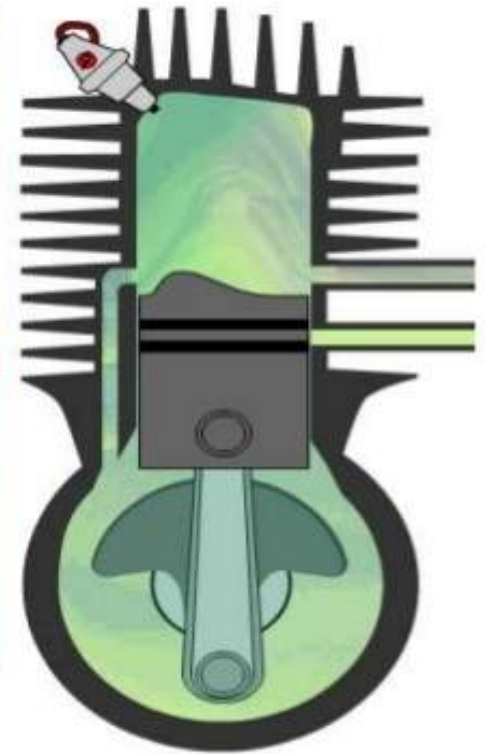
Internal Combustion Engines – two stroke -

Advantages:

- lack of valves, which simplifies construction and lowers weight
- fire once every revolution, which gives a significant power boost
- can work in any orientation
- good power to weight ratio

Drawbacks:

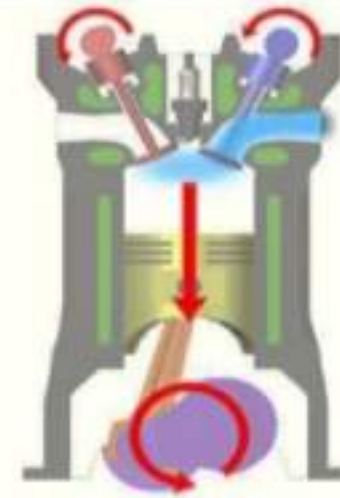
- lack of a dedicated lubrication system makes the engine to wear faster.
- necessity of oil addition into the fuel
- low efficiency
- produce a lot of pollution



Internal Combustion Engines - four stroke -

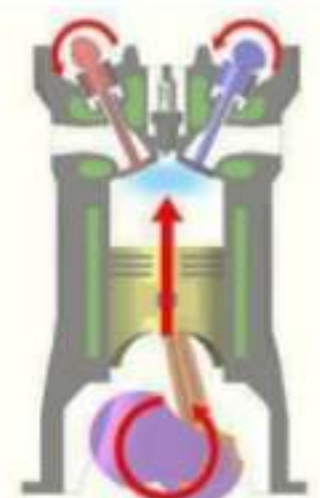


starting position



1. intake

- a. piston starts moving down
- b. intake valve opens
- c. air-fuel mixture gets in



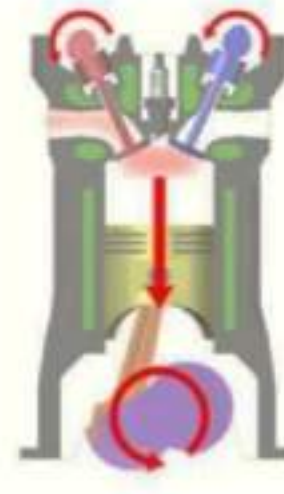
2. compression

- a. piston moves up
- b. both valves closed
- c. air-fuel mixture gets compressed

Internal Combustion Engines – four stroke –

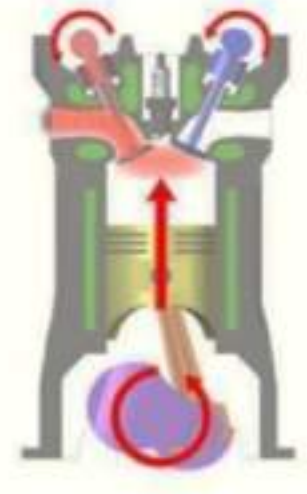


ignition



3. power

a. air-fuel mixture
explodes driving the
piston down



4. exhaust

a. piston moves up
b. exhaust valve opens
c. exhaust leaves the
cylinder

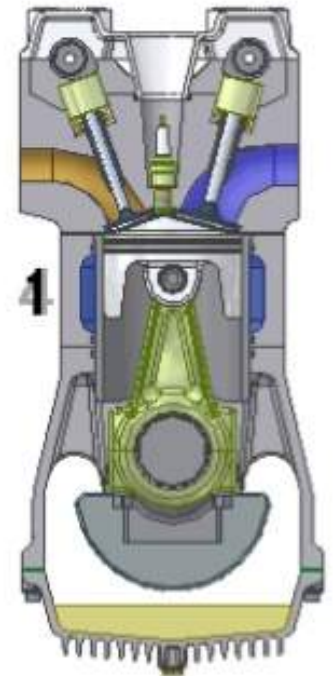
Internal Combustion Engines – four stroke –

Advantages:

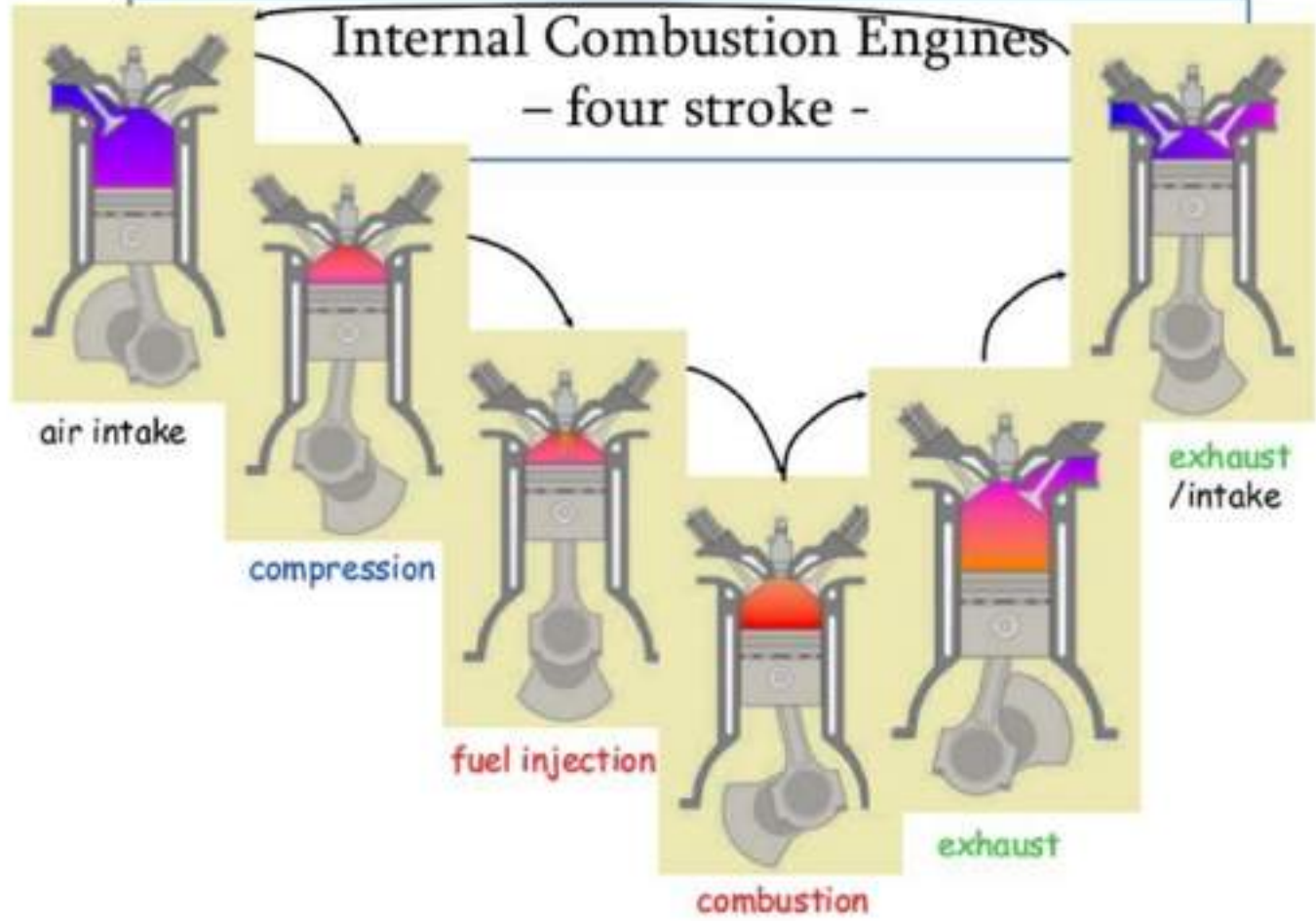
- dedicated lubrication system makes to engine more wear resistant
- better efficiency than 2-stroke engine
- no oil in the fuel - less pollution

Drawbacks:

- complicated construction
- should work in horizontal position due to lubrication



Internal Combustion Engines - four stroke -



Internal Combustion Engines – Diesel –

Advantages:

- self ignition (without electrical spark plug)
- better efficiency
- reliability
- higher durability
- supplied with worse fuels

Drawbacks:

- more expensive production
- more weight
- louder
- lower revolutions

