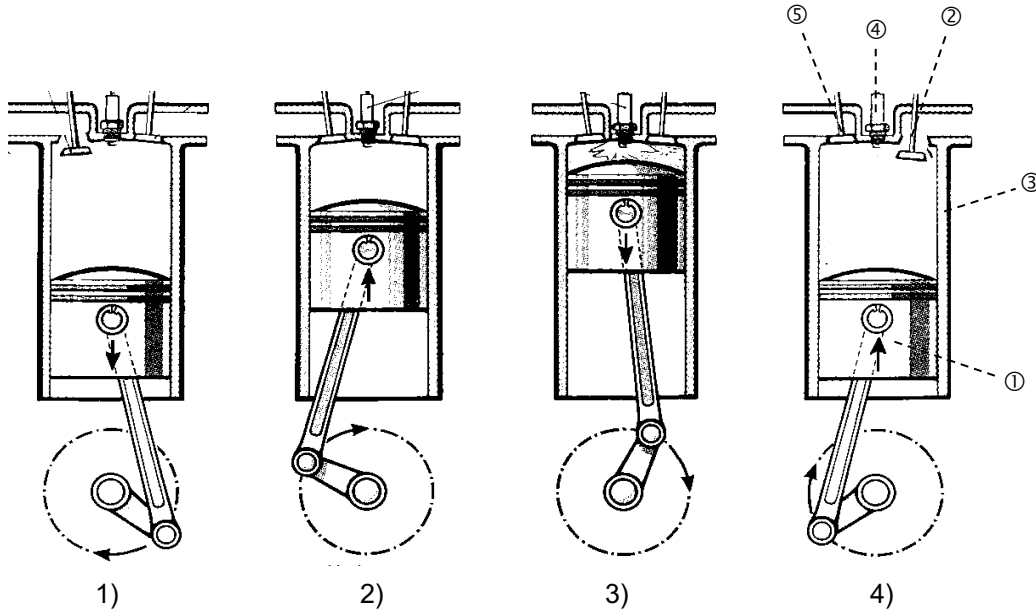


1. Four stroke gasoline engine (Otto engine)

Go to

<http://animatedengines.com/otto.html>

Move the lever to the left and watch the engine operating at low speed. Read the detailed explanations until you understand how the engine works. Then answer the questions below.



- Label the different parts of the engine: *spark plug, intake valve (poppet valve), exhaust valve, piston, cylinder?*
- What is drawn into the cylinder during the intake stroke?
- Answer the following question for the pictures 1) to 4):
 - Which valves are open, which ones are closed?
 - What happens to the vaporized fuel/air mixture?
 - Does it flow into the cylinder? Through which opening?
 - Does it flow out of the cylinder? Through which opening? As what?
 - Is it being compressed? Where? How?
 - Is it being ignited? Where? How?
 - Is work done on the piston? If no, why does the piston move?

2. Four stroke Diesel engine

☞ *There are a few minor differences between a Diesel and a gasoline engine.*

Go to

<http://animatedengines.com/diesel.html>

Move the lever to the left and watch the engine operating at low speed. Read the detailed explanations until you understand how the engine works. Then answer the questions below.

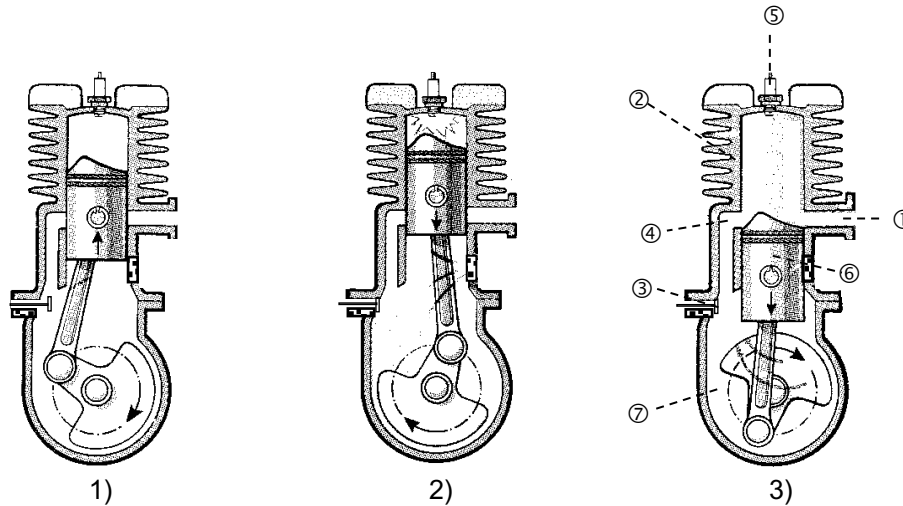
- Which of the following parts do only occur in a Diesel engine, which ones only in a gasoline engine? Which parts do occur in both engines?
spark plug, fuel injector, intake valve (poppet valve), exhaust valve, piston, cylinder?
- What is drawn into the cylinder during the intake stroke?
- At what time is the Diesel added? How?
- How is ignition triggered in a Diesel engine?

3. Two stroke engine

Go to

<http://animatedengines.com/twostroke.html>

Move the lever to the left and watch the engine operating at low speed. Read the detailed explanations until you understand how the engine works. Then answer the questions below.



- a) Label the different parts of the engine: *spark plug, intake poppet valve, intake port, exhaust port, crank case, piston, cylinder?*
- b) What is drawn into the crank case in picture 1)?
- c) Answer the following question for the pictures 1) to 3):
 - I. Which valves and which ports are open, which ones are closed?
 - II. What happens to the vaporized fuel/air mixture?
 - Does it flow into the crank case? Through which opening?
 - Does it flow into the cylinder? Through which opening?
 - Does it flow out of the cylinder? Through which opening? As what?
 - Is it being compressed? Where? How?
 - Is it being ignited? Where? How?
 - III. Is work done on the piston? If no, why does the piston move?