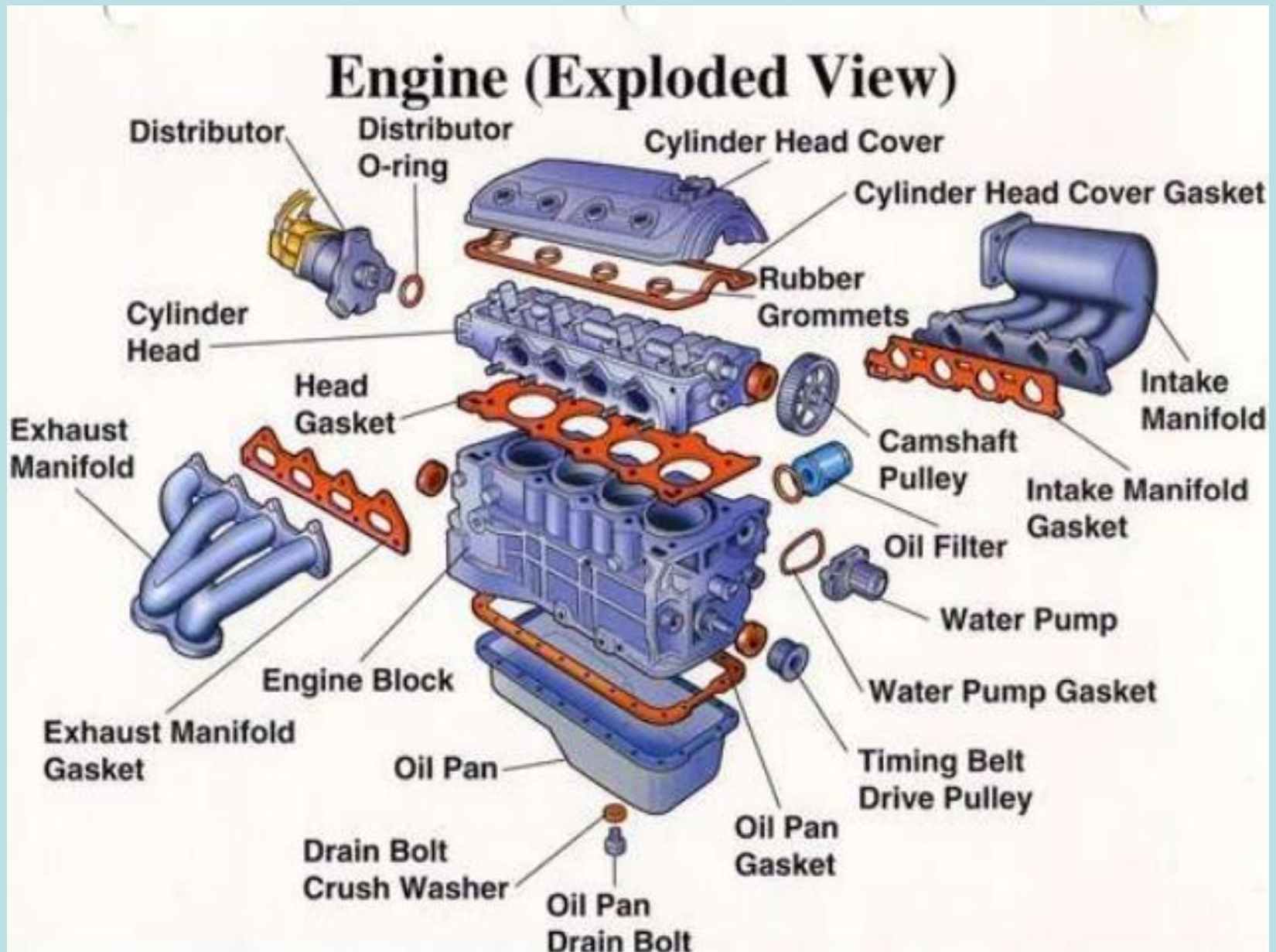


EN 310: Engine Internals and working



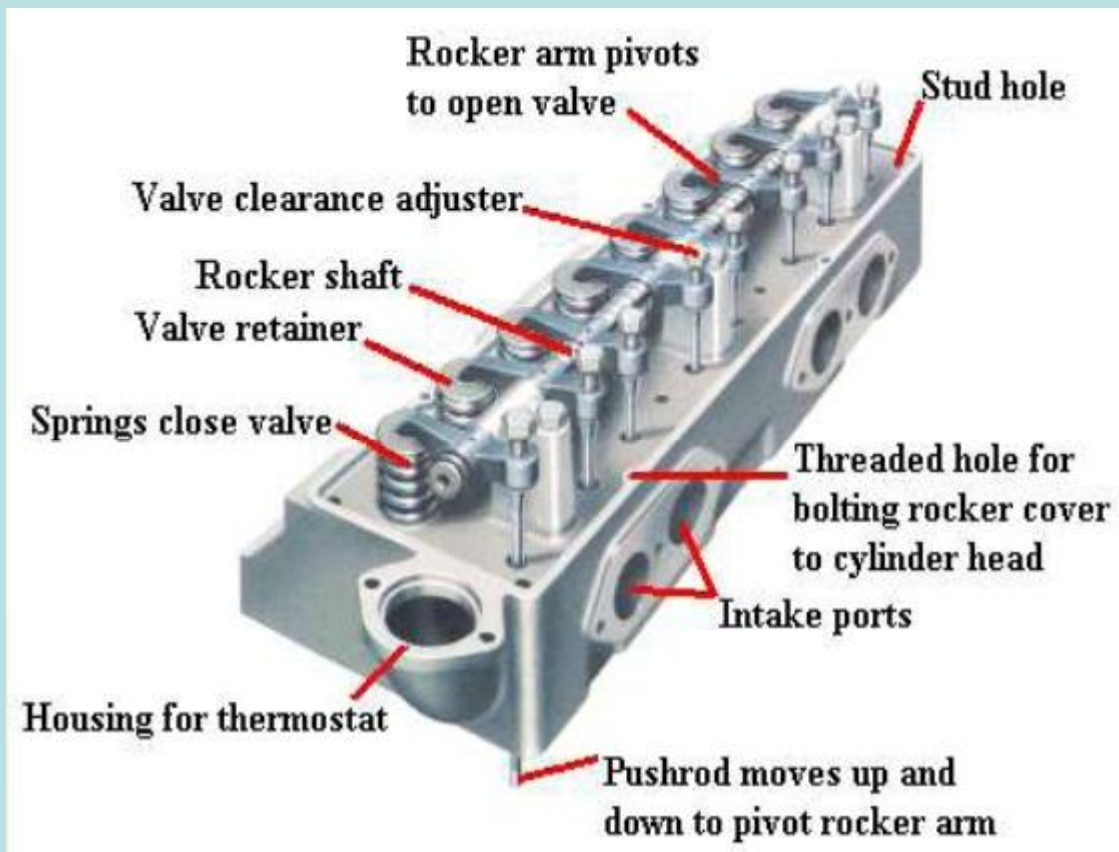
Cylinder Block



- Intake, Compression and Burning of fuel takes place
- Guides the piston
- Cylinder cooling by water jacket or fins
- Cast Iron or Low Carbon steel

<http://www.mechengg.net/2015/09/ic-engine-major-parts-and-its-function.html>

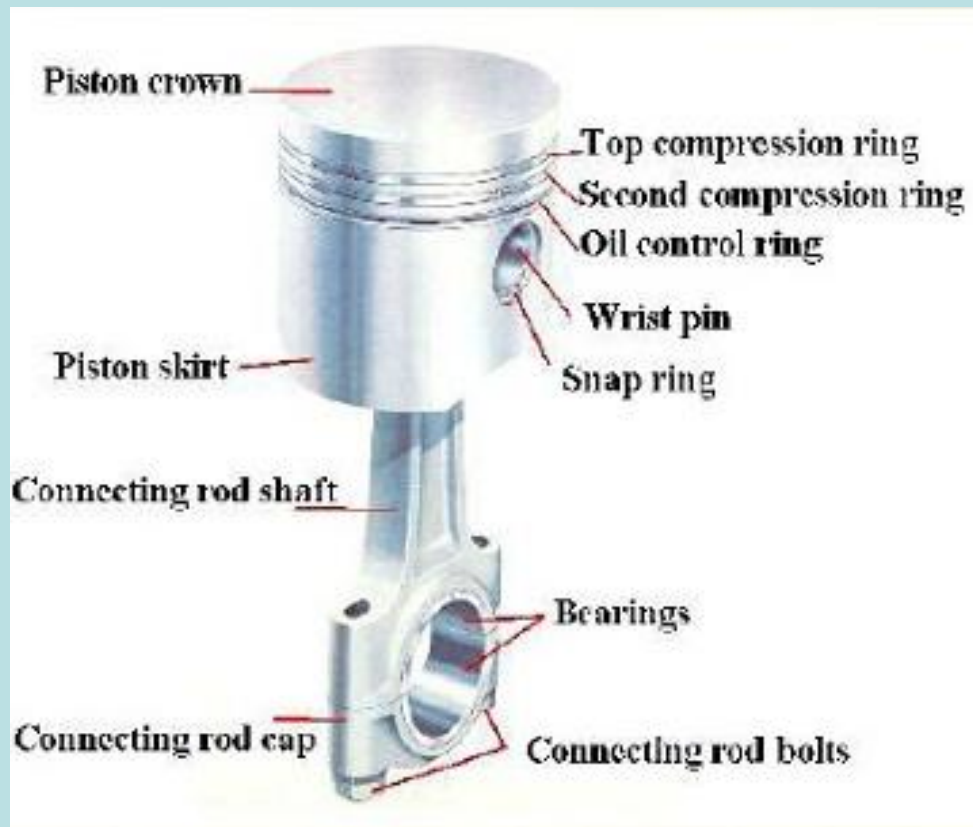
Cylinder Head or Cover



- Closes one side of cylinder block
- Inlet Valve, Exhaust valve, Spark Plug, Injector – bolted on head
- Aluminium alloys

<http://www.mechengg.net/2015/09/ic-engine-major-parts-and-its-function.html>

Piston



- Reciprocates inside the cylinder
- Transmits energy to crankshaft through connecting rod
- Provides seal during compression
- Aluminium alloy

<http://www.mechengg.net/2015/09/ic-engine-major-parts-and-its-function.html>

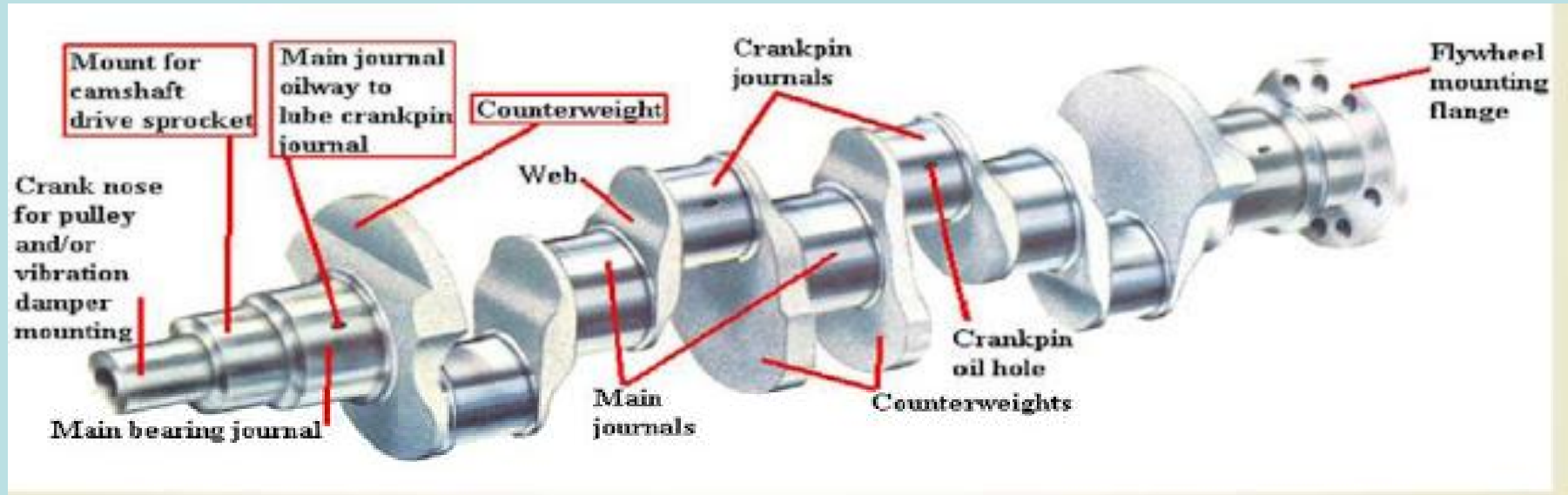
Piston Rings & Connecting Rod



- Pressure tight seal between piston and cylinder walls
 - Split at one end
 - Compression Rings and Oil Ring
 - Cast iron and elastic material
-
- Connects piston and crank – transmits reciprocatory to rotary motion
 - Low carbon steel

<http://www.mechengg.net/2015/09/ic-engine-major-parts-and-its-function.html>

Crank Shaft



- Transforms reciprocating to rotary motion
- Mounted in bearings for free movement
- Size and shape – f(No. of cylinders and size of cylinders)
- Alloy steel

<http://www.mechengg.net/2015/09/ic-engine-major-parts-and-its-function.html>

Fly wheel & Crank case



- Energy storage device
- Rotates shaft during preparatory stroke and helps uniform motion
- Cast iron



- Supports and covers cylinder and crank shaft
- Stores lubrication oil – called oil sump often

<http://www.mechengg.net/2015/09/ic-engine-major-parts-and-its-function.html>

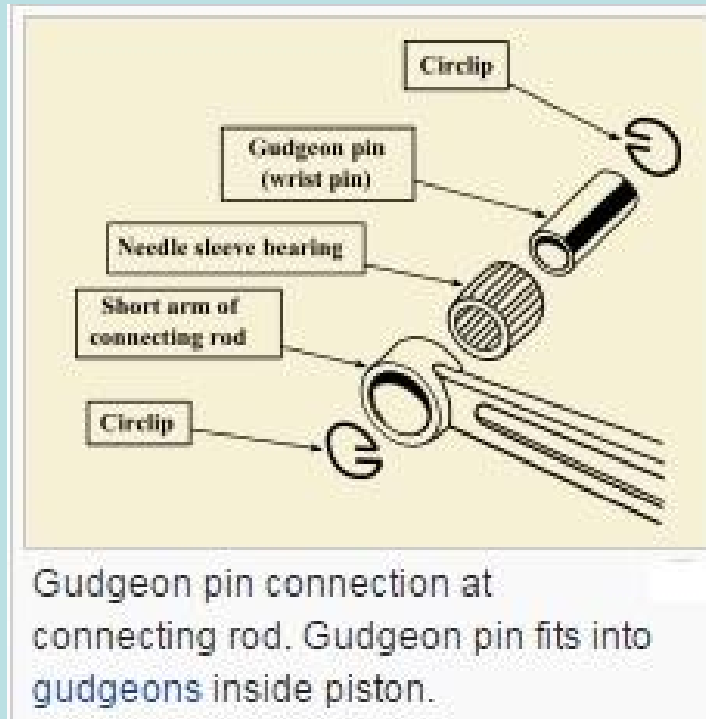
Poppet Valves & Spark Plug



- To regulate fuel-air inlet and exhaust outlet
- Also provide sealing during compression and ignition
- Bronze, Monel metal
- Helps in ignition of fuel-air mixture (SI engine)

<http://www.mechengg.net/2015/09/ic-engine-major-parts-and-its-function.html>

Piston Pin & Cam shaft



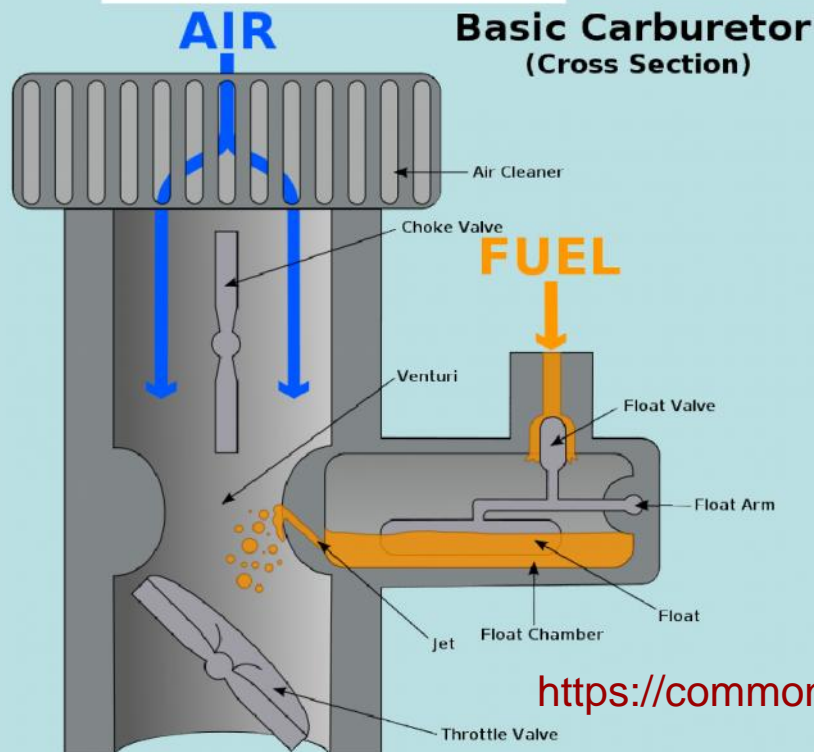
- Attach connecting rod to piston allowing rod to swivel
- Made hollow for lightness
- Carbon steel
- Controls opening and closing of valves at proper timing
- Driven by timing belt, which in turn is driven by the crank shaft
- Carbon steel

<http://www.mechengg.net/2015/09/ic-engine-major-parts-and-its-function.html>

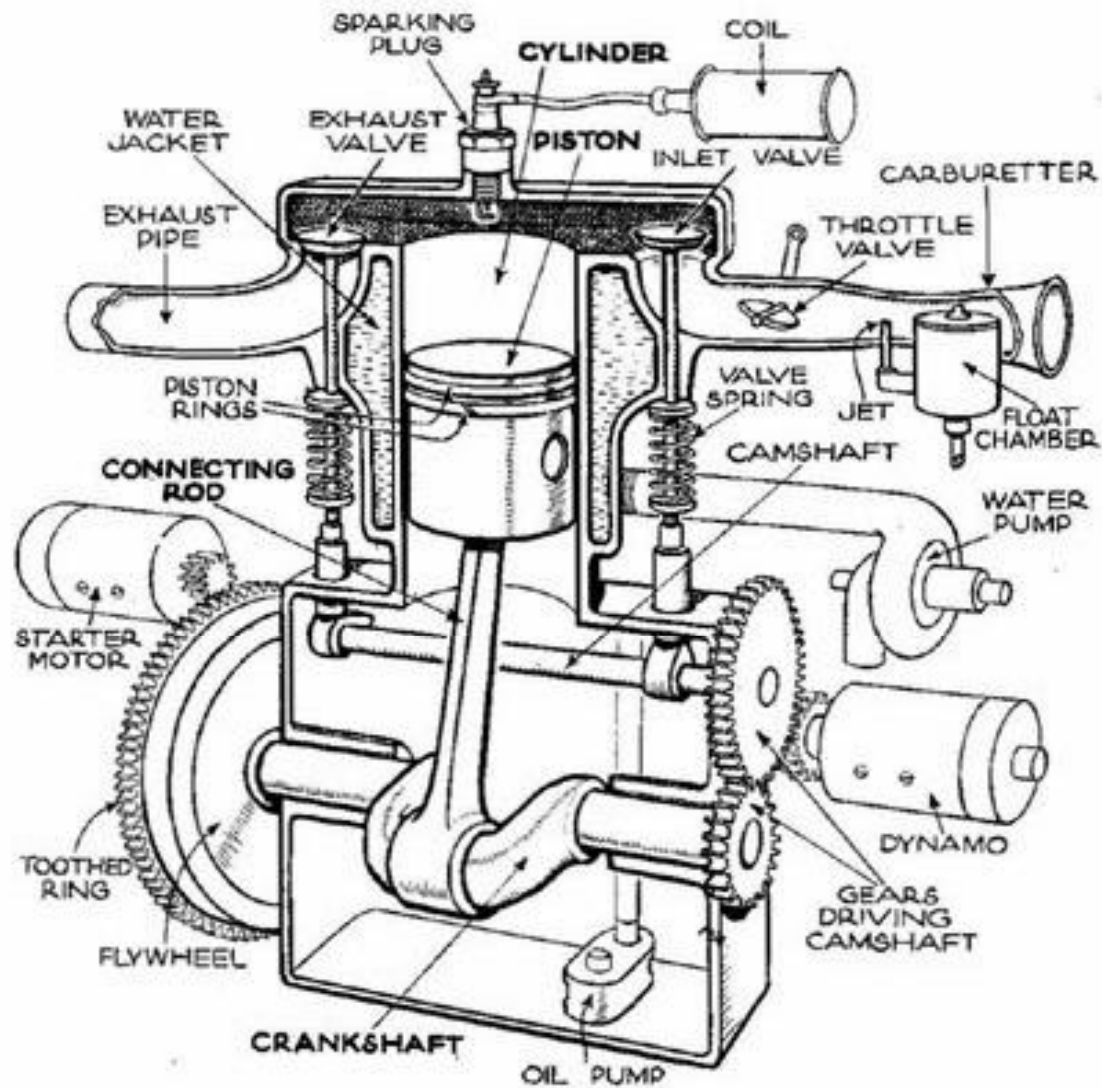
Injector and Carburettor



- Used in CI engine – high pressure fuel spray through holes in the nozzle
- Pressure delivered by fuel pump



- Works with low pressure
- Fuel is atomized and mixed with incoming air



main parts of engine

