Cylinder Block

The Cylinder is fillied accurately in the Cylinder Block. The Cylinder Block Contains Crank, Camshaft, piston and Enyme posts. Cylinder Block Consists of water jackets.

Material → Grey Cast iron, Aluminium Alloys.
Method → Single Casting.

Cylinder Head

The Cylinder Head is attached with the Cylinder Block with Studs. water jackets one provided for passage of cooling water.

Material → Cast iron, aluminium alloys.
Method → Single Casting.

Cylinder liners

The sleeve fitted in the Cylinder bore is called Cylinder liners. It redrces the wearners of the Cylinder

(i) Dry liners (ii) Wet liners are the two type

Dry liners.

It is attached with the Cylinder Block. There is no direct contact with working waters.

Wet liners.

It is surrounded by the Coling water. The inca redrces the wear and tear of the piston

* It should with stand abrasive wear.
* It should with stand Corrosive wear.

Material : Chromium plated mild steel tubes, cast iron

Method : Centrifugal Casting

Crankcase

It is attached at the bottom part of the engine block.

Material : CI, Aluminium Alloys,

Method : casting.

Oil Sump

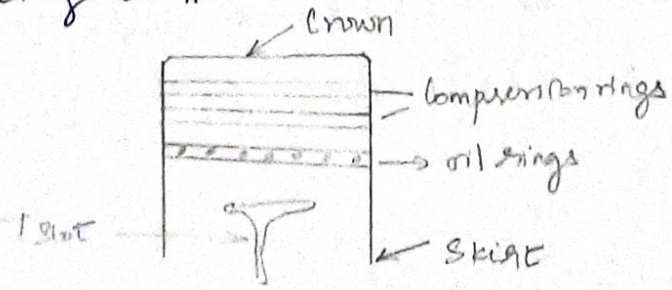
The oil is stored in the oil sump. The down plug is used to remove all the oil.

Material : Steel sheet

Method : Pressing

Piston

It provides a gas tight seal. The force from the power stroke is transmitted to crankshaft by a connecting rod.



The T slot, I, C slot are provided for the expansion of the heat.

Material - CI, Al Alloys, chrome-Nickel Alloy, Cast steel

Method - casting or forging.

Piston rings

Piston rings are provided in the grooves of the piston. The compression rings provides a air tight seal for compression. The oil rings sweeps the excess oil in to oil pain with the holes in the oil rings.

Material → Alloy CI containing Silicon and Manganese
Alloy Steels
Method – Casting or forging.

Connecting rod

It connects the piston and the Crankshaft. The reciprocating motion is converted into Rotary motion. It should be very strong.

Material → Plain carbon steel, aluminium alloys, Nickel Alloys
Method → Drop forging.

Crank Shaft

Crank is a part of the Crankshaft. The Crankshaft of an IC engine receives efforts via crank supplied by the pistons through connecting rod.

Engine Bearings

The Crankshaft is supported by bearings. The Connecting rod big end is supported and attached to the Crank pin on the Crank of the Crankshaft by bearing.

Flywheel

A flywheel is secured on the Crankshaft. It is made of steel or Cast iron disc. Stores Energy required to rotate the shaft during preparatory strokes.

Governor

A governor is defined as a device for regulating automatically the output of a machine by regulating the supply of working fluid to the variation of loads

load ↑ → Speed ↓ → fuel ↑
load ↓ – Speed ↑ → fuel ↓ supply
} Controlled by governors.

- Control the fluctuations of engine speed due to changes of load.

Valves and valve operating mechanisms.

Inlet Valves & Exhaust → Controlled by poppet valves

Valves held by strong springs.

Valve gear mechanism → poppet valve + steam or guide bushings

- Half Speed gear for 4 Stroke engine + Valve Spring + Spring retainer + push rod + Cam Shaft

Drive of the camshaft is arranged through gears or chain and sprocket called timing gear.