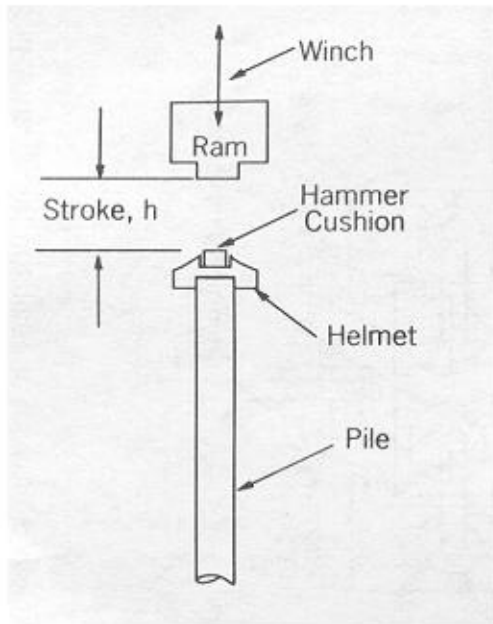


Hammers

There are various types of pile-driving hammers that can be used to install piles.

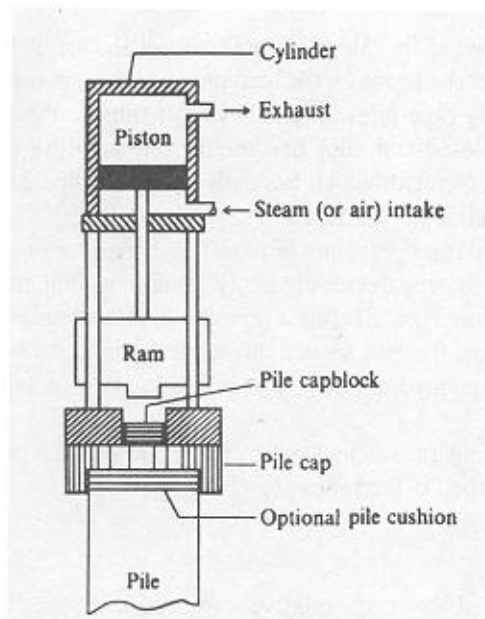
Drop hammer, single-acting hammers, double-acting hammers, diesel hammers, and vibratory drivers are the principal types of hammers that have been in common use as pile drivers in the industry.

① Drop hammers



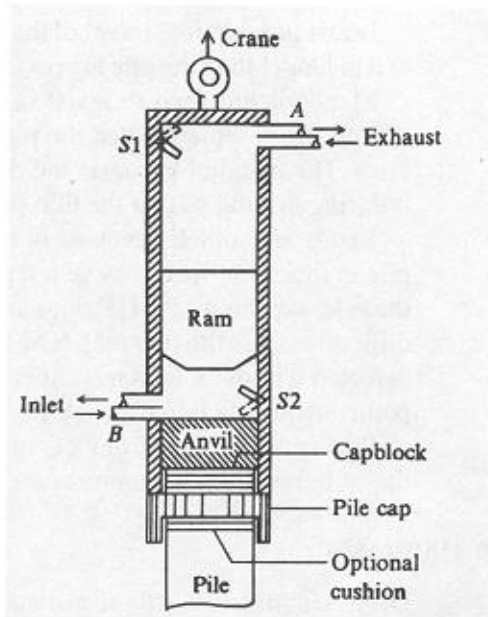
- The drop or gravity hammers are generally raised manually and then impact to the pile is delivered by its free fall.
- The energy is calculated by multiplying the weight of the hammer by its fall.
- Principal disadvantages are the slow rate of blows and length of leads required during early driving to obtain a sufficient height of fall to drive the pile

② Single-acting hammers



- Steam or air pressure is used to lift the ram to the necessary height.
- The ram then drops by gravity onto the anvil, which transmits the impact energy to the cap block, thence to the pile.
- The blow rate is considerably higher than that of the drop hammer.

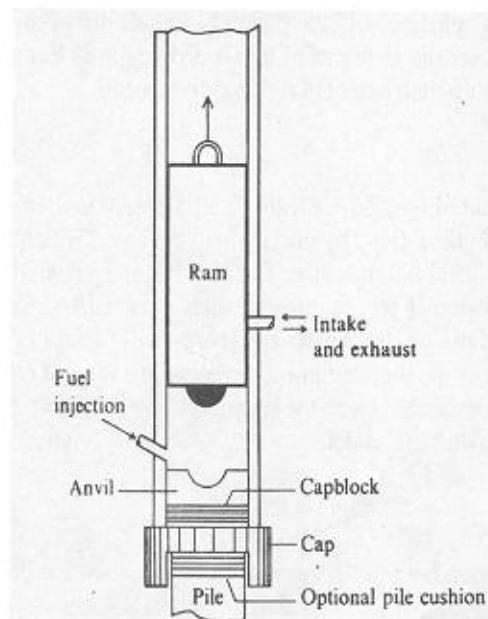
③ Double-acting hammers



- These hammers use steam both to lift the ram and to accelerate it downward.

- The blow rate and energy output are usually higher for double-acting hammer, but steam consumption is also higher than for the single-acting hammer.

④ Diesel hammers

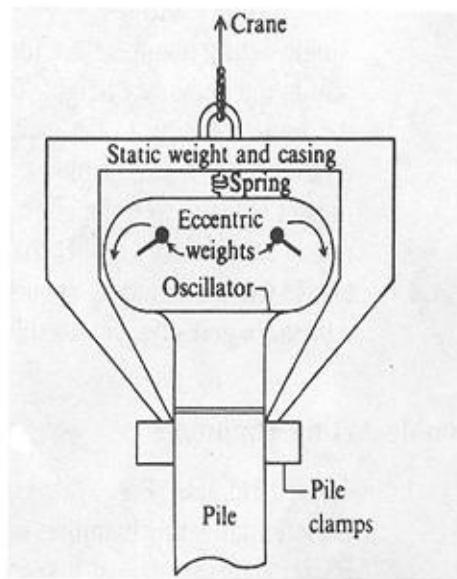


- Diesel hammers consist of a cylinder or casing, ram, anvil block, and simple fuel injection system.

- As the ram falls, the air and fuel compress and become hot because of the compression ; when the ram is near the anvil, the heat is sufficient to ignite the air-fuel mixture.

- Diesel hammers are highly mobile, have low fuel consumption, are lighter than steam hammers.

⑤ Vibratory drivers



- The principle of the vibratory driver is two counterrotating eccentric weights.
- The downward pulse acts with the pile weight to increase the apparent gravity force.
- Vibratory hammers are most effective in installing piles in cohesionless soils.