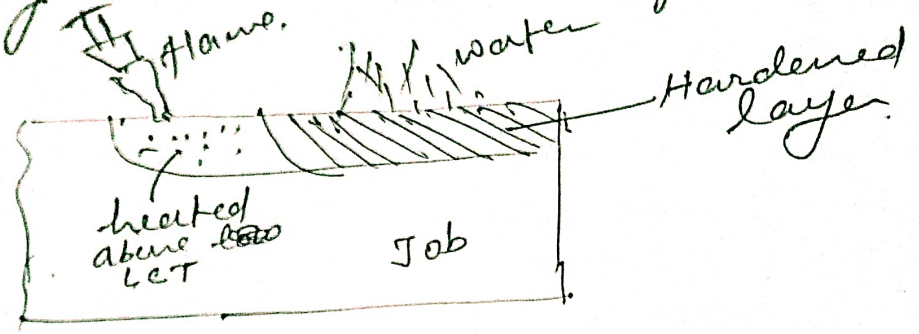
Flame hardening → 180° to 260°C

* In this process, the component is heating above critical temp. by oxy-acetylene flame.
* After heating immediately quenched by spraying water.
- Due to this the highly heated surface became hard but the core remain soft and tough.
- Overheating may result in cracks after quenching.



Appl^{n} – Cutting tools, wheels part.

Gas Carburizing - Gas carburizing is theoretical similar to pack carburizing except the supply of carbon monoxide gas to the heated furnace and the carbon decomposition. Many of problem with pack carburizing are eliminated in this process. The component are enclosed in a carbon bearing environment that is replenished continuously to maintain a high carbon content. Gas carburizing technique is widely used when large quantities of part are required.

Liquid Carburizing → The steel component are submerged in a ~~liquid~~ liquefied carbon rich environment. The main component in such bath is cyanide. However safety issue have led to bath that are non-toxic that accomplish similar result. The component are held in molten salt that introduces carbon into the metal. Carbon is diffused inward producing a hardened case by rapid quenching. Case formed by liquid carburizing have low nitrogen and high carbon content.