GEAR FINISHING PROCESS

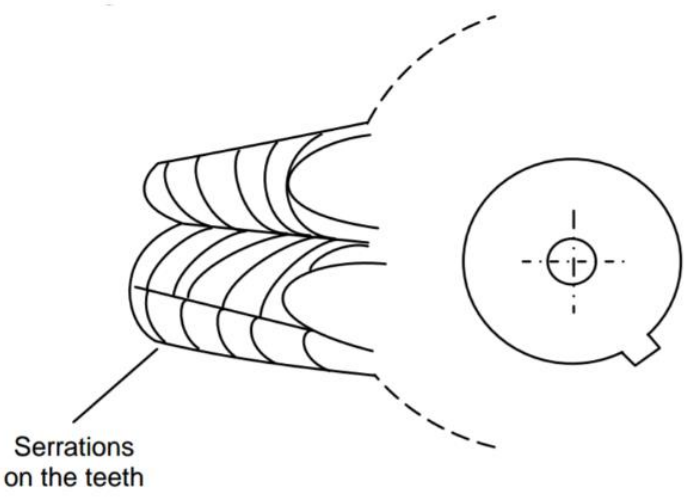
Surface of gear teeth produced by any of the generating process is not accurate and of good quality (smooth). Dimensional inaccuracies and rough surface generated so become the source of lot of noise, excessive wear, play and backlash between the pair of gears in mesh. These all result in loss of power to be transmitted and incorrect velocity ratios. This can be summarized as inefficient power transmission. In order to over come these problems some finishing operations are recommended for the produced gears. Sometimes poor quality of finish and dimensional inaccuracies occur due to hardening of a produced gear. The prepared (generated) gear is subjected to various hardening processes leading to various problems creating inaccuracies. So finishing operations are to be done at last. Commonly used gear finishing operations are:

- Gear shaving
- Gear burnishing
- Gear grinding
- Gear lapping
- Gear honing

GEAR SHAVING

Gear shaving is a process of finishing of gear tooth by running it at very high rpm in mesh with a gear shaving tool. A gear shaving tool is of a type of rack or pinion having hardened teeth provided with serrations. These serrations serve as cutting edges which do a scrapping operation on the mating faces of gear to be finished. Both are gears in mesh are pressed to make proper mating contact.

During shaving the cutter axis is set crossed to the work axis at an angle so as to avoid burnishing. While cutting, the cutter and the gear rotate in close mesh with each other. The work also traverses back and forth longitudinally, across the shaving tool. This process is usually applied to the unhardened gears and offers a very rapid method of finishing.



Gear shaving tool