Engine Compression

- We have already seen how internal combustion engines develop compression
- Basically the piston is slightly smaller in diameter than the cylinder bore of the engine to allow it to fit. If the piston was a tight fit, it would expand as it got hot and eventually stick tight in the cylinder.
- To provide a good sealing fit between the piston and the cylinder wall pistons are equipped with piston rings.

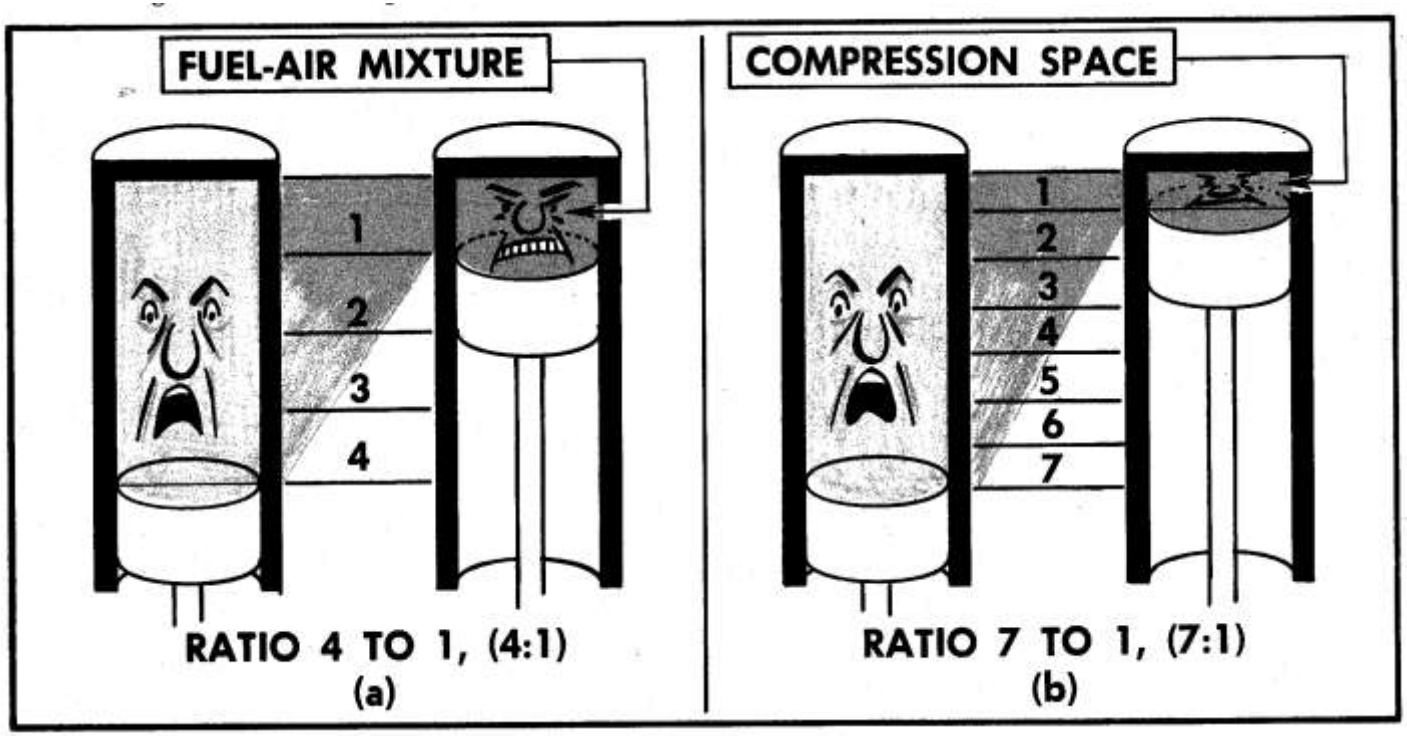
Engine Compression

- Each ring is made from cast iron or some other metal and are split at one end to allow them to expand and to slip over the end of the piston.
- When the piston is installed in the cylinder, the rings are compressed into the ring grooves so that the split end come almost together.
- The rings fit tightly against the cylinder walls.

Engine Compression

- The piston rings work to hold in the compression and combustion pressures.
- Four-cycle engines have an extra ring, called an oil-control ring. These engines get much more oil in the cylinder wall than do 2-cycle. The additional oil must be scraped off to prevent it from getting into the combustion chamber where it would burn and create more problems

Engine Compression Ratio



Engine Compression

- Good compression is necessary for many reasons
- If you continue to operate an engine when the compression is low, damage to the engine parts will increase, fuel oil consumption will increase, and the engine will be more difficult to start.
- Good compression helps your engine start in four ways;

Engine Compression

- 1. It provides high pressure and temperatures near the ignition point
- 2. It concentrates the fuel-air mix into a more restricted place, thus making it easier to ignite
- 3. It helps distribute the fuel particles in the cylinder for improved burning
- 4. The higher the compression, the greater the expansion of gases after the fuel burns (combustion) and this provides more power to the piston

Engine Compression