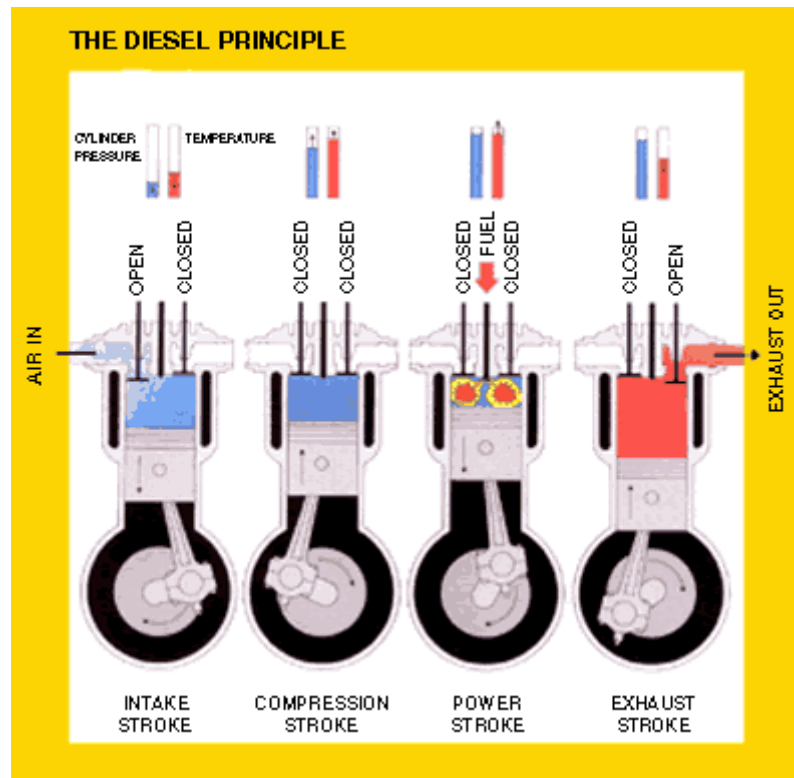


## Working of a Diesel Engine



### Intake stroke

During the intake stroke, the inlet valve opens and air is forced into the combustion chamber, either under atmospheric pressure or by a turbocharger. In order to enhance the subsequent mixing of air and fuel, the air is swirled as it enters the cylinder.

### Compression stroke

The piston compresses the air in the cylinder, heating it in the process. During the cycle the air pressure can become as high as 1,350 atmospheres and the temperature can reach 550°C, well above the flash point of the fuel. At the appropriate moment, the fuel injector opens and fuel is injected into the hot air in a very fine mist. The hot air vapourizes the fuel, and combustion begins.

### Power stroke

The high pressure resulting from the combustion of the fuel forces the piston in a downward motion, providing power to the engine. It is during this stroke that the exploding fuel/air mixture creates a shock wave which we receive - hear - as a loud noise.

### Exhaust stroke

During the exhaust stroke, as the piston moves in an upward direction, unburned gases are forced through the exhaust valve to complete the four strokes. If there is a turbocharger in the system, those gases turn a turbine, which runs an air compressor. The air compressor forces air under high pressure into the cylinder during the next intake stroke, helping to provide a higher compression pressure.

### Reference:

<http://www.shell.ca>