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# Petrol or diesel?

*How they supply and ignite the fuel — with the historic figures left unblended.*

A U.S. Department of Energy page on engines currently in production says there are "two kinds of internal combustion engines currently in production: the spark ignition gasoline engine and the compression ignition diesel engine." They "differ in how they supply and ignite the fuel."

| Source | Official wording |
|---|---|
| **Energy Department, today** | Spark ignition: "the fuel is mixed with air and then inducted into the cylinder during the intake process. After the piston compresses the fuel-air mixture, the spark ignites it, causing combustion." Diesel: "only air is inducted into the engine and then compressed. Diesel engines then spray the fuel into the hot compressed air at a suitable, measured rate, causing it to ignite." |
| **Dugald Clerk, 1911** | In Diesel's engine, "air alone is drawn into the cylinder on the charging stroke; the air is compressed on the return stroke to a very high pressure generally to over 400 ℔ per sq. in. This compression raises the air to incandescence, and then heavy oil is injected… The oil ignites at once… but without explosion." The engine "dispenses with the usual igniting devices." |
| **Collier, 1921** | In the four-stroke Diesel, air "is compressed on the second stroke to a pressure of 450 pounds per square inch. This sudden increase in pressure causes a rise in temperature to about 550 degrees C, and during part of the third stroke, oil is injected, and, owing to the high temperature, ignites." |

## Why the numbers are not added up

Clerk's "generally to over 400 ℔ per sq. in." is a 1911 wording. Collier's "450 pounds per square inch" and "about 550 degrees C" are 1921 wordings. They are not averaged, and they are not treated as a modern rating. Clerk also wrote, in 1911, that the engine was made "in sizes up to 1000 H.P." — likewise left as 1911 wording.

## A short quiz

1. According to the Energy Department, what is inducted into a diesel engine on the intake stroke?
2. What compression figure does Clerk give in 1911?
3. What compression figure does Collier give in 1921?

**Answers.** 1. Only air. 2. Generally to over 400 ℔ per sq. in. 3. 450 pounds per square inch. The two historic figures are not combined.

Wording from the U.S. Department of Energy, "Internal Combustion Engine Basics"; Dugald Clerk, Encyclopaedia Britannica, 1911, "Oil Engine"; and Collier's New Encyclopedia, 1921, "Diesel Engine." Checked 17 November 2026.