

4 Four-stroke engine

Scholar's Encyclopedia: F-H 634

Four-Stroke Engine

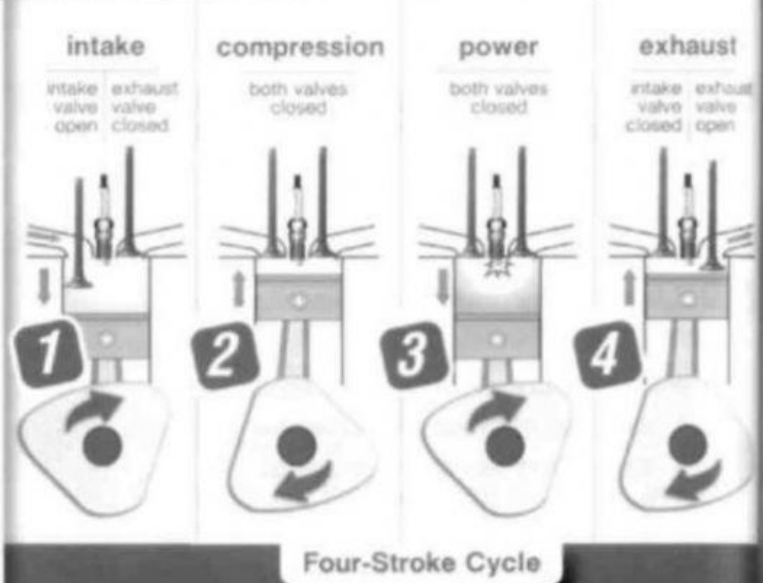
A **four-stroke engine** is a common engine that cycles through four stages. The process works by heating a mixture of fuel and air in a cylinder.

In the first stage, or **intake stroke**, fuel and air enter the cylinder through the **intake valve**. The piston inside the cylinder moves down to make room for the mixture.

Then the valve is closed and the piston moves up again. This is the next stage, or **compression stroke**. The upward-moving piston compresses the fuel and air. The **head gasket** and valves on the **cylinder head** contain the combustion **pressure** during this stage.

The cycle then enters the **power stroke**. In this stage, heat or a spark **ignites** the mixture. The result is a massive force that pushes the piston down again. This force is what powers the engine.

When the fuel is spent, the **exhaust valve** opens to release the remaining gases. This is called the **exhaust stroke**.



Vocabulary

3 Match the words (1-5) with the definitions (A-E).

- | | |
|-------------------|------------------------|
| 1 — ignite | 4 — exhaust stroke |
| 2 — pressure | 5 — compression stroke |
| 3 — exhaust valve | |

- A the process of compressing fuel and air
 B a force caused by pushing against something
 C an opening where spent fuel is released
 D to make something burn or catch fire
 E the process of releasing spent fuel

Get ready!

1 Before you read the passage, talk about these questions.

- What is a four-stroke engine?
- What are the four stages in a four stroke cycle?

Reading

2 Read the encyclopedia entry. Then, fill in the blanks with the correct words from the word bank.

Word Bank

compression exhaust ignites
 intake cylinder releases

The four-stroke engine works by heating fuel and air in a 1 _____. During the first stroke, the 2 _____ valve lets fuel and air into the cylinder. Then the valve closes during the 3 _____ stroke. A piston moves up to condense the air and fuel. Then the mixture 4 _____ during the power stroke. The final stroke 5 _____ gas. This is the 6 _____ stroke.

4 Read the sentence pair. Choose where the words best fit the blanks.

1 intake valve / intake stroke

- A The engine failed because too much air entered the cylinder during the _____.
- B The _____ was loose so the mechanic replaced it.

2 head gasket / four-stroke engine

- A The _____ is the most common type of car engine.
- B The damaged _____ caused a fuel leak in the cylinder.

3 power stroke / cylinder head

- A The car did not start because the spark failed during the _____.
- B Alison added coolant to the _____ to reduce excess heat during ignition.