

4 Four-stroke engine

Scholar's Encyclopedia: F-H 639

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**.

Get ready!

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

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

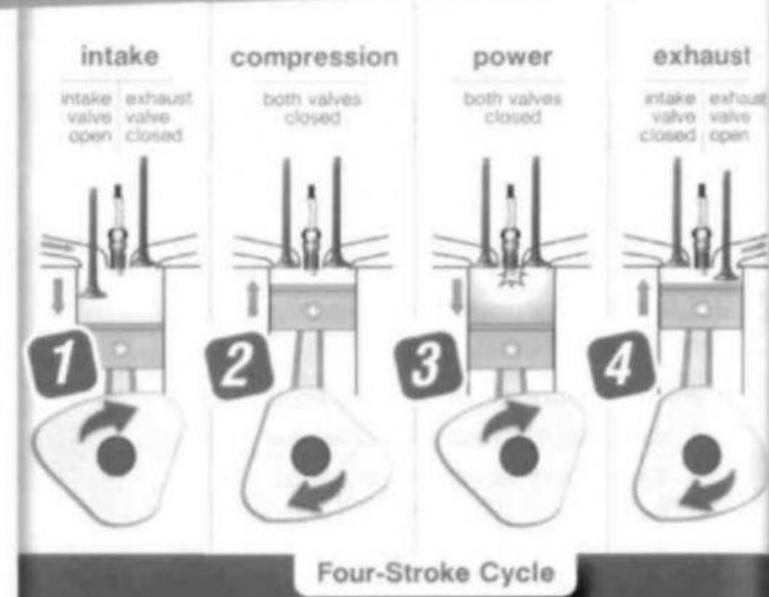
Reading

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.



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

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.