

Automotive Engines 10th

Chapter 9 Gasoline Engine Operation

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

1. What are the strokes of a four-stroke cycle?
2. If an engine at sea level produces 100 horsepower, how many horsepower would it develop at 6,000 feet of altitude?
3. What brands of vehicles use horizontally opposed 4- and 6-cylinder engines?
4. What is the difference between torque and power?
5. How is the angle between power strokes determined?

Answer Key

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1. The four strokes of a four-stroke engine include intake, compression, power, and exhaust.

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2. An engine loses 3% of its power for each 1,000 feet above sea level. Therefore, at 6,000 feet, an engine would lose 18% ($3 \times 6 = 18$) or 18 hp. Therefore, if an engine develops 100 hp at sea level, that same engine will produce 82 hp when operating at 6,000 feet altitude.

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3. This style of engine is used in Porsche and Subaru engines, and is often called the boxer or pancake engine design

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4. Torque is measured as the amount of force multiplied by the length of the lever through which it acts. The term power means the rate of doing work. Power equals work divided by time.

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5. To find the angle between power strokes of an engine, divide 720 by the number of cylinders.

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