

Materials

Internet Device, Pencils, Notes/Textbook

Engine Transformation Systems: Mechanical Engineering [Chapter 13]



<https://youtu.be/OGj8OneMjek>

- 1) a) Which one of the five types of motion transformation systems is represented by the piston in the cylinder of a car? Is it reversible?

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- b) What are its advantages and disadvantages?

Advantages	Disadvantages

- 2) What are the characteristics of the link between the piston and the crankshaft and why would those characteristics be beneficial for components of an engine?

Characteristic	Why?
Removable or Non-Removable	
Complete or Partial	
Flexible or Rigid	
Direct or Indirect	

- 3) The timing belt could be seen as combining the advantages of two motion transmission systems and eliminating some of their disadvantages. Which two system types are combined and which advantages and disadvantages of those systems were important to consider?

Motion Transmission Systems Combined	Advantages Combined	Disadvantages Removed
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- 4) a) The system that opens and closes the intake and exhaust valves in the cylinders is an example of a different motion transformation system. Which one is it and is it reversible?

- b) Why is this system used instead of the others? What are its advantages and disadvantages?

- 5) a) In the example of a four-stroke engine the piston moves up and down in two full cycles (2 up strokes and 2 down strokes). Only one of the down strokes is caused by the combustion of the fuel and air. What causes the other three strokes of the piston?

- b) What characteristic of this motion transformation system makes this possible?