FUEL SYSTEM

6.1. Vocabulary

Ex. 1. *Match the words to their definitions.*

1. carburetor

a. a tube or hose that carries fuel from the tank to the engine.

2. fuel tank

b. a component of an engine's intake system that collects cold air to improve performance.

3. air filter

c. a container used to store fuel for an engine.

4. cold air collection box

d. a type of fuel injection where fuel is injected directly into the combustion chamber at high pressure for improved efficiency.

5. fuel line

e. a device that removes impurities from the air before it enters an engine.

6. fuel pump

f. all the components involved in storing, filtering, and delivering fuel to an engine.

7. fuel filter

g. a device in an internal combustion engine that mixes air and fuel for proper combustion.

8. gasoline direct injection

h. a device that removes impurities from fuel before it reaches the engine.

9. fuel injection

i. a method of delivering fuel directly into an engine's combustion chamber for more efficient burning.

10. fuel system

j. a mechanical or electrical device that pumps fuel from the tank to the engine.

Ex. 2. *Translate the sentences into English.*

1. Замена воздушного фильтра - простой способ улучшить работу топливной системы вашего автомобиля.

2. Карбюратор регулирует количество воздуха и топлива, поступающих в двигатель.

3. Камера сбора холодного воздуха помогает увеличить плотность воздуха, поступающего в двигатель, повышая топливную экономичность.

4. Важно регулярно заменять топливный фильтр, чтобы предотвратить засорение топливной системы.

5. Система впрыска топлива в значительной степени заменила карбюраторы в современных автомобилях благодаря более точному контролю расхода топлива.

6. Утечка в топливопроводе может привести к снижению давления топлива и повлиять на общую работу топливной системы.

7. Топливный насос отвечает за перекачку топлива из бака в двигатель.

8. Поддержание чистоты и эффективности топливной системы имеет важное значение для оптимальной работы автомобиля.

9. Если топливный бак поврежден или проколот, это может привести к утечке топлива и потенциальной угрозе безопасности.

10. Непосредственный впрыск бензина обеспечивает высокоточную подачу топлива непосредственно в цилиндры для повышения производительности и топливной экономичности.

6.2. Reading

Ex. 1. *Read the text.*

Fuel System

A fuel system is made up of several parts. The main ones are the fuel tank, the fuel pump and the carburetor or fuel injection (FI) system.

The fuel tank is a container that holds the gasoline until it is needed by the engine. It has a venting system to let out vapors and to allow air to enter the tank as the gasoline is used.

The fuel pump is either mechanical or electrical. Mechanical pumps are found on older cars. They are driven by the camshaft or other shafts in the engine. Electric fuel pumps are usually located inside the fuel tank. These days most cars have electric fuel pumps because they work better than mechanical ones.

The fuel line carries the fuel from the fuel tank to the fuel pump. On some cars, there is also a return line that takes unused fuel back to the tank.

The carburetor is a device that mixes air and fuel for internal combustion engines. It was common on older cars but is now rare on new ones. A carburetor has one or more tubes called barrels. In each barrel, the air flows downward through a narrow part called the venturi. The venturi is where the air speed increases and causes the pressure in the barrel to drop. As a result, fuel is drawn into the barrel from the fuel line. The fuel mixes with the air and goes into the intake manifold.

Most modern cars use fuel injection instead of a carburetor. Fuel injection is the process of spraying fuel into an engine's cylinders using electronic systems. There are several types of fuel injection, including gasoline direct injection (GDI), port fuel injection (PFI), and throttle body injection (TBI). GDI and PFI are the most common. In GDI, fuel is injected directly into the combustion chamber. In PFI, the fuel is sprayed into the intake ports just before the valves.

The FI system consists of a fuel injector for each cylinder, a fuel rail, and a fuel pressure regulator. The fuel rail is a pipe that carries the fuel to the injectors. The fuel pressure regulator keeps the fuel pressure steady. The FI system also has sensors to monitor the engine conditions. These sensors send signals to the engine control unit (ECU), which controls the amount of fuel injected.

The air filter and fuel filter are other important parts of the fuel system. The air filter removes dust and dirt from the air before it goes into the engine. The fuel filter removes impurities from the fuel before it goes into the engine.

Some cars have additional parts in the fuel system, such as a cold air collection box and an intake manifold runner control (IMRC) valve. The cold air collection box collects cold air from outside the car and sends it to the engine for better performance. The IMRC valve controls the flow of air in the intake manifold to improve fuel efficiency and power.

Ex. 2. *Answer the questions.*

1. What are the main components of a fuel system?

2. How does the fuel tank function in a fuel system?

3. What are the differences between mechanical and electric fuel pumps?

4. What is the purpose of the fuel line in a fuel system?

5. Explain how a carburetor works to mix air and fuel.

6. Why are carburetors rare on new cars?

7. Describe the process of fuel injection and its different types.

8. What are the components of a fuel injection (FI) system?

9. What is the role of sensors in a fuel injection system?

10. What are the functions of the air filter and fuel filter in a fuel system?

6.3. Communication

Ex. 1. *Make sentences using the following words:*

1. fuel/type/car

2. check/regularly/level

3. fill/often/tank

4. gas/station/corner

5. right/fuel/car

6. prices/increasing/lately

7. fuel-efficient/engine/my

8. gauge/working/properly

9. keep/tank/half

10. run/out/gas