

**МРиОА 18-9**

**16.01.2021 г. и 20.01.2021 г.**

**Иностраный язык (английский) в профессиональной деятельности**

**Преподаватель: Корякина Марианна Ивановна**

**Эл. адрес: [kmi-ykt@mail.ru](mailto:kmi-ykt@mail.ru)**

**+79627368770**

### **Тема урока: "Устройство автомобилей"**

**Цели урока:** совершенствование навыков чтения и перевода, усвоение нового лексического материала.

#### **1. Задание 1. Прочитайте и переведите текст.**

#### **Classification of engines**

Engines for automotive and construction equipment may be classified in several ways: type of fuel used, type of cooling employed, or valve and cylinder arrangement. They all operate on the internal combustion principle. The application of basic principles of construction to particular needs or systems of manufacture has caused certain designs to be recognized as conventional.

The most common method of classification is based on the type of fuel used; that is, whether the engine burns gasoline or diesel fuel.

#### **Gasoline engines versus diesel engines**

Mechanically and in overall appearance, gasoline and diesel engines resemble one another. However, many parts of the diesel engine are designed to be somewhat heavier and stronger to withstand the higher temperatures and pressures the engine generates. The engines differ also in the fuel used, in the method of introducing it into the cylinders, and in how the air-fuel mixture is ignited. In the gasoline engine, we first mix air and fuel in the carburetor. After this mixture is compressed in the cylinders, it is ignited by an electrical spark from the spark plugs. The source of the energy producing the electrical spark may be a storage battery or a high-tension magneto.

The diesel engine has no carburetor. Air alone enters its cylinders, where it is compressed and reaches a high temperature because of compression. The heat of compression ignites the fuel injected into the cylinder and causes the fuel-air mixture to burn. The diesel engine needs no spark plugs; the very contact of the diesel fuel with the hot air in the cylinder causes ignition. In

the gasoline engine the heat compression is not enough to ignite the air-fuel mixture; therefore, spark plugs are necessary.

### **Arrangement of cylinders**

Engines are also classified according to the arrangement of the cylinders. One classification is the in-line, in which all cylinders are cast in a straight line above the crankshaft, as in most trucks. Another is the V-type, in which two banks of cylinders are mounted in a "V" shape above the crankshaft, as in many passenger vehicles. Another not-so-common arrangement is the horizontally opposed engine whose cylinders mount in two side rows, each opposite a central crankshaft. Buses often have this type of engine.

The cylinders are numbered. The cylinder nearest the front of an in-line engine is numbered 1. The others are numbered 2, 3, 4, and so forth, from the front to rear. In V-type engines the numbering sequence varies with the manufacturer.

The firing order (which is different from the numbering order) of the cylinders is usually stamped on the cylinder block or on the manufacturer's nameplate.

### **Valve arrangement**

The majority of internal combustion engines also are classified according to the position and arrangement of the intake and exhaust valves. This classification depends on whether the valves are in the cylinder block or in the cylinder head. Various arrangements have been used; the most common are the L-head, I-head, and F-head (fig. 12-8). The letter designation is used because the shape of the combustion chamber resembles the form of the letter identifying it.

#### **L-Head**

In the L-head engines, both valves are placed in the block on the same side of the cylinder. The valve-operating mechanism is located directly below the valves, and one camshaft actuates both the intake and exhaust valves.

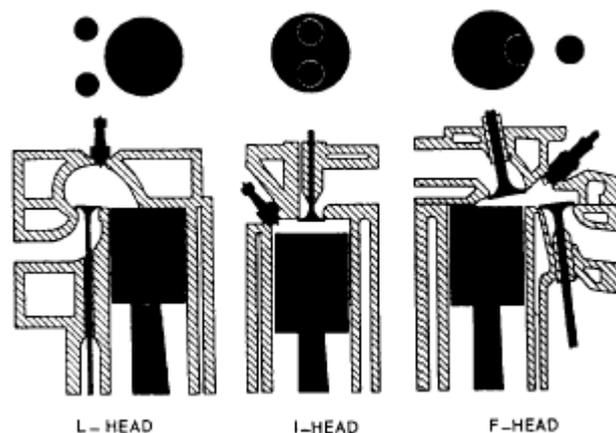


Figure 12-8.-L-, I-, and F-valve arrangement.

### **I-Head**

Engines using the I-head construction are called valve-in-head or overhead valve engines, because the valves mount in a cylinder head above the cylinder. This arrangement requires a tappet, a push rod, and a rocker arm above the cylinder to reverse the direction of the valve movement. Only one camshaft is required for both valves. Some overhead valve engines make use of an overhead camshaft. This arrangement eliminates the long linkage between the camshaft and the valve.

### **F-Head**

In the F-head engine, the intake valves normally are located in the head, while the exhaust valves are located in the engine block. This arrangement combines, in effect, the L-head and the I-head valve arrangements. The valves in the head are actuated from the camshaft through tappets, push rods, and rocker arms (I-head arrangement), while the valves in the block are actuated directly from the camshaft by tappets (L-head arrangement).