



CLASSIFICATION, DESIGNATION AND GENERAL STRUCTURE OF MOTOR VEHICLES

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Abstract

The task of the science "Structure of motor vehicles" is to provide complete information about the structure, working process, theory and technological calculations of vehicles.

Keywords

car, special and racing cars, Transport cars, cargo and cargo-passenger cars.

The automobile industry is developing on a large scale in the Republic of Uzbekistan. After our republic gained independence, in order to have its own car factory and cars, it signed a contract with the South Korean company "DAEWOO" and established the joint venture "UzDaewooAvto" in Asaka, in cooperation with the state of Turkey, small-capacity buses and buses were built in Samarkand. factories were established for the production of other types of cars and car assemblies.

Auto means self-moving (auto-Greek self, mobile-Latin mobile). A car is a moving vehicle, equipped with an engine with an independent source of energy, and with great comfort and safety, it can transport cargo and passengers on non-rail roads or perform special tasks with the help of built-in devices. is a wheeled machine designed to perform. Cars are divided into transport, special and racing cars according to their function.

Transport vehicles include passenger, cargo and cargo-passenger vehicles. Passenger cars are designed to transport passengers, and they are divided into two: buses and passenger cars. Passenger cars with more than eight seats are called buses, and cars with less than eight seats are called passenger cars. Depending on the task, the buses are used for suburban, intra-city, inter-city, specific places and general work. The number of seats in buses varies from 10 to 80, depending on the tasks mentioned above. Buses depending on the gauge length: 5 m - very small (minibus); 6.0-7.5 m - small; 8.0-9.5 m - average; 10.5-12.0 m - divided into large and more than 16.5 m double buses. Passenger cars have two, four and seven seats. Passenger cars differ from each other depending on the size of the engines installed in them: 1.2 l - micro-liter; 1.3-1.8 l - small volume; 1.9-3.5 l - medium capacity; and more than 3.5 liters - large-capacity. Light weight trucks depending on the cargo weight - up to 1.2 t; small weight - 1.3...2.0 t; medium weight - 2.1...8 t; heavy weight - 9...14 t; very large weight - 15...20 t; heavy weight - divided into cars carrying 21...40 t and more than 40 t. A wide variety of cargo is transported in open-top vehicles. Liquid goods are transported in dump trucks, liquids are transported in tank trucks, and most foodstuffs are transported in refrigerated vans, such vehicles are called specialized vehicles. Special cars are equipped with mechanisms, tools and equipment that allow to perform certain tasks. For example, sanitation, firefighting, street sweeping, trucks. Racing cars are sports cars, and the car is designed to participate in sports racing. Races are held on circuits, straight highways, racetracks, hippodromes, velodromes and stadiums.

Carburetor engines installed in modern cars mainly work on a four-stroke cycle. Piston internal

combustion in four-stroke engines, the work cycle occurs in four strokes of the piston, that is, when the crankshaft rotates twice, and the cycle is repeated again.

According to the process taking place in the cylinder, each of the four strokes is named as follows;

- 1) input tact;
- 2) compression stroke;
- 3) expansion tact (work path);
- 4) release tact.

A scheme of a single-cylinder engine with a four-stroke cycle is presented. The cylinder 5 is fixed to the crankcase 4. The upper part of the cylinder is covered with the head 7, and the bottom is covered with the bottom of the crankcase 1. There is a piston 6 in the cylinder, which is attached to the upper head of the connecting rod 13 with a finger 12. The piston is compressed in the cylinder using rings 11. The lower head of the connecting rod is attached to the connecting rod neck of the crankshaft. The crankshaft has two core necks 17, with the help of which they are placed on the support bearings 2 installed in the crankcase. The connecting rod and core necks of the crankshaft are integrally machined with Jagiar 15. A flywheel 16 is attached to the rear end of the crankshaft. Valves 8 and 10 are placed in the head 7 for the introduction of a combustible mixture (in gasoline engines) or air (in diesel engines) and the release of used gases.

A spark plug 9 is installed in gasoline engines to ignite the combustible mixture. In compression-ignition engines (diesels), a nozzle is installed in the head, with the help of which fuel is sprayed into the cylinder. As a result of the combustion of the working mixture, the temperature and pressure in the cylinder increases. Under the influence of pressure, the piston inside the cylinder moves down. The pressure acting on the piston is conventionally considered as the total force K , and it is divided into two constituent forces: the force directed along the connecting rod Q ; force N compressing the piston to the surface of the cylinder. In order to ensure a relatively even distribution of the lateral pressure acting from the piston on the opposite wall of the cylinder located in the transverse plane, in some engines, the axis of the crankshaft is slightly shifted in the direction of the N force relative to the axis of the cylinder. This is called deaxial displacement of the crankshaft mechanism. The force Q is transferred to the neck of the connecting rod, which in turn is divided into forces T and C . If the force C acts on the support of the crankshaft, and the force T acts on the crankshaft at the radius r , it creates a turning moment.

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