

LIGHT CAR GAS DISTRIBUTION MECHANISM STRUCTURE

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Abstract

The gas distribution mechanism (GTM) is an important part of an automobile engine that provides gas exchange in the cylinder during the operation of the engine. GTM is responsible for introducing an air-fuel mixture into the cylinder and releasing combustion products. This article details the structure, principle of operation, types and importance of GTM. It also provides information on the role of GTM in modern cars and its development trends.

Keywords: Gas distribution mechanism, GTM, engine, cylinder, valve, distribution valve, Pusher, Cormislo, hydraulic compensator, phases, OHC, DOHC, SOHC.

Introduction

The gas distribution mechanism serves to introduce a combustible mixture (in carburetor and gas engines) or air (in diesels) into the cylinder in the suction tactic, while in compression and working tactics it serves to limit the cylinder from the external environment, as well as expel the used gases in the exhaust tactic into the external environment. Car engines are mainly fitted with a valve gas distribution mechanism.

Four-stroke car engines use gas distribution mechanism types whose valves are located either below (on the side of the cylinder block) or above (on the cylinder head). The main constructive feature of the gas distribution mechanism, whose valves are located below, is that they are located in the cylinder block. The gas distribution mechanism, whose valves are located above, is in the valves, cylinder head. The valves that transmit the combustible mixture or air to the cylinder are called the injector, and those that expel the gases used beyond the cylinder are called the ejector valve. In each cylinder there is basically one inlet and one outlet valve, and the number of Fists of the distribution Valve is equal to the number of these valves. For example, a four-cylinder engine has 8 valves and a six-cylinder engine has 12 valves. During the working cycle of a four-stroke engine, each valve must be opened once when its crankshaft rotates twice. This means that when the crank shaft rotates twice the distribution valve of the engine rotates once. Therefore, the number of transmissions between them is 1/2.

MAIN PART

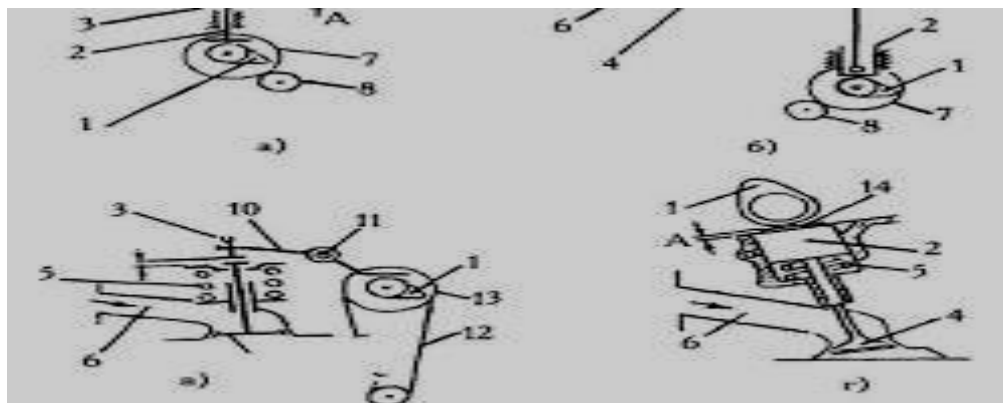
Structure of the Gas Distribution Mechanism of Light Cars

The gas distribution mechanism (GTM) is one of the important components of the internal combustion engine, which ensures the introduction of an air – fuel mixture into the cylinder and the release of combustion products during the operation of the engine.

The Main Tasks Of GTM:

- **Input process:** timely introduction of air-fuel mixture into the cylinder.
- **Compression process:** closing the valves to compress the mixture in the cylinder.
- **Working process:** separating the cylinder from the external environment during the combustion process.
- **Release process:** release combustion products out of cylinder.

Key Elements Of GTM:



Structure of the gas distribution mechanism

- **Distribution Valve:** has eccentrics or kulachoks, moving the valves to open and close.
- **Valves:** located in the cylinder head, opening and closing the input and output channels.
- **Valve springs:** keeps valves closed.
- **Pushers:** transmits the movement between the valves with the Kulachok of the distribution shaft.
- **Coromislos:** transmits the movement of the thrusters to the valves.
- **Hydraulic compensators:** automatically fill the gap between valves and pushers.
- **Distribution phases:** determine the opening and closing times of the valves.

Principle Of Operation Of GTM:

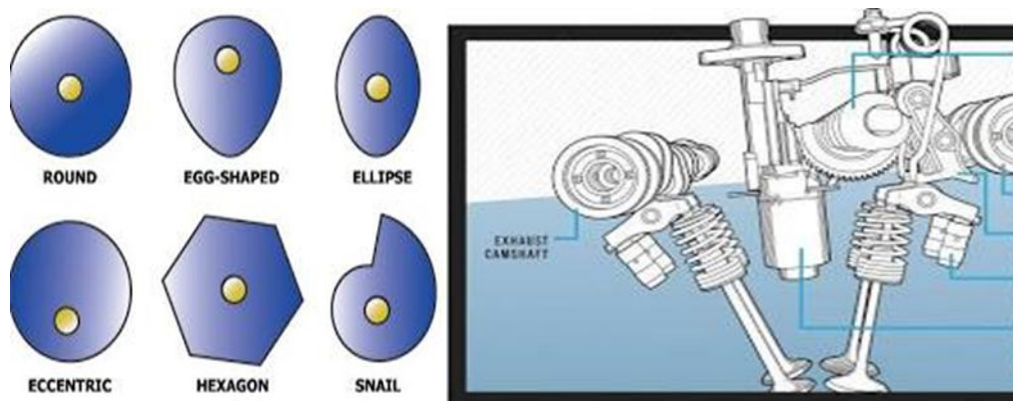
The distribution Valve is connected to the crank shaft of the engine, which raises the thrusters with its kulachok during the rotation process. The pushers, on the other hand, open the valves through the coromislos. Depending on the opening and closing times of the valves, different processes occur in the cylinder.

Types of GTM:

- * **OHC (Overhead Camshaft):** the distribution Valve is located in the cylinder head.
- **DOHC (Double Overhead Camshaft):** there are two distribution shafts, one driving the inlet and the other driving the exhaust valves.
- **SOHC (Single Overhead Camshaft):** is a single distribution valve that controls both valve types.

Importance Of GTM:

GTM determines engine performance, power, torque and environmental friendliness. Modern cars use complex GTMs equipped with electronic control systems. These systems allow the engine to optimize performance and reduce fuel consumption.



CONCLUSION

The gas distribution mechanism is one of the most important parts of a car engine, the operation of which determines the overall efficiency of the engine. Modern GTMs have a complex structure and are equipped with electronic control systems.

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