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Writing for engineers

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How Does a Car Engine Work?

What is a car engine?

A car engine is what helps the car move, it is where the all the cars power is generated.

The first engine was created during the mid 1800s by a man named Karl Benz, he was the founder of Mercedes Benz and although he created the car engine way back during the 1800s his patent remained one of the greatest technological advancements of all time. In today's world everyone's has a car and if it wasn't for the car engine created way back in the 1800s we wouldn't have the internal combustion engine. "The engine is the heart of your car. It is a complex machine built to convert heat from burning gas into the force that turns the road wheels. The chain of reactions which achieve that objective is set in motion by a spark, which ignites a mixture of petrol vapour and compressed air inside a momentarily sealed cylinder and causes it to burn rapidly. That is why the machine is called an internal combustion engine. As the mixture burns it expands, providing power to drive the car."

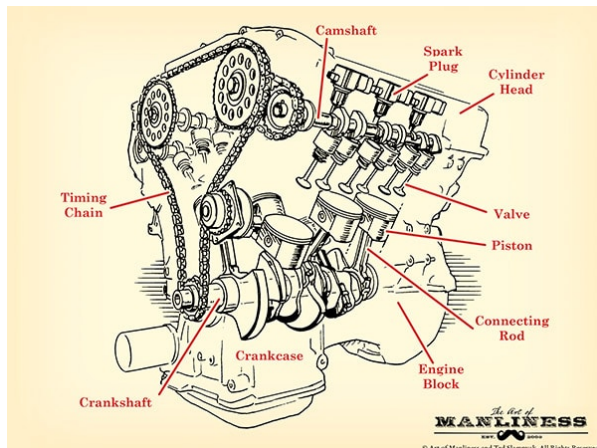
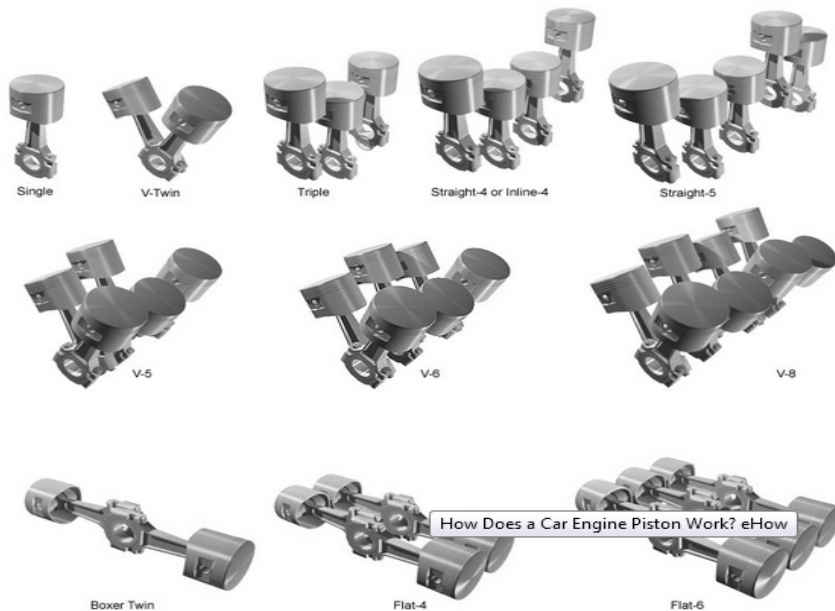


Figure 1

Figure 2: we see the different types of cylinders



Different types of engines

When dealing with cars there are a few things that are always talked about when the topic of engines comes up; whether or not the car is a v6 or a v8 etc. The concept of this is that the number along with the letter are supposed to stand for the amount of cylinders that an engine has if for example the car is a v6 engine it has 6 cylinders.

“In four-cylinder engines, the cylinders are typically mounted in a straight line above the crankshaft. This engine layout is called an *inline engine*. Another four-cylinder layout is called the “flat four.” Here the cylinders are laid horizontally in two banks, with the crankshaft going down the middle. When an engine has more than four cylinders, they are divided into two-cylinder banks — three cylinders (or more) per side. The division of cylinders into two banks makes the engine look like a “V.” A V-shaped engine with six cylinders = V6 engine. A V-shaped engine with eight cylinders = V8 — four in each cylinder bank.” (2)

Basically the number of cylinders that the car has is what makes the car faster. As seen in figure number we see the different ways in which the cylinders are aligned as well as in figure number 3. These two figures show in detail the way that the engine is arranged.

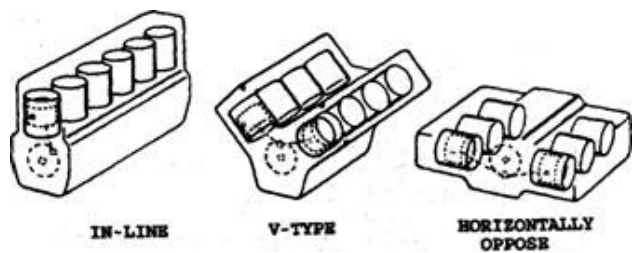


Figure 3: ways in which the cylinders are aligned

Components of a car engine

The components of a car engine are as such: we first start off with the engine block. What this piece does is it's the base for the engine in sense holding the engine into place. Everything that passes through starts with the engine block. For example as seen in figure 4 the engine block sits at the bottom and is the base for the engine and everything passes through it.



Figure 4: what an engine block is supposed to look like

Then move on to the combustion chamber. "It's where fuel, air, pressure, and electricity come together to create the small explosion that moves the car's pistons up and down, thus

creating the power to move the vehicle. The combustion chamber is made up of the cylinder, piston, and cylinder head. The cylinder acts as the wall of the combustion chamber, the top of the piston acts as the floor of the combustion chamber, and the cylinder head serves as the ceiling of the combustion chamber.”(2) Along with the cylinder heads which is a small plate that’s sits over the engines cylinders

Following is the piston, the piston moves up and down in the cylinder. We then have the crankshaft which works together with the pistons in order to move the car. Along with the crankshaft we have the camshaft which is basically what helps everything else function. “The camshaft is the brain of the engine. It works in conjunction with the crankshaft via a timing belt to make sure intake and outtake valves open and close at just the right time for optimal engine performance. The camshaft uses egg-shaped lobes that extend across it to control the timing of the opening and closing of the valves.”. (2)

The timing system keeps both the camshaft as well as the crankshaft in the same sequence and keeps them working together if one is not working without the other, the timing will be off thus making it, so the engine doesn’t work.

Valves which are separated between intake and outtake valves, the intake valve mixes the air and fuel to create the power for the engine while the outtake valve let the exhaust out. They help the car in a sense breathe and it helps for performance. Finally “Above each cylinder is a sparkplug. When it sparks, it ignites the compressed fuel and air, causing the mini-explosion that pushes the piston down.”

In conclusion this what makes a car work, its due to the engine that everything is possible, when thinking about it the engine is basically like a brain, it controls everything that goes on in a car just like how a brain controls everything that happens with the body. Constantly

working to be as efficient as possible. Who knows what technology will have in store for us in the future but if it keeps going like this were going to be in some very good hands.

Works cited

1. The engine. (n.d.). Retrieved from <https://www.howacarworks.com/basics/the-engine>
2. Brett. (2019, January 01). How a Car Engine Works. Retrieved from <https://www.artofmanliness.com/articles/how-a-cars-engine-works/>