

Carburetor, Carburettor, Carburetter, Tomato Can?

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Would you believe someone if they tell you that the first Harley Davidson produced in 1903 used a tomato can for its carburetor?

You may find this story hard to believe but although undocumented, this tomato can carburetor urban legend has been circulating for years.

It is a fact though that the carburetor was invented by Wilhem Maybach. As an associate of Gottlieb Daimler, Maybach designed and developed the carburetor from which modern models are adapted from today.

A carburetor works as a device that mixes fuel and air that burns inside an internal combustion engine. In that internal combustion engine, chemical energy from the fuel is then burned into a combustion chamber. Chemical energy then transforms into mechanical energy which eventually powers the motor of a vehicle.

But even before fuel and air is transformed into mechanical energy by an internal combustion engine, it must first pass through the carburetor for it to be utilized. It is in the carburetor where the fuel, usually liquid gasoline, is atomized or changed into liquid vapor.

To fully understand how a carburetor works, let us first get to know its parts.

The basic carburetor has a cylindrical hollow tube encasement called a throat or a barrel.

Inside the barrel are pistons. These pistons are solid cylinder disks that slide back and forth in the barrel. Pistons fit snugly into the barrel to allow it to move freely but are tight enough not to let air or fluid leak in the barrel.

As the pistons move downward, a partial vacuum is created inside the barrel. This partial vacuum then draws air past through the carburetor's throat and into a nozzle that sprays fuel. The mixture of air and fuel in the carburetor is then delivered into cylinders for combustion.

The amount of air pulled through partial vacuum created by the pistons is controlled by a throttle valve. The throttle valve is found at the base of the carburetor.

When a driver accelerates his automobile by stepping on an accelerator or a gas pedal, the throttle valve opens. The wider the throttle valve opens, the more air flows into the carburetor. Thus more fuel flows into the engine.

A passage way called a venturi is located at a carburetor's barrel. A venturi looks like an hour glass when it narrows down. When air rushes through the narrow ends of a venturi, the air pressure against the sides of the passage way decreases.

With this, partial vacuum is created inside the barrel. This partial vacuum then draws the fuel through the nozzle and into the air.

The pistons create partial vacuum to draw air while the venturi is responsible for drawing partial vacuum to feed fuel into the nozzle.

A float chamber or float bowl is the reservoir where fuel that enters the carburetor is stored. At the reservoir's surface, a device that floats is linked to a small valve to keep a constant amount of fuel inside the reservoir.

The carburetor also has two other nozzles aside from the main nozzle found at the venturi of the carburetor – the idle port and the off-idle or transfer port.

The idle port, found just below the venturi, is responsible for getting fuel into the engine when there is minimal airflow in the carburetor. This happens when the engine is at a low speed.

The off-idle port, found above the idle port, feeds additional fuel to the engine during low engine speed.

An engine vacuum draws fuel from these two ports. Collectively, the off-idle port and the idle port keep the engine supplied with fuel when it is running at low speed. The main nozzle is the one responsible for keeping the engine running at normal operating speeds.

In 1985, most vehicles' carburetors had been replaced by fuel-injection, a computerized and more efficient way of injecting fuel into the engine. But even so, we cannot deny that the technology brought by the carburetor made it possible for the automotive industry to flourish and advance.

Who would have thought what a single tomato can could do? James Monahan is the owner and Senior Editor of

CarburetorMax.com and writes expert articles about carburetors.