



The Carburetor

By the Carburetor Team

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Etymology of “Carburetor” ('kɑ:ɹb(j)əˌreɪtə)

- Def. device to enhance a gas flame by adding volatile hydrocarbons
- Carburetor is a compound word: “Carb” + “Uret” + “Ator”
- “Carb” is the combining form of carbon
- “-Ure” is an archaic suffix from Modern Latin -uretum
 - used in chemical terminology
- “Ator” is a suffix denoting an agitator



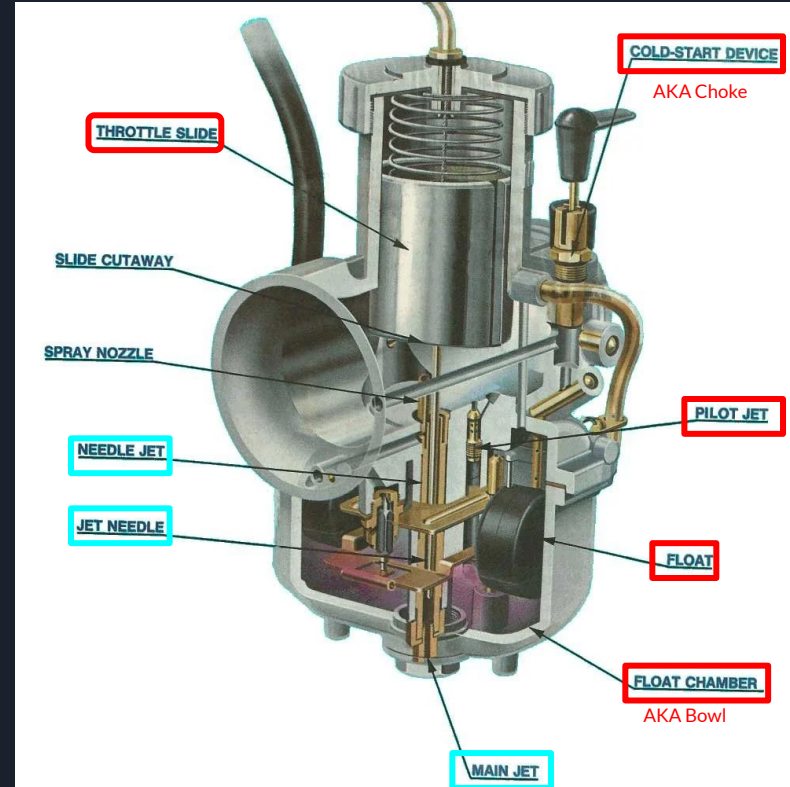
The Carb: A short history and its number one enemy

- The carburetor was by American inventor Samuel Morey in 1826, followed by the first carburetor for a petroleum engine by Siegfried Marcus in 1872
- Frederick William Lanchester of Birmingham, England developed a single cylinder internal combustion engine with chain drive in 1876.
- The carburetors dominated as the method of fuel delivery for most US-made gasoline engines until the late 1980s
- Subsequently, fuel injection outpaced the carburetor in efficiency and use among US-made gasoline engines
- Because its simplicity and independence from an electrical system, the carburetor is still used in many motorcycles
- Still, today, however, carburetors are used in small engines and older or specialized automobiles (notably some NASCAR cars use carbureted engines)



Basic Anatomy of the Carburetor and How it works

- The Basic Components
 - Blue = included in the live demo
 - Red = explained here
- Choke
 - Cuts off the air so that it increases the fuel to air ratio
- Throttle slide
 - Attached to the throttle cable, brings in more air which brings in more fuel
- Pilot Jet
 - Feeds the fuel to the engine during the idle stage
- Float and Bowl
 - Float closes the flow of fuel so that the carb doesn't overflow
 - Bowl holds a small amount of fuel so that the pilot and needle jets have something to draw from directly
- Live Demo in Fusion 360
 - Needle Jet
 - Jet Needle
 - Main Jet



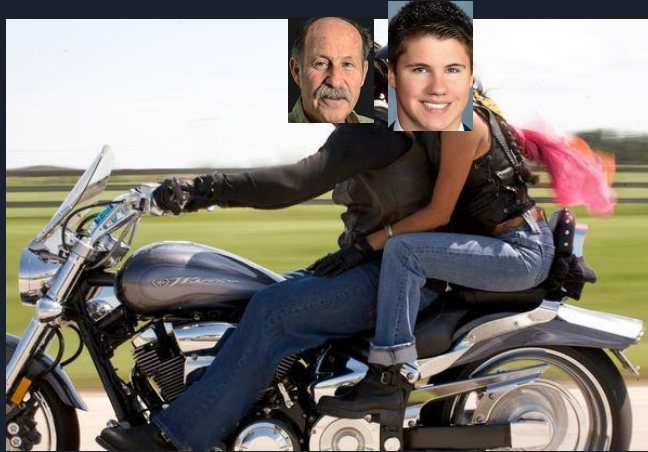
How it works

The carburetor fulfills the following main functions:

1. The fuel enters the fuel inlet and goes into the bowl
2. The air enters the carburetor (generally from an air filter)
3. The narrowing of the throat in the carb creates a low pressure zone, following Bernoulli's principle
4. The low pressure zone creates a vacuum that sucks up the fuel from the bowl and atomizes the fuel
5. The carburetors design (and the choice of jetting) results in the perfect mixture of air and fuel to enter the cylinder for combustion
6. When the throttle is increased, the slide (not shown in this diagram) comes up, which brings up the needle which activates the main jet and brings in more fuel, as well as more air



Thank you! Q&A



Thank you for a wonderful course!

Adam and Taylor ❤️🌟