

Forklift Throttle Body

The throttle body is part of the intake control system in fuel injected engines to regulate the amount of air flow to the engine. This mechanism works by applying pressure on the operator accelerator pedal input. Generally, the throttle body is situated between the intake manifold and the air filter box. It is often attached to or positioned near the mass airflow sensor. The largest part in the throttle body is a butterfly valve called the throttle plate. The throttle plate's main task is to control air flow.

On many styles of automobiles, the accelerator pedal motion is communicated through the throttle cable. This activates the throttle linkages that in turn move the throttle plate. In vehicles consisting of electronic throttle control, otherwise known as "drive-by-wire" an electric motor regulates the throttle linkages. The accelerator pedal connects to a sensor and not to the throttle body. This particular sensor sends the pedal position to the ECU or Engine Control Unit. The ECU is responsible for determining the throttle opening based upon accelerator pedal position along with inputs from different engine sensors. The throttle body consists of a throttle position sensor. The throttle cable is attached to the black portion on the left hand side which is curved in design. The copper coil placed near this is what returns the throttle body to its idle position when the pedal is released.

The throttle plate turns inside the throttle body each time the operator applies pressure on the accelerator pedal. This opens the throttle passage and permits more air to be able to flow into the intake manifold. Normally, an airflow sensor measures this alteration and communicates with the ECU. In response, the Engine Control Unit then increases the amount of fluid being sent to the fuel injectors so as to generate the desired air-fuel ratio. Frequently a throttle position sensor or TPS is fixed to the shaft of the throttle plate to provide the ECU with information on whether the throttle is in the idle position, the wide-open position or otherwise called "WOT" position or somewhere in between these two extremes.

In order to regulate the minimum air flow while idling, various throttle bodies could include adjustments and valves. Even in units that are not "drive-by-wire" there will normally be a small electric motor driven valve, the Idle Air Control Valve or IACV that the ECU uses in order to control the amount of air that can bypass the main throttle opening.

It is common that several automobiles contain a single throttle body, though, more than one could be used and connected together by linkages to be able to improve throttle response. High performance automobiles such as the BMW M1, along with high performance motorcycles such as the Suzuki Hayabusa have a separate throttle body for every cylinder. These models are called ITBs or "individual throttle bodies."

A throttle body is like the carburetor in a non-injected engine. Carburetors combine the functionality of the fuel injectors and the throttle body into one. They operate by combining the fuel and air together and by controlling the amount of air flow. Automobiles that have throttle body injection, which is referred to as CFI by Ford and TBI by GM, situate the fuel injectors in the throttle body. This allows an older engine the chance to be transformed from carburetor to fuel injection without significantly altering the engine design.