

Forklift Throttle Body

The throttle body is a component of the intake control system in fuel injected engines to control the amount of air flow to the engine. This particular mechanism works by putting pressure upon the driver accelerator pedal input. Generally, the throttle body is positioned between the air filter box and the intake manifold. It is normally attached to or placed close to the mass airflow sensor. The largest part within the throttle body is a butterfly valve referred to as the throttle plate. The throttle plate's main task is to be able to control air flow.

On most cars, the accelerator pedal motion is transferred via the throttle cable, therefore activating the throttle linkages works to move the throttle plate. In automobiles with electronic throttle control, otherwise known as "drive-by-wire" an electric motor controls the throttle linkages. The accelerator pedal connects to a sensor and not to the throttle body. This sensor sends the pedal position to the ECU or also known as Engine Control Unit. The ECU is responsible for determining the throttle opening based on accelerator pedal position along with inputs from various engine sensors. The throttle body consists of a throttle position sensor. The throttle cable is attached to the black part on the left hand side which is curved in design. The copper coil positioned close to this is what returns the throttle body to its idle position as soon as the pedal is released.

Throttle plates rotate inside the throttle body each time pressure is placed on the accelerator. The throttle passage is then opened so as to allow much more air to flow into the intake manifold. Typically, an airflow sensor measures this change and communicates with the ECU. In response, the Engine Control Unit then increases the amount of fluid being sent to the fuel injectors to be able to produce the desired air-fuel ratio. Often a throttle position sensor or also called TPS is attached 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 also called "WOT" position or anywhere in between these two extremes.

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

In numerous vehicles it is common for them to contain a single throttle body. To be able to improve throttle response, more than one can be utilized and connected together by linkages. High performance vehicles like the BMW M1, along with high performance motorcycles like the Suzuki Hayabusa have a separate throttle body for each cylinder. These models are referred to as ITBs or also known as "individual throttle bodies."

A throttle body is like the carburetor in a non-injected engine. Carburetors combine the functionality of the throttle body and the fuel injectors into one. They work by blending the fuel and air together and by modulating the amount of air flow. Automobiles which include throttle body injection, that is referred to as CFI by Ford and TBI by GM, locate the fuel injectors inside the throttle body. This allows an old engine the chance to be converted from carburetor to fuel injection without significantly altering the engine design.