

Delphi Electronic Throttle Controls and Mechanical Throttle Bodies

Delphi Electronic Throttle Controls and Mechanical Throttle Bodies control airflow to the engine. A butterfly valve in the device opens and closes the passage into the intake manifold to increase or decrease the volume of incoming air.

Delphi Electronic Throttle Controls are regulated by an electronic signal from the engine management system. They offer increased system air control versus mechanical systems to enable the application of advanced engine technologies and vehicle control features to help improve engine efficiency. They can be tailored to meet customer needs for airflow, response time, and system position feedback.

Delphi Mechanical Throttle Bodies offer a simpler alternative to electronic systems while maintaining excellent durability and reliability. They are mechanically linked to the accelerator and are constructed of aluminum or composite materials. They are designed to provide manufacturers with packaging flexibility.

► Benefits – Delphi Electronic Throttle Controls

- Non-contact sensor provides increased durability and reliability compared to contact sensor designs
- Rolling element bearing motor provides improved control of the motor to help minimize brush wear and increase durability
- Stiff casting design helps minimize vibration for improved motor and sensor durability
- No metal-to-metal contact in the gear train helps reduce contamination in the gear train and sensor
- Various bearing configurations are available (needle, ball, and brushing) to meet specific designs based on customer needs
- Dual lip seals improve sealing to help avoid moisture penetration

► Typical Applications

Delphi Electronic Throttle Controls and Mechanical Throttle Bodies are designed for a wide range of gasoline and flexible fuel engine applications. They are available in a wide range of bore sizes and configurations to meet individual customer requirements.

Delphi also offers mechanical throttle bodies for non-automotive applications including motorcycles, commercial lawn and garden equipment and stationary power generators.



Delphi Electronic Throttle Control Valve with Non-Contacting Throttle Position Sensor



Delphi Gen 6 Electronic Throttle Control Valve with Non-Contacting Throttle Position Sensor



Delphi Gen 6 Electronic Throttle Control Valve with Contacting Throttle Position Sensor



Delphi Compact Gen 6 Gasoline Electronic Throttle Control Valve



Delphi Mechanical Throttle Body with Aluminum Body



Delphi Mechanical Throttle Body with Composite Body

► Performance Advantages

Delphi Electronic Throttle Controls are designed to provide enhanced powertrain functionality — drivability, selectable performance, cruise, and traction control — with fewer components than a traditional system. They help enable advanced vehicle technologies such as hybrid vehicle systems, gasoline direct injection, collision avoidance, adaptive cruise control, and autonomous vehicles.

Delphi Electronic Throttle Controls feature a DC brush motor with two-stage gears and a throttle position sensor based on contact or non-contact sensor technology. Motor and gear characteristics are optimized for maximum force capability. They are available in a full range of bore sizes and with cast aluminum bodies. They offer compact size in a cost-effective package and a single connection design.

Delphi Mechanical Throttle Bodies offer integrated idle air control and throttle position sensor functions. Both multiple lever and cam linkage interfaces are available. Delphi's Mechanical Throttle Bodies are offered in either aluminum or composite material designs, and in a wide range of bore sizes. Composite mechanical throttle bodies offer increased resistance to corrosion and a significant mass reduction compared to aluminum throttle bodies. Delphi's composite mechanical throttle bodies also offer manufacturers reduced investment and piece cost due to their net form body design



Delphi produces a variety of electronic throttle controls for a wide range of applications.



Delphi offers mechanical throttle bodies to suit many different applications.

► **The Delphi Advantage**

Delphi offers the benefits of a long history in developing and manufacturing engine air control technology. Delphi manufactures engine air controls at facilities in North America, Europe, Asia and South America with technical support facilities in each region. This global presence helps Delphi provide close customer support and exceptional on-time delivery performance.

As a global leader in engine management systems technology, Delphi can help manufacturers around the world meet emissions requirements, improve fuel economy and enhance performance. Delphi is a source for high value solutions and our systems expertise is built into every product. Delphi's flexible engineering approach encourages collaboration. And, Delphi has a thorough understanding of automotive markets around the world and a global network of resources.