

### Delphi Quiet Corner Module

Delphi knows vehicles inside and out. By leveraging decades of its automotive experience and expertise, Delphi continues to design, develop, test, and manufacture automotive vehicle innovations that meet or exceed customer expectations. Delphi supplies a full range of braking components, modules, and systems that can be tailored to the manufacturers' specific requirements. With technical centers and manufacturing sites located throughout the world, Delphi provides personalized customer service and on-time, cost-effective deliveries to vehicle manufacturers and other Tier 1 suppliers.

#### ► Description

As an example of Delphi's capability, the Delphi quiet corner module is more than a compact integration of a rotor, caliper, knuckle, and other components. To provide maximum noise control, each component is thoroughly analyzed for its unique "modal map"—a record of frequency modes used to characterize possible noise, vibration, and harshness (NVH). Then Delphi engineers go one step further by measuring how each component's modal signature may interact with other components within the corner module. For example, two components may exhibit excellent NVH characteristics when tested individually. However, when combined, the frequencies may interact to produce unacceptable NVH performance.



For optimal system effectiveness, Delphi can also analyze the suspension system to validate that the overall vehicle provides the driver with a quiet ride.

Each quiet corner module is fully assembled and tested before being shipped to a vehicle assembly location. Its modular configuration helps reduce assembly plant part numbers, helping save vehicle manufacturers significant assembly time and cost as well as floor space.

### Delphi Quiet Corner Module

Features	Benefits
Separated modal map testing	Minimizes frequency interaction
Optimized rotor design	Lowers mass Improves thermal efficiency
Robust caliper	Improves pedal feel Reduces drag Improves pressure distribution/reduces taper wear
Aluminum knuckles and calipers	Reduces weight Enhances fuel economy Lowers unsprung mass/improves ride characteristics
Shipped fully assembled/ tested	Eliminates assembly part numbers Helps save assembly time and cost Helps save assembly floor space
Quiet corner	Reduces warranty claims

#### ▶ Typical Applications

The quiet corner module is designed for a complete range of passenger cars, SUVs, and light-duty trucks. It is available in disc or drum brake designs for front and rear applications.

#### ▶ Performance Advantages

As a byproduct of designing the module with optimum NVH characteristics, the consumer experiences an enhanced pedal feel due to a more robust caliper and consistent pressure distribution. The improved rotor design reduces mass, helps improve lining life, and contributes to greater thermal efficiency. By maintaining a low lateral run-out in the corner, due in part to precision wheel bearings, thickness variation generation leading to pulsation/judder is minimized. Lightweight aluminum components and low drag bearings and calipers contribute to better fuel economy. Lightweight components also result in lower unsprung mass, providing improved overall ride characteristics.

