



## Commercial Vehicle Torsional Vibration Damper Suzuki Noise Reduction Customizable

Our Product Introduction

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### Basic Information

- Place of Origin: China
- Brand Name: Dongfeng
- Certification: IATF 16949:2016
- Model Number: 631000
- Minimum Order Quantity: 100 piece
- Price: EXW 123.5CNY/piece
- Packaging Details: Metal mesh box packaging
- Delivery Time: Spot goods
- Payment Terms: T/T
- Supply Ability: Annual production of 50000 pieces



### Product Specification

- Weight: 10kg
- Function: Reduce Torsional Vibration
- Country Of Origin: China
- Application: Commercial Vehicles
- Color: Black
- Certifications: ISO 9001, TS 16949
- Installation: Bolt-on
- Maintenance: Low
- Damping Capacity: Up To 90%
- Manufacturer: ABC Company
- Material: Steel
- Warranty: 1 Year
- Package Contents: Torsional Vibration Damper
- Durability: High
- Compatibility: Fits Most Commercial Vehicle Engines



### More Images



## Product Description

Automotive torsional vibration dampers are key components used to reduce clamping vibrations in automotive transmission systems. It ensures the comfort, stability, and stability of the car during driving by absorbing and eliminating scattered vibration energy. The design and function of torsional vibration dampers are crucial for improving the performance of automobiles, extending the service life of transmission systems, and enhancing driving experience. We will provide a detailed introduction to the working principle and design of automotive torsional vibration dampers

### 1, What is a car torsional vibration damper?

A torsional vibration damper for automobiles is a device used to reduce torsional vibration in the transmission system, mainly by absorbing vibration, reducing torsional vibration effects, and preventing vibration from causing damage to the engine, turbine, and other transmission components. It is usually installed on the drive shaft between engines or connected to the engine flywheel. Its core is to protect the transmission system of the crane from excessive fatigue by absorbing clamping vibrations generated by engine operation and vehicle speed changes.

### 2, Automobile torsional vibration reduction

The working principle of torsional vibration physics shock absorbers is based on the theory of "vibration absorption" in China. When the engine is in operation, changes in the engine will generate compression vibrations of different frequencies, which are transmitted to the engine through components such as the drive shaft and flywheel. This affects the smooth movement of the vehicle. The torsional vibration damper converts the vibration energy into thermal energy or other forms through built-in elastic elements, damping materials, etc., reducing the impact of vibration on the energy of the vehicle body.

Usually, torsional vibration dampers are composed of springs, springs, oil seals, and hydraulic damping systems. Springs and damping systems are the main vibration absorbing components of torsional vibration dampers. During the working process, the spring element of the torsional vibration damper will adjust its elasticity according to the operating state of the vehicle, absorbing excess vibration. Meanwhile, the hydraulic damping system further suppresses the amplitude of vibration by regulating the oil flow.

### 3, Design and Structure of Automotive Torsion Shock Absorber

#### Structure

The basic structure of torsional vibration dampers includes a housing, elastic elements, hydraulic damping systems, etc. The shell is usually made of high-strength steel or aluminum alloy material to ensure its stability under high load working conditions. The main function of elastic components is to provide elastic recovery force and reduce the propagation of vibration. The hydraulic damping system utilizes the flow characteristics of the fluid to reduce the energy of vibration.

#### Design parameters

The design of torsional vibration dampers requires consideration of multiple parameters, including vibration frequency, elastic coefficient, damping characteristics, etc. In order to ensure its effectiveness under different working conditions, the design of torsional vibration dampers often needs to match the origin and previous working characteristics. In addition, the size, quality, and material selection of shock absorbers are also part of the design process

#### performance requirement

The performance requirements for torsional vibration dampers are also the same, requiring stability to be maintained over a wide operating range. This includes low vibration transmission under high torque, efficient shock absorption performance in low-temperature environments, and long interruptions under eye driving conditions. Usually, torsional vibration dampers also need to have a certain degree of coordination to cope with wear and aging during long-term use.

### 4, Types of torsional vibration dampers for automobiles

#### Single stage torsional vibration damper

Single stage torsional vibration dampers are the most common type, typically using an elastic element and a damping system. It is suitable for most conventional cars and medium-sized vehicles, with a simple structure and low cost, and can effectively reduce the vibration of the vehicle's pallets.

#### Multi layer torsional vibration damper

Multi stage torsional vibration dampers use multiple damping systems and elastic elements to provide more precise vibration control. It is suitable for high-performance vehicles, luxury cars, and some special application scenarios that require precise control. Compared to single-stage shock absorbers, multi-stage attenuators can effectively absorb vibrations over a wider frequency range

#### Electronic controlled torsional vibration damper

With the development of automotive electronics technology, electronically controlled torsional vibration dampers have gradually become a new trend. This type of shock absorber monitors the working status of the vehicle in real time through sensors and electronic control units, and dynamically adjusts the working characteristics of the reduced shock absorber according to different working conditions. This type of shock absorber can automatically adjust its thickness and vibration absorption capacity according to the driving state of the vehicle, thereby providing

### 5, Application fields of automotive torsional vibration dampers

Torsion shock absorbers are widely used in various types of automobiles, especially in the following areas:

#### Connection between engines

The role of torsional vibration dampers is crucial between the engine and the neck. It can not only effectively reduce the compression vibration output by the engine, but also avoid these vibrations from being transmitted to the chassis through the neck, which affects the comfort level.

#### High performance automobiles

For high-performance vehicles, especially heavy-duty and luxury cars, torsional vibration dampers can provide more precise and efficient vibration control. These vehicles usually require corresponding initial conditions and intense driving, and the performance requirements of torsional vibration dampers are demanding.

#### Commercial vehicles and heavy-duty vehicles

In automobiles and heavy vehicles, torsional vibration dampers help reduce the vibration effects caused by heavy loads or high-speed driving, improve vehicle stability, and

### 6, The future development trend of automotive torsional vibration dampers

With the continuous development of the automotive industry, the technology of torsional vibration dampers is also constantly advancing. Future torsional vibration dampers will develop in the following directions

#### Intelligentization

With the trend of automotive standardization, torsional vibration dampers will also be more closely integrated with the vehicle's electronic control system, monitoring and adjusting the vehicle's vibration control in real time.

#### Slight quantification

Lightweight has always been an important goal in automotive design, and the materials and structures of torsional vibration dampers will also develop towards lightweight direction. By using high-strength alloy materials and advanced manufacturing processes, shock absorbers



## Dongfeng (Shiyan) Torsional Damper Company Limited



[gjh.8266@163.com](mailto:gjh.8266@163.com)



[dongfengtorsionaldamper.com](http://dongfengtorsionaldamper.com)

10th Floor, Building B, Donghe Center, Dongfeng 3rd Road, Wuhan Economic and Technological Development Zone, China