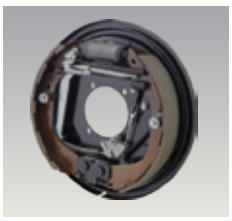
Markets and Products

Akebono draws on its comprehensive brake technologies to develop and supply brakes for automobiles, motorcycles, rolling stock and industrial machinery, as well as sensor products.

Products for Automobiles

- Disc brake calipers
- Disc brake pads
- Disc brake rotors
- Drum brakes
- Drum brake shoes
- Drum brake linings

Disc brake



Drum brake

Products for Motorcycles

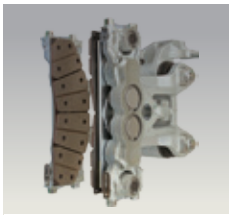
- Disc brake calipers
- Disc brake pads
- Master cylinders

Master cylinder

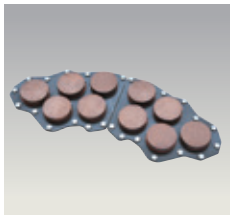
Disc brake

Products for Rolling Stock

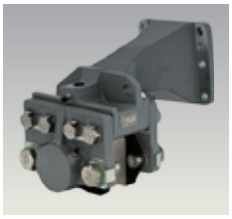
- Bullet train disc brakes
- Bullet train disc brake linings
- Monorail disc brakes
- Railroad train brake shoes



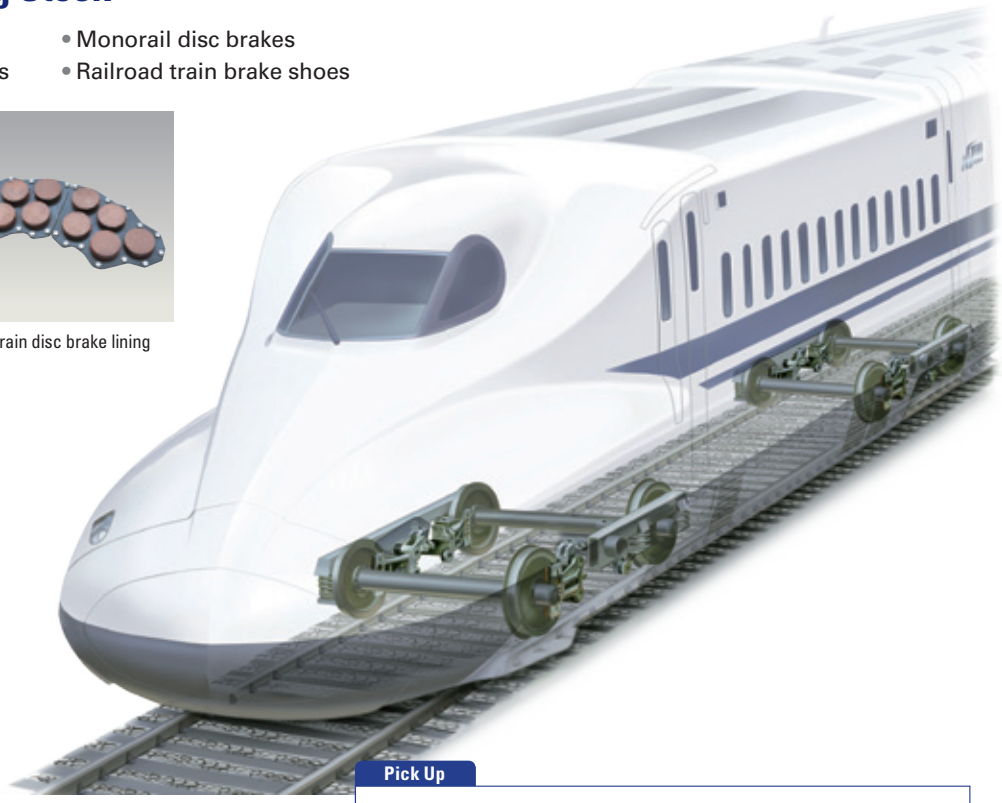
Bullet train disc brake



Bullet train disc brake lining



Monorail disc brake



Pick Up

Contribution in the Railway Field

Akebono has provided the brakes for many Japanese bullet trains, from the first generation Type 0 series to the latest N700A series, as well as conventional trains and monorails.

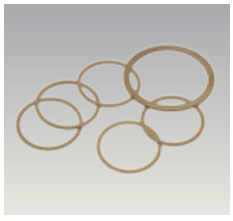
Products for Industrial Machinery

- Drum brakes for forklifts
- Disc brakes for cranes
- Brake shoes for elevators
- Clutch facings for car air conditioning components

Drum brake for forklifts

Disc brake for a rough terrain cranes

Brake shoe for elevators



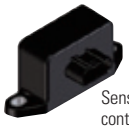
Clutch facings for car air conditioning units

Sensor Products (Infrastructure & Mobility Business)

Civil engineering and architecture field
- Inclinometer systems
- Concrete filling & compaction detection systems (Jutender)
- Lighting emitting inclination sensors (LEIS)/Pocket

Inclinometer

Agriculture and construction field
- Horizontal control systems for tractors
- Horizontal control systems for radio-controlled helicopters used for pesticide spraying
- Drive wheel slip prevention systems for caterpillar tracks



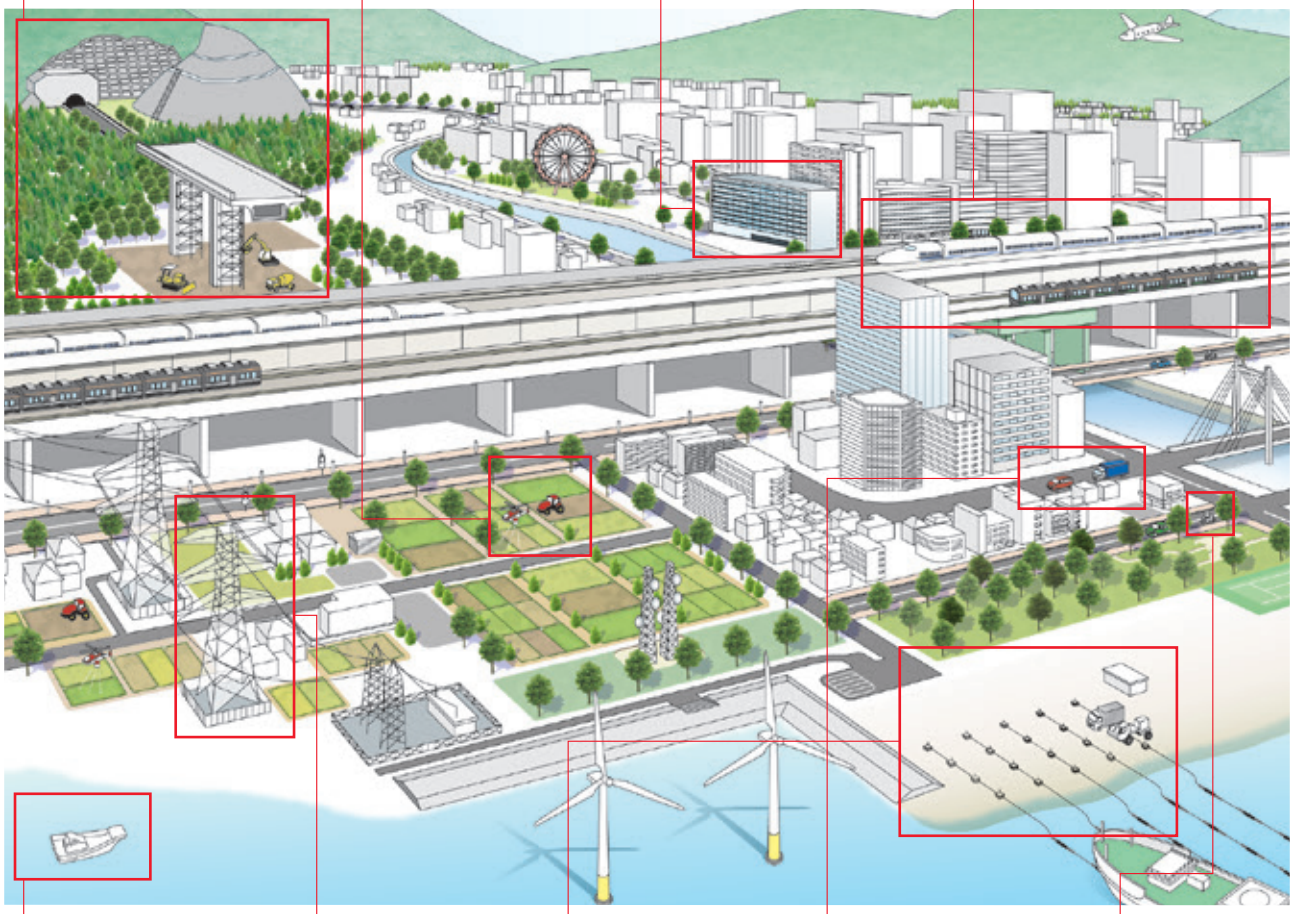
Sensor in horizontal control system for tractor

Building field
- Earthquake detectors for long-wave seismic motion
- Friction materials for vibration damping

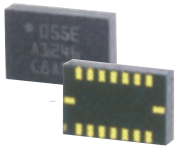
Earthquake detectors for long-wave seismic motion

Railroad field
- Suspension control systems for high-speed trains
- Vehicle behavior detection devices
- Portable vibration measurement devices
- Continuous micro vibration monitoring systems for railway bridges

Vehicle behavior detection device



Marine field
- Position correcting systems for satellite/GPS compasses
- Position correcting systems for fish finders



Sensor in position correcting system for satellites/GPS compass

Energy field (supply)
- Position monitoring systems for power transmission cables
- Inclination and vibration monitoring systems for steel towers

Position monitoring systems for power transmission cables

Energy field (development)
- Oil/gas layer monitoring systems

Ultra low noise accelerometer for oil/gas layer monitoring system

Automotive field
- ESC (electronic stability control equipment)
- Car navigation systems
- ABS
- Suspension control systems
- Roll over airbags
- Hill-start assist systems
- Operation support systems for commercial vehicles

ESC

Motorcycle field
- Suspension control systems

Sensor in suspension control system

Basic Principles of Brakes

Here we explain the structure and function of brakes.

What is a Brake?

It is a device that utilizes friction to cause a vehicle to decelerate and/or stop by converting kinetic energy into heat energy. Sudden braking at 100 km/h generates enough heat to raise the temperature of two liters of water from 0°C to boiling (100°C). Brakes are relatively small compared with other major automobile components, and the space where they are mounted is restricted. Complex controls are required to absorb the output power of the engine and brake safely. Brakes are also considered an important safety component in an automobile because of their key role in ensuring vehicle safety.

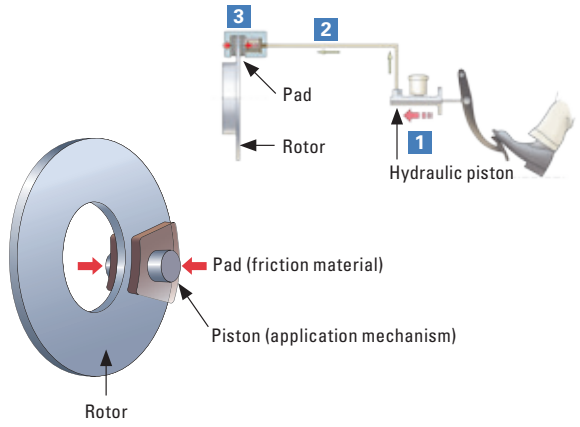
Types of Brake

Each of the four wheels on an automobile is equipped with a brake. Depending on the usage and characteristics of the car, the wheels may have disc brakes or a drum brakes. Disc brakes have the capability to stop a car in a stable manner even at a high speed, while drum brakes have the capability to stop heavier vehicles.

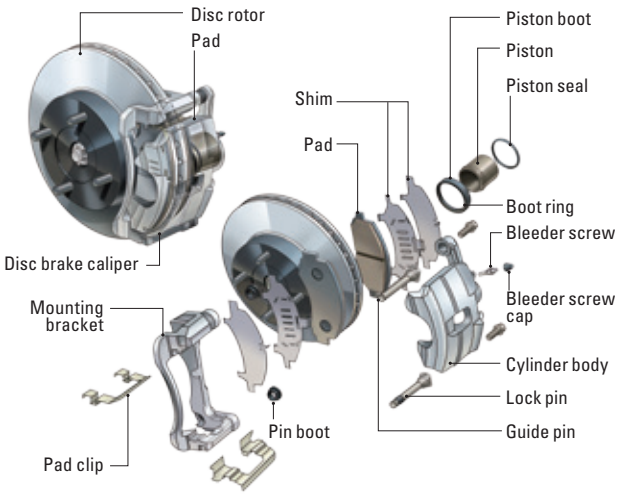
A vehicle can be equipped with different combinations of disc and drum brakes. Some vehicles use disc brakes on the front and rear wheels, while others use disc brakes on the front and drum brakes on the rear.

Disc brakes

Brake pads clamp the rotor to stop its rotation

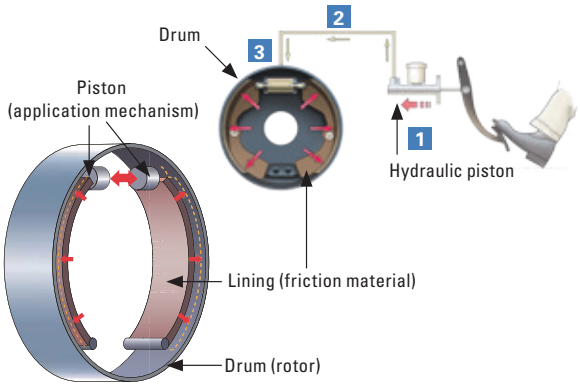


Main Parts of Disc Brakes



Drum brakes

Lining is pushed out to drum from the inside to stop its rotation



Main Components of Drum Brakes