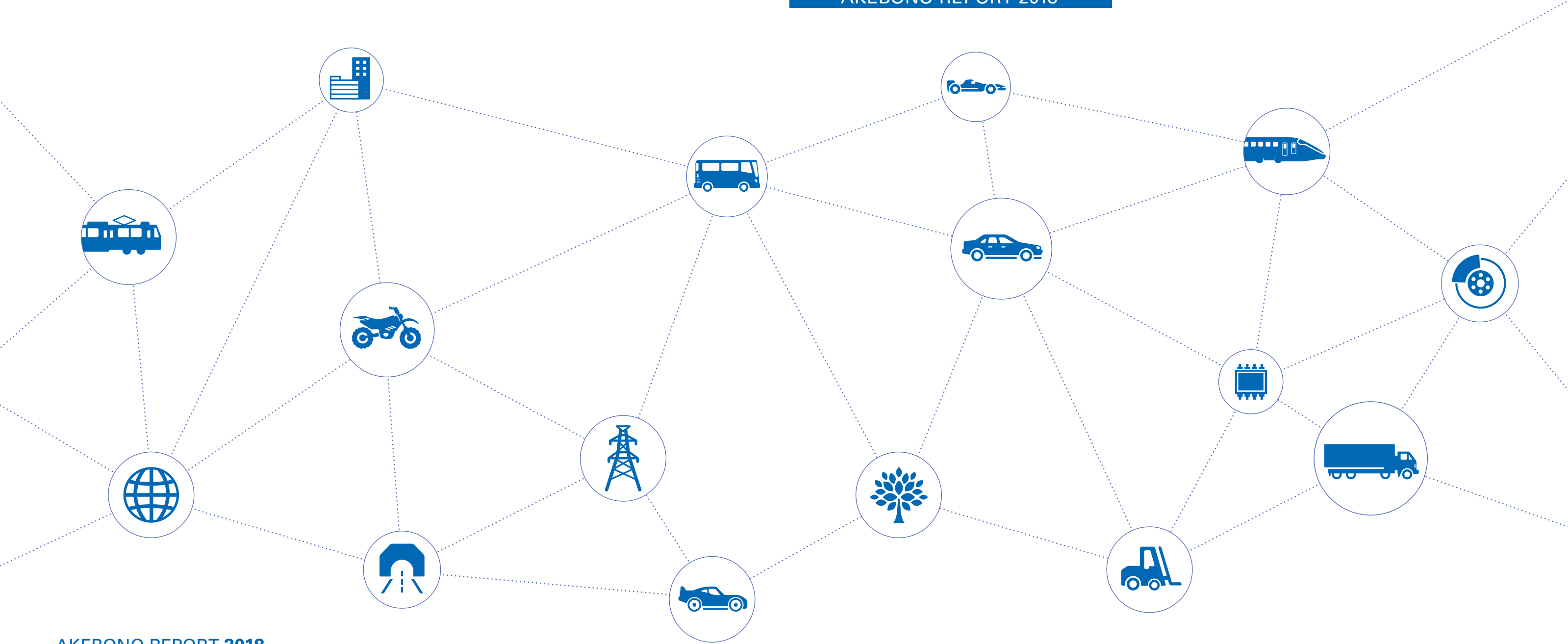


## AKEBONO REPORT 2018



## AKEBONO REPORT 2018

Issued August 2018

### AKEBONO BRAKE INDUSTRY CO., LTD.

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Please send your opinions and impressions to the above office.



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akebono's Corporate Mission	Through "Friction and Vibration, their Control and Analysis," we are determined to protect, grow and support every individual life  Established 1999
akebono's Declaration for the 21st Century	We will continue to create value long into the 21st century as we pursue our Corporate Mission.  We declare that we will: 1. Recognize the real value of what we create and provide. 2. Assure our own indispensability by continuously creating new value. 3. Accomplish our tasks with speed and the courage of our convictions without fear of failure. 4. Achieve our aspirations through the pride of each and every individual.  Established 1999
Corporate Goals	1. Customer needs first 2. Technology realignment 3. Establishing a global network  Established 1990

Brand Slogan	Brand Statement
Absolute safety; Unparalleled control	Since 1929, akebono has brought assurance and peace of mind to our customers and end-users everywhere as a global industry leader in brake design and production. We take pride in our history of achieving safety without compromise, and continue to pursue new standards of perfection with innovation.  Looking to the future, we are inspired by the prospect of delighting and satisfying our customers, and never cease in the challenge to succeed in this goal.  Absolute safety; Unparalleled control. Putting a smile on people's faces all over the world.

Established 2005

Editorial Policy

We compiled the AKEBONO REPORT 2018 based on “integrated thinking,” a concept proposed by the International Integrated Reporting Council (IIRC). In doing so, we have focused on actual examples of the Akebono Group’s operations, the kind of growth it aims to achieve and how it will fulfill its commitment to delivering safety and peace of mind through brake products.

To effectively convey abovementioned content to our stakeholders, we prepared both printed booklet and web editions of the AKEBONO REPORT 2018. In the printed booklet, we put greater emphasis on reader-friendliness, focusing on matters that we want to communicate to a broader range of stakeholders. In this year’s report, we have presented various Company initiatives from the standpoint of ESG (Environment, Society, and Corporate Governance) and SDGs. We hope this will help you understand the business we are promoting with the aim of sustainable growth. Further details on topics presented in the printed booklet can be found on our website.

It is our hope that the aforementioned articles help readers understand Akebono’s determination to lead the way in realizing unparalleled competitiveness as a small, specialized, independent manufacturing company.

In preparing this edition, we referred to the Guiding Principles set forth by the IIRC as well as the Global Reporting Initiative Sustainability Reporting Guidelines (G4) and ISO 26000.

Reporting Period

This report covers the annual results data for the 2017 fiscal year (April 1, 2017 to March 31, 2018). In addition, the report contains references to some ongoing activities undertaken after the latter date to provide readers with a better understanding of the latest status of initiatives.


Organizations


Japan: Akebono Brake Industry (including HP BU, Foundation BU, Infrastructure & Mobility Systems (AIMS) BU, Friction Material BU, Aftermarket BU, and R&D, automotive sales, production, production engineering, quality assurance, purchasing department, and administrative departments as well as Tatebayashi Foundry), domestic Group companies including four production plants (Yamagata, Fukushima, Iwatsuki and Sanyo), Alocs Corporation, Akebono Research & Development Centre, Akebono 123, and Akebono Advanced Engineering; Overseas: ABC, AEC, ABE, ABG, ABCT and ABCS (U.S.); ABM (Mexico); AESA (Gonesse), AESA (Arras) (France); AEG (Germany); AAE (UK); ABSK (Slovakia); AKBT, A&M (Thailand); two Chinese subsidiaries (Guangzhou and Suzhou); AAIJ (Indonesia); and AAVH (Vietnam). Please refer to “Akebono Locations” on pages 47 to 48 for the formal names of those organizations that are presented in the above listing as abbreviations.

Definition of Fiscal Year

To present content in a consistent and easy-to-follow manner, in this report, the period referred to as the fiscal year represents the fiscal period from April 1 to March 31 of the next year. The financial statements are also presented on a fiscal year basis.

The AKEBONO REPORT 2018 booklet presents financial and nonfinancial information on the Akebono Group’s fiscal 2017 initiatives with a focus on readability. For detailed data on each initiative, please visit our website.

**Website**  
Detailed data on each initiative is disclosed on our website.

**Booklet**  
Matters related to priority themes are concisely discussed in the booklet.

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URL	<a href="http://www.akebono-brake.com/english/index.html">http://www.akebono-brake.com/english/index.html</a>

Cautionary Statement Concerning Outlook

Current plans, projections, strategies, business performance and other statements reported herein that are not historic facts represent forecasts made under Akebono’s assumptions and views based on information available at the time this report was prepared. These statements, therefore, are exposed to risks and uncertainties, including but not limited to those associated with the economic climate surrounding Akebono’s business domain, trends in market competition, exchange rates, tax systems and various institutions. Please note that actual business performance may differ significantly from Akebono’s forecast due to various factors.

## Amid change, with a medium- to long-term perspective, we will proactively carry out measures that leverage Akebono's strengths.



### In an automotive industry undergoing change

The automotive industry, Akebono's main business field, is undergoing a major shakeup. The symbolic keyword is "CASE". This acronym of "Connected (progress of connectivity/connection)," "Autonomous (realization of automatic driving)," "Shared & Service (development of shared services)" and "Electrification (electrification of mechanisms)" represents the wide range of new value that automobiles can provide.

While a major trend is occurring in the electrification of automobiles, demand for internal combustion engines in emerging countries and other regions is expected to remain strong. Due to consumer preferences, the hot-selling vehicle model has shifted from Sedan to SUV. In urban areas, the automobile market has changed substantially, with the emergence of a sharing economy, as seen in the shift from ownership to shared ownership of vehicles.

With various changing factors related to technology and markets occurring simultaneously, for us suppliers to survive, we need to reaffirm our strength as "small, specialized, independent manufacturing company" and further reinforce our management foundation while producing creative value with a medium- to long-term perspective and achieving sustainable growth.

### Progress of Akebono New Frontier 30 - 2016 Midterm Business Plan

Akebono has finished the second year of its three-year midterm business plan, of which fiscal 2018, the current fiscal year, is the final year. In the plan, we are working on initiatives based on three basic policies under the theme of "sustainable growth."

- **Rebuilding the North American operations:** We have implemented four measures to rebuild from the manufacturing problems that occurred in our North American business, and business performance is gradually recovering. In "Fundamental organizational reforms," we seek to change key personnel and send experts in manufacturing and quality assurance from Japan to speed up the reforms. In "Productivity improvement," we improved yields and raised productivity by transferring production items, reviewing processes, and other measures. In "Manufacturing capacity increase," we introduced new production facilities, primarily at ABCS\* and ABG\*. In "Improvement of earnings structure," we have reduced purchasing costs and labor costs, and optimized inventory.

\* ABCS: Columbia Plant in Columbia, South Carolina, USA  
\* ABG: Glasgow Plant in Glasgow, Kentucky, USA

- **Establishing global networks based on product-based business units:** In fiscal 2016, Akebono launched five product-based business units with marketing, research and development, purchasing, production and sales functions. In fiscal 2017, the Company standardized product specifications that vary according to customer and region by strengthening collaboration among business units. We will further strengthen collaboration among business units, functions and regions, and seek to further generate cash through the optimal allocation of business resources. We are now building a global database, which will form the foundation of this collaboration.
- **Expanding high performance brake business and recreating European operations:** In fiscal 2017, we completed the installation of the manufacturing line at the Slovakia Plant and the transfer of the high performance brake caliper business from ABCS. Furthermore, the number of customers are increasing, mainly in Europe. In fiscal 2018, we will work to improve production quality at the Slovakia Plant and develop the business in the US and Japan.

### Balancing Medium- to Long-Term Growth with Sustainability

As seen by the adoption of the United Nation's "Sustainable Development Goals (SDGs)" and the international "Paris Agreement" on the mitigation of climate change, companies are now being strongly encouraged to preserve the global environment. Given these circumstances, Akebono will seek sustainable

growth by actively responding to changes in the automotive industry. At the same time, it hopes to meet the needs of society by incorporating measures that contribute to solving global environmental and social issues in its business activities.

In November 2017, Akebono announced its "medium- to long-term vision" that lays out a direction for dealing with the global environment and seeking sustainable growth. Based on this medium- to long-term vision, Akebono will deepen its knowledge of "Friction and Vibration, their Control and Analysis," a company strength, and focus on the development of brake technologies that can be deployed not only in automobiles, but in a wide range of fields such as rolling stock including bullet trains and industrial machinery, while taking on new challenges caused by further changes in the business environment. We will also develop products that leverage our sensor technologies to improve the safety and security of social infrastructure and increase operational efficiency. At the same time, we will implement measures to reduce the environmental impact and improve the workplace safety of our production facilities.

- **Technological Development: Next-generation friction materials:** We are pursuing research on plant-derived materials from the viewpoint of utilizing sustainable resources for the raw material used in friction materials and changing over to substances with low environmental impact. We are pursuing wide-ranging research and development on brake dust, an expected future problem, including unharmed materials for friction materials and technology for measuring brake dust.
- **Technological Development: Next-generation electro-mechanical/high performance brakes:** Akebono researches the practical application of electro-mechanical service brakes that will replace hydraulic brakes in the future and the next-generation "MR fluid brakes" which does not rely on friction. Akebono also develops pneumatic brakes to be used in large European trucks.
- **Technological Development: Sensor technologies (Infrastructure & Mobility business):** Akebono develops sensor products for a wide range of fields including automotive, rolling stock, civil engineering, agriculture, and energy by utilizing its sensor technologies. In the future, Akebono intends to expand

its business by not only providing products, but also solutions such as information and services.

- **Manufacturing capacity increase/Productivity improvement:** In the improvement and renovation of facilities and development of new construction methods, we are committed to rigorous energy conservation and seek to eliminate CO<sub>2</sub> emissions during production in 2050. We are also improving production and logistics efficiency and safety. Iwatsuki Manufacturing, which introduced a new plating facility in May 2018, has made the process as compact as possible and has increased energy saving, production efficiency, and safety.

### A Company that Grows with Local Communities and its Associates

Since 1965, Akebono has operated a Vocational Scholarship Program that allows students to earn qualifications by attending junior colleges and vocational schools while working. More than 3,000 graduates have already made use of this program. In May 2018, "Akebono Nursery School" (commonly known as "Ai-Kids") was opened as a part of our "workstyle reforms" and to enrich our benefits program for associates. We solicited the advice of graduates when opening the nursery school. In addition, Akebono has promoted health management and was designated as a "Company with Excellent Health Management 2018 (White 500)" in recognition of its initiatives in this area. I hope to continue to implement various measures to maintain our growth with local communities and associates.

Since Akebono's founding, "providing safety and security" to customers has been the basis of all its corporate activities. Although we have caused our customers a great deal of concern due to production problems that occurred in the United States, we are now on track to recovery from last year thanks to the various measures we have taken. While it is said that the automotive industry enters a period of change once every one-hundred-years, I view this as an opportunity to change how we work and return to Akebono's Corporate Mission, forge ahead with Monozukuri (manufacturing excellence) and develop human resources with the aim of sustainable growth.

We ask our stakeholders for their continued support and for your frank opinions and comments on this report.

June 2018

Hisataka Nobumoto  
President and CEO





# Since 1929

Akebono was founded as Japan's first brake lining (friction material) manufacturer at the dawn of the Japanese automotive industry.

**1960** First phase of transition  
Launched as a comprehensive brake manufacturer

**1986** Second phase of transition  
First full-scale overseas expansion

**2010** Third phase of transition  
Acceleration of globalization



## 1958

Akebono resin brake shoes and disc brake linings are used on Japanese National Railways' Kodama express trains



## 1982

AD Type disc brakes win the Fiscal 1981 Japan Society of Mechanical Engineers Medal



## 1986

Establishes Ambrake Corporation as a joint venture with General Motors in the United States



## 1960

Signs brake-related technical assistance agreement with a global brake manufacturer Bendix Corporation in the United States



## 1929

Founded as Japan's first brake lining motorization



## 1996

Acquires equity interest in PT. Tri Dharma Wisesa in Indonesia (currently PT. Akebono Brake Astra Indonesia)  
First step to establish a business foundation in Asia



## 1998

Establishes Akebono Arras S.A. production facility in France (currently Akebono Europe S.A.S. Arras Plant)



## 2001

New corporate headquarters, the Akebono Crystal Wing (ACW) is completed in Hanyu City, Saitama Prefecture

## 2000

Starts using the new corporate logo



## 2007

Participates in Formula One providing brake components as the official supplier for the McLaren team



## 2016

Receives the Fiscal 2015 Japan Society of Mechanical Engineers Medal for New Technology in the "development and mass production of high performance brakes for road cars"



## 2014

Establishes Akebono Brake Slovakia s.r.o. in Slovakia



## 2004

Chinese local subsidiaries Akebono Corporation (Guangzhou) and Akebono Corporation (Suzhou) are established



## 2009

Signs a contract with Robert Bosch GmbH to acquire its North American brake business  
Accelerates globalization from 2010

Net sales trend

(Billions of yen)

250

200

150

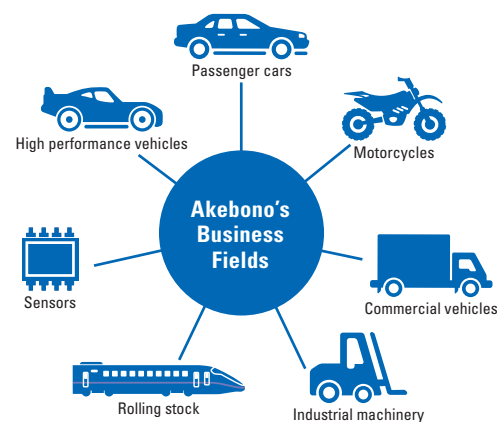
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# Akebono TODAY

Leveraging our position in Japan and overseas as a  
“small, specialized, independent manufacturing company.”

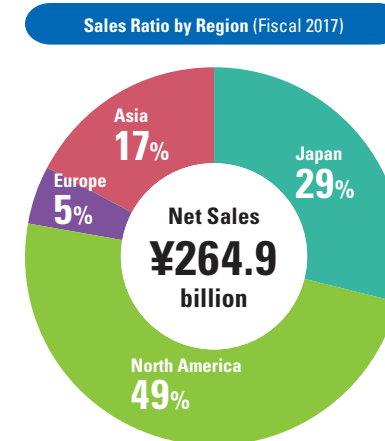
## 7 Business Fields

Leveraging technologies cultivated in the automotive brake field in a wide array of fields including motorcycles, rolling stock and industrial machinery. Opening up new markets with technologies and expertise only a specialized manufacturer possesses.



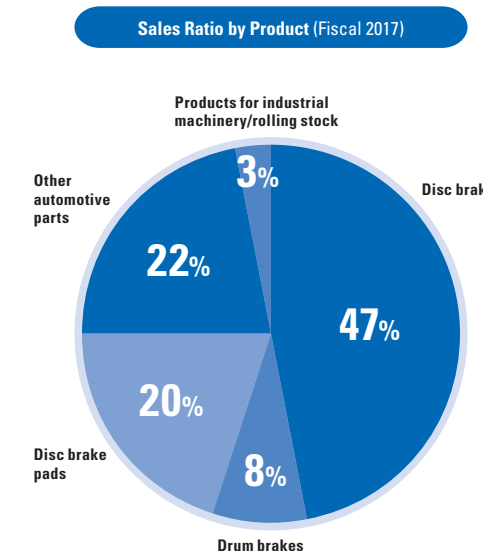
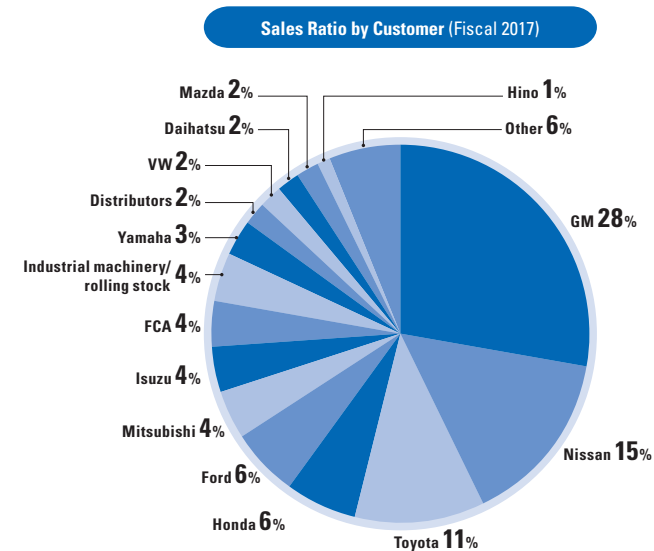
## 71% of sales are overseas

Since entering the overseas market in 1986, we have expanded our business in North America, Europe and Asia. Since fiscal 2015 our overseas sales ratio has exceeded 70%.



## Conducting Business with a Wide-Range of Global Automobile Manufacturers

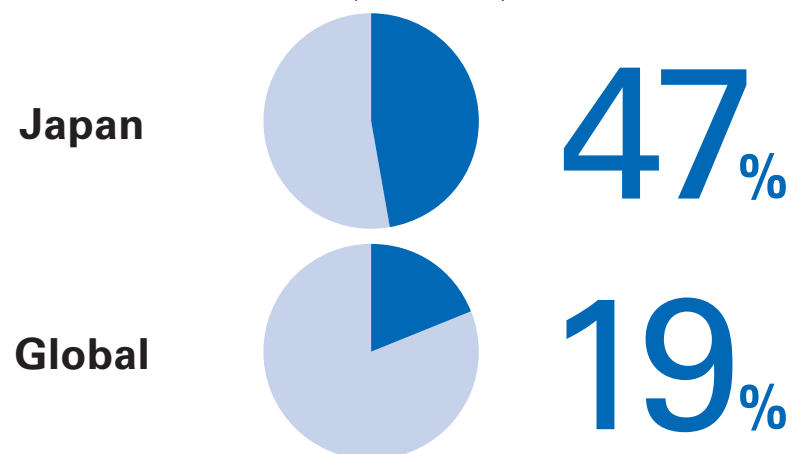
Various manufacturers in Japan and around the world use products made by Akebono as an independent, comprehensive brake manufacturer.



## Brake Pad OEM (fitted in new cars) Market Share (2017)

For our mainstay product, brake pads, we maintain a high global market share of approximately 19% and a domestic market share of approximately 47%\*.

One in every five vehicles worldwide have brake pads made by Akebono.

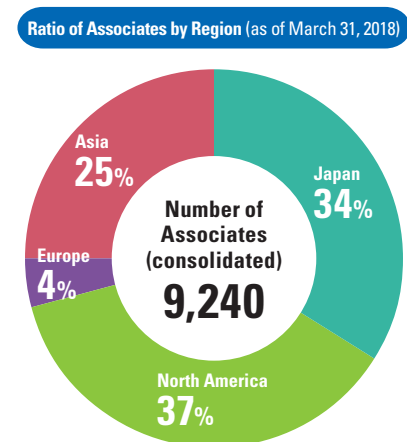


\* Akebono research

## Business operations at 32 bases in 11 countries

Akebono employs 9,240 people around the world. We are developing and training global human resources as a truly global company.

\* Number of bases includes sales offices



Akebono draws on its comprehensive brake technologies to develop and supply brake and sensor products for automobiles, motorcycles, rolling stock and industrial machinery and contribute to safety improvement.

## 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

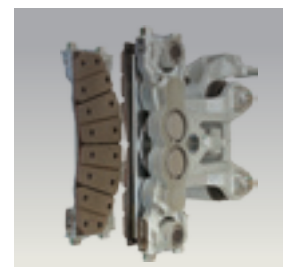


Disc brake

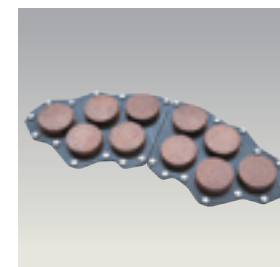


## Products for Rolling Stock

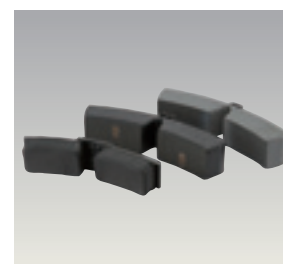
- Bullet train disc brakes
- Bullet train disc brake linings
- Brake shoes for rolling stock
- Disc brake lining for subways



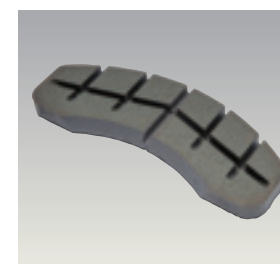
Bullet train disc brakes



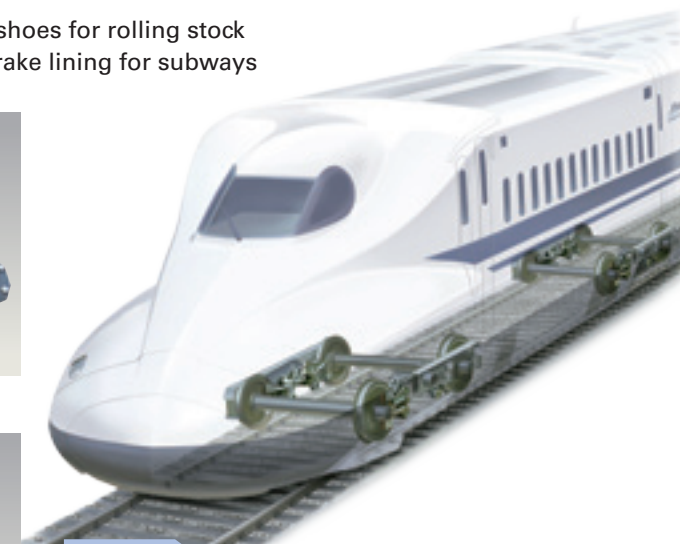
Bullet train disc brake lining



Brake shoes for rolling stock



Disc brake lining for subways



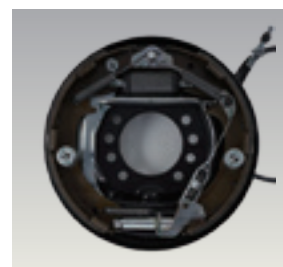
### Pick Up

#### Contribution in the Railway Field

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

## Products for Industrial Machinery

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



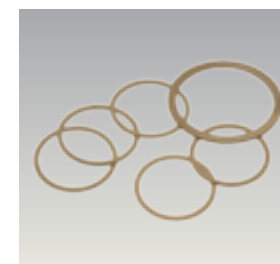
Drum brake for forklifts



Disc brake for rough terrain cranes



Brake shoe for elevators



Clutch facings for car air conditioning units





# Basic Principles of Brakes

## 1. 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 parts, 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 part in an automobile because of their key role in ensuring vehicle safety.

## 2. 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.

## 3. Intermixing of Friction Materials

Disc brake pads and drum brake linings are made by intermixing 10 to 20 kinds of raw materials. Since the required performance varies depending on the customer and vehicle type, we have been changing the raw materials and compositions that we use. The performance requirements for friction materials are that they not be easily affected by the usage environment, heat resistance, mechanical strength, durability, less noise and vibration, and environment-friendly material. Akebono develops and produces high quality products that deliver safety and security to customers based on its unique knowhow and manufacturing technology.

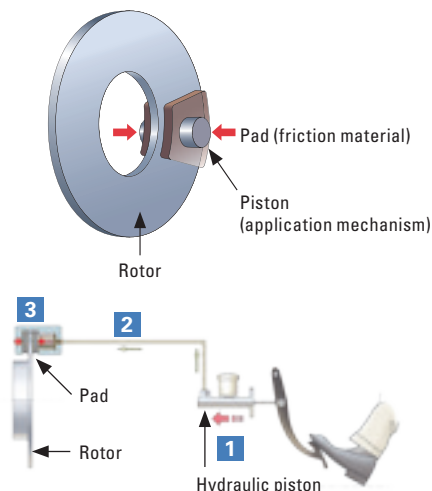
## 4. Aftermarket Parts Business

Akebono products have been adopted as OEM brakes (fitted in new cars) by major global automobile manufacturers. Akebono provides high quality aftermarket brake products developed and produced with high technology knowledge gathered from the OEM business provided to customers throughout the world.

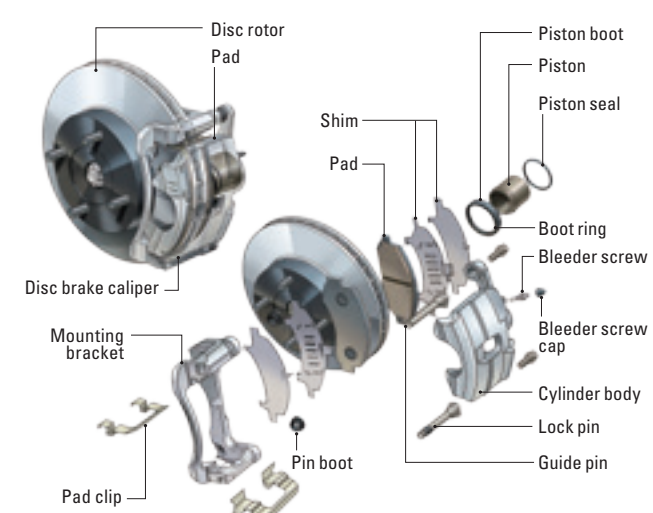
Brakes support customer safety and security throughout the vehicle's life cycle, from the time the new car starts running until the end of its lifetime. During this lifecycle, the aftermarket brake parts are replaced when necessary, for example, when the brake pads and linings are worn away. Akebono provides aftermarket parts for both automaker dealers and the Akebono brand globally. The Company carefully analyzes customer needs and plans and develops aftermarket brakes that customers can choose from.

### Disc brakes

Brake pads clamp the rotor to stop its rotation



### Main Parts of Disc Brakes



### Friction Raw Materials

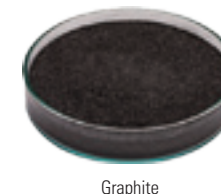
#### Binders



#### Reinforcements

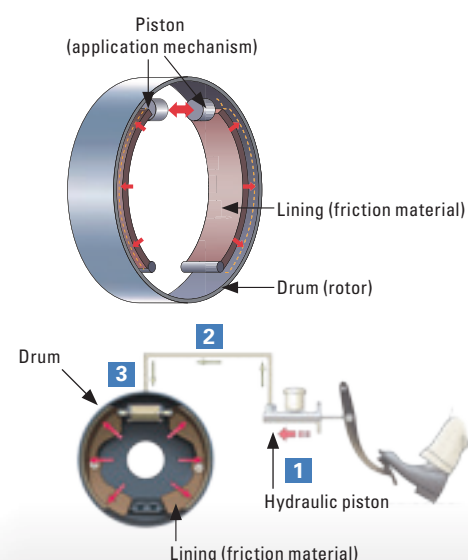


#### Friction Modifiers

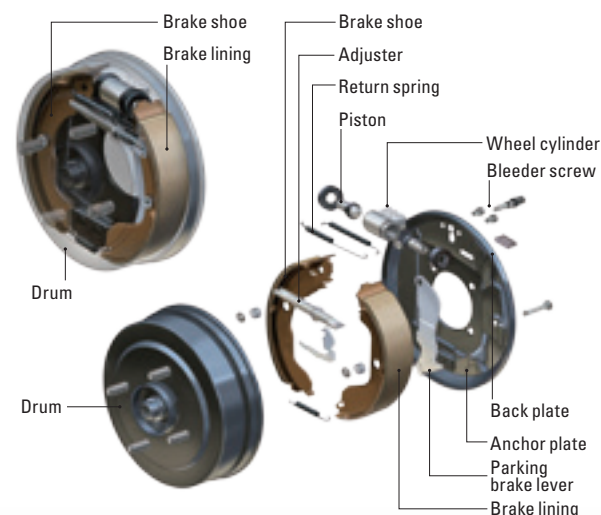


### Drum brakes

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



### Main Parts of Drum Brakes



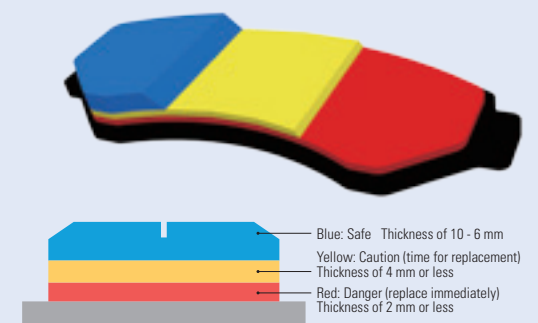
### Advice to Customers

#### Criteria for Brake Pad Replacement

Brake pads will wear and become thinner through continuous use, which might cause damage to the disk rotors and could lead to replacement of the entire brake.

The thickness of the new pad is about 10 mm (1 cm). It can be used at a thickness of about 7 to 8 mm. When residual thickness is 4 mm or less, we recommend pad replacement for safety's sake.

As these are only guidelines, please check the residual thickness of the pads at a car maintenance facility.



Aftermarket brake pads for the Japanese market

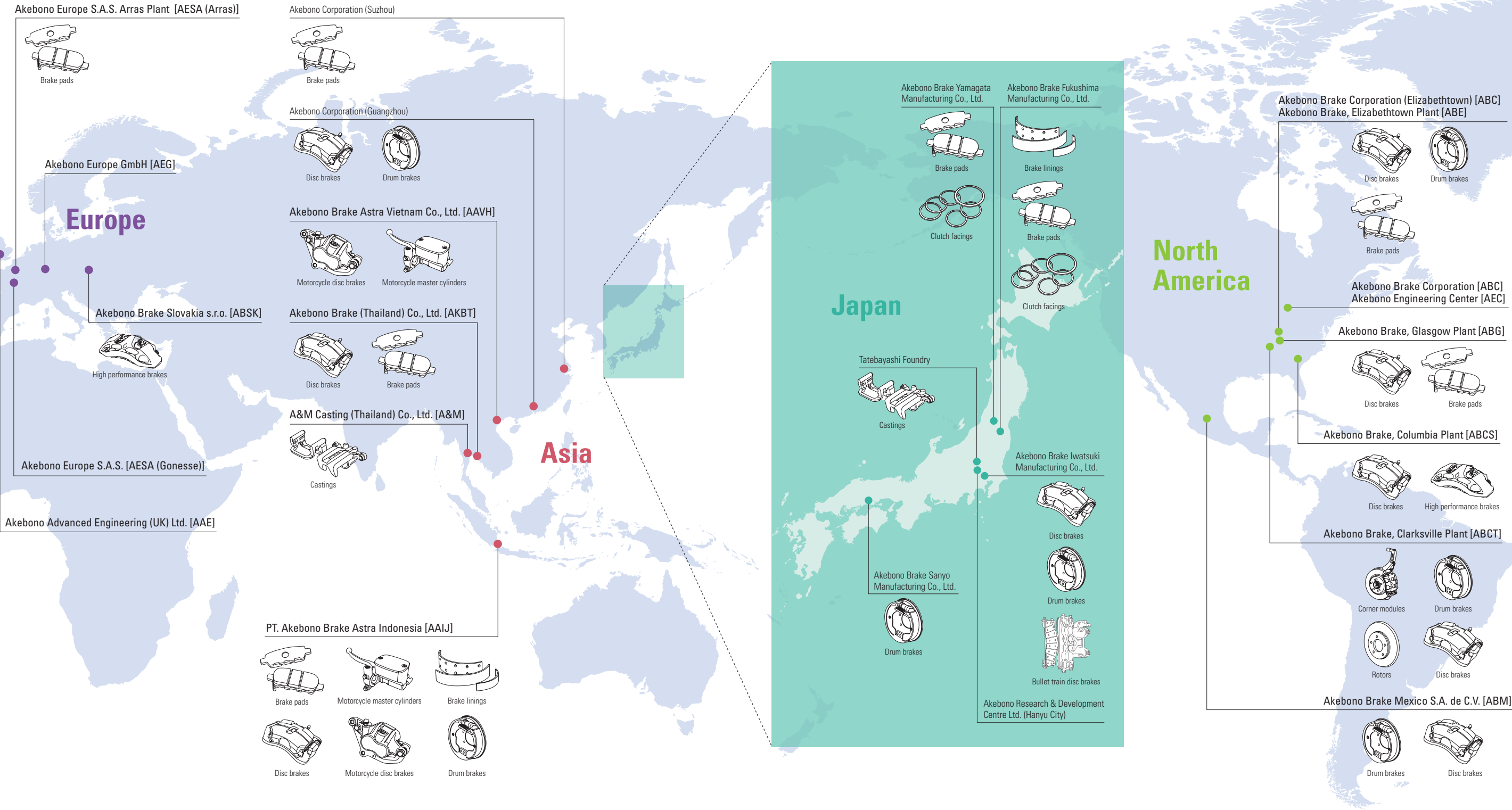


Aftermarket brake pads for the U.S. market



K4 disc brakes for mini cars\* launched in Japan (\* Displacement under 660cc)

Akebono is building a global business structure for responding to various market needs.





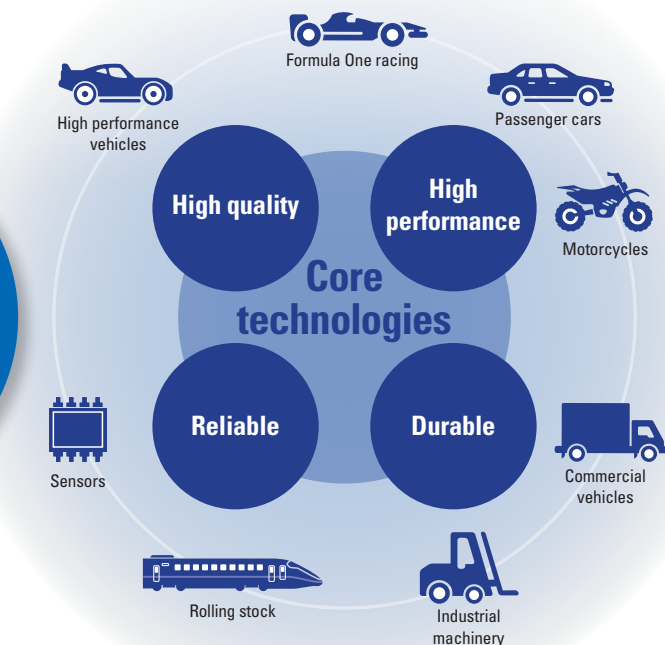
# Overview of Sustainability Management

## Pursue management based on “the sustainability of Akebono and society”

Leveraging its unique position as a small, specialized, independent manufacturing company in the rapidly changing automotive industry, Akebono is contributing to a sustainable society (sustainability) and working to raise corporate value.

### Akebono's Corporate Mission

Through “Friction and Vibration, their Control and Analysis,” we are determined to protect, grow and support every individual life



### Major Products



### Priority Issues

- Low impact to environment**
  - Low environmental impact substances
  - Zero emissions
  - Recycling
- Energy saving**
  - Small/Lighter weight
  - Energy circulation
- Risk management**
  - Less exhaustible resources
  - Less strategic materials
- Safety/comfort**
  - Performance/function
  - IoT
  - Big data/AI
  - Fully autonomous drive

## E

Initiatives to Reduce Environmental Impact  
**Environment** ▶ see page 21-23

### Expand into Next-Generation Technology Seamless Application of Technologies

#### Next-Generation Friction Materials ▶ see page 17

- Resin mold friction materials
- Sintering friction materials



#### Next-Generation Electro-Mechanical/High Performance Brakes ▶ see page 18

- Electro-Mechanical Brakes
- MR Fluid Brakes



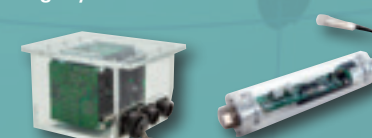
#### High Performance Brakes ▶ see page 19

- Brake Calipers
- Electro-Mechanical Parking Brakes



#### Sensor Technologies ▶ see page 20

- Vehicle behavior detection devices
- Monitoring Systems



## S

Strengthen Ties with Stakeholders  
**Social** ▶ see page 24-30

Global initiatives are progressing thanks to the adoption of the UN's Sustainable Development Goals (SDGs) and international agreements including the Paris Agreement on the mitigation of climate change.

In these circumstances, not only is Akebono improving customer satisfaction through its products and services that leverage its core technologies, it is also creating economic value through its business activity processes and pursuing management based on “the sustainability of Akebono and society,” which contributes to solving this global social issue.



## G

Corporate Value Improvement through Stronger Governance  
**Governance** ▶ see page 31-36

## Expand into Next-Generation Technology– 1

# Next-Generation Friction Materials

## Developing Products Free of Environmentally Hazardous Substances

The use of brake friction materials generates brake dust. In North America, regulations on environmentally hazardous substances have been tightened due to anxiety over the impact of brake dust on the ecosystems of rivers and gulfs. In response, Akebono is striving to develop technologies that reduce the volume of brake dust generated from friction materials while extending the product life of brake pads. It is also conducting research to create methods to analyze and evaluate brake dust.

Also, Akebono promotes the development of products with a lower environmentally hazardous substance content. In accordance with in-house guidelines, which set forth stricter regulations on brake raw materials than required by law, Akebono painstakingly examines these materials' possible impact on the environment and work environment from the product design and development stages. We avoid using materials that fall under the category of environmentally hazardous substance and when it is determined that a substance has a significant impact on people and the environment, we use alternative materials.

## Development and Promotion of Copper-Free Friction Materials

In the U.S. states of Washington and California, state laws have been enforced regarding restrictions on chemicals contained in automotive brake friction materials to prevent the impact of emissions of such substances on river and marine ecosystems. In the state of California, restrictions on copper will be enforced from 2021, and from 2025 onward, it will be illegal to fit new vehicles with friction materials containing 0.5% or more of copper. Conventional friction materials have used copper to ensure safe and effective performance at high temperature. Akebono developed copper-free friction materials and started to market them for aftermarket products in 2007 and supply them as OEM parts to automakers since 2014. By combining multiple component materials, Akebono achieved the same performance as copper contained pads while keeping the cost at the same level.

Around 80%\* of Akebono brand aftermarket brake pads have a copper content that is lower than the 2025 standard for the state of California. Furthermore, we are also working to quickly develop antimony-free materials, as these could potentially be targeted under future regulations.

Akebono will continue to comply steadily with laws, including Washington state laws going forward.

\*Shipment volume basis

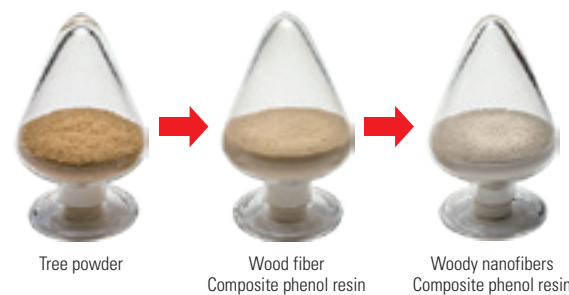


Copper-free brake pad

## Developing Proprietary Materials

The Research & Development Centre develops friction materials that reduce environmental impact. Based on the material technology, the Centre develops new materials which can be applied in new fields other than brakes. Akebono seeks to establish an advantage by differentiating itself from its competitors.

For example, as Akebono's original material, the R&D Centre succeeded in developing phenol resin with wood powder. A special feature of this new material is that fibers miniaturized to nano size based on coniferous wood powder are uniformly dispersed in phenol resin. The new material makes it possible to achieve greater strength in the brake's operating temperature range than with conventional phenol resin. As a result, the new material helps improve the wear resistance of brake pads and improves noise and vibration (NV characteristic).



In addition, Akebono has developed inorganic particles with unique shapes as its new material for new business fields. This material is a uniquely shaped particle that draws fully upon synthetic processes cultivated in material development for brake friction materials and cannot be stably obtained by usual methods. We are working on developing various fields of application by controlling the physical and chemical properties resulting from this unique shape.



## Expand into Next-Generation Technology– 2

# Next-Generation Electro-Mechanical/High Performance Brakes 1: “Next-Generation Brakes”

## What is an Electro-Mechanical Brake?

An Electro-Mechanical Brake is a system that includes a device that operates until the driver applies the brakes and a device that operates with electrical power within the connection between the devices. Because hydraulic piping is no longer necessary, the brakes help improve fuel efficiency by reducing vehicle weight and also contribute to environmental preservation because they do not use brake fluid, which must be properly disposed of whenever repairs are made.



Electro-Mechanical Brake

## Types of Electro-Mechanical Brakes

### Electro-Mechanical Service Brakes

This brake system employs an electro-mechanical operating mechanism that presses the disc brake pad against the brake rotor. Stepping on the brake pedal while driving generates an electric signal, starts up the motor built into in the brake caliper, and generates braking force on the wheel. Since minute movements can be controlled through software programming, safety and comfort will be improved.

### Electro-Mechanical Parking Brakes

This electro-mechanical brake system activates the parking brake. Instead of the conventional parking brake lever, which requires force to operate, the parking brake can be operated with a switch or a pedal, thereby reducing the driver's burden. Because it is controlled by an electronic control unit (ECU), this brake helps to prevent the parking brake operation failure and improves safety.

## Low Drag Calipers

The low drag caliper is a brake that ensures that the pad to rotor gap is precisely maintained at the micron level. This reduces brake drag due to contact between the pad and rotor when the brake is released, contributing to improved fuel economy.



Low Drag Caliper

## MR Fluid Brakes that Emit No Brake Dust

At the Akebono Research & Development Centre, we are conducting research and development into magneto rheological (MR) fluid brakes that eliminate brake dust. This product accommodates the increasing use of electro-mechanical systems in automobiles and is environmentally friendly.

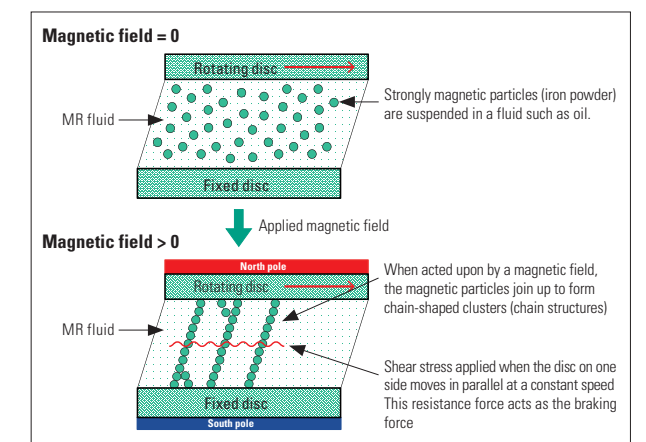
A functional material that has been researched since the 1960s, MR fluid has the characteristic that it changes from a liquid to a semi-solid state in reaction to magnetism. When a magnetic field is applied, the strongly magnetic particles (iron powder) several

microns in diameter suspended in the fluid align with the direction of the magnetic field, forming chain-shaped particle clusters that change the fluid to a semi solid state.

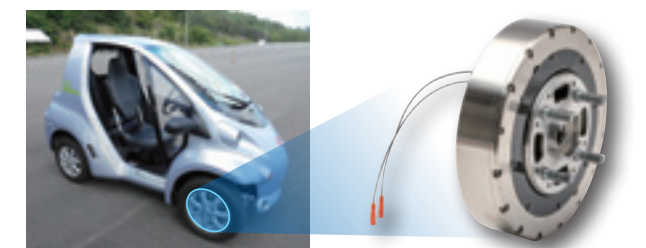
MR fluid brakes are constructed with a space filled with MR fluid between a disc fixed to the vehicle and a disc that rotates together with the wheel hub bearing. When electricity is passed through a magnetic coil mounted inside the brake, a magnetic field is generated in an orthogonal direction to the discs, causing chain-shaped particle clusters to form between the fixed disc and the rotating disc. As the rotating disc continues to rotate, the chain-shaped particle clusters are broken by shear stress, and then form connections to the neighboring cluster, before being broken again in a repeated cycle that generates a resistance force on the rotating disk. This resistance force is the braking force.

Using MR fluid for brakes can reduce the emission of environmentally damaging substances by eliminating abrasion powder because the brakes do not wear. Moreover, MR fluid responds to a magnetic field in less than a micro second, enabling sensitive and stable braking. Since the voltage (excited magnetic force) is electronically controlled, users can select their preferred brake feel from among several preset patterns.

In collaboration with the Institute of Fluid Science, Tohoku University (Professor Masami Nakano), Akebono conducted research and development on ultra-compact mobility and completed its prototype product in March 2015. We will continue to test and improve MR fluid brakes as a smart brake suitable for smart cities and smart mobility, aiming for implementation in 2020.



MR Fluid Brake Principle



MR fluid brake (prototype) and ultra-compact mobility vehicle fitted with it



## Expand into Next-Generation Technology— 3

## Next-Generation Electro-Mechanical/High Performance Brakes 2: High Performance Brakes

### High Performance Automotive Brakes (Opposed piston disc brake calipers)

Opposed piston disc brake calipers, which are mainly used in high performance vehicles, are a type of disc brake caliper with pistons on both sides of the brake rotor. Opposed piston-type caliper features include stable braking power and high controllability.

#### 6-pot Opposed Brake Caliper

Akebono mass-produced 6-pot opposed-type brake calipers have a total of six pistons, three on each side, and is adopted for use in high performance SUVs and sports cars that require high braking performance.



#### 10-pot Opposed Brake Caliper

The 10-pot brake caliper mass-produced by Akebono has a total of 10 pistons, five on each side, and is adapted for use in large high performance vehicles.



These brake calipers depend on brake technology knowhow developed by Akebono through its various motor sports activities and possess such characteristics as high-speed, high-load, and high-temperature braking performance along with the comfort required for high-price vehicles.

### Electro-Mechanical Parking Brake Opposed-type Rear Brake Caliper (Prototype)

This is an opposed-type electro-mechanical parking brake developed for the rear wheels of high performance vehicles. This was developed for existing electro-mechanical parking brakes with the aim reducing weight and enhancing design.



### Ai-Ring

Ai-Ring is one of the largest proving grounds operated by an automotive parts maker in Japan. More than 720,000m<sup>2</sup> in size, Ai-Ring's facility is equipped with test tracks, high-speed 3,016-meter (one lap) oval, a low  $\mu$  road and winding road. The facility suffered costly damage in the Great East Japan Earthquake of March 2011, but the high-speed oval was subsequently restored and the facility reopened in November 2012. From 2013, the second stage of restoration commenced with the restoration of the comprehensive test track and the low  $\mu$  road, the further expansion of slopes, the installation of a new winding road and rough-road, and the expansion of dynamometer facilities. This has enabled us to conduct brake assessment under conditions closer to global real world. The ability to conduct comprehensive evaluation from bench testing to actual vehicle testing in a single facility has speeded up the development process. In April 2018, we began loaning out the track (including part of the maintenance shop) to companies. For further details, please fill out the inquiry form on our website.



Ai-Ring

### Development and Supply of Formula One Brakes

Since 2007, Akebono has been supplying its brake systems to the McLaren team that competes in Formula One (F1), the pinnacle of motorsports. To continue to supply highly reliable brakes that always exhibit stable performance and achieve higher performance, even in harsh environments where rotor temperatures reach as high as 800 degrees Celsius immediately after hard braking, we are intensely committed to every aspect of design including structure, material, and surface treatment.



## Expand into Next-Generation Technology— 4

## Sensor Technologies

Akebono is engaged in the development and sales of various sensors for infrastructure in non-automotive fields through its application of vibration analysis technologies developed in the automotive field.

### Infrastructure & Mobility Business

#### Civil engineering and construction field

- Inclinerometers
- Concrete filling & compaction detection systems (Jutender)
- Inclination monitoring system for bridge construction
- Light emitting inclination sensors (LEIS)/Pocket
- Drive wheel slip prevention system for caterpillar tracks



Inclinometer

#### Agriculture field

- Horizontal control systems for tractors
- Horizontal control systems for radio-controlled helicopters used for pesticide spraying



Sensor in horizontal control system for tractors

#### Building field

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



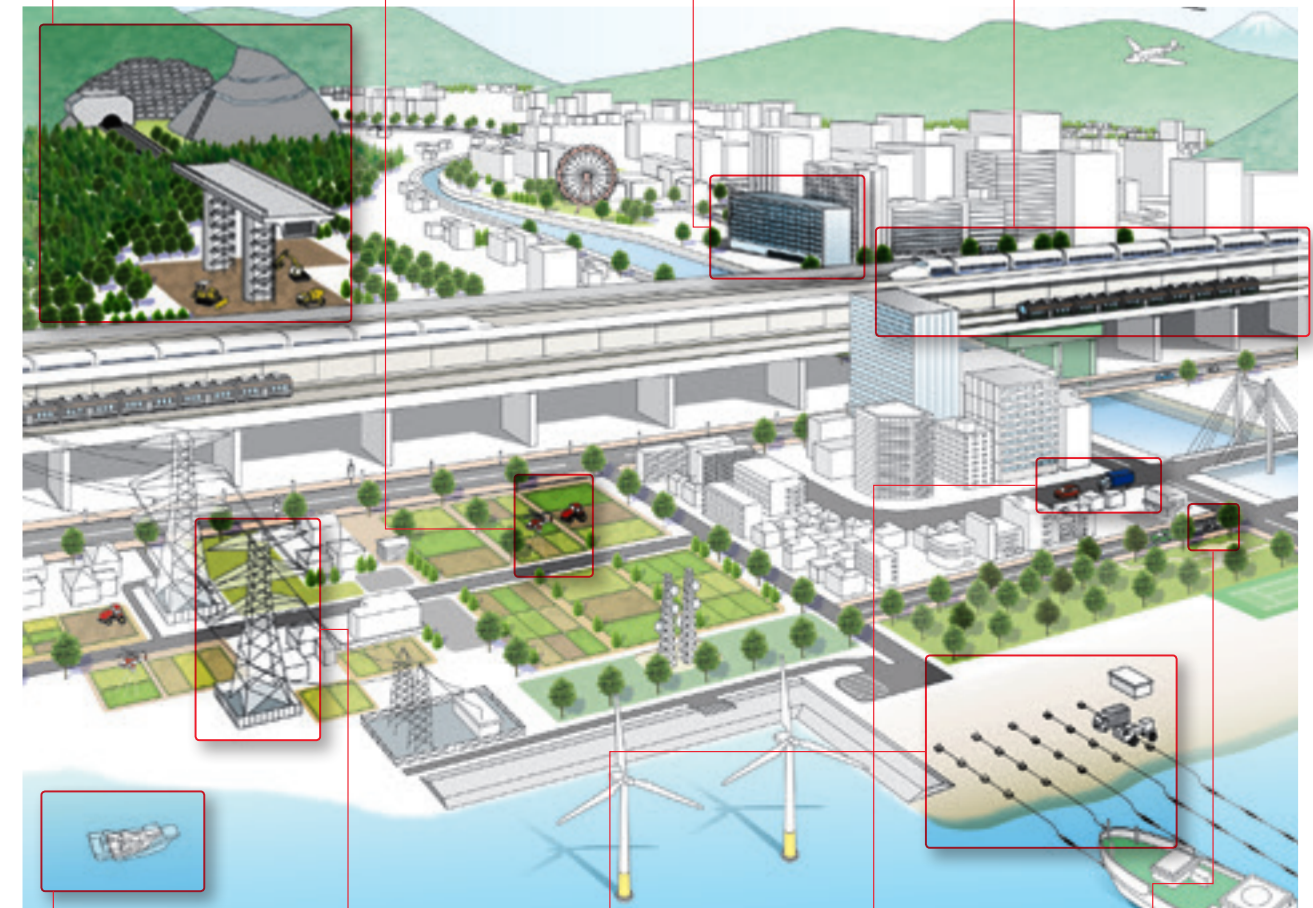
Earthquake detectors for longwave seismic motion

#### Railroad field

- Suspension control systems for high-speed trains
- Vehicle behavior detection devices
- Portable vibration measurement devices
- Continuous micro vibration monitoring systems for railway bridge
- Wireless vibration measurement devices

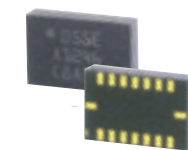


Vehicle behavior detection device



#### Marine field

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



Sensors in position correcting system for satellites/GPS compasses

#### Energy field (supply)

- Position monitoring systems for power transmission cables
- Inclination and vibration monitoring systems for steel towers



Position monitoring system 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 brakes
- Suspension control systems
- Rollover airbags
- Displays of inclination angle
- Operation support systems for commercial vehicles
- Hill-start assist systems



ESC

#### Motorcycle field

- Suspension control systems



Sensor in suspension control system



E Initiatives to Reduce Environmental Impact– 1

Environmental Management



Environmental Declaration and Basic Environmental Policies

The Akebono Group has a shared Environmental Declaration and Basic Environmental Policies that govern its efforts to reduce the environmental impact of its business activities and promote development of environmentally considerate products.

Environmental Declaration

Based on our Corporate Mission and Declaration for the 21st Century, we will continue to create new value in the new millennium, contributing to both the Company and the environment. As a global corporate citizen, we will also strive to protect the environment on a global scale and implement ongoing voluntary activities aimed at creating a safe, vibrant society that co-exists in harmony with the environment.

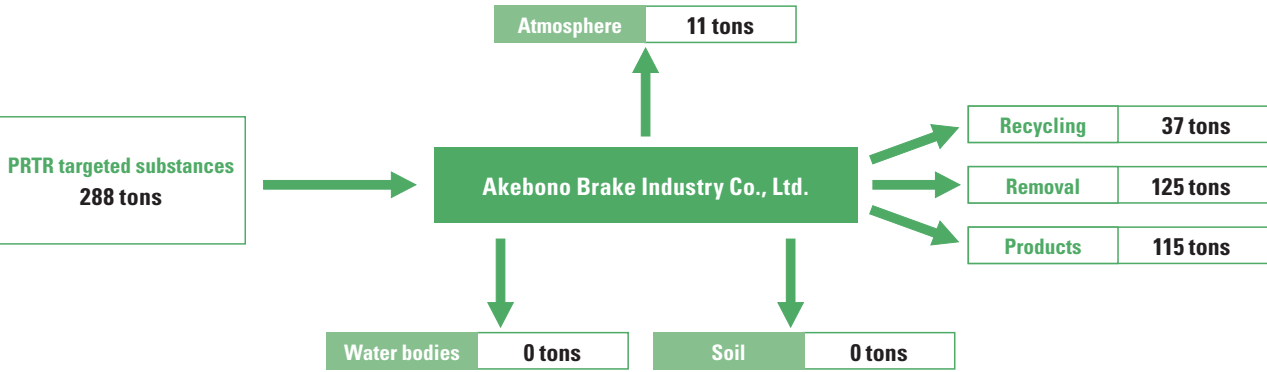
Established 2001

Basic Environmental Policies

- 1. From the early development and design stages, we will actively pursue initiatives that give consideration to both safety and the environment. We will promote the development of technologies and products that minimize environmental impact.
  - 2. Each and every associate will make ongoing efforts to reduce environmental impact and promote an eco-friendly society by conserving energy and resources, recycling and reducing waste.
  - 3. In addition to complying with environmental laws, regulations and agreements, we will endeavor to enhance our environmental management by establishing voluntary management standards both in Japan and overseas.
  - 4. We will actively disclose information to increase understanding of our environmental initiatives and encourage positive relationships with communities with the aim of creating a better living environment.
- Established 2001

Emissions of PRTR Targeted Substances (Fiscal 2017)

Akebono is working to recycle resources and minimize water usage and waste and chemical substance emissions. At the same time, we are taking steps to promote effective use of resources, and striving to achieve manufacturing that can contribute to creation of a recycling society.



\*PRTR (Pollutant Release and Transfer Register): A system for understanding, gathering data, and disclosing the amount of target substances that are transferred externally in the form of emissions or waste processing by businesses that manufacture, use, and emit such substances.

Certified as an Excellent Large-Scale Business Facility under Saitama’s Cap-and-Trade Emissions Trading System

Ai-City (Headquarters) in Hanyu, Saitama Prefecture was certified as a Semi-Top-Level Office in the Excellent Large-Scale Business Facility category, under Saitama Prefecture’s cap-and-trade emissions trading system for conducting outstanding measures to reduce the volume of CO<sub>2</sub> emissions. The certificate was issued in April 2017.

To reduce CO<sub>2</sub> emissions associated with business activities, Saitama Prefecture introduced the cap-and-trade emissions trading system from fiscal 2011.

Business sites that implement especially effective initiatives are designated as “Top-Level Office” and “Semi-Top-Level Office.”

For some time now, Akebono has been engaged in energy-saving activities. Among these initiatives, we use power generation facilities that make use of waste heat and waste hot water, make our lighting more efficient by using solar power generation, and make our energy use visible with a building energy management system.

E Initiatives to Reduce Environmental Impact– 2

Initiatives in Purchasing



Akebono is working to reduce its environmental and social impact with the cooperation of its suppliers.

Green Purchasing

Akebono introduced its Green Purchasing Guideline in 2005, revising it in 2011. Under the guideline we are considering the environment and CSR from the purchasing stage by working together with suppliers to procure materials, components, and secondary materials that have a low environmental impact. We are also encouraging our suppliers to improve their environmental management performance by recommending activities to acquire external accreditation such as ISO 14001. Going forward, our next challenge is to promote these practices at overseas bases as well.

Green Purchasing

Green purchasing refers to the preferential selection and acquisition of products that cause less negative environmental impact. The scope of products covers materials, secondary materials, office supplies and equipment used in the course of manufacturing. Manufacture of “Green Products” requires the practice of green purchasing.

Ranking and Management of Environmental Impact Substances under Green Purchasing Guidelines

Targeted chemical substances are categorized into three ranks and controlled as follows:

Rank	Chemical substances	Examples of control measures
Usage prohibited	Substances that are strictly banned from use and production by law and regulation	Prohibit use/draw up plans for abolishment if there is substance in use
Usage restricted	Substances which are projected to come under legal regulation and substances for which emission regulations are set under existing laws	Conduct research on alternative materials or reduction methods and draw up reduction plan
Proper management of usage information required	Substances listed in GADSL that is, substances requiring declaration of usage amount	Ensure proper management of usage information and work toward reduction of usage

Response to Substances of Very High Concern

In cooperation with our suppliers, Akebono performs testing of purchased products to determine if they contain substances of very high concern (SVHC\*) or banned substances. The tests are performed on the individual product level and their results are communicated back to the suppliers. We are also promoting labeling of purchased items in line with laws and regulations.

Substances of Very High Concern

A substance may (but not necessarily must) be designated as SVHC if it meets one or more of the following criteria: it is carcinogenic, mutagenic or toxic for reproduction, and in addition is either persistent, bioaccumulative and toxic, or very persistent and very bioaccumulative. Such substances are identified as having probability of causing serious adverse effects to human health or the environment.

E Initiatives to Reduce Environmental Impact– 3

Initiatives in Production



Akebono is reducing the environmental impact of its production sites and lowering the power consumption of its production facilities

Introduction of Wastewater Treatment and Air Purification Systems

Akebono has introduced wastewater treatment and air purification systems and is carrying out environment-friendly production activities.

Iwatsuki Manufacturing upgraded its wastewater treatment system and cleared wastewater standards by a wide margin in fiscal 2017. In fiscal 2018, Akebono plans to introduce a system In Guangzhou, China that reduces total wastewater volume and expects it to meet the standard for heavy metal content in wastewater.

In China, where air pollution is a growing problem, industrial zones in each area apply voluntary standards. In Suzhou, we established a new air cleaning system that uses an electrostatic precipitator and low temperature plasma treatment\* and applied voluntary standards that exceed those of the law and regulations. This air cleaning system also helps to deodorize the air.



View of the Suzhou air purification system Partial view of the Suzhou air purification system

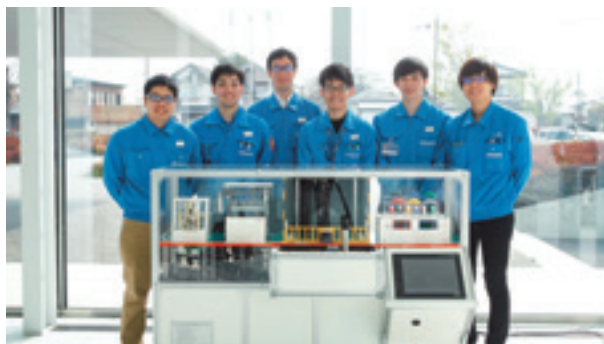
\* Low temperature plasma treatment: Low temperature plasma is air that has around 1% plasmarized (separated into positive ions and electrons) so that it contains plasma ions at room temperature (a few degrees Celsius) and is able to dissolve organic matter.

Developing Young Engineers to Design Environmentally Considerate Facilities

Akebono is looking to develop engineers who will design the facilities of the future by conducting a program for “building a miniature production line for brake manufacturing processes that can be operated by a single motor.” Under the program, a team of young engineers who are within the first five years of their assignment to the production engineering division undertake “miniature line building” concurrently with their ordinary work, undertaking all steps from planning and design to production.

This initiative has been carried out since fiscal 2010. In fiscal 2017, six junior associates produced a miniature manufacturing facility for high performance calipers. The original facility was installed in Hanyu and is the manufacturing facility for producing aluminum opposed type disc brakes for European manufacturers.

Building miniature production lines involves considering the operability of each process as well as the timing coordination over the entire line and so forth. This resulted in various innovations such as reducing the weight of moving parts. Looking ahead, we will develop engineers who will take a birds-eye-view of the entire line and apply their own skills to designing energy-saving, high efficiency facilities.



Miniature line for the high performance caliper manufacturing facility produced in fiscal 2017 and production team members

## **E** Initiatives to Reduce Environmental Impact- 4 Initiatives in Logistics



**Akebono promotes energy saving and rationalization in its distribution operations through the truck operation dynamic management system.**

### Initiatives in Eco-Friendly Driving

The Akebono Group member Alocs Corporation (a logistics solution company) is employing a truck operation dynamic management system. The system utilizes data on individual vehicles gleaned from onboard sensors, such as engine speed, driving speed, acceleration rate and location. This data is automatically transmitted to the headquarters.

Associates in charge of truck operation management use the data to give timely instructions to each driver so that they can avoid crowded routes and helps to ensure that drivers are taking breaks as needed. In these ways, Akebono is ensuring safe and environment-friendly truck operations. In addition, the system also enables objective determination and ranking of drivers' eco-driving by recording data about idling time and sudden acceleration and braking. Through measures such as these, the system can be used to increase motivation for eco-driving and safe driving. Akebono will continue working to save energy and rationalize its distribution operations, ensuring safety while protecting the environment.

Through various efficiency improvement activities, Akebono is helping to improve associate productivity, and lower transportation costs by reducing energy resources.



Alocs Corporation's control screen that gives driving instructions based on real-time truck position and traffic information



Truck from Alocs Corporation headquarters

### Received Honorable Mention for the Cogeneration Grand Prize

In February 2018, at the Cogeneration Grand Prize 2017 sponsored by the Cogeneration Foundation (Advanced Cogeneration and Energy Utilization Center Japan), Akebono received an Honorable Mention (in the Industry Category) for "Improving efficiency and reducing greenhouse gas emissions through cogeneration systems".

Since the introduction of cogeneration in 2011, Akebono has been building systems to reduce CO<sub>2</sub> emissions by improving overall efficiency with the goal of daily capacity utilization, cutting electric power supply to the outside during peak hours, contributing to the electric power business by combining the introduction of advanced equipment that utilizes waste heat with renewable energy, as well as consistently raising gas engine power generation

efficiency and improving waste heat utilization efficiency.

Akebono also received the Excellence Award at the Cogeneration Grand Prize 2013, this time receiving its second award. To fulfill its corporate social responsibility, Akebono views global environmental problems as one of its most important management challenges and is working more comprehensively on environmental conservation activities from a global perspective.



## **S** Strengthen Ties with Stakeholders- 1

# Human Resources and Diversity



### Basic Human Resources Policy

**To provide opportunities to all associates and to support them so that they can share the Company's successes.**

Akebono believes that the most important factor that guides a company to success is human talent (our associates). Guided by that belief, we set forth our basic human resource policy that "each associate must be given the opportunity to exert their abilities and be continuously supported to share their success with the Company." We are striving to build our long-term global personnel policy as well as to facilitate associates' ability to establish their individuality and foster mutual respect and trust.

Moreover, we are working on human rights education and enlightenment with high regard for human rights to achieve an organization with abundant diversity and creativity.

### Global Human Resource Nurturing and Personnel System

We strive to ensure that our associates are assigned optimal positions and work locations based on their competencies, regardless of their nationality. To this end, our human resource recruitment, nurturing and administration systems are premised on abundant respect for human rights as well as associates' individuality, privacy rights and diverse value systems. In particular, we are developing our associates' communication skills, flexibility in dealing with diverse cultures and their linguistic abilities. Up to now, we have had different training programs and personnel systems by location, so we are working to enhance our associates' ability to operate in global business settings, since they have had few opportunities to engage in duties with peers from other countries with different cultures and native tongues.

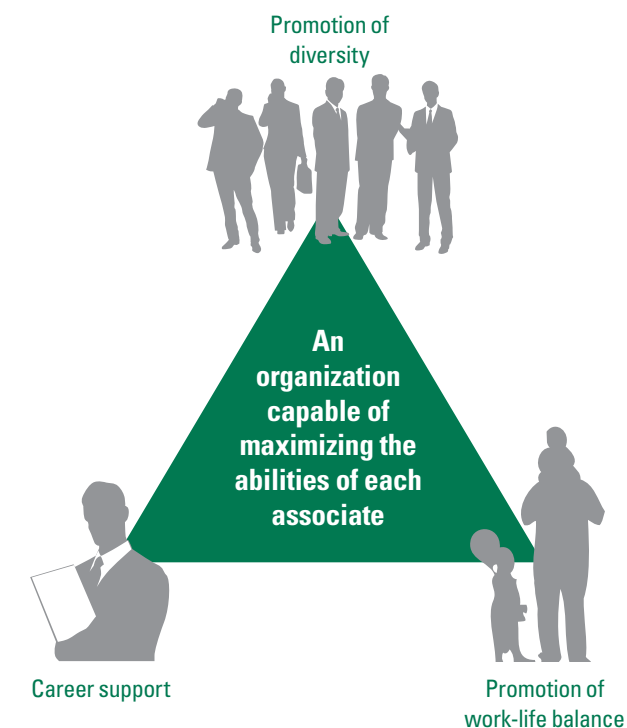
As a part of its training programs, Akebono has prepared globally unified educational materials for training new recruits at all group business locations. Akebono has issued the Akebono Starter Book, a standard educational package that features the Company's corporate history since its founding, characteristics of its operations in each region and explanations of APS (Akebono Production System or Akebono Philosophy and Spirit), its corporate culture and philosophy as well as corporate brand management activities. The book is being used in training programs. By learning through this book, all associates are equally informed of the basic knowledge and concepts necessary to act as Akebono business persons. Moreover, with the addition of programs that reflect local concerns, we are developing human resource educational programs optimized for each region and location.

### Promoting Diversity

Akebono aims to strengthen its corporate capabilities in a way that reflects the high respect it has for the values of each associate and their diversity. The Company cherishes associates' individual aspirations regarding work and life so that each can develop their creativity in the course of their duties, which, in turn, will help bring about a more vibrant company overall. Akebono is promoting diversity because it recognizes that as it expands globally, it is becoming increasingly important to establish a corporate structure that helps each associate realize their full potential regardless of their value system or cultural background. To further promote diversity, the Company is promoting recruitment activities that target people of all nationalities.

Akebono is promoting diversity management centered on three key initiatives, namely, diversity promotion, career support, and work-life balance promotion. Akebono will work to double the number of female managers from 2014 levels by 2020 through further diversity promotion efforts going forward.

### Basic Themes of Diversity Management





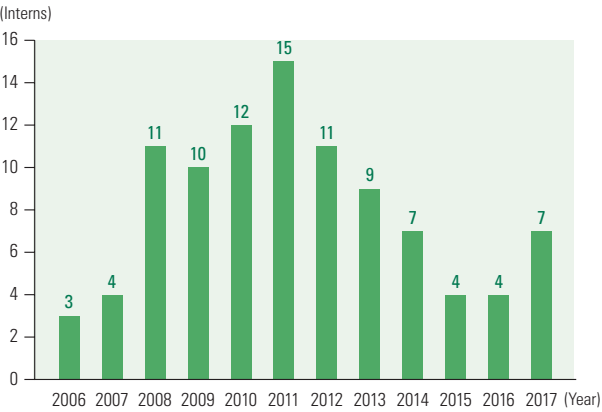
Welcoming Interns from Various Countries

Akebono proactively accepts interns from various countries. It also organizes exchange events for interns and associates, which help to nurture global human resources by providing more associates with opportunities to encounter diverse values of other countries.

National Origins of Interns

United States, United Kingdom, Italy, India, Greece, Sweden, Austria, Spain, Thailand, Slovakia, Germany, Turkey, France, Finland, Portugal, Mexico, Morocco, Canada, Hungary, Netherlands, Poland, Tunisia, Nigeria, and Russia

Numbers of Interns Accepted



Career Support Activities

Since fiscal 2015, Akebono’s Diversity Implementation Office has engaged in activities that support career advancement, such as networking, Dream Map Workshops, and opportunities to talk with directors.

Through these ongoing activities, we aim to evolve the entire company into an organization where each and every associate can maximize their abilities.

Networking

Forming connections among female associates establishes a platform that can help resolve anxieties and issues related to work.

Dream Map Workshops

A part of career training, these workshops help associates visualize their future targets (dreams) and clearly define their ideal career.



A networking event

Talks with Directors

Creating venues for associates and directors to discuss matters and obtain views and advice from different perspectives helps broaden the horizons of all associates.

Promoting the Advancement of Women in the Workplace

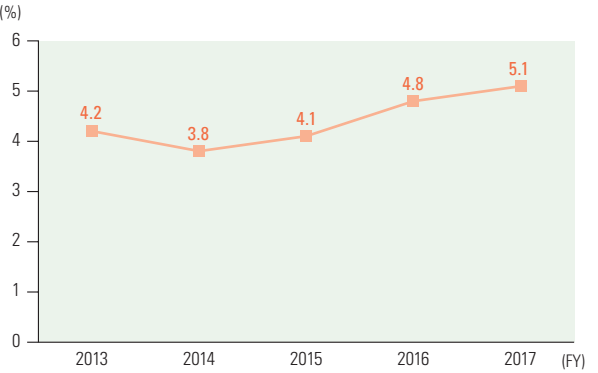
Akebono will continue working to be a company where all of our associates can work with motivation and enthusiasm, regardless of gender.

In April 2016, we received the L-boshi Designation (Third Grade)\* from the chief of the Saitama Labor Bureau. The L-boshi designation system recognizes business owners that have performed excellently in initiatives for promoting the advancement of women from among those who formulate an action plan based on the Act Concerning Promotion of Women's Career Activities and submit the details of the plan. The designation is received from the Minister of Health, Labour and Welfare. There are five evaluation criteria and accredited between grade 1 and grade 3 based on a result of the evaluation. Akebono achieved the top rank of Grade 3.



\*Official nickname for the designation of the General Business Owner Complying with the Standard based on the Act for Promoting the Advancement of Women.

Ratio of female managers (Japan)



akebono Way

Since its founding in 1929, Akebono has developed a wide range of businesses and implemented measures in response to the needs of the times. Further, the values, attitudes and behavioral guidelines required of associates have been handed down unchanged and summarized as the akebono Way and stated in written form in 2017.

Promoting Work-Life Balance

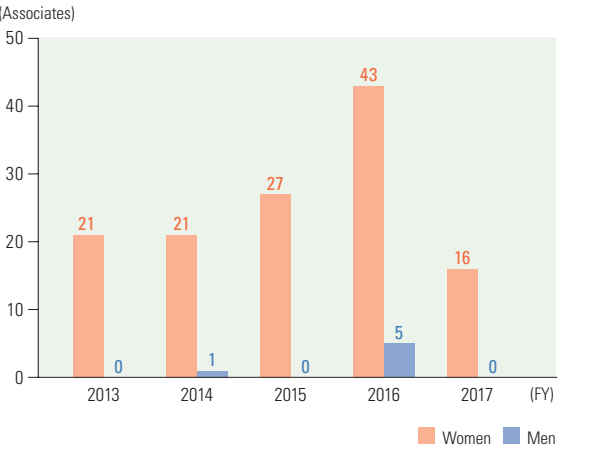
With the aim of accommodating the various workstyles of each associate, Akebono has designed various programs for associates raising children and those caring for family members to assist them with their efforts to strike a balance between these obligations and their work.

We distribute Life Supporter, a booklet that summarizes the content of these and other programs with the aim of facilitating the utilization of the programs by associates. As a result of these initiatives, Akebono received the “Kurumin” mark from Saitama Labor Bureau in October 2016, recognizing it as a company that actively supports child-raising in accord with the Act on Measures to Support Development of the Next Generation. The Company received this award in November 2007 and June 2013, making this the third time that Akebono has received the “Kurumin” mark.

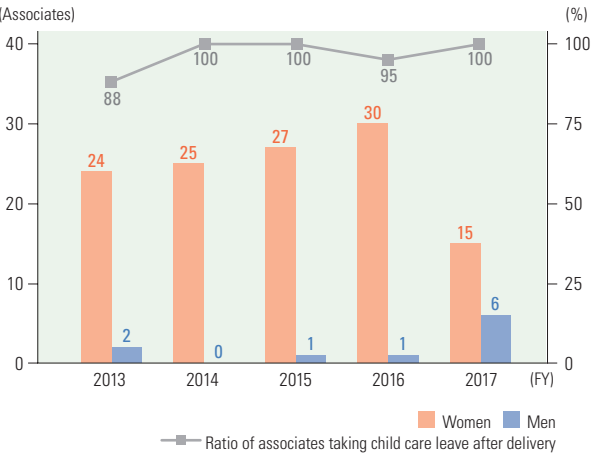


Going forward, we will also implement forward-thinking initiatives with an eye to future issues, thereby securing a corporate structure responsive to issues and changes in the social environment. To create a working environment that offers diverse and flexible working styles, we will continuously enhance these programs by incorporating feedback from associates.

Reduced working-hours plan for child care (Japan)



Child care leave (Japan)



Akebono’s Main Initiatives (Japan)

Child care leave plan	Associates can take leave until the March after the child's third birthday while receiving aid. This can be taken in multiple parts. Note: Akebono has a child care leave plan that exceeds legal standards.	
Career partner plan	A program that provides those who left the Company due to family duties with opportunities to later rejoin Akebono within five years after their resignation. Eligible associates include those who had served for a continuous period of three years or more before leaving and meet other prescribed criteria.	
Nursing care leave plan	Associates can take up to two years leave per family member to provide nursing care while receiving a stipend	
Child nursing care plan	Associates can take up to five days of leave per year (ten days for associates with two or more children) to nurse sick or injured children or for children's doctor visits until the child graduates from elementary school. This leave is separate from annual paid leave.	
Measures to reduce working hours	Child care plans <ul style="list-style-type: none"><li>Reduced working-hours plan: Associates can use the system multiple times until children graduate from elementary school.</li><li>Flex time plan</li><li>Child care aid plan: A fixed monthly aid until the March following the child's third birthday</li></ul>	Nursing care plans <ul style="list-style-type: none"><li>Reduced working-hours plan: Associates can work reduced hours for a total of up to three years per family member to provide nursing care. These can be taken in multiple parts.</li><li>Flex time plan</li></ul>
Improvements to company environment	<ul style="list-style-type: none"><li>Training for new managers regarding the need to consider associates balance of work and home life.</li><li>Provision of useful information for balancing work and home life through pamphlets and the Intranet.</li><li>Akebono Visit Day was held each year during children's summer holidays to give associates' families a chance to visit the workplace.</li></ul>	
Medical leave system	Associates receive 12 days of medical leave per year in addition to their annual paid vacation, so they can recuperate from unforeseen illness or injury without worrying about work.	
Work interval plan	Ensure that long working hours are rectified, and associates get sufficient rest time by leaving 11 hours free from the end of work to the start of work on the next day.	



**Akebono Brake Astra Vietnam (AAVH) was commended for its workstyle reforms based on overtime work reduction**

AAVH had a high turnover rate due to the problems of increasing overtime. Therefore, we pursued initiatives including a zero-overtime work plan that went into full effect in February 2017 and an improvement suggestion program that picks up employee feedback on a timely basis. As a result, plant productivity improved significantly, and the turnover and absentee rates decreased, and we achieved zero overtime in August 2017. These activities were evaluated and the Ministry of Labor of Hung Yen Province, Vietnam commended

Akebono as a company that provides an excellent working environment in October 2017. Akebono will continue to



Commendation ceremony

improve its working environment with the aim of being “a company that makes associates happy.”

**Health Management**

Since fiscal 2017, Akebono has promoted health management by requiring managers to pay attention to the safety and health of associates and requiring associates to protect their health. By raising associate awareness of their health and improving work conditions, we aim to create an environment that is conducive to mental and physical health, with the ultimate objective of improving productivity and creativity.

In April 2017, Akebono created the Health Management Declaration, which expresses the Company's commitment to proactively advancing measures that promote good health as a part of giving back to society. This declaration allows the company to grow along with its associates while helping associates live healthy fulfilling lives in both mind and body. We have systemized initiatives we have undertaken in the past in order to take a more focused approach to promoting mental and physical health, and raise health consciousness.



In February 2018, Akebono was recognized as a “Company with Excellent Health Management 2018 (White 500),” which honors large corporations that practice excellent health management and is jointly promoted by the Ministry of Economy, Trade and Industry and Nippon Kenko Kaigi.

**Akebono Nursery School (Ai-Kids)**

Akebono established the Akebono Nursery School (commonly known as “Ai-Kids”) within the company as a part of workstyle reforms and to enhance the company's benefits package. Akebono seeks to balance work and childcare, establish human resources, raise associates' satisfaction and corporate brand image, and raise the awareness of male associates about childcare in accordance with a “company-led childcare business” promoted by the Cabinet Office. The nursery school's capacity is 12 children and is intended for the children of Akebono Group associates. It is scheduled to open in May 2018.

In the planning and management of this nursery school, we received advice from a graduate of Akebono's Vocational Scholarship Program.

(\* Please see “Vocational Scholarship Program” on page 28)



Exterior view of Akebono Nursery School



Interior view of Akebono Nursery School

**Ai-Village Training Center**

Since its establishment in 2012, Ai-Village global training center has served as a training ground for numerous associates. Around half of the training sessions held there consist of job level-based training programs and training for selected associates organized by the Human Resources Department. Furthermore, various departments such as development, technology, sales, and production also hold them. In addition to being used as a place for retreat-type training sessions, there were some instances where Ai-Village was used by associates trapped by inclement weather. To further increase the scope of training programs, in fiscal 2014, the Company launched Ai-Campus. In addition to language training

programs aimed at nurturing globally capable associates, around 80 courses on basic knowledge about manufacturing and Akebono products are offered. Looking ahead, we will continue to strive to fully utilize this facility to nurture competitive human resources.



View of Ai-Village

**S Strengthen Ties with Stakeholders— 2****Together with Local Communities****Vocational Scholarship Program; Assisting Future Leaders in Their Pursuit of Education**

Since 1965, Akebono has provided scholarships through its Vocational Scholarship Program, a program that allows students to earn wages by working at Akebono while also covering their academic fees for a period of three years. This program has supported junior college students earning degrees in early childhood education to acquire specialist qualifications in these fields.

The Vocational Scholarship Program is currently operated only at Akebono Brake Fukushima Manufacturing Co., Ltd. The scholarship students live together in the corporate dormitory and work alternating shifts to pursue their studies while working. By using their pay to cover their course fees, they can graduate by their own efforts and acquire qualifications. Once they complete their qualifications, they will go on to work at other companies, or as kindergarten teachers or nursery workers. Today, more than 3,000 students have used this program that has continued for more than 50 years, including some second-generation recipients.

We strive to maintain robust relationships with local residents through the provision of scholarship programs aimed at helping young people realize their dreams.

**To-En-Ryo Awarded the 34th Fukushima Prefecture Architecture Cultural Prize's Special Category Prize**

On the site of Fukushima Manufacturing is a dormitory called “To-En-Ryo” to support the scholarship students. As the dormitory, which was built in 1971, had aged, a new dormitory was built in 2016. The new building includes various innovations to make it easier to study while working.

In January 2018, To-En-Ryo was awarded the 34th Fukushima Prefecture Architecture Cultural Awards' Special Category Prize sponsored by Fukushima Prefecture. The dormitory's living space was highly acclaimed for the bright living space and sense of unity it produces, especially the hall that becomes an amphitheater when the partition is closed and the open staircase.



Exterior view of To-En-Ryo

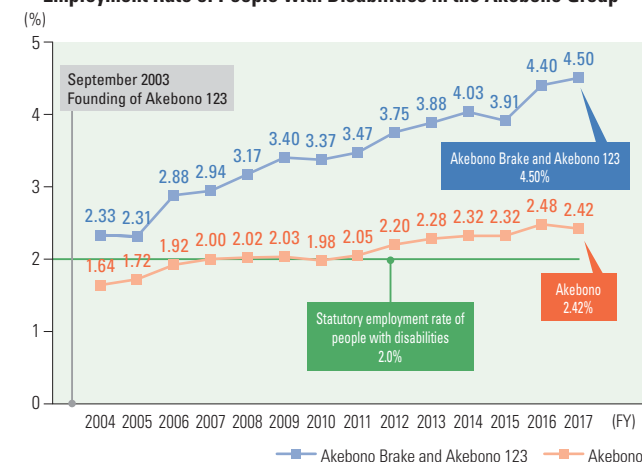


Interior view of To-En-Ryo

**Employment of People with Disabilities**

Akebono 123 Co., Ltd., a special-purpose subsidiary of the Akebono Group that provides employment for people with disabilities, is working to help them achieve personal growth through duties. In April 2016, Akebono was designated as an Excellent Saitama Prefecture Disability-Inclusive Employer for a fourth consecutive year (10th time). The prefecture recognized Akebono's proactive initiatives to create workplaces where people with disabilities can use their abilities.

Akebono's employment ratio for workers with disabilities as of the end of fiscal 2017 stood at 2.42%, higher than the statutory rate of 2.0%.

**Employment Rate of People with Disabilities in the Akebono Group****Ai-Museum**

The Ai-Museum which exhibits our brake technology was established in 2004 to commemorate Akebono Brake Industry's 75th anniversary. The 800 m<sup>2</sup> museum houses over 300 brake-related exhibits such as automobile brakes, motorcycle brakes, and rolling stock brakes. The progress of Akebono as a brake manufacturer can be seen through the historically valuable products and materials.



Open: Every Wednesday from 2:00 pm to 4:00 pm

Offering Office and Plant Tours

In fiscal 2017, more than 280 students from three elementary schools in Saitama Prefecture visited Ai-City headquarters as part of their social studies tours. In addition to a briefing on the Company, this visit included an “Ai-Museum” (Brake Museum) tour and observation of the mobile brake technology educational center as well as programs aimed at providing hands-on experience of manufacturing at the Monozukuri Center. Such tours help raise visitors’ safety awareness while facilitating their understanding of Akebono and its products.

Looking ahead, we will implement initiatives with companies and communities in regions around our domestic and overseas locations. Learning from and inspiring each other, we will grow in tandem with our stakeholders.



Elementary school students visiting Ai-City

Our Mobile Brake Technology Educational Center

More than 200 training sessions are held each year employing the “Mobile Brake Technology Educational Center,” a vehicle specially designed to display braking mechanisms in an easy to understand way to auto dealers, automobile repair shops and others nationwide to teach car salesmen and auto mechanics about the structure of disc and drum brakes.

Points about brake maintenance and market activities are explained using samples and images taken from actual vehicles. Attendees knowledge and technical skills concerning brakes are deepened and their feedback and comments are later reflected in product development. To make customer safety and comfortable driving a reality, we provide training on brake maintenance at brake servicing sites. In addition, we are also active in conducting associate training, family visits, tours for elementary school students, participating in local community events, and more.



Mobile Brake Technology Educational Center training session

**S** Strengthen Ties with Stakeholders– 3

Providing Safety and Security



Occupational Safety and Health Management

To improve its global safety and health management capability, Akebono regularly holds a Global Safety Workshop that all of its global production facilities attend.

In Japan, Akebono has established a management system centered on the Central Safety Environment Committee. Through this system, we strive to ensure the safety and health of associates with the aim of identifying and reducing various risks related to our operations, including prevention of disasters, accidents and other emergencies. Placing the utmost emphasis on securing the safety of our personnel, we have set rules that allow no newly recruited associate or contract worker to engage in actual operations unless they have undergone the required safety education beforehand. We also distribute a booklet summarizing important safety issues to all associates to raise their safety awareness, as well as provide regular opportunities to learn about safety starting from fundamentals.

Response to the Problem of Asbestos

Well ahead of other Japanese domestic companies, Akebono began the development of asbestos-free products in the 1970s. Not only did we lead the field in completing the transition to asbestos-free OEM products for new cars by 1992 and commercial vehicles by 1994, we have not manufactured service parts containing asbestos since 2000. We provide health consultations relating to asbestos and have implemented complementary health checks for neighbors who have lived near Akebono plants, ex-associates, and their family members. In total, 629 people have undergone asbestos health checks as of March 31, 2018. We plan to continue these checks in the future.

A settlement was reached on December 25, 2015 on a lawsuit filed on November 28, 2012 by former associates and bereaved relatives seeking compensation for damages for injuries to health caused by asbestos.

Breakdown of Number of Examinees

(from August 2005 to March 2018)  
Figures in parentheses represent increases from the previous year

	Ex-associates	Families of ex-associates	Neighbors	Total
Asbestosis found	41	0	0	41
Pneumoconiosis found	16	0	0	16
No findings	419 (+2)	37	116 (+2)	572 (+4)
Total	476 (+2)	37	116 (+2)	629 (+4)

**S** Strengthen Ties with Stakeholders– 4

Initiatives to Raise Corporate Value

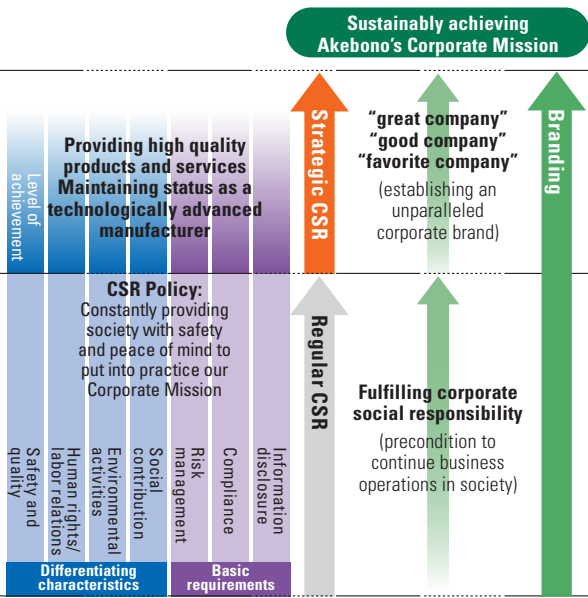


Our Corporate Brand Management and Positioning of CSR Activities

In 2005, Akebono initiated corporate brand management, an initiative aimed at enhancing corporate value by meeting the expectations of stakeholders, namely, customers, shareholders and associates, with an equal emphasis placed on each of these key stakeholder groups. In October 2005, Akebono went on to formulate the Brand Statement, implementing the full-scale launch of its corporate brand management initiative with the aim of encouraging pride in the Akebono brand among associates and thereby strengthening the Company’s competitive edge.

Akebono considers fulfilling its corporate social responsibility (CSR) to be indispensable to continued business operations. In other words, its pursuit of regular CSR activities is an essential part of maintaining its operating foundation. At the same time, corporate branding initiatives reflect the Company’s strategic CSR initiative aimed at further enhancing its social and corporate value. To realize our Corporate Mission, we will promote corporate branding initiatives to secure greater corporate strength, remaining a company that consistently provides people with safety and peace of mind through its operations.

The Relationship between Corporate Brand and CSR



Corporate Brand Awareness Survey

Akebono conducts its own annual surveys on corporate brand awareness in order to effectively put into practice corporate brand management. These surveys have been conducted every year since 2005, when corporate brand management was introduced, as they are an essential part of the Plan, Do, Check and Act (PDCA) cycle that drives our branding promotion activities.

Recently, the scope of the survey was expanded to include a wide range of our domestic and overseas business locations, such as customers and suppliers in each field. In fiscal 2017, we again conducted a survey of all our bases in Japan, North America, Europe and Asia. The number of respondents totaled 6,356.

In the fiscal 2017 survey, the questions on the survey form were substantially changed to make them more concise and specific so that the current state of Akebono’s strengths and challenges could be highlighted. There were concerns that associates’ impressions of Akebono’s technical capabilities had declined year by year. The survey score shows that their impressions have now taken an upward turn, confirming the effect of series of activities including the “Branding Activities 2017 akebono Technology Fest.” held in September 2017. By holding tours of the Technology Fest. at each manufacturing plant, we seek to proactively create opportunities to expose direct and indirect employees to our technology in fiscal 2018.

Because the business unit (BU) system will begin full operation in fiscal 2018, we will continue to conduct the corporate brand awareness survey on impressions from inside and outside of Akebono associated with changes in the organization and personnel. We steadily undertake countermeasures based on the results in order to raise associates’ awareness and thereby improve quality in all aspects of operations.

Identifying Social Needs and Working to Provide Solutions

Akebono is contributing to the creation of a safer, more secure society from various perspectives, identifying social needs and working to provide solutions through its business. In particular, we are focused on developing next-generation technologies such as products that are easy on people and the environment. We will also work to enhance our corporate value by developing the Infrastructure & Mobility business for supporting urban development and people’s everyday lives.



Corporate Governance System



Basic Approach to Corporate Governance

Akebono has formulated the following corporate mission: “Through ‘Friction and Vibration, their Control and Analysis,’ we are determined to protect, grow and support every individual life.” Under this corporate mission, we are creating new values through Monozukuri (manufacturing excellence) and striving to increase shareholder value and corporate value even further in line with our corporate goals of “Customer needs first,” “Technology realignment,” and “Establishing a global network.” As a maker of essential safety equipment, we believe that it is important to maintain and promote healthy and friendly relationships with all stakeholders including customers, shareholders, suppliers, our associates, and local communities in order to achieve sustainable growth and development. In line with this conviction, we have positioned the strengthening of corporate governance as an important management issue, establishing a solid governance structure consisting of such bodies as the Board of Directors and the Audit & Supervisory Board, with every Board member committed to maintaining the vigilant oversight of management.

Initiatives to Strengthen Corporate Governance

April 2000	Introduced an Executive Officer System
June 2005	<ul style="list-style-type: none"><li>Reduced the number of directors from 25 to 12</li><li>Introduced an Outside Director System and elected one outside director</li><li>Established the Compensation Advisory Committee and introduced a performance-based remuneration system for directors</li></ul>
June 2006	Increased the number of outside Audit & Supervisory Board members from 1 to 2
June 2007	Increased the number of outside directors from 1 to 2
June 2010	Increased the number of outside Audit & Supervisory Board members from 2 to 3
June 2014	Increased the number of outside directors from 2 to 3
December 2015	Established the Director Nomination Advisory Committee

Overview of Corporate Governance System

Akebono has adopted the “company with an Audit & Supervisory Board” governance model. We have built a corporate governance system centered on the Board of Directors, Audit & Supervisory Board Members, and the Audit & Supervisory Board. We introduced the Executive Officer System in April 2000 to clarify the responsibility and the authority for business execution, and to enhance management efficiency. The Board of Directors meets regularly once a month, and extraordinary meetings are held as needed. In order to make prompt and accurate judgments on important management matters through sufficient discussion and reviews, Akebono established various important bodies, including the Management Council and the Board of Executive Officers. These bodies operate in accordance with prescribed internal rules. Furthermore, to complement the functions of the Board of Directors and strengthen the transparency and soundness of management, the Company has established the Director Nomination Advisory Committee and the Director Compensation Advisory Committee. As regards the selection criteria and candidates for the Board of Directors, the Audit & Supervisory Board, and executive officers, the Board of Directors determines these by resolutions after being discussed and reported on by the Director Nomination Advisory Committee. In addition, basic matters of the director compensation system are determined by resolution of the Board of Directors after being discussed and reported on by the Director Compensation Advisory Committee to ensure that the compensation system is highly objective and transparent. Management information and suchlike is shared through electronic media, thereby ensuring efficient information sharing among management officers. The execution status of business matters that have been decided is reported to the Board of Directors or the Board of Executive Officers, as appropriate, by the member of the Board or the executive officer who is in charge. This status is also periodically audited by the Audit &

Supervisory Board Members and the Audit Department. The chairperson assigns a certain division (or an individual) as the secretariat of each internal important body. The secretariat is responsible for conducting paperwork such as notices of agenda and minutes. In order to ensure appropriate business execution by members of management, a three-way audit system is applied by means of the Audit & Supervisory Board Members and the Audit & Supervisory Board, the independent auditor, and the Audit Department. Audit & Supervisory Board Members attend essential management meetings, such as the Board of Directors meetings, to monitor the processes of important decision-making and the execution status of business operations. These members also exchange opinions with directors in order to examine without delay any matters that could have a serious impact on Akebono’s management or performance, and then respond promptly. The remuneration for directors and Audit & Supervisory Board Members is determined by the Company’s rules and the compensation criteria are clearly disclosed. Compensation for directors consists of fixed remuneration and performance-based remuneration. The fixed portion is basic compensation for duties and is based on positions. The performance-based portion is determined based on the performance of the Company and individual directors. The amount of remuneration for each director is allocated within limits approved by the General Meeting of Shareholders. The total amount of Audit & Supervisory Board Members’ remuneration is also determined by the General Meeting of Shareholders, and the individual allocations are decided through consultation with the Audit & Supervisory Board. The members of the Audit & Supervisory Board, Akebono’s independent auditor Deloitte Touche Tohmatsu, and the Audit Department closely cooperate by mutually exchanging information such as annual plans and audit reports, and by holding regular opinion-exchanging meetings.

Outline of Akebono’s Corporate Governance Structure (Fiscal 2017)

Type of governance model	A company with an Audit & Supervisory Board
Executive Officer System	Yes
Director’s term stipulated by the articles of incorporation	2 years
Chairman of the Board	Representative Director, Chairman and President
Number of acting directors	6
Of whom, outside directors	3
Of whom, those registered as independent directors	3
Number of Board of Directors meetings held during fiscal 2017	14
Number of Board of Directors meetings held during fiscal 2017	100%
Number of Audit & Supervisory Board members	5
Of whom, outside members	3
Of whom, those registered as independent auditors	3
Outside Audit & Supervisory Board members’ board meeting attendance rate during fiscal 2017	97%
Board of Directors’ advisory organs (voluntary)	Nomination Advisory Committee, Compensation Advisory Committee
Independent auditor	Deloitte Touche Tohmatsu

Board of Directors’ Advisory Committees (voluntary)

Committee names	Director Nomination Advisory Committee	Director Compensation Advisory Committee
Role	Formulation of selection criteria of directors, Audit & Supervisory Board members, including outside members, and executive officers, nomination of candidates, and appropriate deliberation in the selection and development plans of successor candidates such as for Chief Executive Officer, together with reporting to the Board of Directors	Compensation structure of directors (including executive officers), compensation standards, process of compensation determination (including evaluation criteria and allocation) and other setting verifications, and reporting to the Board of Directors
Composition	Internal director 3 Outside director 3	Internal director 3 Outside director 3
Committee member (Chairperson)	Internal director	Internal director
Frequency of meetings	In principle once every half year, with special meetings as needed	In principle once every half year, with special meetings as needed

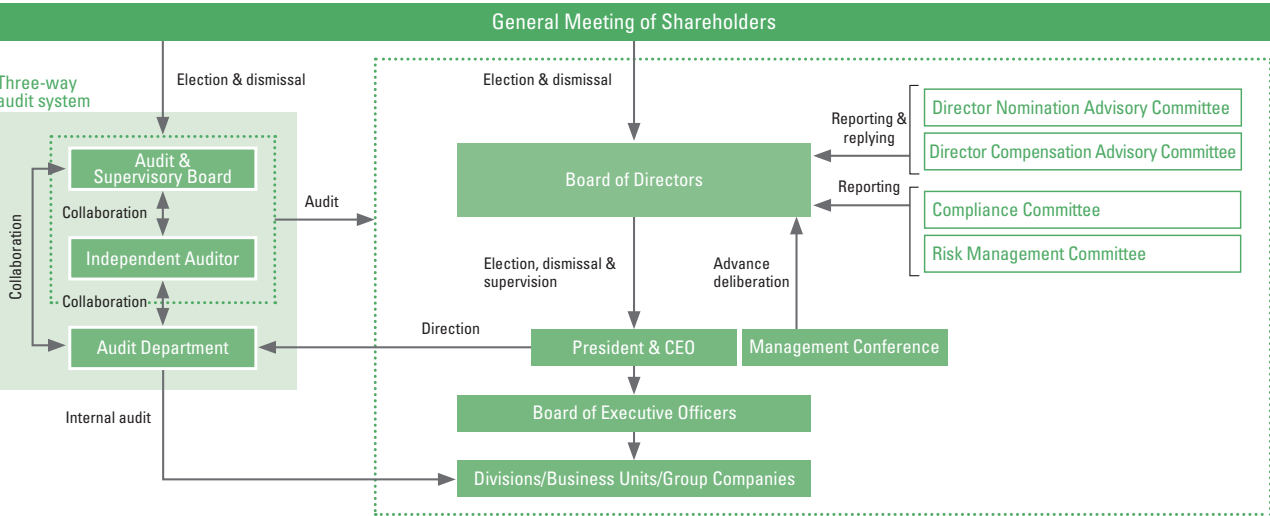
Outside Directors and Outside Audit & Supervisory Board Members

Of the six current directors, Akebono has appointed three independent outside directors with a variety of experience and skills. Their role is to strengthen the corporate governance structure by reinforcing the Board of Directors’ management monitoring functions, and contributing advice to management that will help improve medium- to long-term corporate value. Furthermore, three out of the five Audit & Supervisory Board Members are outside Audit & Supervisory Board Members, thereby ensuring that the supervisory functions from a more independent perspective, and strengthening the audit function of management. Akebono aims to collaborate with outside directors and Audit & Supervisory Board Members and to strengthen its corporate governance system. It therefore regularly convenes opinion-exchanging meetings between representative directors and outside directors, and between representative directors, outside directors, and outside Audit & Supervisory Board Members.

Cooperation among Audit & Supervisory Board Members, the Independent Auditor, and the Audit Department

The Audit & Supervisory Board Members and the Audit & Supervisory Board receive appropriate explanations about the audit content from the independent auditor, and provide cooperation, such as witnessing the audits of the independent auditor, if necessary. In addition, they have regular meetings with the independent auditor as regards the audit system, the audit plan, and the audit implementation status. The Audit & Supervisory Board Members and the Audit Department comprise a mutually complementary system in order to enhance the effectiveness of each audit. They cooperate in conducting the pre-adjustment of the fiscal year’s activities policy, in arranging the monthly report meeting, and in the mutual distribution of the audit report, together with conducting joint audits.

Corporate Governance Structure





Furthermore, the Audit Department and the independent auditor formulate audit plans related to assessments of internal control over financial reporting.

The results of these audit plans are discussed at meetings held from time to time on a regular basis, as necessary.

Outside Directors (as of March 31, 2018)

Name	Reasons for Election	Any Important Representation of Other Entities	Attendance at Board of Directors Meetings (Attended/Convened in Fiscal 2017)
Kunio Ito	Mr. Ito has extensive knowledge and a wealth of experience in corporate management cultivated over his years as a university professor (Accounting & Management) and as an outside director at other companies. He was nominated as an outside director to bring to bear his knowledge and experience when providing advice and recommendations regarding the Company's business judgments and decision-making processes.	<ul style="list-style-type: none"><li>Adjunct Professor, Graduate School of Commerce and Management, Hitotsubashi University</li><li>Outside Director, Sumitomo Chemical Company, Limited</li><li>Outside Director, Kobayashi Pharmaceutical Co., Ltd.</li><li>Outside Director, Seven &amp; i Holdings Co., Ltd.</li><li>Outside Director, Toray Industries, Inc.</li></ul>	14/14
Takuo Tsurushima	Mr. Tsurushima served as a corporate leader at a number of companies, including as President & CEO of Tokyo Stock Exchange, Inc. He was nominated as an outside director to bring to bear his extensive knowledge of and experience in corporate management when providing advice and recommendations regarding the Company's business judgments and decision-making processes.		14/14
Ken Okazaki	Mr. Okazaki possesses specialized advanced academic knowledge in the fields of environmental protection, energetics and thermal engineering. Mr. Okazaki was nominated as an outside director to bring to bear his knowledge and capability to provide appropriate supervision and advice in aid of the Company's business operations.	<ul style="list-style-type: none"><li>Institute Professor, Tokyo Institute of Technology</li><li>Visiting Professor, World Premier International Research Center Initiative, Kyushu University</li></ul>	14/14

Outside Audit & Supervisory Board Members (as of March 31, 2018)

Name	Reasons for Election	Attendance at Board of Directors meetings(a)/ Audit & Supervisory Board meetings(b) (Attended/Convened in Fiscal 2017)
Kesao Endo	Mr. Endo has extensive knowledge and experience as a certified public accountant. He was nominated as an Outside Audit & Supervisory Board Member based on his specialist perspective and highly independent status from management to bring to bear his knowledge and experience in the performance of audits.	(a) 14/14 (b) 13/14
Keizo Tannawa	Mr. Tannawa has extensive knowledge and experience as a management, organizational and human resources consultant in addition to as a corporate manager. He was nominated as an Outside Audit & Supervisory Board Member based on his specialist perspective and highly independent status from management to bring to bear his knowledge and experience in the performance of audits.	(a) 14/14 (b) 14/14
Tomohiro Katayama	A lawyer and certified public accountant, Mr. Katayama has extensive knowledge and experience in the legal and financial audit profession. He was nominated as an Outside Audit & Supervisory Board Member based on his specialist perspective and highly independent status from management to bring to bear his knowledge and experience in the performance of audits.	(a) 14/14 (b) 14/14

Compensation

• Basic Policy for Determining Compensation Paid to Directors and Audit & Supervisory Board Members

Akebono has formulated the basic policy for determining the compensation for Directors and Audit & Supervisory Board Members as follows.

1. Acquire and develop talented human resources

2. Motivate them to continuously improve corporate performance and value

3. Maintain a high level of fairness and rationality
- To maintain an objective and fair compensation system for Directors, we have established a Director Compensation Advisory Committee, which reviews the basic matters relating to Director compensation. Based on the results of this review, the amount of compensation for each Director is allocated within limits approved by the Ordinary General Meeting of Shareholders. Compensation for Directors (excluding Outside Directors) consists of fixed remuneration and performance-based

Total Amount of Compensation Paid to Directors and Audit & Supervisory Board Members (Fiscal 2017)

	Amount of compensation (Millions of yen)	Compensation by category (Millions of yen)			Number of directors/Audit & Supervisory Board members	
		Fixed remuneration (Cash)	Performance-based remuneration			
			Short-term (Cash)	Medium-term (subscription rights to shares)		Long-term (subscription rights to shares)
Directors	167	167	—	—	—	7
Audit & Supervisory Board members	50	50	—	—	—	6
Total	217	217	—	—	—	13
(Outside directors and Audit & Supervisory Board members)	42	42	—	—	—	6

\*The above table includes one Director and one Audit & Supervisory Board Member who retired at the close of the 116th Ordinary General Meeting of Shareholders held on June 16, 2017. As of the end of fiscal 2017, the Company had 6 Directors and 5 Audit & Supervisory Board Members.

\*Upper limits of annual compensation for directors and Audit & Supervisory Board Members upon resolution of the Ordinary General Meeting of Shareholders (annual amount)

(1) Directors	Fixed Remuneration	¥300 million
	Short-term performance-based remuneration	¥120 million (excluding outside directors)
	Medium-term performance-based remuneration	¥60 million (excluding outside directors)
	Long-term performance-based remuneration	¥120 million (excluding outside directors)
(2) Audit & Supervisory Board members	Fixed remuneration	¥60 million

Board Evaluation

Akebono evaluates the effectiveness of the Board with the aim of achieving the sustainable growth of the Group and improving corporate value. The results of this evaluation in fiscal 2016 and initiatives to further improve its effectiveness are outlined below.

1. Evaluation Details

Scope	The Company's directors and auditors
Survey Timeframe	From mid-February to mid-March 2017
Question Topics	1. Structure of the Board of Directors 2. Operation of the Board of Directors 3. Duties and responsibilities of the Board of Directors (especially oversight functions) 4. Support framework for outside directors 5. Support framework for outside auditors 6. Relationship with investors and shareholders

2. Effectiveness Evaluation and Analysis

Areas in good standing	<ul style="list-style-type: none"><li>Structure of Board of Directors (ratio of inside and outside directors)</li><li>Matters for discussion and time allocation at the Board of Directors</li><li>Supervises the operational status of compliance activities and Internal Reporting System</li><li>Composition of the Nomination Advisory Committee and the Compensation Advisory Committee, which are voluntary bodies</li><li>Support system for Outside Directors and Audit &amp; Supervisory Board Members</li><li>Engages in dialog with investors/shareholders</li></ul>
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Areas in need of improvement	<ul style="list-style-type: none"><li>More time to discuss sales strategy, technology development strategy, and future vision, and progress made toward their achievement</li><li>CEO and management succession planning</li><li>Method for determining compensation for senior management, directors and executive officers</li></ul>
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3. Future Action to Improve Effectiveness

1.	Through a review of the organizational structure, we will seek a substantive debate on the sales, technology development, and product strategies at the Board of Directors meeting. We will routinely review and discuss the progress of the midterm business plan.
2.	We will provide a preliminary explanation of Board proposals jointly with Outside Directors and Audit & Supervisory Board Members and provide more venues for exchanging views between Outside Directors and Audit & Supervisory Board Members about Board proposals to strengthen cooperation between them.
3.	Regarding training of the CEO and management successor planning, "human resource discovery and development, and training plan" is discussed at the Director Nomination Advisory Committee. The results of this discussion will be reported to the Board of Directors.
4.	The method of determining compensation of senior management, directors and executive officers, will be further discussed at the Board of Directors meeting taking into account the results of the review of the "Evaluation method for determining compensation and introduction of a stock compensation program" by the Director Compensation Advisory Committee.

**G** Corporate Value Improvement through Stronger Governance— 2

## Management Systems



### Compliance

As it expands globally, it is important that Akebono, beyond complying with the law and regulations, correctly understands and fulfills its corporate social responsibility. Accordingly, we have set up the Compliance Committee, chaired by the president, and established the “akebono Global Code of Conduct” and “akebono Global Standard of Behavior” to be observed by each associate.

To respond to the globalization of management, Akebono endeavors to correctly recognize and carry out its corporate social responsibility. To this end, we have established and promoted the akebono Global Code of Conduct together with the akebono Global Standard of Behavior, and we also work to improve awareness of compliance by conducting a variety of educational programs. Specific examples include training on Japan’s subcontracting act for workplaces that carry out outsourcing operations and training on insider trading regulations. Moreover, in our job level-based training program, we include compliance training to raise the level of awareness on general compliance issues such as information control and prevention of harassment. In addition to this, in fiscal 2017 compliance proficiency tests were given to all associates in Japan, and in November we held a month dedicated to strengthening compliance, which generated thoughtful workplace discussions. Furthermore, in fiscal 2017, we introduced a global compliance e-learning program.

To prevent compliance violations or to detect them at an early stage, and resolve them, Akebono conducts compliance hearings for associates selected at random, and has set up consultation counters, both in-house and outsourced, to accept requests for counseling from all associates, including temporary employees and contract employees. Among these, some of the outsourced consultation has been entrusted to specialized agencies. At all of these counters, the personnel in charge keep the name of the person seeking the consultation and the nature of their consultation confidential. Akebono also ensures that the person seeking consultation does not receive any prejudicial treatment because of making a report or seeking consultation.

### Risk Management System

Akebono strives to identify the risks surrounding the Company and conducts risk control and monitoring to reduce them. We also conduct risk management activities aimed at minimizing the impact of any damage that might materialize. Akebono’s risk management

activities are supported by the Risk Management Committee, comprising a group of directors chaired by the Representative Director & CEO, and the Risk Evaluation Committee a subcommittee of the Risk Management Committee that is chaired by the Representative Director & Executive Vice President. The Risk Evaluation Committee controls Group-wide critical risks. In fiscal 2017, the Company confirmed the implementation status and efficacy of countermeasures for critical Group-wide risks. In addition, the Company promoted a risk management plan for its major overseas locations.

### Information Security Activities

Akebono has established an Information Security Committee, as well as information security policies, guidelines and rules for the handling of information in order to implement appropriate measures to protect information assets properly. We clarify measures according to materiality and risk, in order to provide appropriate protection for data owned in-house or provided by customers or business partners from all kinds of threats, including negligence, accidents, natural disasters, and criminal acts. Under the Information Security Committee, the Company has also set up a working group and established a system where information security personnel or an information system administrator in each section carries out their own checks against the information security risks to which their respective operations are vulnerable. Using a PDCA cycle to raise awareness of and adherence to the various regulations and guidelines through education and training, the Company is working to ensure information security. In the unlikely event that a violation does occur, such as with regard to the Company’s rules of employment, it is strictly dealt with. The Company complies with all relevant laws and regulations and other social norms, and strives to achieve continuous improvement of its management systems, including in response to changes in the environment.

Moreover, in recent years, in light of the increasing risk of information leakage due to global business expansion, growing dependence on IT and the increased liquidity of employment, the Company has strengthened its network environment so that its security exceeds a certain level globally.

In the future, while Akebono continues to implement global education and awareness-raising activities, it will continue to routinely conduct security assessments based on cybersecurity management guidelines, adopt new security measures, build the organization and structure in preparation for contingencies, and strengthen its countermeasures to cyber-attacks, which are becoming increasingly sophisticated.

### Conversation with the President and Outside Director

**We introduce Mr. Ken Okazaki, an Outside Director of the Company, and Mr. Hisataka Nobumoto, the President & CEO of the Company, who discuss the role of outside directors and changes in the automotive industry.**



## Hisataka Nobumoto

President & CEO



## Ken Okazaki

Outside Director (Institute Professor, Tokyo Institute of Technology)

**Okazaki** As a technology specialist, I think the Board of Directors’ mission is to express my advisory opinion on the future direction of Akebono’s technological development. Since the Company is now in a difficult business situation, I make every effort to speak from the standpoint of how to leverage Akebono’s original technology, how to invest in it, and what kind of business model we should develop.



**Nobumoto** Akebono has various technologies, but I question whether it is sufficient that we utilize our technologies only in fields where we now do business. Deeper pursuit of these technologies might provide a

new picture. I’m very grateful that you have given us insight from a technical perspective on the possibility of using these technologies in other fields, on evaluating our technology, and on the development direction.

**Okazaki** Recently, I have found that to develop new technology it is necessary that 1) the management foundation is solid, 2) there is the financial capacity to invest in technology development, and without these two, technology development is impossible. Therefore, we need to consider what kind of technology development to pursue and discuss it at the board of directors meeting or at other venues. Still, we must have a dream. There is no point in having a dream just to have a dream. But, if the dream fails to motivate, we will not develop technologies that inspire.

**Nobumoto** This is not just a technology issue. Although there may be a lot of repetitive work one has to perform each day, you’ll waste your time if you get buried in all of that without a dream.

**Okazaki** More than 100 years have passed since the car was invented, but now things are changing at a

speed never seen before. The most important point is electrification. “E-mobility” is the blanket term for hybrid and plug-in hybrid vehicles, electric vehicles, and fuel cell vehicles. As its popularity spreads, the world of brakes will drastically



change. One of these changes will be the regenerative brake. As friction brake wear decreases, demand for repair parts decreases. Once electric motors are mounted to each wheel, brakes will also have to be miniaturized so they properly fit. This will likely occur around 2040, and though it may seem a long way off, there are many things we need to think about now. More important than even “E-mobility” is addressing the environment. This is becoming increasingly difficult to do in these times. Akebono is a company that has led the world in its efforts to advance environmental measures, but it needs to pay even more attention to this issue.

**Nobumoto** The electrification of the braking mechanism is inevitable. Therefore, we will refocus on the electro-mechanical brake including the control system. An even larger issue is that of the environment. The focus of the three-year midterm business plan, which starts from next fiscal year, is the environment. I would like to find business opportunities from the environmental problems.

**Okazaki** Akebono should pull the world along with technology, its original technology. However, to develop the technology, management is important because funds are still required. We must quickly generate a positive growth cycle.

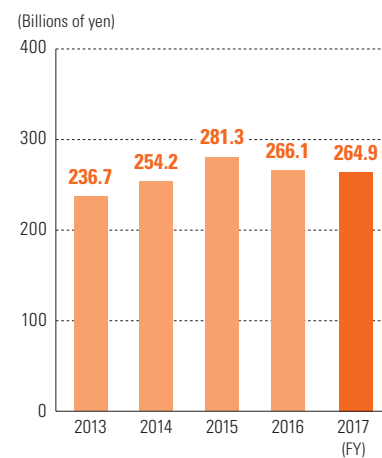
**Nobumoto** I want to return Akebono to a company that is technologically driven.

## Financial and Non-Financial Highlights

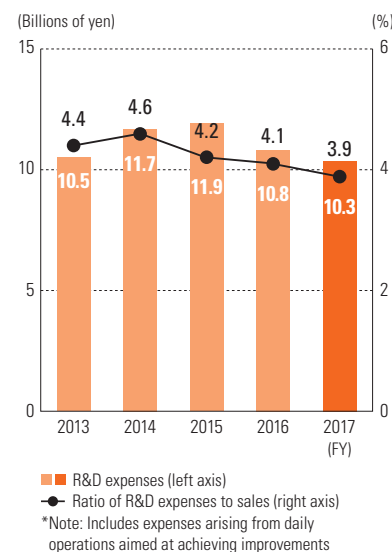
Akebono Brake Industry Co., Ltd. and Consolidated Subsidiaries, the Fiscal Year Beginning April 1 to March 31 of the Following Year

	(Billions of yen)										(Billions of yen)
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Net sales	¥ 184.7	¥ 159.6	¥ 130.6	¥ 216.6	¥ 209.6	¥ 206.0	¥ 236.7	¥ 254.2	¥ 281.3	¥ 266.1	¥ 264.9
Gross profit	36.6	14.6	19.8	30.4	24.9	23.5	26.8	24.3	16.5	26.6	29.5
Ratio of gross profit to sales (%)	19.8	9.2	15.2	14.0	11.9	11.4	11.3	9.6	5.9	10.0	11.2
Selling, general and administrative expenses	21.4	20.9	15.1	19.0	21.1	19.2	18.7	20.3	20.2	22.3	21.4
Ratio of selling, general and administrative expenses to sales (%)	11.6	13.1	11.6	8.8	10.1	9.3	7.9	8.0	7.2	8.4	8.1
Operating profit (loss)	15.2	(6.3)	4.7	11.4	3.8	4.3	8.1	4.0	(3.8)	4.2	8.1
Ratio of operating profit (loss) to sales (%)	8.2	(3.9)	3.6	5.3	1.8	2.1	3.4	1.6	(1.3)	1.6	3.1
Profit (loss) attributable to owners of parent	6.6	(16.3)	2.1	5.3	(3.2)	0.5	2.4	(6.1)	(19.5)	0.4	0.8
Ratio of net profit (loss) to sales (%)	3.6	(10.2)	1.6	2.4	(1.5)	0.3	1.0	(2.4)	(6.9)	0.1	0.3
Return on assets (ROA) (%)	4.2	(10.2)	1.3	3.0	(1.8)	0.3	1.3	(2.9)	(9.0)	0.2	0.4
Return on equity (ROE) (%)	13.7	(42.2)	5.8	11.6	(7.1)	1.2	4.9	(11.5)	(50.1)	1.4	3.0
Capital investment	14.9	17.8	5.4	5.1	14.3	19.8	21.8	20.8	18.6	18.7	11.6
Depreciation	9.9	11.4	10.0	9.8	9.8	8.6	8.9	10.8	13.1	11.9	12.4
Cash flow from operating activities	15.1	4.2	3.2	7.4	2.9	7.6	18.9	10.2	7.5	14.1	19.4
Cash flow from investing activities	(16.0)	(13.6)	(13.4)	(8.6)	(23.8)	(4.1)	(20.3)	(17.7)	(10.1)	(15.9)	(11.1)
Cash flow from financing activities	0.1	38.6	(0.0)	18.2	1.4	(2.0)	(6.2)	5.8	11.2	(2.8)	(11.3)
Number of outstanding shares at the end of period (including treasury stock)	110,992	110,992	135,992	135,992	135,992	135,992	135,992	135,992	135,992	135,992	135,992
Net profit (loss) per share—basic	¥ 61.85	¥ (151.65)	¥ 17.80	¥ 39.75	¥ (24.25)	¥ 3.90	¥ 18.24	¥ (45.83)	¥ (146.31)	¥ 2.66	¥ 5.87
Cash dividends per share	10.00	5.00	5.00	10.00	10.00	10.00	10.00	10.00	—	—	—
Total assets	¥ 163.3	¥ 155.4	¥ 164.1	¥ 186.0	¥ 181.0	¥ 186.6	¥ 199.2	¥ 225.9	¥ 204.4	¥ 201.8	¥ 194.3
Net interest-bearing debt	40.2	47.7	39.5	36.9	52.4	68.1	76.2	95.8	99.4	102.5	97.0
Net debt-equity ratio (times)	0.8	1.7	0.9	0.8	1.2	1.46	1.45	1.78	4.17	4.09	3.59
Net equity (Equity minus minority interests minus share acquisition rights)	49.8	27.4	43.8	47.1	43.3	46.5	52.7	53.9	23.8	25.1	27.0
Net equity ratio (%)	30.5	17.6	26.7	25.4	23.9	24.9	26.4	23.9	11.6	12.4	13.9

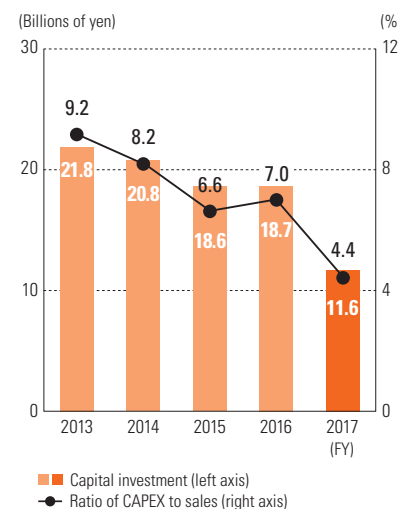
## Net sales



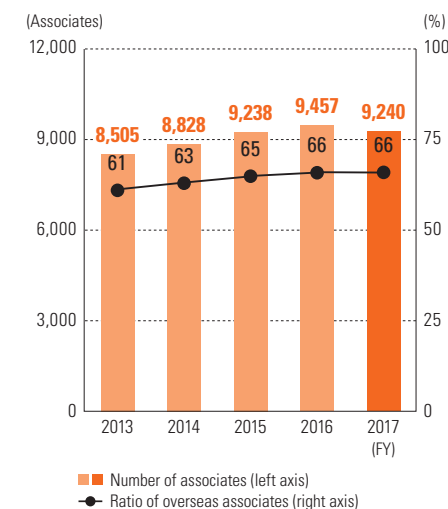
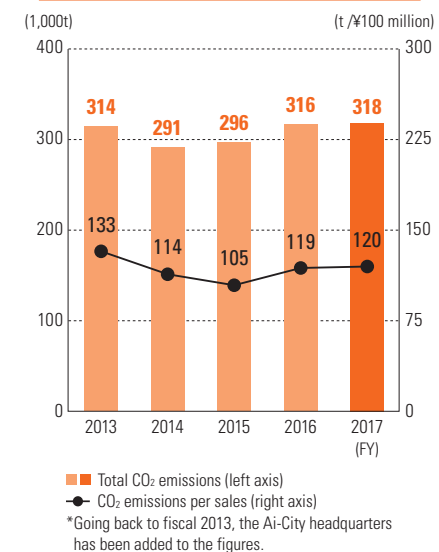
## R&amp;D expenses\* and ratio of R&amp;D expenses to sales



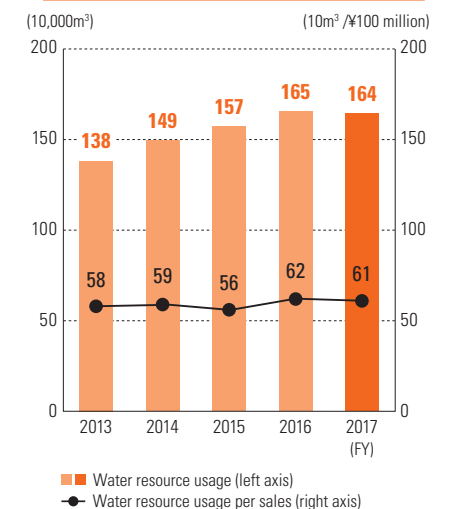
## Capital investment and ratio of CAPEX to sales



## Number of associates and ratio of overseas associates

CO<sub>2</sub> emissions and CO<sub>2</sub> emissions per sales (Akebono group worldwide)

## Water resource usage and water resource usage per sales (Akebono group worldwide)



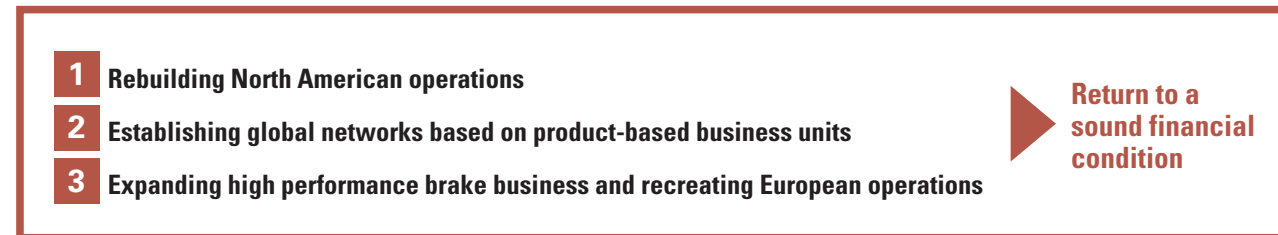


## Progress of akebono New Frontier 30 - 2016

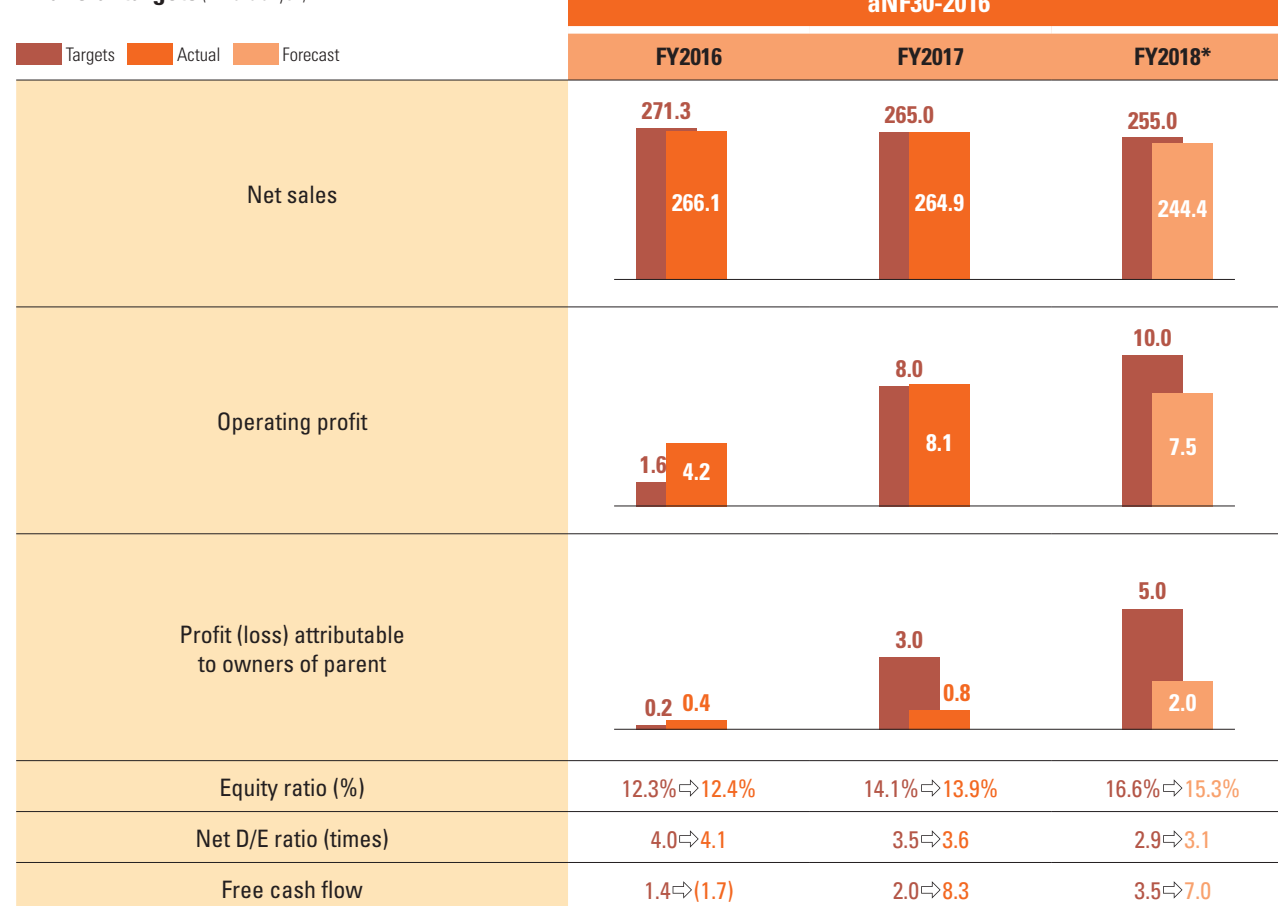
The midterm business plan, “akebono New Frontier 30 – 2016 (aNF30-2016),” ending in fiscal 2018, contains the goals of **1** rebuilding North American operations, **2** establishing global networks based on product-based business units, and **3** expanding high performance brake business and recreating European operations. By realizing these goals, Akebono plans to achieve a sound financial condition and facilitate sustainable growth. Although we produced some positive results in fiscal 2017, the second year of the plan, new challenges have emerged. The Company will unite to solve these challenges and achieve these goals.



**aNF30-2016 Fundamental Strategies** Shift priority from achieving sales targets to sustainable growth



**Financial targets** (Billions of yen)

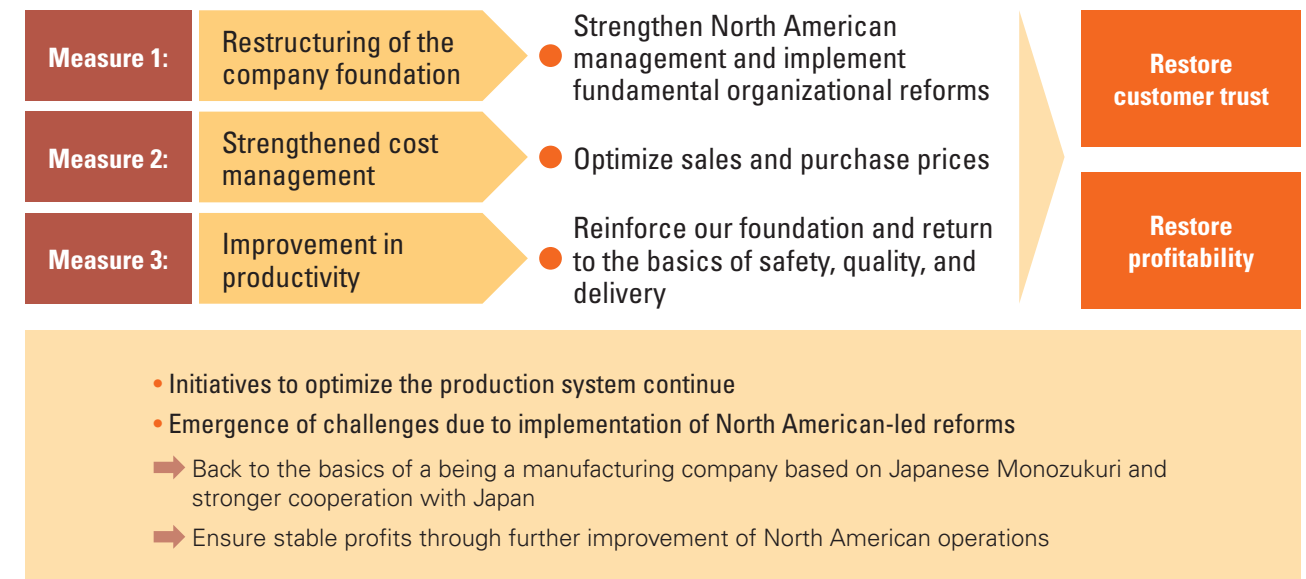


\*Exchange rate assumptions for fiscal 2018: USD: 110.0, EUR: 130.0, CNY: 16.5, THB: 3.4, IDR: 0.0080

## 1 Rebuilding North American operations

As a result of taking measures to rebuild North American operations, in fiscal 2017, operating profit improved by about JPY4.8 billion to JPY1.5 billion, returning to profitability. Despite achieving positive results, such as restoring profitability, sales are expected to decline for several years due to the withdrawal from sedan model by a customer and losing business opportunities for subsequent models because of production problems. Nevertheless, we will continue our efforts to optimize the production

system. Challenges caused by the implementation of major reforms led by U.S. management have also emerged, and therefore I believe we have entered a reform phase that cannot be dealt with by local management alone. To achieve growth, we will go back to the basics of a being manufacturing company based on Japanese Monozukuri (manufacturing excellence), further strengthening cooperation between Japan and the United States. We work to further improve North American operations.

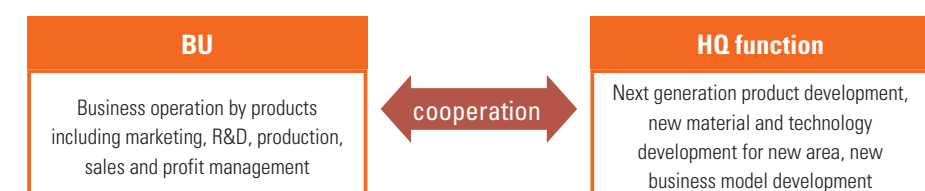


## 2 Establishing global networks based on product-based business units (BUs)

While improving each product's profitability, we have launched five business units (BUs) responsible for marketing, product development, production and sales in various fields with the aim of strengthening our global competitiveness. Although the transition to the BU structure is still in progress, we are taking various

measures aimed at completing the transition by the end of fiscal 2018 as originally planned. The current major challenges include promoting efficient collaboration between BUs and headquarter functions, as well as BUs and overseas operations, but we will work on these to achieve the midterm business plan.



Business Units (BU)	Start-up	Main Products
HP BU	January 2016	HP (High performance) disc brakes
Foundation BU	January 2016	Disc brakes, drum brakes and other mechanical parts
Infrastructure and Mobility (AIMS) BU	April 2016	Products for industrial machinery, rolling stock, and sensors
Friction Material BU	October 2016	Brake pads, lining and other friction materials
Aftermarket BU	October 2016	Aftermarket products



3 Expanding high performance brake business and recreating European operations

The expansion of the high performance brake (high performance brakes for mass-produced vehicles) business is proceeding smoothly and in line with plans. Full-scale production at the Slovakia Plant began in 2016, and the transfer of the production of high performance

brake products from the Columbia Plant in the United States was largely completed in 2017. The high performance brake business plans to begin to expand globally including Europe, as well as North America and Japan.

	Basic policy	Akebono's strengths
R&D Strategy	Absolute commitment to differentiated products, light weight, high performance, enhanced design and high quality	<ul style="list-style-type: none"><li>Realize both high performance and high quality by combining high performance brake technologies accumulated through F1 activity, superior NVH knowhow and cutting-edge manufacturing technology.</li></ul>
Sales Strategy	Expand sales especially in Europe with high performance technologies gained through brake development for premium German automakers.	<ul style="list-style-type: none"><li>Mass production of 6-pot opposed high performance brake calipers</li><li>Developed and supply world's first mass production 10-pot opposed brake calipers</li><li>Appeal of advanced technology</li></ul> <div></div> <div>6-pot opposed brake caliper10-pot opposed brake caliper</div>

Return to a sound financial condition

Akebono plans to return to a sound financial condition by steadily implementing the three pillars of aNF30-2016, namely 1) rebuilding North American operations, 2) establishing global networks based on product-based business units, and 3) expanding high performance brake business and recreating European operations. In fiscal 2017, the second year of aNF30-2016, Akebono made progress in line with the plan, achieving its capital investment target of JPY11.6 billion. The SG&A ratio for domestic operations was 14.4% in fiscal 2017,

compared with 14.0% in the previous fiscal year, against the 12% target. In addition, Akebono spent JPY10.3 billion on development. The Company intends to invest JPY10.0 billion annually on development, while shifting the allocation of funds from application development to focus on advanced research and development. In fiscal 2018, the final year of aNF 30-2016, Akebono will accelerate measures with the aim of achieving the targets of the midterm business plan as early as possible.

			FY2016 Actual	FY2017 Actual
Initiative 1	Control Investment Control CAPEX under ¥15.0 billion	CAPEX	¥ 14.9 billion	¥ 11.6 billion
Initiative 2	Reduce SG&A* Aim for SG&A ratio in Japan under 12%	SG&A ratio in Japan	14.0%	14.4%
Initiative 3	Prioritize R&D costs Shift priority from application R&D to advanced R&D Reduce R&D costs to ¥10.0 billion	R&D costs	¥ 10.8 billion	¥ 10.3 billion

\* Selling, general and administrative expenses

Review of Operations

Net sales in fiscal 2017\* were JPY264.9 billion (0.4% year-on-year decrease) reflecting decreases in sales in North America despite strong sales in the European and Asian regions. Profits increased due to the effects of measures taken to improve profits in North American operations, increased orders received in the Asian region and others. Operating profit and ordinary profit were JPY8.1 billion (JPY4.2 billion for the last fiscal year)

and JPY5.8 billion (JPY0.8 billion for the last fiscal year), respectively. Profit attributable to owners of parent was JPY0.8 billion (JPY0.4 billion for the last fiscal year) mainly as a result of posting impairment loss for non-current assets in the Arras Plant and the Slovakia Plant in Europe.

\*Consolidated fiscal year  
North America/China/Thailand/Indonesia: January 2017 - December 2017  
Japan/Europe: April 2017 - March 2018

Performance by geographical segment

	Net sales				Operating profit			
(Billions of yen)	FY2016	FY2017	Change from last fiscal year	Foreign exchange rate*	FY2016	FY2017	Change from last fiscal year	Foreign exchange rate*
Japan	80.9	81.4	+ 0.5	—	4.1	3.3	(0.8)	—
USA	152.4	138.8	(13.6)	+3.0	(2.9)	1.8	+4.7	+0.0
Mexico	0.8	1.1	+ 0.3	+0.0	(0.4)	(0.3)	+0.1	(0.0)
Europe	11.6	14.1	+2.6	+1.2	(1.3)	(2.0)	(0.8)	(0.2)
China	20.0	22.5	+2.5	+0.3	2.6	2.6	+0.1	+0.0
Thailand	6.6	7.9	+1.3	+0.5	0.4	0.5	+0.1	+0.0
Indonesia	16.3	18.8	+2.4	+0.4	1.4	2.0	+0.6	+0.0
Asia	43.0	49.2	+6.2	+1.2	4.4	5.1	+0.7	+0.1
Eliminations	(22.4)	(19.6)	+2.8	—	0.2	0.2	+0.0	—
Total	266.1	264.9	(1.2)	+5.5	4.2	8.1	+3.9	(0.0)

\* Foreign currency exchange rates (FY2016 → FY2017) USD: 109.6 → 112.0, EUR: 118.9 → 130.3, CNY: 16.4 → 16.6, THB: 3.1 → 3.3, IDR: 0.0082 → 0.0084

Review of Operations by Region

Japan

Review of Fiscal 2017

In products for automobiles, the Akebono Group posted net sales of JPY81.4 billion (0.6% year-on-year increase), favorably affected by increases in orders received for products mainly for new SUVs, as well as also strong sales of industrial machinery and rolling stock products such as those for forklifts and vehicle behavior detection devices for rolling stock, but adversely affected by sluggish exports of compact trucks to the Middle East and decreases in orders received due to production suspension caused by automakers' inspection failings. Operating profit was JPY3.3 billion (19.0% year-on-year decrease) due to the effects of a surge in market prices of steel and other materials, rising labor expenses including performance-linked bonuses as part of the Akebono Group's compensation system, and increases

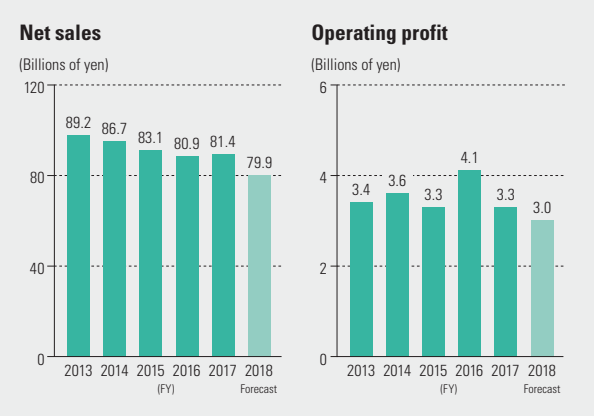


K4 disc brakes for mini cars\* launched in Japan (\* Displacement under 660cc)

in next-generation R&D expenses related to electro-mechanical brakes, environment-friendly friction materials.

Outlook for Fiscal 2018

The Akebono Group expects net sales to be JPY79.9 billion (1.8% year-on-year decrease) and operating profit to be JPY3.0 billion (10.2% year-on-year decrease) due to efforts to rationalize production, despite the effects of declining sales and rising labor costs.





Review of Operations by Region

North America

Review of Fiscal 2017

Net sales came to JPY139.9 billion (8.7% year-on-year decrease), affected by decreased sales caused mainly by some U.S.-based automakers' withdrawal from sedan models and tentative inventory adjustment in the aftermarket products market, although sales increased thanks to strong orders received for products for pickup trucks and SUVs and optimization of sales prices.

Operating profit soared to JPY1.5 billion (operating loss of JPY3.2 billion for the last fiscal year) mainly due to one-time expenses such as external consultant fees were not incurred and expedited freight was significantly reduced through stabilized operations and labor costs reduction through reduced overtime and holiday work were achieved, despite the effects of decreased sales and rising steel and other material prices.

As a result of various measures taken for the four

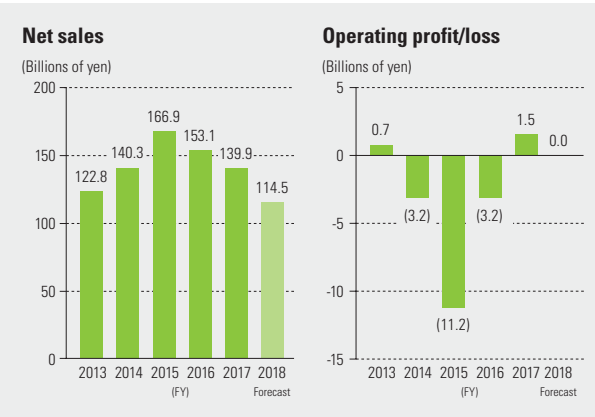


Akebono's EURO® Ultra-Premium Ceramic Disc Brake Pads for the U.S. Market Received the Best Overall Import Aftermarket Product Award for the Third Time

initiatives—(1) Fundamental organizational reforms, (2) Productivity improvement, (3) Increase of manufacturing capacity, and (4) Improvement of earnings structure, the Akebono Group successfully posted operating profit of JPY1.8 billion in the United States alone in fiscal 2017.

Outlook for Fiscal 2018

Akebono expected net sales to be JPY114.5 billion (18.2% year-on-year decrease) and operating profit to be JPY0.0 billion (compared to operating profit of JPY1.5 billion in the last fiscal year) due to the impact of declining sales, despite improving labor costs and cost reductions activities.



Review of Operations by Region

Europe

Review of Fiscal 2017

Net sales were JPY14.1 billion (22.1% year-on-year increase) on increased sales of disc brake calipers for mass-produced high performance vehicles, despite decreased sales in the aftermarket friction material business.

Akebono posted an operating loss of JPY2.0 billion (compared to an operating loss of JPY1.3 billion in the last fiscal year) mainly due to various expenses incurred in the Slovakia Plant resulting from its efforts toward the start of full-scale production, increased depreciation expenses associated with increased manufacturing lines, rising labor costs associated with the increased number of personnel, and delay in the planned rationalization, as well as a change in the product sales

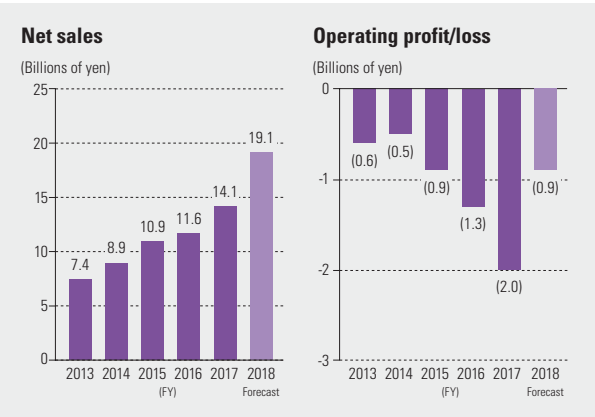


Slovakia Plant where full-scale production has started

mix resulting from declines in the friction material business in the Arras Plant in France, which is highly profitable.

Outlook for Fiscal 2018

An increase in sales is expected mainly due to higher sales of disc brake products for mass-produced high performance vehicles and the operating loss is expected to JPY0.9 billion due to the impact of an increase in sales and a reduction in scrap cost resulting from an improving yield rate.



Review of Operations by Region

Asia

Review of Fiscal 2017

In China, the Akebono Group posted net sales of JPY22.5 billion (12.5% year-on-year increase) due to strong sales of products for SUVs and newly received orders for new models. Operating profit was JPY2.6 billion (2.8% year-on-year increase) mainly due to favorable orders received for highly profitable friction material products and successful rationalization of production, despite increases in labor costs, depreciation, and costs of complying with environmental regulations, thus showing year-on-year increase in sales and profits.

In Thailand, net sales came to JPY7.9 billion (19.0% year-on-year increase) due to increased orders received for products for both domestically sold and exported compact cars and to favorable orders received for aftermarket friction material products. Operating profit was JPY0.5 billion (14.4% year-on-year increase) due to increased sales despite the effects of higher labor costs and the cost of starting up a foundry that began operations last year, thus showing year-on-year increases in sales and profits.

In Indonesia, net sales climbed to JPY18.8 billion (14.9% year-on-year increase) mainly due to favorable



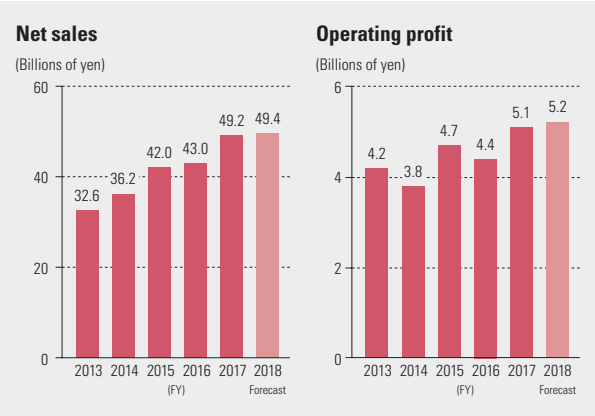
Thai casting plant A&M

sales for products for new MPVs (multi-purpose vehicles) and increases in orders received for products for global platform vehicles (common platforms for global distribution) exported to Europe, and for motorcycles. Operating profit increased soared to JPY2.0 billion (41.4% year-on-year increase) due to the absence of one-time expenses associated with the new business startup that began operation last year, the rationalization of production and increased orders, despite higher labor costs.

Outlook for Fiscal 2018

Net sales of JPY49.4 billion (0.4% year-on-year increase).

Operating profit is expected to remain largely unchanged from that of the last fiscal year because of higher sales and rationalization effects, despite negative factors such as rising labor costs and increasing depreciation expenses associated with capital investment.



Cash Flow Status

Cash and cash equivalents at the end of the fiscal year under review decreased by JPY2.9 billion from the end of the last fiscal year to JPY12.7 billion. Free cash flows out of cash flows from operating activities minus cash flows from investing activities came to JPY8.3 billion.

Cash flows from operating activities

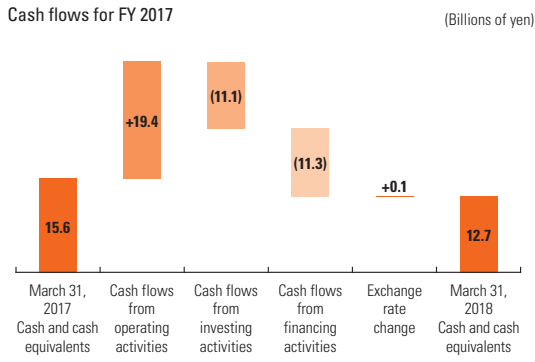
The main factors behind the net cash inflow include profit before income taxes of JPY4.2 billion, depreciation of JPY12.4 billion, a JPY2.9 billion increase in working capital, while income taxes of JPY2.8 billion were paid out.

Cash flows from investing activities

The main factor behind the net cash outflow was the payment of JPY11.4 billion for the purchase of property, plant and equipment in connection with capital investments, mainly in Japan, the U.S., and Europe.

Cash flows from financing activities

The main factors behind the net cash outflow include a JPY3.4 billion net decrease in short-term loans payable, repayment of JPY25.3 billion long-term loans payable, and JPY3.1 billion dividends paid to non-controlling interests, while there were inflows of JPY19.2 billion through proceeds from long-term loans payable and JPY2.1 billion through proceeds from sale and leaseback.



Directors (As of June 15, 2018)



Representative Director & Member of the Board  
Hisataka Nobumoto



Representative Director & Member of the Board  
Yoshimasa Ogino



Representative Director & Member of the Board  
Kazuo Matsumoto



Member of the Board  
Kunio Ito\*1



Member of the Board  
Takuo Tsurushima\*1



Member of the Board  
Ken Okazaki \*1

\*1 Outside directors in accordance with Article 2-15 of the Corporation Law

Audit & Supervisory Board (As of June 15, 2018)

Audit & Supervisory Board Member (Standing)

Hiroshi Ikegami

Audit & Supervisory Board Member (Standing)

Tatsuya Shinoda

Audit & Supervisory Board Member

Tomohiro Katayama\*2

Audit & Supervisory Board Member

Hitoshi Takahashi\*2

Audit & Supervisory Board Member

Yuji Itagaki\*2

\*2 Outside members in accordance with Article 2-16 of the Corporation Law

Executive Officers (As of June 15, 2018)

Chairman, President & CEO

Hisataka Nobumoto

Executive Vice President

Yoshimasa Ogino

Executive Vice President

Kazuo Matsumoto

Senior Managing Executive Officer

Kanji Miyajima

Senior Managing Executive Officer

Takeshi Saito

Senior Managing Executive Officer

Jean de Montlaur

Senior Managing Executive Officer

Yuji Ando

Senior Managing Executive Officer

Katsuji Hidaka

Senior Managing Executive Officer

Yoichi Shinagawa

Managing Executive Officer

Seiji Nishimura

Managing Executive Officer

Toshiyuki Negishi

Managing Executive Officer

Wilm Uhlenbecker

Managing Executive Officer

Hiroshi Idei

Executive Officer

Kiyoshi Tanaka

Executive Officer

Takao Watanabe

Executive Officer

Keiichi Oka

Executive Officer

Takeshi Kashimura

Executive Officer

Seiya Odaka

Executive Officer

Takunobu Okada

Advisors (As of June 15, 2018)

Executive Advisor

J. W. Chai

Honorary Senior Advisor

Hidemitsu Kuwano

Executive Technical Advisor / Assistant to the President & CEO

Shunji Yokoo

Special Assistant to the President & CEO

Sachiyuki Ishige

Technical Advisor

Takashi Kudo

Technical Advisor

Toshifumi Maehara

Technical Advisor

Takashi Kunimi

Advisor

Masahiro Miyamoto

Advisor

Seiji Onoda

Company Outline

Company Name

Akebono Brake Industry Co., Ltd.

Founded

January 27, 1929

Global Head Office

19-5 Nihonbashi Koami-cho, Chuo-ku, Tokyo 103-8534, Japan

Ai-City (Headquarters)

5-4-71 Higashi, Hanyu City, Saitama 348-8508, Japan

President and CEO

Hisataka Nobumoto

Capital

¥19.9 billion

Net Sales

¥264.9 billion (Fiscal 2017)

Number of Associates

9,240



Global Head Office:  
Akebono Nihonbashi Building (Chuo-ku, Tokyo)



Ai-City (Headquarters): Akebono Crystal Wing (ACW)  
(Hanyu City, Saitama Prefecture, Japan)



Ai-Museum (Brake museum)  
Opening hours: Every Wed. 14:00-16:00

Investor Information

Stock Listing

Tokyo Stock Exchange, First Section (Code: 7238)

Common Stock

Authorized: 440,000,000 Shares Issued: 135,992,343 Shares

Principal Shareholders

Shareholders	No. of shares held (1,000 shares)	% of issued common stock
Toyota Motor Corporation	15,495	11.4
Isuzu Motors Limited	12,111	8.9
Japan Trustee Services Bank, Ltd. (trust account)	3,815	2.8
Aisin Seiki Co., Ltd.	3,133	2.3
Akebono Brake SEIWAKON Employee's Shareholding Association	2,436	1.8
Marubeni-Itochu Steel Inc.	2,000	1.5
KYB Corporation	2,000	1.5
SECOM CO., LTD.	2,000	1.5
STATE STREET LONDON CARE OF STATE STREET BANK AND TRUST, BOSTON SSBTC A/C UK LONDON BRANCH CLIENTS- UNITED KINGDOM	1,805	1.3
Japan Trustee Services Bank, Ltd. (trust account 5)	1,774	1.3

Note: The Company's holding of treasury stock is not included in the above list of principal shareholders.

Transfer Agent & Registrar

Mitsubishi UFJ Trust and Banking Corporation, Corporate Agency Department  
Mail address: Shin-Tokyo Post Office post office box No.29 137-8081, JAPAN

Annual Shareholders' General Meeting

The annual shareholders' general meeting is normally held in June each year.

Independent Auditor

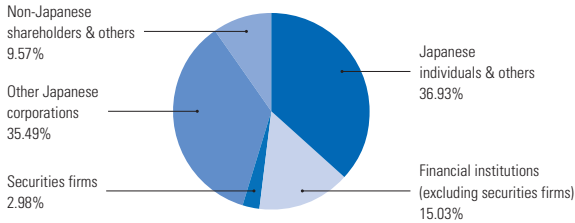
Deloitte Touche Tohmatsu LLC

Shareholders

Category	No. of shareholders	No. of shares held (100 shares)
Japanese Individuals & Others	19,171	501,918
Japanese Government & Municipal Corporations	0	0
Financial Institutions (Excluding Securities Firms)	32	204,202
Securities Firms	50	40,505
Other Japanese Corporations	161	482,240
Non-Japanese Shareholders & Others	155	130,037
TOTAL	19,569	1,358,902
No. of Shares in less than units of 100	—	102,143 shares

Note: The number of treasury shares as of March 31, 2018 was 2,752,644. Of these, 2,752.6 thousand shares are included under "Japanese individuals & others," and 44 shares are included under "No. of shares in less than units of 100."  
The number of shares in the name of the Japan Securities Depository Center as of March 31, 2018 is 3,500. Of these, 3.5 thousand shares are included under "Other Japanese corporations."  
The number of treasury shares indicated in the shareholders' list is 2,752,644, whereas the actual number as of March 31, 2018 was 2,751,644.

Percentage of Shares Held by Shareholder Category





Akebono Group (Japan) (As of June 2018)

Akebono Brake Industry Co., Ltd.

Global Head Office

19-5 Nihonbashi Koami-cho, Chuo-ku, Tokyo 103-8534, Japan

Ai-City (Headquarters)

5-4-71 Higashi, Hanyu City, Saitama 348-8508, Japan

Chubu Office

3-13 Obayashi-cho, Toyota City, Aichi 473-0902, Japan

Sapporo Sales Office

3-2-66 Kitaokadama Sanjo, Higashi-ku, Sapporo City, Hokkaido 007-0883, Japan

Sendai Sales Office

3-7-13 Hinode-machi, Miyagino-ku, Sendai City, Miyagi 983-0035, Japan

Kanto Sales Office

5-4-71 Higashi, Hanyu City, Saitama 348-8501, Japan

Tokyo Metropolitan Sales Office

19-5 Nihonbashi Koami-cho, Chuo-ku, Tokyo 103-8534, Japan

Osaka Sales Office

2-17 Enoki-cho, Suita City, Osaka 564-0053, Japan

Hiroshima Sales Office

4-1-13 Yanonishi, Aki-ku, Hiroshima City, Hiroshima 736-0085, Japan

Fukuoka Sales Office

6-12-41 Itazuke, Hakata-ku, Fukuoka City, Fukuoka 812-0888, Japan

Tatebayashi Foundry

(Casting of brake components)  
6012 Aza-Tobu Kogyo Danchi, Oshima-cho, Tatebayashi City, Gunma 374-0001, Japan

Ai-Ring

(Testing and evaluation)  
41-42 Aza-Osaruda, Uwadaira, Ogawa-machi, Iwaki City, Fukushima 979-3112, Japan

Ai-Museum (Brake museum)

5-4-71 Higashi, Hanyu City, Saitama 348-8508, Japan

Ai-Village (Global training center)

5-11-26 Higashi, Hanyu City, Saitama 348-0052, Japan

Akebono Affiliates

Akebono Advanced Engineering Co., Ltd.

(R&D of high performance brake systems)  
5-4-71 Higashi, Hanyu City, Saitama 348-8508, Japan

Akebono Brake Yamagata Manufacturing Co., Ltd.

(Manufacture of disc brake pads, clutch facings and other brake components)  
161-3 Chuo Kogyo Danchi, Sagae City, Yamagata 991-0061, Japan

Akebono Brake Fukushima Manufacturing Co., Ltd.

(Manufacture of drum brake linings, disc brake pads, clutch facings and other brake components)  
10 Aza-Shinjuku, Oaza-Narita, Koori-machi, Date-gun, Fukushima 969-1652, Japan

Akebono Brake Iwatsuki Manufacturing Co., Ltd.

(Manufacture of disc brakes, drum brakes, bullet train disc brakes and other brake components)  
1190 Oaza-Kanamuro, Iwatsuki-ku, Saitama City, Saitama 339-8601, Japan

Akebono Brake Sanyo Manufacturing Co., Ltd.

(Manufacture of drum brakes and wheel cylinders)  
1966-8 Kushiro, Soja City, Okayama 710-1201, Japan

Alocs Corporation

(Logistics and packing)  
255-1 Ainohara, Iwatsuki-ku, Saitama City, Saitama 339-0071, Japan

Akebono Research & Development Centre Ltd.

(R&D)  
5-4-71 Higashi, Hanyu City, Saitama 348-8511, Japan

Akebono 123 Co., Ltd. (Special subsidiary company)

(Cleaning-related services, packing, and printing of business cards)  
5-4-71 Higashi, Hanyu City, Saitama 348-8508, Japan

Akebono Kids Care Co., Ltd.

(Management of nursery school)  
5-8-4 Higahi, Hanyu City, Saitama 348-0052, Japan

NeoStreet Inc.

(Web shop)  
5-4-71 Higashi, Hanyu City, Saitama 348-8501, Japan

Akebono Group (Overseas) (As of June 2018)

North America

Akebono Brake Corporation [ABC]

(North American Head Office)  
34385 W. Twelve Mile Road, Farmington Hills, MI 48331, U.S.A.

Akebono Engineering Center [AEC]

(R&D)  
34385 W. Twelve Mile Road, Farmington Hills, MI 48331, U.S.A.

Akebono Brake Corporation (Elizabethtown) [ABC]

(North American Co-head Office, sales and marketing of brake components)  
310 Ring Road, Elizabethtown, KY 42701, U.S.A.

Akebono Brake, Elizabethtown Plant [ABE]

(Manufacture and sales of disc brakes, drum brakes and disc brake pads)  
300 Ring Road, Elizabethtown, KY 42701, U.S.A.

Akebono Brake, Glasgow Plant [ABG]

(Manufacture and sales of disc brakes and disc brake pads)  
1765 Cleveland Avenue, Glasgow, KY 42141, U.S.A.

Akebono Brake, Clarksville Plant [ABCT]

(Manufacture and sales of disc brakes, disc rotors, drum brakes, corner modules and other brake components)  
780 International Boulevard, Clarksville, TN 37040, U.S.A.

Akebono Brake, Columbia Plant [ABCS]

(Manufacture and sales of disc brakes, corner modules, castings and other brake components)  
201 Metropolitan Drive, West Columbia, SC 29170, U.S.A.

Akebono Brake Mexico S.A. de C.V. [ABM]

(Manufacture and sales of disc brakes, drum brakes and other brake components)  
Av. Mineral de Valenciana 186 Fracc, Industrial Santa Fe II, Guanajuato Puerto Interior, Silao, Guanajuato, C.P. 36275, Mexico

Europe

Akebono Europe S.A.S. [AESA (Gonesse)]

(Sales and R&D of brake components)  
6 Avenue Pierre Salvi BP 90111, 95505 Gonesse Cedex, France

Akebono Europe S.A.S. Arras Plant [AESA (Arras)]

(Manufacture and sales of disc brake pads)  
Site Artoipôle, 244 Allée d’Espagne, 62118 Monchy-le-Preux, France

Akebono Europe GmbH [AEG]

(Sales, marketing and R&D of brake components)  
Auf der Heide 11-13, 65553 Limburg-Dietkirchen, Germany

Asia

Akebono Brake (Thailand) Co., Ltd. [AKBT]

(Manufacture and sales of disc brakes and disc brake pads)  
700/880 Amata Nakorn Industrial Estate Moo.1, Tambol Panthong Amphur Panthong, Chonburi 20160, Thailand

A&M Casting (Thailand) Co., Ltd. [A&M]

(Manufacture and sales of cast-iron automotive components)  
Ratchaburi Industrial Estate 155/63 Moo.4, T.Chet Samian, A.Photharam, Ratchaburi 70120, Thailand

Akebono Corporation (Guangzhou)

(Manufacture and sales of disc brakes and drum brakes)  
No. 8 Hefeng 1st Street, Yonghe Economic Zone of Guangzhou Development District, Guangzhou, China 511356

Akebono Corporation (Suzhou)

(Manufacture and sales of disc brake pads)  
TingLan Road No. 168 ChangYang Street, Industrial Park, Suzhou, China 215021

PT. Akebono Brake Astra Indonesia [AAIJ]

(Manufacture and sales of disc brakes, drum brakes, pads, linings, master cylinders and other brake components)  
Jl. Pengasaan Dua Blok A1, Km. 1, 6 Kelapa Gading, Jakarta, 14250, Indonesia

Akebono Brake Astra Vietnam Co., Ltd. [AAVH]

(Manufacture and sales of disc brakes and master cylinders for motorcycles)  
Plot F-3, Thang Long Industrial Park II, Lieu Xa Commune, Yen My District, Hung Yen Province, Vietnam

Akebono Advanced Engineering (UK) Ltd. [AAE]

(R&D of high performance brake systems)  
415 Wharfedale Road, Winnersh Triangle, Wokingham, Berkshire RG41 5RA, United Kingdom

Akebono Brake Slovakia s.r.o. [ABSK]

(Manufacture and sales of high performance disc brakes)  
Bratislavska 581 911 05 Trenčin, Slovak Republic