

Ahresty Corporation

# Industry Environment Surrounding the Company and Plans for Future Development

January 16, 2017

Materials for the 2017 Small Meeting



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- Business Portfolio
- Industry Environment
- Medium-Term Management Strategy

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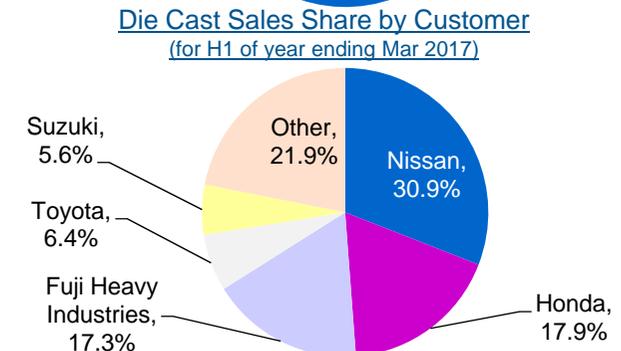
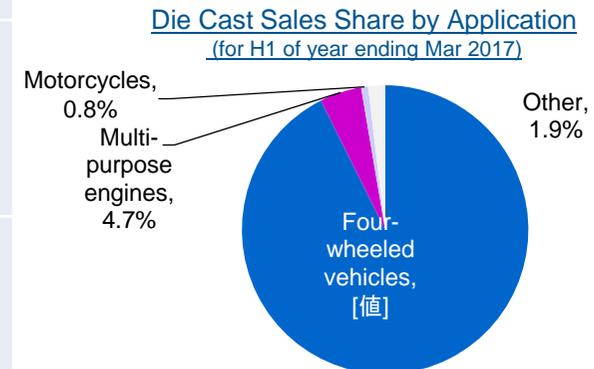
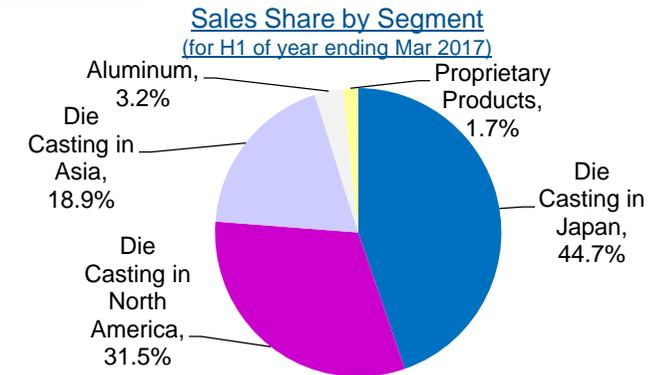
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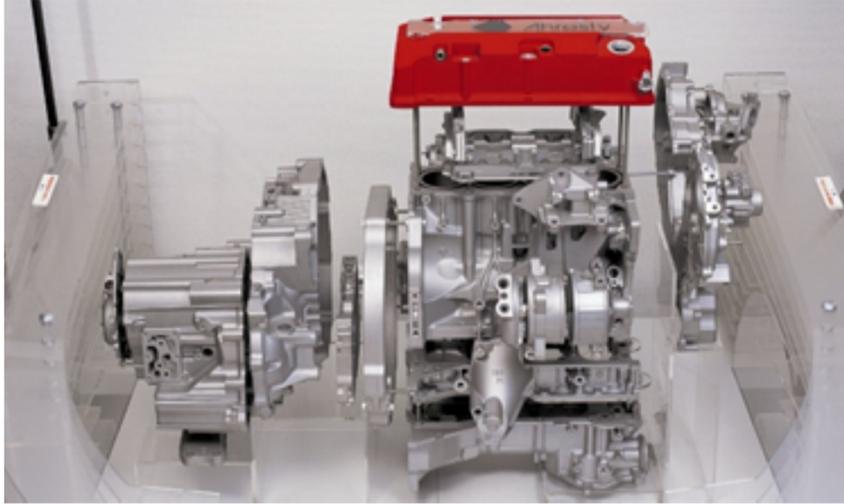
- Medium-Term Management Strategy

# Corporate Profile

Company Name	Ahresty Corporation
Established	November 2, 1943 (founded June 22, 1938)
Sales	144.4 bn yen (consolidated for the fiscal year ended March 2016)
No. of Employees	7,055 (consolidated as of the end of March 2016)
Products	Aluminum die cast products, magnesium die cast products, aluminum alloy ingots, raised flooring panels, die cast peripherals
Main Customers	Nissan Motor Co., Ltd., Honda Motor Co., Ltd., Fuji Heavy Industries Ltd., Suzuki Motor Corporation, Toyota Motor Corporation, Mitsubishi Motors Corporation, JATCO Ltd., Getrag Corporate Group, General Motors Company, Magna International Inc., etc.
Production Facilities	Die Casting: 5 in Japan, 2 in China and 1 in each of the USA, Mexico and India Aluminum: Japan Mold Manufacturing: 3 in Japan, 1 in each of China, Thailand and Mexico Other: Technical Center, etc.



# Die Casting



## Engine (The heart of an automobile)

In response to demand for engine parts with higher quality and reduced automobile weight, cylinder head covers, cam brackets, cylinder blocks, ladder frames, oil pans, chain cases and other parts of engines and other vehicle parts, such as a range of brackets, are made by die casting.

## Transmission (The key part of a power train)

Systems that convert the power generated by the engine to suitable revolutions are made in complex shapes, and they require great strength, high dimensional accuracy and high quality in their external appearance. As a result, transmission cases, clutch cases, housing converters, valve bodies and other components are made by die casting.

## Suspension (Significant for driving safety and comfort)

Reducing the weight of suspension-related parts is commonly undertaken, chiefly for high-end vehicle models. Because they require stiffness, strength, toughness, corrosion resistance and other features, they are manufactured using new die-casting methods, such as the NI process and the MFT process.

## Main die cast products

- ★ Aluminum die cast products: Components for four-wheeled vehicles and products for engines and transmissions comprise more than 90%.
- ★ Magnesium die cast products
- ★ Gravity die cast products
- ★ Others
- Die molds for die casting, peripheral equipment for die casting, used die cast machine sales

## Die cast product characteristics

- ★ A cast at high speed and high pressure using a die or its production method
- ★ High productivity, superior measurement precision and beautiful casting surface => used for a wide variety of items, including automobile parts, which need to be mass-produced under complex structures



# Vehicle Models Incorporating Our Products

## - [Nissan](#)

Altima  
Cima  
March  
Fuga  
Elgrand  
Murano  
Serena  
GT-R  
Skyline  
Teana  
Dayz  
Infiniti  
X-Trail  
... and more

## - [Subaru](#)

Legacy  
Legacy Outback  
Impreza  
Forester  
XV  
XV Hybrid  
WRX S4 / STI  
Levorg  
Exiga  
... and more

## - [Mitsubishi Motors](#)

Galant Fortis  
Delica D:5  
RVR  
Outlander  
Lancer  
Lancer Evolution X  
eK Wagon  
eK Space  
Triton  
... and more

## - [Honda](#)

Legend  
Fit  
Fit Hybrid  
Fit EV  
Freed  
CR-Z  
Step WGN  
Accord  
Accord Hybrid  
N-BOX  
N-ONE  
N-WGN  
Odyssey  
Vezel  
Grace  
Shuttle  
S660  
... and more

## - [Acura](#)

RDX  
MDX  
TLX  
... and more

## - [Suzuki](#)

MR wagon  
Palette  
Alto  
Kizashi  
Wagon R  
Swift  
SX4  
Spacia  
Hustler  
Celerio  
... and more

## - [Lexus](#)

HS250  
RX450h  
LS600h  
IS  
NX300h  
RC  
RCF  
... and more

## - [Toyota](#)

Mirai  
Etios  
Vitz  
Ractis  
Mark X  
Century  
Land Cruiser  
Tundra  
Estima Hybrid  
Vellfire  
RAV4  
Sai  
Harrier  
Crown  
Crown Hybrid  
Corolla US  
... and more

## - [Daihatsu](#)

Atrai  
Hijet  
... and more

## - [Hino](#)

Dutro  
Dutro Hybrid  
Ranger  
... and more

## - [Crysler](#)

Jeep Grand Cherokee  
Jeep Cherokee

## - [Ford](#)

Fiesta  
Focus

## - [GM](#)

Chevrolet Silverado  
GMC Sierra

## - [Mercedes Benz](#)

M-Class  
M-Class Hybrid  
GLA  
... and more

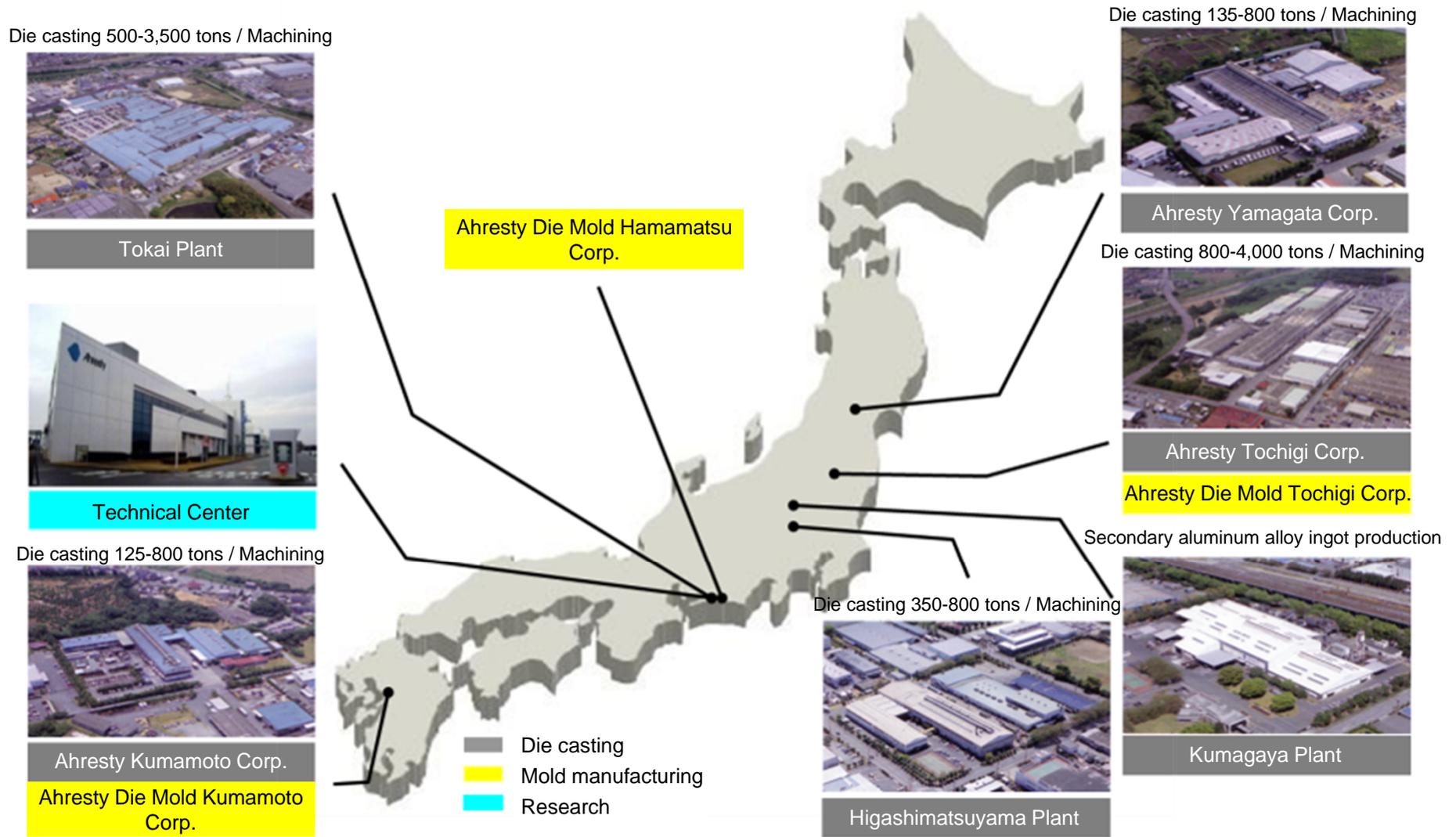
## - [Audi](#)

A4L  
Q5  
A3

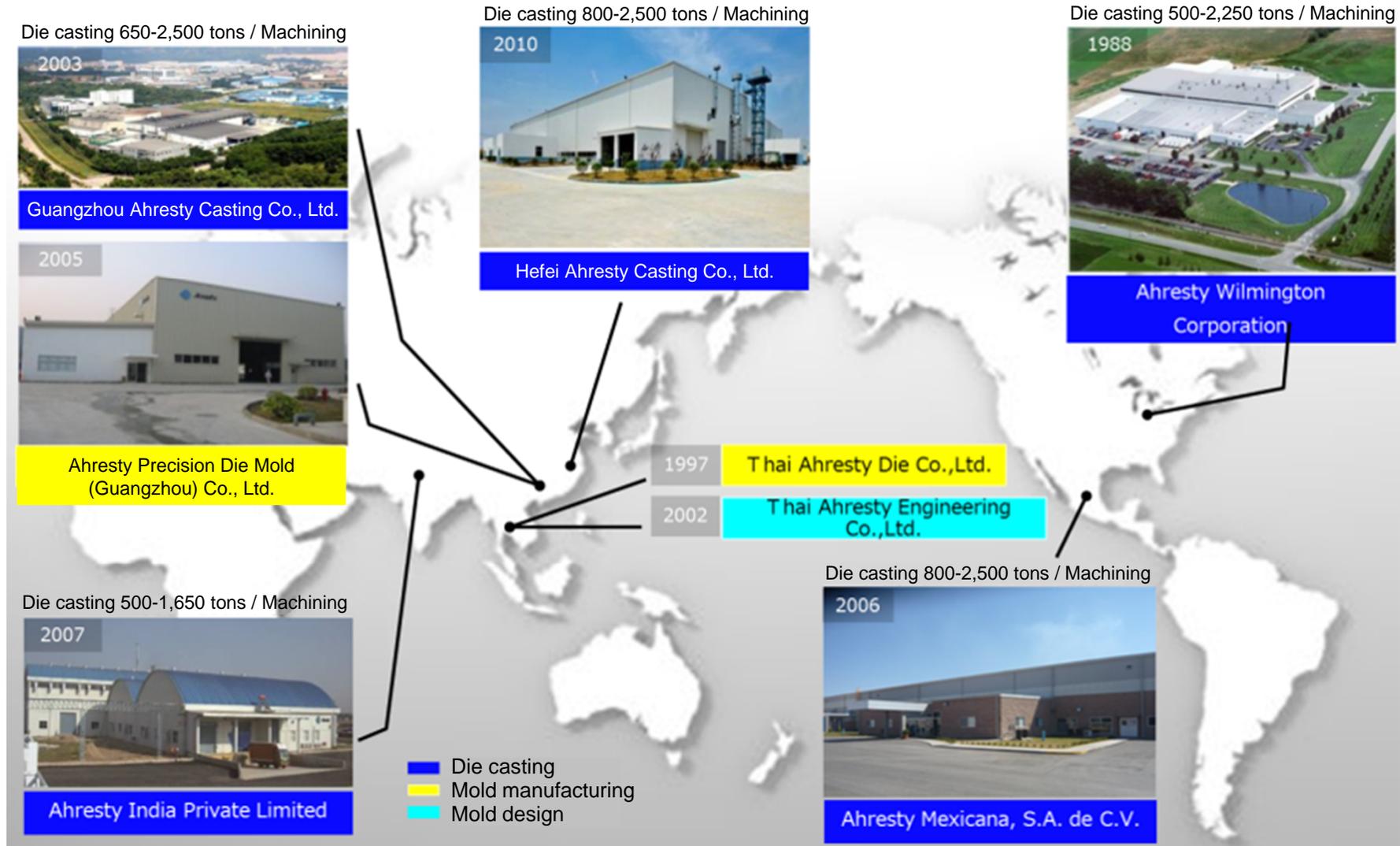
## - [VW](#)

Golf 7

# Die Casting Facilities In Japan



# Die Casting Facilities Outside Japan



# Aluminum Business & Proprietary Products Business

## Aluminum Alloy Ingots

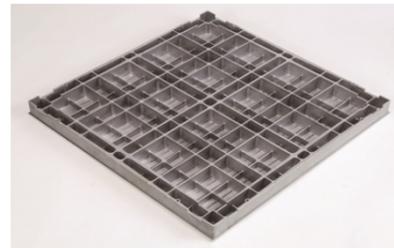


Ahresty produces approximately 40 types of aluminum alloy ingots, including those for die casting, those for casts, and those for special uses. Ahresty manufactures aluminum alloy ingots from aluminum cans, window sashes and automobile scraps, as well as from virgin aluminum ingots and add-in materials. Ahresty provides high-quality, industrial-purpose ingots under strict control, making the most of its analytical equipment and expertise.

## Free Access Floor



\* It was used on the set of a TV drama series produced by TBS entitled *Shitamachi Rocket*.



Raising flooring refers to a double-floor system that accommodates wiring and piping underneath. Ahresty focuses its sales efforts on clean rooms in semiconductor manufacturing plants and on data centers.

With its advanced technological capabilities as an aluminum die casting manufacturer, Ahresty has commercialized the lightest raised flooring panels. The product is made solely by aluminum die casting and is fully recyclable. It helps reduce CO<sub>2</sub> emissions in transportation with its lighter volume and contributes to the extension of the lifetimes of building structures with lighter weight.

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# Industry Environment Surrounding the Die Casting Business (1)

Expand the overseas business  
by capturing the trends of globalization and outsourcing

- Global automobile production is rising centered on China and other emerging countries

Production is expected to surpass 100 million units in 2020.

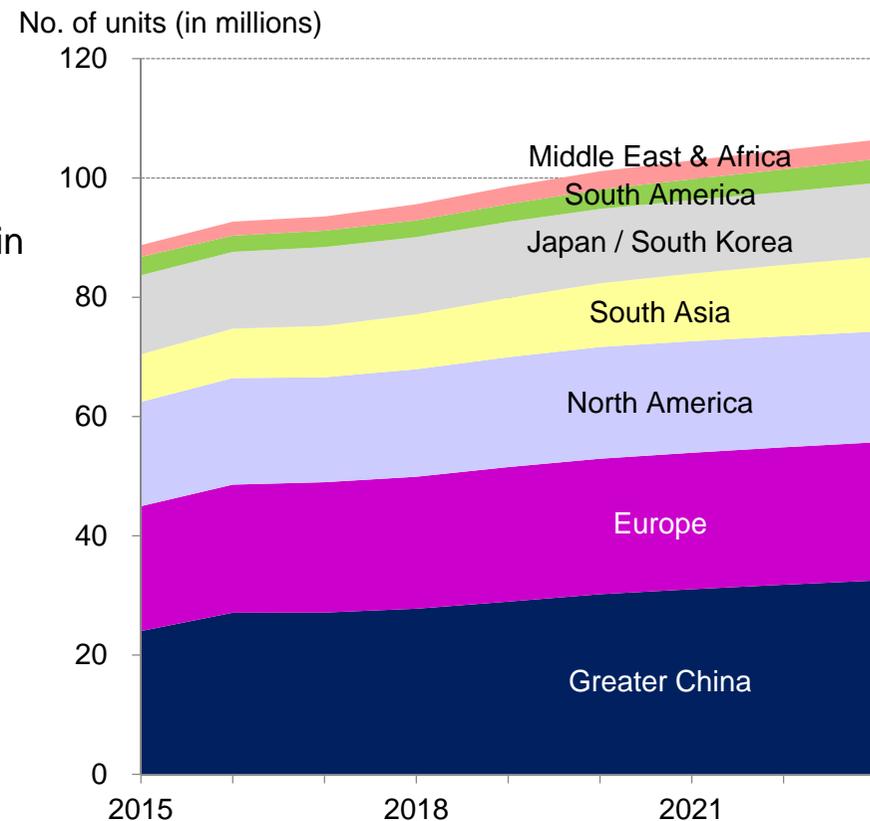
=> Global demand increased by around 1.2 million units from the 2015 level.

The increase is equivalent to the production volume in Japan.

- Trends towards outsourcing

=> While automobile production volumes are increasing, because of the priority orders of capital expenditures among automakers, die casting will be outsourced.

=> Outsourcing of the process until machining  
Orders for die casting *and machining* are on the rise. Outside Japan, at least 90% of orders are for processes including machining.

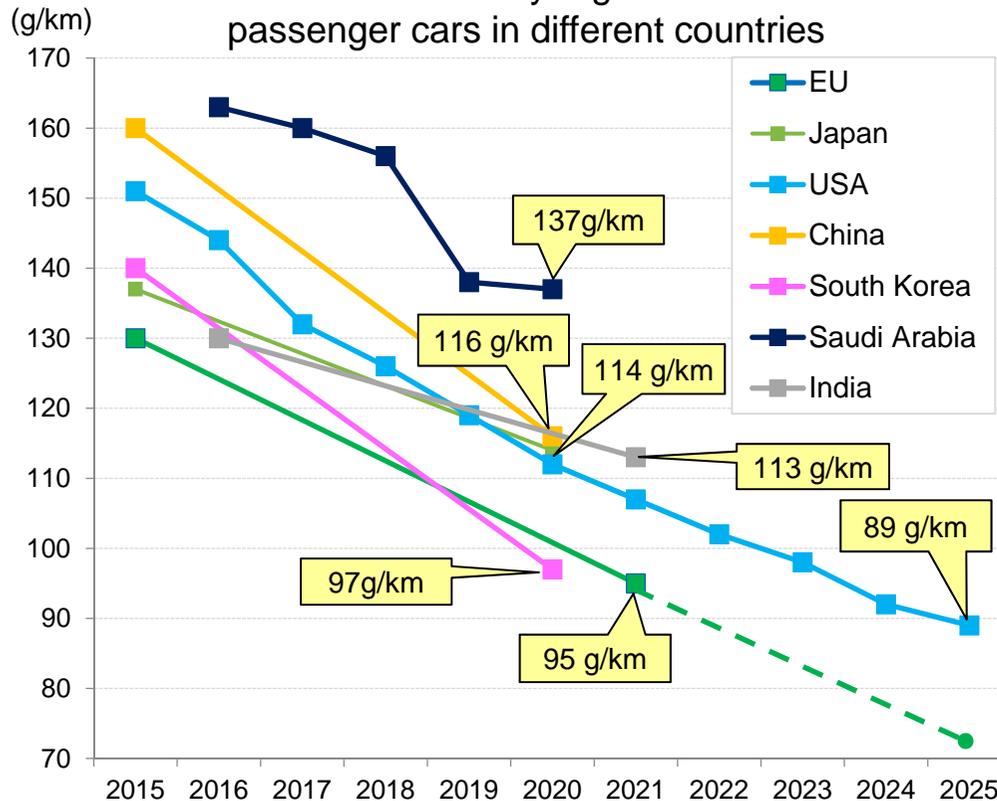


Forecast of global production volume of light vehicles  
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# Industry Environment Surrounding the Die Casting Business (2)

## Increased demand for weight reduction due to rules on fuel efficiency

Trends in fuel efficiency regulation values for passenger cars in different countries

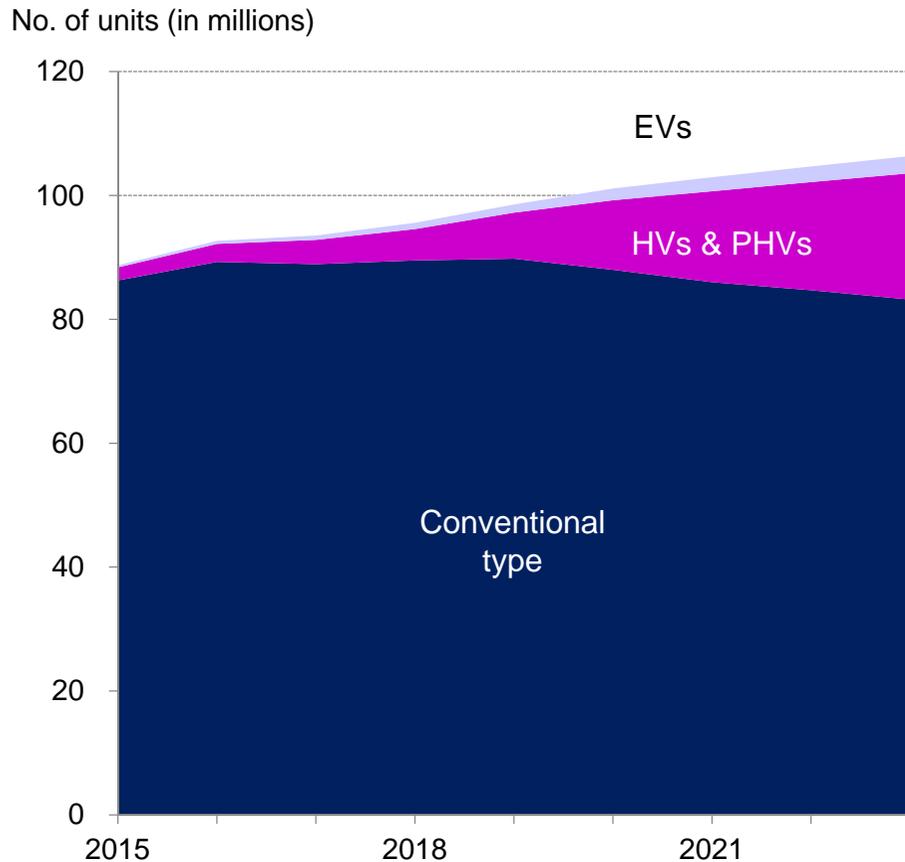


Note 1: All values apply to passenger cars.  
 Note 2: Each value represents the average of CO2 emissions per kilometer of driving in the whole of the relevant country or region simply converted from the fuel efficiency, the indication of which varies from country to country. The target value to be attained varies depending on the lineup of models of the car manufacturer. The EU's target for 2025 is yet to be determined, as it is still under consideration.  
 Sources: Created by Ahresty on the basis of data from regulation authorities of individual countries and regions, the International Council on Clean Transportation (ICCT) and MarkLines Co., Ltd.

- Increased demand for weight reduction
  - ✓ A trend among automobiles toward greater fuel efficiency from the perspective of environmental conservation. (Fuel efficiency standards are becoming tougher and tougher all over the world.)
  - ✓ Vehicle weights are surging year by year because of safety components and a wide variety of automotive parts introduced to increase safety and comfort.
  - ✓ To reduce the weight of a vehicle, replacement with more lightweight materials is effective, in addition to downsizing and revising the body structure.
    - Cast iron engines -> aluminum engines
    - Increase in number of components following transition to hybrid vehicles

# Industry Environment Surrounding the Die Casting Business (3)

Electric vehicles will gradually increase, but their impact is limited



Forecast on global production volume of light vehicles  
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➤ The shift to electric vehicles will have only a minor impact in the foreseeable future.

Forecast for 2023  
Conventional vehicles: 83 million units  
HV and PHVs: 20 million units  
EVs: 2.8 million units  
Total: 106 million units

✓ Electric vehicles will increase, but vehicles powered by internal combustion engines will remain the mainstream in the foreseeable future. Their growth has only a minor impact on engine and transmission components.

➤ It is necessary to make preparations for the future growth of the EV market.

✓ Ahresty will make preparations for the introduction of die casting to body parts and step up technological development and sales activities in a bid to better prepare itself to win orders.

# Industry Environment Surrounding the Die Casting Business (4)

There are not many die casting manufacturers that operate globally

Company	Home country	Japan	USA Canada	Mexico	South America	China	Thailand	Vietnam	India	Europe
<b>Ahresty Corporation</b>	Japan	○	○	○		○	○ (Mold)		○	
Ryobi Limited	Japan	○	○	○		○	○			○ UK
Hiroshima Aluminum Industry Co., Ltd.	Japan	○		○		○	○	○		
NEMAK, S.A B. de C.V.	Mexico		○	○	○	○			○	○ 8 countries throughout the region
Martinrea Honsel	Canada			○	○ Brazil	○				○ Germany Spain
Georg Fischer Co.	Switzerland		○ (LINAMAR)			○				○ Switzerland & 5 others
Group Bocar	Mexico			○						
Magna International Inc (COSMA)	Canada		○			○				○ Hungary & 2 others

# Ahresty's Strengths

➤ Technological capabilities and global production base network

Ahresty is capable of supplying complex large-scale products (for example, engine blocks and mission cases) both in Japan and overseas.

➤ Comprehensive technological development capabilities from die casting design to die casting production

Ahresty is capable of creating quality, productivity, etc. for customers from the development stage.

➤ Comprehensive one-stop production structure

Ahresty is capable of responding to all requirements, including raw material production, die casting die production, casting and machine processing.

➤ An independent manufacturer

Ahresty is capable of taking action for winning orders without constraints from specific customers.

## Ahresty's Position

**One of the industry's leading companies in terms of business scale, technological capabilities and development capabilities**

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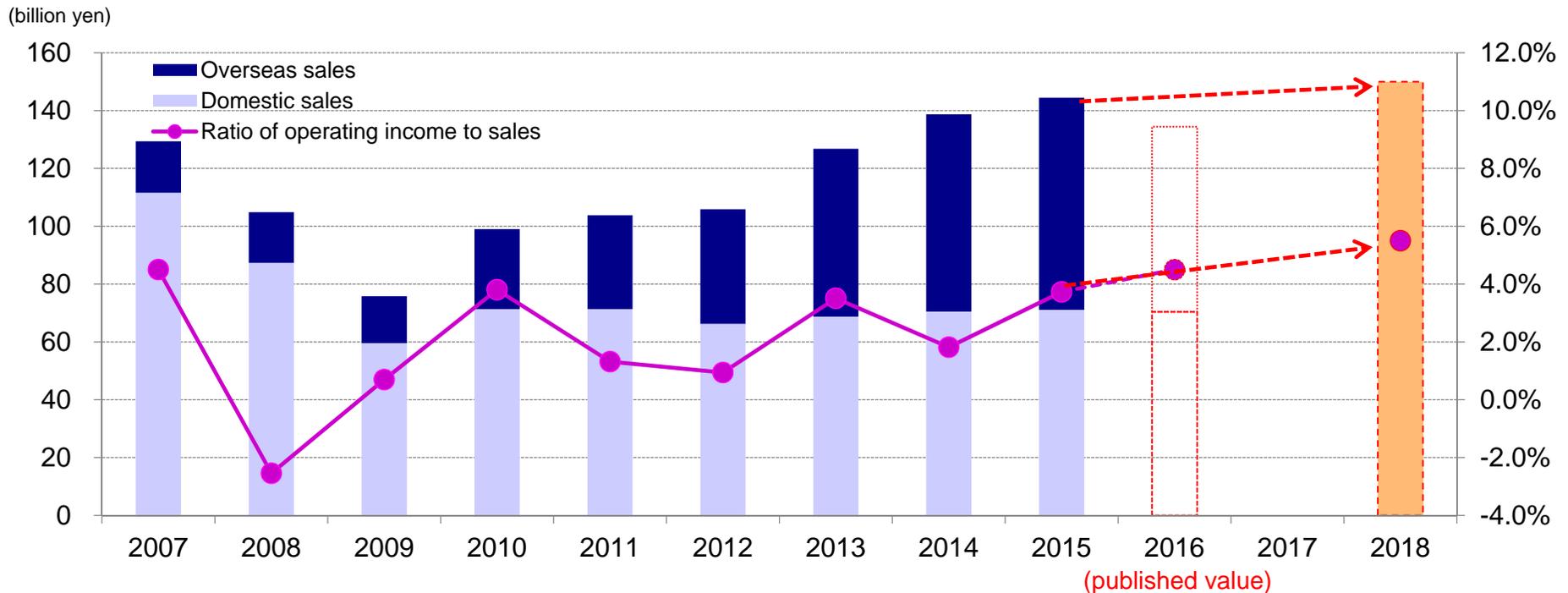
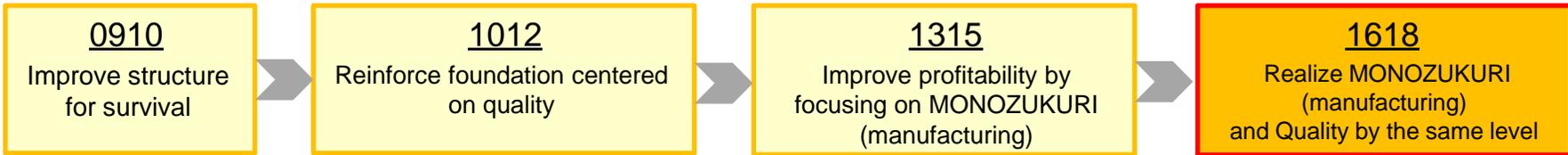
- Business Portfolio
- Industry Environment
- **Medium-Term Management Strategy**

# 10-Year Vision and Changes in Medium-Term Management Strategy

Aim to become a global leader that is trusted by all our stakeholders

Pursue and Advance MONOZUKURI (manufacturing)

Winning absolute customers' trust 2025



The 1618 Medium-Term Management Strategy will implement the measures included in its predecessor (1315) at a global level, aiming to improve MONOZUKURI (manufacturing), HITOZUKURI (development of human resources), and profitability.

# Basic Policy of the 1618 3-Year Ahresty Plan

Ahresty 10-Year Vision

Winning absolute customers' trust 2025

Our aspirations

- Become the most reliable supplier in the eyes of our Customers
- Contribute to the weight reduction of automobiles globally
- Achieve sales target over 200 billion yen

## 1618 3-Year Ahresty Plan

Become the most reliable supplier of large products requiring high precision, in the eyes of our customers

Pursue MONOZUKURI (manufacturing)

Build up a Corporation taking pride in our work

Enhance profitability

Pursue comprehensive risk management

### Business environment

- Increased demand for automobiles, mainly in emerging countries
- Demand recovering in developed countries
- Increased adoption of aluminum die casting products for weight reduction
- Decrease in domestic automobile sales due to the declining birthrate and aging population

# Become the most reliable supplier of large products requiring high precision in the eyes of our customers

Aim to attain first place in customer ratings  
by improving QCD for large products requiring high precision



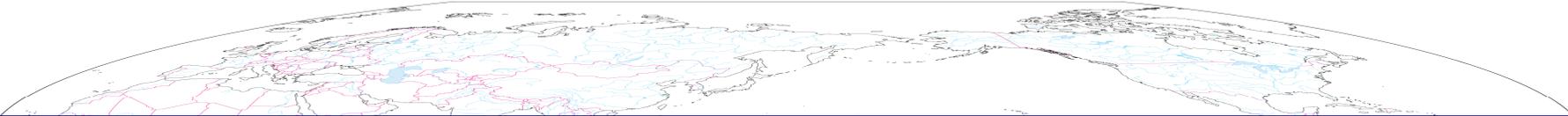
(1618 Medium-Term Management Strategy)

- Promote global sales activity for large-scale technically challenging products
- Actively reach out to new European and U.S. customers in addition to existing Japanese manufacturers
- Build a global production line with advanced investment and production efficiency and apply it to all locations. Contribute to our customers globally.

(Progress and Achievements)

- ◆ Strengthening of sales activities in North America and China: Launch of a North America office, increase in sales staff in China and in North America, start of efforts to approach European manufacturers
- ◆ Ongoing construction of a line exclusively for blocks for Fuji Heavy Industries at the Tochigi Plant
- ◆ Establishment of a development team for winning orders for body parts
- ◆ Excellent supply award won by Hefei Ahresty from Shenyang Aerospace Mitsubishi Motors Engine Manufacturing, contribution awards won by Ahresty Kumamoto and Hefei Ahresty from Daihatsu Motor, letter of appreciation for VA activities from Toyota Motor, and Manufacturing Excellence Award won in India from Maruti Suzuki India

# Pursue MONOZUKURI



## Reform and standardization of global operations

Build a globally unified process and a system for increasing added value based on the objectives/goals of the business (products, services) or functions (Q, C, D, etc.)

### (1) Establishing a process for MONOZUKURI (manufacturing) based on global standards

Create a globally unified system through constant actions for improving productivity based on an analysis of manufacturing conditions, and apply the results to other locations.

### (2) Providing a quality guarantee to gain ultimate trust from customers

Build a system to enable each division and production process to ensure high quality. Constantly carry out actions to improve quality.

### (3) Realizing the technological roadmap

Resolve technological issues based on the technological roadmap, and apply the results to other products and locations.

### (4) Thorough implementation of production cost reduction activities

Reduce production costs by further improving productivity and reducing the basic manufacturing unit through increased efficiency and streamlining.

#### (Progress and Achievements)

- ◆ (1) Monitoring and management of optimal manufacturing conditions for casting and processing, (2) Development of a quality assurance system through rank promotion activities
- ◆ (3) Continued efforts to resolve issues and accumulate technologies on the basis of the technological roadmap, (4) Cost reduction by cutting losses and management of unit cost
- ◆ Holding of policy review meetings (once every three months in Japan and once every four months overseas) and a Global Kaizen Meeting

# Become a corporation that takes pride in its work

**Cultivating a corporate culture that practices the RST Way**

**Developing staff that excel in pursuing MONOZUKURI**

**RST Way  
Conscientious, Proactive, Speedy,  
Learning, Challenge**

Cultivating an open corporate culture in which people can practice the RST Way

- ✓ Improve employee motivation
- ✓ Develop good relationships between employees
- ✓ Fast and accurate information sharing

(Progress and Achievements)

- ◆ RST WAY awards and launch and presentation of Ahresty Awards
- ◆ Establishment of a communication activation committee and its activities
- ◆ Publication of internal wall newspapers, company newsletters and global newsletters

**Ahresty Production Way**

Develop and implement the education system to step up staff development  
(Enhancing the Global RST Academy)  
Improve employee motivation  
Employees with increased knowledge and skills

(Progress and Achievements)

- ◆ Development of an education system, curricula and textbooks
- ◆ Organization of trainer education
- ◆ Mexico: First prize won in the quality control meeting held by Nissan Mexico
- ◆ India: Gold award won from the Quality Control Forum of India
- ◆ The Quality Assurance Command, Ahresty Pretech and Ahresty Yamagata delivered a presentation at the Quality Forum organized by the Union of Japanese Scientists and Engineers and on other occasions

# Enhance profitability

## Management goals for the 1618 3-Year Ahresty Plan

Sales 150.0 billion yen	Ratio of operating income to sales 5.5%
ROA 3.0%	ROE 7.0%

Enhance our financial footing and management foundation  
for medium- to long-term development and growth

**Fair return of profit**

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Aiming to become a leader in research and  
development, service, and technology



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