



# **ABOUT THK**

THK CO., LTD., manufactures and supplies vital machine components around the world. THK products help to convert slippage into controlled rotary motion, enabling parts of machinery to move smoothly, easily, and precisely with linear motion. As a company focused on creation and development driven by its corporate philosophy of providing innovative products to the world and generating new trends to contribute to the creation of an affluent society, THK has continued to focus on the development of a variety of products, including Linear Motion (LM) Guides, since its establishment in 1971.

# **Linear Motion**

#### Creating an affluent society and achieving long-term growth

# **Capital Goods** Ample Expertise **Original Core** Technology Wide-Reaching **Proposals**

# **Key Characteristics**

# The Key Characteristics of THK, the Pioneer and Top Manufacturer of the LM Guide

As the world's leading manufacturer in its field with a proven track record of long-standing success, THK has fostered three key characteristics over many years. Drawing on the strengths of its corporate culture, the Company is further honing these key characteristics in an effort to secure long-term growth and generate corporate value.

### **Original Core Technology**

THK pioneered the development of the world's first

LM Guide based on an original concept and innova-

tive technology. By providing components essential

to increased precision, rigidity, speed, and energy

efficiency in such wide-ranging fields as machine

tools and semiconductor manufacturing equipment,

the Company has consistently played a major role in

the ongoing development of industry.

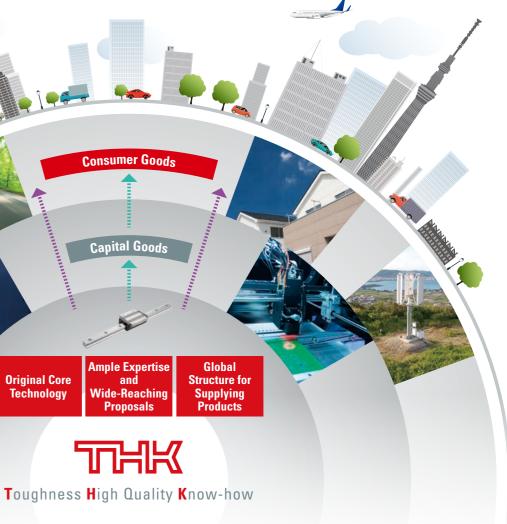
#### **Ample Expertise and** Wide-Reaching Proposals

Since it successfully developed the world's first LM Guide, THK has commanded a leading share of the global market. As it has worked to answer the diverse needs of its customers as a world-class manufacturer, THK has amassed an abundance of knowledge and the ability to propose a wide range of solutions in the field of industrial machinery. In addition to refining these key characteristics, THK has actively expanded its reach beyond the field of industrial machinery to also encompass consumer goods-related fields.

#### Contents

- About THK
- 02 Growth Strategies
- 04 Taking on Social Challenges
- 06 Consolidated Performance Overview
- 08 To Our Stakeholders
- 13 Business Review:
- 13 Review by Geographic Region 18 Review by Business Segment
- 21 THK's Products
- **24** Research and Development
- 26 FSG
  - 26 Environment and Society 28 Corporate Governance
- **30** Board of Directors

- 32 Financial Section
- 62 Corporate History
- 64 Subsidiaries & Affiliate
- 65 Corporate Data



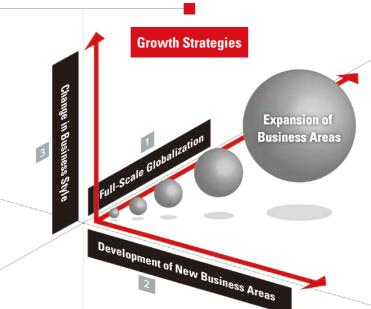
#### **Global Structure for Supplying Products**

THK has actively promoted the development of an integrated production and sales structure with facilities and operations close to centers of demand. The Company currently maintains local production and sales networks that cover its four principal markets: Japan, the Americas, Europe, and Asia. As a result of its activities, THK has steadily built a global business platform, with branches currently established in 25 countries around the world, and continues to cultivate new markets

# ABOUT THK GROWTH STRATEGIES

# Strategies

THK is committed to developing its business through three growth strategies: expanding its geographical range through *full-scale globalization*; purposefully expanding its domains through the *development of new business areas*; and fully utilizing AI, robots, and other technologies in a variety of ways through a *change in business style*.



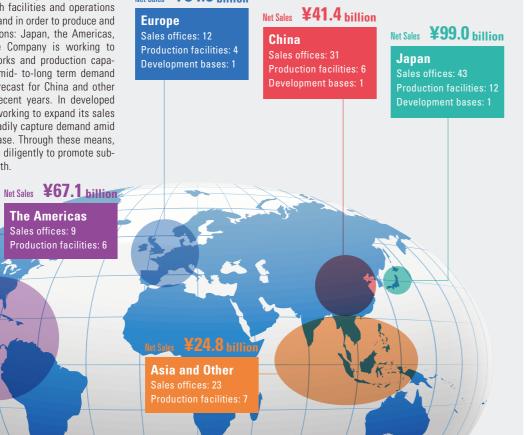
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# GLOBALIZATION

#### **Full-Scale Globalization**

THK has established an integrated production and sales structure with facilities and operations close to centers of demand in order to produce and sell locally in four regions: Japan, the Americas, Europe, and Asia. The Company is working to expand its sales networks and production capabilities in light of the mid- to-long term demand increases that were forecast for China and other emerging markets in recent years. In developed countries, THK is also working to expand its sales network in a bid to steadily capture demand amid expansion in its user base. Through these means, the Company is working diligently to promote substantial additional growth.

#### Net Sales ¥54.0 billion

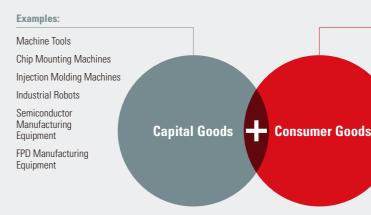


\*This data reflects a modified reporting period that includes 9 months from consolidated companies whose fiscal years ended in March and 12 months from consolidated companies whose fiscal years ended in December.

# NEW BUSINESS

#### **Development of New Business Areas**

THK is accelerating its expansion into consumer goods-related fields such as automotive parts, seismic isolation and damping systems, medical equipment, aircraft, robotics, and renewable energy. In addition, THK has recognized the vast potential in other consumer goods-related fields, and it is honing its abundant expertise and the core linear motion system technology it has cultivated over time to accelerate the pace at which it develops new business areas.



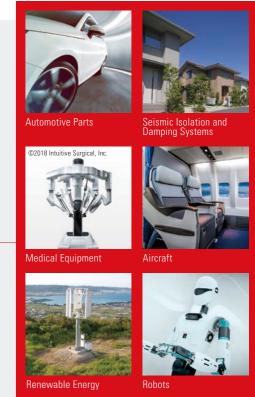
# CHANGE

#### **Change in Business Style**

As it makes strides in the areas of full-scale globalization and the development of new business areas, the Company is also making efforts to further expand its business domains by ensuring the thorough use of new technologies such as Al and robotics in sales, production, and development. In this way, THK is working to transform the frameworks and methods by which it does business.



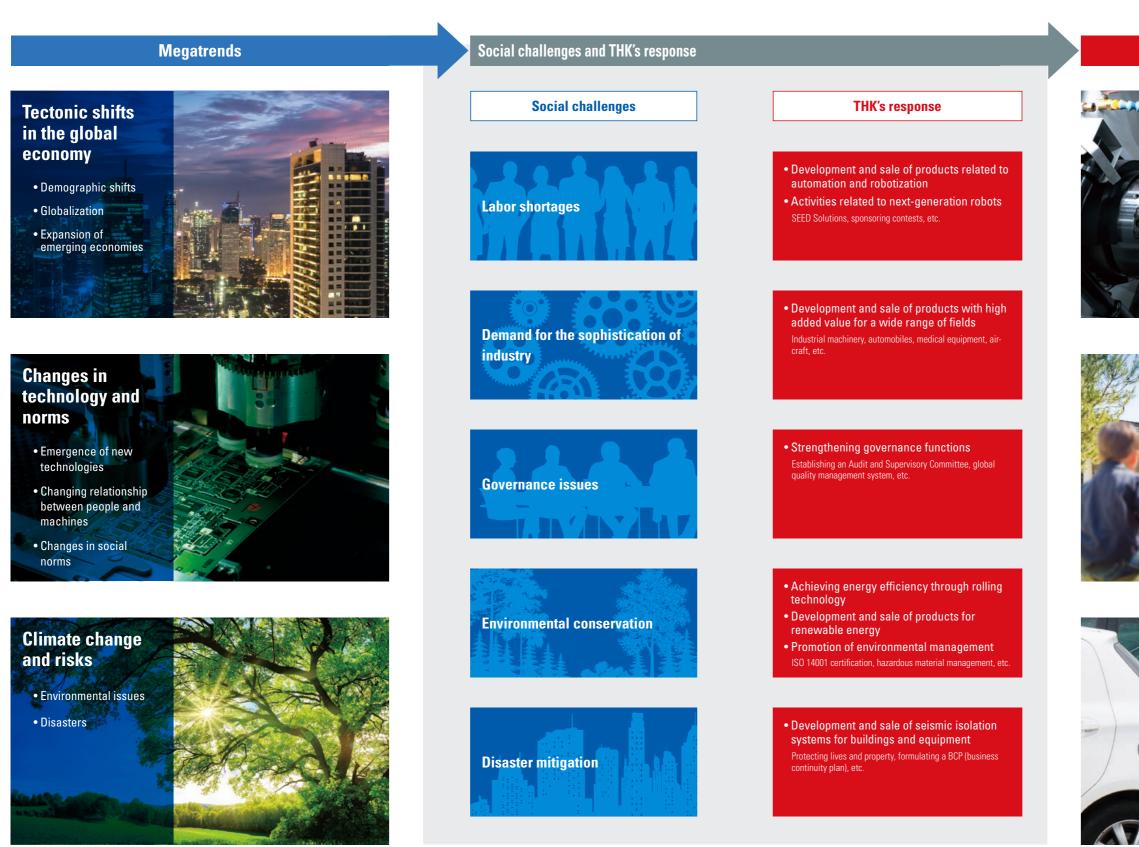
#### Examples:



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# ABOUT THK **TAKING ON SOCIAL CHALLENGES**

# **Social Challenges**



# **Business Expansion**

#### **Expansion of THK's business**



#### **Industrial Machinery** Business

THK is contributing to the higher precision, rigidity, and speed of machinery by providing prod-ucts, like the LM Guide, which are essential components in such wide-ranging industrial equipment as machine tools and semiconduc tor manufacturing equipment.

p18



#### **Industrial Machinery Business (Other)**

THK is adapting its core linear motion system technology to support the automation of the service industry and to cultivate new fields such as seismic isolation and damping systems, medica nent, aircraft, robotics, and

p18

#### **Automotive & Transportation** Business

THK is working to expand its bus ness primarily through underca riage L&S (Linkage and Suspensio components.

p20

# **CONSOLIDATED PERFORMANCE OVERVIEW**

The THK Group changed from a fiscal year end of March 31 to December 31, beginning with the 2017 fiscal year. As the transition takes place during this fiscal year, the scope of consolidation for this modified reporting period includes 9 months for consolidated companies whose fiscal years ended in March (April 1, 2017, to December 31, 2017) and 12 months for consolidated companies whose fiscal years ended in December (January 1, 2017, to December 31, 2017).

	Mar. 2009	Mar. 2010	Mar. 2011	Mar. 2012	Mar. 2013	Mar. 2014	Mar. 2015	Mar. 2016	Mar. 2017	D
Net Sales*1	¥ 179,269	¥ 115,330	¥ 190,661	¥ 196,866	¥168,366	¥ 185,466	¥217,678	¥240,478	¥ 273,577	
Japan	109,566	70,295	117,304	117,900	101,443	101,052	113,361	110,498	112,061	
The Americas	23,266	14,552	20,812	22,279	22,527	28,900	34,856	50,343	63,025	
Europe	24,915	12,635	16,106	19,979	15,194	18,427	20,456	30,424	46,004	
China			13,219	17,087	13,203	19,351	28,302	27,967	29,513	
Asia and Other*2	21,520	17,846	23,218	19,620	15,996	17,734	20,700	21,243	22,971	
Gross Profit	48,340	23,189	54,442	53,975	44,298	52,903	67,024	67,766	70,464	
Operating Income (Loss)	8,523	(9,508)	21,844	19,745	11,692	17,370	28,388	23,169	24,653	
Income (Loss) before Income Taxes and Minority Interests	6,284	(14,510)	21,612	18,520	14,737	24,004	33,501	19,612	23,057	
Net Income (Loss) Attributable to Shareholders of THK CO., LTD.*3	1,204	(14,300)	13,959	12,641	9,808	15,590	22,705	13,575	16,731	
Total Assets	240,350	236,374	279,768	288,333	293,145	336,416	373,610	407,808	414,931	
Net Assets	177,712	162,258	167,937	175,516	189,058	222,148	250,498	250,540	251,540	

\*1 Segments are based on where THK's customers are located.

Por Sharo

\*2 China is included in and prior to the 2009 fiscal year, which ended March 31, 2010.

rei Sildie									
Net Income (Loss)—Basic	¥ 9.36	¥ (111.20)	¥ 108.55	¥ 98.31	¥ 76.96	¥ 123.16	¥ 179.36	¥ 107.24	¥ 132.18
Net Income (Loss)—Diluted		_	_	_	_	—	_	_	_
Book Value	1,372.69	1,252.71	1,296.52	1,352.00	1,479.41	1,736.51	1,957.48	1,953.97	1,966.80
Cash Dividend	20	15	16	20	18	26	50	50	41
Number of Employees	7,266	7,559	8,025	8,628	8,958	9,177	9,494	11,754	11,738
Overseas Sales Ratio (%)	38.9	39.0	38.5	40.1	39.7	45.5	47.9	54.1	59.0
Operating Margin (%)	4.8	(8.2)	11.5	10.0	6.9	9.4	13.0	9.6	9.0
Return on Equity (ROE) (%)	0.7	(8.5)	8.5	7.4	5.4	7.7	9.7	5.5	6.7
Return on Assets (ROA) (%)*4	3.6	(3.9)	8.6	7.1	4.2	5.7	8.2	6.1	6.1
Net Worth Ratio (%)	73.4	68.2	59.6	60.3	63.9	65.3	66.3	60.7	60.0
Asset Turnover Ratio (Times)	0.71	0.48	0.74	0.69	0.58	0.59	0.61	0.62	0.67

\*3 The Accounting Standards for Business Combinations (ASBJ Statement No. 21, published on September 13, 2013) and other standards have been applied, and from the first-quarter consolidated cumulative accounting period, "Net income" is stated as "Net income (loss) attributable to shareholders of THK CO., LTD."

\*4 Return on assets (ROA) represents operating income (loss) plus interest and dividend income as a percentage of average total assets. \*5 U.S. dollar amounts are provided for reference only, converted from Japanese yen at the rate of ¥113.05 = U.S. \$1, the approximate rate of

exchange prevailing in Tokyo on December 31, 2017.

\*6 This data reflects a modified reporting period that includes 9 months from consolidated companies whose fiscal years ended in March and 12 months from consolidated companies whose fiscal years ended in December.

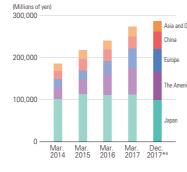
# In the 2017 fiscal year, which ended December 31, 2017, consolidated net sales increased 18.7%\*7 year-on-year, to ¥286.6 billion.

In Japan, the acceleration of automation and robotization has led to a favorable shift in overall demand for THK products for general machinery and machine tools, particularly in the electronics field, which has been driven by semiconductor-related investment. Demand also increased in China and all other regions outside of Japan. THK captured that demand and converted it into sales, leading to an increase in revenue.

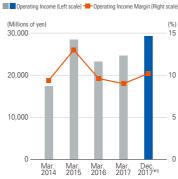
#### Consolidated operating income increased 64.1%\*7 year-on-year, to ¥29.2 billion.

Although fixed costs rose with the increase in sales, profit increased year-on-year because of various factors such as the volume effect of the increase in sales being greater than the increase in cost.



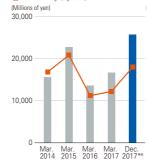


#### Operating Income/Operating Income Margin

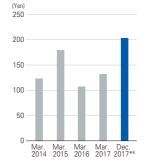


#### Net Income Attributable to Shareholders of THK CO., LTD./Net Income Margin

Net Income Attributable to Shareholders of THK CO., LTD. (Left scale



-ROA -- ROE

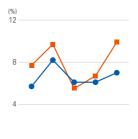


Net Income per Share

Return on Assets (ROA)/Return on Equity (ROE) Number of Employees

(Persons) 15,000

10,000



Mar. Mar. Mar. Mar. Dec. 2014 2015 2016 2017 2017\*6



06 THK ANNUAL REPORT DECEMBER 2017

Millions of yen	Thousands of U.S. dollars $^{\ast 5}$
Dec. 2017*6	Dec. 2017*6
¥ 286,603	\$ 2,535,187
99,099	876,594
67,194	594,374
54,001	477,673
41,410	366,298
24,896	220,221
72,112	637,877
29,279	258,991
31,034	274,515
25,729	227,589
436,664	3,862,574
281,754	2,492,295

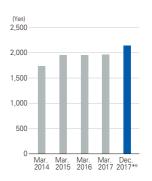






\*7 In the same manner as the 2017 fiscal year, the reference data for the 2016 fiscal year reflects a modified reporting period that includes 9 months from consolidated companies whose fiscal years ended in March (April 1, 2016, to December 31, 2016) and 12 months from consolidated companies whose fiscal years ended in December (January 1, 2016, to December 31, 2016) in the scope of consolidation.

#### Net Assets per Share

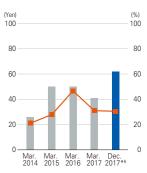


#### **Total Assets/Turnover Ratio**

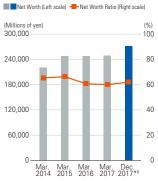


Cash Dividends per Share/Payout Ratio

Cash Dividends per Share (Left scale) - Payout Ratio (Right scale)



#### Net Worth/Net Worth Ratio



# **Achieving New** Management **Targets**

THK CO., LTD. President and CEO **Akihiro Teramachi** 

# A Reflection on the 2017 Fiscal Year and the Outlook for 2018

The 2017 fiscal year, which ended December 31, 2017, marked our transition from having our fiscal year end in March to having it end in December. Accordingly, we had a modified reporting period that includes 9 months from consolidated companies whose fiscal years ended in March and 12 months from consolidated companies whose fiscal years ended in December. In terms of our external environment, a moderate recovery continued in the global economy, led by a continuing trend of recovery in Europe and the United States and other developed countries, as well as signs of economic revival in China and other emerging countries. For the THK Group, the acceleration of automation and robotization has led to a favorable shift in overall demand for our products for general machinery and machine tools, particularly in the electronics field, which has been driven by vigorous semiconductor-related investment. By converting that demand into sales, our consolidated net sales reached ¥286.6 billion, an increase of 18.7% from the previous fiscal year.

Although our workforce and equipment increased as we bolstered our production, leading to higher fixed costs,

the volume effect of our increased sales was greater than the increase in cost. As a result, our operating income was ¥29.2 billion, an increase of 64.1% compared to the previous fiscal year. Furthermore, due to the transfer of all THK RHYTHM CO., LTD., shares to our consolidated subsidiary TRA Holdings CO., LTD., the net income attributable to shareholders of THK CO., LTD., was ¥25.7 billion, a 120.4% increase from the previous fiscal year.

With a continuing favorable trend in the level of orders, an environment of vigorous demand is expected again in 2018, especially for our industrial machinery business. Under these circumstances, we are anticipating a record high year in terms of sales and profits in the 2018 fiscal year, which ends December 31, 2018. We are planning for our consolidated net sales to reach ¥350 billion, an increase of 9.8%, and for our operating income to reach ¥45 billion, an increase of 23.6% compared to the previous fiscal year. In order to respond to increasing demand on top of achieving this plan, we will carry out our responsibility to supply products to our customers by doing everything we can to strengthen our production capability.

# Formulating Management Targets

Operating Income - Operating Income Margin

**Financial Condition** 

9.4%

185.4

19.3

18.4

28.9

101.0

17.3

consolidated companies whose fiscal years ended in December

Mar. 2014

13.0%

217.6

28.3

20.4

34.8

113.3

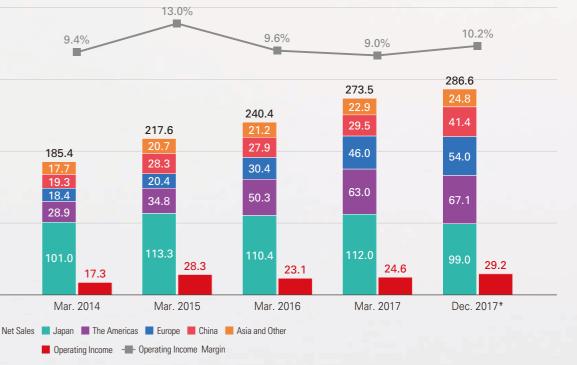
28.3

Mar. 2015

(Billions of yen)

Previously, the THK Group's long-term management sales. However, if the fiscal year ending December 31, target was to achieve ¥300 billion in consolidated net 2017, were adjusted to reflect 12 months, our net sales

			N	lanageme	ent Targets				
				FY2	022				
Con	isolidate	d Net Sa	les				¥500	billion	
Ope	erating In	icome					¥100	billion	
RO	E							17%	
EPS	5							¥560	
Base dustrial Mac	IMF	5	onomic		of 3.8% on avera Automotive & 1	5	ation Bus	iness*	(Billions of yen)
			_						
	FY17	FY18		FY22		FY17	FY18		FY22
let Sales	FY17 202.2	FY18 235.0		FY22 350.0	Net Sales	FY17 116.6	FY18 115.0	····	FY22 150.0
let Sales perating Income	202.2				Net Sales Operating Income				



\*This data reflects a modified reporting period that includes 9 months from consolidated companies whose fiscal years ended in March and 12 months from



# TO OUR STAKEHOLDERS

would exceed that goal at ¥318.8 billion. Accordingly, we have formulated new 5-year management targets to be achieved by the end of the 2022 fiscal year. These targets are: consolidated net sales of ¥500 billion, an operating income of ¥100 billion, an ROE of 17%, and an EPS (earnings per share) of ¥560.

As we strive to achieve these targets, our fundamental

strategies of full-scale globalization, the development of new business areas, and a change in business style remain unchanged. We will continue to vigorously promote these strategies and accelerate activities for each in order to expand our top line and strengthen our bottom line in our industrial machinery business and automotive and transportation business.

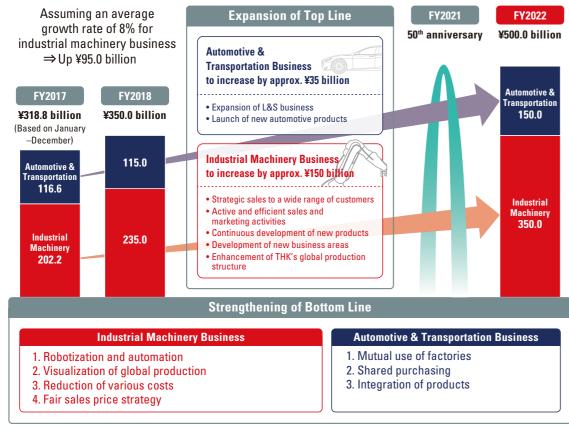
### Industrial Machinery Business Activities

In our industrial machinery business, we are aiming to achieve ¥350 billion in net sales, an increase of ¥150 billion in comparison to the ¥202.2 billion we achieved based on an adjusted, 12-month calculation ending December 31, 2017. The average annual market growth rate is estimated to be 8%, so we will continue to steadily engage with the expected increase in demand in our current market. In addition, we will further expand our top line through activities such as our sales to a wide

range of customers and the development of new business areas.

To expand our sales to a wide range of customers, we have been promoting efficient sales activities targeting a multitude of customers. As a result of our efforts, we were able to strengthen global recognition of THK. The number of visitors to our booths at international exhibitions was 2.5 times higher in the 2017 fiscal year than in the previous fiscal year. As of December 31, 2017,





registration on Omni THK, the e-commerce website we have been expanding primarily in the ASEAN region, has reached 7,700 users. In 2018, we are expanding the regions the website serves to include China and Brazil as we continue to construct a framework that allows customers around the world to easily purchase our products anywhere and anytime, even if they are in a region where we do not have any sales offices. In addition, we have been planning products based on the accumulated market needs of a wide range of customers. We have also expanded the variety of actuators and other products available as semi-custom orders, which we began selling in 2017, and we have been developing new mechatronic products that contribute to automation. In this way, we have steadily promoted various activities aimed at expanding sales to a wide range of customers while also meeting the vigorous demand in our current market. We will continue to strengthen those activities.

At the same time, we are actively making investments in each region to increase production, thereby supporting top line expansion in our industrial machinery business. In January 2018, we began operating equipment to increase production at THK MANUFACTURING OF CHINA (CHANGZHOU) CO., LTD. We are also scheduled to begin production in the additional factory spaces being built on the grounds of THK MANUFACTURING OF VIETNAM CO., LTD., in October 2018 and the Yamagata plant (Japan) in November. In August 2018, we will begin constructing a new plant in India, which is scheduled to open for business in January 2020. In addition to responding to current demand, which is expanding in every region, we will continue to strengthen our production structure in order to steadily engage with the anticipated mid- to long-term growth of demand spurred by the advancement of automation and robotization.

With our development of new business areas, we are expanding into various fields such as medical equipment, seismic isolation and damping systems, aircraft, robotics, and renewable energy. We have launched into the robotics field with SEED Platform Robots, which enable the easy and cost-effective construction of mobile manipulators. We are not just active in new product development, however. We are also actively engaging in activities such



as sponsoring robotics competitions in order to contribute to the advancement of the robotics industry. In the field of renewable energy, we are expanding the use of THK products as components by capitalizing on our products' ability to support large loads and move lightly and smoothly with little force required. In 2017, we began supplying shaft units for wind turbines produced by Challenergy Inc., which developed the world's first wind turbine capable of generating energy even during typhoons. We will continue developing the market for our products by expanding their applications through these kinds of activities in new fields.

In addition to these efforts aimed at expanding our top line, we are continuing to strengthen our bottom line. One initiative has been the visualization of global production, which involves developing policies based on our Eagle System that was introduced in 2017. Specifically, the ability to use terminals to communicate the status of machines in real-time to employees and managers has allowed us to optimize our decision-making regarding our production activities and to increase our overall machine utilization. Furthermore, by accumulating and analyzing machine utilization data, we have achieved greater visibility of the overall distribution of work among our processes and have been using that to increase our production output. We will continue to promote various measures such as these to aim at a dramatic increase in our productivity.

# Automotive and Transportation Business Activities

In our automotive and transportation business, we are actively working on various initiatives to achieve ¥150 billion in net sales and ¥10 billion in operating income. For our undercarriage L&S (Linkage and Suspension) products, we have developed activities that make use of both THK RHYTHM's and TRA's sales and production structures to obtain orders. In terms of new automotive products, we began shipping new linear motion products in February 2018. We will continue to accelerate the development of these kinds of new products that take

Striving for Long-Term Growth

As technology develops and industry becomes even more sophisticated, we anticipate that the demand for THK products will continue to expand over the medium to long term. In order to meet that demand and fulfill our responsibility as a manufacturer to supply parts, we will actively work to bolster our production capability. At the same time, we will strive to improve our profitability by reducing costs. We also believe that expanding the market for our products, which have contributed to the realization of high-performance and energy-saving industrial equipment, will both

advantage of the momentum provided by the increased use of electronics and automation in automobiles. We are also steadily progressing with the construction of frameworks that will enable us to strengthen our top line by bolstering investments that will increase production in every region. Through vigorously promoting such activities, we aim to achieve our management targets and to increase the long-term corporate value of our automotive and transportation business.

contribute to industry and help solve social challenges such as labor shortages and environmental issues.

By striving to make contributions as a corporation indispensable to society, we will realize continuous longterm growth, increase our corporate value, and meet the expectations of our shareholders and other stakeholders. As we work toward achieving our established goals, we kindly request the continued support and understanding of all our stakeholders.

April 2018

Akihino Termachi THK CO., LTD. President and CEO Akihiro Teramachi

# Japan

#### **Operating Conditions and Performance Review**

As a result of the recovery in the global economy, the Japanese economy moderately recovered, with a favorable trend in exports and capital investment. The acceleration of automation and robotization has led to a favorable shift in overall demand for THK products for general machinery and machine tools, in addition to mainly semiconductor manufacturing equipment in the electronics field, which led to net sales of ¥99 billion.

#### Year Ended December 2017 (Results)

#### Sales

- To expand sales to a wide range of customers, THK has developed efficient sales activities that utilize various IT tools and semi-custom order products.
- THK accelerated the pace of efforts to develop new business areas, including seismic isolation, medical equipment, renewable energy, and robotics. The Company also ramped up efforts to cultivate new markets such as the IoT and self-driving car fields.

#### Production

• The Company improved its productivity through the automation and robotization of its production processes, as well as through various means that utilize the IoT, such as the Eagle System.

#### Other

• THK steadily improved profit margins by continuing to adopt a proactive stance toward various improvement activities and further strengthening its business base.

#### Year Ending December 2018 (Plan)

#### Sales

- To continue expanding sales to a wide range of customers, THK will promote efficient sales activities that utilize various IT tools and semi-custom order products
- THK will accelerate the pace of efforts to develop new business areas, including seismic isolation, medical equipment, renewable energy, and robotics.

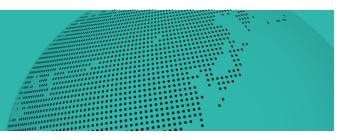
#### **Production**

- The Yamagata plant is undergoing an expansion, with new facilities being built in order to increase LM Guide, ball screw, and actuator production.
- THK will further improve its productivity through the automation and robotization of its production processes, as well as through the visualization of the distribution of work among its production processes via data analysis and a new system derived from the Eagle System.

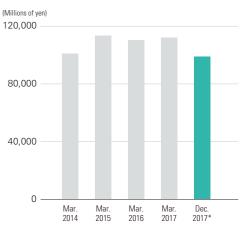
#### Other

• Looking ahead, THK will increase sales and steadily improve profit margins by continuing to adopt a proactive stance toward various improvement activities and further strengthening its business base.





#### **Net Sales**



\*This data reflects a modified reporting period that includes 9 months from consolidated companies whose fiscal years ended in March and 12 months from consolidated companies whose fiscal years ended in December

mber 31, 2017)	
Sales offices	43
Production facilities	12
Development bases	1
Distribution centers	3
	Sales offices Production facilities Development bases

#### Group Companies (As of December 31, 2017)

• THK CO., LTD.	
• THK INTECHS CO., LTD.	
• TALK SYSTEM CO., LTD.	
• THK NIIGATA CO., LTD.	
• THK RHYTHM CO., LTD.	
• NIPPON SLIDE CO., LTD.	
• TRA Holdings, CO., LTD.	

# **BUSINESS REVIEW REVIEW BY GEOGRAPHIC REGION**

# **The Americas**

#### **Operating Conditions and Performance Review**

Year Ended December 2017 (Results)

Year Ending December 2018 (Plan)

its product lineup to match market needs.

efficient sales activities targeting a wide range of customers.

Sales

**Production** 

Sales

**Production** 

14

Eagle System.



(Millions of ven

In the Americas, economic recovery continued with steady consumer spending and capital investments. The Company worked diligently to generate new demand from existing customers by unifying production and sales while developing new business areas, including the medical equipment and aircraft fields as well as energy-related fields. Under those circumstances, the Group saw a steady trend in demand for products related to electronics and machine tools, which led to net sales of ¥67.1 billion.

• The THK Group expanded its market share by generating new demand from existing

customers and taking business from competitors. In addition, the Group strengthened its

• THK ramped up its sales activities in new business areas in order to generate new demand.

• The Company improved its productivity through the automation and robotization of its production processes, as well as through various means that utilize the IoT, such as the

• THK will actively develop various initiatives aimed at expanding sales to a wide range of

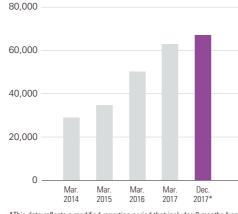
• THK will take full advantage of its position as the only company in its industry to main-

• The Company will accelerate various initiatives, including the automation and robotiza-

tion of its production processes, in order to further improve its productivity.

tain a production platform in North America. At the same time, the Company will expand

customers, including holding exhibitions that utilize its mobile showroom.



#### Bases (As of December 31, 2017)

United States	Sales offices	7		
	Production facilities	3		
Canada	Sales offices	1		
	Production facilities	2		
Mexico	Production facilities	1		
Brazil	Sales offices	1		

#### Group Companies (As of December 31, 2017)

• THK Holdings of America, L.L.C.

• THK America, Inc.

• THK Manufacturing of America, Inc.

# **Europe**

#### **Operating Conditions and Performance Review**

In Europe, the economy continued to show a steady trend. In the fiscal year under review, THK strove to generate new demand from existing customers by unifying production and sales while developing aggressive sales activities to explore new business areas, including the fields of medical equipment, aircraft, and robotics. As a result, net sales stood at ¥54 billion.

#### Year Ended December 2017 (Results)

#### Sales

- THK worked to generate new demand from existing customers and to improve customer satisfaction.
- The Company actively pursued efficient sales activities aimed at a wide range of customers by developing various IT tools.

#### Production

• The Company improved its productivity through the automation and robotization of its production processes, as well as through various means that utilize the IoT, such as the Eagle System.

#### Development

• The THK Group pursued R&D activities with a unified effort that included the linear motion-related R&D activities of THK and the automobile-related activities of THK RHYTHM and the German R&D division of TRA.

#### Year Ending December 2018 (Plan)

#### Sales

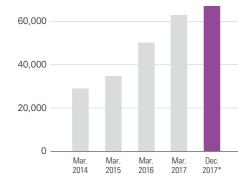
- THK will continue to generate new demand from existing customers and work to further improve customer satisfaction by enhancing aspects of customer service such as on-time delivery and technical support.
- THK will actively develop various initiatives aimed at expanding sales to a wide range of customers, such as acquiring prospective customers at exhibitions.

#### Production

• The Company will actively promote the automation and robotization of its production processes and develop various means that utilize the IoT, such as the Eagle System, in order to further improve its productivity.

#### Development

• THK will continue to coordinate with THK RHYTHM's and TRA's automotive R&D divisions to further its R&D efforts.



\*This data reflects a modified reporting period that includes 9 months from consolidated companies whose fiscal years ended in March and 12 months from consolidated companies whose fiscal years ended in December

#### • The Company will continue to actively drive sales activities in new business areas such as medical equipment, aircraft, and robotics to generate new demand.

THK ANNUAL REPORT DECEMBER 2017

• THK RHYTHM NORTH AMERICA CO., LTD.

• THK RHYTHM MEXICANA, S.A. DE C.V.

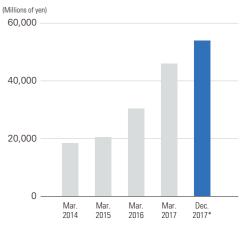
• THK RHYTHM AUTOMOTIVE MICHIGAN CORPORATION

• THK RHYTHM AUTOMOTIVE CANADA LIMITED

• THK BRAZIL INDUSTRIA E COMERCIO LTDA.



#### **Net Sales**



\*This data reflects a modified reporting period that includes 9 months from consolidated companies whose fiscal years ended in March and 12 months from consolidated companies whose fiscal years ended in December

#### Bases (As of December 31, 2017)

24000 (/ 10 01 2000)		
Germany	Sales offices	2
	Production facilities	1
	Development bases	1
United Kingdom	Sales offices	1
reland	Production facilities	1
taly	Sales offices	1
Sweden	Sales offices	1
Austria	Sales offices	1
Spain	Sales offices	1
France	Sales offices	1
	Production facilities	1
Turkey	Sales offices	1
Czech Republic	Sales offices	1
	Production facilities	1
Netherlands	Sales offices	1
Russia	Sales offices	1

#### **Group Companies** (As of December 31, 2017)

- THK Europe B.V. • THK GmbH • THK France S.A.S.
- THK Manufacturing of Europe S.A.S. • THK Manufacturing of Ireland Ltd.
- THK RHYTHM AUTOMOTIVE GmbH
- THK RHYTHM AUTOMOTIVE CZECH a.s.
- THK CAPITAL UNLIMITED COMPANY
- THK FINANCE UNLIMITED COMPANY

# **BUSINESS REVIEW REVIEW BY GEOGRAPHIC REGION**

# China

#### **Operating Conditions and Performance Review**

Year Ended December 2017 (Results)

screws and its mainstay LM Guides.

needs of emerging markets.

Year Ending December 2018 (Plan)

business areas and new customers.

range of customers.

expanding its equipment.

**Production** 

Sales

Production

Eagle System.

Development

Sales



(Millions of ven)

60.000

In conjunction with an expansion in demand that has accompanied investment in smartphones and automobiles in China, FA has progressed against the backdrop of rising wages and a shortage of labor, which in turn has broadened demand for the Company's products. Capitalizing on the sales and production structures it has strengthened over time, THK captured that demand and converted it into sales, resulting in ¥41.4 billion in net sales.

• In China, the THK Group has expanded its sales network while cultivating new business

areas and new customers. The Group has also worked to expand its market share in ball

• The Company improved its productivity through the automation and robotization of its

production processes, as well as through various means that utilize the IoT, such as the

• In collaboration with the Group's R&D operations in Japan, the engineering division of THK (CHINA) CO., LTD., continued to make efforts to develop products that reflect the

• In China, the THK Group will continue to expand its sales network while cultivating new

• By launching Omni THK, a website that allows customers to do everything from selecting

products to placing orders with ease, the THK Group will strengthen its sales to a wide

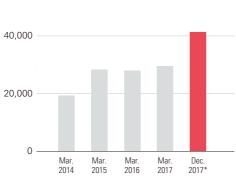
• THK MANUFACTURING OF CHINA (CHANGZHOU) CO., LTD., will increase its production

of LM Guides, and each production facility is working to strengthen its production by

• The Company will strive to further improve its productivity through the automation and

robotization of its production processes, as well as through the acceleration of activities

that utilize the IoT, such as transmitting machine utilization status to employees in real



consolidated companies whose fiscal years ended in March and 12 months from consolidated companies whose fiscal years ended in December

China	Sales offices	31
	Production facilities	6
	Development bases	1

#### Group Companies (As of December 31, 2017)

- THK (SHANGHAI) CO., LTD.
- DALIAN THK CO., LTD.
- THK MANUFACTURING OF CHINA (WUXI) CO., LTD.
- THK RHYTHM CHANGZHOU CO., LTD.

# **Asia and Other**

#### **Operating Conditions and Performance Review**

As the THK Group expands its sales network in the ASEAN region and other parts of the world, the Group undertook aggressive sales activities to generate new demand from existing customers and acquire new customers. Those activities, and the effect of the expanded demand in China that was felt in certain regions, resulted in net sales of ¥24.8 billion.

#### Year Ended December 2017 (Results)

#### Sales

- In Taiwan, the Company expanded sales to its current customers and a wide range of customers by enhancing its sales and distribution network and strengthening its customer service
- In the ASEAN region, the THK Group utilized Omni THK to further expand sales to a wide range of customers, even in regions where there are no THK sales offices.

#### Production

• In addition to undertaking a variety of improvement activities across its production processes, the THK Group promoted automation and robotization. Through these means, the Group expanded production output and lowered manufacturing costs.

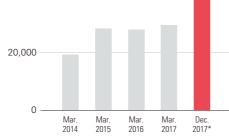
#### Year Ending December 2018 (Plan)

#### Sales

- In Taiwan, THK will bolster sales by generating new demand from existing customers and taking business from competitors. In addition, the Company will increase sales to a wide range of customers by expanding its sales and distribution network and strengthening its customer service.
- In the ASEAN region, the THK Group will utilize Omni THK and other means to further expand sales to a wide range of customers.

#### Production

- At THK MANUFACTURING OF VIETNAM CO., LTD., an additional factory will be constructed in order to increase Miniature LM Guide production
- THK India Private Limited will construct a new plant to produce LM Guides.
- . In addition to undertaking a variety of improvement activities across its production processes, the THK Group will promote automation and robotization. Through these means, the Group will expand production output and lower manufacturing costs.



\*This data reflects a modified reporting period that includes 9 months from

#### Bases (As of December 31, 2017)

- THK (CHINA) CO ITD

- THK MANUFACTURING OF CHINA (LIAONING) CO., LTD.
- THK RHYTHM GUANGZHOU CO., LTD.

#### • THK MANUFACTURING OF CHINA (CHANGZHOU) CO., LTD.

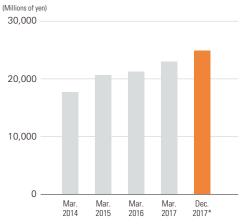
#### Development

• In collaboration with the Group's R&D operations in Japan, the engineering division of THK (CHINA) CO., LTD., will continue to make efforts to develop products that reflect the needs of emerging markets.

time via a system derived from the Eagle System.



#### **Net Sales**



\*This data reflects a modified reporting period that includes 9 months from consolidated companies whose fiscal years ended in March and 12 months from consolidated companies whose fiscal years ended in December

Bases (As of December 31, 2017)				
Taiwan	Sales offices	3		
Singapore	Sales offices	1		
India	Sales offices	5		
Thailand	Sales offices	1		
	Production facilities	1		
South Korea	Sales offices	13		
	Production facilities	4		
Vietnam	Production facilities	1		
Malaysia	Production facilities	1		

#### **Group Companies** (As of December 31, 2017)

- THK TAIWAN CO., LTD.
- THK LM SYSTEM Pte. Ltd.
- THK RHYTHM (THAILAND) CO., LTD.
- THK MANUFACTURING OF VIETNAM CO., LTD.
- THK RHYTHM MALAYSIA Sdn. Bhd.
- THK India Private Limited
- SAMICK THK CO., LTD.

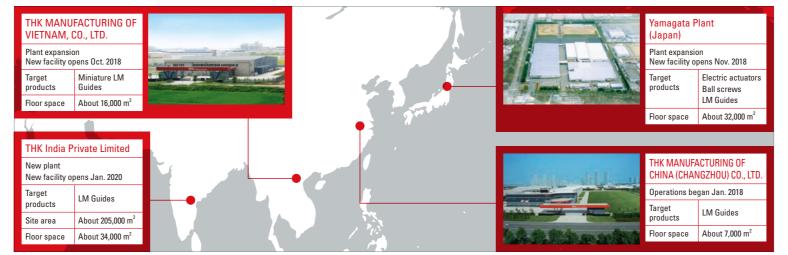
# **Industrial Machinery Business**

#### **Overview**

THK has contributed to the higher precision, rigidity, speed, and energy efficiency of equipment in the industrial machinery field by providing LM Guides and other products for such wide-ranging industrial equipment as machine tools and semiconductor manufacturing equipment. The THK Group also satisfies the automation needs of production lines by offering electric actuators and unit products, which combine such machine components.

#### **Business Environment and Activities**

In an effort to expand its top line, THK is strengthening its global sales structure and constructing a global production structure. On the sales side, the Group is pursuing initiatives to expand sales not to machine manufacturers, but to a wide range of customers: the end users of equipment who will use THK parts in their equipment made in-house and equipment related to automation. In an effort to reach every one of those customers, THK is employing new strategies to attract and interact with more customers at exhibitions. The Company is also pursuing highly efficient sales activities, such as making use of various IT tools to provide the optimal service and information to customers at each step of the purchasing process. With these ongoing efforts, the number of visitors to THK booths at international exhibitions was 2.5 times higher in the 2017 fiscal year than in the previous fiscal year. Omni THK, an e-commerce website where users can easily purchase



#### **Enhancement of the Global Manufacturing Structure**

THK products at any time, has launched in Indonesia and Vietnam in addition to Singapore, Malaysia, and Thailand. At the end of 2017, about 7,700 users were registered on the website. In 2018, Omni THK will be expanded to cover China and Brazil. The Group has continued to increase the products it offers through semi-custom orders, which were introduced for use by a wide range of customers. In this way, THK has steadily promoted various activities aimed at expanding sales to a wide range of customers while also meeting the vigorous demand in its current market. On the production side, THK began operating equipment to increase production at THK MANUFACTURING OF CHINA (CHANGZHOU) CO., LTD., in January 2018. The Company is scheduled to begin production in the additional factories being built on the grounds of THK MANUFACTURING OF VIETNAM, CO., LTD., in October 2018 and the Yamagata plant (Japan) in November. In August 2018, THK will begin constructing a new plant in India, which is scheduled to open for business in January 2020. THK will continue

to strengthen its production structure in order to steadily engage with the anticipated mid- to long-term growth of demand spurred by the advancement of automation and robotization.

In order to strengthen its bottom line, the THK Group is steadily promoting initiatives for the robotization and automation of its production processes as well as utilizing the IoT. THK is improving the efficiency of its production through the introduction of a system that transmits information from the Eagle System to terminals that enable employees and managers to see the real-time operation status of production equipment at a glance. Furthermore, by accumulating and analyzing machine utilization data, the Company has achieved greater visibility of the distribution of work among its processes and has been using that to increase its production output. THK will continue accelerating these kinds of initiatives to strive for a dramatic increase in production.

#### **Medical Equipment**

Aircraft

LM Guides, electric actuators, and related products are increasingly being used in the medical equipment field, mainly in analysis and measuring equipment that require a high level of reliability and quality. The Group's products are also expanding into next-generation medical equipment, including robotic surgical systems and walking assist devices.

In the aircraft field, the THK Group is witnessing an upswing in the use of its compact and highly rigid products that is spurred by a demand for mechanical parts that are safe and lightweight. Centered mainly on aircraft interiors, this expansion in THK product use includes products that are suited for control sticks, reclining seats, and the sliding parts of folding tables and cocknit doors.

# **Industrial Machinery Business** (Other)

#### **Activities in New Areas of Business**

THK is committed to cultivating opportunities in consumer goods-related fields as part of its efforts to promote the development of new business areas. To this end, the Company will draw on the underlying strengths of its accumulated core linear motion system technology and ample expertise in other areas of the industrial equipment field. The applications of THK's compact and highly rigid products have expanded into many fields where they help people live safe and comfortable lives.

#### **Seismic Isolation and Damping Systems**

In the seismic isolation and damping systems field, the THK Group is employing its core linear motion system technology to supply a broad range of products from seismic isolation and damping systems for high-rise buildings, low-rise residences, and other structures such as temples and shrines, to seismic isolation systems for servers and a variety of manufacturing equipment. In this manner, the Group is helping to minimize the damage caused by earthquakes.







Seismic Isolation Modul

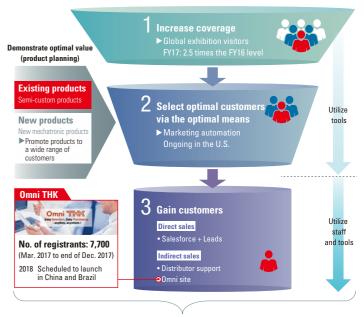
Model TSD







Contact optimal customers at the optimal timing to correctly communicate THK's strengths to them and ascertain their needs



#### Analyze data and perform PDCA through a web-SFA/CRM-ERP collaboration

Develop new business areas further and enhance profitability

#### Robotics

In the robotics field, the THK Group is developing and marketing optimal components for use in robots across a broad range of fields. These applications extend from industrial robots that contribute to the automation of production lines to next-generation robots that may be used in consumer-related fields.

#### **Renewable Energy**

The THK Group is working to develop and promote the sale of products for use as mechanical components in the renewable energy field. In 2017, THK began supplying shaft units for wind turbines produced by Challenergy Inc., which developed the world's first wind turbine capable of generating energy even during typhoons.





# Automotive & Transportation Business

#### **Overview**

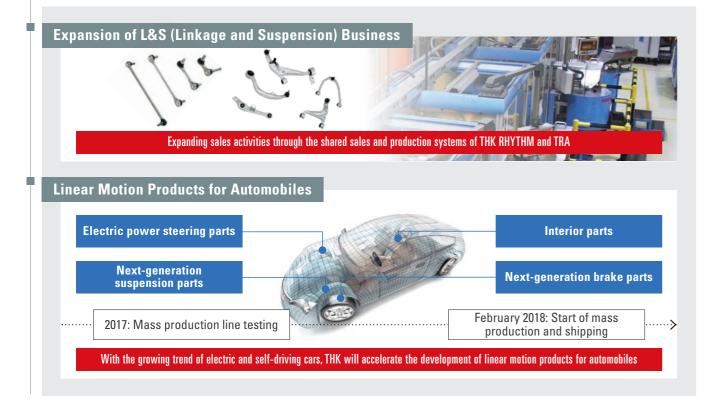
In its automotive and transportation business, as a global supplier with independently operating sales, production, and development structures established around the globe, the THK Group supplies a wide range of customers in the automotive manufacturing sector with undercarriage L&S (Linkage and Suspension) products.

Since its foundation, THK has continued to promote its link balls, which are the mainstay of its automotive and transportation business, alongside other products. Working to further expand its business, the Company acquired RHYTHM CORPORATION (currently THK RHYTHM CO., LTD.) in 2007. In 2015, THK completed the transfer of the L&S business from what was previously TRW Automotive Inc. and incorporated it into the THK Group as THK RHYTHM AUTOMOTIVE (TRA), thereby establishing a global business platform. The Company is also promoting synergistic activities through means such as integrating the automotive component businesses of THK America and THK Europe into THK RHYTHM and TRA, respectively.

#### **Business Environment and Activities**

For its L&S business, the THK Group is expanding activities to obtain orders in China and other emerging markets by making use of both TRA's and THK RHYTHM's sales and production structures, employing strategies such as making proposals to use THK RHYTHM's Chinese plants to supply European and North American automakers who are primarily supplied by TRA. Furthermore, the Group is working diligently to exhibit synergies that will strengthen profitability, including the integration of products and steps to reinforce joint purchasing by region.

In terms of new automotive products, the THK Group has been working to expand the use of linear motion products for next-generation L&S systems, steering, brakes, suspensions, and various other automotive mechanisms. For those new linear motion products whose orders were secured, THK moved forward with preparations that allowed mass production and shipping to begin in February 2018. As demand for linear motion products is expected to rise from the momentum provided by the development of self-driving car technology and the increasing incorporation of electrical components in automobiles, the THK Group will further accelerate the expansion of linear motion product use in these areas.

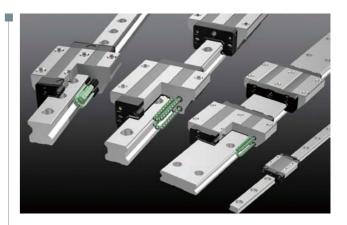


# THK'S PRODUCTS

# Innovative Products

THK was the first company in the world to develop the Linear Motion (LM) Guide, which is based on an original concept and innovative technology. THK also develops, produces, and supplies to the world a range of other vital machine components, including ball screws and electric actuators, as well as automotive and transportation components, such as L&S (Linkage and Suspension) products.





# LM Guides

LM Guides are machine components that convert sliding motion into rolling motion, enabling machine parts to move smoothly, easily, and precisely in a straight line. As a result, LM Guides have facilitated the increased precision, rigidity, speed, and energy efficiency of a wide range of industrial machinery. With the introduction of products such as the Caged Ball LM Guide in 1996 and the Caged Roller LM Guide in 2001, the Company has continued to improve every aspect of the LM Guide and further expand its applications. As a result, LM Guides with caged ball and caged roller technology are now vital components of machine tools, semiconductor manufacturing equipment, and other industrial equipment.



Machine tool (Machining center)

#### Ball Cages and Roller Cages

The cages are resin parts that hold and guide the balls or rollers as they move. The use of cages reduces noise and friction by preventing direct contact between the balls or rollers. This allows for a longer service life, reduced noise, and an extended period of maintenance-free operation.

# **THK'S PRODUCTS**



### **Ball Screws**

Ball screws are machine components that function by causing a large number of balls to circulate between a screw shaft and a nut. This mechanism efficiently converts rotary motion into linear motion. With the Caged Ball Screw, THK has incorporated caged ball technology into its existing ball screw designs, thus helping to achieve longer life with reduced noise and provide an extended period of maintenance-free operation.

As a result, these products are now essential elements in machine tools, industrial robots, semiconductor manufacturing equipment, and other industrial equipment. THK also offers ball screws that are designed to support high loads, making them ideally suited for replacing the hydraulic cylinders used in equipment such as injection molding machines, presses, and die casting machines.



### **Electric Actuators**

Electric actuators are hybrid products combining a guide component such as an LM Guide with a ball screw, linear motor, or other drive component. In industries such as electronics, there is an increasing need to shorten development and manufacturing lead times. Modularization allows these electric actuators to meet such requirements by simplifying the design and reducing assembly time. THK offers a varied lineup of electric actuators ranging from basic, cost-effective units to high-end components designed to operate with high precision or perform to clean room specifications. Such advanced electric actuators have become indispensable parts in equipment used in the manufacture or inspection of semiconductors and liquid crystal displays.



### **Ball Splines**

Developed in 1971, the same year that THK was established, ball splines were the precursor to the LM Guide. In these products, balls roll along a rounded groove machined into the spline's shaft. This critical advance boosts the load that the device can tolerate and permits the transmission of torque. resulting in a revolutionary linear motion system. Compared with the products that came before, these ball splines boosted the permissible load by a factor of 13 and service life by a factor of 2,200. THK offers an extensive lineup featuring ball splines with integrated ball screws and other products that are used in a variety of equipment, including industrial robots, medical equipment, and chip mounters.



# **Cross Roller Rings**

Cross roller rings are roller bearings that feature internal cylindrical rollers arranged orthogonally so as to facilitate load bearing in every direction. The incorporation of the spacer cages between rollers prevents roller skew and friction between the rollers. Possessing high rigidity while maintaining a compact structure, cross roller rings are used in the rotating parts of many different types of industrial machinery, including the joint areas and rotating parts of industrial robots, as well as machining center swivel tables. Other applications include rotating parts of medical equipment and semiconductor manufacturing equipment.





Ever since the Company was founded, THK has continued to expand its lineup of L&S products, such as the link ball: a spherical slide bearing with a ball stud. Made from aluminum, THK's link balls are highly resistant to corrosion and wear. They are also considerably lighter than traditional steel parts. The Company's lineup of link balls has been widely adopted for use in a number of undercarriage systems, such as height sensors and the joint sections connecting stabilizers to the suspension.

of automobiles.



Semiconductor manufacturing equipment (Dicing saw)



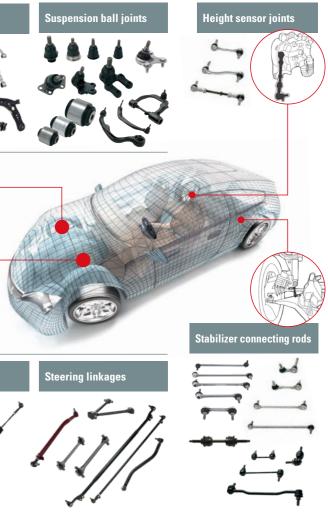




Horizontal articulated robot (SCARA robot)



#### THK ANNUAL REPORT DECEMBER 2017 22



# **Automotive and Transportation Equipment-Related Products**

Furthermore, Group companies THK RHYTHM and THK RHYTHM AUTOMOTIVE are actively engaged in producing L&S products, including steering and suspension components. In addition to the cold-forged ball joints that have been its mainstay, THK RHYTHM has expanded the range of products it offers to include aluminum links that integrate ball joints with aluminum suspension links. These critical safety components are held to the highest standards of quality and performance and help to enhance the safety and comfort

# **RESEARCH AND DEVELOPMENT**

Guided by the corporate philosophy of *providing innovative products to the world and generating new trends to contribute to the creation of an affluent society*, THK continually strives to create original products as a company focused on creation and development.

#### A Global R&D System for the Next Generation

THK is endeavoring to use its core linear motion system technology and expertise to develop its mainstay linear motion systems, mechatronic devices such as XY precision stages and linear motor actuators, and products in the consumer goods-related fields of automotive parts, seismic isolation and damping systems, medical equipment, aircraft, robotics, and renewable energy at its centers for R&D: the Technology Center and the new headquarters established in October 2017 in Tokyo.



New headquarters (Tokyo)

Technology Center (Tokyo)

In 2010, the THK Group established the R&D Center in China. This facility, which was THK's first R&D facility outside of Japan, began full operation in 2012. With the addition of THK RHYTHM AUTOMOTIVE's German R&D facility in 2015, the THK Group is on its way to building R&D structures oriented toward the Americas, Europe, and Asia in order to more accurately meet the needs of customers around the world.

#### **Initiatives During the 2017 Fiscal Year**

To meet the varied needs of its customers in the industrial machinery field, THK has expanded its lineup of LM Guide and ball screw products and developed a diverse lineup of new products that contribute to the automation of customers' production lines, including low-inertia ball screw/splines and gripper-type electric actuators. In the robotics field, THK has expanded its lineup of SEED Solutions components for next-generation robots and introduced SEED Noid platform robots, which combine such components, in order to help lower total costs for customers. In addition, even as THK participates in robotics competitions, the Group has also actively been involved in sponsoring robotics events in order to contribute to the overall development of the service robot industry.

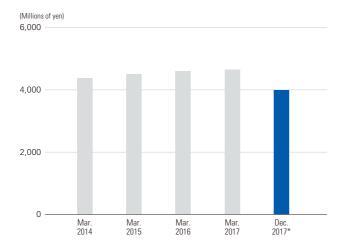
In the automotive and transportation industry, THK has utilized new production methods to introduce aluminum products to the

market in order to meet the customer need for more lightweight automobiles. The Company has also developed aluminum hot forging technology in-house in North America. Even in the new production methods it has developed—in cold forging, hot forging, and precision press technology—THK has distinguished itself from its competitors. Furthermore, the Company has used the unified R&D efforts of THK, THK RHYTHM, and TRA to begin developing and mass-producing linear motion products for the automotive industry to meet the needs generated by the increasing use of electronics in vehicles and self-driving car technology.

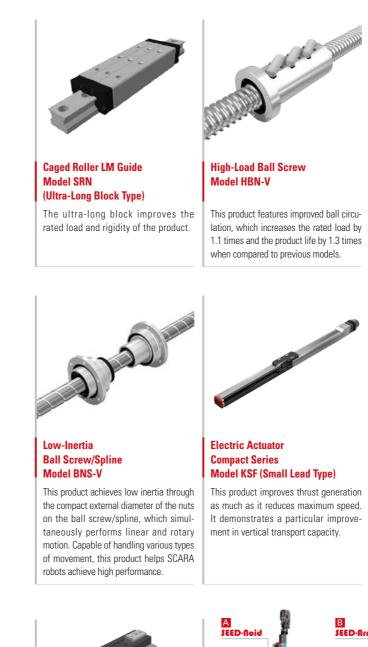
#### Policies and Initiatives for the 2018 Fiscal Year

In the 2018 fiscal year, the THK Group plans to continue focusing its efforts on the efficient development of new products with the aim of further expanding applications for THK's technology. Above all, with the acceleration in AI, the IoT, and robotization, THK will promote the development of new products that incorporate IoT technology into its products. Furthermore, as it strengthens its global development structure, THK will work with THK RHYTHM and TRA to incorporate its accumulated core linear motion technology into the development of products used in the automotive industry. In this manner, these members of the THK Group will work to maximize the synergistic effect of putting their respective technologies to use in one another's fields to contribute to the development of new products.

#### **R&D** Expenses



\*This data reflects a modified reporting period that includes 9 months from consolidated companies whose fiscal years ended in March and 12 months from consolidated companies whose fiscal years ended in December.



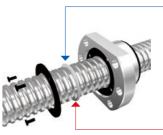


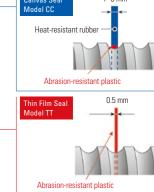
#### Electric Actuator Economy Series Model EG

This product is a gripper-type electric actuator. It contributes to improved repeatability and durability in comparison with pneumatic actuators. Through SEED Solutions, SEED Platform Robots enable the easy and cost-effective construction of mobile manipulators. These products help customers reduce costs and develop applications more efficiently when developing robot bodies.

**SEED Platform Robots** 







#### Ball Screw Accessories Canvas Seal Model CC Thin Film Seal Model TT

The Canvas Seal Model CC is a contact-type seal that excels at dust-proofing and prevents grease from spattering or leaking. The Thin Film Seal Model TT is a cost-effective contact-type seal with low heat generation that can easily be used for different models.



#### Electric Actuator Press Series Model PC100 and Model PC120

These products feature an integrated ball screw nut and ball spline shaft, which allow them to generate high thrust while remaining compact, thereby expanding the lineup of models that are compatible with higher thrust specifications.



#### Ball Spline with Integrated Ball Screw Model DSP

This product is the actuator for Press Series Model PC sold as an independent unit. Its compact structure enables even greater freedom in equipment design.



25

# ESG

Based on its corporate philosophy of providing innovative products to the world and generating new trends to contribute to the creation of an affluent society, THK is pursuing growth as a company and expanding its business while being cognizant of the importance of addressing environmental, social, and governance (ESG) concerns.



#### **Basic Environmental Policy**

The THK Group contributes to both society and the economy through our pioneering role as manufacturers of Linear Motion Guides and other products. We also believe that it is a company's social responsibility to leave the global environment in a healthy state for the next generation, which is why we are promoting the following initiatives to continually decrease our environmental impact and to sustain and improve the natural environment.

#### **Timers for the Kofu Plant Parking Lot Lights**

As of November 2017, all of the lights that illuminate Parking Lot 1 at the Kofu plant are now operated with timers instead of being turned on and off manually. Previously, the lights remained on from the end of the workday at 5:00 p.m. until the beginning of the next workday at 6:00 a.m., a total of 13 hours. Considering the lack of people at night, however, the Kofu plant began using timers to keep the lights on for a total of 7 hours instead: 5 hours from 5:00 to 10:00 p.m. and 2 hours from 4:00 to 6:00 a.m. The lights illuminating the pedestrian walkways in the parking lot continue to stay on to eliminate security concerns. By shortening the amount of time the lights are on, the Kofu plant was able to reduce its annual energy use by approximately 1,058 kWh, or 0.51 tons of CO2. The Kofu plant will adjust the timers to account for seasonal changes in the time the sun rises and sets.



Parking lot light that is now set by a timer

#### THK Group's Basic Environmental Policy

- 1. We consider conservation of the environment to be a major management challenge, and we are striving to accurately understand how our business activities, products, and services impact the environment. All divisions set appropriate environmental goals to address this challenge.
- 2 In addition to complying with environmental laws we have set self-imposed standards that are reviewed regularly to improve the efficiency and effectiveness of our environmental management
- 3. We will continually promote the development of products that help reduce environmental impact
- 4. We will cut down energy use in our business activities and continually promote the reduction of energy consumption and greenhouse gas emissions.
- 5. With a particular focus on the reduction and recycling of waste from our manufacturing division, we will not only continue to promote the saving and recycling of resources, but also strive to prevent pollution.
- 6. We recognize the impact our business activities have on biodiversity, and we will actively work toward the conservation of all life on Earth.
- 7. To achieve greater collaboration with regard to our environmental activities, we provide guidance and support to our affiliate companies and business partners and also strive to work in cooperation and harmony with the community
- 8. This basic environmental policy is disseminated to all divisions in the Group through education, training, and awareness campaigns, and we facilitate the timely release of information on the environment both within and outside the Group.

Revised on April 19, 2018

#### **HVAC System Upgrade at the Yamaguchi Plant**

In July 2017, the Yamaguchi plant upgraded the Factory 1 HVAC system to use one inverter turbo chiller instead of the two absorption chillers it had previously used. The new chiller does not use heavy oil for fuel. As a result, the Yamaguchi plant was able to reduce its annual energy use by approximately 137 kL of crude oil, or 368 tons of CO<sub>2</sub>.



Newly installed inverter turbo chiller



#### **Quality Assurance**

THK has established a quality assurance structure with each production facility both in and outside of Japan certified with the ISO 9001 Quality Management System and other quality standards

#### **Quality Management Process**



#### **Together with Suppliers**

Throughout its supply chain, from design to sales, THK strives to adhere to social norms and be environmentally conscious in order to facilitate the creation of a sustainable society. The Group has formed good partnerships with its suppliers, aiming for mutually beneficial relationships.

	inue to provide onships with o
Activities	<ol> <li>Procurer supplier</li> <li>Fair and</li> <li>Efforts</li> <li>value-ar</li> </ol>
	4. Pursuit d
	5. Impleme
	6. Environn

In c

ber

#### **THK's Supply Chain**

Design	Purchasing/ Procurement	Production
<ul> <li>Long-term maintenance-free operation</li> <li>Low noise, low dust generation</li> </ul>	Check for presence of environmentally hazardous materials	Comply with the Energy Act
Develop grease that can be used in	• Comply with the Act against Delay in	• Pursue zero emissions
the food industry	Payment of Subcontract Proceeds, Etc. to Subcontractors	• Reduce impact on the e
	Beject dealings with criminal	Maintain safe working

organizations

	ISO 9001	JIS Q 9100 Aerospace Industry	ISO/TS 16949 Automotive Industry	IATF 16949
Japan	11	1	1	—
Outside of Japan	13	—	7	6
Total	24	1	8	6

#### Quality Management System Certification Status (Facilities)

that allow the Company to adapt to different industries, such as the automotive and aerospace industries, depending on the products each facility produces. The THK Group has also established a system that allows quality data to be shared globally. In addition to gathering feedback from customers in each region, analyzing it, and providing rapid and appropriate service, the Company endeavors to develop products that meet market needs and to improve quality.

#### **THK Basic Policy on Procurement**

le THK products that satisfy our customers, we establish good, healthy, and mutually our suppliers.

ment practices emphasizing communication with suppliers. Evaluating and choosing ers with thorough consideration for QCDES

equitable dealings in compliance with all pertinent laws, regulations, and social norms

to minimize costs. Encouraging the active pursuit of cost-saving projects and nalvsis initiatives

of global procurement

entation of a BCP (business continuity plan)

mental consciousness through green procurement



av Conservation

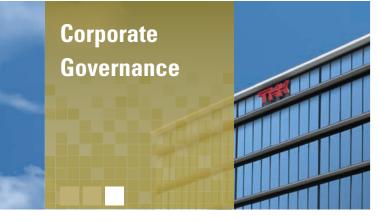
- environment ng environment

# )istributio

- · Reject dealings with criminal organizations
- Security declarations for air shipments
   Fair and proper transactions
- Beduce waste via reusable containers

# Sales

- Collect and reuse packaging materials
- · Enforce safe driving practices



#### **Basic Stance on Corporate Governance**

With the aim of maximizing its corporate value, THK strives to maintain a solid corporate governance in order to make mid- to long-term improvements to its corporate value by sustaining growth through appropriate cooperation with all its shareholders and other stakeholders.

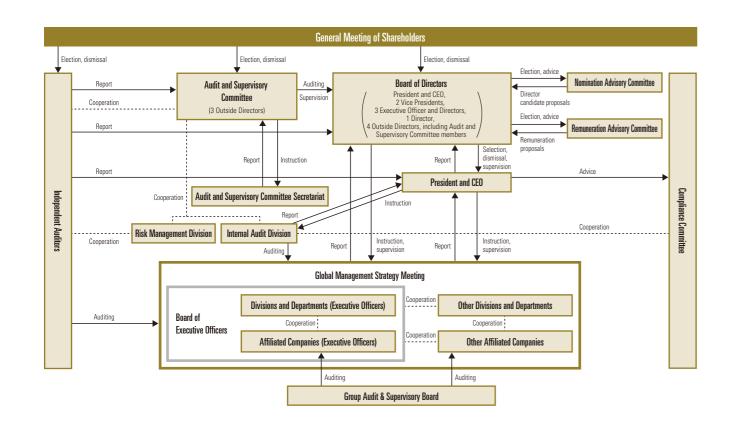
#### **THK's Corporate Governance Structure**

In June 2014, THK introduced an executive officer system. After the Company's  $46^{th}$  General Meeting of Shareholders on June 18, 2016, and in conjunction with its establishment of an Audit

and Supervisory Committee, THK instituted a non-mandatory Nomination Advisory Committee and a Remuneration Advisory Committee to act as advisors to the Board of Directors. In doing so, THK has endeavored to bring enhanced transparency and objectivity to management, strengthen the auditing functions of the Board of Directors, and bring greater speed and efficiency to management-related decision-making and the management of corporate affairs.

#### **Board of Directors**

THK's Board of Directors comprises a total of eight directorsincluding one outside director-who are not members of the Audit and Supervisory Committee, in addition to three outside directors who are Audit and Supervisory Committee members. The Board of Directors makes decisions on important matters of general management and carries out the oversight of directors and executive officers in the execution of their duties. In addition, there are four outside directors whose independence meets the evaluation criteria stipulated by the Tokyo Stock Exchange and THK. With over a third of the outside directors possessing specialized professional knowledge and qualifications related to corporate accounting or general management, this structure has further enhanced management neutrality, legality, and validity while improving the board's management oversight function.



#### Audit and Supervisory Committee

Comprising three outside directors who are Audit and Supervisory Committee members, the Audit and Supervisory Committee utilizes the internal control system to audit and supervise directors and executive officers with regard to the current status of the execution of their duties. The effectiveness of the audits is also enhanced by collaboration between the Audit and Supervisory Committee and independent auditors. In addition, the Audit and Supervisory Committee Secretariat has been established to support the Audit and Supervisory Committee and its members. The Audit and Supervisory Committee Secretariat follows the instructions of the Audit and Supervisory Committee, coordinates with each department, and conveys instructions to the Internal Audit Division and the Risk Management Division, which is responsible for the maintenance and operation of internal controls.

# Nomination Advisory Committee and Remuneration Advisory Committee

The non-mandatory Nomination Advisory Committee and Remuneration Advisory Committee are each composed of four directors, two of which are outside directors. This composition is in accordance with the rules for both committees, which stipulate that outside directors must make up half or more of the members. As advisory bodies to the Board of Directors, both committees review and deliberate on director candidates and remuneration proposals, and they propose the content and outcomes of those deliberations to the Board of Directors. The Board of Directors conducts its own deliberations on the subject matter before deciding on a resolution.

#### **Executive Officer System**

By introducing the executive officer system, THK has endeavored to accelerate decision-making and operational execution, in addition to improving the management oversight function of the Board of Directors and clarifying roles and responsibilities relating to the management of corporate affairs. The Company implemented its Board of Executive Officers, which is attended by directors and executive officers, and established the Global Management Strategy Meeting, which is attended by members of the Board of Executive Officers in addition to those in charge of each division, department, and affiliate company, as a means to share information throughout the Group and improve corporate governance through collaboration between the directors, executive officers, and other members of the management team. To clarify the roles and responsibilities of executive officers relating to the management of corporate affairs, an executive officer's term in office is deemed to be one year.

#### **General Meeting of Shareholders**

THK has consistently regarded active communication with all stakeholders as a crucial part of management. Accordingly, the



Company is actively committed to maintaining fair and proper disclosure of corporate information. In an aim to have open meetings, THK has held its General Meeting of Shareholders on a Saturday every year since 1998, thereby avoiding the period when many shareholder meetings are scheduled. At the General Meeting of Shareholders, the Company provides seating for business partners and other stakeholders to observe the proceedings, and it holds a product exhibition after the end of the meeting in an effort to help more people gain a greater understanding of the Company.

#### **Compliance Structure**

The Compliance Committee, chaired by the CEO, approves the annual activity plan and reports on the execution of those activities, as well as on the handling of legal violations by employees and other matters reported internally. This committee is also attended by outside directors and a legal advisor, and it functions in a proper and legal manner. In addition, THK has established compliance subcommittees reporting to the Compliance Committee, with the subcommittee members being selected from each office and department. The subcommittee members play an important role in maintaining the compliance system by means such as holding voluntary seminars on compliance and fulfilling an advisory function.



# **BOARD OF DIRECTORS**

As of March 18, 2018

#### Directors



**Akihiro Teramachi** President and CEO



Toshihiro Teramachi Executive Vice President and CIO



Hiroshi Imano Executive Vice President and CFO



Nobuyuki Maki Director and Senior Managing Executive Officer Senior General Manager of Automotive & Transportation Headquarters



Takashi Teramachi Director and Senior Managing Executive Officer Senior General Manager of Industrial Machinery Headquarters Representative Director and President of THK INTECHS CO., LTD.



Junji Shimomaki Director and Managing Executive Officer General Manager of Industrial Machinery Headquarters Senior General Manager of Sales Division, Industrial Machinery Headquarters



Masakatsu Hioki Outside Director (Audit and Supervisory Committee Member)

#### **Executive Officers**

Managing Executive Officer Takashi Okubo Executive Vice Chairman of THK (CHINA) CO., LTD.

Managing Executive Officer Masaki Sugita Representative Director and President of THK Holdings of America, L.L.C. Representative Director and President of THK America, Inc.

Managing Executive Officer Tetsuya Hayashida Special Appointive Officer to President Managing Executive Officer Masato Sawada General Manager of Automotive & Transportation Headquarters Director and Executive Vice Chairman of THK RHYTHM CO., LTD.

Managing Executive Officer Takanobu Hoshino General Manager of IMT Division, Industrial Machinery Headquarters Director and Executive Vice Chairman of THK INTECHS CO., LTD.

Managing Executive Officer Akihiko Kambe Senior General Manager of Production Division, Industrial Machinery Headquarters

Outside Director

Executive Officer Naoki Kinoshita President of THK (CHINA) CO., LTD.

Executive Officer Yukio Yamada General Manager of Sales Division, Industrial Machinery Headquarters General Manager of International Sales Division, Sales Division, Industrial Machinery Headquarters

Executive Officer Takehiro Nakanishi

Deputy Senior General Manager of Production Division, Industrial Machinery Headquarters General Manager of Production Engineering Department, Production Division, Industrial Machinery Headquarters General Manager of Global Procurement Department, Production Division, Industrial Machinery Headquarters Executive Officer Yasutoshi Hoshino Deputy General Manager of Corporate Strategy Headquarters

Executive Officer Kenji Nakane

Corporate Strategy Headquarters



Junichi Sakai Director (In charge of Quality Assurance, Risk Management, and Production Engineering)



Masaaki Kainosho Outside Director



(Audit and Supervisory Committee Member)



Yoshiki Ueda Outside Director (Audit and Supervisory Committee Member)

#### Managing Executive Officer

#### Kaoru Hoshide

Senior General Manager of Engineering Division, Industrial Machinery Headquarters

#### Managing Executive Officer Toshiki Matsuda

Representative Director and President of THK Europe B.V. Representative Director and President of THK GmbH Representative Director and President of THK France S.A.S. Representative Director and President of THK Manufacturing of Europe S.A.S. Representative Director and President of THK Manufacturing of Ireland Ltd.

General Manager of Finance & Accounting Department,

Executive Officer Junichi Kuwabara

General Manager of ACE Division, Industrial Machinery Headquarters

#### Executive Officer

#### Akira Furihata

Representative Director and President of THK RHYTHM CO., LTD.

### MANAGEMENT'S DISCUSSION & ANALYSIS

#### Analysis of Operating Results

#### Change in the Fiscal Year End

At the 47th General Meeting of Shareholders on June 17, 2017, a partial amendment to the articles of incorporation was approved, and the THK Group changed from a fiscal year end of March 31 to December 31, beginning with the 2017 fiscal year. As the transition takes place during this fiscal year, the scope of consolidation for this modified reporting period includes 9 months for consolidated companies whose fiscal years ended in March (April 1, 2017, to December 31, 2017) and 12 months for consolidated companies whose fiscal years ended in December (January 1, 2017, to December 31, 2017). For this reason, this report omits percentage comparisons with the previous reporting period.

#### Net Sales

During this fiscal year, a moderate recovery continued in the global economy, led by a trend of recovery in Europe and the United States and other developed countries, as well as signs of economic revival in China and other emerging countries. As a result of the recovery in the global economy, the Japanese economy moderately recovered, with a favorable trend in exports and capital investment as well as signs of overall improvement.

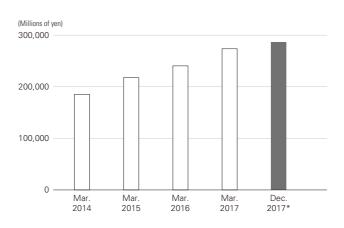
The THK Group has identified full-scale globalization, the development of new business areas, and a change in business style as cornerstones of its growth strategy to expand markets for its products, including LM (Linear Motion) Guides. Under its full-scale globalization strategy, the Group is striving to expand its production and sales structures globally to capture demand from

# FINANCIAL SECTION

#### Contents

33 M	anagement's Discussion & Analysis
<b>37</b> Ri	sk Factors
<b>38</b> Co	onsolidated Financial Statements
38	Consolidated Balance Sheets
40	Consolidated Statements of Income
40	Consolidated Statements of Comprehensive Income
41	Consolidated Statements of Changes in Net Assets
42	Consolidated Statements of Cash Flows
43 No	otes to Consolidated Financial Statements

#### **Net Sales**



\*This data reflects a modified reporting period that includes 9 months from consolidated companies whose fiscal years ended in March and 12 months from o nies whose fiscal vears ended in Decembe idated comr

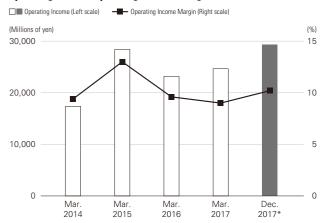
China and other emerging countries, where the market is growing due to developments in factory automation (FA) and other areas, as well as the demand from developed countries, where the user base is expanding. Under the *development of new business areas* strategy, the Group is working to increase sales revenue from not only existing products, but also newly developed products, buoyed by growing use of the Company's products in such consumer goodsrelated fields as seismic isolation and damping systems, medical equipment, aircraft, robotics, renewable energy, and especially automotive parts. Additionally, in order to promote these strategies, the Company is making full use of new technologies such as Al and robots in a variety of different ways, thereby expanding its business domains by realizing a change in business style.

During this fiscal year, there was a favorable shift in overall demand for THK products for general machinery and machine tools, particularly in the electronics field, which has been driven by vigorous semiconductor-related investment. Capitalizing on the global business structure it has strengthened over time, THK captured that demand and converted it into sales, resulting in ¥286,603 million in consolidated net sales.

#### Cost of Sales and Selling, General and Administrative (SG&A) Expenses

Although costs increased with the expansion in net sales, with the favorable shift in overall demand, the Group has continued to pursue robotization, automation, and other activities to improve productivity. As a result of those efforts, the cost to sales ratio was 74.8%, and the ratio of SG&A expenses to sales was 14.9%.

#### **Operating Income/Operating Income Margin**



#### Operating Income

As a result, the operating income was  $\ensuremath{\texttt{¥29,279}}$  million, and the operating margin was 10.2%.

#### Non-Operating Income and Expenses

Non-operating income was ¥2,830 million. This largely comprised ¥948 million of equity in earnings of affiliates and interest received of ¥465 million. Non-operating expenses were ¥855 million, due primarily to ¥360 million in interest expenses and a foreign exchange loss of ¥270 million.

#### Net Income Attributable to Shareholders of THK CO., LTD.

Additionally, the transfer of all shares belonging to THK subsidiary THK RHYTHM CO., LTD., to TRA Holdings CO., LTD., was announced October 23, 2017. The loss on valuation of subsidiary stocks was approved, and a consolidation adjustment was made for the profit on the sale of affiliate stocks. As a result, THK reported a net income attributable to shareholders of THK CO., LTD., of ¥25,729 million, net of ¥3,100 million in corporate income taxes, local inhabitants' taxes, and enterprise taxes.

#### Segment Information

#### Japan

As a result of the recovery in the global economy, the Japanese economy moderately recovered, with a favorable trend in exports and capital investment as well as signs of overall improvement. Under those circumstances, the Group saw expanded demand for products for electronics, general machinery, and machine tools, as well as a favorable trend in overall demand, which led to net sales of ¥106,072 million and an operating income (segment income) of ¥20,248 million.

#### The Americas

As the economy continued to recover in the Americas with steady consumer spending and capital investments, the Company worked diligently to expand transactions with existing customers by unifying production and sales while developing new business areas, including the medical equipment, aircraft, and energy-related fields and particularly the automotive field. Under those circumstances, the Group saw a favorable trend in demand for products for electronics and machine tools, which led to net sales of ¥67,130 million and an operating income (segment income) of ¥2,738 million.

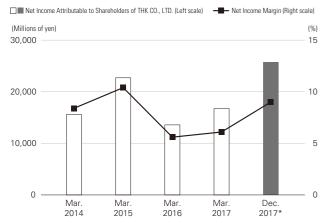
#### Europe

In Europe, the economy continued to show a moderate recovery centered on consumer spending. In the fiscal year under review, the THK Group strove to expand transactions with existing customers by unifying production and sales to develop new business areas, including the medical equipment, aircraft, and robotics fields and particularly the automotive field. Under those circumstances, the Group saw a favorable trend in demand for products for general machinery and machine tools, which led to net sales of ¥57,247 million and an operating income (segment income) of ¥627 million.

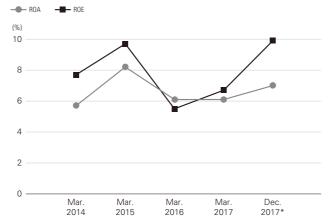
#### China

In conjunction with an expansion in demand that has accompanied investment in smartphones and automobiles in China, FA has progressed against the backdrop of rising wages and a shortage of labor, which in turn has broadened demand for the Company's products. Capitalizing on the sales and production structures it has actively strengthened over time, THK captured that demand and converted it into sales, resulting in ¥40,024 million in net sales and an operating income (segment income) of ¥3,126 million.

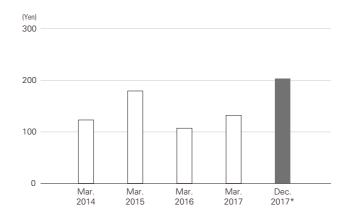
#### Net Income Attributable to Shareholders of THK CO., LTD./Net Income Margin



#### Return on Assets (ROA)/Return on Equity (ROE)



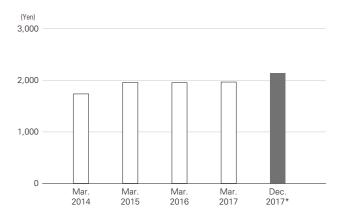
#### Net Income per Share



#### Asia and Other

As THK expanded its sales network in the ASEAN region and other parts of the world, the Group undertook aggressive sales activities to expand transactions with existing customers and acquire new customers. Those activities, and the effect of the expanded demand in China that was felt in certain regions, resulted in net sales of ¥16,128 million and an operating income (segment income) of ¥2,171 million.

#### Net Assets per Share



# **RISK FACTORS**

#### Financial Position

# Assets, Liabilities, and Net Assets Assets

Total current assets stood at ¥270,975 million as of December 31, 2017, an increase of ¥11,147 million compared with the previous fiscal year end. Although cash and cash equivalents decreased ¥7,424 million as a result of capital investments and the repayment of long-term debt, trade accounts and notes receivable increased ¥11,623 million with the upswing in net sales, and inventories increased ¥6,373 million.

Total non-current assets stood at ¥165,689 million as of December 31, 2017, an increase of ¥10,585 million compared with the previous fiscal year end. This increase was primarily due to a ¥7,294 million increase in tangible fixed assets from capital investments and a ¥3,124 million increase in investments and other assets.

#### Liabilities

Total liabilities stood at ¥154,910 million as of December 31, 2017, down ¥8,480 million compared with the previous fiscal year end. This decrease was primarily due to the repayment of ¥13,000 million of long-term debt, despite an increase of ¥3,564 million in trade accounts and notes payable and an increase of ¥2,040 million in accrued expenses.

#### Net Assets

Total net assets stood at ¥281,754 million as of December 31, 2017, an increase of ¥30,213 million compared with the previous fiscal year end. This increase was primarily due to the ¥25,729 million net income attributable to shareholders of THK CO., LTD., in addition to a ¥6,666 million increase in foreign currency translation adjustments and an ¥8,206 million increase in non-controlling interests, despite ¥7,726 million in payments for cash dividends.

#### Cash Flows

Net cash provided by operating activities came to ¥25,616 million. This total primarily reflects an income before income taxes of ¥31,034 million, depreciation and amortization of ¥13,240 million, a ¥9,897 million increase in trade accounts and notes receivable, and a ¥5,463 million increase in inventories.

Net cash used in investing activities totaled ¥15,831 million, primarily due to the purchase of fixed assets.

Net cash used in financial activities totaled ¥17,802 million, which included ¥13,000 million in the repayment of long-term debt and ¥7,726 million in cash dividends.

In addition to each of the aforementioned activities, accounting for the effect of exchange differences, cash and cash equivalents as of December 31, 2017, stood at ¥129,920 million, a decrease of ¥7,424 million compared with the end of the previous fiscal year. Risk factors and uncertainties that could affect the THK Group's business results and financial position include, but are not limited to, the items outlined below.

Please note that any items relating to the future are based on the best judgment of THK Group management as of March 19, 2018.

#### **Dependence on Linear Motion Systems**

The principal business of the THK Group is the manufacture and sale of linear motion systems, notably LM Guides. Linear motion systems account for the majority of sales and are expected to continue to do so for the foreseeable future. Any unexpected technical revolution that jeopardizes the position of linear motion systems as a critical machine component could have a negative impact on the business results and financial position of the THK Group.

#### Effect of Changes in Production Trends within Specific Industries

The THK Group manufactures and sells LM Guides, ball screws, and other machine components, as well as link balls, suspension ball joints, and other transportation equipment components. The principal users of these products are companies that make industrial machinery and equipment, including machine tools, general machinery, and semiconductor manufacturing equipment, as well as manufacturers of transportation equipment. While the THK Group is striving through full-scale globalization, the development of new business areas, and a change in business style to realize expansions in its business domains, the performance of the THK Group is influenced by production trends within industrial sectors such as machine tools, general machinery, semiconductor manufacturing equipment, and transportation equipment, whose manufacturers constitute the THK Group's major customers.

As a result, the business results and financial position of the THK Group could be affected negatively in the future by a downturn in production levels in these specific industries.

#### **Business Expansion Outside of Japan**

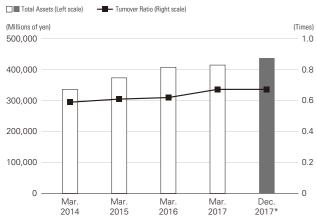
The THK Group has manufacturing and sales operations in the Americas, Europe, China, and other regions. Economic downturns in countries where the THK Group manufactures or sells products, as well as the resulting reduction in demand for the Company's products, could have a negative impact on the THK Group's business results and financial position. Any unexpected legal and regulatory changes in countries other than Japan could also have a similar effect.

#### Exchange Rate Fluctuations

While the THK Group engages in the hedging of risks by means such as foreign exchange contracts for foreign currency transactions, primarily with regard to importing and exporting, there is the possibility that the Group's business results and financial position could be negatively impacted by any major exchange rate fluctuations.

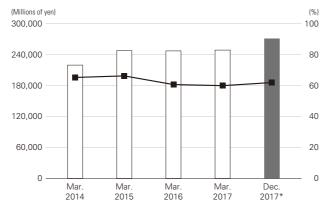
Furthermore, the financial statements of THK's subsidiaries outside of Japan are converted to yen for the generation of the Company's consolidated financial statements. Thus, there is also the possibility that, even with there being no change in the value in the local currency, the amount on the consolidated financial statement after the

#### **Total Assets/Turnover Ratio**



#### Net Worth/Net Worth Ratio

#### Net Worth (Left scale) - Net Worth Ratio (Right scale)



conversion to yen could be negatively impacted by the exchange rate at the time of conversion.

#### **Reliance on Specific Supply Sources**

The THK Group procures some of its raw materials and parts from external supply sources. As a result, the THK Group's business results and financial position could be negatively affected in the event of a shortfall in raw materials and parts owing to factors such as a drop in the production capacity of suppliers, a natural disaster, or some other unforeseen incident.

#### **Incidence of Non-Conforming Products**

THK Group products are widely used in industrial machinery, including machine tools, industrial robots, and semiconductor manufacturing equipment. Applications for THK products have also expanded to include various areas related to consumer goods, including automobiles, seismic isolation and damping systems, medical equipment, aircraft, robots, and renewable energy.

Under these circumstances, the THK Group has worked to establish quality assurance systems to ensure that high product quality is maintained across all product sectors. However, any incidence of non-conforming product that arises in any of these markets could potentially result in substantial costs or a loss of trust among the general public, thereby exerting a negative impact on the business results and financial position of the THK Group.

#### **Information Security**

The THK Group collects, maintains, and manages personal information as well as trade secrets relating to its customers, business partners, and other affiliates as it conducts its business activities. Every effort is made to ensure that this information is stringently managed. However, if part or all of this information is leaked due to a computer virus, information system defect, or another factor, such an event would have the potential to exert a negative impact on the Group's credibility, which could similarly affect the Group's business results and financial position.

#### Disasters, Acts of Terrorism, Infectious Diseases, and Other Maladies

The THK Group possesses manufacturing facilities as well as sales offices in Japan, the Americas, Europe, China, and other regions. In the event that any of the Group's places of business are affected by natural disasters, including earthquakes and fires; political unrest due to acts of terrorism or war; or the outbreak of an infectious disease, the potential exists for the THK Group's business results and financial position to be negatively impacted.

#### Sharp Hikes in the Prices of Raw Materials

In the event of unanticipated sharp hikes in the prices of raw materials arising from factors such as high crude oil prices, the social conditions in countries that supply raw materials, and rising demand in emerging countries, the manufacturing costs of the Group's products can be expected to increase. As a result, there is a possibility that the THK Group's business results and financial position could be negatively impacted.

# **CONSOLIDATED FINANCIAL STATEMENTS**

THK CO., LTD., and consolidated subsidiaries

### **Consolidated Balance Sheets**

	Millions of	Millions of yen	
	December 31, 2017	March 31, 2017	December 3 <sup>°</sup> 2017
SETS	2017	2017	2017
Current Assets:			
Cash and cash equivalents (Note 18)	¥ 129,920	¥ 137,345	\$ 1,149,22
Receivables (Note 18):	+ 123,320	+ 107,040	ψ1,143,24
Trade accounts and notes receivable (Note 3)	85,457	72,636	755,92
—Unconsolidated subsidiaries and affiliates	1,600	2,798	14,1
Other receivables	1,593	2,035	14,0
—Unconsolidated subsidiaries and affiliates	1,102	897	9,74
	89,754	78,367	793,93
Less allowance for doubtful receivables	(218)	(174)	(1,92
	89,535	78,192	791,9
Inventories (Note 4)	43,802	37,428	387,4
Short-term loans receivable	43,002	37,420	307,4
Deferred tax assets (Note 15)	2,337	2,780	20,6
Other current assets	5,374	4,075	47,53
Total current assets	270,975	259,827	2,396,94
	210,013	200,027	2,000,0
Investments and Other:			
Investments in securities (Notes 6 and 18)	6,087	4,107	53,84
Investments in unconsolidated subsidiaries and affiliates	5,290	4,182	46,7
Net defined benefit asset (Note 8)	2,295	2,110	20,3
Long-term loans receivable	72	61	6
Deferred tax assets (Note 15)	754	1,444	6,6
Other investments	2,860	2,328	25,2
Total investments and other	17,359	14,235	153,5
Property, Plant and Equipment (Note 5):			
Buildings and structures	72,565	69,730	641,8
Machinery, equipment, vehicles and others (Note 14)	212,559	196,866	1,880,22
	285,124	266,596	2,522,10
Less accumulated depreciation	(193,598)	(180,188)	(1,712,49
	91,525	86,408	809,5
Land	13,955	13,854	123,4
Construction in progress	10,452	8,377	92,4
Total property, plant and equipment	115,934	108,639	1,025,5
lutona iki an			
Intangibles: Goodwill	11 440	11 251	101 0
	11,449	11,251	101,2
Other Tatal intersibles	20,945	20,976	185,2
Total intangibles	32,395	32,228	286,5
Total assets	¥ 436,664	¥ 414,931	\$ 3,862,57

	Millions	of yen	Thousands of U.S. dollar (Note 1)	
	December 31,	March 31,	December 31,	
ABILITIES AND NET ASSETS	2017	2017	2017	
Current Liabilities:				
Current portion of long-term debt (Notes 7 and 18)	¥ 22.185	¥ 15,185	\$ 196,24	
Payables (Note 18):	+ 22,105	+ 13,103	φ 150,24	
Trade accounts and notes payable	45,190	41.728	399,734	
—Unconsolidated subsidiaries and affiliates	1.063	960	9,402	
Other payables	5.773	3.346	51,06	
—Unconsolidated subsidiaries and affiliates	121	3,340	1,07	
	52,148	46,073	461,282	
Income taxes payable	1,673	3,865	401,20	
Accrued bonuses to employees	2,971	3,398	26,28	
Other accrued expenses	8.639	6,599	76,41	
Lease obligations	126	147		
Other current liabilities			1,114	
	5,452	5,610	48,220	
Total current liabilities	93,196	80,880	824,37	
Long-term Liabilities:				
Long-term debt (Notes 7 and 18)	47,480	67,480	419,99	
Reserve for directors' and corporate auditors' retirement benefits	108	116	95	
Reserve for product warranty	118	129	1,04	
Long-term lease obligations	114	156	1,00	
Net defined benefit liability (Note 8)	7,389	7,827	65,36	
Deferred tax liabilities (Note 15)	5,134	5,359	45,413	
Other liabilities	1,368	1,440	12,10	
Total long-term liabilities	61,713	82,510	545,89	
Commitment and Contingent Liabilities (Notes 9 and 10)				
Net Assets (Note 11):				
Shareholders' equity				
Common stock				
Authorized: 465,877,700 shares; Issued: 133,856,903 shares as of December 31, 2017, and March 31, 2017	34,606	34,606	306,112	
Additional paid-in capital	40,440	44,584	357,71	
Retained earnings	194,626	176,617	1,721,592	
Treasury stock, at cost: 7,287,650 shares and 7,285,746 shares as of December 31, 2017, and March 31, 2017, respectively	(13,998)	(13,991)	(123,82	
Total shareholders' equity	255,675	241,817	2,261,60	
Accumulated other comprehensive income:				
Net unrealized gain on available-for-sale securities	2,847	1,585	25,18	
Foreign currency translation adjustments	13,459	6,793	119,05	
Remeasurements of defined benefit plans	(1,033)	(1,256)	(9,13	
Total accumulated other comprehensive income	15,272	7,122	135,09	
Non-controlling interests	10,806	2,600	95,58	
Total net assets	281,754	251,540	2,492,29	
Total lighilities and not assets	V 490 004	V 414 001	¢ 0.000 F7	
Total liabilities and net assets	¥ 436,664	¥ 414,931	\$ 3,862,57	

The accompanying notes are an integral part of these statements.

#### **Consolidated Statements of Income**

Nine months ended December 31, 2017, and year ended March 31, 2017

line months ended December 31, 2017, and year ended March 31, 2017			Thousands of U.S. doll	
	Millions	Millions of yen		
	Nine months ended December 31, 2017	Year ended March 31, 2017	Nine months ended Decemb 31, 2017	
Net Sales	¥ 286,603	¥ 273,577	\$ 2,535,18	
Cost of Sales (Note 13)	214,490	203,112	1,897,30	
Gross profit	72,112	70,464	637,87	
Selling, General and Administrative Expenses (Notes 12 and 13)	42,833	45,811	378,88	
Operating income	29,279	24,653	258,99	
Non-Operating Income (Expenses):				
Interest and dividend income	551	497	4,87	
Interest expenses	(360)	(397)	(3,18	
Foreign exchange loss, net	(270)	(2,942)	(2,38	
Equity in earnings of an affiliate	948	524	8,38	
Rental income	317	403	2,80	
Loss on sales and disposal of property, plant and equipment, net	(123)	(341)	(1,08	
Impairment loss (Note 5)	(54)	_	(47	
Other, net	747	659	6,60	
	1,755	(1,596)	15,52	
Income before income taxes	31,034	23,057	274,51	
Income Taxes (Note 15)				
Current	5,091	6,447	45,03	
Deferred	(195)	(64)	(1,72	
Total income taxes	4,895	6,383	43,29	
Net income	26,139	16,673	231,21	
Net income (loss) attributable to non-controlling interests	409	(58)	3,61	
Net income attributable to shareholders of THK CO., LTD.	¥ 25,729	¥ 16,731	\$ 227,58	

The accompanying notes are an integral part of these statements.

#### **Consolidated Statements of Comprehensive Income**

Nine months ended December 31, 2017, and year ended March 31, 2017

Nine months ended December 31, 2017, and year ended March 31, 2017	Millions	Millions of yen		
	Nine months ended December 31, 2017	Year ended March 31, 2017	Nine months ended December 31, 2017	
Net Income	¥ 26,139	¥ 16,673	\$ 231,216	
Other Comprehensive Income (Loss) (Note 16):				
Net unrealized gain on available-for-sale securities	1,255	920	11,101	
Foreign currency translation adjustments	6,469	(10,990)	57,222	
Remeasurements of defined benefit plans	227	171	2,007	
Share of other comprehensive income (loss) of an affiliate accounted for under the equity method	317	(542)	2,804	
Total other comprehensive income (loss)	8,270	(10,441)	73,153	
Comprehensive Income	34,409	6,231	304,369	
Attributable to:				
Shareholders of THK CO., LTD.	33,879	6,823	299,681	
Non-controlling interests	¥ 530	(591)	\$ 4,688	

The accompanying notes are an integral part of these statements.

#### **Consolidated Statements of Changes in Net Assets**

Nine months ended December 31, 2017, and year ended March 31, 2017

	Millions of yen						
		5	Shareholders' equit	у			
-	Common stock	Additional paid-in capital	Retained earnings	Treasury stock, at cost	Total shareholders' equity		
Balance at April 1, 2016	¥ 34,606	¥ 44,584	¥ 165,076	¥ (13,950)	¥ 230,317		
Cash dividends	—		(5,190)	_	(5,190)		
Net income attributable to shareholders of THK CO., LTD.	—	—	16,731	—	16,731		
Purchase of treasury stock		_	_	(41)	(41)		
Net changes of items other than shareholders' equity	—	_	—	_	_		
Balance at March 31, 2017	¥ 34,606	¥ 44,584	¥ 176,617	¥ (13,991)	¥ 241,817		
Cash dividends	—	_	(7,721)	_	(7,721)		
Net income attributable to shareholders of THK CO., LTD.	—		25,729	—	25,729		
Purchase of treasury stock	—	—	_	(6)	(6)		
Changes in parent's interest due to transactions with non-controlling shareholders	—	(4,143)	—	—	(4,143)		
Net changes of items other than shareholders' equity	_	_	_	_	_		
Balance at December 31, 2017	¥ 34,606	¥ 40,440	¥ 194,626	¥ (13,998)	¥ 255,675		

	Millions of yen					
	Ac	Accumulated other comprehensive income				
	Net unrealized gain	Foreign currency	Remeasurements	Total accumulated	Non-	Total net
	on available-for-sale securities	translation		other comprehensive	controlling	assets
Balance at April 1, 2016	¥ 665	adjustments ¥ 17,759	plans ¥ (1,394)	¥ 17.030	¥ 3,192	¥ 250,540
	ŧ 000	± 17,709	ŧ(1,394)	± 17,030	± 3,19Z	
Cash dividends	—	—		—		(5,190)
Net income attributable to shareholders of THK CO., LTD.			—	—		16,731
Purchase of treasury stock	_			—		(41)
Net changes of items other than shareholders' equity	920	(10,965)	137	(9,907)	(591)	(10,499)
Balance at March 31, 2017	¥ 1,585	¥ 6,793	¥ (1,256)	¥ 7,122	¥ 2,600	¥ 251,540
Cash dividends	_	—	—	—	—	(7,721)
Net income attributable to shareholders of THK CO., LTD.	_	_	_	_	_	25,729
Purchase of treasury stock	_	—	_	—		(6)
Changes in parent's interest due to transactions with non-controlling shareholders		—	_	—	—	(4,143)
Net changes of items other than shareholders' equity	1,261	6,666	222	8,149	8,206	16,355
Balance at December 31, 2017	¥ 2,847	¥ 13,459	¥ (1,033)	¥ 15,272	¥ 10,806	¥ 281,754

	Shareholders' equity					
	Common stock	Additional paid-in capital	Retained earnings	Treasury stock, at cost	Total shareholders' equity	
Balance at March 31, 2017	\$ 306,112	\$ 394,374	\$ 1,562,291	\$ (123,759)	\$ 2,139,026	
Cash dividends		—	(68,297)	—	(68,297)	
Net income attributable to shareholders of THK CO., LTD.	_	—	227,589	—	227,589	
Purchase of treasury stock	_	_	—	(53)	(53)	
Changes in parent's interest due to transactions with non-controlling shareholders	—	(36,647)	—	_	(36,647)	
Net changes of items other than shareholders' equity	_	—	—	—		
Balance at December 31, 2017	\$ 306,112	\$ 357,717	\$ 1,721,592	\$ (123,821)	\$ 2,261,609	

	AUG
	Net unrealized gain on available-for-sale securities
Balance at March 31, 2017	\$ 14,020
Cash dividends	—
Net income attributable to shareholders of THK CO., LTD.	_
Purchase of treasury stock	_
Changes in parent's interest due to transactions with non-controlling shareholders	·
Net changes of items other than shareholders' equity	/ 11,154
Balance at December 31, 2017	\$ 25,183

The accompanying notes are an integral part of these statements.

Thousands	of	U.S.	dollars	(Note	1)

Thousands of U.S. dollars (Note 1) Accumulated other comprehensive income Foreign currency Remeasurements Total accumulated Non-Total net translation of defined benefit other comprehensive controlling assets adjustments plans income interests \$ 60,088 \$ (11,110) \$ 62,998 \$ 22,998 \$ 2,225,033 (68,297) \_ \_ \_ \_\_\_\_ 227,589 \_ \_ \_\_\_\_ \_ \_ (53) \_ — — (36,647) \_ \_ \_\_\_\_ \_ <u>1,963</u> 72,083 72,587 144,670 58,965 \$ 119,053 \$ (9,137) \$ 135,090 \$ 95,586 \$ 2,492,295

#### **Consolidated Statements of Cash Flows**

Nine months ended December 31, 2017, and year ended March 31, 2017

	Millions	of yen	Thousands of U.S. dollars (Note 1)	
	Nine months ended December 31, 2017	Year ended March 31, 2017	Nine months ended Decemb 31, 2017	
ash Flows from Operating Activities:	51, 2017		51,2017	
Income before income taxes	¥ 31,034	¥ 23,057	\$ 274,51	
Adjustments:				
Depreciation and amortization	13,240	13,185	117,11	
Impairment loss	54	_	47	
Amortization of goodwill	854	978	7,55	
Interest and dividend income	(551)	(497)	(4,87	
Interest expenses	360	397	3,18	
Foreign exchange loss, net	110	1,409	97	
Equity in earnings of an affiliate	(948)	(524)	(8,38	
Loss on sales and disposal of property, plant and equipment, net	165	341	1,45	
Changes in assets and liabilities:				
Increase in accounts and notes receivable	(9,897)	(5,906)	(87,54	
(Increase) decrease in inventories	(5,463)	422	(48,32	
Increase in accounts and notes payable	2,246	7,416	19,86	
(Decrease) increase in provisions	(439)	172	(3,88	
Increase in net defined benefit liability	420	421	3,71	
Other, net	856	1,819	7,57	
Subtotal	32,044	42,693	283,44	
Interest and dividend received	542	480	4,79	
Interest paid	(398)	(351)	(3,52	
Income taxes paid	(6,572)	(2,646)	(58,13	
Net cash provided by operating activities	25,616	40,175	226,59	
ash Flows from Investing Activities:				
Purchase of property, plant and equipment and intangibles	(15,699)	(17,482)	(138,86	
Proceeds from sales of property, plant and equipment	26	20	22	
Increase in investments in securities, unconsolidated subsidiaries and affiliates	(209)	(238)	(1,84	
Increase in loans receivable	(11)	(125)	(9	
Payment for insurance fund	(7)		(6	
Cancellation of insurance fund	_	11	-	
Other, net	69	(145)	61	
Net cash used in investing activities	(15,831)	(17,960)	(140,03	
ash Flows from Financing Activities:				
Repayment of long-term debt	—	(2,185)	-	
Redemption of corporate bonds	(13,000)	_	(114,99	
Cash dividends	(7,726)	(5,185)	(68,34	
Proceeds from payment from non-controlling shareholders	3,000		26,53	
Purchase of treasury stock	(6)	(41)	(5	
Repayment of lease obligations	(69)	(137)	(61	
Net cash used in financing activities	(17,802)	(7,548)	(157,47	
reign Currency Translation Adjustments on Cash and Cash Equivalents	593	(4,285)	5,24	
et (Decrease) Increase in Cash and Cash Equivalents	(7,424)	10,380	(65,67	
ash and Cash Equivalents at Beginning of Year	137,345	126,964	1,214,90	
ash and Cash Equivalents at End of Year	¥ 129,920	¥ 137,345	\$ 1,149,22	

The accompanying notes are an integral part of these statements.

# NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

THK CO., LTD., and consolidated subsidiaries

#### 1. Basis of Presenting Consolidated Financial Statements

The accompanying consolidated financial statements of THK CO., LTD. (the "Company") and its consolidated subsidiaries have been prepared in accordance with the provisions set forth in the Financial Instruments and Exchange Act of Japan and its related accounting regulations, and in conformity with accounting principles generally accepted in Japan ("Japanese GAAP"), which are different in certain respects from International Financial Reporting Standards as to application and disclosure requirements.

The accompanying consolidated financial statements include certain reclassifications and rearrangements to present them in a form that is more familiar to readers outside Japan. Certain amounts previously reported may have been reclassified to conform to the current year financial statement presentation. Such reclassifications have been made solely for comparability of the consolidated financial statements, and do not affect net income or net assets. In addition, the notes to the consolidated financial statements include information that is not required under Japanese GAAP, but which is provided herein as additional information.

Effective from the current fiscal year, the Company and its consolidated subsidiaries with fiscal closing dates other than December 31 changed their fiscal closing dates to December 31 in order to promote management on a Group-wide basis, as well as to enhance the further transparency of management through timely and appropriate disclosure of management information, including operating performances, etc. As a result of this change of the fiscal closing date from March 31 to December 31, the current reporting period covers the nine-month period from April 1, 2017, to December 31, 2017, for the Company and

#### 2. Summary of Significant Accounting Policies

#### (a) Consolidation

The accompanying consolidated financial statements include the accounts of the Company and its subsidiaries that are controlled by the Company. Under the effective control approach, all majority-owned companies are to be consolidated. Additionally, those companies over which the Company is able to directly or indirectly exercise control are to be consolidated even if the holding ratio equals 50% or less. All significant inter-company transaction accounts and unrealized inter-company profits are eliminated upon consolidation. For consolidated subsidiaries and an affiliate whose closing dates are different from that of the Company, certain adjustments necessary for consolidation have been made

The Company had 39 subsidiaries as of December 31, 2017, and 38 subsidiaries as of March 31, 2017. The consolidated financial statements for the nine months ended December 31, 2017, and the year ended March 31, 2017, include the accounts of the Company and its 36 and 35 consolidated subsidiaries (collectively, "the Group"), respectively. Investments in the remaining three subsidiaries, including THK BRAZIL INDUSTRIA E COMERCIO LTDA., are not consolidated and stated at cost, because these companies are small in size, and if these companies had been consolidated, the effect on the consolidated

its consolidated subsidiaries whose fiscal closing dates were March 31, and the twelve-month period from January 1, 2017, to December 31, 2017, for the consolidated subsidiaries whose fiscal closing dates were December 31.

Operating results from January 1, 2017, to March 31, 2017, of the consolidated subsidiaries whose fiscal closing dates were December 31 are adjusted through the consolidated statement of income, where net sales, operating income and income before income taxes during these three months were included in the amounts of ¥44,414 million (\$392,870 thousand), ¥2,129 million (\$18,832 thousand) and ¥1,979 million (\$17,505 thousand), respectively.

U.S. dollar amounts presented in the consolidated financial statements are included solely for the convenience of the readers. These translations should not be construed as presentations that the yen amounts actually represent or could be converted into U.S. dollars at that or any other rate. For this purpose, the rate of ¥113.05 to U.S. \$1, the approximate rate of exchange prevailing in Tokyo on December 29, 2017, has been used for the translation of the accompanying consolidated financial statements as of December 31, 2017, and for the nine months then ended.

As permitted by the Financial Instruments and Exchange Act, amounts of less than one million yen have been omitted. U.S. dollar amounts are translated from such yen amounts, and amounts of less than one thousand dollars have been omitted. As a result, the total amounts in Japanese ven and translated U.S. dollars shown in the consolidated financial statements and notes to the consolidated financial statements do not necessarily agree with the sum of the individual amounts.

financial statements would not have been significant.

#### (Changes in the scope of consolidation)

Changes in the scope of consolidation for the nine months ended December 31, 2017, were as follows:

TRA Holdings CO., LTD., which was newly established during the nine months ended December 31, 2017, was included in the scope of consolidation

The excess of the cost of acquisition over the fair value of the net assets of an acquired subsidiary (goodwill) at the date of acquisition is amortized over 15 years by the straight-line method.

#### (Application of the equity method)

The Company had three affiliates and three unconsolidated subsidiaries as of December 31, 2017, and March 31, 2017. Under the control concept, companies over which the Company directly or indirectly has the ability to exercise significant influence are accounted for using the equity method. For the nine months December 31, 2017, and the year ended March 31, 2017, the Company has applied the equity method to investment in SAMICK THK CO., LTD. Investments in the remaining affiliates and unconsolidated subsidiaries (THK BRAZIL INDUSTRIA E COMERCIO LTDA., etc.) are stated at cost. If the equity method had been applied to the investments in those companies, the effect on the consolidated financial statements would not have been significant.

# (Change in the fiscal closing dates of the Company and certain consolidated subsidiaries)

As noted in Note 1, the fiscal closing date was unified into December 31, effective from the current fiscal year. Consequently, the fiscal closing date of consolidated subsidiaries agrees with that of the Company as of December 31, 2017. The reporting period of the current fiscal year ended December 31, 2017, for the Company, its domestic consolidated subsidiaries and THK India Pvt. Ltd. is the nine months from April 1, 2017, to December 31, 2017, and that for overseas consolidated subsidiaries, excluding THK India Pvt. Ltd., is the twelve months from January 1, 2017, to December 31, 2017.

# Unification of Accounting Policies Applied to Foreign Subsidiaries for the Consolidated Financial Statements

Under Japanese GAAP; (1) the accounting policies and procedures applied to a parent company and its subsidiaries for similar transactions and events under similar circumstances should in principle be unified for the preparation of the consolidated financial statements, (2) financial statements prepared by foreign subsidiaries in accordance with either International Financial Reporting Standards or the generally accepted accounting principles in the United States of America tentatively may be used for the consolidation process, (3) however, the following items should be adjusted in the consolidation process so that net income is accounted for in accordance with Japanese GAAP unless they are immaterial: 1) amortization of goodwill; 2) scheduled amortization of actuarial gain or loss of pensions that has been directly recorded in net assets; 3) expensing capitalized development costs of research and development; 4) cancellation of the fair value model accounting for property, plant, and equipment and investment properties and incorporation of the cost model accounting; 5) exclusion of non-controlling interests from net income, if contained.

#### (b) Translation of Foreign Currency Financial Statements

Assets and liabilities of foreign subsidiaries and an affiliate are translated into Japanese yen at exchange rates prevailing at the balance sheet date. Net assets except for minority interest account at the beginning of the year are translated into Japanese yen at historical rates. Profit and loss accounts are translated into Japanese yen using the average exchange rate during the year. Differences in yen amounts arising from use of different rates are presented as foreign currency translation adjustments in the accumulated other comprehensive income of the net assets section.

#### (c) Inventories

Inventories, except for work in process, are stated at cost determined principally by the gross average method. Work in process for ordered products is stated at cost determined principally by the specific identified cost method. If acquisition cost of an inventory exceeds its net selling value, the carrying amount of such inventory is written down to its net selling value, and the difference is charged to income.

#### (d) Financial Instruments

#### Securities

Investments in securities are classified and accounted for, depending on management's intent, as follows: (1) trading securities, which are held for the purpose of earning capital gains in the near term, are reported at fair value, and the related unrealized gains and losses are included in earnings; (2) held-to-maturity debt securities, which are expected to be held to maturity with the positive intent and ability to hold to maturity, are reported at amortized cost; and (3) availablefor-sale securities, which are not classified as either of the aforementioned securities, are reported at fair value, with unrealized gains and losses, net of applicable taxes, reported as a separate component of net assets. If the fair value of available-for-sale securities is not readily determinable, such investments are stated at cost.

With respect to equity investments in investment business limited partnerships, which are regarded as securities pursuant to paragraph 2 of Article 2 of the Financial Instruments and Exchange Act, such investments are stated using net equity based on the recent available financial statements as of the reporting dates which are provided by the partnership agreements.

For other than temporary declines in fair value, investments in securities are written down to the net realizable value, and the difference is charged to income.

#### **Derivatives and Hedging Accounting**

The Group uses a variety of derivative financial instruments, including forward foreign exchange contracts, interest rate swap contracts and interest rate and currency swap contracts to manage foreign exchange risks and interest rate risks. The Company has established a control environment, which includes policies and procedures for risk assessments and approval, and reporting and monitoring of transactions involving derivative financial instruments. The Group does not hold or issue derivative financial instruments for speculative purposes.

#### Hedge accounting method:

For forward foreign exchange contracts which satisfy the required condition under the related Japanese accounting standards, the hedged foreign currency-denominated receivables and payables are translated at the contract rates, and no gains or losses are recognized.

For interest rate swap contracts which satisfy the required condition under the related Japanese accounting standards, the differential paid or received under the swap contracts are recognized and included in the interest income or expenses.

For interest rate and currency swap contracts which satisfy the required condition under the related Japanese accounting standards, the hedged foreign currency assets and liabilities are translated at the contract rates, no gains or losses on the translation are recognized and the differential paid or received on interest rates under swap contracts are recognized and included in the interest income or expenses.

#### Hedging instruments and hedged items are as follows:

Hedging instruments:	Hedged items:
Forward foreign exchange contracts	Foreign currency-denominated receivables and payables
Interest rate swap contracts	Interest on bank loans
Interest rate and currency swap contracts	Foreign currency-denominated loans and interest thereof

#### Hedging policy:

Forward foreign exchange contracts aim to hedge foreign exchange fluctuation risk and fix cash flows associated with collection of and payment for foreign currency-denominated receivables and payables.

Interest rate swap contracts aim to hedge interest rate fluctuation risk associated with bank loans.

Interest rate and currency swap contracts aim to hedge foreign exchange fluctuation risk and interest rate fluctuation risk associated with foreign currency denominated bank loans.

#### Assessment of hedge effectiveness:

With respect to forward foreign exchange contracts, assessment of hedge effectiveness is omitted since significant conditions concerning hedging instruments and hedged items are identical, and it is assumed in advance that those contracts will offset market fluctuations or cash flow fluctuations upon and continuously after the beginning of the hedge.

With respect to interest rate swap contracts, assessment of hedge effectiveness is omitted since they meet the requirements for special hedge accounting treatments.

With respect to interest rate and currency swap contracts, assessment of hedge effectiveness is omitted since they meet the requirements for applicable special accounting treatments as mentioned above.

#### (e) Property, Plant and Equipment (except for leased assets)

Property, plant and equipment of the Company and its domestic consolidated subsidiaries are depreciated using the straight-line method.

The range of useful lives is principally from 5 to 50 years for buildings and structures and from 4 to 12 years for machinery, equipment and vehicles.

Normal repairs and maintenance, including minor renewals and improvements, are charged to income as incurred.

#### (f) Intangibles

Intangible assets are amortized using the straight-line method.

Software for internal use by the Company and domestic consolidated subsidiaries is amortized on a straight-line basis over a period of five years, the estimated useful life of the software.

#### (g) Lease

Leased assets under finance lease arrangements that do not transfer ownership are depreciated using the straight-line method over the lease term as the useful life, with the residual value deemed to be zero.

#### (h) Allowance for Doubtful Receivables

Allowance for doubtful receivables is stated in amounts considered to be appropriate based on the Group's past credit loss experience and an evaluation of potential losses in the receivables outstanding.

#### (i) Accrued Bonuses to Employees

Accrued bonuses to employees are stated at an estimated amount to be paid in the following year based on the employees' compensation in the current year.

#### (j) Reserve for Directors' and Corporate Auditors' Retirement Benefits

Reserve for directors' and corporate auditors' retirement benefits represents the liability at the amount that would be required if all eligible directors and corporate auditors retired at each balance sheet date.

#### (k) Reserve for Product Warranty

Reserve for product warranty is stated at amount based on the Group's past experience in order to cover possible warranty liabilities.

#### (I) Accounting for Employees' Retirement Benefits

- Methods to determine the estimated retirement benefits to be attributed to the reporting period
   The benefit formula is employed for the method of determining the estimated retirement obligation to be attributed to the reporting
- period.
  2) Amortization of actuarial gains/losses and prior service cost Prior service cost is amortized pro rata in the years from the following fiscal year by the straight-line method, based on the average remaining service years (15 years) of the employees when incurred. Actuarial gains/losses are amortized pro rata in the years from the following fiscal year by the straight-line method, based on the average remaining service years (from 5 to 18 years) of the employees when incurred.
- 3) Application of the simplified method for small businesses For certain consolidated subsidiaries, a simplified method is applied for the calculation of retirement benefit obligations and retirement benefit expenses whereby the necessary retirement benefit provisions for voluntary resignations at the end of the consolidated fiscal year are recorded as retirement benefit obligations.

#### (m) Foreign Currency Translation

All monetary assets and liabilities denominated in foreign currencies, whether long-term or short-term, are translated into Japanese yen at exchange rates prevailing at the balance sheet date. Gains and losses from translation are recognized in the consolidated statements of income to the extent that they are not hedged by forward foreign exchange contracts.

#### (n) Consumption Taxes

Japanese consumption taxes are levied at the flat rate of eight percent on all domestic consumption of goods and services, with certain

# **NOTES TO CONSOLIDATED FINANCIAL STATEMENTS**

exemptions. The consumption taxes received by the Company and domestic subsidiaries on sales are excluded from net sales, but are recorded as a liability. The consumption taxes paid by the Company and domestic subsidiaries on purchases of goods and services are excluded from costs or expenses, but are recorded as an asset. The net balance of liability after offsetting against assets is included in "Other current liabilities" in the consolidated balance sheets.

#### (o) Income Taxes

Japanese income taxes consist of corporate income taxes, local inhabitants' taxes and enterprise taxes.

Provision for income taxes is computed based on the pretax income included in the consolidated statements of income. The asset and liability approach is used to recognize deferred tax assets and liabilities for expected future tax consequences of temporary differences between the carrying amounts and the tax bases of assets and liabilities. Deferred taxes are determined by applying currently enacted tax laws to the temporary differences.

#### (p) Cash and Cash Equivalents

Cash and cash equivalents are composed of cash on hand, bank deposits that can be withdrawn on demand and short-term investments with original maturity of three months or less and which carry a minor risk of fluctuations in value.

#### (g) Per Share Information

Net assets per share is computed by dividing net assets except minority interests at the year-end by the number of common stock outstanding at the year-end.

Net income per share is computed by dividing net income attributable to common shareholders by the weighted-average number of common shares outstanding for the period.

Diluted net income per share reflects the potential dilution that could occur if securities were exercised or converted into common stock. Diluted net income per share of common stock assumes full conversion of the outstanding convertible notes and bonds at the beginning of the year (or at the time of issuance) with an applicable adjustment for related interest expense, net of tax, and full exercise of outstanding warrants.

#### 3. Notes receivable

December 31, 2017, falls on a bank holiday. The following notes receivable matured in that date were accounted for as if they were settled on that date:

	Millions of yen	Thousands of U.S. dollars
Notes receivable (including electronically recorded receivables)	¥ 2,087	\$ 18,460

#### 4. Inventories

Inventories as of December 31, 2017, and March 31, 2017, comprised of the following:

	Millions	of yen	Thousands of U.S. dollars
	December 31, 2017	March 31, 2017	December 31, 2017
Merchandise and finished goods	¥ 14,357	¥ 12,860	\$ 126,996
Work in process	10,104	8,607	89,376
Raw materials and supplies	19,340	15,960	171,074
Total	¥ 43,802	¥ 37,428	\$ 387,456

#### 5. Long-lived Assets

For the nine months ended December 31, 2017, the Group recognized an impairment loss on the following asset group:

	Location Use		Туре	Millions of yen	Thousands of U.S. dollars
Hamam	natsu city, Shizuoka	Assets planned to be disposed of	Land	¥ 54	\$ 477

In assessing whether there is an impairment of long-lived assets, assets are grouped basically based on managerial accounting units. Among rental properties, idle assets and those properties which the Board of Directors made a decision to dispose of, significant assets planned to be disposed of are treated as an individual grouping by item.

For the asset group planned to be disposed of, the Company wrote down the book value to the recoverable amount, and such amount was recognized as an impairment loss. The recoverable amount of the applicable asset group is measured at net selling value and assessed by the estimated sales value.

No impairment loss was recognized for the year ended March 31, 2017.

#### 6. Investments in Securities

As of December 31, 2017, and March 31, 2017, available-for-sale securities with available fair value were as follows:

Carrying amount (fair value) exceeds acquisition cost: Equity securities Carrying amount (fair value) does not exceed acquisition cost: Equity security Total

Carrying amount (fair value) exceeds acquisition cost: Equity securities Carrying amount (fair value) does not exceed acquisition cost: Equity security Total

Carrying amount (fair value) exceeds acquisition cost: Equity securities Carrying amount (fair value) does not exceed acquisition cost: Equity security Total

As of December 31, 2017, and March 31, 2017, available-for-sale securities whose fair value is not reliably determinable were as follows:

Available-for-sale securities	
Unlisted equity securities	

Investments in investment business limited partnerships

These unlisted equity securities and investments in investment business limited partnerships are not included in "Available-for-securities" in the above table.

"Acquisition cost" in the above table refers to the cost after deducting impairment losses. No impairment losses on available-forsale securities value were recognized during the nine months ended December 31, 2017, and the year ended March 31, 2017.

When the fair value of each issue of securities declined more than 50% of the acquisition cost, impairment losses would be recognized.

#### 7. Long-term Debt

ong-term debt as of December 31, 2017, and March 31, 2017, consisted of the following:	Millions	of yen	Thousands of U.S. dollar
	December 31, 2017	March 31, 2017	December 31, 2017
Bank loans 0.076% due in 2026	¥ 29,665	¥ 29,665	\$ 262,406
Corporate bonds issued by the Company:			
0.715% Unsecured straight bonds due in 2017	_	13,000	_
0.850% Unsecured straight bonds due in 2018	10,000	10,000	88,456
0.430% Unsecured straight bonds due in 2018	10,000	10,000	88,456
0.660% Unsecured straight bonds due in 2020	10,000	10,000	88,456
0.296% Unsecured straight bonds due in 2020	10,000	10,000	88,456
	¥ 69,665	¥ 82,665	\$ 616,231
Current portion	(22,185)	(15,185)	(196,240)
Long-term debt, less current portion	¥ 47,480	¥ 67,480	\$ 419.991

		Millions of yen	
		December 31, 2017	
	Carrying amount	Acquisition cost	Net unrealized gain (loss)
	¥ 5,467	¥ 1,461	¥ 4,005
ities	12	12	(0)
	¥ 5,480	¥ 1,474	¥ 4,005

		Millions of yen	
		March 31, 2017	
	Carrying amount	Acquisition cost	Net unrealized gain (loss)
	¥ 3,307	¥ 1,028	¥ 2,279
ities	366	430	(64)
	¥ 3,674	¥ 1,459	¥ 2,215

		Thousands of U.S. dollars	
		December 31, 2017	
	Carrying amount	Acquisition cost	Net unrealized gain (loss)
	\$ 48,359	\$ 12,923	\$ 35,426
ities	106	106	(0)
	\$ 48,474	\$ 13,038	\$ 35,426

, Millions	Millions of yen		
December 31, 2017	March 31, 2017	December 31, 2017	
¥ 193	¥ 193	\$ 1,707	
413	239	3,653	

When the fair value declined between 30% and 50% of the acquisition cost, whether the impairment losses should be recognized or not is determined by considering the financial positions as of the latest fiscal year end and operating results for the past two fiscal years and comparing the average month-end closing market price during the past 24 months with the acquisition cost by each issue.

There were no available-for-sale securities sold during the nine months ended December 31, 2017, and the year ended March 31, 2017.

#### Annual maturities of long-term debt as of December 31, 2017, are as follows:

	Millions of yen					
		December 31, 2017				
	Due within 1 year Due after 1 to 2 years Due after 2 to 3 years Due after 3 to 4 years Due after 4 to 5 years Due after 5 year					Due after 5 years
Bonds	¥ 20,000	¥ —	¥ 20,000	¥ —	¥ —	¥ —
Bank loans	2,185	12,185	2,185	2,185	2,185	8,740
Total	¥ 22,185	¥ 12,185	¥ 22,185	¥ 2,185	¥ 2,185	¥ 8,740

				f U.S. dollars er 31, 2017		
	Due within 1 year	Due after 1 to 2 years		Due after 3 to 4 years	Due after 4 to 5 years	Due after 5 years
Bonds	\$ 176,912	\$ —	\$ 176,912	\$ —	\$ —	\$ —
Bank loans	19,327	107,784	19,327	19,327	19,327	77,310
Total	\$ 196,420	\$ 107,784	\$ 196,240	\$ 19,327	\$ 19,327	\$ 77,310

#### 8. Employees' Retirement Benefits

1. Outline of the retirement benefit plans adopted The Company and consolidated subsidiaries adopt contributory and non-contributory defined benefit plans and defined contribution plans.

Under the defined benefit corporate pension plans (all of which are contributory), lump-sum severance benefits or pensions based on salaries and service years are provided.

Under lump-sum payment plans (all of which are non-contributory), lump-sum payments based on salaries and service years are provided.

Under some defined benefit corporate pension plans and lumpsum payment plans of certain consolidated subsidiaries, net defined benefit liability and retirement benefit expenses are calculated using a simplified method.

#### 2. Defined Benefit Plans

(1) The changes in projected benefit obligations for the nine months ended December 31, 2017, and the year ended March 31, 2017, were as follows:

	Millions of yen		Thousands of U.S. dollars	
	Nine months ended December 31, 2017	Year ended March 31, 2017	Nine months ended December 31, 2017	
Beginning balance of projected benefit obligation	¥ 24,842	¥ 23,725	\$ 219,743	
Service cost	962	1,073	8,509	
Interest cost	287	334	2,538	
Actuarial differences	524	160	4,635	
Retirement benefits paid	(420)	(485)	(3,715)	
Other	427	35	3,777	
Ending balance of projected benefit obligations	¥ 26,624	¥ 24,842	\$ 235,506	

(2) The changes in plan assets for the nine months ended December 31, 2017, and the year ended March 31, 2017, were as follows:

	Millions of yen		Thousands of U.S. dollars	
	Nine months ended December 31, 2017	Year ended March 31, 2017	Nine months ended December 31, 2017	
Beginning balance of plan assets	¥ 19,126	¥ 18,023	\$ 169,181	
Expected return on plan assets	578	545	5,112	
Actuarial differences	801	264	7,085	
Contribution from the employer	627	827	5,546	
Retirement benefits paid	(315)	(342)	(2,786)	
Impact from foreign exchanges	712	(191)	6,298	
Ending balance of plan assets	¥ 21,530	¥ 19,126	\$ 190,446	

# solidated balance sheet

	Millions of yen		Thousands of U.S. dollars	
	December 31, 2017	March 31, 2017	December 31, 2017	
Contributory defined benefit obligations	¥ 25,414	¥ 23,749	\$ 224,803	
Plan assets	(21,530)	(19,126)	(190,446)	
	3,883	4,623	34,347	
Non-contributory defined benefit obligations	1,210	1,093	10,703	
Net liability recorded in the consolidated balance sheet	¥ 5,094	¥ 5,716	\$ 45,059	
Net defined benefit liability	7,389	7,827	65,360	
Net defined benefit asset	(2,295)	(2,110)	(20,300)	
Net liability recorded in the consolidated balance sheet	¥ 5,094	¥ 5,716	\$ 45,059	

#### (4) The components of retirement benefit expenses for the nine months ended December 31, 2017, and the year ended March 31, 2017, were as follows:

	Millions of yen		Thousands of U.S. dollars	
	Nine months ended December 31, 2017	Year ended March 31, 2017	Nine months ended December 31, 2017	
Service cost	¥ 962	¥ 1,073	\$ 8,509	
Interest cost	287	334	2,538	
Expected return on plan assets	(578)	(545)	(5,112)	
Amortization of actuarial differences	93	122	822	
Amortization of prior service costs	103	138	911	
Retirement benefit expenses on defined benefit plans	¥ 868	¥ 1,122	\$ 7,678	

#### (5) Remeasurements of defined benefit plans

The components of remeasurements of defined benefit plans (before tax effect) on "Other comprehensive income" were as follows:

	Millions of yen		
	Nine months ended December 31, 2017	Year ended March 31, 2017	Nine months ended December 31, 2017
Prior service costs	¥ 103	¥ 138	\$ 911
Actuarial differences	369	258	3,264
Total	¥ 473	¥ 396	\$ 4,183

(6) Remeasurements of defined benefit plans

The components of remeasurements of defined benefit plans (before tax effect) on "Accumulated other comprehensive income" were as follows:

	Nine months Voar onded		Thousands of U.S. dollars	
			Nine months ended December 31, 2017	
Unrecognized prior service costs	¥ 1,211	¥ 1,315	\$ 10,712	
Unrecognized actuarial differences	(40)	329	(353)	
Total	¥ 1,170	¥ 1,645	\$ 10,349	

Note: Above amounts are related to the Company and consolidated subsidiaries, and remeasurements of defined benefit plans on "Accumulated other comprehensive income" include unrecognized items (corre-sponding to the equity) of affiliates accounted for using the equity method.

(3) Reconciliation between the ending balances of defined benefit obligations and plan assets and net defined benefit liability recorded in the con-

#### (7) Plan assets

#### a. Components of plan assets Plan assets consisted of the following:

	December 31, 2017	March 31, 2017
Debt securities	36%	35%
Equity securities	44%	44%
General account	19%	20%
Other	1%	1%
Total	100%	100%

b. Method of determining the long-term expected rate of return

The long-term expected rate of return on plan assets is

determined considering allocation of plan assets which are

expected currently and in the future and the long-term rates of return which are expected currently and in the future from the (8) Main actuarial assumptions used for the nine months ended December 31, 2017, and the year ended March 31, 2017, were set forth as follows:

	Nine months ended December 31, 2017	Year ended March 31, 2017
Discount rate	0.5%	0.5%
Long-term expected rate of return	2.0%	2.5%

#### 3. Defined Contribution Plans

The amounts of the required contribution to the defined contribution plans of the Company and its consolidated subsidiaries were ¥323 million (\$2,857 thousand) and ¥356 million for the nine months ended December 31, 2017, and the year ended March 31, 2017, respectively.

# various components of the plan assets.

#### 9. Committed Line of Credit

on plan assets

As of December 31, 2017, and March 31, 2017, the Group had committed lines of credit amounting to ¥15,000 million (\$132,684 thousand). None of the committed lines of credit were used.

#### **10. Contingent Liabilities**

As of December 31, 2017, and March 31, 2017, the Group had no material contingent liabilities.

#### 11. Net Assets

The Companies Act of Japan (the "Act") requires that at least 50% of the paid-in capital of new share issues be transferred to the "Common stock" account and the amount not exceeding 50% of the paid-in capital be included in capital surplus as "Additional paid-in capital."

Under the Act, companies can pay dividends at any time during the fiscal year in addition to the year-end dividend upon resolution at the shareholders' meeting. Interim dividends may be paid at any time during the fiscal year upon resolution by the Board of Directors if the company has prescribed so in its articles of incorporation.

The Act provides certain limitations on the amounts available for dividends or the purchase of treasury stock. The limitation is defined as the amount available for distribution to the shareholders, but the amount of net assets after dividends must be maintained at no less than ¥3 million.

The Act requires that an amount equal to 10% of dividends must be appropriated as a legal reserve or as additional paid-in capital depending on the equity account charged upon the payment of such dividends until the aggregate amount of legal reserve and additional paid-in capital equals 25% of the common stock. Under the Act, the total amount of additional paid-in capital and legal reserve may be reversed without limitation. The Act also provides that common stock, legal reserve, additional paid-in capital, other capital surplus and retained earnings can be transferred among the accounts under certain conditions upon resolution of the shareholders.

The changes in the number of issued shares of common stock and treasury stock during the nine months ended December 31, 2017, and the year ended March 31, 2017 were as follows:

	Number of shares			
April 1, 2017	Increase	Decrease	December 31, 2017	
133,856,903	_	_	133,856,903	
7,285,746	1,904		7,287,650	
	133,856,903	133,856,903 —	133,856,903 — —	

An increase of 1,904 shares in treasury stock is due to acquisition of less than one share unit.

The treasury stock in the above table includes treasury stock (shares issued by the Company) acquired by an affiliate accounted for using the equity method which is attributed to the Company.

Outstanding shares issued:	
Common stock	
Treasury stock:	
Common stock	

An increase of 16,352 shares in treasury stock is due to acquisition of less than one share unit. The treasury stock in the above table includes treasury stock (shares issued by the Company) acquired by an affiliate accounted for using the equity method which is attributed to the Company.

#### Nine months ended December 31, 2017

The following cash dividend payments were approved during the fiscal year:

General shareholders' meeting held on June 17, 2017:

	Total amount Millions of yen	Per share amount Yen	Dividend record date	Effective date
	(Thousands of U.S. dollars)	(U.S. dollar)		
Common stock	¥ 3,164 million (\$ 27,987 thousand)	¥ 25.00 (\$ 0.22)	Mar. 31, 2017	Jun. 19, 2017

Board of Directors meeting held on November 13, 2017:

	Total amount Millions of yen (Thousands of U.S. dollars)	Per share amount Yen (U.S. dollar)	Dividend record date	Effective date
Common stock	¥ 4,556 million (\$ 40,300 thousand)	¥ 36.00 (\$ 0.31)	Sep. 30, 2017	Dec. 5, 2017

#### Year ended March 31, 2017

The following cash dividend payments were approved during the fiscal year:

General shareholders' meeting held on June 18, 2016:

	Total amount Millions of yen	Per share amount Yen	Dividend record date	Effective date
Common stock	¥ 3,164 million	¥ 25.00	Mar. 31, 2016	Jun. 20, 2016

Board of Directors meeting held on November 10, 2016:

	Total amount Millions of yen	Per share amount Yen	Dividend record date	Effective date
Common stock	¥ 2,025 million	¥ 16.00	Sep. 30, 2016	Dec. 5, 2016

#### 12. Amortization of Goodwill

Amortization of goodwill included in selling, general and administrative expenses for the nine months ended December 31, 2017, and the year ended March 31, 2017, were ¥854 million (\$7,554 thousand) and ¥978 million, respectively.

#### **13. Research and Development**

Research and development expenses included in cost of sales or selling, general and administrative expenses for the nine months ended December 31, 2017, and the year ended March 31, 2017, were ¥4,415 million (\$39,053 thousand) and ¥5,235 million, respectively.

Number of shares					
April 1, 2016 Increase Decrease			March 31, 2017		
133,856,903		_	133,856,903		
7,269,394	16,352		7,285,746		

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#### 14. Lease

#### a. Finance leases

The Group mainly leases computer machines and peripheral devices (tools, furniture and fixtures) used at the head office and other locations. Leased assets under finance lease arrangements are depreciated using the straight-line method over the lease term as useful life, with the residual value deemed to be zero.

#### b. Operating leases

Lease commitments under non-cancelable operating leases as of December 31, 2017, and March 31, 2017, were as follows:

	Millions of yen		Thousands of U.S. dollars
	December 31, 2017	March 31, 2017	December 31, 2017
Due within one year	¥ 457	¥ 329	\$ 4,042
Due after one year	649	541	5,740
Total	¥ 1,107	¥ 871	\$ 9,792

#### 15. Income Taxes

The Company and its domestic subsidiaries are subject to Japanese national and local income taxes which, in the aggregate, resulted in a normal effective statutory tax rate of approximately 30.9% for the nine months ended December 31, 2017, and the year ended March 31, 2017.

As of December 31, 2017, and March 31, 2017, significant components of deferred tax assets and liabilities were as follows:

	Millions of yen		Thousands of U.S. dollars
	December 31,	March 31,	December 31,
Deferred tax assets:	2017	2017	2017
Net defined benefit liability	¥ 1,677	¥ 1,884	\$ 14,834
Unrealized gain on intercompany sales of inventories	1.007	934	8,907
Tax loss carried forward	962	1.243	8,509
Valuation loss of investments in affiliates	900	6.987	7,961
Accrued bonuses to employees	775	968	6,855
Loss on devaluation of inventories	638	790	5,643
Unrealized gain on intercompany sales of property, plant and equipment	479	539	4,237
Accrued expenses	344	212	3.042
Accumulated depreciation	296	314	2.618
Retirement benefits payable to directors and corporate auditors	259	262	2,291
Enterprise tax payable	111	304	981
Impairment loss	109	92	964
Loss on devaluation of investments in securities	59	60	521
Allowance for doubtful receivables	42	43	371
Other	588	844	5,201
Total	8,254	15,483	73,011
Less: valuation allowance	(3,158)	(9,577)	(27,934)
Total deferred tax assets	5,095	5,905	45,068
eferred tax liabilities:			
Unrealized gains on available-for-sale securities	(2.399)	(1.867)	(21,220)
Adjustment to book value of a subsidiary due to fair value measurement at the inception	(1,989)	(1,911)	(17,593)
of consolidation			
Depreciation	(1,318)	(1,729)	(11,658)
Unrealized gains on land revaluation	(1,179)	(1,175)	(10,429)
Special depreciation reserve for tax purpose	(6)	(32)	(53)
Other Tatal deferred too liskilities	(245)	(417)	(2,167)
Total deferred tax liabilities	(7,139)	(7,134)	(63,149)
Net deferred tax (liabilities) assets	¥ (2,043)	¥ (1,229)	\$ (18,071)

A reconciliation between the normal effective statutory tax rate and the actual effective tax rate reflected in the accompanying consolidated statements of income for the nine months ended December 31, 2017, and the year ended March 31, 2017, was as follows:

Normal effective statutory tax rate
Non-deductible items such as entertainment expenses
Non-taxable items such as dividends received
Amortization of goodwill
Equity in earnings of affiliates
Inhabitant per capita tax
Statutory tax rate difference between parent and subsidiaries
Difference from effective tax rate applied
Tax credit for research and development
Special tax incentives
Valuation allowance
Investments in consolidated subsidiaries
Consolidation adjustment of gain on sales of shares in affiliates
Other
Actual effective tax rate

#### 16. Other Comprehensive Income (Loss)

The components of other comprehensive income (loss) for the nine months ended December 31, 2017, and the year ended March 31, 2017, were as follows:

	Million	s of yen	Thousands of U.S. dollars
	Nine months ended December 31, 2017	Year ended March 31, 2017	Nine months ended Decemb 31, 2017
Net unrealized gain on available-for-sale securities:			
Gain recognized during the year	¥ 1,788	¥ 1,301	\$ 15,816
Reclassification adjustment to net income	_	_	_
Amount before tax effect	1,788	1,301	15,816
Tax effect	(533)	(381)	(4,714
Net unrealized gain on available-for-sale securities	1,255	920	11,101
Foreign currency translation adjustments:			
Gain (loss) recognized during the year	6,469	(10,990)	57,222
Reclassification adjustment to net income	_	_	_
Amount before tax effect	6,469	(10,990)	57,222
Tax effect	_		
Foreign currency translation adjustments	6,469	(10,990)	57,222
Remeasurements of defined benefit plans:			
Gain recognized during the year	285	136	2,521
Reclassification adjustment to net income	188	260	1,662
Amount before tax effect	473	396	4,183
Tax effect	(245)	(225)	(2,167
Remeasurements of defined benefit plans	227	171	2,007
Share of other comprehensive income (loss) of an affiliate accounted for under the equity method:			
Income (loss) recognized during the year	317	(542)	2,804
Reclassification adjustment to net income			
Share of other comprehensive income (loss) of an affiliate accounted for under the equity method	317	(542)	2,804
Total other comprehensive income (loss)	¥ 8,270	¥ (10,441)	\$ 73,153

Nine months ended December 31, 2017	Year ended March 31, 2017
30.9%	30.9%
0.7	0.6
(0.9)	(2.4)
0.8	1.1
(0.9)	(0.7)
0.2	0.3
(1.5)	(1.4)
(0.1)	—
(1.8)	(2.4)
(0.9)	(2.3)
(21.1)	1.6
0.8	2.3
9.8	_
(0.2)	0.1
15.8%	27.7%

#### 17. Per Share Information

Per share information as of and for the nine months ended December 31, 2017, and the year ended March 31, 2017, is as follows:

	Yen		U.S. dollars
	December 31, 2017	March 31, 2017	December 31, 2017
Net income – basic	¥ 203.28	¥ 132.18	\$ 1.79
Net assets	2,140.71	1,966.80	18.93

Diluted net income per share for the nine months ended December 31, 2017, and the year ended March 31, 2017, is not presented since the Company did not have any kind of securities with potential dilutive effect in the fiscal years.

#### **18. Financial Instruments and Related Disclosures**

(1) Policy for financial instruments

The Group's use of its surplus funds is limited to short-term deposits and other low-risk financial assets. As to raising funds, the Group finances by issuing bonds and bank loans in accordance with business plans. The Group does not hold or issue derivative financial instruments for speculative purposes.

#### (2) Nature and risks of financial instruments

Notes and accounts receivable are subject to credit risks of customers. Receivables denominated in foreign currencies arising from the Group's global business are subject to foreign exchange risks. The Group controls these risks by utilizing forward foreign exchange contracts applicable to net amounts of receivables and payables denominated in foreign currencies.

Most investment securities consist of equity securities and are subject to market value volatility risks.

Most of notes and accounts payable are due within a year.

Bonds and bank loans are financed for working capital or capital investment use and other investments for which the maximum redemption/repayment period is eight years and three months. Long-term debt is exposed to interest rate fluctuation risk and foreign exchange fluctuation risk, but with respect to certain long-term debt, the principal and interest are hedged by derivatives (interest rate swaps and interest rate and currency swap contracts).

The Group utilizes forward foreign exchange contracts to manage foreign exchange fluctuation risk associated with foreign currency-denominated trade receivables and payables, interest rate swap contracts to manage interest rate fluctuation risk associated with long-term debt and interest rate and currency swap contracts to manage foreign exchange fluctuation risk and interest rate fluctuation risk associated with foreign currency-denominated bank loans within the extent of actual demand. With respect to hedging instruments and hedged items, hedging policy and assessment method of hedge effectiveness concerning hedge accounting, please see Note 2 (d).

#### (3) Risk management

- (a) Credit risks-The Company controls customers' credit risks in accordance with internal rules for controlling receivables. Appropriate departments of the Company monitor major customers' financial conditions to promptly obtain information about possible bad debts. Because the counterparties of derivatives are limited to major international financial institutions, the Company does not anticipate any losses arising from credit risk.
- (b) Market risks-The Company utilizes forward foreign exchange contracts to manage foreign exchange fluctuation risk identified by currency associated with foreign currency-denominated trade receivables and payables. The Company also utilizes interest rate swap contracts to manage interest rate risks associated with bank loans and interest rate and currency swap contracts to manage foreign exchange fluctuation risk and interest rate fluctuation risk associated with foreign currency-denominated bank loans. As to investments in securities, fair value and the financial condition of investees are periodically reviewed. Derivative transactions are executed and controlled by the Corporate Strategy Division. The general manager of the Corporate Strategy Division reports results and conditions of derivative transactions at the Board of Director's meetings on a monthly basis.
- (c) Liquidity risks-Each company of the Group prepares and updates cash-flow plans and maintains appropriate amounts of ready liquidity.

#### (4) Other information

Fair values of financial instruments are based on quoted prices in active markets. If a quoted price is not available, other rational valuation techniques are used instead. Because such valuation techniques include certain assumptions, results may differ if different assumptions are used in the valuation. The contract amounts for derivatives listed in Note 19 do not represent the volume of underlying market risks of the derivative transactions.

#### Financial instruments whose fair value is readily determinable as of Decemb

		December 31, 2017	
	Carrying amount	Fair value	Difference
Assets:			
(1) Cash and cash equivalents	¥ 129,920	¥ 129,920	¥ —
(2) Trade accounts and notes receivable	87,058	87,058	_
(3) Investments in securities			
Available-for-sale securities	5,480	5,480	_
Total	¥ 222,459	¥ 222,459	¥ —
Liabilities:			
(4) Trade accounts and notes payable	¥ 46,253	¥ 46,253	¥ —
(4) have accounts and notes payable (5) Long-term debt—Bonds and bank loans, including current portion	<b>₽</b> 40,255 69,665	¥ 40,255 69,984	∓ — 319
Total	¥ 115,919	¥ 116,238	¥ 319
IOLdi	ŧ 115,919	¥ 110,230	# 31:
Derivatives	¥ —	¥ —	¥ —
		Millions of yen	
		March 31, 2017	2144
Assets:	Carrying amount	Fair value	Difference
(1) Cash and cash equivalents	¥ 137,345	¥ 137,345	¥ —
(2) Trade accounts and notes receivable	75,434	75,434	+
(3) Investments in securities	7,5,757	75,454	
Available-for-sale securities	3,674	3,674	
Total	¥ 216,454	¥ 216,454	¥ —
10101	+ 210,404	+ 210,+34	<b>T</b>
Liabilities:			
(4) Trade accounts and notes payable	¥ 42,689	¥ 42,689	¥ —
(5) Long-term debt—Bonds and bank loans, including current portion	82,665	83,322	667
Total	¥ 125,354	¥ 126,021	¥ 667
Derivatives	¥ —	¥ —	¥ —
		Thousands of U.S. dollars	
		December 31, 2017	
	Carrying amount	Fair value	Difference
Assets:	¢ 4 4 40 000	¢ 4 440 000	¢
(1) Cash and cash equivalents	\$ 1,149,226	\$ 1,149,226	\$ —
(2) Trade accounts and notes receivable	770,084	770,084	
(3) Investments in securities	40 474	AO A7A	
Available-for-sale securities	48,474	48,474	
Total	\$ 1,967,793	\$ 1,967,793	\$ —
Liabilities:			
(4) Trade accounts and notes payable	\$ 409,137	\$ 409,137	\$ —
(5) Long-term debt—Bonds and bank loans, including current portion	616,231	619,053	2,821
Total	\$ 1,025,378	\$ 1,028,199	\$ 2,821
Derivatives	\$ —	\$ —	\$ —
Delladiaes	ų —	φ —	ų —

Note Assets

(1) and (2) —As these items are settled within a year and have fair values approximately equal to their carrying amounts, they are stated at the carrying amounts. (3) —Fair value of equity securities is stated at quoted market price. Fair value information of investment securities is discussed in Note 6.

Liabilities

(4) —As these items are settled within a year and have fair values approximately equal to their carrying amounts, they are stated at the carrying amounts (5) —Fair value of bonds is stated at present value of a total amount of its principal and interest discounted by a rate determined considering its remaining periods and credit risks. Bank loans are payable with variable interest rates. Fair value of bank loans is stated at carrying amount because fair value of such bank loans is considered approximately equal to its carrying amount based

Derivatives — Details and information are discussed in Note 19

ber 31, 201	7, and March	n 31, 2017,	are as follows:
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on the following assumptions: (a) variable interest rates reflect the current market rate, and (b) the Company's credit status has not significantly changed after the issuance.

Financial instruments which do not have quoted market prices and whose fair value is not reliably determinable are not included in the table above. Such financial instruments as of December 31, 2017, and March 31, 2017, are as follows:

	Millions	Millions of yen	
	December 31, 2017	March 31, 2017	December 31, 2017
Unlisted equity securities	¥ 193	¥ 193	\$ 1,707
Investments in investment business limited partnerships	413	239	3,653

Detailed information about investments in securities is discussed in Note 6.

Maturity analysis for financial assets as of December 31, 2017, is as follows:

	Million	s of yen
	Decembe	er 31, 2017
	Due within one year	Due after one year
Trade accounts and notes receivable	¥ 129,920	_
) Cash and cash equivalents ) Trade accounts and notes receivable Total	87,058	_
Total	¥ 216,978	_
	Thousands o	f U.S. dollars
	Decembe	- 21 2017

	Decembe	r 31, 2017
	Due within one year	Due after one year
(1) Cash and cash equivalents	\$ 1,149,226	_
(2) Trade accounts and notes receivable	770,084	_
Total	\$ 1,919,310	_

Maturities of long-term debt as of December 31, 2017, are disclosed in Note 7.

#### **19. Derivatives and Hedging Activities**

**Derivatives to which hedge accounting is applied:** The Group utilizes interest rate swap agreements to hedge interest rate risks associated with its bank loans and interest rate and currency swap contracts to hedge foreign exchange risk and interest rate risks associated with its foreign currency-denominated bank loans. The Group's interest rate swaps and interest rate and currency swap contracts qualify for hedge accounting and meet specific matching criteria under Japanese GAAP and are not remeasured at market value, but the differential paid or received under the swap agreements are recognized and included in interest expenses or income, and the foreign currency assets and liabilities hedged by interest rate and currency swap contracts are translated at the contract rates, and no gains or losses are recognized.

Fair value information of such derivatives as of December 31, 2017, and March 31, 2017, is as follows:

		Millions of yen	
		December 31, 2017	1
	Contract	Amount	
	Within one year	Over one year	Fair value of derivative instruments
Interest rate and currency swaps (fixed rate payment in JPY, floating rate receipt in USD)	¥ 19,665	¥ 17,480	¥ 919
		Millions of yen	
		March 31, 2017	
	Contract	Amount	
-	Within one year	Over one year	Fair value of derivative instruments
Interest rate and currency swaps (fixed rate payment in JPY, floating rate receipt in USD)	¥ 19,665	¥ 17,480	¥ 587

Interest rate and currency swaps (fixed rate payment in JPY, floating rate receipt in

Interest rate swaps (fixed rate payment, floating rate receipt)

Interest rate swaps (fixed rate payment, floating rate receipt)

Interest rate swaps (fixed rate payment, floating rate receipt)

Fair value of derivative instruments in the table above is stated at the amount obtained from financial institutions, the counterparties of the contracts.

#### **20. Asset Retirement Obligation**

The Group recognizes restoration duty at the time of leaving based on the real estate rent contracts of the Company's head office, etc., as asset retirement obligation.

Regarding asset retirement obligation as of December 31, 2017, and March 31, 2017, the Company reasonably estimates the amount of security deposits related to the building rent contracts that are not expected to be ultimately collected and records the amount attributed to the current fiscal year in place of recording a liability.

#### **21. Business Combination**

#### Transaction under common control

The Company transferred all shares of THK RHYTHM CO., LTD. (hereinafter, "RHYTHM"), which was a consolidated subsidiary of the Company, to TRA Holdings CO., LTD. (hereinafter, "TRA") on November 14, 2017, following the resolution of the Board of Directors meeting held on October 23, 2017.

#### (1) Overview of business combination

- a. Name of the subsidiary and its business outline
   Name of the subsidiary: THK RHYTHM CO., LTD.
   Business outline: Sales and manufacturing of parts for automotive equipment and other transportation equipment
- b. Date of transfer of shares
- November 14, 2017 (Date of transfer of shares) December 31, 2017 (Deemed date of transfer)

	Thousands of U.S. dollars	
	December 31, 2017	
Contract A	Amount	
Within one year	Over one year	Fair value of derivative instruments
\$ 173,949	\$ 154,621	\$ 8,129
	Millions of yen	
	December 31, 2017	
Contract A	Amount	
Within one year	Over one year	Fair value of derivative instruments
¥ 10,000	¥ 10,000	¥ (48)
	Millions of yen	
	,	
Contract A		
Within one year	Over one year	Fair value of derivative instruments
¥ 10,000	¥ 10,000	¥ (75)
	Amount	Fair value of derivative
Within one year	Over one year	instruments
\$ 88,456	\$ 88,456	\$ (424)
	Contract / Within one year \$ 173,949 Contract / Within one year ¥ 10,000 Within one year ¥ 10,000	December 31, 2017           Contract Amount           Within one year         Over one year           \$ 173,949         \$ 154,621           Within one year         \$ 154,621           Within one year         Millions of yen           December 31, 2017         Contract Amount           Within one year         Over one year           Within one year         Over one year           ¥ 10,000         ¥ 10,000           Within one year         Over one year           Within one year         Over one year           Within one year         Over one year           Y 10,000         ¥ 10,000           Y 10,000         Y 10,000           Within one year         December 31, 2017           Contract Amount         Thousands of U.S. dollars           December 31, 2017         Contract Amount           Within one year         Over one year

- c. Legal form of business combination Sales of shares in consideration for cash
  d. Purpose of the transfer of shares On October 5, 2017, the Company established TRA for the purpose of integrating transportation equipment business, following the development of this business. The Company decided to transfer all shares of RHYTHM held by the Company to TRA in order to enhance the business value of transportation equipment business within the Group and reinforce the THK Group's management.
  e. Number of shares transferred and status of holding shares before and after the transfer
- Number of shares held before the transfer:4,900 shares (Ownership ratio: 100%)Number of shares transferred:4,900 sharesNumber of shares held after the transfer:0 share (Ownership ratio: 0%)

#### (2) Overview of accounting treatments performed

The Company accounted for the transaction as a transaction under common control in accordance with the "Accounting Standard for Business Combinations" (ASBJ Statement No. 21, issued on September 13, 2013) and "Guidance on Accounting Standard for Business Combinations and Accounting Standard for Business Divestitures" (ASBJ Guidance No. 10, issued on September 13, 2013).

(3) Matter concerning the changes in the Company's interest due to the transaction with non-controlling shareholders

- a. Major factor of the changes in capital surplus
- Sales of shares in a subsidiary not followed by a change in scope of consolidation
- b. Amount of decreased capital surplus following the transaction with non-controlling shareholders ¥4,143 million (\$36,647 thousand)

#### 22. Segment Information

The reportable segments are components of the Group for which separate financial information is available, and whose operating results are reviewed periodically by the Board of Directors to determine allocation of operating resources and evaluate their performance.

The Group's main products are machinery parts such as LM (Linear Motion) Guides and ball screws, and transportation equipment-related parts such as link balls and suspension ball joints. In each country, local subsidiaries establish their comprehensive business strategies and conduct their business activities in a similar way that the Company and domestic subsidiaries do in Japan.

Therefore, the reportable segment information consists of the five geographical segments, namely: (1) Japan, (2) the Americas (the United States and others), (3) Europe (Germany, France and others), (4) China, and (5) Other (Taiwan, Singapore and others) based on the Group's production/sales structure.

Segment income is computed based on operating income. The reportable segment information is prepared under the same accounting policies as discussed in Note 2. Inter-segment sales and transfers are stated at amounts based on their fair market values. All adjustments in the following tables are inter-segment elimination on consolidation.

Segment information of the Group as of December 31, 2017, and March 31, 2017, and for the nine months and the year then ended is as follows:

#### **Reportable segments**

				Millions	of yen			
				December	r <b>31, 2017</b>			
	Japan	The Americas	Europe	China	Other	Total	Adjustments	Consolidated
Sales to customers	¥ 106,072	¥ 67,130	¥ 57,247	¥ 40,024	¥ 16,128	¥ 286,603	¥ —	¥ 286,603
Inter-segment	41,345	112	31	4,579	1,400	47,469	(47,469)	_
Total	147,418	67,242	57,278	44,604	17,528	334,072	(47,469)	286,603
Segment profit	¥ 20,248	¥ 2,738	¥ 627	¥ 3,126	¥ 2,171	¥ 28,913	¥ 365	¥ 29,279
Assets	¥ 371,737	¥ 71,002	¥ 117,181	¥ 61,486	¥ 17,736	¥ 639,142	¥ (202,477)	¥ 436,664
Other items								
Depreciation and amortization	¥ 3,263	¥ 3,083	¥ 2,298	¥ 3,340	¥ 428	¥ 12,415	¥ (69)	¥ 12,346
Amortization of goodwill	_	161	692	_	_	854	_	854
Investment in an affiliate accounted for under the equity method	5,123	_	_	_	_	5,123	_	5,123
Increase in property, plant and equipment and intangibles	7,220	3,251	4,288	2,889	199	17,848	80	17,928

				Millions	of yen			
				March 31	I, 2017			
	Japan	The Americas	Europe	China	Other	Total	Adjustments	Consolidated
Sales to customers	¥ 121,865	¥ 62,870	¥ 48,775	¥ 28,008	¥ 12,056	¥ 273,577	¥ —	¥ 273,577
Inter-segment	44,982	39	47	4,091	1,464	50,625	(50,625)	_
Total	166,848	62,909	48,822	32,100	13,521	324,202	(50,625)	273,577
Segment profit	¥ 18,809	¥ 2,311	¥ 649	¥ 750	¥ 1,336	¥ 23,857	¥ 795	¥ 24,653
Assets	¥ 363,731	¥ 67,579	¥ 84,757	¥ 60,801	¥ 15,000	¥ 591,870	¥ (176,938)	¥ 414,931
Other items								
Depreciation and amortization	¥ 4,450	¥ 2,935	¥ 2,007	¥ 3,556	¥ 313	¥ 13,262	¥ (77)	¥ 13,185
Amortization of goodwill	20	157	649	_	151	978	_	978
Investment in an affiliate accounted for under the equity method	4,016	—	_	_	_	4,016	_	4,016
Increase in property, plant and equipment and intangibles	8,486	3,482	3,608	2,157	187	17,922	(81)	17,84

					Thousands of	U.S. dollars			
					December	r <b>31, 2017</b>			
		Japan	The Americas	Europe	China	Other	Total	Adjustments	Consolidated
Sales to customers	\$	938,275	\$ 593,808	\$ 506,386	\$ 354,038	\$ 142,662	\$ 2,535,187	\$ —	\$ 2,535,187
Inter-segment		365,723	990	274	40,504	12,383	419,893	(419,893)	_
Total	1	,304,007	594,798	506,660	394,551	155,046	2,955,081	(419,893)	2,535,187
Segment profit	\$	179,106	\$ 24,219	\$ 5,546	\$ 27,651	\$ 19,203	\$ 255,754	\$ 3,228	\$ 258,991
Assets	\$3	3,288,252	\$ 628,058	\$ 1,036,541	\$ 543,883	\$ 156,886	\$ 5,653,622	\$ (1,791,039)	\$ 3,862,574
Other items									
Depreciation and amortization	\$	28,863	\$ 27,271	\$ 20,327	\$ 29,544	\$ 3,785	\$ 109,818	\$ (610)	\$ 109,208
Amortization of goodwill		_	1,424	6,121	_	_	7,554	_	7,554
Investment in an affiliate accounted for under the equity method		45,316	_	_	_	_	45,316	_	45,316
Increase in property, plant and equipment and intangibles		63,865	28,757	37,930	25,555	1,760	157,877	707	158,584

1. Segmentation by country or area is determined based on geographical proximity.

- The main countries or areas which belong to reportable segments other than Japan or China are as follows:
   "The Americas": The United States of America and others
- (2) "Europe": Germany, France and others
- (3) "Other": Taiwan, Singapore and others
- Adjustments" are as follows:
   (1) Adjustments of "Segment profit (loss)" in an amount of ¥365 million (\$3,228 thousand) for the nine months ended December 31, 2017, represent elimination of inter-segment transactions.
- Adjustments of "Segment profit (loss)" in an amount of ¥795 million for the year ended March 31, 2017, represent elimination of inter-segment transactions. (2) Adjustments of "Segment assets" in an amount of ¥202,477 million (\$1,791,039 thousand) and ¥176,938 million for the nine months ended December 31, 2017, and the year ended March 31, 2017, respectively, are all eliminations of inter-segment transactions
- (3) Adjustments of "Depreciation and amortization" in an amount of ¥69 million (\$610 thousand) and ¥77 million for the nine months ended December 31, 2017, and the year ended March 31, 2017, respectively, are all eliminations of inter-segment transactions.
- (4) Adjustments of "Increase in property plant and equipment and intangibles" in an amount of ¥80 million (\$707 thousand) and ¥81 million for the nine months ended December 31, 2017, and the year ended March 31, 2017, respectively, are all eliminations of inter-segment transactions.
- 4. "Segment profit (loss)" is reconciled with operating income in the consolidated statements of income.

#### Sales by business for the nine months ended December 31, 2017, and the year ended March 31, 2017

	Million	s of yen	Thousands of U.S. dollars
	December 31, 2017	March 31, 2017	December 31, 2017
Industrial Equipment-Related Business	¥ 175,645	¥ 164,310	\$ 1,553,693
Transportation Equipment-Related Business	110,957	109,266	981,486
Total	¥ 286,603	¥ 273,577	\$ 2,535,187

#### Sales by geographical area

			Millions	of yen		
		Nine m	onths ended	December 3	1, 2017	
	Japan	The Americas	Europe	China	Other	Total
Sales to customers	¥ 99,099	¥ 67,194	¥ 54,001	¥ 41,410	¥ 24,896	¥ 286,603
			Millions	of yen		
		Y	Year ended M	arch 31, 2017		
	Japan	The Americas	Europe	China	Other	Total
Sales to customers	¥ 112,061	¥ 63,025	¥ 46,004	¥ 29,513	¥ 22,971	¥ 273,577
			Thousands of	U.S. dollars		
		Nine m	onths ended	December 3	1, 2017	
	Japan	The Americas	Europe	China	Other	Total
Sales to customers	\$ 876,594	\$ 594,374	\$ 477,673	\$ 366,298	\$ 220,221	\$ 2,535,187

			Millions	of yen		
		Nine m	onths ended	December 3	1, 2017	
	Japan	The Americas	Europe	China	Other	Total
Gales to customers	¥ 99,099	¥ 67,194	¥ 54,001	¥ 41,410	¥ 24,896	¥ 286,603
			Millions	of yen		
		Y	Year ended M	arch 31, 2017		
	Japan	The Americas	Europe	China	Other	Total
Sales to customers	¥ 112,061	¥ 63,025	¥ 46,004	¥ 29,513	¥ 22,971	¥ 273,577
			Thousands of	U.S. dollars		
		Nine m	onths ended	December 3	1, 2017	
	Japan	The Americas	Europe	China	Other	Total
Sales to customers	\$ 876,594	\$ 594,374	\$ 477,673	\$ 366,298	\$ 220,221	\$ 2,535,187

#### Tangible fixed assets by geographical area

		and the second sec								
		December 31, 2017           Japan         The Americas         Europe         China         Other         Total           ¥ 50,398         ¥ 17,416         ¥ 16,976         ¥ 28,479         ¥ 2,663         ¥ 115,9           Millions of yen           March 31, 2017								
	Japan	The Americas	Europe	China	Other	Total				
Tangible fixed assets	¥ 50,398	¥ 17,416	¥ 16,976	¥ 28,479	¥ 2,663	¥ 115,934				
			Millions	of yen						
			March 3	1, 2017						
	Japan	The Americas	Europe	China	Other	Total				
Tangible fixed assets	¥ 47,049	¥ 16,838	¥ 13,760	¥ 28,167	¥ 2,823	¥ 108,639				
			Thousands of	U.S. dollars						
			Decembe	r 31, 2017						
	Japan	The Americas	Europe	China	Other	Total				
Tangible fixed assets	\$ 445,802	\$ 154,055	\$ 150,163	\$ 251,915	\$ 23,555	\$ 1,025,510				

#### Loss on impairment on property, plant and equipment by reportable segment

				Millions	s of yen					
		Nine months ended December 31, 2017								
	Japan	The Americas	Europe	China	Other	Total	Adjustments	Consolidated		
Loss on impairment	¥ 54	¥—	¥—	¥—	¥—	¥ 54	¥—	¥ 54		
				Thousands of	U.S. dollars					
			Nine m	onths ended	December 3	1, 2017				
	Japan	The Americas	Europe	China	Other	Total	Adjustments	Consolidated		
Loss on impairment	\$ 477	\$—	\$—	\$—	\$—	\$ 477	\$—	\$ 477		

No loss on impairment was recognized for the year ended March 31, 2017.

#### Amortization and unamortized balance of goodwill by reportable segment

				Millions	of yen			
		Nine months ended December 31, 2017						
	Japan	The Americas	Europe	China	Other	Total	Adjustments	Consolidated
Amortization	¥—	¥ 161	¥ 692	¥—	¥—	¥ 854	¥—	¥ 854
Unamortized balance	—	2,064	9,385		—	11,449	—	11,449

	Millions of yen							
	Year ended March 31, 2017							
	Japan	The Americas	Europe	China	Other	Total	Adjustments	Consolidated
Amortization	¥ 20	¥ 157	¥ 649	¥ —	¥ 151	¥ 978	¥—	¥ 978
Unamortized balance		2,303	8,948	_		11,251		11,251

		Thousands of U.S. dollars						
	Nine months ended December 31, 2017							
	Japan	The Americas	Europe	China	Other	Total	Adjustments	Consolidated
Amortization	\$—	\$ 1,424	\$ 6,121	\$—	\$—	\$ 7,554	\$—	\$ 7,554
Unamortized balance		18,257	83,016	—	—	101,273	_	101,273

#### 23. Subsequent Events

2.

	ed earnings as of December 31, 2017, was appr Total amount	Per share amount		
	Millions of yen (Thousands of U.S. dollars)	Yen (U.S. dollar)	Dividend record date	Effective date
Common stock	¥ 3,290 million (\$ 29,102 thousand)	¥ 26.00 (\$ 0.22)	Dec. 31, 2017	Mar. 19, 2018
ssuance of domestic corporate b	ande			
	orate bonds on February 7, 2018, as follows b	ased on the resolutio	on made by the Board of	Directors meeting h
on June 17, 2017:			·	-
1. 11 <sup>th</sup> series of unsecured bonds				

(2) Issue price:	¥100 (\$0.88) per face value of ¥100 (\$0.88)
(3) Interest rate:	0.140% per annum
(4) Redemption period:	5 years
(5) Redemption method:	Bullet maturing on February 7, 2023
	Retirement purchase is allowed at any time
(6) Payment date:	February 7, 2018
(7) Use of fund:	Fund for redemption of corporate bonds
12 <sup>th</sup> series of unsecured bond	ls
(1) Total amount of issuance:	¥10,000 million (\$88,456 thousand)
(2) Issue price:	¥100 (\$0.88) per face value of ¥100 (\$0.88)
(3) Interest rate:	0.270% per annum
(4) Redemption period:	7 years
(5) Redemption method:	Bullet maturing on February 7, 2025

(6) Payment date: February 7, 2018 (7) Use of fund: Fund for redemption of corporate bonds

38) of each corporate bond

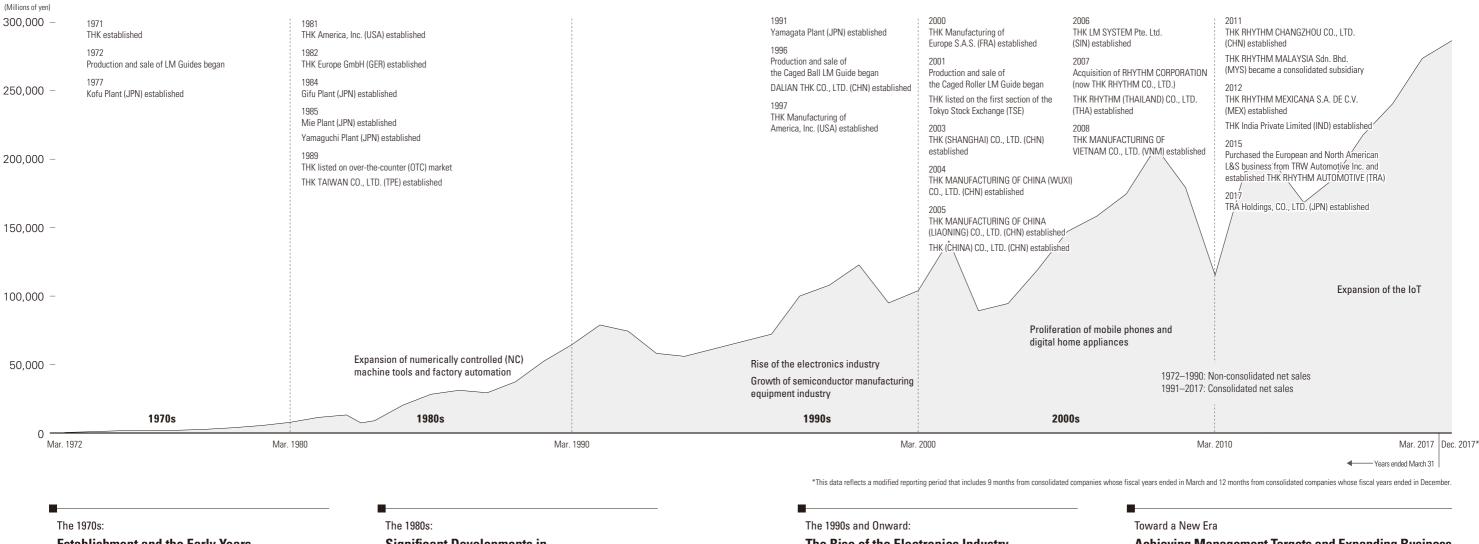
ne after the payment date.

38) of each corporate bond

Retirement purchase is allowed at any time after the payment date.

# **CORPORATE HISTORY**

#### **Net Sales**



# **Establishment and the Early Years**

While rolling motion was commonly achieved through rolling contact utilizing rotary bearings, linear motion was considered impossible to achieve through rolling contact, and it primarily came from sliding contact instead

In 1971, THK developed the ball spline, which enabled a higher level of linear motion precision and performance. This ball spline was the predecessor to THK's current mainstay product, the LM Guide which was first introduced in 1972

In 1978, the Company's products were adopted by a U.S.-based pioneer of the machining center and world-class leader of its day. This breakthrough was the catalyst for the increased use of LM Guides in machine tools.

#### The Ball Spline

Developed in the same year that THK was established, the ball spline was the precursor to the LM Guide. This revolutionary product allows balls to roll along a rounded groove machined into the ball spline's shaft, boosting the load that the device can tolerate and permitting the transmission of torque.



# **Significant Developments in** Factory Automation (FA)

The 1973 oil crisis saw the demise of heavy industry, pushing technology-based industries, such as the automotive, semiconductor, and home appliance industries, increasingly to the fore. Buoyed by depreciation in the value of the yen as well as the outstanding quality of products manufactured in Japan, export volumes to Europe and the United States climbed steadily. Under these circumstances, there was a demand for mass production of high-quality products. With FA advancing across production front lines, machine tool production volumes increased, and the proportion of advanced machine tools with numerical control (NC) saw steady growth. Against this backdrop, the application of LM Guides experienced explosive growth.

#### The LM Guide

Developed utilizing the structure and mechanism of ball splines. LM Guides today are THK's mainstay product. The use of LM Guides by a major U.S.based machine tool manufacturer spurred a significant increase in the application of these products in machine tools

The Rise of the Electronics Industry

During the 1990s, the number of LM Guides used in semiconductor manufacturing equipment surged dramatically, in line with the increase in semiconductor demand. Entering the 2000s, amid the proliferation of mobile devices and digital home appliances, as well as the upswing in demand for semiconductor, flat panel display, and other similar manufacturing equipment, there was a rise in the use of LM Guides, especially the second-generation Caged Ball LM Guide. In tune with the increasing globalization of manufacturing, THK accelerated its business development globally.

#### The Caged Ball LM Guide

The Caged Ball LM Guide was developed as the second-generation LM Guide. By keeping the balls in place, the use of caged ball technology extends service life, reduces noise, and enables long-term maintenance-free operation when compared with first-generation LM Guides.



# **Achieving Management Targets and Expanding Business Domains by Implementing Three Growth Strategies**

As globalization has progressed, the market around THK has also steadily expanded with the rapid development of new technologies such as AI and the IoT. Under these circumstances, the Company aims to expand its business domains through three growth strategies: expanding its geographical range through *full-scale globalization*; purposefully expanding its domains through the development of new business areas; and fully utilizing AI, robots, and other technologies in a variety of ways through a *change in business style*. While moving forward with those strategies, THK is accelerating the initiatives being conducted in its industrial machinery and automotive and transportation businesses to achieve the following management targets by the end of the 2022 fiscal year: consolidated net sales of ¥500 billion, an operating income of ¥100 billion, an ROE of 17%, and an EPS of ¥560. Furthermore, the Company will continue vigorously promoting its growth strategies to aim at achieving not only these management targets, but also long-term growth and an increase in its corporate value.

# **SUBSIDIARIES & AFFILIATE**

As of December 31, 2017

Subsidiaries	Main Operations	Head Office b	ercentage Owned by the Company, ctly or Indirectly (%
THK INTECHS CO., LTD.	Manufacture and sale of vital machinery components and machinery	Tokyo, Japan	100.0
TALK SYSTEM CO., LTD.	Sale of machinery parts and various types of equipment	Tokyo, Japan	99.0
THK NIIGATA CO., LTD.	Manufacture of ball splines	Niigata, Japan	100.0
THK RHYTHM CO., LTD.	Transportation equipment-related business	Shizuoka, Japan	70.0
NIPPON SLIDE CO., LTD.	Manufacture and sale of slide rails	Tokyo, Japan	100.0
IRA Holdings, CO., LTD.	Holding and management company	Tokyo, Japan	70.0
THK Holdings of America, L.L.C.	Holding and management company	Illinois, U.S.A.	100.0
THK America, Inc.	Sale of LM Guides, ball screws, spherical joints	Illinois, U.S.A.	100.0
THK Manufacturing of America, Inc.	Manufacture of LM Guides, spherical joints	Ohio, U.S.A.	100.0
THK RHYTHM NORTH AMERICA CO., LTD.	Transportation equipment-related business	Tennessee, U.S.A.	70.0
THK RHYTHM MEXICANA, S.A. DE C.V.	Transportation equipment-related business	Guanajuato, Mexico	99.9
THK RHYTHM AUTOMOTIVE MICHIGAN CORPORATION	Transportation equipment-related business	Michigan, U.S.A.	100.0
THK RHYTHM AUTOMOTIVE CANADA LIMITED	Transportation equipment-related business	Ontario, Canada	100.0
THK Europe B.V.	Holding and management company	Amsterdam, Netherlands	100.0
THK GmbH	Sale of LM Guides, ball screws, spherical joints	Ratingen, Germany	100.0
THK France S.A.S.	Sale of LM Guides, ball screws, spherical joints	Tremblay-en-France, France	100.0
HK Manufacturing of Europe S.A.S.	Manufacture of LM Guides, ball screws, spherical joints	Ensisheim, France	100.0
HK Manufacturing of Ireland Ltd.	Manufacture and sale of ball screws	Dublin, Ireland	100.0
THK RHYTHM AUTOMOTIVE GmbH	Transportation equipment-related business	Dusseldorf, Germany	100.0
THK RHYTHM AUTOMOTIVE CZECH a.s.	Transportation equipment-related business	Dacice, Czech	100.0
THK CAPITAL UNLIMITED COMPANY	Financing and loan management for affiliated companies in the Americas	Dublin, Ireland	100.0
THK FINANCE UNLIMITED COMPANY	Financing and loan management for affiliated companies in Europe	Dublin, Ireland	100.0
THK (CHINA) CO., LTD.	Holding and management company, sale of LM Guides	Dalian, China	100.0
THK (SHANGHAI) CO., LTD.	Sale of LM Guides, ball screws, spherical joints	Shanghai, China	100.0
DALIAN THK CO., LTD.	Manufacture and sale of ball screws, actuators	Dalian, China	70.0
THK MANUFACTURING OF CHINA (WUXI) CO., LTD.	Manufacture of LM Guides	Wuxi, China	100.0
THK MANUFACTURING OF CHINA (LIAONING) CO., LTD.	Manufacture of LM Guides	Dalian, China	100.0
THK RHYTHM GUANGZHOU CO., LTD.	Transportation equipment-related business	Guangzhou, China	70.0
THK RHYTHM CHANGZHOU CO., LTD.	Transportation equipment-related business	Changzhou, China	78.5
THK MANUFACTURING OF CHINA (CHANGZHOU) CO., LTD.	Manufacture of LM-related parts, unit products	Changzhou, China	100.0
THK TAIWAN CO., LTD.	Sale of LM Guides, ball screws, spherical joints	Taipei, Taiwan	100.0
THK LM SYSTEM Pte. Ltd.	Sale of LM Guides, ball screws, spherical joints	Kaki Bukit, Singapore	100.0
THK RHYTHM (THAILAND) CO., LTD.	Transportation equipment-related business	Rayong, Thailand	70.0
HK MANUFACTURING OF VIETNAM CO., LTD.	Manufacture of slide rails	Bac Ninh, Vietnam	100.0
HK RHYTHM MALAYSIA Sdn. Bhd.	Transportation equipment-related business	Penang, Malaysia	56.0
THK India Private Limited	Sale of LM Guides, ball screws, spherical joints	Karnataka, India	99.3

Affiliate	Main Operations	Head Office	by the Company, Directly or Indirectly (%)
SAMICK THK CO., LTD.	Manufacture and sale of LM Guides	Daegu, South Korea	33.82

# **CORPORATE DATA**

As of December 31, 2017

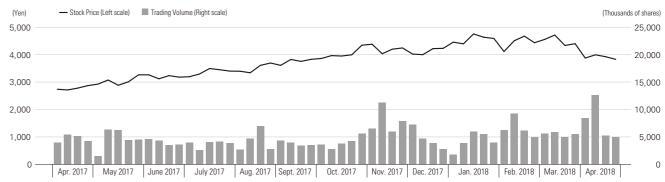
#### **Company Profile**

Headquarters	2-12-10 Shibaura, Minato-ku, Tokyo 108-8506, Japa Telephone: +81-3-5730-3911	in	
Established	April 1971		
Number of Employees	13,364 (consolidated); 3,581 (parent company)		
Month of Ordinary General Meeting of Shareholders	March		
URL	http://www.thk.com/		
Independent Auditors	Grant Thornton Taiyo LLC.		
Stock Information			
Common Stock: Authorized	465,877,700 shares		
Issued	133,856,903 shares		
Stock Exchange Listing	Tokyo Stock Exchange (1 <sup>st</sup> Section)		
Stock Transfer Agent	Mitsubishi UFJ Trust and Banking Corporation		
Number of Chambeldon	17.044		
Number of Shareholders	17,944		
	17,944		
	17,944	Number of Issued Shares Held	Shareholding Rati (%)
Major Shareholders			
Major Shareholders Shareholders	st Account)	Shares Held	(%)
<b>Major Shareholders</b> Shareholders Japan Trustee Services Bank, Ltd. (Trus	st Account)	Shares Held 11,003,700	(%)
<b>Major Shareholders</b> Shareholders Japan Trustee Services Bank, Ltd. (Tru: The Master Trust Bank of Japan, Ltd. (	st Account)	Shares Held 11,003,700 8,025,400	(%) 8.2 5.9
Major Shareholders Shareholders Japan Trustee Services Bank, Ltd. (Trus The Master Trust Bank of Japan, Ltd. ( JP MORGAN CHASE BANK 385632	st Account)	Shares Held 11,003,700 8,025,400 4,347,367	(%) 8.2 5.9 3.2
Major Shareholders Shareholders Japan Trustee Services Bank, Ltd. (Trus The Master Trust Bank of Japan, Ltd. ( JP MORGAN CHASE BANK 385632 Akihiro Teramachi	st Account)	Shares Held           11,003,700           8,025,400           4,347,367           3,497,810	(%) 8.2 5.9 3.2 2.6
Major Shareholders Shareholders Japan Trustee Services Bank, Ltd. (Trus The Master Trust Bank of Japan, Ltd. ( JP MORGAN CHASE BANK 385632 Akihiro Teramachi FTC CO., LTD.	st Account) Trust Account)	Shares Held           11,003,700           8,025,400           4,347,367           3,497,810           2,774,000	(%) 8.2 5.9 3.2 2.6 2.0 2.0
Major Shareholders Shareholders Japan Trustee Services Bank, Ltd. (Trus The Master Trust Bank of Japan, Ltd. ( JP MORGAN CHASE BANK 385632 Akihiro Teramachi FTC CO., LTD. GOVERNMENT OF NORWAY	st Account) Trust Account) st Account 5)	Shares Held           11,003,700           8,025,400           4,347,367           3,497,810           2,774,000           2,709,200	(%) 8.2 5.9 3.2 2.6 2.0 2.0
Major Shareholders Shareholders Japan Trustee Services Bank, Ltd. (Trus The Master Trust Bank of Japan, Ltd. ( JP MORGAN CHASE BANK 385632 Akihiro Teramachi FTC CO., LTD. GOVERNMENT OF NORWAY Japan Trustee Services Bank, Ltd. (Trus	st Account) Trust Account) st Account 5) 100	Shares Held           11,003,700           8,025,400           4,347,367           3,497,810           2,774,000           2,709,200           2,377,200	(%) 8.2 5.9 3.2 2.6 2.0 2.0 1.7 1.7

#### **Shareholder Composition**

Shareholder Type	Number of Shareholders	Number of Issued Shares Held	Shareholding Ratio (%)
Financial Institutions	84	40,502,000	30.26
Securities Companies	55	4,425,280	3.31
Other Corporations	268	4,802,926	3.59
Overseas Institutions	602	61,580,750	46.00
Individuals and Others	16,984	15,261,679	11.40
Treasury Stock	1	7,284,268	5.44

#### **Stock Price and Trading Volume**





# THK CO., LTD.

URL: www.thk.com