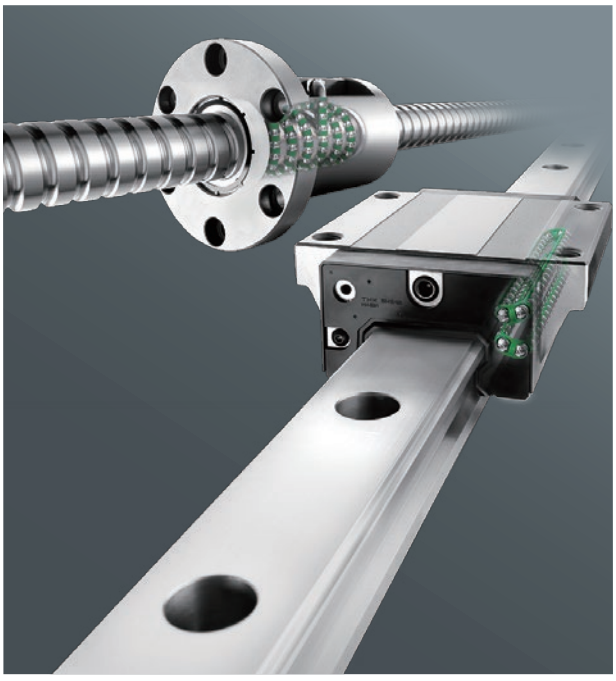
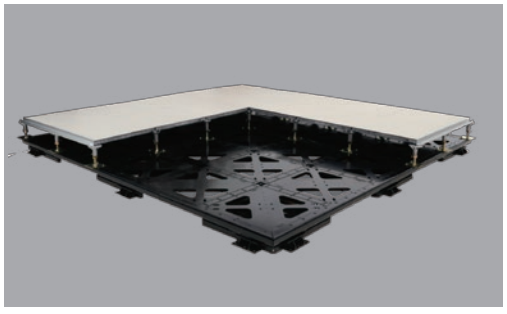
2017/2018
THK CSR Report

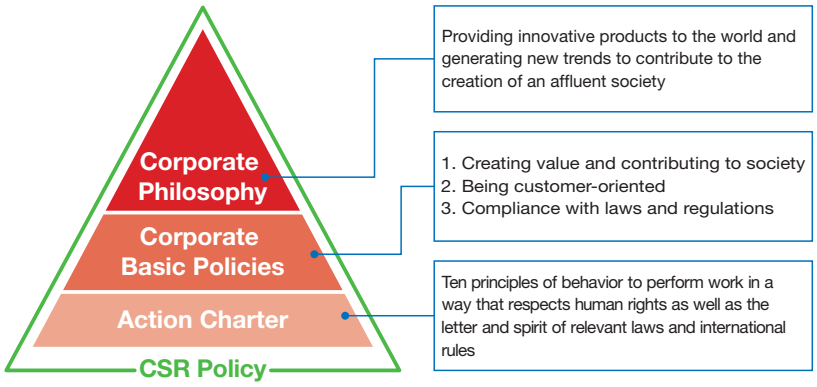




THK's CSR Policy

In 1971, THK introduced a machine component called the *Linear Motion System* to the world, becoming the first company ever to achieve linear motion through rolling motion. Now, we believe it is our corporate social responsibility to use our work to contribute to society, earning the trust of our stakeholders as we follow our corporate philosophy and achieve the *creation of an affluent society*.

We endeavor to improve our long-term corporate value with our CSR policy, which is founded on our Corporate Philosophy that represents our entrepreneurial spirit, our Action Charter that serves as a guide for our actions, and the Corporate Basic Policies that we must follow as we perform our duties.



Contents

THK CSR Report 2017/2018

Reporting Period

This report covers activities performed during and around the period of April 1, 2016, to March 31, 2017.

Scope

This report covers THK CO., LTD., and its consolidated subsidiaries (35), unconsolidated subsidiary, and affiliate. The scope of data in the environmental section is noted in that section.

References

Reference material used in the preparation of this report was taken from the Global Reporting Initiative's "G4 Sustainability Reporting Guidelines" (2013) and the Ministry of the Environment's "Environmental Reporting Guidelines" (2012).

Target Audience

This report is aimed at a broad range of stakeholders, including government administrators, community residents, and THK's customers, shareholders, investors, business partners (including subcontractors and suppliers), and employees. The table below highlights some examples of the ways THK reaches out to its various stakeholders.

Examples of Involvement

Stakeholders	Examples
Customers	●Regular sales activities ●Press releases ●Exhibitions in various countries ●E-mail newsletters ●Technical Support ●Other support sites
Shareholders and investors	●General meeting of shareholders and exhibition ●Financial results briefing ●Investor meetings ●Annual Report ●Online IR Library and information for shareholders
Business partners (subcontractors and suppliers)	●Regular purchasing activities ●Environmental guidelines ●THK company activities
Employees	●Internal newsletters ●Training activities ●Company trips and employee and family events
Government administrators	●Social insurance report and tax returns ●Participating in seminars
Community residents	●Employee volunteering activities ●Community clean-up activities ●Providing guest speakers and factory tours ●Charitable contributions

Pictured on page 2

New headquarters: THK Building 2-12-10 Shibaura, Minato-ku, Tokyo 108-8506, Japan Phone: +81-3-5730-3911 Fax: +81-3-5730-3915

Message from the CEO

Contributing to the Creation of an Affluent Society Through Mid- to Long-Term Growth

Our Surrounding Environment and Growth Strategies

In the fiscal year 2016, a moderate recovery continued in the global economy, led by Europe and the United States and other developed countries, despite a slowdown in the economic growth of China and other emerging countries. Although Japan experienced a weakness in exports due to the increased value of the yen, the economy improved overall, moderately recovering through the second half of the year.

In these circumstances, the THK Group has identified *full-scale globalization*, the *development of new business areas*, and a *change in business style* as cornerstones of our growth strategy to expand markets for our products, including LM Guides. Under our full-scale globalization strategy, we are striving to expand our sales and production structures globally to capture demand from 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. With our development of new business areas, we are working to increase sales revenue from both our existing and newly developed products, buoyed by growing use of THK products in consumer goods-related fields. Additionally, in order to promote these strategies, we are striving to make full use of the IoT, cloud computing, AI, and robots in a variety of different areas such as sales, production, and development, thereby expanding our business domains by realizing a change in business style.

Striving for Mid- to Long-Term Growth

Based on the aforementioned growth strategies, we are promoting activities that will enable us to expand sales in each of our business areas and foster mid- to long-term growth. For our industrial machinery business, we will develop various policies to promote expansion not only of our mass production equipment sales, but of our sales aimed at the wide range of customers who are the end-users of our products. To give an example, we began selling semi-custom LM Guide Actuator Model SKR/KR products in August 2016. We took five custom products with high customer demand and made them into semi-custom products, allowing us to shorten their lead time. We are able to shorten other lead times with our newly launched, web-exclusive optimal product selection tools, which customers can use to easily calculate service life and select models. We also launched Omni THK for Singapore, Malaysia, and Thailand in March 2017. At every step of the process, from first learning about our products to actually placing an order, customers can use Omni THK to effortlessly purchase our products at any time or from any location, even if they are in a region where we do not have any sales branches.

In our other industrial machinery business, we are working to expand the use of our products in new consumer goods-related fields such as automotive parts, seismic isolation and damping systems, medical equipment, aircraft, robotics, and renewable energy.

For our automotive and transportation business, by demonstrating synergy between THK, THK RHYTHM, and TRA's mutual sales and production facilities, we will work to further expand our L&S (Linkage and Suspension) business and develop and expand sales of new products that make use of our core linear motion technology.

We will also strengthen our efforts to improve our profitability. In March 2017, we finished installing the Eagle System, which enables us to see the operation conditions of our machines at each facility in Japan, the Americas, Europe, and China at a glance. This will allow us to standardize global production. In the future, we will pursue dramatic improvements in productivity by connecting our products and production employees to the network so that we can achieve visibility for every process.

2017 Initiatives

Starting in the 2017 fiscal year, we have now changed the end of our fiscal year from March 31 to December 31. The purpose of the change is to promote unified management among the THK Group and to further improve transparency of our operations by providing appropriate and timely disclosure of our financial results and other operational information.

We also moved the offices of our headquarters from Tokyo's Shinagawa Ward to Minato Ward in October 2017. By concentrating nearby branches and the headquarters of THK and some of its group companies in one location, we have endeavored to further strengthen cooperation within the Group, make our operations more efficient, improve the workplace environment, and strengthen our ability to respond to disasters with our business continuity plan (BCP).

Our CSR Policy

As a final word, our LM Guides and other products have been used in machine tools, industrial robots, semiconductor production equipment, and more. These products we created have contributed to the development of industry as components vital to making all kinds of equipment high-precision, high-speed, and labor-saving. In that sense, our products, our very work itself, *is* CSR to us.

We do not simply announce our CSR policy. To put our corporate philosophy soundly into practice, we have established our Corporate Basic Policies and The THK Group Action Charter to strengthen our employees' awareness of CSR. These ideas have been recorded in our Corporate Philosophy, our Corporate Basic Policies, and The THK Group Action Charter pamphlets that have been translated into ten languages and distributed to each and every employee to ensure that everyone understands the message. In doing so, the THK Group will firmly fulfill its social responsibility to help create a sustainable society.

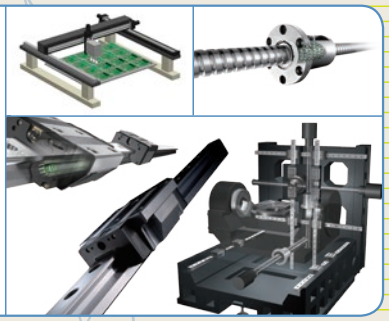
THK CO., LTD., President and CEO

Company Overview

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, we have committed ourselves to developing a variety of products, including Linear Motion (LM) Guides, since our company's establishment in 1971.

Industrial Machinery Business

We have continued to expand the scale of our business by supplying LM Guides and other products that are essential components of industrial machinery such as machine tools and semiconductor production equipment. In addition, we are actively engaged in the manufacture and sale of electric actuators and unit products that combine many machine elements. In this manner, we are bringing increased precision, rigidity, and speed to the industrial machinery field, while at the same time addressing automation needs at the production line.

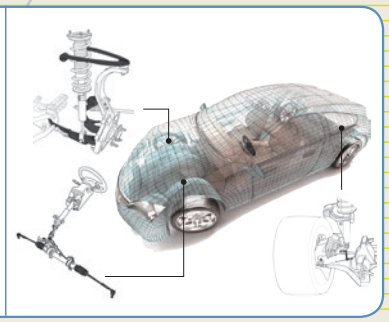


Industrial Machinery Business (Other)

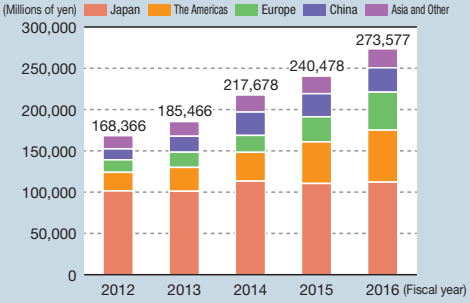
We are committed to cultivating opportunities in consumer goods-related fields, such as seismic isolation and damping systems, medical equipment, aerospace, robotics, and renewable energy, as part of our efforts to promote the development of new business areas. To this end, we draw on the underlying strengths of our accumulated core linear motion system technology and ample expertise in the industrial equipment field. The applications of our compact and highly rigid products have expanded into many fields where they help people live safe and comfortable lives.

Automotive & Transportation Business

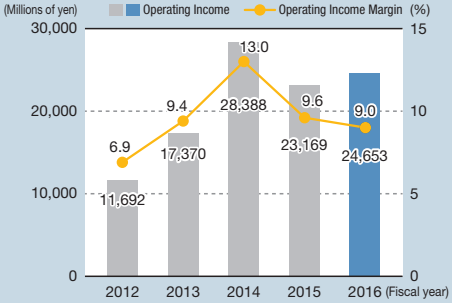
We develop and supply automotive components that support the basic functions of automobiles as a part of our Automotive & Transportation Business activities. We strive to make our mark as a supplier by promptly addressing changes in the global automotive market. In addition to the L&S (Linkage and Suspension) business we have worked to develop since our establishment, we are accelerating our efforts to expand the use of linear motion components in a variety of mechanisms such as next-generation steering, braking, and suspension systems.



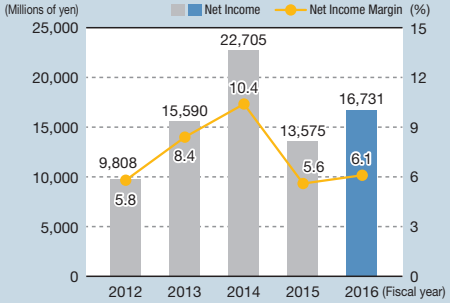
Net Sales



Operating Income and Operating Income Margin

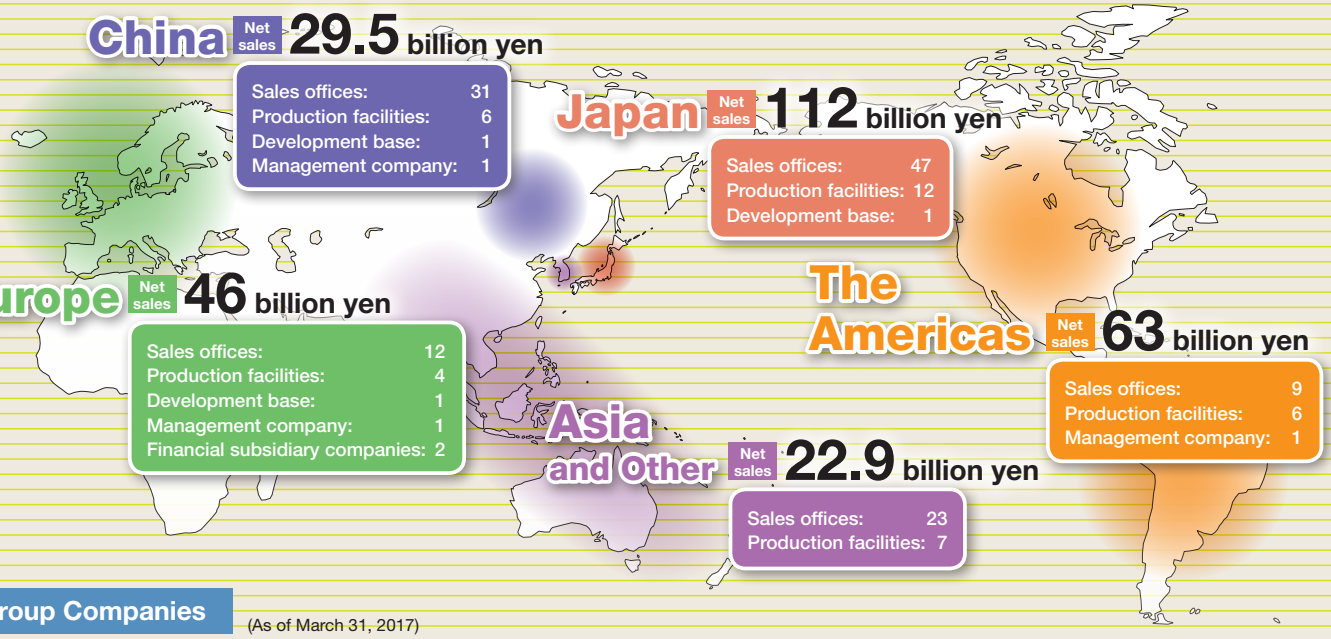


Net Income Attributable to Shareholders of THK CO., LTD., and Net Income Margin



Full-Scale Globalization

THK has established an integrated production and sales structure to produce and sell locally in four areas of demand: Japan, the Americas, Europe, and Asia. Over the past few years, we have been bolstering and expanding our sales network while strengthening our production capabilities across China and other newly emerging markets, where demand is expected to grow over the medium to long term. In developed countries, we are also working to expand our sales network in a bid to steadily capture demand amid expansion in our user base. Through these means, we are working diligently to promote substantial additional growth.



Group Companies

(As of March 31, 2017)

Japan

- THK CO., LTD. ●31 ▲5 ■1
- THK INTECHS CO., LTD. ●1 ▲2
- TALK SYSTEM CORPORATION ●15
- THK NIIGATA CO., LTD. ▲1
- THK RHYTHM CO., LTD. ▲3
- NIPPON SLIDE CO., LTD. ▲1

China

- THK (CHINA) CO., LTD. ●30 ■1 ◆1
- THK (SHANGHAI) CO., LTD. ●1
- DALIAN THK CO., LTD. ▲1
- THK MANUFACTURING OF CHINA (WUXI) CO., LTD. ▲1
- THK MANUFACTURING OF CHINA (LIAONING) CO., LTD. ▲1
- THK RHYTHM GUANGZHOU CO., LTD. ▲1
- THK RHYTHM CHANGZHOU CO., LTD. ▲1
- THK MANUFACTURING OF CHINA (CHANGZHOU) CO., LTD. ▲1

The Americas

- THK Holdings of America, L.L.C. ◆1 (USA)
- THK America, Inc. ●7 (USA)
- THK Manufacturing of America, Inc. ▲1 (USA)
- THK RHYTHM NORTH AMERICA CO., LTD. ●1 ▲1 (USA)
- THK RHYTHM MEXICANA, S.A. DE C.V. ▲1 (Mexico)
- THK BRAZIL INDUSTRIA E COMERCIO LTDA. ●1 (Brazil)
- THK RHYTHM AUTOMOTIVE MICHIGAN CORPORATION ▲1 (USA)
- THK RHYTHM AUTOMOTIVE CANADA LIMITED ▲2 (Canada)

Europe

- THK Europe B.V. ●1 ◆1 (The Netherlands)
- THK GmbH ●10 (Germany, France, UK, the Netherlands, Italy, Turkey, Sweden, Russia, Austria, Spain)
- THK France S.A.S. ●1 (France)
- THK Manufacturing of Europe S.A.S. ▲1 (France)
- THK Manufacturing of Ireland Ltd. ▲1 (Ireland)
- THK RHYTHM AUTOMOTIVE GmbH ▲1 ■1 (Germany)
- THK RHYTHM AUTOMOTIVE CZECH a.s. ▲1 (Czech Republic)
- THK CAPITAL ULC. ▼1 (Ireland)
- THK FINANCE ULC. ▼1 (Ireland)

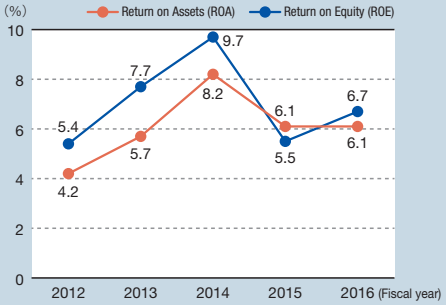
Asia and Other

- THK TAIWAN CO., LTD. ●3 (Taiwan)
- THK LM SYSTEM Pte. Ltd. ●1 (Singapore)
- THK RHYTHM (THAILAND) CO., LTD. ●1 ▲1 (Thailand)
- THK MANUFACTURING OF VIETNAM CO., LTD. ▲1 (Vietnam)
- THK RHYTHM MALAYSIA Sdn. Bhd. ▲1 (Malaysia)
- THK India Private Limited ●5 (India)
- SAMICK THK CO., LTD. ●12* ▲4 (South Korea)

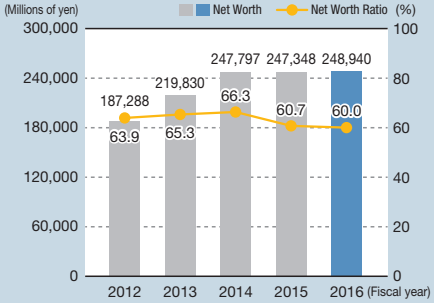
*In addition to the above, THK CO., LTD., has one sales office in South Korea whose staff includes employees on assignment from THK Japan.

● THK CO., LTD. ● Consolidated subsidiary ● Unconsolidated subsidiary ● Affiliate
● Sales office ▲ Production facility ■ Development base ◆ Management company ▼ Financial subsidiary company

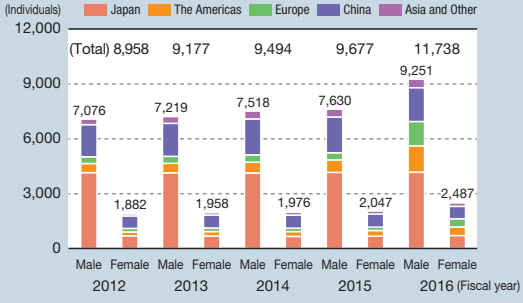
Return on Assets (ROA) and Return on Equity (ROE)



Net Worth and Net Worth Ratio



Employees

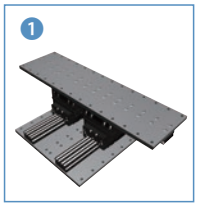


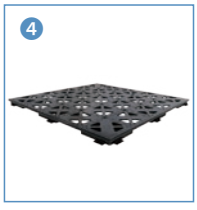
TRA gender composition data added beginning 2016

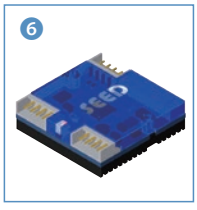
The Many Applications of THK Products

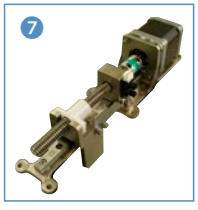
Did you know that THK products are used all around you? In every CSR report since 2007, we have published special features and interviews highlighting examples of customers using our products. There are still many more places where our products are being used around you, so we will continue to cover them in future CSR reports. The testimonials in this edition illustrate, in the words of our customers, how our products are being used for medical equipment, renewable energy, seismic isolation and damping systems, and robots.

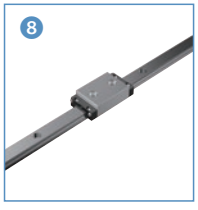
Category	Series/Model		User	Location	CSR Report
Historical buildings	Seismic isolation (building)/CLB	❶	Aichi Prefectural Government Office	Beneath the government office	2010/2011
	Seismic isolation (equipment)/TSD	❷	Ganjoju-in Temple	Beneath Unkei's Buddha statue	2010/2011
	Seismic isolation (building)/CLB	❶	Heijo Palace	Beneath the palace floor	2010/2011
	Seismic isolation (building)/CLB & RDT	❶❸	Honno-ji Temple	Beneath the floor, roof, and statuary in the main hall	2013/2014
Public transportation	Seismic isolation (floor)/TGS	❹	Fukuoka Area Control Center	Server room	2016/2017
	Seismic isolation (floor)/TGS	❹	East Nippon Expressway Company Limited	Beneath the control center floor	2016/2017
Housing	Seismic isolation (housing)/CLB & RDT	❶❸	The Soutome family	Beneath floor of residence	2011/2012
	Seismic isolation (housing)/CLB & RDT	❶❸	The Haneda family	Beneath floor of residence	2012/2013
Medicine	Actuator/KR	❺	The University of Tokyo	Tele-surgical robot	2008/2009
	Seismic isolation (equipment)/TSD	❷	Tohoku University Hospital	Blood analyzer	2013/2014
	SEED Solutions/SEED-MS	❻	Yamanashi University & Kofu Municipal Hospital	Assisted-gait robot	2014/2015
	Syringe unit	❼	HORIBA, Ltd.	Automated blood-cell counter	2014/2015
Welfare	LM Guide/UGR	❽	Imasen Engineering Corporation	Electric wheelchair	2014/2015
Robotics	**SEED Solutions**/SEED-MS	❻	National Institute of Advanced Industrial Science and Technology	Robotic household technology	2013/2014
	SEED Solutions/ Robotic hand for use in space	❾	Japan Aerospace Exploration Agency	International Space Station	2013/2014
	SEED Solutions/SEED-Noid	❿	The University of Tokyo	Platform robot for research/ academia	2016/2017
Renewable energy	Water-powered generating system	⓫	Kanagawa Prefecture Sagami River Left Bank Land Improvement District	Irrigation canal	2015/2016
	Low-Torque Shaft Unit/WLS	⓬	Sylphid Inc.	Strawberry farm	2016/2017

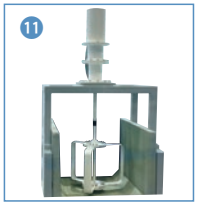












Reducing Vertical Vibration

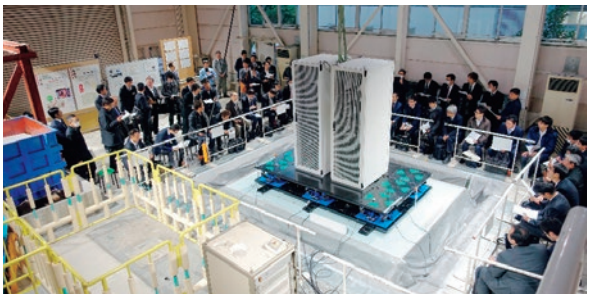
In recent years, major earthquakes such as the Great Hanshin-Awaji Earthquake, the Great East Japan Earthquake, and the Kumamoto Earthquakes struck one after the other, and many expect another to happen soon in the Tokai region, the Tonankai region, or directly beneath Tokyo. However, THK has long provided customers with seismic isolation solutions for buildings, equipment, and servers that protect lives and allow people's surroundings to remain constant even when an earthquake occurs. We want to make sure to protect everyone's valued property during future major earthquakes, so we developed a three-dimensional seismic isolation system that incorporates a new vertical seismic isolation system with the existing (horizontal vibration-absorbing) Seismic Isolation Module Model TGS already used by many customers.

The features of the three-dimensional seismic isolation system allow it to: (1) deflect horizontal earthquake vibrations as previous seismic isolation systems do, (2) absorb vertical vibrations, and (3) make use of the LM Guide technology developed over the years to keep structures and equipment level even as the system itself moves up and down to reduce vibrations.

The effectiveness of the three-dimensional seismic isolation system was verified through three-dimensional vibration testing. We placed server racks on seismic isolation systems and subjected them to the same kind of tremors as Mashiki observed during the Kumamoto Earthquakes, with horizontal and vertical acceleration exceeding 1,000 Gal.* With a two-dimensional seismic isolation system, the horizontal acceleration was reduced to about 1/5 the value input, but the LM Guides were only able to prevent amplification of the vertical acceleration, not reduce it. In comparison, the three-dimensional seismic isolation system reduced vertical acceleration to about 1/3, and it curtailed horizontal acceleration even more than the two-dimensional system.

We want our customers to know about our seismic isolation technology and consider it for their BCP plans, so we held demonstrations in October and November 2016, which about 200 customers attended.

* **Gal:** *Unit of acceleration used for earthquake tremors. 980 Gal is equivalent to 1 G. A magnitude 7 earthquake is 400 Gal or more.*



Demonstration

Attending the Three-Dimensional Seismic Isolation Demonstration

UNIADEX, Ltd., is a total ICT (information and communication technology) support company belonging to the Nihon Unisys Group. As a one-stop service provider, we offer everything from designing, constructing, and installing an ICT base to operation/management, equipment set-up, cloud service, and maintenance.

As we operate in a multi-vendor environment, we also sell THK's seismic isolation systems.

Because THK has amassed an unparalleled, diverse product lineup of seismic isolation systems for equipment, buildings, and floors, we are able to offer products that meet the varied requests of our customers.

We typically recommend installing a seismic isolation system when setting up equipment, especially when hard disks or servers are involved, as any damage they receive in a major earthquake can significantly harm a customer's systems. When we were recently invited to see a demonstration of the three-dimensional seismic isolation system, we were eager to attend.

UNIADEX, Ltd.
Sales Division Ⅱ,
Facility Business Dept.,
Facility Sales 2 Director
Kazuaki Kusano

Sales Division Ⅱ,
Facility Business Dept.,
Facility Sales 2
Yasuyuki Yagawa

During the demonstration, THK used a vibration table to replicate the tremors felt during the Chuetsu Earthquake, the Great East Japan Earthquake, and the Kumamoto Earthquakes. We were able to visually see how well the three-dimensional seismic isolation system installed on the table suppressed vertical vibrations in comparison with the two-dimensional system. The numbers also showed how effectively vertical vibration would be reduced in a major earthquake. In light of these results, we now have a new option to present to customers who consult us about reducing vertical vibrations. We have worked with THK for a long time and view them as a reliable partner. We hope they will continue to develop exceptional products and provide them to the market.

Hitachi, Ltd., Healthcare Business Unit — **Hitachi, Ibaraki Prefecture**

The Joint Circular Arc-Type R Guide Makes Compact, High-Precision Particle Therapy Equipment Possible

What is particle therapy equipment?

There are three primary methods of treatment for cancer: surgery, chemotherapy, and radiation therapy. Particle therapy equipment is a type of radiation therapy equipment. A proton beam irradiates cancer tissue, shrinking or killing cancer cells without any incisions or side effects from medication.

X-ray therapy is a widely used radiation therapy, but x-rays radiate much more energy near the surface of the body, and they can damage normal tissue around the cancer tissue. In comparison, with particle therapy, the peak energy emitted from the proton beam can be matched to the specific location and depth of the cancer tissue. The radiation will not reach the surrounding tissue, so this treatment method makes it possible to have a minimal impact on normal tissue. Particle therapy causes little pain and few side effects, enabling patients to balance their treatment and regular life through outpatient care.

Hitachi, Ltd.
Healthcare Business Unit
Radiation Oncology Systems Division, Particle Therapy System Division
Irradiation Equipment Design Group, Particle Therapy Systems Design Department

Section Manager
Tsutomu Yamashita

Engineer
Takenori Nishimura

Minimizing equipment size is key

Particle therapy equipment is essentially made up of a particle accelerator and a gantry. In the accelerator, protons are accelerated to 2/3 the speed of light. The protons are transported to the gantry, and then they are delivered from the beam transport nozzle to the cancerous area. The gantry can be rotated 360 degrees to the required angle and deliver the proton beam from any direction while avoiding vital organs.

The gantries used in particle therapy equipment are massive, with weights in excess of 100 tons because of the many magnets of various sizes that transport the protons. The size was a major obstacle for the widespread use of this equipment, as hospitals would require a dedicated facility on their campus for this large-scale equipment.

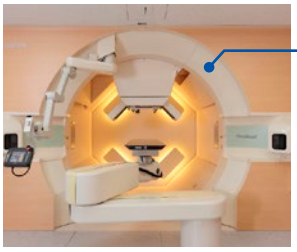
With the gantry being supported from beneath, the rotation tracks on previous models of equipment would deform and become slightly elliptical just from the gantry's weight. Because of that, the support structure and rotating parts were made to be larger and heavier to achieve the necessary rigidity. However, the equipment we provided to Hokkaido University uses Circular Arc-Type R Guides to support the gantry. Rotation accuracy was much improved due to the smoother rotation provided by the preservation of a true circular shape. At the same time, the equipment also became lighter and more compact. Gantries are required to achieve the highest precision, with the position error of the center of radiation being no wider than 2 mm for a 360-degree rotation. It was the Circular Arc-Type R Guides that made it possible for this equipment to meet those size and precision requirements.

Working with THK to create solutions

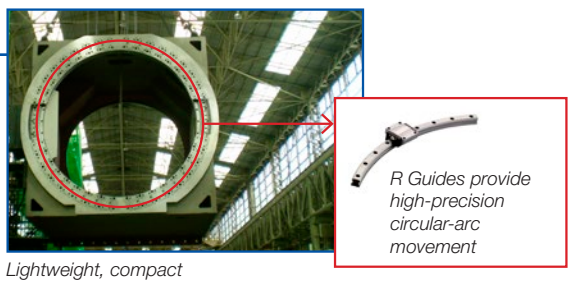
We faced many challenges before this equipment was complete, but we overcame them with the help of THK, who worked with us starting from the design phase. Combining our respective fields of expertise allowed us to move forward with this project, as THK provided design support, assistance during assembly, and more. The end result was a success. It took very little time to go from starting the design process to finishing the assembly process.

Thanks to THK, this equipment is highly regarded, and the next customers in line are also asking us to give them the same state-of-the-art particle therapy equipment that we provided to Hokkaido University.

We hope to continue collaborating with THK to create better products and help create a better society.



State-of-the-art particle therapy equipment that excels at targeting cancer tissue



Lightweight, compact gantry made possible with Circular Arc-Type R Guides

Kyoto University Graduate School

Sakyo, Kyoto, Japan

SEED Solutions Expands Research Possibilities for Industry-Government-Academia Innovation Programs

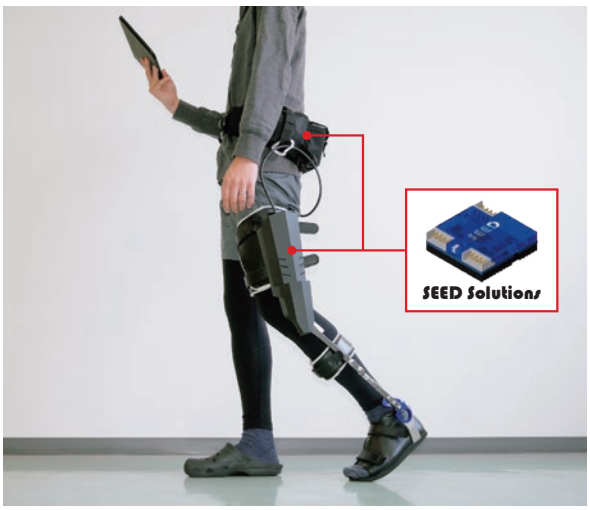
Graduate School of Medicine, Kyoto University
Division of Human Health Sciences
Development and Rehabilitation of Motor Function, Doctor of Medical Science
Tadao Tsuboyama

The Research Promotion Institution for COI (Center of Innovation) Site at Kyoto University is developing the Orthobot® (a wearable mobility assistive device) for the rehabilitation of people with disabilities, helping them regain the ability to walk naturally after suffering paralysis from a stroke or spinal cord injury. With a focus on attaining a "flexible and comfortable society," we at Kyoto University, "the Last 5X innovation R&D Center for a Smart, Happy, and Resilient Society," pursue various research projects, and our Orthobot® research is one COI program that advanced through the industry-government-academia collaboration sponsored by JST (Japan Science and Technology Agency) and the Ministry of Education, Culture, Sports, Science and Technology.

With this mobility assistive device, we are endeavoring to create a robotic walking aid that can be installed to the KAFO (knee-ankle-foot orthosis) devices that most patients are already comfortably using.

Kyoto University's role is to plan the overall design and collect measurements and data from the patients who wear the Orthobot®. The specific movements necessary for walking assistance are different for each person, so we need to collect basic information about the way each individual patient walks.

When regular robotic walking aids are used to collect data, the force used to move a unique individual's leg with a machine naturally generates an opposing force. Only the force that tries to move the leg back gets stronger, forming a lingering habit that exacerbates the symptoms. In contrast, the Orthobot® assists the bending and extending of the knee in a way that matches the movement of the leg while walking. It calculates the timing best suited to the wearer's walking speed and stride length to create a natural gait. Therefore, the timing of the driving motors sent by our robot is crucial. THK's **SEED Solutions** units are used in this critical function, receiving information from the sensors that detect how the individual is walking, and then operating the actuator motors that determine the amount of force used to move the leg up and down.



The Orthobot® is equipped with two ***SEED Solutions*** *units*

The data collection is currently done through wiring, but a single **SEED Solutions** unit has the capability of communicating wirelessly, so we will consider using wireless communications in our future research. One application would be for patients requiring control for not just one, but both legs. If the pace of the left and right legs do not match, the patient will experience difficulty walking. To control the timing of both legs, the sensors in the robots on the left and right legs need to be able to communicate. This is a situation where the wireless communication function of **SEED Solutions** would prove useful.

We are currently in the development phase of rehabilitation robots primarily for use at medical institutions, but we will also broaden our scope in the future to research robots that support independent living, which can be worn by private individuals to make their everyday lives easier. By wearing the Orthobot®, we hope that people with bad hips or knees and those whose return to their community has been limited by lingering symptoms from a serious illness will be able to go to work and live their lives like those without such disabilities.

Challenergy Inc.

Sumida, Tokyo, Japan

The Model WLS Low-Torque Shaft Unit is Crucial in Making the Magnus Vertical-Axis Wind Turbine a Reality

Shocked by the Fukushima Daiichi nuclear disaster caused by the Great East Japan Earthquake in March 2011, I wanted to realize a world that does not rely on nuclear power. I looked into renewable energy, but what I found was that wind power generation was lagging behind in Japan. Despite its great potential for wind generation, Japan's wind conditions are unstable, and typhoons or sudden winds can easily cause accidents and malfunctions. With that knowledge, I embarked on the challenge of making the Magnus Vertical-Axis Wind Turbine, the first in the world of its kind, which enables steady power generation even in a harsh environment like Japan.

The Magnus Vertical-Axis Wind Turbine has cylinders in place of propellers. The rotation of the cylinders in the wind generates a Magnus effect, which causes the whole turbine to spin. This is the same principle that causes curveballs to swerve in baseball.* The adjustment of the cylinders' rotation based on the wind speed allows power to be generated in the presence of both normal and strong, typhoon-like winds. An additional benefit of the vertical-axis structure is that inconsistent wind directions have no effect on its performance. I obtained a patent in 2013, and made the leap to establish Challenergy in 2014.

I first got in contact with THK when I saw their Model WLS at WIND EXPO. THK is the only manufacturer that sells shaft units with such low-torque rotation, which is essential for efficient power generation, so I felt like I had found exactly what I was looking for.

We faced a series of difficulties during development, but during our trial of the turbine in Nanjo, Okinawa Prefecture, which began in August 2016, we successfully achieved stable rotation even during near-typhoon level winds with instantaneous wind speeds up to 25 m/s. Various problems have occurred during the trial, but THK's shaft unit has withstood the sea breeze with almost no rusting, and even now, it has maintained its performance with no change in torque.

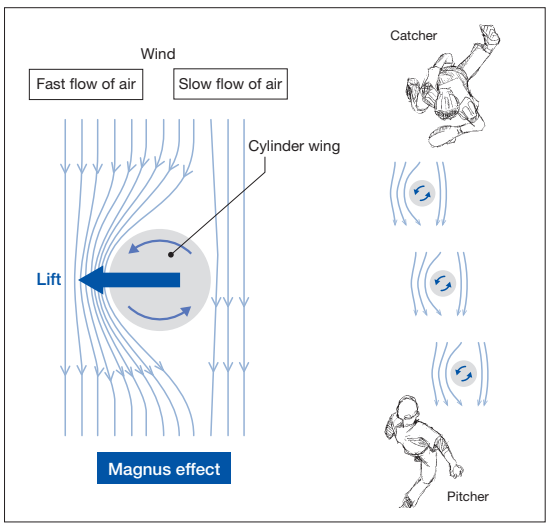
Our current goal is to utilize mass-produced turbines with a power output of 10 kW by 2020. In the future, we would like to make 1 MW turbines a reality, but that would require a bearing unit dozens of meters long. We will have to rely a lot on THK's technical expertise, but I hope to continue our successful collaboration in the future.

Challenergy Inc.
Founder, President & CEO
Atsushi Shimizu

Magnus Vertical-Axis Wind Turbine set up in Nanjo, Okinawa Prefecture

***The principle behind the Magnus Vertical-Axis Wind Turbine**

1. When a pitcher puts spin on a ball, the ball encounters a headwind as it flies to the catcher.
2. The curveball rotates counterclockwise when viewed from above.
3. The left side of the ball is rotating in the same direction as the headwind, so air flows faster on the left.
4. The right side of the ball is rotating in the opposite direction of the headwind, so air flows slower on the right.
5. The ball curves to the left because of the difference in the flow of air on the left and right sides of the ball.
6. When spin is applied to a turbine cylinder instead of a ball, the force of the cylinder trying to swerve in the wind rotates the whole turbine.



Nippon Becton Dickinson Company, Ltd.

Minato, Tokyo, Japan

Advancing the World of Health

Nippon Becton Dickinson Company, Ltd.
BD Life Sciences - Diagnostic Systems,
Business Director,
Kazuhiro Hamaji

Nippon Becton Dickinson Company was founded in 1971 as a Japanese subsidiary of the US corporation Becton, Dickinson and Company. We provide sophisticated products with safety features supported by advanced technical expertise in medical research, diagnostics, and treatments. Our products you may be familiar with include blood collection tubes and insulin pen needles, of which we hold the greatest market share in the world. One of the key products that our diagnostics division offers is the blood culture system. Blood culture tests involve collecting blood samples in blood culture vials, inoculating the vials, and screening for microorganisms. The blood culture system is a vital piece of diagnostic equipment that enables health care providers to select the optimal antibiotics for the patient.

I am sure many of you are familiar with the term *sepsis*. Sepsis is a life-threatening condition that is caused by infections and results in organ and tissue damage. Sepsis has a much higher mortality rate than heart attacks or strokes, which are cited among the three leading causes of death in Japan. However, the cause of death in such cases is often reported as cancer, heart disease, or something else, so this fact is not well-known.

When large-scale earthquakes such as the Great East Japan Earthquake and the Kumamoto Earthquakes occur, many people become injured, and those who lose their homes experience fatigue, which weakens their immune systems and makes it easier for them to become infected with microorganisms. This means it is especially important that our blood culture systems be operational immediately after an earthquake. We recognized that our vertical instruments were at high risk of falling over during an earthquake, so we searched for a solution. The moment we saw THK's seismic isolation system at their exhibition booth at a medical conference and exhibition in Hamamatsu, we knew it would work for us because its compact structure lets it be installed beneath existing equipment. During our subsequent meetings, we obtained a plastic model of the seismic isolation system that makes it easy to see how it works. We were amazed by how far this technology has progressed and realized that information could prove useful by enabling us to provide clear explanations of this technology at hospitals. At later medical exhibitions, when we introduced the blood culture system that comes installed with the seismic isolation system, many customers told us that they already had taken measures for seismic isolation at their facilities. However, when we inquired further, we realized that they were talking about having earthquake-resistant structures, not seismic isolation systems. It is certainly possible to prevent equipment from falling over by securing it tightly to the floor with anchor bolts, but this will not prevent internal damage to the equipment during major tremors. If the blood culture test is stopped longer than a set amount of time, it may not be able to resume. Furthermore, if the instrument is damaged, it cannot be used for some time even after power is restored. With the seismic isolation system, however, you can prevent both toppling and internal damage. We had to conclude that the difference between earthquake-proofing, seismic damping, and seismic isolation is still not widely understood, and that few are familiar with seismic isolation.

The seismic isolation system safeguards the blood culture system from the risk of falling over during an earthquake

Now, we always keep earthquake precautions in mind and recommend THK's seismic isolation system to the customers who purchase our blood culture systems. Our aim is to work with THK to promote seismic isolation systems and deepen everyone's understanding of how important they are for equipment. We believe that developing instruments that will protect the lives of patients even directly after an earthquake will allow us to achieve our corporate philosophy: "Advancing the world of health."

Ofunato Fire Department

Ofunato, Iwate Prefecture

Protecting the Key to Fire Fighting and Disaster Prevention with Seismic Isolation

The old Ofunato Fire Department building was constructed in 1963, but significant deterioration of the building led to the city of Ofunato making plans in 2009 to rebuild the facility as the Disaster Prevention Center. The original plan had been to simply update the old building, and designs for this project were completed. However, in 2011, while the office was thankfully able to avoid significant damage from the Great East Japan Earthquake, the tsunami reached within 200 to 300 meters of our facility, so we temporarily suspended our operations and moved our office to its current elevation. The Ofunato City Disaster Prevention Center officially began operations in April 2017 in a newly constructed, four-story government office building. The facility houses the fire department and its headquarters, the volunteer fire department and disaster response office, and an exhibition hall and touring space. In addition, the facility has a smoke simulation room, the first indoor pool for sea rescue exercises in Iwate Prefecture, and a separate building for training exercises. We installed the seismic isolation system in our Disaster Prevention Center on the third floor, where we receive all 119 calls and other emergency transmissions in our jurisdiction and:

1. Use this information to constantly track the locations of our 90 emergency vehicles so we can mobilize the most appropriate dispatch team,

2. Provide information and support to our dispatch teams while contacting federal and prefectural government bodies to keep damage and injuries to a minimum, and

3. Contact medical facilities to get injured parties transported to hospitals.

When necessary, we arrange for air ambulances or helicopters from disaster prevention aviation units to immediately respond to injured parties. We act as a hub for conveying information during emergencies, so it is of the utmost importance that all our systems are operational in emergency situations.

We expressed our desire for seismic isolation to be incorporated into the building's design. Buildings are constructed to a certain strength based on the importance of that building. There is a strength–importance coefficient for government buildings that is the standard used to compare buildings and determine the strength they require. A typical building would get a 1, a police station would get a 1.25, and our center was given a 1.5, the same level as the prime minister's office. We had originally planned on constructing our facility using seismic damping, but we decided to go with seismic isolation because of the importance of ensuring the equipment in the Disaster Prevention Center's server room does not get damaged or cease functioning during a disaster. We were impressed by the effectiveness of THK's seismic isolation system while visiting a disaster prevention exhibition in Tokyo. We got to see a seismic isolation demo machine absorb vibration right before our eyes. We then physically experienced how much a seismic isolation system reduced vibration during historical earthquakes recreated by THK's seismic isolation simulation van. While we did not direct the company designing our new building to use a particular company's seismic isolation system, we were greatly reassured when we saw they had chosen THK's product in the proposal they submitted.

Installing seismic isolation systems has become commonplace in the world of fire fighting and disaster prevention, but we also hope to see them used in municipal government buildings and other places that handle important information about city residents.

In addition, to increase awareness of fire fighting and disaster prevention among the general public, we intend to have an exhibition room and area to tour so children can visit our facility and learn about fires and natural disasters. We plan to display a model of a seismic isolation system in this area so we can tell visitors about our own seismic isolation system and the importance of seismic isolation in general.

Ofunato Fire Department

Fire Captain **Eietsu Niinuma**

Battalion Chief **Yoshiharu Murakami**

Fire Lieutenant **Wataru Ogino**

Front view of the Ofunato City Disaster Prevention Center

Kyushu Nissei Denki Co., Ltd. Kamimashiki District, Kumamoto Prefecture

Seismic Isolation Dramatically Improves Production Recovery by Eliminating Earthquake Damage to Our Systems

Our company boasts over 30 years of experience as a mass production facility that performs post-processing for semiconductors. We endeavor to craft a business continuity plan (BCP) that will ensure the safety of our employees, secure the trust of our business partners, and maintain stable management particularly during large-scale disasters.

The Kumamoto Earthquakes consisted of two severe tremors: a foreshock and a mainshock. The foreshock had a magnitude of 6.5 and occurred on Thursday, April 14, 2016, at 9:26 at night. We had a number of employees working the night shift on our production floor that evening, and right after the earthquake occurred, our maintenance group contacted the BCP coordinator to inform them that a section of our ceiling panels had collapsed and our production equipment had shifted during the shock. Thankfully, all of our employees were fine. We had them evacuate right away and return home. As we were informed that our electricity was running and our servers were fine, we stayed home the night of the earthquake and waited until the next morning to check on the situation.

When we assessed the conditions in the plant the next morning, we found that our machines had moved significantly from their former positions and ceiling panels had fallen. With these and other issues, production was impossible. We promptly assembled an emergency response group and first contacted every employee to confirm they were safe and got details of any injuries they might have received. The following day, we began full-fledged efforts to get our facility back in working order, at which point we also discussed future precautions. However, on Saturday, April 16, at 1:25 in the morning, a magnitude 7.3 earthquake occurred, causing the condition of our office and production floor to deteriorate further.

At our company, even if our office building and production equipment were completely untouched, losing our servers would lead to problems for the production floor and also cause the receiving and shipping system for raw material and products to cease functioning. Having our servers protected by seismic isolation systems therefore played a major role in allowing us to quickly resume production and other management operations even after these major earthquakes. The recovery goals in our BCP policy are set to 15 days or less for temporary resumption of activities and 30 days or less for total recovery. We actually managed to temporarily resume our activities in 11 days, and we achieved total recovery in 25 days. If our servers had been damaged, it would have taken significantly longer to recover.

Servers that kept functioning during the Kumamoto Earthquakes thanks to seismic isolation systems

Kyushu Nissei Denki Co., Ltd., Production Promotion Division
Management Department
Information System
Assistant Manager
Ryouma Ogata

Manufacturing Development Department
Manufacturing Development Section
Manager
Yoshiro Inoue

It is no exaggeration to say that the seismic isolation systems were the key that enabled our company to continue operations by protecting us against earthquakes, which can occur at any time. We had customers who were forced to suspend operations at their production facilities due to damage from the Great East Japan Earthquake, so they actually had requested that we strengthen our own BCP activities as their business partner. We debated internally whether to use anti-seismic devices or seismic isolation systems to safeguard our integral servers from earthquakes. In the end, we decided to go with seismic isolation systems, as servers are delicate machinery sensitive to tremors and long-period vibration.

Our experience with the recent Kumamoto Earthquakes reaffirmed for us the importance of having a BCP. In the future, we need to further bolster our disaster readiness in every regard, from our production equipment and machines to the racks we use to store product and the pipes throughout our facility. Our experience during this recent disaster showed us what seismic isolation systems can do. Moving forward, we hope to work with THK to secure our valuable equipment with seismic isolation systems and further strengthen our BCP. Furthermore, we have promoted the use of seismic isolation among the companies we do business with.

Oita University Hospital

Yufu, Oita Prefecture

Making Use of Seismic Isolation Systems to Keep Tests Running Even During Earthquakes

In the medical laboratory where I work, we perform a variety of tests, including blood tests, immunological tests, and urine tests. These tests are used for diagnoses, so they are an indispensable part of the medical process. We work tirelessly to ensure testing equipment will function even if it gets damaged in a natural disaster because of the important role these tests play in protecting the lives of our patients.

I saw how severely the Tohoku University Hospital was damaged during the Great East Japan Earthquake. Much of its valuable testing equipment fell over and was rendered unusable. During the Kumamoto-Oita earthquakes that occurred last year, we provided medical assistance in the city of Aso. Luckily, these earthquakes only had a magnitude of 5 where my hospital is located, and the damage it suffered was negligible. At the same time, the Kumamoto City Hospital, located in the city of Kumamoto, where the recorded magnitude was 7, did not have a seismic isolation system and suffered significant damage. All of its patients had to be moved to other facilities because of the risk of the building collapsing. Having personally experienced these two major earthquakes reaffirmed for me the necessity of taking appropriate precautions against earthquakes. In particular, I felt the urgent need to secure our testing equipment with seismic isolation systems.

Therefore, when we installed new equipment during the reconstruction of our testing rooms, we used seismic isolation systems to secure our most valuable devices: biochemistry auto analyzers and blood analyzers. For our other equipment, we used standard earthquake-proofing methods, such as securing the equipment to the wall using bands. Our testing equipment is extremely precise and examines patients' bodies and responses on the micron scale. If these pieces of equipment are damaged during a major tremor, we cannot perform tests until their functions are restored, which takes a long time. As the Advanced Emergency Medical Service Center and Disaster Base Hospital, we provide medical examinations 24 hours a day to emergency patients. To perform these functions, the testing systems that doctors use to treat their patients must remain in working order at all times. We cannot turn patients away during a disaster. We must be able to conduct diagnostic tests, no matter what. From what I saw of THK's seismic isolation system at an academic conference and the results it displayed at the Tohoku University Hospital, I have placed my trust in this technology.

Blood analyzers (top right) and biochemistry auto analyzers (bottom left) installed with seismic isolation systems

Oita University Hospital Department of Medical Technology
Laboratory for Clinical Investigation Chief Manager
Hiroshi Miyako

In March 31 of this year, the head of the Health Policy Bureau at the Ministry of Health, Labor and Welfare issued a revision to the requirements for disaster base hospitals, adding a business continuity plan (BCP) to the list. Because we are a disaster base hospital, I was certain that installing a seismic isolation system was the right decision from a BCP standpoint, as well.

There are many fault lines in Oita Prefecture, and its neighboring Beppu Bay has been an epicenter in the past. This area could see a major earthquake at any time, and there is even a legend that tremors once caused an island to sink into the ocean long ago. I prefer seismic isolation systems over other options such as seismic damping and earthquake-proofing for their ability to isolate objects from tremors. While seismic damping and earthquake-proofing can prevent testing equipment from toppling over and breaking, these methods will not protect what is inside of a machine from breaking due to vibration. Seismic isolation systems, on the other hand, not only prevent equipment from falling over, but also protect the interior of the device from vibration.

We have been charged with the duty of performing diagnostic tests at all times. While securing the entire hospital with a seismic isolation system is not possible, I very much hope to install a seismic isolation system under a whole floor, room, or other section of the hospital.

Hyogo Prefectural Museum of Ancient Bronze Mirrors

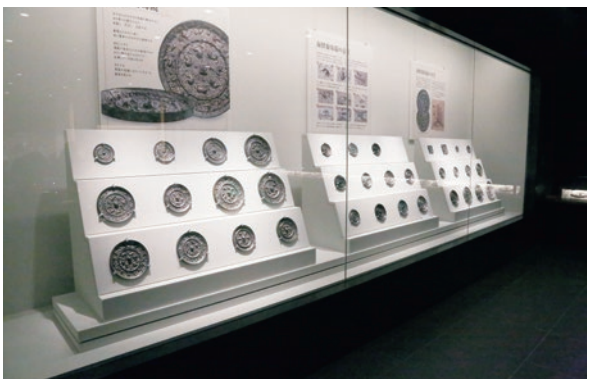
Kasai, Hyogo Prefecture

Seismic Isolation Systems Protect Irreplaceable Historical Works of Art

Our museum opened on April 14, 2017, and exclusively features ancient Chinese bronze mirrors. Tadashi Sengoku, an art collector from the city of Kasai, generously donated and loaned 316 mirrors to our museum. This collection includes ancient Chinese bronze mirrors that can be found nowhere else in the world, and a number of them are on display to the public.

At our museum, you can see the different ways people have viewed mirrors over the ages. 3,700 years ago, during Ancient China's legendary Xia Dynasty, objects resembling mirrors were created out of bronze. While the general perception today is that mirrors are cosmetic tools that reflect a person's face, at the time, they were apparently used by shamans as magic objects meant to enchant people through the reflection of light. Bronze mirrors are typically circular in shape; the choice to model them after the sun and moon in this way seems to emphasize how they shine in light. During the Han Dynasty, mirrors were used to signify the bond between a man and woman and were used as wedding gifts. A couple that pledged to reunite after being separated would split their mirror in two and carry their halves with them. Even in the present day, Japan still maintains the tradition of the vanity being the first thing a bride brings with her when she marries. I hope that, through our displays, visitors to our museum can gain a sense of the feelings encapsulated in mirrors of different eras.

Due to the common usage of mirrors as cosmetic tools to reflect one's face, it is important to make sure they are polished to the brightest silver-white possible. Copper is a common component of the most ancient bronze mirrors. This makes them a reddish-brown color that darkens over time, preventing them from clearly reflecting an image. Increasing the tin content makes the mirror more silver-white in color, but adding too much will result in a brittle and breakable mirror. It takes a high level of technical skill to make such mirrors without causing them to break. The techniques required to create these Chinese mirrors were perfected during the Han Dynasty, but much of this technology was not passed down to future generations. Even with modern technology, we cannot recreate their techniques.



A seismic isolation system is installed within this display case to protect these ancient Chinese bronze mirrors from earthquakes

Hyogo Prefectural Museum of Ancient Bronze Mirrors
Chief Curator
Hiroshi Nakamura

These historical, artistic works are so precious, yet they are disc-shaped and as brittle and breakable as glass. Because of this, we must be extremely careful to prevent these bronze mirrors from getting damaged. The Chinese mirror specialists that make up the Sengoku Collection Research Committee proposed that we install seismic isolation systems in our museum. This was motivated in particular by Hyogo Prefecture having suffered through the Great Hanshin-Awaji Earthquake. We decided to install THK's seismic isolation system under exhibits at risk for earthquake damage.

Our display cases were designed first, so the seismic isolation systems had to fit inside of these cases while also leaving enough room for the stroke to accommodate how much the cases move with long-period ground motion. The flexible structure of THK's seismic isolation system allowed for an extremely effective design in the limited space inside the display cases. Furthermore, the company itself was flexible and worked within the short time frame we had before the day the museum was set to open.

In the future, the need to secure valuable artifacts with seismic isolation will only increase. When designing both exhibition displays and buildings, we hope to include greater involvement from specialists in seismic isolation technology as it relates to cultural artifacts. This will allow us to incorporate these specialists' insight into our designs, thereby creating a solid risk management system that will surely aid us greatly in protecting and making use of cultural artifacts.

Results of 2016 Initiatives

Management Structure

THK endeavors to improve its management oversight functions and continuously conducts internal training in order to pursue fair and sound corporate activities in compliance with laws, regulations, and other social norms.

Security trade control seminar

6 sessions
(Japan: 4 sales offices, 2 production facilities)

Information security audit

4 audits
(Japan: 2 sales offices, 2 production facilities)

Compliance seminar

32 sessions (Japan: 32 sales offices)

Internal audits

71 facilities (Japan: 54, Outside of Japan: 17)

Involvement in Society

As a manufacturing company, THK engages in many kinds of activities to improve individual employees' skills so that it can supply even better products to the market. The Group also diligently promotes activities that contribute to society.

Kaizen proposals submitted

3,777 proposals

e-Learning course completion rate

72.3 %

Employees who passed Japan's National Trade Skill Test & Certification Grade 2 and above

62 employees (Male: 61, Female: 1)

Among these employees was the first female employee in the past five years to become certified in Machine and Plant Drafting. We will continue to encourage other female employees to become certified.

Harmony with the Environment

THK views taking action to address environmental concerns as a responsibility shared by all of humanity, so it actively pursues initiatives to reduce energy use, prevent global warming, use fewer resources, achieve zero emissions, manage hazardous substances, and practice green distribution.

Environmental audits of suppliers and business partners

17 audits

Upgrading to LED lighting

4,405 lights at 20 production facilities
(Japan: 9, the Americas: 5, China: 3, Asia: 2, Europe: 1)

Wind power generated

1,053 kWh (Japan: 1 production facility)

Solar power generated

59,627 kWh (Japan: 3 production facilities, 1 sales office)

Corporate Governance

We have established internal structures and strengthened internal controls in order to heighten the transparency and objectivity of management and to make management-related decision-making more expedient and efficient.

Governance Structure

With the aim of maximizing THK's corporate value, we strive to make mid- to long-term improvements to our corporate value by bettering our corporate governance.

The executive officer system represents one of our main efforts and has been in place since June 2014. Additionally, after the 46th General Meeting of Shareholders on June 18, 2016, and in conjunction with our establishment of an Audit and Supervisory Committee in place of our Audit and Supervisory Board, we set up a non-mandatory Nomination Advisory Committee and a Remuneration Advisory Committee to act as advisory bodies to the Board of Directors. In doing so, we have 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.

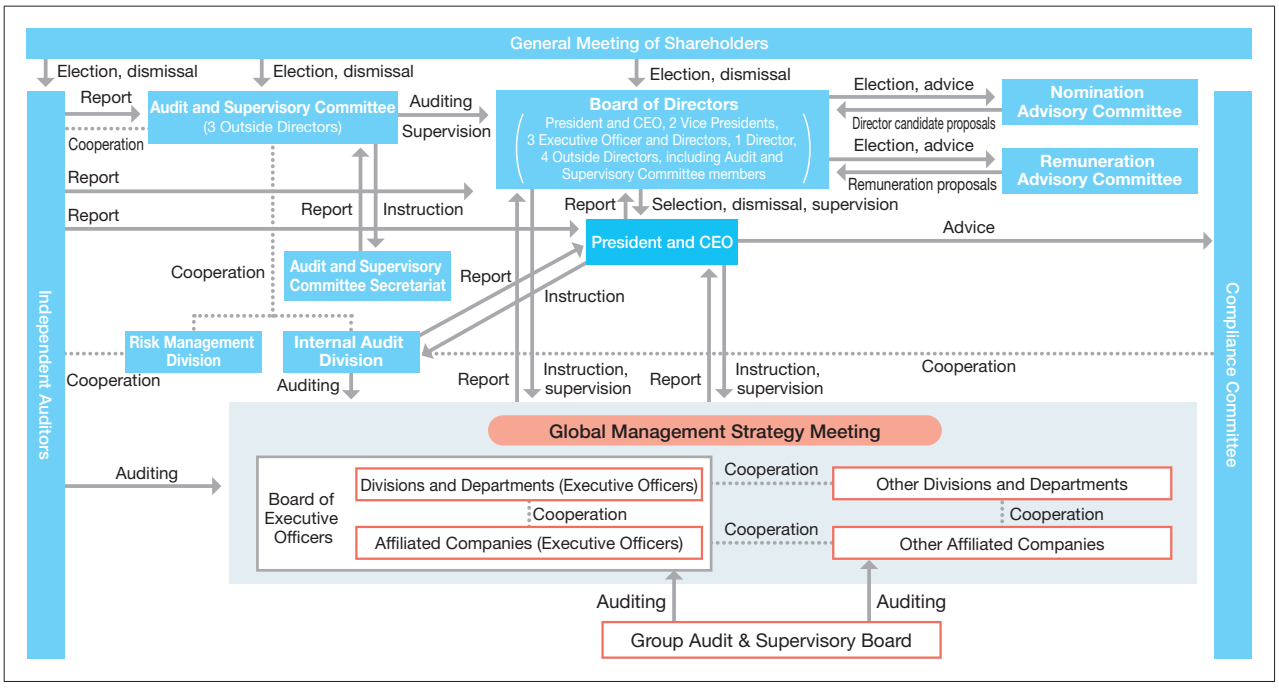
SUMMARY

Audit and Supervisory Committee
- The directors on the Audit and Supervisory Committee, which serves in an auditing and supervisory capacity, participate in Board of Directors meetings and exercise their votes.
- This committee utilizes internal controls to audit and supervise the work of directors and managing executive officers.

Nomination Advisory Committee and Remuneration Advisory Committee
- To secure greater transparency and fairness, half of the members are outside directors.
- As advisory bodies to the Board of Directors, these committees review and deliberate on director candidates and remuneration proposals. The Board of Directors then deliberates and makes decisions regarding those topics.

Executive Officer System
- This system endeavors to improve the management oversight function of the Board of Directors, clarifies roles and responsibilities relating to the management of corporate affairs, and accelerates operational execution.

Governance Structure



Internal Controls

At THK, we comply with laws and regulations and have strengthened our internal controls by establishing an internal control policy to serve as a solid base for our management. We have also established the "Regulations for Internal Control over Financial Reporting" and constantly maintain structures to ensure the reliability of financial reporting throughout the entire THK Group in accordance with the Financial Instruments and Exchange Act.

The Internal Audit Division's Internal Control Audit Department evaluates the effectiveness of internal controls, and the Risk Management Division's secretariat, the Internal Control Section, makes improvements based on their findings.

The internal evaluation performed in 2016 found no critical deficiencies requiring disclosure. The final evaluation results were summarized in the internal control report submitted and disclosed to the Prime Minister (Kanto Local Finance Bureau) in June 2017.

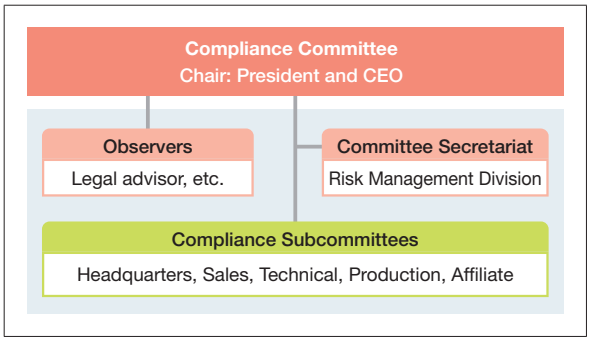
Strengthening Compliance Awareness

To ensure the thorough practice of corporate ethics, we hold various types of training for our employees to learn how to better follow laws and social norms, and we take appropriate action in response to information we receive through the THK Group Helpline.

Compliance Committee

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 to report internally. This committee is also attended by outside directors and legal counsel, and it functions in a proper and legal manner.

Compliance Structure



Compliance Training

1. Compliance Subcommittee Seminar

In December 2016, an outside instructor led one of our regular seminars for all 38 members of the compliance subcommittees, covering power harassment prevention and proper methods of interaction.

After the seminar, all of the participants were asked to record not just what they learned, but what problems or concerns exist at their workplaces. Based on the nature of those concerns, we responded to them in turn or made plans for initiatives in the following year.

Seminar for subcommittee members

2. Compliance Seminars Outside of Japan

In April 2017, we shared the fundamentals of compliance with a total of 19 managers at THK America and TMA (THK Manufacturing of America) in a seminar that covered topics such as corruption and cartels.

Seminar at THK America

Seminar at TMA

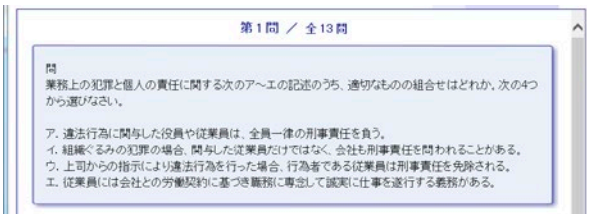
3. Seminars at Sales Offices

We held seminars for THK and THK INTECHS sales staff covering the importance of contracts and compliance case studies involving bribery, the Product Liability Act, and other topics.

Seminar at the Komaki branch

4. Adding e-Learning Materials

In order to improve employees' knowledge about compliance topics critical to their everyday work, in March 2017, we added 13 new questions to the materials published to our internal e-learning environment. We created questions and answers based on the THK Group Compliance Manual, which is distributed to all managers, in order to promote better understanding of the manual's contents.



Sample of a question added

THK Group Helpline

The THK Group Helpline internal notification system was established to prevent compliance violations and to enable quick and appropriate action in the event of an executive or other employee committing a violation. There were seven cases reported in 2016, and we worked with the necessary departments to handle each case appropriately.

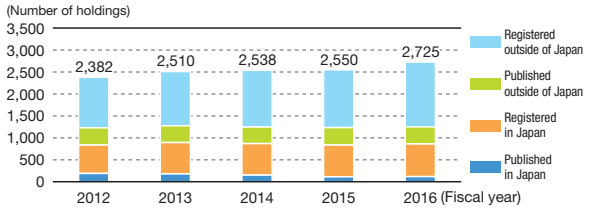
Risk Management and Information Security

To respond to potential risks, we have established systems for information security concerns and pursued initiatives regarding intellectual property, our BCP, and export control.

Intellectual Property

Since THK's founding, as a company focused on creation and development, we have recognized the importance of protecting the new technology that accompanies the development of highly innovative products by actively engaging in intellectual property management. To accelerate our full-scale globalization and the cultivation of new business areas, we have recently been endeavoring to quickly obtain patent rights and become more active in applying for patents outside of Japan. To continue contributing to the creation of an affluent society through the development of innovative products, we will continue to value our intellectual property and fully utilize this resource.

THK's Intellectual Property



BCP

THK has formulated a BCP (business continuity plan) and taken other measures to minimize damage and ensure a rapid business recovery in the event of a disaster such as a large-scale earthquake.

Server Precautions

- We have reduced the risk we would face in a disaster by separating our servers and other main systems from their backups, locating them in different data centers.
- We annually rehearse the process of switching over to backups to prepare for potential issues with our main equipment, thereby ensuring that we will be ready to respond quickly in a worst-case scenario.
- We identify any problems based on this test and make improvements to increase our readiness.

Earthquake-Proofing

- Equipment such as the component and tool storage racks at our production facilities and printers and cabinets at our sales offices are equipped with fixtures that will prevent them from toppling.

Emergency Supplies

- All of our places of business are stocked with items including potable water, food, blankets, and portable toilets. Our production facilities also have items such as rescue equipment and emergency generators prepared.

Export Control

For the examination of regular transactions, we make use of our internal network and promptly classify export materials and services rendered. In addition, we have examinations of materials listed in Appended Table 1 of the Export Trade Control Order and items with special applications conducted by the president and in consultation with the Ministry of Economy, Trade and Industry to ensure the proper examinations are conducted and necessary procedures are completed.

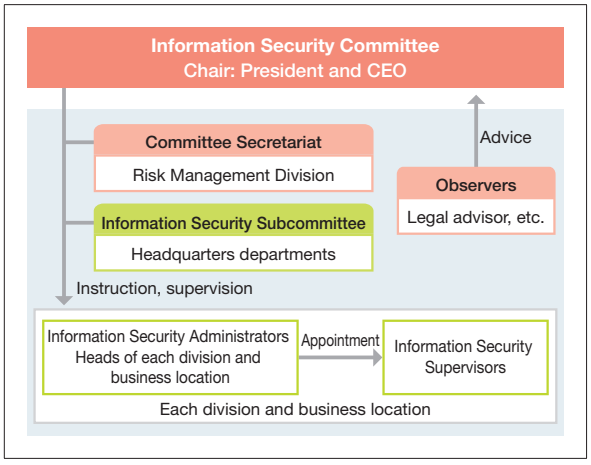
Information Security

The Information Security Committee, chaired by the CEO, has been in place since 2006, and the organization, authority, and roles and responsibilities of its members are clearly defined in the committee's regulations. This committee makes decisions concerning policies related to the establishment of information security systems and deliberates on responses to information security concerns. In 2016, an internal information security audit was conducted by the Information Security Committee Secretariat at four locations in Japan (two sales offices and two production facilities). In addition, we strive to assess our current situation and continuously increase our employees' awareness of information security and educate them through annual information security self-assessments throughout the company.

We maintain security levels throughout the company and have developed the following precautions to prevent accidental information leaks and other incidents.

- Monitoring of our anti-virus software to ensure it is always functioning
- System to quickly investigate the origin of any viruses detected
- Monitoring system to prevent illegal access and unauthorized transmissions
- Response manual for security incidents

Information Management System



Together with Our Customers (Quality Assurance and Suppliers)

We value communication with our suppliers and create opportunities to share recommendations about our respective production processes so that we can consistently offer high-quality products that will satisfy our customers.

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 that allow us to adapt to different industries, such as the automotive and aerospace industries, depending on the products each facility produces.

We have 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, we endeavor to develop products that meet market needs and to improve quality.

In our mission to satisfy all of our customers, we always strive to maintain and improve product quality, thereby delivering safe, dependable products and maintaining uniform quality all over the world.

Quality Policy

We implement quality assurance activities that ensure we always deliver products that will satisfy our customers and earn their trust.

Quality Management System Certification Status (Facilities)

	ISO 9001	JIS Q 9100 Aerospace Industry	ISO/TS 16949 Automotive Industry
Japan	11	1	3
Outside of Japan	11	–	7
Total	22	1	10

Quality Management Process

1. Development and Design
   - Pursue function, performance, and solutions
2. Testing and Investigation
   - Design review
   - Mass production approval
3. Purchasing, Production, and Inspection
   - Pursue uniform quality all over the world
   - Pursue better process capability
   - Pursue better lead time and costs
4. Providing Service and Gathering Quality Data
   - Pursue customer satisfaction
5. Analyzing Quality Data and Providing Feedback
   - Pursue quality improvements and market needs

Together with Our Suppliers

Throughout our supply chain, from design to sales, we strive to adhere to social norms and be environmentally conscious in order to facilitate the creation of a sustainable society. We have formed good partnerships with our suppliers, aiming for mutually beneficial relationships.

THK Basic Policy on Procurement

In order to continue to provide THK products that satisfy our customers, we establish good, healthy, and mutually beneficial relationships with our suppliers.

Activities

1. Procurement practices emphasizing communication with suppliers / Evaluating and choosing suppliers with thorough consideration for QCDES
2. Fair and equitable dealings in compliance with all pertinent laws and social norms
3. Efforts to minimize costs / Encouraging the active pursuit of cost-saving projects and value-analysis initiatives
4. Pursuit of global procurement
5. Implementation of a BCP (business continuity plan)
6. Environmental consciousness through green procurement

THK's Supply Chain

Design
- Long-term maintenance-free operation
- Low noise, low dust generation
- Develop grease that can be used in the food industry

Purchasing/ Procurement
- Investigate environmentally hazardous materials
- Comply with the Act against Delay in Payment of Subcontract Proceeds, Etc. to Subcontractors
- Reject dealings with criminal organizations

Production
- Comply with the Energy Conservation Act
- Pursue zero emissions
- Reduce impact on the environment
- Maintain safe working environment

Distribution
- Reject dealings with criminal organizations
- Security declarations for air shipments
- Reduce waste via reusable containers

Sales
- Collect and reuse packaging materials
- Enforce safe driving practices
- Fair and proper transactions

Installing the NEXTAGE® dual-arm industrial robot will increase our productivity and lead to new business.

NIC Autotec, Inc.

Founded in 1927 in Toyama Prefecture as Nishikawa File Corporation, a file machining and manufacturing company. Developed their business around their FA (Factory Automation) equipment, launching into the field of aluminum frames in 1983 with their development of Japan's first aluminum profile system, the ALFA FRAME® SYSTEM. Currently support manufacturing in Japan with their two core business areas: FA equipment and aluminum frames.

NEXTAGE®

The dual-arm industrial robot made by Kawada Robotics Corporation. As a joint venture between the THK Group and Kawada Robotics Corporation, Kawada Robotics Corporation manufactures the robot body, while THK INTECHS handles sales and develops optional parts.

Technical & Development Dept.
Development Group, Development Team
Hironobu Nagai

Q Tell us how you began using NEXTAGE®.

We have a longstanding friendly relationship with THK. We purchase their LM Guides and other products indispensable to FA equipment, and THK INTECHS in turn uses our ALFA FRAME® SYSTEM.

Recognizing the problems with production capability and decreased quality that arise from the decline in the number of laborers due to the aging population, we had been investigating ways to maintain or possibly improve productivity for some time. It was then that THK INTECHS introduced us to NEXTAGE®, which can work alongside humans, and as we became more interested, we realized our ALFA FRAME® SYSTEM could also support NEXTAGE® peripherals. As we were thinking about how we wanted to stay ahead of demand by gathering expertise about humanoid robots, we were granted the opportunity to make use of the Ministry of Economy, Trade and Industry's Demonstration Project for the Introduction of Robots* and install a NEXTAGE®.

NEXTAGE® using the cameras on its left and right hands to identify the spatial relationships between objects as it works

Q Tell us your impression of NEXTAGE®.

The NEXTAGE® we use sets the square nuts and nut holders that go in the aluminum profiles. Currently, we are doing a production trial with the concept of creating a work environment where robots can step in for people at any time by having the NEXTAGE® use cameras to read the same drawings employees do. We deal with small components, but the NEXTAGE® is able to use its hand cameras to accurately recognize spatial relationships and operate without any issues. I was also pleased that you can use marking tape within the head cameras' detection range so that the robot can automatically adjust to wherever it is moved, so it really can work in place of a person.

When we consulted with THK INTECHS about having the robot assemble nuts and nut holders, they custom-made the hands specifically for that task, and we received a lot of advice about the robot's movements. They also responded quickly whenever there was an issue during the installation, so we were very grateful for their assistance.

Q What do you hope to see from NEXTAGE® in the future?

I am hoping that NEXTAGE® can work in place of or alongside an employee, so I think it would be very convenient if there were features like additional applications or packages so that the actual employee could easily set and change the program instead of having an engineer do the programming.

* *Project aimed at furthering robot utilization in society by promoting trials and verifications of robots introduced in manufacturing and service fields that have not yet embraced robotics*

Together with Our Shareholders

We communicate with our shareholders and various other stakeholders by disclosing corporate information in a fair and impartial manner. We thoroughly secure and manage information, including individual and customer information.

Investor Relations Activities

THK engages in IR activities in an effort to disclose information in a manner that is fair, impartial, expedient, accurate, and easy to understand. In addition to improving the quality of our financial results briefings, interviews, and other IR events, we strive to enhance our disclosures through IR tools such as our Investor Relations website and Annual Report.

Investor Relations Events

Financial Results Briefing

At the financial results briefing, our CEO discusses the company's performance and strategies, while leaving ample time for a Q&A session, where we receive candid feedback regarding our operations.

The proceedings of the meeting are posted on the Investor Relations page of our website in both Japanese and English.

Financial results briefing video

Investor Relations page

Other Meetings

Through smaller-scale meetings and one-on-one interviews, we endeavor to open discussions with many more investors. We strive to take advantage of any opportunity to communicate with our institutional investors both within and outside of Japan through phone conference interviews, annual visits to American and European investors, and other means.

General Meeting of Shareholders

An Open Meeting

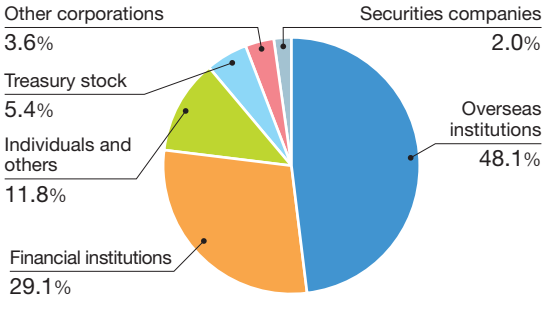
We have been holding our General Meeting of Shareholders on a Saturday in mid-June every year since 1998, thereby avoiding the period when many shareholder meetings are scheduled and allowing more shareholders to participate. We also provide a space in the meeting hall for observers, to give suppliers and others who have a stake in THK the opportunity to better understand our business. As a result, we have seen even greater attendance. After the conclusion of the General Meeting of Shareholders, we hold a product exhibition for attendees to experience THK products up close, which they have few opportunities to do in their everyday lives.

47th General Meeting of Shareholders

Approximately 450 shareholders attended our 47th General Meeting of Shareholders held on June 17, 2017. At the product exhibition, our displays featured industrial machinery essential to manufacturing, such as machine tools and industrial robots, as well as applications that are carving the way into new fields, such as seismic isolation systems, automotive and transportation products, robotics, and renewable energy. We also introduced new initiatives that make full use of the IoT.

47th General Meeting of Shareholders

Stock Distribution by Owner (Current as of March 31, 2017)



Together with Our Employees (Health and Safety)

We strive to create a pleasant work environment by preventing workplace accidents and hosting occasional seminars, lectures, and other activities to promote employee health.

Occupational Health and Safety Management System

Five THK facilities earned OHSAS* 18001 certification in 2010. In 2016, we performed numerous activities to achieve our policy: **Create a pleasant work environment with zero work-related accidents or illnesses.**

Activity	Description	Target	2016 Result	
Allow occupational health and safety management system to reach all employees	Implement risk assessments and workplace safety training			Met
	Organize and report on regulation-related matters (chemical substance risk assessment)			Met
	Prepare and perform internal audits (reciprocal audits)	Semiannually	2 times	Met
	Conduct management review	Annually	1 time	Met
Revitalize health and safety committee activities	Promote disaster prevention	Annually	1 time	Met
	Implement traffic safety activities	Zero traffic accidents	11 accidents	Not met
	Conduct workplace safety patrols	Monthly	12 times	Met
	Promote 5S (6S) activities	Monthly	12 times	Met
Eliminate workplace accidents	Prevent workplace accidents from occurring	Zero accidents	21 accidents	Not met
	Promote submission of proposals to prevent near misses	Production: 1/month per group, Indirect: 1/month per department	1,535 proposals	Met
	Provide instruction to business partners who work on site and visitors			Met
Enhance health management	Perform regular and special health checks	Annually	1 time	Met
	Promote mental health	Annually	1 time	Met
	Perform stress checks	Annually	1 time	Met
	Implement illness prevention activities			Met
	Make improvements based on occupational physician recommendations			Met

***OHSAS:** *Occupational health and safety management systems*

Incident and Severity Rates (Data)

	2012	2013	2014	2015	2016
Incident rate	**0.20**/1.59	**1.09**/1.58	**0.20**/1.66	**1.13**/1.61	**0.25**/1.63
Severity rate	**0.01**/0.10	**0.02**/0.10	**0.00**/0.09	**0.01**/0.07	**0.00**/0.10

*(**THK**/Japan average (%))*

Incident rate: Frequency of work-related injuries
[IR = (Number of incidents) ÷ (Labor hours worked) × 1,000,000]
Severity rate: Severity of work-related injuries
[SR = (Number of lost workdays) ÷ (Labor hours worked) × 1,000]

*Data from 2012 to 2015 represents 5 THK production facilities.
2016 data represents a total of 12 production facilities, including those of THK and its subsidiaries.

Luncheon Seminar

We held luncheon seminars to prevent lifestyle diseases for the third time this fiscal year at our headquarters and Technology Center in December.

This seminar's theme was oral health, which can be intimidating for those who do not know much about it. Three dentists and one dental hygienist from the Meikai University PDI Tokyo Clinic came and held a lecture about cavities and gum disease, in which they also explained the proper way to brush and floss to a total audience of 44 employees.

Lecture at the Technology Center

Mental Health Class

In an effort to create a healthier work environment, the Kofu plant's Test and Research Unit invited the clinical psychologist Yuuki Osada to hold two mental health classes there this year.

After each lecture, group discussions were held where employees and their supervisors had an open dialogue and each side sought to better understand the other. In the future, we will hold classes focused on psychological resilience and learning to see the best in others.

Mental health class

Together with Our Employees (Supporting Development)

We provide avenues to create career paths and develop employee potential in the way best suited to each employee's individual strengths and weaknesses, using such methods as on-the-job training, on-site and off-site training courses, internal publications, and e-learning.

Transferring Skills: Teaching Employees to Recognize Slight Deviations

The Manufacturing Section Ⅲ Machining Group at the Gifu plant machines products for seismic isolation systems as well as wind and water power generation. One product they make is the Inertial Rotary Damping Tube (iRDT)*, which is composed of a large diameter ball screw, M100, and M120, and it conforms to JIS Grade 1 specifications. However, variations due to slight deformations in material or thickness of the surface coating after plating can sometimes make these parts difficult to assemble. In such cases, it is necessary to make adjustments, but the shape is difficult for an NC system to clamp. Human technical skills are necessary, and the final adjustment is done manually by a person using a multi-purpose lathe.

This group holds periodic training sessions where experienced operators teach newer employees so that everyone in the department will be able to perform the process and pass the National Trade Skill Test & Certification system for lathe machining.

Trainer: Shoji Shimoma (deputy manager, left)
Trainee: Tatsuya Yoshida (right)

***iRDT:** Uses a ball screw to absorb earthquake vibration in high-rise buildings by converting it into rotary motion. Effective as a countermeasure to long-period earthquakes.*

Overseas Trainee Program

Starting in December 2016, we established a program to enable employees who have worked at THK for at least three years to experience working at an overseas facility in order to gain the skills and mindset of those who may be transferred abroad in the future. As long as they satisfy a few criteria such as years of service, age, and language skills, anyone can apply for this opportunity, and a screening process is used to select employees and the facilities they will be sent to. In 2016, two employees were sent to start working in India and Singapore under this program.

HR Data Records

(Fiscal year)

	2012	2013	2014	2015	2016
Individuals taking childcare leave	29	31	29	23	21
Individuals with shortened hours	33	41	48	62	71
Average years of service at THK	15.4	16.7	17.4	17.8	18.3
Recognition of Continuous Service recipients (Recognized every five years)	744	579	624	816	613
Kaizen proposal submissions/ Prize recipients	11,871/ 331	11,065/ 278	7,213/ 193	6,309/ 162	3,777/ 94
e-Learning course completion rate (%)	73.2	74.0	77.0	73.6	72.3
Disabled employees in the THK workforce (%) (As of the end of April)	2.01	2.24	2.23	2.21	2.17

Voice An Overseas Trainee's Experience

THK LM SYSTEM Pte. Ltd.
Hisato Miura

I majored in mechanical engineering at my university, focusing on sensor research, so I had hoped to join a company that dealt with components used in robots. I have always enjoyed interacting with people, and when I joined THK, I was put in the sales department as I had hoped. I got to put what I learned at my university to practical use in my sales activities, exercising my knowledge of concepts such as curvature and calculating displacement when explaining things to customers. I was later transferred to the engineering department, and as I accumulated experience there, I became interested in sales activities that would enable me to actually operate robots that use actuators. At the same time, I had learned through my prior sales work that many THK products are shipped to customers' plants outside of Japan. This made me want to make proposals that would meet the needs of those overseas plants, and by expanding sales, increase THK's brand recognition not just in Japan, but around the world. It was at that point that I heard about the Overseas Trainee Program, and I applied without hesitation. I chose Singapore because I would get to cover a large region spanning Southeast Asia and Oceania in my sales activities, and I thought that by getting to meet and talk to many customers from other countries, I could gain a great deal of knowledge that would then contribute to my personal growth. While my English is not at the level where I can use it to conduct sales work, I hope to better my English ability as quickly as I can to contribute to the company.

In 2016, over half of THK's employees were individuals from a country other than Japan. As we pursue globalization, I hope to fulfill my role as one of the first applicants to be selected for the trainee program and inspire many others to want to work overseas.

Together with Our Employees (Human Rights and Diversity in the Workplace)

As a part of our commitment to employing individuals from a wide range of backgrounds, we do not discriminate in our hiring methods. We do not violate human rights through the use of child labor or forced labor, and we cultivate a work environment that is easy to work in, both physically and psychologically, for those with disabilities.

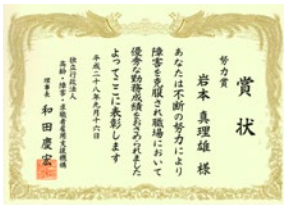
Advisor About Employment for Disabled People

In July 2016, Shunsuke Yoshinaga, deputy head of the Environmental Education Section at the Yamaguchi plant, was designated by the labor bureau to be an advisor concerning employment for disabled people. He gives lectures and provides advice to special needs schools from the perspective of private industry with the intention of supporting the employment of people with disabilities. In November of last year, he presented THK's efforts to hire individuals with disabilities at the Vocational Rehabilitation Research Meeting organized by the Japan Organization for Employment of the Elderly, Persons with Disabilities and Job Seekers.

Supported by Those Around Me

Order Management Section
Manufacturing Promotion Department, Mie Plant
Mario Iwamoto

Replying to Sales regarding an order due date



Award

I studied lathe machining at a technical high school and chose THK because it was a company where I could make use of those skills. I was assigned to NC lathe machining in Manufacturing Section I. Five years after joining THK, I passed the National Trade Skill Test and Certification exam for the mechanical and machining trade, and then focused my attention on training less experienced members.

However, due to a careless mistake on my part, I lost the function of the joints in my right foot from an injury, and I had to undergo rehabilitation for two years. I was officially recognized as having a disability, but I was able to return to work thanks to the efforts made around the plant to reduce the strain on my foot (adding railings on stairs, letting me use the on-site parking lot, etc.). Thanks to everyone's support, I was able to continue working, for which I received an award from the Japan Organization for Employment of the Elderly, Persons with Disabilities and Job Seekers in September 2016.

I now work in the Order Management Section, where I use the experience I gained working on the production floor to manage order due dates. When I receive a request from Sales for a short lead time, I contact the production floor and make adjustments to get as close as possible to meeting the customer's request.

I hope to create a way for disabled people working at different plants to communicate and spread improvements adopted at each plant to make everyone's work environments better.

Always Embracing Challenges

Order Management Section
Manufacturing Promotion Department, Yamaguchi Plant
Tomohiro Omoto

Final shipping transaction

Badge for passing the internal Grade 3 certification test

I joined this company because of the interest I had developed when I participated in a two-week training session at THK while attending the Yamaguchi Prefectural Special Education School in Shimonoseki. After gaining experience assembling cardboard boxes to pack products and ordering components from suppliers, I am now responsible for completing the final shipping transactions to distribute and ship finished products, ordering material like anti-rust film, and inspecting received material. I was not sure I would be able to pass, but after three years, I became certified through an internal test that is equivalent to Grade 3 of the mechanical and machine trade section of Japan's National Trade Skill Test and Certification in 2012. While I had always been sure of my ability to concentrate, passing the skill certification test contributed greatly to my confidence, and since then, I have also been able to get a driver's license. I was interviewed by the Yomiuri Shimbun for an article about employees with disabilities improving their skills, and the article was published in the Western Japan edition on June 5, 2016.

By challenging myself both at work and in my personal life, I feel I have been able to grow immensely. While it is not necessary for my current position, I plan to actively get new qualifications in skills like driving a forklift that are required for jobs I might do in the future. I also hope to someday get married and start a family.

Together with Our Employees (Local Communities)

Along with cooperating with government agencies, NPOs, NGOs, and local communities, we support the independent activities our employees actively pursue to engage with their communities.

Charitable Contributions

As part of our contributions to society, we provide financial assistance in times of natural disasters and donate money to organizations devoted to the advancement of science and the future development of manufacturing in Japan. In addition, we sponsor a variety of events in communities where we have business locations.

Donations

Date	Purpose	Recipient
April 2016	Kumamoto Earthquakes relief	Japanese Red Cross
April 2016	Taiwan earthquake relief	Japanese Red Cross
July 2016	Japanese Red Cross activities	Japanese Red Cross
November 2016	Central Tottori Earthquake relief	Japanese Red Cross
January 2017	Japan Science Foundation contribution	Japan Science Foundation

In recognition of its long history of contributions, the Kofu plant was presented with the Silver Order of Merit by the Japanese Red Cross.

Welcoming the Niigata Medical Association

In November 2016, THK NIIGATA welcomed 19 physicians in response to a request to host a training session to help them become occupational physicians certified by the Japan Medical Association.

While this training is meant to improve their skill as occupational physicians by visiting companies, touring their facilities, and learning about how they manage safety and health, it was also a way for us to improve our work environment by hearing the opinions and suggestions of many physicians.

THK NIIGATA's occupational physician, Dr. Kooro, remarked, "The participants gained a deeper understanding of THK products, and THK even prepared their seismic isolation simulation vehicle for them. It was a very positive experience."

Lecture by Dr. Kooro

Introducing Kids to the Workplace

The Mie plant participated in an event held in July 2016 at Mie Kids' Castle to introduce elementary school students to different jobs. This was the fourth time the event was held, and 35 companies and organizations participated. At THK's booth, we introduced children to taking micron-scale measurements with calipers and micrometers, delicate movement performed by robot hands, and seismic isolation technology using an earthquake model.

Through this direct interaction with the work we do in their hometown, they became excited about the idea of having a job, and they got a taste of how fun science can be.

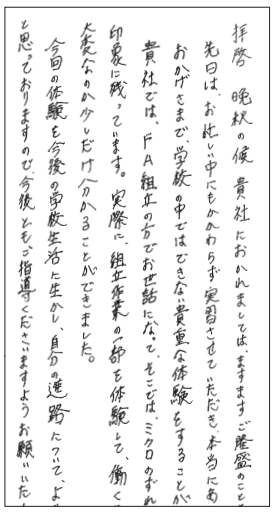
Children taking measurements with a micrometer

Junior Internship

In November 2016, the THK INTECHS Sendai plant accepted four students from KUROKAWA High School as part of the school's three-day work shadowing program for their second-year students.

These students mainly performed assembly work, but they also learned about how high-precision equipment does not allow for even micron-level errors, and how important the everyday greetings they tend not to think much about really are.

The students are also required to send thank you letters after their experience, which is one way the school works to instill in them the manners they will need as adult members of society. As a result of their efforts in career development for their students and training a talent pool that can contribute to the region, this school received an award from the Ministry of Education, Culture, Sports, Science and Technology in January 2017.



Thank you letter from a participant

THK America's Donation Drive

At the request of the city of Schaumberg, THK America's headquarters provides support during the holiday season each year to those who are facing financial struggles. Employees volunteer to donate basic necessities to a charity organization, with items ranging from canned food, snacks, and seasonings to laundry detergent, toilet paper, and disposable diapers.

As they have been donating since 1998, they received an appreciation letter from the city in recognition of their long service. They will continue to undertake charitable activities as a way to give back to their community.

Food and daily commodities collected by employees (Left to right: Jennifer Cuthbert, Annette Drayton, Colleen Griffiths, Tracy Gardner)

Coaching Volleyball

I experienced my first match four years ago when my daughter got involved in a local youth volleyball league, but I got so into the excitement that I earned my referee and coaching certification in 2013. Now, I coach kids three times a week at local elementary and middle school gyms.

In recent years, we have seen a lot of isolated people unable to fit in with society, but sports are the best platform for character building (especially in terms of improving communication). Through the team sport of volleyball, I hope these kids learn the importance of being able to communicate, cooperate, and work with others around them. I plan on continuing to coach for the foreseeable future, and I hope to see those I have worked with return as coaches for younger players and keep bringing life to the youth sports league.

Quality Assurance Section, Yamagata Plant
Tomonori Oorui

Team huddle during a match

Volunteering at the Wang Nursing Home (Liaoning)

The Liaoning plant established a volunteer organization in July 2015, in which approximately thirty employees currently participate in various activities.

In March 2016, they visited the Wang Nursing Home, located twenty minutes away by car, where struggling, disabled elderly people with no relatives receive free support. Volunteers donated staples like rice, flour, and oil, and they made dumplings and ate dinner with the residents. At the opening ceremony for the Wang Garden in April, Hiroyuki Konno, the Liaoning plant's Chief Executive Officer, also attended and received a certificate for the support we provided.

In the future, we plan to continue volunteering and working with charity organizations in the city of Dalian and participate in environmental conservation activities.

Wang Garden opening ceremony and certificate of support (Certificate held by the person second from the right in the front row)

Sowing Seeds in Atsugi

Just like last year, volunteers from the East Japan Region OFC and Engineering Division participated in a rice-planting event organized by the city of Atsugi. We were also able to participate in the harvesting this year, so we received a total of 12 kg of glutinous and non-glutinous rice as our share.

Everyone who participated wanted the rice harvested locally to go to local children to help them become strong and healthy, so in part to promote the idea of local production for local consumption, we donated the rice to a child care center in Atsugi.

Our rice being served as mochi rice cakes at snack time

Promoting Environmental Management

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.

THK Group's Basic Environmental Policy

Revised on June 3, 2013

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. 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.
7. 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.

ISO 14001-Certified Facilities

Japan

Production Facility	Country	Certifying Body
Yamagata Plant, Kofu Plant, Gifu Plant, Mie Plant, Yamaguchi Plant, THK NIIGATA	Japan	JQA
THK RHYTHM Headquarters, Hamamatsu Plant, Inasa Plant, Kyushu Plant		JIA
THK INTECHS Headquarters, Mishima Plant, Sendai Plant		ClassNK

The Americas

Production Facility	Country	Certifying Body
THK Manufacturing of America	USA	SAI GLOBAL
THK RHYTHM NORTH AMERICA		SQA
THK RHYTHM AUTOMOTIVE MICHIGAN		DQS
THK RHYTHM AUTOMOTIVE CANADA (Tillsonburg)	Canada	DQS
THK RHYTHM AUTOMOTIVE CANADA (St. Catharines)		DQS

Europe

Production Facility	Country	Certifying Body
THK Manufacturing of Europe	France	AFAQ
THK RHYTHM AUTOMOTIVE GmbH	Germany	DQS
THK RHYTHM AUTOMOTIVE CZECH	Czech Republic	DQS

Asia

Production Facility	Country	Certifying Body
THK MANUFACTURING OF CHINA (WUXI)	China	CQC
DALIAN THK, THK MANUFACTURING OF CHINA (LIAONING)		TUV
THK RHYTHM CHANGZHOU		BUREAU VERITAS
THK RHYTHM GUANGZHOU		SGS
THK RHYTHM MALAYSIA	Malaysia	DQS
THK RHYTHM (THAILAND)	Thailand	URS

Environmental Targets, Environmental Accounting, and Environmental Impact Overview

Environmental Targets

No.	Item	Results
1	Conserving energy and preventing global warming	CO_2 emissions ratio Target was 0.78*. Result was 0.76. (2.2% decrease) CO_2 emissions: 91,036 tons (5.2% increase from last year)
2	Conserving resources and achieving zero emissions	Zero emissions rate (%) Target was less than 0.50. Result was 0.13*.
3	Managing hazardous materials	PRTR substance use (kg) Target was 61,673*. Result was 71,113. (15.3% increase)

No.	Item	Main Initiatives for 2017
1	Conserving energy and preventing global warming	1. Control use of energy-efficient facility equipment 2. Change to energy-efficient lighting (LEDs) 3. Upgrade air conditioning units
2	Conserving resources and achieving zero emissions	1. Continue pursuing recycling of all waste 2. Thoroughly separate materials 3. Monitor waste locations
3	Managing hazardous materials	1. Change to electric forklifts 2. Test solvents that do not include PRTR substances 3. Promote green procurement

Adjusted because data was taken from 12 Japanese production facilities instead of 8

Environmental Accounting

(1 million yen/year)

Type	Investment	Cost	Main Activities
1. Business costs	563	241	
Pollution control	(37)	(63)	Monitoring air and water quality, performing maintenance on washing equipment and sewage tanks
Global environmental conservation	(525)	(57)	Installing energy-efficient facility equipment
Recycling and conserving resources	(1)	(121)	Waste disposal, recycling costs
2. Upstream and downstream costs	0	452	Green procurement activities
3. Management activity costs	2	184	ISO activities, reducing energy use, managing chemical substances
4. Research and development costs	53	526	New product development
5. Community activity costs	0	7	Local activities, PR activities
6. Environmental damage costs	0	0	
Total	618	1,410	

Environmental Impact Overview

INPUT

		2015	2016	Change
Main raw materials	(t)	84,462	93,213	(+10.4%)
Main indirect materials	(t)	3,074	3,211	(+4.5%)
Packaging materials	(t)	4,315	4,760	(+10.3%)

Energy Input

		2015	2016	Change
Electricity	(MWh)	221,304	228,226	(+3.1%)
Bunker A fuel oil	(kL)	3,916	4,572	(+16.8%)
Liquefied natural gas	(t)	123	140	(+13.8%)
Propane	(t)	894	1,045	(+16.9%)
Kerosene	(kL)	27	18	(-33.3%)

OUTPUT

		2015	2016	Change
Production volume	(t)	71,686	76,202	(+6.3%)

Waste

		2015	2016	Change
Total waste	(t)	19,203	19,625	(+2.2%)
Recycled	(t)	16,598	17,342	(+4.5%)
Incinerated	(t)	2,102	1,780	(-15.3%)

Air Emissions

		2015	2016	Change
CO_2 emissions	(t-CO_2)	152,453	158,416	(+3.9%)
NOx*	(Nm^3)	3,170	2,860	(-9.8%)
SOx*	(Nm^3)	2,509	1,922	(-23.4%)

NOx (Nitrogen oxides): Generated by the combustion of fuel in boilers and other sources.
SOx (Sulfur oxides): Generated by the combustion of sulfurous fuel in boilers and other sources.
*NOx and SOx figures are for five THK plants in Japan only.

*This overview of our environmental accounting and environmental impact is based on the following production facilities:
Twelve production facilities in Japan: Yamagata, Kofu, Gifu, Mie, Yamaguchi, THK NIIGATA, two THK INTECHS facilities (Sendai and Mishima), NIPPON SLIDE, and three THK RHYTHM facilities (Hamamatsu, Inasa, and Kyushu)
Seven production facilities outside of Japan: TMA (USA), TME (France), TMI (Ireland), DALIAN THK (China), Wuxi (China), Liaoning (China), and TMV (Vietnam)

Conserving Energy and Preventing Global Warming

We consider the prevention of global warming to be a common challenge that all of humanity must address. Therefore, we are working to upgrade to energy-saving equipment, with our employees combining their expertise to modify our existing equipment to reduce energy consumption.

THK's CO_2 Emissions

Our target for reducing our CO_2 emissions is defined in terms of our emissions rate (CO_2 emissions per production volume in yen). With the increase in our production, the CO_2 emissions (absolute emissions) from our 12 production facilities in Japan in 2016 was 91,036 tons, which was a 5.2% increase from the previous year's 86,561 tons. However, our emissions rate was 0.76, so we were able to achieve our goal of 0.78.

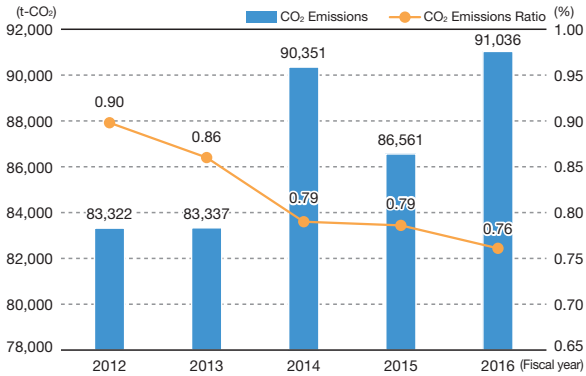
In an effort to reduce energy, we have done the following in every region:

1. Upgraded to LED lighting
2. Upgraded to high-efficiency equipment
3. Improved current equipment
4. Added or switched to energy insulating materials
5. Managed timed shutdowns of air conditioning and lighting, installed lighting equipment with motion detectors and ambient light sensors, and performed maintenance tasks such as inspecting for and repairing gas leaks in air compressor piping.

In addition, through seminars, environmental meetings, and other activities, we make every effort to increase our employees' awareness of the need to conserve energy.

(Left) Gas leak inspection performed at DALIAN THK (tape is placed over a leak, which is later repaired)
(Right) Motion detector used at a TRA facility in the US

CO_2 Emissions

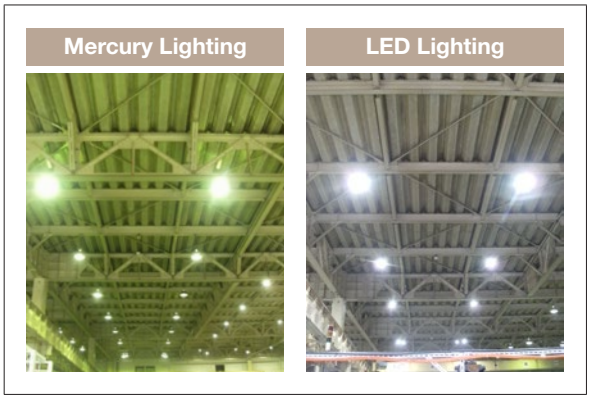


LED Lighting

In 2016, fluorescent and mercury light bulbs were replaced with LED lighting at 20 THK Group facilities. Furthermore, when THK MANUFACTURING OF CHINA (CHANGZHOU) began operations in July 2016, 536 bulbs (out of a total 676 used for illumination) were LEDs.

A total of 4,405 bulbs were upgraded to LEDs, allowing us to save around 2,122 MWh of energy.

We will pursue energy-saving measures next year and in the future by continuing to switch to LED lighting in stages.



Yamaguchi Plant Factory 1

Production Facilities That Upgraded to LEDs

Production Facility	Bulbs Replaced
Japan	
Gifu Plant	874
Yamagata Plant	741
Kofu Plant	323
THK INTECHS CO., LTD., Mishima Plant	282
Yamaguchi Plant	209
THK INTECHS CO., LTD., Sendai Plant	134
THK RHYTHM Kyushu Plant	82
THK RHYTHM Headquarters & Hamamatsu Plant	57
NIPPON SLIDE CO., LTD.	36
China	
THK MANUFACTURING OF CHINA (CHANGZHOU)	536
THK MANUFACTURING OF CHINA (LIAONING)	52
DALIAN THK	18
Europe	
THK RHYTHM AUTOMOTIVE CZECH	280
Asia	
THK RHYTHM MALAYSIA	98
THK RHYTHM (THAILAND)	72
The Americas	
THK Manufacturing of America	330
THK RHYTHM AUTOMOTIVE CANADA (St. Catharines)	207
THK RHYTHM AUTOMOTIVE CANADA (Tillsonburg)	30
THK RHYTHM AUTOMOTIVE MICHIGAN	22
THK RHYTHM NORTH AMERICA	22
Total	4,405

Installing High-Efficiency Equipment

At 10 THK Group production facilities, we have installed high-efficiency equipment to strengthen the capacity of the compressors for our air conditioning systems and other aging equipment. As a result, we were able to reduce our power consumption by about 1,717 MWh/year and decrease our CO_2 emissions by about 2,819 tons.

Examples of New Equipment

Production Facility	Old Equipment	New Equipment
Japan		
Yamaguchi Plant Technical Facility	Compressor (General purpose, 3300V)	Compressor (Inverter, 200V)
Yamaguchi Plant Factory 1	Oil-fired absorption chiller-heater	Vacuum hot water boiler
Mie Plant Factory 1	20 HP floor-standing package air conditioner	20 HP floor-standing package air conditioner
THK NIIGATA	Chiller-heater	Package air conditioner
THK INTECHS Mishima Plant Factory 2	Spot air conditioner/heater	Floor-standing package air conditioner
Europe		
THK RHYTHM AUTOMOTIVE KREFELD GELLEP	R22 air conditioning system	R410a air conditioning system
THK Manufacturing of Europe	60 kW compressor	100 kW air compressor with inverter control
The Americas		
THK RHYTHM NORTH AMERICA	Cation electrodeposition coating equipment tanks 2 & 3	Type that prevents water, chemical, and heating leaks
THK RHYTHM AUTOMOTIVE MICHIGAN	ESD 250 compressor	DSD 250 compressor
THK RHYTHM AUTOMOTIVE CANADA (Tillsonburg)	250 HP compressor (without tank)	275 HP compressor (with tank)

Original Improvements to Existing Equipment

At 12 THK Group production facilities, we have come up with original ways to improve our existing air conditioning systems, compressors, air units, and other equipment. As a result, we were able to reduce our power consumption by about 332 MWh/year and decrease our CO_2 emissions by about 239 tons.

Examples of Equipment Improvements

Production Facility	Improvement	Details
Japan		
Kofu Plant	Added fuel modifier to bunker A fuel oil used for Factory 3 and 4's boilers	Increased fuel efficiency and decreased substance of concern (SoC) use and maintenance costs
Mie Plant	Began utilizing waste heat from heat treatment facility's compressor	Began utilizing waste heat from heat treatment facility's compressor within the plant
Yamaguchi Plant	Improved Technical Facility's air conditioning system	Modified control system to allow choice between using air conditioning and cooling with outside air
THK NIIGATA	Isolated thermostatic chamber for Factory 2's air conditioning system	Reduced running time by separating air conditioning system
China		
THK RHYTHM CHANGZHOU	Improved compressor room's exhaust system	Added more ventilation to reduce the increase in temperature in the compressor room
DALIAN THK	Modified the air conditioning system's OHU (outside air handling unit)	Improved the OHU's ability to dehumidify and cool air by expanding and increasing the cooling coils
THK MANUFACTURING OF CHINA (WUXI)	Made improvements with energy-saving air conditioning system in Factories 1, 2, and 3	Optimized temperature and pressure of the coolant and steam to reduce energy consumption
Europe		
THK Manufacturing of Europe	Stabilized temperature in wrapping room	Installed automatic shutters at entrances to the shipping warehouse, reducing the amount of time it takes to open and close the shutters
The Americas		
THK RHYTHM NORTH AMERICA	Added switches	Segmented the spraying process to reduce steam and hot water use
THK RHYTHM AUTOMOTIVE MICHIGAN	Stabilized temperature on the production floor	Changed location of the thermostats
THK RHYTHM AUTOMOTIVE CANADA (St. Catharines)	Modified air in Factory 1	Made the temperature settings electric
THK RHYTHM AUTOMOTIVE CANADA (Tillsonburg)	Modified air unit	Increased volume of supplied air

Utilizing Thermal Insulation Materials

In 2016, five THK Group production facilities had work performed on their roofs or other areas to improve insulation. In particular, TMA (THK Manufacturing of America) had this work performed on a large scale.

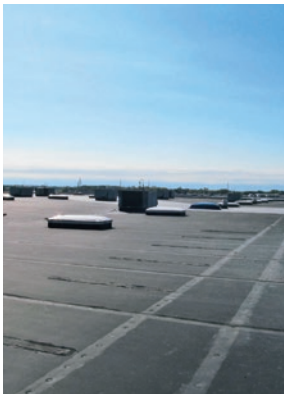
Production Facilities That Introduced Thermal Insulation Materials

Facility	Type	Location
Mie Plant	Roofing	Roof of Grinding Factory 1
THK RHYTHM Headquarters & Hamamatsu Plant	Roofing	Slate roof of machining and assembly facility
THK RHYTHM MALAYSIA	Roofing	Existing roof
TMA	Roofing	Roof of Link Ball facility
THK RHYTHM AUTOMOTIVE MICHIGAN	Insulation sealing	Trailer shipping area

To reduce its energy consumption, TMA performed work in September 2016 to thermally insulate the 9,290 m^2 roof of its Link Ball facility, which represents 25% of the entire TMA building. One major consideration for the roofing work was how to minimize the accompanying waste. In the end, they decided to overlay the existing roof with a layer of white material whose reflective surface provides thermal insulation.

By not replacing the roof, they were able to reduce material waste by an estimated 30.5 tons. They have also reduced their monthly power consumption by about 6%, or 6,500 kWh.

TMA will be thermally insulating the rest of its roof and continue to look for ways to reduce its environmental impact.



Link Ball roof before the improvement

Roof after the improvement

Using Solar Panels at the THK INTECHS Mishima Plant

By updating Factory 2's air conditioning equipment in June 2016, the THK INTECHS Mishima plant's monthly energy usage increased by 15,000 kWh. Therefore, they installed 192 solar panels on the roof of the development building in January 2017 and began generating solar power in an effort to reduce their energy consumption as much as they could.

The energy generated is primarily used for the compressors in Factory 2, but it can also be diverted to other electrical systems as needed. An LCD monitor has also been set up in the lobby that makes it easy to see how much energy is being generated by displaying this information in terms of fluorescent bulbs and LCD TVs.

Based on the amount of solar radiation in the Mishima region, they estimate they will generate about 55,622 kWh of energy per year, or an average of about 4,635 kWh (20 average households' worth) per month. Through the end of March, they generated 12,300 kWh of energy, which primarily went to the compressors. They will continue to pursue various measures to reduce their energy consumption.

Solar panels installed on top of the development building

LCD monitor displayed in the lobby

Conserving Resources and Achieving Zero Emissions

Throughout our company, we promote the effective use of resources, thoroughly separate and recycle waste generated by our production activities, and recognize water as the most important natural resource for life on Earth.

Conserving Resources and Achieving Zero Emissions in 2016

By thoroughly separating and recycling waste, we were able to achieve an emissions rate (final disposal volume/total waste volume) of 0.13%, once again reaching our target of less than 0.50%.

New General Recycling Program

TMA had long been recycling its cardboard and waste generated by the production floor, but it expanded its recycling program in June 2016 to encompass the entire facility, including paper and plastic bottle waste generated in the offices. Recycling bins have been stationed throughout the facility in addition to a centralized container for collection. By the end of December, a total of about 1.2 tons of waste had been recycled. Among that, the amount of paper recycled was approximately equal to 24.6% of the paper purchased at TMA.

Recycling bin placed in an office

By implementing this program, all TMA employees gained a greater awareness of the importance of using their resources wisely and how their actions can protect their environment.

Container used by the recycling company to collect waste

Recycling Resources

TALK SYSTEM collectively retains the entire company's confidential documents and has long entrusted the disposition of expired documents to a recycling company. Recently, to understand how much this recycling has contributed to reducing our environmental impact, TALK SYSTEM has been requesting and receiving recycling certificates. The amount of documentation eligible for disposition varies annually, so one cannot do a simple comparison with the previous year, but over the span of several years, one can see a downward trend in the volume as a result of our company-wide paperless office initiatives. At the same time, through actively purchasing Eco Mark-certified products and other activities, our employees' awareness of the environment and conservation has increased.

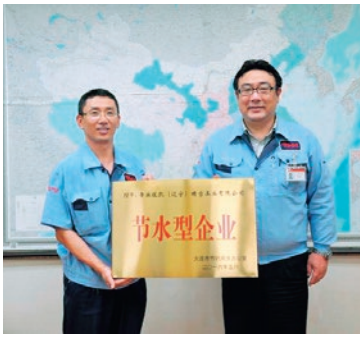
Environmental Impact of Document Disposition

Paper Volume Disposed	CO_2 Amount Reduced	Trees Saved	Energy Saved
Approx. 2,510 kg	Approx. 3,750 kg	Approx. 50 trees	Approx. 2,359 kWh

The Liaoning Plant's Water Conservation Efforts

The Liaoning plant has been managing its water use by cooperating with the city of Dalian's water consumption management campaign since 2014. A water conservation expert from the city came to check the plant's current water usage and gave three instructions: (1) quickly take care of water leaks, (2) strengthen awareness campaigns regarding water conservation, and (3) inspect the pipes. Based on the results of that visit, members of the Liaoning plant performed maintenance on the valves for the heat treating equipment's coolant overflow tank (periodically draining it to preserve the ideal water content inside the tank). After checking the water quality of the coolant in the facility's cooling towers used for air conditioning, they also changed the conductivity from 0–100 to 0–170. Additionally, they adjusted the master valve for sink faucets to reduce the amount of water by half. As a result of these efforts, although their 2016 production increased about 6% from the previous year, they were able to limit the increase of water consumption to about a 0.4% increase.

In recognition of their long history of water management, the city presented them with the Water-Saving Company award in August 2016.



Award received from the Dalian city government office

Water Resource Consumption

THK recognizes water as the most important natural resource for life on Earth and an indispensable resource for the survival of businesses. That is why we always strive to practice the 3 R's (Reduce, Reuse, and Recycle) when it comes to using water at our sales offices and production facilities. We understand that water discharged from our production facilities can have a major impact on biodiversity, so we discharge our water into public waterways with an awareness of the water quality standards established by law. For our 12 facilities in Japan, our production increased about 9% in 2016 compared to the previous year, but our rate of water consumption (water use/production volume in yen) decreased about 11%.

Water Consumption Rate (for 12 Facilities in Japan) (Fiscal year)

	2012	2013	2014	2015	2016
Consumption rate	2.99	2.80	2.52	2.70	2.40

Managing Hazardous Materials

We are updating our equipment and reviewing the products we use in order to reduce the usage of substances that may have a negative impact on biodiversity and the human body.

PRTR Substance Use

In an effort to reduce the amount of hazardous materials (materials that can have a negative impact on the human body or an ecosystem) that we use, we are reducing our use of chemicals subject to the PRTR Law*1.The PRTR substances used at THK are primarily those found in the gasoline and heavy oil we use as fuel. Our goal is to reduce the amount we use by 3% each year, but in 2016, an increase in heavy oil used for in-house power generation led to an approximate 11.8% increase*2 of 7,532 kg compared to the previous fiscal year, from 63,581 kg to 71,113 kg.

***1 PRTR Law: Law Concerning Reporting, etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management**

***2 These targets were adjusted because data was taken from 12 Japanese production facilities instead of 8 as in previous years.**

(kg)

Substance	Amount	Air Emissions
Xylene	2,748	27
Toluene	5,425	1,798
Ethylbenzene	926	14
Benzene	221	29
Methylnapthalene	55,534	257
Other	6,259	—
Total	71,113	2,125

HVAC Efficiency Improvements at the Yamagata Plant

In June 2016, Factory 1 of the Yamagata plant underwent work to improve the efficiency of its HVAC system. The facility originally used two 950 USRT oil-fired absorption chiller-heaters all year long, but it switched to using two 600 USRT turbo chillers in the summer and two 2,326 kW vacuum hot water boilers in the winter. By replacing these units, they were able to reduce their emissions of methylnapthalene by 36%.

As they were unable to use their HVAC equipment for the duration of this process, they packed their HVAC equipment with ice to prevent heat stroke from the potentially rising temperatures in the assembly area.

Turbo chiller

Vacuum hot water boilers

Reducing Substances of Concern (SoC) at the Kofu Plant

The Kofu plant uses bunker A fuel oil to power its HVAC systems. To reduce CO_2 emissions and its use of PRTR substances, as well as to raise the heating efficiency of the boilers and reduce maintenance costs, the plant began using additives in July 2016. These additives (1) absorb large amounts of oxygen, enabling combustion at low temperatures, and (2) break down the sludge in fuel, which works to reduce the impact on the environment. As a result of combining these additives with the bunker A fuel oil at a ratio of 1:5,000 when replenishing these fuel tanks, by the end of March 2017, they were able to reduce their consumption of heavy oil by approximately 22 kl, with a corresponding reduction in methylnapthalene.

Additives that help reduce SoCs

PRTR Substance Reduction at THK NIIGATA

In an aim to reduce its use of PRTR substances, THK NIIGATA changed the washing fluid used in its washing process. The washing fluid they changed to does not contain PRTR substances and performs better than even the washing fluid used at other THK plants. It washes and prevents rust better, leaves less white residue, and performs better in bubble tests. As a result of making this change, with Manufacturing Division Ⅰ switching over in July 2016 and Manufacturing Division Ⅱ that November, they were able to see an approximate 63 kg decrease in polyoxyethylene octylphenyl ether, a PRTR substance.

Washing process using new washing fluid

Green Distribution

In order to reduce CO_2 emissions from distribution, we are working on many initiatives with the purchasing and sales divisions to improve load carrying capacity and implement modal shifts.

Reducing Our CO_2 from Transportation

Our CO_2 emissions from transporting products and components decreased from 4,026 tons of CO_2 last year to 3,647 tons, a reduction of 379 tons (about 9.4%).

However, because of the continued high ratio of diesel-powered vehicles used for transit, our energy consumption (ratio of energy use to freight transport in ton-kilometers) increased by about 5.9%, from 59.5 last year to 63.0.

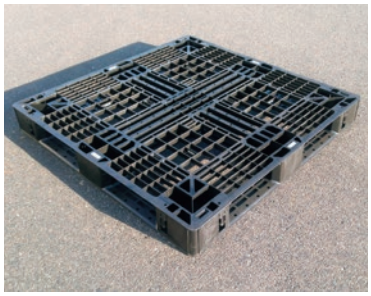
We hold regular reporting sessions four times per year focused on distribution centers, and we come up with and implement measures to make whatever improvements we can in our distribution system and shipping weights.

(Fiscal year)

	2012	2013	2014	2015	2016
CO_2 emissions (t-CO_2)	3,842	3,689	4,178	4,026	3,647
Energy consumption ratio	61.6	60.7	57.7	59.5	63.0

Initiatives Related to Truck Transportation

We have been working to reduce CO_2 emissions from truck transportation by decreasing the weight of our shipments. In the past, we used wooden pallets for shipments that were 1 m^3 or larger, but the additional weight of those wooden pallets resulted in increased overall shipping weights. However, we began the process of switching to plastic pallets in January 2016, and we have been able to decrease our emissions by 25 tons of CO_2. While this is a small improvement, we believe that the combination of many small improvements leads to significant improvements overall, so we plan to continue pursuing a number of different initiatives.



New plastic pallet

Green Distribution

We have made significant changes to the logistics of shipping between DALIAN THK and Japan in order to reuse packaging materials. Originally, Japan would send product materials to DALIAN THK in normal packaging (1), and then DALIAN THK would send customers completed parts in triple-wall packaging (2) through distribution centers in Japan. The triple-wall packaging that was opened by customers would be collected at our distribution centers, and after these were shipped out to customers in or outside of Japan (3), they would be disposed of. Beginning this year, however, packaging that is collected at our distribution centers (4) is now packed with material (5) and sent to DALIAN THK (6). As a result, we have been able to reduce our use of cardboard boxes by about a third.

Material and Triple-Wall Packaging Process Flow (Old Process)

Material and Triple-Wall Packaging Process Flow (New Process)

Third Party Opinion

I had the opportunity to preview THK's CSR Report 2017/2018. I was left with the impression that THK is making steady efforts in the three core areas of its management structure, its involvement with society, and its harmony with the environment to achieve its corporate philosophy of *providing innovative products to the world and generating new trends to contribute to the creation of an affluent society*. I found the "In Our Customers' Words" article especially interesting. This report clearly shows how customers collaborate with THK to manufacture products in new fields such as medical equipment, renewable energy, seismic isolation and damping systems, and robotics.

I first began working with THK twenty years ago, when their Linear Motion Systems, which had been used for machine tools, began being adopted for use in seismic isolation for buildings. The idea of seismic isolation had long been around, but the current seismic isolation system stemmed from the invention of laminated rubber bearings in Western Europe in the latter half of the 20th century. Seismic isolation was an imported concept for earthquake-prone Japan. However, THK's seismic isolation systems are a Japanese invention that expands the possibilities for seismic isolation. The fact that seismic isolation and damping has now become a pillar of THK's business is truly incredible.

The Nihon University College of Science and Technology's Ochanomizu campus where I work is currently constructing a new building with a combination of seismic isolation and damping. The concept for this building's structural design was to give it the structural longevity to last 100 years, to make it highly durable and earthquake-resistant so that it could still maintain its function and continue to be used even after a major earthquake. It has THK's Linear Guide CLB installed for the seismically isolated layer, and the upper structure uses the D.M. damper (i-RDT), which is the world's first partial mode damping system.

THK's approach is also well exhibited by the two-dimensional Seismic Isolation Module Model TGS, which was introduced several years ago. There are other products out there that are intended for use in seismically isolated floors or seismic isolation platforms and marketed as being specifically for equipment. The key is having a seismically isolated floor that functions dependably. What is special about this equipment is that the tried-and-true LM Guides are used as mechanical components in the support system, and the restoring and damping forces can be designed to match predicted seismic motion and actual conditions of use. Even more importantly, its performance has been verified through three-dimensional vibration testing that simulates seismic motion from three directions. According to the report, these products proved useful to a customer in implementing their BCP during an actual disaster (the 2016 Kumamoto Earthquakes), so you can call this an example of THK contributing to society through its superior products.

What I have just described is a reflection on my experience with THK in my own field of expertise, but by looking at this report, I was able to see that THK is pursuing this same kind of collaborative relationship with customers in many new fields, such as medical equipment, renewable energy, and robotics.

Presently, humanity is facing impending population, resource, and environmental problems. What has become particularly clear in recent years is that a flood of information has seemingly caused the trust between regular citizens and corporations, experts such as scientists and engineers, and even the state itself to waver. With society being inundated by information, it is becoming more difficult for corporations, subject-matter experts, and countries to fulfill their responsibility of providing explanations. This is an era where the recommendations of experts are not understood by society, where corporations can fall because of their failed response to problems. If the trust between citizens and corporations, experts, and the state falters, it becomes difficult to solve challenges on a worldwide scale. Humanity seems to face not just issues of population, resources, or the environment, but those of the fragility of civilization, as well. It is in this era that CSR activities will play an ever more important role. I hope that THK, as a trusted group of experts and a trusted corporation, will further enrich and enliven its CSR activities and continue to work with its stakeholders to support the development of society.

College of Science & Technology Nihon University
Professor, Dr.Eng.

Takeshi Furuhashi

Born in 1954. Graduated from the Department of Architecture in the Faculty of Engineering at The University of Tokyo in 1978.
Joined Sumitomo Construction Co., Ltd., in 1978, which became Sumitomo Mitsui Construction Co., Ltd., after a merger in 2003. Involved in structural design for buildings, structural engineering development, seismic isolation/damping structures design, and seismic isolation/damping technology development. Became associate professor in the Department of Architecture in the College of Science and Technology at Nihon University in 2007. Began current position of professor in 2011.
Specializes in seismic isolation and damping structures as well as structural vibration control, especially mode control utilizing dynamic mass. Aims to achieve long-lasting structures with structural response control through research and development in these fields.

Editor's Note

To reaffirm that CSR is the core of our business based on our corporate philosophy, this edition includes testimonials from our customers about how they use THK products for medical equipment, renewable energy, seismic isolation systems, and robots. We have also summarized our efforts to build a corporate governance and compliance structure that will earn the trust of our stakeholders, to provide programs that allow our employees' skills to grow, to contribute to our local communities, to prevent global warming, and to reject the use of harmful chemical substances.

We will continue to pursue initiatives that will earn the trust of our stakeholders and disclose that information in a suitable manner. To that end, we would like to hear your thoughts about this report. Your opinions are valued and will guide us in our future CSR endeavors and the creation of future reports. Please use the enclosed survey to provide us with your feedback.

CSR Project Office

THK CO., LTD.

THK Building, 2-12-10 Shibaura
Minato-ku, Tokyo 108-8506, Japan
Phone: +81-3-5730-3911 Fax: +81-3-5730-3915
URL: http://www.thk.com/

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