

# THK CSR Report

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## 2009/2010

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## ■ Reporting period

This report focuses mainly on activities from April 1, 2008, through March 31, 2009, although activities occurring shortly before and after this period are also discussed.

## ■ Scope

This report is based on information provided by THK Co., Ltd., and its consolidated subsidiaries and affiliated companies. The full scope of the data reported in the environmental section comprises THK's five manufacturing plants in Japan (in YAMAGATA, KOFU, GIFU, MIE, and YAMAGUCHI), THK NIIGATA Co., Ltd., and three manufacturing plants owned by THK INTECHS Co., Ltd. (in SENDAI, MATSUMOTO, and MISHIMA). The scope of the data presented in the sections "Environmental impact: The big picture" and "Cost of environmental protection" includes THK's five overseas manufacturing plants, Nippon Slide CO., LTD., RHYTHM CORPORATION, and Rhythm Kyushu Co., Ltd., as well.

## ■ Target readership

This report is addressed to a broad range of stakeholders, including THK's customers, shareholders, investors, partner businesses (cooperating companies and suppliers), employees, government administrators, and people in local communities.

## ■ Guidelines cited

This report includes references to the Global Reporting Initiative's *Sustainability Reporting Guidelines 2006 (G3)* and the Ministry of the Environment's *Environmental Reporting Guidelines 2007*.

## ■ Please direct inquiries to:

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## Introduction

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Since its establishment, THK has conducted its activities with the aim of contributing to society through its core business. THK honors its corporate social responsibility by conducting its business activities honestly and conscientiously.

Accordingly, this year's report includes a feature section on developing technology, which describes the development policies that enable THK to contribute to society through its core business and also discusses some new products.

The "Management system" section describes THK's internal controls and risk management measures, including efforts to help prevent the spread of the influenza A virus. The section called "Involvement in society" concerns THK's ties with its stakeholders, examining related activities and responsibilities. "Harmony with the environment" offers a look at THK's efforts to meet its environmental targets for 2010, both in Japan and overseas.

THK regards the *CSR Report* as an important tool for communicating with all its stakeholders. Your comments and feedback will be greatly appreciated—please take the time to fill out the enclosed questionnaire.



Message from the top

## THK's efforts to protect the environment

### ■ The importance of environmental issues

Global environmental issues have become an urgent and highly important topic in a variety of fields. From the standpoint of industry there are two sides to this topic. On the positive side, environmental initiatives will open up new markets. The Green New Deal proposed by U.S. President Obama is a good example. It calls for the U.S. government to provide about 15 trillion yen in funding over 10 years to support a wholesale conversion to renewable energy sources. On the negative side, though, industry will be confronted with strict controls on the use of electricity and gas to produce goods and provide services. Businesses will have to invest in new equipment to reduce CO<sub>2</sub> emissions and will also have to purchase emission credits, leading to substantially increased costs.

It may seem as though these two aspects of the situation are mutually contradictory. The preservation of the global environment is a critical issue, however, one that all businesses must address as a matter of self-preservation. Environmental CSR activities should not be considered in terms of the cost but must be regarded as an investment in the effort to protect our planet. It's an investment that will bring us, as a corporation and as individuals, great benefits.



## ■ Helping to protect the environment through our core business

Ever since THK was established in 1971 our corporate philosophy has been “providing innovative products to the world and generating new trends to contribute to the creation of an affluent society”. Based on this philosophy, THK has created many energy-saving products that convert the linear-motion components of machine tools from conventional sliding motion to rolling motion. These products are used not only in machinery but in a wide variety of mechanisms commonly encountered in daily life, and they help protect the environment in many ways.

Energy conservation is the underlying concept for the development of all THK products. The ability to minimize frictional resistance makes it possible to reduce the size of electric motors and of machines themselves, resulting in dramatically lower power consumption. Using LM Guides in the sliding section of a large grinding machine to move the machining table back and forth, for example, reduces power consumption by 90% compared to conventional grinding machines using sliding guides. Replacing an air cylinder with an LM Guide actuator combined with a servo motor reduces CO<sub>2</sub> emissions by a factor of 150. THK’s Link Ball products meet the needs of automobile makers seeking to incorporate lightweight components in order to maximize fuel performance and reduce CO<sub>2</sub> emissions. These products have found favor as components in hybrid cars.

We will continue to help our customers achieve significant energy savings in the future.

## ■ Protecting the environment during the production process

As a manufacturer, THK strives to protect the environment in its manufacturing and distribution activities. Equipment is being updated and lighting systems are being revised at all of our production plants to enable the plants to achieve their respective annual targets for reducing CO<sub>2</sub> emissions. We have also implemented zero emissions programs aimed at reducing, reusing, and recycling waste materials.

In our distribution activities we constantly work to improve loading ratios and promote a modal shift to rail-based transport. These efforts, however, are just the start.

In the future we need to develop more energy-efficient production machines and actively incorporate natural energy sources. Our office employees must become more environmentally aware and practice energy conservation.

## ■ Keeping the planet green for future generations

Planet Earth is said to be a miraculous place, for in the vast cosmos here alone do we find the conditions required to sustain life. We have a solemn duty to leave this wonderful planet in good shape for the benefit of those who will be here after us. We hope our customers will appreciate the energy-saving benefits of THK products. Meanwhile, we will keep striving to use less energy in our own production processes, in the hope that, many years from now, our descendants will look upon our efforts with gratitude.

Akihiro Teramachi

President and CEO

THK Co., Ltd.



# The THK Group

## Main products



LM Guides



Actuators



Ball Screws



Ball Splines



Link Balls



Cross Roller Rings

## Profile

THK, a pioneering manufacturer, developed the world's first Linear Motion Guide and is the world's largest LM Guide producer. Since the company was established in 1971, its LM Guides and other products have been used in machine tools, industrial robots, and semiconductor production equipment. THK products are essential components in these devices, enhancing precision, increasing speed, and reducing labor, and have contributed to developments in many industries. In recent years, applications for THK products have expanded to include CT scanners, MRI devices, and other advanced medical instruments; high-performance environment-friendly automobiles and railway cars; and seismic isolation and vibration-damping devices that protect human life and property.

THK is working to achieve consolidated sales of ¥300 billion through full-scale globalization and the development of new business areas. Full-scale globalization, based on the idea that the site of demand is also the optimum production site, is an effort to strengthen the unified producer-retailer system in four territories: Japan, the Americas, Europe, and Asia. In 2008 THK opened seven new sales offices in China, one in the Czech Republic, and one in the Netherlands. A sales office in Russia will open in 2009. The initiative devoted to developing new business areas is an effort to expand the range of THK product applications into consumer fields by establishing specialized departments. The acquisition on May 31, 2007, of RHYTHM CORPORATION, an automotive parts manufacturer, as a consolidated subsidiary, is expected to contribute to the development of new business areas.

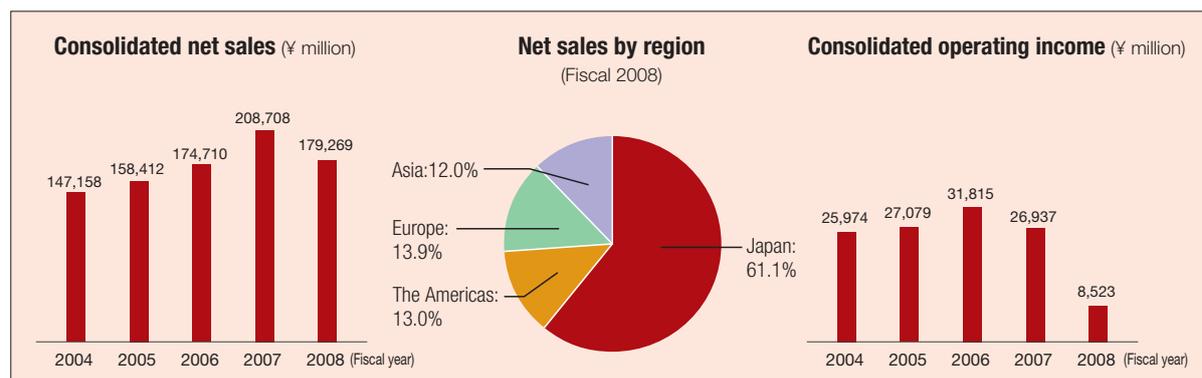
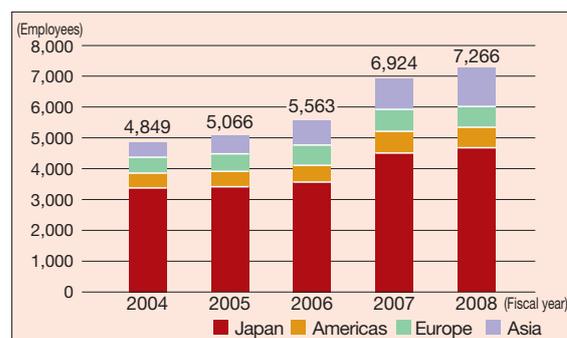
Corporate name	THK Co., Ltd.
Date established	April 10, 1971
Address	3-11-6 Nishi-Gotanda, Shinagawa-ku Tokyo, Japan 141-8503
Capital	¥34.606 million*
End of fiscal year	March
Employees, consolidated	7,266*
Employees, non-consolidated	3,210*
Consolidated subsidiaries	10 in Japan, 19 overseas*

\* As of March 31, 2009

### THK employees, non-consolidated (as of March 31, 2009)

Employment status	Number of employees	Average age	Average years of service
Employees (male)	2,706	37.3	14.2
Employees (female)	504	30.3	9.0
Employees (total)	3,210	36.2	13.4
Board members	20		
Part-time workers	12		
Dispatched from affiliates	135		
Temporary staff	66		

### Consolidated employees



# The THK Group: Major locations

THK is pursuing full-scale globalization to strengthen its unified producer-retailer system in four territories: Japan, the Americas, Europe, and Asia.

### China

**Sales offices** ..... 17

**Plants** ..... 4

**Group companies**  
 THK (CHINA) CO., LTD.  
 THK (SHANGHAI) CO., LTD.  
 DALIAN THK CO., LTD  
 THK MANUFACTURING OF CHINA (WUXI) CO., LTD.  
 THK MANUFACTURING OF CHINA (LIAONING) CO., LTD.  
 RHYTHM GUANGZHOU CORPORATION

### Japan

**Sales offices** ..... 49

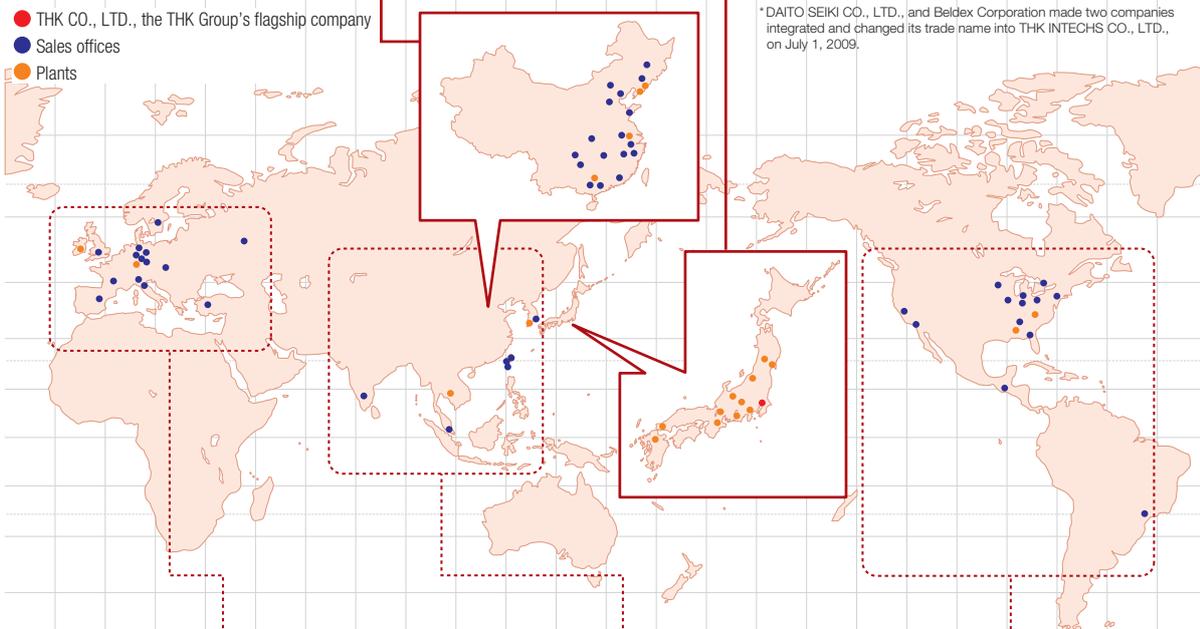
**Plants** ..... 15

**Distribution centers** ... 3

**Group companies**  
 THK INTECHS CO., LTD.\*  
 THK NIIGATA CO., LTD.  
 TALK SYSTEM CORPORATION  
 RHYTHM CORPORATION  
 Rhythm Kyushu Co., Ltd.  
 Rhythm L Co., Ltd.  
 L Tool Co., Ltd.  
 L Trading Co., Ltd.  
 L Engineering Co., Ltd.

- THK CO., LTD., the THK Group's flagship company
- Sales offices
- Plants

\*DAITO SEIKI CO., LTD., and Beldex Corporation made two companies integrated and changed its trade name into THK INTECHS CO., LTD., on July 1, 2009.



### Europe

**Sales offices**

Germany ..... 4	The Netherlands ..... 1
United Kingdom ..... 1	Turkey ..... 1
Italy ..... 2	Russia ..... 1
Sweden ..... 1	Czech Republic ..... 1
Austria ..... 1	<b>Plants</b>
Spain ..... 1	Ireland ..... 1
France ..... 1	France ..... 1

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**Group companies**  
 THK Europe B.V.  
 THK GmbH  
 THK France S.A.S.  
 THK Manufacturing of Europe S.A.S.  
 PGM Ballscrews Ireland Ltd.

### Asia

**Sales offices**

Taiwan ..... 3
Singapore ..... 1
India ..... 1
South Korea ..... 1

**Plants**

South Korea ..... 2
Thailand ..... 1

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**Group companies**  
 THK TAIWAN CO., LTD.  
 THK LM SYSTEM Pte. Ltd.  
 Beldex KOREA Corporation  
 THK RHYTHM (THAILAND) CO., LTD.  
 SAMICK THK CO., LTD.

### The Americas

**Sales offices**

United States ..... 10
Canada ..... 1
Mexico ..... 1
Brazil ..... 1

**Plants**

United States ..... 2
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**Group companies**  
 THK Holdings of America, L.L.C.  
 THK America, Inc.  
 THK Manufacturing of America, Inc.  
 Rhythm North America Corporation  
 THK Brasil LTDA

## Developing technology to deliver added value to society

— Creating new value and pursuing customer satisfaction —

### ■ Providing innovative new products

The central focus of THK's technological development activities is the effort to cultivate creative products that anticipate the customer's needs, in accordance with THK's corporate philosophy, "providing innovative products to the world and generating new trends to contribute to the creation of an affluent society".

By developing innovative new products, THK can create new areas of demand within the machine tool industry. In this way, THK seeks to play a leading role in the creation of new markets. THK's approach to technology has always been based on performing the greatest possible amount of work using minimal force, by converting sliding motion into rolling motion. This constitutes an enormous contribution in terms of energy conservation and high performance, two qualities that are highly valued these days.

In 1972, shortly after the company was founded, THK produced the world's first rolling linear motion system—the LM Guide. The LM Guide overturned conventional wisdom in the machine tool industry, making it possible to consume only one-tenth the power required with conventional sliding-motion

guides. This was a highly significant advantage in terms of environmental concerns. In the midst of the economic boom Japan was enjoying at the time, the LM Guide was also the first product in the Japanese industrial world to embrace the value of "environmental friendliness" by reducing the need for lubricants and enabling machine tools to become smaller and consume less power.

By the latter half of the 1990s, amid the development and dissemination of information technology, it had become necessary to address the new value of "high precision". THK responded by developing new LM Guides and other products suitable for use in semiconductor manufacturing. In 1996 THK introduced a second-generation LM Guide called the Caged Ball LM Guide, the culmination of 10 years of development. In the Caged Ball LM Guide, the internal rolling elements, or balls, are enclosed within a plastic retainer, or cage. This revolutionary new product not only addressed the need for high precision, it also embodied new values—silent operation, high durability, and low maintenance—to meet the needs of a new age.

### ■ Milestones in the development of creative products and attainment of customer satisfaction

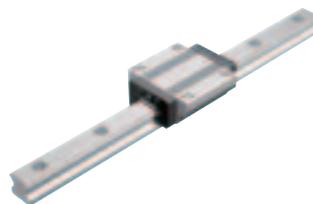
THK is the first to convert sliding motion into rolling motion.

- 1972: The original LM Guide



High-speed, high-precision, low-noise, environment-friendly products

- 1996: Model SSR Caged Ball LM Guide
- 1998: Model SHS Caged Ball LM Guide
- 2000: Model SRG Caged Roller LM Guide



- 1981: 4-way Equal Load LM Guide (Worldwide standard)

#### THK's early years

- 1979: Precision Ball Screw

#### Perfecting core technology

- 1983: Ball Screw with a Large Lead (First in the industry with finished shaft ends)
- 1989: Nut-rotating Ball Screw (First in the industry)
- 1990: Offset Ball Screw (THK original)
- 1990: Model LT Ball Spline
- 1990: Model LTR Ball Spline

#### Perfecting high-value-added technology

- 2000: Model SBN High-Speed Caged Ball Screw
- 2002: Model HBN High-Load Caged Ball Screw
- 2002: Model SBK High-Speed Caged Ball Screw

- 1971: Ball Spline



### ■ Anticipating needs 5 to 10 years in advance

Another focus of technological development at THK is the pursuit of customer satisfaction—accurately identifying the needs of customers and of society in general and responding in a timely manner. THK’s stakeholders are concerned about the global environment and about helping to provide a safe and secure society. To earn the confidence and continuing patronage of the larger community, THK must provide products and technology that meet people’s needs, in a timely manner.

Once a technological development has been achieved, it takes time to convert it into a viable new product. In order to make needed technology available at the time the need becomes apparent, it is necessary to anticipate customers’ needs five to ten years in advance, long before customers themselves are aware of them. In this sense, an accurate assessment of the market is absolutely essential. The use of THK technology has expanded beyond the machine tool industry and is now helping to ensure a safe and secure society. Examples of this include the incorporation of THK technology into seismic

isolation devices and THK’s collaboration in the development of medical robots.

THK is working to expand its activities in a wide range of fields, in pursuit of ever greater customer satisfaction, and to provide products that meet customers’ needs, in order to place its accumulated technology at the service of society.

Providing the link between creative product development and customer satisfaction

### THK Technology Center

THK’s technological development efforts were formerly carried out at individual production sites. In 2005 the company established the THK Technology Center in Ota Ward, Tokyo, as its base for research and development activities. The Technology Center serves as the source for information related to THK technology and a venue for design and development activities as well as testing and examination procedures. Some 220 engineers are employed at the Center, which is equipped with a variety of processing machines, durability testers, three-dimensional measuring instruments, and other devices.

THK’s Engineering and Development Department oversees the development of new products. A project team is assigned to each development project to ensure rapid development. Newly developed products are sent off to the manufacturing plants, so that development personnel working at the site of production can further improve the quality of each product.



● Automobiles

● Housing

**New fields of business**

● Robotics

● Consumer products

### ■ Developing technology: Case 1

## Super-high Rigidity / Super-low Waving LM Guide

Creating new value by developing new technology

#### Key points in product development

- Greater accuracy, higher load-bearing capacity
- Superior environmental performance

The challenge was to ensure that the movement of a table incorporating LM Guides was accurate to the nanometer—one-millionth of a millimeter. It was already possible to achieve accuracy to the micrometer (one-thousandth of a millimeter), but in most cases nanometer-level accuracy was obtainable only through the use of static pressure. Attaining greater accuracy with LM Guides had been a longtime challenge for the industry, entailing two difficult problems. The first was dealing with a phenomenon known as waving, caused by slight fluctuations in the load bearing on the rolling element. Every manufacturer knew that this problem could be resolved by reducing the ball diameter, but this gave rise to the second problem: smaller balls meant less load-bearing capacity.

Toru Takahashi, the head of THK's Fundamental Technology Research Laboratory, was casually sketching on a sheet of paper when he suddenly came up with a solution to this dilemma. He had drawn a standard cross-sectional view of four balls when it occurred to him that, by making each ball smaller, he could create space for more balls to be added, one at a time. He



knew, of course, that the rated load could increase along with any increase in the number of grooves.

The smaller the balls, the more waving can be suppressed and the more grooves there are; with more grooves, the rated load can increase. Takahashi was aware of all these principles, but it was only when he drew his sketch that they came together to form a viable solution. His theory was promptly studied and prototypes were prepared and tested, proving the validity his proposal.

The Super-high Rigidity/Super-low Waving LM Guide, created by doubling the grooves of the 4-groove LM Guide, delivers nanometer-level accuracy. Moreover, it proved to be a remarkably environmentally friendly product because, unlike static-pressure units, which the Super-high Rigidity/Super-low Waving LM Guide will replace, the lubricants are contained in the block. This keeps the work area free from contamination. With static pressure, lubricants continually flow between the base of the machine and the table during operation, so the work area gets contaminated with lubricants.

The Super-high Rigidity/Super-low Waving LM Guide is the ideal linear guide for machining centers and lathes that previously relied on static pressure. The new guide greatly improves initial cutting accuracy, reducing the need for grinding after the cutting is done, and this is only one of its cost-saving benefits.

#### Comments from the developer

### Toru Takahashi

Manager, Fundamental Technology Research Laboratory,  
Engineering Division

I hope this Super-high Rigidity/Super-low Waving LM Guide is appreciated by our customers and seen as a very good product, worth the price. It'll be an ideal replacement when a customer has trouble with an existing LM Guide or wants to upgrade. Ideally, when customers using guides made by other companies want greater accuracy, the only product they'll consider is the THK Super-high Rigidity/Super-low Waving LM Guide—that's the kind of product this should be.



■ Developing technology: Case 2

# The SBKH

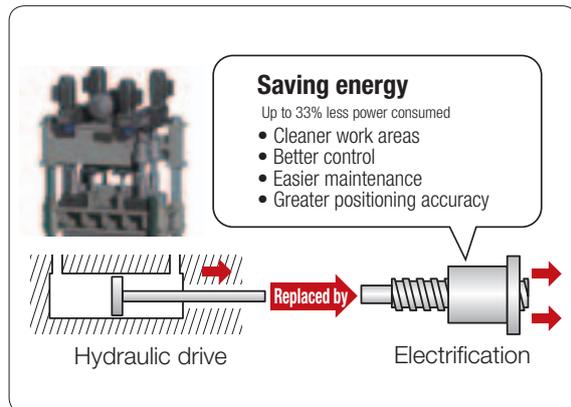
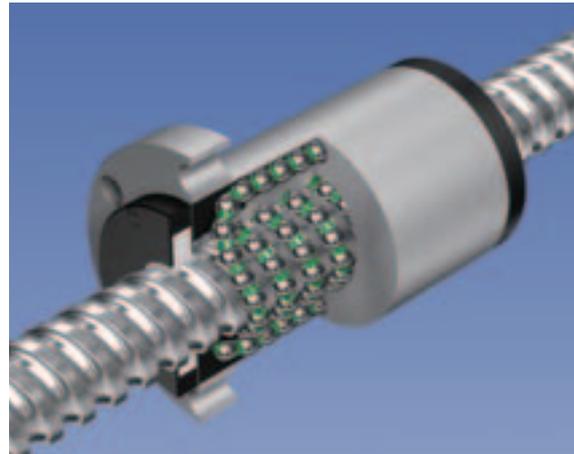
High-Load, High-Speed Caged Ball Screw

Developing technology to ensure customer satisfaction

**Key points in product development**

- Enhanced durability, high load-bearing capacity, low noise
- Superior environmental performance

There was rising demand for a High-Load Ball Screw capable of generating thrust by itself. The availability of such a product would make it possible to replace conventional hydraulic drives with electric drives in presses, injection molding machines, and other large machines. Switching to electric drives would provide many benefits: (1) reduced power consumption—up to 33%, (2) cleaner work areas, (3) better control of the machine, (4) easier maintenance, and (5) greater positioning accuracy. When High-Load Ball Screws were first incorporated into injection molding machines, however, problems arose due to damaged balls. With hydraulic units, even if the actuator isn't propelled in a perfectly straight direction, the driving force is still properly transmitted. Because a Ball Screw is a precision component, however, if the load is positioned at an oblique angle the balls won't bear the load evenly, and this is why problems occurred (see the illustrations at right). Occasionally, abrasion caused by contact between the balls themselves also adversely affected the Ball Screw's operation.



To resolve the problems that had arisen and also prevent abrasion from occurring, retainers were inserted between the balls. The product's basic structure was revised to make it far more durable, and the flow of the balls inside the Ball Screw was improved to reduce operational noise. The result was the SBKH High-Load, High-Speed Caged Ball Screw, which is now on the market.

The SBKH Ball Screw is suitable for high-speed applications. By enabling hydraulic drives to be replaced by electric drives, it eliminates the need for hydraulic pumps and various other ancillary devices, along with their power requirements. Thus, the SBKH Ball Screw both addresses environmental concerns and helps reduce costs.

**Comments from the developer**

## Tsutomu Togashi

Research and Development Unit I,  
Engineering and Development Department

At the outset the big challenge we faced in developing the SBKH High-Load, High-Speed Caged Ball Screw was striking the right balance between providing high value-added performance and holding down costs in order to end up with a price that would keep our customers happy. As the developer, I found this pretty difficult at first, but we resolved the issues one by one and eventually came up with the product our customers were asking for, and this provided a great sense of fulfillment.





## Management system

A company must grow with society. In its business activities, THK pursues the principle of contributing to the creation of an affluent society. In accordance with its corporate philosophy, THK has practiced CSR through its core business ever since the company was founded; THK's corporate philosophy embodies the awareness that a company has to grow together with society. Today, corporate social responsibility is more important than ever. Accordingly, THK has been reexamining its past efforts and reviewing its approach, to once again ensure that employees conducting THK business are acutely aware of CSR.



# Management

# Corporate governance

**Q** Please describe the basic concept of corporate governance.

**A** THK's basic approach to corporate governance is to strive to improve the transparency of its operations for shareholders and investors and provide appropriate and effective management to maximize shareholders' returns.

## Governance system

THK's operations are managed and controlled by its Board of Directors; Board of Auditors, which includes external auditors; and Accounting Auditor. THK is striving to increase the transparency of its operations and improve oversight of management to ensure that business goals are attained, in order to continually enhance its corporate value. THK has established an Internal Audit Office, an independent entity under the direct jurisdiction of the CEO, to evaluate the faithful performance of business duties, management efficiency, and the adequacy of THK's internal controls.

## Internal controls

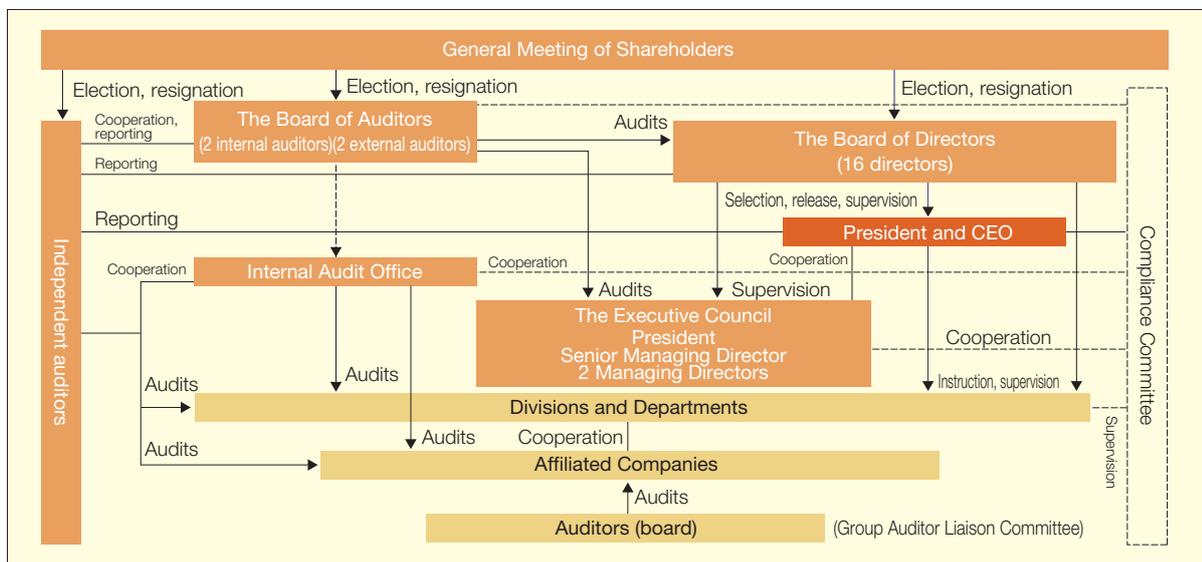
THK is implementing measures to reinforce internal controls for the purpose of further solidifying its management infrastructure, in full compliance with legal requirements. In accordance with the system for planning and establishing internal controls set up in 2006, THK launched an internal controls project in fiscal 2006 and has developed a system for ensuring the reliability of financial reporting. THK's internal controls project is based on Japan's Financial Instruments and Exchange Law, and is being implemented throughout the entire corporate group, including subsidiaries and affiliates. The internal evaluations conducted in fiscal 2008 revealed no significant deficiencies; the report of internal control was submitted to the Prime Minister of Japan (via the Kanto Finance Bureau of the Ministry of Finance) for public disclosure.

## Security-related trade controls

Reports of threats to the security of the international community appear in the news virtually every day, and demands for more stringent implementation of security-related trade controls are increasing. Amid the increasingly fluid interactions brought about by globalization and the rise of information technology, there is growing concern over exports of goods and technology that could adversely affect security. THK's Security Export Control Department, part of the Risk Management Division, continually monitors revisions to relevant laws and regulations, keeps all THK Group companies up to date about their legal responsibilities, and establishes the necessary internal procedures to rigorously enforce all security-related trade controls. Employees responsible for security-related trade controls at individual sales offices are required to attend a Security Export Control Seminar presented by the Ministry of Economy, Trade and Industry, to enable them to better educate other employees about export controls; 18 branches took part in the seminar in fiscal 2008.

Workshops are held for production department employees to help them better understand security-related trade practices and help ensure compliance with all legal obligations. THK also uses its website to improve service and make sure customers receive prompt and accurate information about the applicability of trade controls. THK promptly issues documentation required by customers seeking to export their products.

### ■ Governance framework



# Compliance

Q

Please describe THK's efforts in the area of compliance.

A

In order to continue to be a company fully deserving of society's trust, THK is establishing a strong system designed to ensure thorough compliance and provide employees with ongoing training and education.

## Compliance system

Since 2005 THK has had a standing Compliance Committee, chaired by the CEO. The Compliance Committee discusses and approves all compliance-related policies, rules and regulations, and training programs, and deals with compliance violations and internal reporting. A Compliance Panel has been established under the committee's jurisdiction, with representation from each business department. A Compliance Panel member is assigned to each area and business location to organize regular workshops presided over by specialists, promote the compliance system, and serve as a consultant and liaison.

An internal "THK helpline" has been set up to help deter board members and employees from committing compliance violations and help ensure that appropriate actions are taken quickly if a violation occurs. These services are being publicized to make them better known throughout the corporation.

es, an in-company educational tool, to help employees become more aware of compliance in their daily work. In March 2008 eight new compliance-related case studies were added, bringing the total to 23. The materials include 48 drill-type study questions; over time, more questions will be added.

\* e-learning: The use of educational materials available via computer



▲ Compliance Panel members take part in a study session.

## Compliance system



## Training and educational activities

To further promote compliance THK has introduced educational activities for supervisory staff (assistant managers, group leaders, and team leaders). As of February 2008, 441 production facility employees, including employees at affiliated companies, had completed these activities. Compliance-related training for general employees has also been added; 817 employees had received such training as of April 2009.

In December 2008 Compliance Panel members began attending regular study sessions, conducted by a visiting lecturer (a corporate lawyer), dealing with issues such as leaking of classified information, insider trading, sexual harassment, and power harassment.

THK has also introduced educational materials concerning compliance into its e-learning\* resourc-

## Distribution of "We use rear seat belts" stickers

The revised Road Traffic Act, which went into effect in June 2008, requires that all automobile passengers, including those in rear seats, wear seat belts. To ensure that this law is obeyed and to protect the lives of its customers and employees, THK has issued a notice to all group companies urging that drivers make sure back-seat passengers fasten their seat belts and reminding people riding in the back to always wear seat belts.

To encourage the use of rear seat belts in private vehicles, THK has distributed "We use rear seat belts" stickers, supplied by the Japan Automobile Federation, to all of its employees.

## Eliminating drunk driving

Drunk drivers now face severe legal penalties. To help eliminate drunk driving, THK revised its employment regulations in September 2008 to make drunk driving a cause for punitive dismissal. THK has also established standard procedures for disciplinary measures to be taken against drunk driving and has publicized these throughout the corporation.

## Risk management and information security

Q

Please provide some examples of risk management in action.

A

THK has systems in place to minimize damage in the event of a disaster and has also instituted various information security measures, which are actively implemented.

### Commitment to Business Continuity Plan

In September 2008 officials at THK's KOFU Plant, assisted by an outside consulting firm, began formulating a BCP\* to prepare for the possibility of a major earthquake or other disaster. The plan is expected to be completed in fiscal 2009, and similar plans will be created for THK's other plants in Japan over time. As part of these efforts, THK installed seismic isolation tables at the KOFU Plant in July 2008 and at its YAMAGUCHI Plant in December 2008 to protect IT equipment from being damaged in an earthquake. All five THK plants in Japan now have seismic isolation tables installed, and THK Group companies throughout Japan are expected to have them installed over the course of fiscal 2009.

THK plants in Japan have established a system for rapidly ascertaining the safety of employees in the event of a disaster. Under the system, when an earthquake or other disaster occurs, a voice or e-mail message is sent to each employee's preregistered mobile or stationary telephone number or e-mail address; the employee responds by indicating whether he or she, and any family members, are safe, and whether he or she can report to work. This will enable THK to quickly determine the status of all employees and rapidly formulate a plan for recovery and the resumption of business activities.

\* BCP: Business Continuity Plan

### Countermeasures against the influenza A (H1N1) virus

To protect the health of its employees and help ensure business continuity in the event of the further spread of the influenza A virus, in February 2009 THK issued a manual prescribing countermeasures against the influenza A virus. The manual specifies measures to be taken and supplies to be prepared and provides for employee education to be conducted in advance of the spread of the influenza A virus. The manual also sets forth business continuity procedures to be followed in the event of a pandemic. THK is currently making the prescribed advance preparations. In addition to the manual, THK has also prepared educational materials explaining countermeasures that individual employees can take and is conducting an in-house educational campaign to increase knowledge and raise awareness about the influenza A virus.

THK also maintains a stock of masks, disinfectants, and other supplies to help prevent the influenza A virus from spreading, and encourages employees to keep such items on hand.

In April 2009 the World Health Organization raised

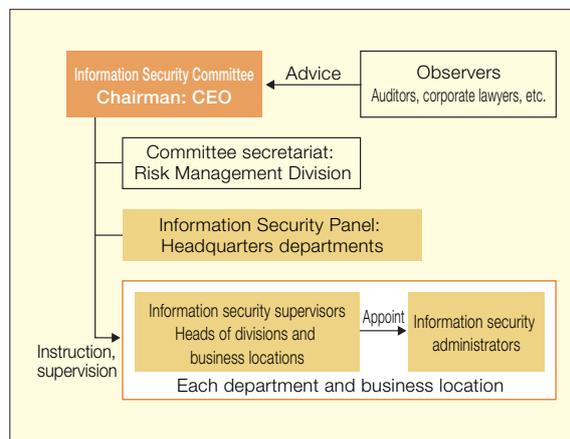
its pandemic alert for the influenza A (H1N1) virus to phase 4. In response, THK set up a task force headed by its CEO, as prescribed by the influenza A virus manual. Overseas business trips are being discouraged, and employees who travel abroad in their private time are required to have their health monitored by a supervisor for a specified period following their return to Japan. At business locations in heavily affected areas of Japan, employees have been instructed to take all possible measures to prevent the spread of influenza, including wearing masks when commuting, washing their hands with care, and gargling. Before entering these business locations, visitors are asked to wash their hands with disinfectant to help prevent influenza from being transmitted to THK employees.

### Information security system

THK has initiated internal audits of its information security system, at the behest of the Information Security Committee secretariat. In fiscal 2008 internal audits were conducted at four locations: the YAMAGATA Plant, the MIE Plant, the OSAKA Branch, and the NAGOYA Branch. Whenever an audit reveals a problem, instructions are issued for improvements to ensure strict observance of company regulations concerning information security.

To further educate employees about information security, THK provides educational activities for supervisory staff (assistant managers, group leaders, and team leaders); as of January 2009, 94 sales division employees had completed these activities. Information security training for general employees has also been introduced.

### Information management system





## Involvement in society

Creating jobs, cultivating personnel, securing fair profits, and paying taxes. These form the basis for our company's activities. For these things to happen, though, it is essential to build good relationships with our stakeholders: customers, shareholders and investors, partner businesses (cooperating companies and suppliers), employees, government agencies, and local communities.

THK places great value on its relationships with all stakeholders, that is, on our involvement in society at large.



Society

## Together with our customers (for higher product quality)

Q

What efforts does THK make to ensure a continuing supply of better products?

A

THK is dedicated to upholding its CEO policy—Diligent Pursuit of The Best Quality—and has instituted action guidelines to ensure continuing efforts to provide optimum quality.

### Diligent Pursuit of The Best Quality

**Diligent Pursuit of The Best Quality:** THK's CEO policy for fiscal 2008. As a leading global corporate brand, THK can't afford to settle for conventional quality but must constantly improve quality control to ensure that it is providing customers with the world's best products. To this end, THK has created a Quality Improvement Committee to oversee quality improvement activities throughout the entire organization.

The quality of the products THK provides to customers reflects manufacturing and calibration skills and other technological capabilities employed at THK production sites. To assess the quality of products made at different sites, including plants located overseas, the Quality Improvement Committee sponsored an in-house quality competition in October 2008. Products from THK plants around the world were collected for the competition. After establishing quality-assessment criteria for each product, judges from the Quality Assurance Division evaluated the products and the plants that produced them. Their findings indicated that the quality of THK products remains consistent no matter where the production site is located, including overseas.

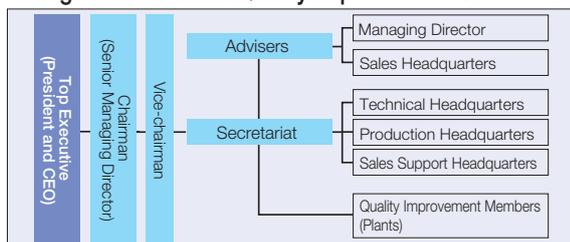
THK now has plants not only in Japan but in the U.S.A., Europe, and elsewhere in Asia as well, so it is essential to keep manufacturing quality consistent worldwide. For this reason, THK has launched a universal quality control (TQS\*) initiative. THK is also improving global procurement, which is the basis for the principle of optimum-production sites. This entails fair and impartial testing of materials and components procured for use by overseas plants, in cooperation with procurement personnel, to ensure that all THK plants are using superior materials and components.

To further ensure uniform quality worldwide, THK employs teleconferencing, its own internal WAN,\*\* and other new technology to share information with overseas sites and facilitate technological interaction. Activities such as these have reinvigorated efforts to improve quality at all THK plants, in accordance with the CEO policy: Diligent Pursuit of The Best Quality.

\* TQS: THK Quality Standard—THK's unique quality standard

\*\* WAN: Wide Area Network—A computer network covering a broad area

### Organization of the Quality Improvement Committee



### Quality Assurance System

To offer safe and reliable products to customers all over the world and provide the best possible Quality Assurance System from a global perspective, THK has obtained ISO 9001 Quality Management System certification for all its plants in Japan, the U.S.A., Europe, and elsewhere in Asia. THK has also obtained ISO/TS 16949 Automobile Production Quality Management System certification for its FAI Division and TME and TMA plants. This enables THK to supply products to the automobile industry, where a more advanced level of quality control is required. THK will continue to employ quality management systems at all its plants in an effort to ensure ongoing improvements in product quality.

### Improvement Presentation Meeting

Improvement is a constant theme in manufacturing. THK continually holds presentation meetings in an effort to improve quality and technology. The first Improvement Presentation Meeting, sponsored by the Production Division, was held in November 2007; the second was held over the course of two sessions in February and March 2009. The event is a venue for presentations on QC\* circle activities, developments in machining technology, and improvements in day-to-day operations at specific plants, which, it is hoped, will catch on at other plants. In addition to the five domestic plants represented at the first meeting, THK's NIIGATA Plant was represented at the second meeting for the first time. Prior to the event, preliminary screening rounds were held at the respective plants, and qualifying rounds for Eastern Japan and Western Japan were held thereafter. Ultimately, nine presentations on improvements were offered at the meeting, along with two special reports presented by THK's Production Engineering Department.

The GIFU Plant sponsored a presentation on improvements in its assembly process. Plant officials had established a goal of reducing the 250-second assembly time by 64 seconds, through improvements to jigs and other equipment, but repeated improvements made it possible to exceed the goal and reduce the assembly time by 78 seconds.

\* QC: Quality Control



▲ A QC circle presentation meeting at the MIE Plant

## Together with our customers (for greater customer satisfaction)

**Q** Please describe THK's customer service activities.

**A** THK continually works to improve sales skills throughout the corporation by ensuring that its accumulated expertise is shared by all sales personnel, in the spirit of true customer service.

### TAPS Certification Program

The TAPS\* Certification Program, inaugurated in fiscal 2008, is an internal qualification system designed to improve the skills of sales people employed by THK's agents, as part of efforts to increase customer satisfaction. The objective is to enable agents to provide the same level of customer service that THK's own sales people provide.

Sales people who enroll in the program attend seminars on THK products and technology, held in three sessions, and are tested at the end. In the program's introductory year, 30 participants performed well enough on the tests to earn the TAPS qualification; each received a photo-embossed certificate.

TAPS certified sales employees participate in annual development programs that include seminars on products, technology, and sales management, as well as hands-on training at plants and attendance at various exhibitions. TAPS certified sales people are actively involved in planning and conducting customer briefing sessions concerning THK products.

These development programs help TAPS certified sales people become more knowledgeable and foster greater interaction with THK's own sales employees. Ultimately, this enables THK's agents to better understand customer needs and provide better service in a variety of ways. THK will continue to improve the TAPS Certification Program and elicit the participation of more THK agents, to provide greater customer satisfaction.

\* TAPS: THK Authorized Professional Sales

### Global Sales Meeting

THK's first Global Sales Meeting was held in July 2008 in Seattle, Washington, in the U.S.A. The catchphrase for this event, devoted to improving customer service around the world, was Global 10 21, a reference to THK's goal of becoming one of the world's top 10 component manufacturers in the twenty-first century.

Nine top sales employees from THK's four territories—Japan, the Americas, Europe, and Asia—attended the meeting to discuss issues affecting sales activities, relate success stories, and share their expertise.

Those in attendance reaffirmed that, although they work in different countries and cultures, the THK sales approach—true customer service—remains the same everywhere. They also noted the critical importance of communicating with customers and expressed support for the TAP1 program, now being carried out in sales divisions around the world.



▲ Global Sales Meeting participants from various countries introduce themselves.

### VOICE | Voice of a salesman



**Atsushi Yayabe**

Assistant Manager,  
Sales Section, HAMAMATSU Branch,  
Sales Department, East Japan Region II

I wanted to gain greater knowledge by interacting with people, so I've been working in the sales division ever since I joined THK. When I took part in the TAP\*1 program, I realized that I had a one-way sales attitude. You have to listen to customers very carefully and find out what they really need. Now, after discussing everything with the customer, when I convey their requirements to the design and production people I make sure they understand the customer's needs correctly in every detail. It's especially satisfying when they can make a product for a customer that's not even in the regular lineup. That's when I really see our corporate policy in action—"providing innovative products to the world".

Right now I'm working with a younger employee, doing sales work and showing him the ropes. It takes me back to my own early days with the company. I try to do my job without losing sight of my original goal and cherish my interactions with our customers. To find out what my customers need, I try to put myself in their place. With the help of my colleagues, I'm going to keep trying to come up with ideas to satisfy our customers.

\* TAP: THK Advantage Program. There are three types: TAP1 (sales), TAP2 (production), and TAP3 (administration).

## Interview — Customer's voice —

# Partnership with THK develops as market needs change over time.

### Shinsuke Suhara

Executive Officer,  
Electronics Assembly Equipment Division,  
Machine Engineering Department,  
Fuji Machine Mfg. Co., Ltd.

#### Fuji Machine Mfg. Co., Ltd.

Since its establishment in 1959, Fuji Machine Mfg. Co., a manufacturer of industrial machinery including electronic-component mounters and machine tools, has provided advanced technology and technical services to computer and mobile phone manufacturers and auto makers around the world. The company's Electronics Assembly Equipment Division handles production and sales of its electronic-component mounters, while the Machine Tools Division primarily handles production and sales of lathes designed for use by auto makers.



#### How did you happen to form a partnership with THK?

Some 28 years ago we launched an Engineering Division, the forerunner of our Electronics Assembly Equipment Division, and began selling the first “automatic mounters” ever used in the electronics industry. Back then we called them placers; they inserted components, with leads attached to the electrodes, into substrates. Those machines evolved into the present-day mounters, which place tiny electronic components on a substrate.

Mounters run at very high speeds compared to machine tools and placers, so rolling guides were absolutely necessary. THK's circular-arc design, with the balls making contact at only two points, has very low rolling resistance and is very stable, with a high tolerance for mounting errors. We decided to use THK products because they met our requirements, and that was the start of a long relationship.

#### What have you been most impressed with in your dealings with THK?

When I started designing products and trying to improve performance, I found conventional guides unsatisfactory. When we wanted to increase speed, iron and stainless steel guides were too heavy and not rigid enough. Ceramic was a promising material, so I contacted several makers about developing ceramic guides, including THK, and THK was more than willing to give it a try. They developed the world's first ceramic guide, and we were the first to use it. I recall it quite clearly. The machine incorporating ceramic



guides ran very fast, placing every chip in just 0.068 seconds. That machine was recognized within the industry as the world's fastest mounter at the time.

Once high-speed requirements were satisfied, the market need was flexibility, to enable makers to accommodate diverse production formats. We shifted to a modular design for our new NXT series, with each constituent device unitized for ease of replacement. The unit consists of a number of small machines, so the guides must also be very small. Ease of maintenance was important because many guides are used in each unit. The THK guides have retainers between the balls to prevent direct contact. With no balls colliding, the operation is very smooth. It's quiet, with a very long service life. In addition, there's a function provided that lubricates the rails automatically. These features make it possible to extend the maintenance-free operating period, which, as a machine maker, we appreciate very much.

Our partnership with THK has grown stronger as we've cooperated with one another in meeting the changing demands of the market.

#### What are you hoping for from THK in the future?

When we come up with an idea, THK's people respond quickly. We naturally talk with the sales people first, and the next time we meet they bring along technical people to explain their proposal. If there are difficulties, they explain just what the difficulties are, in plain language. The coordination between sales and the technical side at THK is wonderful, and I look forward to even better and smoother cooperation in the future.

From a technical perspective, extending the maintenance-free period is highly important for both of us. We would like them to develop units that require no maintenance at all for a period of, say, three to five years. Another problem is heat, a result of the emergence of machines that run at increasingly higher speeds. I expect THK to further improve their technology in relation to these two points.

## Together with our shareholders

Q

Please describe THK's activities for shareholders and investors.

A

THK strives to make its corporate management practices more transparent through fair and equitable disclosure of information to shareholders and investors.

### Investor relations events

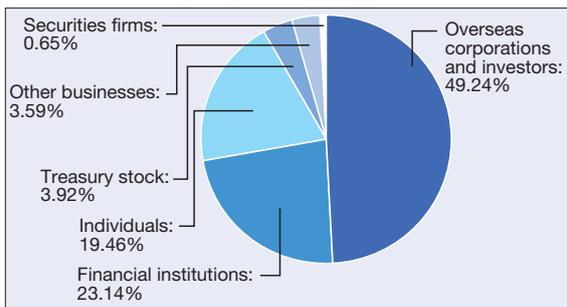
At THK's semiannual investor meetings, the CEO provides a detailed explanation of THK's business performance and business strategies. Ample time is provided for answering questions and listening to candid opinions directed at company management. THK also tries to expand its dialogue with all of its investors through small-scale meetings and individual interviews. In addition, THK has been working to expand opportunities for communication with U.S. and European institutional investors through regular annual visits and other opportunities.

### Investor relations tools

THK publishes an annual report, as a means of disclosing information appropriately and impartially to shareholders and investors. The company also publishes a fact book for investors, for use as an informational tool. These items, along with materials presented at investor meetings, legally required disclosures, and other information, are posted in Japanese and English on the Investor Relations page of THK's website. Video coverage of investor meetings and other events is also provided, in both Japanese and English. In these and other ways, THK strives for appropriate and impartial information disclosure to all investors regardless of affiliation or location.

In November 2008 the Investor Relations page of THK's website was fully redesigned for the convenience of shareholders and investors. The menu at the top of the page has been revised to make it easier to find the desired information, and access to investor relations materials from previous fiscal years has been improved, making the site more convenient and useful for THK's shareholders and investors.

### Shareholdings by investor type (as of March 31, 2009)



### General Meeting of Shareholders

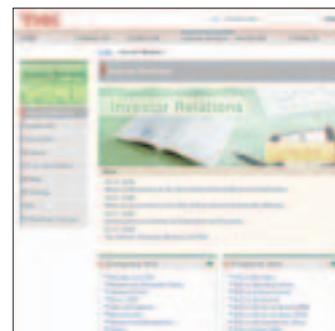
Since 1998 THK has held its annual General Meeting of Shareholders on a Saturday, avoiding the days when most general shareholder meetings are held, to enable more THK shareholders to attend. To permit more stakeholders to learn about THK's management, seats for observers are provided at the meeting venue, and attendance by all THK's stakeholder groups, particularly partner businesses, has been encouraging. The 39th General Meeting of Shareholders was held on June 20, 2009, with 390 shareholders in attendance. An exhibition of newly developed products was held in an adjoining venue, enabling visitors to obtain a better understanding of THK products rarely seen up close in daily life.



The THK Annual Report 2008



The 39th General Meeting of Shareholders



Investor Relations page of THK's website  
<http://www.thk.com/us/ir/index.html>

## Together with our partner businesses

Q

How does THK build good relationships with its suppliers and partner businesses?

A

THK engages in fair and equitable dealings with its partner businesses, forming strong partnerships and seeking mutual development through workshops and other activities.

### Fair and equitable commerce

THK regards its suppliers of materials and components and its processing contractors as indispensable partners. THK's partner businesses are selected through an exacting but fair and equitable process based on the company's purchasing guidelines. Prospective new partner businesses undergo a careful check of their management practices, product quality, technical capabilities, cost competitiveness, environmental efforts, and 5S\* activities. A rigorous final screening, based on THK's demanding standards for partner businesses, is required before executive approval can be given and business transactions begin. Existing partner businesses are evaluated in a similar manner each year, using a Partner Business Grading Form, and the results have a direct impact on business transactions. THK encourages partner businesses to improve in areas in which they score poorly in these evaluations.

To ensure strict observance of all relevant laws and ethical standards, THK participates in outside seminars on subcontracting and other topics and holds in-house study sessions as well. By studying examples of violations occurring at other companies and reviewing case studies, THK employees acquire a better understanding of fair and equitable procurement practices, which they strive to uphold.

\* The 5S rule calls for *seiri* (order), *seiton* (tidiness), *seiketsu* (cleanliness), *seiso* (cleaning up), and *shitsuke* (discipline).

### The THK Association

The THK Association, consisting of THK's 206 co-operating companies, suppliers, and other partner businesses, is a venue for interaction to promote mutual progress for THK and the association's member companies. Members celebrated the thirtieth anniversary of the association's founding at its general annual meeting in Jozankei, Hokkaido, in June 2008. THK's managerial policies were discussed at the meeting, and THK's CEO presented awards to member companies for superior VA\* proposals. The event also included an outing and a golf competition.

Branches of the association based at various production plants hold workshops on cutting costs and improving quality, among other activities. The THK Association will continue to serve as a venue for building strong partnerships among member companies.



▲ The THK Association

\* VA: Value Analysis, a management method for increasing component and product functionality by reducing overall costs

### VOICE | Voice of a partner business

I hope to maintain a relationship that allows us to keep on cooperating to develop better technology.



▲ Cold finished steel bars



**Kiyoshi Suzuki**

President, SUZUHIDE KOGYO CO., LTD.

SUZUHIDE KOGYO has been dealing with THK since 1985. We supply drawn materials for their core products, LM Guides and Ball Splines. Because we are member of their supply chain, our product quality is directly reflected in their products. We are doing our utmost to provide a stable supply of high-quality products.

Formerly, the drawn materials we supplied to THK were cold finished steel bars in a complex shape called a profile. The quality requirements were much stricter than for ordinary cold finished steel bars. We had to rely on the skills of our craftsmen for production accuracy, but later we revamped and improved the process and developed our own original manufacturing process. Now we have a dedicated factory located near the YAMAGUCHI Plant as well as a dedicated production line in the main plant.

THK's determination to achieve the highest possible quality is an attitude that we share. I hope we can grow together in the future based on our common pursuit of *monotsukuri*.

## Together with our employees (for a healthy and safe working environment)

Q

What steps does THK take to ensure the safety and health of its employees?

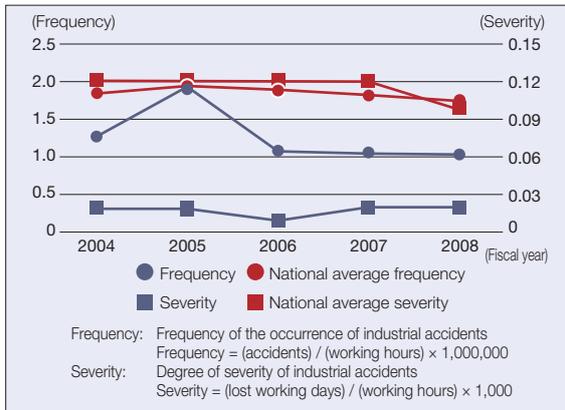
A

THK strives to create a safe working environment and make every employee conscious of safety issues so that all employees can work with vigor and enthusiasm.

### Occupational health and safety

THK believes that ensuring employee safety is the starting point for *monotsukuri* and an essential prerequisite for business operations.

#### Frequency and severity of accidents at 5 THK plants in Japan



of safety slogans, safety patrols, the introduction of an incident reporting system, safety meetings, and other programs designed to promote safety. The eventual aim of these efforts is achievement of the 2009 safety management goal of zero critical accidents.



▲ Getting caught between cylinders

### Disaster prevention activities

RHYTHM CORPORATION has established a disaster prevention system based on the principles set forth in the corporation's Basic Policy on Measures against Earthquake and Other Disasters: "Save life first", "Prevent secondary disasters", and "Make every effort to resume business operations". A disaster prevention organization has been created to rapidly transmit decisions from headquarters to other locations. Standards for actions by employees are set forth in the firm's earthquake manual, and every employee has been provided with pocket-size cards summarizing the corporation's procedures in the event of an earthquake, standards for employee attendance in the event of a foreseeable or sudden earthquake, and safety notification system.

In September 2008 the firm's Disaster Team, comprising executives and managers as well as ordinary employees, conducted exercises as part of a corporate disaster prevention campaign. The activities included a presentation on disaster prevention by a guest lecturer from the Western Regional Center for Emergency Management of Shizuoka Prefectural Government, who praised RHYTHM CORPORATION's disaster prevention system as an example for other firms to follow. RHYTHM CORPORATION's system has also been cited on the Shizuoka Prefectural Earthquake Preparedness Education Center website as an example of a disaster prevention system used in manufacturing and other industries.

### Setting up an infirmary

In July 2008 an infirmary staffed with resident nurses was established at THK headquarters. Along with company doctors, the nurses provide employees with detailed health counseling. In addition to regular check-ups, employees at THK headquarters can get detailed guidance and advice on caring for mental health, enabling them to alleviate stress.

Steps have been taken to achieve closer coordination between nurses at THK headquarters and those at the production plants, making it possible to quickly ascertain the overall health of THK's workforce. Company doctors and nurses are also providing advice on measures to protect employees from the influenza A virus, which has become a health issue worldwide.

### Safety education using risk simulators

Officials at THK WUXI in China conducted a special campaign from December 2008 to February 2009 to enhance employee awareness of safety issues. Every employee received 10 hours of safety education, which included the use of three types of risk simulators specially prepared by the company to simulate the experience of (1) getting entangled in gears, (2) being cut by flying chips, and (3) getting caught between cylinders. This helped employees develop an intuitive grasp of potential hazards in their immediate surroundings. In addition to safety education, the campaign included a safety slogan contest, posting

Organization	Duties
Disaster Prevention Team Control Department (11 people)	General decision-making and instructions
Control Department Unit (7 people)	Assisting headquarters personnel
Information Liaison Unit (18 people)	Gathering and exchanging information
Disaster Prevention Team	
General Affairs and Rescue Team (19 people)	Rescuing the injured
Security and Evacuation Team (23 people)	Evacuations and guidance
Equipment Inspection Team (67 people)	Preventing secondary disasters
Firefighting Force (66 people in 7 groups)	Firefighting and organizing inside the plant

## Together with our employees (supporting growth)

Q

What efforts does THK make to help its employees advance?

A

If human resources stop developing, the company itself cannot achieve growth. THK provides a system to support self-development initiatives by employees and makes efforts to ensure that the technical skills of expert employees are passed on.

### e-learning

THK has introduced an e-learning system to help facilitate employee education, enabling employees to engage in self-development activities whenever they have access to the internet. The e-learning offerings include a basic course in Business Skills; a Product Knowledge course, which covers a wide range of THK products; and a course on Compliance, currently a topic of great interest. As of March 2009 the system includes a total of 37 e-learning courses.

By taking advantage of opportunities for distance learning provided by this system, sales employees, for example, can study for and take a qualifying exam to acquire internal accreditation in electrical engineering. Use of the e-learning system is steadily increasing.

#### ■ Trends in e-learning

	Courses	Employees who enrolled in courses			Percentage of enrolled who completed course
		Eligible employees	Employees enrolled	Percentage of eligible employees	
March 2006	24	1,634	515	31.5%	43.8%
March 2007	24	1,777	581	32.7%	46.9%
March 2008	34	1,963	893	45.5%	73.9%
March 2009	37	1,965	921	46.9%	73.2%

### Improving skills and developing multiskilled workers

To improve the capabilities of individual employees, THK actively works to develop multiskilled workers. At the MIE Plant, where a "skill map" for the entire plant has been prepared, expert employees provide one-on-one training to other workers at the plant. Trainees, already well versed in their routine duties, have a chance to return to basics and review safety confirmation procedures and other points while referring to work process charts and illustrations. Surface grinders and other machine tools are used to teach the positioning of work pieces and whetstones, starting positions, and other points. Rather than simply rely on machines, trainees acquire advanced skills from expert employees through actual experience.

The employees who conduct the training also go back to the fundamentals, reviewing existing work procedures and making improvements. Thus, both sides benefit from this system, which, as an effective means of mutual development, is expected to be expanded in the future.



Technical training at the MIE Plant  
At left, the trainer, Nobuyoshi Nakano;  
At right, the trainee, Tomoki Nakamura.  
Both work in Manufacturing section II

## VOICE | Voice of a trainee

### Training in Japan

I joined THK Singapore in 2007 as an office worker. Our job is coordinating the activities of the Singapore sales division, THK Headquarters in Tokyo, and our local agents. We work with the sales people in the field, preparing quotations, adjusting lead times, negotiating prices, and taking orders from customers. We try to provide optimum service to the end users.

I wanted to improve my product knowledge and learn how my work in Singapore relates to THK's operations in Japan, and in July 2008 I got an opportunity to go to Japan for a week of training. After undergoing training at THK Headquarters and at branches and plants in Japan, I realized that (1) daily work at THK revolves around the concept of putting the customer first, (2) THK looks beyond the customer and considers the benefits to the end user, and (3) THK engages in research and development on products closely related to daily life.

I obtained an overall understanding of the way purchase order data issued at THK Singapore is processed in Japan. From now on I intend to perform my regular duties while keeping in mind that the rest of the process is affected by my work. In Japan I learned that esteem for the customer is part of THK's corporate culture, and I want to help spread this concept in the Singapore office. I want to do my job faithfully, keeping in mind the customers' point of view, and provide service that will satisfy our customers.



**Margaret Lei Enbei**  
Sales Administration

## Together with our employees (support in seeking challenges)

Q

Does THK have mechanisms for incorporating its employees' ideas and achievements?

A

THK has various systems designed to encourage employees to achieve their goals and pursue their dreams. Support for such efforts helps THK build positive relationships with its stakeholders.

### Commendation system

Product development at THK normally begins with the formation of a project team and proceeds through the following stages: (1) determination of preliminary specifications and designation of the project leader; (2) selection of other project members, in addition to technical personnel, from all over the organization, including production and sales divisions; (3) design and development; (4) technical reviews and marketing studies; (5) mass production of prototypes; (6) evaluation of prototypes; (7) PQR\*; and (8) start of production.

The project team is dissolved when its task is completed and production starts. Product development is guided by THK's corporate philosophy, "providing innovative products to the world and generating new trends to contribute to the creation of an affluent society". When a product embodying this philosophy is developed, each member of the project team personally receives a commendation from THK's CEO praising the team's achievement. This system is effective for raising the morale of everyone involved in development, not just the technical personnel, and helps foster a corporate culture that encourages active participation in development projects.

\* PQR: Post-Qualification test Review—examination of test results



▲ (Left to right) Yoshifumi Nagato, Research and Development Unit II; Shuhei Yamanaka, Research and Development Unit II; CEO Akihiro Teramachi; Ryuji Furusawa, Research and Development Unit I.

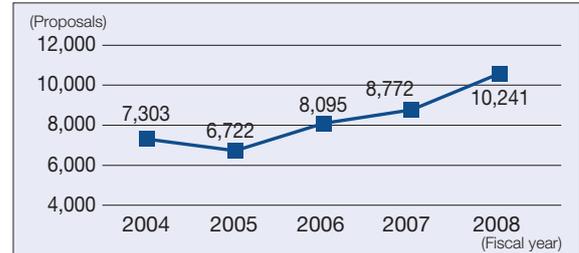
### Eliciting ideas for new products

As a creative, development-oriented company, THK has initiated a system for eliciting ideas from employees for new product development. This provides an opportunity for employees not ordinarily directly involved in product development to take the initiative and present their own ideas. The ideas submitted are reviewed for originality, practicality, and business potential, in screening sessions attended by representatives from the sales, production, and technical divisions. In fiscal 2008, the system's third year, 74 ideas were submitted, of which 5 were cited for commendation.

### Proposals for improvements

THK has established a system eliciting proposals from employees for improvements, to assist in the company's efforts to improve and refine products, operational efficiency, quality, safety, productivity, and technology. THK values its employees' originality, ingenuity, and on-site perspectives. This system encourages continuing submissions of proposals and includes evaluations of proposed improvements. All proposals are evaluated, and commendations are awarded. Employees receive points based on the results of the evaluations and can accumulate more points for successive proposals. Whenever an employee's point total surpasses one of six specified levels, he or she receives an award. The highest-level award is the THK Prize. Every year, more than 100 employees earn second-level commendations. In fiscal 2008, 10,241 proposals were received, 16.7% more than in the previous year.

#### ■ Improvement proposal submissions (2004 to 2008)



### VOICE | Voice of the THK Prize winner

I joined THK in 1986 and have worked in production shops at the NAGOYA Manufacturing Section and the GIFU Plant for 23 years. While I'm working I get ideas for more efficient ways of doing things, so I write my ideas down and present proposals for improvements every year. By July 2008 I had accumulated 300 points, enough to win the THK Prize. I submit proposals for improvements any time I happen upon an idea or get an inspiration, in the hope that it will help make our operations more efficient.

Once you win a prize, you're motivated to try to get to the next level. With the prize I won this time, I took my family to Hong Kong. Now I'm starting out again from scratch, but I'd like to win the THK Prize again.



**Toshikazu Yamada**

Group Leader,  
Manufacturing Section III,  
Manufacturing Department,  
GIFU Plant

## Together with our employees (supporting diverse ways of working)

Q

How is THK responding to the increasing desire among employees for more personally amenable working conditions?

A

THK's employment system accommodates a broad array of diverse working arrangements. THK also has a system in place to express special appreciation to longtime employees.

### Training systems

THK operates various training systems to develop the abilities of individual employees and improve overall capabilities within the company. These systems include orientation for new employees, on-the-job training for new employees, "step-up" training in both the second year and sixth year of employment, and training for employees in specific positions (group leader, manager, and department head). Particular emphasis is placed on the training of new employees, each of whom is paired with a mid-level employee who provides individual on-the-job training. The two work together for about a year, which facilitates communication in the workplace, as the new employee acquires the necessary knowledge and job skills.



▲ "Step-up" training

### Length-of-service awards

To show appreciation for their many contributions, THK awards commendations to its employees after every five years of continuous service. In fiscal 2008, 441 employees received commendations and commemorative gifts to honor their service.

#### ■ Length-of-service awards (2004 to 2008)

	2004	2005	2006	2007	2008
35 years of continuous service	0	0	10	7	6
30 years of continuous service	10	12	15	20	16
25 years of continuous service	29	24	74	133	91
20 years of continuous service	150	137	54	87	107
15 years of continuous service	154	175	136	99	43
10 years of continuous service	162	187	100	179	74
5 years of continuous service	102	126	77	91	104
Total	607	661	466	616	441

### Continued employment for older employees

In accordance with revised legislation governing employment opportunities for older people, THK has introduced a system for continued employment beyond the age of retirement. Previous restrictions on continued employment were abolished in 2008; any employee who is healthy and willing to keep working is now eligible for continued employment.

This system offers an effective means of passing on traditional shop-floor skills and technology and helps foster a work environment conducive to high-quality manufacturing and services.

### Hiring people with disabilities

In accordance with Japanese law, THK is working to ensure that people with disabilities make up at least 1.8% of its workforce, particularly at its headquarters and manufacturing plants. THK has set a high priority on creating a hospitable work environment for people with disabilities, to facilitate long-term employment with THK.

#### ■ Percentage of disabled employees

2006	2007	2008
1.21%	1.48%	1.57%

### Support for hiring of people with disabilities at the YAMAGUCHI Plant

THK is working to employ more people with disabilities. In cooperation with five schools for people with disabilities in YAMAGUCHI Prefecture, THK's YAMAGUCHI Plant arranges for two or three students from these institutions to receive on-site training each year. The students, their parents, PTA members, and teachers from the schools are invited to visit the plant in advance to ascertain that conditions are suitable for training. In fiscal 2008 three students received a cumulative total of 45 days of training, acquiring experience in packaging and inspection operations. One of the trainees joined the company in April 2009.



▲ Using a scanner to read product-quality data

## Together with local communities

**Q** Why does THK place importance on contributing to local communities?

**A** No business can exist alone. Accordingly, each THK business location works to maintain a meaningful relationship with the local community.

### Charitable contributions

As part of its contributions to society, THK provides monetary support for areas and people affected by disasters and makes donations to organizations devoted to promoting science and the future development of *monotsukuri* in Japan. THK also co-sponsors a variety of events in communities where it has business locations.

#### Major donations in 2008

Great Sichuan Earthquake, China	May
Tropical cyclone, Myanmar	May
Iwate-Miyagi Inland Earthquake, Japan	June
Sakuranbo Marathon, Higashine, Yamagata Prefecture	June
Co-sponsorship: Conference for the Promotion of MONOZUKURI	October
Japan Science Federation	December



THK received an award (Medal with Dark Blue Ribbon) from the Japanese Government for its disaster relief donations in 2008.

### Cleanup activities

In October 2008 THK's TOYOTA Branch organized a campaign to clean up nearby roads, parks, and parking lots, to help improve the environment for residents of the area. Participants encountered more refuse than expected along the area's roads: they filled six seventy-liter garbage bags in a single hour. Roadside conditions were greatly improved, and local residents thanked the cleanup volunteers. Through this experience, the campaign participants reconfirmed the importance of protecting the environment and interacting with the local community. TOYOTA Branch employees plan to join local volunteer groups to continue their activities to contribute to the community.



▲ Participants in the TOYOTA Branch's cleanup campaign

### Disaster drill

In November 2008, at the request of the local elementary school district's disaster prevention organization, THK's TOYOTA Branch exhibited THK's seismic isolation simulating vehicle, in connection with a local disaster drill. Despite rainy weather, about 1,200 people (400 children and 800 adults) gathered on the day of the drill, the fifth of the year. Participants took part in a shouting contest (simulating the experience of being trapped under rubble) and sampled the fearful experience of an earthquake on the seismic isolation simulating vehicle. For the children, it was a scary experience. The adults also found the drill frighteningly convincing, and many resolved to take more protective measures against earthquakes.

### Helping students build a robot

THK's YAMAGUCHI Plant has formed partnerships with local high schools and schools for the disabled and periodically holds activities with them. In April 2008, when a study group at Ube Technical High School decided to participate in a robot-building contest, the students asked the YAMAGUCHI Plant to share its expertise and explain how THK products might be used to make a robot. The students visited the plant and showroom and received a briefing.

The students built a robot that included THK products. Although it failed to win a prize, they sent a message of appreciation to the YAMAGUCHI Plant, saying that the briefing had been very helpful to them.



▲ Students at Ube Technical High School assembling their robot

**Roadside tree adoption program**

THK's YAMAGATA Plant participates in a roadside tree adoption program operated by the city of Higashine's construction division. A total of 917 people from 8 businesses and 35 associations participate in the program. The volunteer participants adopt roadside trees and affectionately oversee their development.

The program motto is "Keep our hometown clean". The volunteers periodically clear weeds around the trees, check safety equipment on roads and pedestrian bridges for damage, and plant flowers in designated areas. YAMAGATA Plant employees are responsible for about one kilometer of road south of the plant's front gate, which they cleaned up twice in 2008, in May and October. The YAMAGATA Plant will continue to participate in community activities and help expand the tree adoption program throughout the city of Higashine.



▲ Volunteers cleaning up the roadway

**Governor's commendation**

In November 2008 THK's KOFU Plant received a letter of commendation from the governor of Yamanashi Prefecture for its efforts to promote advanced skills. Since 1978, at the request of the Yamanashi Vocational Ability Development Association, the KOFU Plant has conducted annual skills tests in nine areas of machining operations and provided personnel to evaluate the test results. Every year since fiscal 2007 the Yamanashi Technicians Federation has designated three KOFU Plant employees as representatives of Yamanashi craftsmanship; they help develop training programs to educate new generations of crafts people at workshops in Yamanashi. The KOFU Plant is committed to fostering the development and passing on of useful skills in Yamanashi Prefecture.



**Occupational health and safety commendation**

To eliminate any possibility of production-related disasters, DALIAN THK holds environmental and safety patrols, disaster drills, workshops and analyses of disaster case studies, and continuing internal and external safety education activities. In fiscal 2008 DALIAN THK held 16 environmental and safety patrols and 3 disaster drills in an effort to identify problems and eliminate visible and invisible risks. In June 2008 a month-long heightened safety campaign was held to monitor and publicize safety conditions and improve safety awareness among employees. As a result, targets were achieved in all safety programs—no deaths, critical injuries, or instances of occupational illness were recorded. In December 2008 DALIAN THK was commended by the Dalian municipal government as Dalian's most advanced, safety-oriented company.

DALIAN THK will strive to maintain safe operations by giving due consideration to employee safety, cultivating a hospitable work environment, and fostering harmony between the company and its employees.



**Protecting the stork**

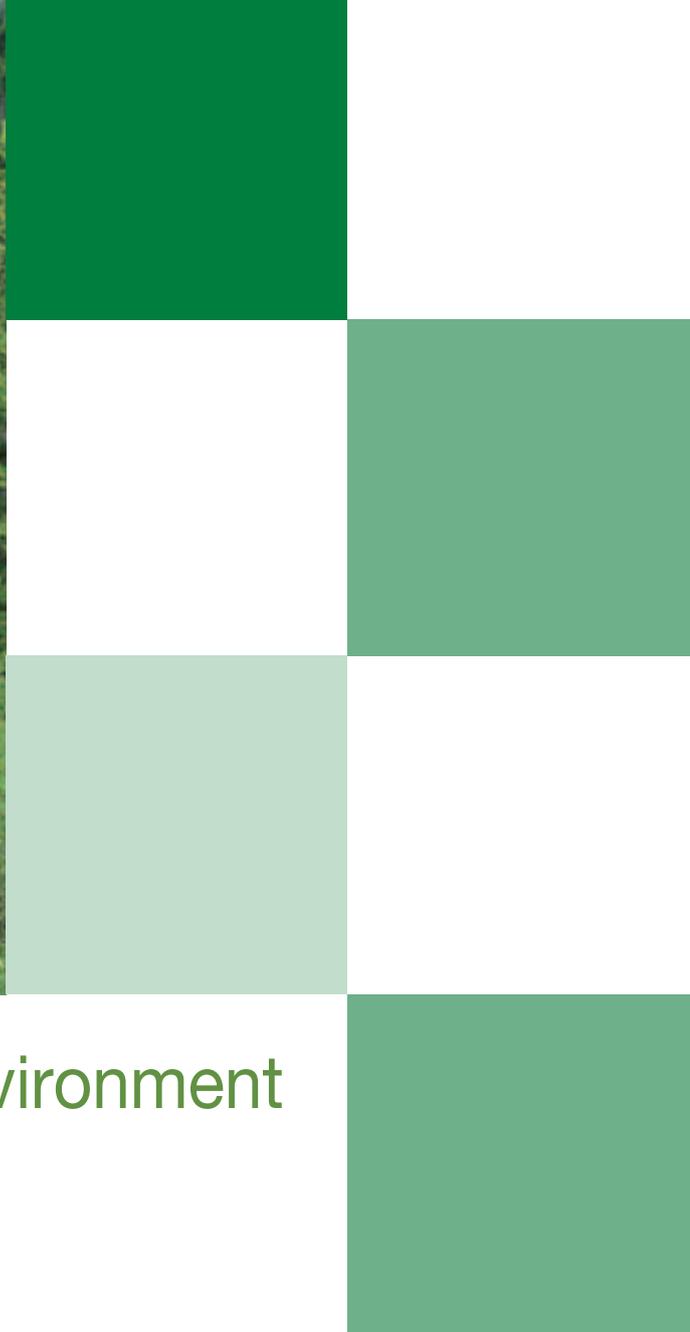
The Alsace region of France is known as a habitat for storks, which, as a symbol of happiness and prosperity, are well cared for. Conservation programs abound, and there are many parks designated as sanctuaries and conservation centers devoted to breeding and ecological research. THK Manufacturing of Europe (TME) contacted the mayor of Ensisheim, where TME is located, to offer its support for the stork conservation program. In May 2008 municipal authorities installed a stork nest on TME grounds, as "a gesture of friendship with TME" (to quote the mayor's speech).

TME intends to maintain and develop its partnership with the local community by helping to protect the storks that nest on its grounds.



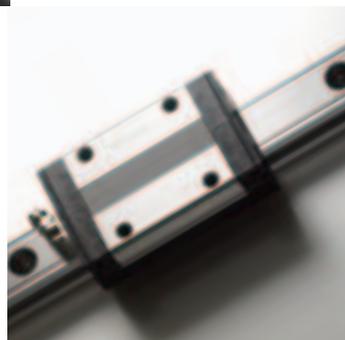
A pair of storks nesting on THK grounds ▶

Involvement in society



## Harmony with the environment

The first commitment period of The Kyoto Protocol has begun. In its fourth report the Intergovernmental Panel on Climate Change noted “the direct involvement of human activity in global warming”. Protecting the environment is a common responsibility for the entire human race. A company’s efforts to address environmental issues are essential to its existence and activities as a corporate citizen.



Environment

## Promoting environmental management

**Q** What efforts has THK made in the area of environmental management?

**A** THK established its basic environmental policy in 2001. In 2005 THK identified a set of areas and targets for environmental efforts.

### Basic environment policy

Since the development of the LM Guide, the THK Group has contributed to both society and the economy through its pioneering role as a manufacturer of linear motion systems and machine components. We believe that it is a company's social responsibility

to leave the global environment in good condition for the next generation, which is why we are undertaking the following initiatives to continually decrease environmental burdens and maintain and improve the natural environment.

**THK Group's basic policy regarding the environment**

1. Conservation of the environment is considered a major management concern, and we are striving to accurately grasp the impact on the environment produced by the Group's business activities, products, and services. Every division participates by setting relevant environmental goals.
2. In addition to following environmental laws, we set self-imposed standards for Group companies and regularly review them to improve the efficiency and effectiveness of our environmental management.
3. We will continually promote the development of products that help reduce environmental burdens.
4. We will continually promote conservation and recycling of resources, with particular attention to reducing and recycling waste from our manufacturing divisions.
5. To promote greater unity in our environmental activities, we will provide guidance and support to our affiliates and business partners, and strive to work in cooperation and harmony with local communities.
6. This basic policy regarding the environment shall be disseminated to all divisions in the Group through education, training, and activities designed to improve awareness. We will disclose information concerning the environment to parties within and outside the Group in a timely manner.

### ■ Environmental activities and targets

Area	Objectives and goals	Main activities
Energy conservation and preventing global warming	Cut greenhouse gas emissions	① Energy diagnostics ② Energy conservation ③ Use of clean energy
Material conservation and zero emissions	Reduce environmental impact: achieve zero emissions	① Input controls (materials, parts and by-products) to reduce usage and boost per-unit yields ② Controls on emissions and final waste disposal ③ Material re-use and recycling
Harmful substance controls	Eliminate and control harmful substances in THK Group production and distribution activities	① Substitution of PRTR-designated substances ② Green procurement and purchasing
Environment-friendly products and services	Develop products and supply services using LCA (Life Cycle Assessment) methods	① Caged Ball Product series development ② Extension of service life and maintenance-free periods

# Environmental management system

**Q** What environmental objectives has THK set for itself?

**A** THK continually promotes environmental management, focusing on acquisition of ISO 14001 certification, and sets companywide environmental targets.

## Environmental management system

THK is actively working to acquire ISO 14001 certification for all its production sites in Japan and overseas. THK WUXI and DALIAN THK were certified in fiscal 2007 and 2008, respectively. THK LIAONING is expected to obtain ISO 14001 certification in 2009. When it does, every THK plant in China will be ISO 14001 certified.

Environmental activities are carried out by all THK Group companies. The Risk Management Division's Environmental Management Department, located at THK Headquarters, coordinates activities carried out by THK's administrative, production, and distribution divisions.

In fiscal 2008 THK met its targets for material conservation and zero emissions and for harmful substance controls (reduced the use of PRTR-designated substances). THK failed to meet its target for energy conservation (reduced CO<sub>2</sub> emissions).

## ISO 14001 certified business locations

Location	Date of certification	Certifying body
YAMAGATA Plant	Sept. 10, 1999	J Q A
KOFU Plant	Dec. 28, 2000	J Q A
YAMAGUCHI Plant	Feb. 2, 2001	J Q A
RNA (America)*	Jun. 13, 2001	S Q A
RHYTHM, Headquarters/GOKYU Plant	Dec. 20, 2001	J I A
MIE Plant	Sept. 6, 2002	J Q A
Rhythm Kyushu	Dec. 20, 2002	J I A
TMA (America)**	Jul. 14, 2003	Q M I
TME (Europe)***	Feb. 3, 2004	AFAQ
GIFU Plant	Dec. 24, 2004	J Q A
THK NIIGATA	Oct. 21, 2005	J Q A
Rhythm INASA Plant	Dec. 20, 2006	J I A
THK WUXI (China)	Jan. 7, 2008	C Q C
DALIAN THK (China)	Dec. 18, 2008	T Ü V
THK LIAONING (China)	Fiscal 2009 (projected)	

\* RNA: Rythm North America Corporation  
 \*\* TMA: THK Manufacturing of America, Inc.  
 \*\*\* TME: THK Manufacturing of Europe S.A.S.

## THK's environmental targets

No.	Field	Fiscal 2009 targets	Midterm targets (by fiscal 2010)
1	Energy conservation and preventing global warming	<p><b>Reduce CO<sub>2</sub> basic unit emissions to 0.98 kg-CO<sub>2</sub> per ¥1,000 (9% reduction relative to the 2005 level)</b>                      Fiscal 2008 target was 0.98: 1.24 actual (target not met)</p> <p>Major efforts in fiscal 2009</p> <ol style="list-style-type: none"> <li>Reduction in absolute power consumption (full-scale conservation of electricity)</li> <li>Controlled energy usage (powering machines, air-conditioning, and lighting)</li> <li>Increased equipment efficiency (air-conditioning, lighting, and production machinery)</li> </ol>	<p><b>Reduce CO<sub>2</sub> basic unit emissions by 15%</b>                      Standard value: 1.08 kg-CO<sub>2</sub> per ¥1,000 (relative to fiscal 2005)</p> <p>■ CO<sub>2</sub> basic unit emissions (kg-CO<sub>2</sub> per ¥1,000)</p>
2	Material conservation and zero emissions	<p><b>Reduce emissions rate to less than 1%</b>                      Fiscal 2008 target was 2%: 1.6% actual (target met)</p> <p>Major efforts in fiscal 2009</p> <ol style="list-style-type: none"> <li>Better waste separation to facilitate recycling</li> <li>Improve yield (for components and materials)</li> <li>Reuse of cutting oil</li> </ol>	<p><b>Achieve zero emissions (less than 0.5% of final waste disposal)</b>                      Standard value: 4.7% (relative to fiscal 2006)</p> <p>■ Final waste disposal (%)</p>
3	Harmful substance controls	<p><b>Reduced the use of PRTR-designated substances to 15,100 kg or less</b>                      Fiscal 2008 target was 15,600 kg: 14,391 kg actual (target met)</p> <p>Major efforts in fiscal 2009</p> <ol style="list-style-type: none"> <li>Green procurement</li> <li>Cooperation with suppliers</li> <li>Control usage of forklifts</li> </ol>	<p><b>Reduce use of materials subject to PRTR Law (3% per year)</b>                      Standard value: 16,664 kg (relative to fiscal 2006)</p> <p>■ Materials subject to PRTR Law (kg)</p>

## Environmental measures

Q

Did THK introduce any new environmental measures in fiscal 2008?

A

THK organized an Environmental Measures Team in its administrative divisions and initiated environmental activities involving all employees at its manufacturing plants.

### Environmental Measures Team

In an effort to help reduce CO<sub>2</sub> emissions, THK formed an Environmental Measures Team in October 2008, comprising members from various divisions at THK Headquarters and its Technology Center. The team has promoted measures that can be carried out in employees' immediate surroundings, mainly in the areas of energy conservation (reducing power consumption), reducing waste (cutting back on paper usage, recycling, and producing less refuse), and reducing water usage.

The team began its activities by collecting data on electricity and water usage and waste volume, to ascertain existing conditions. The younger members of the team were encouraged to think freely and and come up with their own ideas. Suggestions were screened to identify ideas that could be acted on immediately, and these were put into practice. After a month, the team collected data again and compared it to the earlier findings. Ideas were once again solicited, the team again enacted those that could be put into practice immediately, and this process was repeated. The team's goal was to reduce paper usage (the number of sheets), power consumption, and the volume of refuse by 5% compared to the corresponding figures for April through September. After launching the plan team members met weekly for three months and monthly thereafter. Meetings were also held with specific departments, to check their progress. As a result of these efforts, the data revealed gradual improvement from month to month. The team's founding principle was to find reasonable, even enjoyable ways to make improvements and elicit the involvement of other employees, and its efforts are steadily paying off.

Targets for reductions in fiscal 2009 will be based on the previous year's performance; monthly progress will be reported to each division in a timely manner. The team will also introduce educational activities for individual employees. The results of the environ-

### ■ Reductions achieved

	2nd-half reduction, relative to 1st-half totals
Power consumption	16%
Water usage	12%
Refuse generated	1%
Paper usage (number of sheets)	13%



▲ The Environmental Measures Team

mental initiatives undertaken at THK Headquarters will be reported to THK sales offices to help promote companywide environmental activities.

### Environment-friendly activities

At THK's GIFU Plant there had been a lack of coordination between production activities and environmental activities, with some areas receiving attention only from the environmental side. To improve the situation, in fiscal 2008 the plant introduced "environment-friendly activities" aimed at all employees, including on-site subcontractors and employees working in the company cafeteria.

Three perspectives were emphasized: (1) incorporating environmental activities into production activities, (2) emphasizing indirect effects as well as direct effects, and (3) setting targets that enable all employees to get involved. Each department was asked to propose environmental measures that could be incorporated into routine duties, and suitable activities were determined for each department. A point system was established to reward each activity accomplished, and monthly targets were set for point totals. Common activities include (1) picking up trash (1 point) and (2) attending environmental study sessions (5 points).

In fiscal 2008 the target point total for all departments was 42,204; the actual point total was 62,746 points, well above the target. Every department achieved its respective target. These activities helped raise environmental awareness among the employees and left the plant area much cleaner than before. The GIFU Plant will continue to carry out these types of environmental activities in the future.

### ■ Major activities

	Point per action
(1) Picking up trash	1
(2) Turning off lights	1
(3) Taking part in community volunteer activities	5
(4) Offering proposal for in-house environmental improvements	5
(5) Separating waste materials	5
(6) Attending environmental education and training sessions	5

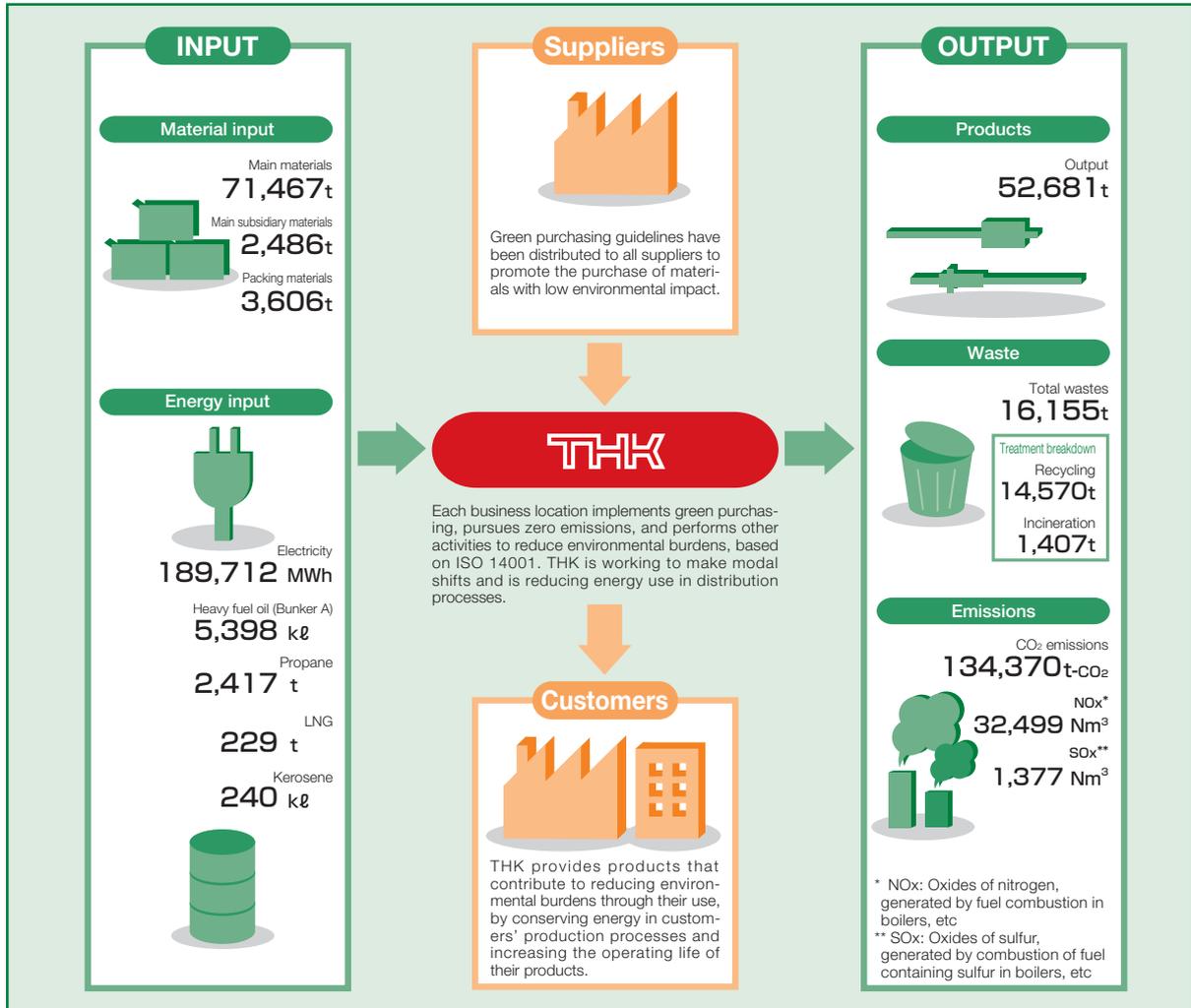


▲ Picking up trash and clearing weeds around Sekigahara Station, near THK's GIFU Plant

## Environmental impact: The big picture

**Q** Please describe THK's management of environmental burdens.

**A** Production activities entail consumption of precious resources and energy. In fiscal 2008 THK began collecting data on environmental protection costs at THK Group companies overseas as well as at production facilities in Japan.



### ■ Cost of environmental protection

(Units: ¥ million/year)

Cost classification	Investment	Expenditures	Main measures
(1) Business areas			
Pollution control	29.1	35.6	Installation of waste-water treatment equipment
Environmental protection	40.1	19.0	Introduction of solar panels and battery-driven forklifts
Resource recycling	3.3	148.2	Recycling of waste materials
(2) Upstream/downstream cost	0.0	1.9	
(3) Control activities	0.0	142.4	ISO 14001 registration and maintenance fees
(4) R&D (including Development Dept.)	56.7	284.0	
(5) Social activities	0.0	1.2	
(6) Environmental cleanup	0.0	3.4	
<b>Total</b>	<b>129.2</b>	<b>635.7</b>	

Note: 1) Figures on overall environmental burdens and other environmental accounting data represent an aggregate based on data from the following production facilities: THK's five Plants in Japan, in YAMAGATA, KOFU, GIFU, MIE, and YAMAGUCHI; other THK Group Plants in Japan; THK NIIGATA, three THK INTECHS Plants, Nippon Slide, RHYTHM CORPORATION, and Rhythm Kyushu; and five overseas THK Plants; TMA (America), TME (France), DALIAN THK (China), THK WUXI (China), THK LIAONING (China)

2) Figures on NOx and SOx emissions are for THK's five Plants in Japan only.

## Energy conservation and preventing global warning



What efforts has THK made to reduce CO<sub>2</sub> emissions?



THK is actively introducing energy-saving production equipment, air-conditioning systems and lighting; improving operational efficiency and productivity; and mounting a full-scale campaign to conserve electricity.

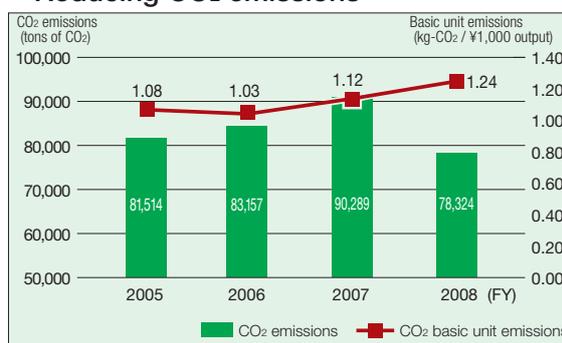
### CO<sub>2</sub> emissions in fiscal 2008

THK sets targets for reducing CO<sub>2</sub> emissions, using basic units (CO<sub>2</sub> emissions divided by production volume). In fiscal 2008 the target basic unit was set at 0.98 but the actual result was 1.24, representing a major setback. This reflected a sharp decline in production beginning in the latter half of the previous fiscal year. In absolute terms, CO<sub>2</sub> emissions declined by 11,965 tons for a 13% reduction from the previous year's total, falling from 90,289 tons of CO<sub>2</sub> in fiscal 2007 to 78,324 tons in fiscal 2008.

Energy-saving initiatives undertaken by THK in fiscal 2008 included (1) efficient operation of cogeneration systems, (2) conversion to energy-saving lighting systems, (3) switching off of neon lights in plants and mercury-vapor lamps in parking lots, (4) interior temperature controls (heating activated at 21°C, cooling activated at 28°C), and (5) reduced operation of incidental equipment (coolers, compressors,

air conditioners, etc.) thanks to adjustments in work periods. The effectiveness of these initiatives will be scrutinized in fiscal 2009, and further measures to conserve electricity and reduce CO<sub>2</sub> emissions will be implemented.

### Reducing CO<sub>2</sub> emissions



### Activities at TMA

TMA, which produces LM Guides and Link Balls, was established in 1997 in the state of Ohio in the U.S.A. ISO 14001 certified since fiscal 2003, TMA has established and implements a wide variety of programs to promote environmental protection. The company's efforts to reduce global warming include continuous improvements in productivity, achieved through the adoption of proposals submitted by employees, and promotion of 5S activities. TMA also carefully monitors energy consumption in its power, air-conditioning, and lighting systems.

TMA's environmental tasks for fiscal 2009 include (1) raising employee awareness and encouraging the switching off of indoor lights, (2) introducing sensor switches for lighting and adjusting lighting in respective work areas, and (3) replacing the filters in the plant's 20 air conditioners and instituting temperature controls. As a result of these efforts, TMA expects to reduce its CO<sub>2</sub> emissions by 1.5 million pounds (1 pound is equal to about 454 grams). In fiscal 2008, the company as a whole emitted about 24 million pounds of carbon dioxide (11,000 tons when calculated using the U.S. emissions coefficient). TMA anticipates a 6% reduction in CO<sub>2</sub> emissions in fiscal 2009, compared to 2008.

U.S. President Obama's Green New Deal initiative calls for an 80% reduction in greenhouse gas emissions by 2050, compared to the 1990 level. The president's declaration is being taken very seriously in the United States, and new laws and other measures can be expected to be enacted to fulfill his pledge. TMA will have to embrace some major changes in response. Whatever measures the U.S. government may take, TMA will continue to actively work to help prevent global warming.



▲ At left, Andrew Lower, Engineering Department; at right, TMA Vice President Muten Iwamoto



▲ The Link Ball manufacturing plant has switched from incandescent to energy-efficient fluorescent lighting.



▲ A switch-off reminder

## Material conservation and zero emissions

**Q** What efforts is THK making to reduce wasteful use of materials and curtail waste emissions?

**A** THK decreases stock and improves yield—reducing the generation of waste—by carefully managing its use of materials, and facilitates reuse and recycling by thoroughly separating waste materials before disposal.

### Material conservation and zero emissions

The term “zero emissions” refers to efforts to reduce waste to the absolute minimum level by converting waste materials generated in production processes into useful materials.

THK’s business activities inevitably generate waste materials, including scrap metal, oil, coolants, detergents, other fluids, grinding sludge, packing materials, plastic waste, and oil-soaked paper and cloth. By rigorously separating waste materials, THK now recycles almost all its waste.

The total amount of waste generated in fiscal 2008 was 7,632 tons, about 1,000 tons less than in the previous year. The amount of waste for final disposal (burial and incineration) decreased by about 200 tons, to 121 tons.

The zero emissions numerical target (ratio of final waste to total waste generated) for fiscal 2008 was set at under 2%; the actual result was 1.6%, so the target was met. This was due to improved recycling rates for waste materials including grinding sludge and waste oil and other fluids, which are recycled as raw materials for cement. THK has set a zero emissions numerical target of under 1.0% for fiscal 2009 and a midterm numerical target of under 0.5% for fiscal 2010.

### Audits of waste disposal contractors

Soil contamination caused by illegal dumping of waste and other forms of environmental damage have become a serious social issue. In addition to internal environmental audits, each THK plant conducts an annual audit of intermediary and final waste disposal contractors. THK’s GIFU Plant, for example, conducted audits of five intermediaries and one final waste disposal contractor in May and June of 2008. Audits focus on areas including (1) proper waste disposal, (2) sufficient processing capacity, and (3) ensuring that no waste oil or other fluids flow into the soil or waterways around the disposal site.

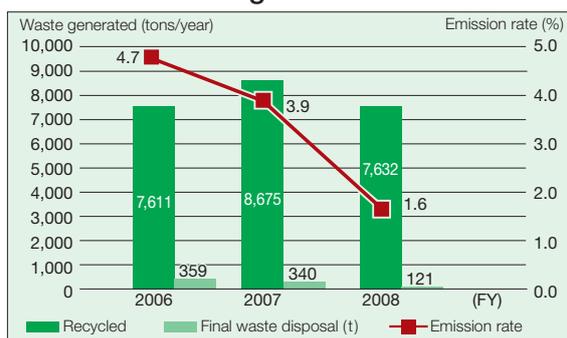
THK will continue to improve its environmental auditing inside and outside the company to reduce environmental burdens on local communities.

### Promoting material and thermal recycling

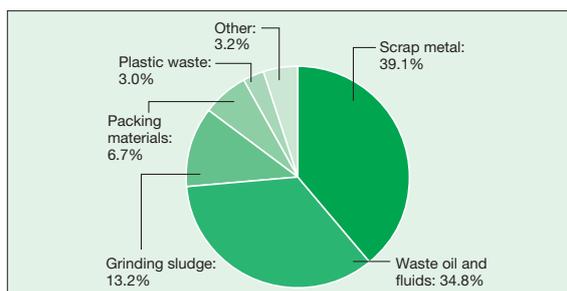
The THK INTECHS Co. MISHIMA Plant, which used to dispose of all its waste paper and plastic waste as industrial waste, has begun doing business with a recycling company that produces refuse paper and plastic fuel (RPF, a solid fuel made from waste paper and plastic). About 80% of the plant’s plastic waste and 100% of its waste paper are now recycled for use in RPF. RPF has a calorific value of 6,000 to 9,000 kilocalories per kilogram, which is equal to coal and coke. It is primarily used in paper and steel-making plants as an alternative to fossil fuels. By separating its plastic waste by type, the MISHIMA Plant is aiming to achieve 100% recycling of plastic waste.

Grinding swarf emitted in machining processes is entrusted to a contractor equipped with machinery that produces “iron plastic briquettes”. The swarf is mixed with finely crushed plastic, heated to reduce the volume, and finally solidified. The resulting product is used as a raw material by a leading iron and steel manufacturer. Formerly disposed of as industrial waste, swarf is now 100% recycled.

### Trends in waste generation



### Waste

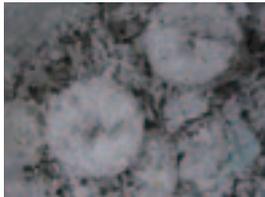


▲ "Iron plastic briquettes" made from grinding swarf

**Recycling of confidential documents**

At THK's KOFU Plant, discarded confidential documents used to be stored in a locked iron box. When the box was full, it was turned over to a disposal contractor to be destroyed, together with the papers in it.

In June 2008 plant officials installed a new shredder employing a "tear and crush" system that leaves long paper fibers intact, making them easy to recycle. The shredded paper is compacted at high speed, sold to a paper recycler, and eventually processed by a paper manufacturer as backing paper for decorative boxes and the like. Thanks to the acquisition of the new shredder, waste paper formerly disposed of at a cost is now a valuable resource.



▲ Shredded waste paper



▲ Recycled as backing paper for boxes

**Reducing waste by improving separation**

At THK's MIE Plant, since June 2008 plastic waste has been separated into two types: valuable, recyclable waste and waste for burial or incineration. Designated bins are provided to ensure that all valuable, recyclable plastic waste is collected.

All ordinary trash that can be processed by a shredder is shredded for recycling. Packing materials and filler accompanying incoming goods are actively recycled and reused; the plant is also switching to the use of returnable boxes to further reduce waste.



▲ Separation of plastic waste

**Green IT activities at THK GmbH**

THK GmbH (the THK Group's European sales company, consisting of a headquarters and 16 branches) has long made efforts to protect the environment. Among these is a program called "Green IT: Reducing resource consumption".

Since fiscal 2005, THK GmbH has been engaged in a task known as server virtualization, in which, through the use of special software, a single server computer is converted into multiple virtual servers. In this way THK GmbH has succeeded in reducing the number of actual servers it uses from about 70 to just 6. Server virtualization has enabled the company to reduce its annual electricity consumption from 650,000 kilowatt hours to about 60,000 kilowatt hours—a mere 9.2% of the former level. This includes the electricity used to run servers as well as networks, power systems, air conditioners, and other infrastructure.

THK GmbH is also working to make its office operations paperless. The company makes effective use of e-mail, fax conversion systems, and scanners. IT systems now facilitate the management of internal memos and attendance and other personnel matters, as well as marketing and distribution activities, enhancing business efficiency and greatly reducing paper usage. In fiscal 2009 THK GmbH expects to use about 40,000 fewer sheets of paper than it did the previous year. Multifunction office equipment has been introduced to enable copying, printing, and other automated tasks to be handled by a single device, providing further savings in energy and resources.



▲ IT Department employees



**Karsten Fallnich**  
Manager Information Technologies Europe

## Harmful substance controls

**Q** How does THK manage chemical substances that impose high environmental burdens?

**A** THK practices green purchasing throughout its entire supply chain and is working more closely with suppliers to create a mutually beneficial environmental quality system.

### Compliance with the REACH regulation

REACH (**R**egistration, **E**valuation, **A**uthorization, and **R**estriction of **C**hemicals) is a European Union regulation that came into effect on June 1, 2007. A synthesis of more than 40 regulations related to chemical substances that had previously been enacted in individual EU countries, REACH has been described as the most complex piece of legislation in the Union's history.

To ensure compliance with REACH requirements, THK established a REACH project in June 2008. The project team is working to obtain an accurate understanding of the regulation, collect the latest information, identify the responsibilities of relevant departments, and develop a scheme for future activities, possibly incorporating an IT system. The REACH regulation applies not only to chemical substances but also to articles containing certain substances, making it absolutely necessary to cooperate with upstream and downstream manufacturers in the supply chain to ensure that essential information gets communicated. THK is striving to create more advanced mechanisms for this purpose, based on its cooperative relationships with the customers, cooperating companies, and partner businesses THK has cultivated through its green purchasing practices.

### ■ Main points of the REACH regulation

The REACH regulation applies to (1) chemical substances themselves, (2) preparations (compounds or solutions containing two or more substances), and (3) articles (objects that acquire a specific shape, surface, or design during production). Each of these categories is subject to specific controls.

<b>Substance</b>	Registration required (1 ton or more of substance per year per company)
<b>Preparation</b>	Registration required (1 ton or more of substance in preparation per year per company)
<b>Article</b>	Registration required (1 ton or more of intended release of substances per year per company)
	Notification required (SVHC* concentration 0.1% or above: 1 ton or more per year per company) Information must be provided to customers and details must be provided to interested parties upon request. (SVHC concentration 0.1% or above)

\* SVHC: Substances of Very High Concern (as defined by the REACH Regulation)

### Reducing PRTR-designated substances

RHYTHM CORPORATION's GOKYU Plant, located in the city of Hamamatsu, has an integrated production system encompassing everything from design to manufacturing, and deals with a wide variety of chemical substances. The plant's environmental policy is aimed at reducing the use of hazardous substances, and two targets have been established with respect to chemicals subject to the PRTR Law.\* The first is to end the use of the chlorinated organic solvent dichloromethane by fiscal 2010; the second

is to reduce the use of other PRTR-designated substances by 5%, compared to the fiscal 2007 level, by fiscal 2012. To meet the first target, the plant is switching to the use of hydrocarbon cleaners and expects to achieve the stated goal in fiscal 2010 (the fiscal 2008 total was 2,750 kg less than that for the previous year). To meet the second target, the plant's 15 forklifts are gradually being converted to run on LPG fuel instead of gasoline. The fiscal 2008 totals for toluene and xylene were 785 kg and 654 kg lower, respectively, than those for the previous year.

\* PRTR Law: A law promoting better management and understanding of environmental emissions of designated chemical substances

### ■ Substances subject to the PRTR Law (kg)

Type	Amount handled	Amount emitted into the atmosphere
Xylene	5,210	39
Toluene	4,846	115
Ethyl benzene	810	20
Benzene	334	42

Note: The above data represent cumulative totals for THK's five plants in Japan, THK NIIGATA, and three THK INTECHS CO. plants.



▲ An LPG-fueled forklift

### Emergency drills: oil spills

Great care is taken at every THK Plant to ensure that there is no outflow of lubricants, waste oil, or machining oil from the plant premises that might contaminate waterways or harm the local ecology or agriculture. To be prepared for every imaginable scenario, however, all THK plants conduct oil spill emergency drills.

At the THK GIFU Plant, for example, all the rain that falls on plant grounds is directed into six oil-water separator tanks. In keeping with a plant slogan, not a single drop of oil is allowed to escape the grounds. In a drill held in August 2008 employees sprayed lubricant on roadways on the plant grounds to verify that all oil gets directed into the separator tanks, as intended. The employees later practiced recovering the lubricant from the tank using absorbent mats.

## Green distribution

Q

Does THK take any special environmental measures when it distributes and transports its products?

A

THK not only incorporates environmental measures into its product development and production processes, it is also working to reduce energy consumption and CO<sub>2</sub> emissions in its distribution activities.

### Green distribution

Shipments from THK's YAMAGATA Plant to some customers travel some 1,800 kilometers. Formerly carried by truck, these shipments now travel by rail, a modal shift\* that has reduced energy consumption from 19,700 to 4,380 megajoules and lowered CO<sub>2</sub> emissions from 1.35 to 0.22 tons. THK is working to expand this shift in cooperation with its customers.

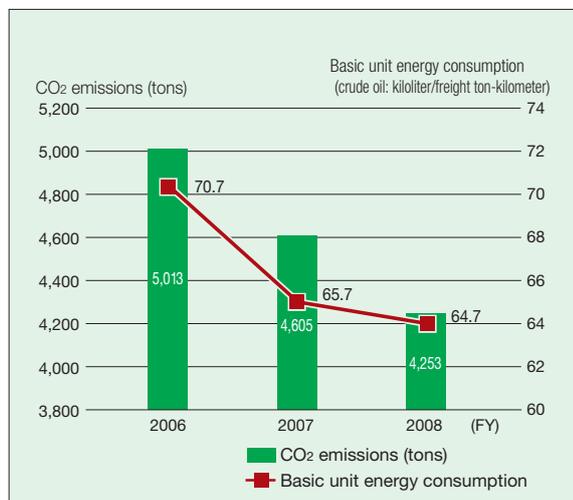
THK has also improved load ratios through the use of post pallets,\*\* revised transport routes between its plants and Distribution Centers, and begun routing all freight through its CHUBU Distribution Center. These efforts have enabled THK to send one fewer truck to the Kinki region and two fewer to Narita Airport each week, compared with the previous year. As a result, basic unit energy consumption (kiloliters of crude oil divided by ton-kilometers of freight) in fiscal 2008 improved 1% in comparison to fiscal 2007, and CO<sub>2</sub> emissions declined by 352 tons, or about 7.6%.

At THK's Distribution Centers, packing materials are conserved to reduce waste, and power usage has been reduced through improvements in facility air-conditioning and lighting systems. THK is working to perfect its green distribution practices, to reduce environmental burdens in every area affected by its distribution activities.

\* Modal shift: A transition from transport by truck to transport by sea and rail, to permit shipping in bulk and reduce CO<sub>2</sub> emissions

\*\* Post pallet: A stackable pallet fitted with posts between the decks or beneath the top deck to prevent load collapse

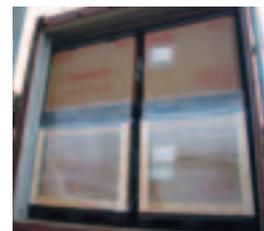
### ■ Trends in transport-related CO<sub>2</sub> emissions and specific energy consumption for THK alone



### Returnable boxes for overseas shipments

Returnable boxes have been used for overseas shipments of auto parts and materials to TMA for the past three years and to TME since November 2008. Returnable boxes are used whenever there is sufficient freight to fill a shipping container. The advantages of returnable boxes over conventional wooden crates are (1) reduction of waste materials (wooden pallets are no longer discarded at the shipping destination), and (2) the ability to double-stack cargo, which reduces the number of trucks required by half, decreasing the environmental burden imposed by CO<sub>2</sub> emissions.

THK intends to study further use of returnable boxes for seaborne shipments to its overseas plants and sales companies.



▲ Returnable boxes make double-stacking possible.

### Using Eco Bands

At the suggestion of SANKO SEISAKUSHO Co., one of THK's production contractors, THK's FAI\* Division started using a product called the Eco Band in August 2008, to help eliminate waste and meet targets for reducing shipping costs. Previously, shipments were placed on a pallet and wrapped in industrial film to prevent load collapse; after only one use, the film was discarded as waste when the shipment reached its destination. Eco Bands can be attached in half the time required to wrap a shipment in film, and uncrating is easier because Eco Bands don't adhere the way film does. The result has been a large-scale reduction in film purchasing costs.

When THK began using Eco Bands, there was concern that they might come loose during shipping, but no such incidents have occurred. THK now uses Eco Bands for 50% to 60% of its shipments and plans to gradually shift to using Eco Bands for the rest, in consultation with its customers.



▲ A shipment secured with an Eco Band

\* FAI: Future Automotive Industry

## Third-party opinion

I have read the third *THK CSR Report*. It is coherently organized, written in plain language that the reader can readily understand, printed in appropriately sized type, and illustrated with accurate charts and tables—all indications that the report has been compiled with care. My first encounter with THK was 10 years ago, in March of 2000. I met Mr. Shirai, THK's Managing Director (then general manager of the Engineering Division), who oversaw the preparation of this report, at a scholarly lecture sponsored by the Japan Society for Precision Engineering. We have stayed in contact with each other ever since, doing joint research from time to time. THK is a corporate member of the Society's research committee.

Ten years ago, I've been told, THK had annual sales of around ¥100 billion. At the time it was virtually unthinkable that a company mainly devoted to producing LM Guides and Ball Screws would achieve annual sales of around ¥200 billion by fiscal 2007, putting it on the same level with the leading machine tool manufacturers. How was THK able to grow so rapidly and establish so many plants in Japan and abroad? I think the answer lies in THK's corporate philosophy, "providing innovative products to the world and generating new trends to contribute to the creation of an affluent society" (see the "Message from the top" section of this report). As a pioneering firm ahead of its time, THK developed precision components and products with excellent energy-saving capabilities. The new technologies that anticipated users' needs are explained in the section on "Developing technology" (pages 10 and 11). The Super-high Rigidity/Super-low Waving LM Guide and High-load, High-speed Caged Ball Screw are cited as the fruits of these new technologies. THK's Technology Center was established to develop products that truly address customers' needs, not just the

self-satisfaction of engineers. The existence of the Technology Center has contributed greatly to the development of highly accurate, thoroughly reliable, energy-saving products.

THK has succeeded in expanding its production bases in Japan, the United States, Europe, and Asia. I think this has been possible because, among other things, THK has successfully developed innovative methods of reducing friction and has incorporated this technology into products that offer excellent energy-saving results. The other important factor is that THK has a proper understanding of corporate social responsibility. This understanding has motivated THK to make constant efforts to maintain a solid management system, get involved with local communities and contribute to society as a whole, and strive to achieve harmony with the natural environment. All these efforts derive from THK's capacity for developing excellent technology (including its manufacturing technology). The *THK CSR Report 2009/2010* explains the actions that THK has taken to fulfill its corporate social responsibilities, as well as the results and effects of those actions, in a straightforward manner. I'm glad to see that THK's ongoing devotion to "harmony with the environment" is clearly articulated in the section on the company's basic environment policy: "to continually decrease environmental burdens and maintain and improve the natural environment" (page 29).

In his introductory message, Mr. Teramachi, THK's CEO, writes "we need to develop more energy-efficient production machines and actively incorporate natural energy sources". I hope to read about actual examples of these efforts in next year's *CSR Report*.



**Dr. Kiyoshi Suzuki**

PROFESSOR,  
DEPT. OF SYSTEM ENG.  
NIPPON INSTITUTE OF TECHNOLOGY

Born in 1946. He joined the Kawasaki Plant, Hitachi, Ltd., in 1962 and worked there until 1966. In 1968, he graduated from Department of Physics, Tokyo University of Science. In 1986, he finished a doctoral dissertation Paper for a Dr. degree: Study on manufacturing fine short metal fiber by chatter machining (Tokyo University). In 1970, he became an Engineering Official, Institute of Industrial Science, University of Tokyo. In 1975, he became an Assistant, Institute of Industrial Science, University of Tokyo. In 1988, he became a Lecturer, Institute of Industrial Science, University of Tokyo. In 1988, he became an Associate Professor, Department of System Engineering, Nippon Institute of Technology. In 1993, he became a Professor, Department of System Engineering, Nippon Institute of Technology. From 2001 through 2003, he served as Vice Chairman and trustee (Head of publishing department), Japan Society for Abrasive Technology. In 2001, he became a Chairman Emeritus, ICAT (International Committee of Abrasive Technology). His current positions are: Member, Board of Trustees, Japan Society for Precision Engineering; Member, Board of Trustees, Japan Society for Abrasive Technology.

■ **Awards:** In 1983, he was awarded Noteworthy Invention Prize, Science and Technology Agency. In 1986, he was awarded Okochi Memorial Technology Prize, Okochi Memorial Foundation. In 1994, he was awarded Prize for encouragement, Japan Society for Abrasive Technology. In 2000, he was awarded JSPE Takagi Award, Japan Society for Precision Engineering. In 2003, he was awarded Best Paper Award, Japan Society of Advanced Production Technology. In 2005, he was awarded 2004 National Conference Prize, Japan Society of Electrical-Machining; Best Paper Award, Japan Society for Abrasive Technology; Kumagai Prize, Japan Society for Abrasive Technology; and Best Paper Award, Machine Tool Engineering Foundation. In 2007, he was awarded for the Best Paper, Asian Electrical Machining Symposium '07, and received the Kumagai Prize, Japan Society for Abrasive Technology; Best Paper Award, Machine Tool Engineering Foundation; and Best Paper Award, Japan Society of Electrical-Machining Engineers.

## Postscript

It has been our pleasure to present this year's *THK CSR Report*, our third report so far. The Feature section of this report focuses on technological developments that reflect THK's corporate philosophy. Other sections offer easy-to-follow explanations of the corporate governance and compliance systems in which our stakeholders place their trust, as well as THK's systems for making full use of the capabilities of its employees, who are THK's vital human resources. There are also sections on THK's participation in community activities and its efforts to develop environment-friendly products and help alleviate global warming. As in previous years, we have made an effort to present the voices and opinions of people connected to THK and of THK employees both in Japan and overseas, to illustrate THK's global reach.

THK will continue its group-wide efforts to practice corporate social responsibility and environmental protection, and we will work to further improve the content of our reports.

We look forward to hearing the views of you, the reader, so that we can use this valuable feedback as a resource for THK's future CSR activities, and when preparing our next report. We encourage you to fill out the attached questionnaire—we will greatly appreciate your candid thoughts and opinions.

CSR Report Project secretariat  
(Next scheduled report: December 2010)

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