

THK CSR Report 2008/2009



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Introduction

THK conducts business in accordance with our corporate philosophy, "providing innovative products to the world and generating new trends to contribute to the creation of an affluent society."

In keeping with our corporate philosophy, this year we present a feature section focusing on the roles that THK technologies play in helping to reduce earthquake damage in earthquake-prone Japan and dealing with current problems in medical care, such as a shortage of physicians and regional disparities in medical care.

From a social perspective, we examine our efforts on behalf of our stakeholders and consider whether these activities are being conducted efficiently and responsibly. We also explain how we plan to meet our environmental targets for 2010.

THK considers this *CSR Report* to be an important tool for communicating with all of our stakeholders. We greatly appreciate your comments and feedback and encourage you to fill out the attached questionnaire.

Reporting period

This report focuses mainly on activities from April 1, 2007, through March 31, 2008, although activities occurring shortly before and after this period are also discussed.

Scope

This report is based on information provided by THK Co., Ltd., 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 (YAMAGATA, KOFU, GIFU, MIE, and YAMAGUCHI), THK NIIGATA Co., Ltd., and DAITO SEIKI Co., Ltd.

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*.

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The THK Group

Main products





Actuators







Ball Splines



Link Balls

2<u>6</u>0

Cross Roller Rings

Profile

LM Guides

THK is a pioneering manufacturer and developer of 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 "development of new business areas". "Full-scale globalization", based on the idea that the site of the 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. The company's initiative devoted to the "development of new business areas" is an effort to expand the range of THK's product applications into consumer fields by establishing specialized departments. The acquisition on May 31, 2007, of Rhythm Corp., an automotive parts manufacturer, as a consolidated subsidiary, is expected to accelerate 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 141-8503 Capital ¥34.606 billion' March End of fiscal year 6 924* Employees, consolidated Employees, non-consolidated 3,075* Consolidated subsidiaries 10 in Japan, 19 overseas* * As of March 31 2008

THK employees, non-consolidated (as of March 31, 2008)

Number of employees	Average age	Average years of service
2,593	37.0	14.3
482	30.0	9.2
3,075	35.9	13.5
20		
1		
16		
135		
614		
	Number of employees 2,593 482 3,075 20 1 16 135 614	Number of employees Average age 2,593 37.0 482 30.0 3,075 35.9 20 - 1 - 16 - 135 - 614 -



Trends in numbers of consolidated employees





Message from the top: CSR at THK

Offering a new sense of value to society, with CSR as the centerpiece

Akihiro Teramachi President and CEO THK Co., Ltd.

Pursuing CSR through our core business

THK's LM Guide, developed through our pioneering work as the world's first Linear Motion Guide manufacturer, is a revolutionary product that converts the linear-motion component of machine tools and other machinery from a conventional "sliding motion" into a "rolling motion". To achieve linear motion with old-fashioned sliding guides, a force of 10 to 20 kg was required to move a 100 kg object. Switching to rolling guides made it possible to move the same object with only 1 to 2 kg of force. In other words, it requires dramatically less energy to move things. We have also developed and marketed products such as Caged Ball LM Guides, which use only one-hundredth of the amount of lubricant required for conventional products, as well as other products that help save energy and keep the environment clean.

We also provide energy conservation, environmentfriendly products for automobiles, to make them lighter, safer, and faster.

Meanwhile, in our immediate surroundings, the demand for home automation has been growing. As the population ages, it's increasingly necessary to create barrier-free conditions at home and help alleviate the need for nursing care. This entails equipping homes with devices that can perform various functions, which is another area where our products are being used.

In addition, we have developed seismic isolation

devices to help offset the dangers posed by major earthquakes, which have become so frequent in recent years. These devices minimize the vibrations transmitted to buildings by circumventing earthquake vibrations with seismic isolators installed between the building and its foundations. They effectively protect the integrity of the building, which makes them fundamentally different from quake-resistance and vibration-damping devices. Seismic isolation not only protects the house from the dangers posed by an earthquake, it can also protect the people inside from getting injured or killed by falling furniture, appliances, or debris. If we could install seismic isolation devices in every building, I think it would give people greater peace of mind, even in earthquake-prone Japan.

In these and other ways, THK is devoted to providing CSR-conscious products and services, and has been ever since its establishment. Recent increases in the cost of raw materials and energy have created an even greater need for "LM Guides", because these products improve energy efficiency while also helping to protect the environment. We're not going to rest on our laurels, though—THK is working to supply the world with new products to meet the needs of the times.

CSR activities are nothing new at THK. As expressed in our corporate philosophy, "providing innovative products to the world and generating new trends to contribute to the creation of an affluent society," THK has been as a creative, development-oriented company ever since it was founded in 1971.

Improving value for stakeholders

THK owes its current success entirely to the support of its stakeholders, including customers, partner businesses, shareholders, employees, and people in local communities. According to some theories, the life of a company is around 30 years, but THK is still growing 38 years after it was founded.

Certainly, one of the reasons for our longevity is the bond we have forged with our stakeholders, and we must continue to cultivate mutually beneficial relationships with them in the future.

We view customer satisfaction from a global perspective, and we feel that even when languages and cultures differ, the essence of what customers want is the same no matter where they are. The best quality products and services must be provided to customers at a reasonable price when and where they are needed.

THK actively promotes globalization, but to achieve true customer satisfaction, we want both our Japanese employees and our local employees to fully understand THK's corporate philosophy and identity. Developing creative products is the cornerstone of our business. We will continue to expand our business and strive to earn the trust of our stakeholders.

THK's identity

As we see it, the purpose of THK's corporate existence is to help create an affluent society by providing highly useful products, such as linear motion systems.

We believe that pursuing energy conservation and environment-friendly management policies enhances our reputation. We intend to ensure that our stakeholders' opinions are reflected in the products we develop and in our management policies, and we will continue to emphasize contributions to society.



「「日に、免震システム

The need for anti-earthquake measures

ただいまの濃度は

Seismic isolation simulating vehicle provides a jolt of realism.

Becoming aware of the horrors of an earthquake

As an earthquake-prone country, Japan leads the world in antiearthquake technology. There are currently three main technologies aimed at making buildings earthquake-safe. The first is "quakeresistance", which means making a building strong enough to withstand vibrations. The second is "vibration-damping", which means incorporating damping elements into the structure to absorb vibrations. The third technology is "seismic isolation", which employs inserted elements to isolate the building from its foundation in order to prevent vibrations from being transmitted directly to the building.

THK has made skillful use of linear motion technology, accumulated over many years, to develop seismic isolation devices. The catalyst for development was the Great Hanshin-Awaji (Kobe) Earthquake of 1995. In the quake's aftermath there was speculation that THK's linear motion systems might provide a means to reduce vibrations transmitted to buildings during earthquakes and prevent buildings from collapsing in future quakes. This concept was the starting point for our development of seismic isolation devices.

Once we actually started manufacturing and selling these systems, however, we realized how difficult it was to adequately convey in words the advantages of seismic isolation over quake-resistance and vibration-damping. The most effective way of demonstrating the horrors of an earthquake and the superior characteristics of seismic isolation devices is to let as many people as possible actually experience the difference in vibration. In 2007 THK started producing and operating seismic isolation simulating vehicle. As far as we know, this vehicle is the first of their kind ever used in Japan.

Quake-resistance and vibration-damping

●免震システム

Seismic isolation



The dotted line shows the vibration with quake-resistance; the solid line shows the vibration-damping.

The dotted line shows the vibration with seismic isolation.

Basic components of the "seismic isolation system"

CLB Linear Rolling Support The crossed "LM Guides" slide 360° horizontally in response to earthquake vibrations while supporting the weight of the building

Viscous Damper Absorbs earthquake vibrations using a "ball screw" to reduce the impact

a "ball screw" to reduce the impact of sudden movement

Decompression Rubber

Laminated rubber pads return the building to its original position



The importance of seismic isolation devices

Inside a seismic isolation simulating vehicle, people can experience simulated seismic events including an earthquake of magnitude 6 or greater; the Great Kanto Earthquake, the Great Hanshin-Awaji (Kobe) Earthquake, and the Niigata Chuetsu Earthquake; and earthquakes expected to occur in the Tokai, Tonankai, and Nankai regions within the next 30 years (the probability is 60%). To ensure the safety of those who experience a simulated earthquake in a seismic isolation simulating vehicle and to protect them from injury, the interior is equipped with cushions and handrails, and people are given detailed instructions before they board the vehicle. Many of the visitors who undergo this experience say they never thought the tremors could be so big and many say they have clearly felt the difference that seismic isolation makes. This is the benefit of the seismic isolation simulating vehicle.

This vehicle not only demonstrates the superiority of THK's seismic isolation devices, but by effectively simulating the horrors of an earthquake, it gives people a visceral awareness of the importance of being prepared for such an event. The experience makes people more keenly aware of the need to be prepared for an earthquake and encourages them to take anti-earthquake measures. This is an issue of concern not only for people in the construction industry but for the general public as well.

Our seismic isolation simulating vehicle is currently making the rounds of disaster-prevention events and exhibitions, which are held all over Japan. We will continue to have this vehicle travel the country in an effort to convince as many people as possible of the importance of taking measures against earthquakes. If you happen to see our seismic isolation simulating vehicle in your neighborhood, we hope you will take the opportunity to experience of the horrors of an earthquake firsthand.

Living safely



isolation devices

Sendai, Japan

When we enlarged our house, our architect explained to us how seismic isolation devices work. It brought back frightful memories of an earthquake off the coast of Miyagi Prefecture 30 years ago, and of the Hachinohe earthquake 12 years ago. I thought it would be best to have a seismic isolation structure. to minimize the vibrations transmitted to the building and to prevent the house from collapsing and furniture from toppling over.

The Hachinohe earthquake didn't make headlines at the time, but because we were close to the epicenter, we had considerable damage, including overturned furniture, broken dishes, and severed water and power lines. We also suffered emotional trauma. More recently, during the lwate and Miyagi inland earthquakes, the cabinet doors flew open in the main house, which doesn't have seismic isolation devices, and the pictures on the walls were all askew, but nothing fell over in the new addition, which was constructed with seismic isolation devices, although it swayed like it was balancing on a ball. I realized again how effective the seismic isolation devices is.

Since every earthquake that occurs revives fears from past quakes, I think there's also a definite psychological benefit. Thanks to our seismic isolation devices, we have greater peace of mind.

THK's "RDT Viscous Dampers" for building exteriors Short construction period, major impact

The Board of Education in the city of Akita is currently having all of the city's elementary schools and junior high schools that were built prior to the enactment of the new building standards law in 1981 inspected for quake-resistance. School buildings that do not meet the new standards will be retrofitted for quake-resistance.

The Chikuzan elementary school in Akita has a 110-year history. The present school building, completed in 1972, does not meet the new standards. During the inspection it was determined that many parts of the building would have to be reinforced. This would have taken a great deal of time using traditional construction methods and would have required the construction of a temporary school building. Fortunately, THK's "RDT Viscous Dampers" for building exteriors offered the perfect solution. The cost was reasonable, and the construction work took only six months. This proved to be a great advantage, as it minimized the impact of the work on the school's operations. The vibration-dampings were given a covering



Exterior of the Chikuzan elementary school building in the city of Akita after the installation of viscous dampers for quake-resistance

to improve their somewhat intimidating appearance.

During the lwate and Miyagi inland earthquakes, schools built using conventional methods incurred cracked walls and broken pipes, but this sort of damage was conspicuously absent at the Chikuzan elementary school. School officials reported that the building had proven to be sufficiently quake-resistance.

Robotic telesurgery: A dream comes true

Making cutting-edge medical technology available to more patients



Actuator (KR) 2 R Guide

Have your operation performed by a highly skilled surgeon no matter where you are.

Aging population and declining birthrate, a shortage of physicians, and regional disparities in medical care—these are among the healthcare issues currently confronting Japan; they are in the news almost daily. One promising approach to resolving some of these issues is the use of medical robots. Among other efforts, research is progressing in the area of robotic telesurgery, which will enable a surgeon to operate on a patient who is not in the same location. While the physician operates the controls at his location, a robotic arm installed in the remote operating room moves in response to signals received over a broadband connection. The ability to have an operation performed by a highly skilled surgeon anywhere in the world is a dream come true and THK is putting its technology to excellent use in helping to develop telesurgery robots.

The development of medical robots has focused on several objectives: (1) enabling the physician to see behind or inside normally inaccessible internal organs and skeletal structures, (2) providing surgical access to confined spaces and the areas of organs that are difficult to reach by hand, and (3) making it possible to perform microsurgery and high-precision surgery. More recently, efforts have also been directed toward equipping sparsely populated areas with facilities for remote diagnosis and

remote surgery, to provide patients in such areas with diagnostic and surgical services on a par with those available in hospitals equipped with state-of-the-art medical equipment.

A collaborative academic-industrial research and development project has been established with the aim of providing regions and countries that have substandard medical facilities with the same high level of health care enjoyed in wealthier countries. The project participants, including Tokyo University Professor Mamoru Mitsuishi and scholars from Kyushu University, are currently engaged in finding practical applications for telesurgery robots. The first robot designed to assist a surgical procedurein this case, "minimally invasive laparoscopic surgery" -was developed in 1999, and the second, an improved version of the first, appeared in 2007. In minimally invasive laparoscopic surgical robot, a laparoscope (endoscope) and forceps or an electric scalpel are inserted through small openings made in the abdomen; the doctor uses a surgical-assistant robot installed at the operating table to perform the surgery by remote control. Thus, a physician in a hospital in Japan, for example, can perform surgery on a patient in a hospital in Southeast Asia. To date, two successful remote-control operations have been performed: on two occasions doctors at Chulalongkorn University in Thailand have removed the gallbladder of a guinea pig located in Fukuoka, on the island of Kyushu. (See the illustration on the opposite page.)

* Minimally invasive laparoscopic surgery: A surgical procedure designed to be nonintrusive and to subject the patient to minimal trauma



Advances in medical care to create an affluent society

THK has participated in the development of telesurgery robots, designing and manufacturing the robot arms and the arm sections of the forceps. Actuators and **2**R Guides, THK's flagship products, are used in various parts required to faithfully reproduce the movements of the surgeon and maintain patient safety during the procedure. The telesurgery robot project is undergoing further improvements with a view toward eventual practical applications. Other THK products and technologies have also been put to use in medical fields. One example is the repositioning robot, developed by Professors Ichiro Sakuma and Mamoru Mitsuishi of the University of Tokyo and others, which assists the movements of the physician during surgery.

Surgery to repair a femur fracture requires considerable physical strength to bring the bone into the proper position.

The use of THK's rolling motion technology to move heavy objects using minimal force can reduce physical demands on the physician and can make it easier for women to work in the field of orthopedic surgery.

THK technology augments human physical strength. More uses for THK products are expected to be found in a variety of fields. As Japan continues to change demographically due to its aging population and declining birthrate, THK will make effective use of its technological capabilities to help create a truly affluent society.



Repositioning robot assisting a surgical procedure

Opening up great possibilities

My relationship with THK started when I was involved with intelligent machine tools* before taking up telesurgery robots. I had confidence in THK's considerable technical capabilities. Telesurgery robots, however, pose different challenges compared to machine tools. For instance, the requirements of reduced size and weight are different. Surgery is a race against time. Not only do the movements have to be more precise, but the robotic arm must react quickly and must be designed for quick installation and replacement. Another issue is cleaning and sterilization. THK took all of our demands very seriously. The telesurgery robot is a revolutionary system that not only reduces the patient's trauma but also lightens the burden on the surgeon. It offers many advantages, not the least of which will be helping to correct regional disparities in medical care and provide appropriate initial treatment in medical emergencies. I hope that THK will continue to engage in joint R&D with us, in the hope that we can put the telesurgery robot and its enormous potential to practical use.

* Intelligent machine tools: Machines equipped with the ability to analyze and make decisions



Professor **Mamoru Mitsuishi** Dr.Eng. Department of Engineering Synthesis School of Engineering, The University of Tokyo

Objectives and organization of the CSR Project

THK published its first CSR Report in 2007. When I first saw the report. I felt that we had done a pretty good job. From the time it was founded, THK has conducted its business with the aim of contributing to society through its core business, based on a corporate philosophy devoted to "providing innovative products to the world and generating new trends to contribute to the creation of an affluent society." Our CSR activities have led me to recognize anew that CSR is a direct extension of our corporate objectives, which are to increase our corporate value and earn profits in order to contribute to society and keep our employees happy. But we should not be complacent. Although THK carries out CSR activities in each department, there are no companywide CSR target figures or policies; this is a weak point.

I think the main focus of our CSR activities is environmental measures. If a company believes that getting its work environment in order and increasing production efficiency will ultimately result in environmental protection and higher profits, then active, concrete measures should be taken to advance these goals. THK needs to clarify the criteria by which environmental measures are evaluated and set up a mechanism to link them to each department's performance evaluation.

Another important subject is compliance. It is important that THK implement companywide measures to prevent any part of the company from lapsing into an exclusively profit-oriented mentality.

With these concerns in mind, THK inaugurated the "CSR Project", in an effort to pursue CSR through its core business. Thirteen well-experienced employees



Organization of the CSR Project

from the production, sales, technical, and headquarters departments are participating in the project, which is based on the plan-do-check-act formula. Under this scheme, the project participants identify 12 subject areas to be addressed by CSR activities and draw up a plan for each area. These plans are then carried out and the results are checked and acted upon by all the participants. Meetings are held whenever necessary to present and discuss status reports. I hope that each THK employee understands the significance of these activities and plays his or her role conscientiously, knowing that they are related to employee happiness.

CSR should not be regarded as a cost but as an investment in the future. I would like everyone to perform their CSR activities with diligence and initiative, in order to increase our corporate value and help us contribute to society.



Takeki Shirai Director in charge of CSR Managing Director THK Co., Ltd.

safety

CSR subject areas

1	Corporate governance	\bigcirc	Social contributions
2	Compliance	8	Information disclosure
3	Risk management	9	Quality and product safe
4	Information security	10	Occupational health and
5	Personal data protection	1	Employment
6	Environment	(12)	Human rights

Management system



Actively pursuing CSR activities in order to contribute to society

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.

The various departments involved in the CSR Project have identified 12 subject areas, including corporate governance and compliance, and are working on measures to improve and update THK's efforts in each area. At the same time, employees receive ongoing training and education to ensure that THK continues to be a company deserving of the trust society has placed in it.

THK strives to achieve higher corporate value and contribute to society through its CSR activities, and will continue to actively implement CSR-oriented management policies. 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. In addition to ensuring the sound operation of the organization, THK has begun reinforcing and enhancing internal controls throughout the entire group, including subsidiaries and affiliated companies.

Governance system

THK employs a system of statutory auditors. The management structure, based on a Board of Auditors that includes both THK's Board of Directors and external auditors, establishes an Executive Council as the organization that considers strategy and makes timely and appropriate corporate management decisions.

The Executive Council determines the basic orientation of management and collects and compiles necessary information for discussions by the Board of Directors. The Board of Directors has ultimate authority over corporate management decisions, based on its discussions. The Board of Auditors, which meets every month and attends important meetings of the Board of Directors and other such events, is responsible for ensuring that the directors exercise their functions in compliance with the obligations and limitations prescribed by law and by the articles of incorporation. The Internal Audit Division, the only independent entity in the governance system evaluates the execution of duties, management efficiency, and internal controls, based on internal auditing regulations and in cooperation with the auditors. Our auditing activities also encompass our overseas operations, based on a fourpole approach focusing on Japan, Asia, Europe, and the Americas.

Internal controls

THK is enacting 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 2007 and is now developing a system for ensuring the reliability of financial reporting.

The internal controls project is based on "Japan's Financial Instruments and Exchange Law", which will take effect with the settlement of accounts in March 2009 and will be implemented throughout the entire group, including subsidiaries and affiliated companies. We are currently in the process of designating companies within the group that will undergo evaluation as well as evaluating resources, addressing deficiencies, and implementing improvements.

Security-related trade controls

Despite calls for stricter security-related trade controls in Japan and throughout the world in recent years violations of foreign-exchange laws are rampant. This cannot be ignored. At THK, we are creating a system to ensure that security-related trade controls are obeyed. To this end, we have set up a Security Export Control Department within the Risk Management Division under the authority of the CEO, drawn up a compliance program, and registered the program with the Ministry of Economy, Trade and Industry. Requests for confirmation of export controls from the Ministry have sharply increased, so we are establishing a mechanism to enable us to respond to client requests by posting the necessary information on our website and quickly producing the relevant documents.



Corporate Governance Framework

In order for us to continue to be a company deserving of the trust society has placed in us, every one of our employees must act in a compliance-conscious manner at all times. THK is establishing a system designed to ensure thorough compliance and provide employees with ongoing training and educational activities.

Compliance system

Since 2005, THK has had a standing "Compliance Committee", chaired by the CEO. The Compliance Committee discusses and approves all policies, rules and regulations, and training programs related to compliance, and deals with compliance violations and internal reporting. "A Compliance Panel", with representation from each business department, has also been established under the committee's jurisdiction. A Compliance Panel member is assigned for each area and business location to organize regular workshops presided over by specialists, promote the compliance system, and serve as a consultant and liaison. Panel members also present progress reports on a regular basis, work out solutions to problems, and take countermeasures. For example, as a countermeasure against so-called disguised contract labor, checklists were distributed to all plants and labor contracts were reviewed. The Risk Management Division proposed other countermeasures and dispensed advice on how to avoid problems.

As another example, 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.

Compliance system



Training and educational activities

To further promote compliance, THK has initiated educational activities aimed at supervisory staff (assistant managers, group leaders, and team leaders). A total of 441 production employees including some at affiliated companies, had taken part in such activities as of February 2008.

THK has also incorporated compliance-related ed-

ucational materials (48 drill-type questions, 15 case studies) into the in-house educational resource known as e-learning*, to help employees become more aware of compliance in their daily work. In addition, management personnel attend mandatory lectures in an effort to better their understanding of compliance.

THK has engaged a lawyer to act a guest lecturer at regular study sessions for Compliance Panel members. These sessions deal with issues such as "disguised contract labor", the Japanese law known as the "Act against Delay in Payment of Subcontract Proceeds, Etc. to Subcontractors", "sexual harassment, and power harassment".

* e-learning: Accessing and utilizing educational resources by computer or via a computer network



A compliance study session at THK Headquarters

Distribution of Fundamentals for the THK Group Employees

As part of THK's efforts to perfect its compliance system, the booklet "Fundamentals for the THK Group Employees" is distributed to all employees to help them understand the company's basic policies and perform their work properly. This booklet explains the "THK Corporate Philosophy"; "THK's Basic Policies" defining social contributions; customer-oriented business prac-tices; adherence to laws and regulations; and the "THK Companies Action Charter", which sets forth action guidelines for performing one's daily work. It also includes an abridged version of THK's "Company Regulations". Employees are required to carry this booklet on their person at all times and refer to it in the workplace and when working on their own.



C "Fundamentals for the THK Group Employees", published in five languages

As a basic requirement for business survival, it is essential to practice stringent risk management to minimize damage, whatever situation may arise, so that our stakeholders can have complete confidence in us. Meanwhile, we are working to establish a world-class information security system.

Commitment to Business Continuity Plan

Earthquake damage would disrupt production activities at THK plants. To protect IT equipment against damage from earthquakes, we installed a seismic isolation table at our MIE Plant in February 2008, our GIFU Plant in March 2008, and our YAMAGATA Plant in March 2008. For the same reason we plan to install a seismic isolation table at our KOFU Plant in fiscal 2008 and at our YAMAGUCHI Plant thereafter.

At THK Headquarters, we have stocked food and drinking water, a three-day supply for 165 people, as part of our BCP efforts*. Naturally, we are also devising other measures and arranging disaster-relief supplies, including rescue equipment, medical goods, and portable toilets, to ensure the physical safety of our employees and nearby residents.

* BCP: Business Continuity Plan

Preventing unauthorized access

In order to reinforce measures to protect our core systems from unauthorized access, we have reviewed our access control system and consolidated our work processes, with the cooperation of the principal departments involved. Operations began under the new system in December 2007.

Information security system

"The Information Security Committee", chaired by the CEO, holds discussions on regulations and educational programs concerned with information security and oversees our progress in this area. The reviewing of security-related rules was the priority task for 2007. "Regulations for managing classified Information" and "Regulations for managing Information Equipment" were thoroughly revised, and a new "Standard for managing classified Information" and "Standard for managing Information Equipment", detailing business processing procedures, were drawn up. When the new rules were put into effect, explanatory sessions were held for security administrators in every section at every major site. Starting in 2006, information security workshops were held for management personnel, but these activities have now been completed.

Our personal data protection system is constantly being monitored and improved as part of our information security activities, to ensure that it operates in accordance with the laws and regulations governing personal data protection as well with as THK's internal regulations.

For transactions with major cooperating companies and suppliers, conventional confidentiality agreements have been replaced by more detailed confidentiality procedures. Efforts to reinforce information security along the entire supply chain, including among suppliers, are currently underway.

Information management system



Attendance at information security workshops

	2006 Classes Participants		2007	
			Classes	Participants
Plants	8	155	1	59
Sales	2	26	5	94

Declaration on the elimination of antisocial forces

In keeping with our basic policy of abiding by laws, THK has declared its intention to take a zero-tolerance posture against so-called antisocial forces. As a concrete example of how THK adamantly rejects any connection with antisocial forces, we have required each of our main suppliers, 311 cooperating companies and suppliers in all, to submit their own "declarations on the elimination of antisocial forces", after first explaining the general meaning of the declaration to them.

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.

Diligent Pursuit of The Best Quality

THK places great value on its relationships with all stakeholders, that is, on our involvement in society at large. We have set up a Quality Improvement Committee to attain greater customer satisfaction and ensure the best quality. We have further developed our website to provide more information and have expanded our showrooms. We have organized investorrelations events and created IR tools to maximize shareholders' returns. We have strengthened our partner relationships. We have improved training opportunities, such as study sessions, and are offering improved benefits to help our employees fulfill their ambitions. We are working to help create a sustainable society by developing communication activities to bond with local residents, and we plan to continue these activities in the future.

As a creative, development-oriented company, THK looks at things from the customer's perspective and emphasizes quality assurance activities to provide products that are both safe and reliable. In keeping with our 2008 CEO policy, Diligent Pursuit of The Best Quality, we have established a Quality Improvement Committee to help ensure that we are providing products that satisfy our customers.

Quality Improvement Committee

As a leading global corporate brand, THK can't afford to settle for conventional quality but must attain the best quality while also improving quality control, human resources, and employee education. In January 2008, we set up a Quality Improvement Committee entrusted with conducting cross-organizational quality improvement activities, such as continually improving and updating machining equipment, to ensure that we can provide our customers with the best quality products. "The Quality Improvement Committee" will initiate a group-wide effort to improve the quality of THK products, thus enabling us to fulfill our social responsibilities.

The committee is made up of the CEO, who serves as the top executive; a senior managing director, who serves as chairman; and managers from each department. Another managing director and managers from the sales headquarters act as advisers. Other members, who are selected from our various plants, help implement individual action plans in cooperation with the Quality Assurance Division secretariat.

This year we are investigating the concept of taking a conventional product and determining what it takes to make it run more smoothly, in order to be able to position it as a high-precision product. To this end, we are working together with our production plants on improvements in manufacturing quality. This includes a wide range of activities, from reviewing design data to improving raceways^{*}.

* Raceway: Machined groove in which a ball or other rolling element slides

Organization of the Quality Improvement Committee



Quality Assurance System

THK has acquired ISO 9001 Quality Management System certification for all our plants in Japan, the Americas, Europe, and Asia. Our FAI* Division and TME** plants have now been ISO/TS 16949 (Automobile Production Quality Management System) certified, which requires a more advanced level of quality management.

Amid the rapid progress of globalization, THK must deliver the best quality products, relying on a quality assurance system that encompasses both domestic and overseas plants. Our Quality Assurance Division and Purchasing Department cooperate to ensure fair and equitable testing and evaluation of superior materials and components, to strengthen our system for purchasing at optimum production sites around the world.

To ensure that quality and performance remain consistent no matter where a product is manufactured, our Quality Assurance Division is leading an effort to ensure uniform quality at every production site*** and standardize measuring and testing methods for products and components. To this end, we plan to reinforce our quality assurance system by establishing a standard measuring method for each country or region, with adjustments for local differences, to improve the accuracy of our measurements.

- * FAI: Future Automotive Industry
- ** TME: THK Manufacturing of Europe S.A.S., THK's manufacturing operation in France
- *** This entails applying the THK Quality Standard, or TQS

Improvement Presentation Meeting

The first Improvement Presentation Meeting, sponsored by our Production Division, was held in November 2007. The meeting featured examples of improvements that specific plants made in their day-to-day operations, which, we hope, will catch on at other plants. Eleven case studies of improvements implemented at THK's five domestic plants, including improvements in quality and productivity and improvements in production equipment and machining, were presented at the meeting. Five case studies specially reported by the Production Engineering Department were also presented. The YAMAGATA Plant's Manufacturing Section III received an award for a report explaining how section employees reduced the machining time for ball screws by 26%.

Improvement activities are essential for production performance. We plan to hold another Improvement Presentation Meeting next fiscal year, in the hope that the technological improvements presented will be adopted at other plants. All THK departments are required to continually improve management quality, in an effort to improve quality not only in production but in every department, based on the principle of adopting the customer's point of view. THK strives to be a good partner and to provide satisfaction to our many customers throughout the world.

More exhibitions and showrooms

We have expanded our showrooms and are actively participating in exhibitions in Japan and abroad. This provides excellent opportunities to familiarize customers with our products, to have them actually see our products and give us their opinions.

In fiscal 2007 THK participated in 57 exhibitions in Japan, including events featuring machine components and other events focusing on housing. THK also took part in over 40 exhibitions abroad, including EMO Hannover 2007. Our first seismic isolation simulating vehicle was completed in December, and since then it has been presented at numerous exhibitions and events. Many people have had an opportunity to experience the dangers posed by earthquakes and witness the effectiveness of our seismic isolation technology.

We remodeled and reopened the showroom in our YAMAGATA Plant in March. In the years ahead we will continue to maintain close contact with local communities and business, and we plan to expand our other showrooms as well, as a service to our customers.



Showroom at the YAMAGATA Plant

Voice of a THK saleswoman

After joining the company, I did mostly accounting work at my branch. But last year I was transferred to sales, and I'm now in charge of sales to three of our distributors. I had actually wanted to work in sales from the time I joined the company. That's because I have always enjoyed talking to people, and I thought this would be a way to prove myself.

Selling industrial products is mostly a man's world, but I believe that offering a woman's perspective can create a new style of sales. For this to happen, we must always confront the question of what we can do for the customer. Sometimes I try so hard to satisfy a customer that I end up asking the people at our company to do things that are practically impossible.

Picking up ideas from conversations with customers, finding a solution and then implementing it—that's what I think a reliable salesperson does. To get to that point, I have to learn something new every day. I always try to see things from the customer's perspective and take a sincere approach to my work.

Earning a profit for the company is, of course, important, but I do my best just to be able to hear a customer say thank you, and that's why I want to continue to dedicate myself to improving customer satisfaction.



Shizuyo Takahashi Senior Staff, Sales Section, UENO Branch

Enhancing our website

To enable our customers to access the information they need at any time, we operate one main website and a variety of related sites. Technical information is provided on our Technical Support site, where visitors will find basic information, technical calculations, and CAD data related to products. Our websites are used by more than 140,000 people all over the world. We have also set up a "Seismic Isolation Website" for our customers in Japan. This site explains differences among quake-resistance, vibration-damping, and seismic isolation technology, and provides information on anti-earthquake measures. It also provides information on our Business Continuity Plan.



V Ο Ι C Ε

We talked with Tamio Otani, Executive Managing Director of Hitachi Via Mechanics, Ltd., about the company's partnership with THK.



Learning from each other-the ideal partnership

Hitachi Via Mechanics, Ltd.

Founded in 1968 as a member of the Hitachi Group, Hitachi Via Mechanics has been making important contributions to industry through its manufacturing, marketing, and service activities in three areas: printed wiring board manufacturing systems and maskless direct exposure systems, which are foundation technologies for the state-of-the-art electronics equipment industry; factory automation equipment and systems for a broad range of machining and flexible manufacturing tasks; and arc welding and cutting systems that are indispensable to industry. In printed wiring board drilling machines, the company's main product area, Hitachi Via Mechanics commands more than 85% of the Japanese market, which is evidence of the high level of customer support and confidence the company has attained. The word "via" is Latin for "road." In the printed circuit board and exiting patterns on the top and bottom surfaces of a printed circuit board are called "via holes."

Tell us about Hitachi Via Mechanics' business.

Forty years have passed since we introduced our first printed wired board drilling machines in 1968. In the mid-70s we attracted attention when we were the first to provide a z-axis, which up to then had been moved up and down by a hydro-pneumatic cylinder, equipped with a rotary motor and ball screw. This machine could deliver 70 to 80 hits with a dual-axis machine controlled by servo technology*. Nowadays, 6-axis machines are becoming the mainstream, and we have delivered roughly 17,000 units of these worldwide. Our share of the global market is said to be more than 55%.

At first, most printed wired board drilling machines were xytable constructions. This means that they had only one table that moved forward and backward (the x-axis) and to the right and left (y-axis). Our machines, however, were split-axis-type machines, where the head and the column were each equipped with a separate table. This construction was adopted because unlike conventional machine tools, the horizontal movement (xyaxis) of a printed wired board drilling machine has to come to a complete stop before holes are drilled with the vertical movement (z-axis). The argument over the relative merits of these different construction concepts continued for a long time, but ultimately all the printed wired board drilling machines around the world changed to our split-axis design. The fact is that the foundation for our success was provided by THK products.

Tell us about your relationship with THK.

The early 80s was an era of 4-axis printed wired board drilling machines. At that time, we used to use a horseshoe-shaped ball guide as guide for the drive axis. Later, in an effort to increase the productivity of general-purpose machines, we began developing 6-axis machines. The table, which is 2 meters wide for 4-axis machines, had to be made as wide as 3 meters for a 6-axis machine, although it was made of thin board. To check the vertical and horizontal thermal deformation of the table and minimize horizontal skewing, it was essential to use the linear motion guides being developed at that time.

We were already using linear guides from another manufacturer in heavy machines that required high precision, but I was assigned the important task of selecting a better manufacturer to supply us with higher-priced guides for use in general-purpose machines.

At that time, there were two competing linear motion guide designs: a circular-arc type, made by THK, and a gothic-arch type, made by another manufacturer**. I held meetings with the design engineers time and again, but I remember that I was at a loss over which to choose, because there were no clear differences. In the end, we produced two prototypes and equipped each with a different set of guides, but the trial runs still did not reveal which guides were better. When the time came to make a decision, I realized that our company's splitaxis construction needed to evenly expand and contract to the right and left direction using the center as a reference. At that time, our company's machine tools for mass production were not capable of producing mounting surfaces with the accuracy required by other manufacturers of linear motion guides. But using one side of the board-type table as reference and leaving the other side free was out of the question. Using the center

as a reference and allowing even thermal deformation of the table to the right and left appeared to exert more stress than the guide could withstand over an extended period of use. Under those circumstances, THK's linear motion guide was the perfect match. In addition, I thought we needed a linear motion guide that would not be affected by the harsh environment of flying glass and copper and aluminum dust. I became convinced that THK's linear motion guides were the right choice.

Later, the table became even larger, and now it's around 4-meters wide. Without THK's support, I don't think it would have been

possible to design a table supported on four LM Guides without encountering major problems. Today every hole-drilling machine maker around the world has adopted the split-axis construction, putting an end to the long battle with xy-table construction.



LM Guide installed under a table

What do you expect from THK in the future?

As an engineer, I don't want junior designers to think that the parts that have always been used are necessarily the best. "Look around, all over the world" is my advice. And if you find something good, don't use it right away, but first go to your current supplier, show them the difference, and urge them to bring their product up to par. If your current supplier gives up, then change to the new supplier. This is true partnership, I think.

What I admire about the people I deal with at THK is that they listen to the customer's needs with keen interest and do everything in their power to satisfy the customer with regard to performance, cost, delivery lead times, and other requirements. That's why THK has earned my respect in the nearly 20 years I have been dealing with them.

At first, the smallest holes our hole-drilling machines could drill were 0.3 to 0.5 millimeters in diameter. Now we can drill holes 0.075 millimeters in diameter, and in the near future we will probably see 0.050 millimeter holes drilled at mass-production pace. The hole drilling speed has also increased drastically. A 4-axis machine used to be able to drill 1,200 holes per minute at 150 hits in two stacked boards, but with a 6-axis machine the performance has jumped to 9,000 holes per minute at 500 hits in three stacked boards. I take pride in the fact that these technological advances have made it possible to manufacture amazingly lightweight, thin, and compact electronic devices, like mobile phones and personal computers, with dramatically improved energy efficiency. Such products have contributed to advances in society. This is also true for THK, I believe. Looking ahead, I hope that our partnership will grow even stronger and that we will continue to learn from each other.

- * Servo technology: A technology that automatically controls position, orientation, and other parameters
- * Circular-arc and gothic-arch design: In the circular-arc design, the groove cross-section consists of one circle, and the ball has contact at two points. In the gothic-arch design, there are two circles and the ball has contact at four points.

THK strives to manage its business activities appropriately and efficiently to maximize shareholder earnings. In addition to making efforts to bring about internal improvements, we try to elicit a range of views from our shareholders and investors to help us increase the transparency of our corporate management through fair and appropriate disclosure of information.

General Meeting of Shareholders

Since 1998 THK has held its annual General Meeting of Shareholders on a Saturday, avoiding the days when most General Meetings of Shareholders are held, to enable more of our shareholders to attend. To allow more stakeholders to become familiar with THK's management, we provide observer seats at the meeting venue, and we have recorded good attendance by all stakeholder groups, particularly our partner businesses.

Attendance at our General Meeting of Shareholders has been increasing year after year. In 2008, attendance increased by 20, to 395. In an adjoining venue, the company presents an exhibition focusing on familiar products, enable general visitors to obtain a better understanding of THK products that are rarely seen up close in daily life.



38th General Meeting of Shareholders



Examples of THK products familiar to the public, on display in a venue adjoining the site of the General Meeting of Shareholders

Investor relations events

At THK's semiannual investor meetings, the CEO provides a detailed explanation of our 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 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.

Breakdown of shareholdings by investor type (as of March 31, 2008)



Investor relations tools

THK publishes an "Annual Report", as a means of disclosing information appropriately and impartially to shareholders and investors, and the company also publishes a fact book for investors for use as an informational tool. These items, along with materials presented at investor meetings and other materials, are posted in Japanese and English on the "Investor Relations Page of the THK website". Streaming video of investor meetings and other events is also provided in both Japanese and English. In these and other ways, THK strives for appro-

priate and impartial information disclosure to all investors regardless of affiliation or location.



 Investor Relations web page (Englishlanguage site) At THK, we regard our partner businesses, including cooperating companies and suppliers, as essential partners in creating our products. We strive to build good relationships through fair and equitable commerce and try to help one another grow by increasing cooperation through the THK Association and through study sessions and other activities.

Fair and equitable commerce

In the past, we used partner business rating forms to evaluate our partner businesses, but it turned out that each purchasing department used a different format. To solve this problem, we created a companywide unified style and incorporated various improvements, and since fiscal 2007 evaluations have been submitted in this standard format. This has led to more fair and equitable commerce. We want to continue using the results of these evaluations to identify problems and jointly find remedies.

The THK Association

"The THK Association", consisting of THK's cooperating companies, suppliers, and other partner businesses, is a venue for interaction to promote mutual progress both for THK and the association's member companies. The number of member companies grew from 199 in 2006 to 207 in 2007. The activities of the association's individual chapters include holding briefing sessions to obtain a better understanding of activities related to TAP II*, arranging lectures by SME diagnosis advisors, and setting up plant tours. These activities often result in improvements that help lower costs on both sides. THK's CEO has presented awards to four member companies that submitted the best VA proposals**.

- * TAP: THK Advantage Program. TAP I (sales), TAP II (production), and TAP III (ancillary divisions) refer to activities designed to help create a strong organization and provide a competitive advantage over other companies.
- ** VA: Value analysis, a management method for increasing component and product functionality by reducing overall costs

Study sessions offered by partner businesses

At THK Manufacturing of China (Wuxi), our partner businesses hold study sessions under the motto "passing on basic knowledge." In 2007, the fourth year since the start of these activities, the plant asked six partner businesses to hold study sessions that were attended by a total of 163 employees. The topics covered are gradually expanding, and the level is also rising. Occasionally, participants also receive hands-on training at a production plant.

Study session dealing with process improvements

Looking forward to continuing our win-win relationship

Neturen Heat Treat Company's induction hardening technology is indispensable in the production of important safety-related components in automobiles, construction machinery, and machine tools. Induction hardening plays a very important role in increasing product strength.

Our relationship with THK dates back to 1983, when a Neturen plant was located on the grounds of the THK Kofu Plant. We also developed our overseas business through technical tie-ups. There is much for us to learn, not only from a technical perspective but in the areas of corporate philosophy, developing human resources, and improving the work environment. I look forward to strengthening our relationship



 Induction hardening equipment at the YAMAGUCHI Plant

further, and, in doing so, increasing the quality of our *monotsukuri*.

For us, cooperation with THK is extremely important in regard to the development of new products and materials as well. With *monotsukuri* as our common theme, we will continue to strive jointly for higher quality and learn from each other. This, I hope, is how our win-win relationship will continue to develop.



Hajime Nitta President and CEO Neturen Heat Treat Co., Ltd.

THK employees are interested in everything and actively seek to achieve their goals and dreams. They provide our customers with innovative solutions and drive the company's development. We believe that THK's system, which is set up to support such positive attitudes, greatly contributes to good relations with our stakeholders.

Employee inventiveness

In fiscal 2007, 472 inventions were submitted under our "Employee Inventiveness" system, which actively solicits and rewards submissions of inventions by employees; 145 patent applications were filed.

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. 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 2007, the system's second year, 87 ideas were submitted, of which 6 were cited for commendation.

Voices of Prize Winners

Employees of our Hitachi Branch have been actively participating in the program under the leadership of Makoto Hosokawa, a senior staff member. In 2007, the branch submitted four proposals, of which two received awards. Branch employee Shigeki Okuma received an Outstanding Performance Award, and employee Hiroko Ishida also received a prize.

"The harder you search for an idea, the more you hit a blank wall. It's better to revise things you normally use, without giving them much thought. I focused on one thing, and the idea that it could be done by linear motion suddenly hit me."

"You can be sure that people are using THK products in their immediate environment. I don't want to sound like I'm boasting, but I'd like to continue to propose ideas that please our customers. I'd also like to actually produce the kind of fantastic products they use in science fiction movies and manga."



Makoto Hosokawa, Senior Staff, Sales Section (left) Hiroko Ishida, Sales Support Section (center) Shigeki Okuma, Sales Support Section (right)

Length-of-service awards

To help bolster employee morale, THK awards commendations to employees who have five years of continuous service with the company. In fiscal 2007, 616 employees received commendations and commemorative gifts.

Proposals for improvements

THK solicits "proposals for improvements" from employees to assist in efforts to improve and refine products, operational efficiency, quality, safety, and productivity. We value our employees' originality, ingenuity, and on-site perspectives. In fiscal 2007 alone, 8,772 proposals were submitted, extending a trend toward increased submissions for the third successive year.

Proposals range from ideas for improvements in machining equipment and production tools to suggestions for revising work processes to make them more environment-friendly and for managing delivery deadlines more efficiently.

All proposals are evaluated, and employees are awarded points for their submissions. An employee who accumulates enough points can win the THK Prize, which brings with it a trip overseas valued at 1 million yen. Since this system was inaugurated in 1978, more than 30 employees have won the prize; there were two winners in fiscal 2007. By continuing to promote this proposal system, we not only improve operations but also sharpen employees' day-to-day observation skills and inspire greater self-motivation.



Trends in number of improvement proposal submissions (2003 to 2007)

At THK, we have adopted various systems to provide our employees with a vibrant, more amenable working environment. This is because we believe that diverse ways of working are a trend of the times and that it is part of our corporate mission to support employees in making social contributions. At the same time, we are making a greater effort to create jobs for people with disabilities.

Volunteer leave and holiday systems

In December 2007, we established "volunteer leave and holiday regulations" to enable our employees to devote themselves to volunteer work for fixed periods of time or do company work and contribute to society at the same time, while maintaining their employee status. The leave system provides for a maximum three-year leave after at least three years of continuous employment. The holiday system provides for a maximum of six days of holiday time after at least one year of continuous employment. In both cases, the system is applicable to welfare activities of high social merit. The leave system was used for the first time in January 2008, when one of our employees joined the Japan Overseas Cooperation Volunteers to do volunteer work in Peru.

Child-care and family-care leave

In fiscal 2007, 47 employees (46 females and 1 male) availed themselves of our child-care leave system, but none of our employees made use of the family-care leave system.

Trends in employee use of the child-care leave system



Voices of a beneficiary of the volunteer leave system

Since my student days, I've been interested in developing countries and the children living in them. I took part in international cooperation projects while I was in university. After joining the company I was constantly wondering if there wasn't some way I could make an international contribution through my work. Then the volunteer leave and holiday systems were announced. It was a chance for me to pursue my personal goals while remaining an employee of THK. That's when I decided to join the Japan Overseas Cooperation Volunteers.

I'm now in my new post in Peru, after undergoing about two months of training. The difficult part of the training period was learning Spanish, but I kept on telling myself that if I tried harder I would achieve more, and somehow I made it.

Here in Peru I work in a care facility for disadvantaged children. I feel that affluence is a function of the number of choices you have, and I do work that I hope will expand the possibilities open to these children. I'm proud of being a THK employee and contributing to society a little bit at a time. I'm trying to make my two-year term here a meaningful experience.

Extending the retirement age

In keeping with the revision of the Senior Employment Opportunity Expansion Law, under which companies are obligated to gradually extend the retirement age to 65, we have introduced a plan to continue the employment of post-retirement-age workers. In the past, continued employment was subject to certain limitations, but these limitations were abolished in January 2008. Now any employee is eligible for continued post-retirement employment if the employee (1) wants to continue working after reaching the retirement age, (2) has at least a 90% attendance record over the last 5 years, and (3) has no serious health problems, based on his or her last medical checkup.

Hiring people with disabilities

Our plants are making various efforts to hire people with disabilities, including hiring mentally disabled people in cooperation with job coaches at regional care facilities.

We have implemented various measures to promote the employment of people with disabilities, such as installing handrails in the bathrooms in the Techno Center to provide easier access for workers who use wheelchairs.

Percentage of disabled employees

2005	2006	2007	
1.26%	1.21%	1.48%	
Minimum rate required by law: 1.80%			



Beneficiary of the volunteer leave system on assignment in Peru

Mariko Hayashi (top row, center) Member of Japan Overseas Cooperation Volunteers 2007, 4th Team Job: Youth activities Ever since the company was established, THK has sought to advance together with its employees, embracing the sentiment that "a company is its people." The term "human resources," used in this context, refers to human materials. If human resources stop growing, the company itself cannot achieve growth. We will, therefore, continue to create environments that help foster individual growth and strengths.

Language learning and cross-cultural training

As we have acquired more overseas locations, we have started offering language training to develop human resources well-suited to working in foreign countries and dealing with other cultures.

Employees assigned to overseas positions must undergo cross-cultural training to learn about the culture and customs of the country they are being posted to. In 2007, employees posted to France and China received training focusing on the cultures and customs of those countries. In addition, our branch in France offers training in differences between "French and Japanese cultures and business and management practices", to help French employees obtain a better understanding of Japanese culture. These activities have proven to be effective in facilitating communications between French and Japanese employees, promoting mutual understanding, and helping to prevent misunderstandings.

Number of language learners

	2006	2007	
English	81	91	
Chinese	3	5	
Korean	1	_	

Technology and production training

Our Sales Engineering Department holds monthly training classes designed for employees who have worked for the company for ten years or less. Depending on their level of knowledge, participants can enroll in either the beginner's course, which covers subjects such as basic machine elements, THK products, and the machinery industry, or the intermediate course, which is devoted to THK products.

In 2007, 227 employees attended the beginner's course



A classroom at the Chicago Branch

and 21 took the intermediate course to brush up on their knowledge. At our overseas locations, technical workshops are held once every six months to help the engineers improve their skills and acquire more knowledge about our products.

At the plant level, THK has added targeted education to a lineup that already included (1) stratified education (education for new employees, managers, and supervisors), (2) professional schools (which provide education to develop multi-skilled workers), (3) skills schools, and (4) self-development programs (which help prepare employees to take nationally administered skill tests, business career certification tests, and the like). All these programs are designed to enhance productivity, technical capabilities, and employee quality and performance, by enabling employees to acquire special skills, technology, and knowledge. Study sessions formerly run by individual departments have been consolidated within a companywide education system which all employees are entitled to attend. Course content is primarily decided by the employees in charge, who also choose the instructors. In this way, both the organizers and the participants have a chance to improve their skills. In 2007, courses covering 54 subjects were held and attended by a total of 1,200 employees.

KOFU Plant skills school

Our KOFU Plant has established a "skills school" for new employees, where they can prepare for in-house skill tests and acquire new skills. At the training site in Plant I, qualified group leaders and senior employees provide personalized, one-on-one training. The curriculum is adapted to each employee's experience to ensure that everyone gains technical proficiency at his or her own pace. Employees are taught how to use machine tools for cutting and other processes. We also try to impart the THK policy that says people-building is where *monotsukuri* begins.

Kuniharu Tanaka is a lecturer at the "skills school" and a veteran of over 40 years in his profession. He believes that master skills should be taught to as many people as possible, so he also teaches at educational institutions in Yamanashi Prefecture. "I pass along techniques and train younger people in grinding and cutting technology," he says, "which I think is especially important."



Direct instruction in the basics of machining Trainee: Tatsuya Koshiishi, Manufacturing Section I (left) Lecturer: Kuniharu Tanaka, Manufacturing Section II (right)

Ever since the company was first established and embraced the sentiment that "a company is its people," THK has been working to perfect a system aimed at ensuring safe and healthy working environments for its employees, the company's most precious resource. THK also organizes company trips and parties for employees, to provide them with opportunities to relax and get to know each other better.

Occupational health and safety

In order to protect employee health, THK requires employees to meet periodically with a company doctor to review their medical checkups and discuss other health-related issues. THK also has nurses stationed at the KOFU, YAMAGUCHI, and YAMAGATA Plants, who are available to provide employees with detailed health counseling. Some departments have established systems to protect employees from working too much, for example, by scheduling designated no-overtime days.

THK Headquarters systematically gathers information on industrial accidents that result in injuries to personnel. Based on this information, the company analyzes every industrial accident occurring in its plants and implements companywide measures to prevent such incidents from recurring.





Fire drills

A fire drill was conducted at THK Headquarters in February 2008. To raise awareness of the importance of disaster prevention, employees travelled the designated disasterescape route, a 15-minute walk leading to "Rinshi-no-mori Park", which is a regional evacuation site. Employees were also encouraged to experience a simulated earthquake in THK seismic isolation simulating vehicle, which was stationed along the way. Evacuation and fire drills were conducted in March at the Techno Center.

Amid the tense drama of a simulated earthquake, these drills were carried out successfully. THK is striving to instill greater awareness of the need for disaster prevention in all employees to ensure everyone's safety.

AED

We have installed Automated External Defibrillators (AEDs) in 23 locations, including affiliated companies, for use in the

event that an employee or a visitor suffers a sudden life-threatening cardiopulmonary arrest. Training in the operation of the devices has been offered at some business locations, and we plan to offer such training at every site, to ensure that as many employees as possible



AED training session at THK Headquarters

know how to handle such emergencies.

Company trips and parties

To create opportunities for employees to interact, THK organizes company trips and parties. The company is divided into ten different geographical areas for this purpose. Kanto area employees went on an overnight trip to Lake Shirakaba in Nagano Prefecture in October. It was a wonderful



chance for these employees to meet people with whom they usually communicate only by phone or e-mail.

Kanto area employees making soba on a company trip



YAMAGATA Plant employees visiting Universal Studios

In addition to the social contributions we make through our business activities, as a corporate citizen THK believes in the importance of coexisting amenably with local and regional communities. Each of our business locations makes an effort to participate actively in regional society, recognizing both the unique qualities of each region and our role as a corporate citizen.

Charitable contributions

THK makes donations and engages in fundraising activities at its various business locations.

In September 2007 our KOFU Plant registered as a member of the "Ringpull Reproduction Network", which collects pull tabs from beverage cans in order to exchange them for wheelchairs and other items. Since then, our business locations in Japan have been sending the pull tabs to the KOFU Plant.

In July 2007, THK NIIGATA donated funds for an environmental improvement project aimed at installing flush toilets in lavatories in a nearby community center and connecting the lavatories to the public sewage system. In return THK NIIGATA received a letter of appreciation from the local residents' association.

Donations collected at a summer festival organized by RHYTHM Corp. in July 2007 were directed to a trust fund for social welfare activities and for children of traffic victims. Profits from a crane game located in the THK corner at the festival were donated to the Mid-Niigata Prefecture Earthquake Fund.

PGM Ireland* cosponsored an Irish Youth Foundation children's hour. In 2007, employee volunteers donated an amount equivalent to at least 1 hour of their wages, and PGM Ireland matched the amount collected. The IYF as a whole collected donations totaling 150,000 euros (about ¥23 million) in fiscal 2007 to support disadvantaged children and sports activities.

* PGM Ireland: PGM Ballscrews Ireland Ltd., a production site in Ireland

Embracing an open society

THK strives to operate transparently and works to promote better understanding of the company and its operations.

In March 2008, our YAMAGUCHI Plant organized a meeting between local residents and the industrial estate association, and arranged plant tours. This event was very significant in that it provided an opportunity to sound out the local community with regard to environmental matters, including the discharge of treated wastewater and waste oil from the plant. In July 2007, the plant invited 22 PTA members and teachers from the Yamaguchi Minami Sogo special needs school to visit the plant, to encourage future employment and promote internship for the school's students. An intern from the school has been working at the plant since April 2008.

THK Manufacturing of America, Inc., has begun holding a Career Day. In 2007, more than 40 students visited the TMA plant, some of whom are now work at TMA after getting practical workplace experience during summer vacation.

THK employees receive training in occupational health and safety, as well as accident prevention; 23 employees are now qualified "first responders." Since 1999, we have been employing people with disabilities from local communities as temporary employees. These employees have been trained to do accurate and reliable assembly work, and they now form an important part of our workforce. These activities will be continued and expanded beyond our plants in the future.



PGM Ireland employees



Local residents working together with company employees

Involvement in society Together with local communities

Nationwide support for local communities

THK's business locations throughout Japan cooperate with the activities of The Japanese Red Cross Society. In April and August 2007 and January 2008, 195 employees from our KOFU Plant donated blood. In July 2007, the plant was cited by Minister of Health, Labour and Welfare, for its many years of support for blood drives.

The DAITO SEIKI SENDAI Plant has been engaged in fundraising for the Miyagi branch of The Japanese Red Cross Society since 1993. In December 2007, the plant was awarded a Silver Merit Award for this achievement.





Commendation awarded to the KOFU Plant for blood donations Silver Merit Award to the DAITO SEIKI SENDAI Plant

Participation in local events

THK engages in activities designed to promote harmonious coexistence with local communities.

Every year our GIFU Plant participates in the "Sekigahara Fureai 21 festival", a two-day event held in the town of Sekigahara, where the plant is located. The theme of the 2007 festival, held on October 20 and 21 was the Genpei War. This was an apt choice since the tomb of Tokiwa Gozen is located in the town. For the event, THK employees costumed as the historical figures "Ushiwakamaru", "Shizuka Gozen", and "Tokiwa Gozen", paraded along the streets near the festival venue.

RHYTHM Corp. held its annual RHYTHM Festival in July 2007. Although there were fewer visitors than in normal years because of rainy weather, around 1,500 people, mainly employees and their families and local residents, attended the festival.



Employees costumed as Tokiwa Gozen (left) and Shizuka Gozen (right)

Communication with local communities

THK develops its relationships with local communities along environmental lines.

Employees at our YAMAGATA Plant cleared weeds in July and October 2007 as part of a "Wagamachi-Gairojyu Satooya Seido Event" sponsored by the Industrial Estate Environmental Division. The project, an effort to improve the neighborhood streetscape, involved weeding areas around roadside trees to protect them and clearing the area of trash.

In April 2007, employees at our KOFU Plant began planting environmentally friendly kenaf plants, which absorb more than four times the amount of carbon dioxide that ordinary trees and shrubs do, on the factory grounds. In fall, when the plants had grown to a height of about 3 meters, employees and local elementary school students set about making kenaf paper at a traditional Japanese paper village in Nakatomi-cho, Minami Koma-gun. The kenaf plants were boiled to pulp in a sodium hydroxide solution. Some 300 coasters were made from the kenaf paper, of which 100 were donated to Maizuru Elementary School, which is located near the factory. The remaining coasters are used at the plant whenever drinks are served to visitors.



 Employees of the YAMAGATA Plant pulling weeds and cleaning up trash



Coasters made from kenaf paper

Harmony with the environment

03

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THK regards environmental conservation

as its duty and strives for business

activities that enable harmonious coexistence 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.

As a manufacturer of machine tools, THK has contributed to society and the economy through its pioneering development of "LM Guides" and "Linear Motion Systems". From an environmental perspective, by providing technology that converts sliding motion into rolling motion the company has helped to reduce environmental burdens by enabling its customers to save energy and space, reduce the use of lubricants, reduce noise, and reduce working hours. THK believes that a company has a social responsibility to protect the environment and leave it in good condition for the next generation. THK established its basic environment policy in 2001, and, in 2005, identified a set of areas and targets for environment efforts. In fiscal 2007, the company set new medium-term numerical targets for material conservation, zero emissions, and harmful substance controls, and is now taking concrete steps to achieve these targets.

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 a 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



THK is actively striving to introduce ISO 14001 at all of its production sites in Japan and overseas and continually promotes environmental management based on applicable standards. Our Risk Management Division leads the effort to set companywide environmental targets, oversees progress in this area, and ensures that the departments concerned cooperate in taking measures to make certain that the targets are met.

Environmental management system

To promote our companywide environmental measures, the Risk Management Division's Environmental Management Department, the Production Department, the Distribution Department, and the Corporate Strategy Division General Affairs Department hold regular environmental meetings to monitor the progress we have achieved in each environmental field, as well as to study ways to cope with any problems and challenges encountered by the departments when pursuing their environmental measures.

While each department proceeds according to our annual plan, information on the concrete details of these activities is shared at the environmental meetings in an effort to disseminate it to other locations as well and benefit environmental activities companywide. In fiscal 2005, THK set a mid-term target of reducing

Environmental meetings



CO₂ emissions per unit of output by 15% by 2010 relative to the 2005 level. In fiscal 2007 THK set midterm numerical targets for material conservation and zero emissions, seeking to achieve emissions of less than 0.5% by 2010, and also set a 3% annual target for chemicals subject to the PRTR Law.

To reach these numerical targets, we will improve information sharing, coordinate our activities, and translate these targets into concrete measures.

Field Fiscal 2008 targets Mid-term targets (by fiscal 2010) CO2 emissions basic unit to be reduced Reduction of CO₂ emissions basic unit by 15% by 9% relative to the 2005 level Standard value: 1.08 kg-CO₂/1,000 yen (relative to fiscal 2005) Reduction in absolute power consumption 1 kg-CO₂/1,000 yen CO₂ emissions basic unit Introduction of energy diagnoses and ESCO' (2) 1.3 Energy conservation (3) Introduction of clean energy 1.1 (4) Introduction of high-performance and 0.9 high-efficiency equipment 0.7 (cooling and heating machines, compressors, manufacturing equipment, lighting, etc.) Actual performance 0.5 2005 2006 2007 2008 2009 2010 - Target value Emissions rate to be reduced to less than 2%. Achievement of zero emissions (less than 0.5% of final waste disposal) Standard value: 4.7% (relative to fiscal 2006) Reduction of absolute amount of waste Reduction of general waste (%) Final waste disposa Material conservation 3 Increase of recycling rate 5% and ④ Increase of yield ratios 4% (reduction of reject percentage) zero emissions 3% (5) Reduction of wastewater discharge 2% 1% Actual performance 0% 2006 2007 2009 2008 2010 - Target value Amount of materials subject to PRTR Law to be Reduction of materials subject to PRTR Law (3%/year) reduced to 15,600 kg or less. Standard value: 16,664 kg (relative to fiscal 2006) Harmful Green procurement (kg) Materials subject to PRTR Law substance 17000 ② Green purchasing 16500 16000 controls ③ Cooperation with suppliers (promoting green 15500 15000 procurement) 14500 14000 Actual performance 13500 2008 2009 2010 2006 2007 Zarget value

THK's environmental targets

* ESCO: Energy Service Company; a business that provides comprehensive energy efficiency services, thus contributing to the protection of the environment

The data below was collected from THK's five plants in Japan, as well as from THK NIIGATA Co., Ltd. and DAITO SEIKI Co., Ltd.'s three production sites in fiscal 2007. THK began accumulating data on the cost of protecting the environment in fiscal 2007.



Cost of environmental protection

(Units: ¥ million/year)

Cost classification	Investment*	Expenditures**	Main measures
(1) Business areas			
Pollution control	5.6	19.4	Repair of oil storage facility
Environmental protection	391.7	55.7	Energy-efficient equipment (replacement of transformers), renovation of air-conditioning equipment
Resource recycling	17.0	125.0	Grinding sludge solidification equipment, expenditures for treatment of general and industrial waste
(2) Upstream/downstream cost	0.0	5.9	
(3) Control activities	0.0	155.6	Expenditures for environmental measurements
(4) R&D (including Development Dept.)	6.3	276.1	
(5) Social activities	0.0	0.4	
(6) Environmental clean-up	0.0	0.0	
Total	420.6	638.1	

* Investment: Funds spent on machinery and equipment whose effects will extend into the future beyond one year

** Expenditures: Funds expended on daily operations, including labor and other costs

The world's first LM Guides and Linear Motion Systems developed through THK's pioneering efforts not only help save energy but contribute to alleviating environmental impact in a variety of ways. THK embraces the basic concept of Cubic E in providing ever more environment-friendly products, such as the Caged Ball LM Guide.

LM Guides reduce power consumption by 90%

THK's Linear Motion Systems convert the linear-motion component of machine tools from conventional "sliding motion" to "rolling motion", which results in a 90% reduction of energy consumption. This means that, from an energy perspective alone, these components qualify as environment-friendly products. THK's plants operate many manufacturing machines which themselves incorporate THK products. Their power consumption is so low that the local power companies have started asking questions. Linear motion systems save energy and are environment-friendly in many other ways as well. For example, they reduce the amount of lubricant needed, greatly reduce the frequency of disassembly and reassembly, and simplify maintenance.

Sliding motion of a large-size surface grinder



Large-size grinder with sliding motion guide equipped with LM Guide

LM Guide vs. sliding motion guide

	Sliding motion guide	LM Guide	Effect
Table mass (transfer mass)	5,000kg	5,000kg	-
Hydraulic pressure	ф160×1.2МРа	ф65×0.7МРа	Diameter:60% less, pressure:42% less
Thrust	23,600N	2,270N	90% less
Motor	38.05kW	3.7kW	90% less
Power consumption	38kWH	3.7kWH	90% less
Hydraulic drive oil consumption	400 <i>l</i> /yr	250 <i>l</i> /yr	37% less

Cubic E

All THK products are created according to the "THK's Cubic E Concept" (E^3 : Cubic E), a development principle devoted to environmental protection (ecological), high added-value (economical), and durability (endless).

Ecological refers to protecting the environment, including eliminating contaminants, improving the working environment, and reducing waste. Economical refers to minimizing production cost and creating durable multifunctional products. Endless refers to improving the serviceability of products, extending operational life, and making them maintenance-free.

Caged Ball Products

The most important innovation that our Cubic E concept has produced is the Caged Ball Product series which includes the LM Guide, Ball Screw, and Ball Spline. The addition of a cage to conventional ball-type products has helped us meet the demands of the times by further increasing the efficiency of our products, making them more environment-friendly, improving performance, reducing cost, and reducing the need for maintenance. "The balls (internal rolling elements) are retained and guided by a cage (retainer), in which the balls circulate in a spinning motion." While this may sound easy, the development of our Caged Ball Products entailed a 10-year-long process of trial and error.



THK addresses energy conservation and the reduction of greenhouse gases by making improvements on multiple levels. These include introducing energy conservation equipment, changing over to alternative fuels, and implementing the company's TAP II Project. These measures were implemented in fiscal 2007, but due to a variety of factors, including increased demand and the startup of new production plants, overall greenhouse gas emissions increased.

Reducing CO2 emissions

THK uses energy in various machining processes, including cutting, grinding, heat treatment, and operation of air compressors, as well as for air-conditioning, lighting, and other purposes. To reduce our CO₂ emissions, we have comprehensive power-saving measures in place and are making the utmost effort to reduce the power consumption of our equipment.

Our mid- and long-term energy conservation objectives are (1) energy diagnoses (to analyze energy consumption in buildings, mechanical drives, air conditioning, lighting, compressors, etc.); (2) energy conservation (concrete measures based on the results of energy diagnoses); and (3) increased use of natural gas, solar power, and other clean energy technologies. Through these measures, we intend to reduce CO₂ basic unit emissions (kg-CO₂/ ¥1,000 of output) by 15% by 2010, compared to our fiscal 2005 level.

Our efforts in fiscal 2007 were geared toward updating our equipment to achieve higher productivity and efficiency through various improvements, which included switching to energy conservation heat and cooling systems, installing inverter-type lighting fixtures, fractionalizing switching times of light switches, centralizing compressors, and initiating TAP II activities. Power consumption increased, however, at our YAMAGATA Plant's Unit III, the THK NIIGATA Plant III, and other production sites, and the hot summer caused an increase in power consumed by air-conditioning systems. As a result, we recorded CO₂ emissions of 90,289 tons (7,132 tons more than the previous year), and CO2 basic unit emissions of 1.12 (an 8.5% increase over the previous year). Although the energy consumption situation deteriorated in fiscal 2007, we will continue to strive to reach our 2010 taraets.

Reducing CO₂ emissions



Changing energy consumption

Energy sources used at THK include electricity purchased from power companies, heavy fuel oil (Bunker A), petroleum fuels such as propane gas, and liquid natural gas. Over the last few years, we have been trying to cut back our use of heavy fuel oil and use more purchased electricity instead, to curb CO₂ emissions as much as possible. Cutting back on our use of heavy fuel oil will also help lower NO_x and SO_x emissions.

Energy consumption breakdown



Practicing energy conservation

In our quest for higher productivity, the "3M rule" plays an important role. This rule sets forth three Japanese concepts to keep in mind in order to prevent waste: muri (excess), muda (waste), and mura (lack of consistency). The "5S rule", meanwhile, offers positive concepts: seiri (order), seiton (tidiness), seiketsu (cleanliness), seiso (cleaning up), and shitsuke (discipline). People at THK have been following these rules since our company was founded. Every employee faithfully observes these rules, which apply to a wide range of activities. Local employees at TMA voluntarily work on implementing proposal for improvements and practicing the 5S rule. Energy conservation means making an effort to cut back on power consumption in day-to-day operations, for example, by turning the lights off more frequently and adjusting thermostats to the proper temperature. Through

such people-based measures, we have been able to reduce power consump-tion by 2 to 5%.



TMA's improvements bulletin board

Energy-saving technology for furnace equipment

THK is gradually shifting from conventional carburizing furnaces using methane or propane gas to "vacuum carburizing furnaces," which use only roughly half the amount of energy and emit hardly any CO₂.

The old carburizing furnaces had drawbacks in that they generated and accumulated soot, which made them maintenance-intensive. In vacuum carburizing furnaces, the quenching takes place in a hermetically sealed vessel, so no smoke or flames are generated.

Our adoption of vacuum carburizing furnaces has yielded many benefits, even beyond environmental aspects. In addition to energy conservation and reducing CO₂ emissions, we have been able to (1) shorten

treatment times, (2) increase product quality, (3) improve working conditions, and (4) increase safety.

As of March 2008, we have a total of 17 vacuum carburizing furnaces in operation at our production locations in Japan and overseas.



Vacuum carburizing furnace at the YAMAGUCHI Plant

Energy-saving lighting fixtures

At THK NIIGATA, over the past five years power consumption has increased about 30% per year due to building expansion and installation of additional production equipment and ancillary facilities. In an effort to reduce power consumption, the plant has begun replacing its 400-Watt mercury-vapor lights with new 360-Watt eco-type lights, without any loss of illumination on the shop floor.

At present, 66 out of 120 mercury-vapor lights have been replaced. This has reduced annual power consumption by roughly 10,500 kWh, which corresponds to approximately 5.8 tons of CO₂.



Newly installed mercury-vapor lamps

Efforts at the KOFU Plant

At all of THK's plants, a broad range of improvement activities have been underway, including TAP II. These activities are extremely relevant from an environmental perspective. People often say that you can't expect results unless everyone changes their attitudes. For example, efforts in our day-to-day lives, like not throwing things away, don't come overnight.

Fortunately, the idea of taking good care of things has been deeply rooted in our employees ever since the plant was founded. Our Environmental Management Section regularly instructs employees in environmental management, but for this education to achieve any practical results, I think it has to be founded on a willingness to make improvements. Machines and equipment are replaced year after year with more energy-efficient equipment, but the environmental performance of the equipment depends to a large extent on how we use them.

At our KOFU Plant, we engage in companywide environmental efforts addressing the four main themes: (1) energy conservation, (2) material conservation and zero emissions, (3) harmful substance controls, and (4) environment-friendly products and services. To effectively carry out these activities, each of us must follow the established rules, and all of us have to fulfill our duties responsibly. I believe that environmental activities, like manufacturing activities, are an accumulation of day-to-day efforts. We are told to increase our environmental performance through all sorts of activities, but I would like to continue working toward achieving our targets by steadily sticking to the basics.



Toshiya Kamino Manager Environment Education Section KOFU Plant



At the KOFU Plant, used cooking oil discarded by employees' families is collected in a salvage depot, cleaned, and used as fuel for diesel forklifts. THK conducts a variety of activities designed to increase yield ratios for raw materials, decrease the amount of waste generated, and promote recycling via thorough separation of waste. In addition, we are continuing to work to achieve zero emissions by 2010.

Zero emissions

THK pursues zero emissions* in three ways: (1) managing our input of raw materials, parts, and subsidiary materials; (2) managing emissions and waste for permanent disposal; and (3) encouraging reuse and recycling. While minimizing waste generation, we also rigorously separate and recycle the waste materials we do generate.

The principal materials used in THK products are metals, mainly steel. We are making an ongoing effort to improve the rail-cutting yield for "LM Guides" and the machining yield for "Ball Screw" shafts and nuts. In keeping with THK's just-in-time production system, which provides the "necessary materials at the right time and in the right quantity", the company minimizes waste by rigorously managing purchasing quantities and timing, while continually improving the process in various ways.

We also strive to reuse waste materials generated in our business activities, including scrap metal, waste oil, waste fluids, grinding sludge, packing materials, and plastic waste. Our recycling rate has increased from year to year. Depending on the material and content, waste materials are put to several uses. Metal waste is used as a raw material in steelmaking. Sludge containing grindstone powder is used as a raw material for cement. Waste oil is used as a fuel, and plastic waste and waste impregnated with oil are used in the manufacture of iron.

The amount of waste generated in fiscal 2007 rose by

Waste recycling methods







1,000 tons compared to the preceding year, but thanks to increased recycling, we achieved an emission rate (final waste disposal/total amount of waste generation) of 3.9%, which was 0.8% lower than that for the preceding year—an 18% improvement. Our plan for fiscal 2010 is to achieve emission rates of less than 0.5% for the entire THK Group.

* Zero emissions: A model system for circulating resources, in which waste matter is used as a resource, leaving no waste whatsoever.

Trends in waste generation



Our commitment to recycling

To increase our waste recycling rates, we must first determine how waste can ultimately be put to use and then thoroughly separate it accordingly. THK has established rules for separating industrial waste and ordinary waste into a maximum of 35 categories. Putting these strict separation rules into practice requires each employee to be properly aware of our responsibility to protect the environment. THK promotes recycling by providing employees with environmental education, to reinforce the importance of separating waste and recycling. We do this in various ways. For example, we use charts with simple photos depicting different types of plastic waste, which can be difficult to classify.



Charts with photos make sorting easier at the MIE Plant.

In May 2007, our YAMAGUCHI Plant introduced waterlubricated oil-free compressors. While conventional compressors are oil-lubricated and generate waste oil that has to be treated, the water-lubricated compressor is manufactured to environment-friendly specifications, using purified water that can be sent directly to a wastewater treatment facility. The water-lubricated compressor is also designed with machine-friendly features, such as low discharge temperature, low speed



capability, and low operating noise. It has fewer parts that need replacement and therefore is less susceptible to breakdowns, for stable long-term operation.

Water-lubricated compressor at the YAMAGUCHI Plant

Recycling cutting tools

THK NIIGATA used to regrind used drills, end mills, and other cutting tools for reuse, and after reuse discard them as scrap metal for use as construction materials, among other things. In fiscal 2007, THK NIIGATA changed to a system of circulating resources, which calls for used cutting tools to be reused as raw material for manufacturing cutting tools.

The raw materials for cutting tools, such as cemented carbide, contain rare metals such as "tungsten". Thermit tools contain "titanium" and other rare metals. In fiscal 2007, the plant recovered roughly 25 kg of rare metals from cemented carbide and 34 kg from Thermit tools, for use as recycled materials.



Separation of used tools by impurity content

Grinding sludge solidification

Following the example set by our YAMAGUCHI and YAMAGATA Plants, our KOFU Plant introduced solidification equipment for grinding water-soluble and oily grinding sludge in fiscal 2007. In the past, sludge generated in grinding processes was reused in road construction, as part of the base material laid below the road surface. By mixing the sludge with waste from cutting processes and turning it into briquettes, we succeeded in recycling it as a raw material for steel products. At the KOFU Plant, this helped improve the environment in the manufacturing area and led to stepped-up efforts to maintain the 5S rules.





Sludge solidification equipment at the KOFU Plant

Solidified sludge at the KOFU Plant

Recycling lights

Our YAMAGATA Plant has arranged for old fluorescent lights and other lights to be picked up and replaced so that the resources contained in the lights can be recycled for use at the plant. A contractor sorts the lights by content according to strict recycling rules. This enables the plant to reclaim its resources, and optimum treatment has resulted in zero emissions. A system has also been developed to reuse glass to manufacture new fluorescent lights.



Recycled fluorescent lights and other lights

THK promotes green purchasing along its entire supply chain. We ask our suppliers to provide services according to the principle of optimal Quality, Cost, and Delivery, to which we now have added Environment-friendliness. We want to further improve supplier cooperation in environmental matters to create a mutually beneficial relationships for environmental quality system.

Green purchasing

THK classifies chemical substances capable of having an adverse impact on human health or ecosystems as environmentally hazardous substances. Products that do not contain the 16 prohibited substances listed in the table or contain less than the acceptable level specified in "THK's Green Purchasing* Guidelines" are considered "green products."

In fiscal 2004, THK published two sets of standards, the "Green Purchasing Guidelines" and "THK Group Chemical Substances Standards List." The company also began requiring cooperating companies to be analyzed and surveyed concerning substances contained in their products, and asked each cooperating company to introduce an environmental management system. In this way we have succeeded in replacing hazardous substances such as lead, hexavalent chromium, and cadmium. As of April 2006, virtually 100% of our standard products are green products.

Based on information gathered in connection with green purchasing, THK has compiled a controlled substances database, on which is used to help us respond to customer inquiries.

* Green purchasing: Preferential purchasing of raw materials that have minimal environmental impact from suppliers who strive to reduce environmental burdens

Substances prohibited by THK

Substance
Polychlorinated biphenyl (PCB)
Polychlorinated terphenyls (PCT)
Polychlorinated naphthaline (PCN)
Chlorinated paraffin (CP)
BIS (tributyltin) oxide (TBTO)
Tributyle tins (TBT)
Triphenyl tins (TPT)
Asbestos
Azo compounds
2,4,6-tri-tertial-butyl-phenol
** Cadmium or cadmium compounds
** Lead or lead compounds
** Mercury or mercury compounds
** Hexavalent chromium compounds
** Polybrominated biphenyls (PBB)
** Polybrominated biphenyl ethers (PBDE)

** Complies with the RoHS directive on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Coordination with customers and cooperating companies



Commitment to the PRTR Law

THK's production processes consist for the most part of cutting and grinding and generally do not involve the use of chemical substances. Protecting the environment, however, entails not only reducing and managing the chemical substances contained in products but also substances used in work processes. We strictly follow the regulations for managing substances designated by the PRTR Law^{***}, and accurately monitor the amounts handled and emitted. In fiscal 2007, a mid-term target was set for reducing substances subject to the PRTR Law (see page 29). The present value is set at 3% annually, but we are considering a complete phase-out in the future.

Currently, the only substances requiring notification under the law are xylene and toluene, which are contained in the gasoline and diesel fuel used to power forklifts and other in-plant transport equipment. We are gradually switching to battery-operated forklifts. Substances subject to the PRTR Law are also used in negligible amounts in some of our air-conditioning equipment and in fluids used in grinding processes. We are currently working to reduce these amounts further.

*** PRTR Law: Law promoting better management and understanding of environmental emissions of designated chemical substances.

Substances subject to the PRTR Law

Туре	Amount handled	Amount emitted into the atmosphere
Xylene	5,845kg	50kg
Toluene	5,865kg	149kg
Ethyl benzene	1,337kg	26kg
Benzene	1,012kg	55kg

THK not only implements environmental measures in product development and production processes, we have also started targeting distribution processes. In an effort to use less energy and reduce CO₂ emissions during transport, we are working on streamlining our entire distribution process through measures such as modal shifts and increased loading ratios.

Green distribution

To reduce environmental impact across the entire field of distribution, our Distribution Department, based in product centers throughout Japan, is currently developing "Green Distribution Guidelines". In fiscal 2006, a mid-term plan was drawn up, and measures are being taken to accurately calculate improvements in freight ton-kilometers* and total energy used.

Our basic green distribution policy is directed at reducing CO₂ emissions and increasing transport efficiency. We are currently working on five initiatives:

- 1. Introducing an environmental management system for the Distribution Department;
- Promoting activities conducive to a healthy environment by
 proposing modal shifts** and
 - centralizing cargo trucks;
- 3. Promoting low-emission vehicles by
 - using low-emission company vehicles and
 - using low-emission forklifts and other equipment;
- 4. Undertaking activities to reduce environmental impact by setting up a system to cooperate with forwarders to improve transport efficiency, by
 - reducing CO₂ emissions,
 - taking measures to increase transport efficiency,
 - improving the loading ratios, and
 - promoting eco-driving habits; and
- 5. Recycling and lightening packing materials.

As a result of these measures, energy consumption in transport operations in fiscal 2007 decreased from the preceding year by the equivalent of 157 kiloliters of crude oil, and CO₂ emissions decreased by 408 tons of CO₂, or approximately 8%.

- * Ton-kilometer: Unit used to express amounts of cargo transported; one ton of freight transported one kilometer equals one ton-kilometer.
- ** Modal shift: A transition from transport by truck to transport by sea and rail, to permit shipping in bulk and reduce CO₂ emissions

Trends in transport-related CO₂ emissions and specific energy consumption for THK alone



THK Distribution Department environmental management system



Utilization of post pallets

THK has been using post pallets* as a means of increasing the loading ratio during transport. This has enabled us to utilize loading space more efficiently by double-stacking cargo and has resulted in a roughly 1.5 times higher loading ratio. This enables us to fill the available space with other cargo, sparing us the use of an average of three trucks a month, which in turn results reductions in CO₂ emissions of around 5.48 tons a month.

At the same time, we are striving to reduce our impact on the environment by shifting to larger transport vehicles. Where we used to use two 10-ton trucks for deliveries, for example, often we now use one trailer truck. We would like to continue to expand this system as much as possible in cooperation and consultation with our customers.

* Post pallet: A stackable pallet fitted with posts between the

decks or beneath the top deck to keep cargo from falling over

ODuble-stacked post pallets

Third-party opinion

I have read the *THK CSR Report* in detail and feel that it is a straightforward presentation that is easy to understand. Let me give you my impressions on three points that were taken up in the report.

First, Mr. Shirai, the Director in charge of CSR, notes that "CSR should not be seen in terms of expenditure, but as an investment." I am convinced that, as long as this basic principle is maintained, THK's CSR activities will take on more and more significance. The return on investment is not something that can be assessed by simply looking at a sales figure. Shareholders, for example, should be made to understand that there are other returns that are difficult to express in numerical terms, such as a company's image as perceived by the public, and these are also important.

Second, the diagram under "Environmental impact: The big picture," which illustrates environmental input and output, with THK in the center, left a strong impression on me. I think this illustration perfectly sums up THK's environmental measures. I note, however, that the illustration mentions only five plants and four production sites in Japan, which makes me wonder about THK's overseas locations. The figures given for sales, total amount of waste generated, and CO₂ emissions have to be accepted for what they are. It makes one want to know, though, how they compare with the situation at other companies within the same industrial sector and with producers in general, both in Japan and abroad. An explanation of how this ties in with the numerical environmental targets on the preceding page might also make the presentation easier to understand and even more persuasive.

Third, this report is too valuable to be shared solely with THK's direct stakeholders. My own area of expertise, strategic system engineering, is a technological field that eschews a "can't see the forest for the trees" approach in favor of seeing both the trees and the forest. You cannot put together a composite system unless you understand the technology of each component; the notion that management is all that counts is a misconception. Starting out from complex boundary friction, which is sometimes said to be the devil's work, THK set about developing products that make maximum use of rolling friction and succeeded. This simple but tricky subject is not exactly popular in today's academic and research circles. The declining numbers of interested faculty members and students, as well as researchers, presents a serious problem.

I think the true significance of CSR lies in making excellent reports like this one available to the whole world, in order to appeal to talented young people everywhere to return to the roots of *monotsukuri*.



Professor **Yoshiaki Ohkami**, Ph. D. Graduate School of System Design and Management, Keio University

Born in 1939. In 1963, Professor Ohkami earned his master's degree from the Department of Applied Physics (Instrumentation and Control Engineering), Faculty of Science and Engineering I, Waseda University. In 1968, he completed his doctoral degree at the Division of Science and Engineering, Graduate School of Science and Engineering, Tokyo Institute of Technology. He then joined the National Aerospace Laboratory of Japan's Science and Technology Agency. In 1974, he went to the University of California, Los Angeles, as a visiting researcher, where he became a NASA International Fellow. In 1992, he became a professor (Space Engineering) in the Department of Mechano-Aerospace Engineering, Graduate School of Mechanical Engineering, Tokyo Institute of Technology. In 1999, he became a special advisor and technical commissioner to the Japan Aerospace Exploration Agency. In 2000, he became a professor at the Graduate School of System Design and Management, Keio University. He assumed his current position in 2008.

He presented prize-winning papers to the Society of Instrument and Control Engineers in 1970 and 1980. In 1981, he was awarded the Technical Achievement Prize by Japan's Ministry of Science and Technology. He has also submitted a prize-winning paper to the Japan Society of Mechanical Engineers. In 1997, he was made a JSME Fellow at the Society's 100th anniversary celebration. In 1999, he was awarded a prize by the JSME Space Engineering Division in recognition of his services. In 2000, he received the John Breakwell Memorial Lecture Medal from the American Institute of Aeronautics and Astronautics.

Postscript

This concludes the *THK CSR Report 2008/2009*, our second report so far. Amid mounting public interest in CSR reports, we have introduced a feature section on the pursuit of CSR through our core business and have tried to explain THK's corporate governance and compliance systems, as well as our efforts to develop environment-friendly products and alleviate global warming.

We have also made an effort to present the voices and opinions of a greater number of people affiliated with THK, including THK employees. We hope this conveys to our stakeholders aspects of THK that we usually do not have a chance to show. We hope you feel that reading this report was worthwhile.

We will continue our group-wide efforts to further enhance our reports by drawing on the resources of our newly established CSR Project secretariat.

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

CSR Report Project secretariat (Next scheduled publication: December 2009)

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