



*Our Precision, Your Advantage*

# 2011

## Environmental/Social Report

2010.4 ~ 2011.3



# Company Overview

**Company Name:** KYB Corporation  
 (official corporate name: Kayaba Industry Co., Ltd.)  
**Founded:** Kayaba Research Center, November 19, 1919  
**Established:** Kayaba Manufacturing Co., Ltd. March 10, 1935  
**Incorporated:** November 25, 1948  
**Head Office:** World Trade Center Bldg., 2-4-1, Hamamatsu-cho, Minato-ku,  
 Tokyo 105-6111, Japan  
**Chief Representative:** President Masao Usui  
**Capital:** ¥19,113,680,000 (As of March 31, 2011)  
**Plants:** Sagami, Kumagaya, Gifu North, Gifu South  
**Laboratories:** Basic Technology R&D Center, Products Technology  
 R&D Center



## Affiliated company production bases

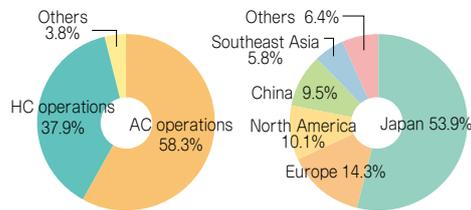
### Japan

Kayaba System Machinery Co., Ltd.  
 KYB Kanayama Co., Ltd.  
 KYB-YS Co., Ltd.  
 KYB Cadac Co., Ltd.  
 KYB Trondule Co., Ltd.  
 TAKAKO Industries, Inc.

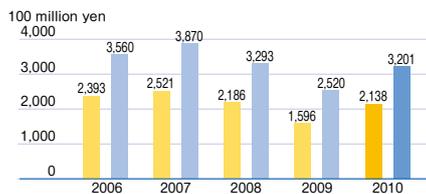
### Overseas

KYB Manufacturing Czech, s.r.o.  
 KYB Suspensions Europe, S.A.  
 KYB Steering Spain, S.A.  
 KYB Advanced Manufacturing Spain, S.A.  
 KYB Industrial Machinery (Zhenjiang) Ltd.  
 KYB Hydraulics Industry (Zhenjiang) Ltd.  
 Wuxi KYB Top Absorber Co., Ltd.  
 Changzhou KYB Leadrun Vibration Reduction Technology Co., Ltd.  
 KYB Manufacturing Taiwan Co., Ltd.  
 KYB (Thailand) Co., Ltd.  
 KYB Steering (Thailand) Co., Ltd.  
 KYB Manufacturing Vietnam Co., Ltd.  
 TAKAKO Vietnam Co., Ltd.  
 KYB-UMW Malaysia Sdn. Bhd.  
 KYB-UMW Steering Malaysia Sdn. Bhd.  
 P.T.Kayaba Indonesia  
 KYB Manufacturing North America, Inc.  
 TSW Products Co., Inc.  
 KYB-Mando do Brasil Fabricante de Autopeças S.A.

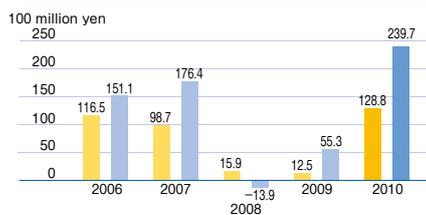
**Sales by Product** (Fiscal 2010) [Consolidated]      **Overseas Sales** (Fiscal 2010) [Consolidated]



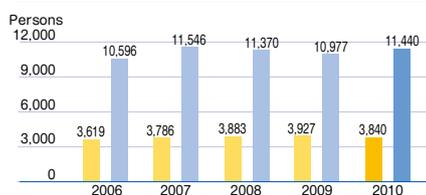
**Shift in Sales** (100 million yen)



**Shift in Working Profit** (100 million yen)



**Shift in Employees**



## Major Products

Segment		Main products
Reporting segment	AC operations	Shock absorbers, suspension systems, power steering systems, Vane pumps, front forks, oil-cushion units, stay dampers, free locks
	HC operations	Cylinders, valves, oil dampers for railroad, collision bumpers, pumps, motors, aircraft landing systems, aircraft pilot systems, aircraft control systems, aircraft emergency systems.
Others	Special-purpose vehicles and other products	Concrete mixer trucks, granule carriers, special-purpose vehicles, simulators, hydraulic systems, stage mechanisms, marine equipment, tunnel boring machines, environmental devices, Earthquake-resistant and vibration insulation dampers, electronic control systems

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# To Our Stakeholders

**The KYB Group promises to promote the creation of products and plants that are kind to earth and human kind, and contribute to the advancement of society by deepening partnership with our stakeholders through environmental preservation and social contribution activities.**



Masao Usui,  
President

A handwritten signature in black ink that reads "Masao Usui". The signature is written in a cursive, flowing style.

I would like to express my condolences to the victims of the Tohoku earthquake and tsunami that struck on March 11, 2011 and their families. My respect also goes to those making efforts in the restoration. For those reading this report, please allow me to make my greetings for this fiscal 2010 year by first taking this opportunity to thank everyone for their continuous support and patronage.

The chaos of the world's economy triggered by the financial crisis of 2008 has also impacted heavily the companies of the KYB Group. To cope with this, the KYB Group has promoted activities toward reduction of product raw cost and reformed its business structure including group reform. As a result, we are on the road to building a structure that is stronger than ever. In addition, we were able to maintain profit for fiscal 2010, thanks to the recovery of the economy in Asian countries centering on China.

However, the impact of the Tohoku earthquake, tsunami and nuclear power accidents have caused enormous damage nationwide. Many of our customers and suppliers were affected and despite our fullest efforts as the KYB Group for the restoration, much time will be needed in the recovery. At the same time, we are now entering summer and handling towards the suppression on the use of power is inevitable.

Hence, we will refresh our state of minds towards energy saving for 2011 and on, and will continue to promote global operations to answer the demands of customers while making further efforts to strengthen our organization through continuous improvements. Coincidentally, fiscal 2011 marks the first year of our new mid-term plan. We will start the mid-term plan that ends in fiscal 2013 by envisioning the ideal state 10 years from now, or 2020.

And in fiscal 2011, we will further strengthen the power of the KYB Group to better answer the needs of our customers.

As an enterprise providing strength and comfort, the KYB Group will aggressively promote the following for the prevention of global warming, marking environmental preservation activities as an important index of assessing management, to create products that are kind to the earth and humankind so that people around the globe may live fuller lives:

- Reduction of CO<sub>2</sub> emissions
- Energy saving
- 3R (Reduce, Reuse and Recycle)

For research and development, we will focus mainly on the reduction of environmental impact and will promote the development of products that aims at lighter weight, resource saving, safety and energy saving. Some of these environmentally friendly products include:

- Hydraulic systems such as conveyors, etc.
- KYB original hybrid (assist regenerative) systems
- Use of biodegradable oils for shock absorbers

At the manufacturing sites, we are implementing activities to shorten lead time to realize both high-efficiency production and reduction of environmental impact, and promoting use of recyclable energy, etc. Such examples include:

- "Electricity regeneration" of rotational deceleration energy of shipment inspection devices and prototype tolerance test devices used on mass production lines
- "Use of recyclable energy" such as installation of PV generators and use of biofuel in commuter buses, etc.
- "Installation of energy-saving devices" such as inverter-type/high-efficiency fluorescent lighting, heat-pump air-conditioners, etc.

Furthermore, our goal does not end at only energy

saving but extends to industrial wastes, aiming at 65% reduction of final disposals compared to 2000 by 2015.

In this age where social responsibilities of enterprises are becoming more critical, the KYB Group will also engage actively in social contribution activities for local communities as a good corporate citizen with full compliance, improved internal control system and corporate governance, and prompt disclosure of information as our primary responsibilities. Activities include:

- Contribution of solar projectors to disaster sites
  - Participation in clean-up activities at Kanigawa of Gifu and Sagamigawa of Kanagawa
  - Provision of chair skis in support of the Paralympics
- Due to the increase in social demands for environ-

mental problems and the viewpoint of raw-cost reduction activities, the KYB Group launched the Energy Saving Plant in October 2009. The Committee appoints approximately 15 persons per plant consisting of personnel related to production and facilities with the General Manager of each plant as the leader to engage in energy-saving measures for production facilities, air-conditioning units, pneumatic systems, etc. As an example of activities performed in fiscal 2010, we were able to cut down about 90 tons of CO<sub>2</sub> by suppressing air leaks that occur in pneumatic systems.

I hope this report gives some insight concerning KYB Group's activities toward environment and society for continuous support by our many stakeholders.

## The Group will work as one for implementing the new mid-term environmental plan



**Ken Mizumukai**,  
Managing Director  
Executive Officer for Environment  
& Safety

*Ken Mizumukai*

My condolences extend to the victims of the Tohoku earthquake and tsunami and their families and I pray for the earliest recovery as possible.

As a good corporate citizen, the KYB Group is making continuous efforts to maintain the trust and satisfaction of our customers and society by developing products and technologies that are environmentally friendly and providing products of high quality.

With regards to environment preservation, we have implemented various activities from the viewpoints of reducing greenhouse effect gases, resources and environment, and substances that impact the environment.

Although we were able to achieve almost all of the environmental target values, there is still the need to increase the speed of our activities.

For the mid-term plan starting from fiscal 2011, we will be carrying forward with a global viewpoint that includes overseas production sites while marking reduction of greenhouse effect gases and wastes as top-priority issues.

I feel that the activities for cutting back on used energy has been firmly rooted in each and every employee through the Energy Saving Plant Committee that took off fully in Japan starting the last fiscal

year.

During this fiscal year, we will strengthen these activities to expand domestic improvement examples such as "zero standby energy" and "energy-saving device installations" at overseas sites.

For product development and production methods, we will manufacture products with giving consideration to the biodiversity and promote the use of sustainable energy and the 3R for wastes to prevent in advance impact on the environment.

Concerning the society, we will reinforce disaster measures at KYB Group with the Tohoku earthquake and tsunami as well as the water disaster in Kani, Gifu as lessons, and strengthen our partnership with the local community through disaster site support and local joint emergency drills.

We will continue to maintain the safety of our employees by reinforcing earthquake resistance of buildings and further fulfilling safety education through the "Safety Experience Dojo" to create a workplace so that their families can feel at ease.

Lastly, I would like to thank everyone for holding interest in this report. We will continue to make efforts to enrich and improve the contents in the future. Your suggestions and comments are greatly appreciated.

# Close-up

2010 KYB Activity Close-up



## Machines Driven by Water

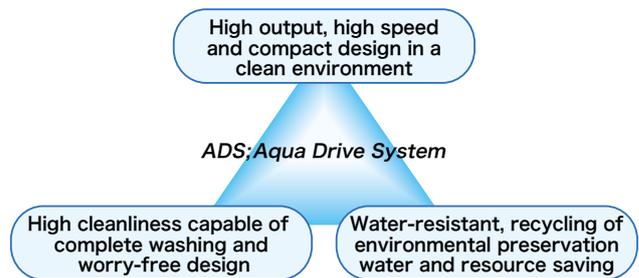
The Aqua Drive System (ADS) is a new fluid control technology utilizing tap water as operating fluid. The system is very clean and environmentally friendly, and realizes high output features and controllability that are the characteristics of fluid pressure. The application of this technology is being highly expected as the fourth new drive system in addition to the past drive systems of hydraulic, pneumatic and electric systems.

The application of ADS can be expected in such markets as foods, medical treatment/medicine, cosmetics, chemicals and semiconductors, which all require production processes in an environment that is safe, sanitary and clean. Amongst such efforts, we jointly worked with a food-processing machinery manufacture to create a completely water-driven slicer for thinly cutting ham into certain thicknesses. As a result we constructed a new system with a never-before-seen added value of being able to completely wash the device while realizing the same slicing performance as conventional machines.

In other related matters, we have been actively participating in survey research operations by partnering with the industry, academy and government to effectively apply ADS in exhaust heat of generation plants, etc. from the viewpoint of energy saving and environmental friendliness.

When using water as the operating fluid, measures for wear, friction and rust due to the low lubricating

properties become major development issues. In order to solve these issues, we are conducting research and development on the performance and tolerance of main ADS devices up to a practical level for pumps, motor servo valves, etc. by adding our unique know-how from various viewpoints including structure and materials based on the hydraulic technology that is the core technology of KYB.



### ADS meat slicer

※ Jointly developed with Watabe Foodmach Co., Ltd. in the R&D operations of the Japan Meat Technology Institute based on the subsidy operations of the Agriculture & Livestock Industries Corporation



## Protecting the Tokyo Sky Tree with the Oil-damper Vibration Damping System

While high-rise building technologies advance in this country of Japan known to be the great nation of earthquakes, the livability and safety of building are being questioned and reviewed once again. In addition, the experience of Tohoku Earthquake, which was one of the most powerful earthquakes in the world, will likely cause further attention on earthquake resistance technologies including oil dampers. We will continue to improve earthquake resistance technologies to protect the lives and safety of people.



**Yoshifumi Hibako**  
Engineering Dept. Engineering Headquarters,  
Kayaba System Machinery Co., Ltd.



# KYB Group Corporate Spirit

Based on the corporate spirit, we aim to become a corporate group that gains the satisfaction of our stakeholders.

## Corporate Spirit

By serving technologies and products that make people's lives safe and comfortable, KYB group dedicates to the society.

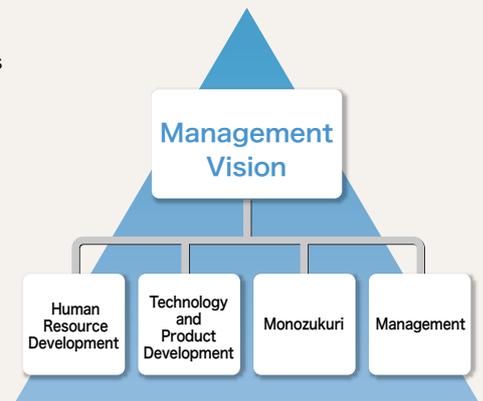
1. We shall build a corporate culture full of vitality, and hold high goals.
2. We shall value sincerity, cherish nature, care for the environment.
3. We shall constantly pursue creativity, contribute to the prosperity of customers, shareholders, suppliers and society.

Relationship between KYB Group and stakeholders

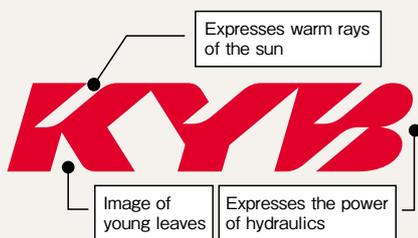


## Management Vision

1. **Human Resource Development**  
To develop human resources who have a thorough understanding of our policies and strategies and can accomplish our goals with passion.
2. **Technology and Product Development**  
To provide products that gain the admiration, comfort and full satisfaction from our customers throughout the world.
3. **Monozukuri (Japanese manufacturing expertise)**  
To operate plants filled with the creative inspiration of committed Monozukuri, energy and joy of creating products that satisfy our customers.
4. **Management**  
To be always self-aware of our corporate social responsibilities and to pursue efficient group management.



## KYB Corporate Symbol and Brand Statement



### The meaning behind the logo

The characters express comforting rays of sun, calm growth of plants and flexible handling in the winds of change. The design of the letter "B" symbolizes fluid pressure and the use of italics adds a sense of speed, innovation, growth and reform.

### Color

The color "red" symbolizes love, passion and enthusiasm, portraying an image of the sun's warmth, heat and power to create life opening a new generation. We refer to this color as the "KYB Red".

## Our Precision, Your Advantage

KYB has been providing sophisticated quality and reliable technologies to our end users and customers. The characteristics of our products are expressed directly in our statement. The meaning behind the statement is that not only the provision of reliable quality to the general public, customers and suppliers ties into the "advantage" of stakeholders as an ongoing business of KYB, the happiness of monozukuri (Japanese manufacturing expertise) leads to the "advantage" of employees in the sense that they can feel that each and everyone of them are changing the world with such reliable quality.

## KYB Group Environmental Policies

The KYB Group is implementing activities by establishing a basic policy concerning the environment so that everyone can contribute to environmental preservation activities.

Slogan

# Protect the Green Earth and Create Products Gentle to the Environment



### Basic Environmental Policies

The KYB Group creates products gentle to both people and the earth. As a company that provides power and comfort, we are dedicated to the promotion of environmental activities as an important tool for evaluating management.

- (1) Strive to ensure long-term and sustainable operations throughout the entire KYB Group.
- (2) Work to promote harmony with society and contribute to the global community as a good corporate citizen.
- (3) Clarify every employee's role so that all employees can participate fully.

For fiscal 2011, the KYB Group established a new mid-term plan. Based on the plan, we will implement environmental and safety activities based on the basic policy.

**Environmental/Safety Mid-term Policy** (2011 to 2013) (abstract shown below)

**Battle Globally and Win Worldwide with the Power of the KYB Group**  
~ Simultaneous sharing, actions and improvements ~

1. **Creation of energy-saving plants :**  
Cut down CO<sub>2</sub> basic unit by 1% each year and reduce CO<sub>2</sub> emissions by 25% compared to 1990 by 2020
2. **Creation of waste-free plants :**  
Cut down final disposal amount of industrial wastes by 65% compared to fiscal 2000 by 2015
3. **Creation of accident-free plants :**  
Create a workplace that is safe, pleasant and accident-free

### Activity Plan Related to Environmental Preservation

We are promoting activities on a company-wide scale by defining goals every year according to the "Activity Plan Related to Environmental Preservation."

#### ■ Activity results of 2010

Compilation range: Sagami Plant, Kumagaya Plant, Gifu North Plant, Gifu South Plant

Activity items		Fiscal 2010 goals	Fiscal 2010 activity results	Activity plan Fiscal 2011 goals
Prevention of global warming	CO <sub>2</sub> emission volume	83,652 tons-CO <sub>2</sub> /year or less	83,887 tons-CO <sub>2</sub> /year	CO <sub>2</sub> energy : Planned saving of energy through peak cuts, standby power, etc.  Recycling of oil wastes Wastes : volume reduction of fluid wastes
	Energy saving	Energy usage volume (basic unit)	203 ℓ/million yen or less	
Improvement of recycling and recycling rate	Recycling	85% or higher recycling rate	87.9% recycling rate	
	Zero emission	3% or less landfilled waste	4.1% landfilled waste	
Reduction of waste	General waste	589 tons/year or less	532 tons/year	
	Industrial waste	4,003 tons/year or less	4,064 tons/year	
	Metal scraps	18,666 tons/year or less	19,469 tons/year	



Note: ·Discharge generated from our production activities are treated as wastes and categorized into general wastes, industrial wastes and metal scraps.  
·For energy, crude oil equivalent is calculated for electricity and fuel and the total value is displayed as total energy.  
·Basic unit is calculated based on the production shipment.

# Environmental Management

## Environmental Management Organization

The Environment and Safety Committee meetings are held twice a year, and environment and safety audits are held once a year to unify the understanding concerning policies and activities related to the environment and safety of each plant on a group-wide scale. Furthermore, we have been introducing various techniques so that employees can also save energy at home by changing the temperature setting of air-conditioners and using eco-operations through environmental education and implementation of environmental housekeeping books.

### ISO 14001 certification acquisition status

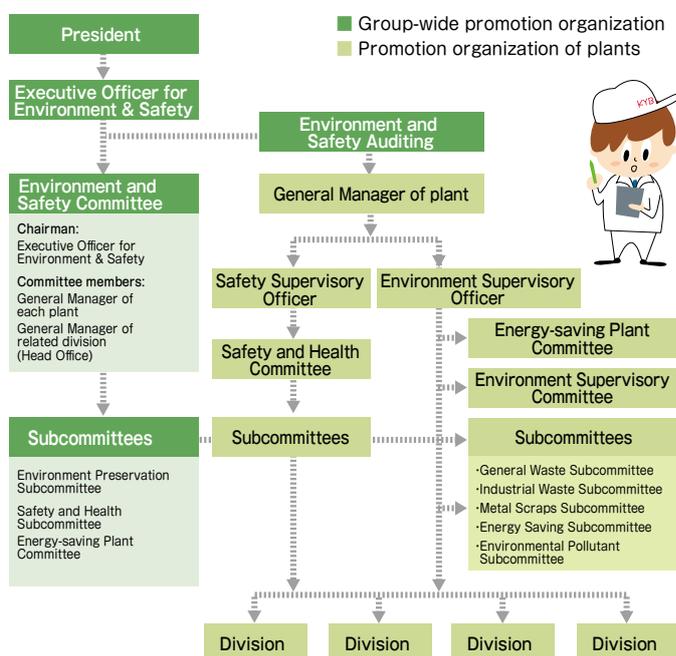
	Plant name	Certification years	Certification range	FY2010 judgment
Inhouse plant	Gifu South Plant	2000.2	Products Technology R&D Center	Renewal screening ○
	Kumagaya Plant	2000.12		Periodic screening ○
	Sagami Plant	2000.12	Basic Technology R&D Center	Periodic screening ○
	Gifu North Plant	2001.2	KYB Kanayama	Periodic screening ○
Affiliated companies	KSM Mie Plant	2000.12		Renewal screening ○
	KYB-YS	2004.4		Renewal screening ○
	Takako Industries (Shiga Plant)	2003.2		Periodic screening ○
	KYB Trondule	2008.11		Periodic screening ○
See about inhouse plants for KYB Kanayama				



External auditing

The Gifu North Plant received a periodic screening for ISO14001 by the certification body in February 2011 and the environmental management system was determined to be running appropriately.

### ◆ Environment and Safety Committee Organization



### Establishment of Education Organization for the Environment Management System KMCZ(Czechoslovakia)

In the past, overview of the environmental policies and environmental systems were provided in group education. Starting this fiscal year, we have started periodic education in smaller groups according to ranks targeting all employees and incorporated the environmental management system in the curriculum. Rather than

stopping at just an overview, we were able to deepen the awareness and knowledge of our employees concerning the environment by using text books that included case examples and holding tests to check the level of understanding.



Class in session

### Environmental Accounting | In order to quantitatively assess the involvements regarding environmental preservation, environmental costs have been calculated since 2000.

#### ◆ Environmental preservation cost

This report is compiled by using categories of invested amount and cost according to the environmental accounting guidelines indicated by the Ministry of the Environment.

Unit: million yen

Category	Description of main activities	Invested amount	Cost	
(1) Environmental preservation cost to suppress environmental impact occurring within the area of operation due to main business activities (cost within operation area)	① Pollution prevention cost	○Atmospheric pollution and water pollution prevention activities ○Maintenance and inspection of pollution prevention facilities ○Analysis and measurement of atmosphere and water quality	852.9	1015.4
	② Earth's environment preservation cost	○Shift from use of fossil fuel to city gas ○Installation of photovoltaic generation facilities	87.2	25.4
	③ Resource circulation cost	○Recycling of plant wastes ○Reduction of industrial wastes	23.0	179.8
(2) Cost for suppressing environmental impact generated at upstream or downstream from main business activities (upstream/downstream cost)	○Use of urethane mats instead of cardboard	1.0	0	
(3) Environmental preservation cost for management activities (management activity cost)	○Maintenance and periodic/renewal screening of ISO14001 ○Environmental training	1.4	75.0	
(4) Environmental preservation cost for research and development activities (R&D cost)	○Products that are lighter and with less harmful chemical substances ○Development of environment-friendly products	14.0	139.2	
(5) Environmental preservation cost for social activities (social activity cost)	○Afforestation and maintenance of scenery surrounding plant ○Issuing of environmental/social report	8.8	20.1	
(6) Cost for handling environmental damage (environmental remediation cost)	○Monitoring and measurement of surrounding underground water	0	0	
	Total	988.2	1454.8	
	Grand total		2443.0	

Compilation range: Sagami Plant, Kumagaya Plant, Gifu North Plant, Gifu South Plant Target period: April 1, 2010 - March 31, 2011



#### Categories and definitions of environmental preservation cost

[Invested amount] Expense for the purpose of environmental preservation during the target period with effect that continues for a number of terms and cost running for those periods. (Amount acquired during the current term of the depreciable asset)

[Cost] Cost or loss generated from expenditure of finance/service for the purpose of environmental preservation.

## Environmentally Friendly Product Development

### Rare Metals that are the Focus of Attention

#### Rare metal collection drum mixer



Currently, various rare metals are being used in compact electronic devices such as cellular phones and personal computers. These products that become unneeded, however, are disposed of as generate waste and are not reused. There is a growing anticipation for the recovery of these rare metals.

To simply describe the recovery work of rare metals, collected compact electronic devices are shredded to tiny bits, added with chemicals in each

process for chemical separation and each type of rare metal is then extracted. During this work, a drum mixer is used in each process of chemical mixing and cleaning. The drum mixer was adopted due to its simple and rigid structure, and little power consumption. The material of the drum is selected according to the characteristics of each chemical especially for the recovery of rare metals.

### Energy Saving

#### ◆Saidan (Confidential document dispatch shredder vehicle)



Companies lose major trust when personal information or confidential information is leaked to the outside. The Saidan can be dispatched to the actual site for processing confidential documents with the attendance of the customer.

Past collection methods required the collection vehicle to go to an incineration facility and incinerate documents with the presence of the customer. Much trouble is required even when processing documents using inhouse shredders, etc. On the other hand, Saidan allows the customer to attend and visually see the disposal.

Shredded paper can be recycled as recycled waste-paper for contributing to energy-saving and environmental measures.



#### ◆e-MIXER (electronically controlled concrete mixer truck)

e-MIXER is an environmentally friendly mixer truck that incorporates electronic control technologies and hydraulic technologies such as hydraulic pump/motor, etc. Utilization of electronic control allows high-speed rotation of the drum even at low engine rotation. A vehicle kind to the environment with low noise and low gas emission was realized. The noise has been reduced by half on an audible level and fuel consumption during work has been improved by 14% (In-company comparison). The electronically controlled unit adds an automatic washing feature that repeats rotation and reverse rotation of the drum at a single touch to drastically reduce the load of cleaning work within the drum that has been a major burden in the past as well as to improve the operability of the mixer.



## Environmentally Friendly Product Development

### Technologies that support riding comfort and high efficiency

#### ◆KEEPS: Electronically-controlled vane pump for power steering

During this age where the entire world is focusing on the environment, there is also rapid change in steering to energy-saving products. As a part of such age, we developed KEEPS that realizes both the steering feel that can only be realized by hydraulics and energy-saving features. This pump has been adopted by a major automobile manufacturer in Europe and the production has started at a plant in Spain from November 2009. This pump is expected to be adopted in energy-saving steering systems such as large-size vehicles, SUV's and trucks.



#### ◆Electronically controlled power steering system

This is a steering system equipped with an electronically-controlled assist motor instead of a hydraulic actuator to reduce needed steering power. The assist power of the motor is controlled according to the steering power of the driver to realize optimal steering with the needed amount of assistance at the needed time.

This is a product newly developed for vehicles with medium to large engine displacement. While there is growing concern related to environmental issues, the use of EPS will increase for medium to large-size vehicles in the future and the widespread of EPS is expected to accelerate even further.



#### ◆Mass production of HARMOFREQ (Frequency dependent shock absorber)

A shock absorber that changes damping force according to the input vibration frequency was developed.

The compact structure, when compared to conventional products, and the simple mechanism of the shock absorber have made it a groundbreaking product that realizes both stable operability and luxurious riding comfort. Mass production began in October 2009 and the product has been acclaimed highly by specialists and general public at test drives for its superb riding comfort and handling.



#### ◆CVT vane pump for light and compact vehicles

Our CVT vane pump for light vehicles was adopted by a major CVT manufacturer and mass production was started in September 2009. This is a new product for light and compact vehicles that improves the existing CVT pump structure superior in efficiency, silence and reliability that has been designed for medium-size

vehicles and sold more than 4.5 million units.

The cover section of this product has been changed from the cast-iron design to aluminum die-cast for 32% lighter weight for major contribution to energy saving and lighter weight of the CVT unit.



### Contributing to the environment with drive recorders

#### ◆Drive recorder DRE-120/400 KURUMAME

Did you know that you can receive public funding for KURUMAME (DRE-120 and DRE-400) from the Japan Trucking Association and prefectural Trucking Associations?

The device is required to warn and score over-speeding, sudden turns, sudden accelerations, abrupt braking and even extensive idling. Drive recorders are no longer devices used after accidents occur.

There are many truck companies installing KURUMAME in their trucks that have saved more than 10% on fuel consumption. KURUMAME is a drive recorder that is kind to the environment, saves gas and cuts down on CO<sub>2</sub> emissions.

KURUMAME is being used actively today along with trucks that travel all around Japan.



Constant recording from multiple points such as videos from inside and outside the vehicle



Complete analysis features for economy driving

### Vehicle dampers that are environmentally friendly

#### ◆Environmentally-friendly dampers

While the development and widespread of environmentally-friendly vehicles such as electric vehicles and hybrids are becoming more common, new technologies that aims at the protection of environment are also be demanded of vehicle dampers.

At KYB, we are developing three types of dampers as vehicle dampers that reduce the amount of crude oil used and integrate with the natural environment (soil). These are gas dampers that utilize inactive gas as the operating fluid rather than mineral oil for generating power using pressure, aqua dampers that use water and glycolic fluids, and biodegradable oil dampers that use oil that are decomposed into water and gas by microorganisms.



Environmentally-friendly operating fluid used as substitute

# Environmental and Safety Activities for Manufacturing

## ◆Occupational Safety & Health Management System (OSHMS)

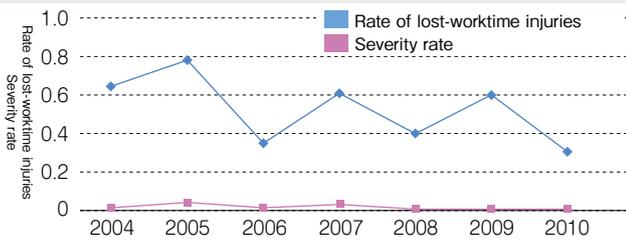
We have started a company-wide implementation of OSHMS from 2003 to prevent occupational accidents and to improve the occupational safety and health standards. OSHMS reduces risks at the workplace by repeatedly implementing the PDCA cycle based on the assessment of factors that are dangerous or harmful. In other words, we aim to improve the safety and health standards of the workplace by reducing risks. This management method to further reduce risks from the conventional safety management is being actively practiced by many offices.



OSHMS acquisition history

Acquired year	Plant name
Mar 2004	Gifu North Plant KYB Kanayama
Jul 2005	Sagami Plant
Mar 2006	Gifu South Plant
Nov 2009	KYB-YS

Disaster Statistics



\*Rate of lost-worktime injuries : indicates the frequency of accidents  
(Number of lost-worktime injuries per 1 million hours of labor)  
\*Severity rate : indicates the severity of accidents  
(Number of lost labor days per 10 million hours of labor)

## ◆P.T. KYBI Small-group activities for zero accidents (Indonesia)

P.T. KYBI launched a company-wide activity towards zero accidents in November 2010. The first step involved presenting inhouse a safety slogan for enlightenment of safety. Every Friday, employees are required to wear an armband. For the second step, small-group activities were started in January to reduce accidents to zero. With each person in charge of the line as a group leader, employees are working to improve their own workplace for a safer environment. In order to further improve the awareness of employees concerning safety, all members perform 1) safety patrol, 2) KYT and 3) HIYARIHAT (close encounters and startling moments) proposals.



Group leader appointment ceremony

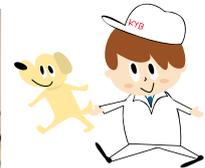


Risk prediction training at workplace

## ◆KMNA Opening of Safety Experience Dojo (America)

The Safety Experience Dojo is currently open at four in-house plants and at one plant of an affiliated company in Japan. In the future, the dojo will be expanded to overseas sites and the first was opened at KMNA of America.

Because safety education requires not only classroom lectures but practical experience of risks at the actual sites, we are also opening the Safety Experience Dojo at overseas production sites so that employees can experience for themselves the risks of the workplace and understand the severity of accidents and injury so that they do not behave unsafely when actually working.



Detailed guidance is provided for safe work such as safety and sanitary protection, etc.

Panel display for easy understanding

Confirmation of standing position when working



## ◆KST Reciting of safety rules using the Safety Handbook (Thailand)

For the safety education at the workplace with new employees coming in every day, group KYT has been reciting safety rules at the beginning of each day since January 2011 due to the new awareness that safety education is needed on a daily basis along with periodic safety education. For the reciting of safety rules, the employees use a safety handbook made by Ms.Prapatsara in charge of safety at KST herself with the hope of an accident-free workplace summarizing items necessary for safety into a 46-page book.



Reciting of safety rules



Group KY activity at the start of each morning

## Reduction of Environmental Impact

### Global Warming Prevention Activities

1. Effective usage of energy is being promoted as an activity participated by all personnel.
2. Enlightenment activities such as the promotion of energy saving is being continuously implemented.
3. Other than the promotion of the development of methods with better energy saving, the consumptions of energy by currently invested facilities are being fully assessed.
4. Heat retention/insulation is implemented for facilities to prevent diffusion of energy.
5. Contract demand is being reduced as efforts to equalize energy use.



### ◆Goals for reducing CO2 emissions and energy use

Reduction of both basic units for CO2 emissions and total energy usage by 1% compared to fiscal 2010 by the end of fiscal 2011

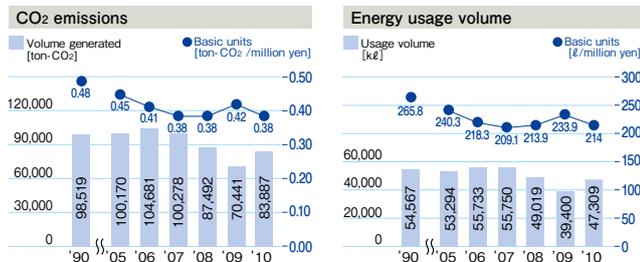
The annual target for CO2 emissions (17% reduction) in fiscal 2010 was almost achieved as the amount was 16% less than in fiscal 2007.

The annual target for energy basic unit (3% reduction) was not achieved as the amount was 2% more than in fiscal 2007

Further efforts will be made to reduce CO2 emissions by carrying forward steady activities including use of city gas rather than fossil fuel, installation of energy-saving devices, improvement of air leaks, etc.

#### (Main activities of fiscal 2010)

Promotion of energy-saving plant/Shift from use of fossil fuel to city gas/Renewal of aged transformers to amorphous transformers/Promotion of inverter/intermittent operation/Reduction of air pressure and repair of air leaks/Renewal to high-efficiency lighting/Installation of photovoltaic generation facilities/Shift to EcoCute hot-water supply



Note:  
 Conversion factor using for calculating CO2 emission  
 \*Source of CO2 emission conversion factor: Japan Automobile Manufacturers Association, Inc.  
 Power...0.3817kg-CO2/kwh, Kerosene oil...2.5308kg-CO2/l, Diesel oil...2.6468kg-CO2/l,  
 Bunker A...2.7000kg-CO2/l, LPG...3.0094kg-CO2/l, City gas...2.3576kg-CO2/m<sup>3</sup>  
 \*Energy consumption: total electricity and fuel converted to crude oil. Basic units are calculated based on the shipment volume of production.  
 (Basic unit = energy consumption ÷ production/shipment volume)



Accumulating the wisdom of all employees

### "Getting rid of wastes"

The breakdown of energy consumption in the Sagami region is as follows: 60% for production facilities, 20% for lighting and air-conditioning, 10% for experiments, 5% for the research laboratory and 3% for JA. For this fiscal year, the cost of electricity averaged 40 million Yen a month.



Minoru Watanabe  
 Equipment Control Sect.,  
 Sagami Plant

With regards to Sagami, infrastructure-related improvements made as main measures to save energy have had little effect for their cost and the Sagami region itself has yet to meet the energy-saving regulation value (1% reduction each year) as set by the government. Further efforts are needed to save energy.

During this fiscal year, we made a number of small improvements by focusing primarily on cutting back standby power of production facilities. In the future, we will all work together to continuously cutback on standby power, eradication of wastes by optimizing air-conditioners, and implementing environment improvement activities such as afforestation, Green Curtains, etc.

We give attention to the smallest of details to diligently reduce small wastes.

At KYB, we have organized the Energy Saving Plant Committee to cutback on standby power of production facilities and the reduce production power by reviewing manufacturing method. Some of these examples are introduced below.

### ◆Turning off the dust collectors installed on the machining centers

The machining centers used at the Sagami Plant are equipped with a dust collector to collect oil mists generated during cutting. Although this device is built with a feature to only operate during machining, we found that some of the dust collectors continued operation even when finished machining. In order to

eradicate this waste, we changed the machining program of the machining centers so that the dust collector will also turn off once machining is finished. With this improvement, we were able to reduce 2.1 tons of CO2 per year for the line consisting of five machining centers.



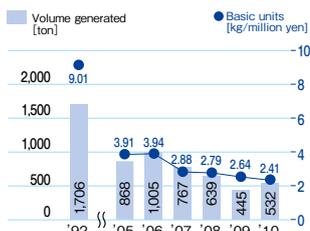
## Waste Reduction Activities

1. Energy saving (reduce, reuse and recycle) is promoted in all stages of design, manufacturing, sales and distribution to reduce waste. Paperless conferences are also promoted in offices to drastically reduce paper wastes.
2. Rules have been established for segregating wastes to improve recycling efficiency.
3. Activities toward zero emission are being carried forward.

### ◆Reduction target for general waste

Reduction of discharge by 10% compared to fiscal 2000 by the end of fiscal 2011

The annual target for the amount of waste discharged (43% decrease) was achieved as the amount generated in fiscal 2010 was 532 tons, 49% less than in fiscal 2007.



\*Value excluding wood waste from '07 (compiled as industrial waste)

Note:

The waste disposal and treatment ordinance was partially revised such that effective April 2008, wood pallets are treated as industrial wastes (formerly general wastes). Hence, the category of wood wastes was changed and the values revised.

### ◆Reduction target for industrial waste

Reduction of discharge by 30% compared to fiscal 2000 by the end of fiscal 2011

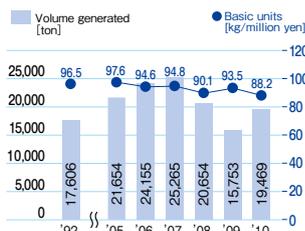
The annual target for the amount of waste discharged (32% decrease) was almost achieved as the amount generated in fiscal 2010 was 4,064 tons, 31% less than in fiscal 2007.



### ◆Reduction target for metal scraps

Reduction of discharge by 1% compared to fiscal 2000 by the end of fiscal 2011

The annual target for the amount of waste discharged (26% decrease) was not achieved as the amount generated in fiscal 2010 was 19,469 tons, 23% less than in fiscal 2007.



### Aim for the Top-running Energy-saving Plant

Although the Gifu South Plant has worked steadily and continuously to cut down on wastes by introducing new technologies and installing high-efficiency devices at an early stage, the regulations that are become stricter each year have made it difficult to accomplish goals using only the conventional methods.

For further improvement, the plant has incorporate "visualization" starting this fiscal year. The aim is to provide visuals of the usage state for detailed analysis to find wastes and abnormalities that were unnoticed until now. Currently, the system is under evaluation on a model line.

Although past activities were carried out by a special staff, we will aim at the participation of all employees by actively transmitting information that may be helpful in improvements.

Energy cost: about 50 million yen per month  
The goal can be accomplished without fail through diligent improvements. We will continue to work together to achieve the goal.

**Takuya Kinomura**

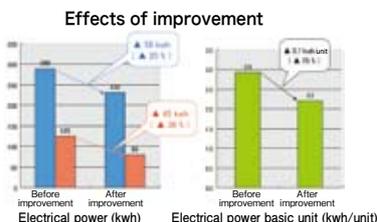
Environment & Antidaster Control Sect.  
(South resident, Gifu North Plant)

### ◆Finding wastes by checking the electrical usage of all line equipment

The H5 line at the Gifu South Plant is a line operating many types of equipment with extremely high power consumption including cleaners and performance testers. If losses can be cut back on this line, the effects will be enormous. We installed a power meter on each of the equipment installed on the line and installed a system that automatically monitors the power consumption. Now we can grasp all power information linked to production and see in real time the status of standby power when the line is not operating.

After starting measurements, we found that the standby power of the filter pump within the cleaner and centrifugal separator within the performance tester were a waste.

After stopping these devices during non-operation hours, we were able to save 11,415Kwh a month, or 254,736 yen a year.



### ◆Development of energy-saving type performance tester utilizing a power regeneration system

Because the device for testing the performance of hydraulic motors requires a large volume of operating oil to be fed at extremely high pressure, enormous amount of power was needed. By installing a generator on the load side of this tester, we were able to retrieve the loss generated in heat as power. This effect realizes about 50% power reduction compared to conventional testers, and achieves drastic increase in the efficiency with the extremely large energy saving and improved production method.

#### Comparison of consumed power

- Conventional tester: 727Wh/unit
- Energy-saving tester: 372Wh/unit (49% reduction)

Comparison of consumed power: every 5 sec. (work/unit)



# Environmental Report Environmental Preservation Activities of Plants

ISO14001 mark indicates a certified plant of ISO14001.

OSHMS mark indicates a certified plant of the labor safety management system.

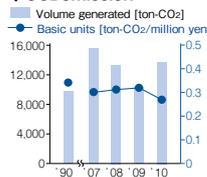
**Sagami Plant** ●Location: 1-12-1, Asamizodai, Minami-ku, Sagami-hara-shi, Kanagawa 252-0328 TEL 042-746-5511 ●Beginning of operation: May 1975  
 ●Floor surface area: 53,951m<sup>2</sup> ●Main products: hydraulic equipment (pumps, motors, valves), railroad equipment (semi-active/passive dampers), aircraft parts (wheels, brakes)

ISO14001  
JQA-EM1171 OSHMS  
TS05-14-3

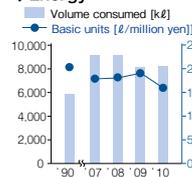
## 2010 Topics & Environmental Preservation Activities

- Photovoltaic generation facility (capacity: 30KW) was installed on the rooftop of the office building for CO<sub>2</sub> reduction of about 14 tons/year.
- Oil separator was installed to process alkaline fluid wastes. The device will reduce industrial wastes by about 78 tons/year.
- Exhaust heat from gas engine power generation is also used for plant air conditioning for a pleasant working environment.

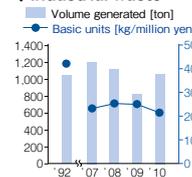
### CO<sub>2</sub> emission



### Energy



### Industrial waste



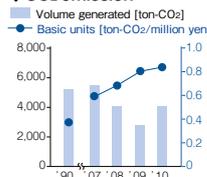
**Kumagaya Plant** ●Location: 2050, Nagazaika, Fukuya-shi, Saitama 369-1193 TEL 048-583-2341 ●Beginning of operation: January 1971  
 ●Floor surface area: 68,118m<sup>2</sup> ●Main products: special-purpose vehicle (concrete mixers, granule carriers, pruned branches shredder truck), hydraulic equipment (gear pumps, large-size valves, reduction gears)

ISO14001  
JQA-EM1152

## 2010 Topics & Environmental Preservation Activities

- The amount of power consumed was cut back by monitoring the usage of power trunk during the night and off days and using a calendar timer for more efficient use of power.
- Fluorescent lighting in the restrooms was replaced with automatic lighting using a sensor to prevent unnecessary lighting.
- Concrete walls at property lines on the road (school-commuting road) south of the plant were changed to a fence to reduce risk of collapse during an earthquake.

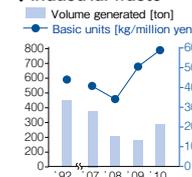
### CO<sub>2</sub> emission



### Energy



### Industrial waste



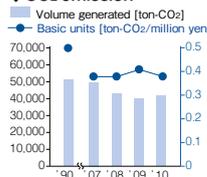
**Gifu North Plant** ●Location: 2548, Dota, Kani-shi, Gifu 509-0298 TEL 0574-26-5111 ●Beginning of operation: April 1968 ●Floor surface area: 156,817m<sup>2</sup>  
 ●Main products: shock absorbers for automobiles, hydraulic equipment for automobiles

ISO14001  
JQA-EM1288 OSHMS  
TS04-21-01

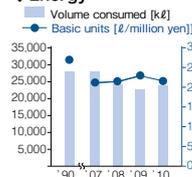
## 2010 Topics & Environmental Preservation Activities

- In order to reduce the amount of CO<sub>2</sub> emissions, fuel was switched to city gas for the paint drying oven and water boiler.
- Efforts are being made to reduce wasted power by cutting down on the standby power of the hydraulic unit pump by intermittent operation and conducting energy-saving patrol during lunch break.
- PP bands and stretch films disposed as wastes are now being recycled.

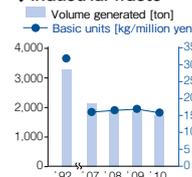
### CO<sub>2</sub> emission



### Energy



### Industrial waste



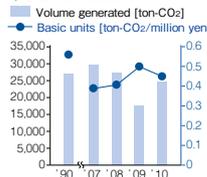
**Gifu South Plant** ●Location: 505, Dota, Kani-shi, Gifu 509-0297 TEL 0574-26-1111 ●Beginning of operation: July 1943 ●Floor surface area: 108,010m<sup>2</sup>  
 ●Main products: front forks for motorcycles, hydraulic equipment (cylinders, valves)

ISO14001  
JQA-EM0700 OSHMS  
TS06-21-4

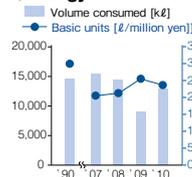
## 2010 Topics & Environmental Preservation Activities

- Centrifugal oil separator was installed as an activity for reducing industrial wastes. The device removes oils within cleaning fluid so that the fluid is like new at all times. The device has eradicated the need to freshen the fluid and the amount of waste fluid has dropped to a tenth.
- Cut-waste compressor was installed.  
 This device compresses cut wastes to a circular board of 8cm in diameter while squeezing out cutting oil at the same time. After the installation, the amount of cutting oil replenished dropped to less than a fifth of the original amount and the number of transportations carrying cut wastes also dropped drastically. Further efforts are being made to improve the operation efficiency.

### CO<sub>2</sub> emission



### Energy



### Industrial waste



## Working Diligently to Eradicate Small Wastes



The Kumagaya Plant consumes about 10 million yen worth of electricity a month and about 2 million yen worth of fuel and gas a month. For energy-saving activities, we are mainly cutting down on wasteful energy.  
 <Examples>

- Operation of cation painting on alternate days, disconnection of transformer during extensive off days, change to high-efficiency mercury lamps, etc.
- Use of timer to start, stop as well as cut down on the standby power and air leaks of production equipment, etc.

Although this is a small plant, attention to details and diligent efforts to turn on and off electricity will lead to major energy-saving results. For cutback of energy not directly connected to production such as work processes that consume large volumes of energy, we have made changes in schedule to best suit the product volume, stopped motors that are idling, decreased motor speed using inverter, etc. We will continue to make efforts to eradicate small wastes.

Satoshi Konishi  
 Production Engineering Sect., Sagami Plant (Kumagaya resident)



## Power Saving by Increasing Efficiency of Plating Rectifiers

At the Gifu North Plant, there are a total of 13 plating lines that operate day and night. One of the lines is structured with four rectifiers including an etching device. The total output capacity ranges from 16,000A to 30,000A. Some of the lines have aged significantly, as they have been operating for more than 30 years since the plant was first built. In hopes of saving energy, we have been updating the lines every year. As a result, we have been able to save 3,024kwh per month. We will continue to focus on environmental issues in the future and contribute to facility making that is kind to the earth.



Hiroyuki Yamada  
 Equipment Control Sect., Suspension Manufacturing Dept. Gifu North Plant

## Social Support Activities

### The Tohoku Earthquake and Tsunami

Many fell victim to the major earthquake and tsunami that occurred on March 11, 2011. Our condolences extend to those to the victims and their families, and we pray for the earliest restoration. Since the disaster, the KYB Group has joined forces to conduct many activities.



Reference data: Japan Meteorological Agency

#### ◆Launching of Headquarters Control

Immediately after the earthquake, Disaster Control was established at the Head Office. With the President as the General Manager of Headquarters Control, countermeasure meetings were held at all Group site via a TV conference network from March 14 to check the well-being of employees and detailed damages of each site. These meetings were held twice a day, once in the morning and once in the evening until the end of March, then they were held once a week.

Fortunately, there were no one injured within the Group. Although some of the facilities suffered minor damage, we were able to restore them in a short time. However, as we were reported on the conditions of disaster sites, customers, suppliers, etc. one after another, KYB examined all types of support possible. The provision of relief goods to disaster sites and restoration support of equipment of customers and suppliers were instructed and immediately executed.

For the predicament concerning electricity, instructions to save electricity was notified immediately by the top management and we have been turning off unnecessary lighting and cutting back on standby power. Simultaneous sharing of timely information on a daily basis by the entire Group allowed simultaneous execution of precise measures and has become a major lesson for implementing future activities.



Disaster Control meeting



#### ◆Disaster site support

At the disaster sites, people faced extreme shortage of food, water, etc. The food and water stored at the Gifu North Plant were sent as relief goods. These goods including water, 700 servings of rice and instant noodles were sent through the local government of Kani-shi, Gifu. Various other relief goods were provided by related companies and the Purchasing Dept. including water and rice to disaster sites, suppliers and customers. In addition, 34 of our environmental solar projectors were provided by the Sagami Plant through the local government of Sagami-hara-shi for use in the restoration work at disaster sites.

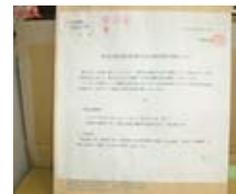
The effects of the projectors were even brought up in a newspaper.



Newspaper article about the help of solar projectors

#### ◆Monetary contributions to victims

Due to the damage of this disaster extending to a devastating scale, various organizations are accepting monetary donations in place of organizations of affected prefectures. KYB has donated 30 million yen to the affected prefectures through Keidanren. Furthermore, there were also monetary donations from related companies and KYB overseas sites including KYB of America and Vietnam. With the help of companies and union, donations were also collected from employees and sent to disaster sites through the Japanese Red Cross Society. The amount of monetary donations and contributions totaled over 63 million yen.



Donation box with a message requesting help



**We were contacted by customers and suppliers in request of aid for restoration as their equipment had either moved or become damaged. We responded immediately. We all worked with the single thought of wanting to be useful even if there was very little we can do.**

For the support of disaster restoration, all of us responded immediately to the requests of customers and suppliers. I believe that our immediate response and actions were the most meaningful. We received many thanks from our customers and suppliers and they were very happy. Please allow me to take this opportunity to thank those who helped and supported the restoration together with KYB.



**Hiroshi Hasegawa**  
Chief of Disaster Relief Operation Team,  
Manufacturing, Sagami Plant

## Social Support Activities

### ◆Supporting customers and suppliers

KYB received many reports from customers and suppliers that the extent of damage to their production equipment as the result of the earthquake is very serious. Upon receiving such reports, KYB immediately organized the Disaster Relief Operation Team for the restoration of equipment and conducted the activities described below. We received request for restoration support from customers with enormous damage to their plant facilities and KYB organized and dispatched 40 Disaster Relief Operation Team members in five days. As a result, a total of 21 pieces of equipment were restored their accuracy, etc.

51 members were dispatched in five days to support suppliers. A total of 70 pieces of equipment were restored including NC turning machines and we were able to restore production in an extremely short time.



KYB Disaster Relief Team members performing accuracy restoration of equipment (photos taken with permission)

### ◆Contribution of emergency food supplies to NPOs

Emergency food supplies stored at the Head Office, Sales and other branches needing renewal (food to feed about 400 persons for 3 days) were contributed to NPO Second Harvest Japan.

In Japan, five to nine million tons of foods are being thrown away every year despite that they can still be eaten safely. There are also hundreds of thousands of people in Japan forced to live standards below the needy and poor. Second Harvest Japan accepts food supplies that are close to expiring before they are thrown away and provides them to those in need for effective utilization.

Since the emergency food supplies we had the last time were well beyond the expiration date, we were forced to throw them away without the chance of being able to distribute them to our employees. This time, we investigated at an early stage various organizations that effectively utilize such food supplies. After careful selection and negotiation, we chose the

above organization to take our emergency food supplies. We would like to continue such activities that help the society in the future.



Packing work by Second Harvest



Content of emergency food provided by Second Harvest

### ◆KST Visiting elementary school and contributing play equipment (Thailand)

During the company trip in July 2010, we visited an elementary school to donate play equipment that they were not fortunate enough to have. On that day, we were welcomed by the Principle, entire faculty, pupils and their parents for a nice exchange.

During the major flood in October, 100,000 baht (50,000 baht from the company and total of 50,000 baht collected as personal donations) from employees and company were also given to victims as encouragement.



Surrounding a banner that reads "KYB Supports Children"



## Environmental Preservation and Safety Activities of Overseas Production Plants



Acquisition of the ISO 14001 certification has also started overseas to carry out environmental preservation, waste reduction and safety measures in the same way as Japan.

### KYBSE (Spain)

#### 2010 Environmental Protection Activities Air pollution •Elimination of organic fluorine compounds in the chrome plating process

Organic fluorine compound is a type of atmospheric contaminant that is regulated by governmental agencies and the discharge into the air is limited to 5mg/Nm<sup>3</sup>. Up to 2010, chrome was used in chrome plating devices. Although the type of chrome was changed in 2009 to a type that does not contain organic fluorine compounds, it required a year to eliminate all organic fluorine compounds in the corresponding processes (2010).



Chrome that does not contain organic fluorine compounds

#### •Reduction of volatile organic compounds (VOC) based on environmental laws

We modified the painting lines using solvents to use of water-based paint.



Modification to use of water-based paint

### KSS (Spain)

We finished renewing the compressors in August 2010. The compressors that have been used for 11 years have aged, required an enormous time to maintain and were difficult to secure plant supply air. We then purchased new compressors to suppress the amount of electricity consumed and adopted a system to automatically track compressors depending on the amount of air used. The goal was to save majority of the electricity used for generating air while guaranteeing air supply throughout the plant.



Past compressor room New compressor room

Result: -529.915Kw/año (-22,74%)

The renewal of compressors allowed cutback of -42.393€/year. Other than the above, we will further make improvements by replacing equipment to save energy.

### KIMZ (China)

#### Manufacturing at a plant kind to the planet

##### ① Efforts to discharge water that is kind to the environment

At KIMZ, we have been preventing in advance environmental pollution since April 29, 2010 by managing the COD and heavy metal nickel discharged as waste water every day by the Quality Assurance Sect. and General Affairs Sect. taking measurements. In the case abnormality is discovered in the measurement of nickel, dept. emergency meeting is held by the General Affairs Sect. to find the cause and to prevent in advance flow to the outside.



Daily measurement of discharge water

##### Energy-saving activities that are kind to the planet

##### ② Promotion of energy-saving activities for creating an environment that is kind to the earth

As one of the energy-saving activities that are kind to the planet, KIMZ has been reducing wasteful energy by immediately turning off unnecessary power and reducing emissions of greenhouse effect gases in 2011 so that creation of a kind environment leads to social contributions.



Full compliance of lights out

### KMT (Taiwan)

There were 121 indicated reports of items that required improvement including work uniforms, protection gear, forklifts and dangerous locations. Among the 121, 115 were improved. Some of the examples are shown below.

1. Storage location is unclear: improvement made using white lines
2. No masks: employees were made sure to wear masks
3. No net on fan: protect net installed

115 items including the above three were improved.



Failure to wear masks during casting/cutting process



Masks were distributed and employees were required to wear them during work



Unclear storage location



Storage locations were made clear by drawing white lines

## Environmental Preservation and Safety Activities of Overseas Production Plants

### KST (Thailand)

#### Green zone around the plant

The green zone surrounding the plant was reviewed based on the basic concept of employees coming to work with a refreshed feeling, welcoming customers in a pleasant atmosphere and bringing peace to the plant surroundings.



For a rich green zone in three years

Although we have yet to realize our concept since we have just planted the trees, we are making efforts to realize a rich green zone in three years by watering daily and regularly adding fertilizer and pruning branches.

### KYBT (Thailand)

#### Efforts of General Manager of Environment & Safety Control Department.

We are currently using about 14,000 liters a day to water trees and grass at our automobile plant. In order to lower our water cost and surrounding temperature, we are using water discharged from the paint process that has no issues in water quality and is below the regulated value. As a result, we were able to drop the monthly water cost to 6,500 baht. I would like to implement this at the motorcycle plant as well.



Healthy grass at the plant



Kanchana Chuadchoom, General Manager of Environment & Safety Control Dept. satisfied with the water-saving effects of using discharge water

### TVC (Vietnam)

Ever since establishment, the Takako Vietnam Plant has been making full efforts in environment, safety and health by aiming to create an environment that is safe and easy to work.

We especially focus on safety, energy saving and accident prevention by regularly implementing safety patrol, cut-down of electricity usage and disaster training. We have adopted the Japanese methods for disaster training to maintain an accident-free plant through fully-participated evacuation drills, fire drills, extinguisher inspections jointly held by the Binh Duong Fire Department of VSIP.



Fire extinguishing training guided by the fire department



Fire extinguishing demonstration by the Binh Duong Fire Department of VSIP

Ever since I joined Takako Vietnam Plant in 2006, I have been actively carrying out activities with a sense of responsibility to protect the lives of all employees as the activity leader of environment, safety and health. My efforts have been rewarded as the awareness of the entire plant has improved. Now, all employees participate actively and the activities have become important part of the plant.

I would like to continue implementing environmental, safety and health activities on a regular basis so that we become a model plant for all neighboring plants.



Thanh Hai  
Manager, Production Engineering Sect.

### KMSB (Malaysia)

Safety is top priority. As one of the programs to prevent accidents, we held a safety, health and environment week from April 19 to April 23, 2010. The activities included exhibitions, video sessions, evacuation trainings, search of dangerous areas, blood donations and awarding of zero accidents.



#### KYB Manufacturing Czech, s.r.o.

Location: Pardubice, Czech Republic  
Main products: shock absorbers, etc.



#### KYB Suspensions Europe, S.A.

Location: Navarra, Spain  
Main products: shock absorbers, etc.



#### KYB Steering Spain, S.A.

Location: Navarra, Spain  
Main products: vane pumps, etc.



#### KYB Advanced Manufacturing Spain, S.A.

Location: Navarra, Spain  
Main products: shock absorbers for automobiles, manufacturing and sales of struts and suspension systems



#### KYB Industrial Machinery (Zhenjiang) Ltd.

Location: Jiangsu, China  
Main products: shock absorbers, etc.



#### KYB Manufacturing Taiwan Co., Ltd.

Location: Taoyuan, Taiwan  
Main products: shock absorbers, front forks, etc.



#### KYB (Thailand) Co., Ltd.

Location: Chonburi, Thailand  
Main products: shock absorbers, front forks, etc.



#### KYB Steering (Thailand) Co., Ltd.

Location: Chonburi, Thailand  
Main products: vane pumps, etc.



#### KYB Manufacturing Vietnam Co., Ltd.

Location: Hanoi, Vietnam  
Main products: front forks, etc.



#### TAKAKO Vietnam Co., Ltd.

Location: Ho Chi Minh, Vietnam  
Main products: hydraulic device parts, etc.

We face the problem of employees taking days off due to traffic accidents. In order to improve awareness, we invited employees to the Traffic Safety Classroom. We also distributed stickers to employees in order to increase the awareness concerning the importance of wearing helmets and seatbelts. The goal is for all employees to be aware of safety when commuting to work.

In order to achieve an accident-free plant through, we hope that these activities have built a foundation for all employees to be aware of safety, health and environment. Our goal is to create an accident-free plant.



Accident-free workplace award ceremony



Traffic safety activity



Safety, health and environment exhibition

### KMNA (America)

In 2010, KMNA implemented a new fire-extinguishing training system for emergency personnel that utilize a smart technology that detects where a trainee will shoot compressed air/water of the training fire extinguisher. This system automatically adjusts according to the state of fire. Furthermore, the system itself simulates class A, B and C fire for four different difficulty levels. The Bullex fire extinguisher training



New fire-extinguishing training utilizing smart technology



system is the safest, live-fire simulator in the world. We would like to implement this training to all staff members of KMNA in the near future.

### KMB (Brazil)

#### Don't forget to turn off the air-conditioners!

Ever since we were certified ISO 14001 in 2007, we have been carrying out many energy-saving activities each year.

One of the simplest yet interesting activities is to turn off air-conditioners when not in use (during break, at the end of meetings, etc.). 01 portable device of 21.000BTUs consumes about 2KWh of energy.

In other words, forgetting to turn off the air-conditioner once a month (all night long) means consumption of about 2KWh x 14h. x 12 months = 336KWh/year. This is nearly the same as 84kgs of CO<sub>2</sub> (calculation based on national electrical energy saving program, Procel). The measure we actually took was placing strips of paper near the airflow duct of the air-conditioner. When the air-conditioner is on, you will notice the strips moving as a visual signal and remember to turn off the switch.

Roseli Hayashi in charge of this activity says that she has never seen an air-conditioner being used unnecessarily since this simple activity was put into effect. Remember to turn off the air-conditioners!



The switch in on



Visual signal of paper strips

Valdecir Nazarkevicz  
Safety and Environment



#### KYB Hydraulics Industry (Zhenjiang) Ltd.

Location: Jiangsu, China  
Main products: hydraulic cylinders, etc.



#### Wuxi KYB Top Absorber Co., Ltd.

Location: Jiangsu, China  
Main products: manufacturing, sales, and repair of front forks for motorcycles, rear cushion units, and their structural components



#### Changzhou KYB Leadrun Vibration Reduction Technology Co., Ltd.

Location: Jiangsu, China  
Main products: manufacturing, sales and servicing of railroad devices such as railroad car dampers (axis, horizontal movement, yaw, between cars), leveling valves, differential pressure regulating valve, etc.

#### Acquisition Status of ISO 14001 Certification

Plant	Registered on	Plant	Registered on		
Overseas Bases	KSS(Spain)	Jun 2001	Overseas Bases	P.T.KYBI(Indonesia)	Nov 2004
	KYBSE(Spain)	Dec 2001		KMSB(Malaysia)	Apr 2005
	KMT(Taiwan)	Aug 2001		KMB(Brazil)	Mar 2007
	KYBT(Thailand)	Jul 2003		KIMZ(China)	Jun 2009
	KMNA(U.S.A.)	May 2002		TVC(Vietnam)	Jan 2007
KST(Thailand)	Aug 2003	KMCZ(Czech)	Aug 2009		

● Europe

● Asia

● North & South America



#### KYB-UMW Malaysia Sdn. Bhd. KYB-UMW Steering Malaysia Sdn. Bhd.

Location: Selangor, Malaysia  
Main products: rear cushions, front forks, shock absorbers, vane pumps, etc.



#### P.T. Kayaba Indonesia

Location: Bekasi, Indonesia  
Main products: front forks, rear cushions, shock absorbers



#### KYB Manufacturing North America, Inc.

Location: Indiana, U.S.A.  
Main products: shock absorbers, etc.



#### TSW Products Co., Inc.

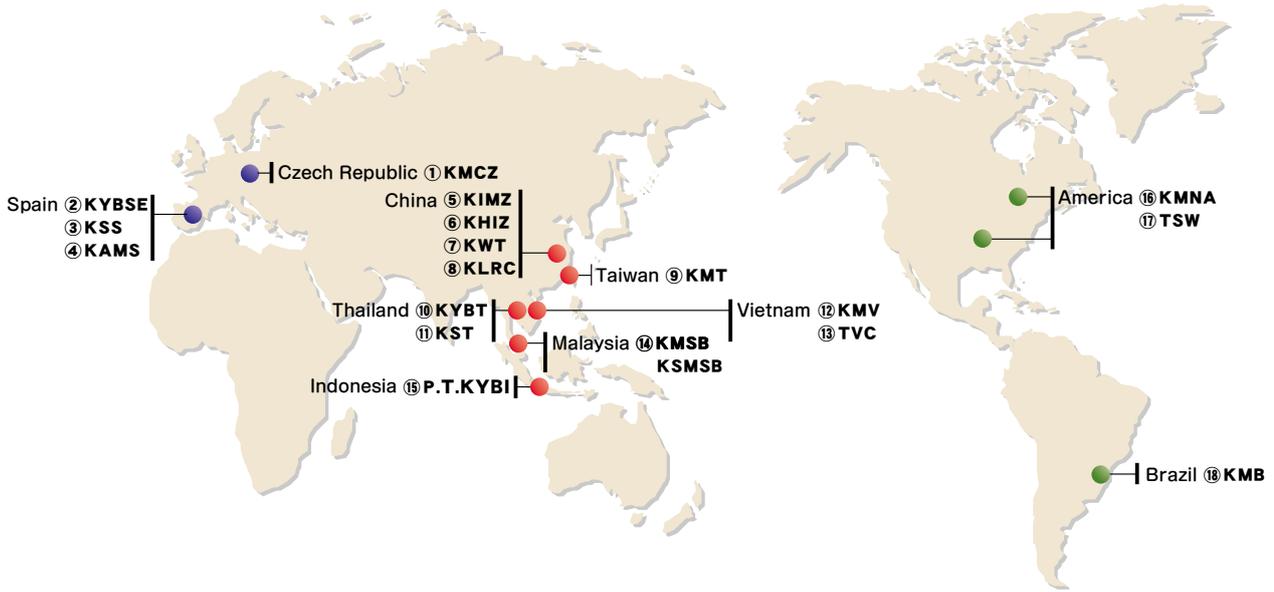
Location: Kansas, U.S.A.  
Main products: hydraulic device parts, etc.



#### KYB-Mando do Brasil Fabricante de Autopecas S.A.

Location: Parana, Brazil  
Main products: shock absorbers, etc.

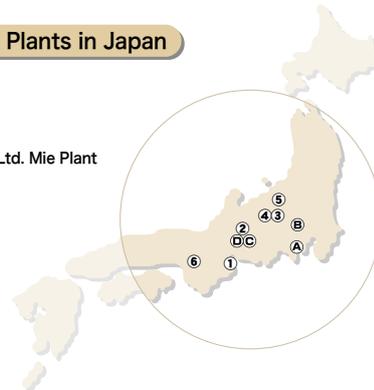
Overseas Production Plants



*Our Precision, Your Advantage*

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  - Ⓑ Kumagaya Plant
  - Ⓒ Gifu North Plant
  - Ⓓ Gifu South Plant
- Affiliated companies
- ① Kayaba System Machinery Co., Ltd. Mie Plant
  - ② KYB Kanayama Co., Ltd.
  - ③ KYB-YS Co., Ltd.
  - ④ KYB Cadac Co., Ltd.
  - ⑤ KYB Trondule Co., Ltd.
  - ⑥ TAKAKO Industries, Inc.



[www.kyb.co.jp](http://www.kyb.co.jp)

Visit our website for more information including the Environmental/Social Report.

Please direct inquiries regarding our "involvements concerning the environment" to the Environment & Safety Control Department  
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