

# 2007 Social & Environmental Report



**JTEKT**

Pursuing dreams through skill to bring you valuable technology

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## Activities of Affiliated Companies

- 31 - Koyo Machine Industries Co., Ltd.
- 33 - Toyooki Kogyo Co., Ltd.
- 35 - Koyo Sealing Techno Co., Ltd.
- 37 - CNK Co., Ltd.
- 39 - Koyo Thermo Systems Co., Ltd.
- 41 - Koyo Electronics Industries Co., Ltd.
- 43 - Daibea Co., Ltd.
- 45 - Utsunomiya Kiki Co., Ltd.
- 47 - HOUKO Co., Ltd.
- 49 - Toyoda Van Moppes Ltd.

### “Environmental & Social Report 2007” : Reporting Period and Organizations Covered

Reporting period  
FY 2006 (April 2006 to March 2007)  
★ This report includes items that took place outside of this period.

Scope and organizations covered in this report  
Environmental conservation activities carried out by JTEKT Corporation  
★ This report includes the performance of our affiliates as well.

### Guideline Used as Reference

The Ministry of the Environment's  
“Environmental Report Guideline (2003 edition)”

### About the Cover

Based on an overall theme of environmental conservation on a global scale, we have attempted to express the concept of conducting environmentally friendly business activities around the world by means of our global network in our three main product fields: steering systems, bearings and driveline components, and machine tools.

## Activities of Overseas Affiliated Companies

- 51 - JTEKT Automotive (Thailand) Co., Ltd.
- 53 - JTEKT AUTOMOTIVE VIRGINIA, INC.
- 55 - KOYO BEARINGS (EUROPE) LTD.
- 57 - KOYO LIOHO (FOSHAN) AUTOMOTIVE PARTS CO., LTD.

## Environmental Data

- 59 - Environmental Data by Location

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## Message from the President

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The JTEKT Group, which began as a maker of bearings and machine tools and later expanded its product lineup to include steering systems and driveline components, seeks as a group possessing extensive manufacturing know-how to “contribute to the happiness of people and the abundance of society through product manufacturing that wins the trust of society.”

In order to start a new page in JTEKT’s history and promote achievement of the above corporate philosophy, in April this year we established our “JTEKT Vision 2015,” which calls for the JTEKT Group to carry out operations based on a spirit of “Creation & Innovation” and win the trust of customers through a continual pursuit of top-class quality as a true “Quality First Company.” This Vision also expresses our commitment to carrying out business activities in a manner that is fair, transparent, and in compliance with relevant laws, regulations, and business ethics in order to fulfill our social responsibilities as a trusted member of the international business community.

Protection of the global environment is an issue that concerns everyone, and each person should take action to resolve environmental problems based on a sober consideration of our planet’s future. The JTEKT Group has established an “Environmental Action Plan” that stipulates targets for 2010, and member companies are working hard as a team to achieve these voluntary targets. We aim to contribute to the creation of a sustainable society not only through productivity improvements and other measures that reduce the load on the environment but also through providing such energy-efficient products as electric power steering and ultra-low-torque bearings, both of which improve vehicle fuel efficiency.

We believe that human resource development is a key to achieving our goals and that our employees constitute one of our most valuable assets. Through a development program aimed at enabling employees to achieve their true potential, we hope to create a workforce capable of understanding societies, cultures, and environmental issues around the world and to be a company that wins the trust of customers and society by listening closely to the environmental concerns of all its stakeholders. We welcome your feedback to the content of this Social & Environmental Report.

September 2007



Global Environmental  
Conservation Committee Chairman  
President

**Motohiko Yokoyama**



Director of Environmental  
Management  
Senior Executive Director

**Nobuyoshi Hisada**

# Corporate Philosophy / Vision

JTEKT, based on a deep awareness that environmental conservation on a global scale is one of its most important duties as a company, aims to contribute to the further safety and prosperity of society by creating new value and by promoting harmony between people, society and the environment.

Our Corporate Philosophy expresses our company's basic spirit and values, and our Vision describes the company we aim to be in 2015.

## Corporate Philosophy

### Corporate Purpose

Seek to contribute to the happiness of people and the abundance of society through product manufacturing that wins the trust of society.

### Management Stance

- 1 . Create new value and provide society with joy and inspiration on a broad scale.
- 2 . Aim to growth in harmony with society through innovative operations on a global basis.
- 3 . Create a bright, energetic corporate atmosphere based on respect for people.
- 4 . Strive toward the realization of safer, more abundant living circumstances.

## JTEKT's 2015 Vision: "Creation & Innovation"

### Specific aims of formation

#### 1 . Achievement of the company's dream

Enable JTEKT as a "monozukuri" company (one dedicated to skill and excellence in manufacturing) to contribute to the betterment of society through the provision of products and services truly desired by customers.

#### 2 . Realization of each employee's potential

Enable each employee to obtain the joy, satisfaction and recognition that results from contributing to society through corporate activities and to achieve continual personal growth.

### Corporate objectives

- 1 . Be a "monozukuri" company friendly to the global environment
- 2 . Be a company that promotes living and work environment improvements by providing safe, reliable, pleasurable products
- 3 . Be a company that sees market changes as business chances and continues to grow throughout the world
- 4 . Be a truly global company that is a good corporate citizen with an excellent social and cultural understanding in each world region

### Core paradigm

**Each employee acts with initiative and a sense of responsibility to enable JTEKT to achieve its corporate objectives!**

- 1 . Strong ambition: Take pride in being a JTEKT employee and strive to enhance both personal capability and corporate value
- 2 . Emphasis on speed in decision-making and actions: Speed is vital to achieving a competitive edge
- 3 . Teamwork: While respecting the individual, work closely as a team in order to realize synergistic capability
- 4 . Culture of task completion: Cultivate a culture of continuing to search for solutions and make improvements until the task has been completed

# Company Profile

Company name:	JTEKT Corporation	
Headquarters:	No.5-8, Minamisemba 3-chome, Chuo-ku, Osaka, Japan	
Head Offices:	Nagoya head office No.7-1, Meieki 4-chome, Nakamura-ku, Nagoya, Aichi Pref., 450-8515, Japan Osaka head office No.5-8, Minamisemba 3-chome, Chuo-ku, Osaka, Japan	
President:	Motohiko Yokoyama	
Capital:	36,200 million yen (as of March 31, 2007)	
Number of employees:	31,355 (consolidated) 9,919 (nonconsolidated)	(As of March 31, 2007)
Sales	Year ending March 2006	1025.2 billion yen (consolidated) 634.8 billion yen (nonconsolidated)
Ordinary income	Year ending March 2006	66.9 billion yen (consolidated) 38.2 billion yen (nonconsolidated)
Consolidated subsidiaries:	91 (32 in Japan, 59 overseas)	

## Sales, Ordinary Profit, and Number of Employees



Note: JTEKT Corporation was created on January 1, 2006, by the merger of Koyo Seiko Co., Ltd. and Toyoda Machine Works, Ltd., with Koyo Seiko being the legally surviving entity. Accordingly, the results shown for FY 2005 were calculated by adding Koyo Seiko's results from April through December 2005 to JTEKT's results from January through March 2006. Results for FY 2004 and before are for Koyo Seiko.

## Domestic Plants

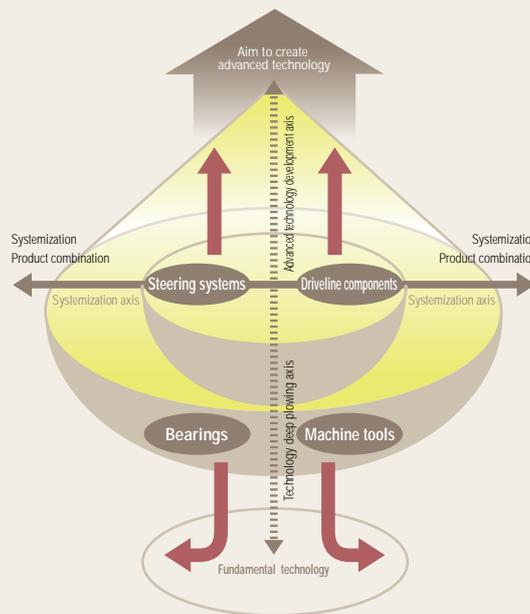
- |  |  |   |
|--|--|---|
| <b>Kokubu Plant</b> 24-1 Kokubu Higanjo-cho, Kashiwara, Osaka Pref.                          | <b>Tokyo Plant</b> 3-5-2 Sakae-machi, Hamura, Tokyo                          | <b>Toyohashi Plant</b> 5-61 Akemi-cho, Toyohashi, Aichi Pref.               |
| <b>Kariya Plant</b> 1-1 Asahi-machi, Kariya 448-8652, Aichi Pref.                            | <b>Kagawa Plant</b> 515-1 Umayado, Higashi-kagawa, Kagawa Pref.              | <b>Tadomisaki Plant</b> 1-5-3 Tado-cho, Takahama, Aichi Pref.               |
| <b>Tokushima Plant</b> 1 Okuno-Aza-Yamahata, Aizumi-cho, Itano-gun, Tokushima Pref. 771-1294 | <b>Nara Plant</b> 333-2 Toichi-cho, Kashihara, Nara Pref.                    | <b>Hanada Plant</b> 1-10 Aza-Fukayama, Shinfukuji-cho, Okazaki, Aichi Pref. |
| <b>Okazaki Plant</b> 8 Aza-Kiriyama, Ichiba-machi, Okazaki, Aichi Pref.                      | <b>Higashi-Kariya Plant</b> 1-7 Kitajizouyama, Noda-cho, Kariya, Aichi Pref. | <b>Kameyama Plant</b> 805-18 Aza-sakinou, Taikouji-cho, Kameyama, Mie Pref. |

## Main Products

### Steering systems



### Bearings



### Driveline components



### Machine tools



### Other products



# Global Network

## NORTH AMERICA & SOUTH AMERICA

### Regional headquarters

1. JTEKT NORTH AMERICA, INC. (USA)

### Steering manufacturing

2. JTEKT AUTOMOTIVE TENNESSEE-VONORE CO. (USA)
3. JTEKT AUTOMOTIVE TENNESSEE-MORRISTOWN, INC. (USA)
4. JTEKT AUTOMOTIVE VIRGINIA, INC. (USA)
5. JTEKT AUTOMOTIVE TEXAS, L.P. (USA)
6. JTEKT AUTOMOTIVA BRASIL LTDA. (Brazil)
7. JTEKT AUTOMOTIVE ARGENTINA S.A. (Argentina)

### Driveline component manufacturing

8. JTEKT AUTOMOTIVE SOUTH CAROLINA, INC. (USA)

### Bearing manufacturing

9. KOYO CORPORATION OF U.S.A. [MANUFACTURING DIV. ] (USA)

### Machine tool manufacturing

10. TOYODA KOKI DO BRASIL INDUSTRIA E COMERCIO DE MAQUINAS, LTDA. (Brazil)

### Technical centers

11. JTEKT CORPORATION NORTH AMERICAN TECHNICAL CENTER (USA)
12. JTEKT NORTH AMERICA, INC. TECHNICAL CENTER (USA)

### Sales

13. KOYO CORPORATION OF U.S.A. [ SALES DIV. ] (USA)
14. JTEKT TORSSEN NORTH AMERICA, INC. (USA)
15. KOYO ROLAMENTOS DO BRASIL LTDA. (Brazil)
16. KOYO CANADA INC. (Canada)
17. KOYO LATIN AMERICA, S.A. (Panama)
18. KOYO MEXICANA, S.A. DE C.V. (Mexico)

### Sales & service

19. TOYODA MACHINERY USA CORP. (USA)



2. JTEKT AUTOMOTIVE TENNESSEE-VONORE CO. (USA) 3. JTEKT AUTOMOTIVE TENNESSEE-MORRISTOWN, INC. (USA) 9. KOYO CORPORATION OF U.S.A. [MANUFACTURING DIV. ] (USA) 10. TOYODA KOKI DO BRASIL INDUSTRIA E COMERCIO DE MAQUINAS, LTDA. (Brazil)

## EUROPE

### Regional headquarters

1. JTEKT EUROPE S.A.S. (France)
2. JTEKT CORPORATION EUROPEAN BEARING CENTRAL OFFICE (Netherlands)
3. JTEKT TORSSEN HOLDINGS S.A. (Belgium)

### Steering manufacturing

4. JTEKT HPI S.A.S. (France)
5. JTEKT AUTOMOTIVE LYON S.A.S. (France)
6. JTEKT AUTOMOTIVE DIJON SAINT-ETIENNE S.A.S. (France)
7. JTEKT AUTOMOTIVE CZECH PLZEN, S.R.O. (Czech Republic)
8. JTEKT AUTOMOTIVE UK, LTD. (U.K.)

### Driveline component manufacturing

9. JTEKT TORSSEN EUROPE S.A. (Belgium)
10. JTEKT AUTOMOTIVE CZECH PARDUBICE, S.R.O. (Czech Republic)

### Bearing manufacturing

11. KOYO BEARINGS (EUROPE) LTD. (U.K.)
12. KOYO ROMANIA S.A. (Romania)

### Technical centers

13. JTEKT EUROPE S.A.S. TECHNICAL CENTER (France)
14. JTEKT CORPORATION EUROPEAN BEARING TECHNICAL CENTRE (Netherlands)

### Sales

15. KOYO FRANCE S.A. (France)
16. EUROPA-KOYO B.V. (Netherlands)
17. KOYO (U.K.) LTD. (U.K.)
18. KOYO DEUTSCHLAND GMBH (Germany)
19. KOYO KULLAGER SCANDINAVIA A.B. (Sweden)
20. KOYO ITALIA S.R.L. (Italy)
21. KOYO IBERICA, S.L. (Spain)

### Sales & service

22. TOYODA MACHINERY AND ENGINEERING EUROPE SAS (France)
23. TOYODA MITSUBI EUROPE GMBH (Germany)



6. JTEKT AUTOMOTIVE DIJON SAINT-ETIENNE S.A.S. (France) 9. JTEKT TORSSEN EUROPE S.A. (Belgium) 11. KOYO BEARINGS (EUROPE) LTD. (U.K.) 23. TOYODA MITSUBI EUROPE GMBH (Germany)

## ASIA / OCEANIA

### Regional headquarters

1. JTEKT (CHINA) CO., LTD. (China)
2. JTEKT (THAILAND) CO., LTD. (Thailand)

### Steering manufacturing

3. JTEKT AUTOMOTIVE (TIANJIN) CO., LTD. (China)
4. JTEKT AUTOMOTIVE (FOSHAN) CO., LTD. (China)
5. JTEKT STEERING SYSTEMS (XIAMEN) CO., LTD. (China)
6. KOYO STEERING (THAILAND) CO., LTD. (Thailand)
7. JTEKT AUTOMOTIVE (THAILAND) CO., LTD. (Thailand)
8. KOYO JOINT (THAILAND) CO., LTD. (Thailand)
9. JTEKT AUTOMOTIVE (MALAYSIA) SDN. BHD. (Malaysia)

### Driveline component manufacturing

10. TOYODA-KOKI DALIAN INNOVATION AUTOMOTIVE CO., LTD. (China)

### Bearing manufacturing

11. WUXI KOYO BEARING CO., LTD. (China)
12. DALIAN KOYO WAZHOU AUTOMOBILE BEARING CO., LTD. (China)
13. KOYO BEARING DALIAN CO., LTD. (China)
14. KOYO LIHO (FOSHAN) AUTOMOBILE PARTS CO., LTD. (China)
15. KOYO AUTOMOTIVE PARTS (WUXI) CO., LTD. (China)
16. KOYO MANUFACTURING (THAILAND) CO., LTD. (Thailand)
17. KOYO JICO KOREA CO., LTD. (Korea)
18. KOYO MANUFACTURING (PHILIPPINES) CORP. (Philippines)

### Machine tool manufacturing

19. TOYODA MACHINERY (DALIAN) CO., LTD. (China)

### Technical centers

20. JTEKT AUTOMOTIVE SCIENCE AND TECHNOLOGY CENTER (DALIAN) CO., LTD. (China)
21. JTEKT CORPORATION (CHINA) TECHNICAL CENTER (China)

### Sales

22. KOYO (SHANGHAI) CO., LTD. (China)
23. GKN TOYODA (THAILAND) LTD. (Thailand)
24. JTEKT KOREA CO., LTD. (Korea)
25. KOYO SINGAPORE BEARING (PTE.) LTD. (Singapore)
26. KOYO AUSTRALIA PTY. LTD. (Australia)

### Sales & service

27. TOYODA MACHINERY S.E. ASIA CO., LTD. (Thailand)



6. KOYO STEERING (THAILAND) CO., LTD. (Thailand) 7. JTEKT AUTOMOTIVE (THAILAND) CO., LTD. (Thailand) 12. DALIAN KOYO WAZHOU AUTOMOBILE BEARING CO., LTD. (China) 19. TOYODA MACHINERY (DALIAN) CO., LTD. (China)

## JAPAN

### Head Offices

1. Nagoya Head Office
2. Osaka Head Office



### Research & Development Centers

3. Nara prefecture
4. Osaka Prefecture



5. Aichi Prefecture



### Technical Centers

6. Chubu Technical Center
7. Toubu Technical Center



8. Driveline Technical Center



### Plants

9. Kokubu Plant
10. Kariya Plant
11. Tokushima Plant
12. Okazaki Plant
13. Tokyo Plant
14. Kagawa Plant
15. Nara Plant
16. Higashi Kariya Plant
17. Toyohashi Plant
18. Tadomisaki Plant
19. Hanazono Plant
20. Kameyama Plant

### Sales Offices

21. Tokyo Branch Office
22. Higashinoh Branch Office
23. Kitakanto Branch Office
24. Hamamatsu Branch Office
25. Toyota Branch Office I
26. Toyota Branch Office II
27. Nagoya Branch Office
28. Kansai Branch Office
29. Nishinoh Branch Office
30. Tohoku Business Office
31. Utsunomiya Business Office
32. Mito Business Office
33. Chiba Business Office
34. Okazaki Business Office
35. Kobe Business Office
36. Okayama Business Office
37. Kyushu Business Office

### Machine Tool & Mechatronics Headquarters

38. Customer Center
39. Tokyo Sales Office
40. Saitama Sales Office
41. Gunma Sales Office
42. Sales Sect. for Middle Japan
43. Hamamatsu Sales Office
44. Hokuriku Sales Office
45. Osaka Sales Office
46. Hiroshima Sales Office
47. Fukuoka Sales Office

### Distribution Centers

48. Kansai Distribution Center
49. Kawai Distribution Center
50. Chubu Distribution Center
51. Kansai Distribution Center
52. Nishinoh Distribution Center

# Corporate Governance

## Fulfilling Social Responsibility

In order to achieve continuous improvement of company value and fulfill CSR expectations as a trusted corporate citizen of the international community, we are endeavoring to attain management transparency for the sake of shareholders and other concerned parties.

## Achieving Rapid Accurate Decision-making

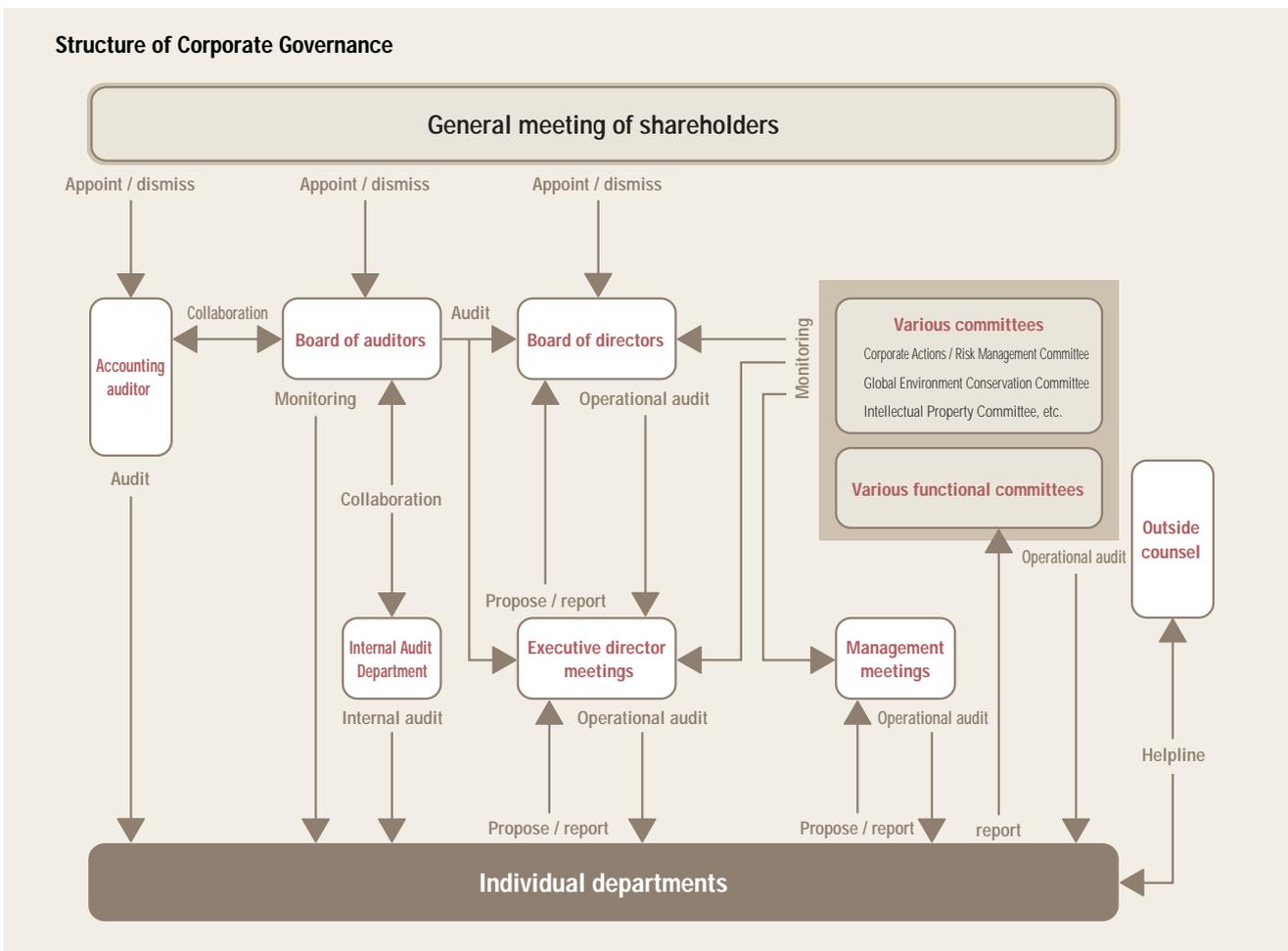
The primary decision-making meetings are the general meeting of shareholders and the board meetings. In addition, to achieve swift decision-making and efficient execution of operation, we have adopted an executive officer system whose role is to focus on operations.

Specialized, full discussions are carried out in the executive director meetings and various committee meetings to enable fast, accurate decision-making. To share information and confirm progress of operations among directors and managing officers, management

committees are held with the participation of directors, auditors and managing officers.

The board of auditors exists as an auditing organization, and external auditors make up two of the five auditors.

An Internal Audit Department has been established to audit internal operations and support the board of auditors.



# Compliance

We position compliance with laws, corporate ethics, and regulations as a major responsibility of management. Compliance and risk management are invaluable to being a company that has the trust and high expectations of society, and we are continually striving for improvement in these areas.

## Corporate Activities Standard

- 1 . Follow proper business practices and engage in fair, transparent and free competition based on a respect for the law.
- 2 . Derive concepts from the market, provide the best in quality, technology, and service, and obtain the satisfaction and trust of customers.
- 3 . Carry out global environmental improvement activities proactively and aggressively.
- 4 . Respect the individuality of employees, create workplaces that are motivating to employees and enable them to fulfill their potential, and strive to provide each with abundant living circumstances.
- 5 . Maintain close communication not only with shareholders but also with society and disclose corporate information properly.
- 6 . As a good corporate citizen, aggressively pursue activities that contribute to society.
- 7 . Follow international rules, observe the laws, cultures and customs of countries and regions where we have operations, and seek to contribute to their growth.

As a "monozukuri" company dedicated to the highest manufacturing principles, JTEKT aims to achieve world-class levels of quality and safety and continues to pursue new challenges in manufacturing innovation. At the same time, to meet increasing social demands for corporate responsibility, JTEKT last year established a Risk Management Committee and issued Employee Conduct Guidelines to provide employees with an easy-to-understand outline of expected behavior in order to enable JTEKT to carry out its Corporate Philosophy and achieve its aims.

## Establishment of Corporate Actions / Risk Management Committee

### Establishment of committee

"Corporate Actions / Risk Management Committee" was established in March 2006 and been discussing various important issues related to compliance and risk management.

### Committee activities

A Risk Management WG" and "a Compliance WG" have been formed and carry out such tasks as implementing companywide the committee's decisions and policy and conducting audits.

## Establishment of "Employee Conduct Guidelines"

### Formation of guidelines

Following discussions by the Corporate Actions / Risk Management Committee, the Employee Conduct Guidelines were established in April 2006. This is an easy-to-read collection of policies and principles that guides employees when they face challenges on the job as they strive to implement JTEKT's corporate philosophy and achieve company goals.

### Content of Employee Conduct Guidelines

- Chapter 1 Guidelines related to employee's relationship with the company
- Chapter 2 Guidelines related to employee's participation in company activities
- Chapter 3 Guidelines related to employee's relationship with society
- Chapter 4 Guidelines related to employee's personal activities

### Distribution of "pocket version"

An easily carried "pocket version" of the Employee Conduct Guidelines has been distributed to all employees so that they can refer it handily in everyday life.

### Promoting training on compliance

Training sessions have been held at all business sites with the aim of explaining the rational behind of the Corporate Philosophy, Corporate Activity Standards and Employee Conduct Guidelines and gaining acceptance thereof.



Compliance training

## Receiving assistance regarding corporate ethics

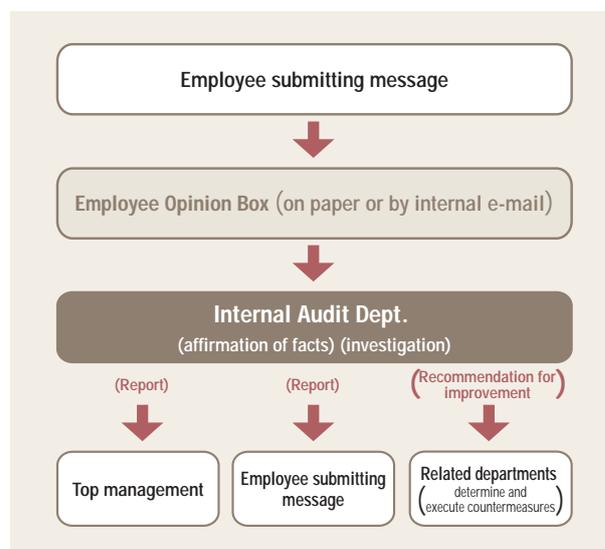
An "Employee Opinion Box" and "Corporate Ethics Helpline" have been set up to enable employee's seek answers to questions and raise issues regarding compliance issues.

### "Employee Opinion Box"

This is a means by which employees can receive consultation when they are having doubts about the lawfulness of their own activities or other activities being carried out in the company. Messages can be dropped in a box or sent by company e-mail.

### "Corporate Ethics Helpline"

Employees unable to consult with their supervisor or specialist department for various reasons can utilize a corporate ethics helpline set up for consultation with outside lawyers. The lawyers provide advice and improvement proposals to JTEKT management as required, while keeping the employee's identity anonymous.





# For Our Customers

## Relationship with customers

### Putting customers first and focusing on quality

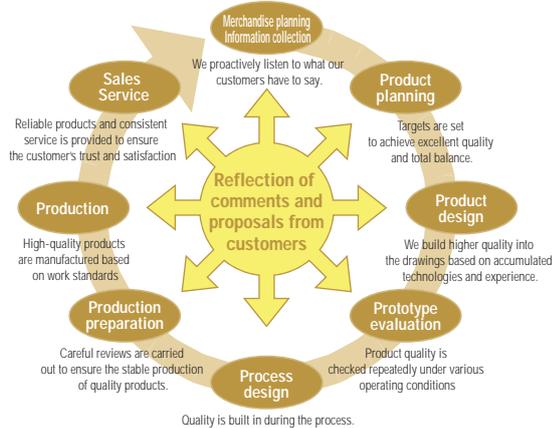
"We will put quality first and provide products to earn the trust and satisfaction of our customers." This is in our quality policy, and we are working to emphasize the concept of "putting customers first and focusing on quality" at every opportunity as well as to create attractive products that will satisfy the customer.

### Quality control system & Creating products to put the customer first

We are promoting "TQM (Total Quality Management) activities" based on "improvement in quality of work" and "vitalization of people and workplaces" for everything from product planning to manufacturing, sales, and service, and we are working to build in quality.

In particular, in FY 2007 we established "From Quantity to Quality!" as the basic concept of our company policy, and we are striving to be a company that provides customers with reliable products and superior service.

Moreover, because we acquired certification in the ISO 9001 and ISO/TS 16949 international quality management standards early on, we have created a quality system that can respond to the demands of customers.

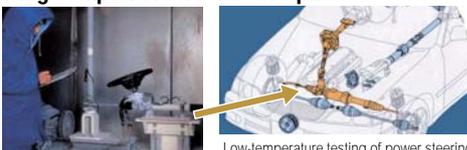


### Creating machine tools that create customer satisfaction



Performance evaluation of grinder

### Creating competitive automotive parts



Low-temperature testing of power steering

## Quality Assurance

### Basic Concept

Basically, quality assurance is achieved by building in quality at each process. We assure quality by building it in at the development and production (mass production) preparation stages. We also strive to enhance customer satisfaction by continuously improving our effectiveness in quality assurance, by abiding by the quality policy, all in accordance with the quality management system.

### Quality assurance that involves our suppliers

Quality and reliability are the most important selling points for the JTEKT, Koyo, TOYODA, and TORSEN brands. In order to supply high-quality products that earn the trust of our customers, we carry out quality assurance activities not only internally but also with our suppliers.

### Efforts to eradicate environmentally burdensome substances from our products.

We position freedom from environmentally burdensome substances as an important quality characteristic and strive to provide products that customers can use without concern.

## Social involvement



Introducing our newest technologies at the SAE Show

We have been contributing to society by designing Only-One products attractive to customers.

Also, we contribute to society through the focused improvement of our fundamental technologies creating product systems and modules and developing and offering safe, reliable, pleasure-providing, energy-conserving, and environmentally friendly products.



The safe "Only-One" PLC that passed stringent European certification tests.



Windmill power generator  
Contains JTEKT bearings in the primary shaft and generator.



Developed low-torque high-performance tapered roller bearings  
(80% less rotational torque)

# Together with Local Communities



JTEKT, as a partner with local communities, proactively promotes communication through various activities in order to better integrate with the local communities.

## Activities contributing to society

### <The JTEKT Challenge Cup>

Some 15 schools and 30 teams participated in an elementary school soccer tournament that JTEKT sponsored in February this year in Kariya, Aichi Prefecture.

Also, volunteers from our nearby plant served participants by making lunch, etc. to make the entire tournament an enjoyable event.



The JTEKT Challenge Cup



Free miso soup served by plant volunteers

## Communication with local communities

### <Community discussion meeting>

In order to build good relations with local communities, our company invites local residents for community meetings, where active exchanges of views take

place. Through these meetings we are able to gain the understanding of residents with respect to our efforts.



Community meeting (Kokubu Plant)



Plant tour (Kokubu Plant)

### <Local beautification activities / Plant Festivals>

In order to improve our employees' environmental awareness, our company carries out local beautification activities every year. Employees proactively participate in cleanup around the plant and flower-planting activities in order to

better coexist with local communities.

Also, we hold Plant Festivals every year, which are enjoyed by employees, their family members, and local residents.



Cleanup (Higashi Kariya Plant)



Flower-planting activity (Tokyo Plant)



Plant Festival (Hanazono Plant)



# Together with shareholders and investors

## Management summary of fiscal year 2006 and regarding returning profits to shareholders

JTEKT "seeks to contribute to the happiness of people and the abundance of society through product manufacturing that wins the trust of society." In order to achieve this corporate philosophy, the JTEKT Group has dedicated itself to securing steady growth and stable profit by enhancing the group's overall capability, responding appropriately to changes in the business environment, developing products that foresee the needs of customers, and creating strong workplaces as well as by providing customers with the highest level of satisfaction through delivering the best in quality and service.

Consolidated sales for FY 2006 were 1,025.2 billion yen, an increase of 300.9 billion yen, or 41.5%, over the previous period. Regarding profit, despite a rise in raw material prices, consolidated operating income rose to 66.9 billion yen, an increase of 20.1 billion yen, or 43.1%, thanks to increased sales, and consolidated net income rose 17.6 billion yen, or 64.6%, to 44.9 billion yen.

As a result, JTEKT was able to issue an annual dividend to shareholders of 19 yen per share, an increase of 4 yen per share from the previous year.

Our forecast for the current fiscal year is 1,060 billion yen in consolidated

sales, 67 billion yen in consolidated operating income, and 40 billion yen in consolidated net income. We expect to increase the annual dividend by 2 yen to 21 yen per share.

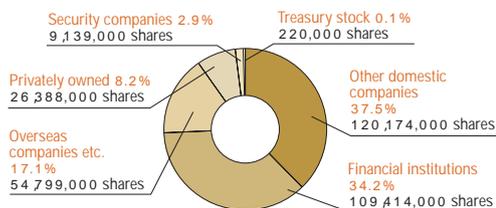
### Status of shares

Status of shares (as of March 31, 2007)  
 Total authorized shares ..... 1,200,000,000  
 Total issued shares ..... 320,136,000  
 Number of shareholders ..... 24,764

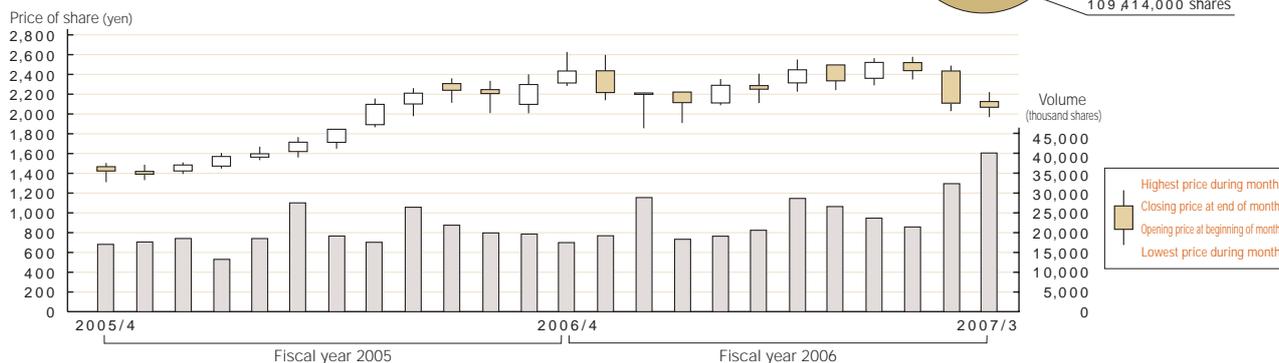
### Status of major stockholders

Name of shareholder	Number of shares (thousand shares)	Percentage of voting rights
Toyota Motor Corporation	72,435	22.63
Japan Trustee Services Bank, Ltd.	17,868	5.58
DENSO CORPORATION	17,611	5.50
The Master Trust Bank of Japan, Ltd. (trust account)	17,486	5.46
Nippon Life Insurance Company	12,361	3.86
Toyota Industries Corporation	7,493	2.34
Resona Bank, Ltd.	6,749	2.11
The Sumitomo Trust & Banking Co., Ltd.	6,729	2.10
Sumitomo Mitsui Banking Corporation	6,366	1.99
Toyota Tsusho Corporation	5,649	1.76

### Distribution of shares by owner



### Changes in price of share



### Procurement Policy Meeting

In March 2007, JTEKT held its FY 2007 Procurement Policy Meeting with the participation of 314 suppliers.

President K. Yoshida urged participants to manufacture products in an environmentally friendly way, improve unsafe situations and actions, and promote activities to prevent defects from flowing to the following process and from being produced in your own process.

In addition, suppliers that had achieved outstanding results were recognized in

an awards ceremony at this meeting.



Procurement Policy Meeting



Awards ceremony

# Relationship with employees

~ Human resource development ~



JTEKT philosophy is to "seek to contribute to the happiness of people and the abundance of society through product manufacturing that wins the trust of society." In order to create new value and provide society with joy and excitement on a broad scale, we strive to carry out human resource development in a manner that allows all employees to fulfill their creative abilities. We strive to create workplaces where the individuality of each employee is respected, that provide employees with the chance to fulfill their potential, and that enable them to contribute to the success of the company

Our system of human resource development system, which consists of the three elements training, evaluation, and compensation, enables employees to improve their skills on a continual basis and provides them with motivating circumstances for the duration of their years in the company.

## Idea behind human resource development

- (1) Develop employees who understands the company philosophy, and who are professional, creative, highly skilled, and able to achieve management goals.
- (2) Develop employees who are creative, always motivated to improve themselves, and able to realize their true potential through self-driven and disciplined actions.
- (3) Develop employees who respects human rights, lives in harmony with the environment, observes social rules, areis sensible and have an international perspective.

## Employee development

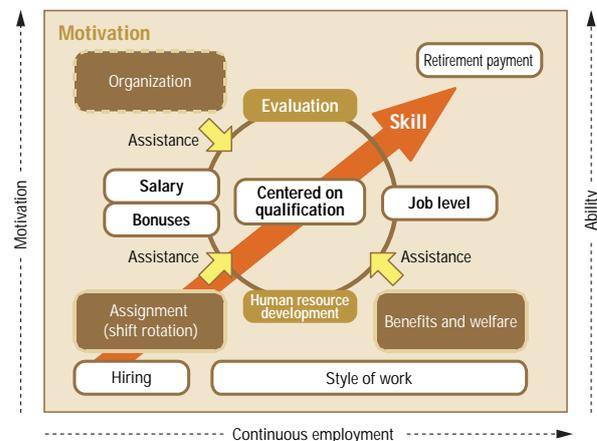
Our training system consists of rank-specific training (companywide training), function-specific training within specialist fields, and workplace-specific training carried out by the workplace.

Rank-specific training is separate for each qualifications and job level. Clearly defined knowledge, skills and responsibilities must be attained by persons at each rank, and the training is designed to achieve that.

Function-specific training is provided so that employees can obtain advanced knowledge and skills through external instructors who are skilled in specific functional fields.

At each workplace, an education and training plan is defined so that employees can acquire the skills relevant to their job level and qualifications based on a schedule.

In addition, we support employees' efforts to obtain qualifications and in self-development programs.



## Technician development

In order for JTEKT, as a maker of functional components possessing both bearing and machine tool divisions, to continually provide the world with advanced, reliable technology rooted in innovative monozukuri practices, it must carry out continual training to provide its employees with advanced technical skills.

Technicians receive basic education through the company's vocational school and then through OJT at the workplace. After that, technicians are trained while working with their teams through such means as studying for national and internal technical-skill examinations and participating in courses to increase their skills.





# Relationship with employees

~ Safety, Hygiene, Health, and Transportation ~

Building a safe and pleasant working environment and aiming to achieve both physical and mental fitness

## Safety, Hygiene, and Health

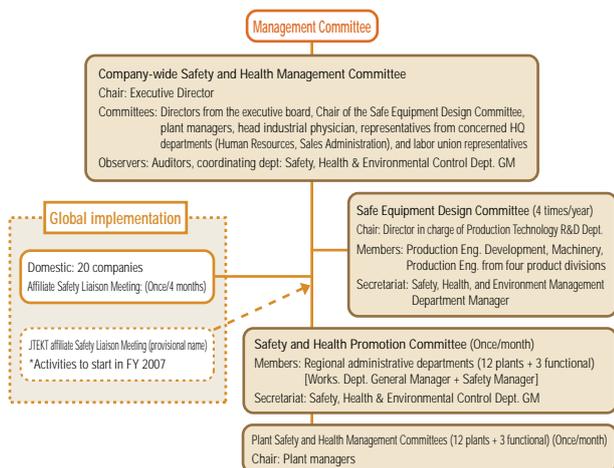
Concerning the safety and health policy of JTEKT, it "recognizes that securing the safety and health of employees is an essential aspect of company managing and proactively promotes companywide safety and health activities for that purpose." Employees actively participate in safety and health activities with the aim of maintaining their health and creating pleasant workplaces.

### Centralized management system under the Safety and Health Management Committee

Our company established a companywide "Safety and Health Management Committee," chaired by the executive director responsible for safety and health, which determines policies, targets, and actions related to safety, hygiene, health, traffic, and fire prevention and follows up on implementation.

We also established a lower organization called the "Safe Equipment Design Committee," which has the purpose of creating intrinsically safe equipment by strengthening specifications and implementing measures companywide. In addition, for the purpose of exchanging information with our affiliates and aligning direction, we established an "Affiliate Safety Liaison Meeting" and started expanding these activities to overseas affiliates this year.

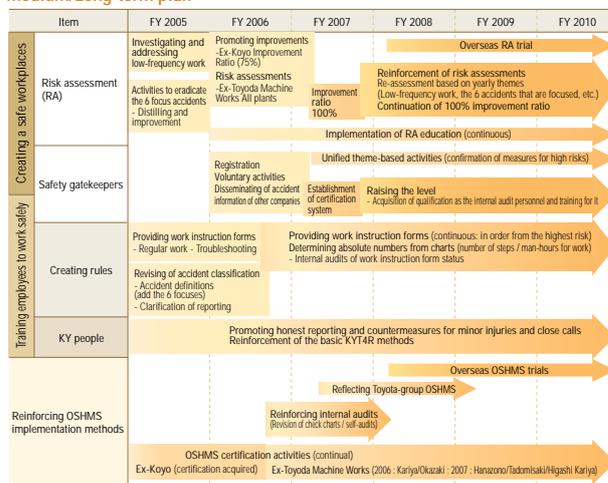
Regarding plant safety and health activities, action items decided by the Safety and Health Promotion Committee and other important information is disseminated to employees through the plant-level Safety and Health Management Committee at each plant in order to prevent the recurrence of accidents and create pleasant workplaces.



## Continuous improvement in safety and health activities based on medium- and long-term plans

By promoting continuous safety and health activities according to the themes in the medium- and long-term plans, which are "creating safe workplaces," "training employees to work safely," and "reinforcing OSHMS implementation methods," we are working to raise safety and health levels.

### Medium/Long-term plan



## Improving awareness and knowledge through safety and health education

In order to create workplaces where safe, pleasant work is possible, employees must receive safety and health education to improve their awareness and knowledge. Thorough training is carried out until employees are able to work correctly at their workplaces. Each employee must be careful to ensure his own safety and that of coworkers.

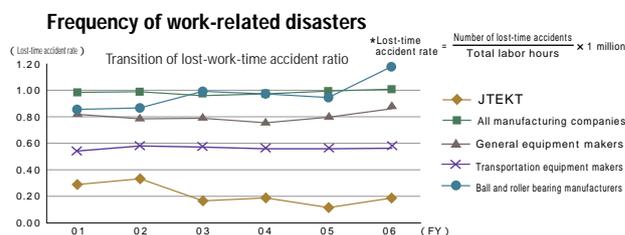
This education to ensure workplace safety and health is an important part of training and is carried out consistently.

### (1) Principal education

- Rank-based education: New employees, new group leaders, new section managers (safety managers), etc.
- Special education: (statutory) Low-voltage electrical, arc welding, grinding stone replacement, organic solvents, hypoxia, dust, noise, etc.
- Special education (non-statutory) Toyota-group education of people in charge of outside workers, education of high-place work/ electric shock prevention, etc.
- OSHMS education: Risk assessment education

### (2) Principal training

- Basic KYT4R training, danger training, skill training, etc.





## Major policies for 2006

### 1. Safety and Health

- (1) Carry out activities based on occupational safety and health management system
- Improve work methods and equipment through promoting risk assessment
  - Implementation of risk assessment training  
Number of times (total of 20 times); number of people who have taken the training (total of 527 people)
  - Number of risk assessments (evaluations) implemented  
Number implemented: 14,837; Number of pieces of equipment: 17,812
  - Acquisition of certification from external organizations
  - FY 2006 (new): Kariya/Okazaki; (renewed) Tokyo
  - FY 2007 (new certification expected): Hanazono/Higashi Kariya/Tadomisaki
  - \*In FY2007, all domestic plants will be certified
- (2) Promote safety-conscious employee
- Enforce observation of rules (prepare manuals, education and training)
  - Enforce reporting and horizontal implementation

- (3) Promoting efforts to improve the intrinsic safety of equipment
- Standardization of equipment safety specifications
  - Promotion of measures to prevent starts by third parties (lockout systems)
- (4) Equipping forklifts with seatbelts
- Seatbelts have been added to all forklifts in the company
- (5) Improve work environments
- Improve workplaces that fall into 3rd degree noise management (Target: 0 by 2010)
  - Improve hot workplaces
  - Reduce workload by incorporating ergonomics



Acquisition of OSHMS certification (Kariya)



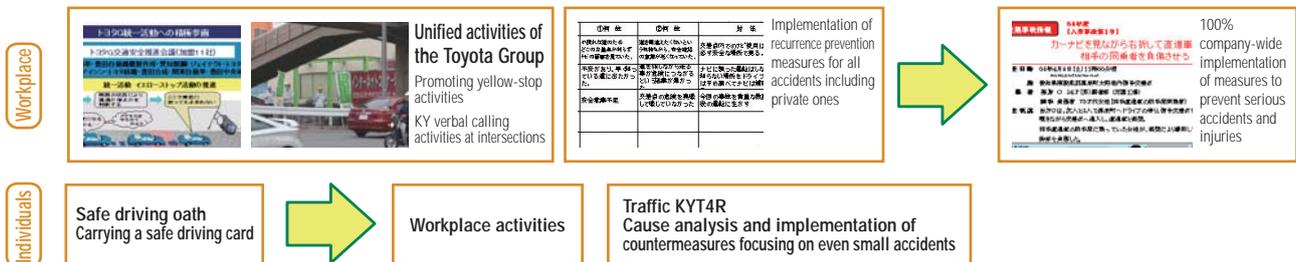
Acquisition of OSHMS certification (Okazaki)



Standardization of equipment safety specifications

### 2. Traffic and fire prevention

- (1) Invigorating workplace activities focusing on preventing accidents at intersections



- (2) Creating workplaces where fires don't happen

- Promotion of equipment measures based on fire prevention assessments
- Fire prevention inspections by the department fire prevention manager
- Implementation of initial-stage firefighting training

#### Fire prevention assessments done by the division manager



Voluntary inspection chart



Workplace inspections



Summary of plant inspection results

#### Implementation of initial-stage firefighting training



Ensured understanding of firefighting equipment handling methods in Portuguese



Initial-stage firefighting training

### 3. Achieving mental and physical health

Health management activities are being executed to assist employees in promoting health and well-being. As a measure for achieving mental and physical

health, we proactively promote activities to prevent lifestyle-related diseases and maintain mental health suited to individual health and activity levels.

- (1) Achieving mental health

- We proactively promote mental health measures focused on preventing depression.
- Education of managers in mental health and to be listeners
- Basic knowledge on mental health, methods to detect anything unusual in subordinates early on, proactive attentive listening methods
- Stress checks
- Realizing stress levels in yourself and reporting the results to your workplace
- Counseling for high-stress individuals
- Providing mental health information
- The 15th of every month is "Health Day"



- (2) Measures to combat lifestyle-related diseases

Group education is carried out to prevent lifestyle-related diseases

#### Education for preventing lifestyle-related diseases

Objective: To motivate employees to improve their lifestyles  
For: People with metabolic syndrome

#### Details of education

- Measurement of vascular age (objective: to get a grasp of arterial hardening)
- Sampling health foods (low-calorie foods, balanced foods)
- Diet improvement education





# Environmental Promotion Framework

As a manufacturing company that seeks to be environmentally friendly, in addition to reducing the burden on the environment through productivity improvements, we endeavor to develop and supply environmentally friendly products that contribute to protection of the global environment and the creation of a sustainable society.

## Centralized Management Framework with the Environmental Conservation Committee at the Center

The Global Environmental Conservation Committee, chaired by the President, determines company policies, targets, and measures related to the environment. To support the work of this committee, six specialized subcommittees have also been established to work on priority themes stipulated in the company's environmental policy.

A Plant Environmental Subcommittee chaired by the plant manager has been established at each plant, and based on the policies and plans of the Global Environmental Conservation Committee, it promotes specific activities in cooperation with various plant departments.

### Promoting Global Environmental Management

In order to promote environmental conservation activities of the entire group, JTEKT has established a system of Global JTEKT Group Environmental Liaison Meetings to implement environmental activities with both domestic and overseas affiliates. In FY 2006, we organized our overseas affiliates into the four groups North America / South America, Europe, Asia, and China in order to strengthen our management system.

#### Highlights

##### Global JTEKT Group Environmental Liaison Meeting for the Asia Group

In May 2007, representatives from six overseas affiliates in such countries as Thailand, the Philippines, and Malaysia participated in the first Asia Group meeting.

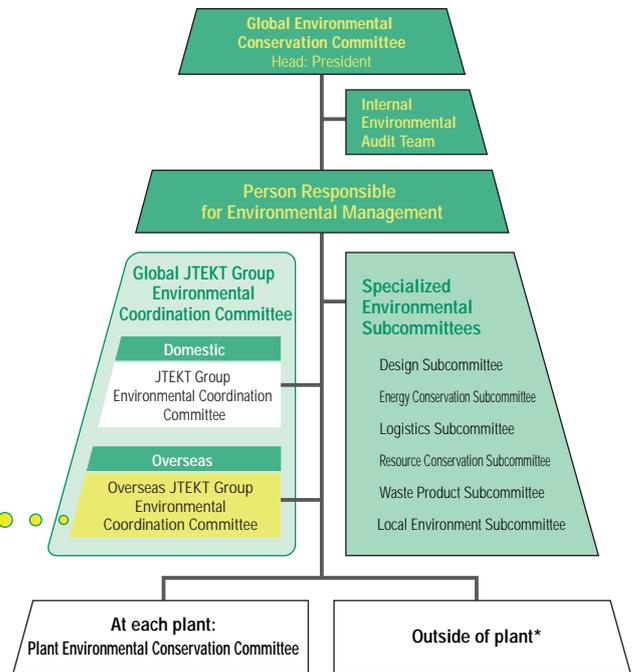
During the meeting, participants shared environmental information and improvement examples to aid in the achievement of common JTEKT Group environmental targets, and each company confirmed the role that they should fulfill.



Global JTEKT Group Environmental Liaison Meeting for the Asia Group  
KOYO MANUFACTURING ( THAILAND )



Plant tour  
JTEKT AUTOMOTIVE ( THAILAND )



★ Outside the scope of third-party certification

## Environmental Policy

Our company has established and publicly disclosed a companywide environmental policy that covers all employees including outside workers who work inside our plants. Some plants have also established plant-level environmental policies based on the conditions at their plant and local conditions.

### Environmental Policy

1. Voluntarily and aggressively carry out global environmental conservation activities both in Japan and abroad in all our business activities, products, and services based on a deep awareness that environmental protection on a global scale is an important mission of our company.
2. Maintain an environmental management system that pursues harmony between our business activities and the environment, strive continuously for improvements related to environmental issues, and seek the related cooperation of suppliers of raw materials, etc.
3. Comply with all environmental requirements pertaining to our business activities stipulated in laws, regulations, agreements, etc. and strive aggressively to prevent environmental pollution.
4. Contribute to global energy and resource conservation through accurately grasping technical needs related to global environmental conservation and developing and supplying products that meet such needs.
5. Raise the environmental awareness of all employees and pursue the following as important environmental management objectives in relation to all our business activities, products, and services.

- |  |  |
|--|--|
| ① Reduction of CO <sub>2</sub> emissions through efficient energy utilization                                | ② Reduction of waste                                       |
| ③ Reduction of raw and consumable materials  | ④ Reduction of logistics-related CO <sub>2</sub> emissions |
| ⑤ Thorough implementation of chemical substance control and reduction of substances of environmental concern | ⑥ Maintaining and improving community environments         |

6. Maintain an organized environmental conservation structure, clarify environmental conservation activity objectives and targets, conduct periodic reviews, and pursue environmental conservation activities based on the participation of all employees.
7. Maintain an awareness of the community surrounding each business site, maintain good communications with concerned government agencies and local residents, participate in community environmental improvement activities, and publicly disclose information on our environmental management activities as necessary.

# Activities in Fiscal Year 2006



## Environmental Action Plan

Our company has established an "Environmental Action Plan" for 2010 stipulating an action policy and specific goals, and based on that we are implementing environmental conservation activities that include our affiliates to contribute to the creation of a sustainable society. In areas where goals have

already been achieved, we have set more challenging targets and are working to achieve them.

### Fourth Environmental Action Plan – Targets for FY 2010

\* Includes upgraded targets

[ 1 ] Enhancement of environmental conservation activities by further reducing environmental impact			
Item	Details	FY 2006 results	FY 2010 targets
Promotion of measures to prevent global warming	Total CO <sub>2</sub> output : 5% reduction from 2003 level by the end of FY 2010 Unit CO <sub>2</sub> output : 7% reduction* from 1990 level by the end of FY 2010 •Promoting the further reduction of energy losses (for equipment with high power and energy consumption, etc.)	276,455 (t-CO <sub>2</sub> ) 43.5 (t/100 million yen)	241,373 (t-CO <sub>2</sub> ) 55.4 (t/100 million yen)
Controlling and further reducing substances of environmental concern	Substances subject to PRTR : 60% reduction from FY 1998 level by the end of FY 2010 •Reduce discharge of paint solvent by improving efficiency of paint use •Switch to products with lower ratio of substances subject to PRTR Improve paint adhesion rate	103 (t)	77 (t)
Reducing waste and promoting resource conservation	Zero landfill waste : 99% reduction from the FY 1998 level by the end of FY 2010 Incinerated waste : 50% reduction* from the FY 2004 level by the end of FY 2010 Unit waste output : 5% reduction* from the FY 2003 level by the end of FY 2010 Primary materials, by mass : 5% reduction from the FY 2005 level by the end of FY 2010 Primary materials, by value : 5% reduction from the FY 2005 level by the end of FY 2010 Secondary materials, by value : 5% reduction from the FY 2005 level by the end of FY 2010 •Reduction of machining allowances through near-net-shape technology •Improvement of yields •Longer die and tool life •Reducing and reusing waste oil •Measures to control waste at source •Reducing material losses •Longer machining fluid life •Increased recycling of waste	36 (t) 1,463 (t) 10.1 (t/100 million yen) 1.719 (t/million yen) 12.09 (million yen/million yen) 5.89 (million yen/million yen)	Achieved in FY 2003, zero landfill efforts are continuing. 1,200 (t) 11.5 (t/100 million yen) 1.633 (t/million yen) 11.49 (million yen/million yen) 5.60 (million yen/million yen)
Promoting the rationalization of logistics	CO <sub>2</sub> output at the transportation stage: At or below FY1990 level by the end of FY 2010 Basic unit of CO <sub>2</sub> output: 40% reduction from the FY 1990 level by the end of FY 2010 •KAIZEN of transportation methods •Expansion of modal shift	17,881 (t-CO <sub>2</sub> ) 2.85 (t/100 million yen)	15,865 (t-CO <sub>2</sub> ) 2.16 (t/100 million yen)

[ 2 ] Eco-friendly development and design		
Item	Details	FY 2006 results
Efforts in the development and design stage	We have introduced the "Basic environmental efficiency equation" as a common index for reducing environmental impact. By increasing the environmental efficiency, the environmental impact of new products can be decreased •Basic environmental efficiency = Performance of the product/Environmental impact of the product = $1/\sqrt{(W^2+T^2+E^2)}$ W : Mass term, T : Loss term, E : Energy term •Increase in environmental efficiency = Environmental efficiency of the new product/Environmental efficiency of the old product Improvement in environmental efficiency: 1.67 times better than the FY 2002 level by the end of FY 2007	•Improved environmental efficiency of power steering •Decreased weight and size of Torsen LSD •Reduced weight of CVT oil pump and reduced its energy consumption •Increased the life of needle roller bearings for planetary gears •Reduced power consumption of Top Center series machining center (TH-555F3) by decreasing the amount of coolant
Strengthening tie-ups with suppliers	Promotion of more green purchasing Creation of eco-friendly Purchasing Guidelines for distribution to suppliers	Creation of an environmental management system

[ 3 ] Expansion of environmental management system in response to consolidated management		
Item	Details	FY 2006 results
Developing structure and improving actions	Share basic policy and action guidelines	Continued activities with domestic group companies

[ 4 ] Participation in social and conservation activities as a corporate citizen		
Item	Details	FY 2006 results
Promoting social contribution activities	Participate in environmental conservation activities	Implementation of clean-up activities around the plant
Developing communication with local communities	Coordinate with and provide support for local governments	Held local discussion meetings
Promoting PR and information disclosure	Improve the supply of environmental information via the Internet Improve and keep issuing our environmental reports Promote regional community volunteer activities	Issued Environmental Report



# Environmental Audits

In order to evaluate whether or not the environmental management system is being continuously maintained and improved, our company receives both internal audits and external audits every year.

## Internal audits

In order to determine whether or not the environmental management level is being continuously improved and to evaluate the mitigation of latent environmental risks, an internal audit is carried out once a year. In FY 2006, no major items requiring correction were identified.

Observation items were all corrected and improvements were made.

The results of the internal audit are reported to the involved management classes through the Global Environmental Conservation Committee.

## External audits

In April 2007, we received an ISO 14001 surveillance audit, during which time we received further instruction on how day-to-day operations at each workplace must be directly tied to environmental improvement activities aimed at achieving purposes and goals. There were no major nonconformities, but five items were identified as observations, which were corrected by joint efforts between all concerned departments. We will continue to improve our rules for operating the environmental management system in order to strengthen our environmental management activities.



Surveillance audit carried out in April '07

## Efforts by overseas affiliated companies

In FY 2006, six overseas JTEKT group companies obtained ISO14001 certification, including KJKC (Korea) JAPL (Czech Republic), JAPA (Czech Republic).

## Overseas affiliates in the Czech Republic acquired ISO14001 certification

Our two overseas affiliates in the Czech republic, JAPL and JAPA, acquired ISO 14001 certification in November 2006.

The Czech Republic, a beautiful country where nature is plentiful and remnants of medieval towns can still be seen, has extremely pressing environmental conservation needs, so we are carrying out activities very proactively in this country.

These affiliates help protect the environment not only by supplying energy-efficient electric power steering, which reduces vehicle emissions, but also through such ongoing activities as sorting trash and properly controlling hazardous substances.

## Overseas affiliates that acquired ISO14001 certification in FY 2006

Overseas affiliate	Date certification acquired
KJKC (Korea)	June 2006
JAPL (Czech Republic)	November 2006
JAPA (Czech Republic)	November 2006
KLF (China)	December 2006
SF-KOYO (China)	March 2007
KDC (China)	April 2007



JAPL

# Environmental Accounting



We carry out environmental accounting in order to grasp investments and costs associated with environmental conservation activities as well as the benefits obtained through environmental countermeasures and to improve the efficiency of these activities and countermeasures.

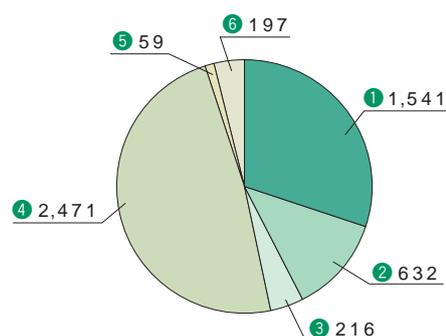
Environmental accounting practices are an important means of helping our stakeholders understand our environmental activities and are vital to corporate management, and therefore we will continue efforts to improve them.

## Cost of Environmental Conservation

(Unit : million yen)

Category	Description	Investment	Cost
<b>1 Business area cost</b>			
Pollution control	Improvement of wastewater channels	238	282
	Maintenance and management costs for wastewater treatment equipment		
	Maintenance and management costs for dust collection equipment		
Global environmental protection	Cost of energy conservation measures	295	57
Resource recycling	Investment and maintenance costs for waste reduction	32	637
	Cost of waste disposal, recycling, etc.		
<b>2 Upstream and downstream cost</b>			
	Green purchasing costs	-	632
	Expenses for industry groups, etc.		
<b>3 Management activity cost</b>			
	Cost of education and awareness-development activities	1	215
	Cost of maintaining and managing ISO14001 certification		
	Environmental monitoring and measurement cost		
<b>4 Research &amp; development cost</b>	Development cost of eco-friendly products	730	1,741
<b>5 Social activity cost</b>			
	Cost for environmental information disclosure	-	59
	Cost of greening etc.		
<b>6 Environmental damage cost</b>			
	Pollution load levy (Tokyo and Tokushima)	33	164
	Cost of groundwater and soil purification		
Subtotal		1,329	3,787
Total		5,116	

Breakdown of environmental conservation costs



## Economic Effect of Environmental Conservation Measures

(Unit : million yen)

	Details of effect	Economic effect
Profit	Recycling of waste products generated by our primary business activities and business profit from the recycling of used products, etc.	1,246
	Reduction in energy cost from energy conservation measures	243
Cost reductions	Reduced waste disposal costs from resource conservation and recycling	171
	<b>Total</b>	<b>1,660</b>

The economic effect brought about by environmental conservation measures does not include factors such as "contribution to VA of products," "avoidance of environmental risk," and improvement to corporate image."

Figures only include calculable items such as energy-saving effect, etc.

### Calculation range: JTEKT Corporation only

(Head offices and branches, Logistics Center, R&D Dept., and all plants)

### Accounting period: FY 2006 (April 2006 to March 2007)

Cost depreciation is not included.

Costs with combined expenditure purposes are shown.

### Environmental accounting results for FY 2006

The total environmental conservation cost for FY 2006 was 5,100 million yen, comprising 1,330 million yen of investment and 3,790 million yen of expenses.

Compared to the previous fiscal year, more money was used for energy conservation measures for the purpose of addressing global warming.

The economic benefit from our environmental conservation measures was 1,660 million yen. Contributing to this was the sale of steel scrap, the sale of solidified grinding swarf, and a change from paying for shot material recycling to selling it.



# Environmental Education and Training

In order for a corporation to promote environmental efforts, its employees must each understand what they can do for the environment in their day-to-day operations. At JTEKT, we utilize environmental education and training to improve employee awareness of the need for environmental conservation.

## Environmental education

Our company carries out various types of environmental education to improve the environmental awareness of all employees

### (Environmental self-awareness sessions)

Every year in June, our environmental month, we hold environmental self-awareness sessions in each plant for our employees.

Employees are educated on global environmental issues, JTEKT's environmental efforts, and the rules that each of them must follow with respect to environmental conservation.

### (Educating internal environmental auditors)

Every year, we carry out internal environmental auditors training for employees of JTEKT and affiliates that includes content for new internal environmental auditors and for retraining people already registered as internal environmental auditors.

In FY 2006, 95 people were newly registered as internal auditors as a result of this training.

### (New employee training and rank-based training)

Companywide training concerning the environment is provided for new employees, newly appointed managers, staff positions, and skilled positions.

### (Training related to equipment having an environmental impact)

Training is carried out at each workplace regarding the appropriate control of equipment that has an impact on the environment.

## Emergency training

JTEKT regularly carries out emergency preparedness training at each plant in order to enable employees to handle emergencies properly.



Environmental self-awareness session (Kameyama Plant)



Internal auditor training session

## No. of people with major environment-related qualifications (FY 2006)

Pollution prevention manager	Atmosphere	27
	Water	30
	Noise	28
	Vibration	14
Energy management manager		28
Energy management officer		13
Internal environmental auditor		260



Comprehensive disaster training at plant (Tadomisaki Plant)



Oil boom extending training (Tadomisaki Plant) during a simulated oil leak

# Efforts to Reduce Environmental Risk



Our company has incorporated proactive prevention measures into its environmental management system and is striving to reduce environmental risks with the aim of eradicate regulatory infractions, abnormalities and complaints involving any action that has a negative effect on the local environment.

## ■ Compliance Status for Environmental Laws and Regulations

We have set voluntary standards for plant wastewater and atmospheric emissions that are even more stringent than those set out by law. In FY2006, we had no breaches of environmental laws or regulations, nor did we have any penalties or fines, and there were no legal actions brought against us.

## ■ Environmental accidents and complaints

In FY 2006, we had four environmental complaints regarding noxious smells caused by construction work and other problems. Each situation was corrected, and countermeasures implemented at the concerned plant are being expanded to other plants.

We will continue ongoing efforts to promote preventative activities.

There were no accidents related to the environment.

## ■ On-site checks of Industrial Waste Processing/Collection Contractors

We implement a yearly on-site check of all waste processing and waste collection contractors to ensure that the waste we give them is being handled appropriately.



On-site check of incineration facility (March 2007)

## ■ Efforts related to soil and groundwater (continuous reporting)

Regarding groundwater pollution caused by trichloroethylene, used in the past as a cleaning agent, our Kariya and Okazaki plants use a pump-and-treat method (\*1) to clean water before it exits the plant and prevent the outflow of pollutants.

The Okazaki Plant since 2004 has been carrying out bioremediation (\*2), a process that involves the injection of nutrients.

Also, we report groundwater measurement results to the authorities as well as to local residents during town meetings that we hold.

### FY 2006 Trichloroethylene measurements

Environmental standard: 0.03 Units: mg/L

Plant	Maximum measured value in groundwater
Kariya	0.93
Okazaki	0.35

\*The substance was not detected at the observation wells at the boundaries of any plants other than the ones shown above.

### \*1 Pump-and-treat method:

Groundwater is turned to spray and air is blown from below in order to vaporize and separate organic solvents inside, and activated carbon absorbs the pollutants.

### \*2 Bioremediation:

This is a method of revitalizing polluted environments using microorganisms. Substances such as nutrients are injected into the affected area to elevate the cleaning power of resident microorganisms.



# Efforts at the Development and Design Stages

In its Environmental Policy, JTEKT has committed to contributing to energy conservation and resource conservation by developing and providing environmentally friendly products. To quantitatively evaluate the degree to which the products we develop reduce the burden on the environment, we devised a "basic environmental efficiency equation" as an index.

Environmental efficiency is a value calculated from the degree of weight reduction, compactness, energy savings, etc., and "environmental burden" is the inverse of this value. For instance, if environmental efficiency\* is 1.25, the decrease in environmental burden is determined by the following equation to be 20%.

$$\left(1 - \frac{1}{1.25}\right) \times 100 = 20\%$$

\*Basic environmental efficiency equation

Product performance / Product environmental burden =  $1 / \sqrt{(W^2 + T^2 + E^2)}$   
 W: Mass item, T: Loss item, E: Energy item

## Steering Systems

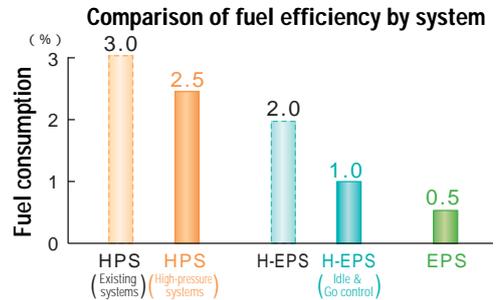
Of the numerous parts and systems composing an automobile, the steering system is required to have particularly reliable performance. Our company is an integrated manufacturer of steering systems that responds to the diversified needs of customers, emphasizing not only Q (quality), C (cost), and D (delivery) but also E (environment), S (safety), and C (comfort). To this end we have established technical centers in Japan, Europe, and America, and we supply products that contribute to environmental conservation around the world.

Electric power steering systems are more fuel-efficient and compact than conventional systems, but higher output is required in order to be usable on larger vehicles. While working to develop systems with such output, we are working to improve the environmental features of both electric and conventional steering systems.



### Power steering (PS) types and applicable vehicles

	Application				Location installed
	Passenger vehicles				
	Kei	Small	Medium	Large	
.Electric PS (EPS)					Cabin
Column-assist type PS (C-EPS)					Engine compartment
Pinion-assist type PS (P-EPS)					Engine compartment
Rack-assist type PS (R-EPS)					Engine compartment
.Hydraulic-electric PS (H-EPS)					Engine compartment
.Hydraulic PS (HPS)					Engine compartment



### .Electric power steering

#### Column-assist type

Successful efforts to achieve higher output power enabled improved efficiency compared to conventional designs

FY 2006 efforts

#### Aim of development

Change to a brushless motor (smaller size, reduced weight)  
 Adoption of Hall IC torque sensor (smaller size, reduced weight)

#### Effect

Mass: 26% reduction  
 Torque reduction: 19% reduction  
 Energy consumption: 83% reduction

Increase in environmental efficiency:  
**1.56**



Rack axial force up to 12,000 N

The new torque sensor meets the new European safety standards.



### Pinion-assist type

Successful efforts to achieve smaller size and lighter weight enabled improved efficiency compared to conventional designs

FY 2006 efforts

**Aim of development**

Optimization of motor/controller housing (smaller size, reduced weight)

**Effect**

Mass: 22% reduction  
Torque reduction: 22% reduction  
Energy consumption: 83% reduction

Increase in environmental efficiency:  
**1.55**



### Rack-assist type

Successful efforts to achieve smaller size and higher output enabled improved efficiency compared to conventional designs

FY 2006 efforts

**Aim of development**

Integration of E-VGR (smaller size, reduced weight)  
Improvement of motor efficiency (smaller size, increased output power)

**Effect**

Mass: 22% reduction  
Torque reduction: 36% reduction  
Energy consumption: 83% reduction

Increase in environmental efficiency:  
**1.69**



**Awarded the "Automotive Component Award" at the 4th "Monozukuri Component Awards Ceremony"**

(sponsored by the Nikkan Kogyo Shimbum, supported by the Ministry of Economy, Trade and Industry and The Japan Chamber of Commerce and Industry)

### .Hydraulic-electric power steering

Successful efforts to achieve smaller size and lighter weight enabled improved efficiency compared to conventional designs

FY 2006 efforts

**Aim of development**

Optimization of motor/controller housing (smaller size, reduced weight)

**Effect**

Mass: 20% reduction  
Torque reduction: 10% reduction  
Energy consumption: 67% reduction

Increase in environmental efficiency:  
**1.39**



### .Hydraulic power steering

Successful efforts to achieve lighter weight and lower loss enabled improved efficiency compared to conventional designs

FY 2006 efforts

**Aim of development**

Friction pressure-welded rack (reduced weight)  
High-flow-rate valve (lower losses)  
High-flow-rate pump (lower losses)

**Effect**

Mass: 10% reduction  
Torque reduction: 20% reduction  
Energy consumption: 17% reduction

Increase in environmental efficiency:  
**1.18**





# Efforts at the Development and Design Stages

## Drive systems

Vehicles increasingly are being required to have reduced impact on global warming and atmospheric pollution. Regarding our driveline components, we use sophisticated forming and machining technologies as well as electronic control technologies to create smaller and lighter products and reduce energy consumption so that automobile fuel consumption can be reduced. In this way we are contributing to the protection of the global environment.

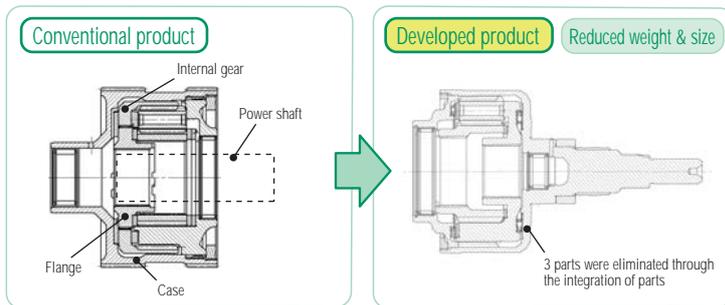


### Ultracompact Torsen LSD

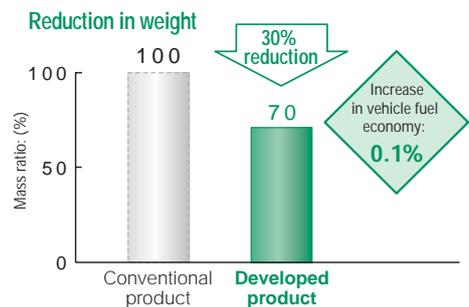
We developed a new product for luxury vehicles (Lexus) that is dramatically lighter and more compact than conventional products, thus contributing to improved fuel economy.

#### Structure and characteristics

The internal gear, flange, and power shaft were integrated and a caseless structure was adopted, allowing us to realize significantly weight and size reductions.



Increase in environmental efficiency: **1.10**

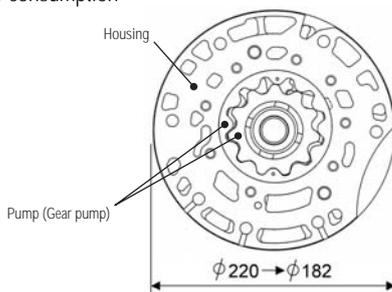


### Compact CVT oil pump

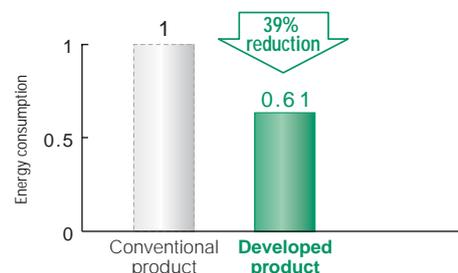
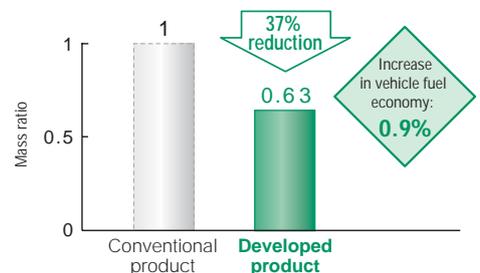
With this CVT oil pump for compact cars, dramatic reductions in weight and discharge rate were achieved, thus contributing to improved fuel economy.

#### Structure and characteristics

Lighter weight through a smaller housing outer diameter  
 Reduced pump discharge rate by 39%, which decreased energy consumption



Increase in environmental efficiency: **1.62**





## Bearings

As industry develops further, the performance required of bearings in terms of product life, light weightness, and high-speed rotation is becoming even more advanced and diversified. Our company contributes to global environmental conservation by increasing the efficiency and reducing the weight of bearings required by the automotive, semiconductor, steelmaking equipment, home appliance, and space industries.



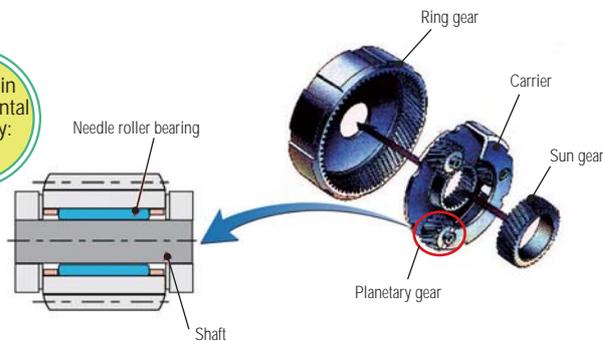
### Long-life needle roller bearing for planetary gears

In addition to heat treatment processing technology we developed for longer product life, we carry out a surface modification treatment on the planetary shaft (shot peening\*).

Increase in environmental efficiency: **1.22**



Planetary shaft (left) Needle roller bearing (right)



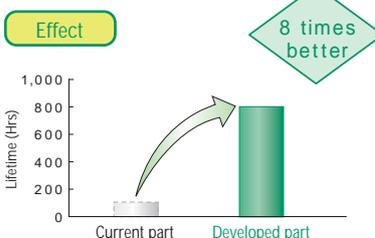
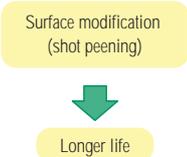
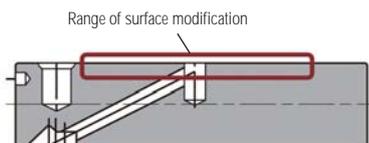
#### Aim of development

To achieve longer life with high speed and low torque

#### Effect

Eight times longer life than current product

#### Developed part



\***Shot peening**: A technique of increasing the fatigue strength of metal by bombarding it with numerous spherical solid particles to produce large compressive residual stress in the material surface.

### Development of a high-efficiency chain for CVTs

Our company has concluded an exclusive license agreement with Dutch company Gear Chain Industrial B.V. (GCI) to use this company's patents and know-how related to involute chains, based on which we have succeeded in the development of a high-efficiency chain for continuously variable transmissions (CVT).

In recent years, automakers increasingly are switching from automatic transmissions to CVTs to improve vehicle fuel economy.

Conventional CVTs comprise those with a metal belt and those with a chain, but JTEKT, using the various elemental technologies it cultivated through its bearing business along with the technology of GCI, has developed the "JTEKT Involute Chain," which is more efficient than existing metal belts and produces less noise than existing chains.

In addition, the torque capacity of this product can be more than twice that of metal belts. Accordingly, this chain will enable CVT application on vehicles with high torque ranges that currently cannot use CVTs, which will contribute to the conservation of energy and resources.

#### 【Characteristics of the JTEKT Involute Chain (J-IC)】

**High efficiency with high torque capacity**  
 Because the J-IC is more efficient at the low- and high-speed regions where transmission gear ratios are large, it has even higher fuel efficiency than existing CVTs (4-5% better than existing CVTs in fuel economy efficiency measurement mode 10-15). Also, while the torque limit of metal belts used in existing CVTs is about 350Nm, the J-IC can perform at twice this torque, making it possible to use CVTs not only on SUVs and other vehicles but also non-automotive applications.

**Low noise**  
 J-IC has a unique structure that suppresses the shock occurring when the chain and the pulleys engage, resulting in less noise from the chain.





# Efforts at the Development and Design Stages

## Machine Tools

We are developing machine tools while recognizing the importance of reducing energy consumption and conserving resources. We carry out product assessment evaluating the effect of the product on the environment at every stage from manufacturing to disposal so that we can provide products with a low environmental burden to our customers.



### Top Center series machining center TH-555F3: Reduced power consumption through less coolant

- Minimization of the swarf dispersal area by making the equipment more compact
- Reduction of the amount of coolant and energy consumption



#### 【Reduction of the amount of coolant and power consumption】

Minimized swarf dispersal area: Fig.1  
Minimized jig size according to the machining area



Horizontal machine with superior handling of swarf has been further improved to minimize swarf area to a width of 990

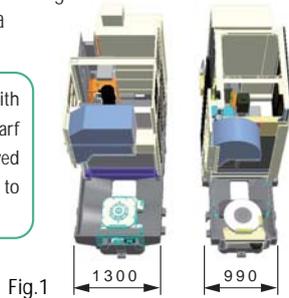


Fig.1

Improved handling by placing the bed directly below swarf and by increasing the oil pan inclination angle, change in the locations of the swarf drain pipes (Directly in front of oil pan): Fig.2

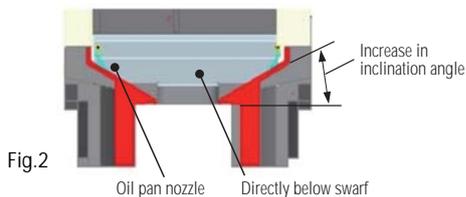


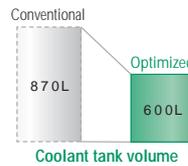
Fig.2

Reduced pressure loss through the use of a coolant valve  
Adoption of a low-pressure-loss coolant valve  
Optimization of coolant nozzle, adoption of an energy-saving nozzle

#### Energy conservation from high-pressure coolant

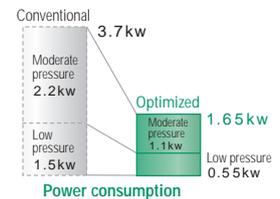
Optimization of amount of coolant through spindle  
• Confirmed that this amount can be 10 ℓ /min for a moderate pressure of 1.0MPa without any problem

G3 measurement results (moderate pressure of 1.0MPa)	Discharge rate
7.6DR( through hole 1 × 2 )	2.8 ℓ /min
TAP M6( through hole 0.8 × 1 )	0.4 ℓ /min
Without tool (holder only, 4 pullstud)	7.8 ℓ /min



Coolant tank volume

Reviewed pump capacity  
Low pressure 1.5 kW 0.5 kW  
Moderate pressure 2.2 kW 1.1 kW



Power consumption

### ■ EGProcessor compact cylindrical grinder leads to the "Energy-Conserving Machinery Award"

At the 2005 Energy-Conserving Machinery Awards ceremony held by the Japan Machinery Federation, we received the JMF Chairman's Award for our EGProcessor compact cylindrical grinder.

The EGProcessor was developed in conjunction with NEDO (New Energy and Industrial Technology Development Organization) and was exhibited at the Japan International Machine Tool Fair in Autumn 2004 as a "next-generation environmentally friendly grinder."

In presenting this award, JMF recognized this grinder's energy savings (50% less energy consumption during grinding than conventional grinders), space savings (60% less floor area than conventional grinders), and productivity (cycle time 10% shorter than that of conventional grinders).



# Environmental Burden of our Business Activities



## Resource inputs and emissions into the environment

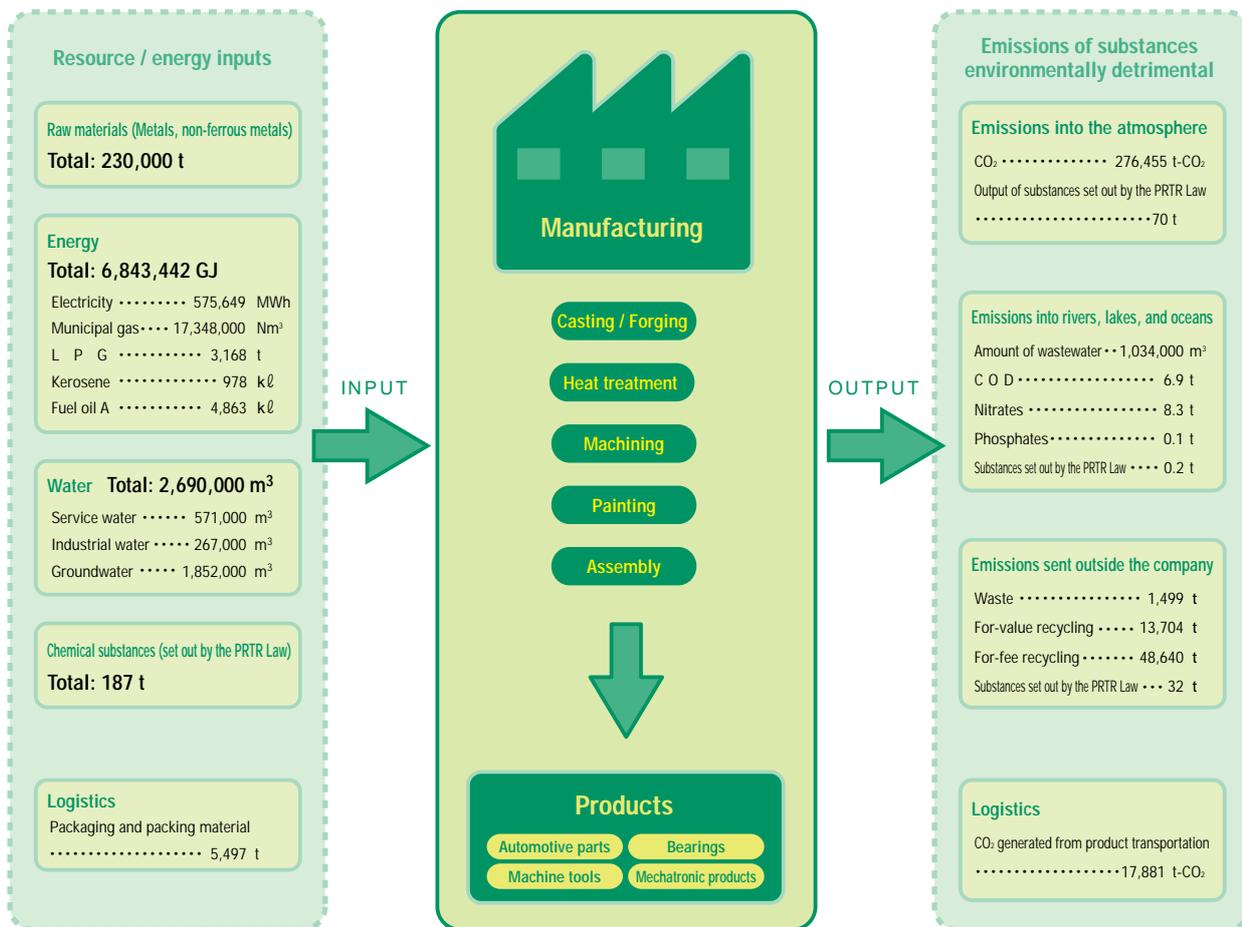
The objective of environmental conservation activities is to reduce environmental burdens in all phases of business activities.

JTEKT quantitatively grasps overall amounts of material and energy input and amounts of output flowing into the environment and strives to

reduce burdens placed on the environment through each type of business activity.

Shown below are material and energy input amounts and amounts of output flowing into the environment.

In addition to striving to prevent global warming by reducing energy use during forging, casting, heat treatment, and machining processes, we are working to reduce environmental burdens caused by waste from each process and by the use of chemical substances in processes such as painting.



GJ ..... Gigajoule (unit of heat) G = 10<sup>9</sup>

PRTR Law ..... This is an abbreviation for "Pollutant Release and Transfer Register" and is a system in which the release and transfer of chemical substances into the environment is reported to the authorities, who then publicize this information.

NO<sub>x</sub> ..... Nitrogen oxides

SO<sub>x</sub> ..... Sulfur oxides

COD ..... Chemical Oxygen Demand (an index that indicates water pollution)



# Global Warming Prevention Measures

The prevention of global warming is an important environmental objective of our company, and we have established an Energy Conservation Committee to promote activities to reduce total CO<sub>2</sub> emissions and conserve energy by increasing the energy efficiency of existing manufacturing processes and replacing deteriorated equipment with high-efficiency equipment.

In FY 2006, production volumes increased, and soaring crude oil prices caused energy expenses to increase as well. Although reduced our unit amounts, we missed achieving our total CO<sub>2</sub> emission target by roughly 2% (roughly 0.4% less than the result for FY 2005).

We will intensify our activities to reach the total emissions reduction target for 2010.

## Primary activities

### Improvement of heat-treatment process

- Developed high-speed carburizing furnace
- Switched the continuous heating furnace pre-heat zone to gas

### Improvement of production/peripheral equipment

- Introduced high-efficiency transformer
- Introduced high-efficiency compressor
- Introduced high-efficiency compressed-air dehumidifier
- Installed high-efficiency fluorescent lighting

Energy conservation expansion activities through the integration of low-load lines

Efficient operation of in-house power generation equipment

CO<sub>2</sub> reductions through change to energy source (fuel oil A → utility gas)

Renewal of energy conservation activities at every workplace

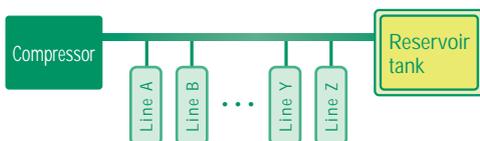
### Environmental considerations in newly built plants

- Strategic use of stratified air conditioning throughout the plant as well as individual air-conditioners for workers.
- Use of high-efficiency fluorescent lighting.

## Examples of improvement

[ Tadomisaki Plant ]

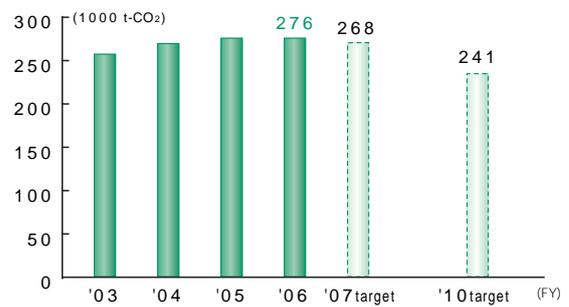
Decrease in compressor power consumption achieved through reduced air flow pressure (Installation of a plant-air reservoir tank)



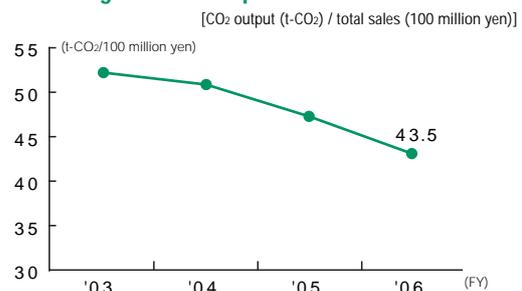
By installing a reservoir tank at the end of the air piping, sudden pressure changes can be avoided, making it possible to lower the compressor's air pressure and reduce its power consumption.

Air flow pressure setting : 4.5 kg/cm<sup>2</sup> → 4.0 kg/cm<sup>2</sup>  
 Compressor power consumption : 12%  
 Reduction in CO<sub>2</sub> : 694 t-CO<sub>2</sub>/year

Changes in total CO<sub>2</sub> output



Changes in unit output



## Tokyo Plant receives Director's Award from Kanto Bureau of Economy, Trade and Industry

On February 6, 2007, at the Saitama-Shintoshin National Government Building, the Tokyo Plant received the Director's Award from the Kanto Bureau of Economy, Trade and Industry for having demonstrating excellence in energy management in FY 2006.

This award recognized the Tokyo Plant's efforts over many years to utilize energy more efficiently. Of the nine recipients in the Kanto region, the Tokyo Plant was the only recipient from the Tokyo metropolitan area.

The Tokyo Plant will continue proactive efforts to conserve energy and strive to receive the Minister of Economy, Trade and Industry's award.



Award Certificate



Plant Manager Mr. Hatada receiving the award

# Resource Conservation Activities



To address the problem of resource depletion, we established a Resource Conservation Committee, which is acting to reduce primary materials such as raw materials and secondary materials such as abrasives and cutting tools in order to promote production activities that take into account the global environment.

## Results of FY 2006 efforts

In FY 2006, we had a target to reduce the unit consumption cost of primary materials to 1.0% less than the figure for FY 2005. By improving yields through near-net-shape processing and effectively using scrap such as punched-out material, we were able to achieve a reduction of 6.0%, clearing the target.

With a target to reduce the unit consumption cost of secondary materials to 1.0% less than the figure for FY 2005, we carried out activities to improve tool life, reduce the number of grinding wheels used, etc.; however, we were able to achieve a reduction of only 0.1% due to soaring crude oil prices.

### Details of primary initiatives and implemented actions

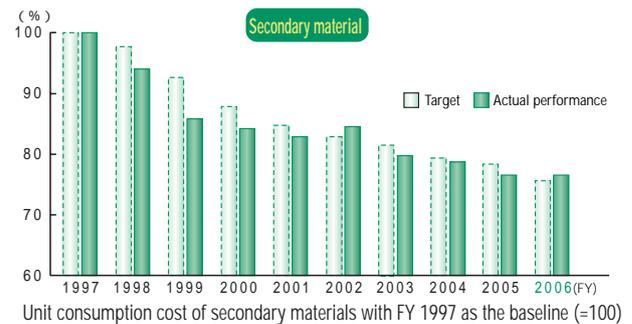
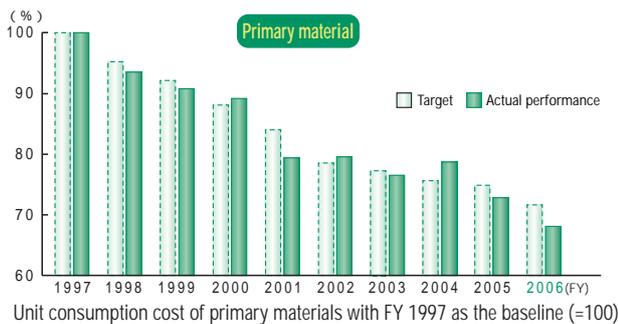
#### Primary material

- Reducing material costs by increasing material yield through changes in processing methods
- Reducing material costs through changes in material and material quality

#### Secondary material

- Reducing consumption through changes in material quality of grinding wheels, cutters and dies, as well as changes in specifications
- Recycling of waste oil, grinding wheels, cutters, and jigs

### Unit primary material usage by fiscal year

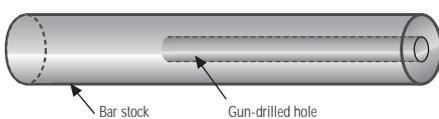


### Example of Kaizen related to primary material

Improved material yield by changing the part processing method to friction welding from gun-drilling

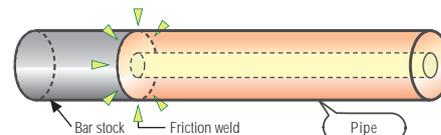
#### Before Kaizen

Gun-drilling of bar stock



#### After Kaizen

Friction welding of bar stock and pipe



33% reduction in raw material weight

Previously, this part for steering was manufactured by gun-drilling a hole in the bar stock. By changing the processing method to friction-welding a pipe to the bar stock, the required strength is secured and raw material weight is reduced 33%. This kaizen improvement succeeded in reducing not only raw material weight but also the energy required for processing.

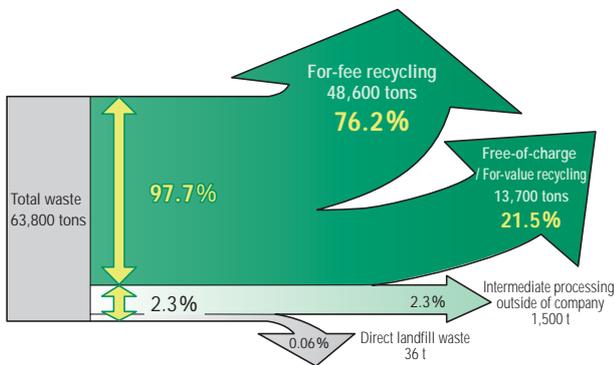


# Activities to Reduce Waste Products

Our company proactively carries out waste-reduction activities in view of the decreasing number of landfill sites and with the aim of using resources more effectively.

In addition to targets for reducing the amount of waste hauled to landfill sites or incinerated, we also aim to increase our use of recycling services (depending on the type, the service is free, at a charge, or we are paid) to reduce overall waste output.

## Processing status of industrial waste products and recycled materials



## Kaizen example

### Change to for-value recycling of iron oxide fine powder generated by the shot-blasting process (Tokushima Plant and Kagawa Plant)

The shot-blasting process carried out after bearing part forging produces a fine iron oxide powder. Previously, we had to pay a fee to have this powder recycled along with grinding sludge.

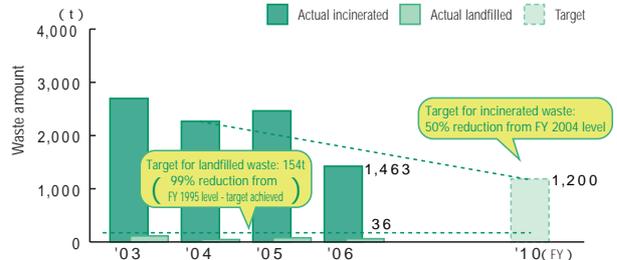
In FY 2006, however, we started separating the iron oxide fine powder, mixing it with waste plastic, and solidifying it into something that we can sell as a raw material for use in electric steel furnaces.

### Kaizen result

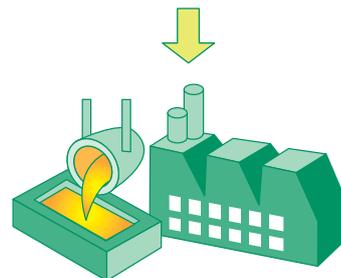
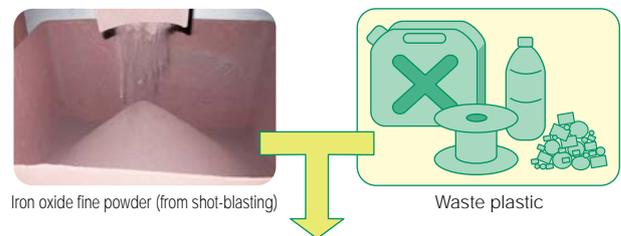
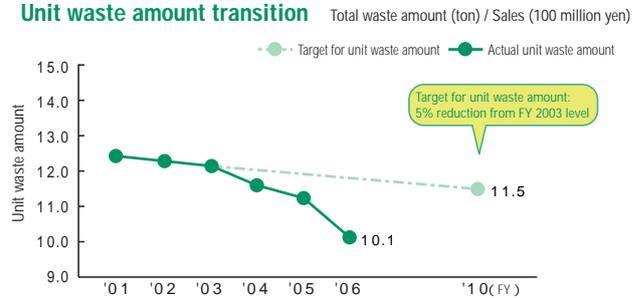
Amount of for-value recycling: 450t/year  
Reduction in processing cost: 6.8 million yen/year

\*Shot-blasting  
This is a way of processing workpieces by shooting particles at the workpiece surface.

## Landfill and incinerated waste by fiscal year



## Unit waste amount transition



# Managing and reducing chemical substances / Promoting streamlining in logistics



Our company has established "chemical substance management standards" and divided all chemicals used into several grades to manage them.

Also, we grasp amounts of substances of environmental concern that we use, emit, and move, and we make the required declarations based on the PRTR Law.

We are working toward a FY 2010 target of reducing amounts of PRTR-designated substances emitted and moved by 60% compared to FY 1998 by means of a PRTR Substance Reduction Subcommittee and promoting related activities.

## Kaizen example

We introduced a powder coating machine to reduce usage of toluene and xylene, which make up 64% of the PRTR-designated substances that we emit or move.

### Kaizen result

Reducing the amount of PRTR-designated substances emitted •• 3,000kg/year.

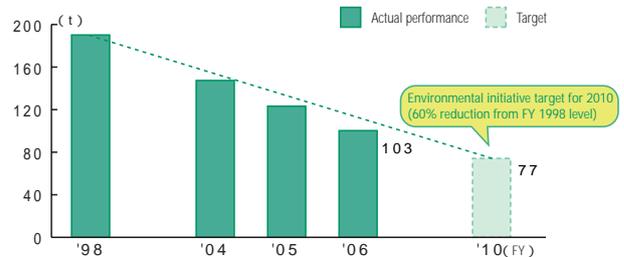


Powder coating drying machine

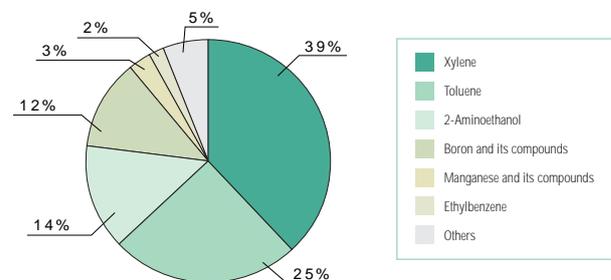


Powder coating in progress

## Amount of PRTR-designated substances emitted and moved by fiscal year



## Breakdown of PRTR-designated substances for FY2006



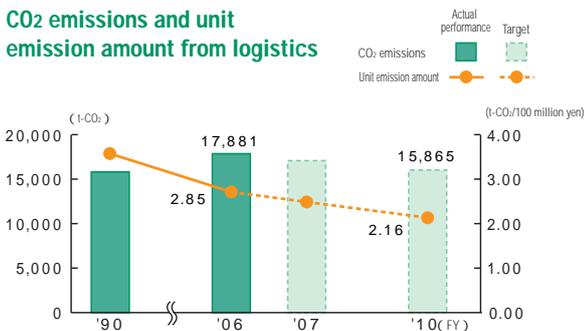
## Promoting streamlining in logistics

### Grasping the actual CO2 emissions in logistics and setting new targets

We are working to reduce CO2 emissions to 1990 levels by 2010.

Starting in FY 2007, in addition to the kaizen example to the right related to changing to trailers for core routes, we have also been working to use modal shift and relay logistics based on logistics centers in order to reduce the number of shipments on core routes.

### CO2 emissions and unit emission amount from logistics



### Kaizen example Adoption of trailers for export shipments

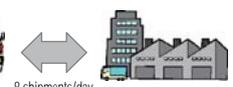
We have introduced trailers for shipments of products bound for export, and by reducing the number of shipments, we aim to reduce CO2 emissions from logistics and reduce transportation costs.

#### Before

15-ton trucks were used to transport goods from the Kokubu Plant to Kobe and Osaka ports.



Kokubu Plant (15t truck)



Kobe and Osaka ports

8 shipments/day

Issue: Because of the large number of shipments and long driving distances, the CO2 emissions from logistics were significant.

CO2 emissions from logistics: 123t/year

#### Kaizen details

By using a large trailer and sending a large shipment at once, the number of shipments was decreased.

(Before Kaizen)

8 shipments with 15t trucks/day

(After Kaizen)

3 shipments with the trailer/day

#### Examples of trailers



Comparison of loads  
15t truck ••••• 13.5t  
Trailer ••••• 26.3t

CO2 emissions from logistics: 69t/year

#### Effect

Reduction in CO2 emissions from logistics: 54t/year



# Koyo Machine Industries Co., Ltd.



## Message from the President



President  
Masaomi So

Our company is currently engaged in various activities aimed at reducing CO2 emissions, the main cause of global warming, as a matter of high priority is actively pursuing the development and manufacture of products with improved environmental efficiency. As part of these efforts, we are striving to provide products that contribute to reduced energy consumption and the launch of efficient new factories. We also are engaged in zero-emission activities. In FY 2006 we achieved a recycling percentage of 99.44%, and we will continue pursuing the goal of zero waste. Based on a respect for humanity, we will continue to use our wisdom and creativity to deliver superior value and contribute to the realization of a safe and prosperous society.

### Company outline

Company name	Koyo Machine Industries Co., Ltd.
Head office	2-34 Minamiematsu-cho, Yao-shi, Osaka TEL 072-922-7881 URL http://www.koyo-machine.co.jp
Established	August 1961
Capital	1.1 billion yen
Net sales	FY 2005: 35,328 million yen FY 2006: 37,953 million yen
Primary business	Manufacturing and sale of automotive parts, machine tools, factory automation systems, and precision devices
Number of employees	1,030
Business bases	Sales bases: Tokyo, Chubu, Osaka (USA, Korea) Production bases: Head office and Plant (Osaka), Yuzaki Plant (Nara), Gojo Plant (Nara) Overseas companies: 4 (USA, China, Thailand)
Acquire the ISO 14001 Certification	ISO 14001: Certification acquired in May 2001

### Main products



#### Machine tools

- Centerless grinders
- Surface grinders
- Wafer grinders
- Other grinders



#### Joints

- Automotive intermediate shafts
- Driveshafts

### Environmental data

Item	Yao Plant			Yuzaki Plant			Gojo Plant			
	Legal limit	In-house standard	Actual measurement	Legal limit	In-house standard	Actual measurement	Legal limit	In-house standard	Actual measurement	
Drainage water quality	BOD	60	50	16.8	1,500	600	184.8	1,500	600	110
	COD	60	50	23.4	-	-	-	-	-	-
	SS	120	100	5.8	1,500	600	52.2	1,500	600	200
	pH	5.8 ~ 8.6	5.9 ~ 8.5	7.6	5 ~ 9	5.8 ~ 8.6	7.9	5 ~ 9	5.5 ~ 8.5	8.4
	Mineral oil	5	4	1.1	5	4	1.3	5	4	3.2
	Wastewater volume	142	100	52.8	-	-	*2	-	-	*4
Air	NOx	150	120	36.3	150	120	52	150	120	63
	SOx	0.3	-	*1	1.1	-	*3	0.23	-	*5
	Particulates	0.1	0.01	0.0015	0.2	0.01	0.005	0.2	0.01	0.005
Noise	Morning	65	60	57.6	65	60	54.4	65	60	59.1
	Afternoon	70	65	60.1	70	65	57	70	65	60.8
	Evening	65	60	57.8	65	60	53.8	65	60	58.9
	Night	60	55	54.5	55	50	48.5	55	54	49.7
Vibration	Afternoon	70	65	46	65	60	42.5	65	60	31
	Night	65	60	42	60	55	43.3	60	55	*6

Yao Plant: (Water quality) Discharged into public waters, regulated by the Water Pollution Control Law and reported to Yao city (Noise) Regulated by Osaka prefectural bylaws (Air) Facility: Absorbing type cooling equipment regulated by Osaka prefectural bylaws \*1: Not measured since city supplied natural gas used (Vibration) Regulated by Osaka prefectural bylaws  
Yuzaki Plant: (Water quality) Discharged into public sewage, regulated by Kawachi-town sewage bylaws \*2: Not measured due to sewage (Noise) Regulated by Nara prefectural bylaws (Air) Facility: Absorbing type cooling equipment, regulated by Nara prefectural bylaws \*3: Not measured since city supplied natural gas used (Vibration) Regulated by Nara prefectural bylaws  
Gojo Plant: (Water quality) Discharged into public sewage, regulated by Gojo city sewage bylaws \*4: Not measured due to sewage (Noise) Regulated by Nara prefectural bylaws (Air) Facility: Absorbing type cooling equipment / Regulation: Nara prefecture bylaw \*5: Not measured since LP gas used (Vibration) Regulated by Nara prefectural bylaws \*6: Level lower than lowest possible measurement provided by measuring equipment  
Note: Osaka prefectural bylaws: Osaka prefecture living environmental laws and regulations; Nara prefectural bylaws: Nara prefecture living environmental laws and regulations [Units: BOD, COD, SS, Mineral oil (mg/l), Wastewater volume (m<sup>3</sup>/day), NOx (ppm), SOx (Nm<sup>3</sup>/h), Particulates (g/Nm<sup>3</sup>), Noise, Vibration (dB)]

## Environmental management system

Environmental objective	Performance index (mid-term target)	FY 2006 target	FY 2006 results	Evaluation	Main activities
<b>Environmentally friendly products</b> Set activities related to the development of products with less environmental burden	Improved environmental efficiency = Degree of performance improvement × Degree of reduction in environmental burdens (Standard: Pre-2005 Production products)	KVD200 1.42 VG50 1.25 2RG120 1.06 Lock pin press-fitting machine 1.07 Intermediate joint with damper 1.18	1.75 1.27 1.06 1.08 1.18		<b>Environmentally friendly product subcommittee</b> Develop KVD200, reduce size of KVD300 (for smaller-diameter machined objects) Develop VG50, save space by vertical axis specification Modify 2RG120, save space by use of AE sensor Modify lock pin press-fitting machine, make compact transfer unit and press-fitting unit Modify intermediate joint with damper, reduce weight by hollow damper
<b>Energy conservation</b> Reduce consumption of electricity Reduce consumption of gas Reduce consumption of water	Reduction of base unit (energy consumption / production output) 10% reduction compared to FY2005 1.25% in FY2005 to 1.13% in FY2010	1.23%	1.18%		<b>Energy conservation subcommittee</b> Streamline air conditioner operation Continued replacement to energy conserving mercury lamps Investigate the possibility of installing inverter-type compressors Continued replacement from high altitude mercury lamps to line illumination fluorescent lamps
<b>Resource conservation I</b> Reduce primary and secondary material usage	Reduce basic unit (CO <sub>2</sub> emissions / production output) 5% reduction compared to FY2005 34.8% in FY2005 to 33.1% in FY2010	33.4(t / 100 million yen)	32.4(t / 100 million yen)		<b>Resource conservation subcommittee I</b> Countermeasures, ongoing activities to offset increased material costs Reduce malfunction rate and number of defects Increase material yield by new manufacturing methods and unification of material types Adoption of inexpensive and substitute products Review of lots for orders
<b>Environmental improvement</b> Reduce waste (not including salable resource) Recycling waste products Monitor the air and water quality	7% reduction in basic unit (waste amount / total output) compared to FY2005 1.86 in FY2009 99.9% recycling in FY 2009 100% compliance to legally regulated level and level set forth by company	1.92(t / 100 million yen) Recycling percentage: 99.3%	1.91(t / 100 million yen) Recycling percentage: 99.44%		<b>Environmental conservation subcommittee</b> Reduce waste products and liquid waste Introduce new painting machine Reduce fluorescent lamp glass waste (rentals) Repair equipment oil leaks
<b>Resource conservation II</b> Reduce paper usage Reduce logistics costs (packaging cost and shipping cost)	Reduction target of basic unit (number of sheets used / sales amount) from 2005 Reduce sheet usage index in proportion to the sales amount by 3% from previous year 0.142 (cumulative total for all departments) for FY 2009 Reduce basic unit (cost / sales amount) by 14% compared to the actual FY 1998 level	0.165 (1000 sheets / million yen) Packaging cost ... 0.46% Shipping cost ... 0.84% Logistics cost ... 1.30%	0.138 (1000 sheets / million yen) Packaging cost ... 0.51% Shipping cost ... 0.61% Logistics cost ... 1.12%		<b>Resource conservation subcommittee II</b> Reduce usage of copying paper Promote usage of CDs for creating instruction manuals Use email to provide estimates Change to reusable ball screw packaging cases

□ Target ■ Actual



# Toyooki Kogyo Co., Ltd.



## Message from the President



President  
Yasuaki Hayashi

Okazaki aims to be a city that "coexists in harmony with the environment and abounds in greenery and beautiful waterways," and as a member of this community, our company strives to provide environmentally friendly technology and contribute to the creation of a society friendly to people and the environment. Based on this policy, we have engaged in various environmental conservation activities. In addition to activities related to conserving energy and reducing waste, we develop and supply products that conserve energy and resources and endeavor to reduce the use of substances of environmental concern in our products, thereby contributing to customers' manufacturing innovation and reduced environmental impact.

## Company outline

Company name	Toyooki Kogyo Co., Ltd.
Established	1958
Head office	45 Kaizan, Hacchi-cho, Okazaki-city, Aichi Prefecture TEL 0564-48-2211 URL http://www.toyooki.jp/
Capital	2.54 million yen
Net sales	FY2005: 14,786 million yen FY2006: 12,835 million yen
Primary business	Hydraulic and pneumatic equipment, automotive component, measurement equipment
Number of employees	521
Business base	Sales bases: Tokyo, Chubu, Osaka, Hiroshima, and Fukuoka Production bases: Okazaki Head Office Plant (Aichi), Anjou Plant (Aichi)
Acquire the ISO 14001 Certification	ISO 14001: Certification acquired in February 2003 (renewed in February 2006)

## Main products



## Environmental data

Item	Legal limit	In-house standard	Actual measurement
<b>Drainage water quality</b>			
BOD	2.0	1.0	1.6
COD	2.0	1.0	4.6
SS	2.0	1.0	3
pH	6.5 ~ 8.5	6.7 ~ 8.3	7.2
Nitrogen	3.5	1.7	5
Phosphorus	3	1.5	0.03
Mineral oil	2	1.5	1
Animal and vegetable oil	1.0	5	1
<b>Air</b>			
K value	7.59	1	0.49
NOx	2.57	0.05	0.14
SOx	0.1	1.20	0.002
Particulates	250	1.3	7.7

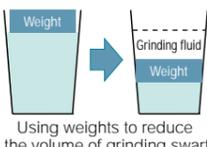
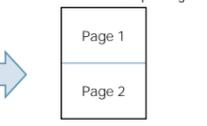
Item	Legal limit	In-house standard	Actual measurement
<b>Noise</b>			
Morning	55	53	50
Afternoon	60	58	52
Evening	55	53	52
Night	50	48	47
<b>Vibration</b>			
Afternoon	65	61	43
Night	60	57	44

[Water quality] Discharged into public rivers, regulated by Pollution prevention and environmental preservation protocol (Okazaki city)  
 [Noise] Regulated by Pollution prevention and environmental preservation protocol (Okazaki city)  
 [Air] Regulated by Pollution prevention and environmental preservation protocol (Okazaki city)  
 [Vibration] Regulated by Pollution prevention and environmental preservation protocol (Okazaki city)

[Units] BOD, COD, SS, Nitrogen, Phosphorus, Mineral oil, Animal and vegetable oil (mg/ℓ), NOx (ppm), SOx (m³/Nh), Particulates (g/m³), Noise, Vibration (dB)

In-house standard: Values for which preventative measures are carried out

## Environmental management system

Environmental objective	Performance index (mid-term target)	FY 2006 target	FY 2006 results	Evaluation	Main activities	
Energy conservation	Reduction of CO <sub>2</sub> discharge	Cut on the basic unit. By the end of FY2010, 30% reduction compared to FY2003.	CO <sub>2</sub> emissions Total emissions: 4403 ton	4,265 (ton)	x	Dispersed compressors under multi-unit control: 8 units Intermittent operation of hydraulic pumps and coolant pumps: 16 units Adoption of smaller motors and inverters: 5 units Use of energy-saving ceiling lighting for plant (fluorescent lights and mercury lights) Turning off the power in the entire plant during long holidays  
			Basic unit 0.74 (ton / million yen)	0.78 (ton / million yen)		
Waste	Reduction of industrial waste	Cut on the basic unit. By end of 2010, 30% cut compared to FY2003.	Waste Total waste: 313 ton	345 (ton)	x	Life extension of washing liquid. Sorting and charging of grinding chips Reduction system of grinding chips  
			Basic unit 0.053 (ton / million yen)	0.063 (ton / million yen)		
Environmental products	Development of energy and resource saving products	Development of energy and resource savings products	Energy-saving products Development of 2-model.	2-model product development.	x	Hybrid hydraulic pump unit Energy-saving vane pump  
			Reduce environment impacting substances from products	RoHS compatible products. Production of 2-model.		
Paper	Reduction of paper purchased	By end of FY 2007, 6% reduction in comparison to 2004	Amount of paper purchased : 1,223 sheets	1,046 sheets	x	Single-sided same-size printing Double-sided 2-in-1 printing  

Target Actual



# Koyo Sealing Techno Co., Ltd.



## Message from the President



President  
Hideki Sato

Located at the mouth of the clear Yoshino River in the city of Shikoku, our company strives for harmony with this beautiful environment as we manufacture oil seals and functional components made of rubber and plastic in order to support industries and lifestyles.

As an integrated rubber manufacturer, we are independently and proactively promoting activities to conserve the global environment in all business activities from product planning to design, procurement, manufacturing, sales and service.

Based on an accurate grasp of the technical needs related to global environmental conservation, we are developing revolutionary oil seals with high levels of sealing and low-torque in order to prevent environmental pollution from lubricants.

We are also contributing to the conservation of the global environment through the development of functional rubber parts.

## Company outline

Company name	Koyo Sealing Techno Co., Ltd.
Established	October 1964
Head office	39 Aza Nishino, Kasagi, Aizumi-cho, Itano-gun, Tokushima Prefecture TEL 088-692-2711 URL http://www.koyo-st.co.jp/
Capital	125 million yen
Net sales	FY 2005: 13,278 million yen FY 2006: 14,254 million yen
Primary business	Manufacture of oil seals (general, large size, bonded piston seals, etc.) and rubber products
Number of employees	490
Acquire the ISO 14001 Certification	Oct. 23, 2002 (valid until Oct. 22, 2008)
Certification body	Japan Audit and Certification Organization for Environment and Quality (JACO)

## Main products



## Environmental data

Item	Drainage water quality			K value	Air		
	Legal limit	In-house standard	Actual measurement		NOx	Particulates	Particulates
Pollutant load (COD)	17.4	8.1	5.7	13	0.13	0.12	
Pollutant load (Nitrogen)	15.1	5.8	3.65	180	87	87	
Pollutant load (Phosphorus)	1.68	1	0.94	0.3	0.02	0.02	
BOD	30	9.2	9.0				
COD	30	9.6	9.4				
SS	30	13	12				
pH	5.8 - 8.6	6.5 - 7.9	7.9				
Oil content	5	1.3	1.0				
Nitrogen	16	4	3.4				
Phosphorus	120	7.7	7.4				
Wastewater volume	840	540	535				

[Units] Pollutant load (kg/day) BOD, COD, SS, Oil content, Nitrogen, Phosphorus (mg/ℓ)  
Wastewater volume (m³/day), NOx (ppm), Particulates (g/m³-N), Noise, Vibration (dB)

## Environmental management system

Environmental objective	Performance index (mid-term target)	FY 2006 target	FY 2006 results	Evaluation	Main activities	Charts	
Energy conservation	Reduce energy conservation	CO2 emissions basic unit (proportion to production output): 6.0% reduction by the end of FY 2008 compared to FY 2005 < 71.42 > CO2 emissions (t-CO2): 6.6% reduction by the end of FY 2008 compared to FY 2005 < 6,351 >	CO2 emissions basic unit: 4.0% reduction compared to FY 2005 < 74.37 > CO2 emissions: 2.6% reduction compared to FY 2005 < 6,613 >	9.1% reduction < 70.13 > 2.3% reduction < 6,636 >	×	Effectively operate in-house power generator (shorter operation time) Reduce power consumption by delaying heater timer for vulcanization press by 30 minutes Do activities to reduce air leaks when not in operation Always turn-off of lights when not required for work Prevent people from turning off air conditioner, periodically inspect and clean filters Implement energy conservation patrols	
	Resource conservation	Reduce primary and secondary material usage	<b>Primary materials</b> Proportion of primary material consumption cost to production output: 3% reduction by end of FY 2008 compared to FY 2005 <b>Secondary materials</b> Proportion of secondary material consumption cost to production output: 3% reduction by end of FY 2008 compared to FY 2005	Proportion of secondary material consumption cost to production output: 1.0% reduction compared to FY 2005 < 99.0% > Proportion of primary material consumption cost to production output: 1.0% reduction compared to FY 2005 < 99.0% >	2.6% increase < 102.6% > 9.1% increase < 105.1% >	×	Move rubber kneading in-house Change to chemical additives in rubber Reduce usage of rubber material Move processing of metal rings in-house Eliminate prebake for metal rings Eliminating and consolidating adhesives Reducing adhesive consumption by using a smaller adhesive tank Replacing wet blast media less frequently Reusing degreasing agent
Waste products		Reduce waste	Proportion of basic unit for waste to production output: 9% reduction by end of FY 2008 compared to FY 2005 < 5.54 > Incinerated waste (t): 24% reduction by end of FY 2008 compared to FY 2005 < 283 > Direct landfilled waste (t): 60% reduction by end of FY 2008 compared to FY 2005 < 7.83 >	Proportion of basic unit for waste to production output: 3% reduction compared to FY 2005 < 5.89 > Incinerated waste (t): 8% reduction compared to FY 2005 < 335 > Direct landfilled waste (t): 20% reduction compared to FY 2005 < 12.24 >	3.0% reduction < 5.89% > 8.0% reduction < 335% > 231% increase < 35.3% >	×	Recycle degreasing agent (Abzol) Recycle direct landfilled waste (thermal recycling) Turn waste oil into a saleable resource Do activities to reduce scrap rate Thoroughly separate garbage
	Logistics	Reduce packaging and packing material Improve efficiency of logistics	Basic unit for packaging and packing material cost (proportion to total sales): 8.0% reduction by end of FY 2008 compared to FY 2005 < 0.357 > Basic unit for delivery cost (proportion to total sales): 8.0% reduction by end of FY 2008 compared to FY 2005 < 0.053 >	Basic unit for packaging and packing material cost: 4.0% reduction compared to FY 2005 < 0.372 > Basic unit for delivery cost: 4.0% reduction compared to FY 2005 < 0.055 >	11.9% reduction < 0.341 > 323% increase < 0.184 >	×	Increase usage rate of plastic cases and packing reinforcement material Effectively/commonly utilize metallic rings and finished products Change to electric forklifts (to reduce CO2) Reduce deliveries through change in transportation routes Change from using Akabou during emergencies to a less expensive transportation method
Design		Carry out product assessments	Item	Target	Completion date of development	With respect to the plan	
	Increase orders of primary low torque seals		30% reduction in energy consumption compared to existing products	Dec. 2008	×	Increase orders of primary low torque seals (30% reduction in energy consumption compared to existing product) Develop ultra-low torque seals (1/10 the torque and twice the life of primary products) Develop seals compatible with high peripheral speeds (Development of surface improving technologies such as coatings) Develop lightweight bonded piston seals (reduce weight through development of local thickening technology) Develop fluororubbers compatible with biodegradable oil (to address marine pollution) Develop replacement materials for environmentally-impacting substances (elimination of DOP and hexavalent chromium)	
	Develop ultra-low torque seals		Lower torque (1/10) compared to primary products	March 2008	×		
	Develop seals compatible with high peripheral speeds		50% reduction in energy consumption compared to existing products	Dec. 2008	×		
	Develop lightweight bonded piston seals		10% reduction in weight compared to existing products	Dec. 2008	×		
	Develop fluororubbers compatible with biodegradable oil		Measures to address marine pollution	Dec. 2006	×		
Develop replacement materials for environmentally-impacting substances	Develop replacement materials	Dec. 2006	×				
Regional environment	Strengthen our environmental conservation system	Usage of PRTR substances (t): 30% reduction by end of FY 2008 compared to FY 2005 < 1.31 >	Usage of PRTR substances (t): 10% reduction compared to FY 2005 < 1.71 >	10% reduction < 1.71 >		Reduce adhesive tank volume in order to reduce adhesive usage during replacement Reduce adhesive consumption based on a review of adhesive replacement period Ongoing management of facilities to which monitoring and measurement items apply Do environmental patrols around plant (once a week) Improve environmental facilities (surface lining for oil-blocking dike / renovation of roof over hazardous materials storage area) Beautify area around plant (May and August)	
	Manage and improve environmental facilities	100% compliance with in-house standards	100% compliance with in-house standards	100% Compliance			
	Activities to improve environmental facilities	Improvement of surface lining for oil-blocking dike Improvement of roof over hazardous materials storage area	Implemented Implemented	Implemented Implemented			



# CNK Co., Ltd.



## Message from the President



President  
Ikumi Funahashi

The company was established in 1958 as "Chubu Netsuren Research Center" for the purpose of researching and developing sulfurization treatment. It then undertook development of FA equipment for machine tools and the manufacture of rack shafts. In 1989, we changed our company name to CNK Co., Ltd. Having a management philosophy of "creating technology that is friendly to both mankind and the environment and promoting preservation of global and local environments in order to contribute to realization of a plentiful and comfortable society," we acquired ISO14001 certification in February 2002. We have been assisting customers through implementing activities that are in accord with an environmental management system, and producing products that have low in environmental burden.

## Company outline

Company name	CNK Co., Ltd.
Established	1958
Head office	28 Buwari, Noda-cho, Kariya-shi, Aichi Prefecture TEL 0566-21-1833 URL http://www.cnk.co.jp/
Capital	48 million yen
Net sales	16.6 billion yen
Primary business	Machinery, environmental products, metal surface treatment, automobile parts
Number of employees	294
Business base	Headquarters plant, Tokyo Branch office, Toyota Plant, CNK Manufacturing (Thailand) Co., Ltd.
Acquire the ISO 14001 Certification	ISO 14001: Certification acquired in February 2002

## Main products

<b>Machinery</b>  LNIV type loader for crankshafts	<b>Environmental products</b>  Round eddy-current coolant system	<b>Metal surface treatment</b>  Clutch plate	<b>Automobile parts</b>  Rack shafts
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## Environmental data

Item	Headquarters Plant			Parts Plant			Toyota Plant			
	Legal limit	In-house standard	Actual measurement	Legal limit	In-house standard	Actual measurement	Legal limit	In-house standard	Actual measurement	
Drainage water quality	BOD	160	25	4.1	160	25	10.85	No particular facility		
	COD	160	25	3.6	160	25	8.6	No particular facility		
	SS	200	30	3.2	200	30	6.2	No particular facility		
	pH	5.8 ~ 8.6	5.8 ~ 8.6	8.0	5.8 ~ 8.6	5.8 ~ 8.6	7.6	No particular facility		
	Mineral oil	5	5	0.4	5	5	1.9	No particular facility		
	Wastewater volume	644.4	-	243.6	-	-	-	No particular facility		
	Air	NOx	180	180	79.0	No particular facility			No particular facility	
SOx		0.14	0.14	0.036	No particular facility			No particular facility		
Particulates		0.30	0.30	0.002	No particular facility			No particular facility		
Noise	Morning	65	65	59.4	65	65	60.0	55	55	52.3
	Afternoon	70	70	63.3	70	70	62.0	60	60	53.9
	Evening	65	65	58.5	65	65	62.3	55	55	53.1
	Night	60	60	56.3	60	60	58.8	50	50	49.6
Vibration	Afternoon	70	70	Less than 50	70	70	Less than 50	70	70	Less than 50
	Night	65	-	-	65	-	-	65	-	-

[Units] BOD, COD, SS, Mineral oil (mg/ℓ), Wastewater volume (m³/day), NOx (ppm), SOx (Nm³/h), Particulates (g/Nm³), Noise, Vibration (dB)

## Environmental management system

Category	Environmental objective	Performance index (mid-term index)	FY 2006 target	FY 2006 results	Evaluation	Main activities
Environmentally friendly products	Reduce burden on environment-friendly product design activities.	Promote environment friendly designs that take into account of energy conservation, reducing waste, recycling and reduced noise. Number of Design For Environment: 4 or more per year.	4 or more Design For Environment per year.	4 per year		<b>Product assessment</b> Reduce weight through change in shape of slide rails on roll-forming unit Reduce weight through change in shape of tie bar outside roll-forming unit Reduce material weight with a smaller design for roll-forming unit  New roll-forming unit with changed tie bar and slide rails <b>Changes in number of design for environment</b> 
Energy conservation	Reduce energy consumption through activities performed by Energy Conservation Subcommittee.	The Energy Conservation Subcommittee sets target figures for FY of each division, clarifies concrete execution items and promotes activity. By end of FY 2010, reduce CO2 total output by 5% compared to FY 2005.	CO2 total output 12,138 t-CO2/year	12,139 t-CO2/year		<b>Improve equipment productivity</b> Achieve shorter cycle times through change in the drill model for NC lathes Investigate compressed air leaks when not in operation; reduce these leaks Stop grinding stone rotation and coolant and hydraulic units after NC machining cycle is finished Increase load for each ch through improvement of shaft coupling jig  Achieve shorter cycle time through change in drill model for NC lathes  Reduce compressed air leaks in plant equipment <b>Changes in CO2 total output</b> 
Resource conservation	Reduce industrial waste through activities performed by the waste group.	The waste group sets target figures for FY of each division, clarifies concrete execution items and promotes activity. By end of FY 2010, reduce total industrial waste output by 25% compared to FY 2005.	Total waste output 74 t/year	97.8 t/year	(Base unit evaluation: )	<b>Measures at source</b> Reduce defects through use of swarf cover on NC lathes Extend life of pilot hole drills through addition of coolant pipes to transfer machines Reduce clamping scratches through addition of air blow to milling machines Reduce flange appearance defects during gas nitrocarburizing  Prevent burnishing scratches by attaching a cover  Add coolant pipe to transfer machine drill process <b>Changes in total waste output</b> 
Green procurement	Reduce impact on environment through joining activities to realize a society with an environmentally sound material cycle	Promote a green procurement where parts, materials and essential materials which are low on environmental burden from manufacturers who are proactive on environment preservation.	Number of green procurements : 6 or more per year	6 per year		<b>Reduce environmental burden of procured items</b> Change lathe coolant from oil-based to aqueous cutting fluid Change Tx-free thinner with less toluene and xylene for cleaning thinners in paint process Improve utility through elimination of solidification step achieved with different grinder swarf recycler  Change lathe coolant to aqueous coolant  Improve utility through elimination of solidification step <b>Changes in number of green procurements</b> 
Environmental improvement	Reduce environmental burden through execution of "personal declaration on environment" by all employees and through personal environmental improvement activities.	Raise environmental awareness of all members and continuously deploy improvement activities in order to reduce environmental burden in each division. Number of environmental improvements to be 2 or more per month per division	Number of environmental improvements to be 2 or more per month per division	Total of 113 per year		<b>Reduce environmental burden in each division</b> After keeping thinner used for cleaner for about a week, the thinner separates and the supernatant liquid can be used as the thinner for the undercoat By cleaning the dried paint particles from the filter on the large painting booth, the filter can be reused for the smaller booth When our products are purchased, the attached file cannot be used as a place to hold the customer-specified drawings, so they were thrown out, but now they are now reused as cost estimation files A special liquid-holding tray was introduced to prevent the outflow of corrosive liquids  Files that were thrown out are now reused by other departments  Prevent outflow of corrosive liquids using a special tray <b>Changes in number of environmental improvements</b> 

□ Target ■ Actual



# Koyo Thermo Systems Co., Ltd.



## Message from the President



President  
Michiro Kajiwara

On June 6, 2007, the G8 summit was held in Germany, and a long-term target of halving worldwide greenhouse gas emissions by 2050 was proposed by the Japanese government. To achieve this target, various types of activities must be pursued.

As an integrated manufacturer in the field of heating technology, we are accelerating efforts to create new thermal technologies and develop products with environmentally friendly features (energy conservation, resource conservation, short lead times, etc.) to better control greenhouse gas emissions. We also are working to improve logistics. Your continued guidance and support is appreciated. Thank you.

## Company outline

Company name	Koyo Thermo Systems Co., Ltd.
Established	July 19, 1967
Head office	229 Kabata-cho, Tenri-shi, Nara Prefecture TEL 0743-64-0981 URL http://www.koyo-thermos.co.jp/
Capital	450 million yen
Net sales	FY 2006: 24.665 billion yen FY 2005: 21.51 billion yen
Primary business	Heat treatment furnace for metals, heat treatment equipment for manufacturing semiconductors, electronic parts, and ceramics, heat treatment equipment for LCD and plasma displays, others
Number of employees	415
Business base	Sales bases: Nara (Headquarters), Tokyo, Gunma, Aichi, Shizuoka, Fukuoka, Kagawa Production bases: Headquarters Plant (Tenri City), Kashihara Plant (Kashihara City) Overseas affiliates: 4 companies (China, Taiwan, Korea, Thailand)
Acquire the ISO 14001 Certification	ISO 14001: Certification acquired in June 2001

## Main products



## Environmental data

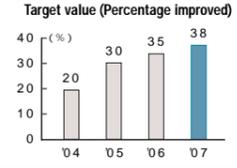
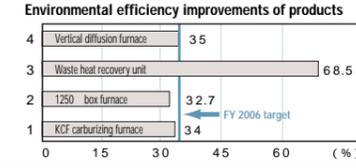
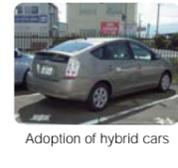
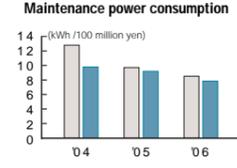
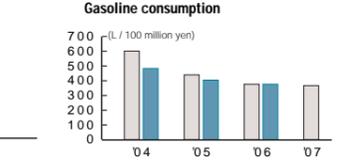
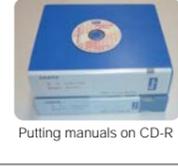
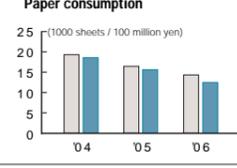
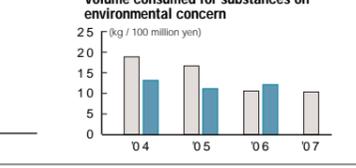
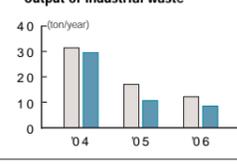
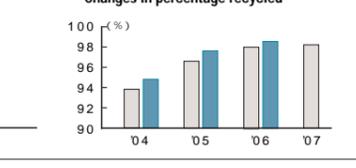
Category	Facility	Item	Legal limit	Actual measurement	
				Average	Maximum
Air	Flue and fire tube boiler	SOx	3.46	-	0.019
		NOx	180	-	64
		Particulates	0.30	-	0.004
Absorption water chiller/heater		SOx	0.44	0.015	0.018
		NOx	180	63	65
		Particulates	0.30	0.004	0.005
Drainage water quality	Sewage (kitchens and lavatories)	pH	5 ~ 9	8.7	9.0
		BOD	1,500	213	220
		SS	1,500	125	190
Noise	Presses Shearing machine Compressors Fans	Afternoon	65	63.6	63.7
		Night	60	58.2	58.7
Vibration		Afternoon	65	-	37
		Night	60	-	30

## Headquarters and plant



Water quality obtained from water quality test results of sewage (No dedicated facility)  
[Units] SOx (Nm<sup>3</sup>/h), NOx (ppm), Particulates (g/Nm<sup>3</sup>), BOD, SS (mg/ℓ), Noise, Vibration (dB)

## Environmental management system

Category	Environmental objective	Performance index (mid-term index)	FY 2006 target	FY 2006 results	Evaluation	Main Activities	
Design for environment	Delivering products with improved environmental efficiency (energy, resources)	Provide products with 40% better environmental efficiency in FY 2008 (comparison criterion: FY 2002)	Provide products with 35% better environmental efficiency (comparison criterion: FY 2002)	32.7-68.5%		<p><b>[Applicable products]</b> 1. KCF carburizing furnace 2. 1250 box furnace 3. Waste heat recovery unit 4. Vertical diffusion furnace</p> <p><b>[Areas of improvement and target values]</b> Power consumption: 35% improvement Equipment weight: 35% improvement</p>   	
Energy conservation	Reduce energy consumption	(1) Reduce consumption of city gas (proportional to fiber input volume) (2) Reduce gasoline consumption (3) Reduce consumption of special A fuel oil (4) Reduce electricity consumption	Reduce city gas consumption rate of FY 2008 to 0.924kg or less / kgFin Reduce consumption of FY 2008 to 346.1ℓ or less / 100 million yen Keep consumption at 110kℓ / year or less Reduce consumption of FY 2008 to 8,120 kWh or less per 100 million yen Reduce consumption of FY 2008 to 3.77kWh or less / kgFin	Input of 0.961 kg or less / kgFin 360.8ℓ or less / 100 million yen 110kℓ / year or less 7,260kWh per 100 million yen per year 3.92kWh or less / kgFin	0.606kg / kgFin 360.8ℓ / 100 million yen 86.0kℓ / year 7,260kWh per 100 million yen per year 2.72kWh / kgFin	<p>Increase drying efficiency of drying furnace (drying and removal times, control of drying temperature)</p> <p>Adopt hybrid cars for company use Fine temperature control</p> <p>Use public transportation for long-distance business trips</p> <p>Increase use of pull switches for lighting Promote motion-activated lighting</p> <p>Improved efficiency of plant operation through standardizing operation and moving up closing time upon job completion</p>   	
	Resource conservation	Effective use of resources	(1) Reduce usage of copy paper (2) Reduce consumption of flammable high-pressure gas (butane, acet hydrogen, and xylene, ammonia)	Keep usage for FY 2008 to 12,930 sheets or less in A4 size per 100 million yen per year Keep usage for FY 2008 at 44.8kg or less per 100 million yen	14,210 sheets per 100 million yen per year 50.1kg / 100 million yen	12,780 sheets per 100 million yen per year 36.7kg / 100 million yen	<p>Promote use of CD-Rs for instruction manuals Establish use of back paper and double-sided copying in all divisions</p> <p>Leak checks at the start of work and when replacing tanks Turn off main valves when not in use</p>   
		Reduce substances with environmental burden	Target substances: Xylene, toluene and butyl acetate	Reduce total consumption of target substances to 9.4kg or less per 100 million yen per year	10.06kg or less per 100 million yen per year	11.34kg per 100 million yen per year	<p>Investigate and introduce paints with less of these substances Carry out education and awareness activities for contractors</p>
	Green procurement	Stop purchasing and using products containing substances specified by the RoHS Directive	Stop purchasing and using products containing the substances specified by the RoHS Directive in devices bound for the EU	100% check of all devices bound for the EU (units shipped and cases used)	8 units 45 cases		<p>Check for the specified substances and investigation of substitutes</p> <p>Explore green products and control amounts purchased</p>
(2) Green purchasing		Have at least 40% of office supplies as green products	33% or more	42.5%			
Environmental improvement	Initiatives for achieving zero emissions	(1) Reduce volume of waste	(1) Keep output of waste for FY 2008 to 7.6 tons or less per year	12.2 tons or less per year	7.545 tons per year	<p>Sift through floor sweepings to recover scrap metal</p> <p>Remove flux from used welding rods so that metal cores can be turned into saleable products</p> <p>Recycle used Miracle Wipers (cotton cloth used for cleanup)</p> <p>Encourage people to take home waste they bring in</p>   	
		(2) Improve recycling percentage	(2) Keep recycling percentage for FY 2008 above at 99% or more	At least 98.5%	99.2%		
Environmental laws	Compliance with environmental laws, regulations, and norms, as well as the prevention of environmental pollution	(1) Number of environmental law violations: 0 per year (2) Number of environment pollution accidents: 0 per year	(1) Number of environmental law violations: 0 (2) Number of environment pollution accidents: 0	0 0		<p>Execute statutory inspections and regular inspections</p> <p>Execute emergency response tests</p>	
Logistics	Reduce packaging and packing materials	Achieve reduction for FY 2008 of at least 1,103.8kg per year	456.1kg / 6 months (latter half)	988.7kg / 6 months		<p>Reduce packing material through use of stretch film</p> <p>Reduce thickness of 2nd layer of vinyl rap</p> 	
	Reduce CO <sub>2</sub> emissions through logistics improvements	Achieve reduction for FY 2008 of at least 3.83t per year	At least 3.16 tons per year	3.39 tons per year		<p>Reduce number of delivery vehicles by increasing loading efficiency</p> <p>Reduce delivery distance through use of consolidated loads</p>  	
Service	Eliminate asbestos in service work	To have at least 150 cases of non-asbestos work for FY 2008 (total for FY 2007 and FY 2008)	100%	100% (29 cases)		<p>Promote elimination of asbestos through strict monitoring in designing for remodeling</p>	

Target Actual



# Koyo Electronics Industries Co., Ltd.



## Message from the President



President  
Tsutomu Yuine

Artificial greenhouse gas were pointed out as a cause of global warming in the IPCC report issued in February this year, and since then people around the world have been focusing on the goal of halving total greenhouse gas emissions. Dramatic improvement in the overall efficiency of societies will be necessary in order to achieve this goal.

Having been selected as one of Japan's model industries this year, our company is introducing a more energy-efficient air-conditioning and heating system, and we expect to achieve a 48% reduction in CO<sub>2</sub> emissions.

We will continue to pursue increased efficiency in our products and operations in order to contribute to the prevention of global warming.

### Company outline

Company name	Koyo Electronics Industries Co., Ltd.
Founded	November 1955 March 1959
Head office	1-171 Tenjin-cho, Kodaira, Tokyo TEL 042-341-3111 URL <a href="http://www.koyoele.co.jp/">http://www.koyoele.co.jp/</a>
Capital	1,593.2 million yen
Net sales	FY 2006: 13.4 billion yen (nonconsolidated) FY 2005: 12.7 billion yen (nonconsolidated)
Primary business	Manufacture and sale of electronic control devices and on-vehicle products
Number of employees	379
Business base	Sales bases: Sendai, Tokyo, Nagoya, Osaka, Hiroshima Production base: Oizumi Plant (Yamanashi) Overseas affiliates: USA, China (3 companies), Taiwan
Acquire the ISO 14001 Certification	ISO 14001: Certification acquired in December 2000

### Main products Electronic control devices



### Environmental data

Item	Oizumi Plant			Head office		
	Legal limit	In-house standard	Actual measurement	Legal limit	In-house standard	Actual measurement
Drainage water quality	Domestic wastewater discharge only					
Air	NOx	180	60	46	No particular facility	
	SOx	1.3	0.01	0.006	No particular facility	
	Particulates	0.3	0.01	0.009	No particular facility	
Noise	Morning	60	60	53	No particular facility	
	Afternoon	65	65	54	No particular facility	
	Evening	60	60	57	No particular facility	
	Night	55	55	51	No particular facility	
Vibration	Afternoon	65	50	40	No particular facility	
	Night	60	45	35	No particular facility	

[Units] NOx (ppm), SOx (Nm<sup>3</sup>/h), Particulates (mg/Nm<sup>3</sup>), Noise, Vibration (dB)

### [Introduction of a nighttime thermal storage air conditioning system]

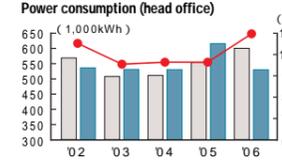
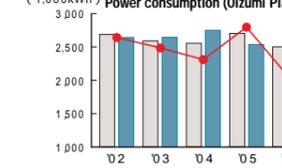
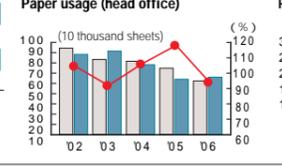
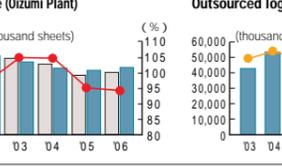
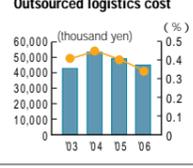
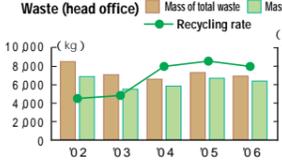
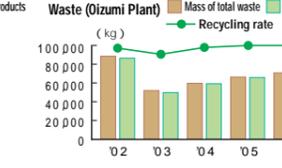
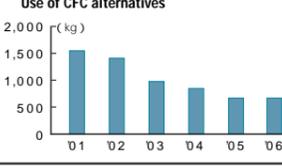
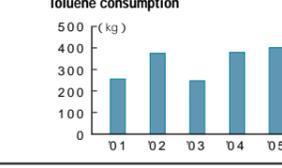
This nighttime thermal storage air-conditioning and heating system stores energy at night using electrical energy and then uses this stored energy during the daytime for air-conditioning and heating in order to flatten peak loads, in addition to which this system has the following environmental advantages:

- Reduced CO<sub>2</sub> emissions: 48% decrease in CO<sub>2</sub> emissions is estimated
- No atmospheric pollution: Because there is no oil combustion, there are zero gas emissions
- Reduced water consumption: No evaporation of water from cooling towers



Photo of nighttime thermal storage air conditioning system: Thermal storage area is on the bottom and the heat pump is on top

## Environmental management system

Environmental objective	Performance index (mid-term target)	FY 2006 target	FY 2006 results	Evaluation	Main Activities																		
Environmentally friendly products	Promote environmental design	Manage environmental design targets	Reduce product weight	Achieved weight and energy savings using a miniature magnetic rotary encoder and a miniature all-purpose PLC. (refer to the figures to the right)	<table border="1"> <thead> <tr> <th>Developed product</th> <th>Item</th> <th>Existing product</th> <th>Developed product</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Miniature magnetic rotary encoder TRD-MC series</td> <td>Weight</td> <td>150g</td> <td>50g</td> </tr> <tr> <td>Power consumption</td> <td>60mA</td> <td>35mA</td> </tr> <tr> <td rowspan="2">Miniature all-purpose PLC SJ series</td> <td>Weight</td> <td>650g</td> <td>250g</td> </tr> <tr> <td>Power consumption</td> <td>260mA</td> <td>110mA</td> </tr> </tbody> </table>	Developed product	Item	Existing product	Developed product	Miniature magnetic rotary encoder TRD-MC series	Weight	150g	50g	Power consumption	60mA	35mA	Miniature all-purpose PLC SJ series	Weight	650g	250g	Power consumption	260mA	110mA
	Developed product	Item	Existing product	Developed product																			
Miniature magnetic rotary encoder TRD-MC series	Weight	150g	50g																				
	Power consumption	60mA	35mA																				
Miniature all-purpose PLC SJ series	Weight	650g	250g																				
	Power consumption	260mA	110mA																				
			Reduce power consumption		 Miniature rotary encoder  Miniature all-purpose PLC																		
Energy conservation (electricity)	Promote energy and resource conservation	Reduce power consumption at head office	1% reduction from previous year	Head office: 10% reduction	Change to energy-conserving equipment and devices Firmly establish the practice of turning off lights when they are not needed Cool Biz work wear and adjustment of air-conditioner settings  Nighttime thermal storage air conditioning system																		
		Reduce power consumption at Oizumi Plant		Oizumi Plant: 13% reduction		 Power consumption (head office)  Power consumption (Oizumi Plant)																	
Resource conservation I (paper)	Reduce paper usage	Promote paperless work at head office	Reduce usage of paper	Head office: 4% increase	Changing to paperless work by digitizing  The Koyo Electronics Industries group's teleconferencing system connects 4 countries, 10 affiliates, and 13 rooms.																		
		Promote paperless work at Oizumi Plant	Reduce usage by 2% from previous year	Oizumi Plant: 3% increase		 Paper usage (head office)  Paper usage (Oizumi Plant)  Outsourced logistics cost																	
Resource conservation II (logistics)	Promote energy and resource conservation	Reduce resources consumed for shipment	Reduce logistics outsourcing costs by 2%	Logistics outsourcing cost reduced by 8%	Implementation of combined shipments Choosing the logistics carrier based on the type of shipment Use returnable containers for subcontractors																		
Waste	Reduce and optimally recycle waste	Promote zero emissions at head office	Achieve recycling percentage of 92%	Head office: 91%	Thoroughly separate garbage Form partnerships with recyclers Request suppliers to reduce packing material  Empty reels to be recycled																		
		Promote zero emissions at Oizumi Plant	Achieve recycling percentage of 98%	Oizumi plant: 100%		 Waste (head office)  Waste (Oizumi Plant)																	
Chemical substances	Suppress use of and properly control chemical substances	Reduce the use of the CFC alternative HCFC225 with the aim of phasing it out in the future	Achieve 10% reduction from previous year	0% reduction from previous year	Eliminate standard circuit board washing (100% elimination completed) Explore different cleaning methods for products ordered by customers Review cleaning methods involving toluene Change to adhesives and hardeners that do not contain toluene  Solvent that contains toluene																		
		Reduce the use of toluene	Achieve 10% reduction from previous year	18% reduction from previous year		 Use of CFC alternatives  Toluene consumption																	

Legend: □ Target, ■ Actual, ● Achievement ratio, ○ As a percentage to sales



# Daibea Co., Ltd.



## Message from the President



President

Mitsuhiro Ikeda

The depletion of natural resources, increase of deserts caused by deforestation, and global warming caused by CO<sub>2</sub> emissions are just some of the serious environmental problems facing our world today.

Our company is concentrating on using energy in an efficient, environmentally considerate manner and creating products that are even more environmentally friendly than before.

In addition, under the guidance of our Global Environmental Conservation Committee, our five specialized subcommittees specializing in energy conservation, resource conservation, environmental improvement, logistics, and paper reduction are pursuing the reduction of environmental burdens on an ongoing basis.

It is my desire to work together with all employees to contribute to global environmental conservation.

## Company outline

Company name	Daibea Co., Ltd.
Established	February 1936
Head office	9-510 Otorikita-machi, Nishi-ku, Sakai-shi, Osaka TEL 072-262-1125 URL http://www.daibea.co.jp/
Capital	2,317 million yen
Net sales	FY 2005: 21,684 million yen FY 2006: 24,006 million yen
Primary business	Manufacture and sale of bearings and bearing-related products
Number of employees	506 (as of March 31, 2007)
Business base	Head office and Sakai Plant (Sakai-shi, Osaka), Nabari Plant (Nabari-shi, Mie prefecture)
Acquire the ISO14001 Certification	ISO 14001: Certification acquired in August 2001

## Main products

Our compact and lightweight thin-walled bearings used in applications such as the heat rollers of copying machines and contribute to reducing the burden on the environment.



Thin-walled bearing

## Environmental data

	Item	Head office and Sakai Plant			Nabari Plant		
		Legal limit	In-house standard	Actual measurement	Legal limit	In-house standard	Actual measurement
Drainage water quality	BOD	150		130	65	58	8
	COD	150		72.7			
	SS	200		31	90	80	3
	pH	5.8 ~ 8.6		7.1	5.8 ~ 8.6	6.3 ~ 7.7	7.7
	Mineral oil	5		4	3	2.7	0
	Wastewater volume						
Air	NOx	No particular facility					
	SOx	No particular facility					
	Particulates	No particular facility					
Noise	Morning	65	60	52	65	63	49
	Afternoon	70	65	59	70	68	53
	Evening	65	60	56	65	63	49
	Night	60	60	53	60	58	48
Vibration	Afternoon	70	60	42	No particular facility		
	Night	65	55	42	No particular facility		

[Units] BOD, COD, SS, Mineral oil (mg/ℓ), NOx (ppm), SOx (Nm<sup>3</sup>/h), Particulates (g/Nm<sup>3</sup>), Wastewater volume (m<sup>3</sup>/day), Noise, Vibration (dB)

## Environmental management system

	Environmental objective	Performance index (mid-term target)	FY 2006 results	Single year target	Evaluation	Main Activities
Energy conservation	Reduce energy consumption	By FY 2009 end, reduce the energy cost per unit by 3.0% compared to FY 2006	Reduced energy cost by 6.0% compared to FY 2003	CO <sub>2</sub> : +4.1% compared to FY 2003	×	<ul style="list-style-type: none"> <li>Repair air leaks</li> <li>Change pumps and compressors to the inverter type</li> <li>Optimize air conditioning based on Cool Biz and Warm Biz</li> <li>Improve lighting</li> <li>Install high-efficiency transformers</li> <li>Pursue efforts related to energy-saving model line</li> </ul>
		By FY 2009 end, reduce CO <sub>2</sub> 3.0% compared to FY 2003	Reduced emission by 3.0% compared to FY 2003			
Resource conservation	Reduce primary materials and secondary materials	Primary materials: By FY 2009 end, reduce primary materials consumption per unit by 3.0% compared to FY 2006	Reduced primary materials by 3.0% compared to FY 2003	Primary materials: +3.2% compared to FY 2003	×	<ul style="list-style-type: none"> <li>Reduce weight by changing forging dimensions</li> <li>Reduce amount of materials used by decreasing grinding cost</li> </ul>
		Secondary materials: By FY 2009 end, reduce secondary materials consumption per unit by 3.0% compared to FY 2006	Reduced secondary materials by 3.0% compared to FY 2003	Secondary materials: +3.0% compared to FY 2003		
Environmental improvement	Reduce waste	By FY 2009 end, reduce amount of waste per unit by 3.0% compared to FY 2006 By FY 2009 end, reduce waste discarded by 99.5% compared to FY 2000 Recycling rate: 99.5% by FY 2009 end	Reduced base unit by 7.5% compared to FY 2003 Reduced amount of waste discarded by 99.5% compared to FY 2000 Recycling rate: 99.5%	Recycling rate: 99.5%		<ul style="list-style-type: none"> <li>1. Reduction of waste               <ul style="list-style-type: none"> <li>Produce resources by hardening grinded particles</li> <li>Reuse grinding fluid from the compactor</li> <li>Recycle packaging Rent colored rags</li> <li>Recycle fluorescent lamps Recycle chopsticks</li> </ul> </li> <li>2. Environmental conservation Local cleaning activities</li> </ul>
	Improve local environment	Compliance with in-house standards Environmental conservation activities	Measurement of compliance with control items Beautification of plant area			
Logistics	Reduce packaging materials Improve logistics efficiency	By FY 2009 end, reduce logistics cost in relation to sales by 3.0% compared to FY 2006	Reduced logistics cost (per total sales) by 3.0% compared to FY 2003	+15.3%		<ul style="list-style-type: none"> <li>1. Improve packaging materials cost               <ul style="list-style-type: none"> <li>Reduce packing material by eliminating rivets from cartons and cases</li> </ul> </li> <li>2. Improve load efficiency of delivery               <ul style="list-style-type: none"> <li>Reduce delivery costs by changing the vehicle class of delivery vehicles</li> </ul> </li> </ul> Logistics budget            Computerized company expense payment system
Paper reduction	Reduce usage of paper	In FY 2009, reduce usage of copy CP paper by 9% compared to FY 2006 target	Reduced paper usage by 2.0% compared to FY 2005	+4.0% compared to FY 2005		<ul style="list-style-type: none"> <li>Reduce handouts and utilize projector</li> <li>Promote dual side printing (continuation)</li> <li>Reduce paper by computerizing the business trip applications and cost calculations</li> <li>Reconsider logistics and number of prints</li> <li>Reconsider allocation of paper</li> </ul> Paper usage

□ Target ■ Actual



# Utsunomiya Kiki Co., Ltd.



## Message from the President



President  
Kunihiko Kato

Global warming is not merely a problem to be faced by future generations but rather has already begun to affect the world we live in today. Rising temperatures and changing rainfall levels are lowering agricultural productivity, and food shortages are becoming more serious in each region of the world. As a country that imports massive quantities of food, Japan is being directly affected by this problem. Our company, which acquired ISO 14001 certification 5 years ago, has worked aggressively to reduce CO<sub>2</sub> emissions and contributed greatly to the prevention of global warming.

This year we are pursuing efforts to identify and eliminate waste and improve production efficiency in order to further reduce CO<sub>2</sub> emissions.

## Company outline

Company name	Utsunomiya Kiki Co., Ltd.
Established	October 1953
Head office	585 Suzumenomiya-machi, Utsunomiya, Tochigi Prefecture TEL 028-653-1311 URL http://www.utsunomiya-kiki.co.jp/
Capital	50 million yen
Net sales	FY 2006: 6,010 million yen
Primary business	Needle roller bearings, etc.
Number of employees	270
Acquire the ISO14001 Certification	ISO 14001: Certification acquired in August 2002 Certification agency: Japan Quality Assurance (JQA)

## Main products



Thrust-type needle roller bearings



Radial-type needle roller bearings

## Environmental data

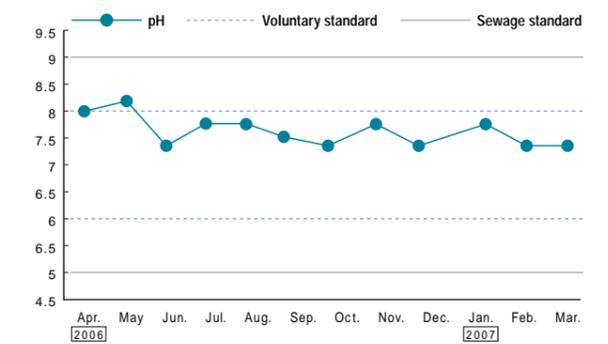
Item	Legal limit	In-house standard	Actual measurement	
	5 ~ 9	6 ~ 8	7.4	
Drainage water quality	pH			
	n-Hex (animal and vegetable oil)	3.0	1.5	1.4
	n-Hex (mineral oil)	5	3	0
Noise	Nitrite nitrogen	380	380	12
	Morning	50	50	43
	Afternoon	55	55	51
	Evening	50	50	50
Vibration	Night	45	45	45
	Afternoon	60	60	49
Night	55	55	44	

[Units] n-Hex, Nitrite nitrogen (mg/ℓ), NO<sub>x</sub> (ppm), Noise, Vibration (dB)

## Monitoring environmental measurement data trends

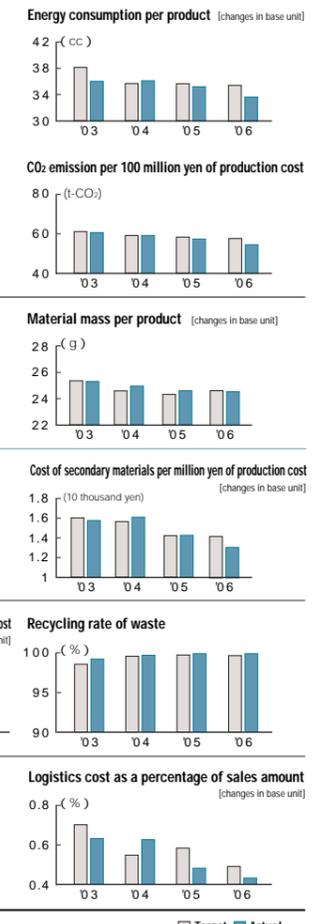
In order to quickly detect abnormalities and develop appropriate counter measures.

### FY 2006 Trend of plant sewage measurements



## Environmental management system

Category	Environmental objective	Performance index (mid-term index)	FY 2006 target	FY 2006 results	Evaluation	Main activities
Energy conservation	Reduce electricity consumption Reduce gas consumption Reduce fuel consumption Reduce ground water and water supply usage	a) In FY 2007, reduce the energy consumption of a single product by 10.0% from 2002 level b) By end of FY 2010, reduce CO <sub>2</sub> emission per total sales by 13.0% from FY 1997 level	a) 1.0% reduction from previous year b) 1.0% reduction from previous year	a) 2.2% reduction b) 5.5% reduction		<p>Display electricity consumption on a screen to improve awareness in order to reduce electricity consumption</p> <p>Switch the heat source for our air conditioners and heaters to an air-cooled heat pump in order to reduce CO<sub>2</sub> emissions</p> <p>Shorten air conditioner and heater operation times and manage temperature to reduce electricity consumption</p> <p>Increase the number of inverter-controlled compressors and shorten the engine compressor operation times in order to reduce CO<sub>2</sub> emissions</p> <p>Apply an insulating Isotan coating to the roof to improve air-conditioner and heating efficiency</p>
Resources	Reduce consumption of primary and secondary materials Reuse and recycle primary and secondary materials	Primary materials In FY 2008, reduce the mass of primary materials consumed by 6.42% from FY 2002 level	1.0% reduction from previous year	1.2% reduction		<p>Reduce material consumption by staggering cutouts, reducing spacing between cutouts, and reusing extra pieces</p> <p>Reduce material consumption by changing from a 2-piece to a 1-piece cage</p>
		Secondary materials In FY 2007, reduce the expenditure of secondary materials per sales amount by 18.2% from FY 2002 level	2.0% reduction from previous year	7.6% reduction		
Environmental improvement	Reduce, suppress production and recycle waste Appropriate disposal of waste Monitor ambient water noise and vibration Monitor chemical substances Improve environment around plant	a) In FY 2007, reduce total emission (including valuable resources) per manufacturing cost by 7.19% from FY 2002 level b) From the end of FY 2004, continue to limit percentage of solid waste disposal below 1% of total emission c) Waste collector, disposal contractor, check site of final disposal d) 100% compliance with laws and in-house standards e) 100% compliance in hazardous material management by using check sheet f) Maintain a good factory appearance	a) 1.0% reduction from previous year b) Achieve recycling rate of over 99% c) 100% enforced d) 100% compliance e) 100% compliance f) Continued weed removal and develop campaign for planting flowers	a) 1.0 reduction b) 99.9%		<p>Turn waste plastic spools into a saleable resource (They are put into a flexible container, sold, and reused)</p> <p>Recycle shot powder and pit sludge to reduce landfilled waste</p> Flexible container
Logistics	Reduce amount of packaging materials Promote reuse of packaging materials Promote usage of more environmentally friendly packaging materials Improve transportation efficiency	In FY 2008, reduce logistics cost per sales amount by 39.2% from FY 2002 level	5.0% reduction from previous year	6.8% reduction		<p>Increase delivery efficiency through reducing the number of deliveries contracted out</p> <p>Wash and reuse trays, plastics tubes, and packing</p>





# HOUKO Co., Ltd.



## Message from the President



President  
Kazumi Nakamura

Our company's management principle is to "provide value for our customers by creating user-friendly and environmentally friendly products."

We promote environmentally friendly products by overhauling and modifying Toyoda grinders to conserve resources and develop compact high-performance grinders to conserve energy.

Based on the direction of our Environmental Improvement Committee, all our employees participate in environmental conservation activities to reduce CO<sub>2</sub> and other industrial emissions and develop ecologically friendly office and factory environments.

We will continue to contribute to our environment and society.

## Company outline

Company name	HOUKO Co., Ltd.
Established	February 1, 1971
Head office	1-3 Ejiri, Hishilke, Kota-cho, Nukata-gun, Aichi Prefecture TEL 0564-62-1211 URL http://www.houko.co.jp
Capital	100 million yen
Net sales	FY 2005: 6,400 million yen FY 2006: 6,830 million yen
Primary business	Manufacture of multipurpose grinders and CNC grinders, repair and modification of grinders, manufacture of automobile parts, manufacture of electrical and electronic equipment
Number of employees	240
Certificate acquisition	December 12, 2001
Certification body	Japan Management Association (JMA)

## Main products



## Environmental data

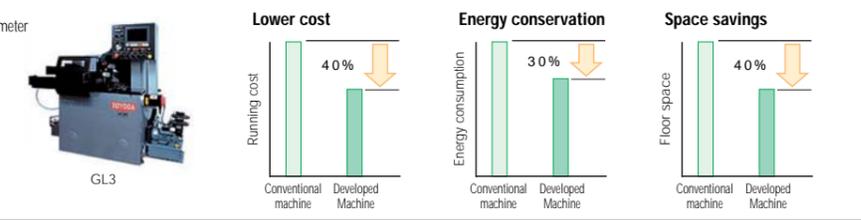
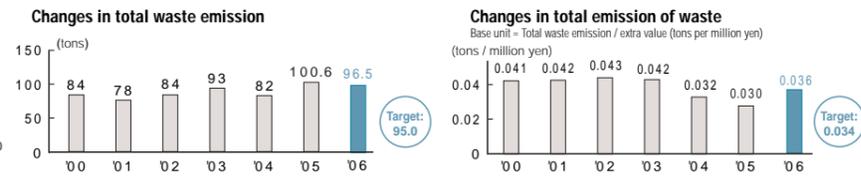
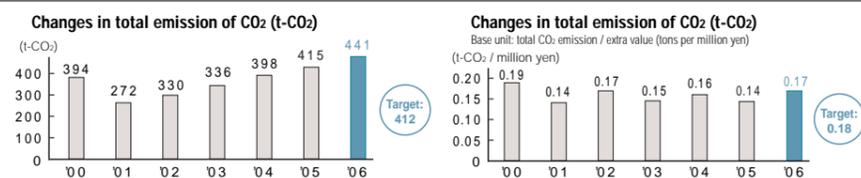
Item	Legal limit	Actual measurement	
Drainage water quality	pH	5.8 ~ 8.6	7.5
	BOD	2.0	2.3
	COD	2.0	4.0
	SS	2.0	2.0
	Oil content	2.0	Less than 0.1
	Nitrogen	4.0	3.7
	Phosphorus	3	Less than 0.01
Air	NOx		
	SOx		No particular facility
	Particulates		

Item	Legal limit	In-house standard	Actual measurement
Noise	Morning	65	46
	Afternoon	70	45
	Evening	65	46
Vibration	Afternoon	70	40
	Night	65	40

After initial treatment at our company, sewage undergoes final treatment at the JTEKT Kohda Plant.  
[Units] BOD, COD, SS, Oil content (mg/ℓ), NOx (ppm), SOx (Nm<sup>3</sup>/h), Particulates (g/Nm<sup>3</sup>), Noise, Vibration (dB)

## Environmental management system

Environmental objective	Performance index (mid-term index)	FY 2006 target	FY 2006 results	Evaluation	Main activities	
Energy conservation	Total CO <sub>2</sub> emission By end of FY 2010, reduce emission by 5% compared to FY 2005	Total CO <sub>2</sub> emission 412 tons / year (t-CO <sub>2</sub> )	441 tons / year (t-CO <sub>2</sub> )	×	<p>Replacing compressors with energy-savings ones and optimizing their operation (55kW constant-power models were replaced with 37kW inverter-controlled models, and separate installations for each plant were changed to a centralized system that is managed company-wide.) (Expected result: 48,560kWh / year)</p> <p>Old transformers were replaced, greatly reducing electrical losses. (Expected result: 62,880kWh / year)</p>	
	Promote energy conservation activities	1,900 yen / person and year	6,847 yen / person and year			
Resource conservation	Total waste emission By end of FY 2010, reduce emission by 25% compared to FY 2005	Total waste emission 95 tons / year	96.5 tons / year		<p>Separately collecting and recycling surplus runners from automobile parts (surplus runners that were collected together and disposed of are now separately collected, and sold as recycling material (8.3t / 6 months))</p> <p>Recycling by separating waste</p> <ul style="list-style-type: none"> <li>Recycled paper and cardboard: 20.3 tons</li> <li>Recycled wood shavings: 8.2 tons</li> </ul> <p>Selecting and reviewing the optimum waste processing contractors to reduce processing costs: 1,858 thousand yen / year</p>	
	Promote reduction of waste	500 yen / person and year	4,031 yen / person and year			
Environmentally friendly products	Reduce environmental burden by developing environmentally friendly products	Promote environmental design considering energy conservation, reduction in waste, recycling and low noise levels.	Development of new models (includes minor model change) 1 or more / year	1 / year	<p>Development of the GL3P-25S II (45M CBN wheel grinder)</p> <p>This is an energy-saving, space-saving grinder that uses a small-diameter CBN wheel based on the concept of "small, light, and beautiful."</p> <p>Lower cost (running cost is 40% less)</p> <ul style="list-style-type: none"> <li>Fewer man-hours required to replace grinding wheel</li> <li>Fewer man-hours required for confirming quality after replacing the grinding wheel or changing its diameter</li> <li>Fewer man-hours required for coolant maintenance</li> </ul> <p>Lower energy consumption (30% less energy consumption)</p> <p>Less space required (40% less floor space)</p>	
Environmental improvement	Forest protection /greening campaign	Set up of green area inside plant	Promotion of tree-planting on company grounds (promotion of greenery on plant grounds)	Planted trees around the painting plant Approx. 30 trees added	<p>"Creating a plant environment overflowing with greenery"</p> <p>With a total of about 800 trees with 45 varieties, CO<sub>2</sub> absorption increased by 5.9 tons a year</p> <p>25,448kWh / year of energy savings from solar power generation</p> <p>Expansion and equipping of painting plant (two other examples are shown in the energy conservation section)</p> <p>The painting area attached to the assembly area was completely separated and modern equipment was put in to improve the environment and painting efficiency</p> <p>Painting performance was increased by 150%, and the assembly floor was enlarged by 120%</p> <p>A roof was built over the truck yard in between the plants in order to prevent rain from washing off the oil that is on the parts while they are being transported outside</p> <p>Periodic "Green Campaigns" for all employees to participate are held (once a month) in which weeds inside and outside plant grounds are removed</p> <p>Effective use of recycled paper (49,262 sheets / year)</p>	
	Campaign for reducing environmental burden	Planning and modification of plant facility		1 or more / year		4 / year
		Improve operation by promoting paperless activities		No. of work improvements At least 1 improvement / year per workplace		1.3 improvements / year per workplace



Actual Target Conventional machine Developed Machine



# Toyoda Van Moppes Ltd.



## Message from the President



President  
Kazuhiko Sugita

Since its founding in 1975, our company has provided customers with CBN grinding wheels and other tools for super-abrasive applications, all of which enable high-efficiency manufacturing, resource conservation, and recycling.

With the growing importance of establishing a recycling, sustainable society, our company has actively pursued improvements in areas such as energy and resource conservation in order to contribute to protection of the global environment and is striving to develop super-abrasive tools that will enable customers to carry out manufacturing operations with minimal environmental burden.

## Company outline

Company name	Toyoda Van Moppes Ltd.
Established	1975
Head office	1-54 Shiroyama, Maiki-cho, Okazaki-shi, Aichi Prefecture TEL 0564-48-5311 URL <a href="http://www.tvmk.co.jp/">http://www.tvmk.co.jp/</a>
Capital	481 million yen
Net sales	FY 2006: 4,750 million yen
Primary business	Manufacture and sale of tools containing diamond or CBN grindstones that can withstand superabrasive applications
Number of employees	270
Business base	Sales bases: Aichi, Tokyo, Osaka, Shizuoka, Hiroshima Production base: Head Office Plant (Aichi)
Acquire the ISO14001 Certification	ISO 14001: Certification acquired in March 2001

## Main products



### Vitrified bond CBN wheel

- For grinding camshafts
- For grinding crankshafts
- For high speed grinding
- For grinding cylinders others



### Diamond rotary dresser

- Drivers type
- Flange type
- For bearings
- For ball screws
- For piston rings others

## Environmental data

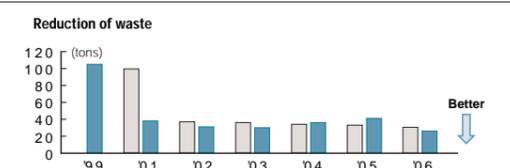
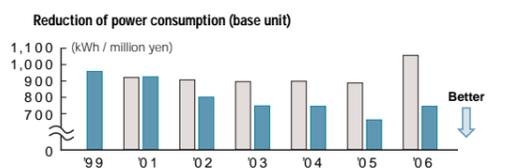
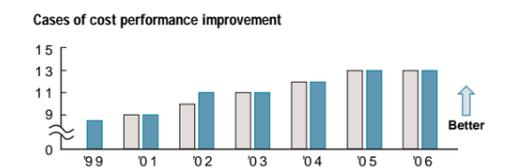
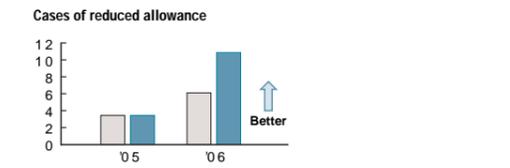
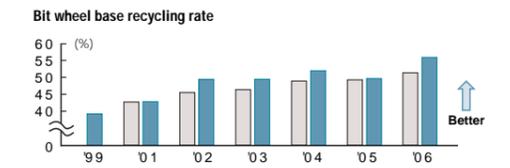
## Head Office Plant

Item	Legal limit	In-house standard	Actual measurement
	<b>Drainage water quality</b>		
BOD	2.0	2.0	2
COD	2.0	2.0	1.3
SS	2.0	2.0	1.0
pH	6.5 ~ 8.5	6.5 ~ 8.5	7.3
Mineral oil	2	2	< 1
Copper	1	1	0.09
Zinc	3	3	0.07
Soluble iron	5	5	0.4
Nitrogen	3.8	3.8	1.4
Phosphorus	4.1	4.1	0.11
<b>Noise</b>			
Morning	55	55	44.1
Afternoon	60	60	42.3
Evening	55	55	40.4
Night	50	50	42.4

Unit: mg/ℓ (except for pH)  
All the other regulated items that are not shown here have not been detected.  
Unit: Noise (dB)

## Environmental management system

	Environmental objective	Performance index (FY 2009 target)	FY 2006 target	FY 2006 results	Evaluation	Main activities
Environmentally friendly products	Recycle Promotion of base recycling of CBN wheel	Increase the recycling rate of CBN wheel bases by the end of FY 2010 by 33.0% compared to FY 1999 Base recycling rate FY 1999: 39.1% FY 2010: 52.0%	Recycling rate of CBN wheel base 27.9% increase from FY 1999 level Base recycling rate: 50.0%	54.7%		Bit wheel base recycling activity  CBN grinding stone
	Environmental design Promote design that minimizes machining allowance	36 cases of reduced allowances by the end of FY 2010	6 cases / year of reduced allowances	11 cases		Change grinding stone width (review dies, etc.) Change grinding stone thickness (review settings) 
	Extended life Promotion of extended life of CBN wheel	Cases of cost performance improvement for CBN wheel Increase by 2.1 times (10% or more reduction in tool cost) from FY 1999 level Cases of cost performance improvement FY 1999: 7 cases / year FY 2010: 15 cases / year	Cases of cost performance improvement for CBN wheel 1.9 times increase from FY 1999 level (10% reduction in tool cost) Cases of cost performance improvement 13 cases / year	13 cases		Propose improved grinding stone and optimize machining condition [Actual examples] Longer Tr interval achieved through changes in pin grinding stone specifications and Tr conditions Longer Tr interval achieved through changes in drive pin OD grinding and the grinding stone 11 other examples  Use of grinding stone and optimize machining condition
Energy conservation	Reduce CO <sub>2</sub> emissions	Reduce CO <sub>2</sub> emissions (base unit) by 4.0% compared to FY 2006 by the end of FY 2010 FY 2006: 24.9 tons / 100 million yen FY 2010: 23.9 tons / 100 million yen	Power consumption (Base unit) 5.6% reduction from FY 1999 level Power consumption (base unit) 1,024.0kWh / million yen	745.2 kWh / million yen		Reduce power consumption by installing energy-saving air conditioning Promote energy conservation by adopting "Cool Business Wear" system Propose energy conserving methods  Installation of energy-saving air conditioning
Resource conservation	Reduce industrial waste	Reduce industrial waste (base unit) by 4.0% compared to FY 2006 by the end of FY 2010 FY 2006: 2.61 tons / year FY 2010: 2.51 tons / year	Solid waste disposal (Landfill and incineration) 69.5% reduction from FY 1999 level Solid waste disposal: 33.3 tons / year	27.1 tons		Promote recycling through sorted collection of waste (plastic, WA grinding stone, discarded wire)  Sorted collection of waste



□ Target ■ Actual



# JTEKT Automotive (Thailand) Co., Ltd.

## Message from the President



President  
Ryutarō Abe

The ISO 14001 standard, provides a model for establishing a management system that is focused on controlling and improving a company's impacts on the environment.

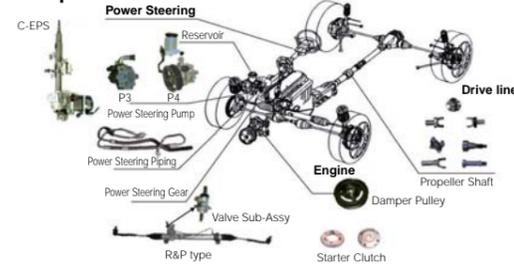
In this session, environmental management systems, tools, and techniques are described as a framework for continual improvement of environmental performance, including compliance to environmental regulations.

Effectively applied, ISO 14001 promises cost savings, waste reduction, energy efficiency, resource productivity, and improvements in public relations and liability.

### Company outline

Company name	JTEKT Automotive (Thailand) Co., Ltd.
Established	October 1996
Head office	107 M.4 T.Pluakdaeng A.Pluakdaeng Rayong 21140 Thailand Tel. +66-38-954315
Capital	620 million baht
Net sales	FY:2006: 6,494 million baht
Primary business	Automotive part, Power Steering System, Drive Line System, Engine Parts
Number of employees	685
Acquire the ISO 14001 Certification	ISO 14001: Certification acquired in December 2003

### Main products

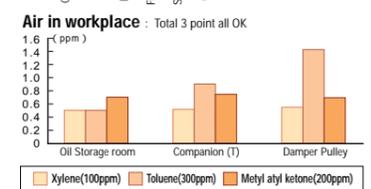
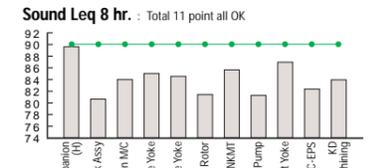
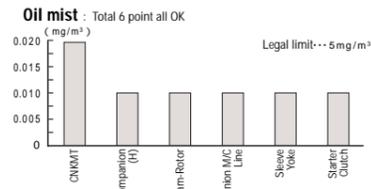
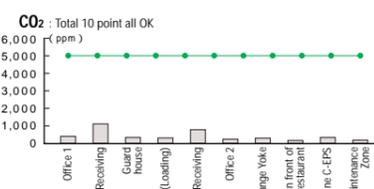
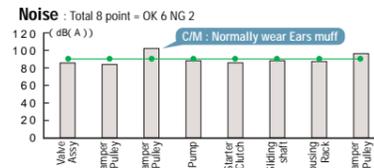
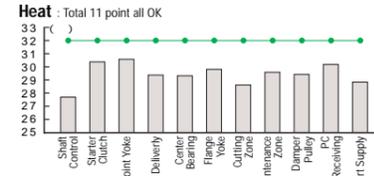


ISO/TS 16949  
CERT.NO.BGK0403941



ISO14001:2004  
CERT.NO.TH 07000006

### Environmental data



### Drainage water quality

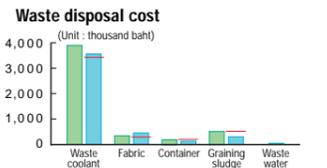
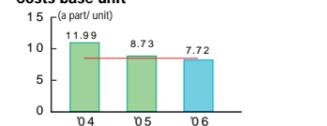
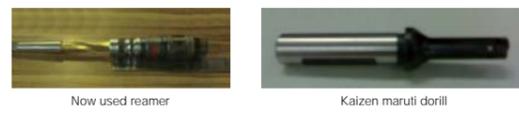
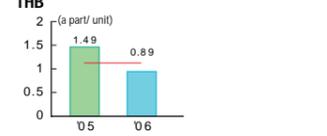
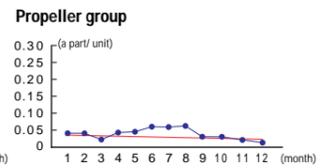
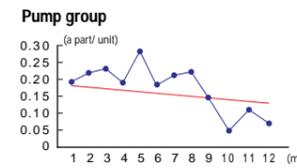
Item	Legal limit	Actual measurement
BOD	5.00	2.2
SS	200	12
Oil & Grease	10	3
COD	750	79
TDS	3000	322
Phenol	1	0.001
Cyanide	0.2	0.005
pH	5.5 - 9.0	7.8
Barium	1	0.3
Cadmium	0.03	0.02
Copper	1	0.05
Lead	0.2	0.10
Manganese	5	0.06
Nickel	1	0.01
Hexavalent Chromium	0.75	0.01
Zinc	5	0.03
Selenium	0.02	0.001
Mercury	0.005	0.0001

### Air

Stack	Item	Legal limit	Actual measurement
Stack 1	Dust	400	4.94
	Lead	30	-
	Xylene	200	-
Stack 2	Dust	400	5.78
	Lead	30	-
	Xylene	200	-
Stack 3	Dust	400	6.02
	Lead	30	0.081
	Xylene	200	< 0.35
Stack 4	Dust	400	0.42
	Lead	30	0.009
	Xylene	200	0.44
Stack 5	Dust	400	0.77
	Lead	30	0.216
	Xylene	200	0.87
Stack 6	Dust	400	1.44
	Lead	30	-
	Xylene	200	0.59
Stack 7	Dust	400	0.88
	Lead	30	2.71
	Xylene	200	< 0.35

### Environmental management system

Category	Environmental objective	Performance index (mid-term index)	FY2006 target	FY2006 results	Evaluation	Main activities
Environmental improvement	All line reduce noise	Rack & pinion line, pump line, dumper pulley And all	Less than 90 dB(A)	Below the standard of the 8-hour equivalent continuous sound level in all the lines Beyond the standard of the noise level in 2 places out of 24 places		The spot is checked and measurement of sound level is carried out. From noise measuring, we found loud noise come from air blow gun and we can reduce it. Reduce air blow gun usage, modify blowing in machine Use silencer in blow air process Imposition of the earplug wearing
Resources conservation	Cloth & glove reduce	Reduce usage, rework and reused	Reduce 10 %	Reduce 15 %		Limit for issue for each line only enough for used per day Repeat Used Selected for no need quality process.
Energy conservation	Electrical and water consumption	Install chiller for good condition working, demand up 760 kW FY2005: THB 1.49 per unit	Reduce 10 %	Reduce 40 %		Reduce electrical lighting Shut down air valve Break Time Power consumption (Base unit) FY2006: THB 0.89 per unit
Cost saving	Production tool cost reduction	Increase tool life, Kaizen Change Tool, Modify Machine Study Cutting Oil	Reduce 10 %	Reduce 12 %		Kaizen activity 1. 9 hole big some time setting difficult Compare tool life
Waste management	Waste disposal cost down	Additional area for waste management	Reduce 10 %	Reduce 9 %		Setting Waste Area Disposal cost re-calculation





# JTEKT AUTOMOTIVE VIRGINIA, INC.



## Message from the President



President  
Hisami Takagi

At JAVA, we are committed to our goal of being environmentally responsible.

In fact, our commitment goes beyond the walls of our facility and the land on which it is built. It is our belief that we must educate our workforce and our community about the importance of reducing consumption and increasing reuse/recycling.

This includes encouraging recyclers to explore new markets and partnering with other organizations to create markets for recycling of wastes to reduce environmental costs.

We will never be content with our results; there is always room for improvement no matter how far you are ahead of any other group or industry.

## Environmental policy

JTEKT AUTOMOTIVE VIRGINIA (JAVA) is committed to protecting the environment where Manufacturing, Engineering and Office activities are performed by adhering to the following items:

1. Maintain an Environmental Management System that is appropriate to the nature, scale and environmental impacts of activities and products.
2. Observe all applicable environmental laws, rules, regulations and agreements and provides the framework for identifying aspects and for setting and reviewing environmental objectives and targets.
3. Contribute to global energy and resource conservation through continual improvement and the prevention of pollution.
4. Maintain awareness and communicate with the public at large, employees and those working for or on behalf of the company such as contractors, suppliers, consultants and temporary workers.

## Company outline

### Overview:

JAVA is the 6th largest employer in Botetourt County (261employees) and manufactures high quality Electric Power Steering and Manual Steering Systems as well as the associated Rack and Pinion Gears.

Our EPS system reduces fuel consumption by 2.5%; a definite benefit to our environment.

### Background:

Company name	JTEKT AUTOMOTIVE VIRGINIA, INC. [ JAVA ]
Established	January 1999
Head office	555 International Parkway, Daleville, VA24083, USA Tel: ( 1 )-540-966-3505, Fax: ( 1 )-540-966-3506 Location: Botetourt Center at Greenfield, Daleville Virginia 15 miles northeast of Roanoke Virginia Plant size: 259,000 sq. ft. (24,090 sq. meters) on 81 acres
2006 Production	886,633 Steering Systems produced (Manual and EPS) \$241M in Sales
Number of employees	261 (May 2007)



Electric power steering (EPS)

### Certifications:

ISO 14001 - November 2003  
TS 16949 - November 2004



## Award recognition (Environmental and community)

JTEKT North America - Health, Safety, and Environmental Improvement  
"First Place - 2006 Team Recognition Award"

United Way of Roanoke Valley  
"2006 Participation Award"

The Clean Valley Council of Roanoke Valley  
"2003 Kroger Award of Excellence"

Commonwealth of Virginia and VMA  
"2006 Governor's Environmental Excellence Gold Award"



Joseph Brown, JAVA Safety and Environmental Manager (center)  
Bill Bolling, Lt. Governor of Virginia (2nd from right)

## Environmental management system

	Environmental Projects	Issue	Corrective Action	Target
1	Oil and Coolant Reuse / Recycling	Paying to Recycling externally. Frequent changing of coolant in sumps due to tramp oils.	Test various sump filters and fluid recyclers to extend coolant life.	Reduce Environmental costs per column by 5%.
2	Evaporator	Quantity of product sent out for recycle is approximately 90% water.	Samples to be tested by vendor (verify that it will not harm environment).	Reduce Waste Disposal/Recycling Costs by 50%.
3	Wood Pallets	Wood Pallets being sent to landfill.	Study current recycler Move Suppliers to Plastic Returnables	Eliminate wood waste. 50% suppliers using plastic returnables.
4	Plastic Trays	Plastic Trays from supplier totes are not recycled, placed in trash.	Locate Recycler that will accept this material and other plastics.	Eliminate Waste from Plastic trays, plastic shrink wrap, etc.
5	Litter Elimination	Trash Compactor leaves lots of trash on ground when hauled to empty.	Research compactors and vendors to replace or modify compactor.	Eliminate debris and trash from compactor.

NOTE: ALL ENVIRONMENTAL PROJECTS WERE DERIVED FROM ISO 14001 SIGNIFICANT ASPECTS SUMMARY.  
ALL TARGETS HAVE A DEADLINE OF DECEMBER 2007.



# KOYO BEARINGS (EUROPE) LTD.



## Message from the President



President

Takashi Terakado

Living in the UK it is quite common for news on environmental change to filter through on a daily basis. The record breaking high summer temperatures and lack of snow during the recent winters are all evidence of the subtle changes that are being experienced here at KBE, which is located centrally within the UK.

We cannot solely rely on our government's policies to ensure that our children and future generations can enjoy this beautiful and pleasant land the way it is now. It is not only up to the people who live here, but also the manufacturing companies that operate in the area, who should adopt a positive stance on the issues affecting the environment.

As an example, we must ensure that none of the products that we supply to our customers contain any of the 4 Substances of Concern i.e. Lead, Cadmium, Hexavalent Chromium and Mercury. This action has already been carried out.

The collection, analysis and distribution of data is a very important aspect for a company adopting a more proactive role in environmental management. This will enable it to clearly identify problems and implement corrective measures quickly.

KBE has to put every effort into developing an efficient production process through greater recycling of packaging waste, budget control on individual parts production, utilising the grinding swarf as a resource not a waste product and reducing the amount of scrap production. As the president of this company it is my objective to make it clear to all our employees that a company can still make a profit without having a negative impact on the environment.

### Company outline

Company name	KOYO BEARINGS (EUROPE) LTD. [KBE]
Established	February 1990
Head office	ELMHIRST LANE, DODWORTH, BARNSELEY, SOUTH, YORKSHIRE, S75, 3TA
Capital	54.84 million pounds
Sales	FY2006: 59.94 million pounds (12.85 billion yen)
Main products	Hub units, Double-angular contact bearings, Water pump bearings, Taper roller bearings, Single ball bearings, Pulley bearings
Number of employees	410
Acquire the ISO14001 Certification	ISO 14001: Certification acquired in February 2000

### Recycling activities

#### Proposed actions

1. Use a baling machine to handle waste cardboard and plastic packaging, and sell it.

Cardboard waste can be sold on for 25 pounds per ton

Plastic materials can be sold on for 50 pounds per ton

2. Use a can crushing machine to crush empty grease pails.

The grease pails will have to be emptied and be as free from grease as possible to allow us to be able to send them as general scrap steel.

3. After these measures are tested and assessed, consider purchase of the baling machine and can crushing machine.



Compressed cardboard



Compressed plastic



Can crushing machine

### Environmental management system

	Aim	Aspects	Method	Target/Measure	Target Date	Status
Waste	To reduce the production of waste material.	Disposal of incoming packaging waste.	Maximise the use of returnable packaging for supplied components.	Review current packaging situation for incoming goods and establish a target for returnable packaging	End of qtr1 2007	Previously not considered as a separate item. Significant amount of components currently supplied in returnable packaging. Review to be carried out and target produced.
		Outgoing product packaging	Maximise the use of returnable packaging for product sales	75% returnable packaging	End of 2007	Outgoing returnable packaging limited to customer agreement. New business for 2007 agreed the use of returnable packaging.
		Disposal of metal oil drums and grease pails.	Remove from contaminated waste stream.	100% of oil drums to be returned to supplier for reuse.	Current situation	Oil supplies currently comply with the requirement.
				Dispose of all metal grease drums through the scrap metal route.	Maintain 100% disposal through this route.	Successful trial completed in 2006. Now forms the normal route. The system should maintain this level of performance.
		Cardboard and polythene waste to landfill.	Minimise landfill disposal route.	Recycle cardboard and polythene.	Maintain minimum 98% recycling level.	Successful trial completed in 2006. Now forms the normal route. Currently at 98%. The programme should maintain this performance
Disposal of grinding sludge as hazardous waste	Identify potential recycling routes.	Recycled amount: 750t/year	Proposal available by end of 2007	Compression of grinding sludge to proceed; a buyer for the briquettes has been found.  Grinding sludge press		
Energy conservation	Reduce energy usage	Electricity Consumption	Establish an electricity reduction programme.	Electricity usage below 10,912.7 kWh/tonne. (2007)	End of qtr 4 2007	Primary energy usage area is with compressed air generation. Investigations underway for improving compressor performance.
		Burning natural gas in furnaces	Maintain optimum burner efficiency.	CO <sub>2</sub> emissions to be maintained below 0.5% on all furnace burners.	Routine Maint.	Regular adjustment and monitoring programme in place.
Environmental improvement	To cooperate with customers on environmental matters.	Products containing greases and RP oils with hazardous properties or containing substances of concern as defined by customer requirements.	To remove / minimise the use of substances of concern in products through the sourcing of alternative products	Number of hazardous substances used in products. No hazardous substances in products.	February 2007	Customer assessment completed in 2006. Abolished the use of substances of concern from January 2007.
Waste	Follow proper disposal routes.	Disposal of Electrical/Electronic equipment.	Control the disposal of Electrical/Electronic equipment within the WEE regulations	Prepare formal procedure to comply with the WEE regulations. Make the appropriate registration.	End of qtr 1 2007	New requirement process and system needs to be developed. Should be in place by the end of qtr 1 2007.



# KOYO LIOHO (FOSHAN) AUTOMOTIVE PARTS CO., LTD.



## Message from the President



President

Masafumi Okumoto

Today, in the 21<sup>st</sup> Century, environmental problems are vital issues directly facing humanity. Global warming, the destruction of the ozone layer, the occurrence of extreme wind and rain, atmospheric pollution, etc., all demonstrate the worsening global environment.

It has been slightly over a year since January 2006, when we began production activities in Shunde, Guangdong Province, China. The first thing that we worked on was the environmental issue, and in September 2006, we were the first company in the industrial park to acquire ISO14001 certification. There are many different ways to work on environmental problems, but at KLF, we carry out integrated production starting with forging, and because of the high cost of electricity in China, we are focusing our efforts on resource and energy conservation.

It is our hope that our efforts, as humble as they may be, can somehow contribute to the protection of the global environment.

## Company outline

Company name	KOYO LIOHO (FOSHAN) AUTOMOTIVE PARTS CO., LTD. [KLF]
Established	August 3, 2004
Head office	No.12, Wusha Section Of Shurpan Road, Daliang Town, Shunde Of Foshan, Guangdong, CHINA
Capital	12 million (dollars)
Primary business	Vehicle axle bearings
Ratio of capital contribution	JTEKT: 62% / Koyo Metaltec: 5% Lioho Machine Works, Taiwan: 30% / Toyota Tsusho: 3%
Number of employees	196 (as of June 2007)
Acquire the ISO14001 Certification	ISO 14001: Certification acquired in September 2006
Certification body	SGS

## Environmental policy

We shall comply with the law, reduce consumption, prevent pollution, and promote continuous improvement

## Main products



HUB



SHAFT



DAC

## Environmental data

	Item	Legal limit	In-house standard	Actual figures
Water	pH	6-9	-	7.0
	SS	100	90	64
	BOD	110	20	59.9
	COD	30	10	25.3
	Animal and vegetable oil	15	0.949	0.912
	Sulfur compounds	1	10	0.023
	Ammonia nitrogen	15	-	4.233
Air	Oily smoke	2	2	1.4
	Noise	Daytime	65	65
Night		55	55	53.9

## Environmental management system

	Environmental objective	FY 2006 target	FY 2006 results	Main activities
Energy conservation	Reduce electrical consumption	Power usage: 3,550,000 kWh/year	4.9% more than planned	<ol style="list-style-type: none"> <li>Air-conditioning (cooling) setting: 26 °</li> <li>Adoption of inverter compressor</li> <li>Changing from mercury lights to energy-saving lamps</li> <li>Lights-out during mealtimes</li> </ol>  
Waste	Reduce the amount of gloves / rags used	2.95 2.85 yuan/person	2.27 yuan/person/day	Promote their collection, washing, and reuse   
Resource conservation	Reduce the amount of primary materials used	Utilizing end pieces	Target achieved	Utilizing end pieces in introducing a sawing machine 
Environmental improvement	Wastewater processing	Wastewater below the standard	Target achieved	Wastewater processing system 
	Hazardous waste handling	100% collection and processing	100% collection and processing	We have determined a collection area for hazardous waste and qualified special contractors collect the waste. 

Issues still left to tackle: In FY 2007, we will be carrying out activities with focusing on reducing electrical consumption as we did not meet our FY 2006 target. In order to reduce the amount of primary materials we use, we will be working to reduce our scrap defect rate to 0.3% from 0.5%.

## Acquisition of ISO14001 certification

In order to protect the local / global environment, we started plans for acquiring ISO14001 certification in February 2006, and received a preliminary audit on September 1 and the formal audit on September 18 (certified by SGS). We received ISO14001 certification on October 26, making us the first such certified company in Section A of the Shunde Industrial Park in Foshan, Guangdong, China, and we were even featured in the Industrial Park's bulletin.

Our company was established on August 3, 2004. We manufacture 1.2 million hub units a year for the Toyota Motor Corporation's Camry, and we ship them to four places: China

(Guangzhou), Australia, Taiwan, and Thailand.

Our company has "We shall comply with the law, reduce consumption, prevent pollution, and promote continuous improvement" as our environmental policy, and we are working to improve our production and environmental facilities, maintain and improve our wastewater standards, sort our waste, and recycle and reduce metal scrap and waste oil, etc.





# Environmental Data by Location

\* Atmospheric data / Maximum value measured  
 \* Water quality / pH:hydrogen ion concentration COD:chemical oxygen demand BOD:biochemical oxygen demand SS:suspended solids Oil:n-hexane extracted substance content ( ) denotes average volume per day ND:or not detected less than lower limit  
 \* Regulation values / Self-regulatory standards (including values stricter than those set by law)  
 \* Substances subject to PRTR / Substances the volume of which exceeds 1,000 kg/year (excluding dioxins)  
 The substance number indicates the government designated number of a class 1 chemical substance under PRTR law.  
 The volume treated in a plant means the volume of a PRTR substance which is treated in a plant by conversion to a different substance via incineration, neutralization, decomposition, chemical reaction, etc.  
 The amount consumed means the amount of a PRTR substance which is converted to a different substance by a chemical reaction and either used in a product or incidentally removed from the plant.

## Kokubu Plant



Number of employees : 1,098  
 Products : Various types of ball and roller bearings, ultra-large bearings, hub units, high-precision bearings

Item	Regulation Value	Results	
		Maximum	Minimum
pH	6.0 ~ 8.0	7.2	6.8
COD	30	26	15
BOD	30	29	20
SS	60	10	4.0
Oil	4	2.9	1.8
Zinc	4	0.36	0.33
Soluble iron	10	4.5	2.5
Soluble manganese	10	ND	ND
Fluorine	8	0.31	0.30
Nitrogen	15	11	5.2
Phosphorus	1.5	0.38	0.10
Boron	-	-	-
Displacement per day	-	1,008	864

Item	Equipment	Regulation Value	Measured Value
Particulates	Boilers (for forging)	0.30	0.003
NOx		100	29
SOx		0.5	0.007
[ Unit ]NOx:ppm Particulates:g/m <sup>3</sup> N SOx:K value			

		Regulation Value		Measured Value	
		Regulation Value	Measured Value	Regulation Value	Measured Value
Noise	Morning	65	59		
	Afternoon	70	63		
	Evening	65	57		
	Night	60	55		
Vibration	Afternoon	70	41		
	Night	65	40		

Substance No.	Substance Name	Amount Handled	Emission		Transfer			Recycled	Treated in Plant	Consumed
			Into Atmosphere	Into Waterways	Into Soil	Sewage	As Waste			
1	Water soluble zinc compounds	3,918	0	8	0	0	384	0	0	3,526
16	2-aminoethanol	9,595	0	29	0	0	9,566	0	0	0
63	Xylene	2,731	2,731	0	0	0	0	0	0	0
227	Toluene	1,045	1,045	0	0	0	0	0	0	0
311	Manganese and its compounds	1,123	0	0	0	21	406	0	0	696

## Okazaki Plant



Number of employees : 742  
 Products : Electric power steering, power steering gears, AT/CVT proportional control valves, CVT oil pumps, propeller shafts, cast parts

Item	Regulation Value	Results	
		Maximum	Minimum
pH	6.5 ~ 8.5	7.4	7.1
COD	20	4.1	3.0
BOD	20	8.7	2.8
SS	20	1.0	1.0
Oil	2	0.40	0.15
Zinc	3	0.10	0.10
Soluble iron	5	0.27	0.11
Soluble manganese	3	0.10	0.10
Fluorine	1	0.10	0.10
Nitrogen	( 15 )	7.7	6.9
Phosphorus	( 2.0 )	0.05	0.03
Boron	10	0.05	0.04
Displacement per day	-	1,200	714

Item	Equipment	Regulation Value	Measured Value
Particulates	Boilers (for thickeners)	0.1	0.002
NOx		130	55
SOx		0.09	-
Particulates	Boilers (for air conditioning)	0.1	0.002
NOx		130	38
SOx		ND	-
Particulates	Melting furnace	0.15	0.0
NOx		100	10
SOx		0.76	-
Particulates	Gas engine (Cogeneration)	0.05	0.005
NOx		180	88
SOx		6.08	-
[ Unit ]NOx:ppm Particulates:g/m <sup>3</sup> N SOx:K value			

		Regulation Value		Measured Value	
		Regulation Value	Measured Value	Regulation Value	Measured Value
Noise	Morning	65	61		
	Afternoon	70	64		
	Evening	65	59		
	Night	60	59.5		
Vibration	Afternoon	70	30		
	Night	65	30		

Substance No.	Substance Name	Amount Handled	Emission		Transfer			Recycled	Treated in Plant	Consumed
			Into Atmosphere	Into Waterways	Into Soil	Sewage	As Waste			
44	Ethylene glycol monoethyl ether	2,266	0	0	0	0	0	0	0	2,266
63	Xylene	2,157	2,067	0	0	0	0	0	0	90
227	Toluene	5,547	4,454	0	0	0	0	0	0	1,093
311	Manganese and its compounds	53,637	0	0	0	0	1,180	0	0	52,457

## Kariya Plant



Number of employees : 1,450  
 Products : Machine tools, damper pulleys, machined parts

Item	Regulation Value	Results	
		Maximum	Minimum
pH	5.8 ~ 8.6	6.9	6.7
COD	( 14 )	7.3	4.5
BOD	( 20 )	12	6.4
SS	( 20 )	1.0	ND
Oil	5	1.0	0.4
Zinc	2	0.30	ND
Soluble iron	5	0.35	ND
Soluble manganese	2	0.15	ND
Fluorine	5	ND	ND
Nitrogen	( 17.2 )	13	8.7
Phosphorus	( 1.7 )	0.04	0.03
Boron	10	0.07	0.03
Displacement per day	-	1,979	586

Item	Equipment	Regulation Value	Measured Value
Particulates	Boilers (for canteens)	0.1	ND
NOx		130	57
SOx		ND	-
Particulates	Boilers (Cold & hot water generators)	0.1	ND
NOx		130	51
SOx		ND	-
[ Unit ]NOx:ppm Particulates:g/m <sup>3</sup> N SOx:K value			

		Regulation Value		Measured Value	
		Regulation Value	Measured Value	Regulation Value	Measured Value
Noise	Morning	65	56		
	Afternoon	70	66		
	Evening	65	63		
	Night	60	57		
Vibration	Afternoon	70	45		
	Night	65	41		

Substance No.	Substance Name	Amount Handled	Emission		Transfer			Recycled	Treated in Plant	Consumed
			Into Atmosphere	Into Waterways	Into Soil	Sewage	As Waste			
40	Ethylbenzene	1,747	1,422	0	0	0	0	0	0	325
63	Xylene	7,775	7,449	0	0	0	0	0	0	327
227	Toluene	4,184	3,360	0	0	0	0	0	0	824

## Tokyo Plant



Number of employees : 378  
 Products : Needle roller bearings, constant velocity joints, driveshafts, propeller shafts

Item	Regulation Value	Results	
		Maximum	Minimum
pH	5.8 ~ 8.6	7.6	7.1
COD	-	-	-
BOD	150	9.0	3.7
SS	200	23	8.5
Oil	20	2.0	0.99
Zinc	2	0.29	0.29
Soluble iron	10	1.7	1.7
Soluble manganese	10	ND	ND
Fluorine	8	ND	ND
Nitrogen	120	15	7.5
Phosphorus	16	1.3	0.4
Boron	-	-	-
Displacement per day	-	362	115

Item	Equipment	Regulation Value	Measured Value
Particulates	Gas absorption boiler	0.08	0.002
NOx		49	29.5
SOx		-	-
[ Unit ]NOx:ppm Particulates:g/m <sup>3</sup> N SOx:K value			

		Regulation Value		Measured Value	
		Regulation Value	Measured Value	Regulation Value	Measured Value
Noise	Morning	-	-		
	Afternoon	70	64		
	Evening	60	57		
	Night	55	53		
Vibration	Afternoon	55	25		
	Night	50	25		

Substance No.	Substance Name	Amount Handled	Emission		Transfer			Recycled	Treated in Plant	Consumed
			Into Atmosphere	Into Waterways	Into Soil	Sewage	As Waste			
16	2-aminoethanol	1,387	0	0	0	4	1,383	0	0	0
63	Xylene	4,688	4,688	0	0	0	0	0	0	0
227	Toluene	6,726	6,726	0	0	0	0	0	0	0
304	Boron and its compounds	9,285	0	0	0	371	8,914	0	0	0

## Tokushima Plant



Number of employees : 1,097  
 Products : Ball bearings, water pump bearings, cylindrical roller bearings, special-environment bearings

Item	Regulation Value	Results	
		Maximum	Minimum
pH	6.0 ~ 8.2	7.4	7.3
COD	10	9.7	7.2
BOD	-	-	-
SS	19	12.8	8.7
Oil	3	2.7	2.5
Zinc	2	ND	ND
Soluble iron	10	0.10	0.10
Soluble manganese	10	ND	ND
Fluorine	8	ND	ND
Nitrogen	25	6.6	4.9
Phosphorus	2.5	0.13	0.05
Boron	-	-	-
Displacement per day	-	768	669

Item	Equipment	Regulation Value	Measured Value
Particulates	Diesel engine	0.1	0.010
NOx		950	790
SOx		21	0.043
Particulates	Boilers	0.3	0.001
NOx		250	165
SOx		21	0.01
[ Unit ]NOx:ppm Particulates:g/m <sup>3</sup> N SOx:K value			

		Regulation Value		Measured Value	
		Regulation Value	Measured Value	Regulation Value	Measured Value
Noise	Morning	60	54		
	Afternoon	65	58		
	Evening	60	55		
	Night	55	52		
Vibration	Afternoon	65	53		
	Night	60	52		

Substance No.	Substance Name	Amount Handled	Emission		Transfer			Recycled	Treated in Plant	Consumed
			Into Atmosphere	Into Waterways	Into Soil	Sewage	As Waste			
16	2-aminoethanol	3,865	0	1	0	0	239	0	0	3,625
63	Xylene	3,999	3,999	0	0	0	0	0	0	0

## Kagawa Plant



Number of employees : 574  
 Products : Tapered roller bearings

Item	Regulation Value	Results	
		Maximum	Minimum
pH	5.8 ~ 8.6	7.0	6.7
COD	40	27	20
BOD	40	33	23
SS	50	6.9	4.8
Oil	3	2.8	1.8
Zinc	2	0.25	0.25
Soluble iron	10	1.0	1.0
Soluble manganese	10	ND	ND
Fluorine	8	ND	ND
Nitrogen	60	10	7.6
Phosphorus	8	1.7	0.37
Boron	-	-	-
Displacement per day	-	862	512

Item	Equipment	Regulation Value	Measured Value
Particulates	Boilers No.1	0.30	0.0192
NOx		250	100
SOx		5.0	0.121
Particulates	Boilers No.2	0.30	0.0151
NOx		250	73
SOx		5.0	0.0294



# Environmental Data by Location

\* Atmospheric data / Maximum value measured  
 \* Water quality / pH:hydrogen ion concentration COD:chemical oxygen demand BOD:biochemical oxygen demand SS:suspended solids Oil:n-hexane extracted substance content ( ) denotes average volume per day ND:or not detected less than lower limit  
 \* Regulation values / Self-regulatory standards (including values stricter than those set by law)  
 \* Substances subject to PRTR / Substances the volume of which exceeds 1,000 kg/year (excluding dioxins)  
 The substance number indicates the government designated number of a class 1 chemical substance under PRTR law.  
 The volume treated in a plant means the volume of a PRTR substance which is treated in a plant by conversion to a different substance via incineration, neutralization, decomposition, chemical reaction, etc.  
 The amount consumed means the amount of a PRTR substance which is converted to a different substance by a chemical reaction and either used in a product or incidentally removed from the plant.

## Nara Plant



Number of employees : 590  
 Products : Electric power steering, hydraulic power steering, manual steering

**Water Quality Measurement Data**  
Unit:mg/ℓ( except pH values )

Item	Regulation Value	Results	
		Maximum	Minimum
pH	6.0 ~ 8.0	7.5	7.0
COD	13.5	11	9.8
BOD	13.5	6.6	1.5
SS	5	1.0	0.59
Oil	1	0.90	0.50
Zinc	2	ND	ND
Soluble iron	0.9	0.08	0.06
Soluble manganese	0.9	0.11	0.07
Fluorine	8	ND	ND
Nitrogen	40	27	16
Phosphorus	15	14	6.6
Boron	-	-	-
Displacement per day	-	170	92

**Atmospheric Measurement Data**

Item	Equipment	Regulation Value	Measured Value
Particulates	Plant 1, No.1 (Boilers)	0.1	0.002
		150	43
		0.6	0.2
Particulates	Plant 1, No.2 (Boilers)	0.1	0.002
		150	40
		0.6	0.19
Particulates	Plant 2 (Cold & hot water generators)	0.1	0.001
		150	62
		0.6	0.2
Particulates	Plant 4 (Cold & hot water generators)	0.1	0.001
		150	40
		0.6	0.35

[ Unit ]NOx:ppm Particulates:g/m<sup>3</sup>N SOx:K value

**Noise/Vibration Data** Unit: dB

		Regulation Value	Measured Value
Noise	Morning	64	63
	Afternoon	67	62
	Evening	64	60
	Night	54.8	54
Vibration	Afternoon	60	55
	Night	55	52

**PRTR Substances**

Substance No.	Substance Name	Amount Handled	Into Atmosphere	Emission		Transfer		Recycled	Treated in Plant	Consumed
				Into Waterways	Into Soil	Sewage	As Waste			
63	Xylene	13,743	13,743	0	0	0	0	0	0	0
227	Toluene	3,904	3,904	0	0	0	0	0	0	0

Unit: kg/year

## Tadomisaki Plant



Number of employees : 819  
 Products : Driveshafts, 4WD couplings

**Water Quality Measurement Data**  
Unit:mg/ℓ( except pH values )

Item	Regulation Value	Results	
		Maximum	Minimum
pH	6.0 ~ 8.5	8.3	7.8
COD	( 10 )	8.4	4.3
BOD	( 10 )	3.9	1.6
SS	( 20 )	5.5	1.8
Oil	2	0.50	0.13
Zinc	2	0.18	0.14
Soluble iron	3	0.12	0.12
Soluble manganese	2	0.10	0.10
Fluorine	5	0.25	0.25
Nitrogen	( 34.8 )	21	12
Phosphorus	( 3.6 )	0.99	0.20
Boron	10	ND	ND
Displacement per day	-	4,080	137

**Atmospheric Measurement Data**

Item	Equipment	Regulation Value	Measured Value
Particulates	Boilers (Cold & hot water generators)	0.1	0.01
		130	51
		ND	0

[ Unit ]NOx:ppm Particulates:g/m<sup>3</sup>N SOx:K value

**Noise/Vibration Data** Unit: dB

		Regulation Value	Measured Value
Noise	Morning	65	57.1
	Afternoon	70	56.5
	Evening	65	56.3
	Night	60	55.7
Vibration	Afternoon	70	41
	Night	65	41

**PRTR Substances**

No substances handled at rate of 1,000 kg/year or above.

## Higashi Kariya Plant



Number of employees : 346  
 Products : Mechatronics products, sensors, propeller shafts, machined parts

**Water Quality Measurement Data**  
Unit:mg/ℓ( except pH values )

Item	Regulation Value	Results	
		Maximum	Minimum
pH	5.8 ~ 8.6	7.6	7.2
COD	( 29 )	5.7	3.7
BOD	( 20 )	8.5	3.4
SS	20	2.5	1.4
Oil	5	0.80	0.15
Zinc	2	0.10	0.08
Soluble iron	5	0.33	0.14
Soluble manganese	2	0.15	0.11
Fluorine	5	0.40	0.13
Nitrogen	( 27.3 )	27	23
Phosphorus	( 2.7 )	0.03	0.02
Boron	10	0.04	0.02
Displacement per day	-	162	63

**Atmospheric Measurement Data**

Item	Equipment	Regulation Value	Measured Value
Particulates	Boilers (Cold & hot water generators)	0.2	<0.004
		130	64
		0.7	<0.01

[ Unit ]NOx:ppm Particulates:g/m<sup>3</sup>N SOx:K value

**Noise/Vibration Data** Unit: dB

		Regulation Value	Measured Value
Noise	Morning	65	59
	Afternoon	70	64
	Evening	65	60
	Night	60	59
Vibration	Afternoon	70	45
	Night	65	45

**PRTR Substances**

No substances handled at rate of 1,000 kg/year or above.

## Hanazono Plant



Number of employees : 1,039  
 Products : Electric power steering, hydraulic power steering pumps, Electric control units

**Water Quality Measurement Data**  
Unit:mg/ℓ( except pH values )

Item	Regulation Value	Results	
		Maximum	Minimum
pH	6.5 ~ 8.5	7.4	7.2
COD	10	6.1	3.9
BOD	10	3.9	1.9
SS	10	1.0	1.0
Oil	2	1.0	1.0
Zinc	1	0.29	0.10
Soluble iron	5	0.14	0.10
Soluble manganese	3	0.14	0.10
Fluorine	1	0.10	0.10
Nitrogen	( 31.5 )	20	12
Phosphorus	( 3.3 )	0.05	0.02
Boron	10	1.0	1.0
Displacement per day	-	372	172

**Atmospheric Measurement Data**

Item	Equipment	Regulation Value	Measured Value
Particulates	Boilers (Cold & hot water generators)	0.1	<0.002
		130	63
		ND	<0.002

[ Unit ]NOx:ppm Particulates:g/m<sup>3</sup>N SOx:K value

**Noise/Vibration Data** Unit: dB

		Regulation Value	Measured Value
Noise	Morning	55	53
	Afternoon	60	53
	Evening	55	52
	Night	50	48
Vibration	Afternoon	65	51
	Night	60	49

**PRTR Substances**

Substance No.	Substance Name	Amount Handled	Into Atmosphere	Emission		Transfer		Recycled	Treated in Plant	Consumed
				Into Waterways	Into Soil	Sewage	As Waste			
311	Manganese and its compounds	1,123	0	8	0	0	225	0	0	898

Unit: kg/year

## Toyohashi Plant



Number of employees : 590  
 Products : Hydraulic power steering, hydraulic power steering hoses, manual steering, collapsible steering columns

**Water Quality Measurement Data**  
Unit:mg/ℓ( except pH values )

Item	Regulation Value	Results	
		Maximum	Minimum
pH	6.1 ~ 8.0	6.8	6.6
COD	18	13	10
BOD	10	3.3	2.1
SS	10	8.0	3.6
Oil	1	ND	ND
Zinc	2	0.12	0.12
Soluble iron	10	0.84	0.84
Soluble manganese	10	ND	ND
Fluorine	8	ND	ND
Nitrogen	50	48	31
Phosphorus	5	5.0	3.5
Boron	-	-	-
Displacement per day	-	112	77

**Atmospheric Measurement Data**

Item	Equipment	Regulation Value	Measured Value
Particulates	Plant 1 (Boilers)	0.10	0.008
		100	77
		1.0	0.150
Particulates	Plant 2 (Cold & hot water generators)	0.03	0.002
		100	29
		1.0	0.004
Particulates	Plant 3 (Cold & hot water generators)	0.10	0.002
		100	76
		2.3	0.11

[ Unit ]NOx:ppm Particulates:g/m<sup>3</sup>N SOx:K value

**Noise/Vibration Data** Unit: dB

		Regulation Value	Measured Value
Noise	Morning	60	59
	Afternoon	65	63
	Evening	65	61
	Night	60	58
Vibration	Afternoon	55	38
	Night	50	34

**PRTR Substances**

Substance No.	Substance Name	Amount Handled	Into Atmosphere	Emission		Transfer		Recycled	Treated in Plant	Consumed
				Into Waterways	Into Soil	Sewage	As Waste			
63	Xylene	2,142	2,142	0	0	0	0	0	0	0
346	Molybdenum and its compounds	3,379	0	0	0	0	0	0	0	3,379

Unit: kg/year

## Kameyama Plant



Number of employees : 253  
 Products : Ball bearings, clutch bearings

**Water Quality Measurement Data**  
Unit:mg/ℓ( except pH values )

Item	Regulation Value	Results	
		Maximum	Minimum
pH	6.0 ~ 8.0	7.7	7.0
COD	9	9.0	3.1
BOD	8	4.0	1.3
SS	10	4.0	0.60
Oil	0.5	ND	ND
Zinc	2	0.10	0.10
Soluble iron	10	0.49	0.49
Soluble manganese	10	ND	ND
Fluorine	8	ND	ND
Nitrogen	120	21	12
Phosphorus	-	0.27	0.10
Boron	-	0.08	0.05
Displacement per day	-	87	54

**Atmospheric Measurement Data**

Item	Equipment	Regulation Value	Measured Value
Particulates	Plant 1 (Boilers)	0.1	0.005
		150	83
		1.65	0.11

[ Unit ]NOx:ppm Particulates:g/m<sup>3</sup>N SOx:K value

**Noise/Vibration Data** Unit: dB

		Regulation Value	Measured Value
Noise	Morning	65	54
	Afternoon	70	55
	Evening	65	53
	Night	55	51
Vibration	Afternoon	65	35.5
	Night	60	33.0

**PRTR Substances**

Substance No.	Substance Name	Amount Handled	Into Atmosphere	Emission		Transfer		Recycled	Treated in Plant	Consumed
				Into Waterways	Into Soil	Sewage	As Waste			
16	2-aminoethanol	1,015	0	3	0	0	1,012	0	0	0

Unit: kg/year



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