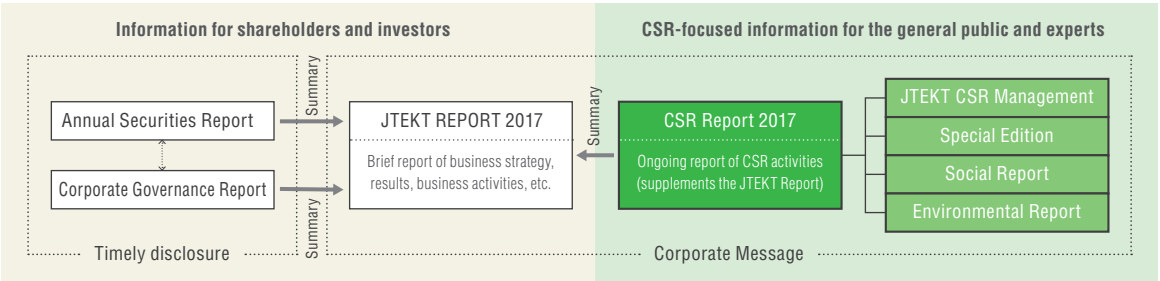
CSR Report 2017

Orientation of this report

The structure of the two-part JTEKT CSR Report which was used up until FY2015 and which contained a Message (printed booklet) and a Details & Data section (online PDF file), was integrated into an online PDF file as of last year.
It comprises of four parts, “JTEKT's CSR Management”, which is a brief summary of CSR-promoting initiatives, a “Special Edition/Technologies Supporting Value Creation” which introduces examples of product development, and the “Social Report” and “Environmental Report” which introduce concrete activities, systems, data and so on.

*Renewal period differs according to each interactive tool, and therefore their respective target periods for renewal may vary.



Editing policy

- This report aims to inform our stakeholders in straightforward language of JTEKT’s concept and activities surrounding CSR.
- For related articles:

M = JTEKT CSR Management F = Special Edition S = Social Report E = Environmental Report J = JTEKT REPORT 2017

Target period and target organizations/scope

Target period

FY2016 (April 2016 - March 2017) *Some items include content from other periods.

Target organizations and scope

All activities of the JTEKT group

For items for which there is no criteria uniform across the JTEKT group, the unconsolidated results of JTEKT are displayed.
As a general rule, if there are changes in the tallying scope, we revise data dating back to the past.

Reference guidelines

◎ The 4th edition of Sustainability Reporting Guidelines (G4 Guidelines)
◎ Japan’s Ministry of the Environment “Environmental Reporting Guidelines (2012 edition)”
◎ ISO26000 (International Standard for corporate responsibility)

New! This mark is used to indicate new actions begun in FY2016 and information disclosed for the first time in this year’s report.
*This mark is omitted for the Special Edition.

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M JTEKT CSR Management
F Special Edition/ Technologies Supporting Value Creation
S Social Report
E Environmental Report

Third-party opinion on the JTEKT CSR Report 2017
Response to the third-party opinion

JTEKT CORPORATION

JTEKT CSR Management

- The CSR Report 2017 PDF is published with the aim of conveying the concept and activities pertaining to JTEKT's CSR in an easily understood manner. This report emphasizes objectiveness, completeness and continuity.
- Please refer to the JTEKT REPORT 2017 for information about JTEKT's business performance, business activities, planning, and strategy.
- For related articles:

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JTEKT's Concept of Social Responsibility M_01
CSR promotion M_02

JTEKT's Concept of Social Responsibility

About CSR (Corporate Social Responsibility)

In February 2009 JTEKT formulated its CSR Policy. In April 2016, it rearranged these into JTEKT's Concept of Corporate Social Responsibility and the Corporate Activities Standards and is engaging in a wide range of CSR activities.

Concept of CSR

The JTEKT group focuses on fulfilling its mission of "Seek to contribute to the happiness of people and the abundance of society through product manufacturing", and engages in business activities in harmony with the economy, society and the environment based on our Corporate Activities Standards. As a good corporate citizen, we work to resolve social issues together with our customers and suppliers who share this mindset in order to continue contributing to the sustainable development of society and the world.

Corporate Activities Standards

Responsibility to our customers and business partners

- We follow proper business practices and engage in fair, transparent and free competition based on a respect for the law.
- We derive concepts from the market, provide the best in quality, technology and service, and obtain the satisfaction and trust of customers.

Responsibility to our shareholders

- We maintain close communication not only with shareholders but also with society at large and disclose corporate information properly, while at the same time working to improve our corporate value on a continuous basis.

Responsibility to our employees

- We 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.

Contributing to regional societies and to global society

- As a good corporate citizen, we aggressively pursue activities that contribute to society.
- We follow international rules, observe the laws, cultures and customs of countries and regions where we have operations, and seek to contribute to their growth.
- We carry out global environmental improvement activities proactively and aggressively with deep awareness of their being an important corporate mission.

CSR Promotion

Companywide CSR activities in each department

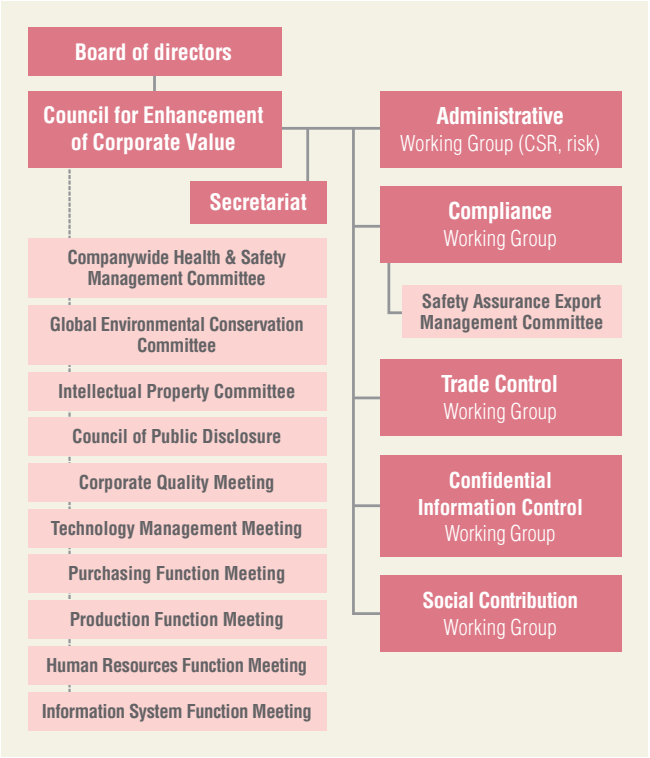
JTEKT considers CSR activities to be true corporate activities and has each department prepare an annual CSR implementation plan. In addition, we rotate a PDCA cycle (*1) in accordance with monthly management based on policy management. Through mechanisms such as this aimed at achieving goals, we are applying our company policies and business/function policies into concrete initiatives and steadily promoting CSR activities.

*1 **PDCA cycle** PDCA is a management tool for continuously improving work by repeating a Plan-Do-Check-Action cycle.

Specialized working groups

Specialized working groups are established to create and promote activity plans for compliance, trade control, confidential information control, and social contribution, all of which are important themes.

Outline of the CSR promotion structure



Administrative Working Group	Plan and monitor the progress of CSR activities, regularly assess risk management status and evaluate risks.
Compliance Working Group	Raise awareness and reinforce the need for compliance with laws, internal rules and business ethics.
Trade Control Working Group	Propose and promote measures for securing compliance with foreign rules concerning imports and exports.
Confidential Information Control Working Group	Assess and improve in accordance with guidelines and strengthen structures and systems concerning information security.
Social Contribution Working Group	Promote social contribution and volunteer activities.

Start of discussion to improve corporate value

JTEKT has regularly inspected the progress of its CSR activities in the CSR Promotion Committee chaired by President that was formed in February 2009. Meanwhile, in recent years, society has begun placing particular emphasis on sustainable value creation by companies and stakeholders' interest in this area is growing year after year. For JTEKT as well, the extent to which we can improve corporate value through our CSR activities is a major factor in our ability to fulfill our Corporate Philosophy of "Seek to contribute to the happiness of people and the abundance of society through product manufacturing". For this reason, in March 2017, the name of "CSR Promotion Committee" was changed to "Council for Enhancement of Corporate Value" and the committee began to go beyond the conventional scope of CSR activities by opening discussions about practical implementation models aimed at value creation (Management Model and Engagement Model).

Establishment of the Council of Public Disclosure

JTEKT conducts appropriate information disclosure in accordance with laws and regulations. In August 2016, the Council of Public Disclosure was established, comprising of concerned directors and managers of JTEKT' s Corporate Headquarters. This Council confirms the facts of information necessary for the realization of corporate governance and proactively discloses this through a timely and appropriate route. In addition to this information, JTEKT also discloses ESG (*2) information in JTEKT Report, our integrated report, in order to increase the transparency of our corporate activities and strengthen our foundation as a company trusted by society.

*2 **ESG** The first letters of "Environment", "Social" and "Governance". Items a company must consider when rolling out its businesses as corporate responsibility.

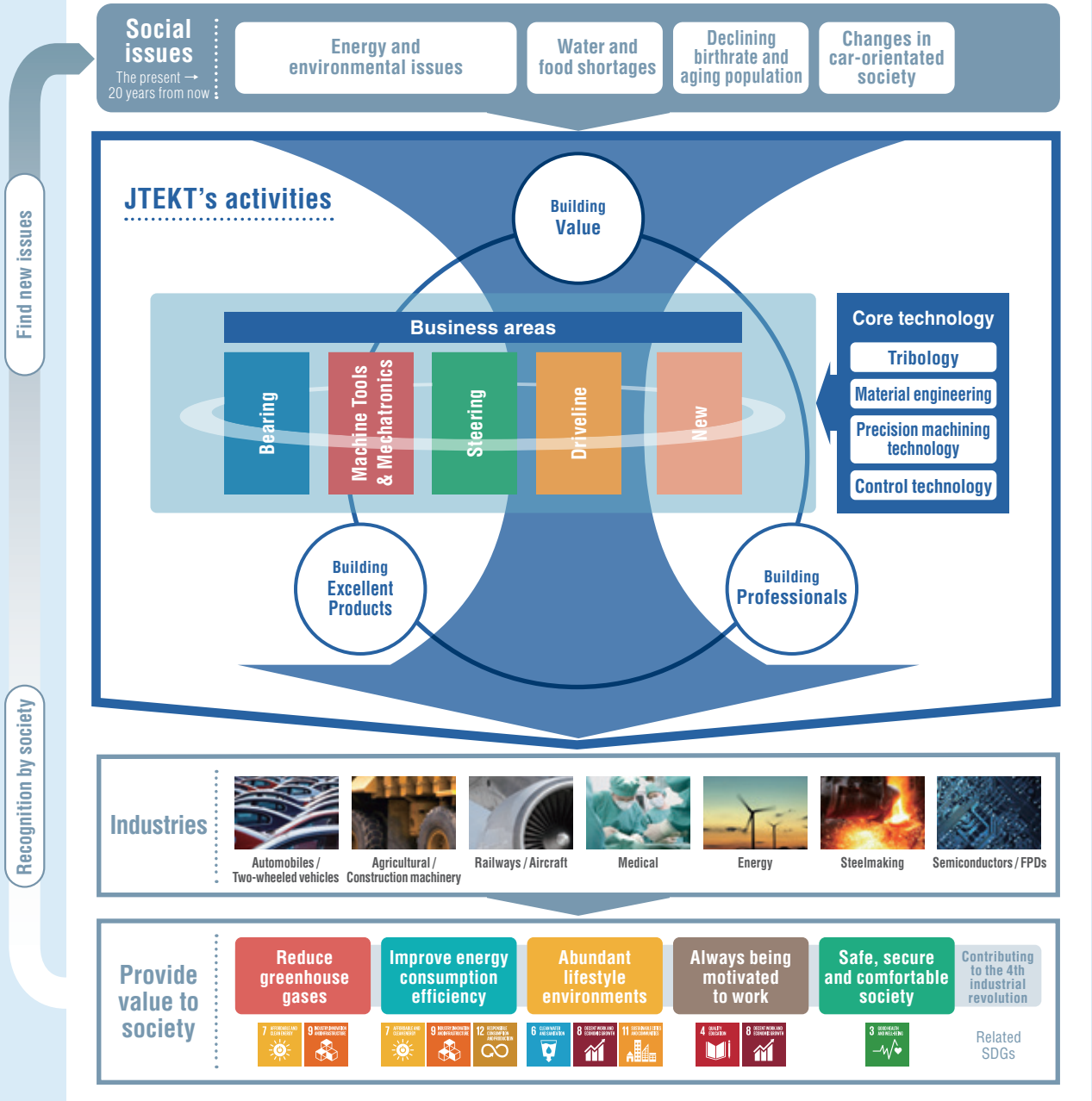
Technologies Supporting Value Creation

JTEKT leverages its No. 1 & Only One technologies to create new values and help solve the various issues society faces. This Special Edition introduces the stories behind the development of five products together with the impressions of the employees who took up the challenge of evolving the related technologies.

Helping to resolve social issues through the evolution and fusion of our technologies

F_02 RP-EPS or rack parallel type electric power steering
F_04 Torsen for small truck
F_05 Next-generation super-low friction torque tapered roller bearing LFT-IV
F_06 Low friction torque deep groove ball bearing for motors
F_07 Small-sized gear skiving center GS200H

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



SUSTAINABLE DEVELOPMENT GOALS 17 GOALS TO TRANSFORM OUR WORLD

The JTEKT group is contributing to the achievement of Sustainable Development Goals (SDGs) adopted at the United Nations General Assembly.

Reduce greenhouse gases | Improve energy consumption efficiency | Abundant lifestyle environments | Safe, secure and comfortable society

RP-EPS or rack parallel type electric power steering

→ E_11 Related article

Newly Developing EPS for Medium/Large Vehicles with a Vision of Future Car Society

(3rd from left)
System Development Office 2,
Steering System Engineering Dept. 2,
Steering Systems Business Headquarters
Tatsuhiro Yamamoto

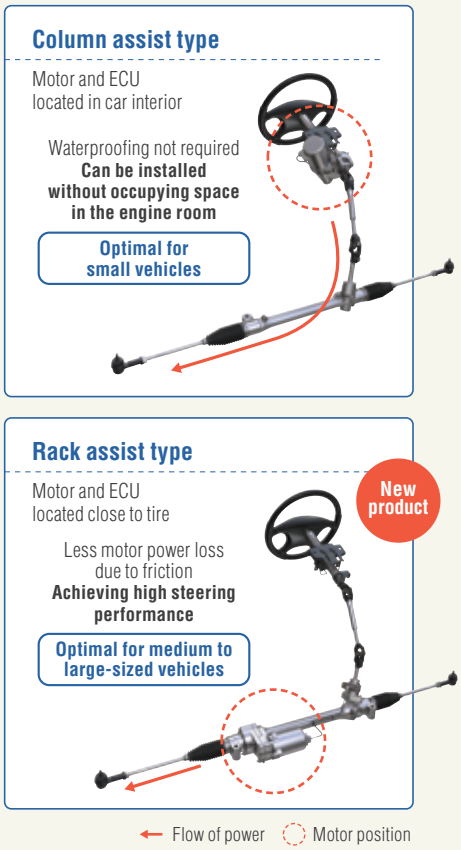
JTEKT's electric power steering (EPS) boasts the top share in the world, and of the three basic functions of a car (travel, turn and stop), focuses on "turn" and is helping to improve safety and comfort. Amidst predictions that even medium to large-sized vehicles, which conventionally adopt hydraulic power steering, will make the transition to EPS, JTEKT developed a new EPS for medium/large-sized vehicles in 2016 and has commenced its mass production.

With a forward vision to support advanced driver-assistance and autonomous driving

EPS can be broadly divided into two types; column assist type and rack assist type. The column assist type EPS is suitable for small vehicles as its motor and the computer that controls this motor (ECU) are located in the vehicle's interior cabin. Meanwhile, the rack assist type EPS has its motor and ECU located close to the vehicle's tire therefore has minimal power loss due to friction and is suited to medium/large-sized vehicles which require relatively higher steering performance. JTEKT stands out from other EPS manufacturers due to the diverse product lineup we offer for both EPS types. In particular, we currently occupy the highest share of the global market for our column assist type EPS. Moving forward, JTEKT plans to focus on popularizing and expanding our rack assist type EPS also. "It is predicted that, in order to support advanced driver assistance and autonomous driving, even large vehicles and luxury cars which conventionally adopted hydraulic power steering, will make the transition to EPS. We have developed a new rack assist product in order to answer this market need." (Yamamoto)

Achieving one of the smallest packaging sizes in the world.
Received the Innovative Technique Award from Toyota Motor Corporation.

Features of each EPS system



Incorporating world-first technology to achieve high comfort and quietness

"RP (rack parallel) -EPS" is one of the newly developed rack assist type products. This system's reduction gear uses a bearing specially designed through cooperation between engineers from JTEKT's steering and bearing businesses to achieve one of the smallest packaging sizes in the world and improve onboard mountability. Moreover, by incorporating JTEKT's original innovative ideas in the mechanism known as the ball screw, the RP-EPS offers smoother and more comfortable steering, in addition to quietness.

"Our new ball screw design is the first of its kind in the world to be used for auto parts. I was in charge of design, but truly believe it would not have been possible to accomplish this without the close collaboration between the Production Engineering and Manufacturing departments." (Asakura) "The design is completely new so we had to make mass production equipment like none ever seen before too. The task of doing this was extremely difficult but our sense of achievement when we succeeded made it all worthwhile." (Mizuno) "It was extremely challenging to develop mass production equipment that could provide both high accuracy and high efficiency but thanks to the cooperation of the Machine Tools & Mechatronics Operations Headquarters and JTEKT group companies, we achieved our goal." (Yoshida)

A high-level safety design conforming to international standards

In 2011, JTEKT established a development process that conformed to the international functional safety standard, ISO26262 and, in 2014, developed the world's first column type EPS with a redundant design. "Redundant design" refers to a safe design whereby systems are duplicated so that even if one system fails during vehicle operation, it will be possible to continue providing assistance to steering wheel operation. Based on our experience in this area, a redundant design was adopted for the torque sensor and motor drive unit in the newly developed RP-EPS also.

Production Engineering Group 3,
Production Engineering Office 2,
Steering Production Engineering Dept.,
Production Engineering Headquarters
Yuji Mizuno(left)

Design Group 1,
System Development Office 2,
Steering System Engineering Dept. 2,
Steering Systems Business Headquarters
Masayoshi Asakura(right)

Striving to be a body of engineers capable of providing new values

Mass production of RP-EPS began at Hanazono Plant in December 2016. It was adopted on the Lexus models, LC500h and LC500, released in March 2017. Moreover, in order to meet an increased demand for EPS in medium/large-sized vehicles, JTEKT has established a plan for global production, including mass production in Tennessee, U.S. (commenced in June 2017) and China (scheduled to commence in 2019). "We went through a trial-and-error process to find a way to improve the steering experience even further. I truly feel we overcame this challenge and succeeded at our goal due to all members of the Design, Production Engineering and Manufacturing departments uniting as one and combining their strengths." (Yamada) "In this project, various conflicting opinions emerged such as 'we want new ideas', 'we want higher accuracy mass production equipment', 'we want to keep costs down' and so on and I feel I did a good job at balancing all of these." (Suzuki) "I want to continue contributing to the creation of cars which consumers find even more appealing through the development of new steering systems. I want JTEKT to be a body of engineers that doesn't just meet market needs, but also offers new values." (Yamamoto)

RP-EPS was adopted on
Lexus LC500h/LC500 launched in March 2017.

Advanced Engineering Office
Production Engineering Development Dept.
Production Engineering Headquarters
Yoshimasa Yamada(left)

Advanced Engineering Office
Production Engineering Development Dept.
Production Engineering Headquarters
Takayuki Suzuki(middle)

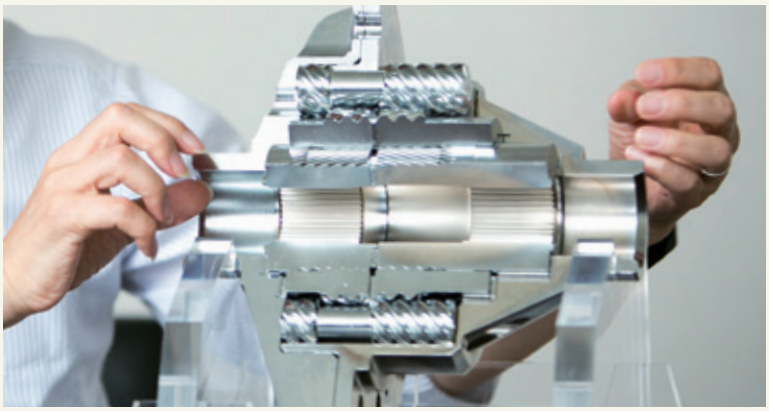
Production Engineering Group 3,
Production Engineering Office 2,
Steering Production Engineering Dept.
Production Engineering Headquarters
Yuji Yoshida(right)

Reduce greenhouse gases | Improve energy consumption efficiency | Abundant lifestyle environments | Safe, secure and comfortable society

Torsen for small truck

Rolling Out Safety/Comfort-Enhancing Technologies to New Fields

Torque Control Device Design Office
Driveline System Engineering Dept. 2,
Driveline Systems Business Headquarters
Motoyasu Yamamori



Received the Innovative Technique Award from Hino Motors, Ltd. in recognition of its ability to improve driving in rough road conditions. Went into mass production in July 2017.

Leveraging its experience accumulated in the sports car and SUV fields, JTEKT developed a technology to improve comfort and steering performance for small trucks driving on rough roads.

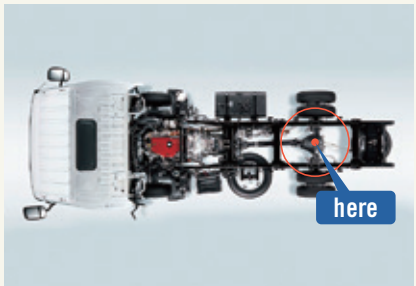
Preventing bogging in muddy conditions

The small trucks that work in Indonesia's palm fields must carry large loads of coconuts on unpaved roads. Often these trucks slip in the muddy ruts in the road and become bogged. As a prevention measure to this, Hino Motors, Ltd. established a plan to equip JTEKT's TORSEN product as a genuine factory-installed optional part and engaged in a joint development project with JTEKT. TORSEN is a form of LSD (Limited Slip Differential), a product which transmits power from a driving wheel that has slipped to the other driving wheel. Its features are its superior durability, performance and maintenance.

Development of a new product useful in tough operating environments

JTEKT's TORSEN is adopted on many vehicle types both in Japan and overseas, with a particular focus on sports cars and SUVs. However, this is the first time it has been used on trucks. This move has proven that TORSEN provides the performance to meet customers' needs, such as sufficient strength to support payload, the ability to drive on rough roads and reliability over long distances and long periods. "We ventured into unknown territory with this development, but through the cooperation of the Design, Testing, Production Engineering and other divisions under the guidance of JTEKT WAY, we succeeded in launching it as a product." In 2017, a monitoring evaluation was carried out in Indonesia and there were absolutely no cases of vehicles becoming bogged, which earned TORSEN a strong reputation amongst owners. "I saw that JTEKT could contribute to society in a new arena when we successfully applied the technology we'd accumulated to date on trucks and this made me very happy."

Monitoring evaluation in Indonesia.
The ability for a vehicle to get loose after becoming bogged was significantly improved.



*This photo of vehicle structure was taken from Hino Motors website.

*TORSEN is a registered trademark of JTEKT Corporation.

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Next-generation super-low friction torque tapered roller bearing LFT-IV

→ E_11 Related article

Contributing to Greater Fuel Efficiency with No.1 Low Friction Torque Performance

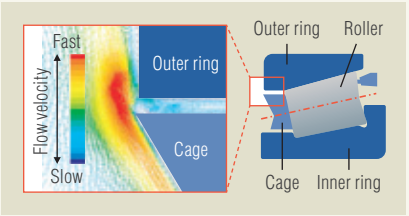
Roller Bearing Group
Powertrain Engineering Office
Automotive Bearing Development Dept.
Bearing Operations Headquarters
Akiyuki Suzuki

As a countermeasure to environmental issues such as global warming, there is an even greater demand to improve fuel efficiency of vehicles. In order to help solve this problem, JTEKT has developed a new-generation tapered roller bearing for use in cars with No.1 low friction torque performance.

Pursuing torque loss reduction from various angles

Many tapered roller bearings are used in the driveline units of vehicles, such as transmissions and differentials, and play a role in supporting each rotating shaft during the process of transmitting engine power to a vehicle's tires. For this reason, a major point regarding the extent to which such bearings can contribute to better fuel efficiency is how much torque loss created by friction can be reduced. For a long period of time, JTEKT has engaged in research and development activities aimed at reducing the friction torque loss of tapered roller bearings from a variety of angles and, as a result, commercialized the LFT (Low Friction Torque) series. LFT-III, a product developed in 2006, successfully reduced torque loss by approximately 50 percent compared to JTEKT's standard products of the same size. LFT-III is adopted by automotive manufacturers both in Japan and overseas and is significantly contributing to better fuel efficiency. Moreover, in 2017, JTEKT successfully developed LFT-IV, which has reduced torque loss by a further 30 percent or so compared to LFT-III.

External appearance of LFT-IV. The cage is made of resin, which has high design flexibility

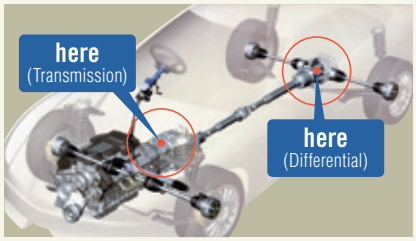


The flow of lubricating oil is analyzed in order to find the optimal cage shape. Agitation resistance caused by lubricating oil has been greatly reduced.

Reducing agitation resistance of lubricating oil to the greatest extent possible

Tapered roller bearings are used in units filled with lubricating oil. LFT-IV was developed with a primary focus on reducing agitation resistance, which occurs due to more lubricating oil flowing through the bearing than necessary, to the greatest extent possible. The approach taken was to make the part of a bearing referred to as the "cage" into a shape which minimizes the amount of lubricating oil that flows through the bearing using CAE (computer-aided engineering). In order to reflect the optimal cage shape found through CAE into the product, resin was used as the cage material instead of the conventional metal, due to its high design flexibility. By using this LFT-IV with its significantly lower torque, on differentials, a fuel efficiency improvement of 2.5 percent can be expected.

"Currently we are working on solving issues standing in the way of mass production for this product. I hope JTEKT continues to respond to the demand for low torque and contribute to society through technology."



LFT-IV supports all vehicle models, from light vehicles to pick-up trucks.

Torque reduction

Compared to LFT-III, currently the No.1 product in terms of low torque

Approx. **30%** reduction

Expected improvement to fuel efficiency

Compared to a standard product when used on a differential

Approx. **2.5%** improvement

*LFT(Low Friction Torque) is a registered trademark of JTEKT Corporation.

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Low friction torque deep groove ball bearing for motors

→ E_11 Related article

Agricultural & Electrical Machinery Group
Industrial & Construction Machinery Bearing Engineering Office
Industrial Machinery Application Engineering Dept.
Bearing Operations Headquarters
Takahiro Nishikawa

Group 2
Organic Materials Sect.
Material R&D Dept.
Research & Development Headquarters
Kazunori Miyake

Group 2
Organic Materials Sect.
Material R&D Dept.
Research & Development Headquarters
Takeshi Tsuda

Higher-efficiency for Motors That Account for a Large Percentage of Domestic Power Consumption

In Japan, it is estimated that the power consumed by industrial motors accounts for around 75 percent of that consumed by the overall industrial sector. With motor manufacturers striving to develop higher-efficiency products, JTEKT has developed a motor bearing which achieves both significantly less torque compared to conventional products and longer service life.

Development of groundbreaking grease that solves opposing issues

In order to improve motor energy efficiency, there is a demand to reduce torque loss of bearings created by friction, etc. At the same time, in order to eliminate the need for maintenance, extending the service life of motors is a major focus. However, the properties required for lower torque and longer life oppose one another, therefore achieving both had been extremely difficult until now.

In order to solve this issue, JTEKT went through a process of trial and error to find a new design. As a result, we elucidated that one of the major causes of torque loss was the agitation resistance of grease, which is sealed inside bearings to reduce the friction between metal components and prevent wear. We engaged in research and development from the approach of analyzing all the way back to the molecular structure of grease, something that had never before been attempted. Consequently, we successfully developed groundbreaking grease that reduces torque loss by around 50 percent and extends bearing life by approximately double compared with conventional products.

Improved performance achieved from original ideas and activities

"By being involved in this development project, I really felt that the key to accomplishing great feats was to take an approach that no one has ever thought of before and run with it." (Tsuda) "One valuable experience I gained from this project was to learn that significant improvement of performance could be achieved through fundamental research. I want to continue pursuing *monozukuri* that contributes to society." (Miyake) JTEKT will continue proposing motor bearings using the new grease for application in a broad range of fields, including industrial machinery, home appliances and electric vehicles.

Received the 2016 Tribo-Technology Award from the Japanese Society of Tribologists in recognition of the benefits towards significantly lower reduction and quietness.

"In our next development project, I want to once again listen to the true voice of the market and leverage JTEKT's accumulated technologies in order to offer society new values." (Nishikawa)

The results of tests by industrial motor manufacturers showed that energy efficiency could be improved between 1 and 3 percent merely by using this bearing.

Torque loss Compared with conventional — Approx. **50%** reduction

Bearing life — Approx. **2** times the conventional

Quietness Compared with conventional — Approx. **33%** improvement

Reduce greenhouse gases | Improve energy consumption efficiency | Abundant lifestyle environments | Safe, secure and comfortable society

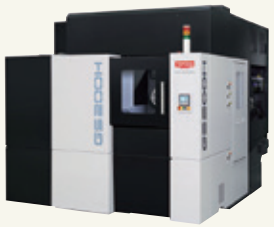
Small-sized gear skiving center GS200H

Reforming Gear Production with a World-First Product. Widely Contributing to the Evolution of *Monozukuri*

Cutting Group
Machining & Process Engineering Office
Machine Tools & Mechatronics Engineering Dept.
Machine Tools & Mechatronics Operations Headquarters
Kazuki Natsuda

Cutting Group
Machining & Process Engineering Office
Machine Tools & Mechatronics Engineering Dept.
Machine Tools & Mechatronics Operations Headquarters
Lin Zhang

Cutting Group
Standard Machine Development Office
Machine Tools & Mechatronics Engineering Dept.
Machine Tools & Mechatronics Operations Headquarters
Yoshio Ootsuka


GS200H

Gears are used as component parts of machines in all fields. Various machining processes are required for gear production, therefore production lines must consist of special-purpose equipment for each process arranged in a row. JTEKT developed a gear skiving center that integrates all gear machining processes into one machine for higher-efficiency production of higher-accuracy gears. Gear skiving is helping to reduce size and weight as well as improve productivity for machines of all fields.

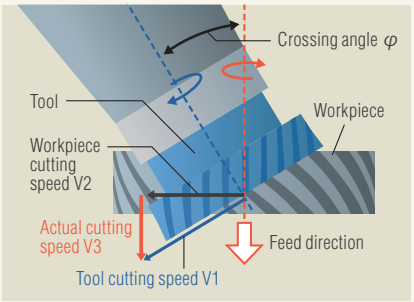
A world-first product created through collaboration beyond business boundaries

There are various gear machining techniques. Skiving is the most recent of these and involves tilting the tool on an angle against the workpiece, then simultaneously rotating the tool and workpiece at high speed in order to generate gears. Compared to conventional techniques, skiving offers the advantages of reduced machining time, smaller and lighter gears, etc. The doctrine behind skiving was presented in Europe in the 1960s however there were many issues due to the level of technology at that time, and it never reached the practical realization phase. JTEKT began development of production equipment with the skiving technique in 2005. Aiming to improve the commercial viability and production efficiency of TORSEN, a product for automotive use made from various gears, the JTEKT group company that manufactures TORSEN in Belgium and Japan's Machine Tools & Mechatronics Operations Headquarters went beyond the traditional business boundaries to bring their respective wisdom together. From 2006, JTEKT accumulated tool and control technologies while mass producing gears using the skiving technique. As a result of these efforts, the GS300H gear skiving center was commercialized in 2013 and was the first case of the skiving technique being used on a machining center in the world.

Integrating processes that required 5 special-purpose machines into 1

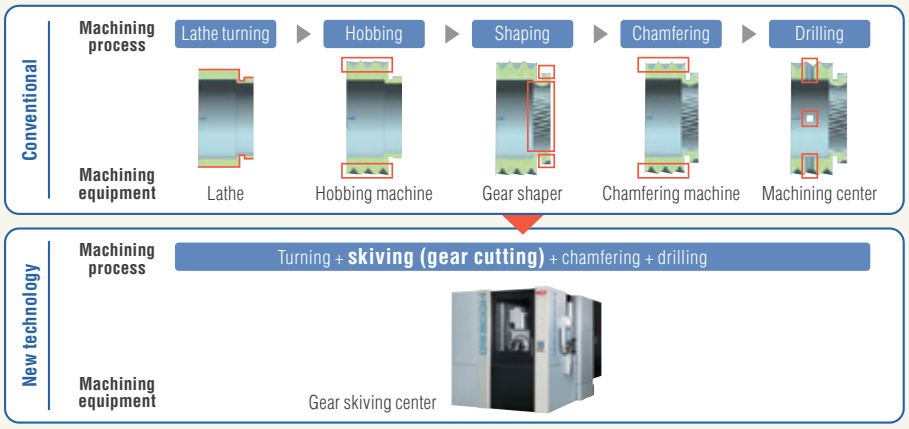
GS300H integrates the gear machining processes that conventionally required five special-purpose machines into a single machine, thereby contributing to space-saving and power-saving on manufacturing shop floors. Workpieces only need to be loaded once to proceed with multiple processes, meaning error that tends to arise during loading and unloading is significantly reduced, which in turn helps to increase machining accuracy. Based on this solid track record, in 2015, JTEKT released GS700H as the second machine of the GS series.

How skiving works

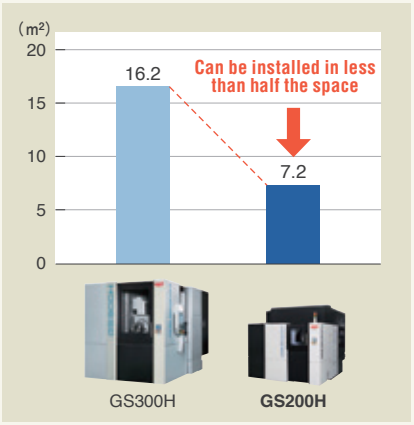


*GEAR SKIVING CENTER is a registered trademark of JTEKT Corporation.

Flow of gear processing



GS200H footprint



GS700H is optimal for machining large gears used in industrial robots, construction machinery, trucks, etc. JTEKT is answering the needs of faster, high accuracy gear machining in a wider range of industrial fields.

Achieving groundbreaking size reduction and a significant Increase in accuracy

Then, in May 2017, GS200H was released as the third machine of the GS series. This machine is optimal for machining small gears used in cars, etc. GS200H inherits all of the technologies and know-how JTEKT has accumulated to date, such as process integration, our proprietary tool and control technologies, etc. at the same time as achieving a groundbreaking size reduction whereby installation space (footprint) is less than half of that required by GS300H. Furthermore, machine rigidity has been increased by more than double that of GS300H, and the design minimizes distortion of the equipment due to heat, thereby increasing machining accuracy. In addition, as a part of our IoE (*) initiatives, a TOYOPUC-AAA is a standard feature of GS200H as a module for the accumulation and analysis of data. By gathering and analyzing data on vibration during machining, it is possible to identify signs of malfunction and tool replacement, which helps achieve the goals of quality improvement and greater maintenance efficiency.

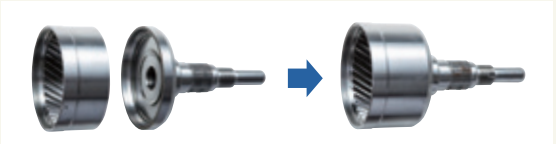
The strength of having machine tool users within JTEKT

GS200H enables car parts to be made smaller, lighter and integrated, therefore it can be anticipated as a model that will help improve fuel efficiency. Moreover, GS200H reduces abnormal noises by improving the accuracy of gears, of which a high number are used in cars, thus contributing to a higher degree of quietness. The strength of JTEKT's Machine Tools & Mechatronics business is that we have a steering business, driveline business and bearing business within our own company. Due to having manufacturing car parts directly within our own company, we have the advantage of an environment in which we can easily incorporate the users' opinions in our development of new machine models. Moreover, JTEKT is also capable of developing and mass producing bearings, which are necessary to increase the performance of machine tools. The GS series was born by taking full advantage of this ideal environment. "JTEKT designs optimal tools and sets optimal machining conditions to enable customers to create the parts they want. Drawing out the capability of machine tools to the maximum extent possible as we have through these developments is, I believe, also important in fulfilling our customers' wishes." (Natsuda) "I am convinced that one of JTEKT's major strengths is our culture of engaging in machine model

development by listening closely to our customers' viewpoints. I want to continue evolving machine tools as one with our customers." (Ootsuka) "I think that it is important to not only evolve existing technologies, but also create technologies that don't yet exist in this world. My future goal is to be able to contribute to the advancement of *monozukuri*." (Zhang)

***IoE:** In recent years, much attention has been given to "IoT" (Internet of Things), however JEKT proposes "IoE" (Internet of Everything), which includes connection between not only "things" (objects) but also people and services.

Example of product innovation (TORSEN parts)



In conventional equipment, two individual parts had to be machined separately, then welded (left), however the GS series enables machining of a single integrated part (right). This means strength is improved as welding is no longer required.

Social Report

- The CSR Report 2017 PDF is published with the aim of conveying the concept and activities pertaining to JTEKT's CSR in an easily understood manner. This report emphasizes objectiveness, completeness and continuity.
- Please refer to the JTEKT REPORT 2017 for information about JTEKT's business performance, business activities, planning, and strategy.
- For related articles:

M = JTEKT's CSR Management F = Special Edition
S = Social Report E = Environmental Report
J = JTEKT REPORT 2017

- In this Social Report section, we have summarized the overall activities for FY2016 by stakeholder. This report has been consistently configured in the same way since the 2008 CSR Report, in order to make it easy to read on a continuous basis.

Target period and target organizations/scope

Target period

FY2016 (April 2016 - March 2017)
* Some items include content from other periods.

Target organizations and scope

All activities of the JTEKT group

For items for which there is no criteria uniform across the JTEKT group, the unconsolidated results of JTEKT are displayed. As a general rule, if there are changes in the tallying scope, we revise data dating back to the past.

Reference guidelines

◎ The 4th edition of Sustainability Reporting Guidelines (G4 Guidelines)
◎ Japan's Ministry of the Environment "Environmental Reporting Guidelines (2012 edition)"
◎ ISO26000 (International Standard for corporate responsibility)

New! This mark is used to indicate new actions begun in FY2016 and information disclosed for the first time in this year's report.

Together with customers S_01
Together with business partners S_05
Together with employees S_07
Together with local communities S_24
Together with shareholders and investors S_29

Together with customers

Social background

Awareness of consumers' rights is rising on a global scale, exemplified by the ISO26000 positioning consumer issues as one of the central themes, and the 4th edition of Sustainability Reporting Guidelines (G4 Guidelines) establishing a section on product responsibility. Moreover, there is a trend emerging which emphasizes dialogue with stakeholders amidst an expectation of corporations to incorporate sustainable interaction with society into their value creation process.

The way of thinking by JTEKT

Considering the entire society as customers

In order to provide customers with the highest quality products, JTEKT naturally searches for value as a supplier but at the same time aims to be considered as having value as a partner that can be relied upon. Moreover, JTEKT's products are used in various industries, such as automotive, railway, steel, aviation and space and are deeply and widely involved with society and environmental issues. We JTEKT have a strong awareness of our social responsibility, and constantly strive to improve technology and quality, regarding our customers to be not only those who we directly do business with, but also the society at large.

→ F_01～08・J_08～09 Related article

Quality policy and quality assurance system

Figure-01

Establishing a quality policy with the motto of "Customer First", we are involved in a variety of quality improvement activities. We also maintain and constantly improve a quality assurance system based on this policy.
In 2013, the wording of the quality policy was partially changed. The phrase "product quality" was changed to a more specific expression, "design quality and manufacturing quality". We believe that seeking quality at each stage of design and manufacturing allows us to improve overall product quality and gain our customers' trust.

Quality policy Adhering to the theme of "Quality First", we offer products which earn the trust and satisfaction of our customers.

- Making decisions and taking swift action from the standpoint of our customers
- Improving design and manufacturing quality through the ingenuity of all members

Together with customers

Main activities FY2016

[Quality]

Elimination of Major Quality Problems

In September 2014, the Quality BR (Business Revolution) Office was established directly under top management with the aim of extinguishing major quality issues. The Quality BR Office has established a vision of “Floor Management” (daily management, change point management, troubleshooting) and engages in activities to maintain and improve this.

Implemented QG (*1) -20 activities (milestone control)

JTEKT has begun a control meeting using 20 milestones for all stages, from planning, design, development and production preparation to full-scale production. The required quality is properly reflected in the product.

*1 QG QG is an abbreviation for Quality Gates.

Strengthening the EDER (*2) activity New!

JTEKT engages in an EDER activity aimed at looking from our customers’ perspectives to discover market issues at an early state, promptly identify the cause, establish countermeasures and deploy these in the market.

*2 EDER “EDER” is an abbreviation of “Early Detection Early Resolution”.

Improvement through periodic inspections

JTEKT actively pursues the obtainment of reviewed quality management system certification through third parties. JTEKT continues to receive periodic inspections once or twice a year and uses the results to further revise and improve its quality control system.

Major obtained certifications

- ISO9001 (International quality management system standard)
- TS16949 (Quality management system for the automotive industry)
- JIS Q 9100 (Quality management system for the aviation/aerospace industries)

Initiatives to reform company culture and raise customer satisfaction levels

For the purpose of raising quality awareness, we have set May and November as “Quality Months”. During these months, we engage in various activities such as collecting and displaying posters and quality slogans, and discussing improvements for each department.

Moreover, from November until December, the 2nd Quality Exhibition was held at 18 venues and attended by a total of 11,110 directors and managers of JTEKT. This exhibition introduced quality status and initiatives for improvement as well as provided an opportunity to renew our awareness of the importance of quality.

Poster for the 22nd Quality Month


2nd Quality Exhibition (Tadomisaki Plant)

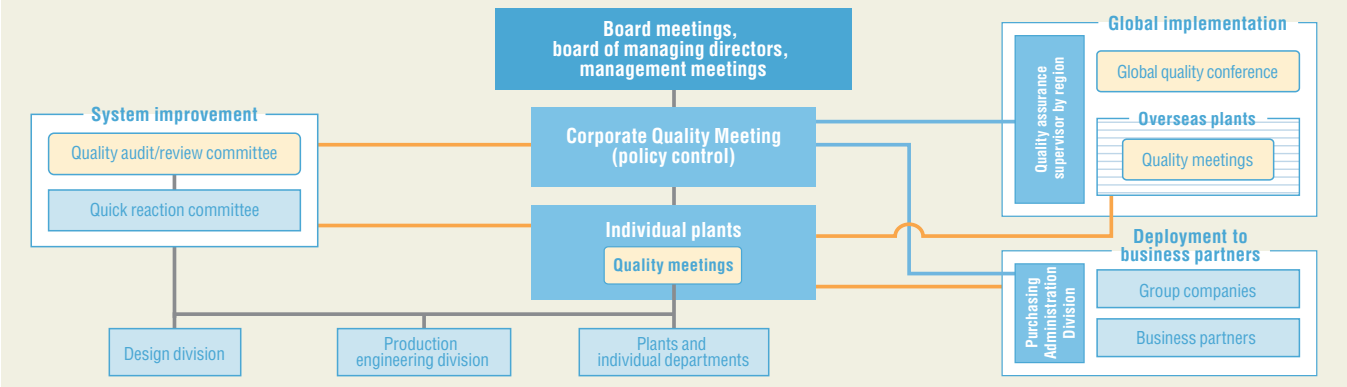
Awards from customer companies

JTEKT received awards from customer companies in recognition of various quality improvement activities.

Major awards FY2016

Customer name	Award	Awarded company
General Motors Company	Award for Excellence in Quality	JTEKT Corporation Daibea Co., Ltd.
Hitachi Automotive Systems Americas, Inc.	Quality Excellence Award	JNA (U.S.)
Renault S.A.S. NISSAN MOTOR CO., LTD.	TPM Excellence Award	Toyoda Van Moppes Ltd.
YANMAR CO., LTD	TPM Excellence Award	JTEKT Corporation
Aichi Machine Industry Co., Ltd.	Award of Excellence for Quality	JTEKT Corporation
Perodua	Quality Excellence Award	JAMY (Malaysia)

Figure-01 Quality assurance system



Together with customers

[Communication]

Conducting a customer satisfaction survey

As in previous years, in FY2016 we conducted customer satisfaction surveys targeting our main customers. In order to improve satisfaction in the five areas of quality, delivery, technical response capability, cost response capability and technical/sales service, we shared the issues revealed by these surveys and are exerting efforts to solve them promptly and appropriately.

Exhibit at the 28th JAPAN INTERNATIONAL MACHINE TOOL FAIR (JIMTOF2016)

JTEKT had an exhibit at the 28th JAPAN INTERNATIONAL MACHINE TOOL FAIR (JIMTOF2016) held at Tokyo Big Sight from the 17th to the 22nd of November. With an innovative exhibit linked with our 10-year anniversary campaign under the banner of "Young Company with Rich History", we introduced JTEKT's core technologies, such as our historical highly-reputed machine, TOYODA-Gendron cylindrical grinder, and the latest model, CNC cylindrical grinder GE4i, as well as the concept of "Smart factory where people have the lead role." With one new demonstration unit, this JIMTOF themed on virtual technology became a hot topic due to its breakthrough exhibits, and the JTEKT booth was visited by around 20,000 exhibit-goers, which is the highest number ever.

JTEKT's booth

Increase awareness through company and business advertisements

2016 was the year of JTEKT's 10-year anniversary campaign, which was conducted on a scale the likes of none before. The campaign slogan of "Young Company with Rich History" was adopted due to 10-year old JTEKT being formed from a merger between two companies with a total of 150 years' history between them. As a face fitting this slogan, JTEKT commissioned Ebizo Ichikawa, a kabuki actor bringing new approaches (innovation) to the traditional world of kabuki. Our advertising campaign spanned across a variety of media, including television commercials, newspaper/magazine/online advertisements and billboards, in order to create buzz and improve recognition of JTEKT's company name.

Television commercial

Advertisement displayed in the Nagoya station concourse

Holding "Young but Historic Discussions" New!

As part of our 10-year anniversary campaign, JTEKT's top management and well-known people active in historic and traditional areas held "Young but Historic Discussions" in which they discussed topics such as tradition, innovation, history and youth. We also published advertisements in a variety of magazines to appeal to a wide range of people.

- A discussion between face of JTEKT's 10-year anniversary campaign, Ebizo Ichikawa and JTEKT's President, Tetsuo Agata
- A discussion between Shogo Kariyazaki, a well-known Japanese flower artist, and JTEKT's Chairman Atsushi Niimi (when the discussion was held in Jun. 2016/current Senior Advisory)
- A discussion between General Manager Hitoshi Fujisaki of Tokyo Station Hotel (which completed a full facelift in 2012 and celebrated its 100th anniversary in 2015) and President Agata

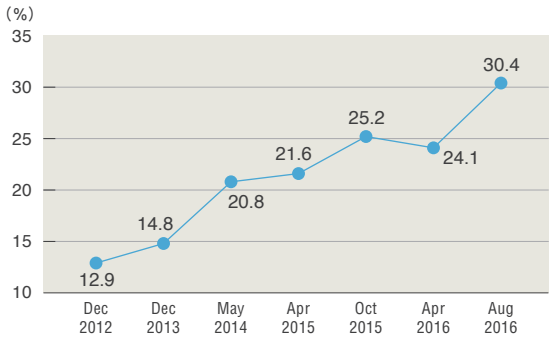
Ebizo Ichikawa and President Agata have a discussion

Together with customers

Significant improvement of company name recognition

As a result of our 10-year anniversary campaign, JTEKT's company name recognition rose from 21.6 percent in April 2015 to 30.4 percent in August 2016.

Transition in company name recognition



JTEKT businesses advertisements

JTEKT ran business advertisements in FY2016 as part of efforts to strengthen the Koyo brand representing our bearing business and TOYODA brand representing our Machine Tools & Mechatronics business, and ultimately promote sales. For the bearing business, we established the concept of "Key of your operation Koyo" and emphasized the superior performance and technology of JTEKT's bearings in order to strengthen sales in the industrial machinery and commercial fields. For the Machine Tools & Mechatronics business, we established the concept of "Just for your best" and emphasized reliability with tradition using expressions with a premium feel based on our stance of delivering customers the optimal product right when it is needed. We will continue rolling out business advertisements aimed at penetration of the Koyo and TOYODA brands.

Business advertisement for the Koyo bearing business brand

Business advertisement for the TOYODA Machine Tools & Mechatronics business brand

Special exhibit at JTEKT ROOM Ginza New!

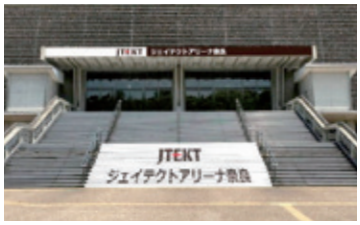
From the 10th to the 30th of November, JTEKT held a Leonardo De Vinci Exhibition - Technique and dream by tradition at JTEKT ROOM Ginza, which attracted many visitors. Together with a manuscript left behind by De Vinci, we exhibited a bearing mock-up and self-traveling vehicle reproduced by JTEKT. This exhibit introduced the connection between JTEKT's technologies and the dream envisioned by De Vinci.

Explaining exhibited articles

Obtainment of naming rights for Gymnastic No. 1, KASHIHARA Sports Park (Nara prefecture) New!

In 2016, JTEKT obtained the naming rights for Gymnastic No. 1, Nara Prefectural KASHIHARA Sports Park, one of Nara's largest arenas, and began using the nickname of "JTEKT Arena Nara." As well as utilizing the arena as the second home arena for JTEKT STINGS (our men's volleyball team), we also use it for engaging in activities that contribute to the local community, and are improving awareness of JTEKT's company name in the Kansai region.

S_25 Related article



JTEKT Arena Nara

My CSR

Shunya Hattori
Kansai Group
Application Engineering Office 2
Application Engineering Dept.
Sales & Marketing Headquarters

Aiming for customer satisfaction

Our department constantly aims to provide customers with products and technical services which earn their satisfaction through assessing customer needs by direct visits to customers, technical exchange meetings, exhibitions and so on, then offering more value than their expectations with speedy response. We are focusing on expanding product sales and creating JTEKT fans through solving our customers' troubles. I am in charge of our customers in the Kansai area but I will never forget how nervous and happy I felt when I was specifically requested by a customer to help them with their issue.

Together with business partners

Social background

One of the issues raised by ISO26000 is the "promotion of social responsibility in the value chain." Moreover, the Leaders' Declaration of the 2015 G7 Elmau Summit included "Responsible Supply Chains." When engaging in procurement activities, in addition to conventional QCD (quality, cost and delivery), a company is expected to also consider factors such as human rights, labor practices, fair business practices and the environment.

The way of thinking by JTEKT

Promoting fair business

JTEKT regards business partners as equals and aims for mutual development and growth based on strong relationships of trust. JTEKT has stipulated policies for open and fair business practices in its Corporate Activities Standards and its Purchasing Philosophy regardless of country or company size and including companies with no experience supplying to JTEKT. On the company website, JTEKT has outlined procedures for becoming a business partner, as a means of providing fair, equal opportunities for all.

"Follow proper business practices and engage in fair, transparent and free competition based on a respect for the law."

(from JTEKT Corporate Activities Standards)

Purchasing Philosophy

Fair and transparent business transactions	We provide open, fair and equal opportunities to all regardless of nationality or company size, including companies with no experience doing business with JTEKT.

Purchasing Basic Policy

Mutual trust	Build mutual trust through close communication with business partners.
Coexistence and co-prosperity	Achieve harmonious relationships with business partners based on mutual trust.
Long-term, stable business relationships	Achieve stable procurement meeting JTEKT's quality, cost, volume, and delivery requirements through continuous business.
Global purchasing	Achieve optimal purchasing from a global viewpoint and improve international competitiveness by a strong supplier chain.

[CSR Activity Item Guidelines]

We issued the CSR Activity Item Guidelines for our business partners, in order to share with them the purpose of our CSR Policy and clarify items that we would like our business partners to observe. We request our business partners deploy these guidelines upstream as well.

Moreover, in order to maintain fair trade, we ensure that all departments which interact with business partners respect the various industrial fair trade guidelines and, in order to improve communication with business partners, utilize every opportunity to disseminate information and gather opinions.

1. Management-related initiatives

- Legal compliance
- Risk management

2. Initiatives for stakeholders

- Securing quality
- Fair trade
- Good labor-management relations
- Protection of human rights/respect for diversity
- Observance of corporate ethics
- Initiatives for local communities

3. Initiatives for the global environment

- Environmental management
- Environmentally friendly business activities

Green Purchasing activities

Our company promotes companywide Green Purchasing activities in order to contribute to the creation of a sustainable recycling-based society. For this purpose, we have issued Green Purchasing guidelines and have requested the cooperation of business partners.

Requests to our business partners

We make the following requests to our business partners under the Green Purchasing Guideline.

- Construction of an environmental management system based on obtainment of external certification such as ISO14001.
- Observation and reinforcement of environmental laws and regulations
- Prohibit or restrict use of environmentally burdensome substances
- Improve environmental performance by reducing CO_2 emissions, etc.
- Promote actions to conserve biodiversity

Together with business partners

Main activities FY2016

Purchasing Policy Briefing

On April 18th, the Purchasing Policy Briefing was held at the Hotel New Otani Osaka, attended by 249 companies and 277 people. As FY2016's purchasing policy, we requested the strengthening of CSR and thorough safety, which are major premises of business. At the same time, we explained our major implemented items for the fiscal year. We also awarded our business partners who had demonstrated outstanding performance in regards to quality, technology and cost price improvement for the year overall.

Major Implementation Items for FY2016

- Strengthen efforts to solve significant quality problems
- Achieve superior international cost competitiveness
- Respond to global optimal production

Purchasing Policy Briefing in North America New!

JNA (U.S.), JTEKT's North American group company, held the 2016 JNA Purchasing Policy Briefing on October 12th, 2016. Sixty major business partners attended this briefing, which provided explanations of company policy, procurement policy and market trends. The event was successful in promoting understanding of JTEKT's procurement policy applicable to business partners in North America as well as forming and strengthening relationships of trust.

Quality control tournament of the JTEKT Supplier Association

The Quality Management Convention was held on November 22nd, at Osaka Matsushita IMP Hall, and was participated in by around 400 people from all 253 member companies of the JTEKT Supplier Association(*). In addition to examples of outstanding improvements from 6 companies and presentation by JTEKT's QC Circle, a lecture was given on the role of QC Circle supporters.

* **The JTEKT Supplier Association** The JTEKT Supplier Association is comprised of 253 companies (as of FY2016). It is intended to foster mutual trust among members and raise their capabilities through activities such as quality control tournaments, workshops, and lectures.

JTEKT Supplier Association Workshop

The JTEKT Supplier Association participated at the Midland Hall in Nagoya on January 25th. Training was conducted on the three themes of environment conservation, control of chemical substances contained in products and appropriation of transactions in the supply chain overall. In addition, an external lecturer was invited to give a lecture on business continuance.

Initiatives for the conflict minerals issue

JTEKT shares our customers' procurement policies in regards to problems such as infringement of human rights in conflict regions, and in FY2016 once again conducted the survey regarding conflict minerals ongoing since FY2013. With the cooperation of our business partners, we confirmed the status of conflict minerals all the way up the supply chain and appropriately responding to related customer enquiries. Moreover, based on our CSR Activity Item Guidelines, JTEKT requests our business suppliers to also be responsible when procuring resources and raw materials.

TOPICS

Special lecture for JTEKT's 10-year anniversary

In order to show our appreciation to the dealers and customers of bearings and machine tools, President Tetsuo Agata and Senior Advisory Atsushi Niimi held special lectures for JTEKT's 10-year anniversary in ten regions throughout Japan, which were attended by over 1,400 people. The lectures introduced various lessons learned through hardship by Mr. Niimi and President Agata through their experience and own personal episodes as businessmen. Feedback from participants included "It was extremely useful as a reference point" and "I want to apply what I heard to my company's training."

Regions where lectures were held

July	Gunma
August	Shizuoka, Osaka, Fukuoka, Okayama
September	Sendai, Aichi, Kanazawa, Niigata
November	Tokyo

Poster advertising special lectures for JTEKT's 10-year anniversary

Scene from a lecture

My CSR

Kyouichi Chaen
Purchasing Dept. 2
Purchasing Headquarters

Possessing awareness as the face of JTEKT

The Purchasing Department has the most opportunities to interact with business partners. We must be aware that our words and deeds will be interpreted as JTEKT's stance and beliefs and at the same time, we are expected to handle information acquired from external sources with care. I am always careful to conduct myself in a way that will earn trust as the face of JTEKT.

Together with employees

Personnel-related actions

Social background

Amidst a variety of CSR-related standards and targets being established (i.e. the Ten Principles of the United Nations Global Compact, ISO26000, OECD Guidelines for Multinational Enterprises, the 4th edition of Sustainability Reporting Guidelines (G4 Guidelines), the International Integrated Reporting <IR> Framework and Sustainable Development Goals (SDGs), there were repeated cases where narratives relating to human rights and labor were reinforced. The global community is strongly demanding that companies emphasize respect for human rights and workers' rights more when engaging in business activities.

The way of thinking by JTEKT

Creating a friendly work environment for all

JTEKT promotes the creation of a workplace in which all of our employees find it easy to work, considering various aspects such as human development, respect for diversity and safety and hygiene. Our company believes that, as we expand globally, it will become even more important to deepen understanding towards human rights and share this with group companies both domestically and overseas.

Respect for human rights and utilization of diverse human resources

JTEKT's Corporate Activities Standards states the following; "Respect the individuality of employees, create safe workplaces that motivate employees and enable them to fulfill their potential and strive to provide each with abundant living circumstances." We give explicit instructions regarding the prohibition of discrimination based on race, gender, age, nationality, etc., and share and enforce this thinking with our group companies both in Japan and overseas. Additionally, we engage in various actions to utilize diverse human resources.

Main actions

- Hiring foreign employees
- Assisting female employees' career development
- Employing persons with disabilities
- Changing fixed-term employees to permanent employees
- Providing assistance for those engaged in childcare or family care
- Reduction of work outside regular hours and encouragement of paid leave usage
- Providing post-retirement employment opportunities
- Various education concerning human rights, etc.

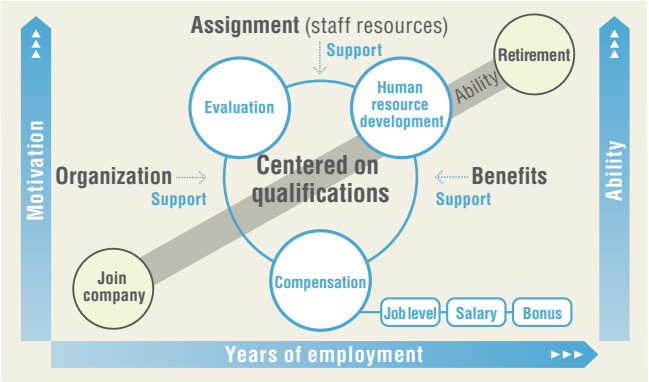
Direction of human resource development

Based on the following 3 points, JTEKT constructed a systematic human resource development system to enable all employees to grow while achieving a sense of accomplishment.

1. Develop employees who understand the Corporate Philosophy and are professional, creative, highly skilled, and able to achieve management goals.
2. Develop employees who have confidence, pride, and passion, think for themselves, and act as a member of the JTEKT group.
3. Develop employees who respect human rights, live in harmony with the environment, observe social rules, are sensible, and have an international perspective.

Maintaining high motivation and enhancing abilities

Our human resource development system, consisting of training, evaluation and compensation, enables employees to continually improve their skills and provides them with a motivating working environment during their years in the company.



Main activities FY2016

[Labor-management relations and employment] Emphasizing labor-management communication

JTEKT places importance on labor-management communication and facilitates numerous opportunities for direct dialogue between workers and management on a companywide and individual plant basis. These include various social gatherings and discussion sessions. Workers and management exchange opinions on company development and stabilizing/improving employee quality of life and strive to deepen mutual trust and understanding by building even firmer relationships.

Labor-management discussion opportunities (held in FY2016)

- Central Production Subcommittee Meetings (annual)
- Central Labor-Management Meetings (annual)
- Labor-Management Meetings (4 times)
- Labor-Management Committee Meetings (10 times)
- Labor-Management training (annual)
- Plant Production Section Meetings (monthly at each plant)
- Business Facility Labor-Management Discussions (monthly at each business facility)
- Workplace Discussions (as required at each workplace) etc.

Together with employees

Initiatives relating to paid leave and working hours

JTEKT aims to create a workplace in which employees find it easy to use paid leave. Labor and management cooperate together to periodically check the usage status of paid leave in order to improve the usage rate. Moreover, business reform is also promoted by indirect departments as one theme of the Mid-term Management Plan. JTEKT is striving to reduce working hours.

Labor condition transition (Average per each workers union member)

	2012	2013	2014	2015	2016 (FY)
Total work hours (hours)	2,074.7	2,115.3	2,107.2	2,089.8	2,080.3
Work outside of regular hours (hours)	316.0	351.7	345.7	334.9	331.6
Percentage of paid leave consumption (%)	63.2	65.6	67.4	71.6	72.4

Maintain employment

In FY2016, JTEKT continued to exert efforts to maintain employment through various measures such as reassignment from the perspective of effectively utilizing resources. JTEKT observed the relevant laws and internal regulations for managing the employment of fixed-term workers. In FY2016, 72 fixed-term workers were appointed as permanent employees.

Transition from fixed term workers to permanent employees

	2012	2013	2014	2015	2016 (FY)
Number of transitions made (people)	167	184	99	91	72

Composition of employees as of the end of March 2017

	Male	Female	Total
Permanent employees	11,111	919	12,030
Fixed-term employees (*1)	2,787	576	3,363
Total	13,898	1,495	15,393

	Male	Female	Average
Years of employment	16.1	11.2	15.7

Job turnover rate (*2)	0.9%
Job turnover rate within the first 3 years (*3)	2.5%

*1 Total fixed-term, part-time, reemployed, and temporary employees *2 Voluntary early retirement rate *3 Permanent employees, seasonal recruits, voluntary early retirement

[Human resource development]

Formation of a global human management/development framework

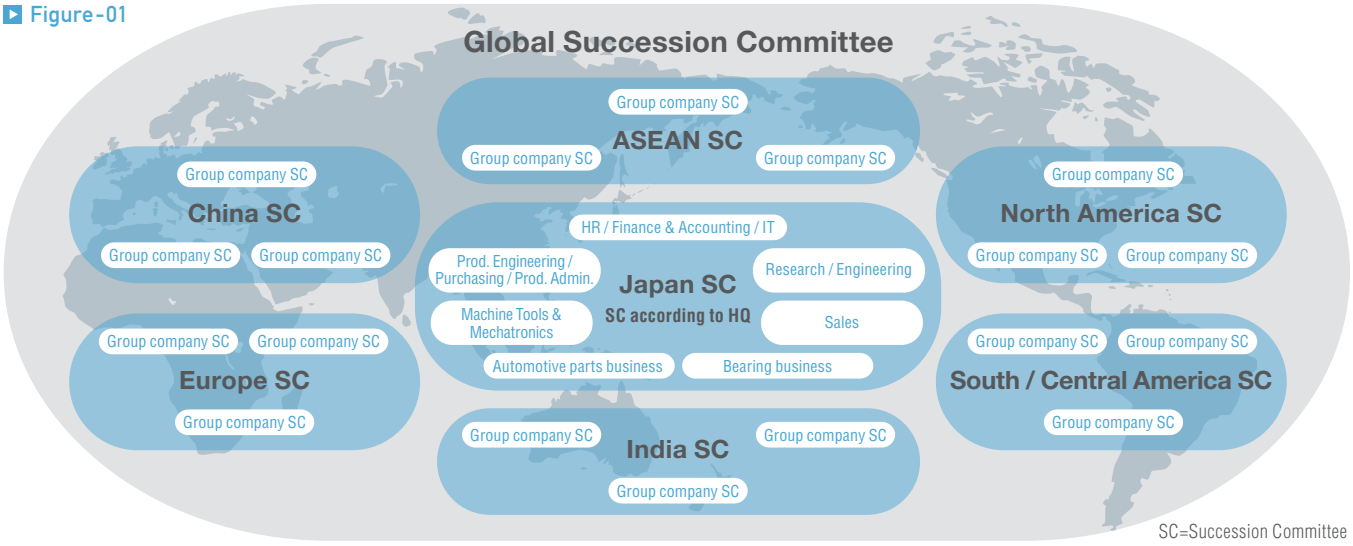
Figure-01

Around 60 percent of the approximate 44,000 employees of the JTEKT Group work overseas. JTEKT promotes the formation of a global human management/development framework with the aim of creating the optimal environment for employees and the company alike so that motivated and capable people, regardless of nationality or race, may perform to their fullest transcending national and regional borders. JTEKT assembled information on the careers and capabilities of employees currently occupying major posts at our domestic and overseas bases and potential successors and held regional Succession Committees in FY2016 also to discuss the discovery, development and appropriate allocation of successors for each post. We also gather information from each region and hold a Global Succession Committee to discuss the discovery, development and appropriate allocation of human resources for the group overall. Moreover, from FY2016, personnel nominated at the Succession Committee as candidates for overseas bases are provided the opportunity to participate in selection-based training held at JTEKT Head Office in order to improve management skills of the group overall. We plan to continue this in FY2017.

Percentage of foreign nationals in major overseas posts (consolidated)

		2015	2016 (FY)
Foreign employees in the general manager class	No.	125	124
	Percentage (%)	62.2	62.9

Figure-01



SC=Succession Committee

Together with employees

Hiring and utilization of foreign employees

Even within Japan, JTEKT is proactively hiring and utilizing excellent human resources regardless of nationality.

Foreign employee hiring results (general office/engineering)

	2012	2013	2014	2015	2016 (FY)
Seasonal hiring no.	2	6	3	14	14
Mid-career hiring no.	11	3	0	0	1

Strengthening of employees' English abilities, bidirectional employee interaction between Japan and overseas

JTEKT also strives to strengthen the English ability of its employees overall in order to develop professionals capable of working globally. In addition to providing motivation-raising strategies such as an internal TOEIC exam and self-study courses (company-subsidized), as part of our overseas trainee system, we also arrange for young employees who are willing to work at JTEKT's overseas group companies at an early stage in their careers, so that they may improve their language ability and cross-cultural communication skills.

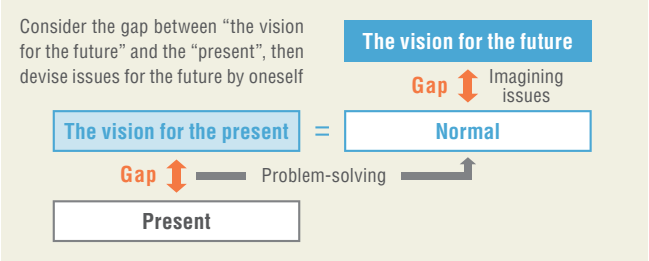
Moreover, from FY2016, JTEKT will fully promote training in Japan for employees of its overseas group companies by utilizing an inter-company transfer visa. Rather than the conventional one-way pattern of sending employees from Japan to overseas, we will begin bidirectional employee interaction between Japan and overseas.

Human resource development for office and engineering staff

The JTEKT training system is composed of four pillars: rank-based training, job title-based training, age-based training and selection/theme-based training. We also focused on supporting the acquisition of qualifications and self-study efforts. Training to strengthen problem-solving ability is conducted on a rank-based basis, and from FY2016, task-based problem-solving training has been held for employees with Assistant Manager status in order to strengthen ability to imagine issues and leadership. JTEKT is also developing problem-solving trainers on a global scale so as to foster a culture whereby senior employees pass on their knowledge to junior employees.

Gain the ability to imagine issues

There may not be any problems now, but environments do change. JTEKT plans to commence training particularly for Assistant Managers to imagine future issues and take preemptive measures in order to respond to customer needs five/ten years from now.



Task-based problem-solving training program

First session	● Explanation of task-based problem-solving ● Consider a workplace's mission ● Environment analysis
Second session	● Task-based problem-solving Steps 1 thru 3 ● Leadership ● Organizational management
Third session	● Task-based problem-solving Steps 1 thru 5 ● Organizational management ● Capability development plan ● Expression of determination

Expand targeted employees

Moving forward, JTEKT will spread the problem-solving concept for all levels on an ongoing basis.

Currently advancing in the 3-year plan

FY2014 Problem-solving training began

Target expansion

FY2014	Line manager
FY2015	Managers other than line managers Company trainer development (future shift to in-house) Office/engineering staff R4 (lecturers of company trainer development class) Employees temporarily transferred domestically/overseas
FY2016	Office/engineering staff R5 (lecturers of company trainer development class) Global trainer development Advanced refinement to rank-based training (office/engineering staff R4)
FY2017 and beyond	Refinement to individual rank-based training

Roll out to all employees

Human resource development for production staff

Figure-01

The JTEKT training system is composed of the three pillars of companywide training, workplace-based training and self-study. Regarding companywide training, apart from a career development program (rank-based) which is based on training at the JTEKT Technical Training Center (*1), we carry out supervisor training, 10 specialized skill training courses, TWI supervisor trainer development courses (*2) and TWI 10-hour courses. Regarding workplace-based training, we implement OJT (*3) training covering the specialized skills necessary to pass down to future generations, as well as special training and skill courses for the obtainment of certifications necessary in the line of work. We support the self-study of employees so they may attempt the National Trade Skills Test, QC Test, Voluntary Conservation Officer recognition, etc. In FY2016, sheet metal training was launched and we plan to deploy this to KL (Kaizen Leaders) who primarily engage in kaizen (improvement) tasks in FY2017.

***1 JTEKT Technical Training Center** Provides vocational training approved by the prefectural governor of Aichi. Focuses on developing excellent production personnel.
***2 TWI supervisor trainer development course** TWI is an abbreviation for "Training Within Industry". It is internal training for supervisors.
***3 OJT** Abbreviation for "On the Job Training," or training carried out during actual work.

Together with employees

Figure-01 Rank-based training types and main content

	Training	Main content	Attendees
Managers	Training for new department managers and manufacturing assistant managers	CSR, workplace management	10
	R3 training for new managers	CSR, policy management, daily task control	99
Office & engineering staff	R4 training for new office & engineering staff	CSR, leadership, planned fulfillment of tasks	113
	R5 training for office & engineering staff	Business communication skills	143
	R6 training for office & engineering staff	Problem solution methods and concepts	98
	Training for mid-career new employees	CSR, JTEKT employee basic knowledge and mindset	29
	Training for office & engineering new employees	CSR, JTEKT employee basic knowledge and mindset	157
Production staff	Training for newly appointed production managers	Acquisition of an internal human resource development framework and JPS (*) production system	11
	Training for new Chief Leaders	CSR, Management basics and planned fulfillment of tasks	48
	Training for new KLs	Basics of workplace improvements and acquisition of production systems	66
	Training for new Group Leaders	Problem solutions based on QC concept	85
	Training for new production employees	CSR, JTEKT employee basic knowledge and mindset	121

* JPS JTEKT Production System

TOPICS

Received Four Awards at the WorldSkills International in Japan

At the WorldSkills International in Japan held in Yamagata prefecture in October, JTEKT employees received a total of four awards.

- Gold Award in Mechanical drawing A JTEKT first : Yuji Tsuchiya
- Silver Award in Mechatronics : Morimasa Kono, Kazuya Ymanaka
- Fighting Spirit Award in Mechatronics : Shota Kimura,Tomoya Hattori
- Fighting Spirit Award in trimming die : Kiyofumi Yamamoto

Feedback from the employee who obtained the Gold Award

Yuji Tsuchiya
Technical Training Center

Next, I want to take on the world

When I joined JTEKT as a student of their Technical Training Center three years ago, I never imagined I would one day win a Gold Award at the WorldSkills International in Japan. I really feel that it was accomplishable due to being supported by so many people. I'm currently preparing for the 44th WorldSkills Competition to be held in the UAE in October 2017. I will take on the world as a representative of Japan and a representative of JTEKT.

Promoting TQM activities

JTEKT promotes TQM (Total Quality Management) activities based on the three pillars of "Customer First", "Endless Improvements" and "Participation by All". At workplaces, which are the frontline, we strive to foster mutual instruction and the handing down of unique techniques and human resource development through small group activities (QC Circle activities).

TOPICS

Sharing the direction of TQM activities at a 10-year anniversary tournament

On December 9th, JTEKT held its 10-year anniversary tournament at the Osaka International House Foundation in Osaka city. The theme of the tournament was "TQM activities aimed to become a truly global company – the joy, wonder and inspiration of working". The tournament consisted of a Global QC Circle Improvement Case Study Presentation in which QC circles selected from six regions across the world presented the results of their activities, as well as an All-JTEKT TQM Competition, which aimed at sharing the direction of TQM activities.

Various QC Circles receive awards at national competitions

On May 20th, the SP☆GIRLS QC Circle from JTEKT's Toyota Branch Office received the Kaoru Ishikawa Award for Promoters at the QC Circle National Competition held in Sapporo. On September 8th, the Sea Man Circle from JTEKT's Nara Plant received the Fascinating Award at the QC Circle National Competition held at the Nagoya Congress Center. On November 29th, the Birdie Circle from JTEKT's Okazaki Plant received the Gold Award at the QC Circle National Competition held at Tokyo Big Sight. This was the first time JTEKT had the honor of receiving the Kaoru Ishikawa Award and Gold Award.


1


2

3

1. The SP☆GIRLS who received the Kaoru Ishikawa Award for Promoters
2. The Sea Man Circle who received the Fascinating Award
3. The Birdie Circle who received the Gold Award

Together with employees

Promotion of the J-KI activity

New!

J-KI is an abbreviation for JTEKT Knowledge intensive staff Innovation. It is an activity that aims at improving productivity and vitalizing organizational culture by changing approaches to daily tasks so that we can see the content of one another's tasks and each other's thoughts. The 1st case presentation for J-Knowledge Intensive was held at JTEKT's Technical Center (Hanazono) on March 31st and was attended by approximately 80 people. The Center Manager, General Manager, Group Manager and various other members of Technical Center (Central Japan) presented the accomplishments of J-KI activities and details of initiatives.

SQC (*) Improvement Case Study Companywide Presentation

In R&D, design, production activities and so on, JTEKT proactively incorporates the SQC method to be able to make scientific judgments based on data and consider the variation of materials, parts and properties. In order to share case studies and the importance of the following 3 points; "data-based discussion," "understanding the concept of variation," and "verifying and predicting (forecasting) hypotheses," and learn from one another to improve skills, JTEKT holds a SQC Improvement Case Study Companywide Presentation each year. In FY2016, approximately 510 members attended the event.

* **SQC** SQC is the abbreviation for Statistical Quality Control.

A group of technicians who proactively consider JTEKT's development

In FY2012, the JTEKT Engineers Association was formed to provide an opportunity for engineers of JTEKT's respective areas to work hard together to improve their technical ability and leadership abilities in the name of solving societal issues. In FY2016, the fifth year since its formation, each association focused on initiatives to enhance the tours and events held by the respective committees and branches in east, west and central Japan as well as further stimulate communication between engineers. JTEKT Technical Presentation is also held annually. It is alternated between Kariya Plant and Kokubu Plant in order to secure a high attendance of engineers. In FY2016, it was held at Kokubu Plant on November 23rd. The session was divided into the three specialty fields of electric/electronics, material/tribology/mechanical elements, and machining/production engineering, and live connection to each of our operating centers enabled a total of approximately 700 people companywide to engage in discussion on 18 themes.

JTEKT Technical Presentation (Kokubu Plant)

[Respect for diversity]
Promoting diversity

In the midst of an ever-changing management environment, represented by globalization, accepting and utilizing personnel with diverse values irrespective of gender, nationality, age, culture and so on is essential for a company to continue growing. JTEKT positions the promotion of diversity as an important management strategy for the achievement of the JTEKT GROUP VISION and engages in various initiatives accordingly.

Reform awareness of all employees and encourage a diversity mindset

New!

In order to promote diversity, first, all employees must understand the necessity and the purpose, change their awareness and their conduct. To this end, JTEKT takes the approach of including the theme of diversity in the President's message, e-learning for all employees and incorporating a diversity component in our rank-based training. Moreover, in FY2016, an expert in the field was invited to give a lecture on diversity, which was attended by 1,500 employees.

Together with employees

Assisting female employees in developing their careers

In order to accelerate female participation in the workplace, JTEKT conducted an actual condition survey targeting all female employees and all management personnel in FY2014. We investigated the environment surrounding female employees, awareness of female employees' work and the development/assessment by superiors of subordinates. Based on the issues brought to light through this survey we established the following four elements which have been focused on since FY2015. We made steady progress with such activities in FY2016 also.

1. Reform consciousness	We implement training for all administrative positions on understanding diversity management from the aspects of eliminating stereotyped perception of gender roles, and the nurturing of female subordinates.
	We conduct career training for women in all positions on long-term career design and network formation.
2. Dual support	Creation of systems and environments enabling employees with limitations to continue working
	Introduction of systems aimed at supporting career development
3. Strengthen hiring	Proactive hiring of women who are strongly career-oriented
4. Foster culture	We foster a corporate culture that enables all employees to flourish, regardless of gender, based on diversity education for all employees as well as other methods.

Management diversity training (1 day)

Career training for female employees (2 days)

No. of females hired/appointed managers (*1)

	2012	2013	2014	2015	2016 (FY)
Total no. of women hired through seasonal recruitment	20	27	26	31	37
(Total no. of employees hired through seasonal recruitment)	(326)	(316)	(309)	(311)	(345)
No. of women managers	12	13	16	16	16
(Total no. of managers)	(1,804)	(1,870)	(1,937)	(1,976)	(1,924)
No. of women assistant managers	22	32	37	49	62
(Total no. of assistant managers)	(1,303)	(1,328)	(1,410)	(1,486)	(1,594)

*1 Based on company registration (includes employees temporarily transferred to domestic or overseas group companies and excludes employees from other companies temporarily stationed at JTEKT) Values differ from last year's report due to a revision to the calculation method.
*2 Subsection chief equivalent

Formulation of an action plan based on the Act of Promotion of Women's Participation and Advancement in the Workplace

Based on a law relating to promoting women in the workplace (the Act of Promotion of Women's Participation and Advancement in the Workplace), JTEKT formulated an action plan.

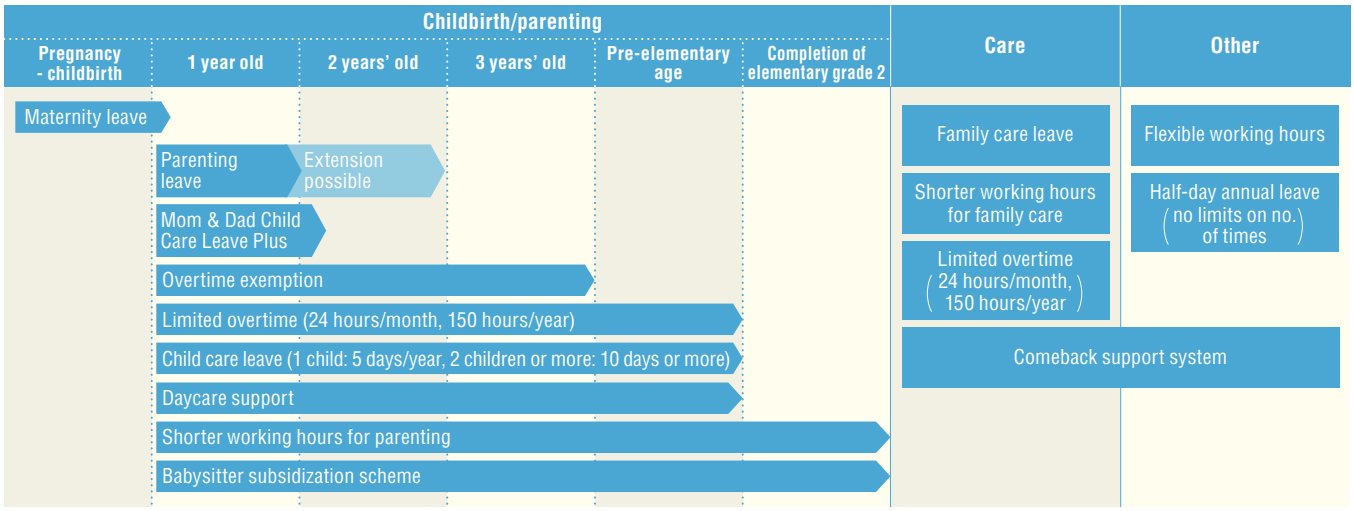
Plan period	Apr. 1st 2016 – Mar. 31st 2020
Issues	● Low percentage of women in managerial positions (0.8% or 16 women as of Jan. 31st 2015)
	● Low percentage of women in full-time positions (7.3% or 857 women as of Jan. 31st 2015)
Target	● By Mar. 31st 2020, increase the number of women in managerial positions by 2.5 times the number as of Jan. 2015
	● By Mar. 31st 2020, increase the number of women in managerial positions by 1.3 times the number as of Jan. 2015

Together with employees

Enhancement of the dual support system

JTEKT is exerting efforts to support all employees, regardless of gender, to balance child-raising or caregiving with work. To this end, we are enhancing the systems and creating workplace environments in which employees can easily utilize such systems.

Overview of dual support system



Description of major schemes

Parenting leave [revised in FY2015]		Available until child turns one. (if unable to secure spot in daycare center, can be extended until the child turns 2)
Mom & Dad Child Care Leave Plus		Available until child is 14 months old if both parents take parenting leave.
Shorter working hours for parenting [revised in FY2015]		Parents can shorten the hours they work in one day until March 31st in the year that the child completes grade 2 of elementary school.
Daycare support [revised in FY2015]	Aichi prefecture	Four Toyota Group companies jointly operate Cooperative nursery school "Tacchi House" primarily concentrated in the Mikawa region of Aichi prefecture. Tacchi House provides a childminding service during company operational hours.
	Other regions	If parents work on public holidays, a room in the workplace is used by a professional to provide child-minding services. * Available at Nara Plant and Kokubu Plant as of March 2017
Babysitter subsidization scheme [revised in FY2015]		Employees can arrange babysitters for their children subsidized by the company when they have work commitments. The company covers 50% of babysitting costs with an annual limit of 240,000 yen/person
Family care leave		A total of 365 days leave available for each family member in need of care. (Able to be broken into a maximum of three periods)
Shorter working hours for family care		Able to acquire up to two times within three years of first using the system for each family member requiring care.
Comeback support system		A system where employees who have had no choice but to resign due to their spouse being transferred or the need to care for a family member can return to work (comeback) if they have registered to do so upon their resignation and their circumstances allow it. In principle, this system is available for up to 5 years after resignation.

Number of employees who took childcare leave New!

		2012	2013	2014	2015	2016 (FY)
Number of employees who took childcare leave	Female	28	34	30	34	36
	Male	0	1	1	0	5

*Numbers were counted at a different timing to last year, therefore the figures differ to last year's report.

Number of employees who took family care leave New!

		2012	2013	2014	2015	2016 (FY)
Number of employees who took family care leave	Female	2	1	3	1	0
	Male	1	1	2	2	2

*Numbers were counted at a different timing to last year, therefore the figures differ to last year's report

Together with employees

Reemployment of retired employees

To allow highly motivated retired employees with abundant knowledge and experience to continue working, JTEKT established a post-retirement reemployment system in April 2006. As of March 31st, 2017, 718 people reemployed by JTEKT and related companies were working at various workplaces and training younger employees who will one day become the leaders of JTEKT.

Application of the post-retirement reemployment system in FY2016

Number of those who are applicable			175
Number of applications [a]			157
Number of re-employed [b]	JTEKT	149	157
	Group companies	8	
Rate of employment [b/a]			100%

Provision of training and tools to consider asset building

A re-employment system clarifying expectations and roles was launched in FY2014 aimed at employees who return to work after retirement. In FY2015, an Asset Building Exploratory Labor-Management Committee was established to discuss pre-retirement asset building so that employees may retire with a sense of reassurance. In FY2016, the committee organized an increase in the amount JTEKT contributes to the Defined Contribution Plan and confirmed it would be providing training and tools for asset building aimed at raising employee awareness.

Enhancement of career/life training New!

JTEKT's career/life training used to focus on employees turning 50 and 55 years old, however starting from FY2016, we began incorporating training targeting employees turning 28 and 30 years old. With the aim of providing an opportunity for employees to consider their life plan including their careers, assets formation, health management and knowledge of nursing care, training content is adjusted to suit the target age.

Career/life training participants (FY2016)

Name of training	Target	No. of participants
28 y.o. – Career/life 28 training participants	Skill jobs	197
30 y.o. – Career/life 30 training participants	Administrative jobs	137
30 y.o. – Life 30 training participants	General jobs	10
50 y.o. – Career/life 50 training participants	All employees	347
55 y.o. – Career/life 55 training participants	All employees	216
Total		907

Employment of people with disabilities

JTEKT supports the active participation of employees with disability in the workforce by creating comfortable workplaces and allocating personnel to best suit the characteristics of their individual disability. Moreover, with the retention rates of persons with disabilities not increasing in society as it should be, JTEKT is exerting efforts to help increase this rate by encouraging a good understanding of workplaces and tasks through hands-on training.

Number of disabled persons employed (As of the end of March 2016)

No.of employees with disabilities	300
No.of employees according to legislation	279
No. over or short	+21
Employment rate	2.15%

* In accordance with legislation, employees with severe disabilities are counted twice (as 2 people) in the above table.

[Employee satisfaction improvement] Workplace management questionnaires

Every December, JTEKT conducts a workplace management questionnaire for all employees. In FY2016 as well, we collected comments from employees in both managerial and non-managerial positions at each workplace through questions regarding the "understanding of the workplace mission", "common perception of the upper management policies", and "understanding of the connection between the upper management policies and personal themes", etc. This allowed us to understand management status, such as whether the progress of daily operations is properly controlled and whether company policies are steadily communicated. We aim to create a better workplace by incorporating issues found through this questionnaire into the plan for the following fiscal year.

Confirming the level of satisfaction through morale surveys

JTEKT conducts a morale survey in December each year, along with a workplace management questionnaire, in order to confirm the level of employee satisfaction/dissatisfaction towards the organization and policies, and their associated reasons. Incorporating the results into the plan for the following fiscal year will lead to improvement in employee satisfaction.

Adoption of Cafeteria Plan for benefits

JTEKT has adopted a selection-based benefit program (Cafeteria Plan). Employees can freely select from the benefit menu, including food, travel, and family care, according to points received. In FY2016, the point usage rate was 96.2 percent.

We support our employees in having a fulfilling life through various programs and facilities such as the employee savings scheme, employee shareholding association, dormitories, and gym.

Together with employees

[10-year anniversary activities]

JTEKT Global Tournament

On December 10th, JTEKT held JTEKT Global Tournament at Noevir Stadium Kobe in Kobe city, Hyogo prefecture as the closing event to mark its 10th anniversary. Around 5,000 employees gathered at the venue, including participants from both domestic and overseas group companies. In the first session of the commemoration ceremony, President Agata delivered a speech that reflected on the past decade and expressed determination to take a new step forward. The second session consisted of a participation-based event and anniversary concert. It was a global tournament that enhanced JTEKT employees' feeling of unity.

The "ONE JTEKT" slogan at Noevir Stadium Kobe

Compilation of "JTEKT 10 Years of Making History"

January 2016 marked JTEKT's 10th anniversary since establishment and "JTEKT 10 Years of Making History" was compiled in commemoration of this milestone. It introduces the individual histories of Koyo Seiko and Toyoda Machine Works prior to the merger, and the ten years of history since the 2006 merger. As a special feature, content of a sit-down discussion between the people directly involved in the merger was featured. The publication also included pages introducing JTEKT's No. 1 & Only One products and technologies as well as a section introducing domestic and overseas group companies. This document was distributed to all employees and an English translation provided to overseas group companies. This initiative had the effect of increasing the pride that employees feel towards their company and fostering a sense of unity for the JTEKT group on the whole.

English (left) and Japanese (right) versions of "JTEKT 10 Years of Making History"

JTEKT night game spectating

As a commemorative event of JTEKT's 10th anniversary and with the aim of fostering employee unity, express gratitude to our stakeholders and increase awareness of our company name, JTEKT employees went to pro baseball games together as spectators. This was held on two occasions, one in May at the Hanshin Koshien Stadium when the Hanshin Tigers took on the Chunichi Dragons in the Osaka Contest, and one in July at Nagoya Dome when the same teams faced each other again. Both events were participated in by JTEKT group employees and their families, as well as customers and business partners – totaling approximately 5000 JTEKT-related people. These were special events filled with a sense of unity and many were excited to see Executive Vice President Masakazu Isaka make the ceremonial first pitch, JTEKT's slogan display on the stand and so on.

The "10th JTEKT" slogan at Hanshin Koshien Stadium

Together with employees

Safety and health-related initiatives

Social background

The ISO26000 positions work habits as one of its central themes, and as such safety and health at work has been raised as an issue, and corporate safety and health management has been set in detail. Moreover, according to the Ministry of Health, Labour and Welfare, the number of people who die or take four days or more off work due to work-related injury or illness has reached 110,000 per year and companies are now expected to find feasible solutions to this problem.

The way of thinking by JTEKT

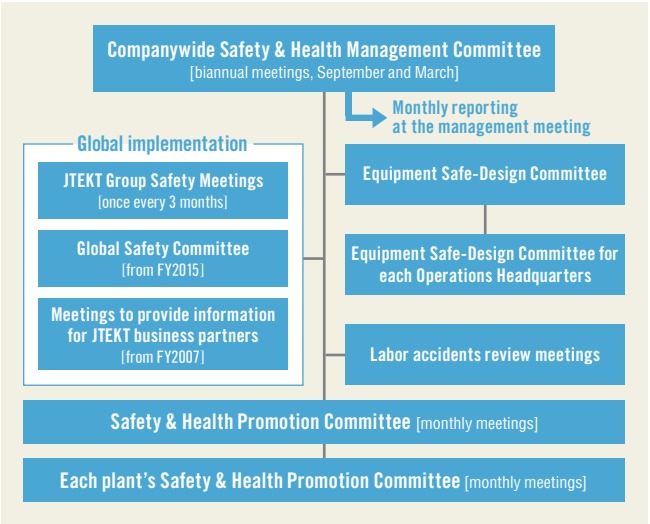
Aiming to create a safe and comfortable workplace environment

All JTEKT employees unite to engage in safety and health activities and create a comfortable workplace environment under our Companywide Safety & Health Policy.

Promoting activities under a centralized control system

In order to systematically and consistently promote the formation of a safe and comfortable workplace environment, we established a Companywide Safety & Health Management Committee and have formed a centralized control system which covers group companies both in Japan and overseas. JTEKT is rolling out its safety and health activities on a global scale.

Safety, health control system



Main activities FY2016

[JTEKT's safety activities]

Activities based on the safety & health management system

By FY2007, 11 plants and the Higashi-kariya Operation Center had acquired "JISHA OSHMS Standards Certification", certification by the Japan Industrial Safety & Health Association concerning occupational safety and health management systems with an emphasis on risk management. Since then, activities have been ongoing in accordance with the management system. In FY2014, the Sayama Plant also acquired certification.

JISHA OSHMS Standards Certification

FY2016	Updated at Nara Plant, Toyohashi Plant, Hanazono Plant, Tadomisaki Plant, Higashikariya Operation Center and Tokushima Plant
FY2017	Scheduled to be updated at Sayama Plant, Kokubu Plant, Kagawa Plant and Kameyama Plant

Aiming for zero work-related accidents

▶ Figure-01

At JTEKT domestic plants and operation centers, we continuously promote various safety and health activities aimed at achieving zero work-related accidents. Such activities include establishing Major 6 accidents (*1) which can easily lead to death or impairment and the establishment of Safety DOJO (*2) to prevent work-related accidents through improving work and equipment. Since FY2011 we have placed particular emphasis on countermeasures for "accidents caused by skipping machine-stop"(*3) and continued in FY2016 to focus on eradicating these as an issue of utmost importance. As a result, we were able to reduce the number of failure-to-stop accidents from 9 in FY2015, to 5 in FY2016; however unfortunately, we were unable to fully eradicate them. Also, pedestrian accidents seem to be increasing but the total number of accidents has decreased (no. of lost time accidents has also fallen). We are working to thoroughly identify the reasons for such accidents and achieve our Safety Vision of "Safety First" - JTEKT should eliminate all the accidents. by accelerating our efforts in developing safety personnel and safe workplaces. In FY2017, we will aim to halve the total number of accidents from a year earlier.

*1 **Major 6 accidents** Accidents arising through pinching/entanglement, heavy objects, vehicles, falling, electric shock and hot surfaces.
*2 **Safety DOJO** A place where accidents on actual machinery are simulated and employees learn the importance of observing work rules through physical experience.
*3 **Accidents caused by skipping machine-stop** Accidents which occur when troubleshooting or repairs are conducted without stopping the machine tools.

"Safety Vision" as the pillar of safety activities

"Safety First"
- JTEKT should eliminate all the accidents.

● Safety takes priority over everything
● Strong ambition for ZERO accidents ● Aiming for ZERO risks

We need to become a company which employees and their families are happy with and proud of.

Safety personnel	Safe workplace
① Can protect him/herself	① Equipment is intrinsically safe
② Does not let others get injured	② 4S is continuously and actively carried out
③ Improves unsafe actions and conditions	③ The workplace is improved on a daily basis

Together with employees

Figure-01

[Safety activities of domestic group companies]

Held Domestic Group Safety Meetings

Continuing on from last year, safety meetings were held every three months. With the venue changing to a different company each time based on a system of rotation, these meetings were opportunities to confirm safety activities of the company where the safety meetings were held, extract hazards through shop floor patrols, exchange opinions and deploy countermeasures. In addition, major items (refer to S_18 FY2016 Safety Activity Summary) were shared and engaged in by the entire group.

Small group activities and special support activities New!

Domestic group companies were divided into six small groups for each region and these groups met every two months. On such occasions, participants conducted shop floor patrols of each other's premises, extracted issues then established and implemented countermeasures. Moreover, focused support was provided for companies with frequent accidents in the form of the designated JTEKT responsibility confirming the progress of safety activities each month, as well as conduct local safety patrols and extra any issues. As a result of these initiatives, the total number of accidents for the entire domestic group was slightly less than the previous financial year. However, incidents continue to be frequent, therefore the entire JTEKT group will exert greater effort in developing safety personnel and safe workplaces moving forward.

Figure-01

[Safety activities of overseas group companies]

Global safety meeting

Since FY2015, JTEKT has been holding global safety meetings with the aim of having all JTEKT companies unite in the pursuit of safety through information exchange with overseas group companies and mutual stimulation. The second of these meetings was held on July 12th at Wiz, JTEKT's Corporate Pension Fund Hall in Kariya city, Aichi prefecture. The four presiding companies for each region participated in this meeting to discuss the status of initiatives for development of safety personnel and creation of safe workplaces, then participated in tours of Kameyama and Toyohashi Plants specifically to observe safety activities.

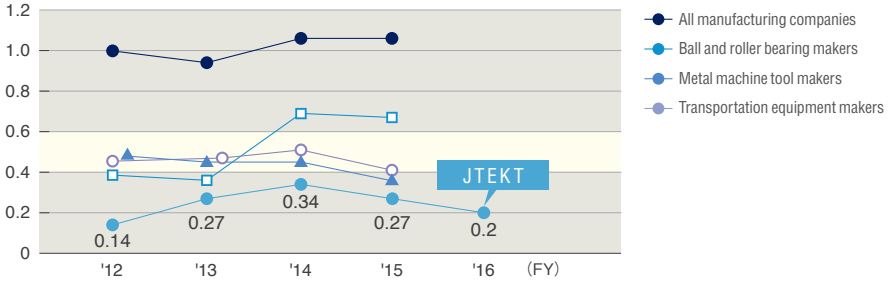
Improving safely level on a global basis

Regarding the status of work-related accidents occurring at overseas group companies, 26 accidents occurred in 2016, compared to a total of 96 accidents in 2011. However, accidents caused by skipping machine-stop are still rising, as they have since 2012, demonstrating that overseas group companies faced the same problem as JTEKT domestic group companies. We will proactively assess conditions using the *genchi genbutsu* approach and implement support activities in order to raise the safety level globally and achieve zero accidents across JTEKT.

Figure-01

Change of industrial accident frequency rate

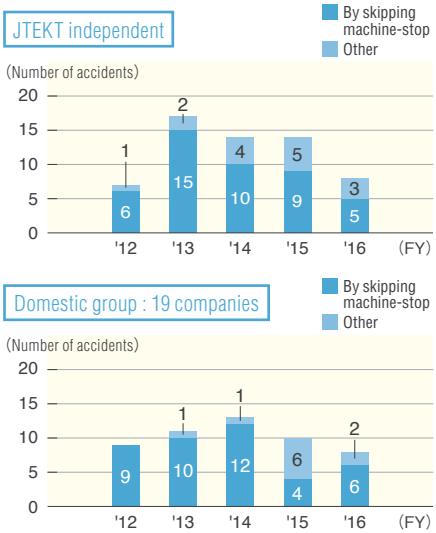
[Lost time accident rate] ✻ The FY2016 section of the graph only shows the lost time accident rate for JTEKT.



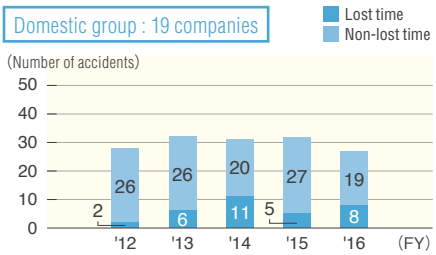
$$\text{Lost time accident rate} = \frac{\text{Number of lost time accidents}(*)}{\text{Total work hours}} \times 1 \text{ million}$$

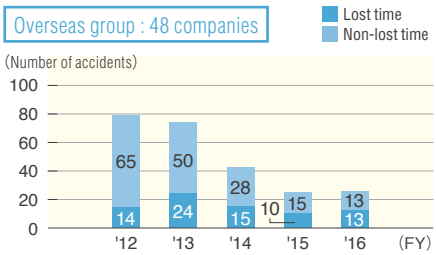
* **Lost time accidents** JTEKT defines lost time accidents as work-related accidents resulting in work absence of 1 day or more.

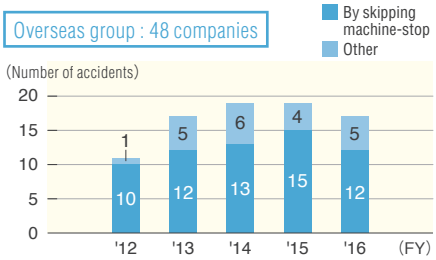
Trend of the Major 6 accidents



Trend of total number of accidents







✻The consolidated management scope differs between the Safety & Health Activities Report and Environmental Report. As such, the number of group companies in individual graphs also changes.

Together with employees

Summary of safety activities for FY2016

Major items

- Eradication of frequently-stopping equipment
- Promotion of red equipment (*1) countermeasures
- Safety personnel evaluations (*2)
- Full participation safety patrols
- Refresher training for troubleshooting
- Job risk assessment

Promotion of various equipment countermeasures

- Red equipment countermeasures: Completed for 2,921 machines
- Frequently-stopping equipment countermeasures: Completed for 2,315 machines
- Oil-leak countermeasures: 1,832 machines

Created workplaces where safety awareness is shared and workers warn each other about unsafe behavior

- Reinforced safety checks using the pointing and calling method, targeting 100 percent execution.
- Promoted proposals for near misses (*3).

→ Countermeasures were completed for all 103,464 proposals.

- Promoted training in Safety DOJOs and shop-based Safety DOJOs (*4).
- Conducted an actual-condition assessment through a safety diagnosis by DuPont.

Global deployment

- Rolled out domestically deployed items to our overseas group companies.

→ Held investigations when accidents occurred and promoted countermeasures.
Promotion of countermeasures for equipment with oil leaks
Safety personnel evaluation
Eradication of frequently-stopping equipment
Promotion of red equipment countermeasures

***1 Red equipment** Equipment without covers which still have the risk of trapping hands.
***2 Safety personnel evaluations** Individual employees conduct a self-assessment to confirm their own level as safety personnel and strive to achieve higher in this area.
***3 Near misses** A safety and health activity involving gathering and sharing of information on near misses and the devising of reoccurrence prevention measures.
***4 shop-based Safety DOJOs** A Safety DOJO targeting risk sources and equipment specific to a certain workplace or production line.

My CSR

Hiroshi Watanabe
Safety & Health Control Dept.

For all employees and their families

The Safety & Health Control Dept. promotes the development of “personnel strong on safety” and “workplaces where employees can work with a sense of security by preventing work-related accidents, traffic accidents and fires”. Even one accident can cause grief for not just the employee(s) involved, but also their family and it could sometimes even ruin a person’s life. JTEKT constantly listens to the voice of our workers and sometimes take an iron-fist approach to create a safe and secure workplace for all and aim for zero accidents.

Improving awareness and knowledge through safety & health education

One of the key requirements of workplace safety & health activities is the planned implementation of education and training. Our main forms of education are rank-based training based on job level and special training based on job type, while our main forms of training are Training named “4R” for safety awareness (*5), danger-sensing training, and skill training.

***5 Training named “4R” for safety awareness** KYT stands for Kiken (danger), Yochi (recognition), and Training. The term “4R” means “4 rounds.” This is danger-recognition training through 4 phases.

Main training types (number of attendees in FY2016)

Rank-based training	Safety management training	99
	Group Leader training	85
	New employee training	157
	Training Center student training	78
Special training	Grinding wheel replacement	78
	Low-voltage handling	78
Others	All-Toyota training for those overseeing outside workers	545
	All-Toyota training for those overseeing construction	138
	Elevated-work training	769
	Electric shock prevention training	645
	Education for risk assessment trainers	372
		3,044

[Creating a comfortable workplace environment]

Workplace noise countermeasures

JTEKT has been engaging in improvements to eliminate all Noise Level 3 Classification areas (90 dB or higher) however has still not succeeded in achieving this goal. We are promoting improvement activities as per plan, without delay.

Creating a workplace environment considerate of senior and female workers

In order to promote the creation of a workplace environment considerate of senior and female workers, JTEKT introduced our own original ergonomics assessment in FY2015 and has rolled this out to all domestic plants. From FY2016, we have been implementing improvements.

Improving high temperature workplaces

From the perspective of worker protection, JTEKT revised work environment measurement standards and began WBGT-based (*6) assessments in FY2010. JTEKT’s index is WBGT 30°C. We will continue implementing countermeasures in FY2017.

***6 WBGT (Wet-Bulb Globe Temperature)** An indicator incorporating humidity, radiant heat and temperature, which significantly impact a person’s heat balance. Calculated using dry-bulb temperature, wet-bulb temperature and globe temperature.

WBGT (Wet-Bulb Globe Temperature) calculation method

Outdoors: WBGT = 0.7 × wet-bulb temp. + 0.2 × globe temp. + 0.1 × dry-bulb temp.
Indoors : WBGT = 0.7 × wet-bulb temp. + 0.3 × globe temp.

Together with employees

Health-related initiatives

Social background

With the ongoing increase in national health cover fees and decline in productive population, the health maintenance of employees can be interpreted from a company management perspective, and an increasing number of companies are incorporating the strategic concept of "healthy companies." Moreover, according to the Ministry of Health, Labour and Welfare, the number of people who suffered from mental health issues due to highly stressful jobs and were recognized as eligible for workers' compensation grew to almost 500 in FY2016 which is the highest since the survey began in 1983. Mental health measures by companies have become a matter of extreme importance.

The way of thinking by JTEKT

Promoting healthy minds and bodies for every employee

JTEKT values the health of each and every one of its employees and as such, conducts health management activities so that employees may enjoy and go about their daily work with vitality. As an initiative to promote healthy minds and bodies, we proactively promote mental health activities and activities for the prevention of lifestyle-related diseases.

Main activities FY2016

[Achieving mental health]

Further strengthening and promotion of mental health measures

▶ Figure-01

In FY2016, JTEKT continued to promote mental health measures which focused on preventing depression however in the end, there was an increase compared to last year of employees in twenties and forties taking time off work for the first time. For people in their twenties, we realized that there were many cases in which employees in their first three years with the company developed depression. One reason why people in their twenties are believed to be susceptible to depression is because they have just begun life on their own and lack support from people around them, therefore can become emotionally unbalanced. Causes for people in their forties include environment changes due to personnel shuffles, etc. and emotional issues triggered by interpersonal relationships with supervisors, colleagues, etc. In FY2017, we will reflect the results of FY2016 and promote training to improve an individual's ability to deal with stress as well as improve management-level employees' ability to notice unusual changes in their subordinates' behavior.

Implementation of stress checks

JTEKT conducts stress checks as part of health checkups so that employees may be aware of their own stress levels and know their level of psychological burden. People found to have high stress levels have the option of receiving face-to-face counseling if they require it. Of the employees found to have high stress levels, 168 requested to speak with a welfare worker before seeking medical advice from a doctor, while 5 employees requested to medical advice from a doctor immediately. Of the reasons for high stress, the highest at 40 percent was interpersonal relationships, followed by 25 percent "feeling burdened by their work", 20 percent stating their individual ability to handle stress was too low, and 15 percent stated "Other, family issues, etc." JTEKT believes that improving interpersonal relationships in the workplace is an important factor of improving mental health.

Workplace improvement activities based on stress check results

▶ Figure-02

In order to ascertain stress levels in one's own workplace and leverage this to make improvements, employees performed stress checks at their workplaces. The results are fed back to the division head. Regarding the evaluation per department in FY2016, Rank A workplaces (workplaces full of positive energy) had doubled, however Rank D and E workplaces (where stress is being felt) had decreased compared to the past three years, indicating a favorable trend overall. However, due to the increased number of employees taking time off work for the first time due to mental health-related issues, JTEKT believes the degree of stress ranges from high to low even within the same department depending on section and unit. In FY2017, we will conduct stress check analyses using a smaller unit so that we may establish more fine-tuned countermeasures.

TOPICS

Certified as a 2017 Excellent Health Management Company (Large-scale Company Category White 500)

In February 21st, JTEKT was certified as a 2017 Excellent Health Management Company (Large-scale Company Category White 500). This is a certification scheme promoted jointly by Japan's Ministry of Economy, Trade and Industry and NIPPON Kenko Kaigi (*1). whereby companies with notably superior health management are selected and commended. JTEKT's proactive initiatives to promote both the mental and physical health of employees were regarded highly, leading to this year's certification. JTEKT's next goal is to be selected as a "Health Management Brand" (*2) by the year 2020.

2017 健康経営優良法人 Health and productivity ホワイト500

***1 NIPPON Kenko Kaigi** A group established to conduct effective activities aimed at extending the healthy life of all Japan's citizens and realizing appropriate medical care through collaboration between civilian organizations and with the full support of government bodies.

***2 Health Management Brand** As part of promoting healthy companies, the Ministry of Economy, Trade and Industry is working together with the Tokyo Stock Exchange to select companies strategically engaging in the health management of employees from the perspective of business operations as "Health Management Brand".

Together with employees

Held mental health training

JTEKT provided mental health training as part of the rank-based training targeting newly-appointed managers and supervisors. Mental health training comprised of the following components; understanding and dealing with mental disorders, how to listen to others, how to cope with personal stress, assertion (*1) and so on. Moreover, compliance training targeting all employees in managerial positions raised the theme of "Anger management for prevention of power harassment."

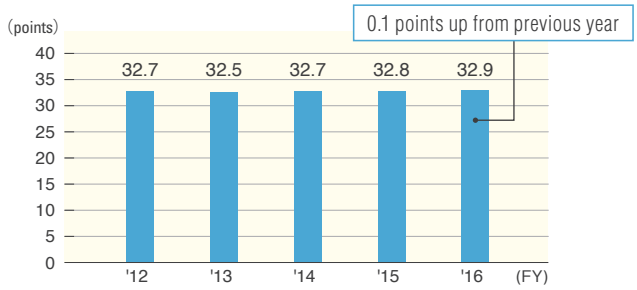
*1 **Assertion** The skill of frankly conveying to another person on the spot one's thoughts and feelings using appropriate expressions while respecting the other person's thoughts and feelings.

Support for employees taking time off work due to mental disorders in returning to work

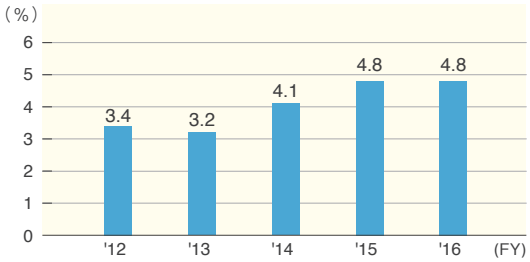
JTEKT supports the return of employees taking off work due to mental disorders, based on the Guidelines for Maintaining and Improving Workers' Mental Health established by the Ministry of Health, Labour and Welfare. Our return to work support program focuses on reoccurrence prevention and cooperates with external organizations such as vocational centers for persons with disabilities. The reoccurrence rate dropped from 0.34 percent in FY2009 to 0.24 percent in FY2016.

Figure-01

Transition of average stress levels (*2)

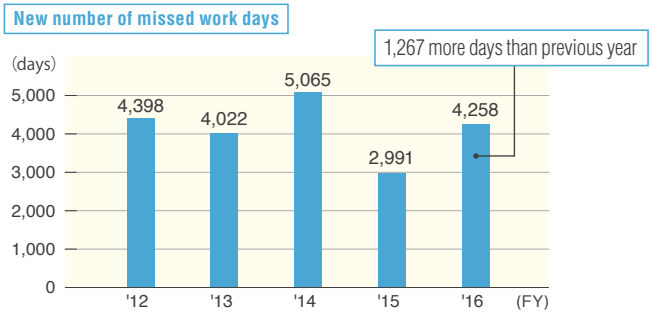


High-stress individual ratio yearly transition (*3)

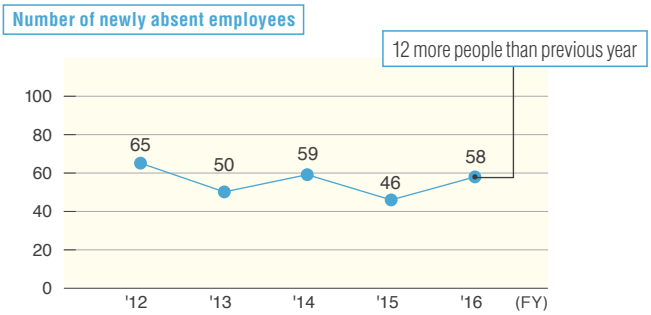


Number of work absences due to mental disorders

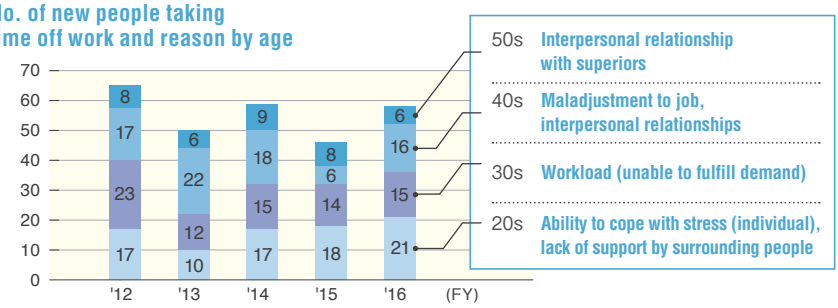
New number of missed work days



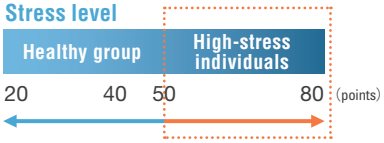
Number of newly absent employees



No. of new people taking time off work and reason by age



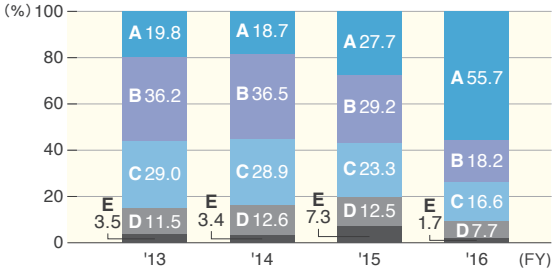
Stress level



*2 **Stress level** Stress level = depression scale. Indicates the mental state and stress at the time the survey was conducted. Individuals with a stress level of 50 points or over are classed as "high-stress". Individuals with 60 points or over are suspected of suffering from depression.

*3 **High-stress individual ratio** Number of high-stress individuals against the total number of employees who submitted stress surveys.

Figure-02 Stress check results



Ranks

- A Extremely good (workplaces full of positive energy)
- B Good (lively workplaces)
- C Normal
- D Poor (workplaces where stress is felt)
- E Extremely bad (high stress levels. Workplace improvement is necessary)

Together with employees

Establishment of "Health Day" New!

JTEKT has established a "Health Day" for each month in order to enhance employee awareness and interest in health. Each Healthy Day raises a theme suited to the season and company events and health-related materials are circulated.

Circulated "Health Day" material

Implementation of a "one word from each person" activity

As part of creating workplace with a positive atmosphere, JTEKT has been promoting an activity where everyone gives a few remarks according to a monthly theme during morning or afternoon workplace assembly. The aim of this activity is to create an opportunity for sharing each other's feelings and speak directly with one another in order to vitalize workplace communication.

Trend of excessive work measures

It is a company's obligation to have employees working long hours interviewed by a doctor to ensure health maintenance. During the interview, an industrial physician checks the employee's degree of fatigue and work situation. Employees diagnosed to have accumulated fatigue are given guidance on overtime work restrictions for the next month and on lifestyle.

Awareness activities

There is a high possibility that excessive work may lead to cerebral vascular disturbance and ischemic heart disease. As such, JTEKT took into account the health risks related to working long hours and engaged in awareness activities which emphasize points to observe concerning "correction of frequent overtime, working weekends, and non-stop working stretches" and "assessing and controlling work time". As a result, we were able to significantly reduce the number of employees in managerial positions who received long-hour worker health checkups in FY2016. However, unfortunately the number of general employees who received the long-hour worker health checkup rose. In FY2017, we will continue engaging in activities to make duties more efficient and improve management methods of equalization countermeasures and long hour workplaces.

Transition of number of employees receiving checkup for working long hours

Managers		Staff	
FY2012	Approx. 2,523 (Average : 210/month)	FY2012	Approx. 1,563 (Average : 130/month)
FY2013	Approx. 2,767 (Average : 231/month)	FY2013	Approx. 1,753 (Average : 146/month)
FY2014	Approx. 3,004 (Average : 250/month)	FY2014	Approx. 2,312 (Average : 193/month)
FY2015	Approx. 4,451 (Average : 371/month)	FY2015	Approx. 1,854 (Average : 155/month)
FY2016	Approx. 2,408 (Average : 201/month)	FY2016	Approx. 2,088 (Average : 174/month)

*Health checks for employees who work long hours apply to employees who have worked over 45 hours of overtime a week for 3 months consecutively, including management and general employees as well as employees who have worked over 70 hours of overtime in a single month.

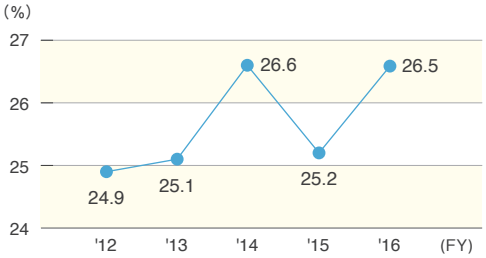
[Achieving physical health]

Reducing the risk of lifestyle disease

Beginning with lifestyle-related diseases, we focus on the prevention, early detection and early treatment of illnesses, and actively support the health management of our employees. With BMI (*) as one index to measure the risk of contracting a lifestyle disease, JTEKT established the goal of reducing the percentage of employees with a BMI of 25 or higher (excluding fixed-term employees) to 20% or less and are engaging in various activities towards achieving this.

***BMI** BMI is calculated by dividing body weight (kg) by height (m) squared. The Japan Society for the Study of Obesity (JASSO) stipulates that people with BMI of 25 or higher are obese.

Percentage of employees with BMI 25 or higher

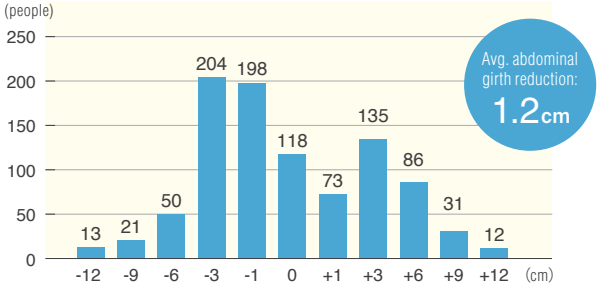


Special health guidance New!

The program that JTEKT began in 2008 for special health checkups and healthcare guidance is gradually taking hold. JTEKT is taking assertive action towards the objective of eradicating metabolic syndrome. In FY2016, the percentage of participants achieving their goal improved from 6.0 percent the previous year to 8.3 percent. Results of evaluations conducted six months from the guidance showed that 288 employees (31 percent) had reduced their abdominal girth by 3 cm or more and, of these, 67 employees had broken free from one of the criteria for diagnosing metabolic syndrome (an abdominal girth of 85 cm or more for men and 90 cm or more for women). On the other hand, there were as many as 264 (28 percent) employees whose abdominal girth increased by 3 cm or more, indicating that, even though participants in the program were aware of the need to improve their physique, they were not following this up by changing their behavior and obtaining concrete results. As such, JTEKT wants to enhance content in the future so that our health guidance may be more effective in realistic terms.

Increase/reduction in abdominal girth of participants in special health checkups and healthcare guidance six months after start

(total no. of participants: 941)



Together with employees

New, overnight stay-based health guidance (Smart Life Stay)

Continuing on from FY2015, JTEKT once again held overnight stay-based health guidance in FY2016 at Kaminoyama city, Yamagata for two nights and three days. This was held twice, once in August and once in October, with President Agata attending the October program. Health awareness of the 22 employees who participated was significantly improved and they are making ongoing improvements to their lifestyles.

Data health plan New!

A data health plan refers to the effective and efficient implementation of health service based on the analysis of medical fees data/health checkup data and in accordance with a PDCA cycle.
With the Japanese government establishing the “extension of healthy life expectancy for people” as one of its major policies, all health insurance associations are expected to establish and implement this data health plan. The department in charge of health promotion at JTEKT works with JTEKT’s health insurance association to roll out health services based on data analysis.
In FY2016, as countermeasures for the growing severity of so-called “lifestyle diseases”, we conducted health guidance aimed at “preventing artificial dialysis due to diabetic nephropathy” and encouraged employees previously found to have health issues to go for examinations.

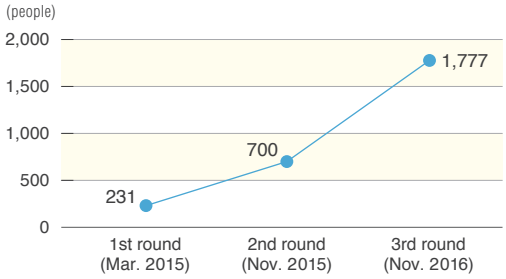
Walking campaign

Figure-01

JTEKT launched a walking campaign in FY2014 in order to provide employees with the opportunity to adopt better daily exercise habits. The third round was held in November 2016. Under the theme of “Base to Base Walking”, participants walked a distance equivalent to the route between individual JTEKT bases with a goal of 10,000 steps per day. Every time, we are improving our planning and operational method of this campaign. In order to further increase the number of participants for the third round, we focused on strengthening the method of raising awareness of the event and incentives as well as introduced a new advance registration scheme and web-based system. As a result, we attracted 1,777 participants, largely exceeding our goal of 1,500. In FY2017, we will verify the effects of the campaign using exercise habits and obesity rate, etc. as indicators.

Company newsletter Posters PC pop up Company intranet

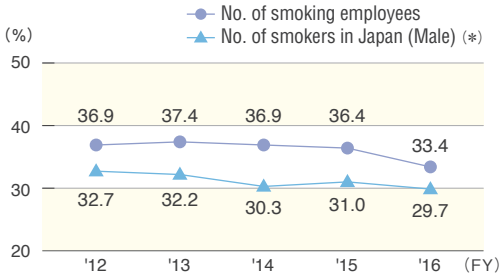
Figure-01 Shift in walking campaign participant no.



Quit Smoking campaign

JTEKT has continuously promoted a Quit Smoking Challenge as an activity to provide those employees who express a wish to quit smoking with full support from medical professionals. This activity aims at reducing the number of smokers working for JTEKT (excluding limited-term workers) to 32 percent or less by the year 2020. In FY2016, we conducted another survey to assess the awareness level towards quitting smoking. In a questionnaire-style survey targeting 3,185 employees, most of which were in managerial positions, the percentage of smokers interesting in kicking the habit had increased significantly from 11.0 percent to 40.7 percent compared with the previous year. JTEKT will continue supporting its employees to give up smoking through the Quit Smoking Challenge, etc. and not simply focus on the individual but also simultaneously take approaches to smoking environments/workplaces so that the percentage of smokers may fall and in order to prevent passive smoking.

Transition of percentage of smokers



*From an investigation by JT

Together with employees

Various data on employees

Item			Unit	FY2014	FY2015	FY2016
Number of employees (Total permanent, fixed-term, part-time, reemployed, and temporary employees)				14,842 (3,724)	14,702 (3,442)	15,393 (3,363)
		Men	People	13,442 (3,157)	13,312 (2,930)	13,898 (2,787)
		Women		1,400 (567)	1,390 (512)	1,495 (576)
Average age				38.9	38.9	39.3
		Men	Age	39.0	39.0	39.4
		Women		37.8	37.9	37.8
Years of employment				15.3	15.4	15.7
		Men	Years	15.6	15.7	16.1
		Women		11.2	11.2	11.2
Number of employees who quit within 3 years of entering the company [permanent employees, seasonal recruits, quitting due to personal reasons]			%	3.68	3.70	2.54
Persons hired [Seasonal recruitment]	Total			309	311	345
	Men			283	280	308
	Women			26	31	37
	Administrative	Total		47	50	55
		Men		26	24	32
		Women	People	21	26	23
	Engineering	Total		89	87	103
		Men		89	86	94
		Women		0	1	9
	Technical	Total		173	174	187
		Men		168	170	182
		Women		5	4	5
Rate of Senior Partner re-employment system application			%	100	100	100
Percentage of employees realizing personal growth (*)			%	32	33	36
Percentage of employees feeling job satisfaction (*)			%	36	37	39
Percentage of employees happy with the company (*)			%	27	28	29
Percentage of employees with a BMI above normal			%	26.6	25.2	26.5
Percentage of smokers			%	36.9	36.4	33.4
Number of incidents reported within the company (corporate ethics consultation desk / harassment helpline)	Total			51	51	45
	Compliance with laws/rules			4	3	4
	HR systems			10	10	6
	Workplace communication			4	2	5
	Sexual harassment-related consultations		Incidents	1	0	1
	Power harassment-related consultations			20	27	10
	Consultations on other forms of harassment			1	2	12
	Health and safety			3	1	1
	Other			8	6	6

*From the workplace management questionnaire (6 options).

Together with local communities

Social background

The importance of participating in and contributing to the local community is one of the seven core themes of ISO26000. The 4th edition of Sustainability Reporting Guidelines (G4 Guidelines) touches on local community development programs based on the needs of local community. As “corporate citizens”, companies are expected to contribute to the local society in a variety of ways.

The way of thinking by JTEKT

“Social contribution activities” as one of the Corporate Activities Standards

One of JTEKT’s Corporate Activities Standards is “As a good corporate citizen, aggressively pursue activities that contribute to society.” The Social Contribution Working Group under the CSR Promotion Committee (which changed its name to “Council for Enhancement of Corporate Value” in March 2017) leads in expanding a variety of social contribution activities, supported by activities rooted in the local community, proactive individual activity towards building nature and culture, and activities to support the affected areas of the Great East Japan Earthquake.

What we want to achieve

▶ Figure-01

JTEKT promotes activities for social contribution as a good corporate citizen, with the aim of developing alongside the local community.

For activities befitting JTEKT, each base actively interacts with their local communities, aims to solve regional issues and engages in actions rooted in the local community.

Main activities FY2016

[Communication]

In FY2016, there were a total of 655 cases of social contribution activities (of which 129 were new) reported by domestic bases. At JTEKT, we believe that identifying the needs of the community through interacting with its members is the first step in achieving activities rooted in the local community therefore community discussions, plant festivals, etc. were held at each base to deepen communication with the region.

Holding community discussions at all plants

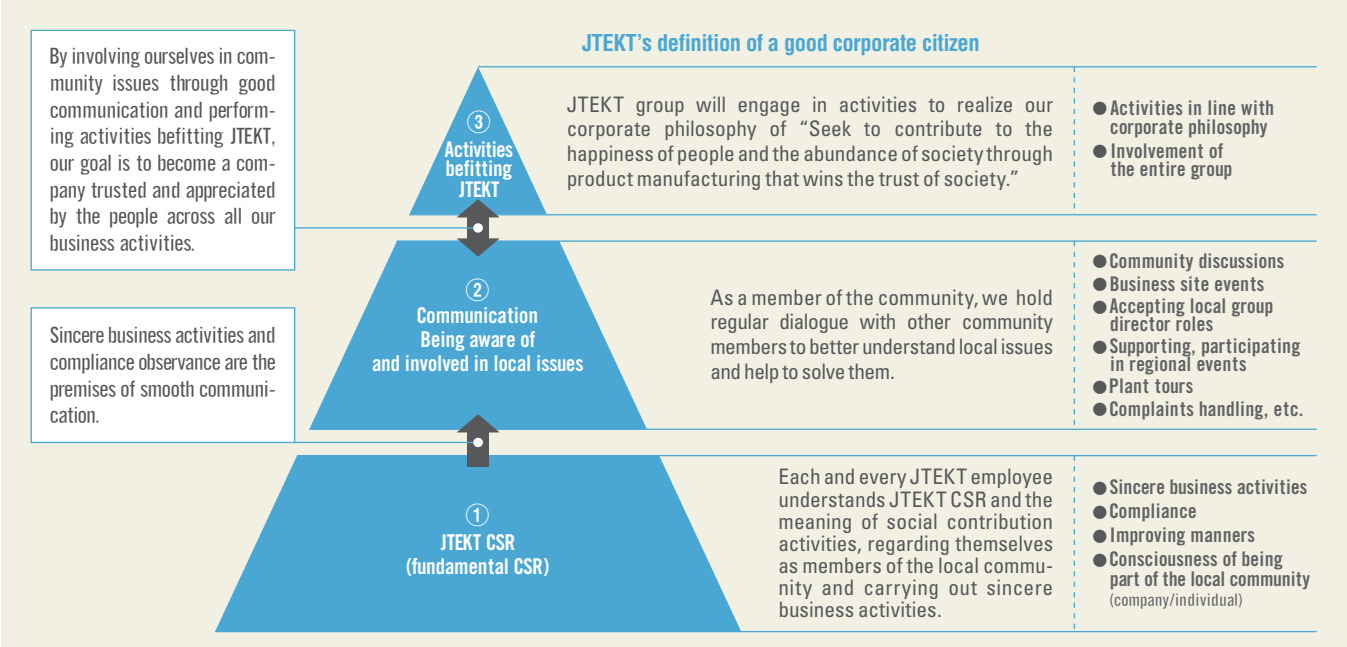
We periodically invite local government officials and community members to participate in community discussions at each plant and operation center. At these discussion sessions, we report achievements and exchange opinions concerning environmental conservation activities, and conduct plant tours, etc., to build a good relationship with the local community. During FY2016, sessions were held at all 13 domestic plants.

E_10・21 Related article

Community discussion at Kokubu Plant

Community discussion at Tadomisaki Plant

▶ Figure-01



Together with local communities

Deepening friendships through plant festivals

Each of JTEKT's plants and operation centers hold festivals every year, with stage shows, games, employee-run stalls and more. The aim is to promote friendship between employees, families and the local community. Festivals were held at 10 plants and at the Higashikariya Operation Center in FY2016, counting a total of 8,037 visitors.

The festival at Okazaki Plant. Part of the profits from stall sales was used to donate road safety goods to the Civic Safety Department, Okazaki city office.

Various forms of communication with the community

In addition to community discussions and plant festivals, JTEKT is deepening its communication with the community through various forms.

Introduction of activities

Support for the Tokushima Marathon 2017 New!

Tokushima Plant

Seven JTEKT employees from our Tokushima Plant volunteered to help run the Tokushima Marathon 2017 held on March 26th. These employees provided salt at the water stations along the marathon course. The employees involved expressed their desire to proactively participate in activities that could contribute to the community again in the future.

Employees providing salt to runners at water stations while cheering them on.

Introduction of activities

Donating drop curtain and light truck to communities New!

Daibea Co., Ltd.

Daibea is a bearing manufacturer with its head office and Izumi Plant located in Izumi city, Osaka prefecture and its Nabari Plant located in Nabari city, Mie prefecture. The company was established in February 1936. In 2016, as commemoration of 80th anniversary in business, it has donated a drop curtain to Izumi city and a light truck to Nabari city.

The drop curtain is used by Minami Matsuo Hatsugano Elementary and Junior High School in Izumi city.

The light truck is used by Nabari city hall.

[Nurturing of young community members]

Through activities such as *monozukuri* classes and sporting events, JTEKT contributes to the nurturing of young community members.

JTEKT held *monozukuri* classes at schools and children-orientated events to teach children about car parts, etc.

A visiting class at Sakurai Minami Elementary School, Sakurai city led by employees from Nara Plant. The children wrote reviews on the class, saying that they thought it was a valuable experience to see an engine up close.

For the first time, JTEKT participated in Kids Engineer 2016 held at PACIFICO Yokohama. Children learnt about the functions and mechanisms of various car parts.

JTEKT STINGS (a men's volleyball team) held volleyball lessons in the regions throughout Japan where JTEKT has bases.

A costumed mascot participated in the lesson held at Hamura city, Tokyo.

Using body language to passionately give guidance to students with disabilities at Aichi Prefectural Okazaki School for the Hearing Impaired.

Giving guidance to around 100 elementary school students from prefectural schools at JTEKT Arena Nara.

S_04 Related article

Together with local communities

Introduction of activities

Supporting nearby schools from various aspects New!

JSAI (India)

JSAI provided support to nearby schools in the form of flushable toilets, installation of a water filtration unit and library, dispatch of computer teachers, etc. At a gathering by the school to show their appreciation for JSAI's support, heartfelt thanks were expressed by many, including the representative of the village, students and their guardians.

At the gathering of appreciation

Flushable toilet installation

[Welfare support]

JTEKT supports the socially vulnerable, such as sick persons and those with disabilities, in many ways.

Introduction of activities

Ongoing "Once a year, volunteer" activity

All domestic bases

In order to foster a culture whereby all JTEKT employees proactively participate in volunteer activities, JTEKT continued its "Once a year, volunteer" activity again in FY2016 in which it distributes novelty goods to employees who have engaged in volunteer activities. Novelty goods that would contribute to supporting the welfare of people with disabilities or people living in zones affected by natural disaster were chosen.

| Selling bread and sweets at a vocational aid center |

With continuance of our "Once a year, volunteer" activity, an initiative involving selling bread and sweets made at vocational aid centers is growing popular at each base. Through this activity, JTEKT has deepened its connection with the people at vocational aid centers.

Osaka Head Office (multipurpose hall)

East Japan Branch Office (JTEKT ROOM Ginza)

Introduction of activities

A hands-on seminar to increase awareness of welfare

Toyota Branch Office

Following on from previous fiscal year, a hands-on seminar was held again this year in order to increase employees' understanding of disabled peoples' perspectives and way of life as well as interest in their welfare. Two lecturers with disabilities themselves were invited to lead the seminar and a vision impairment booth was set up for employees to see how a guide dog did its duty, read braille, etc., as well as a hearing impairment booth, where employees joined in a gesture game, and tried speaking in sign language.

Expressing one's name in sign language

A guide dog smoothly showing the way

[Road safety]

JTEKT actively promotes a number of road safety activities, including "risho"(*), which is carried out at each of our domestic bases.

* **Risho** A practice unique to Japan where, on the morning of a specific day every month, employees of automotive-related companies promote road safety awareness amongst drivers. This activity aims to reduce the number of road accidents.

Traffic safety activity "risho" at the roads surrounding Higashikariya Operation Center

Introduction of activities

"Dial 110 Day" promoted by Mareka Shidochi New!

Mareka Shidochi, JTEKT's employee and a well-known female wrestler, was designated by the Hokkaido Prefectural Police to be head of the Command and Control Center for a day on January 10th and engage in activities to promote "Dial 110 Day".

Mareka Shidochi
- active in women's wrestling

A mock emergency call response

Together with local communities

[Community beautification]

JTEKT employees actively participated in activities to make the community beautiful and foster harmony with local regions. This activity was carried out at all domestic bases, including plants, head offices and branch offices, in FY2016 also.

Kariya Plant 530 (zero garbage) activity

Higashinihon Branch Office: Gathering of fallen gingko tree leaves in Ginza

Hiroshima Branch Office: Cleanup activity around the office

Nagoya Head Office: Joint cleanup activity with companies around the office

[Harmonization with nature]

JTEKT considers environmentally-orientated social contribution to be of great importance. Each plant and operation center engages in a variety of activities with community members aimed at harmonization with nature.

Kagawa Plant's participation in "Building Kagawa's Vibrant Sea"

→ E_23 Related article

Toyohashi Plant's participation in "Sandy Beach Fureai Walk", an initiative to clean up coastal areas

→ E_23 Related article

[Disaster area support]

It has been six years since the Great East Japan Earthquake, yet devastated areas are still in the midst of recovery and reconstruction. JTEKT has designated the support for disaster areas as a pillar of our societal contribution activities, and our employees continue to participate in support activities. JTEKT also supported the areas devastated by the Kumamoto Earthquake.

Introduction of activities Volunteering at Great East Japan Earthquake disaster areas New!

As part of JTEKT's 10th anniversary campaign, JTEKT employees engaged in volunteer activities in the disaster areas devastated by the Great East Japan Earthquake from the 23rd to the 25th of September. A total of 45 employees participated in various locations around Minami Sanriku town and Kesennuma city, Miyagi prefecture region.

Received expressions of appreciation from faculty members for wiping windows and repairing shoe boxes at a community center.

Cooperated with the Kesennuma Asobiba Community Organization that runs play centers for children by making chairs and desks.

Visited various locations in disaster area while listening to a storyteller and donated flowers at the Crisis Management Department

Introduction of activities Charity caravan supporting disaster areas

All domestic bases

JTEKT ran charity caravans supporting disaster areas at all of its domestic bases as a companywide support activity utilizing the cafeteria menu and vending machines. FY2016 was the fourth year of this initiative and a total of 3,401,851 yen was raised in donations. The money raised was donated to ten volleyball teams at six schools in Kesennuma/Minami Sanriku and Kesennuma Asobiba Community Organization as support for their activities.

Donations

FY2013 → 2,314,976 yen
FY2014 → 2,620,525 yen
FY2015 → 3,302,973 yen
FY2016 → 3,401,851 yen

\\ Ongoing in FY2017! //

Held at various schools in Minami Sanriku town, Kesennuma city. Received messages of thanks and photos afterwards.

Together with local communities

Introduction of activities

Volleyball class supporting disaster area recovery

JTEKT STINGS

On July 9th, JTEKT STINGS held a volleyball class to support disaster area recovery. This class was participated in by around 100 members of high school volleyball teams in Kesennuma/Minami Sanriku and served to deepen interaction.

This volleyball class is in its 5th year, and has been ongoing since June 2011, when JTEKT held our first class in the disaster area three months after the earthquake and tsunami devastated the region.

TOPICS

Volleyball team members at high school in area receiving JTEKT support begin cleanup activity at closet train station

The boys/girls' volleyball team at Motoyoshihibiki High School, Miyagi prefecture have begun activities under the theme of "contributing to the community" after discussing amongst themselves what they can do as a show of appreciation to JTEKT for the money we donate towards supporting their activities and providing volleyball classes. Currently the team members engage in a cleanup activity around their closet train station, JR Motoyoshi Station once a week. JTEKT received a letter from the team members which read "While receiving your support, we renewed our awareness of the importance of doing something not for yourself, but for the benefit of others, and this was our opportunity to start some form of activity that would contribute to our community."

Introduction of activities

Participation in "Heart-Warming Sport Projects" New!

"Heart-Warming Sport Projects" are projects whereby athletes are dispatched to schools in the regions affected by the Great East Japan Earthquake in order to support their emotional recovery and contribute to restoration and recovery.
This project is sponsored by the four organizations of the Japan Sports Association, Japanese Olympic Committee, Japan Football Association and Japan Top League Alliance. As part of "Keep-Smiling Sport Experiences" - one initiative of this project – former JTEKT STINGS member, Shiro Furuta (at the time) taught a lesson at Kuji City Ookawame Elementary School in Iwate prefecture on August 24th.

After having the kids engage in physical exercise, Mr. Furuta talked about his own experiences and conveyed the importance of striving towards ones' dream.

Masayuki Kubota
CNK Co., Ltd.

My CSR

Community contribution activities participated in by all employees

CNK proactively engages in a companywide activity aimed at protecting the environment. In concrete terms, CNK's Environmental Committee regularly meets and rolls out activities for energy-saving, resource-saving and community contribution. In the resource-saving activity, all departments enforce waste separation and waste quantity control. In the community contribution activity, all CNK employees engage in weeding around the parking lot, cleaning public roads, etc. on a monthly basis. CNK wishes to continue these activities and have its employees constantly encourage one another to contribute to the community.

Atsushi Sagami
Koyo Thermo Systems Co., Ltd.

My CSR

Social contribution activities at one with the community

Koyo Thermo Systems Co., Ltd. is blessed with a lush green environment due to its location at the confluence of Furugawa river and Yamatogawa river in Tenri city. The company is a member of the Environment Liaison Council, City of Tenri, a group established for the purpose of protecting Tenri's natural environment. As part of this, the company engages in river cleanup activities, introduces eco-friendly cooking with minimal food waste and so on. It also engages in regular cleanup activities around company premises. Koyo Thermo Systems will continue contributing to regional society through environment protection activities.

Together with shareholders and investors

Social background

The transparency of company management is scrutinized, making it increasingly important to disclose information in an accurate and timely manner and establish accountability. Moreover, in the financial sector as well, it is becoming more commonplace to emphasize ESG (*1) information when assessing a company's value. Therefore, it is important for a company to be able to balance earning power with business sustainability.

***1 ESG** The first letters of "Environment", "Social" and "Governance". Items a company must consider when rolling out its businesses as corporate responsibility.

The way of thinking by JTEKT

Aiming for highly transparent management

One of JTEKT's Corporate Activities Standards is "Maintain close communication not only with shareholders but also with society at large, disclose corporate information properly, and strive continuously to improve company value." Based on this concept, we guarantee transparent management, and strive to construct a long-term relationship of trust with shareholders and investors.

Main activities FY2016

Information disclosure and IR activities

JTEKT not only observes rules on legislated disclosure and timely disclosure, but also strives to increase the transparency of its management. In addition, in order to deepen understanding of JTEKT and the JTEKT group by shareholders and investors, the company also actively discloses information that is both well-timed and appropriate voluntarily and in a fair manner, through various IR activities.

End-of-period IR results briefing

At the end-of-period IR results briefing for analysts and institutional investors held in May 2017, direct dialogue was had regarding the status of each JTEKT business with the general manager of each business headquarters in attendance. We incorporate feedback received through such dialogue in the annual review and revision (*2) of our mid-term management plan and strive to reflect it in our business activities.

***2 Review and revision** Regularly revising a plan to suit changes in the management environment.

Main IR activities

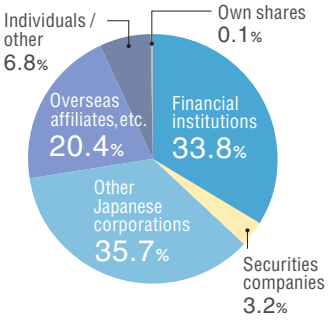
Target	IR activity
Domestic institutional investors/stock analysts	● Hold IR results briefing and small meetings ● Individual interviews ● Conduct plant tours ● Issue of JTEKT Report (integrated report)
International institutional investors	● Individual interviews ● Participate in stock company-hosted conferences ● Issue of JTEKT Report (integrated report)
Individual shareholders/ individual investors	● Notify business reports and summons of General Meeting of Shareholders

Shareholder status

Current as of the end of March 2017, the number of shares issued was 343,286,000 and the breakdown of shareholders is as follows.

→ J_48 Related article

Shareholder distribution status



Financial institutions	116,174	thousand shares
Securities companies	11,154	thousand shares
Other Japanese corporations	122,433	thousand shares
Overseas affiliates, etc.	69,943	thousand shares
Individuals / other	23,307	thousand shares
Own shares	271	thousand shares

As of the end of March 2017
(anything less than 1,000 rounded down)

Business performance and return of profits

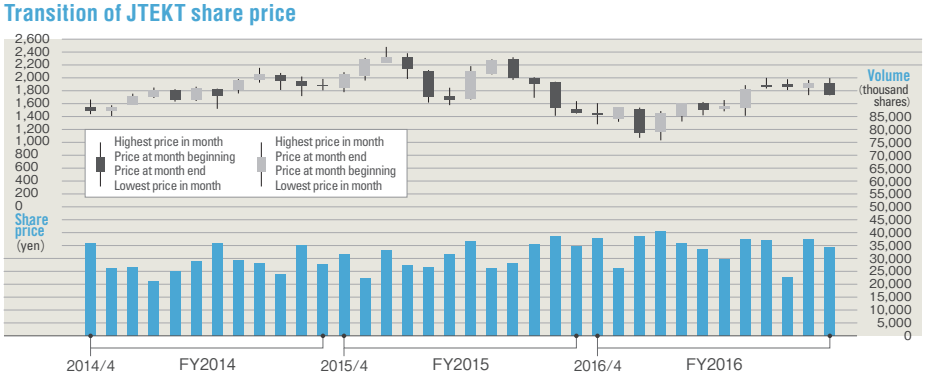
▶ Figure-01

JTEKT considers ongoing stable dividends a basic premise and comprehensively considers performance and payout ratio in order to satisfy the expectations of our shareholders. Based on this policy, the dividend per share for FY2016 was 42 yen, which is equal to last year's amount.

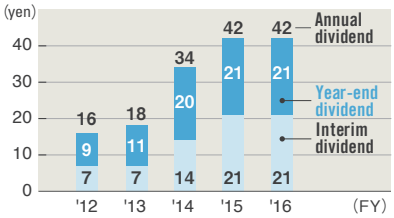
→ J_18・48 Related article

▶ Figure-01

Transition of JTEKT share price



Transition of dividend per share



JTEKT bond ratings

Rating institution	Long-term rating	Short-term rating
Japan Rating Agency	A+	J−1
Rating & Investment Information, Inc	A	

Environmental Report

- The CSR Report 2017 PDF is published with the aim of conveying the concept and activities pertaining to JTEKT's CSR in an easily understood manner. This report emphasizes objectiveness, completeness and continuity.
- Please refer to the JTEKT REPORT 2017 for information about JTEKT's business performance, business activities, planning, and strategy.
- For related articles:

M = JTEKT's CSR Management F = Special Edition
S = Social Report E = Environmental Report
J = JTEKT REPORT 2017

- This section, the Environmental Report, summarizes environmental aspects of FY2016 based on the JTEKT Environmental Action Plan 2020.

Target period and target organizations/scope

Target period

FY2016 (April 2016 - March 2017)
* Some items include content from other periods.

Target organizations and scope

All activities of the JTEKT group

For items for which there is no criteria uniform across the JTEKT group, the unconsolidated results of JTEKT are displayed. As a general rule, if there are changes in the tallying scope, we revise data dating back to the past.

Reference guidelines

- The 4th edition of Sustainability Reporting Guidelines (G4 Guidelines)
- Japan's Ministry of the Environment "Environmental Reporting Guidelines" (2012 edition)
- ISO26000 (International Standard for corporate responsibility)
- A calculation standard stipulated by GHG Protocol Initiative
- Ministry of the Environment and Ministry of Economy, Trade and Industry "General Guidelines on Supply Chain GHG Emission Accounting"

New! This mark is used to indicate new actions begun in FY2016 and information disclosed for the first time in this year's report.

Environmental management	E_01
Environmentally considerate development and design	E_11
Prevention of global warming	E_12
Effective use of resources	E_16
Control and reduction of environmentally burdensome substances	E_20
Biodiversity conservation	E_22
Appendix	E_25

Environmental data for each operation base of the JTEKT group can be viewed on the JTEKT website.

http://www.jtekt.co.jp/e/csr/env_data.html

Environmental management

Social background

Sustainable Development Goals (SDGs) were adopted in September 2015 at the UN Sustainable Development Summit. Of the 17 goals aimed to be achieved by 2030, many are related to the environment. A company's business activities affect the planet environment in various ways. Not only are companies expected to comply with the environmental regulations of each country, but also set targets and policies autonomously and proactively, as well as promote initiatives for conserving the planet environment throughout all business activities.

The way of thinking by JTEKT

For sustainable development of the planet

To realize our Corporate Philosophy of "contributing to the happiness of people and the abundance of society through product manufacturing that wins the trust of society." we as a group have positioned the environment as one of our main management issues and are involved in actions which contribute to the sustainable development of society and the planet. We are greatly aware of the impact corporate activities have on the environment, and are working proactively to tackle matters of high importance.

JTEKT Group Environmental Vision

▶ Figure-01

In March 2011, JTEKT established the JTEKT Group Environmental Vision, comprising of an Environmental Philosophy and Environmental Policy, which sets out our initiatives towards conserving the global environment. We aim to achieve a sustainable society, establishing an action plan and promoting activities to achieve this goal.

JTEKT Group Environmental Vision = **Environmental Philosophy** + **Environmental Policy**

Promotion structure

Under the Global Environmental Conservation Committee

▶ Figure-02

JTEKT has established a Global Environmental Conservation Committee chaired by President and with the aim of implementing environmental management. The Committee sets target values based on company policies, as well as discusses and determines measures, then manages the progress thereof. Currently, in order to flexibly respond to issues relating to business activities, six specialized environmental subcommittees have been established and are proactively working to achieve the goals defined in Environmental Challenge 2050.

Promotion of global environmental management

We are working to further strengthen our environmental management for 19 group companies in Japan, and 38 group companies overseas.

→ E_26 Appendix

Environmental management

Figure-01 JTEKT Group Environmental Vision

Environmental Philosophy

The JTEKT group is aiming for “zero“ environmental burden of business activities and products throughout their life-cycle in order to conserve the global environment for future generations and realize a sustainable society.

Environmental Policy

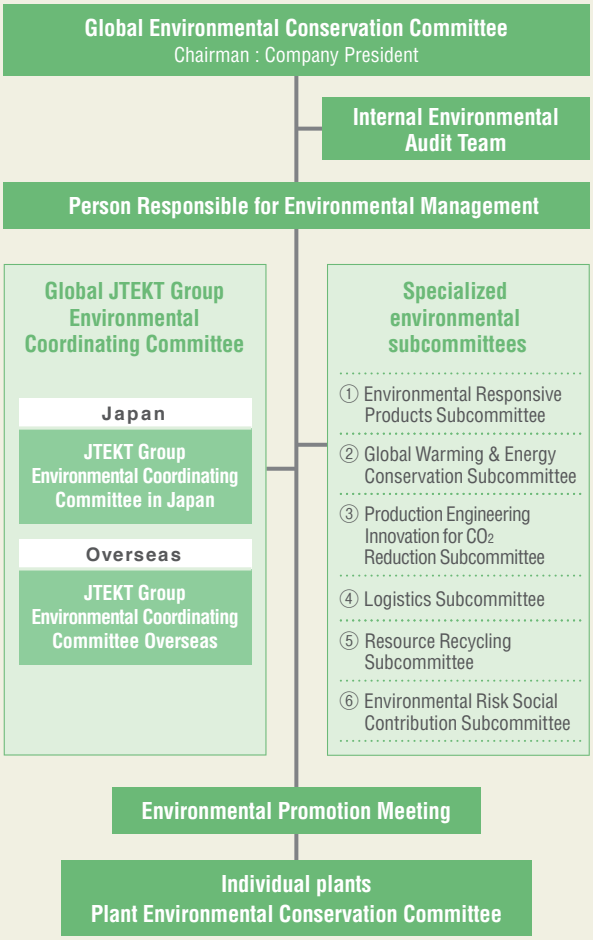
(Date of establishment: January 1st, 2017)

Based on our corporate philosophy, all JTEKT employees share the JTEKT GROUP VISION and JTEKT WAY in promoting global environmental conservation activities autonomously and proactively in accordance with JTEKT's management strategy, including both internal and external issues.

1. Make a continuous improvement in our Environmental Management System to enhance environmental performance.
2. Comply with environment related laws, regulations, treaties, agreements and other requirements related to our business activities. Promote harmony with community environments, maintain/improve environmental conservation and strive to prevent environmental pollution.
3. Conduct environmental management activities designed to the lifecycle of our products, and pursue the following:
   (1) Develop and design environmentally friendly products
   (2) Procure raw materials with low environmental burden, and control/reduce CO_2 emissions, waste and chemicals etc. at every manufacturing stage
4. Protect biodiversity considering of locational conditions of each JTEKT site and establish a society in harmony with nature through ecosystem conservation.

Figure-02 Organizational chart

J_33 Related article



Environmental management

Targets and results

Initiatives of Environmental Challenge 2050

In May 2016, in line with the slogan of "*For future children*," JTEKT formulated and announced Environmental Challenge 2050 as new initiative guidelines to minimize environmental load by the year 2050.

Guidelines of Environmental Challenge 2050

Area	Guidelines
Product/ Technology	Contribute to an environmental society using our capabilities in the development of products and technologies ・Proactively promote development of products, such as parts for fuel cell vehicles, anticipated to contribute to reducing environmental burden.
Creation of a low-carbon society	Minimize the amount of CO_2 emitted throughout the entire life cycle of our products, from material/part procurement to design and manufacture, and even including disposal.
	Minimize the CO_2 emitted from plants when products are manufactured by the year 2050 ・Develop, introduce and diffuse innovative processes and equipment ・Daily improvement and higher efficiency equipment at plants ・Switch to reusable energy, hydrogen energy, etc.
Creation of a recycling-based society	Minimization of discharged materials and expansion of recycling in the production phase ・Implement countermeasures targeting point of origin (improve yield, etc.), improve value of waste material through strengthened separation practices, etc. (creating valuable resources) ・Utilize recycled materials, increase company recycling
	Recycle water used at plants, minimize water consumption Make water cleaner before discharging from plants
Society in harmony with nature, biodiversity	In addition to JTEKT-wide activities, promote activities to achieve society in harmony with nature and protect the ecosystem through collaborating with the Toyota group, government offices and NPOs.
Environmental management	Build a corporate culture and professionals to proactively promote global environment conservation ・Improve employee environmental awareness and develop human resources able to contribute both internally and externally to the company ・Expand environmental activities on a global basis

JTEKT's Environmental Initiative Environmental Action Plan 2020

▶ Figure-01

As part of our effort to achieve Environmental Challenge 2050, in order to promote the JTEKT group and our environment conservation activities, we formulated the Environmental Action Plan 2020 which sets out our initiatives and specific targets, and share this throughout the entire JTEKT group.

In FY2016, JTEKT group's overall global CO_2 emissions basic unit had improved 8.3 percent compared with FY2012, meaning we had accomplished our target. We also reached our target regarding JTEKT's individual CO_2 emissions basic unit, which was 2.1 percent less than last fiscal year (8.3 percent reduction compared to FY2008). Moving forward, we will work on establishing CO_2 emissions targets with scientific basis as our contribution to keeping global temperature rise below 2 degrees Celsius, as decided upon in the Paris Agreement. At the same time, in order to realize Environmental Challenge 2050 formulated last fiscal year, JTEKT is aiming to minimize CO_2 emitted throughout the entire life cycle of its products and is promoting and strengthening activities on a groupwide scale.

Environmental management

Figure-01 Environmental Action Plan 2020

Values in square brackets are comparisons with the base year

Product / Technology

Develop and design environmentally friendly products

Action items	Targets and initiatives	FY2016 results of activities	Evaluation	Related pages
(1) Develop new technology and new products leading to environmental burden reduction	① Evaluate all JTEKT products using the environmental efficiency formula set by JTEKT and aim to improve	(1) Rack parallel type electric power steering (RP-EPS) (2) Next-generation super-low friction torque tapered roller bearing LFT-IV (3) Low friction torque deep groove ball bearing for motors	○	E_11 F_02 F_05 F_06
(2) Promote 3R (reduce, reuse, recycle) design considerate of effective resource utilization	① Design products which are easily recycled ② Reduce resource consumption by making products smaller, lighter and longer-lasting			
(3) Control and reduce environmentally burdensome substances contained in products	① Promote groupwide response to worldwide chemical substance regulations	Response to individual country's chemical substance regulations		
(4) Roll out environmental assessments in the design and development phases	① Promote improvements to product performance and conduct life cycle assessments (LCA)	Contribution to CO_2 reduction through products: 726,000 t		
(5) Contribute to CO_2 reduction through products	① Develop and design environmentally-considerate products which contribute to reducing CO_2 emissions ② Contribute to reduction of CO_2 emissions from product usage by 800,000 t or more by FY2020			

Creation of a low-carbon society

Reduce CO_2 emissions

(1) Reduce CO_2 in production and logistics
- Global reduction of CO_2
- Reduction of CO_2 through improvements to logistics

Production

① Promote CO_2 reduction through daily improvement activities at plants
② Develop and introduce low-CO_2 production technologies through production engineering innovation (Seek to improve productivity, roll-out activities including offices, etc.)

Item	FY2016 target	Results
CO_2 emissions	FY2016 basic unit target × production volume	226,596 t-CO_2 [—]
Emissions by in-house production volume	143.5 t/100 million yen (8.1% reduction compared to FY 2008)	143.2 t/100 million yen [8.3% decrease]
Emissions by global in-house production volume	165.4 t/100 million yen (4% reduction compared to FY 2012)	158.0 t/100 million yen [8.3% decrease]

Logistics

① Reduce CO_2 emissions by improving logistics efficiency and enhancing fuel economy

Item	FY2016 target	Results
Emissions by sales	2.16 t/100 million yen (4% reduction compared to FY 2012)	2.15 t/100 million yen [4.4% decrease]

○

E_07
E_13
～15

(2) Promote reusable energy

① Promote reusable energy that considers the unique characteristics of each individual area and region

(1) Amount of reusable energy introduced: 1,168 kW (cumulative)
(2) Installation of JASI solar power generation (220 kW)

E_14

Creation of a recycling-based society

Reduce waste

Production

(1) Promote thorough reduction of waste through countermeasures focusing on the source of the waste
(2) Achieve Zero Emissions in all JTEKT group plants (JTEKT itself achieved zero direct landfill waste in FY 2009 and is continuing to aim for zero waste production in other areas)

Item	FY2016 target	Results
Emissions by in-house production volume	7.25 t/100 million yen (13% reduction compared to FY 2008)	7.12 t/100 million yen [14.8% decrease]
Direct landfill waste	Zero	Zero
Emissions by global in-house production volume	9.9 t/100 million yen (4% reduction compared to FY 2012)	10.2 t/100 million yen [1.3% decrease]
Direct landfill waste	Accomplishment of Zero Emissions *	Zero

*Make direct landfill waste less than 1% of emissions

○

E_16
E_17

Logistics

(1) Reduce use of one-way packaging material

① Reduce packaging material consumption through simpler packaging, using more returnable containers, etc.

Item	FY2016 target	Results
Emissions by sales	0.78 t/100 million yen (4% reduction compared to FY 2012)	0.77 t/100 million yen [4.9% decrease]

E_18

Effective use of resources

(1) Reduce waste in production

① Reduce stock removal and improve yield through design and technique changes
② Countermeasures targeting point of origin, reduction

(1) Initiatives for reduction of primary material consumption
(2) Initiatives for reduction of secondary material consumption

○

E_16
～18

(2) Reduce water consumption in production

① Promote recycling, water conservation and waste reduction

Item	FY2016 target	Results
Emissions by in-house production volume	1,740 m^3/100 million yen (4% reduction compared to FY 2012)	1,480 m^3/100 million yen [18.7% decrease]
Emissions by global in-house production volume	2,150 m^3/100 million yen (4% reduction compared to FY 2012)	1,140 m^3/100 million yen [49.1% decrease]

E_19

*RP-EPS is a registered trademark of JTEKT Corporation. *LFT(Low Friction Torque) is a registered trademark of JTEKT Corporation.

Environmental management

Values in square brackets are comparisons with the base year

Area		Action items	Targets and initiatives	FY2016 results of activities	Evaluation	Related pages
Society in harmony with nature, biodiversity	Enforce chemical substances controls and reduce environmentally burdensome substances	(1) Reduce environmentally burdensome substances in production activities	① Reduce the discharge and transportation of PRTR substances ・Reduce through promoting substitute materials	Release/transfer of substances subject to PRTR: 40 t	○	E_20
	Biodiversity conservation	(2) Action for biodiversity	① Promote activities based on our Biodiversity Conservation Action Guidelines ② Promote conservation of biodiversity through "connecting activities" in the JTEKT group and across all Toyota group companies	(1) Activity to conserve little tern nesting sites (2) Tree-planting activity		E_22 ～24
Environmental management	Environmental management	(1) Strengthen and promote consolidated environment management	① All affiliate companies to formulate and roll out their individual environment activity plans based on the JTEKT Group Environmental Vision ② Establish strategic environmental management which considers the management issues of business activities	(1) Continued activities with group companies in Japan and overseas (2) Held JTEKT Group Environmental Coordinating Committee sessions	○	E_01 E_02 E_08
		(2) Promote environmental activities in cooperation with business partners	① Promote green purchasing by all parts/materials suppliers ・Control and reduce environmentally burdensome substances included in parts and materials ・Request the creation and operation of environmental management systems ② Promote purchasing of environmentally-considerate products	Expanded Green Purchasing Guidelines		S_05
		(3) Promote sustainable plant activities	① Promote plant greenification and plants which utilize and harmonize with nature	Activity to conserve little tern nesting sites		E_24
		(4) Promote environmental education activities	① Promote environmental awareness education aimed at improving employee environmental awareness ② Promote rank-based education ③ Implement JTEKT Environment Month (June)	(1) Environmental education during Environmental Month (2) Rank-based education (3) Environment hazard prediction sheets		E_10
	Preserve and improve the global environment, forge communication	(1) Enforce preventative measures for environmental problems and observe regulations	① Promote ongoing zero legal violations and complaints from residents by strengthening and improving daily management tasks	(1) Environmental accidents: 1 (2) Held Workshop on Environmental Issues and Near Misses	×	E_09
		(2) Build good relationships with local residents	① Promote environmental conservation activities around plants ② Build good relationships through discussions with local residents and local government	(1) Clean-up activities around plant (2) Held environmentally-related discussions with local community		E_21 S_27
		(3) Proactive disclosure of environmental information and enhancement of communication activities	① Promote release of the JTEKT Report Establish communication with government agencies and local residents ② Improve the JTEKT brand image and external evaluation through proactive disclosure of information	Issued CSR report 2016		S_24

Environmental management

Environmental load caused by business activities

Reduction of environmental load in all stages

JTEKT strives to quantitatively assess overall resource and energy amounts used (input) and amounts discharged into the environment (output) in order to reduce environmental load in all business activity stages.

Resource and energy input versus environmentally burdensome substance output

The table below shows the resource and energy input versus environmentally burdensome substance output for FY2016. In order to minimize the impact of business activities on global warming, JTEKT strives to reduce energy consumption with a focus on those processes with high energy consumption, such as casting, forging, heat treatment and machining.

Resource and energy input versus environmentally burdensome substance output

INPUT

Resource and energy input		
Raw materials (metal, nonferrous metals) **Total:** 399,000 t		■
Resource recycling volume	27,000 t	■
Energy **Total:** 16,712,902 GJ*1		■
Electricity	1,458,481 MWh	■
City gas	43,967,000 Nm³	■
LPG	4,708 t	■
Kerosene	704 kℓ	■
Heavy oil A *2	598 kℓ	■
Water **Total:** 5,543,000 m³		■
Recycled water volume	863,000 m³	■
Chemical substances (amount of substances subject to PRTR *3) **Total:** 117 t		■
Logistics		
Packaging and packing materials	25,000 t	■

Manufacturing

Casting
Forging
Heat treatment
Machining
Painting
Assembling

Products
Automotive parts
Bearings
Machine tools
Mechatronics business

OUTPUT

Environmentally burdensome substance output		
Released into the atmosphere		
CO_2	769,000 t-CO_2	■
SOx	55.2 t	■
NOx	26 t	■
Toluene, Xylene	69 t	■
Other substances subject to PRTR	13.8 t	■
Discharged to waterways / sewage		
Wastewater	4,241,000 m³	■
COD *4	17 t	■
Nitrogen	9 t	■
Phosphorus	0 t	■
Release/transfer of substances subject to PRTR	0.1 t	■
Discharge leaving the company		
Waste	31,000 t	■
Recycling for a fee *5	19,000 t	■
Recycling for profit	147,000 t	■
Transfer of substances subject to PRTR	7.2 t	■
Logistics		
CO_2 emissions relating to product transfer	15,000 t-CO_2	■

■ Tally of the 19 JTEKT and domestic group companies and the 38 overseas group companies
■ Tally of the 19 JTEKT and domestic group companies
■ JTEKT independent

*1 **GJ** Giga-joule (heat quantity unit), G=10^9
*2 **Heavy oil A** Among the three classes (A, B, C) of heavy oil, heavy oil A is the closest to kerosene and is used as fuel for boilers or heating.
*3 **PRTR regulation** "PRTR" is an abbreviation for Pollutant Release and Transfer Register, which is a system created by the government for reporting the amount of chemical substances released or transferred.
*4 **COD** Chemical Oxygen Demand (water quality index)
*5 **Recycling for a fee** A processing fee is payed in order to recycle.

Environmental management

CO_2 emissions for the overall supply chain

Based on guidelines established by the Ministry of the Environment and Ministry of Economy, Trade and Industry (*1), JTEKT calculates then endeavors to reduce the amount of CO_2 emitted through its business activities, including its supply chain, as well as the use and disposal of products sold. Results for the entire JTEKT group in FY2016 are shown in the below table.

→ E_13 Related article
→ E_25 Appendix

*1 **Guidelines established by the Ministry of the Environment and Ministry of Economy, Trade and Industry** General Guidelines on Supply Chain GHG Emission Accounting.

CO_2 emissions for the overall supply chain

Scope (*2)	Emissions ($t\text{-}CO_2$)	Remarks
Scope 1 (Self-produced direct emissions)	111,000	Self-produced emissions through using city gas and other fuels
Scope 2 (Indirect emissions produced by own energy source)	658,000	Emissions produced due to using electricity purchased by JTEKT
Scope 3 (Other indirect emissions)	7,633,000	Emissions produced by related activities such as raw material purchasing, disposal and distribution

*2 **Scope** The calculation scope for greenhouse gas emissions stipulated by the GHG Protocol Initiative which prepares the global guidelines for calculating and reporting greenhouse gas emissions.

Environmental accounting

Assessment of cost and results

▶ Figure-01

By quantitatively assessing the costs and results of environmental conservation, we continue to make both effective and efficient improvements. We use environmental accounting to help familiarize our stakeholders with our environmental conservation activities, and publicly disclose related information. The tally system is in accordance with the Ministry of the Environment's Environmental Accounting Guideline.

Environmental accounting results for FY2016

Environmental conservation costs for FY2016 were 2.5 billion yen in investments and 3.94 billion yen in management costs, adding up to a total of 6.44 billion yen. This was an increase of 950 million yen (17.3 percent) from the previous year. In order to meet our targets defined in Environmental Action Plan 2020, we implemented measures such as the visualization of energy and shift to LED lighting. As a result, environmental conservation costs increased by 1.05 billion yen compared with the previous year.

▶ Figure-01

Environmental conservation costs

(Million yen)

Type	Details	Investment	Cost
[1] Business on-site costs ① Pollution prevention costs	● Service & upkeep of environmental equipment	223	261
② Environmental conservation costs	● Measures for energy conservation	1,174	141
③ Resource recycling costs	● Waste processing, recycling	—	402*
[2] Upstream and downstream costs	● Green purchasing	—	37
[3] Management activity costs	● Environmental monitoring, measurements, etc.	—	151
[4] R&D costs	● R&D of environmentally friendly products	1,108	2,863
[5] Social activities costs	● Disclosure of environmental information, greenification, etc.	—	76
[6] Environmental damage costs	● Soil and groundwater restoration	—	—
Total		2,505	3,931
Gross amount		6,436	

*Includes PCB waste processing cost

Economic benefit of environmental conservation measures

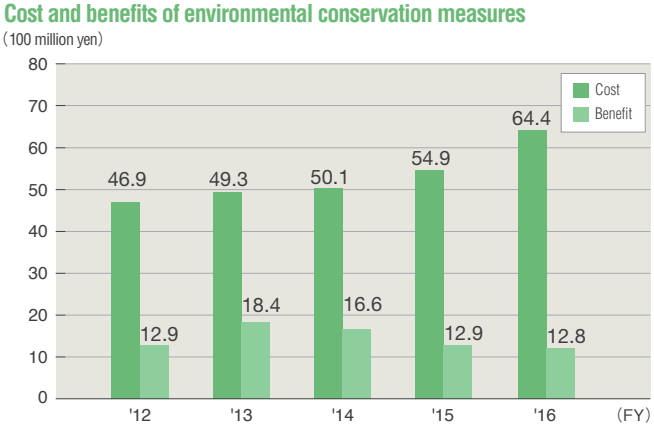
(Million yen)

Details of benefits	Economic benefit
Profit from recycled material sales	769
Energy-cost reduction from promoting energy conservation	468
Reduction of waste processing costs	40
Total	1,277

Benefits towards material amount reduction from environmental conservation measures

Details of benefits	Benefits towards material amount reduction
Energy consumption ($t\text{-}CO_2$)	17,300
Waste output (t)	1,991

Cost and benefits of environmental conservation measures



*We have not calculated the economic benefits brought about by environmental conservation measures such as increased product value, avoiding environmental risk and improving corporate image. We have only calculated items which can be accurately appraised such as energy-savings benefits, etc.
*Depreciation costs are not included. Expenses with multiple purposes are proportionately distributed.
*Scope of calculation: JTEKT independent (including some group companies working at JTEKT)
*Calculated period: FY2016 (April 2016 to March 2017)

Environmental management

Main activities FY2016

JTEKT Group Environmental Coordinating Committees

In order to share policies and targets with the entire group and strengthen initiatives, the JTEKT Group Environmental Coordinating Committee is held every year and is attended by representatives of both domestic and overseas group companies.

Domestic JTEKT Group Environmental Coordinating Committee

The Environmental Coordinating Committee is held three times a year with all 19 group companies in Japan to promote activities for CO_2 reduction, waste reduction, and environmental disturbance prevention. In April 2016, a Coordinating Committee was held by environment managers from domestic group companies and discussion was had regarding the status of each company's FY2015 environment initiatives and plans for FY2016. In July and December of 2016, in addition to reporting and discussing our performance up until now and future efforts, risk countermeasures for environmental equipment and the like were checked during plant tours as a means of improving environmental conservation countermeasures.

JTEKT Group Environmental Coordinating Committee in Japan held on July 22nd

JTEKT Group Environmental Coordinating Committee for overseas affiliates New!

European Health Safety Environment (HSE) Management Forum

In March 2017, the first Health Safety Environment (HSE) Management Forum was held at JALY (France). The Forum was attended by all safety and environment managers in the European region and the European headquarters (JEO). It was a good opportunity to share awareness of health and safety topics and deepen understanding of Environmental Action Plan 2020 targets. A plant tour was also included in the gathering, and participants shared information on daily activities and improvement examples. Moving forward, we will endeavor to hold the Forum bi-annually, establish a framework for cooperation between plants and achieve JTEKT group's environmental targets.

European HSE Forum (JALY: France)

Fernanda Dolberth (Left)
Marcela Oliveira (Right)
JABR (Brazil)

Effective utilization of limited natural resources

Water resources are absolutely essential to human life. Although there is an abundance of fresh water in rivers, lakes and underground reservoirs, it is a fact that, currently, water is not being evenly distributed throughout society. According to a United Nations report, there is a risk that two-thirds of the population will suffer from water shortages by the year 2050. As countermeasures to this type of situation, it is important that we make efforts to secure the safety of drinking water and food.

The JTEKT group has established an environmental target for water consumption reduction with the aim of protecting natural resources. In order to meet this target, JABR prepared a 200m^3 large-capacity tank and uses rainwater accumulated in this tank for the cooling towers of its production equipment. Using rainwater as an alternative to water resources has a major impact on environmental protection responsibility and reduction of water consumption within JABR.

Moreover, JABR runs various environmental protection campaigns all year long. One activity is having employees grow tree seedlings to expand environmental consciousness. Also, one major activity is JABR's Recycle Fair. The aim of the Recycle Fair is for employees to make handcraft items using recyclable waste produced by the plant for the purpose of waste recycling and reducing environmental impact. In FY 2016, JABR ran a "Use a Mug" campaign. The company provided all employees in the management department with mugs they could use while at work in order to reduce plastic waste (disposable plastic cups). Through activities such as these, JABR is raising peoples' awareness of the environment at the same time as promoting the reduction of waste, as well as the reduction of raw material, water, energy and fuel used in the manufacturing and transportation of products.

Environmental management

China Safety and Health Environment (EHS) Section Meeting

JTEKT held a meeting in China concerning safety, health and the environment in June 2016 at YKS and March 2017 at KLF. Representatives of JTEKT group companies in China reported environmental activities and issues at their respective company. At the KLF meeting, case examples of improvements as a result of the visualization of plant energy consumption were introduced. Through on-site inspection of the site, we enhanced the specialized knowledge and skills of employees involved in safety and environment duties and improved environmental awareness.

China Safety and Health Environment (EHS) Section Meeting (KLF: China)

Reducing environmental risk

Environmental accident prevention activities

To prevent environmental accidents, we share countermeasures implemented in response to incidents occurring both inside and outside the company for similar equipment. Moreover, in order to comply with environmental legislation, treaties and convention levels, we have set internal standards (*1) more stringent than regulations, which we manage thoroughly.

***1** JTEKT's internal effluent standards are 80 percent of regulatory requirements.

Legal compliance with environmental legislation

In FY2016, an incident occurred where contaminated water leaked from the sewage system into rainwater drains and flowed outside the JTEKT group site.

In addition to reporting to the concerned government authority, investigating causes and implementing countermeasures for each incident, JTEKT also shares information and countermeasures with all group companies and plants through its JTEKT Group Environmental Coordinating Committee and the Workshops on Environmental Issues and Near Misses mentioned later in an effort to prevent recurrence of similar incidents.

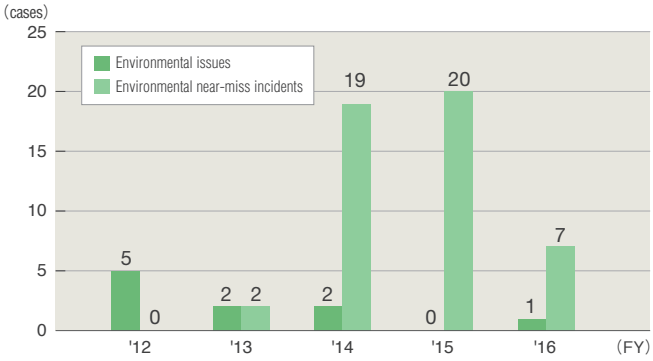
Workshops on Environmental Issues and Near Misses

Once every two months, JTEKT holds an Workshop on Environmental Issues and Near Misses in order to highlight case experiences of environmental near-miss incidents (*2) that have occurred other than environmental accidents and thoroughly share countermeasure content and implementation items companywide. In this workshop, environmental managers from all JTEKT plants gather at the plant where the environmental near-miss incident occurred and verify the case experience of the near-miss using the *genchi genbutsu* approach. Then, the efficacy of countermeasures is examined, and items to be rolled out companywide are discussed with all employees as a means of recurrence prevention. Unfortunately, in FY2016, JTEKT had one environmental issue, but we were able to significantly reduce the number of environmental near-miss incidents to seven cases.

Workshop on Environmental Issues and Near Misses (Tadomisaki Plant)

***2** Incidents that had only a slight impact on the environment and were handled within the area they occurred in.

Shift in no. of environmental issues and case experiences of environmental near-miss incidents



Environmental patrol by Plant Managers

As part of our Environmental Month every June, Plant Managers of each plant conduct environmental patrols. FY2016 environmental patrols involved confirming the status of rainwater drains and waste laydown areas.

Environmental patrol (Nara Plant)

Emergency drills

JTEKT performs regular emergency drills to prepare for the occurrence of various environmental accidents. Every plant also conducts emergency drills for nightshift workers, assuming the occurrence of an accident at night.

Emergency drills (Sayama Plant)

Environmental management

Environmental audits

Internal audits

JTEKT conducts internal audits annually to confirm the operational status of our environmental management system and compliance with legislation. We corrected all issues identified in this audit.

External audits (ISO14001)

In April 2017, JTEKT was subjected to an ISO14001 surveillance audit based on the 2015 revision of the same standard. As a result, there were zero cases of non-conformity, and our environmental management system was deemed as congruent with standard requirements and having been effectively implemented. However, twelve cases were identified as having room for improvement, and therefore the departments in charge of handling these cases have been specified and corrections are being made.

ISO14001 external audit

Environmental audits of overseas group companies

The JTEKT group has constructed a consolidated auditing system and has been conducting environmental audits on overseas group companies since FY2014. These audits focus on legal compliance activities aimed at preventing environmental issues and complaints. In FY2016, audits were conducted at three bases in North America, one base in China and three bases in India.

Environmental audit (KBNA Richland plant: U.S.)

Environmental audit (KBIN: India)

Environmental education

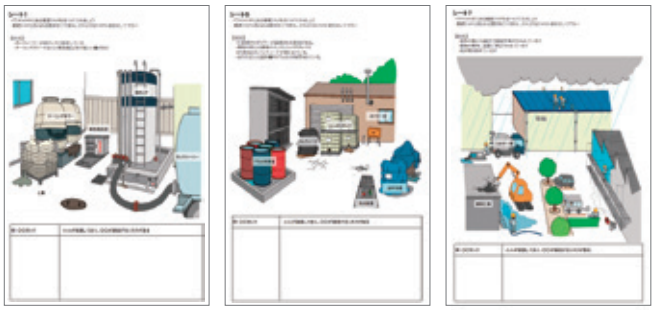
Environmental awareness education

During Environment Month in June of 2016, environmental awareness training was held for all employees through e-learning. The theme this year was “Eco Change! Each Employee Must Change their Awareness!” and 7,193 employees completed the training.

Preparation of environment hazard prediction sheets New!

In FY2016, as an initiative aimed at improving employee awareness of the environment, JTEKT prepared environment hazard prediction sheets.

These consist of eleven types of illustrative sheets promoting understanding and improvement of environmental risk in the workplace. These environment hazard prediction sheets came into effect during the Environment Month of June 2017 and we plan to implement them companywide in the future.



Environment hazard prediction sheets (example)

Environmental communication

Interaction with other companies

JTEKT promotes environmental communication activities through interaction with other companies aimed at being mutually beneficial by serving as opportunities to both acquire skills and know-how, and leverage solutions to environmental issues as well as introduce other companies to JTEKT’s environmental initiatives. In FY2016, this interactive activity was held with Panasonic Industrial Devices SUNX Tatsuno Co., Ltd. JTEKT visited the company’s plant and observed how to install an actual measuring instrument for energy visualization operation of the company’s energy management system and improvement examples thereof. On this occasion, meaningful interaction was had through the exchange of opinion regarding the focus and progress of environmental activities, etc.

Plant tour
(Panasonic Industrial Devices SUNX Tatsuno Co., Ltd.)
http://panasonic.net/id/pidsxtn/

Community discussions

All JTEKT plants regularly invite local residents and government members to community discussions. This is an opportunity to introduce JTEKT’s environmental initiatives, have participants take a plant tour and voice their opinions in order to facilitate communication with the local community.

→ S_24 Related article

Environmentally considerate development and design

Social background

The influence of product usage on the environment is deeply related to the development and design phases of the product. To lower our environmental burden, our company must oversee products from material purchase through usage by the customer, all the way until disposal. We must also work on developing environmentally friendly designs which can be easily reused and recycled.

The way of thinking by JTEKT

Improve each product from every angle

We JTEKT, in line with our Corporate Philosophy of "contributing to the happiness of people and the abundance of society through product manufacturing that wins the trust of society. " develop and design environmentally friendly products. We believe that our products and technologies provide environmental countermeasures for our customer's products and manufacturing processes and as such, greatly contribute to the environment. Therefore, we strive to improve the environmental performance of each product throughout the entire product life cycle, and are producing results which will contribute to the prevention of global warming and the effective use of resources.

Promotion structure

Promotion by the Environmental Responsive Products Subcommittee

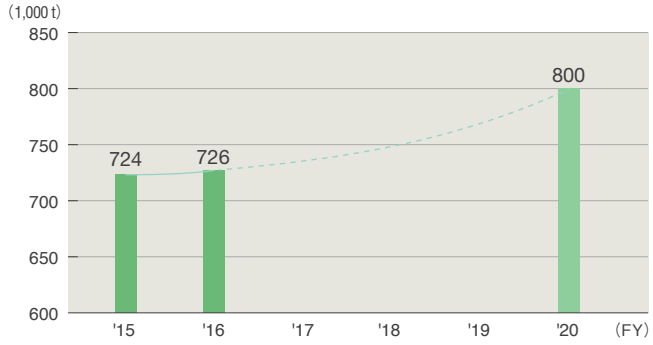
Under the guidance of the Global Environment Conservation Committee, which unites companywide environmental conservation activities, the Environmental Responsive Products Subcommittee is promoting the development of environmentally friendly products together with group companies in Japan. Innovative technology is used in the development and design stages to make products smaller, lighter, and more efficient, and reduce the amount of environmentally burdensome substances and raw material usage. In this way, JTEKT is engaging in environmental conservation on a global scale.

Contribution to CO_2 reduction through products

Figure-01

JTEKT is working to improve product efficiency to meet its target of making its contribution to CO_2 reduction through products for the year 2020 either equivalent to or greater than the current CO_2 emissions of the entire JTEKT group.

Figure-01 Contribution to CO_2 reduction through products



*Contribution to CO_2 reduction through products figures are the contribution calculated globally for each fiscal year.
*In FY2016, the method for calculating reduction contribution was partially changed.

Assessment method

JTEKT has established an original environmental efficiency basic equation to serve as an index in quantitatively assessing environmental load reduction benefit. The larger the value, the greater the environmental load reduction benefit is. Each year JTEKT sets higher environmental efficiency targets and works to reach them within product development.

Environmental efficiency basic equation and environmental efficiency value calculation

Environmental efficiency is a value calculated based on the degree of lightness, compactness, energy-savings, etc. The environmental efficiency value is calculated by dividing the environmental efficiency of the assessed product by that of the standard product.

Environmental efficiency

$$\frac{\text{Product performance}}{\text{Product environmental load}} = \frac{1}{\sqrt{W^2+T^2+E^2}}$$

W : Mass T : Loss E : Energy

Calculation of environmental load reduction effect

As the environmental load reduction effect, it is possible to seek environmental load reduction ratio more than the environmental efficiency value. For example, if the environmental efficiency value was 1.25, that product's environmental load reduction benefit would be 20%.A reduced environmental load is sought as the reverse of the environmental efficiency value.

Environmental efficiency value

$$\frac{\text{Environmental efficiency of assessed product}}{\text{Environmental efficiency of standard product}}$$

Environmental load reduction ratio

$$\left(1 - \frac{1}{\text{Environmental efficiency value}}\right) \times 100$$

Assessment of products mentioned in the PICK UP section

Developed product name	Percentage of environmental burden reduction	
Rack parallel type electric power steering (RP-EPS)	4.9%	→ F_02 Related article
Next-generation super-low friction torque tapered roller bearing LFT-IV	13.0%	→ F_05 Related article
Low friction torque deep groove ball bearing for motors	29.0%	→ F_06 Related article

Environmentally considerate development and design

Group company activities

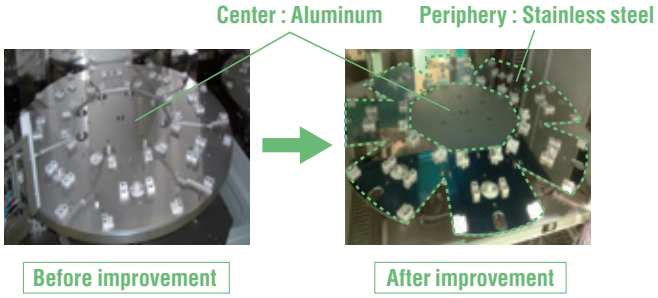
JTEKT conducts environmental design activities with intimate interaction between each operations headquarters and all group companies. Through creative ideas from the design stage, products of the JTEKT group are contributing to the world environment.

Main measures

Group company in Japan	Koyo Thermo Systems Co., Ltd.

Reducing the amount of aluminum used in vertical furnace turntables

Conventionally, the workpiece conveyance turntables of vertical furnaces for manufacturing semiconductors were made out of large, circular sheets of aluminum, however, the production of aluminum parts requires high power consumption therefore the design was changed to use stainless steel plate on the periphery of the turntable. As a result, the company succeeded in reducing the amount of aluminum used by 68 percent.



Prevention of global warming

Social background

In November 2016, the Paris Agreement entered into force as the new international rules for combating global warming. The common global long-term target of the Paris Agreement is to suppress the increase in the global average temperature to well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 degrees Celsius above pre-industrial levels. The Agreement also clearly states its goal of achieving net zero emissions by the second half of this century. Companies are also being required to step up their initiatives to reduce CO_2, both directly and indirectly.

→ E_07 Related article

The way of thinking by JTEKT

Reducing CO_2 emissions within all processes

In order to help prevent global warming, JTEKT engages in activities to reduce emissions of CO_2, a major greenhouse gas, in the production and transportation of products. All group companies, both in Japan and overseas, promote energy-saving methods and the use of reusable energy throughout all processes from product design to delivery.

Reducing CO_2 emissions in production

Reducing domestic CO_2 emissions

Figure-01

JTEKT set the target of reducing our CO_2 emissions basic unit to 15 percent compared to FY2008 by FY2020 and engages in activities to achieve this. We reduced our CO_2 emissions by 3,000 t during FY2016 due to improved energy saving methods, and reached our target basic unit of CO_2 emissions, achieving 143.2 t/100 million yen. In order to proactively promote CO_2 reduction during production, we are engaging in activities to consecutively reach our goal such as visualizing energy consumption on each line in our plants, having variable fixed costs and reducing standby power during non-operating times.

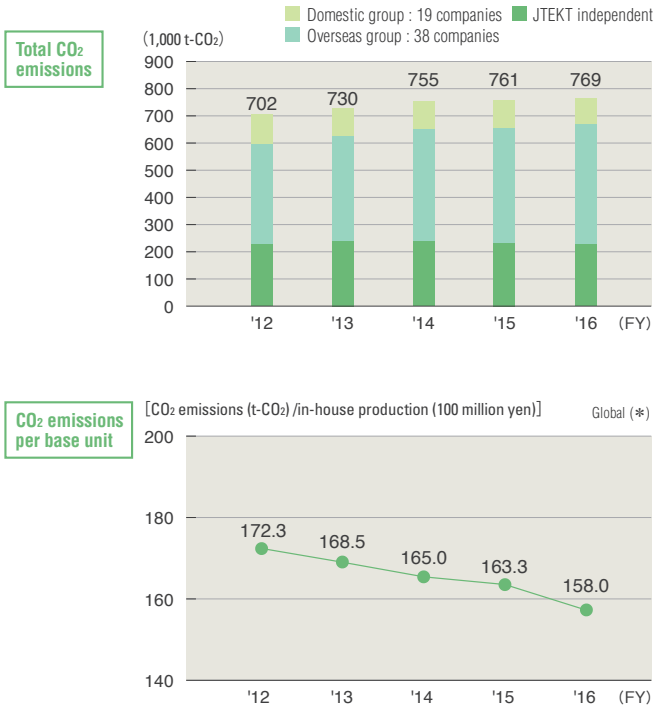
Reduction of global CO_2 emissions

Figure-02

With an aim to minimize the impact of global production operations on global warming, JTEKT is working to reduce CO_2 emissions not only within the company but also at all JTEKT group companies in Japan and overseas. The CO_2 emissions basic unit for FY2016 was 8.3 percent less than the FY2012 level, meaning that we had met our target for FY2016. We will continue to improve productivity in order to prevent global warming and improve production efficiency as an entire group.

Figure-01 Transition of total and per base unit CO_2 emissions in production

Figure-02 CO_2 emissions (global and base unit)



*JTEKT + 19 domestic group companies + 38 overseas group companies
*Past results have been partially revised after reconfirming CO_2 emissions.

Prevention of global warming

Main measures

Initiatives for realizing Environmental Challenge 2050

Based on the Environmental Action Plan 2020 drawn up as the first step towards achieving the goals set out in Environmental Challenge 2050, JTEKT is pushing ahead with changing all of the lights used in its administrative offices and plants to LED. In FY2016, 15,266 lights were changed to LED, and 8,586 more are planned for FY2017.

Main measures

Overseas group company	KBNA (U.S.)

Energy-saving by controlling no. of compressor units

Previously, in order to expand production lines at KBNA's Richland Plant, it was necessary to increase the number of compressors however the current compressor system has no backup function, therefore there was a risk of production stopping during a breakdown. Additionally, compressors are stopped and started frequently, leading to increased power consumption. As a way to avoid this, KBNA adopted a system to control the number of compressor units. This system reduces power consumption and achieves energy-saving by using both a compressor that performs inverter operation to suit load variation and a high-efficiency compressor for base load which operates constantly.
Moreover, two compressors were stopped and one is used as backup in case of breakdown. This move has resulted in an annual reduction of CO_2 emissions of 10,800 t (45 t/day) and 94,000 USD (393 USD/day).

David Green
(KBNA Richland plant：U.S.)

Initiatives for energy visualization New!

In FY2016, as part of efforts to achieve the goals set out in Environmental Challenge 2050, JTEKT asked Panasonic Environmental Systems & Engineering Co., Ltd. to conduct an energy-saving diagnosis with the aim of creating new energy-saving items and developing professionals capable of performing energy-saving diagnosis. Power meters are being installed on each line of all JTEKT plants in order to first create the right environment to achieve goals through visualization of energy consumption. 733 power meters were installed in FY2016, with a further 1,054 planned for FY2017, which will complete installation on all lines.

Introduction of renewable energy

In 2016, JSAI (India) introduced 220 kW of electric power by installing a solar power generation system, bringing the total power introduced up until now to 270 kW. In 2017 it plans on introducing a further 170 kW, which will compensate for around 10 percent of the company's overall electric power consumption. JTEKT's independent introduction of renewable energy amounts to 685 kW to date, meaning we have achieved our target of 500 kW or higher. Including group companies both within Japan and overseas, the total amount of renewable energy introduced by the entire JTEKT group up until FY2016 equals 1,168 kW. In FY2016, we generated 1,271 MWh of power and reduced CO_2 emissions by 470 t. In ongoing efforts to minimize CO_2 emissions in line with our Environmental Challenge 2050, JTEKT will continue proactively introducing renewable energy with low environmental burden.

Solar power generation (JSAI: India)

Activities for production technology innovation

Figure-01

In order to achieve our CO_2 reduction target for FY2020, JTEKT is engaging in efforts to improve productivity and reduce CO_2 emissions through production technology innovation. In FY2016, we promoted technological development with focus on the four areas of :

(1) Reduce production processes and equipment number
(2) More compact equipment
(3) Introduce high-efficiency devices and equipment following load fluctuation
(4) Energy loss reduction and energy recycling

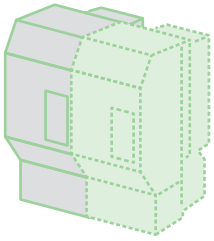
Prevention of global warming

Figure-01

Reduction of equipment number through high-speed cutting of shafts and screws

Shorter cycle time through machining conditions and tool technology development
2 conventional units → 1 newly developed unit

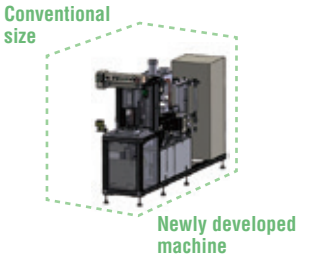
Energy comparison 30% decrease



Downsizing of equipment through development of a cup-type washing machine

Reduced washing water and tank volume due to a smaller washing volume (cup-type).
Volume comparison: 30-50% decrease

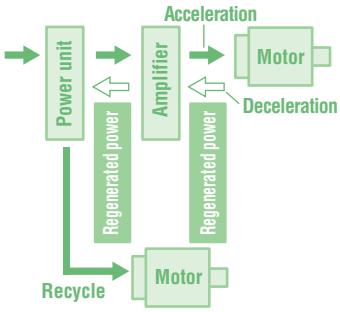
Energy comparison 20% decrease



Load variation following and reduced loss with high-efficiency devices and power regeneration

Assess waste (*muda*) through measurement of actual power in machining cycle and absorb energy through power regeneration.
Improved power control for processing equipment

Energy comparison 10~30% decrease



Reducing CO_2 emissions in logistics

Reducing CO_2 by integrating product delivery shipments

Figure-02

In FY2016, JTEKT reduced the basic unit for CO_2 emissions by around 1 percent compared to the previous year, or 2.15 t/100 million yen by integrating product delivery shipments. In FY 2017, we will continue our efforts to reduce CO_2 through further integrating product delivery shipments, modal shift (*) and the use of electric fork lifts in plants, etc.

***Modal shift** A shift from transporting goods by large trucks, etc. to transportation by rail or sea.

Main measures

Shorter transportation distance

In FY2016, hub unit manufacturing was transferred from Kokubu Plant to Kameyama Plant. This shortened the distance product had to be transported to major customers in the Aichi region, and resulted in an annual reduction in CO_2 emissions of 220 t.

Promoting battery-drive fork lifts

Through using battery-driven forklifts (logistics vehicles), JTEKT succeeded in reducing CO_2 emissions by 15 t annually. We will continue promoting adoption of battery-driven forklifts in FY2017 also.

Battery reinstallation-type forklift

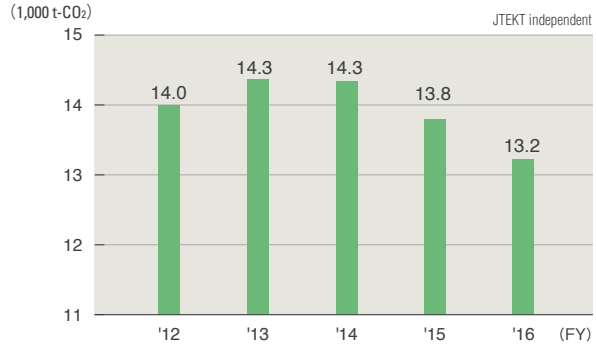
Holding of environment and safety meetings New!

Environment and safety meetings were held in three distribution centers in Kanto, Chubu and Kansai. JTEKT asked the logistics companies that participated to focus on fuel-efficient driving by utilizing drive recorders and digital tachometers. Various viewpoints were also exchanged in these meetings.

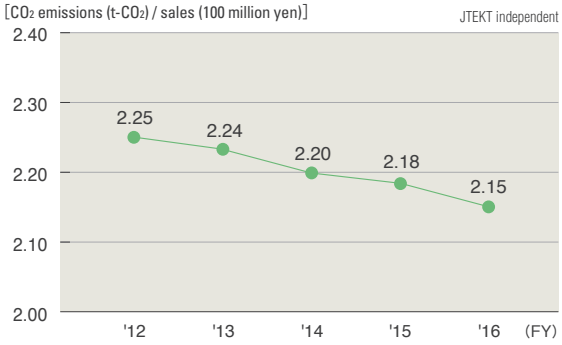
Environment and safety meeting (Kansai Distribution Center)

Figure-02 Transition of total and per base unit CO_2 emissions in logistics

Total CO_2 emissions



CO_2 emissions per base unit



Effective use of resources

Social background

Preservation of the world's resource foundation is a major theme of ISO26000, the 4th edition of Sustainability Reporting Guidelines (G4 Guidelines) and Sustainable Development Goals (SDGs). There is a strong demand on companies to reduce their usage of raw materials and recycle parts. In addition, due to the concern of global water shortages in the future, it is becoming increasingly important for companies to engage in activities for the effective utilization of water resources.

The way of thinking by JTEKT

Responsibility as a *monozukuri* company

At JTEKT, we consider the effective use of resources as one of the responsibilities of an environmentally friendly *monozukuri* company. By making improvements and devising ideas for the production processes of each product, we strive to reduce material usage and waste output, as well as recycle and save valuable resources.

Saving resources in production

Initiatives for reduction of primary material consumption

JTEKT is working to transition to net shape (reduction of machined portions) by improving casting and forging formation technologies, in order to reduce the amount of materials used.

Main measures

Material reductions through improving forging accuracy ▶ Figure-01

Through high accuracy forging, it is possible to achieve thinner dimensions for the diameter of the sleeve yoke used in joints of propeller shafts, which reduces the portions that require cutting and other machining. This has led to a significant reduction in material consumption.

Initiatives for reduction of secondary material consumption

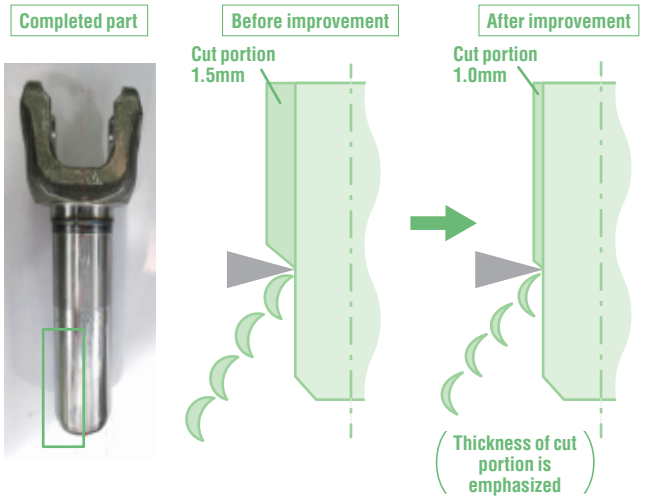
We succeeded in reducing consumption by revising the material, shape, hardness and other specs of secondary material for products such as dies, grinding wheels and cutting tools and further increasing their durability. Also, we strove to promote recycling by regenerating and recycling waste oil, grinding wheels, cutting tools and jigs.

Main measures

Extended mold life through surface nitriding ▶ Figure-02

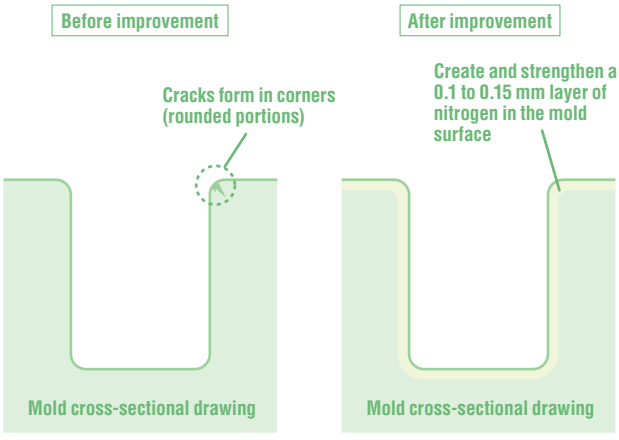
Due to heavy load applied to the inside corners of molds (rounded portions) used in warm forging, cracks form and mold life is reduced. However, by nitriding the mold surface, life is extended. This improvement has resulted in an annual reduction of material consumption by around 0.1 t per mold.

▶ Figure-01 Material reductions through improving forging accuracy



Material consumption	Annual decrease of approx. 17 t

▶ Figure-02 Extended mold life through surface nitriding



Mold life	3 times

Effective use of resources

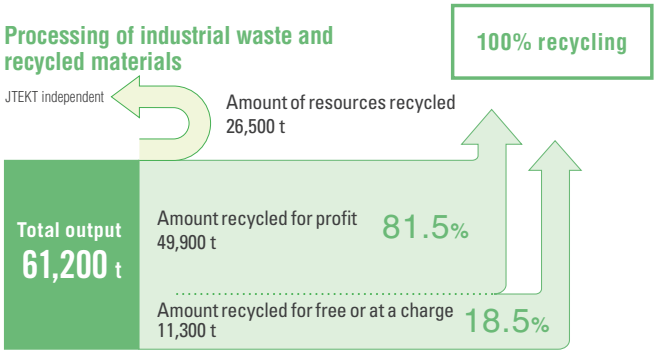
Waste reduction

Initiatives for achieving Zero Emissions

JTEKT has been engaging in activities based on 3R (Reduce, Reuse, Recycle) to achieve a 100 percent recycling rate for the effective use of resources regarding all discharged materials, including waste. The result was the achievement of a 100 percent recycling rate in November 2012, which has been maintained ever since. We are currently promoting various initiatives to achieve Zero Emissions (*) at all JTEKT group plants.

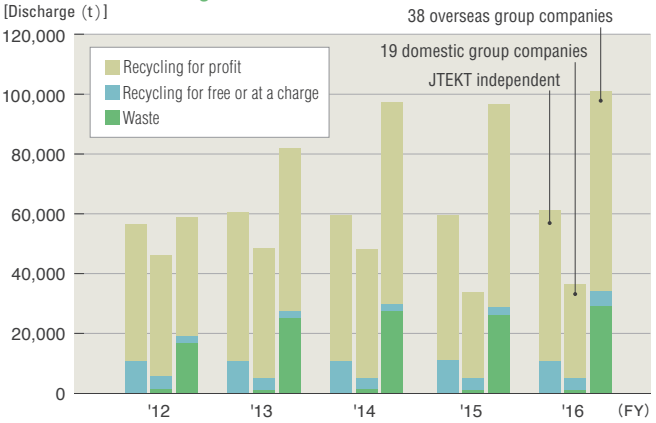
*Zero Emissions The practice of utilizing waste and byproduct created through industrial activities as resources for other industries in an attempt to avoid releasing waste into the natural world on the whole. Proposed by the United Nations University in 1994.

Processing of industrial waste and recycled materials



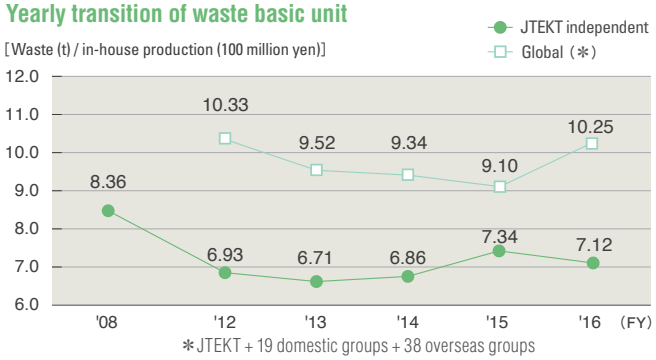
*Amount handled externally (incineration waste) *Zero direct landfill waste

Transition in discharge amount



* 21 domestic group companies prior to FY2014
* JTEKT's independent direct landfill waste has remained at 0 tons since FY2009.
* JTEKT independent incineration waste has been 0 t since FY2013

Yearly transition of waste basic unit

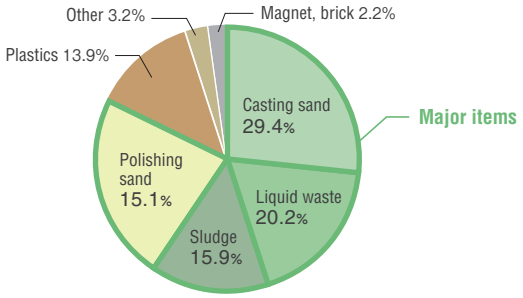


*JTEKT + 19 domestic groups + 38 overseas groups
*Past results have been partially revised after reconfirming emissions.

Initiatives for realizing Environmental Challenge 2050

Based on the Environmental Action Plan 2020 drawn up as the first step towards achieving the goals set out in Environmental Challenge 2050, JTEKT is engaging in efforts to categorize waste (recycling items for free or at a charge) and implementing countermeasures with a focus on waste for which there is a high discharge volume.

FY2016 waste ratios (JTEKT independent)



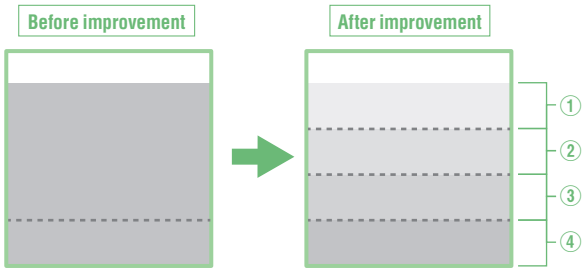
Main measures

Reduction of coolant and mold lubricant changes

Up until now, when there was a need to change the coolant used in turning and polishing processes or mold lubricant used in forging processes, JTEKT requested an external service provider to dispose of all the liquid in the tank as waste. However, by implementing the following initiatives, JTEKT has successfully reduced liquid waste by 80 percent:

(1) reduce the overall amount of liquid in the tank by not adding new coolant or oil for a number of days prior to the change,
(2) store the relatively cleaner liquid at the top layer of the tank in a separate tank and recycle after the rest of the tank content has been changed,
(3) process the bottom layer of the liquid in an internal condenser and reduce volume to around one-tenth,
(4) outsource the contaminated contents that have sunk to the very bottom of the tank to an external service provider.

Reduction of waste liquid by layer



Outsource to external service provider and dispose of entire tank's contents.

① reduce the overall amount of liquid in the tank by not adding new coolant or oil
② Upper layer – temporarily store in a separate tank and recycle after oil, etc. change
③ Bottom layer – reduce to around one-tenth in a JTEKT condenser.
④ Sunken contaminated contents – outsource to external service provider together with the one-tenth that remaining at step ③.

Waste volume	80% decrease

Effective use of resources

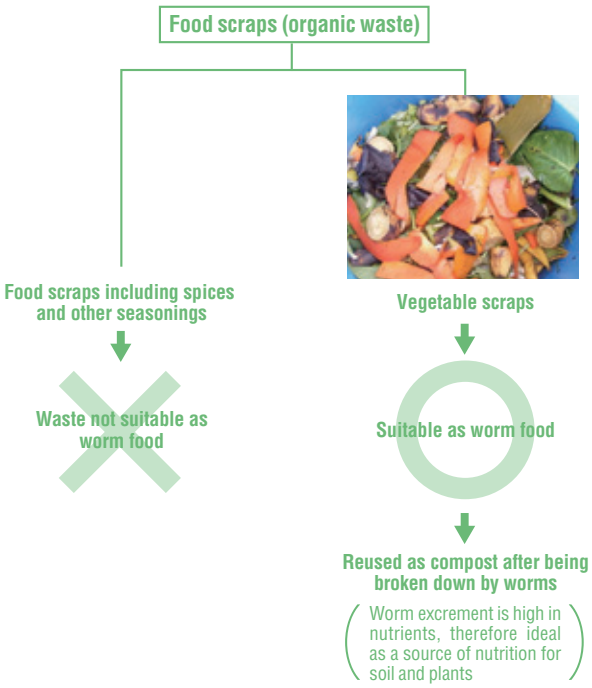
Main measures

Overseas group company	JTC (Thailand)

Initiatives to reduce food waste New!

From May 2016, JTC (Thailand) has been engaging in an activity at its Gateway Plant to break down food scraps produced from its canteen using worms and reduce the overall amount. As a result, the company succeeded in reducing food scraps down to around one-tenth a week. The food scraps broken down by worms are rich in nutrients and helps to improve soil, therefore the solid portions can be recycled as compost for increasing greenery within the plant. The liquid portions are distributed to nearby elementary schools and other companies within the industrial park, who express appreciation for the contribution.

Breaking down food with worms and creating compost



Containers with holes are used for better ventilation.

Twice a week, the worms are fed with food scraps. Worms are easily affected by dehydration therefore must be kept in soil with constant humidity, so inspections are conducted every morning and evening.

Solid portion

Liquid portion

VOICE Making compost with worms

After asking ourselves what we can do to help protect the environment, we decided to try and recycle the food scraps produced at the plant, even if the amount was small, by using worms to create compost. Through this activity, we succeeded in significantly reducing the amount of organic waste (food scraps) significantly, and this gave us great joy. We will continue environment protection activities with the goal of eliminating organic waste entirely.

From right
Suree Kongchai
Thanatchaporn Wannachai
Peartip Jantaranuwat
Nuntraputt Poolsawat
JTC (Thailand)

Reduction of packaging material

Reducing packaging and packing material Figure-01

In order to effectively use resources, JTEKT has established targets for packaging and packing material (both wood and paper), and promotes simpler, returnable and reusable packaging. For wooden packaging and packing material, we expanded the scope of returnable pallets and simplified wooden boxes. We also promote various initiatives for paper packaging and packing material, such as switching from disposable cardboard to returnable plastic cases, reviewing excessive packaging, using cardboard boxes to suit product size to reduce cushioning material, etc.

Main measures

Making packing for products shipped overseas returnable

In FY2016, we changed the packing material used when shipping products to Thailand from disposable cardboard boxes to reusable plastic cases, resulting in a reduction of packing material amounting by 1.2 t.

Before improvement

One-way (disposable) cardboard boxes

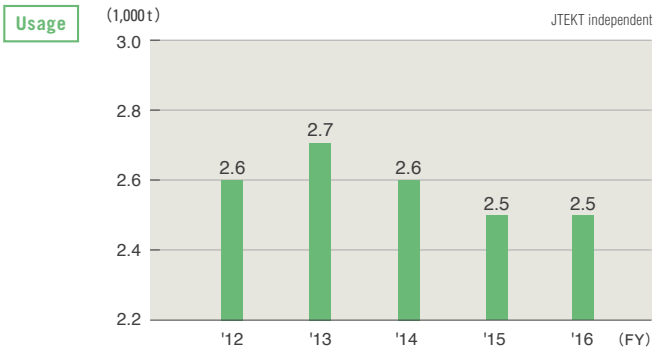
After improvement

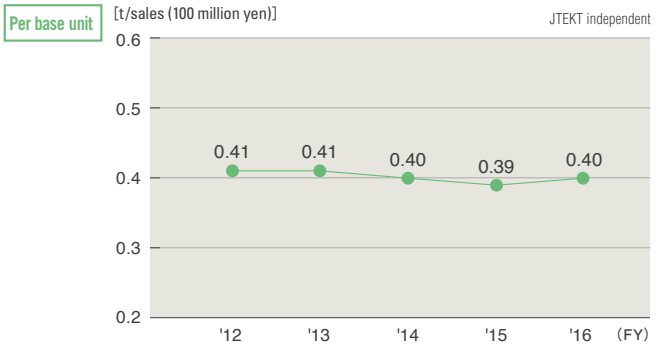
Returnable (reusable) plastic cases

Effective use of resources

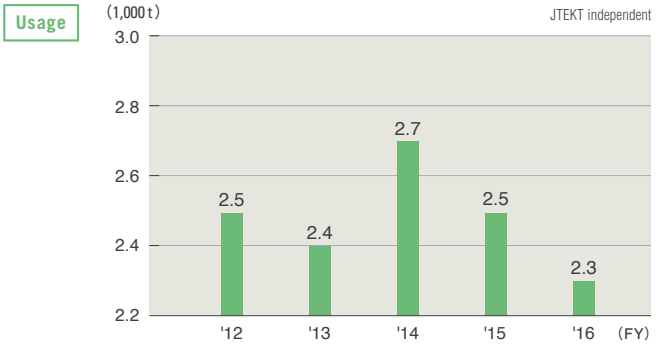
Figure-01

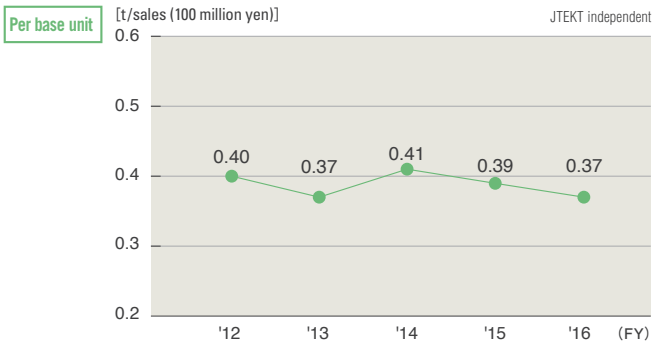
Transition of wood packaging usage and per base unit





Transition of paper packaging usage and per base unit



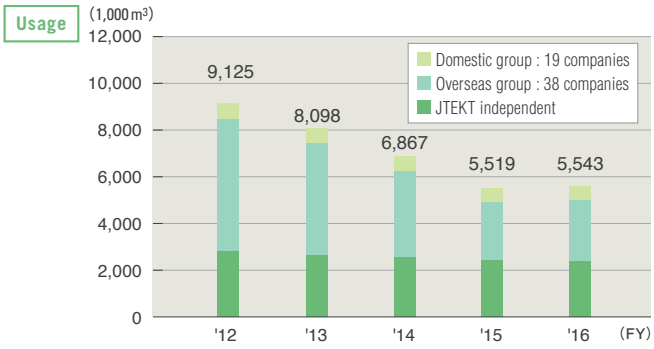


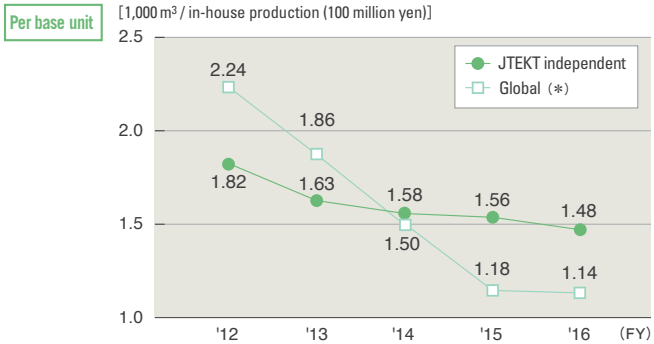
Reduction of water usage

Promoting efficient water usage

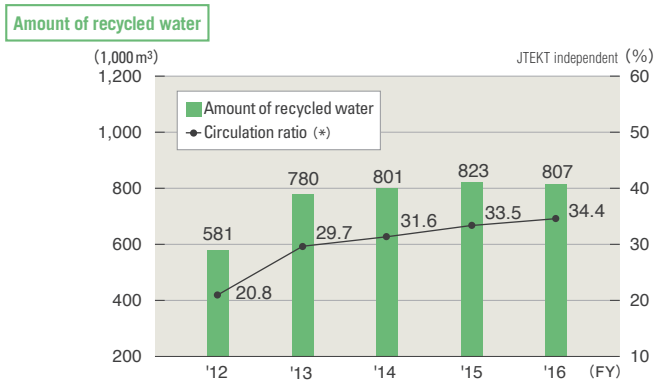
To reduce the usage of water, a precious resource, we engage in internal activities to decrease wasteful usage and recycle water. In FY2016, we had at first planned on improving our basic unit and usage amount of water by 4 percent or more compared with FY2012, however we achieved this goal ahead of schedule in FY2015 therefore, we set our sights on improving the figure compared to FY2015 by 0.5 percent or more. As a result, we achieved a 5-percent (80 m³/100 million yen) improvement in basic unit and reduced usage by 4.5 percent (110,000 m³). We have already achieved our planned target for FY2017, an improvement of 5 percent or higher compared to FY2012 therefore we will continue efforts to improve the figure by 0.5 percent or higher compared with FY2016 results.

Water usage / Basic unit transition / Amount of recycled water





*JTEKT + 19 domestic groups + 38 overseas groups
21 domestic group companies prior to FY2014
*Past results have been partially revised after reconfirming emissions.



*Circulation ratio The percentage of water recycled against the amount of water consumed

Control and reduction of environmentally burdensome substances

Social background

There are tightening restrictions on the usage and release of environmentally burdensome substances which adversely impact ecosystems and human health. Companies are expected to implement measures to thoroughly control and reduce environmentally burdensome substances in all stages of production and observe all regulations.

The way of thinking by JTEKT

Reducing environmentally burdensome substances

As we JTEKT aim to be an "environmentally friendly *monozukuri* company", the reduction of environmentally burdensome substances throughout the entire product life cycle is one of our social responsibilities. It goes without saying that we will lower consumption and discharge amounts, in addition to assessing and controlling environmentally burdensome substances within products.

Control and reduction of chemical substances included in products ▶ Figure-01

A Product and Environment Committee has been established among related departments as part of JTEKT's efforts to limit the environmentally burdensome substances included in products. This committee collects information, manages data, holds company training and so on, and then incorporates its activities in the activities of Section Meetings for implementation.

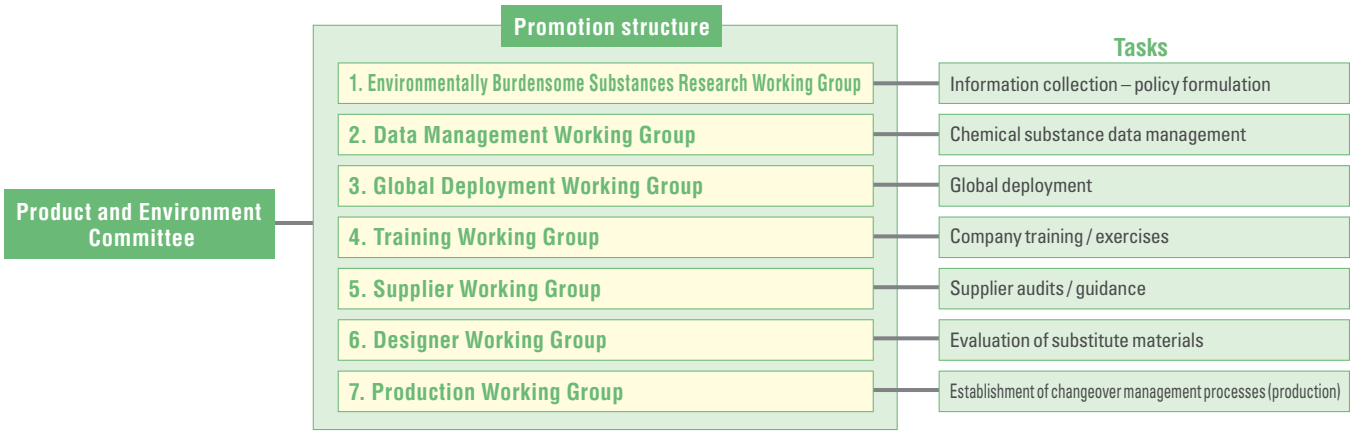
Control and reduction of chemical substances within production

Reduction of substances subject to PRTR ▶ Figure-02

JTEKT is taking action to reduce the impact of chemical substances released into the environment from production activities on people's health and the environment. In FY2016, we succeeded in reducing the amount of PRTR substances (*) released and transferred through promoting control of paint coating efficiency, etc.

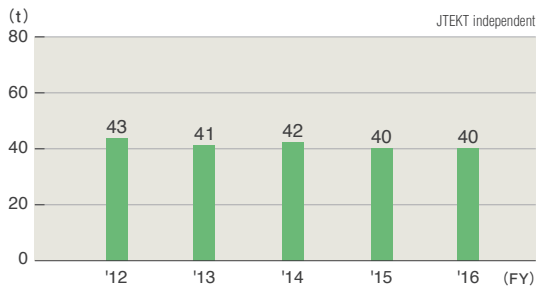
* **PRTR** A system to collect and disseminate information on environmental release and transfer of toxic chemicals reported to government agencies. PRTR is an abbreviation of "Pollutant Release and Transfer Register".

▶ Figure-01 **Organizational chart of the Product and Environment Committee**



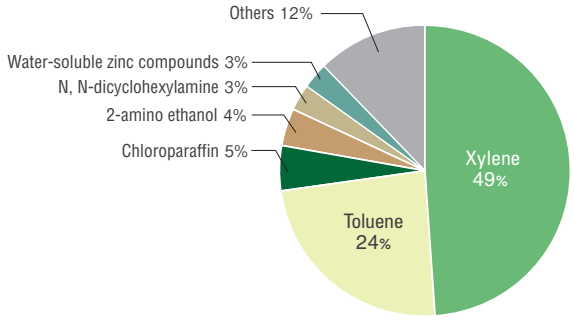
▶ Figure-02

Yearly transition release and transfer breakdown of substances subject to PRTR



*Past results have been partially revised after reconfirming release and transfer amounts.

Release and transfer breakdown of substances subject to PRTR for FY2016



Control and reduction of environmentally burdensome substances

My CSR

Sayuri Suemitsu
Bearing Operations Headquarters
Engineering Planning Dept.
Planning Office Group 1

Raising awareness of environmentally burdensome substances

I am currently involved in investigating environmentally burdensome substances for the Bearing Operations Headquarters. Up until now, I thought that "environmentally considerate manufacturing" was mainly about reducing CO_2 and industrial waste but since I became involved in my current work, I have realized there are many laws and regulations relating to environmentally burdensome substances in the world. If JTEKT does not comply with these laws and regulations, it would be a major risk in terms of company management, as we could be prevented from delivering products to customers or damage our brand reputation. With legal compliance as a given, I'd like to make designers with responsibility for drawings more aware of the importance of managing environmentally burdensome substances.

Proper storage and control of PCB devices

The Act on Special Measures concerning Promotion of Proper Treatment of PCB Wastes requires the storage and notification of devices containing PCB (polychlorinated biphenyl), widely used as an insulating oil. Here at JTEKT, we properly store such devices and notify government agencies in accordance with this act. In addition, all high-pressure condensers with highly concentrated PCB levels in storage were rendered harmless in FY2016.

Measures for devices with low PCB concentration

In addition to devices with highly concentrated PCB levels, JTEKT properly stores electrical devices that were previously judged as not containing PCB, but in which minute amounts of PCB have in fact been detected. We are continuing appropriate processing of such devices systematically.

Measures for soil and groundwater (continued report)

Since 1998, JTEKT's Kariya and Okazaki plants have implemented ongoing measures to prevent external leaks and to purify groundwater of trichloroethylene, a substance previously used in detergents and other materials. They do this using a pumping and aeration system (*1). In addition, since FY2004, the Okazaki Plant has used a microbial purification system (*2) which injects nutritional supplements as part of their purification measures. JTEKT reports groundwater measurement results to government agencies and provides local residents with explanations in community meetings.

→ S_24 Related article

*1 **Pumping and aeration system** Groundwater is pumped up and sprayed and air is blown from below to aerate and separate organic solvents, which are made to adhere to activated carbon for removal.

*2 **Microbial purification system** A method of restoring contaminated environments by utilizing microbial function. The purification capability of microbes living in the environment is raised by injection of nutrients, etc.

Trichloroethylene measurement values

Environmental standard: 0.03 mg / ℓ (mg / ℓ)

Plants	Maximum measurement value in groundwater		
	FY2015	FY2016	Status
Kariya	0.939	0.794	Purifying
Okazaki	0.016	0.011	Purifying

* For plants other than the above, no trichloroethylene was detected in measurements taken in wells around the plant borders.

Biodiversity conservation

Social background

The diversity of living creatures on this planet is rapidly depleting, for reasons such as habitat loss resulting from the spreading destruction of nature. Even one of the UN's SDGs aims at preventing biodiversity loss. Corporate activities are made possible thanks to the blessings of nature, but at the same time impact biodiversity greatly. This is why it is important that corporations are proactively involved in biodiversity conservation activities such as protecting the natural habitat.

The way of thinking by JTEKT

Initiatives leveraging regional characteristics

JTEKT believes biodiversity conservation to be a critical social issue supporting life and lifestyle. Based on the JTEKT Group Environment Vision, each plant promotes initiatives which leverage the regional characteristics of its location and broaden the scope of activities aimed at conservation of biodiversity.

Under the Biodiversity Conservation Action Guideline

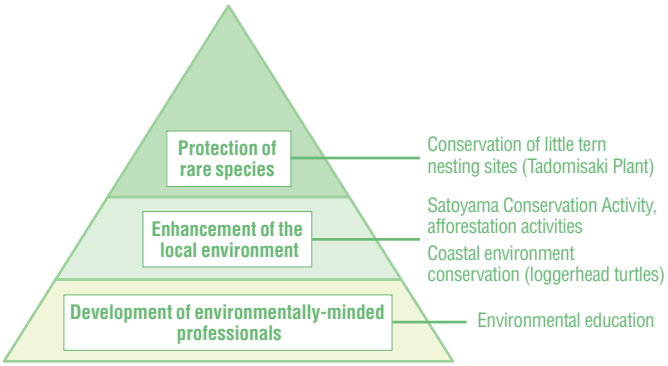
▶ Figure-01

In order to reduce the environmental load created by our business activities and be mindful of biodiversity, JTEKT formulated the Biodiversity Conservation Action Guideline in March of 2011 based on the Environmental Action Plan 2015 of our JTEKT Group Environmental Vision.

JTEKT's aspiration

JTEKT's biodiversity conservation activities focus on the three main initiatives of 1) protecting the rare living species that inhabit or grow at each plant, 2) enhancing the local natural environments surrounding each plant and 3) developing environmentally-minded professionals in order to achieving conservation of biodiversity on an ongoing basis. We engage in activities to protect the rare living species at each plant based on objective evaluations incorporating the viewpoints of experts and academics.

Conceptual image



Map of JTEKT biodiversity conservation activities

▶ Figure-02

Due to operating plants across a broad area in both Japan and overseas, JTEKT endeavors to expand our biodiversity conservation initiatives through connecting the activities of individual plants. We will continue promoting activities to broaden such connection both domestically and internationally.

→ S_27 Related article

▶ Figure-01 **Biodiversity Conservation Action Guideline**

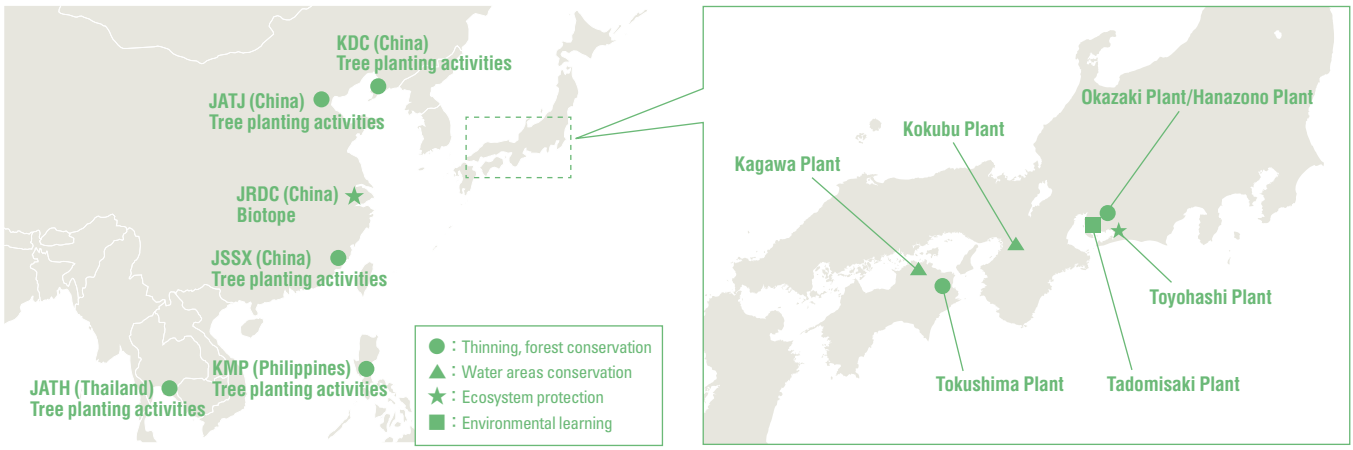
Relationship with business activities	
Raw material procurement	● Liaise with business partners to protect biodiversity.
Soil usage	● Through greenifying our plants, etc., we are engaging in activities to protect ecosystems which contribute to biodiversity.
Production activities	● With activities such as preventing global warming by developing innovative techniques and equipment, effective resource usage, reduction of environmentally burdensome substances and so on, we aim to succeed at both biodiversity and corporate activities. ● We work hard to quantitatively assess the impact our business activities have on biodiversity.
Product development	● Based on life-cycle assessment approach, JTEKT develops and designs top-class environmentally friendly products and reduces impact on biodiversity.

Promotion of social contribution activities benefiting biodiversity conservation
● Proactively participate in social contribution activities through cooperation with councils and affiliated companies.

Training, awareness activities and information-sharing
● Raise employee awareness of biodiversity conservation through environmental training.
● Use the CSR report as a tool to communicate our activities towards biodiversity conservation with our stakeholders and with the community.

Biodiversity conservation

Figure-02 Map of JTEKT biodiversity conservation activities



Initiatives of domestic plants

Okazaki Plant/Hanazono Plant

Participation in "Okazaki Nature Experience Forest" Satoyama Conservation Activity

Aim

Preserve the abundant nature of our region for future generations through the Okazaki Nature Experience Forest, an activity to conserve our local satoyama (semi-natural woodlands).

Content

Tend to the woodlands within the facility. Upkeep of the bamboo groves, cutting the undergrowth, maintaining the walking paths, etc.

(No. of participants) 41

Toyohashi Plant

Held an activity called "Sandy Beach Fureai Walk" to protect loggerhead turtle spawning grounds

Aim

Protection of the spawning grounds for loggerhead turtles, which have been designated as an endangered species.

Content

• Collected garbage from sand dunes.
• Held environmental learning on loggerhead turtles for local children.

(No. of participants) 140

Tadomisaki Plant

Making nests using scrap material

Aim

Promoting environmental learning for local children.

Content

Held a workshop to make nests from recycled scrap material.

(No. of participants) 180 (26 families)

Kokubu Plant

Participation in "Ishikawa Cleanup Operation in Yamatogawa River."

Aim

Improve water quality of Yamatogawa River to restore it to its former clear state.

Content

Clean-up activity around both Yamatogawa River and its tributary, Ishikawa River.

(No. of participants) 12

Kagawa Plant

Participation in "Building Kagawa's Vibrant Sea."

Aim

Maintain a healthy sea by considering the ocean area and land area as one.

Content

Activity to eliminate rubbish on land and an activity to clean the sand dunes.

(No. of participants) 16

Tokushima Plant

Participation in "Tokushima Collaborative Forest-Building Project."

Aim

Maintain forests and create environments in which a wide variety of living creatures can inhabit.

Content

•Entered a partnership agreement with Tokushima Prefecture and the National Land Afforestation Promotion Organization in Tokushima.
•Carried out thinning, felling and planting in untended forest areas since 2011.

(No. of participants) About 40

Biodiversity conservation

Activity to conserve little tern nesting sites (Tadomisaki Plant) New!

The little tern species of bird has chosen Tadomisaki Plant as its nesting site, therefore the plant has been engaging in an activity to conserve such sites since 2015. The little tern is a rare, migratory bird that comes to Japan in summer to build colonies along rivers and coastlines, then breed. The little tern has been designated by Japan's Ministry of the Environment and Aichi Prefecture's Red Data Book as being an endangered species (*). The plant will continue this activity into the future and contribute to the conservation of biodiversity.

* Designated as "Endangered Species Cat. 2" in the 4th Version of the Japanese Red Lists (2012) issued by the Ministry of the Environment and "Endangered Species Cat. IB" in the 3rd Version of the Aichi Red Lists (2015) issued by Aichi Prefecture.

Little terns (fully grown)

Little terns (hatchlings)

\\ VOICE // For the co-existence of humans and nature

Yoshifumi Osawa
Driveline Systems Business Headquarters Tadomisaki Plant Administration Dept. General Affairs Section

In 2015, Tadomisaki Plant became aware that little terns were using the plant as their nesting sites so, with the cooperation of the Wild Bird Society of Nishi-Mikawa Area, we began maintaining nesting sites and implementing measures to attract more of the species. In FY2017, we felt our efforts had paid off as we confirmed a higher number of little terns were building their nests within our plant grounds. We will continue these activities in an effort to realize co-existence between humans and nature under the Environmental Challenge 2050 slogan of "*For future children.*"

Mr. Osawa passed away on April 28th, 2017. We have included this message from him out of deep respect for the activities he promoted during his life and with the consent of his family and other concerned parties.

TOPICS

A biotope initiative to restore habitats of various flora and fauna

In the winter of 2015, Tadomisaki Plant consulted with Aichi Prefecture's Natural Environment Department regarding how to attract little terns to nest within its plant grounds, and although preparations were made in spring of 2016, the measures were unsuccessful. In 2017, as a result of expanding bare land, scattering seawater, using bird cries and setting up decoys, we successfully attracted little terns on April 30th. On May 28th, we counted 500 birds however the majority of the hatchlings were eaten by birds of prey, and by June 6th, the colony had been abandoned. It is not rare for little terns to abandon their breeding ground as a result of their natural enemies or adverse weather. The bird maintains its species by successful breeding once every few years, therefore JTEKT considers the successful enticement of the birds in 2017 as a major step forward. Biotope (*) activities are not about spending money to build miniature gardens, but rather restoring the natural environments that living creatures choose to inhabit. JTEKT believes this initiative is a pioneering and authentic example of an environmental activity.

* "Biotope" is derived from the two words "bio" and "topos" (meaning "place") and refers to the habitat of living creatures.

Mr. Nobuo Takahashi
(Wild Bird Society of Nishi-Mikawa Area secretariat, Chief Director of the Aichi Biological Research Council NPO, Aichi Prefecture wildlife protection staff, Ministry of the Environment's rare species conservation promoter)

Tree-planting activity (KDC: China) New!

In April 2016, employees of KDC and their families participated in a tree-planting event in Dalian, China.
With the support of local government, 100 trees were planted. It was an excellent opportunity for the children who participated to sense the importance of protecting the environment through tree-planting and get close to nature. The activity also helped to improve participants' awareness of the environment.
KDC will continue its tree-planting activities in order to further contribute to the protection of China's environment.

Tree-planting activity (KDC: China)

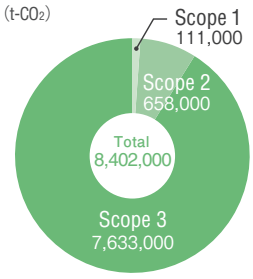
Appendix

CO_2 conversion coefficients to calculate CO_2 emissions volume

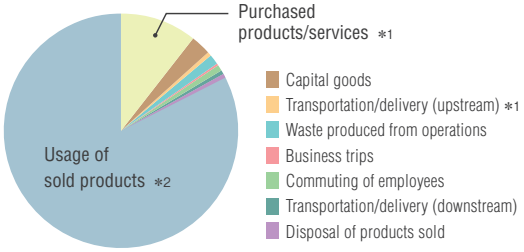
Electricity	0.3707 kg-CO_2/kWh
Heavy oil A	2.6958 kg-CO_2/ℓ
Kerosene	2.5316 kg-CO_2/ℓ
Propane gas	3.0040 kg-CO_2/kg
City gas	2.1570 kg-CO_2/Nm^3

The CO_2 conversion coefficients were set by the Japan Federation of Economic Organizations (1990) and are used in Japan. Regions outside of Japan use 2001 published values. We fixed electrical conversion coefficients so that the results of our improvements could be evaluated.

CO_2 emissions by scope



Scope 3 CO_2 emissions (percentage) by category



Scope 3 CO_2 emissions by category (FY2016) ∗3

Classification	Category	Emissions	Calculation method
Upstream	Purchased products/services ∗1	727,000	Calculated based on the amount of steel purchased (price) multiplied by emissions per basic unit
	Capital goods	195,000	Calculated based on equipment investment amount related to capital goods multiplied by the cost per unit
	Fuel and energy-related activities not included in Scope 1 and 2	—	N/A
	Transportation/delivery (upstream) ∗1	27,000	Calculated as emissions due to purchasing/distribution of raw materials, parts, etc., based on the amount of steel purchased (price) multiplied by emissions per basic unit
	Waste produced from operations	107,000	Calculated based on amount of waste multiplied by emissions per basic unit
	Business trips ★	18,000	Calculated based on travel expenses multiplied by emissions per basic unit; estimated based on employee number for overseas group companies
	Commuting of employees ★	47,000	Calculated based on commuting expenses multiplied by emissions per basic unit; estimated based on employee number for overseas group companies
	Leased assets (upstream)	—	Leased assets calculated as Scope 1 and 2 emissions
Downstream	Transportation/delivery (downstream)	30,000	Calculated based on product transportation amount and distance multiplied by emissions per unit; calculated based on distribution expenses multiplied by emissions per unit for overseas group companies
	Fabrication of sold products	—	Due to the difficulty of calculating emissions due to the processing of products by customers using a reasonable method, this criteria has been excluded from the scope of calculation at this time
	Usage of sold products ★ ∗2	6,450,000	Calculated based on the amount of energy consumption for annual production volume for steering, driveline components, and machine tools (calculated based on a 10-year usage period)
	Disposal of sold products	33,000	Calculated by deriving the masses of each material used from the material content of all steering, driveline parts and machine tools manufactured annually then multiplying this amount by the emissions basic unit.
	Leased assets (downstream)	—	N/A
	Franchise	—	N/A
	Investment	—	N/A
Total		7,633,000 (t-CO_2)	

★ Portion subjected to third party verification ∗1 Calculated based on steel purchase volume ∗2 Calculated based on steering, driveline products and machine tools
∗3 Calculated using emissions basic unit stipulated in the guideline

Third party verification

In order to increase the reliability of CO_2 emissions data, we asked SGS Japan Inc. to verify our FY2016 results as a third party. The scope of the verification covered all JTEKT production sites and domestic group companies' bases as well as some overseas group companies, and the CO_2 emissions by scope were Category 6 (business trips), Category 7 (commuting by employees) and Category 11 (usage of sold products).

Certificate of verification

Appendix

The scope of consolidated environmental management

Europe

● 12 production companies

JTEKT AUTOMOTIVE UK LTD. (England)
KOYO BEARINGS (EUROPE) LTD. (England)
JTEKT TORSEN EUROPE S.A. (Belgium)
KOYO BEARINGS DEUTSCHLAND GMBH (Germany)
JTEKT HPI S.A.S. (France)
JTEKT AUTOMOTIVE LYON S.A.S. (France)
JTEKT AUTOMOTIVE DIJON SAINT-ETIENNE S.A.S. (France)
KOYO BEARINGS VIERZON MAROMME SAS (France)
JTEKT AUTOMOTIVE CZECH PLZEN, S.R.O. (Czech Republic)
JTEKT AUTOMOTIVE CZECH PARDUBICE, S.R.O. (Czech Republic)
KOYO BEARINGS CESKA REPUBLIKA S.R.O. (Czech Republic)
KOYO ROMANIA S.A. (Romania)

Asia / Oceania

● 8 production companies

JTEKT (THAILAND) CO., LTD. (Thailand)
JTEKT AUTOMOTIVE (THAILAND) CO., LTD.(Thailand)
KOYO MANUFACTURING (PHILIPPINES) CORPORATION (Philippines)
JTEKT AUTOMOTIVE (MALAYSIA) SDN. BHD. (Malaysia)
JTEKT SONA AUTOMOTIVE INDIA LTD. (India)
KOYO BEARINGS INDIA PVT.LTD (India)
PT.JTEKT INDONESIA (Indonesia)
KOYO JICO KOREA CO., LTD. (Korea)

China

● 10 production companies

JTEKT AUTOMOTIVE (TIANJIN) CO., LTD.
JTEKT AUTOMOTIVE (FOSHAN) CO., LTD.
JTEKT STEERING SYSTEMS (XIAMEN) CO., LTD.
JTEKT DALIAN INNOVATION AUTOMOTIVE CO., LTD.
WUXI KOYO BEARING CO., LTD.
DALIAN KOYO WAZHOU AUTOMOBILE BEARING CO., LTD.
KOYO BEARING DALIAN CO., LTD.
KOYO LIOHO (FOSHAN) AUTOMOTIVE PARTS CO., LTD.
KOYO AUTOMOTIVE PARTS (WUXI) CO., LTD.
KOYO NEEDLE BEARINGS (WUXI) CO., LTD.

Japan

● 13 JTEKT bases
● 19 domestic group production companies

Koyo Machine Industries Co., Ltd. (Osaka)
Toyooki Kogyo Co., Ltd. (Aichi)
Koyo Sealing Techno Co., Ltd. (Tokushima)
CNK Co., Ltd. (Aichi)
Koyo Thermo Systems Co., Ltd. (Nara)
Koyo Electronics Industries Co., Ltd. (Tokyo)
Daibea Co., Ltd. (Osaka)
Utsunomiya Kiki Co., Ltd. (Tochigi)
HOUKO Co., Ltd. (Aichi)
Toyoda Van Moppes Ltd. (Aichi)
Koyometaltec Co., Ltd. (Mie)
KJK Co., Ltd. (Tokushima)
NIPPON NEEDLE ROLLER MFG. Co., Ltd. (Mie)
Koyo Heat Treatment Co., Ltd. (Osaka)
FORMICS Co., Ltd. (Aichi)
Taiho Co., Ltd. (Kagawa)
Eiko Seimistu Co.,Ltd. (Kagawa Prefecture)
Tokio Seiko Corporation (Tokyo Prefecture)
Yamato Seiko Co.,Ltd. (Nara Prefecture)

North America / South America

● 8 production companies

JTEKT AUTOMOTIVE TENNESSEE-VONORE LLC (U.S.A.)
JTEKT AUTOMOTIVE TENNESSEE-MORRISTOWN, INC. (U.S.A.)
JTEKT AUTOMOTIVE TEXAS, L.P. (U.S.A.)
JTEKT AUTOMOTIVE SOUTH CAROLINA, INC. (U.S.A.)
KOYO BEARINGS NORTH AMERICA LLC (U.S.A.)
KOYO BEARINGS CANADA INC. (Canada)
JTEKT AUTOMOTIVA BRASIL LTDA. (Brazil)
JTEKT AUTOMOTIVE ARGENTINA S.A. (Argentina)

JTEKT CSR Report 2017

Environmental Data by Operations Base ①

This page includes the environmental data for 2 locations, Kokubu and Kariya, out of our 13 locations; 12 domestic plants and 1 operations center.

[Chemicals] Substances subject to PRTR **[Atmosphere]** Measured values are the maximum values **[Water quality]** pH: Hydrogen-ion concentration/ COD:Chemical oxygen demand/ BOD: Biochemical oxygen demand/ SS: Suspended solids in water/ Oil content: N-hexane extract content/ ND: Lower than determination limit/ Values in parenthesis show the daily average values **[Regulated value]** JTEKT internal standards (some more stricter than regulatory amounts) **[Substances subject to PRTR]** Shows substances which are handled in amounts of 1,000 kg/year or more. Substance number shows the legislative number for each of the No. 1 type chemical substances of the PRTR regulations. Removal processing amount is the amount of substances subject to PRTR which are incinerated, neutralized, broken down, put through reaction treatment, etc. within JTEKT premises. Consumed amount is the amount of substances subject to PRTR which are changed to another substance through reaction treatment, or removed from JTEKT premises in, or attached to, products. **[Target period] April 2016 to March 2017**

Kokubu Plant

No. of Employees 1,924

Production items
- All types of ball bearings
- Roller bearings
- Ultra-large bearings
- High-accuracy bearings

Overall environmental data

		Classification		Volume
INPUT		Energy consumption	(GJ)	976,487
		Water consumed	(1,000m³)	414
		Chemical substances handled	(t)	11.2
OUTPUT	Atmosphere	Greenhouse gases	(t-CO_2)	3,909
		NOx	(kg)	5,741
		SOx	(kg)	0
		Chemical substances released	(t)	3.8
	Sewage	Wastewater	(1,000m³)	123
		COD	(kg)	5,018
		Nitrogen	(kg)	0
		Phosphorus	(kg)	0
		Chemical substances transferred	(t)	0.08
	Materials discarded	Recycled for profit	(t)	3,916
		Recycled at a charge	(t)	1,532
		Waste (incineration+landfill)	(t)	0
		Chemical substances transferred	(t)	2.2

* Due to sewage disposal, there are no regulation values for COD, nitrogen, or phosphorus

Water quality measurement data

Index	Regulation value	Results	
		Maximum	Average
pH	5.2～8.8	8.1	7.4
BOD	480	140	77
SS	480	26	5.0
Oil content	4	2.8	1.1

Unit : mg/ℓ (Excluding pH)

Atmosphere measurement data

Facility	Index	Regulation value	Maximum value
Boiler (Annealing furnace)	Dust	0.08	0.003
	NOx	144	34
	SOx	—	—
Boiler (Hot and cold water generator)	Dust	0.08	0.003
	NOx	120	110
	SOx	—	—

Unit : Dust= g/Nm³ NOx= ppm SOx= Value K

Noise / Vibration data

Unit : dB

Index		Regulation value	Maximum	Average
Noise	Morning	64	58	52
	Afternoon	69	64	56
	Evening	64	60	51
	Night	59	59	49
Vibration	Daytime	68	54	52
	Nighttime	63	54	46

Foul odor

Unit : ppm

Measurement item	Regulation value	Measurement
Ammonia	0.8	0.77
Methanethiol	0.0016	0.0005
Trimethylamine	0.0040	0.0040

* Malodorous substances (22 substances) were measured.
* All items not listed were below minimum determination limit.

Substances subject to PRTR

Unit : kg/year

Substance number	Chemical name	Amount handled	Amount released			Amount transferred		Amount recycled	Amount Removed and treated	Amount consumed
			Atmosphere	Waterways	Soil	Sewage	Waste			
1	Water-soluble zinc compounds	10,660	0	0	0	0	1,066	0	0	9,594
80	Xylene	3,167	3,167	0	0	0	0	0	0	0
412	Manganese and its compounds	2,615	0	52	0	0	941	0	0	1,621

Kariya Plant

No. of Employees 1,373

Production items
- Machine tools
- Damper pulleys
- Machined parts

Overall environmental data

		Classification		Volume
INPUT		Energy consumption	(GJ)	209,265
		Water consumed	(1,000m³)	124
		Chemical substances handled	(t)	2.0
OUTPUT	Atmosphere	Greenhouse gases	(t-CO_2)	8,016
		NOx	(kg)	228
		SOx	(kg)	0
		Chemical substances released	(t)	2.0
	Waterways	Wastewater	(1,000m³)	173
		COD	(kg)	618
		Nitrogen	(kg)	874
		Phosphorus	(kg)	6
		Chemical substances transferred	(t)	0
	Materials discarded	Recycled for profit	(t)	401
		Recycled at a charge	(t)	236
		Waste (incineration+landfill)	(t)	0
		Chemical substances transferred	(t)	0

Water quality measurement data

Index	Regulation value	Results	
		Maximum	Average
pH	5.9～8.5	7.2	7.0
COD	19	5.5	3.8
BOD	20	9.7	5.1
SS	20	5.5	2.2
Oil content	4	0.3	0.2
Zinc	1.6	0.1	0.04

Unit : mg/ℓ (Excluding pH)

Index	Regulation value	Results	
		Maximum	Average
Soluble iron	4	0.5	0.5
Soluble manganese	1.6	0.3	0.2
Fluorine	4	0.1	0.1
Nitrogen	16.1	12.0	8.4
Phosphorus	1.5	0.1	0.1
Boron	8	0.06	0.03

Atmosphere measurement data

Facility	Index	Regulation value	Maximum value
Boiler (for cafeteria use)	Dust	0.08	0
	NOx	104	57
	SOx	1.2	—
Boiler (Hot and cold water generator)	Dust	0.08	0
	NOx	104	61
	SOx	1.2	—

Unit : Dust= g/Nm³ NOx= ppm SOx=Nm³/hr

Noise / Vibration data

Unit : dB

Index		Regulation value	Maximum	Average
Noise	Morning	64	56	49
	Afternoon	69	64	54
	Evening	64	62	50
	Night	59	57	49
Vibration	Daytime	68	47	33
	Nighttime	63	38	26

Foul odor

Measurement item	Regulation value	Measurement
Odor index	12	10

Substances subject to PRTR

Unit : kg/year

Substance number	Chemical name	Amount handled	Amount released			Amount transferred		Amount recycled	Amount Removed and treated	Amount consumed
			Atmosphere	Waterways	Soil	Sewage	Waste			
300	Toluene	1,689	1,356	0	0	0	0	0	0	333

JTEKT CSR Report 2017

Environmental Data by Operations Base ②

This page includes the environmental data for 2 locations, Tokushima and Okazaki, out of our 13 locations; 12 domestic plants and 1 operations center.

[Chemicals] Substances subject to PRTR **[Atmosphere]** Measured values are the maximum values **[Water quality]** pH: Hydrogen-ion concentration/ COD:Chemical oxygen demand/ BOD: Biochemical oxygen demand/ SS: Suspended solids in water/ Oil content: N-hexane extract content/ ND: Lower than determination limit/ Values in parenthesis show the daily average values **[Regulated value]** JTEKT internal standards (some more stricter than regulatory amounts) **[Substances subject to PRTR]** Shows substances which are handled in amounts of 1,000 kg/year or more. Substance number shows the legislative number for each of the No. 1 type chemical substances of the PRTR regulations. Removal processing amount is the amount of substances subject to PRTR which are incinerated, neutralized, broken down, put through reaction treatment, etc. within JTEKT premises. Consumed amount is the amount of substances subject to PRTR which are changed to another substance through reaction treatment, or removed from JTEKT premises in, or attached to, products. **[Target period] April 2016 to March 2017**

Tokushima Plant

No. of Employees 1,171

Production items

- Ball bearings
- Water pump bearings
- Cylindrical roller bearings
- Special environment bearings
- Double row angular contact ball bearings
- Hub units
- Tensioner pulleys

Overall environmental data

		Classification		Volume
INPUT		Energy consumption	(GJ)	866,111
		Water consumed	(1,000m³)	885
		Chemical substances handled	(t)	8.4
OUTPUT	Atmosphere	Greenhouse gases	(t-CO_2)	3,334
		NOx	(kg)	27,729
		SOx	(kg)	859
		Chemical substances released	(t)	4.8
	Waterways	Wastewater	(1,000m³)	213,852
		COD	(kg)	4,449
		Nitrogen	(kg)	3,205
		Phosphorus	(kg)	9
		Chemical substances transferred	(t)	0
	Materials discarded	Recycled for profit	(t)	6,822
		Recycled at a charge	(t)	1,665
		Waste (incineration+landfill)	(t)	0
		Chemical substances transferred	(t)	0

Water quality measurement data

Index	Regulation value	Results	
		Maximum	Average
pH	5.9～8.5	7.2	6.6
COD	16	12.0	9.5
BOD	24	4.0	2.3
SS	2.4	1.2	1.1
Oil content	25	4.1	3.1
Zinc	2.5	0.06	0.05

Unit : mg/ℓ (Excluding pH)

Atmosphere measurement data

Facility	Index	Regulation value	Maximum value
Boiler (Absorption type cold and hot water generator)	Dust	0.24	0.01
	NOx	144	51
	SOx	16.8	0.03
Diesel engine	Dust	0.08	0.05
	NOx	902.5	762
	SOx	16.8	0.04

Unit : Dust= g/Nm³ NOx= ppm SOx= Value K

Noise / Vibration data

Unit : dB

Index		Regulation value	Maximum	Average
Noise	Morning	59	51	50
	Afternoon	64	56	55
	Evening	59	52	51
	Night	55	52	49
Vibration	Daytime	63	54	48
	Nighttime	58	50	45

Foul odor

- Malodorous substances (22 substances) were measured.
- All items were below minimum determination limit.

Substances subject to PRTR

Unit : kg/year

Substance number	Chemical name	Amount handled	Amount released			Amount transferred		Amount recycled	Amount Removed and treated	Amount consumed
			Atmosphere	Waterways	Soil	Sewage	Waste			
80	Xylene	3,827	3,827	0	0	0	0	0	0	0
438	Methylnaphthalene	3,189	0	0	0	0	0	0	0	3,189

Okazaki Plant

No. of Employees 883

Production items

- 4WD coupling
- Linear solenoid valves for AT and CVT
- Oil pumps for AT and CVT
- Propeller shafts
- Cast parts

Overall environmental data

		Classification		Volume
INPUT		Energy consumption	(GJ)	751,804
		Water consumed	(1,000m³)	130
		Chemical substances handled	(t)	5.5
OUTPUT	Atmosphere	Greenhouse gases	(t-CO_2)	3,061
		NOx	(kg)	18,983
		SOx	(kg)	0
		Chemical substances released	(t)	3.4
	Waterways	Wastewater	(1,000m³)	44
		COD	(kg)	108
		Nitrogen	(kg)	242
		Phosphorus	(kg)	0.46
		Chemical substances transferred	(t)	0
	Materials discarded	Recycled for profit	(t)	11,643
		Recycled at a charge	(t)	3,425
		Waste (incineration+landfill)	(t)	0
		Chemical substances transferred	(t)	0

Water quality measurement data

Index	Regulation value	Results	
		Maximum	Average
pH	6.6～8.4	7.6	7.1
COD	16	4.0	3.0
BOD	16	6.9	2.7
SS	16	11.0	2.9
Oil content	1.6	0.5	0.5
Zinc	2.4	0.05	0.05

Unit : mg/ℓ (Excluding pH)

Index	Regulation value	Results	
		Maximum	Average
Soluble iron	4	0.5	0.5
Soluble manganese	2.4	0.3	0.2
Fluorine	0.8	0.10	0.10
Nitrogen	12	5.9	4.9
Phosphorus	1.6	0.10	0.07
Boron	8	0.04	0.03

Atmosphere measurement data

Facility	Index	Regulation value	Maximum value
Electric furnace	Dust	0.12	0.004
	NOx	80	5
	SOx	6.072	—
Boiler (for air conditioning)	Dust	0.08	0.002
	NOx	104	29
	SOx	—	—
Heating furnace	Dust	0.12	0.002
	NOx	80	5
	SOx	6.072	—
Gas engine (cogeneration)	Dust	0.04	0.002
	NOx	160	38
	SOx	6.072	—

Unit : Dust= g/Nm³ NOx= ppm SOx=Nm³/hr

Noise / Vibration data

Unit : dB

Index		Regulation value	Maximum	Average
Noise	Morning	64	60	50
	Afternoon	69	58	56
	Evening	64	60	52
	Night	59	56	50
Vibration	Daytime	69	37	32
	Nighttime	64	32	31

Foul odor

Measurement item	Regulation value	Measurement
Odor index	12	10

Substances subject to PRTR

Unit : kg/year

Substance number	Chemical name	Amount handled	Amount released			Amount transferred		Amount recycled	Amount Removed and treated	Amount consumed
			Atmosphere	Waterways	Soil	Sewage	Waste			
300	Toluene	3,266	2,623	0	0	0	0	0	0	643

JTEKT CSR Report 2017

Environmental Data by Operations Base ③

This page includes the environmental data for 2 locations, Tokyo and Kagawa, out of our 13 locations; 12 domestic plants and 1 operations center.

[Chemicals] Substances subject to PRTR **[Atmosphere]** Measured values are the maximum values **[Water quality]** pH: Hydrogen-ion concentration/ COD:Chemical oxygen demand/ BOD: Biochemical oxygen demand/ SS: Suspended solids in water/ Oil content: N-hexane extract content/ ND: Lower than determination limit/ Values in parenthesis show the daily average values **[Regulated value]** JTEKT internal standards (some more stricter than regulatory amounts) **[Substances subject to PRTR]** Shows substances which are handled in amounts of 1,000 kg/year or more. Substance number shows the legislative number for each of the No. 1 type chemical substances of the PRTR regulations. Removal processing amount is the amount of substances subject to PRTR which are incinerated, neutralized, broken down, put through reaction treatment, etc. within JTEKT premises. Consumed amount is the amount of substances subject to PRTR which are changed to another substance through reaction treatment, or removed from JTEKT premises in, or attached to, products. **[Target period] April 2016 to March 2017**

Tokyo Plant

No. of Employees 523

Production items
- Needle roller bearings
- Constant velocity joints
- Drive shafts
- Propeller shafts

Overall environmental data

		Classification		Volume
INPUT		Energy consumption	(GJ)	330,717
		Water consumed	(1,000m³)	98
		Chemical substances handled	(t)	12.3
OUTPUT	Atmosphere	Greenhouse gases	(t-CO₂)	1,252
		NOx	(kg)	48
		SOx	(kg)	8
		Chemical substances released	(t)	4.4
	Sewage	Wastewater	(1,000m³)	69
		BOD	(kg)	274
		Nitrogen	(kg)	840
		Phosphorus	(kg)	48
		Chemical substances transferred	(t)	0.38
	Materials discarded	Recycled for profit	(t)	3,503
		Recycled at a charge	(t)	649
		Waste (incineration+landfill)	(t)	0
		Chemical substances transferred	(t)	2.7

* Due to sewage disposal, there are no regulation values for COD

Water quality measurement data

Index	Regulation value	Results	
		Maximum	Average
pH	5.9~8.6	8.1	7.7
BOD	240	11	4
SS	200	61	13
Oil content	24	1.0	1.0
Nitrogen	96	23	11.9
Phosphorus	13	1.3	0.7

Unit : mg/ℓ (Excluding pH)

Atmosphere measurement data

Facility	Index	Regulation value	Maximum value
Gas suction type boiler	Dust	0.08	0.005
	NOx	44	37
	SOx	0.33	0.01

Unit : Dust= g/Nm³ NOx= ppm SOx= Value K

Noise / Vibration data

Unit : dB

Index		Regulation value	Maximum	Average
Noise	Morning	59	57	55
	Afternoon	69	64	61
	Evening	59	57	56
	Night	54	52	51
Vibration	Daytime	58	49	36
	Nighttime	48	42	33

Foul odor

Measurement item	Regulation value	Measurement
Odor index	12	10

* Changed to the odor index in FY2016

Substances subject to PRTR

Unit : kg/year

Substance number	Chemical name	Amount handled	Amount released			Amount transferred		Amount recycled	Amount Removed and treated	Amount consumed
			Atmosphere	Waterways	Soil	Sewage	Waste			
1	Water-soluble zinc compounds	1,099	0	0	0	0	110	0	0	989
80	Xylene	1,510	1,510	0	0	0	0	0	0	0
300	Toluene	2,786	2,786	0	0	0	0	0	0	0
72	Chlorinated paraffins	5,005	0	300	0	0	1,602	0	0	3,103

Kagawa Plant

No. of Employees 913

Production items
- Tapered roller bearings
- Hub units

Overall environmental data

		Classification		Volume
INPUT		Energy consumption	(GJ)	995,011
		Water consumed	(1,000m³)	341
		Chemical substances handled	(t)	6.0
OUTPUT	Atmosphere	Greenhouse gases	(t-CO₂)	3,853
		NOx	(kg)	98
		SOx	(kg)	32
		Chemical substances released	(t)	2.8
	Waterways	Wastewater	(1,000m³)	239
		COD	(kg)	2,571
		Nitrogen	(kg)	1,692
		Phosphorus	(kg)	8
		Chemical substances transferred	(t)	0.004
	Materials discarded	Recycled for profit	(t)	9,594
		Recycled at a charge	(t)	1,150
		Waste (incineration+landfill)	(t)	0
		Chemical substances transferred	(t)	0.09

Water quality measurement data

Index	Regulation value	Results	
		Maximum	Average
pH	5.9~8.5	6.9	6.5
COD	40	30	18
BOD	40	36	26
SS	40	2.0	1.3
Oil content	2.4	2.0	1.4
Nitrogen	48	14	8
Phosphorus	6.4	0.4	0.1

Unit : mg/ℓ (Excluding pH)

Atmosphere measurement data

Facility	Index	Regulation value	Maximum value
Boiler	Dust	0.24	0.004
	NOx	208	55
	SOx	4	0.1

Unit : Dust= g/Nm³ NOx= ppm SOx= Value K

Noise / Vibration data

Unit : dB

Index		Regulation value	Maximum	Average
Noise	Morning	64	58	54
	Afternoon	64	60	54
	Evening	64	57	51
	Night	59	55	51
Vibration	Daytime	49	28	27
	Nighttime	46	28	26

Foul odor

Unit : ppm

Measurement item	Regulation value	Measurement
Ammonia	1.2	0.18

Substances subject to PRTR

Unit : kg/year

Substance number	Chemical name	Amount handled	Amount released			Amount transferred		Amount recycled	Amount Removed and treated	Amount consumed
			Atmosphere	Waterways	Soil	Sewage	Waste			
80	Xylene	2,732	2,732	0	0	0	0	0	0	0
438	Methylnaphthalene	2,794	14	0	0	0	0	0	0	2,780

Environmental Data by Operations Base ④

This page includes the environmental data for 2 locations, Nara and Higashi-kariya, out of our 13 locations; 12 domestic plants and 1 operations center.

[Chemicals] Substances subject to PRTR **[Atmosphere]** Measured values are the maximum values **[Water quality]** pH: Hydrogen-ion concentration/ COD:Chemical oxygen demand/ BOD: Biochemical oxygen demand/ SS: Suspended solids in water/ Oil content: N-hexane extract content/ ND: Lower than determination limit/ Values in parenthesis show the daily average values **[Regulated value]** JTEKT internal standards (some more stricter than regulatory amounts) **[Substances subject to PRTR]** Shows substances which are handled in amounts of 1,000 kg/year or more. Substance number shows the legislative number for each of the No. 1 type chemical substances of the PRTR regulations. Removal processing amount is the amount of substances subject to PRTR which are incinerated, neutralized, broken down, put through reaction treatment, etc. within JTEKT premises. Consumed amount is the amount of substances subject to PRTR which are changed to another substance through reaction treatment, or removed from JTEKT premises in, or attached to, products. **[Target period] April 2016 to March 2017**

Nara Plant

No. of Employees 1,840

Production items

- Electric power steering
- Electric pumps for hydraulic-electric type power steering
- Hydraulic power steering
- Manual steering

Overall environmental data

		Classification		Volume
INPUT		Energy consumption	(GJ)	199,440
		Water consumed	(1,000m³)	40
		Chemical substances handled	(t)	13
OUTPUT	Atmosphere	Greenhouse gases	(t-CO_2)	7,416
		NOx	(kg)	0
		SOx	(kg)	0
		Chemical substances released	(t)	12.1
	Waterways	Wastewater	(1,000m³)	26
		COD	(kg)	132
		Nitrogen	(kg)	340
		Phosphorus	(kg)	67
		Chemical substances transferred	(t)	0.001
	Materials discarded	Recycled for profit	(t)	1,009
		Recycled at a charge	(t)	851
		Waste (incineration+landfill)	(t)	0
		Chemical substances transferred	(t)	0.2

Water quality measurement data

Unit : mg/ℓ (Excluding pH)

Index	Regulation value	Results Maximum	Results Average
pH	5.9~8.5	7.5	7.2
COD	12	8.4	5.5
BOD	12	2.0	0.9
SS	20	5.9	0.5
Oil content	2	0	0

Index	Regulation value	Results Maximum	Results Average
Soluble iron	1	0.04	0.02
Soluble manganese	1	0.03	0.003
Nitrogen	40	20	14
Phosphorus	15	3.6	2.7

Atmosphere measurement data

Facility	Index	Regulation value	Maximum value
No. 1 Plant, No. 1 (Boiler)	Dust		
	NOx		
	SOx		
No. 1 Plant, No. 2 (Boiler)	Dust		
	NOx	Abolished	
	SOx		
South No. 2 Plant (Boiler)	Dust		
	NOx		
	SOx		

Unit : Dust= g/Nm³ NOx= ppm SOx= Value K

Noise / Vibration data

Unit : dB

Index		Regulation value	Maximum	Average
Noise	Morning	64	57	53
	Afternoon	67	59	56
	Evening	64	62	57
	Night	54	52	50
Vibration	Daytime	59	55	43
	Nighttime	54	53	40

Foul odor

- Malodorous substances (22 substances) were measured.
- All items were below minimum determination limit.

Substances subject to PRTR

Unit : kg/year

Substance number	Chemical name	Amount handled	Amount released			Amount transferred		Amount recycled	Amount Removed and treated	Amount consumed
			Atmosphere	Waterways	Soil	Sewage	Waste			
80	Xylene	9,097	9,097	0	0	0	0	0	0	0
300	Toluene	2,947	2,947	0	0	0	0	0	0	0

Higashi-kariya operations center

No. of Employees 173

Overall environmental data

		Classification		Volume
INPUT		Energy consumption	(GJ)	32,694
		Water consumed	(1,000m³)	3
		Chemical substances handled	(t)	0
OUTPUT	Atmosphere	Greenhouse gases	(t-CO_2)	1,256
		NOx	(kg)	0
		SOx	(kg)	0
		Chemical substances released	(t)	0
	Waterways	Wastewater	(1,000m³)	3
		COD	(kg)	16.81
		Nitrogen	(kg)	8.38
		Phosphorus	(kg)	0.59
		Chemical substances transferred	(t)	0
	Materials discarded	Recycled for profit	(t)	116
		Recycled at a charge	(t)	42
		Waste (incineration+landfill)	(t)	0
		Chemical substances transferred	(t)	0

Water quality measurement data

Unit : mg/ℓ (Excluding pH)

Index	Regulation value	Results Maximum	Results Average
pH	6.0~8.3	7.7	7.2
COD	16	6.8	5.0
BOD	16	6.7	1.2
SS	16	1.0	1.0
Oil content	4	0.5	0.5
Zinc	2	0.1	0.1

Index	Regulation value	Results Maximum	Results Average
Soluble iron	4	0.1	0.1
Soluble manganese	4	0.1	0.1
Fluorine	5	0.40	0.13
Nitrogen	48	3.6	2.9
Phosphorus	6	0.2	0.1
Boron	8	0.06	0.03

Atmosphere measurement data

Facility	Index	Regulation value	Maximum value
Boiler (Hot and cold water generator)	Dust		
	NOx	Abolished	
	SOx		

Unit : Dust= g/Nm³ NOx= ppm SOx=Nm³/hr

Noise / Vibration data

Unit : dB

Index		Regulation value	Maximum	Average
Noise	Morning	64	56	50
	Afternoon	69	58	50
	Evening	64	56	49
	Night	59	56	48
Vibration	Daytime	68	28	26
	Nighttime	63	29	25

Foul odor

Measurement item	Regulation value	Measurement
Odor index	12	10

Substances subject to PRTR

- No substances had handling amounts of over 1,000 kg /year

JTEKT CSR Report 2017

Environmental Data by Operations Base ⑤

This page includes the environmental data for 2 locations, Toyohashi and Tadomisaki, out of our 13 locations; 12 domestic plants and 1 operations center.

[Chemicals] Substances subject to PRTR **[Atmosphere]** Measured values are the maximum values **[Water quality]** pH: Hydrogen-ion concentration/ COD:Chemical oxygen demand/ BOD: Biochemical oxygen demand/ SS: Suspended solids in water/ Oil content: N-hexane extract content/ ND: Lower than determination limit/ Values in parenthesis show the daily average values **[Regulated value]** JTEKT internal standards (some more stricter than regulatory amounts) **[Substances subject to PRTR]** Shows substances which are handled in amounts of 1,000 kg/year or more. Substance number shows the legislative number for each of the No. 1 type chemical substances of the PRTR regulations. Removal processing amount is the amount of substances subject to PRTR which are incinerated, neutralized, broken down, put through reaction treatment, etc. within JTEKT premises. Consumed amount is the amount of substances subject to PRTR which are changed to another substance through reaction treatment, or removed from JTEKT premises in, or attached to, products. **[Target period] April 2016 to March 2017**

Toyohashi Plant

No. of Employees 613

Production items
- Hydraulic power steering
- Manual steering
- Safety handle column

Water quality measurement data

Index	Regulation value	Results	
		Maximum	Average
pH	6.1～8.4	7.4	7.1
COD	16	4.5	3.2
BOD	16	2.5	1.0
SS	24	2.0	1.2
Oil content	4	1.0	1.0
Nitrogen	48	8.4	4.4
Phosphorus	6	0.7	0.4

Unit : mg/ℓ (Excluding pH)

Overall environmental data

		Classification		Volume
INPUT		Energy consumption	(GJ)	243,840
		Water consumed	(1,000m³)	44
		Chemical substances handled	(t)	3.3
OUTPUT	Atmosphere	Greenhouse gases	(t-CO_2)	9,285
		NOx	(kg)	804
		SOx	(kg)	39
		Chemical substances released	(t)	0.3
	Waterways	Wastewater	(1,000m³)	10
		COD	(kg)	34
		Nitrogen	(kg)	46
		Phosphorus	(kg)	4
		Chemical substances transferred	(t)	0.5
	Materials discarded	Recycled for profit	(t)	2,047
		Recycled at a charge	(t)	335
		Waste (incineration+landfill)	(t)	0
		Chemical substances transferred	(t)	0.3

Atmosphere measurement data

Facility	Index	Regulation value	Maximum value
No. 1 Plant (Boiler)	Dust	0.03	0.001
	NOx	120	44
	SOx	1	0.001
No. 2 Plant (Hot and cold water generator)	Dust	0.03	0.002
	NOx	120	49
	SOx	1	0.002
No. 3 Plant (Hot and cold water generator)	Dust	0.03	0.007
	NOx	120	16
	SOx	1	0.002

Unit : Dust= g/Nm³ NOx= ppm SOx= Value K

Noise / Vibration data

Unit : dB

Index		Regulation value	Maximum	Average
Noise	Morning	60	55	54
	Afternoon	65	57	55
	Evening	64	57	55
	Night	59	57	53
Vibration	Daytime	55	37	34
	Nighttime	50	35	34

Foul odor

Measurement item	Regulation value	Measurement
Odor index	14	10

Substances subject to PRTR

Unit : kg/year

Substance number	Chemical name	Amount handled	Amount released			Amount transferred		Amount recycled	Amount Removed and treated	Amount consumed
			Atmosphere	Waterways	Soil	Sewage	Waste			
453	Molybdenum and its compounds	2,705	0	0	0	0	0	0	0	2,705

Tadomisaki Plant

No. of Employees 1,013

Production items
- Drive shafts
- 4WD coupling

Water quality measurement data

Index	Regulation value	Results	
		Maximum	Average
pH	6.0～8.8	7.5	7.3
COD	18	6.4	4.3
BOD	18	3.4	2.2
SS	24	5.0	1.8
Oil content	1.6	0.5	0.5
Zinc	0.8	0.03	0.02

Unit : mg/ℓ (Excluding pH)

Index	Regulation value	Results	
		Maximum	Average
Soluble iron	2.4	0.4	0.2
Soluble manganese	4	0.1	0.1
Fluorine	12	0.2	0.1
Nitrogen	24	7	4.7
Phosphorus	3.2	0.4	0.2
Boron	184	0.1	0.1

Overall environmental data

		Classification		Volume
INPUT		Energy consumption	(GJ)	648,583
		Water consumed	(1,000m³)	158
		Chemical substances handled	(t)	2.6
OUTPUT	Atmosphere	Greenhouse gases	(t-CO_2)	2,423
		NOx	(kg)	308
		SOx	(kg)	57
		Chemical substances released	(t)	0.001
	Waterways	Wastewater	(1,000m³)	40
		COD	(kg)	160
		Nitrogen	(kg)	233
		Phosphorus	(kg)	8
		Chemical substances transferred	(t)	0
	Materials discarded	Recycled for profit	(t)	8,598
		Recycled at a charge	(t)	658
		Waste (incineration+landfill)	(t)	0
		Chemical substances transferred	(t)	0.06

Atmosphere measurement data

Facility	Index	Regulation value	Maximum value
Boiler (Hot and cold water generator)	Dust	0.05	0.001
	NOx	104	36
	SOx	0.6	0.002
Continuous carburizing furnace	Dust	0.05	0.001
	NOx	104	1.6
	SOx	0.6	0

Unit : Dust= g/Nm³ NOx= ppm SOx=Nm³/hr

Noise / Vibration data

Unit : dB

Index		Regulation value	Maximum	Average
Noise	Morning	69	61	58
	Afternoon	69	61	58
	Evening	69	60	58
	Night	64	59	58
Vibration	Daytime	55	43	40
	Nighttime	50	43	39

Foul odor

Measurement item	Regulation value	Measurement
Odor index	16	10

Substances subject to PRTR

Unit : kg/year

Substance number	Chemical name	Amount handled	Amount released			Amount transferred		Amount recycled	Amount Removed and treated	Amount consumed
			Atmosphere	Waterways	Soil	Sewage	Waste			
453	Molybdenum and its compounds	1,761	0	0	0	0	0	0	0	1,761

JTEKT CSR Report 2017

Environmental Data by Operations Base ⑥

This page includes the environmental data for 2 locations, Hanazono and Kameyama, out of our 13 locations; 12 domestic plants and 1 operations center.

[Chemicals] Substances subject to PRTR **[Atmosphere]** Measured values are the maximum values **[Water quality]** pH: Hydrogen-ion concentration/ COD:Chemical oxygen demand/ BOD: Biochemical oxygen demand/ SS: Suspended solids in water/ Oil content: N-hexane extract content/ ND: Lower than determination limit/ Values in parenthesis show the daily average values **[Regulated value]** JTEKT internal standards (some more stricter than regulatory amounts) **[Substances subject to PRTR]** Shows substances which are handled in amounts of 1,000 kg/year or more. Substance number shows the legislative number for each of the No. 1 type chemical substances of the PRTR regulations. Removal processing amount is the amount of substances subject to PRTR which are incinerated, neutralized, broken down, put through reaction treatment, etc. within JTEKT premises. Consumed amount is the amount of substances subject to PRTR which are changed to another substance through reaction treatment, or removed from JTEKT premises in, or attached to, products. **[Target period] April 2016 to March 2017**

Hanazono Plant

No. of Employees 1,296

Production items

- Electric power steering
- Hydraulic power steering pump
- Control computer

Overall environmental data

		Classification		Volume
INPUT		Energy consumption	(GJ)	316,209
		Water consumed	(1,000m³)	70
		Chemical substances handled	(t)	0.4
OUTPUT	Atmosphere	Greenhouse gases	(t-CO_2)	1,228
		NOx	(kg)	419
		SOx	(kg)	9
		Chemical substances released	(t)	0.2
	Waterways	Wastewater	(1,000m³)	67
		COD	(kg)	238
		Nitrogen	(kg)	470
		Phosphorus	(kg)	3
		Chemical substances transferred	(t)	0
	Materials discarded	Recycled for profit	(t)	841
		Recycled at a charge	(t)	447
		Waste (incineration+landfill)	(t)	0
		Chemical substances transferred	(t)	0.02

Water quality measurement data

Unit : mg/ℓ (Excluding pH)

Index	Regulation value	Results	
		Maximum	Average
pH	5.9~8.5	7.8	7.2
COD	8	4.3	3.2
BOD	8	3.1	1.1
SS	8	2.0	1.2
Oil content	1.6	1.0	1.0
Zinc	0.8	0.05	0.05

Index	Regulation value	Results	
		Maximum	Average
Soluble iron	2.4	0.5	0.5
Soluble manganese	2.4	0.3	0.3
Fluorine	0.8	0.1	0.1
Nitrogen	24	17.0	8.4
Phosphorus	2.4	0.1	0.03
Boron	8.0	1.0	1.0

Atmosphere measurement data

Facility	Index	Regulation value	Maximum value
Compact once-through boiler	Dust	0.08	0.001
	NOx	100	29
	SOx	6.07	0.00
Boiler (Hot and cold water generator)	Dust	0.08	0.001
	NOx	100	49
	SOx	6.07	0.003

Unit : Dust= g/Nm³ NOx= ppm SOx=Nm³/hr

Noise / Vibration data

Unit : dB

Index		Regulation value	Maximum	Average
Noise	Morning	74	61	55
	Afternoon	74	64	58
	Evening	74	57	52
	Night	69	56	51
Vibration	Daytime	60	30	30
	Nighttime	56	30	30

Foul odor

Measurement item	Regulation value	Measurement
Odor index	14	12

Substances subject to PRTR

- No substances had handling amounts of over 1,000 kg /year

Kameyama Plant

No. of Employees 422

Production items

- Ball bearings
- Clutch bearings
- Clutch pulleys for alternator
- Hub units

Overall environmental data

		Classification		Volume
INPUT		Energy consumption	(GJ)	231,615
		Water consumed	(1,000m³)	35
		Chemical substances handled	(t)	1.9
OUTPUT	Atmosphere	Greenhouse gases	(t-CO_2)	8,818
		NOx	(kg)	118
		SOx	(kg)	168
		Chemical substances released	(t)	0.3
	Waterways	Wastewater	(1,000m³)	18
		COD	(kg)	36
		Nitrogen	(kg)	315
		Phosphorus	(kg)	2
		Chemical substances transferred	(t)	0
	Materials discarded	Recycled for profit	(t)	768
		Recycled at a charge	(t)	201
		Waste (incineration+landfill)	(t)	0
		Chemical substances transferred	(t)	1.6

Water quality measurement data

Unit : mg/ℓ (Excluding pH)

Index	Regulation value	Results	
		Maximum	Average
pH	5.9~8.5	8.0	7.7
COD	8	4.0	2.3
BOD	8	2.0	1.1
SS	20	4.0	1.5
Oil content	1.0	0.5	0.5
Zinc	4	0.04	0.01

Index	Regulation value	Results	
		Maximum	Average
Soluble iron	8	0.07	0.03
Soluble manganese	2	0.22	0.04
Fluorine	5	0.1	0.1
Nitrogen	50	25.0	17.4
Phosphorus	1	0.5	0.14
Boron	8	0.11	0.06

Atmosphere measurement data

Facility	Index	Regulation value	Maximum value
No. 1 Plant (Boiler)	Dust	0.1	0.007
	NOx	150	28
	SOx	1.65	0.06

Unit : Dust= g/Nm³ NOx= ppm SOx=Nm³/hr

Noise / Vibration data

Unit : dB

Index		Regulation value	Maximum	Average
Noise	Morning	60	56	55
	Afternoon	60	58	55
	Evening	60	53	52
	Night	55	50	49
Vibration	Daytime	58	33.3	32
	Nighttime	48	35	34

Foul odor

- Malodorous substances (22 substances) were measured.
- All items were below minimum determination limit.

Substances subject to PRTR

- No substances had handling amounts of over 1,000 kg /year

Environmental Data by Operations Base ⑦

This page includes the environmental data for Sayama Plant out of our 13 locations; 12 domestic plants and 1 operations center.

[Chemicals] Substances subject to PRTR **[Atmosphere]** Measured values are the maximum values **[Water quality]** pH: Hydrogen-ion concentration/ COD:Chemical oxygen demand/ BOD: Biochemical oxygen demand/ SS: Suspended solids in water/ Oil content: N-hexane extract content/ ND: Lower than determination limit/ Values in parenthesis show the daily average values **[Regulated value]** JTEKT internal standards (some more stricter than regulatory amounts) **[Substances subject to PRTR]** Shows substances which are handled in amounts of 1,000 kg/year or more. Substance number shows the legislative number for each of the No. 1 type chemical substances of the PRTR regulations. Removal processing amount is the amount of substances subject to PRTR which are incinerated, neutralized, broken down, put through reaction treatment, etc. within JTEKT premises. Consumed amount is the amount of substances subject to PRTR which are changed to another substance through reaction treatment, or removed from JTEKT premises in, or attached to, products. **[Target period] April 2016 to March 2017**

Sayama Plant

No. of Employees 172

Production items

- TORSEN

Overall environmental data

		Classification		Volume
INPUT		Energy consumption	(GJ)	32,124
		Water consumed	(1,000m³)	5
		Chemical substances handled	(t)	0.000
OUTPUT	Atmosphere	Greenhouse gases	(t-CO_2)	1,205
		NOx	(kg)	31
		SOx	(kg)	0
		Chemical substances released	(t)	—
	Waterways	Wastewater	(1,000m³)	3
		COD	(kg)	9
		Nitrogen	(kg)	97
		Phosphorus	(kg)	0.30
		Chemical substances transferred	(t)	—
	Materials discarded	Recycled for profit	(t)	656
		Recycled at a charge	(t)	81
		Waste (incineration+landfill)	(t)	0
		Chemical substances transferred	(t)	—

Water quality measurement data

Index	Regulation value	Results	
		Maximum	Average
pH	5.2～8.8	7.7	7
Oil content	4	ND	ND
Nitrogen	192	36	32
Phosphorus	25.6	ND	ND

Unit : mg/ℓ (Excluding pH)

Atmosphere measurement data

Facility	Index	Regulation value	Maximum value
No.1 Plant (Boiler)	Dust	0.08	0.001
	NOx	120	65
	SOx	0.52	0

Unit : Dust= g/Nm³ NOx= ppm SOx=Nm³/hr

Noise / Vibration data

Unit : dB

Index		Regulation value	Maximum	Average
Noise	Morning	64	62	58
	Afternoon	69	61	58
	Evening	64	61	56
	Night	59	57	53
Vibration	Daytime	Unmeasured		
	Nighttime			

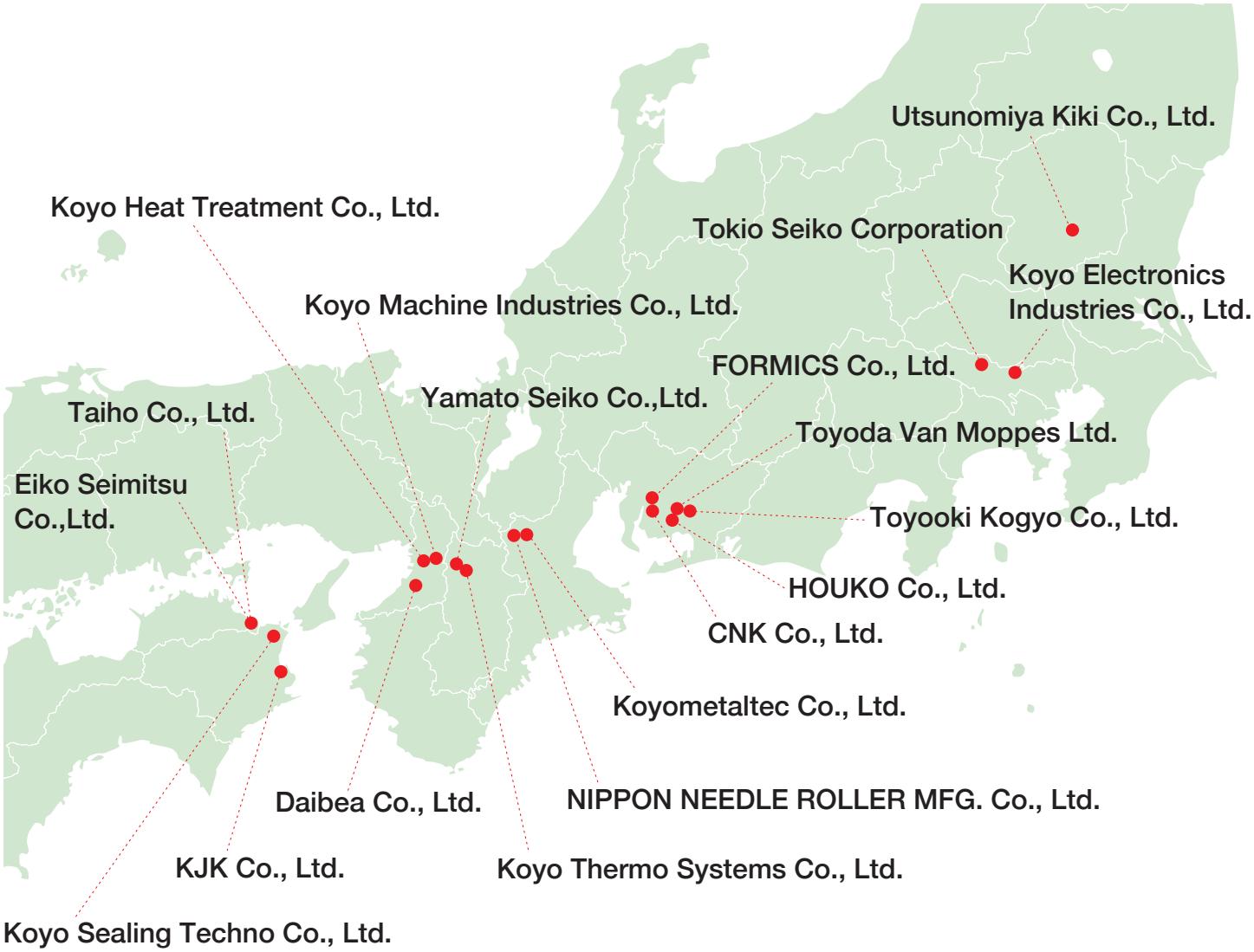
Foul odor

* Vibration and foul odor have not been measured as they occur in regions outside of the regions covered by regulations

Substances subject to PRTR

* No substances had handling amounts of over 1,000 kg /year

Global business sites [Domestic group production companies]



Koyo Machine Industries Co., Ltd.

Classification			Volume
INPUT		Energy Consumption (GJ)	236,363
		Water consumed (1,000m³)	42.7
		Chemical substances handled (t)	9.6
OUTPUT	Atmosphere	Greenhouse gases (1,000t-CO₂)	9.0
		Chemical substances released (t)	8.6
	Public water area	Chemical substances transferred (t)	0
	Materials Discarded	Recycled for profit (1,000t)	2.2
		Waste output (1,000t)	0.9
		Chemical substances transferred (t)	1.0

Koyo Sealing Techno Co., Ltd.

Classification			Volume
INPUT		Energy Consumption (GJ)	142,231
		Water consumed (1,000m³)	125.4
		Chemical substances handled (t)	0.0
OUTPUT	Atmosphere	Greenhouse gases (1,000t-CO₂)	6.0
		Chemical substances released (t)	0
	Public water area	Chemical substances transferred (t)	0
	Materials Discarded	Recycled for profit (1,000t)	0.3
		Waste output (1,000t)	0.1
		Chemical substances transferred (t)	0

Koyo Thermo Systems Co., Ltd.

Classification			Volume
INPUT		Energy Consumption (GJ)	59,851
		Water consumed (1,000m³)	13.2
		Chemical substances handled (t)	0.4
OUTPUT	Atmosphere	Greenhouse gases (1,000t-CO₂)	2.4
		Chemical substances released (t)	0.4
	Public water area	Chemical substances transferred (t)	0
	Materials Discarded	Recycled for profit (1,000t)	0.1
		Waste output (1,000t)	0.1
		Chemical substances transferred (t)	0

Daibea Co., Ltd.

Classification			Volume
INPUT		Energy Consumption (GJ)	292,949
		Water consumed (1,000m³)	57.5
		Chemical substances handled (t)	1.6
OUTPUT	Atmosphere	Greenhouse gases (1,000t-CO₂)	11.3
		Chemical substances released (t)	0.9
	Public water area	Chemical substances transferred (t)	0
	Materials Discarded	Recycled for profit (1,000t)	0.6
		Waste output (1,000t)	0.8
		Chemical substances transferred (t)	0

Koyometaltec Co., Ltd.

Classification			Volume
INPUT		Energy Consumption (GJ)	534,771
		Water consumed (1,000m³)	104.4
		Chemical substances handled (t)	0
OUTPUT	Atmosphere	Greenhouse gases (1,000t-CO₂)	20.8
		Chemical substances released (t)	0
	Public water area	Chemical substances transferred (t)	0
	Materials Discarded	Recycled for profit (1,000t)	12.4
		Waste output (1,000t)	0.5
		Chemical substances transferred (t)	0

KJK Co., Ltd.

Classification			Volume
INPUT		Energy Consumption (GJ)	71,318
		Water consumed (1,000m³)	2.1
		Chemical substances handled (t)	0
OUTPUT	Atmosphere	Greenhouse gases (1,000t-CO₂)	2.7
		Chemical substances released (t)	0
	Public water area	Chemical substances transferred (t)	0
	Materials Discarded	Recycled for profit (1,000t)	4.0
		Waste output (1,000t)	0.01
		Chemical substances transferred (t)	0

NIPPON NEEDLE ROLLER MFG. Co., Ltd.

Classification			Volume
INPUT		Energy Consumption (GJ)	73,312
		Water consumed (1,000m³)	41.4
		Chemical substances handled (t)	0
OUTPUT	Atmosphere	Greenhouse gases (1,000t-CO₂)	2.9
		Chemical substances released (t)	0
	Public water area	Chemical substances transferred (t)	0
	Materials Discarded	Recycled for profit (1,000t)	0.1
		Waste output (1,000t)	0.6
		Chemical substances transferred (t)	0

Koyo Heat Treatment Co., Ltd.

Classification			Volume
INPUT		Energy Consumption (GJ)	370,104
		Water consumed (1,000m³)	32.8
		Chemical substances handled (t)	0
OUTPUT	Atmosphere	Greenhouse gases (1,000t-CO₂)	15.7
		Chemical substances released (t)	0
	Public water area	Chemical substances transferred (t)	0
	Materials Discarded	Recycled for profit (1,000t)	0.3
		Waste output (1,000t)	0.04
		Chemical substances transferred (t)	0

Taiho Co., Ltd.

Classification			Volume
INPUT	Energy Consumption	(GJ)	87,231
	Water consumed	(1,000m³)	5.9
	Chemical substances handled	(t)	0
OUTPUT Atmosphere	Greenhouse gases	(1,000t-CO_2)	3.3
	Chemical substances released	(t)	0
OUTPUT Public water area	Chemical substances transferred	(t)	0
OUTPUT Materials Discarded	Recycled for profit	(1,000t)	4.5
	Waste output	(1,000t)	0.03
	Chemical substances transferred	(t)	0

Yamato Seiko Co.,Ltd.

Classification			Volume
INPUT	Energy Consumption	(GJ)	48,082
	Water consumed	(1,000m³)	2.6
	Chemical substances handled	(t)	0
OUTPUT Atmosphere	Greenhouse gases	(1,000t-CO_2)	2.0
	Chemical substances released	(t)	0
OUTPUT Public water area	Chemical substances transferred	(t)	0
OUTPUT Materials Discarded	Recycled for profit	(1,000t)	0.02
	Waste output	(1,000t)	0.1
	Chemical substances transferred	(t)	0

Eiko Seimitsu Co.,Ltd.

Classification			Volume
INPUT	Energy Consumption	(GJ)	24,013
	Water consumed	(1,000m³)	3.4
	Chemical substances handled	(t)	0
OUTPUT Atmosphere	Greenhouse gases	(1,000t-CO_2)	1.0
	Chemical substances released	(t)	0
OUTPUT Public water area	Chemical substances transferred	(t)	0
OUTPUT Materials Discarded	Recycled for profit	(1,000t)	0.5
	Waste output	(1,000t)	0
	Chemical substances transferred	(t)	0

Toyooki Kogyo Co., Ltd.

Classification			Volume
INPUT	Energy Consumption	(GJ)	96,649
	Water consumed	(1,000m³)	16.2
	Chemical substances handled	(t)	7.9
OUTPUT Atmosphere	Greenhouse gases	(1,000t-CO_2)	3.7
	Chemical substances released	(t)	7.9
OUTPUT Public water area	Chemical substances transferred	(t)	0
OUTPUT Materials Discarded	Recycled for profit	(1,000t)	0.4
	Waste output	(1,000t)	0.2
	Chemical substances transferred	(t)	0

CNK Co., Ltd.

Classification			Volume
INPUT	Energy Consumption	(GJ)	246,492
	Water consumed	(1,000m³)	45.7
	Chemical substances handled	(t)	17.1
OUTPUT Atmosphere	Greenhouse gases	(1,000t-CO_2)	9.7
	Chemical substances released	(t)	17.1
OUTPUT Public water area	Chemical substances transferred	(t)	0
OUTPUT Materials Discarded	Recycled for profit	(1,000t)	0.1
	Waste output	(1,000t)	0.5
	Chemical substances transferred	(t)	0

Koyo Electronics Industries Co., Ltd.

Classification			Volume
INPUT	Energy Consumption	(GJ)	35,619
	Water consumed	(1,000m³)	10.7
	Chemical substances handled	(t)	0.3
OUTPUT Atmosphere	Greenhouse gases	(1,000t-CO_2)	1.4
	Chemical substances released	(t)	0.1
OUTPUT Public water area	Chemical substances transferred	(t)	0
OUTPUT Materials Discarded	Recycled for profit	(1,000t)	0.05
	Waste output	(1,000t)	0.02
	Chemical substances transferred	(t)	0

Utsunomiya Kiki Co., Ltd.

Classification			Volume
INPUT	Energy Consumption	(GJ)	139,253
	Water consumed	(1,000m³)	70.9
	Chemical substances handled	(t)	0
OUTPUT Atmosphere	Greenhouse gases	(1,000t-CO_2)	5.2
	Chemical substances released	(t)	0
OUTPUT Public water area	Chemical substances transferred	(t)	0
OUTPUT Materials Discarded	Recycled for profit	(1,000t)	3.1
	Waste output	(1,000t)	0.2
	Chemical substances transferred	(t)	0

HOUKO Co., Ltd.

Classification			Volume
INPUT	Energy Consumption	(GJ)	38,625
	Water consumed	(1,000m³)	3.3
	Chemical substances handled	(t)	10.4
OUTPUT Atmosphere	Greenhouse gases	(1,000t-CO_2)	1.5
	Chemical substances released	(t)	10.4
OUTPUT Public water area	Chemical substances transferred	(t)	0
OUTPUT Materials Discarded	Recycled for profit	(1,000t)	0.2
	Waste output	(1,000t)	0.04
	Chemical substances transferred	(t)	0

Toyoda Van Moppes Ltd.

Classification			Volume
INPUT	Energy Consumption	(GJ)	27,025
	Water consumed	(1,000m³)	8.2
	Chemical substances handled	(t)	2.8
OUTPUT Atmosphere	Greenhouse gases	(1,000t-CO_2)	1.0
	Chemical substances released	(t)	2.3
OUTPUT Public water area	Chemical substances transferred	(t)	0
OUTPUT Materials Discarded	Recycled for profit	(1,000t)	0.1
	Waste output	(1,000t)	0.1
	Chemical substances transferred	(t)	0

FORMICS Co., Ltd.

Classification			Volume
INPUT	Energy Consumption	(GJ)	13,955
	Water consumed	(1,000m³)	1.6
	Chemical substances handled	(t)	3.5
OUTPUT Atmosphere	Greenhouse gases	(1,000t-CO_2)	0.5
	Chemical substances released	(t)	3.5
OUTPUT Public water area	Chemical substances transferred	(t)	0
OUTPUT Materials Discarded	Recycled for profit	(1,000t)	0.7
	Waste output	(1,000t)	0.03
	Chemical substances transferred	(t)	0

Tokio Seiko Corporation

Classification			Volume
INPUT	Energy Consumption	(GJ)	23,174
	Water consumed	(1,000m³)	1.3
	Chemical substances handled	(t)	0
OUTPUT Atmosphere	Greenhouse gases	(1,000t-CO_2)	0.9
	Chemical substances released	(t)	0
OUTPUT Public water area	Chemical substances transferred	(t)	0
OUTPUT Materials Discarded	Recycled for profit	(1,000t)	0.7
	Waste output	(1,000t)	0
	Chemical substances transferred	(t)	0

Domestic group Total

Classification				Volume
INPUT		Energy Consumption	(GJ)	2,561,017
		Water consumed	(1,000m³)	589
		Per base unit	(1,000m³/100 million yen)	0.62
		Chemical substances handled	(t)	54
OUTPUT	Atmosphere	Greenhouse gases	(1,000t-CO_2)	101
		Per base unit	(t-CO_2/100 million yen)	106
		Chemical substances released	(t)	51
	Public water area	Chemical substances transferred	(t)	0
	Materials Discarded	Recycled for profit	(1,000t)	30
		Waste output	(1,000t)	4
		Waste intensity	(t/100 million yen)	4.5
		Chemical substances transferred	(t)	1.0

* Emissions = Amount of recyclables sold + amount of waste disposed
* Includes chemical substances subject to PRTR which have a handling amount of 1000 kg/year or more.

Global business sites [North America/South America]

JATV
(JTEKT AUTOMOTIVE TENNESSEE-VONORE, LLC)

Classification			Volume
INPUT	Energy Consumption (GJ)		346,328
	Water consumed	(1,000m³)	59.1
OUTPUT Atmosphere	Greenhouse gases	(1,000t-CO_2)	20.8
OUTPUT Materials Discarded	Recycled for profit	(1,000t)	3.2
	Waste output	(1,000t)	2.5

JATM
(JTEKT AUTOMOTIVE TENNESSEE-MORRISTOWN, INC.)

Classification			Volume
INPUT	Energy Consumption (GJ)		643,104
	Water consumed	(1,000m³)	107.7
OUTPUT Atmosphere	Greenhouse gases	(1,000t-CO_2)	37.3
OUTPUT Materials Discarded	Recycled for profit	(1,000t)	2.9
	Waste output	(1,000t)	1.9

JATX
(JTEKT AUTOMOTIVE TEXAS, L.P.)

Classification			Volume
INPUT	Energy Consumption (GJ)		105,621
	Water consumed	(1,000m³)	9.8
OUTPUT Atmosphere	Greenhouse gases	(1,000t-CO_2)	6.4
OUTPUT Materials Discarded	Recycled for profit	(1,000t)	1.2
	Waste output	(1,000t)	0.7

KBNA
(KOYO BEARINGS NORTH AMERICA LLC)

Classification			Volume
INPUT	Energy Consumption (GJ)		2,223,428
	Water consumed	(1,000m³)	595.7
OUTPUT Atmosphere	Greenhouse gases	(1,000t-CO_2)	138.1
OUTPUT Materials Discarded	Recycled for profit	(1,000t)	19.2
	Waste output	(1,000t)	6.3

JASC
(JTEKT AUTOMOTIVE SOUTH CAROLINA,INC.)

Classification			Volume
INPUT	Energy Consumption (GJ)		107,700
	Water consumed	(1,000m³)	5.5
OUTPUT Atmosphere	Greenhouse gases	(1,000t-CO_2)	6.5
OUTPUT Materials Discarded	Recycled for profit	(1,000t)	2.5
	Waste output	(1,000t)	0.2

KBCA
(KOYO BEARINGS CANADA INC.)

Classification			Volume
INPUT	Energy Consumption (GJ)		210,519
	Water consumed	(1,000m³)	30.7
OUTPUT Atmosphere	Greenhouse gases	(1,000t-CO_2)	6.1
OUTPUT Materials Discarded	Recycled for profit	(1,000t)	0.1
	Waste output	(1,000t)	2.7

JABR
(JTEKT AUTOMOTIVA BRASIL LTDA.)

Classification			Volume
INPUT	Energy Consumption (GJ)		88,604
	Water consumed	(1,000m³)	10.1
OUTPUT Atmosphere	Greenhouse gases	(1,000t-CO_2)	0.9
OUTPUT Materials Discarded	Recycled for profit	(1,000t)	1.0
	Waste output	(1,000t)	0.3

JAAR
(JTEKT AUTOMOTIVE ARGENTINA S.A.)

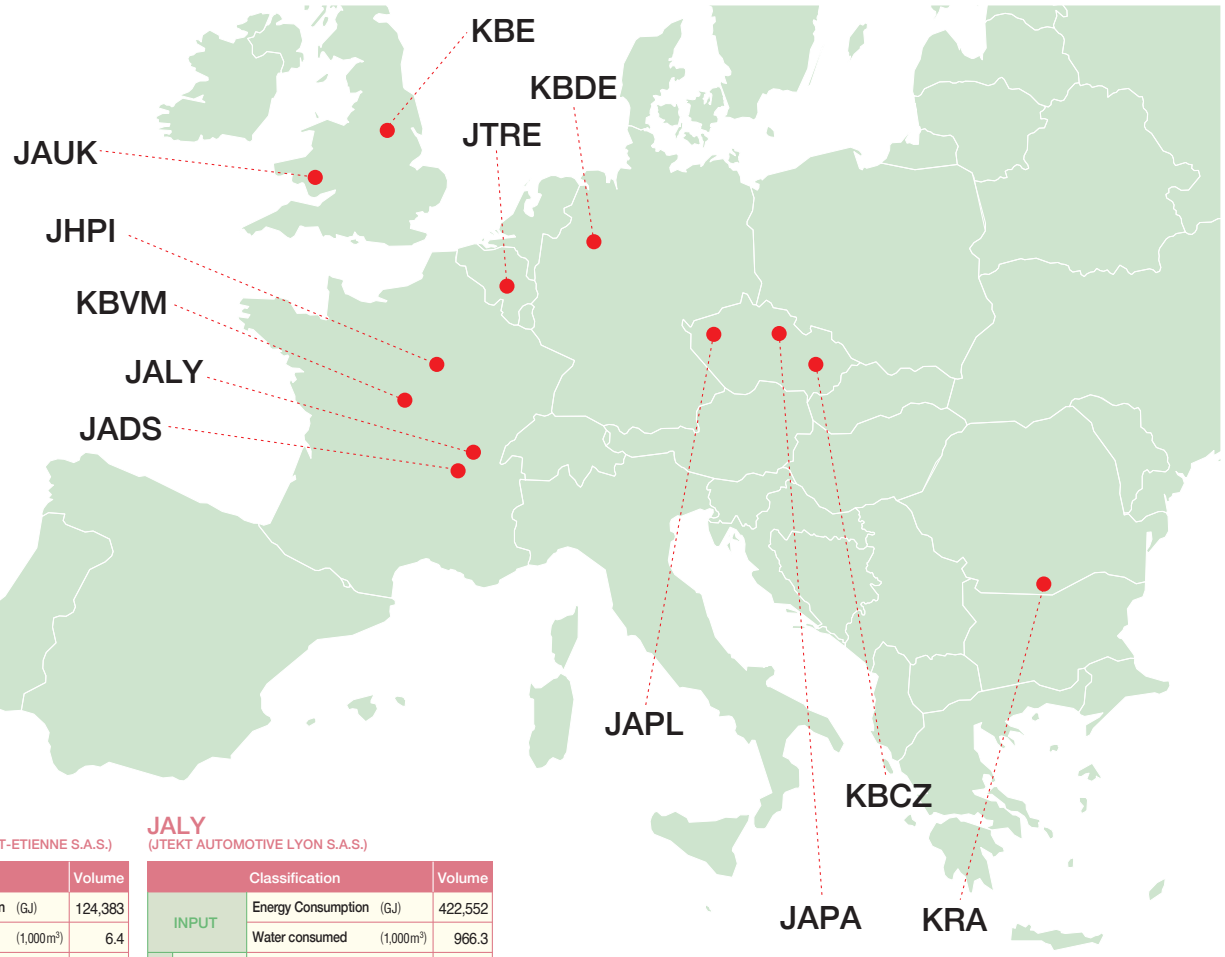
Classification			Volume
INPUT	Energy Consumption (GJ)		33,766
	Water consumed	(1,000m³)	0.0
OUTPUT Atmosphere	Greenhouse gases	(1,000t-CO_2)	1.2
OUTPUT Materials Discarded	Recycled for profit	(1,000t)	0
	Waste output	(1,000t)	0

North America / South America group Total

Classification			Volume
INPUT	Energy Consumption (GJ)		3,759,071
	Water consumed	(1,000m³)	819
	Per base unit	(1,000m³/100 million yen)	0.9
OUTPUT Atmosphere	Greenhouse gases	(1,000t-CO_2)	217
	Per base unit	(t-CO_2/100 million yen)	280
OUTPUT Materials Discarded	Recycled for profit	(1,000t)	30
	Waste output	(1,000t)	14.6
	Waste intensity	(t/100 million yen)	16.7

* Emissions = Amount of recyclables sold + amount of waste disposed

Global business sites [Europe]



JADS
(JTEKT AUTOMOTIVE DIJON SAINT-ETIENNE S.A.S.)

Classification			Volume
INPUT		Energy Consumption (GJ)	124,383
		Water consumed (1,000m³)	6.4
OUTPUT	Atmosphere	Greenhouse gases (1,000t-CO₂)	1.0
	Materials Discarded	Recycled for profit (1,000t)	0.9
		Waste output (1,000t)	1.2

JALY
(JTEKT AUTOMOTIVE LYON S.A.S.)

Classification			Volume
INPUT		Energy Consumption (GJ)	422,552
		Water consumed (1,000m³)	966.3
OUTPUT	Atmosphere	Greenhouse gases (1,000t-CO₂)	6.6
	Materials Discarded	Recycled for profit (1,000t)	1.8
		Waste output (1,000t)	2.2

JHPI
(JTEKT HPI S.A.S.)

Classification			Volume
INPUT		Energy Consumption (GJ)	110,819
		Water consumed (1,000m³)	8.9
OUTPUT	Atmosphere	Greenhouse gases (1,000t-CO₂)	2.2
	Materials Discarded	Recycled for profit (1,000t)	0.2
		Waste output (1,000t)	0.2

JAUK
(JTEKT AUTOMOTIVE UK LTD.)

Classification			Volume
INPUT		Energy Consumption (GJ)	23,916
		Water consumed (1,000m³)	1.5
OUTPUT	Atmosphere	Greenhouse gases (1,000t-CO₂)	1.1
	Materials Discarded	Recycled for profit (1,000t)	0.4
		Waste output (1,000t)	0.1

KBVM
(KOYO BEARINGS VIERZON MAROMME SAS)

Classification			Volume
INPUT		Energy Consumption (GJ)	188,195
		Water consumed (1,000m³)	14.3
OUTPUT	Atmosphere	Greenhouse gases (1,000t-CO₂)	3.1
	Materials Discarded	Recycled for profit (1,000t)	1.8
		Waste output (1,000t)	2.1

KBE
(KOYO BEARINGS (EUROPE) LTD.)

Classification			Volume
INPUT		Energy Consumption (GJ)	185,156
		Water consumed (1,000m³)	12.3
OUTPUT	Atmosphere	Greenhouse gases (1,000t-CO₂)	8.9
	Materials Discarded	Recycled for profit (1,000t)	2.9
		Waste output (1,000t)	1.1

JAPL
(JTEKT AUTOMOTIVE CZECH PLZEN,S.R.O.)

Classification			Volume
INPUT		Energy Consumption (GJ)	80,846
		Water consumed (1,000m³)	9.9
OUTPUT	Atmosphere	Greenhouse gases (1,000t-CO₂)	4.5
	Materials Discarded	Recycled for profit (1,000t)	0.6
		Waste output (1,000t)	0.4

KBCZ
(KOYO BEARINGS CESKA REPUBLIKA S.R.O.)

Classification			Volume
INPUT		Energy Consumption (GJ)	105,146
		Water consumed (1,000m³)	7.9
OUTPUT	Atmosphere	Greenhouse gases (1,000t-CO₂)	5.9
	Materials Discarded	Recycled for profit (1,000t)	0.7
		Waste output (1,000t)	0.8

JAPA
(JTEKT AUTOMOTIVE CZECH PARDUBICE, S.R.O.)

Classification			Volume
INPUT		Energy Consumption (GJ)	190,787
		Water consumed (1,000m³)	12.1
OUTPUT	Atmosphere	Greenhouse gases (1,000t-CO₂)	9.9
	Materials Discarded	Recycled for profit (1,000t)	0.8
		Waste output (1,000t)	1.6

JTRE
(JTEKT TORSEN EUROPE S.A.)

Classification			Volume
INPUT		Energy Consumption (GJ)	89,254
		Water consumed (1,000m³)	4.7
OUTPUT	Atmosphere	Greenhouse gases (1,000t-CO₂)	2.7
	Materials Discarded	Recycled for profit (1,000t)	1.7
		Waste output (1,000t)	0.9

KRA
(KOYO ROMANIA S.A.)

Classification			Volume
INPUT		Energy Consumption (GJ)	692,870
		Water consumed (1,000m³)	190.6
OUTPUT	Atmosphere	Greenhouse gases (1,000t-CO₂)	29.2
	Materials Discarded	Recycled for profit (1,000t)	10.9
		Waste output (1,000t)	0.5

KBDE
(KOYO BEARINGS DEUTSCHLAND GMBH)

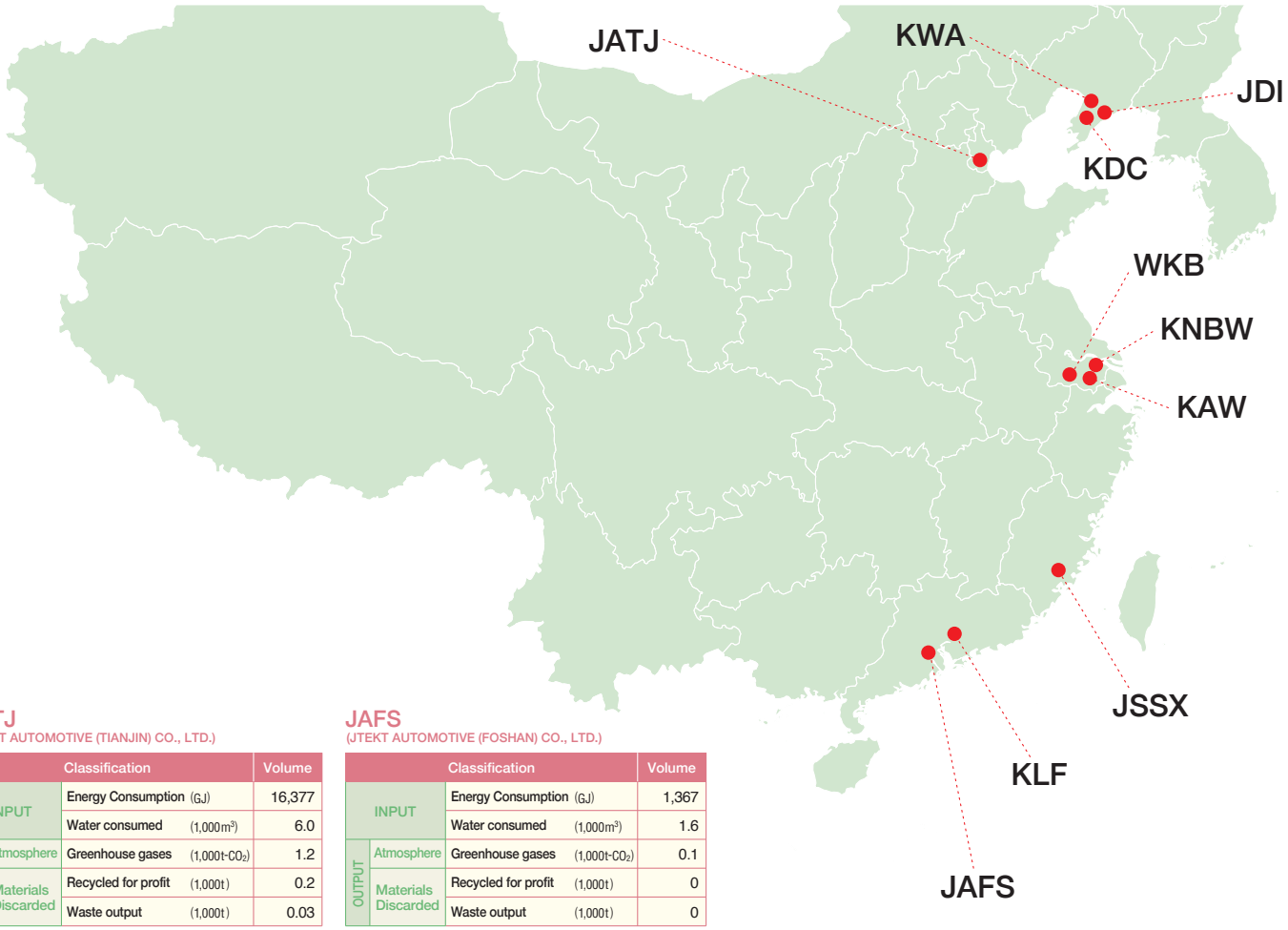
Classification			Volume
INPUT		Energy Consumption (GJ)	178,872
		Water consumed (1,000m³)	76.7
OUTPUT	Atmosphere	Greenhouse gases (1,000t-CO₂)	9.1
	Materials Discarded	Recycled for profit (1,000t)	2.4
		Waste output (1,000t)	1.1

Europe group Total

Classification			Volume
INPUT		Energy Consumption (GJ)	2,392,796
		Water consumed (1,000m³)	1,312
		Per base unit (1,000m³/100 million yen)	1.7
OUTPUT	Atmosphere	Greenhouse gases (1,000t-CO₂)	84
		Per base unit (t-CO₂/100 million yen)	111
	Materials Discarded	Recycled for profit (1,000t)	25
		Waste output (1,000t)	12
		Waste intensity (t/100 million yen)	16.0

* Emissions = Amount of recyclables sold + amount of waste disposed

Global business sites [China]



JATJ
(JTEKT AUTOMOTIVE (TIANJIN) CO., LTD.)

Classification			Volume
INPUT		Energy Consumption (GJ)	16,377
		Water consumed (1,000m³)	6.0
OUTPUT	Atmosphere	Greenhouse gases (1,000t-CO_2)	1.2
	Materials Discarded	Recycled for profit (1,000t)	0.2
		Waste output (1,000t)	0.03

JAFS
(JTEKT AUTOMOTIVE (FOSHAN) CO., LTD.)

Classification			Volume
INPUT		Energy Consumption (GJ)	1,367
		Water consumed (1,000m³)	1.6
OUTPUT	Atmosphere	Greenhouse gases (1,000t-CO_2)	0.1
	Materials Discarded	Recycled for profit (1,000t)	0
		Waste output (1,000t)	0

JSSX
(JTEKT STEERING SYSTEMS (XIAMEN) CO., LTD.)

Classification			Volume
INPUT		Energy Consumption (GJ)	107,707
		Water consumed (1,000m³)	42.8
OUTPUT	Atmosphere	Greenhouse gases (1,000t-CO_2)	8.0
	Materials Discarded	Recycled for profit (1,000t)	0.5
		Waste output (1,000t)	0.01

WKB
(WUXI KOYO BEARING CO., LTD.)

Classification			Volume
INPUT		Energy Consumption (GJ)	49,449
		Water consumed (1,000m³)	10.9
OUTPUT	Atmosphere	Greenhouse gases (1,000t-CO_2)	3.6
	Materials Discarded	Recycled for profit (1,000t)	0.0
		Waste output (1,000t)	0.1

KWA
(DALIAN KOYO WAZHOU AUTOMOBILE BEARING CO., LTD.)

Classification			Volume
INPUT		Energy Consumption (GJ)	41,052
		Water consumed (1,000m³)	13.2
OUTPUT	Atmosphere	Greenhouse gases (1,000t-CO_2)	3.0
	Materials Discarded	Recycled for profit (1,000t)	0.5
		Waste output (1,000t)	0.5

KDC
(KOYO BEARING DALIAN CO., LTD.)

Classification			Volume
INPUT		Energy Consumption (GJ)	98,772
		Water consumed (1,000m³)	19.7
OUTPUT	Atmosphere	Greenhouse gases (1,000t-CO_2)	7.3
	Materials Discarded	Recycled for profit (1,000t)	0
		Waste output (1,000t)	0.1

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

Classification			Volume
INPUT		Energy Consumption (GJ)	148,220
		Water consumed (1,000m³)	46.3
OUTPUT	Atmosphere	Greenhouse gases (1,000t-CO_2)	11.0
	Materials Discarded	Recycled for profit (1,000t)	2.7
		Waste output (1,000t)	0.2

KAW
(KOYO AUTOMOTIVE PARTS (WUXI) CO., LTD.)

Classification			Volume
INPUT		Energy Consumption (GJ)	162,590
		Water consumed (1,000m³)	25.5
OUTPUT	Atmosphere	Greenhouse gases (1,000t-CO_2)	11.9
	Materials Discarded	Recycled for profit (1,000t)	0.2
		Waste output (1,000t)	0.3

JDI
(JTEKT DALIAN INNOVATION AUTOMOTIVE CO., LTD.)

Classification			Volume
INPUT		Energy Consumption (GJ)	11,709
		Water consumed (1,000m³)	8.8
OUTPUT	Atmosphere	Greenhouse gases (1,000t-CO_2)	0.9
	Materials Discarded	Recycled for profit (1,000t)	0.7
		Waste output (1,000t)	0.01

KNBW
(KOYO NEEDLE BEARINGS (WUXI) CO., LTD.)

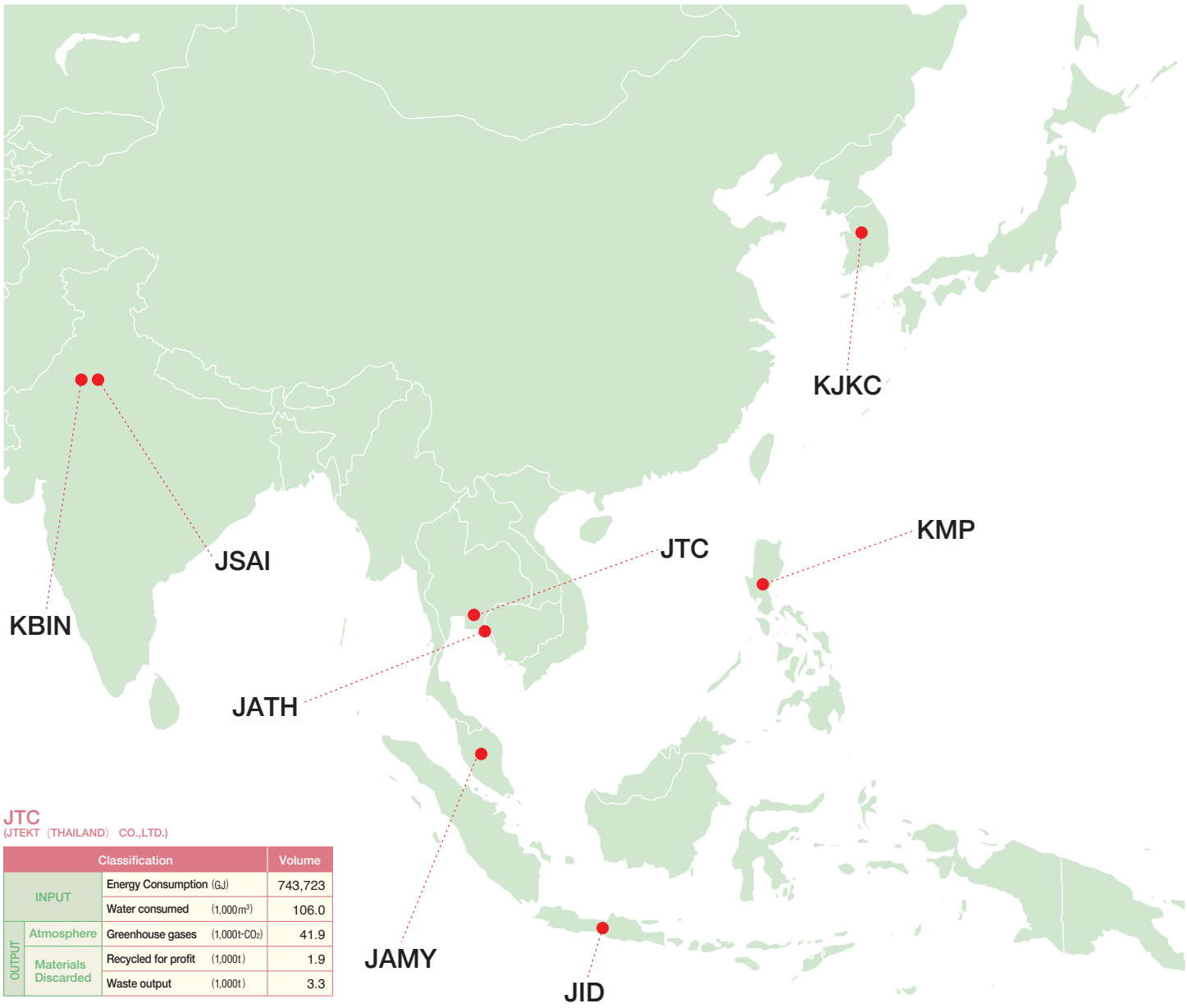
Classification			Volume
INPUT		Energy Consumption (GJ)	137,267
		Water consumed (1,000m³)	26.1
OUTPUT	Atmosphere	Greenhouse gases (1,000t-CO_2)	10.2
	Materials Discarded	Recycled for profit (1,000t)	0.2
		Waste output (1,000t)	0.3

China group Total

Classification			Volume
INPUT		Energy Consumption (GJ)	774,511
		Water consumed (1,000m³)	201
		Per base unit (1,000m³/100 million yen)	0.67
OUTPUT	Atmosphere	Greenhouse gases (1,000t-CO_2)	57.1
		Per base unit (t-CO_2/100 million yen)	190
	Materials Discarded	Recycled for profit (1,000t)	5.0
		Waste output (1,000t)	1.5
		Waste intensity (t/100 million yen)	5.0

* Emissions = Amount of recyclables sold + amount of waste disposed

Global business sites [Asia/Oceania]



JTC
(JTEKT (THAILAND) CO.,LTD.)

Classification			Volume
INPUT		Energy Consumption (GJ)	743,723
		Water consumed (1,000m³)	106.0
OUTPUT	Atmosphere	Greenhouse gases (1,000t-CO_2)	41.9
	Materials Discarded	Recycled for profit (1,000t)	1.9
		Waste output (1,000t)	3.3

JATH
(JTEKT AUTOMOTIVE (THAILAND) CO.,LTD.)

Classification			Volume
INPUT		Energy Consumption (GJ)	255,990
		Water consumed (1,000m³)	73.5
OUTPUT	Atmosphere	Greenhouse gases (1,000t-CO_2)	14.4
	Materials Discarded	Recycled for profit (1,000t)	2.7
		Waste output (1,000t)	1.7

JAMY
(JTEKT AUTOMOTIVE (MALAYSIA) SDN. BHD.)

Classification			Volume
INPUT		Energy Consumption (GJ)	82,901
		Water consumed (1,000m³)	17.8
OUTPUT	Atmosphere	Greenhouse gases (1,000t-CO_2)	4.5
	Materials Discarded	Recycled for profit (1,000t)	0
		Waste output (1,000t)	0.2

KMP
(KOYO MANUFACTURING (PHILIPPINES) CORPORATION)

Classification			Volume
INPUT		Energy Consumption (GJ)	100,451
		Water consumed (1,000m³)	21.5
OUTPUT	Atmosphere	Greenhouse gases (1,000t-CO_2)	5.4
	Materials Discarded	Recycled for profit (1,000t)	0.1
		Waste output (1,000t)	0.4

JSAI
(JTEKT SONA AUTOMOTIVE INDIA LTD.)

Classification			Volume
INPUT		Energy Consumption (GJ)	31,248
		Water consumed (1,000m³)	18.2
OUTPUT	Atmosphere	Greenhouse gases (1,000t-CO_2)	2.9
	Materials Discarded	Recycled for profit (1,000t)	0.1
		Waste output (1,000t)	0

KBIN
(KOYO BEARINGS INDIA PVT. LTD.)

Classification			Volume
INPUT		Energy Consumption (GJ)	77,155
		Water consumed (1,000m³)	12.9
OUTPUT	Atmosphere	Greenhouse gases (1,000t-CO_2)	7.1
	Materials Discarded	Recycled for profit (1,000t)	0.8
		Waste output (1,000t)	0.1

JID
(PT.JTEKT INDONESIA)

Classification			Volume
INPUT		Energy Consumption (GJ)	80,106
		Water consumed (1,000m³)	22.6
OUTPUT	Atmosphere	Greenhouse gases (1,000t-CO_2)	5.9
	Materials Discarded	Recycled for profit (1,000t)	0.8
		Waste output (1,000t)	0.3

KJKC
(KOYO JICO KOREA CO., LTD.)

Classification			Volume
INPUT		Energy Consumption (GJ)	20,034
		Water consumed (1,000m³)	2.3
OUTPUT	Atmosphere	Greenhouse gases (1,000t-CO_2)	1.0
	Materials Discarded	Recycled for profit (1,000t)	0.01
		Waste output (1,000t)	0.1

Asia/Oceania group Total

Classification			Volume
INPUT		Energy Consumption (GJ)	1,391,608
		Water consumed (1,000m³)	275
		Per base unit (1,000m³/100 million yen)	0.69
OUTPUT	Atmosphere	Greenhouse gases (1,000t-CO_2)	83
		Per base unit (t-CO_2/100 million yen)	201
	Materials Discarded	Recycled for profit (1,000t)	6.5
		Waste output (1,000t)	6.1
		Waste intensity (t/100 million yen)	15.1

* Emissions = Amount of recyclables sold + amount of waste disposed

Third-party opinion on the JTEKT CSR Report 2017

Director of the Workers Club for Eco-harmonic Renewable Society (NPO)
Tamio Yamaguchi

Tamio Yamaguchi's profile
After 25 years at a newspaper company, Mr. Yamaguchi held a position as the manager of public relations at an environment venture company, chief editor of a publishing company's environmental magazine, and part-time university lecturer, after which he began freelancing. He has been researching CSR since 2000, each year analyzing and reporting the trends of over 350 companies' CSR reports.

Workers Club for Eco-harmonic Renewable Society
A citizen's organization that considers from a global point of view how society and the natural ecosystem that should be passed on to future generations can live in harmony. The organization researches, supports and implements activities so that citizens, companies and government agencies will form a recycling-based society. Researching and Making Proposals regarding the Ideal CSR in CSR Workshops of Study Groups.
(http://junkanken.com)

* **ESG** The first letters of "Environment", "Social" and "Governance". Items a company must consider when rolling out its businesses as corporate responsibility.

I have been writing the third-party opinion since the first CSR Report (FY2008) and am grateful to have had the opportunity to see JTEKT's CSR become increasingly enriched and the level of information disclosure grow. I am convinced that JTEKT has been able to use the same individual belonging to an NPO for such a long period of time due to its broad-mindedness and strong enthusiasm for self-innovation through self-relativization. I believe that a third-party opinion is not a description of impressions of a CSR report, but rather the result of engagement between a company and third-party through a report conveying the actual state of the company, with the purpose of facilitating the next engagement. It would not be an overstatement to say the third-party opinion plays a part in fulfilling the "Engagement Model" (established March 2017).

Considering both aspects simultaneously to achieve good CSR

This year's report gave me the impression that the CSR is gradually becoming more enriched and its level of information disclosure is growing. This sense of heightened enrichment came from reading about initiatives relating to CSR promotion, such as how JTEKT has changed the name of the CSR Promotion Committee to the Council for Enhancement of Corporate Value and established the Council of Public Disclosure. The first initiative mentioned above is a proclamation that JTEKT has clearly shifted its focus from CSR to 'strategic CSR' and integrated its company management. JTEKT's CSR is well-spread amongst its employees so I am sure the message associated with this transition will also spread before long.

However, as indicated by CSV (Creating Shared Value), strategic CSR is about producing values common to both the company and society, therefore I would like to see JTEKT also paying attention to the creation of social value.

Furthermore, at the same time as value creation, CSR also requires responsibility for the impact that business activities have on the environment and society, therefore it is important to consider both of these aspects simultaneously.

The establishment of the Council of Public Disclosure was timely as it will enable information disclosure that withstands the trend of investors enhancing the ability to evaluate ESG(*) information in accordance with the Stewardship Code. In the future, I hope to see clear stipulation of information disclosure principles relating to non-financial information and the establishment of information disclosure management. Also, please promptly take action regarding the specification of materiality I recommended previously.

It was a wise decision to enrich content relating to "Building Professionals"

In regards to the increased level of information disclosure, this was evident from reading the "Together with employees" section of the CSR Report. This section has grown from 14 pages in the previous year's report to 17 pages and includes content that leads the way for other CSR reports of Japan. "Building Professionals" is one of the three activities that form the JTEKT GROUP VISION and is also mentioned in the Message from the President (JTEKT Report) as follows; Building Professionals" is the foundation that supports "Building Value" and "Building Excellent Products" and, as such, the most difficult and critical component. This kind of approach will result in the diversification and strengthening of initiatives for "Building Professionals", therefore it was a wise decision to enrich the content of the "Together with employees" section. I believe such initiatives are the reason for the ongoing improvement in the level of employee satisfaction reported through the employee questionnaire.

Incorporating guidelines in targets is important

The Environmental Report also addresses social requirements and contains no small amount of leading reports. For example the long-term guideline of the Environmental Challenge 2050 has been established, and the report provides many examples that this is indeed serving as a concrete guideline for daily environmental conservation activities. Looking at other companies' reports, it is rare for a report to cover actions based on a long-term guideline looking as far ahead as the year 2050. Moving forward, JTEKT should incorporate this guideline in its targets in concrete terms and set short-to-midterm targets in a backcasting approach. This will surely help to further promote initiatives on the frontline and clarify evaluation. In regards to CO_2 emissions, the report states that "Moving forward, we will work on establishing CO_2 emissions targets with scientific basis" so I would like to see the same direction being taken for other categories also.

Response to the third-party opinion

Corporate Planning Department,
Corporate Management HQ, JTEKT Corporation

Thank you, Mr. Yamaguchi, for your invaluable opinion of our complete CSR report, following our opinion exchanges at the kick-off meeting and intermediate meeting. We believe we have been able to continuously advance forward with the improvement of our information disclosure through this CSR Report since the initial FY2008 publication due to the steady accumulation of your opinion over the years, which we have enabled by making the opportunity to receive such opinions a milestone of this report.

In FY2017, JTEKT constructed the Management Model and Engagement Model as its implementation models and is working on strengthening initiatives to enhance corporate value. In order to co-create corporate value through dialogue with stakeholders, we have been promoting the integration of reports since FY2016 and by supplementing the integrated report "JTEKT Report 2017" with this CSR Report, which features detailed CSR-related information in addition to orderly positioning the reports we have achieved further enhancement.

In regards to your feedback relating to "considering both aspects simultaneously to achieve good CSR", firstly we would like to firmly grasp each of the requirements and expectations directed at JTEKT as the importance of corporate social responsibility grows even greater and, based on the implementation of JTEKT-style initiatives which consider our impact on the environment and society, further promote activities which exceed the scope of conventional CSR activities, such as how contributing to the solving of social issues and values produced by corporate activities can lead to social values. Moreover, we will engage in initiatives to improve our internal structures; namely the processes for information disclosure relating to non-financial information and materiality specification and push forward with the creation of value on an ongoing basis.

Moving forward, we will continue engaging in initiatives for the realization of our Corporate Philosophy – "contributing to the happiness of people and the abundance of society through product manufacturing that wins the trust of society" – and provide ongoing reports to our stakeholders of the status of such initiatives.

Thank you for reading.

We would like to further improve the CSR initiatives and reports, listening to our stakeholders.
If you have any opinions or requests, please feel free to contact us.

Inquiries

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