

PICK



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UP



2011



This section introduces some of the major activities from FY2011 centered on 5 keywords.

The keywords of “Environment” “Safety, Peace-of-mind, Comfort” and “Global” were chosen based on the image of the company JTEKT aims to become as stated in the JTEKT VISION 2015.

Of the activities carried out in FY2011, we particularly wish to emphasize efforts made to spread CSR companywide and recover from natural disasters.

PICK UP 2011

Keyword

1 Environment Development of a lighter electric power steering system

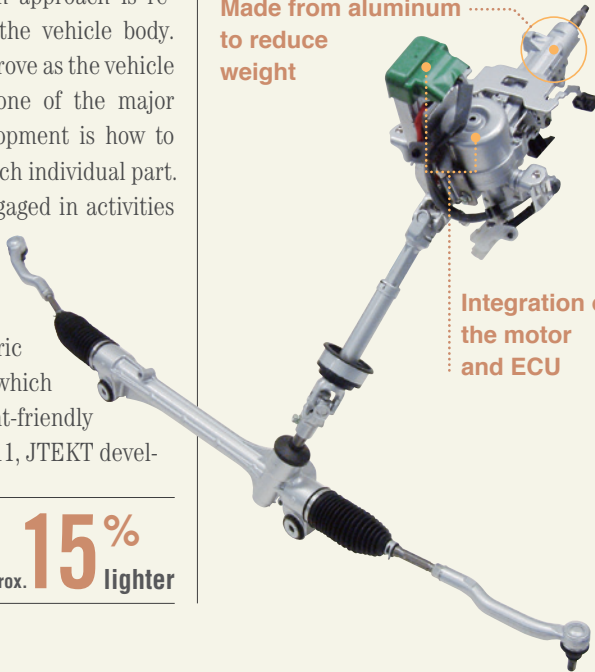
Improved fuel efficiency through lighter parts Promoting energy-saving

At the frontline of vehicle development, various approaches are taken in the name of energy-saving, which contributes to the environment. One such approach is reducing the weight of the vehicle body. Fuel efficiency will improve as the vehicle body lightens, hence one of the major issues in design development is how to reduce the weight of each individual part. At JTEKT, we have engaged in activities to make each steering system smaller and lighter, with a particular focus on electric power steering (EPS) which is the most environment-friendly steering systems. In 2011, JTEKT devel-

oped the ECU-motor integration type C-EPS system as a column-assist power steering series. This new C-EPS system is around 15% lighter than the conventional system and contributes to energy-saving.

Made from aluminum to reduce weight

Integration of the motor and ECU



Weight
Conventional system
18.2kg → 15.5kg
Approx. **15%** lighter

Easy assembly on vehicle through design innovation Improved comfort and safety

The newly developed product integrates the motor and the computer which operates it (ECU) reducing the harnesses (cables) required for connection and making it easier to assemble in the vehicle on the assembly line. Moreover, the brush-free motor, which is one of the key parts, has been made smaller and lightened by approximately 20% of the conventional motor. The section which connects the steering system to the steering wheel is now made from

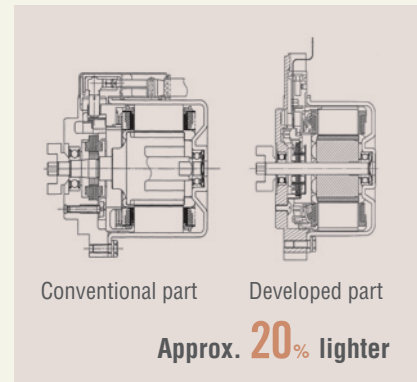
aluminum, making it lighter. Through the gradual accumulation of ideas such as these, we have reduced weight by 2.7kg compared with the conventional part. At the same time, in order to improve driving comfort and safety, in addition to a new steering intuitive control which increases safety as well as responds to steering wheel operations with better agility, we have equipped the steering system with back-up control that

Environment

Engaging in environmentally-conscious manufacturing from the development and design stages. Doing our best to preserve the global environment across all production activities. That is our mission as an environmentally-friendly manufacturing company.



Motor parts made smaller



offers the driver peace-of-mind by providing the appropriate assistance to suit all driving conditions. This product is used on Toyota's new model Camry currently being sold in Japan, the US and Asia.



Toyota Camry

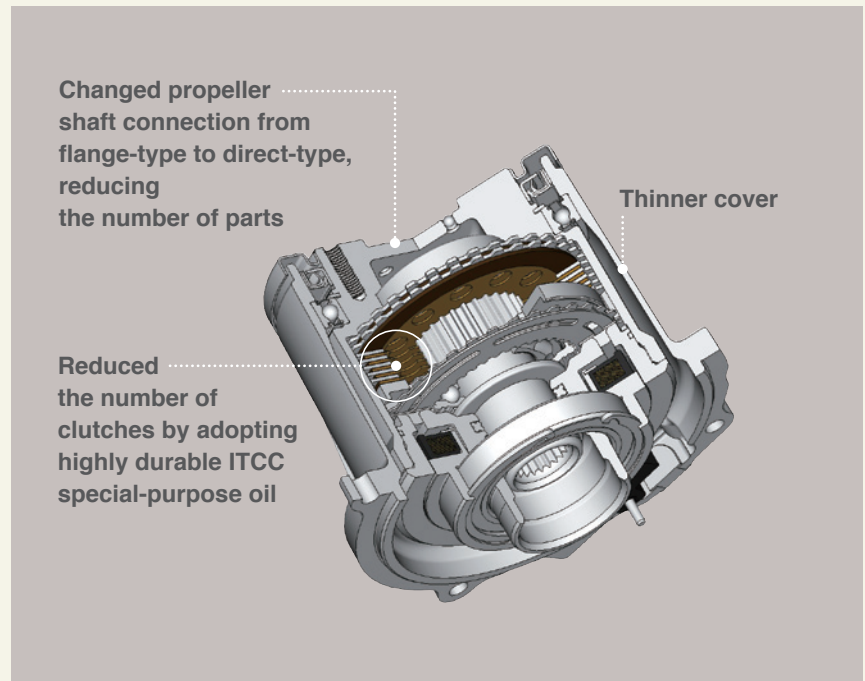
*C-EPS is a trademark of JTEKT Corporation

2 Environment Development of an electronic control 4WD coupling (ITCC) which achieves better fuel efficiency and a pleasurable driving experience

Further improved and mass produced the product which received the Invention Award

Amidst rising popularity and attention towards cars that are more fuel efficient and environmentally-friendly, a demand has also emerged for better fuel efficiency and a pleasurable driving experience with safety and peace-of-mind for 4WD systems. JTEKT was among the first to respond to such a need, developing an electronically controlled 4WD coupling (ITCC). The ITCC is the core element of a 4WD system as it is responsible for transmitting the ideal power to the rear tires to suit the road surface and driving conditions. It is used by major vehicle manufacturers worldwide. In 2009, JTEKT was awarded the National Invention Award for the invention of a diamond-like carbon (DLC-Si) coated electromagnetic clutch(*). Following this, aiming to contribute to even better fuel efficiency, the ITCC which incorporated further devel-

Electronically controlled 4WD coupling (ITCC)



oped technology, was adopted on the Mazda CX-5. Mass production of the ITCC began in 2011 in preparation for sales launch of new model vehicles.

* Diamond-like carbon (DLC-Si) with silicon is an amorphous carbon that displays similar properties to diamond. Using an electromagnetic clutch with a DLC-Si coating several microns thick, clutch size is reduced and life is extended.

Contributing to better fuel efficiency performance of new model eco cars through weight reduction and higher efficiency

Mazda CX-5



On the new ITCC, in order to reduce weight and improve car fuel efficiency, the number of clutches was reduced by using highly durable ITCC special-purpose oil, the number of parts was reduced through revising vehicle mounting structure, the cover was made thinner and so on. As a result, we succeeded in reducing weight of the developed ITCC by around 4kg compared with the conventional, in other words a 38% weight reduction. Furthermore, in the search for a control to suppress torque trans-

mitted to the rear tires to the minimal required amount, we have developed a more efficient 4WD system and consequently reduced energy loss during travel compared with the conventional part. JTEKT will continue technological development which will achieve both better fuel efficiency and a pleasurable driving experience, contributing to the development and spread of eco cars which are gentle on the planet and comfortable to drive.

Weight
Conventional system
10.4kg → 6.5kg
Approx. **38%** lighter

* ITCC is a trademark of JTEKT Corporation

3 Environment Development of an electric oil pump for idle reduction to contribute to better vehicle fuel efficiency

Mass production of a small electric oil pump for gasoline-driven cars

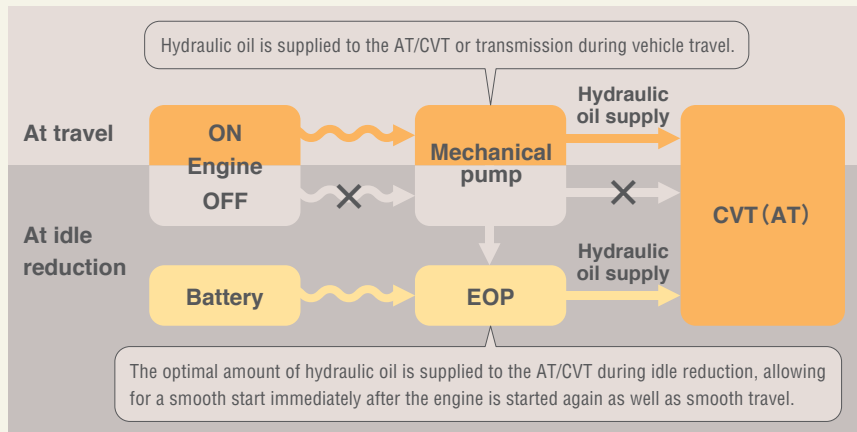
Due to energy-saving activities and the reinforcement of environmental regulations in recent years, vehicle manufacturers have proactively introduced technologies which contribute to better fuel efficiency. Idle reduction, which stops the engine when the car is stationary, is effective in improving the fuel efficiency of gasoline-drive cars. For this reason, transmissions with idle reduction mechanisms are attracting attention, however if there is a time lag when the car starts moving again, this affects the driver's comfort and safety. A smooth start requires an electric oil pump (EOP) which supplies hydraulic oil to the transmission when the engine is stationary. Mean-

while, the engine room of existing gasoline-drive cars is narrow and the EOP has to be designed small to fit. "In 2011, JTEKT responded to these needs by developing and mass producing an electric oil pump for idle reduction that contributes to even better fuel efficiency.

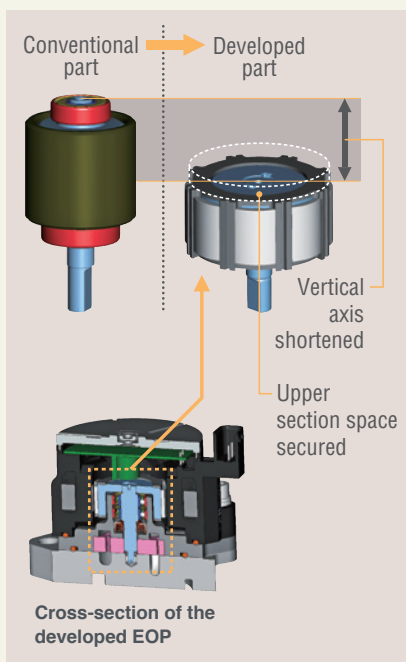


The developed EOP

Hydraulic oil supply route for an idle reduction mechanism



Smaller motor parts



Popularizing idle reduction cars by standardly equipping Contributing to preservation of the global environment

The new product, at the same time as adopting a small brush-free motor, features a reduced length bearing located in the motor rotor. This product is approximately 30% smaller than the conventional part. Furthermore, power consumption has been reduced to a maximum of 47% through control which suppresses excessive output. Also, through revising the process, reducing the number of parts and so on, cost has been reduced by around 60%. It is believed that the idle reduction mechanism will become more and more important in the future as a technology which achieves better fuel efficiency at

low cost on gasoline-driven cars as they are. On that point, this product encourages standard equipping on vehicles and accelerates the popularization of idle reduction vehicles. It can also be used on hybrid and electric cars in the future. Through continued product and technological prowess, JTEKT will continue to promote the realization of a car society that can co-exist with the planet.

Motor parts	Approx. 30% smaller	compared to the conventional part
Energy consumption	Approx. 47% less	compared to the conventional part
Cost	Approx. 60% lower	compared to the conventional part

4 Environment

Contributing to energy-saving in manufacturing through enhancing the environmental performance of machine tools

Introducing a new energy-saving technology in machine tool products with the goal of reducing energy consumption

Machine tools support manufacturing as the mother machines that make machines. JTEKT aims to develop machine tools which help save energy and resources. As such, we are engaged in tireless innovative engineering to advance process integration through the reduction of coolant usage, more compact machines and higher efficiency, whilst always maintaining quality and safety of products. Also, in regards to the product lifecycle from manufacture to disposal, JTEKT conduct product assessments to measure the environmental impact, etc., as part of the effort to offer products with minimum environmental load.

One of the greatest issues of this action was power consumption during machin-

ing. Machine tools use a large amount of energy during machining, therefore reducing power during machining is the key to saving energy in the production line. As such, in 2011, JTEKT applied newly developed energy-saving technologies (energy-saving circuit, energy-saving unit) to the FA800S machine as part of the energy consumption reduction effort.

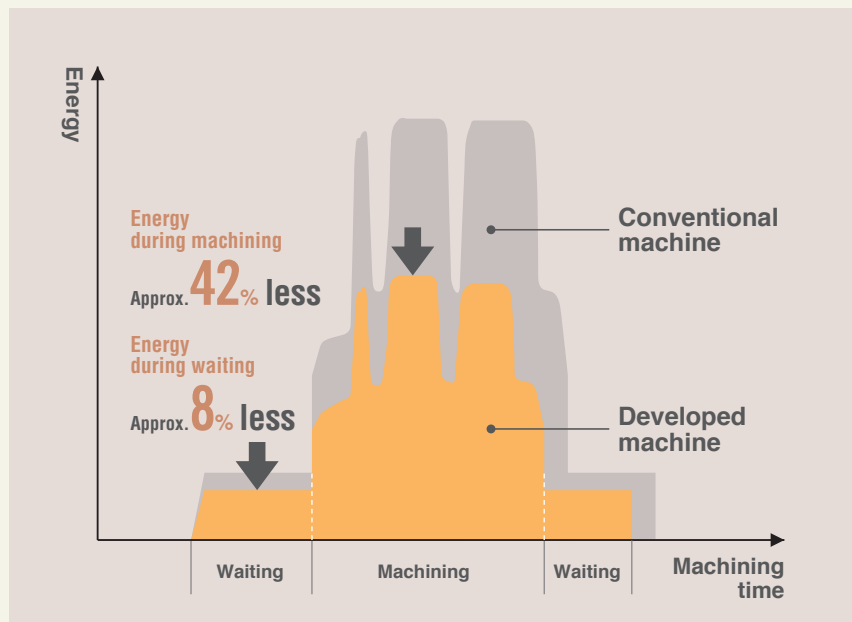
Reducing energy consumption during wait and operation through technological innovation and creativity

On the FA800S, use of an inverter for devices and improving the coolant supply

View of the FA800S



Reduction of machine tool energy consumption

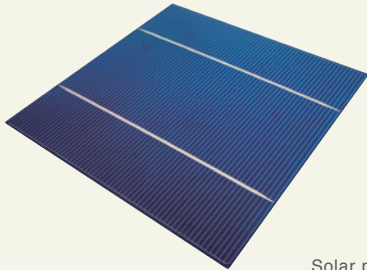


method, etc., has reduced the number of devices, thereby reducing the amount of energy consumed during wait time by around 8%. Furthermore, by using inverter control for the motor and so on, the amount of energy consumed during machining has been reduced to around 42%. As a result of various actions, we have successfully reduced energy consumption by half of the conventional product.

While raising environmental awareness, like the energy-saving technologies developed this time, needs for products which feature technologies that help to reduce environmental load are growing every year. Approximately half of all the machine tools we received orders for in FY2011 were equipped with environmentally-responsive technologies. We will continue striving to contribute to the global environment by further increasing our environmentally-friendly line-up.

FA800S case

Energy consumption **50% less** compared to the conventional part
Approx.



Solar panel
(final completed product)



Continuous diffusion furnace

5 Environment Development of a next-generation solar power cell manufacturing unit to achieve energy-saving and low-cost production of solar power

Koyo Thermo Systems, a JTEKT group company, develop and manufacture a solar power battery cell diffusion furnace essential for solar power generation. Amidst heightened awareness of environmental conservation and energy-saving, there is a demand even within the solar power panel manufacturing domain to further cut energy usage and reduce costs.

In response to this demand, the Continuous Diffusion Furnace developed in 2011 has around 83% less power consumption per processing surface of each solar power cell, weighs around 72% less, and emits around 2.9t less CO₂ per machine compared to the Horizontal Diffusion Furnace. Through green engineering, we will continue to produce solar power batteries

that help to conserve of the global environment.

Koyo Thermo Systems Co., Ltd.

Head office and plant 229, Kabata-cho, Tenri, Nara, JAPAN

Established July 19, 1967

No. of employees 461 (as of April 1, 2012)

Business Manufacturing and sale of industrial heat treatment equipment and Moldertherm heaters

Power consumption
Per processing surface of each solar power cell **Approx. 83% less**

Weight
Per processing surface of each solar power cell **Approx. 72% lighter**

CO₂ emission
Per machine **Approx. 2.9t less**

6 Environment Introducing solar power and promoting energy-saving at Tokyo plant in preparation for power shortages

JTEKT are proactively introducing reusable energies as part of energy-saving countermeasures. While we had planned to introduce 5kW of solar power to 10 domestic plants at the beginning of 2011, in line with the power usage restrictions put into place in the Kanto region after the Great East Japan Earthquake struck, we concentrated on our Tokyo plant, introducing 50kW of solar power in July. Based on the idea of securing power in the event of an emergency, solar power is used to run the administrative buildings, janitor's room, drainage facilities and so on. As a result, approximately 39,500kWh of solar power was generated over the 9 months between

July of 2011 and March of 2012, reducing CO₂ emissions by around 14.6t (or 19t per annum).

We plan to establish 60kW of solar power in our Nara plant, situated in the Kansai region which is predicted to have power shortages this year. Our goal is to introduce over 500kW of solar power by the year 2020, rolling out solar power and wind power to all our plants one by one, creating production plants in harmony with nature.

CO₂ emission
From July, 2011 until March, 2012 **Approx. 14.6t less**

Solar power generation (Tokyo plant)



7 Environment

Reducing power wastage and heightening employee awareness through the visualization of energy usage

In order to reduce the amount of energy used on our production lines, it is necessary to gauge the amount of power used during wait time and operation and confirm that power is being used appropriately without wastage. To achieve this, JTEKT installed eco power meters which automatically measure power on the main lines of each plant and display the measured values constantly. This was part of an effort to make energy usage visible. By

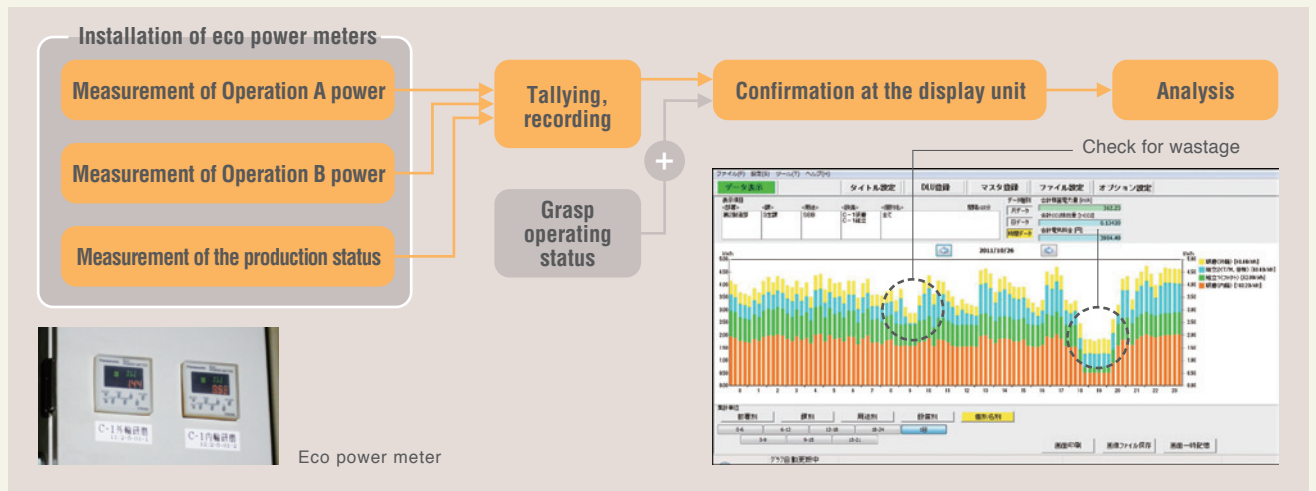
seeing the amount of power used and effects of energy-saving in numerical values, we were able to reduce the power used in wait mode when the machine is stopped and control at a basic unit level. The displays also raised employee awareness. We are rolling out examples of improvements learnt on the main lines to other lines and rolling out to individual plants at the Environment Promotion Meeting each month. In the future, we will

promote directives such as stopping machines (sleep mode) when not in operation, optimizing quality stability time at start-up and wait status control when machines are stopped, in an effort to save energy and improve operation availability.



Defining action items for energy-saving at each individual plant and raising employee awareness (example of the Tokushima plant)

The visualization of energy usage using eco power meters



Energy-saving activities at Tokyo plant in the summer of 2011 from peak-cut strategies to green walls

In the summer of 2011, part of the Tokyo plant's production was transferred to other plants due to the power usage restrictions applied to companies in the Kanto region in the wake of the Great East Japan Earthquake. Even after the effects of that move were subtracted from the equation, the Tokyo plant still achieved an energy saving of around 13% in the 3 months between July and September.

Concretely speaking, the peak-cut strategies involved changing the time of day that the heat

treatment furnaces were heated and introducing equipment such as generators and engine compressors. Energy-saving measures included revising the AC periphery and introducing air compressor automatic limited control operation. At worksites, grassroots measures such as erecting green walls and shade cloth were taken. All plants took part in these activities and JTEKT's companywide effort towards energy-saving is ongoing.

Power consumption **13%**
Tokyo plant from July to September 2011 **Approx. 13% less**



Erected green walls and shade cloths as summer energy-saving measures



Taking action in individual workplaces and raising energy-saving consciousness

Keyword



Safety, Peace-of-mind, Comfort

We believe safety, peace-of-mind and comfort are elements strongly demanded by society of manufacturing companies. We are responsible for offering products with these 3 elements as well as protecting the safety of our employees and all related persons.

2 Safety, Peace-of-mind, Comfort Building a new development process towards conformity with ISO26262

JTEKT has established traceability to the development process of electronic control systems. Trials began on the new system in August of 2011, with actual operation from April, 2012.

This move was made in an effort to comply with ISO26262, the international standard relating to the functional safety of electronic control systems for vehicles. ISO26262 stipulates that correct processes are implemented for the whole of the product development life cycle and systems are established to alleviate the risk of malfunctions.

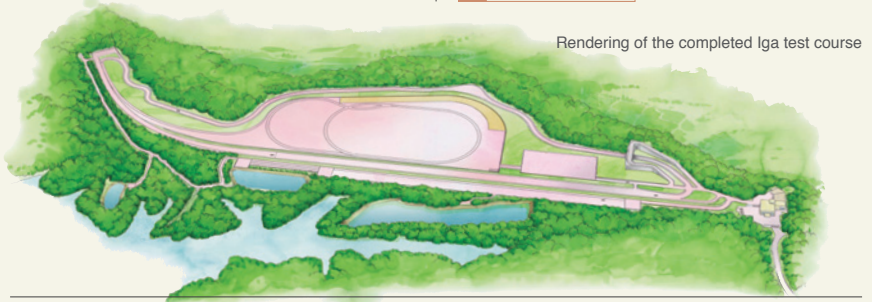
In recent years, the sophistication of vehicle electronic control systems has been accompanied by a rise in the demand and expectation of functional safety. JTEKT believe the introduction of new development processes will improve the level of trust towards functional safety and create a corporate culture acutely conscious of safety.

1 Safety, Peace-of-mind, Comfort Construction of a large scale test course to ensure we propose attractive products to our customers

In order to make proposals to our customers as a system supplier, JTEKT decided to build our first large scale test course. Construction began in June of 2011. To harness the knowledge we have accumulated as a specialized manufacturer, evaluate and analyze JTEKT original standardized or serialized products, we

will operate a test course which reproduces all types of road surfaces. We aim to secure quality of production on our global standard line and provide an even higher level of safety, peace-of-mind and comfort. The test course is scheduled for completion in October, 2012.

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Rendering of the completed Iga test course

3 Safety, Peace-of-mind, Comfort Aiming for complete safety and peace-of-mind in the workplace environment

ISO26000 upholds a principle that superior safety and health standards and organizational performance complement and reinforce each other. This is precisely what JTEKT believe. It is the belief of our management that the safety and health of each and every one of our employees is what makes our organization strong. In FY2011, particular attention was paid to the elimination of "not-stopping accidents" (*1) on a safety aspect. Observation of the 1000-plus work rules registered last fiscal year was reinforced. As a result, the percentage of not-stopping accidents out of total accidents dropped from 66.7% in FY2010 to 33.3% in FY2011. Also, the lost-day accident rate dropped from 0.29 to 0.23. On a health aspect, we continued on from

last fiscal year with emphasis on mental health measures which are also attracting a lot of attention in society on the whole.

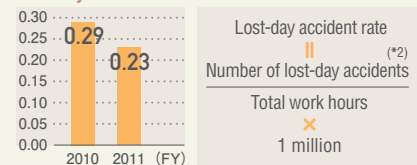
We will continue to observe the basic approach of "stop, call, wait" and reinforce safety and health control more than ever before. In addition, by implementing countermeasures assuming new risks we will aim for the complete safety and peace-of-mind for our employees and related persons.

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Percentage of not-stopping accidents out of total accidents

	Total accidents	Not-stopping accidents	Percentage
FY2010	15	10	66.7%
FY2011	12	4	33.3%

Lost-day accident rate



*1 Not-stopping accidents: Accidents which occur when troubleshooting work or repairs are performed without stopping the machine. *2 Lost-day accidents: JTEKT defines lost-day accidents as work-related accidents resulting in work absence of 1 day or more.

Keyword

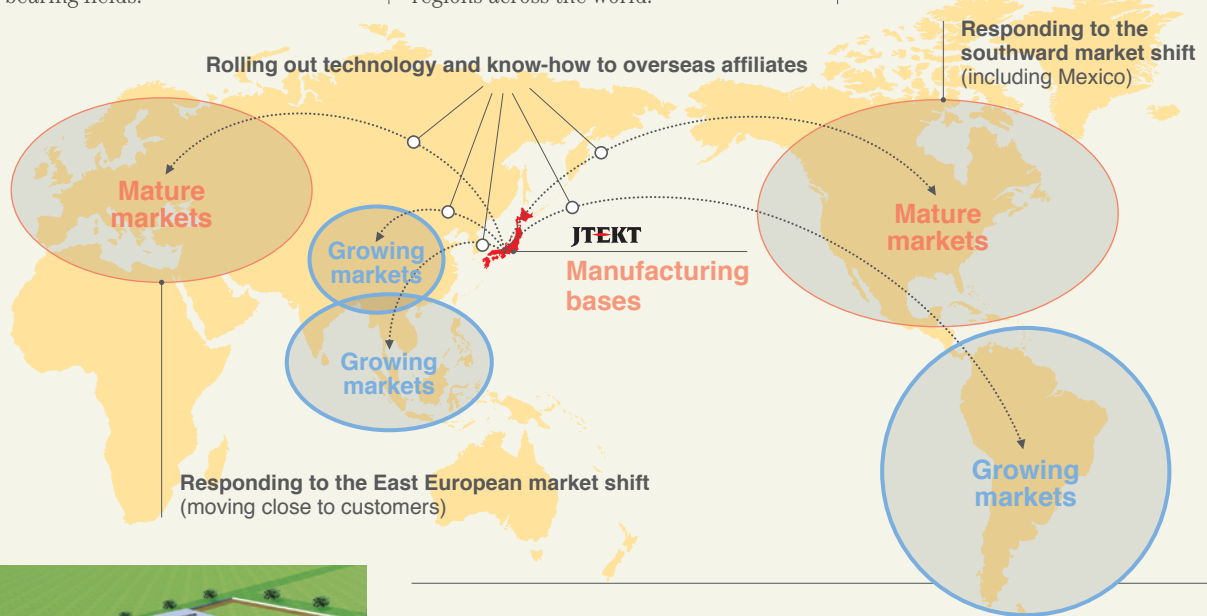
1 Global
Rolling out superior production lines to the world Leading to the vitalization of regions

JTEKT has selected superior production lines from our plants to be standard lines and is promoting construction of a global standard line to be rolled out to affiliate companies around the world. This activity began in FY2010 and in FY2011, was rolled out to Indonesia, Thailand and the US in the automotive, industrial machine and bearing fields.

By rolling out operation framework including standardized lines and employee training we are securing the stable quality of manufacturing that underpins the JTEKT brand globally, realizing a “Globally Uniform Quality”. JTEKT Japan will be responsible for quality, making it possible to verify on lines identical to those operated domestically in order to secure the level of quality our customers have come to expect from our design, manufacturing and inspection processes. Through this kind of activity, we will build a competitive manufacturing framework and contribute to the creation of stable jobs, employee training and vitalization of regions across the world.

Global

Promoting formation of a framework to offer products which match our customers’ needs more swiftly in regions across the globe. Through these actions, JTEKT is contributing to creating jobs and aiming to be a truly global company.



Rendering of the completed JID plant (Indonesia)



Rendering of the completed KBIN plant (India)

2 Global
Promoting local production in growing markets Contributing to job creation

In FY2011, JTEKT enhanced our production framework with a particular focus on Asia. At our Indonesia affiliate we built a new bearing plant which began production from December, 2011. We plan to have approximately 1,200 employees by 2014. We also built a new bearing plant at our Indian affiliate. Production will begin from November of this year and we plan to have

approximately 450 employees by 2015. We will continue activities to strengthen business foundation in key regions such as Asia where there is significant growth and contribute to society and the economies of various regions around the globe.

The relationship between CSR and everyday tasks Each and every employee rethinking their roles

The ISO26000 emphasizes the important of communication related to social responsibility both inside and outside organizations as one of its guidelines on integrating social responsibility as an organization on the whole. JTEKT proactively create opportunities for employees to exchange opinions on CSR.

FY2011 was a year where we made special effort to promote the spread of the term CSR itself and the concepts that accompany it. In training sessions, first we had

the general managers of each department who are in charge of promoting CSR explain what it meant in their own words and then we discussed the important policy of reinvestigating duties which have become second nature from a CSR perspective.

JTEKT believe that making employees see how they are helping the company and society will motivate them to always do their best.



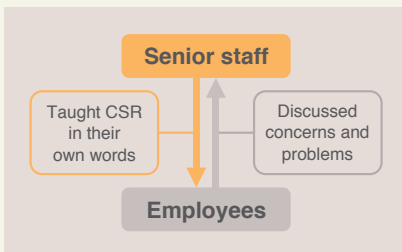
Spreading CSR internally

Holding CSR training sessions for each department and conducting questionnaires targeting all employees. We concentrated our strength on spreading CSR throughout the company.

Steps to spreading CSR internally



Activities for the spread of CSR in each department



Percentage of people who "understood CSR satisfactorily" and "understood CSR really well".
(Top 2 answers out of 6 options)

	FY2010	FY2011
Managers or above	47%	64%
General employees	13%	26%
All employees	21%	35%

The percentage of employees who understood the CSR policy increased significantly

To verify the degree to which CSR has spread throughout the company, we have conducted a questionnaire since FY2010 asking employees their level of understanding of the CSR policy. The results of this questionnaire revealed that 35% of employees either understood satisfactorily or understood well, which were the top 2 answers out of 6. The FY2011 results was 14 percentage points higher than the 21% result at the end of FY2010. The written questionnaires completed by

general managers in each workplace showed us that in most departments, there was a shared awareness of CSR issues. Moreover, two-thirds of all departments expressed a desire to continue activities to spread CSR. We will continue to hold training sessions in each department and further improve understanding of CSR. We will also maintain a framework where discussion can be had on JTEKT's changing social responsibility to suit social conditions.

PICK UP 2011

Spreading CSR internally

I realized how closely intertwined daily duties and CSR are.

Production Headquarters
Production Administration Dept. 1
General Manager
Hiroshi Nakamichi

I realized that things I hadn't worried about much until now actually went against compliance.

Bearing Operations Headquarters
Industrial Machinery Application Engineering Dept.
Assistant Manager
Junichi Kubo

There were lots of opinions, so we listed up the problems relating to our various jobs and thought up countermeasures.

Bearing Operations Headquarters
Industrial Machinery Application Engineering Dept.
General Manager
Nobuya Suzuki

I thought that CSR activities weren't related to my work but I realized that wasn't true.

Kariya Plant
Quality Control Dept.
Tsuyoshi Hirai

I've begun reciting from the CSR handbook in after-lunch meetings.

Production Engineering Headquarters
Steering Production Engineering Dept.
General Manager
Takao Inoue

There were lots of positive opinions about how we can fulfill our social responsibilities as employees of a company.

Production Headquarters
Production Administration Dept. 2
General Manager
Tsuyoshi Suenaga

The department's awareness rose regarding what we are working for in the first place.

Kokubu Plant
Administration Dept.
General Manager
Kouji Nakamura

At first the term "CSR" itself was confusing but now that it is called Corporate Social Responsibility (in Japanese), it's much easier for us.

Production Headquarters
Production Administration Dept. 2
Left: **Keiji Matsumoto**
Right: **Aya Kishimoto**

My CSR Special

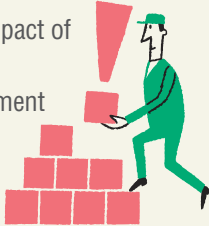
Quotes from the questionnaire completed by employees who participated in training sessions.
We are steadily raising awareness of CSR among JTEKT employees.

Keyword

Disaster Recovery

2011 was a year never to be forgotten for Japan and for the world.

Now, companies must rethink the impact of disasters and build a new risk management framework.



Donations, etc., in FY2011

The Great East Japan Earthquake

- JTEKT group donated 70 million yen (March, 2011)
- Directors and employees donated 11, 335, 645 yen.

Typhoon 12

- JTEKT Corporation donated 1.5 million yen (October, 2011)

Thailand floods

- JTEKT group donated 5 million Baht (October, 2011)

2 Disaster Recovery Thailand floods Among the first to support flood-affected customers

After the Thailand floods of July 2011, JTEKT swiftly provided their machine tool customers affected by the disasters with support.

JTEKT support team members went to Thailand and taught 10 Thai service personnel repair methods, etc. Also, 6 employees from group companies cooperated to visit 35 customers and examine 199 machines suspected of damage. Of these, 76 machines in 19 companies had taken on water so we carried out initial



Teaching personnel on the actual machine

repair work. Our customers even said to us "JTEKT was the first to come".

1 Disaster Recovery The Great East Japan Earthquake Supporting disaster recovery as an organization and as individuals

In the wake of the Great East Japan Earthquake that struck on March 11th, 2011, JTEKT, as a company and as individuals, took various actions towards disaster recovery.

Response immediately after disasters

- Immediately after the disaster, JTEKT established an emergency earthquake task force with the company president as the head.
- Confirmed the safety of JTEKT and JTEKT group company employees and their families
- As a supplier, procured substitute parts so as not to stop our customers' lines.
- As a machine tool manufacturer, supported the recovery of disaster-struck customers.
- The company on the whole promoted energy-saving and power peak-cut more than ever. A rotating holiday system was introduced for the 3 months between July and September.

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- Recruited short-term employees for the Tokyo plant through job advertising magazines in the disaster areas.
- Closed the emergency earthquake task force in June. Continuing to solve outstanding issues in individual departments.

Response still continuing today

- **Supporting the Tohoku recovery as a Toyota group member**
Hold periodical meetings and discuss recovery projects (current as of March, 2012)
- **Established activity bases for the Tohoku region**
Established a machine tools maintenance/service base and sales base to support the recovery of industries in the disaster-struck areas (April, 2012)

JTEKT volunteers

- 6 JTEKT employees worked alongside local volunteers through the Toyota group disaster volunteer network
- Bell mark coupons, unused stamps, mistakenly written and unused postcards (replace with stamps and provided), unused phone cards, etc., were collected from employees and donated through NPOs supporting the disaster-struck areas. (still continuing in 2012)
- The JTEKT volleyball team, Stings, held volley ball training sessions twice in June

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Employees who volunteered for recovery support in the wake of the Great East Japan Earthquake



Katsuji Washio (left)
Okazaki Plant
Administration Dept. General Affairs Section

Volunteered from June 29th to July 3rd

I want to volunteer again in the future

I removed rubble from rice fields and residential areas then separated it for disposal. Once I saw how deep I had to dig to remove the rubble that had been washed into the rice fields, I realized what a long road to recovery it would be. I want to volunteer again.

Yasuhito Ishihara (right)
Engineering Headquarters
Advanced Product Development Center
Advanced Product Development Office

Volunteered from July 27th to 31st

The reusable cloth bags were popular

I was involved in cleaning out roadside drains and removing rubble. It took 10 people 2 hours just to clean a 100 meter –long stretch of road. It made me painfully aware of just how long recovery would take. When I helped out at a local festival the reusable cloth bags provided by our company were really popular with the disaster victims.