JTEKT technology, helping to build a society where people can lead secure lives.

Advancements in various industry technologies such as cars, energy and so on, have brought convenience and luxuriance to people's lives. On the other hand, securing safety against accidents on the road and in the workplace is becoming a major issue of concern. The first step of JTEKT's CSR is to be strongly aware of this issue facing society and actively pursue a solution. This special report singles out but a few products from the many examples available and introduces how JTEKT is contributing to the building of a safe society.



A new technology reducing work at heights in wind power generation

The difficulty of performing maintenance work on high-up wind power generators is an issue of concern.

JTEKT have used ceramics to prevent electrical corrosion (*) and develop a highly reliable, long-lasting bearing for wind power generators. Reducing the amount of maintenance (work at heights) through longer service life has improved safety on wind power generation farms.

*The phenomenon where an electrical current passes through the inside of a rotating bearing and the surface of the contact portion of the rollers partially melts.





JTEKT bearings are used in wind power generators.

Bullet train | Axle bearings





Maximum speed

300 km/h

Bearing type Double-row tapered roller bearing Lubrication method Immersion lubrication



Reliability and durability supporting a high speed travel of 300 km/h

The N700 is a state-of-the-art bullet train capable of speeds up to 300 kilometers per hour. In the center of this train's wheels, supporting a stable, smooth ride, are JTEKT bearings.

Our bearings have the role of transmitting torque from the drive motor to the wheels without loss. High reliability and durability is expected of bearings used in the severe environment that is high speed transportation. With cutting-edge technology, JTEKT are contributing to the safe operation of bullet trains.



Featuring an electric tilt & telescopic mechanism and impact energy absorption mechanism with the same overall length as the conventional C-EPS.



Improving driving safety and collision safety

Correct driving posture is the first step to safe driving. Being able to adjust the steering wheel forward, backwards and height-wise into a suitable position leads to improved driving safety. The electric tilt and telescopic feature makes this kind of adjustment possible at the simple operation of a switch.

In 2009, JTEKT were the first in the world to develop and mass produce a C-EPS (column-type electric power steering) that combined both the electric tilt & telescopic mechanism and high output.

This product also features an impact energy absorption mechanism, making it superior in collision safety.

* The electric tilt & telescopic C-EPS was jointly developed with Aishin Seiki.



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A car travels by transmitting engine power to the tires. JTEKT's ITCC (electronically controlled 4WD coupling) and TORSEN (torque sensing differential for fulltime 4WD) respond to changes in the driving environment, and distribute engine power optimally to the front and back wheels.

These devices are used in many 4WD vehicles around the world.

In particular, the ITCC transmits engine power to the front wheels during normal driving, and transfers power to the back wheels when the front ones are about to slip, hence avoiding spin. This device achieves both fuel efficiency and driving performance of a higher order.



Helping to build an environment where workers can feel safe

JTEKT are also involved in improving safety on the production shop floor. In 2004, we developed and commoditized the first safety PLC "TOYOPUC – PCS" in Japan.

PLC is the abbreviation for "programming logic controller", and is a type of computer that controls production equipment operations.

Until that time, safety standards prohibited the use of PLCs in safety

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control.

However, JTEKT made this possible by developing a safety PLC with the world's fastest processing speed and high reliability, for which we received international safety standard certification.

The popularity of safety PLCs is increasing due to the fact that they offer a low-cost, space-saving form of control that protects worker safety.

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An example of using a safety PLC for safe control. Controls the robot in response to the state of the safety fence door (open or closed), protecting people's safety.

We will continue to exert our efforts in product and technology development, and fulfill our social responsibility as a manufacturer

JTEKT, as a manufacturer of mechanical parts and machine tools, believe that the social responsibilities we should fulfill through our operations involves both environmental and safety aspects. This special report has focused on safety. Neither mechanical parts nor machine tools often get the chance to be seen by the consumer however they are deeply entwined with people's lives. JTEKT, hand-in-hand with our customers,

will continue efforts to offer a higher level of safety to society as a whole.

Needle bearing business of US company, TIMKEN, becomes part of a new team

Achieving world top class in automotive bearings

From January of 2010, US company's needle bearing business became part of the JTEKT Group under the new brand [Koyo Torrington Needle Roller Bearings]. As a result, JTEKT's world-wide share of the needle bearing market now stands at approximately

26%, and our position as a world top-class supplier of bearings for the automotive industry is stead-fast.





New brand logo mark (*1)



Contributing to the development of a car-orientated society through the creation of synergism.

In response to an increased demand for low fuel costs and low emission vehicles, the importance placed on high quality needle bearings in the automotive industry is increasing. With the acquisition of TIMKEN's needle bearing business, the JTEKT Group has gained significant strength in the automotive bearing field from a production, technical and sales point of view.

From now on also, through the development, manufacture and sale of products high in added-value, we will continue to respond to the requests of our customers across the globe and contribute to the development of a car-orientated society.

• Former TIMKEN needle bearing business overview

○ Sales turnover : USD 408 mill (2009)

○No. of employees : 3,242 (Current at Dec, 2009)

ODevelopment/production locations North US:Development(1) · Production(4)

Total	Development : 3 locations / Production : 12 locations
Asia	China:Production (1)
Europe	Germany:Development (1) • Production (1) /Czech:Development (1) • Production (1) /France:Production (3)/Spain:Production (1)
America	/Canada:Production (1)

Figures shown in parenthesis are the no. of locations

Global share of the needle bearing market * 2007 JTEKT investigation



•Former TIMKEN needle bearing business



Former TIMKEN needle bearing business sales structure by automotive part *2 Koyo Torrington Needle Roller Bearings abbreviation

What are needle bearings?

Bearings are a type of mechanical part which come in many variations including antifriction bearings, slide bearings and so forth. Needle bearings are a type of antifriction bearing. A thin, needle-shaped roller is used on a rolling element, making parts and the overall product smaller and more light-weight, while reducing friction thereby contributing to vehicle fuel efficiency.

(Main types of antifriction bearings)



Backed by a new structure, we will continue responding to needs to a more thorough extent

KOYO BEARINGS USA LLC **Company President Kenneth Hopkins**



Message to Employees (Koyo Torrington)

We have taken on a new challenge. In order to succeed, I ask that you draw on your strong experience and creativity you have cultivated until now. Only with your personal commitment to teamwork can we realize our full potential.

Message to JTEKT

On behalf of the Needle Bearing Business (Koyo Torrington), I wish to express my appreciation and enthusiasm for the future.

As a part of this global acquisition, it is our sincere desire to exceed the expectations that JTEKT have for us.

Message to our Customers

We endeavor to be your partner of choice, increasing our development capabilities based on this new structure, as we strive to meet your needs and exceed your expectations. Furthermore, it is our intent to focus on continuing to improve our products and services, and provide you with world-class needle bearings.

[CSR-related activities]

Helping to reduce the environmental burden through developing higher performance products.

Creating a workplace rich in motivation

We respect the individuality of our employees, and endeavor to create a workplace that is motivating to each and every individual. One example of this is our commitment to communication within the company. In April of 2010 we held a conference call connecting all of our bases. More than 400 employees from across the globe participated. Moreover, we are creating activities that encourage communication and interaction of our employees in every region.

Aiming for improved fuel efficiency of vehicles

We will continue to contribute to reducing the burden on the environment through the development of higher efficiency, higher quality needle bearings. One example of this is our current research into utilizing needle bearings to reduce friction and increase efficiency in engines. By putting this research to practical use, our goal is to increase the fuel efficiency of vehicles and other transportation devices by 5% in the future.

Characteristics of needle bearings

Contributing to the downsizing and lightening of the overall product through downsizing parts

Reducing energy loss caused by friction

Contributing to improved vehicle fuel efficiency!

Koyo Torrington's (*2) technology answering a wide-range of needs

Main products Formed needle roller bearings

Automatic transmissions

Alternators

•ABS motors

Solid type needle roller bearings/

Automatic transmissions

Air compressors

• Pumps





 Automatic transmissions •Manual transmissions Planetary gears

Thrust needle roller bearings



- Air compressors
- Automatic transmissions Torque converters