



# For Environmental Protection

**Highlights**

## A New, Environmentally Friendly and Energy Efficient Plant has been Completed



Work began at the Nittoku Spark Tech Tono Co., Ltd. Nino Headquarters Plant in April 2014. This plant was designed to be energy-efficient, under the concept “a plant that is friendly to people and the environment.” We incorporated into the design measures to benefit the environment and save energy including adopting a monitor roof that lets light in while allowing heat to escape, reducing the electricity used in air conditioning by introducing a vaporization-type blower and reducing the load on indoor air conditioners by using outside air for dust collection and venting. It also leases its rooftop for the installation of mega solar panels and has other features that take the environment into consideration.

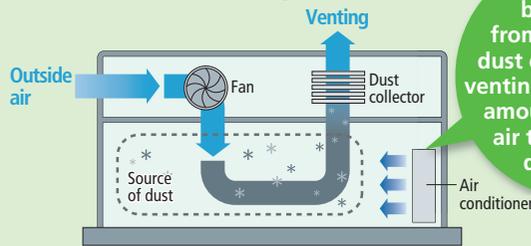
**Production items**

Insulators for spark plugs

**Production capacity**

13.5 million per month  
(Phased increases in production capacity)

**Dust collection and venting mechanism**



Air is brought in from outside for dust collection and venting, reducing the amount of cooled air that must be discarded.

**Voice of the Organizer**

### Making a factory friendly to people and the environment

In the past when we created environmentally friendly facilities, it often resulted in complex systems, placing a burden on employees. This time we chose equipment and systems that are easy for employees to maintain, aiming for both energy efficiency and ease of maintenance.

**Yuki Morishita**

Production Support Engineering Dept.



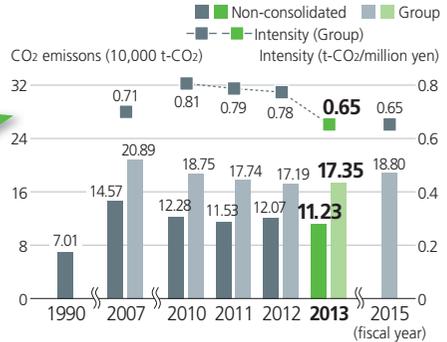


## Meeting Our Target for Reducing CO<sub>2</sub> Emissions

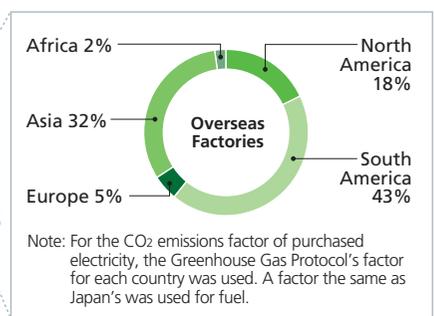
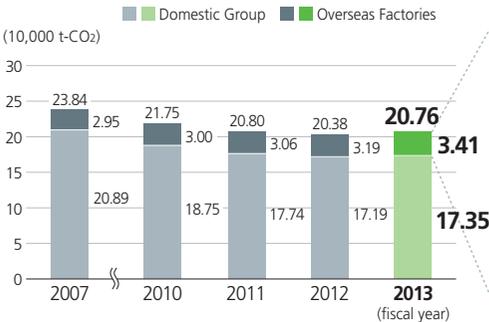
In fiscal 2013, our CO<sub>2</sub> emissions figure was 173,500 tons, meeting our fiscal 2013 target of 182,000 tons. The target was attained through energy transformation in the manufacturing process, updating of facilities (for energy efficiency) and achieving an energy-savings effect by revising our manufacturing conditions.

Promoting measures such as energy conversion and equipment updates

### Transition of Emission Volume of Energy-Origin CO<sub>2</sub> (Offices and Plants)



### Trend in CO<sub>2</sub> Emissions (Domestic Group + Overseas Factories)

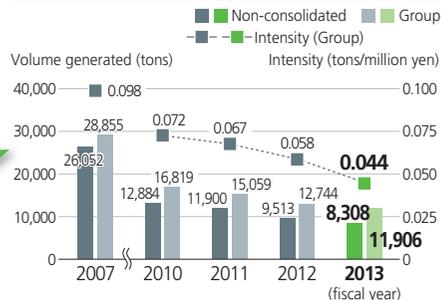


## Reduction in Waste Generated

In fiscal 2013, the waste intensity was 0.044 tons/million yen. By reducing the amount of ceramic sludge produced in our manufacturing process and increasing manufacturing process yield, we have lowered the waste intensity 55% compared with the fiscal 2007 level.

Reducing volume of ceramic sludge discharged in manufacturing processes

### Trends in Volume of Waste Generated

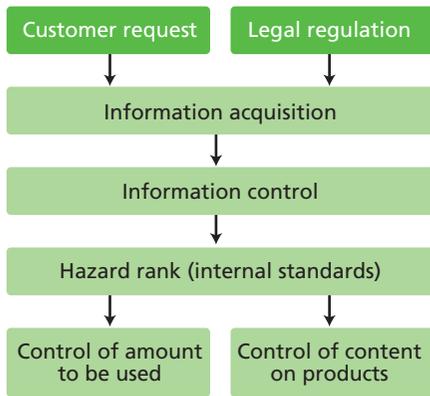


## For Environmental Protection

### Soundly Managing Chemical Substances to Comply with the International Regulations of Different Countries

To satisfy customer requests and regulation such as the ELV Directive, RoHS Directive and REACH Regulation of the EU, we assign hazard ranks to substances of environmental concern. With handling standards for each rank, we carefully manage non-containment and reduce their use.

#### Management System



#### Voice of Our Controls Organizer

#### Incorporating regulations and customer desires into our work plans

We are incorporating within our department information on regulations from the Environment and Safety Management Department and requests from customers related to regulated substances to help configure plans for making environmentally friendly products.



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Engineering Dept. 1  
Semiconductor Div.

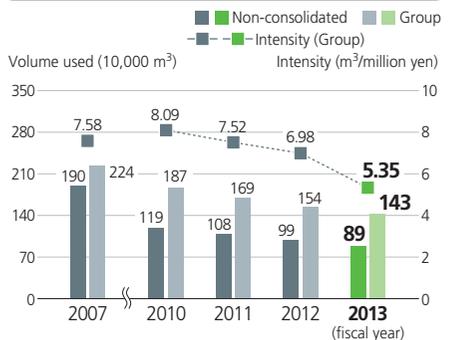
Establishing hazard rankings and managing chemical substances appropriately

Water consumption per unit of production improved by 29% since fiscal 2007

### Reducing the Amounts of Tap and Well Water Used

In fiscal 2013, the water use intensity was 5.35 m<sup>3</sup>/million yen. In the manufacturing process, we conserved water by using recycled water, adjusting the number of units operating and changing manufacturing conditions, achieving a 29% improvement over the fiscal 2007 level.

#### Trends in Volume of Tap/Well Water Used

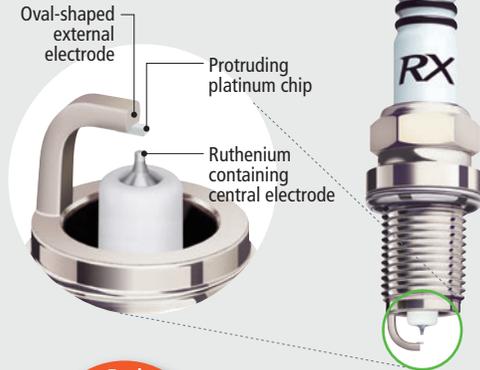




## Developing Environmentally Friendly Products

### Energy-Efficient, Environmentally Friendly **Premium RX Spark Plugs**

Using a first-of-its-kind central electrodes containing ruthenium and an oval shaped external electrodes with protruding platinum chip, this spark plug achieves outstanding ignitability and low fuel consumption. It is a next-generation premium plug with outstanding overall performance, including environmental performance.



A new design that achieves premier performance!

### Improved Fuel Efficiency

JC08 mode fuel efficiency

(km/l)



Conventional spark plug



Premium RX Spark Plug

Test vehicle: 2,400 cc  
Gasoline used: regular

Fuel efficiency up **2.2%** (compared to NGK SPARK PLUG's conventional plugs)

Through outstanding ignitability and fuel efficiency, it achieves a 2.2 percent improvement in fuel efficiency compared with conventional plugs even in the new standard JC08 mode. In addition, it uses 1.9 percent less gasoline than conventional plugs when idling at stoplights or when stuck in traffic.

### Reduced CO<sub>2</sub> Emissions

Premium RX Spark Plugs reduce CO<sub>2</sub> emissions and are environmentally friendly. Compared to conventional spark plugs, they reduce CO<sub>2</sub> emissions by the amount two Japanese beech trees would absorb in a year.

Basis for calculation: Driving 5,000 km per year/carbon dioxide emission factor 2.31 kg-CO<sub>2</sub>/L gasoline (Environmental Agency's "Report on Survey of Carbon Dioxide Emissions")/amount of CO<sub>2</sub> absorbed by a Japanese beech tree in a year 11 kg CO<sub>2</sub>/year (calculated by the Forestry and Forest Products Research Institute).