

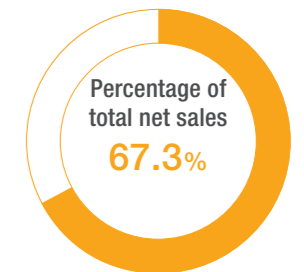


Transportation Systems Segment

Electrical equipment for rail vehicles that responds to demand for railway infrastructure in Japan and worldwide

Business Overview

We delivered electrical equipment for the Hokkaido Shinkansen, which started its service in March 2016. Overseas, we received orders for subway contracts in Southeast Asia and the Middle East. In the future, we will promote overseas expansion even more aggressively as a driver of growth through means such as expansion of maintenance business in China.



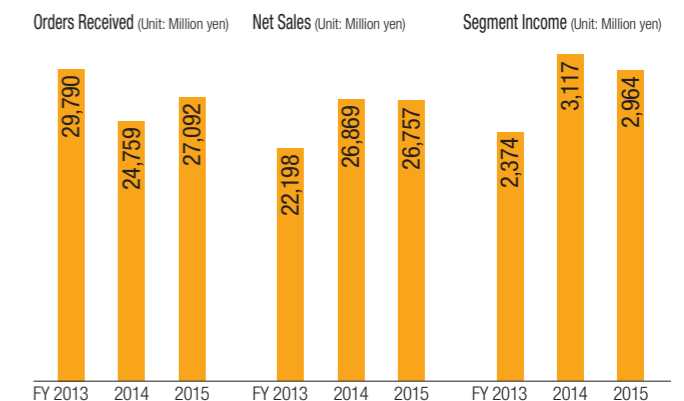
Results for fiscal 2015

- Orders Received**
27,092 million yen
 (Up 9.4% year on year)
- Net Sales**
26,757 million yen
 (Down 0.4% year on year)
- Segment Income**
2,964 million yen
 (Down 4.9% year on year)

Orders received increased 9.4% compared with the previous fiscal year to 27,092 million yen, led by upturns both in Japan and outside Japan.

Net sales totaled 26,757 million yen, a 0.4% decrease from the previous fiscal year, due to a decrease outside Japan, despite an increase in Japan.

Segment profit decreased 4.9% compared with the previous fiscal year to 2,964 million yen.



BUSINESS

- 10 Transportation Systems segment
- 11 Industrial Systems segment
- 12 Information Equipment Systems segment
- 13 Expansion of New Businesses
- 14 Research and Development/Intellectual Property

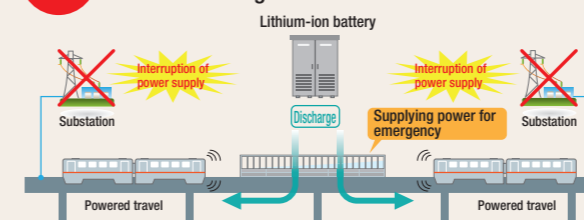
TOPICS

Development and Delivery of Regenerative Power Storage System "E³ Solution System" with Large Capacity

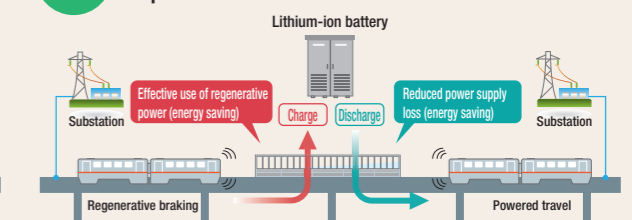
With regard to "E³ Solution System," our highly acclaimed regenerative power storage system, we developed the system with large capacity and delivered it for the Tokyo Tama Intercity Monorail. The system has an output of 1,000 kW per set, and realizes an output of 2,000 kW by providing two sets. In addition to the existing functions such as regenerative power absorption, the system has a function for emergency running when trains are stopped between stations due to power failures at substations, so that trains can safely evacuate to the nearest stations. We will continue to contribute to disaster countermeasures and an energy-saving society through the spread of the system.

Features of E³ Solution System

In emergency Supplying power as power source systems for train running



In normal conditions Storage of regenerative power and supply of power when needed

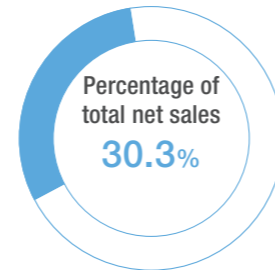


Enhance functions of high-efficiency inverters and contribute to upgrades, energy savings and space savings for production facilities

Business Overview

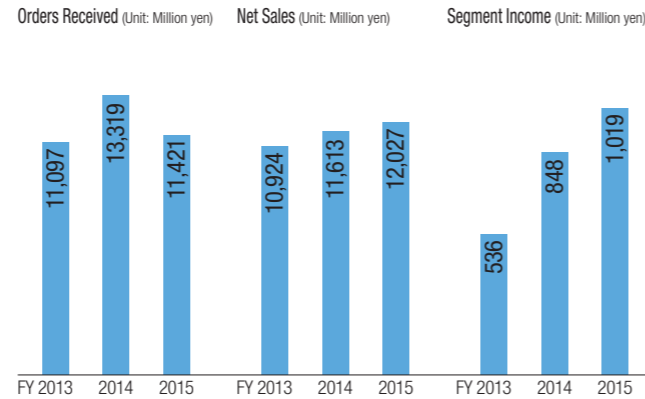
We develop and manufacture general industrial machinery and equipment, testing equipment for automobile development and infrastructure equipment.

For the "VF66 series" of intelligent inverters, we developed "VF66G" as a lineup that supports inter-connected systems, and strengthened support to small-scale hydropower generation, wind power generation and other distributed power source systems. In addition, we developed a 500 kW-class inverter configured with single unit, as compared to a previous configuration of units connected in parallel, thereby significantly reducing the space required for installation of a control panel. We will continue to respond to demands for upgrades, energy savings and space savings for production facilities, and work to expand the business in and outside Japan.



Results for fiscal 2015

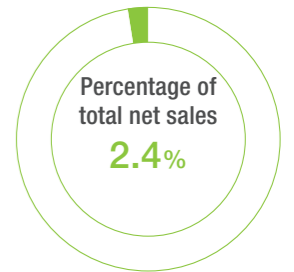
- Orders Received**
11,421 million yen
 (Down 14.2% year on year)
 Orders received decreased 14.2% compared with the previous fiscal year to 11,421 million yen due to decreased orders for testing equipment for automobile development, processing equipment, and social infrastructures.
- Net Sales**
12,027 million yen
 (Up 3.6% year on year)
 Net sales increased 3.6% year on year to 12,027 million yen due to increases in sales of testing equipment for automobile development and outside Japan, despite a decrease in those for social infrastructure.
- Segment Income**
1,019 million yen
 (Up 20.2% year on year)
 Segment profit totaled 1,019 million yen, a 20.2% increase compared with the previous fiscal year.



Provision of railway station operating equipment that achieves multi-functions and a compact size and IoT/M2M solutions in various fields

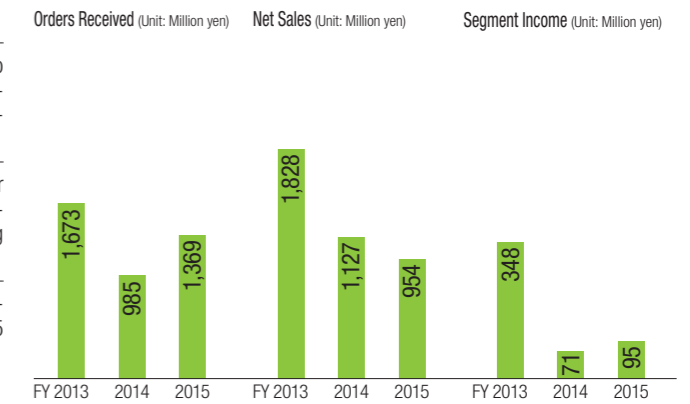
Business Overview

We develop and manufacture railway station operating equipment that can achieve mechanization and reduction of labor in railway station operations of railway operators. We also contribute to improvements of efficiency in operations through IoT/M2M solutions and power visualization solutions using mobile phone networks and cloud servers for monitoring and control.



Results for fiscal 2015

- Orders Received**
1,369 million yen
 (Up 39.0% year on year)
 Orders received increased 39.0% to 1,369 million yen, due to increased orders for railway station operating equipment.
- Net Sales**
954 million yen
 (Down 15.4% year on year)
 Net sales decreased 15.4% year on year to 954 million yen mainly due to a decrease in sales of remote monitoring systems.
- Segment Income**
95 million yen
 (Up 34.1% year on year)
 Segment profit increased 34.1% compared with the previous fiscal year to 95 million yen.



TOPICS DC drive mode of the intelligent inverter VF66B

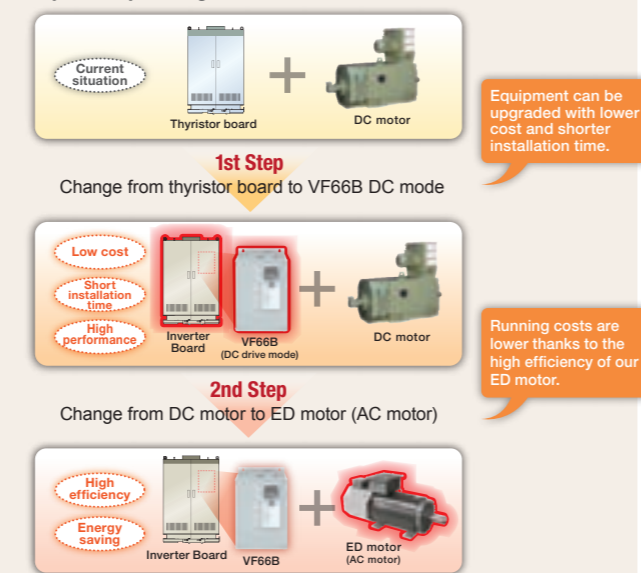
Direct current motors (DC motors) were used as the main type of variable-speed drive from the 1970s to the first half of the 1990s, and they were adopted in various production facility lines in combination with thyristor Leonard equipment.

The DC drive mode of the latest inverter "VF66B" helps to control investment costs as DC drive mode can convert control equipment into an inverter with the DC motors as is for equipment using DC motors that continues to operate. This can also lead to gradual updates to AC motors, which is the next step.

In addition, the introduction of the DC drive mode will not only enable digital control, but also enables construction of interface with various latest networks and PLC, thereby making equipment of higher performance.

Going forward, we will support the needs of customers with the products that leverage our advanced motor drive technologies.

Update steps through the introduction of the VF66B DC drive mode



* ED motor : Toyo Denki's permanent magnet high efficiency motor

TOPICS Order received for commuter pass vending machines for the Transportation Bureau of the City of Yokohama

We have received order for 50 commuter pass vending machines for the Transportation Bureau of the City of Yokohama. This product is a composite ticket vending machine that can singlehandedly issue a variety of tickets such as commuter passes, standard tickets, books of tickets and special tickets. This machine is compatible with tickets of various media such as smart cards, magnetic PET tickets, large magnetic tickets, and Edmondson old style tickets.

Furthermore, the machine enables reduction of power consumption and improved operability thanks to a color LCD with touchscreen, and conforms to the security authorization standards of the Congress of Japan Railway Cybernetics.

We will continue to develop and provide easier-to-use railway station operating equipment.



Expansion of New Businesses

Initiatives in distributed power source (small-scale hydro-power, wind power, biomass, wave power, tidal power, etc.)

We have been working to safely make the most of natural energy sources such as small-scale hydropower, wind power, biomass, wave power and tidal power, by leveraging the know-how of permanent magnet synchronous generators and interconnected systems we have developed over many years.

Take the small-scale hydropower generation system for instance. The system uses water as renewable energy, and effectively utilizes water resources which have not been utilized before, such as agricultural waterways and agricultural dams. We will continue working on effective utilization of various natural energy sources.

System upgrades of distributed power source systems of Toyo Denki Seizo K.K.

- Bountiful experience with power companies in Japan
- Interconnected system protective function
- Higher efficiency by combining with permanent magnet synchronous generators
- Islanding detection function is incorporated in inverters that support interconnected systems
- Switchable from interconnected system operation to self-supporting operation
- Black start in the absence of power source systems is possible
- System upgrades of overload protection, external signal input, etc.
- Output control function
- A wide range of lineup with output from 10 to 750 kW, in particular, bountiful experience with output from 10 to 200 kW



Power Conditioner



EDG Permanent magnet synchronous generator (supports 10 - 750kW)



Initiatives in remote monitoring (IoT/M2M solutions)

We contribute to improvements of efficiency in operations through IoT/M2M solutions using mobile phone networks and cloud servers for monitoring and control.

Joint development of data acquisition and analysis systems for fuel cell lift trucks

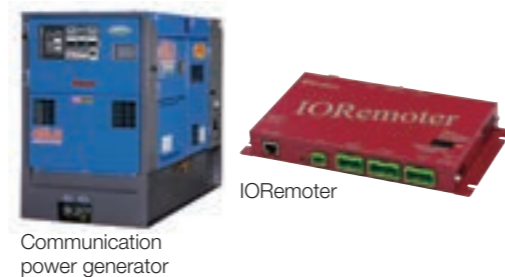
In cooperation with TOYOTA INDUSTRIES CORPORATION, we have developed data acquisition and analysis systems for fuel cell lift trucks. With this system, operation data is collected, stored in cloud servers using mobile phone communication systems, and analyzed. For the remote data management system owned by Toyo Denki Seizo K.K., we developed a data logger capable of on-board use, which enables real-time analysis of cloud servers and is equipped with information transmission function. This system analyses and visualizes data on location information and operation states, thereby contributing to optimization of maintenance services and improvement of merchantability.



Fuel cell lift trucks

Joint development of communication power generator mounted with remote monitoring system

In cooperation with Denyo Co., Ltd., we developed a communication power generator mounted with a remote monitoring system, and commenced its services. The communication power generator was developed by mounting "IORemotor," Toyo Denki Seizo K.K.'s remote monitoring terminal, to Denyo Co., Ltd.'s engine power generator. It enables sending email alerts in case of failure and remote monitoring through cloud services utilizing mobile phone lines. Customers can use various functions through ASP services. We will continue to contribute to operational efficiency through provision of easy-to-install and affordable IoT/M2M solutions.



Communication power generator

Research and Development/Intellectual Property

R&D to support the development of social infrastructure and supporting frameworks

Research and Development

The Group's R&D activities are based on seeking to create products that fully satisfy our customers and challenging the creation and expansion of these products, and we actively promote development of technologies of our existing businesses and basic

technology developments that support this development as well as development of new products that expand our businesses.

Results and topics from fiscal 2015

Segment	Project	Description
Transportation Systems	Delivery of "E ³ Solution System" with large capacity	Developed a system with large capacity for "E ³ Solution System," a regenerative power storage system, and delivered it for the Tokyo Tama Intercity Monorail. The system comes in two sets and has an output of 2000kW, or 1000kW per set.
	Development of electric door operating equipment	Developed electric door operating equipment, in addition to the conventional pneumatic door operating equipment, in an aim of higher performance and reduction of maintenance work.
Industrial Systems	Development of a 500 kW single inverter	Developed a 500 kW-class inverter configured with single unit (install panels), as compared to a previous configuration of units connected in parallel, thereby significantly reducing the space required for installation of a control panel.
	Development of VF66G, inverter that supports interconnected systems	Developed "VF66G" as an inverter that supports interconnected systems for distributed power source systems. In addition to the conventional self-supporting and linkage mode, governor control mode was added. In linkage operation, the inverter is adapted to FRT requirements*1 as a standard feature.
Information Equipment Systems	Enhanced security of composite ticket vending machine	Mounted the function of protecting internal data, etc. against tampering, such as surreptitious reading from operation screen and attacks from networks, in composite ticket vending machines which deal with smart cards.
	Zooming of monitoring items using remote terminals	In order to zoom monitoring items, coordination function of short range wireless (ZigBee) was added, and as the additional units, multiple battery-powered ZigBee sensors can be used.
Research Laboratory	Research on globally compatible insulation systems for motors	Conducted research on high-voltage insulation systems for traction motors for overseas railroads, high heat-resistance insulation systems for which materials of global standards are used, etc., in anticipation of further advancement of globalization and overseas development. We had clear idea of actually using such systems.

*1 FRT requirements: Fault Ride Through requirements

Intellectual Property

Our intellectual property is placed as a key corporate resource. Our intellectual property department is responsible for the management of intellectual property and our research laboratory and the development divisions in each business unit actively apply for patents and utility models.

In the overseas markets which we expect to further expand our businesses, we have started to actively engage in activities concerning our intellectual property in order to protect our technologies and brand.

Patent applications granted

