

# Machinery & Systems Headquarters



We are striving to further increase the competitiveness of our mainstay products and improve product value from the perspective of the life cycle.

Director and Managing Executive Officer  
General Manager of Machinery & Systems Headquarters

Shinsuke Minoda

## Business environment and performance

The production volume of our marine diesel engines was on par with the previous fiscal year at 181 engines/3,280,000 horse power. In addition, we delivered three LNG-burning engines, three methanol-burning engines, and one ethane-burning engine. These engines all burn new types of fuel, and offer excellent environmental performance and economic efficiency. Industrial machinery saw a year-on-year decline in orders received for reciprocating compressors to oil refineries and other facilities, which is attributed to a heightened negative attitude towards capital expenditures affected by the fall of crude oil prices and economic slowdown in China and other emerging countries. Because the business environment is expected to remain tough for the time being, we intend to increase the sales of high-pressure compressors for gas-burning marine diesel engines, for which demand is expected to grow, and enter non-petroleum fields in

collaboration with Kaji Technology Corporation. Demand for cranes is strong both in Japan and other countries due to replacement demand and new demand that arose from the need to accommodate larger container ship sizes. To meet this demand, we are conducting large-scale capital investments at our Oita Works aimed at increasing production capacity, with the new facilities scheduled to start operating in October 2016. We are also studying overseas production of container cranes. In the Life-cycle Solution Service (LSS Service) and Customer Oriented Service, we achieved record highs for both orders received and net sales. These successes were due in part to the strength of after-sales services for marine diesel engines, which were made possible by viewing the docking before the ballast water regulations as a business opportunity, as well as increased crane-related relocation and dismantling work.

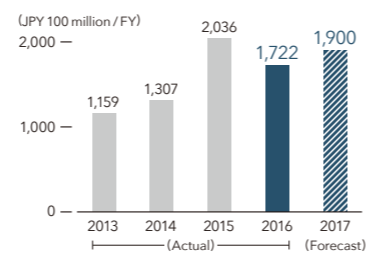
## Fiscal 2016 earnings

Orders received declined by 31.339 billion yen (-15.4%) year on year to 172.238 billion yen. This was due in part to the decrease in orders for marine diesel engines, container cranes, bridges, port structures, various industrial machinery, and after-sales services. Thanks to these products and businesses,

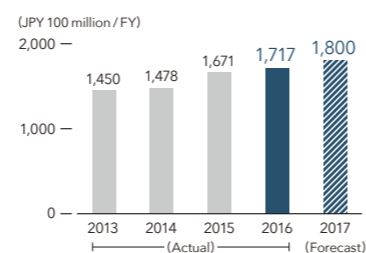
net sales increased by 4.553 billion yen (+2.7%) year on year to 171.690 billion yen. Operating income increased by 3.146 billion yen (+29.5%) year on year to 13.806 billion yen, partly reflecting the strength of after-sales service business and industrial machinery.

## Financial highlights

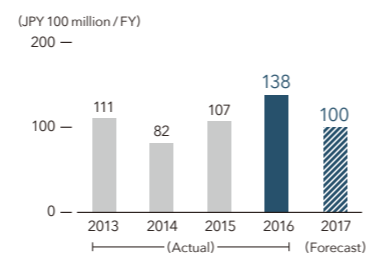
### New orders



### Net Sales



### Operating income



# Our Action

Initiatives for innovation based on the Mid-Term Business Plan

## Topics Expanding environment policy-compliant product business

In October 2015, we completed the first electronically-controlled gas injection diesel engine (ME-GI) in Japan for commercial use. We have also received an order for the world's first ethane-burning engine (ME-LGI). Ready to offer ME-GI, ME-GI-Ethane, and ME-LGI, we have established a system to meet the needs for various types of fuel. In addition, in October 2015 we added

a high-pressure gas compressor to the fuel gas supply system (FGSS) for ME-GI, which has been installed at Tamano Works. It began gas operation with the world's first combination of compressor and engine. We are steadily moving forward with the creation of a system that will allow us to supply not only engines as single units, but also high-value added propulsion systems in an integrated manner.



Methanol-burning electronically-controlled gas injection diesel engine (ME-LGI)

## Topics Improving crane production capacity

Cranes continue to see strong demand both in Japan and other countries. To respond to numerous inquiries, we are expanding our domestic and overseas manufacturing centers. At Oita Works, a manufacturing

center in Japan, we have conducted capital expenditures to increase the large Portainer production capacity to 36 per year. A new production line is scheduled to start operating in the second half of 2016.



Ongoing improvement of the production capacity at Oita Works

## Topics Enhancement of after-sales services

For the after-sales services for marine diesel engines, we have established a system for entering the maintenance and repair business, which was not in the previous business model. We have expanded overseas bases and established a global organization for the after-sales services for industrial machinery. In addition, we are moving

forward with efforts to enhance the after-sales service business, such as the expansion of the technical service domain aimed at providing new services. We will create businesses from the viewpoint of the product lifecycle to break away from the previous earnings structure that was based merely on the sales of products.



Entering the marine diesel engine maintenance and repair business

## Topics Expansion of social infrastructure business

Moving forward, we will continue to see an increase in the demand for the construction of social infrastructure for the Olympic Games until 2020. This in turn will lead to greater demand for the repair of aging roads, bridges, and other structures. The decommissioning of nuclear power plants is also another significant issue facing Japan. To respond to these areas of demand and issues, we established an Infrastructure Business Department in April 2015 and created a system

that makes it possible to operate businesses in an integrated manner. This department and system consolidate our management resources, such as the bridge construction technologies, radar search technologies, and robot technologies used for the decommissioning business. Moving forward, we will promote collaboration and joint development with other companies in the different fields, thereby benefitting from the great demand and further expanding our social infrastructure business.



Investigation of tunnel lining concrete