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# Moving Toward Revolutionary

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# Realization of Industrial Automation

SKAN

Since its founding in 1915, Yaskawa Electric has set motors and their applications as its business domain, and continued to support the cutting-edge industries of the times with its products and technologies.

From "motor manufacturer" to "automation provider," we gave birth to the now universally accepted concept of mechatronics\*, and now we evolved to a "total solution provider." Global demographic changes, environmental issues caused by increases in energy consumption, transformation in the manufacturing scene caused by rapid evolutions of information technology-dramatic changes are now happening in the business environment that surrounds our Group. Against this backdrop, the Yaskawa Group aims to contribute to the resolution of customer management issues through the evolution of core technologies (motion control, robot technology, and power conversion) and to create new added value for society by expanding the application of mechatronics. By realizing our management principle of "contributing to the development of society and the welfare of humankind through business operations" we will contribute to the sustainable development of society.

\* Yaskawa Electric led the world in putting forward the term "mechatronics" in the late 1960s. This concept evolved when we combined our customers' machinery with Yaskawa's electronic products to create superior quality and function.

#### Financial Period Covered This report covers FY2018 (From March 1, 2018 to February 28, 2019)

#### **Editorial Policy**

This report has been compiled with the intent to communicate broadly the future potential of Yaskawa for its shareholders, investors, and a wide readership, and care has been taken to enable prompt understanding of its value creation from various perspectives in a balanced manner

This report is prepared with reference to the "International Integrated Reporting Framework" by the International Integrated Reporting Council (the IIRC), with the aim of helping readers make

#### Note on Numerical Values and Graphs

All numerical values are rounded down, as applicable

#### Note on Forecasts Mentioned in this Report

Future projections for performance and other matters contained in this report are based on the information that is available at the time of issue and on a certain level of requirements as seen rational, however, actual results may vary due to various factors

Some examples of such factors are economic conditions, both in Japan and outside the country, trends in demand for the company's products and services, and trends in foreign exchange and stock markets. Please also note that factors which may impact the company's results are not limited to the aforementioned.

## **OUR HISTORY**

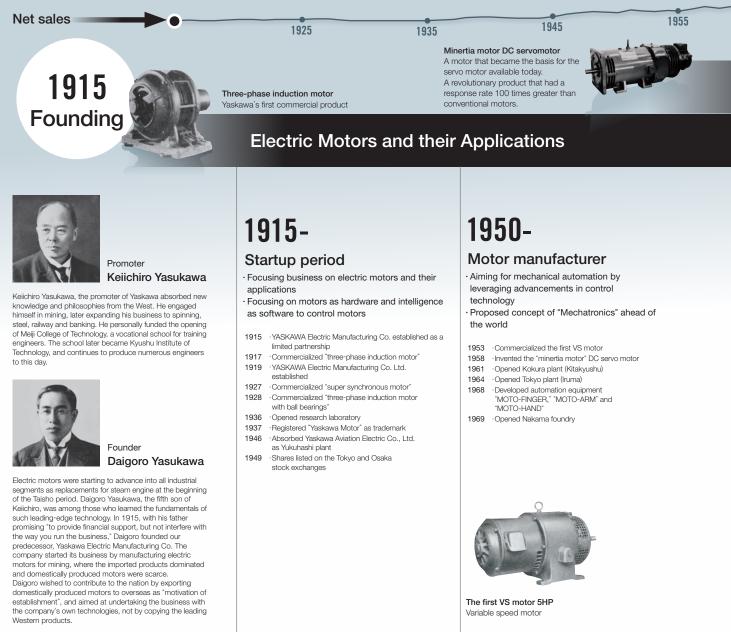
## Contributing to the development of industry and society with world's first epoch-making products and technologies

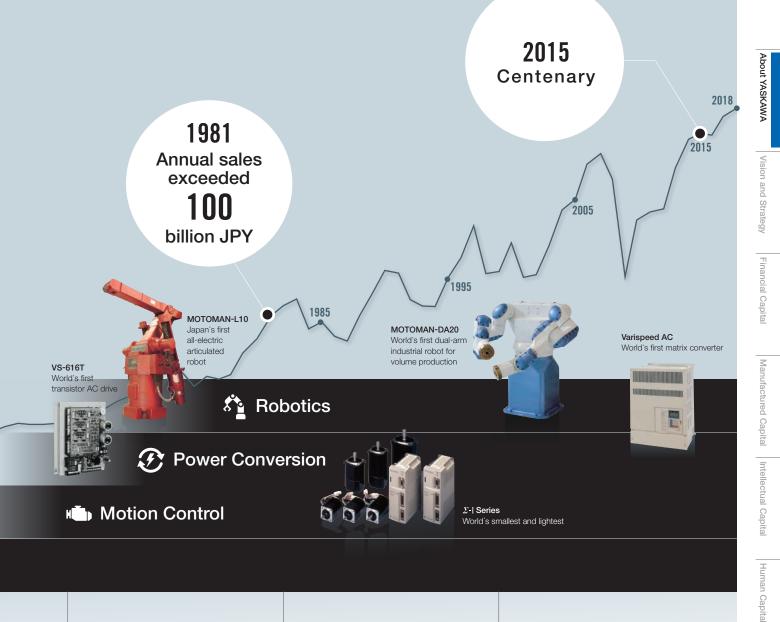
Since its establishment in 1915, Yaskawa Electric has held its mission of being "a company founded on technology" in order to undertake the business by its own technologies and continued to make challenges into the latest technology of the times.

In 1969, Yaskawa led the world in putting forward the concept "mechatronics" combining mechanism and electronics. In 1970s, Yaskawa shaped an idea of "unmanned factories" which are automated plants where

human and machines coexist. And Yaskawa has begun the full utilization of digital data and announced the concept "i<sup>3</sup>-Mechatronics\*"(i cube Mechatronics) for creating new value at manufacturing scenes in 2017. In 2018, Yaskawa Solution Factory was established to realize the unmanned factory which had been planned for a long time. Yaskawa group continues to take on challenges for realizing new industrial automation revolution.

\* i<sup>3</sup>-Mechatronics: Yaskawa's solution concept for realizing a new industrial automation revolution





## 1970-

#### Automation provider

Announced the concept of "unmanned factory", automated plant with support of machines
Aggressively devoted management resources into the rapidly growing mechatronics market; unveiling new products back-to-back
Changed the company name from YASKAWA Electric Manufacturing Co., Ltd. to YASKAWA Electric Corporation on the occasion of 75th anniversary

- 1971 Commercialized the "Varispeed (VS) series" AC drives
   1974 Started domestic production of floppy disk drives (as Y-E Data)
   Developed of the "YASNAC" NC with built-in microcomputer
- 1977 Commercialized "MOTOMAN-L10" vertically articulated industrial robot
- 1979 Commercialized "VS-626TV" vector control AC drive
- 1983 Commercialized the AC servo drive series
- 1987 ·Commercialized vacuum robot for semiconductor manufacturing



The concept of "unmanned factory"

## 1990-

#### Mechatronics promoter

• Offering solutions that match changes in society and industry

Creation of new business by developing applications of mechatronics technology

- 1991 ·Commercialized "Σ series" AC servo drives
- 1995 ·Commercialized "VS-616G5" vector control AC drive 1998 ·Commercialized "MOTOMAN-UP6"
- 1998 ·Commercialized "MOTOMAN-UP6" 1999 ·Commercialized "MOTOMAN-CS series" clean robots
- for transferring liquid crystal substrates
   2002 · Commercialized "TEM LX2" lower limb rehabilitation
- robot 2003 · Developed "SmartPal" next-generation robot



VS-616G5 World's first general-purpose vector control AC drive

MOTOMAN-UP6 World's first multiple robot cooperative control

## 2005-

#### Total solution provider

 Launch of i<sup>3</sup>-Mechatronics, a new solution concept
 Established Yaskawa Solution Factory to realize "unmanned factory"

- 2005 Commercialized new generation robot (dual-arm and 7-axis) Commercialized matrix converter "Varispeed AC"
- ·Commercialized matrix converter "Varispeed AC" 2006 ·Commercialized \*1000 series" generalpurpose AC drive
- 2009 Developed "QMET DRIVE" motor drive system for hybrid electric vehicles
- 2010 ·Released \*Enewin\* electrical products for large-scale wind turbines ·Commercialized \*PV 1000\* PV inverter
- 2013 Commercialized "MOTOMAN-BMDA3" for biomedical applications
- 2017
   Commercialized servo motor with built-in amplifier

   Commercialized "MOTOMAN-HC10" collaborative robot
   Commercialized "MOTOMINI" small and lightweight robot

   2018
   Commercialized the digital data solution
- 2018 ·Commercialized the digital data solution "YASKAWA Cockpit"



with built-in amplifier

semiconductor

Equipped with GaN power



MotoMINI The smallest and lightest in industry

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Corporate Governance

## **OUR PHILOSOPHY**

#### Corporate motto reflecting the founding spirit

In 1979, Vice President Reijiro Kitani (at that time) proposed the "corporate motto", which codified the Company's spirit and philosophy for the first time. The corporate motto consists of the "founding spirit," "management principle" and "guideline for the employees." "Founding spirit" is based on the aspiration of Keiichiro Yasukawa, the promoter of the company, to "to set up an industry to repay the debt of gratitude to the State." "Management principle" is based on the business policy and memorandum of the founder, Daigoro Yasukawa, with the three pillars of quality, profit and market orientation. The "guideline for the employees" is a set of action guidelines for employees to realize management principle. These guidelines are recited daily throughout the company and are firmly rooted.

### **Corporate Motto**

#### Founding Spirit

Our Company was founded by Daigoro Yasukawa in 1915 with the aim of "setting up an industry to repay the debt of gratitude to the State", an aspiration held by his father Keiichiro Yasukawa.

#### **Group Management Principle**

The Yaskawa Group's mission is to leverage the pursuit of its business to contribute to the advancement of society and the well-being of humankind.

We will realize our mission by executing the following three core tenets:

- 1. Develop and enhance world-class technologies, with an emphasis on our foundation of quality.
- 2. Boost management and operation efficiency and achieve the returns necessary for the successful growth of the company.
- 3. Satisfy the needs of the market and dedicate ourselves to serving our customers as a customer centric organization.

#### Guideline for the Employees

We will respect the traditions of Our Company and strive to realize our management principle. At the same time, we will increase public trust and thereby seek prosperity for the company and our own happiness.

In particular, the following five items serve as daily action guidelines.

Let's put our customers first.

Let's pursue both high quality and high profitability.

Let's train ourselves and overcome the competition with unyielding spirit.

Let's broaden our horizons and change our way of thinking.

Let's deepen mutual trust and cooperate with each other.



## Aim for sustainable corporate value improvement with the realization of management principle at the core

In light of the recent heightening of geopolitical risks and uncertain economic and social conditions in the macroeconomic environment, we revised our long-term business plan "Vision 2025", which was disclosed on April 20, 2015. In this review, we have redefined our vision for FY2025 in an easy-to-understand manner, as well as attempting to instill the management principle inside and outside the group by drawing on our vision, with the realization of our management principle at the core.

#### 1. Redefining Business Areas

With mechatronics at its core, Yaskawa Group has established two business domains: "factory automation and optimization" and "mechatronics applications" and is pursuing initiatives based on the following strategies.



#### Strategies in "Factory Automation and Optimization"

- Realization of the industrial automation revolution centered on i<sup>3</sup>-Mechatronics
   We provide new automated solutions by integrating mechatronics and ICT technologies.
- Pursuing the global No.1 in core businesses We will pursue and achieve global No.1 share in robotics and motion control segments.

#### Strategies in "Mechatronics Applications"

- Challenge for new mechatronics applications We determine business commercialization by exploring and demonstrating fields in which mechatronics technology can be applied. In particular, we will focus on the commercialization of the following areas.
- Energy Saving Reduce power consumption by energysaving equipment
- Food & Agri Promote automation in food production and agriculture market
- Clean Power Establish energy creation, application and storage business
- Humatronics Promote development of medical and welfare markets

#### 2. Revision of Financial Targets

By eliminating the previously established sales targets of "Net Sales (Twice or more as compared to FY2015)" and "Ratio of Sales in New Business Areas (Twice or more as compared to FY2015)" for FY2025, we have positioned operating income as the most important management indicator and are aiming to generate a record operating income of 100 billion yen in order to accelerate quality improvement. In addition, we have revised upward the ROE target, which had been adopted as an indicator of capital efficiency, from 13% to 15%. To maintain a constant level of financial leverage and further improve the return efficiency for shareholders, we have also adopted ROIC and set targets for the efficiency of invested capital, including interest-bearing debt. In terms of returns to shareholders, we will continue to strengthen returns to shareholders using the dividend payout ratio as an indicator.

Financial Targets for FY2025 Over 100 billion yen

 $\frac{15_{\% \text{ or more}}}{15_{\% \text{ or more}}}$ 

	FY2015 Results
Operating Income	<b>36.7</b> billion yen
ROE*1	12.8%
ROIC*2	11.3%
Dividend Payout Ratio	23.6%

\*1 ROE /Return on Equity = Profit attributable to owners of parent / Shareholders' equity \*2 ROIC/Return on Invested Capital = Profit attributable to owners of parent / Invested capital Yaskawa has been implementing business strategies to achieve Vision 2025 by capitalizing on the management capital it has accumulated over its 100 year history. Through these efforts, we are achieving sustainable growth and contributing to the SDGs through the creation of social value, which leads to the realization of our management principles.



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#### **Creating Social Value**

We provide value to our stakeholders through our business operations.



# Utilizing the corporate culture cultivated since our founding to open up a new era

How the founding spirit of "being a company founded on technology", "pursuit of customer satisfaction", and "quality-oriented" took root as a corporate culture

Yaskawa's founder Daigoro Yasukawa had the mission statement of "being a company founded on technology" in order to conduct business with original technologies, rather than imitating the leading Western technologies. The company was in the red for the first 17 years since its founding, and despite having to go through difficult times, it did not change its mind. I think this is because the enthusiasm and determination of Daigoro has permeated the organization since the dawn and has been shaped as a corporate culture.

Since then, as motors have been used by customers through our business operations, the ideal form and direction of the entire organization have been created based on the concept of "Pursuit of customer satisfaction" in addition to "being a company founded on technology". The term "Electric motors and their applications" which has been Our Company's business domain to date, is considered to have arisen from the dialogue with customers.

At that time, we were also involved in the production equipment of materials, such as steel and spinning, which operated 24 hours a day. The idea of "quality-oriented" took root in the organization as we believed that we should not cause any trouble to our customers' equipment. In this way, the cumulative actions of the people in the organization over the years have served as the basis for value judgments and have developed into our corporate culture.

### "Mechatronics as a forward-looking business concept" and "policy management"

New turning point for our corporate culture was when we introduced the concept of "Mechatronics" to realize automation when manufacturing was about to change from material industry to assembly industry at the end of Japan's economic growth. At this time, the existing business was still mainly focused and the concept was not a culture yet but just a vision. As such, Yaskawa worked on TQC (policy management) as a tool to set the whole organization in one direction. Yaskawa established its own management system, including tools for setting and managing targets in sales, development, quality control, and manufacturing. As a result, the vision of mechatronics and TQC have become part of our corporate culture, and Yaskawa has made significant progress in the R&D and customer development for automation in the assembly industry.

#### Yaskawa's "glocal" expansion

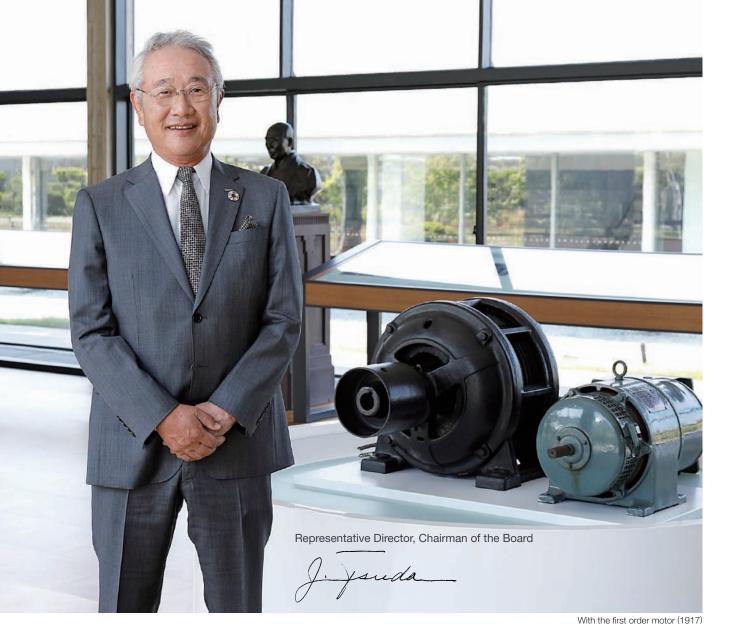
After that, globalization of our business proceeded. Yaskawa accelerated the "glocal"\* expansion which is not to selling Japanese products as they are to overseas but to provide customer services and products needed in each community. It was a different way from many Japanese companies at that time but the culture matched well with changes of business environment and it resulted in today's Yaskawa.

We have faced many difficulties since our founding, but as a result of the wisdom and courage of the people involved in each era, we are now a leading global company. The 6 cultures that have been nurtured over the years – (1) "company founded on technology" (2) "pursuing customer satisfaction" (3) "quality-oriented" (4) "mechatronics as a forward-looking business concept" (5) "policy management" (6) "glocal management" – are critical to Yaskawa Group's strength today.

 $\pmb{\ast}$  it means providing best services based on any local community in the world in addition to business management with global mindset

#### Toward the age of big data and AI

There's no doubt that the trend of collecting, analyzing, and using data is going to take off at a tremendous pace, and the time is coming again when Our Company needs a forwad-looking business concept (Vision). In the 1970s, "mechatronics" from Our Company had the impact of leading the third industrial revolution. The Yaskawa Group



will continue to drive the evolution of production from short-, medium-, and long-term perspectives under the concept of i<sup>3</sup>-Mechatronics in the Fourth Industrial Revolution, which aims for an optimal production system in a data-driven society.

Now that the basic theory of AI is widely shared, the key to AI is its utilization and application. We believe that Our Company's corporate culture of working with customers to solve on-site problems provides a significant advantage in becoming a company that can provide more and more ideas on what to do with AI.

On the other hand, even if you have a lot of ideas, success is part of it. We will be asked how we will evaluate and manage them. In the course of policy management up to now, we have worked hard to set a firm outlook and achieve it, but for new things for which a value judgment has not been set, we must be flexible to incorporate them. In this sense, we do not need to be bound by a single set of values. I believe that actions to realize a new era will create the next corporate culture.

Until a while ago, some people said that there would be no

further technological development, but now there is a common recognition that IoT and AI will make further technological leaps. Up until now, we have been working on the idea of how to use electronics to control mechanisms (Machinery). In the future, however, dramatic changes may occur due to ideas born from new values, such as designing machines that are easy for AI to operate. Even in such a world, I believe that the Yaskawa Group has personnel with a broad range of abilities enough to lead what is required by society in the new era. We will open a new era by developing our next corporate culture while acting.

I would like to take this opportunity to ask our stakeholders for the continued support to Yaskawa for its development in the days to come.