YASKAWA

YASKAWA ELECTRIC CORPORATION

www.yaskawa.co.jp/en/

202006 P013E-06

YASKAWA

YASKAWA ELECTRIC CORPORATION CORPORATE PROFILE



The Last 100 Years. And Toward the Future.

Our passion for manufacturing is timeless and will never change.

1915



1917
Commercialized three-phase induction motor

2020



2017
Small robot MotoMINI



2017
Collaborative robot
MOTOMAN-HC10DT

Since being founded in 1915, Yaskawa Electric has set “electric motors and their applications” as its business domain and supported the leading-edge industries of the age. In order to engage in business with its own technology, the company established a creed of “becoming a technology-centered company,” proposed the concept of “mechatronics*,” ahead of the rest of the world, and has maintained quality-first management with the determination to develop the world’s first-in-class and revolutionary technologies and products. Yaskawa’s core technologies are “motion control,” “robotics,” and “power conversion.” These technologies and products born and created out of our search for elaborate control of mechanical movements contribute on a daily basis to improvements in the quality and efficiency of manufacturing around the world. We will continue to evolve technology and contribute to development of the world through our new solutions.

* In the late 1960s, Yaskawa Electric led the world in putting forward this concept fusing “mechanism” and “electronics.” This concept evolved when we combined our customers’ machinery with Yaskawa’s electric products to create superior quality and function.



AC servo drives & controllers



AC drives



Robotics



System engineering



Environmental and energy equipment

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Cities move forward and never rest.

What kind of future would you like to see?



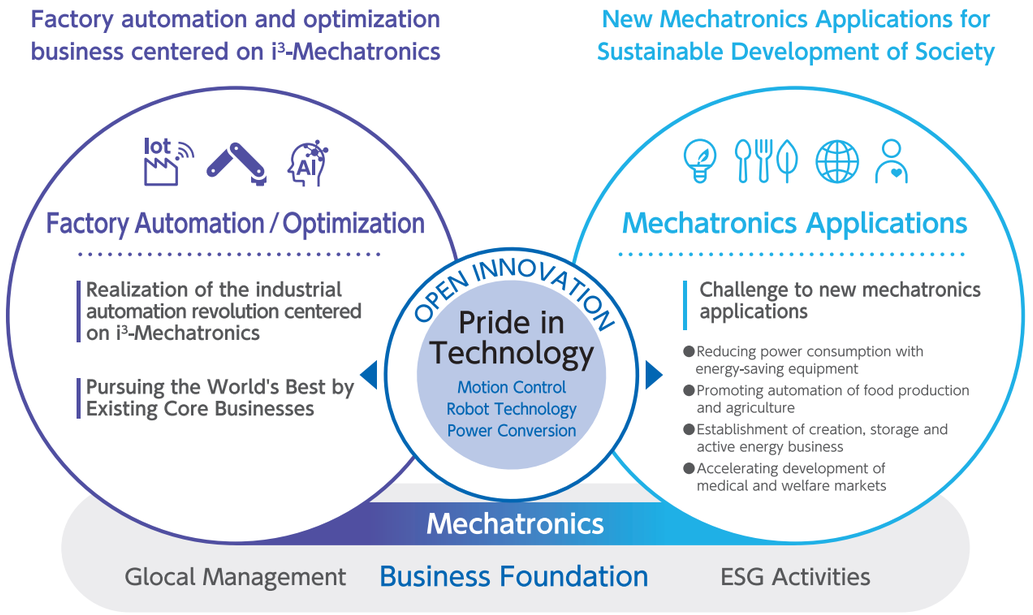
Our Vision

We will provide new value to society by integrating the evolution of core technologies and open innovation.

In 2015, the 100-year anniversary of our company 's founding, the Company saw a dramatic change in the business environment as an opportunity and adopted the "Vision 2025" as a blueprint for its future management. In 2019, we reviewed the "Vision 2025" to clarify our company's vision.In this review, we reconfirmed our company's vision and established "factory automation and optimization" and "application area of mechatronics" centered on mechatronics as business domains.Furthermore, in order to accelerate the sustainable growth of society and the improvement of corporate value, while promoting quality-oriented management and real-time digital management, we are actively working to clarify themes to be addressed from the perspective of "ESG" with a focus on social contribution through our business activities of providing unique products.

Vision 2025

By advancing our core businesses, we will contribute to solving our customers' management issues. We will also create new added value for society by expanding new fields that apply mechatronics technology.



※ i³-Mechatronics : Solution Concept for Realizing a New Industrial Automation Revolution

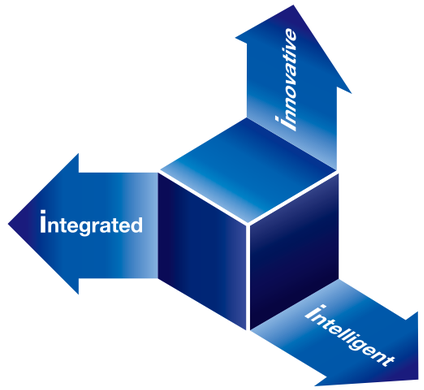


A new industrial automation revolution is starting with digital data management

i³-Mechatronics

We provide unprecedented solutions with three “i”.

New value with “i cube”, digital data solution



By putting digital data management on top of the automated solutions based on mechatronics technologies and products that YASKAWA has provided to customers, YASKAWA realizes the solution concept "i³-Mechatronics (i-cube Mechatronics)" and contributes to resolving customer’s business challenges from the production sites.

THREE steps to realize i³-Mechatronics

Step 1 integrated

- A production site is visualized with data by motors which act as a sensor.
- Further automation is promoted by linking components such as robots, servo drives and AC drives etc. and their processes.
- FA layer is wired with IT layer.

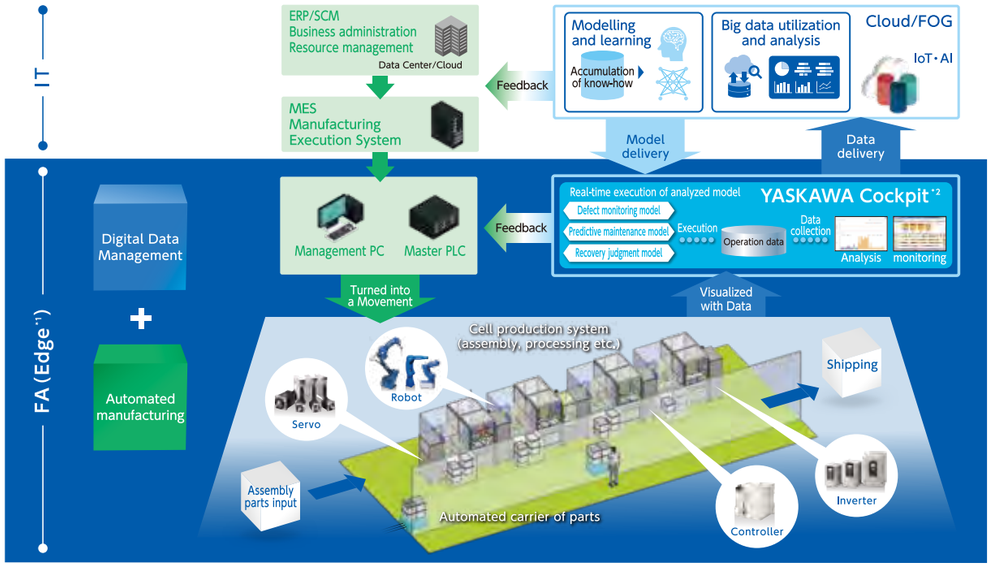
Step 2 intelligent

- Data driven analysis and learning (big data analysis and AI)

Step 3 innovative

- Data is fed back and turned into a movement for the improved productivity.

Smart factory realized by i³-Mechatronics



*1 : Edge is an information processing field for data analysis and feedback that require real-time performance at production sites or factories.
*2 : Cockpit is a software that able to collect, store, and analyze real-time data on equipment and devices at production sites.

Driving Society

With 100 years of experience with motors and their control, we contribute to industrial and social developments with technologies we have cultivated.

AC servo drives and AC drives that command a world No. 1 share

The motion control business broadly consists of two product lineups: AC servo drives and AC drives. AC servo drives, which excel at high-speed and high-precision position control, are applied to various high-speed and high-performance equipment and automatic machines. AC drives control the rotation speeds of motors by flexibly changing the power-supply frequencies of motors. The emergence of AC drives drastically upgraded the productivity of factories, and contributed to advancements in industrial and social development and energy savings. We, as a leading company of motor controls, have gained trust from our customers with a solid record of performance.

Major applications of AC servo drives

- Semiconductor and liquid crystal manufacturing equipment
- Chip mounters
- Machine tools
- Food and packaging machinery
- Textile machines
- Robots



AC servo drive “Σ-7 Series”
Motion controller “MP3000 series”

Major applications of AC drives

- Conveyors
- Fans and pumps
- Air-conditioning equipment
- Elevators and escalators
- Cranes



AC drives

Application of AC drive technology to utilization of renewable energy

For the prevention of global warming, there is an increasing need to utilize renewable energy. Through the application of AC drive technology, we have commercialized power conditioners for solar power generation and drive systems for electric vehicles toward energy creation/application/storage.



Enewell-SOL P2H
(Three-phase insulated PV inverter)



Moter drive system
for electric vehicles

Stepping onto a motionless escalator.
It then begins to move gently
as if a car was being driven by an experienced driver.

Smart Factory

Realization of ideal automation for humans and robots to coexist and cooperate

Industrial robot “MOTOMAN” operating globally

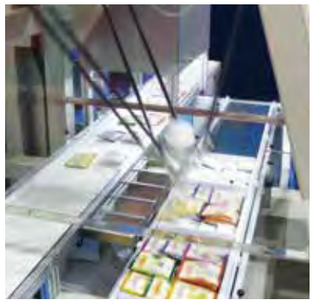
Since the debut of the all-electric industrial robot “MOTOMAN” in Japan in 1977, we have taken a leading role in the world’s industrial robot market. Starting with arc welding for automobile production, for which we remain a market leader, our robots have assumed an active role in every industrial field including spot welding, handling, assembly and coating, as well as handling and transport in clean rooms for liquid crystal, organic EL displays and semiconductor manufacturing.
As one solution to the labor shortage in recent years, the scope of robot applications is extending to the food industry and other markets where there has been little practice in robotic automation.



Auto body welding



Our manufacturing plant
where robots make robots



Application in food packaging

From robots that replace to humans to robots that work with humans

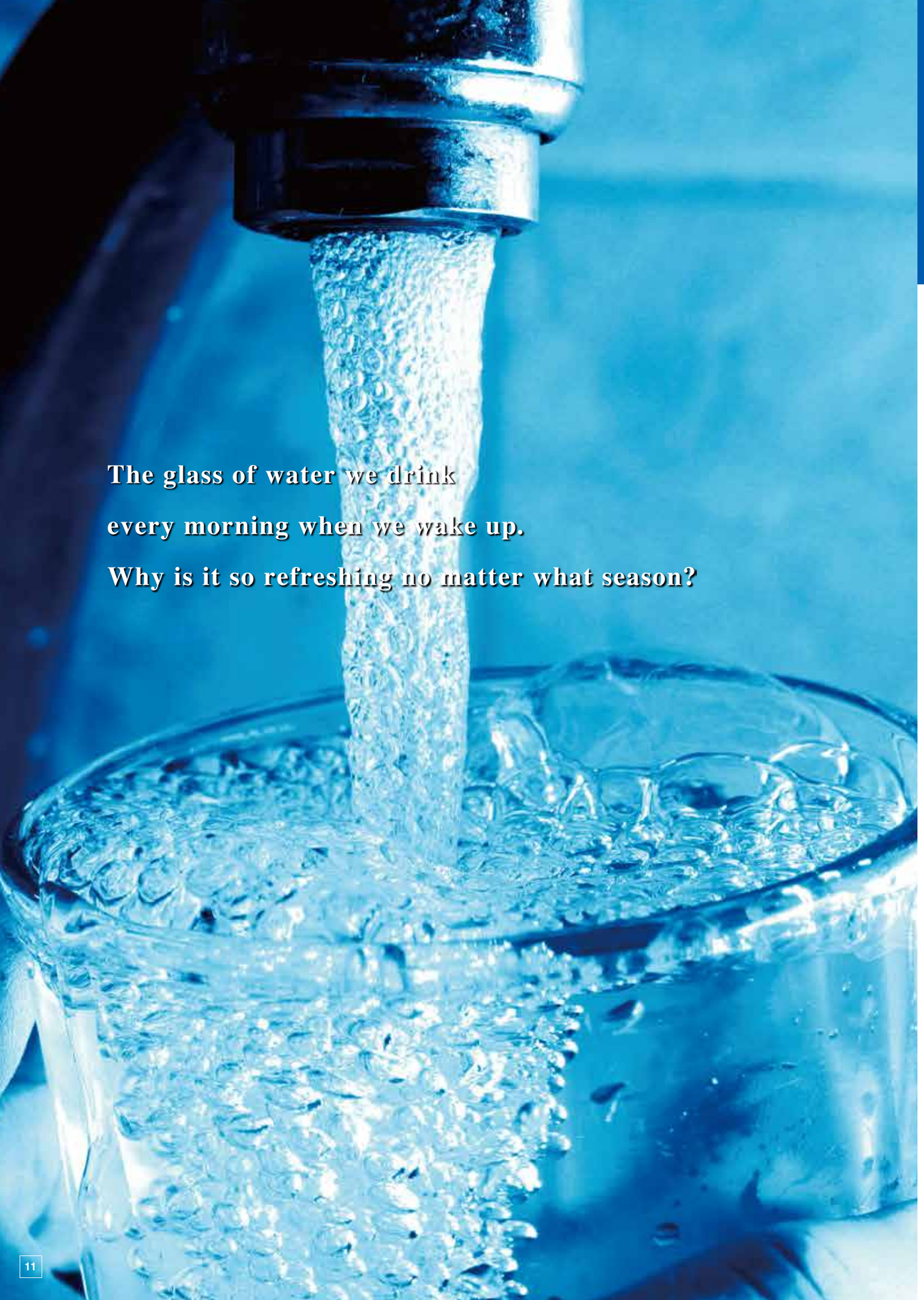
Robots are now expanding their usage not only for industry but also many other fields through improving their speed and accuracy as well as handling complex movement and enhancing their safety function to collaborate with humans.
Yaskawa developed a robot that can work with humans without the need for a safety fence in 2017. With this robot, we support for the automation in the industries such as the consumer electronics, computers and communication equipment, in which robots have yet to be introduced as much .

Note : Risk assessment is needed at any cases though MOTOMAN-HC10DT doesn’t need a safety fence.



Collaborative robot
MOTOMAN-HC10DT

One car comes off the production line every three seconds in Japan.
How do robots in this country do this work?



Secure Lifeline

Yaskawa's system engineering technology supports our life 24 hours a day.

Ensuring the stable operation of water treatment plants and other public facilities

We support public electric facilities for which stable operation is essential, such as water treatment plants and transportation infrastructures. For water supply/sewage facilities that cannot be stopped even for one moment, we offer not only assured reliability but also solutions that meet social needs, including environmental protection and disaster prevention. For the emerging needs, such as energy savings, advanced water purification, and effective utilization of facilities, we propose and construct new systems making full use of the leading-edge system engineering technology.


Sewage activity monitoring room

Offering optimum control systems with advanced technology

For many years, we have been engaged in the development, design, and production of electric equipment for industrial systems, and have accumulated a wealth of experience. Our control units and drive units have been adopted in every blast furnace operating in Japan, and have also secured top share around the world in large-scale blast furnace* systems, supporting their stable operations on a 24-hour basis. We contribute to a comfortable life and the creation of an affluent society by offering highly reliable industrial systems with advanced technology and high-quality products.

* Volumetric capacity 5,000 m^3 or more


Blast furnace facility

Contributing to effective utilization of renewable energy and products for solar power generation

Utilization of renewable energy is being pressed forward worldwide, and we have commercialized generators and converters for large-scale wind power generation. In addition, we have created a lineup of large-capacity drive solutions from low voltage to high voltage, aiming at business expansion by pursuing new customers and entering into new fields, such as the marine vessel market. In addition, by reducing the total cost of photovoltaic power generation using power conditions for photovoltaic power generation, we are contributing to the conversion of renewable energy into a mainstay power source.


Electric eqipment for large scale wind power generation



XGI1000

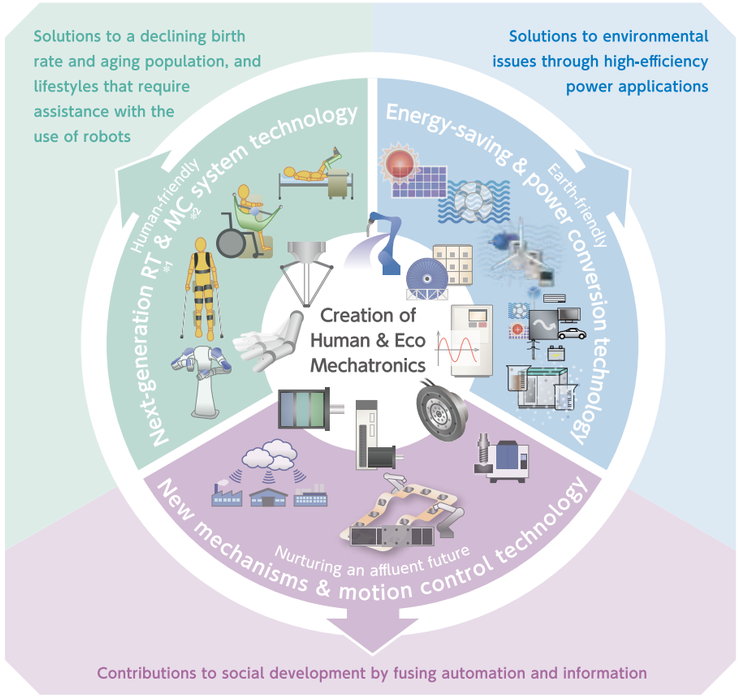


Passion for Innovation

Challenges and passion for innovation

Continuously taking on challenges for high-value added technological innovation to change the world

We have continuously created the world' s first technology that enables the evolution of manufacturing under the motto of "emphasizing the importance of quality and constantly developing and improving technologies in which we can take pride throughout the world."
At present, we are devoting ourselves to developing human and earth-friendly high technologies based on the theme of "Creation of Human & Eco Mechatronics," centering on our Corporate Research & Development Center.



∗1 Robotics Technology ∗2 Motion Control

Human-friendly
Next-generation RT & MC system technology

As the population continues to age in combination with a declining birth rate, lifestyle support of the elderly and labor shortages have become social issues. At our R&D Center, not only is the performance of conventional industrial robots being upgraded but also next-generation robotics technology, including lifestyle support robots that will coexist with people, is being designed and developed.

Nurturing an affluent future
New mechanisms & motion control technology

We aim at creating high-value-added products by combining and optimizing application-based functions, and pursuing ultra-precision control technology.

Earth-friendly
Energy-saving & power conversion technology

Environmental load reductions can be advanced by "saving energy" and "efficient energy conversion." We contribute to protecting the global environment through energy-saving and energy conversion technologies with higher-efficiency mechatronics products.

Like animals and plants,

a company might also be a companion living on this planet.



Robot Village

Action for Society

For building a sustainable society

Environmental Management

Toward realization of a low-carbon society, CO_2 emissions are halved at Robot Village*.

As our head office is located in Kitakyushu City, an environmental future city, we promote environmental management aggressively. Taking the opportunity of the centennial anniversary in 2015, we have upgraded and renamed our head office “Robot Village” by promoting and implementing state-of-the-art eco-conscious initiatives. As environmental measures at Robot Village, our products and technologies are used to halve CO_2 emissions compared with conventional levels.

* “Robot Village” is our registered trademark.

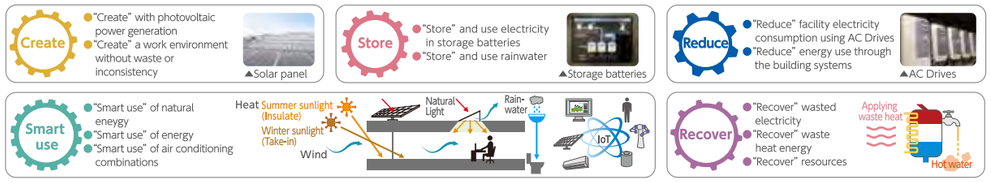
At the Robot Village, CO_2 emissions are halved by “100 ECO items”!

The 100 ECO items

What are the 100 ECO items?

Eco-friendly technologies, devices, and actions grouped into five categories: Create, Store, Reduce, Recover, and Smart use. Robot Village has integrated the 100 ECO items into areas including production line construction, building systems, energy-saving operations, and introducing eco-friendly equipment to successfully and significantly reduce CO_2 emissions.

Robot Village developed the “100 ECO items” to coexist with the earth’s environment.



Social Contributions

Social contributions and support activities

As a social contribution activity, Yaskawa Mirai (Future) Club was established in-house. Our employees who endorse the club’s goals set aside a portion of their salary to support groups involved in such fields as “medicine and welfare,” “sound upbringing of youth,” and “environmental protection.” Also, we co-sponsor the Kosen Robo-Con (Technical College Students’ Robot Contest), in which engineers-to-be from around Japan compete in contests focusing on robot production ideas and technology as well as robot performance in hopes of fostering the next generation of talent.





Contribution activities through sports

Yaskawa Electric supports sports activities with the aim of providing people with “dreams” and “aspirations.” Since 2009, we have co-sponsored the professional soccer team “Giravanz Kitakyushu.” We have also co-sponsored the “Kitakyushu Marathon” held since 2014, as the main sponsor, with Yaskawa employees and their families participating as marathon support volunteers. Our track & field team members have been active for more than 40 years mainly in long-distance running events, such as ekiden relay races and marathons, and continue to expand their event stage, from participation in the New Year Ekiden (All-Japan Corporate Team Ekiden Championships) to the World Track and Field Championships and the Olympics.





DNA of YASKAWA

Taking over the spirit of foundation, always developing cutting-edge technologies and products centering on “electric motors and their applications”



Established YASKAWA Electric Manufacturing Co. was established as a limited partnership
1915



1917
Commercialized Three-phase induction motor

DC servo motor Minertia motor
1958



1977
The world’s first general-purpose transistor AC drive



Japan’s first all-electric industrial robot “MOTOMAN-L10”
1977



1983
AC servo drive series



Dual-arm robot
2005



2009
Motor drive system for hybrid electric vehicles



Generator for large-scale wind power generation
2011



2012
The world’s first PV inverter using GaN



Robot for biomedical applications
2013



2015
New model of small robot
The world’s first AC servo motor with built-in amplifier
Next-generation AC drive



Collaborative robot MOTOMAN-HC10DT
Small robot MotoMINI
2017年

Global Network

Worldwide Yaskawa

Yaskawa's worldwide network includes business bases in 30 countries and production bases in 12 countries.

Our customers' global businesses are reliably supported by connecting our group companies and service bases throughout the world. We provide regionally-based finely-tuned support.

Europe



YASKAWA EUROPE GmbH

Germany
- YASKAWA EUROPE GmbH

Sweden
- YASKAWA NORDIC AB

U.K.
- YASKAWA ELECTRIC UK LTD.
- YASKAWA UK LTD.

Italy
- YASKAWA ITALIA S.R.L

France
- YASKAWA FRANCE SARL

Spain
- YASKAWA IBERICA S.L.

Finland
- YASKAWA FINLAND OY
- THE SWITCH ENGINEERING OY

Norway
- THE SWITCH MARINE DRIVE NORWAY AS

Netherlands
- YASKAWA BENELUX BV

Slovenia
- YASKAWA SLOVENIJA D.O.O.
- YASKAWA RISTRO D.O.O.

Czech Republic
- YASKAWA CZECH S.R.O

Poland
- YASKAWA POLSKA SP. ZO. O.

North America



YASKAWA AMERICA, Inc.

U.S.A.
- YASKAWA AMERICA, INC.
- SOLECTRIA RENEWABLES, LLC

Canada
- YASKAWA CANADA INC.

Mexico
- YASKAWA MEXICO S.A. DE C.V.

Middle East・Africa

Israel
- YASKAWA EUROPE TECHNOLOGY LTD.

Turkey
- YASKAWA TURKEY ELEKTRIK TICARET LTD. STI.

South Africa
- YASKAWA SOUTHERN AFRICA (PTY) LTD.

South America

Brazil
- YASKAWA ELETRICO DO BRASIL LTDA.
- MOTOMAN ROBOTICA DO BRASIL, LTDA.

Asia Pacific



YASKAWA ELECTRIC (CHINA) CO., LTD.

China
- YASKAWA ELECTRIC (CHINA) CO., LTD.
- SHANGHAI YASKAWA DRIVE CO., LTD.
- YASKAWA TSUSHO (SHANGHAI) CO., LTD.
- YASKAWA ELECTRIC (SHENYANG) CO., LTD.
- YASKAWA SHOUGANG ROBOT CO., LTD.
- YASKAWA (CHINA) ROBOTICS CO., LTD.

Korea
- YASKAWA ELECTRIC KOREA CORPORATION

Taiwan
- YASKAWA ELECTRIC TAIWAN CORPORATION

Singapore
- YASKAWA ASIA PACIFIC PTE. LTD.

Thailand
- YASKAWA ELECTRIC (THAILAND) CO., LTD.

Indonesia
- PT. YASKAWA ELECTRIC INDONESIA

Vietnam
- YASKAWA ELECTRIC VIETNAM CO., LTD.

Malaysia
- YASKAWA MALAYSIA SDN . BHD.

India
- YASKAWA INDIA PRIVATE LIMITED

Network in Japan

Our group force responds with technical skills and trust.

We flexibly meet customer needs with two R&D centers and five production bases in Japan.

We provide robust business support with complete nationwide coverage through a network of 16 branch and sales offices, and group companies and service bases across Japan.

Kyushu



Head office

- **Head office** (Robot Village)
- Laboratory (Corporate Reserch & Development Center)
- Yahata-nishi plant (Robot Plant / Yaskawa Robot Center)
- Yahata-higashi plant (Motion Control Plant)
- Yukuhashi plant (Drive Center, System Engineering Center)
- Nakama plant (Robot plant)
- Kyushu office
- Kumamoto sales office

Chubu

- Chubu office / Chubu Robot Center
- Nagano sales office
- Hamamatsu sales office
- Nagoya sales office
- Hokuriku sales office

Tohoku

- Tohoku sales office

Kanto

- Tsukuba
- Iruma plant (Motion Control Plant / YASKAWA Solution Factory)
- Tokyo branch
- Kanto Robot Center / Saitama sales office
- Chiba sales office
- Yokohama sales office
- Hachioji sales office

Kinki

- Osaka office
- Keiji sales office

Chugoku

- Chugoku sales office

Shikoku

- Shikoku sales office

Group companies in Japan

- YASKAWA AUTOMATION & DRIVES CORP.
- YASKAWA MECHATREC CORPORATION.
- SUEMATSU KYUKI CO., LTD.
- FOOD & AGRI MECHATRO SOLUTION, INC.
- AI CUBE INC.
- ROBOTIC BIOLOGY INSTITUTE INC.
- BESTACT SOLUTIONS INC.
- YASKAWA CONTROLS CO., LTD.
- YASKAWA LOGISTEC CORPORATION.
- YASKAWA MANUFACTURING CORPORATION.
- DOEI CORPORATION.
- YASKAWA OBVIOUS COMMUNICATIONS INC.

Factory Tour

Factory Tour

Factory Tour

Yaskawa Electric accepts visitors to the Robot Village and the factory where you can see the product process.

The Robot Village

Yaskawa Electric developed Japan's first all-electric industrial robot "MOTOMAN" in 1977. Since then, we have been leading the domestic and overseas industrial robot market by developing a succession of robots that automate operations such as welding, assembly, painting and handling. In the Robot Village tour, in addition to the "a factory where robots make robots" you can also visit the "Yaskawa Innovation Center" which conveys "robot technology" and "Attractiveness of Manufacturing" and the "Yaskawa Electric History Museum" which introduces the products that our company has developed so far and the history of the Yasukawa family, including the founder, who supported the initial stage.


Yaskawa Innovation Center


Robot Plant

Nakama Plant
—medium- and large-sized general industrial robots are produced

At the Nakama Factory, YASKAWA Electric's medium- and large-sized general industrial robots are produced from processing parts to assembly.


Nakama Plant



Drive Center

During the tour of the inverter plant, visitors can see the automated inverter manufacturing line using robots.


Drive Center

The Chubu Robot Center

You can see various demonstrations using robots at the Chubu Robot Center.

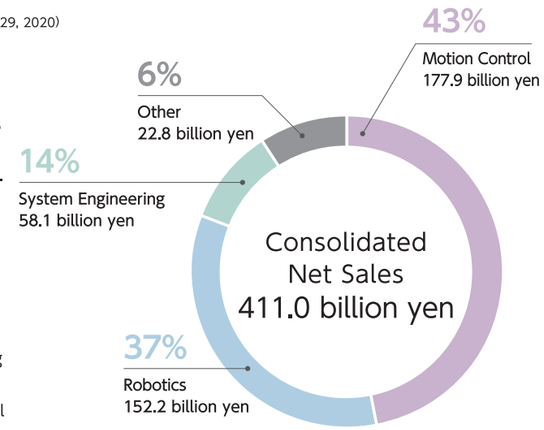
The Chubu Robot Center

Company's Outline

Company Outline

Corporate Outline (As of February 29, 2020)

Corporate Name	YASKAWA Electric Corporation
Founded	July 16, 1915
Head Office	2-1 Kurosakishiroishi, Yahatanishi-ku, Kitakyushu 806-0004, Japan Phone +81-93-645-8801 / Fax. +81-93-645-8831
Representative	Hiroshi Ogasawara, Representative Director, President
Capital Stock	30.6 billion yen
Number of Shares Outstanding	266,690 thousand shares
Number of Shareholders	65,922
Employees	Consolidated 15,179(Including temporary employees)
Net sales	Consolidated 411.0 billion yen (Fiscal year ended February 2020)



Sales breakdown by business segment
(year ended February 2020)

Directors and Exective Officers (As of June 10, 2020)

Representative Director
Chairman of the Board
Junji Tsuda

Representative Director
President
Hiroshi Ogasawara

Representative Director
Senior Managing Executive Officer
Shuji Murakami

Director
Managing Exective Officer
Yoshikatsu Minami

Director
Managing Exective Officer
Masahiro Ogawa

Director, Member of the Audit and Supervisory Committee
Yuji Nakayama

Director, Member of the Audit and Supervisory Committee
Koichi Tsukahata

Outside Director, Member of the Audit and Supervisory Committee
Yoshiki Akita

Outside Director, Member of the Audit and Supervisory Committee
Junko Sasaki

Outside Director, Member of the Audit and Supervisory Committee
Hideo Tsukamoto

Outside Director, Member of the Audit and Supervisory Committee
Yuuichirou Kato

Managing Exective Officer
Akira Kumagae

Exective Officer
Michihiko Zenke

Exective Officer
Michael Stephen Knapek

Exective Officer
Yasuhiko Morikawa

Exective Officer
Junichi Nakano

Exective Officer
Noburou jinnai

Exective Officer
Kenji Ueyama

Exective Officer
Bruno Schnekenburger