

A Challenge to Create Value for the Chinese Market



Home-use air conditioner plant at the Midea Group

In its mid-term business plan Dash 25 (FY2016-FY2018), the first step for realizing its Vision 2025, the company's long-term business plan (over a ten-year period between 2016 and 2025), the Yaskawa Group is aiming to establish profitable business structure. One of the most important challenges for achieving its targeted 450 billion yen in net sales and operating income ratio of 10 percent in FY2018 is business expansion in the growing Chinese market. The Yaskawa Group is making efforts to further boost the competitiveness of

its operations in China for each of its business divisions and has established a growth strategy for China from the perspectives of its capability in development, manufacturing, and sales as outlined below.

To follow is a feature with on-site reports on the various activities in which Yaskawa engages with its customers (the underlined focal points for its China strategy indicated below) in its AC servo & controller business and robotics business.

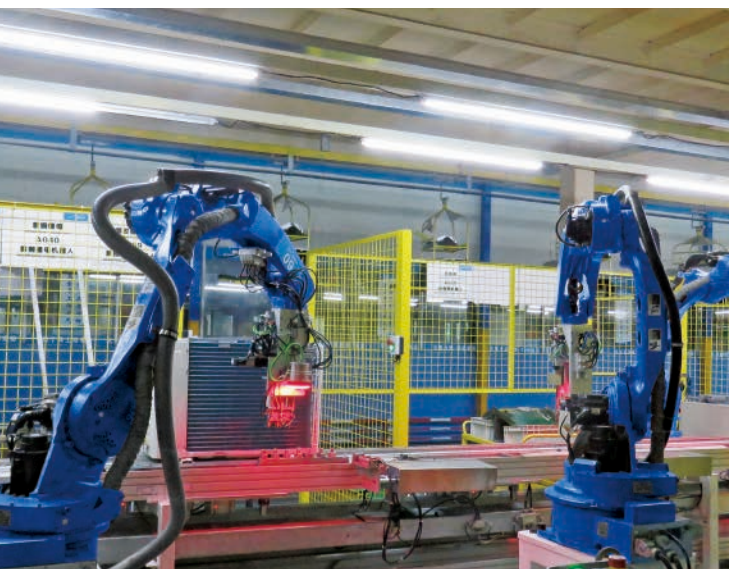
Focal Points for China Strategy in Dash 25

	Motion Control Segment		Robotics Segment
	AC Servo & Controller Business	Drives Business	
Development	Strengthening local development capability at Shenyang plant	Enhancing lineup for new Zero series products	Strengthening local development capability at Changzhou plant
Manufacturing	Doubling local manufacturing capacity through establishment of third Shenyang plant (Building a structure for monthly production of 200,000 units for motors and amplifiers)	Start of local production for new Zero series products	More than doubling local manufacturing capacity through establishment of third Changzhou plant (Building a structure for monthly production of 1,500 units)
Sales	<u>Focus on markets with high potential of growth, particularly in general electronic devices such as smart-phones</u>	Success in markets such as those for elevators and cranes through introductions of new products that are optimized for specific applications	<u>Cultivation of general non-auto markets through alliances with leading local companies</u>

Challenges for automation for the mass production of large varieties of household appliances

In the robotics business in China, the Yaskawa group is focusing on cultivating general non-automotive markets through alliances with leading local companies. It established Guangdong Yaskawa-Midea Industrial Robotics System Ltd., a joint venture with the Midea Group, one of its alliance partners, in September 2015 and is working on automating production lines with a focus on household appliances.

The Midea Group boasts top levels of global market share as a manufacturer of large household appliances and is aggressively collaborating with foreign companies as it aims to become world number one in the area of smart household appliances. It has also set up Guangdong Midea-Yaskawa Service Robotics Ltd. with Yaskawa and is making efforts in research and development, production, and sales of rehabilitation and nursing care robots in rapidly aging China.



Outdoor units for air conditioners in the assembly line



Huang Zhibo, facility investment engineer at the Midea Group

The Midea Group is working on automating its plant production lines for its air conditioners and kitchen appliances using robots. As of July 2017, about 250 robots are being used at manufacturing lines for its home-use air conditioner segment. "The introduction of robots has stabilized the quality of our products and enhanced our reliability. While using robots to do work that entails high levels of risks realized workplace safety, we have also been able to improve our production efficiency by controlling takt time*" says Huang Zhibo, facility investment engineer at the Midea Group. As to a future outlook, he said "We expect Guangdong Yaskawa-Midea Industrial Robotics System to supply application platforms for automating processes. We have been automating each process individually to date, however, will push forward automation aiming for total optimization for the future. We will make efforts to create a state-of-the-art smart plant that aims to realize 'a plant that is linked with our customers' where they can order products directly to the plant and production is done automatically."

* Takt time: Time needed to make a product

The Midea Group not only manufactures products under its brand but also conducts a broad range of work as an OEM*¹ and is faced with the need to cope with mass production of a large variety of products. Shigeru Gohara, president at Guangdong Yaskawa-Midea Industrial Robotics System, spoke about the biggest challenges of automation for the manufacturing of household appliances-



The palletizing process ahead of shipment

es, saying it's "a balance between the difficulty of tooling change in multiproduct lines within a short cycle time*² that goes with mass production, and ROI for equipment to make that possible."

Guangdong Yaskawa-Midea Industrial Robotics System, which began full-fledged activity in March 2016, has been making challenges to take on various types of jobs as a system integrator for robots. "As the future direction, we will make standard packages for systems using our robots focusing on 'the area of assembly, handling, distribution, and welding' to maximize our results by building a mechanism where we can offer promptly what our customers need," he said.

* 1 OEM: Abbreviation for original equipment manufacturer. Manufacturing products to be sold under the brand of the contractee

* 2 Cycle time: Time of operation at a certain process in the production line



Shigeru Gohara of Guangdong Yaskawa-Midea Industrial Robotics System and its robot system for remote control assembly

Huang Zhoulu

Project leader at Guangdong Yaskawa-Midea Industrial Robotics System

I'm primarily responsible for applications for household appliances and working on developing an automated assembly line for remote control devices and parts for microwave ovens. Automation for the mass production of large varieties of household appliances involves a high level of difficulty but I always bear in mind that we should achieve customer satisfactions in solving their problems and contributing to their growth and competitiveness.



Robot system for loading containers

Quickly Capturing Signs of Change in the Market and Promptly Deploying Sales Strategies that Match the Chinese Market



Interview with
Shiro Namba

Sales Manager,
Motion Control Division,
Yaskawa Electric
(China) Co., Ltd.

The Yaskawa Group's AC servo & controller business in China has been growing rapidly in recent years in line with the development of the country's manufacturing sector. Particularly amid a trend to consolidate the production of smartphones in China, demand for AC servos is rapidly expanding as key components for the manufacturing devices for semiconductors and electronic parts, which are the core parts of smartphones, and for embedding in assembly and testing devices.

Demand for communication devices such as smartphones are spreading not only for semiconductors and electronic parts but also to the markets for machine tools, carving machines, and metal processing to further boost demand for Yaskawa products.

FY2017 marks ten years from the launch of the iPhone. Amid expectations for large-scale capital investment triggered by the launch of new models, Yaskawa has been making efforts to take advantage of the opportunity and has continued to approach equipment manufacturers where demand may be expected for AC servos. It has been strengthening the power of its brand for AC servos and expanding market share by fully leveraging its capability in development of products in China that meet local needs and the strength of its capacity in manufacturing products of high quality locally. Yaskawa's AC servos are currently estimated to have achieved top market share in China; however, Chinese manufacturers are also emerg-

ing and rapidly boosting their market share. Our strategy is to stay ahead of the game and to thoroughly capture the strong market with a sense of speed.

The markets that Yaskawa is focusing on as rapidly growing markets in China are those for smartphones, LEDs, lithium batteries and machine tools. Changes such as in the display, casing, charging methods and communication system (5th Generation) which are incurred by model changes in the smartphone market are leading to new demand for manufacturing equipment, and a shift from what used to be done by human hands to mechanical processes is resulting in rapid increases in demand for AC servos. China is also shifting to the use of LEDs for illumination on the backdrop of accelerated measures to deal with the environment and LED manufacturers are aggressively investing in the latest equipment in order to boost their production capacity and for efficiency. Strong demand for lithium batteries is expected to continue in markets of electronic devices like smartphones and PCs as well as of electric vehicles. Due to moves to strengthen domestic products based on national policy, the machines produced by Chinese manufacturers offer high performance which often use AC servos supplied by Yaskawa. These machine tools are also associated with the production of items such as smartphones and household appliances, which is tying into further increase in demand.

We provide support for the success of our customers in these markets which in turn is tying in to growth for our business in China.

In China, other than the various national policies such as China Manufacturing 2025 and directions for technical innovation, there are elements like increases in wages and the arrival of aging society with a falling birth rate that will lead to a maintained growth of the market for AC servos over the mid-to-long term. We will continue to quickly capture signs of change in the market and deploy sales strategies that match China in a speedy manner as we tie the growth of the Chinese market into further growth for the Yaskawa Group.