A Conversation with the President of the Precision Machinery Company

Current status and future prospects of the robot business

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It has been two years since the launch of the Precision Machinery Company.

In October 2010, we merged the hydraulic equipment division and robot division to form the Precision Machinery Company. After the launch, interaction between the divisions has continued to grow, creating synergistic effects. In the manufacturing department, robots have been introduced at a faster speed than ever at the Nishi-Kobe Works (hydraulic equipment division), steadily moving toward automation. This has boosted production efficiency at the works and enabled the robot division to promote new application development on actual production lines, revealing the effectiveness of having both users and the manufacturer within the same company. In addition to the manufacturing department, the procurement department and the quality assurance department also engage in close information exchanges that are facilitating mutual growth.

Furthermore, we intend to actively promote information exchanges among the engineering and development departments as well. While robots were originally hydraulically driven, we moved in the 1980s to electric drives. Nevertheless, hydraulic drives also have many advantages. For example, most construction equipment operates on hydraulics. We are hoping that the recent trend toward hybrids will result in the appearance of innovative products that combine the power of hydraulics and controllability of electric drives.

Tell us about the latest robot topics.

The International Robot Exhibition was held in Tokyo in November 2011. The event was a success, with more exhibiting companies and visitors than in 2009. What was particularly noticeable among the exhibits was the trend toward downsizing and faster motion speed. Robots are becoming slimmer and more compact so that more robots can be placed on a single stage to realize shorter spot welding lines. In addition, by increasing the motion speed, the welding points of each robot can be increased to boost productivity. This compactness and higher speed contribute to the reduction of facility costs for automobile production lines. With our BX series robots, we reduced the installation area by approximately one-half and greatly reduced the time required for each welding spot compared to existing models, and we are confident that our robots are of the highest standard compared with other companies.

The next thing that attracted attention was the parallel link-type robots. The same type of robot developed by Kawasaki is called the picKstar, which is targeted at the food, medical products, and cosmetics industries. These three industries, unlike the automobile and electrical industries, are not greatly affected by business fluctuations, so relatively stable sales can be expected.

Cooperation between humans and robots appears to be increasing.

We are currently developing technology to bring humans and robots closer. The international standards (ISO) have been revised to allow software-based safety monitoring of robots. In response to this change, we have developed Cubic-S, a robot motion monitoring safety unit. Cubic-S will enable safety fences to be placed closer to the robot since they will only need to be placed according to the actual motion range of the robot. In addition, monitoring of the robot's motion range and speed has made it possible for humans to come closer to robots. These functions will also make it easier for human and robots to collaborate.

What is the recent trend in the robot market?

In 2009, China became the largest automobile producer in the world by volume, and production is expanding, with the parts industries benefiting from the boom as well. The same trend can also be seen in other emerging countries. Demand for robots has been surging as a result, and the emerging countries are growing in importance as a market for robots. In response, we are also strengthening our sales and service systems in emerging countries. Due to the economic growth in emerging countries and expansion of new markets such as smartphones, the market for semiconductors is growing as well. We have earned high marks from the manufacturers of semiconductor production equipment for the proposals we put forward, and we intend to respond aggressively to development requests from our customers and further boost our market share. Furthermore, we also plan to leverage our know-how cultivated in the area of clean robots for semiconductors to expand into clean environments in other fields.

A few words in conclusion?

Robots are now a fixture in a wide range of industries, spanning from automobiles and electronics to semiconductors. In addition, demand for robots has recently been rising fast for relatively new applications, such as the food, medical products, and cosmetics industries. In response to these market trends, we would like to expand our existing customer base by cultivating new customers and applications in new fields. Toward this end, we need to accelerate development of vision systems, sensors, and other technologies not seen before. We will continue promoting these developments, and providing new robot products that will benefit our customers.