

Cooling Systems Division Future Technologies

Akira Sugawara

Katsuhiko Baba

Sanyo Denki recently defined its corporate philosophy as "We SANYO DENKI make the dreams of people come true for the happiness of people in cooperation with people." Sanyo Denki Technology Center has now been completed and gone into operation. This center will serve as the core of technology and product development based upon our corporate philosophy, opening the way forward to a bright future.

Here, we describe the present and future technologies that the cooling systems division is working on with reference to our previous technologies.

When development and production of cooling devices started in 1965 for cooling the inside of electronic equipment, we offered only one type of AC fan motor. This motor was the first of a whole range of products to be developed by the cooling systems division, and was called "SAN ACE". The name was decided upon after gathering suggestions from the staff of our company.

We have developed several series of fans, ranging from the \square 60 mm "Pico Ace" to the ϕ 170 mm "Dyna Ace", including both AC and DC fans in accordance with customers needs. Later, we added \square 40 mm DC fan motor "Fine Ace" in the series of fans. This product has developed into "SAN ACE MC" series.

To satisfy customers requirements, we have developed a series of "Long Life Fan", "SAN ACE MC" and "Water Protected Fan" products. At present, we now manufacture some 3,000 models. These are the result of integrating the skills of the design engineers, production engineering staff, marketing staff, as well as those working in the business units such as production, production control, quality control, procurement and general affairs departments.

The success of the company's products reflects the spirit of the founder of Sanyo Denki of "making a progress ahead of the times."

Despite the difficult business environment in Japan, the cooling systems division has grown strongly from the bottom in 1993 as shown in [Fig.1](#). In the last three years, we have achieved an annual growth rate of 1.5 times over the previous year.

In the Fall of 1994, a target was set for the first year of the first mid-term plan that runs until 1997, but the actual growth rate will be more than double.

Two key factors have enabled this extraordinary growth. One is "SAN ACE MC" fan that was developed in 1993 and has greatly boosted sales since 1994. Sales of "SAN ACE MC" continue to grow strongly. The other factor has been the acquisition of ISO 9002. Efforts to acquire ISO 9002 certification started in Spring, 1993 and succeeded in September of the following year. We have learnt not only about quality control but also overall business truths such as "Check the facts," "Must be understandable by a third person," "Check the effects," and "Fulfill one's responsibilities and authority." Since receiving certification, quality and reliability have increased with the effort of various departments. Sanyo Denki's cooling fans are famous for their quality and reliability in addition to inherent performance and functionality. These factors have all contributed to the fast growth of the BLDC fan in addition to "SAN ACE MC."

But our growth could not have been possible without the following:

- Clients who have remained with us
- Outside vendors who have worked with us

- The local communities where we work

We would like to express our sincere appreciation to all those people.

We are now drawing up the second mid-term business plan for the 21st century in order to achieve our goals with the help of all departments. We have been working to increase production in the last several years, but the second mid-term business plan features various new product developments and production capacity increase by building new factories.

New product development will be in line with three tenets of our corporate philosophy (1) Technology to protect the earth's environment (2) Technology to protect the health and safety of humans (3) Technology to use new energies and to conserve energy. For example, by developing a high performance cooling system, equipment can be more compact and can have higher performance which increases reliability and makes possible longer life. It results in saving natural resources and energy. When fan is made to have longer life, it results in the same way. Making fan low-noise also reduces nuisance to people and is linked to the technology related to the above item (2). And the cycle of product development is self-enhancing.

In the field of production capacity, the new factory will be completed in July, 1998, having a total floor area exceeding an enormous 26,000 m².

The new factory will have two air conditioning systems for both cooling and heating to suit mid-season temperatures in Spring and Fall, a cafeteria with an observatory and other features to create a pleasant working environment.

Yet we still face many challenges, such as compliance with ISO 9001, acquisition of ISO 14000 and introduction of new production control systems.

We will continue to challenge targets in many fields, but our past experience provides a most valuable lesson: "When people in business finished the work with one accord, it will bring them a happiness."

We present a following message as our future plan "Our division will work together with people and achieve business activities which will satisfy our corporate philosophy."

In closing, the first "Long Life Fan" that we developed years ago is still rotating. Life expectancy of our fans at atmospheric conditions of 60°C is now about 50 years.

The cooling systems division is a good example of how gathering of people's power delivers supreme technologies.

We look forward to making further progress together.

Akira Sugawara

Executive Managing Director in charge of technical development

General Manager of Cooling Systems Division

Katsuhiko Baba

Director

Assistant General Manager in charge of Cooling

Systems Division

Fig.1 Sales record of Cooling Systems Division

