Cooling Systems Division

Hiromitsu Kuribayashi

In equipment such as communication devices and power conditioners for photovoltaic power generation which are used for long periods such as 10, 20 years, prolonged maintenance-free operation is ideal and it is desirable that the embedded fans are long-life. Moreover, in order to cool the equipment which continue to increase in heat generation year after year, further improved airflow is required. In light of these changing needs, Sanyo Denki has commercialized a San Ace 9LG type in 60 mm sq. x 25 mm thick, 80 mm sq. x 25 mm thick and 92 mm sq. x 25 mm thick. These models are significantly higher airflow than the conventional long-life fans with approximately 20 years life. Furthermore, in the counter rotating fan, a San Ace 9CRL type (60 mm sq. x 76 mm thick, 80 mm sq. x 80 mm thick), with 130,000 hours life, has been commercialized. These are brushing-up models based on long-life technologies we have accumulated since we firstly commercialized in 1991.

While DC fans have been developed for power reduction and long-life, AC fans haven't been developed them due to difficulty in improvement of the motor efficiency. Meanwhile, Sanyo Denki succeeded in developing an AC fan which consumes power only around one-quarter of conventional models while expected life is extended by approximately 2.4 times. By embedding a circuit inside the fan which converts AC power to DC power, it has become possible to drive a high efficient DC motor. Sanyo Denki has succeeded in developing AC fans which cover a wide input voltage range (100 V to 240 V AC) in order to respond to power supplies in countries around the world, and also offer approximutely 6 years life. These AC fans feature all the merits of a DC fan.

We introduce the fans were launched in 2013 below. These are products reflected our technologies and achieved industry leading performance. Sanyo Denki will continue to pursue higher performance fans and improve reliability as well as the development of technologies which contribute to conserving the global environment.

■ High Airflow/Long-life Fan

DC fan

- 60 mm sq. x 25 mm thick “San Ace 60L” 9LG type
- 80 mm sq. x 25 mm thick “San Ace 80L” 9LG type
- 92 mm sq. x 25 mm thick “San Ace 92L” 9LG type

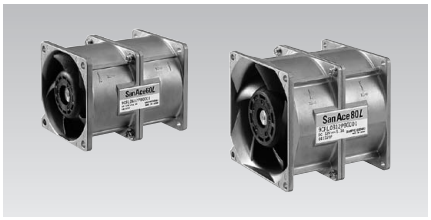
We achieve industry-leading (*)high airflow, long-life, low SPL and low power consumption.

We offer an expected life of 180,000 hours (approx. 20 years) while achieving 1.3 to 1.8 times maximum airflow and 1.6 to 3.5 times maximum static pressure and compared with our conventional model. These feature 29 to 33% reduction in power consumption and a maximum SPL reduction of 4 dB (A). An optimal product for the cooling of communication devices, power conditioners for photovoltaic power generation and so on which requires maintenance-free operation for prolonged periods of time.

■ Long-life Counter Rotating Fan

DC fan

- 60 mm sq. x 76 mm thick “San Ace 60L” 9CRL type
- 80 mm sq. x 80 mm thick “San Ace 80L” 9CRL type



These are long-life fans with properties such as high airflow and high static pressure which are characteristic of counter rotating fans. Top product in the industry(*), achieving 130,000 hours (approx. 15 years) expected life. An optimal fan for cooling communication devices, servers, storages and so on which demand high airflow, high static pressure and long-life.

■ Low Power Consumption/Long-life AC Fan

AC fan

- 120 mm sq. x 38 mm thick “San Ace 120AD” 9AD type

An AC fan with approximately one-quarter power consumption than our conventional model with 60,000 hours (approximately 6 years) expected life that is around 2.4 times. This fan has wide operating voltage range can be used with both 100 V and 200 V AC power sources. The fan complies with demands of lower power consumption and longer-life for AC fans. Additional details are described in the features in this Technical Report.

■ Low Power Consumption Fan

DC fan

• 70 mm sq. x 38 mm thick "San Ace 70" 9GA type

The 70 mm sq. size fan was newly developed as there have been no size in between the 60 and 80 mm sq. types in our lineup up until now. This fan has low power consumption of 31.2 W only achieved a maximum airflow of 2.65 m^3/min and maximum static pressure of 860 Pa. By providing the optimal fan size and performance for our customers' equipment, we believe we can achieve even further higher efficiency and lower SPL of the equipment. Additional details are described in the features in this Technical Report.

• 80 mm sq. x 15 mm thick "San Ace 80" 9GA type

The power consumption is reduced by approx. 35% compared with our conventional model. Maximum airflow is increased by approx. 1.2 times, and maximum static pressure is increased by approx. 1.7 times. SPL is reduced by approx. 2 dB (A) making it the leading product in the industry(*). This is an optimal fan for cooling medical equipment, audio equipment, measurement eguipment, monitors and so on.

■ High Static Pressure Fan

DC fan

• 92 mm sq. x 38 mm thick "San Ace 92" 9HV type

We successfully achieves approx. 2.5 times higher maximum static pressure than our conventional model while providing practically equivalent to maximum airflow. This fan leads the industry(*) through achieving a maximum airflow of 5.1 m^3/min and maximum static pressure of 1,100 Pa.

This is an optimal fan for cooling of servers, storages, communication devices, power sources and so on with high system impedance.

(*) According to a performance comparison at the time of product launch. As an axial current DC fan for industrial application. For fans of the same size. Results from Sanyo Denki research.

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