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## Upon the Opening of Kangawa Works

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The 21<sup>st</sup> century is the century for the environment.

Ten years into the 21<sup>st</sup> century, a paradigm reform on the environment is beginning on a global scale. The shift from fossil fuels to alternate energy will likely accelerate even faster from now on. In terms of energy mediums, electricity is clean and easy to use. We have entered an age where the motors that we manufacture are widely requested as power sources that use electricity.

At Sanyo Denki, we developed the first Japanese servo motor in 1955. In the half-century that followed, we have developed and manufactured a variety of products with the goal of developing and manufacturing the top motor in the industry. The primary factory for manufacture was the Midorigaoka Works in Ueda City, Nagano Prefecture. However, after operations began in 1944, more than 60 years have passed and the factory has deteriorated with age. Unfortunately, the area around Midorigaoka Works is a residential area, and therefore the factory cannot be expanded. With the expanded number of production models, the production had to be split between three factories separated by a distance in the same city: Midorigaoka Works, Tsuiji Works, and Aoki Works. As a result, there was considerable waste in different areas. Finding a solution to this problem has been a topic for many years.

Kangawa Works has been opened to integrate these three factories. The New Factory Construction Committee was founded in February 2007 at the time of construction for Kangawa Works. The Committee has investigated the effects of switching to integrated factories. The factory construction design was drawn up on the following concepts in order to construct a consistent production line for motors and become the top motor factory in the industry.

- Factory with energy saving and excellent environmental measures
- Not a luxurious factory, but a comfortable one
- Aim for smooth and simple work flow
- Improve the problems of the distance between managers and the manufacturing floor, and the distance for people's movements
- Ensure security in the factory.

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Above all, in order to preserve the global environment in the manufacturing site, the specific construction design should include the following in order to achieve a structure that should be present in all future factories.

- Reduce wasted power used in the factory
- Create an efficient and pleasant space by reducing the external heat load
- Improve the work environment by including a large amount of natural light (light court)
- Introduce a clean energy system (photovoltaic power system)
- Reduce the load on the air conditioners through the recovery of oil mist
- Use rain water to effectively replenish water supplies

By combining the functions at Midorigaoka Works, Aoki Works, and Tsuiji Works, dramatic improvements are expected in terms of the waste involved in moving products and people between the factories. Furthermore, in order to construct highly rational production systems, lines, and spaces for the new factory, the “High-returns Manufacturing Project” was launched in January 2008, and waste was removed from every aspect of the site, from factory layout and facilities to manufacturing procedures.

This Technical Report is a special edition that collects the technology in the factory construction and manufacturing, as well as the corresponding efforts, in the establishment of Kangawa Works.

Kangawa Works was completed in March 2009, and full operations started in May. As part of being the top motor factory in the industry, the contribution to the global environment will be verified for the motors manufactured at Kangawa Works.

Through the construction of Kangawa Works, we have managed to meet all of our dreams over these long years. I personally have great thanks for all of the many people who have helped this come true.