

Environment

Based on its original strengths regarding “quality” and “global,” Sanden is focusing on the “environment” as a key means to promote an additional surge of corporate growth.

Making a Contribution by Creating New Value Through the Development of “Environmental Friendly Products”

■ Beginning the Supply of Electric Compressors for Mercedes Benz Hybrid Cars

In June 2009, Sanden began supplying Germany-based Daimler AG with electric compressors for incorporation in the air-conditioning system of Daimler's first hybrid car, the Mercedes Benz S400 Hybrid.

The S400 Hybrid features the luxury, safety, and drivability characteristics of other S-class Mercedes Benz models along with diverse environmental technologies that increase efficiency and energy conservation. By providing the core component of the S400 Hybrid's air-conditioning system—an electric-powered compressor with outstanding energy conservation performance—Sanden is helping further increase the car's added value.

The electrically driven compressors being supplied for the S400 Hybrid differ from ordinary belt-driven compressors in that they do not depend on the car engine to operate, so they can maintain optimal air-conditioning performance in line with conditions in vehicles even when the vehicle's engine is stopped. As a result, they have special characteristics, including those that contribute to reductions in fuel



■ An electric compressor

consumption and CO2 emissions.

Plans call for Sanden to supply electric compressors for all the Mercedes Benz S400 Hybrid models that are manufactured.

To position itself to supply advanced, high-quality car air-conditioning compressors going forward, Sanden is strengthening its product development capabilities that contribute to environmental protection as well as progress in the automotive manufacturing industry.

■ Progress in Environmental Operations

In 1993, we established the Sanden Environmental Charter as a voluntary plan. In 1997, we revised our Environmental Charter in light of the establishment of ISO 14001 as the international standard for environmental management systems in 1996 and the importance of corporate environmental preservation activities.

The revised Sanden Environmental Charter was introduced at all domestic and overseas affiliates to serve as a clear expression of the Sanden Group's fundamental approach to environmental activities. By leveraging its existing strengths in “quality” and “global,” Sanden is seeking to realize corporate growth while making the “environment” a key focus of its operations.



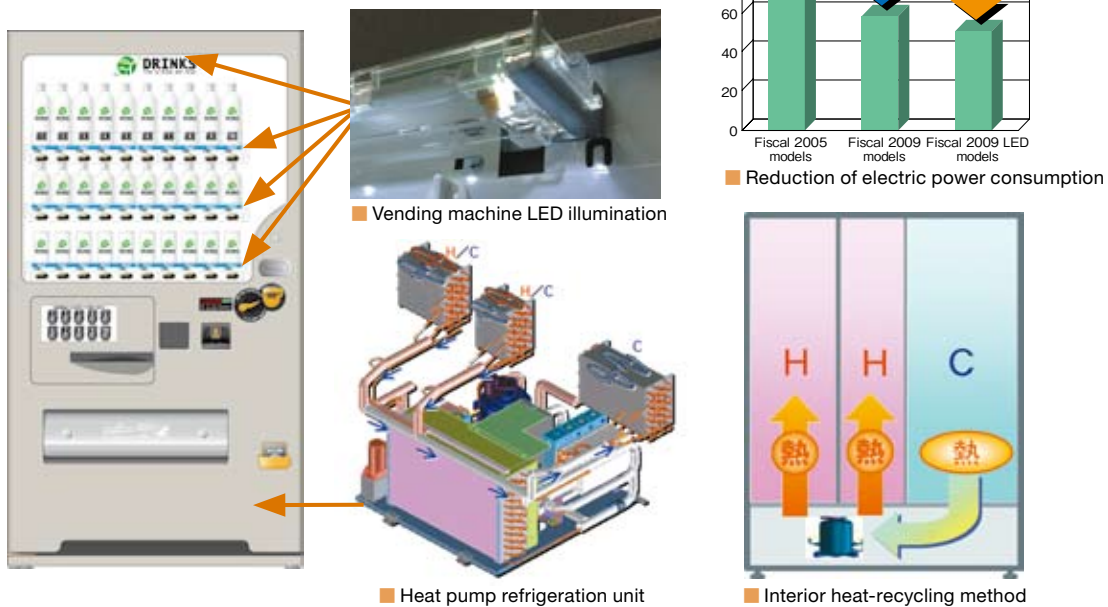
■ Environment-Friendly Vending Machines (Heat Pumps and LED Illumination)

In the past, Sanden worked to increase the energy-conservation performance of its vending machines by equipping them with capabilities for learning how to optimize fan control functions in line with trends in the volume of products vended and by equipping them with vacuum-insulation materials. As a result, our fiscal 2005 models attained the 2005 top-runner targets of Japan's Ministry of Economy, Trade and Industry (METI). Sanden's fiscal 2009 models feature heat-pump technology and additional advances in high-performance insulation structures, making them able to conserve 41% of the electric power consumed by fiscal 2005 models. Our heat pump technology employs an

interior heat-recycling method that does not allow excess heat within vending machines to escape uselessly, and this has enabled significant additional energy conservation.

In addition, Sanden has been an industry leader in beginning the mass production of vending machines with LED illumination technology. This has enabled the development of ultra-environment-friendly models that conserve an additional 5% of the electric power consumed by previous models.

With the exception of certain specialized models, all our fiscal 2010 model vending machine products will incorporate heat pumps. Aiming to help resolve global environmental problems, we intend to continue promoting the development of new environmental technologies going forward.



■ Development of Non-Fluoron, Energy-Saving Refrigeration/Freezing/Air-Conditioning Systems

Sanden is moving ahead with R&D programs aimed at finding ways to realize comprehensive reductions in the environmental impact of convenience stores and other facilities operated by its customers. By employing refrigerants with zero destructive impact on the ozone layer and developing energy-saving equipment, and advancing with the development of such technologies as those for coordinating the operations of that equipment with store air-conditioning systems, we have been able to create environment-friendly store systems. Having been developed in conjunction with the Non-fluoron, Energy-Saving Freezing/Air-Conditioning System Project of Japan's New Energy and Industrial Technology Development Organization (NEDO), these systems have undergone repeated, full-scale pilot testing since 2005. This pilot testing—employing a test facility that contains a full-scale convenience store—has tested conditions in the environment within the store as well as changes associated with store locations and special regional and seasonal conditions.

capabilities for providing a full array of services ranging from development through maintenance.

Having developed unparalleled non-fluoron, environment-friendly store systems, we are engaged in activities aimed at providing our customers with benefits related to both environment-friendliness and economic performance.

The marketing of non-fluoron, environment-friendly systems is scheduled to begin from the latter half of 2009, and plans call for additional efforts to upgrade the appeal of these systems and broaden the lineup of these systems that are marketed.

In our System Delivery & Maintenance (SDM) Business, we have conducted numerous studies aimed at reducing customers' facility life-cycle costs with reference to such factors as market-related installation environments, system performance, and the ease of installation and maintenance processes. Based on those studies, we are building



■ A large-scale testing facility containing a full-scale convenience store