

# Using Advanced Technologies to Deliver 21<sup>st</sup> Century Vending Machine Systems that Harmonize with Social Needs

The Vending Systems Division is working to develop products based on five key development themes: "Creating environment-friendly products," "Creating products that meet consumer needs," "Creating products that are easy to use," "Reducing life-cycle cost," and "Contributing to society."

To ensure that vending machines continue to relate harmoniously to society in the future, we are giving top priority to accelerating various activities aimed at delivering products that respond to the needs of the natural and social environments and are highly appealing to customers.

## ■Activities to Reduce Environmental-Impact Substances and Conserve Energy

Sanden has been a pioneer in the vending machine industry regarding activities to reduce the use of substances with problematic environmental-impact characteristics, pushing ahead with the development of substitutes for insulation and refrigerants containing fluorochemicals, the complete elimination of the use of packing materials that contain polyvinyl chloride (PVC), and other activities. Besides proactively responding to various strict environmental regulations in Europe, the Company has added new product offerings through efforts to develop non-fluorochemical vending machines utilizing safe CO<sub>2</sub> refrigerants and to develop vending machines with greatly improved energy conservation performance due to their incorporation of heat pump functions. These activities have enabled us to create the industry's broadest product lineup.

Our sustained efforts to develop vending machine energy conservation technology have enabled us to utilize learning functions that control fan operation in line with the volume of vending merchandise items dispensed, vacuum

insulation materials and improved insulation material structures, energy-conserving components, and other technologies that have made it possible to reduce electric power consumption. We have long placed strong emphasis on these energy conservation activities. As a result, we were able to achieve considerable additional progress in electric power consumption reduction during fiscal 2007-the electric power consumption of heat-pump-type vending machines launched during fiscal 2007 is 68% lower than that of models introduced in fiscal 2000. We are making still further progress in energy conservation through the combination of heat pump systems, LED illumination, and various other new technologies.

## ■EcoLeaf Label Registration

The EcoLeaf environmental label program aims to use the LCA method to quantitatively assess products' environmental impact at all stages-from manufacturing through distribution, use, disposal, and recycling-and display the assessment results, thereby promoting better communication between companies and consumers. Based on the Type III environmental declaration specified in ISO 14025,

the EcoLeaf label program has been operated since 2002 by the Japan Economic Management Association for Industry (JEMAI).

Having participated in the EcoLeaf program since 2007, Sanden obtained EcoLeaf certification for 19 models in three series of CO<sub>2</sub>-refrigerant heat pump products during 2008. For more information on the program, please visit: <http://www.jemai.or.jp/english/ecoleaf/index.cfm>

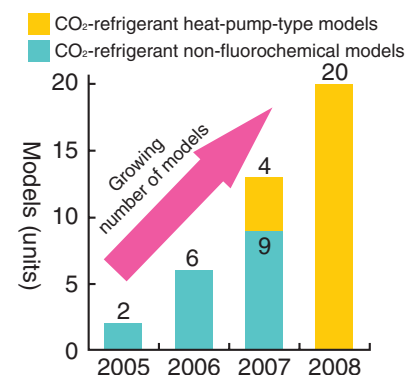


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■EcoLeaf environmental label



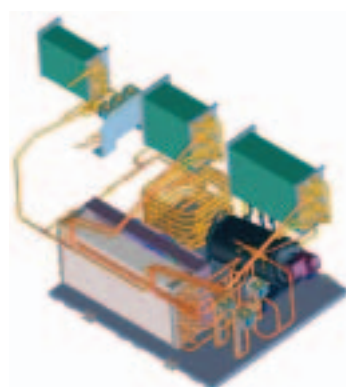
■CO<sub>2</sub>-refrigerant heat-pump-type vending machine

## ■Number of non-fluorochemical vending machine models



Sanden is increasing its development and launch of environment-friendly non-fluorochemical products each year

## ■Overview of heat pump unit



The use of heat pump units enables the realization of great improvement in energy conservation performance

## ■Progress in improving vending machine energy conservation performance

