

## **Sanden Corporation opens state-of-the-art Technical Centre in Germany**

*With expansion of its manufacturing plant in France, Sanden to increase production of automotive air conditioning compressors to 4 million per annum in Europe.*

(Bad Nauheim, 24.10.00) October 2000 marks another milestone in the expansion of Sanden Corporation's global network and emphasis on Europe. The inauguration of the Sanden Technical Centre Europe in Germany and extension of its manufacturing plant in France better position the Japanese conglomerate to serve a rapidly expanding and technologically demanding market. Sanden operates in Europe as a subsidiary of Sanden Corporation Japan, the world's largest independent manufacturer of automotive air conditioning compressors with annual consolidated global sales of 2.3 billion Euro (214,000,000,000 Japanese Yen). In Europe, Sanden is recognized as the market leader of automotive air conditioning compressors with an estimated market share of 45%.

In presenting the new facilities, Sanden President Mr. Masayoshi Ushikubo states: "We have made a substantial investment in our European Manufacturing and Technical Centres. This not only puts us at the leading edge of automotive air conditioning systems technology, but it gives us the capacity and flexibility to provide immediate and future solutions to meet the technically challenging needs of our customers."

At Bad Nauheim, in close proximity to Frankfurt/Main, Sanden has now opened a state-of-the-art Technical Centre to provide full testing facilities for air conditioning, ventilation and heating systems (HVAC) of all types of vehicles. The centre includes a climate wind tunnel that is currently the most technically advanced of its type in the world. Total production area at the Sanden Manufacturing Centre at Tinteniac, near Rennes, originally built in 1996, has been expanded to over 40,000 square meters with an expected full production capacity of four million compressors per year.

### **Sanden Technical Centre in Germany**

With the opening of the Technical Centre in Germany, Sanden is relocating most of its engineering staff from its European Headquarters in Basingstoke, England to Bad Nauheim. The centrally based facility will function as Sanden's primary testing, research

and development centre. Total construction costs for the centre amount to 10.2 million Euro (20 million German Marks), which includes the climate wind tunnel and testing facility. The highly sophisticated environmental chamber is equipped to control temperature and humidity, sunload, dual chassis dynamometers and wind speed, which enables climatic simulations of actual driving conditions while measuring heating, air conditioning or vehicle cooling performance.

The climate wind tunnel operates from plus 50° celsius to minus 40° celsius, at speeds of up to 160 kilometres per hour, with humidity levels of up to 95%. A complete range of HVAC performance can be tested as well as comprehensive measurement of fuel consumption and emissions. Solar simulation can be achieved with an intensity range of 0.3 to 1.2 kW/m<sup>2</sup>. Configuration capabilities of the dynamometer offer testing for front wheel, rear wheel and four wheel drive transmissions. A separate NVH chamber can measure the noise and vibration related to air conditioning systems in vehicle performance, operating at a range of temperatures and engine speeds. System and compressor calorimeters at the facility offer a controlled environment for performance testing of individual components.

At the Technical Centre in Bad Nauheim strong emphasis will be placed on compressor development and future technology. Sanden's environmental commitment and emphasis on fuel saving systems will be integral parts of research and development at the facility, as will be the development of systems for electric cars, low-noise systems and the elimination of CFCs. The development of alternative refrigerants such as CO<sub>2</sub> are to be carried out in addition to the continued testing of the presently used refrigerant R-134a.

Vehicle testing capabilities of the Technical Centre are for passenger cars, light trucks, mini-vans and small buses. A specially secured and fully enclosed area was constructed to assure secrecy and confidentiality for test and developmental models. 24 Employees have already begun work in Bad Nauheim and will expand to a total of 34 employees by March 2001. Sanden already plans to further extend its German Technical Centre and projects that a total of 70 Engineers and employees will be engaged in Bad Nauheim in the future.

## **Sanden Manufacturing Centre in France**

Originally built in 1996, Sanden's production factory in Tinteniac, near Rennes in Brittany, has rapidly increased in capacity to keep pace with market demand. From a single assembly line for seven cylinder models, the plant has added a second line for six and seven cylinder models plus a range of component machining equipment for final assembly. Two new production buildings have been built this year, to allow for further expansion of production capacity including a foundry to cast compressor bodies, two further assembly lines for new technology swash plate compressors, and a greatly increased range of machining of locally produced components. The total production area for casting, machining and assembly is now over 40,000 square meters.

The original investment of 40 million Euro has now been doubled with the addition of the two new production buildings. The cumulative investment is to reach 100 million Euro by 2002. A workforce of 620 is currently employed in Tinteniac and due to increase by an additional 180 in the next two years. Sanden especially emphasises quality and environmental protection at its Tinteniac manufacturing plant. ISO 9002, ISO 14001 and QS 9000 have all been achieved in recent years.

A total of 2 million piston variable compressors were produced in 2000. The expansion will allow for a full production capacity of 4 million compressors per annum by 2002.

## **Headquarters in the United Kingdom**

In 1978 Sanden opened its first office in the United Kingdom. 10 years ago they moved their offices to the current location in Basingstoke. Now the European Headquarters, Sanden (England) coordinates the supply of compressors and components from its factories in France, Japan, USA and Singapore to its customers in Europe. Sanden currently employs a workforce of 1,100 in Europe with a staff of 70 in Basingstoke. A climatic wind tunnel is also located in Basingstoke and is available for comprehensive air conditioning testing as well as providing back-up service to the new Technical Centre in Bad Nauheim.

### **From textile manufacturing to a global leader of automotive air conditioners**

Sanden was established in 1943 as the Sankyo Electric Company Limited in Ise, Japan. Kaihei Ushikubo, head of a textile factory with a history stretching back generations, had decided to re-focus the company on the manufacturing of condensers and wireless communication equipment parts. Sankyo Electric began manufacturing SD-5 compressors for automotive air conditioners in 1971. Sankyo was listed on the first section of the Tokyo Stock Exchange in 1973, the same year that the tradename was changed to Sanden.

The establishment of Sanden International came one year later, and offices were opened in Garland, Texas and Singapore. The sales network was expanded to England and Australia in 1978. In recognition of the company's energy and global perspective, the corporate name was officially changed to the Sanden Corporation on October 1, 1982. Two years later, joint venture companies were established in India, Malaysia and Mexico. Sanden opened a joint venture company in Indonesia in 1988 and acquired the Vendo Company, America's Number two manufacturer of vending machines. In 1989, operations started at Sanden's second U.S. factory in Wylie, Texas. With the beginnings of an extensive network Sanden was on its way to becoming the global corporation it is today.

Today, Sanden Corporation has thirty-seven consolidated subsidiaries, fourteen in Japan, six in the United States, two each in Germany, France, Thailand and Taiwan, and one each in the United Kingdom, Italy, Spain, Belgium, Australia, Singapore, the Philippines, Indonesia and Hong Kong.

Sanden's automotive product range is one of three business units. Sanden is the international leader in the manufacturing of vending machines, following the purchase of the Vendo Company eleven years ago. It is also a major supplier of refrigerated showcases in the far East. The general product group manufactures a range of household products for the Japanese market. Compressor and food related equipment comprise Sanden's core business segments with Automotive Equipment Systems accounting for 56% of current revenue; Automatic Retail Systems for 41%; and Household and Environmental Systems for the remaining 3%. Global sales amounted to 2.3 billion Euro for the fiscal year ending March 2000.

### **European Market Leader with 45% Market Share**

Mr. Ushikubo states that overseas sales for Sanden's automotive and food related equipment make up 66% of the Japanese conglomerate's total global business with 30% of those sales achieved in Europe alone. The demand for air conditioning in vehicles has seen tremendous expansion in the past 20 years. Only 5% of all vehicles produced in 1980 had air conditioning, this figure has increased to 60% today and is expected to reach 95% (comparable to the U.S. market) in the future.

The Sanden Corporation with 9,100 employees worldwide and 9 million air conditioning compressors produced yearly is the world's largest independent manufacturer of automotive air conditioning compressors with a total share of 25% of the market. With the largest share of the market in Europe, Sanden claims most of the large European automotive producers as its customers, including Audi, Volkswagen, Opel, the PSA Group, Renault Nissan, Fiat, Volvo, DaimlerChrysler and New Holland.

Sanden President Mr. Masayoshi Ushikubo states, "Our ability to deliver high technology engineering solutions and emphasis on satisfying customer needs have enabled us to rapidly expand in the European, Asian and North American markets. Our environmental commitment, as well as our social and cultural responsibility to our communities, are of the utmost importance as we continue to expand and transcend national borders."