



Application design of components for air-conditioning systems at DENSO Automotive Deutschland GmbH



**DENSO's basic philosophy is to meet customer needs by locating operations close to its customers. We are building a structure to support local management of local operations in Japan, the Americas, Europe and Asia & Oceania.**

### Adapting to Globalization

We are maximizing our corporate contribution under globalization by extending localized management to all levels, from research and development (R&D), production to service and financing. In the future, DENSO will establish R&D operations in locations that offer the best potential for technology improvement. We will also strengthen organizational structures to support product design in locations close to markets. As a true global supplier, our role is to monitor the needs of the automotive society and end-users and reflect those needs in products, not only in Japan, but throughout the world. DENSO's consistent commitment to this approach in all of its markets is a key advantage.

## Business Development in Japan



DENSO's research laboratories in Japan, source of our future technology

In addition to its Global Headquarters, DENSO's facilities in Japan include 11 plants, one research laboratory, and 77 subsidiaries and affiliates. These form the nucleus for DENSO's global business development. In the domestic market, annual vehicle production in Japan remains steady at just over 10 million units, and further significant growth is unlikely. To achieve continued business growth in this environment, DENSO needs to increase content value per vehicle, and maximize the proportion of high value-added products. DENSO is achieving this by focusing R&D on the introduction of new products to the Japanese market in the key areas of environment, safety, comfort and convenience. The prioritized business categories in this context are intelligent transport systems (ITS), safety products, diesel common rail system (CRS), and products for hybrid electric vehicles (HEVs).

In the year under review, DENSO participated in a project by the Ministry of Land, Infrastructure and Transport to test an Internet-based taxi dispatch service, as the company responsible for the development and implementation of the system to be used in the trials. Safety-related products brought to market included an adaptive cruise control (ACC) system with a low-speed following mode, and a vision sensor for a lane-keeping assist system. New products for HEVs included a hybrid control computer, a battery-monitoring unit, a DC-DC converter and an electric compressor for new, large HEVs introduced by Toyota Motor Corporation.

## Activities in the Americas



DENSO's first North American production company, established in Michigan in 1984

DENSO first entered the North American market in 1963, when it began to supply alternators to Ford Motor Company. It subsequently established a sales office in Chicago, followed by sales offices in Los Angeles (which was expanded into its first overseas subsidiary in 1971) and Detroit. In 1969 an office was also opened in Toronto, Canada to support the continuing expansion of marketing operations in North America. DENSO's first North American production company was DENSO Manufacturing Michigan, Inc., which was established in 1984 to manufacture heat exchangers. DENSO's presence in North, Central and South America, currently extends to 29 production companies and 10 companies involved in sales and other activities.

In the year under review, DENSO established its second North American production company for car air-conditioning compressors. The new company, TD Automotive Compressor Georgia, LLC, is a joint venture with Toyota Industries Corporation. DENSO Manufacturing Arkansas, Inc. was established in 2003 and started production of radiators and car air conditioners. DENSO has now basically completed a supply structure for all of its products in the U.S. market. Its main task now is to secure orders from Japanese-affiliated automakers, which are enjoying high levels of demand, while aggressively expanding its sales to the Big Three automakers. Sales to the Big Three currently consist mainly of products for luxury cars. Though DENSO has important advantages in terms of technology development capabilities and product quality, the challenge now is to improve cost competitiveness so that it can expand sales of products for medium-priced vehicles.

## Priorities in the European Market



DENSO Manufacturing UK Ltd., producing heaters and air conditioners

DENSO's presence in Europe dates from the opening of an office in Amsterdam in 1972. It has since established sales offices in the United Kingdom, Germany, France, Italy, Sweden and Belgium. Our first European production company was DENSO Barcelona S.A. established in Spain in 1989. This company manufactures engine control components and automotive electronic products. Today DENSO has 17 production companies and 16 companies involved in sales and other activities in Europe.

Europe is a mature market, but DENSO's market share is still small. Though it recorded an operating loss in fiscal 2005 due to start-up costs resulting from production capacity expansion, DENSO regards Europe as an important market with the potential to contribute to global earnings as marketing efforts start to yield growth. It is actively serving every need of Japanese-affiliated automakers, which are steadily expanding their production, while moving decisively to increase sales of strategic products, such as car air conditioners, engine management systems, CRS and car navigation systems, to European automakers.

One of the key product areas for sales growth is car air conditioners. The market is expected to expand in step with growth in the percentage of vehicles with installed air conditioners. In fiscal 2004, DENSO began to supply systems to Volkswagen, and in fiscal 2007 it will commence deliveries to Peugeot. Another key area is CRS. The percentage of diesel vehicles in the European market is high, at around 50%. Tighter exhaust emissions regulations will be a positive factor for DENSO as it works to expand its market share. The Company has completed the expansion of CRS production facilities in Hungary in preparation for the start of deliveries to Ford of Europe in fiscal 2005.

In April 2005, the Aachen Engineering Center was established within DENSO Automotive Deutschland GmbH as an engineering base for diesel engine components. This engineering center will carry out application design and performance evaluation of fuel injection systems for diesel engines. In the future, the facility will be expanded into DENSO's European engineering base for all powertrain components.



Newly established Aachen Engineering Center for application design and evaluation of diesel engine components

## Asia and Oceania



Manufacturing fuel injection pumps at DENSO Haryana Pvt. Ltd. in India

DENSO has had a presence in the markets of Asia and Oceania since 1963, when it began to export spare parts for Japanese-made vehicles. DENSO (Thailand) Co., Ltd. was established in 1972 as DENSO's first production base in the region, and its first overseas production facility. The company manufactures electrical automotive components and car air conditioners. Since then DENSO has established business operations in Australia, Indonesia, the Philippines, the Republic of Korea, Malaysia, India, China and so on. It currently has 39 production facilities in the region and 12 companies involved in sales and other activities.

## ASEAN-based Capabilities Expanded



Manufacturing alternators at DENSO (THAILAND) Co., Ltd., DENSO's first overseas production company

DENSO has established new production facilities and expanded its capacity at existing facilities, including starting production of CRS at Siam DENSO Manufacturing Co., Ltd. in Thailand, to meet the needs of the ASEAN-based IMV project initiated by Toyota Motor Corporation in August 2004. In Thailand, which will be the main focus for activities relating to the IMV project, DENSO has established a number of facilities, including a parts-processing center, an export center, and a skill-training center. By concentrating and strengthening its ASEAN-based operations, DENSO aims to establish manufacturing systems comparable with those in Japan as a model for plants in other regions of the world.

With the view of ASEAN as a single region, DENSO has introduced a more centralized production system that allows single manufacturing bases to complement each other. In the year under review, the Company spun off the sales division of P.T. DENSO Indonesia Corp., to form P.T. DENSO Sales Indonesia, a new sales company.

## Increased Emphasis on China



DENSO's production company in Chongqing, China, produces magnetos, CDI amplifiers and ignition coils for the rapidly growing Chinese market.

The Chinese automobile market is expected to expand rapidly in the years ahead. Current forecasts indicate that the number of vehicles produced will increase from five million annually at present to eight million by 2010, making China the world's second biggest market. DENSO has positioned China as an important market in its global growth strategy. The sales target for the year to March 2011 is ¥150 billion.

In the year under review, DENSO established a production companies in Tianjin to produce filters and another to produce heat exchangers for car air conditioners, a production company for fuel injectors and fuel injection pumps for gasoline engines in Guangzhou and an ignition-coil production company in Wuxi. These four new companies bring the total number of production operations in China to 14, and the foundations for DENSO's production network in China are now basically complete. DENSO will keep pace with future demand growth by expanding capacity at these facilities.

DENSO has also established a joint venture in Tianjin to sell aftermarket products. The new company will work with other Japanese-affiliated parts manufacturers to develop a sales network for maintenance parts and other products. The main customers at present are Japanese-affiliated automakers, but the customer base will be expanded through marketing targeted toward non-Japanese automakers, including European and American manufacturers and local manufacturers commercial vehicles. Marketing efforts will focus on strategic products, especially car air conditioners, engine management systems, diesel injection systems and car navigation systems.

## Other Regions



Signing ceremony on acquiring a capital interest in Smith Manufacturing (Pty) Limited

In the year under review, DENSO decided to acquire a capital interest in Smiths Manufacturing (Pty) Limited (SMITHS), the largest automotive air conditioner company in the Republic of South Africa (RSA). DENSO has long provided technical assistance to SMITHS on automotive air conditioners, heaters, radiators and electric fans. This investment will allow DENSO to expand its business foundation in the RSA.