

Perpetuating the Spirit of *Mono-zukuri* to Create New Value for the Next Generation

AISIN is working to produce new value for the next generation by building on a wealth of accumulated technologies in automotive parts. The Group is confident that an unwavering spirit dedicated to developing new markets will ensure business expansion and sustainable growth and subsequently contribute to the advancement of society.

■ Steady Growth Backed by Advanced Technological Capabilities

The needs and functions demanded by consumers for their automobiles, including superb safety, environmental features and driving pleasure, will continue to diversify and grow more sophisticated. The key mission of AISIN is to respond appropriately to those needs, and to do so, we are undertaking ongoing development of highly reliable, cutting-edge technologies based on "Quality First."

While focusing on R&D of technologies and products currently demanded by customers, AISIN is also looking ahead as far as 30 to 50 years.

This approach is showing steady results year after year, as evidenced by the development in fiscal 2006 of the world's first RWD hybrid system, which offers a sophisticated combination of environmental and driving performance. Moreover, through employment of a 2-piece housing case, we developed a high torque capacity FWD 6-speed MT, which offers world-class compactness and lightness and is used in numerous automobile models.

AISIN also developed the world's first electric active stabilizer system jointly with Toyota Motor Corporation (TMC) as a result of augmenting the system module technologies that are at the heart of safe, environmental and high-performance driving. Since automobiles will roll toward the outside curve when turning due to centrifugal forces, the stabilizer reacts to the rolling motion and maintains the balance of the vehicle. This system enables variable control of the vehicle depending on the state of the vehicle to provide rolling control and a comfortable ride.

AISIN's power retractable seat is also gaining attention as a new function and product that raises the level of comfort and convenience in automobiles. The product enables the rear seat of a minivan to be stored under the floor to maximize the total storage space within the cabin.

■ Pursuit of R&D through Intra-Group Competition and Cooperation

The AISIN Group is composed of companies operating in a wide range of fields. Each Group company, with Aisin Seiki at its head, possesses highly specialized technologies and engages in proprietary technological development. Therefore, the Group employs a unique R&D structure that encourages both competition and collaboration among its Group companies. By augmenting each Group company's strength and effectively combining their individual developments, AISIN offers innovative functions, technologies and products.

For example, Aisin Seiki is involved in every product segment, focusing on body related and engine related products, and takes the initiative in overall R&D. Aisin AW plays a key role in the technological development of drivetrain and information related products, while Aisin AI takes the lead for drivetrain related products and ADVICS has a crucial responsibility for brake and chassis related products. In addition, Aisin Takaoka and Aisin Chemical Co., Ltd. (Aisin Chemical) conduct elemental technology development in such areas as iron casting, metal forming and plastic molding, while concurrently developing functional products using proprietary methods.

System products such as driving control systems and driving safety support systems are ones in which Group companies conduct joint development to combine their respective technologies. This approach is garnering attention for AISIN for its pioneering vision in the fields where its Group strengths shine.

Various vehicle components are evaluated in a hot-weather chamber at temperatures up to 50°C





Toyokoro Proving Ground (Nakagawa County, Hokkaido)



Brake control test of ABS on frozen road



Engine start-up and other vehicle performance testing are conducted in a cold-weather chamber at temperatures as low as -50°C



Performance testing of fuel cells for home use

World's Leading Proving Grounds in Japan and Abroad

AISIN has one of the world's most illustrious proving grounds, which are capable of evaluating not only individual components but vehicles as well. For example, AISIN has the Fujioka Proving Ground in Aichi Prefecture and the Toyokoro Proving Ground in Hokkaido, the latter of which added a 7.9-km high-speed track in September 2005. The track is equipped with a close reproduction of a standard freeway with slopes and no banked curves. Bridges, tunnels and concrete walls also allow assessment of radio disturbances and ITS-related issues, offering testing conditions unavailable by other component manufacturers around the world. Overseas, AISIN was the first Japanese supplier to build and open a proving ground in North America with the Fowlerville Proving Ground in the U.S. state of Michigan. By operating its own proving ground and establishing a testing environment for vehicle performance evaluations, AISIN seeks to further augment development and sales structures and expand its business in the North American market.

Such facilities are integral to raising the reliability of our products. AISIN aims to ensure the safety of its products by fur-

ther expanding its proving grounds and adding new testing capabilities.

Actively Promoting R&D in Energy Related Business

In the energy related business, we are promoting the development of fuel cells, which are expected to be a major energy device of the 21st century. Preceding practical application to automobiles, we have developed a residential fuel cell cogeneration system jointly with TMC that boasts significant energy savings and is effective in reducing CO₂ emissions. This system allows home generation of electricity and also makes efficient use of the heat energy generated during the fuel cell's reaction process.

AISIN is already developing an array of devices and technologies in this field, including a gas engine cogeneration system already commercially available as well as such promising products as dye-sensitized solar cells. AISIN is actively undertaking R&D oriented toward contributing to society and the environment.