DEVELOPMENT OF NEW BUSINESS AREAS

At present, THK's business remains focused on capital goods sectors such as machine tools, industrial robots, and semiconductor production equipment. Ongoing new business development initiatives are aimed at broadening this base into consumer goods and related sectors. THK has already established growing businesses in new areas such as automotive components, seismic isolation devices, and parts for consumer appliances. Going forward, THK is focused on continuing to increase the range of product applications.

FAI Division

Targeting higher earnings from the transportaion equipment-related business segment

FAI stands for Future Automotive Industry. THK set up the FAI Division in 1999 to expand usage of the company's products as automotive components. Link balls, which are the division's mainstay product, are used in automobile undercarriages as joint sections to connect the stabilizers to the suspension. Many leading automakers in Japan, Europe and the Americas use link balls, and the business has grown steadily. THK's advantage in this area is an integral molding process for the production of aluminum diecasts. This makes the link balls much lighter than conventional steel versions, as well as highly resistant to corrosion or abrasion. Awareness continues to grow among automakers of the high-performance benefits offered by these products.

RHYTHM joined the THK Group in May 2007 as part of THK's efforts to accelerate development of new business areas. The operations of the FAI Division and RHYTHM comprise the transportation equipment-related business segment. THK aims to develop these operations in an integrated fashion.

RHYTHM and THK both manufacture automotive parts that are mainly used in the undercarriage sections of vehicles. The two companies have numerous mutually complementary strengths in this field. RHYTHM has developed forging technologies and superior quality control systems to facilitate the supply of components to extremely strict dimensional and strength tolerances. As a result, many of Japan's automakers source critical safety components for vehicle undercarriages from RHYTHM. The company commands a high share of the Japanese market for suspension joints and related products. Besides Japan, RHYTHM also has production and sales bases in overseas markets such as North America and China. Complementing these strengths, the FAI Division has developed aluminum die-cast technology and can access the THK Group's global production and sales network. The division has already established a track record with a number of automakers based inside and outside Japan.

Pursuing synergies with RHYTHM

Future plans call for boosting the global presence of the THK Group as an automotive parts supplier by pursuing synergies with RHYTHM to enhance the group's ability to respond rapidly and precisely to ongoing changes in the global automotive market.

One of the key developments within the transportation equipment-related business environment over the past few years has been the emergence of a number of dynamic world regions where vehicle demand and production volumes are both on the rise. Amid rapid growth in vehicle demand in emerging markets, THK is currently targeting aggressive proposal-based sales activities across various regions around the world. By supplying highly competitive products, THK aims to expand both the number of automotive sector clients and the range of vehicle models in which THK products are used.

A second key change is an ongoing trend to make vehicles lighter and more energy efficient, reflecting the impact of factors such as stricter environmental regulations and high oil prices. The FAI Division has already developed link balls made using an integral aluminum die-cast process that are substantially lighter than conventional steel parts. This has contributed to improvements in fuel economy. Going forward, THK aims to combine this technology with the forging technology of RHYTHM to develop products that will come to define the industry's benchmarks. In addition, automakers expect ever-increasing levels of safety from parts suppliers as automobiles continue to improve in terms of performance and multi-functionality. THK is working to upgrade its quality assurance systems on a global basis in response to the demands of automakers by incorporating quality control and technical support systems for critical safety components that RHYTHM has developed over many years.

In the transportation equipment-related business segment, THK is targeting first-tier supplier status through these kinds of initiatives. The major focus is on the development of products that provide the de facto standard within the industry based on zero-defect guarantees and highly original technology.

Fiscal 2007 activities and results

The main priority during fiscal 2007 was on developing the new operational infrastructure to facilitate business collaboration with RHYTHM. In Japan, THK relocated the main FAI Division to RHYTHM's head office and factory site to start integrated business activities. In the United States, sites were merged to create an efficient sales organization and eliminate unnecessary duplication. In Europe, THK appointing specialist personnel from the FAI Division and from RHYTHM at to THK branch office to reinforce sales capabilities. Elsewhere, a new production base was established at THK RHYTHM (THAILAND) CO., LTD. in July 2007, with manufacturing operations commencing in September 2008.

THK also began developing an integrated longer-term business strategy with RHYTHM. Efforts focused on creating an effective business development framework for separate regions and customers by leveraging the global THK Group network across Japan, the Americas, Europe and Asia.

Alongside these various initiatives, THK also focused on aggressive sales activities together with RHYTHM, mainly targeting automakers based in Europe. These efforts were successful in securing new customers for link balls and expanding the range of models using these THK Group products. Orders for link balls were double the level achieved in the previous year.

Net sales posted by the transportation equipment-related business segment in fiscal 2007 totaled ¥40.4 billion. The year marked a successful start to collaborative business development efforts with RHYTHM. The emerging synergies with RHYTHM promise to translate into more positive results in the marketplace going forward.

Fiscal 2008 initiatives based on longerterm strategy

THK has set a target of ¥70.0 billion for transportation equipment-related business segment sales in fiscal 2010. To achieve this figure, THK plans to reinforce efforts to develop synergies with RHYTHM. In fiscal 2008, besides stand-alone products such as link balls, plans call for the active development of modularized products combining THK's mainstay LM guides with other products such as ball screws. For its part, by taking advantage of the global sales network constructed by the THK Group, RHYTHM plans to develop products tailored precisely to customer requirements, based on the compilation and analysis of detailed information on market needs.

Outside of product development, efforts will continue to strengthen the base of operations in the European market, which has good growth prospects. A key focus will be on expanding the range of applications for various products.

By making further progress in business development based on a longer-term perspective and building on the success achieved with initiatives undertaken to date, THK is targeting net sales of ¥45.0 billion in the transportation equipment-related business segment in fiscal 2008.



ACE Division

Broad possibilities for THK's seismic isolation technology

ACE stands for Amenity Creation Engineering. Guided by the concept of "developing technology to realize creative living spaces for greater comfort," the ACE Division has sought to apply THK's original linear motion technology since its establishment in 2001. The division markets seismic isolation devices that protect human life and property from the threat of earthquakes.

Seismic isolation devices help buildings to dampen or absorb the vibrations and shaking caused by an earthquake. THK's products are unique in that they can give adequate earthquake protection to a wide range of structural types, from high-rise buildings and low-rise residences to historical structures such as temples and shrines.

A related area where interest among Japanese companies has recently grown is in the development of business continuity plans (BCPs). Applying THK's original expertise in seismic isolation technology, the division is developing and selling seismic isolation devices for protecting operating assets such as PCs and servers from damage caused by earthquakes. Compared to rival products on the market, THK's high-performance seismic isolation devices reduce the vibrations caused by an earthquake to a much greater extent.

The number of domestic construction starts dropped in Japan in fiscal 2007 following the enactment of legislation to revise building standards. With the aim of boosting the number of devices installed, the ACE Division conducted an aggressive nationwide PR campaign, including the use of earthquake simulation vehicles at housing exhibitions in Japan's major cities. Targeting potential corporate customers amid a surge in the formulation of disaster countermeasures as part of BCP development, the division also engaged in PR activities to stress the superiority of THK seismic isolation devices in the protection of servers. These promotional activities were successful in terms of expanding the total installed base of THK seismic isolation devices.

Upgrading promotional campaigns and sales activities amid growing demand for BCP-related products

The sales target for fiscal 2008 is ¥2.0 billion. To achieve this figure, the ACE Division plans to continue using PR campaigns to promote the benefits of THK's seismic isolation devices to construction firms and homebuilders. In addition, the division aims to promote more widespread product uptake by holding seminars aimed at consumers to explain to people the importance of installing seismic isolation devices, along with the advantages offered by THK technology and products. The division also plans to make more effective use of earthquake simulation vehicles in marketing activities.

In a business environment where corporate demand for BCP-related products continues to strengthen, the division is also focusing on expanding sales of seismic isolation devices for server protection.



CAP Project

Consumer goods applications of THK technology for "electric-powered living"

THK established the CAP (Consumer Application Products) Project in 2002 with the aim of developing applications for THK products in end-use consumer applications and of cultivating new markets. Based on the core concept of "electric-powered living," THK is working to create business opportunities in a broad range of fields, mainly components for use in consumer appliances, other lifestyle goods, and universal design equipment. Product development efforts are focused not only on developing new applications for THK products to meet existing market needs, but also on creating future-oriented products.

THK increased the number of proposals and assigned more development staff to the CAP Project during fiscal 2007, reflecting expanded opportunities for technical applications due to greater use of automation in targeted fields. THK organized private shows as part of efforts to maximize the effectiveness of promotional activities. Adding to the existing range of mainstay products (lensshift units for commercial LCD projectors and sliding rails designed to fit electric induction hobs), new products entering the massproduction phase included hybrid units for use with blood-testing equipment and actuators for use in agricultural machinery. In the field of robots, an area with particular promise, THK was an active participant in publicly



sponsored projects. Good progress was made in terms of R&D advances with elemental devices along with fundamental development work on robotic hands.

Effective marketing activities to grow sales of developed products

Increasing usage of automation in consumer-use appliances and other areas targeted by the CAP Project has boosted the prospects for generating higher sales through the application of specialized linear motion technology.

To achieve the CAP Project's fiscal 2008 sales target of ¥1.2 billion, we are making proposals to leverage the global sales infrastructure of the entire THK Group to produce and sell products. With the aim of securing larger orders for mainstay mass-produced items, THK's business development teams are also working with existing customers to expand the range of applications while at the same time looking to broaden the customer base. Moreover, with an eye to creating business opportunities over the longer term, THK is targeting the development of new products in selected fields such as kitchen appliances, aircraft interiors, and civilian robots.

MRC Center

Creating future sources of profit

THK set up the MRC Center in 2000 with the aim of creating future pillars of earnings growth through the development of highly original products. As suggested by its name, the facility is engaged in creating new technology that spans the fields of mechatronics, robotics and computing. Currently the center is focused on development of surgical assistance robots and other advanced technology, including humanoid robots. The future market potential in these areas is large. The MRC Center is working to exploit the advantages provided by THK's technologies.

One noteworthy result of our ongoing development programs is Mister C Motion Designer, a software package that enables robots to move with smooth precision along gentle curves. By simultaneously controlling the movement trajectory, which is based on clothoid curve modeling, and the acceleration over time, this new technology represents a significant addition to THK's amassed expertise in specialized linear motion solutions for smooth, precise robotic movement.

During fiscal 2007, as part of a joint research project with a university, the MRC Center made substantial progress in the commercialization of one type of surgical assistance robot. The mechatronics developed for this robot enable considerably more complex and precise movements than achieved previously. Elsewhere, the center is also involved in a collaborative project involving groups from industry, academia and the public sector to develop humanoid robots for applications in cellbased production methods.

A greater focus on commercialization

In medicine, the trend toward advanced technology and the need to control medical spending as society ages both point toward greater use of robots in the future. Increased introduction of robots is also widely expected in industry, reflecting demand for further efficiency gains within production systems. THK is focusing development efforts in both these areas.

Full-scale commercialization of surgical assistance robots is now under way. The major issues are ensuring conformity with the legal safety requirements in Japan, reduction in weight, and the development of materials that are compatible with the widespread use of X-rays and magnetic fields in medical settings. With humanoid robots, among other issues, efforts are now focusing on improving motive functions and on the development of more advanced adaptive control functions.

In fiscal 2008, by addressing these issues, THK aims to accelerate progress toward early commercialization. This not only means speeding up internal development processes, but also involves strengthening cooperative links with other groups, including companies and external research institutions.



