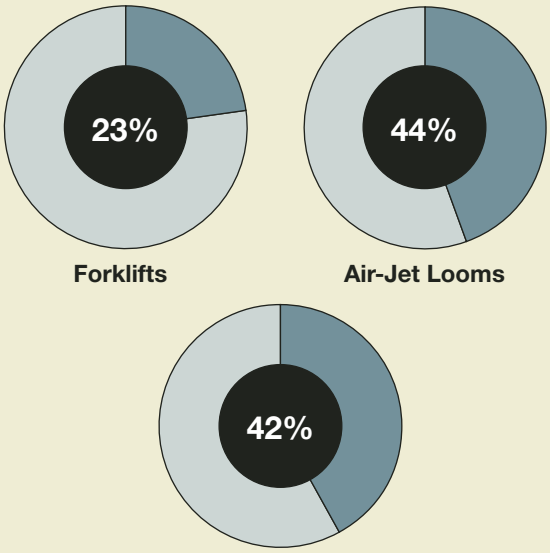
Businesses and Responsibilities of the Toyota Industries Group

Fulfilling Responsibilities with High Quality Products

The Toyota Industries Group is characterized by the variety of business operations it carries out in diverse markets and the large number of products that hold high market shares in their respective markets. This chapter introduces the group's seven major business divisions and presents the "high quality products" that these divisions offer, as well as explaining what types of responsibilities each division is striving to fulfill.

Graph 1 Top-Selling Products Throughout the World (Share of Global Market)



Note: Figures for forklifts and air-jet looms are for 2006 (Jan-Dec). The figure for compressors is for FY 2007 (Apr 2006 – Mar 2007). All figures are internal estimates.

Materials Handling Equipment Business

Textile Machinery Business

Car Air-Conditioning Compressor Business

Vehicle Business

Engine Business

Electronics Business

AL Business (Advanced Logistics Business)

Materials Handling Equipment Business

Toyota Industries' materials handling equipment business develops, manufactures, and sells industrial vehicles such as forklifts, tow tractors, and shovel loaders. We are also dedicated to providing customers with optimal materials handling systems for conveying, storing and sorting, using automated storage and retrieval systems, and automatic guided vehicle systems. We provide a broad range of forklifts, ranging in capacity from 0.5 tons to heavy-duty models with a capacity of over 40-tons, including both internal combustion trucks (gasoline, diesel, LPG, and CNG) and electric trucks. Toyota Industries maintains a top share of the forklift market, capturing 43% of the Japanese market and 23% of the global market (internal estimate) in 2006.

In 2000, we acquired BT Industries AB of Sweden, the world's leading supplier of warehouse trucks as a wholly-owned subsidiary.

In 2001, we took over the industrial equipment sales and marketing operations of Toyota Motor Corporation and established TOYOTA Material Handling Company, an in-house company that integrates manufacturing and marketing operations. In order to maximize our group strengths, we have since established the Toyota Material Handling Group, which combines the operations of TOYOTA Material Handling Company and BT Industries.

P.7

Textile Machinery Business

Since the founding of Toyota Industries, the textile machinery business has been engaged in a continuous unbroken line of operations, offering spinning machinery (which spins bundles of fibers into yarn) and weaving machinery (which weaves yarns into fabric) to customers throughout the world. Textile machinery has evolved over the years to embody a wide range of highly advanced technologies, such as control, communications, and mechatronics technology.

Our mainstay air-jet loom boasts the number one share of the global market and we believe that we are held in high regard throughout the world as the leading company in the spinning machinery industry.

P.9

Car Air-Conditioning Compressor Business

Toyota Industries has long offered world-leading products as a car-conditioning compressor manufacturer. We believe that variable-displacement compressors (which automatically control cooling capabilities) and fixed-displacement compressors (which are highly reliable in harsh environments, lightweight, and feature upgraded functions) are giving us a dominant share in the global market.

Recently, Toyota Industries developed an electrically driven compressor for hybrid vehicles. Toyota Industries is also currently working to develop next-generation compressors, such as a CFC-free CO_2 refrigerant compressor.

P.10

Vehicle Business

Toyota Industries' vehicle business manufactures automobiles under consignment from Toyota Motor Corporation. With our accumulated and proven experience in manufacturing mainly compact and midsize automobiles, Toyota Industries' vehicle business is currently manufacturing two models: the Vitz (Yaris overseas) and the RAV4 for Europe and the United States.

Through our untiring pursuit of improvements and reforms to our production operations using the Toyota Production System (TPS), Toyota Industries' vehicle business has won high acclaim within the Toyota Group for its top-class quality and quick production launch.

P.11

Engine Business

Toyota Industries' engine business manufactures diesel and gasoline engines ranging in capacity from 1,500cc to 5,200cc. Our automobile engines are manufactured under consignment from Toyota Motor Corporation (TMC) and installed on designated Toyota vehicles. Our industrial engines are installed on forklifts of Toyota Industries and gas engine-driven heat pumps.

Our diesel engines in particular, which were developed in collaboration with TMC, are lightweight and offer high power in addition to lower noise and vibration. We are proactively promoting the development of technologies that will reduce the impact of our engines on the environment, such as through cleaner exhaust emissions.

P.12

Electronics Business

Toyota Industries' electronics business produces power electronics components for automobiles, liquid crystal displays, and semiconductor package substrates. We are continuing to strengthen our efforts in the development and production of electronic components and equipment used in automobiles, such as compact, highly efficient, and lower cost DC-DC converters, and DC-AC inverters for use in vehicles, that will enable home appliances to be used inside the vehicle.

In 1997, we established ST Liquid Crystal Display Corp. (STLDC) as a joint venture with Sony Corporation to manufacture liquid crystal display panels, while in 1998, TIBC Corporation was established as a joint venture with Ibiden Co., Ltd. to produce semiconductor package substrates.

P.13

AL Business

In 2002, Toyota Industries launched its Advanced Logistics business, which develops logistics systems for our customers and provides comprehensive management and operation services for our customers' logistics centers. We are currently working on the rationalization of logistics operations for various industries by making use of the experiences that we have acquired in our development, manufacturing, and sales of materials handling equipment and systems. As a member of the Toyota Group, we are also drawing upon *kaizen* (continuous improvement) know-how acquired from our experience at production sites.

Toyota Industries aims to reform logistics operations in Japan by proposing comprehensive solutions for planning, building, and operating logistic centers, while optimizing processes throughout the entire supply chain.

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Rack Sorter P (Automated storage and retrieval system, pallet type)

Geneo (1-3.5 ton Internal Combustion Forklift) (8-Series and Toyota Tonero overseas)

Materials Handling Equipment Business

Putting the Customer First, with the Themes of "Safety", "Environment" and "Ease of Operation"

Environmental Responsibilities

Forklifts

- To help curb global warming by conserving energy during operation
- To prevent air pollution by reducing emission of exhaust gases
- To dispose of hydraulic oils and spent batteries properly
- To develop and supply products that comply with the safety and environmental standards of each region in which our products are sold

Automated Storage and Retrieval Systems and Automatic Guided Vehicle Systems

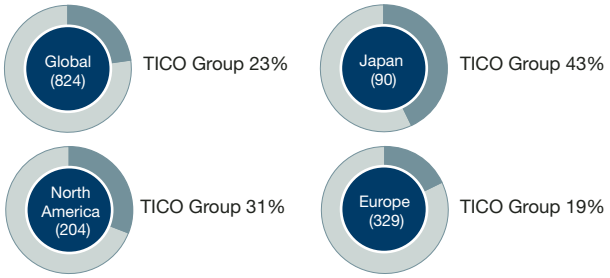
- To help curb global warming by reducing the level of electricity consumed during operation
- To reduce noise during operation
- To dispose of hydraulic oils and spent batteries properly

Social Responsibilities

Forklifts, Automated Storage and Retrieval Systems and Automatic Guided Vehicle Systems

- To maintain and improve the reliability and durability of our products
- To prevent adverse impacts on the health of users by minimizing emissions of exhaust gases, noise and other factors
- To provide after-sales service to enable customers to continue to use our products safely and efficiently

Graph 1 **Toyota Industries' Share of Global Forklift Market**
January-December 2006 (thousand units)



Fulfilling Our Responsibility as the Global Leader in Forklifts

Toyota Industries recognizes our responsibility as a global leader in forklifts. In order to fulfill this responsibility, we continually enhance our activities in the area of research and development of new products that anticipate customer needs, and ensure the continuous improvement of quality, sales, and service to achieve customer satisfaction. We expect to continue to take the initiative and contribute to society by attempting to ensure that we meet this responsibility.

In fiscal year 2006, the Toyota Material Handling Group (TMHG) began operations by combining the operations of TOYOTA Material Handling Company and our overseas subsidiary, BT Industries. This framework enables these two companies to increase their mutual understanding through joint development of new products and production preparation. Based on the principle of "the customer comes first", TMHG will pursue business activities that will continue to gain the confidence of our customers.

Pursuing Customer Benefits Through Actual Observation and Analysis of Customer Operations

Forklifts play an important role in our customers' manufacturing and distributing processes, so our customers expect their forklifts to work continuously without breaking down. We believe that this makes reliability and durability the two key factors that our customers expect from our forklifts. We gave reliability and durability top priority in the development of the Geneo, launched in Japan in September 2006, with an emphasis placed on safety, the environment, and ease of operation.

We have built a global network for sales and after-sales service to better serve our customers. The forklift industry differs from the auto industry, where customers go to dealers' showrooms to choose a vehicle. Our sales staff and service mechanics actually visit our customers' factories, warehouses, and other premises where our products are used to observe and analyze our customers' needs, operating conditions, and environment. They then propose optimized solutions, taking into account efficiency, safety, environmental performance, and other factors. Other support services that we offer our customers include regular servicing, recommendations for servicing and repairs appropriate to the operating situation, and safety training seminars. (See topics.)

To meet our customers' demands for improved efficiency and quality of materials handling services, we have also developed a wide range of materials handling equipment and logistics management systems, as well as proposing improvements based on the principles of the Toyota Production System (TPS). By helping our customers to ensure a safe, efficient, and well-organized workplace, we hope to help them reap the benefits of using our products, such as simultaneous cost reductions and efficiency improvements, the prevention of potential losses from down-time or low efficiency, and of course, a safe working environment.

Supporting Our Distributors and Dealers Worldwide

As part of our commitment to providing better sales and after-sales service, Toyota Industries provides comprehensive support to its distributors and dealers throughout the world. We provide materials for sales promotions and solutions proposals to help sales staff to provide even better proposals to our customers. Other ways in which we help our distributors to improve the quality of their sales and after-sales service include the introduction of a certification program to facilitate proper recognition of skills, and to motivate sales staff and service mechanics, and the provision of well-organized training to upgrade their skills.

Considering the Work and Global Environments

Forklifts are closely linked to customers' costs and their working environment, therefore highlighting the need for environmental consciousness. In internal combustion engine forklift development, we have made efforts to improve fuel efficiency, decrease the amount of harmful substances, such as NOx, found in the emissions, developed DPFs (diesel particulate filters) and low-emission trucks (which use LPG and CNG), and reduced overall noise levels. Electric forklifts have also become quite popular, as we have achieved the same level of performance by utilizing an AC motor system that extends running time and improves energy efficiency.

As customers become more and more aware of their working environments, more electric trucks are being introduced for indoor use. Certain challenges remain in this area however, such as initial costs and the down-time required for recharging batteries. We are also promoting the sale of low-emission trucks (that use LPG and CNG) and the development of environmentally conscious products. R&D activities to ensure cost reductions, better performance, and shorter recharging time of electric trucks are other examples of our efforts.

Hybrid technology is another greatly anticipated technology for achieving major improvements in the fuel efficiency of internal combustion engine forklifts. Drawing on the understanding of hybrid technology and parts available within the Toyota Group, Toyota Industries has developed a highly efficient hybrid system for forklifts that is reliable, durable and inexpensive. A concept model of this hybrid forklift was revealed at Logis-Tech Tokyo 2006 in September. We believe that the hybrid forklift provides the same performance as conventional internal combustion forklifts, but with major improvements in fuel efficiency, providing excellent performance in terms of both the environment and economy. Technological development for the commercialisation of the hybrid forklift is continuing. In 2005, we exhibited the prototype of our fuel-cell forklift and attracted a great deal of attention. With the comprehensive technology of the Toyota Group, we are working toward developing it for practical use.

We are also promoting recycling and responsible disposal activities together with our dealers. Forklifts have a high recycling rate because they are made mainly of steel and iron. However, proper treatment by specialist companies is necessary when disposing of oil used in the hydraulic systems for loading and unloading, and the lead batteries used in electric trucks.

We ensure that dealers carry out the necessary disposals properly when performing maintenance, parts replacement, and trade-ins. As the number of electric forklifts in operation continues to increase, our industry must deal with the issue of proper disposal of spent batteries.

Hybrid Forklift (Concept Model)

TOPICS The Start of a Driving Program for Forklift Operators

Spreading safe driving skills and contributing to safe operation and the elimination of accidents

Toyota Industries has continued to improve the "safety" of forklift. It has developed an original system, "SAS"*1, to contribute to safe operation and improve operating efficiency. This system has been equipped on the Geneo series of forklift and has achieved a level of safety that is top in the world. However, many of the accidents that occur at the worksite are caused by human error. Therefore, it was thought that safety countermeasures are necessary not only from the machinery side, but also that maintaining and improving the safety awareness of the operators is essential as well. In accordance with this, the "TOYOTA Material Handling Customer Center"*2 (located in Ichikawa City, Chiba Prefecture) our general exhibition facility for materials handling equipment, was expanded and a "safe driving program" aimed at re-educating operators about safe driving was started at this facility.

The "safe driving program" is targeted at certified operators and they will learn from real examples of past accidents about the kinds of operations that are dangerous. They will also receive thorough reinstruction about safe driving through special training in how to predict dangerous outcomes before they occur. This re-education for certified operators is a proactive initiative to eliminate accidents and TOYOTA Material Handling Company will develop an appropriate program which utilizes its many years of experience as a forklift manufacturer. This program is planned to start during 2007 and an estimated 1400 operators are expected to attend.

*1 System of Active Stability: This is our proprietary system that provides superior stability during turning and load handling by detecting various pieces of information, such as the angle of the steering wheel and the weight and height of the load being carried, and then controlling them.

*2 TOYOTA Material Handling Customer Center
Location: Ichikawa City, Chiba Prefecture
Start of operation: April 2001 (the new annex was completed in April 2007)
Site area: 5,282 m^2
Main building (4 floors) Floor space 6,273 m^2
New annex (3 floors) Floor space 2,149 m^2

JAT710 Air-Jet Loom

RX240 Ring Spinning Frame

Textile Machinery Business

Thoroughly Predicting the Demands of the Market and Customer Needs

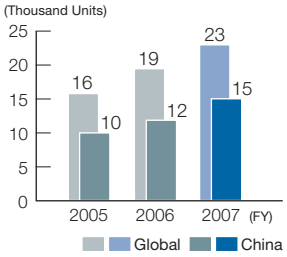
Environmental Responsibilities

- To help curb global warming by reducing the amount of energy consumed during operation
- To reduce noise and vibrations during operation

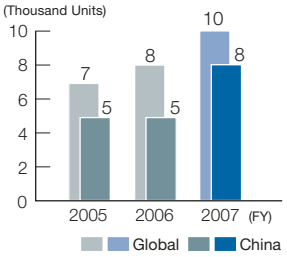
Social Responsibilities

- To maintain and improve the reliability and durability of our products
- To provide after-sales service to enable customers to continue to use our products safely and efficiently

Demands for Air-Jet Loom in the World and China



Sales Units of Toyota Industries' Air-Jet Loom



Responding to Customer Demands — from Product Development to After-Sales Service

The major textile producing countries in recent years are China, India, Pakistan, and Turkey. China, in particular, is the world's largest textile producer in terms of production volume of synthetics, cotton yarn and silk thread, and export volume of clothing materials. The Chinese government has launched a number of industry promotion policies, including increasing the percentage of shuttleless looms from 28% to 40%, and increasing the percentage of comber yarn from 25% to 30% over the next five years starting from 2006.These steps are part of the Chinese government's bid to transform the country from one that produces a large volume of textiles, to a country that is excellent in terms of quality, and which will be held in high regard by advanced markets. China is aiming to become the top textile producing country in the world, in both name and reality.

What supports the textile industry in China is Toyota Industries' air-jet loom, which has the largest global market share. The air-jet loom inserts the weft yarn by air jet, significantly improving the productivity of the weaving process compared to the time required when the weft-inserting process relied on manual labor. In addition, with air-jet looms, premium textiles such as corduroy and cloth for down blankets can be weaved. The air-jet loom however, is machinery that is difficult to manufacture, even in China where remarkable developments in technology have been made.

Four years after its launch in February 2003, Toyota Industries' JAT710 air-jet loom, continues to be extremely popular in China. In addition to the inclusion of a monitoring system that makes it easy for the customer to manage manufacturing procedures, the machinery attains high speed operation of up to 1,250 rpm. A reduction in air consumption of around 20% compared to the previous model also means significant energy savings. It has also contributed to improvements in the working environment, as vibrations have been cut by around 30% compared to the previous model.

TOPICS The China International Textile Machinery Exhibition (CITME)

In October 2006, we participated the 10th China International Textile Machinery Exhibition in Beijing and exhibited JAT710 air-jet loom and RX240 NEW-EST ring spinning frame.

Toyota Industries' exhibition booth in CITME

10SR Fixed-Displacement Compressor (Rotary Valve Type)

6SEU14 Variable-Displacement Compressor

Car Air-Conditioning Compressor Business

In Pursuit of the Ultimate Lightweight Compressor—for Comfort and the Environment

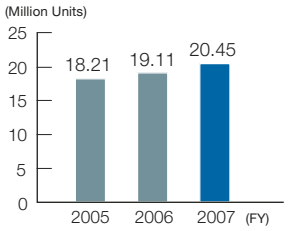
Environmental Responsibilities

- To help curb global warming by reducing the amount of fuel consumed during operation (low power consumption)
- To help curb global warming by preventing leaking of CFC substitutes
- To help curb global warming by conducting research into natural and next generation refrigerants that will replace CFC substitutes and by complying with refrigerant regulations in each country or region

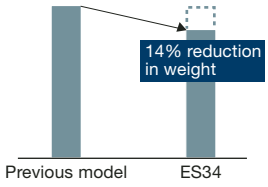
Social Responsibilities

- To maintain and improve the reliability and durability of our products
- To improve driver comfort and fuel efficiency by making compressors more compact and lightweight and reducing noise and vibration

Sales Units of Compressor



Weight to Cooling Capacity Comparison Between the New Electric Compressor ES34 and the Previous Compressor



Innovations in Car Air-Conditioning Compressor Technology

Drivers assume that their car air-conditioning system will not break down, and if the air-conditioning system is not working well, it can reflect badly on the reputation of the car itself. As a specialist in compressors for car air-conditioning systems, it has been Toyota Industries' unswerving goal to ensure that its compressors continue to perform at a high level for as long as possible. Towards this end, we have pursued more power efficient, smaller, and lighter compressors with reduced noise and vibration. The compressor is an indispensable component for maintaining cabin comfort. However, because it uses the engine's power and is located in the front of the vehicle, the more power-efficient, compact, and lightweight it is, and the less noise and vibration it produces, the better.

In terms of environmental impact, the vast majority of CO_2 emissions caused by car air-conditioning compressors over their life cycles are due to fuel consumption while the air-conditioning is operating. Compressors therefore need to be made more power-efficient in order to reduce their fuel consumption.

Although CO_2 emissions during the manufacture of compressors are lower than during their use, the majority of emissions that occur during the manufacturing stage are due to the manufacture of materials, especially aluminum die casts. Consequently, by making the compressors smaller and lighter, we can help to reduce CO_2 emissions from the manufacturing process. Looked at in these terms, making our products more compact and lightweight is our greatest responsibility as a compressor manufacturer both in social and environmental terms.

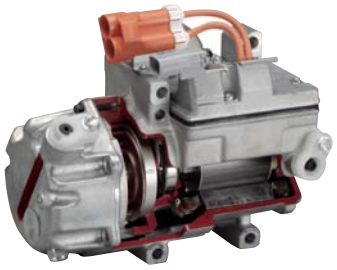
To achieve this, we use computer-aided engineering (CAE) to optimize basic specifications and the dimensions of each part. Specifically, we have reduced excess thickness by optimizing die cast shapes using flow analysis and shape optimization software. Other efforts to reduce the size and weight of our compressors include the development of die casting methods to cut oversize for machining and increasing the number of "process-less" parts.

Another important challenge is to prevent the leakage of CFC substitutes (greenhouse substances), which are currently used as refrigerants. We are also pursuing a range of research and development activities, including research into natural and next generation refrigerants to replace CFC substitutes.

TOPICS New Electric Compressor ES34

In fiscal year 2007, we developed the ES34 inverter-integrated electric compressor for large hybrid vehicles. This model is used for the Lexus LS Hybrid in 2007.

The ES34 meets the high levels of quietness required for the Lexus flagship series and also ensures the same installation capability as belt driven compressors. The weight to cooling capacity has been reduced by 14% compared to the previous model (ES27), thanks to a uniquely designed motor and a compact inverter.



ES34 electric compressor (Hermetic scroll type)

Vitz (Yaris outside Japan) RS

RAV4

Vehicle Business

Striving for Even Higher Standards of Production as an Automaker

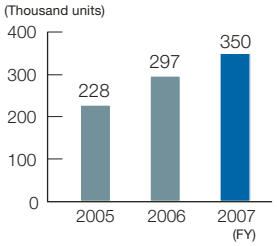
Environmental Responsibilities

- To reduce the environmental impact of production
- To abolish the use of restricted substances

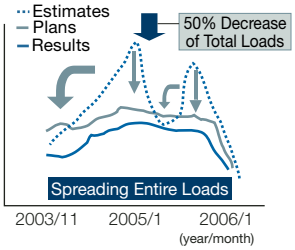
Social Responsibilities

- To ensure safety throughout the production stage and to pursue QCD (Quality, Cost, and Delivery)

Production Units of Vehicles



Production Preparation Loads



Establishing a Business Culture to Improve and Take on New Challenges Continuously

As an experienced manufacturer of compact and midsize vehicles on consignment from Toyota Motor Corporation (TMC), our vehicle business is responsible for realizing quality, low cost, and delivery that satisfies customers. The entire division comes together to strive for improvement and innovation in unison and always strives to realize the most advanced manufacturing.

Our vehicle business has been manufacturing the popular Vitz (Yaris outside Japan) since 1999 and the RAV4 since 2001 under consignment from TMC and continuously produces them at high standards. In that time, there has not been a single case of a serious quality problem in the manufacturing process. In competition with the other automobile manufacturers of the Toyota Group throughout the world, Toyota Industries' vehicle business continues to maintain high standards in terms of quality, low-cost, and delivery. In 2006, we once again earned the Superior Quality Performance Award presented to suppliers by TMC.

In addition, we give top priority to the safety of our employees, (including the growing number of temporary workers) during the production process and continue to pursue thorough safety management systems in the workplace.

Our efficiency in carrying out production preparations that enable us to begin production in a shorter period is also highly renowned. During the full-model change of the new-model Vitz (launched in Japan in February 2005) and the new-model RAV4 (launched in Northern America in December 2005 and in Europe in January 2006), we carried out reform of production preparation processes that went beyond conventional ideas, and attained excellent results.

In the past, during the planning of operation processes and the specifications of facilities, we confirmed our plans by first discussing various issues while referring to drawings, and then making an actual production line. We would then begin to solve any problems that arose. In the recent model changes for the Vitz and RAV4, however, we implemented a production line simulation at the planning and conceptual stages using three-dimensional data (three dimensional images), thereby bringing specification discussions forward in the planning process and increasing efficiency.

Furthermore, using virtual training and virtual manuals (moving manuals) that employ three-dimensional data, we shortened the work training period and enhanced production accuracy. In addition, through project activities that removed every conceivable barrier between departments, such as production engineering, quality assurance, and manufacturing, we created a system where decisions could be made and implemented more quickly.

These improvements reduced the total production preparation load by 50% and spread that load more evenly across the entire production preparation process. Furthermore, at the request of TMC, members of our manufacturing department participated in production preparations for the Yaris in France utilizing their experiences in Japan.

On-site inspections by top management

2AD Diesel Engine
(2.2ℓ; Used in the RAV4)

Engine Business

Responding to Customer Confidence and Striving for Environmental Conservation

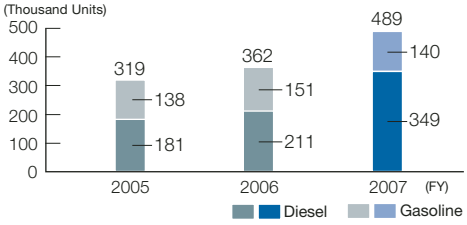
Environmental Responsibilities

- To help curb global warming by conserving energy during operation
- To comply with the environmental regulations of each country and region
- To help curb air pollution from emissions
- To comply with voluntary environmental standards and reduce the amount of waste produced by extending maintenance intervals

Social Responsibilities

- To maintain and improve the reliability and durability of our products
- To improve fuel efficiency
- To comply with the regulations of each country and region

Production Units of Gasoline and Diesel Engines



Reducing the Environmental Impact and Improving the Quality of Clean Diesel Engines

Toyota Industries, as a diesel engine manufacturer in the Toyota Group, aims to improve its technological capabilities and contribute to Toyota Motor Corporation's (TMC) development and production activities, including its overseas operations.

While diesel engines are more fuel-efficient and discharge less CO_2 than gasoline engines, they emit more NOx and particulate matter. In an effort to enhance the environmental performance of our diesel engines, we have implemented post-treatment measures for NOx and particulate matter, but our biggest challenge for the engines themselves is to improve their fuel efficiency and to reduce their CO_2 emissions. In collaboration with TMC, Toyota Industries has realized significant reductions in environmental impact by introducing a number of new technologies that raise the fuel efficiency of diesel engines. The European emission regulations, EURO 4, which came into effect throughout the EU in 2005, require new automobiles to reduce emissions of particulate matter to one tenth of that of conventional automobiles. Our AD diesel engines, which we began producing in March 2005, satisfy the requirements of EURO 4. We are now preparing to satisfy EURO 5, even stricter regulations that are set to be introduced after 2009. In October 2006, we expanded our testing center to boost our development of next generation clean diesel engines.

New Testing Center

Bringing Our Environmentally Friendly Foundry Plants to the World

Our three plants in Japan, Hekinan, Higashichita, and Kyowa plants are charged with the task of adopting newly developed manufacturing technologies ahead of their overseas counterparts and perfecting them in Japanese production processes before transferring them to our overseas production bases. A good example of this is our casting technology for foundry parts that are essential to engine manufacture. The responsibility for the adoption, perfection, and transfer of this technology rests with our Higashichita Plant. In 2006, this plant received a Technology Award from the Japan Foundry Engineering Society for its development of CV foundry production technology for use in cylinder blocks for high-output diesel engines. This technology was applied to the 1VD diesel engine. (See topics)

On the environmental front, we have ensured safety by separating the work zones and equipment, and achieved zero waste, as well as CO_2 emission reductions through the introduction of environmentally friendly and energy-saving equipment and monitoring systems. We have thus succeeded in attaining world-class energy conservation and productivity in the production of die-cast cylinder blocks for AD engines. We have transferred this spirit of environmental protection to our plants in China, Poland, and other countries throughout the world.

TOPICS Production of New Diesel Engine (V8) Starts

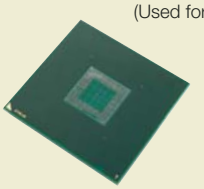
To raise fuel efficiency and reduce CO_2 emissions, we worked to develop a lighter engine. This resulted in Japan's first mass production of a cylinder block made of lightweight and high strength vermicular graphite cast iron (FCV). In December 2006, we started production of the 1VD-FTV diesel engines with a common rail system that uses this FCV cylinder block.

1VD Diesel Engine
(4.5ℓ; Used in the Land Cruiser)

400W DC-AC Inverter
(Used in the Tacoma)

DC-DC Converter for the EPS
(Used for the Lexus LS Hybrid)

Low-Temperature
Polysilicon TFT-LCD Panel



Package Substrate for
Computer MPUs
(FC type)

One-Segment Television
Tuner Module for PCs

Electronics Business

Contributing to the Reduction of Environmental Impact through the Spread of Hybrid Vehicles

Environmental Responsibilities

- To manufacture core components for environmentally friendly hybrid vehicles
- To help curb global warming through energy conservation and power efficiency during use by making our products more compact, light weight, and efficient

Social Responsibilities

- To maintain and improve the reliability and safety of our products
- To make our products more compact, lightweight, efficient, and lower in cost
- To ensure their reliability as an emergency power source in times of natural disaster

Our Quest to Become the Leading Supplier of Power Electronics Devices and Systems for Vehicles

Hybrid vehicles have attracted significant attention from around the world with their superior environmental friendliness. Toyota Industries' electronics business produces DC-DC converters, which are an extremely important component for hybrid vehicles. They convert the high voltage of the main battery to a lower voltage to recharge the auxiliary battery and to supply power to the lights, wipers, horns, and other in-vehicle devices, as well as to operate the electric power steering. By making further improvements to our products so that they are more compact, lightweight, have higher efficiency, and lower costs we believe that we are contributing to the performance and popularization of hybrid vehicles, and hence contributing to a reduction in their environmental impact. Given the direct effect of the performance and function of our products on a vehicle's fuel consumption, costs, and safety, the production of defective components is unacceptable. Toyota Industries has, therefore, been working on activities to improve market quality since 2004. In 2005, we started production of DC-DC converters for EPS (electric power steering) used on the Lexus (hybrid vehicle models), the top-of-the-line luxury brand of Toyota vehicle.

The electronics business also manufactures DC-AC inverters that convert direct current to alternating current. We aim to become the top supplier of power electronics devices, such as converters and inverters, and electric power systems for motor vehicles. We will continue to work on enhancing design, production preparation, and initial management, to ensure a stable supply of high quality products and to improve production efficiency in order to meet anticipated increases in demand.

Electronics for the Telecommunications Industry

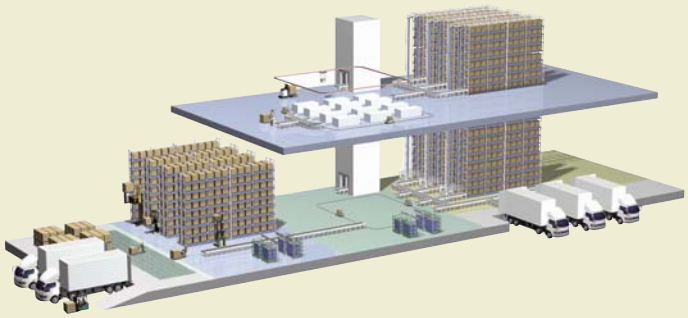
We have also engaged in an another electronics business, not only for automobile manufacturers, but also for manufacturers of personal computers and mobile devices. ST Liquid Crystal Display Corp (STLCD), a joint venture with Sony Corporation, manufactures low-temperature polysilicon TFT-LCD panels, a cutting-edge liquid crystal display, for use in digital still cameras, video cameras, PDAs, and mobile phones used across the globe. TIBC Corporation, a joint venture with Ibiden Co., Ltd. manufactures the latest semiconductor package substrates for use in personal computers, mobile phones, IC cards, etc.

We are also supporting the multimedia capabilities of personal computers, portable devices, and some automobiles with our proprietary digital terrestrial television tuner with encryption and imaging technologies.

TOPICS 22nd International Battery, Hybrid and Fuel Cell Electric Vehicle Symposium & Exposition (EVS22)

The EVS22 is the world's largest international symposium dedicated to electric vehicles, including hybrid and fuel cell electric vehicles, and was held at the Pacifico Yokohama from October 23 through 28. We exhibited DC-DC converter and DC-AC inverter.

Toyota Industries' exhibition booth in EVS22



AL Business

Providing Logistics Solutions Using *Kaizen* (Continuous Improvement) Principles

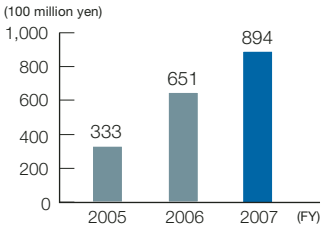
Environmental Responsibilities

- To reduce the impact on the environment through rationalization of logistics

Social Responsibilities

- To provide comprehensive services to help our customers to achieve improved operating results
- To achieve thorough compliance with the relevant laws and regulations

Sales of Logistics Business



Transforming Logistics into a High Value-Added Business

Toyota Industries entered the logistics business in 2002 in response to requests from many of our customers to help them to improve their logistics operations that draw on Toyota's *kaizen* (continuous improvement) principles, which we have cultivated in production operations. Despite launching this new business with *kaizen* as our advantage, improvements made at distribution centers had only a limited effect and did not greatly satisfy our customers. We decided, therefore, to pursue the total optimization of logistics operations from the standpoint of the product's final purchasers, i.e. shoppers. This meant applying *kaizen* across the entire supply chain, from the distribution centers to both the production sources upstream and through to the stores downstream, This is a "market-in" approach to logistics that can supply the required products when they are needed in the quantities that they are needed in accordance with the demands of the market. By applying *kaizen* to the entire logistics supply chain, we believe that we can achieve results in more processes and on a greater scale, thus making more customers happy.

Toyota Industries' AL business does not merely engage in establishing and operating logistics centers for our customers. We assist customers, particularly retailers, with in-store distribution problems, such as on their shelves or in backyard operations, by introducing Toyota Production System (TPS) principles, thus promoting reform from a comprehensive perspective that is not limited just to the distribution centers. In the future, we expect to proactively provide solutions, including the sharing of logistics operations in particular industries and improving the production sites of manufacturers. Our ultimate goal is to achieve "total logistics optimization" that provides comprehensive, integrated solutions for the entire process from the production sites to the checkout counter of retail stores and through to the end customer.

In the five years since launching this business, our customer base has expanded to include many industries, such as the food, daily goods, pharmaceutical products, home improvement, and mail order industries. In the past, logistics and logistics departments tend to be regarded as cost centers that only generated expenses. In order to change the way industries perceive logistics, improvements are needed that will turn logistics operations into profit centers with high levels of added value, as well as the thorough implementation of compliance, which is the premise for such improvements. The pursuit of "total logistics optimization" should enable the reduction of excessive loading and labor, but it is first necessary to increase awareness about regulatory compliance in the industry overall.

Based on this belief, Toyota Industries established the Compliance Group within its Advanced Logistics Division in March 2005. The Compliance Group organizes the massive quantities of laws and regulations according to the relevant industry and operational theme, and prepares and uses checklists so that we can check the status of its compliance with those laws and regulations. Due to taking this initiative with regard to our compliance efforts, we require other logistics companies with which we cooperate to also do the same.

The prime social responsibility of Toyota Industries' Advanced Logistics business is to attempt to achieve total logistics optimization and transform logistics operations into a high value-added business.