

Business Activities

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Materials Handling Equipment

As a market leader with an extensive knowledge of global logistics needs, Toyota Industries provides a range of materials handling equipment, mainly lift trucks, and logistics solutions to customers.

Strengths	<ul style="list-style-type: none"> An extensive logistics-related product lineup both in the fields of materials handling equipment (internal-combustion lift trucks, electric lift trucks, fuel cell (FC) lift trucks, etc.) and materials handling systems (automated storage and retrieval systems, automatic guided vehicle (AVG) systems, automated lift trucks, etc.) High technological capabilities, including those linked to environmental and safety performance In-house development and production of key components, including engines and motors Production know-how that ensures high levels of quality and production efficiency Global, well-developed production, sales and service networks Total support services encompassing IT-based maintenance and inspection as well as operational management No. 1*1 in lift truck unit sales in the world
Opportunities	<ul style="list-style-type: none"> Growing need for products with high energy savings and low environmental impact, driven by a rise in eco-consciousness An increase in logistics volume resulting from such factors as an expansion of e-commerce transactions, accompanied by a rising need for higher logistics efficiencies
Risks	<ul style="list-style-type: none"> Restrained capital investment due to a slowing economy Weaker sales caused by intensifying competition Change in business environment triggered by entry of competitors from different industries

*1: Survey by Toyota Industries Corporation

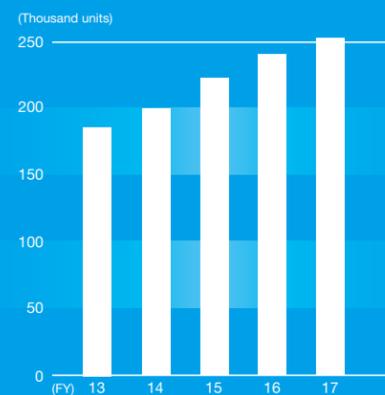
Net Sales (IFRS)

FY2016: ¥1,019.4 billion → FY2017: **¥988.1 billion**

Operating Profit (IFRS)

FY2016: ¥91.7 billion → FY2017: **¥89.4 billion**

Materials Handling Equipment Sales



Business Overview in Fiscal 2017

The materials handling equipment market in 2016 as a whole continued to expand globally due mainly to increases in unit sales in Europe and North America as well as a recovery in China, although unit sales in Japan were on par with the previous year. Amid this operating climate, Toyota Industries strengthened production and sales activities matched to respective markets and rolled out new products such as the sales launch in Japan of the new 1.0- to 3.5-ton electric lift trucks, "gene B." As a result, unit sales of our mainstay lift trucks for fiscal 2017 improved in Europe and Japan, and increased by 14,000 units, or 6%, to a total of 253,000 units over the previous fiscal year. Net sales totaled ¥988.1 billion, a decrease of ¥31.3 billion, or 3%, attributable mainly to the impact of exchange rate fluctuations despite an increase in unit sales. In addition, in order to respond to structural changes in the logistics industry and reinforce its Logistics Solutions Business on a global scale, Toyota Industries acquired two major materials handling systems operators in the United States and the Netherlands in April 2017 and May 2017, respectively.

Toyota Material Handling Group (TMHG)

As a market leader in the materials handling equipment and logistics fields, Toyota Industries assists customers worldwide in attaining greater logistics efficiencies by delivering logistics solutions optimally tailored to their specific needs.

Under the TMHG management structure, we engage in business under the TOYOTA, BT, RAYMOND and CESAB brands. Mutually utilizing the development and sales strengths of each brand, TMHG is promoting business expansion on a global scale.

We basically carry out product development in three regions, namely Japan, the United States and Europe. Based on this structure, we develop and manufacture products in each region, which are matched to the specific local needs and characteristics, and ensure quick product delivery to customers. At the same time, we seek greater product appeal by conducting in-house development and production of key components of lift trucks, including engines and motors.

In addition to supplying such high-quality products, we place special emphasis on sales and services through our extensive networks. On the sales front, we respond to demands of customers who conduct business globally by augmenting our consultation team dedicated to handling cross-border and cross-regional matters. In terms of services, we assign a total of more than 10,000 experienced and knowledgeable service personnel to Japan, North America and Europe, our mainstay markets, to provide finely tailored services to customers. Our service personnel visit customers on a periodic basis and provide maintenance services to prevent troubles from occurring. When a problem does occur, they swiftly make a visit to the customer and promptly take appropriate action.

In the field of logistics solutions, in which we provide systems to solve customers' logistics-related issues, sustainable market growth is expected globally due to the

recent, rapid expansion of the e-commerce market. Amid this environment, our operations extend beyond providing lift trucks and other materials handling equipment. We intend to reinforce our Logistics Solutions Business by leveraging our production and logistics know-how accumulated in manufacturing operations. At the same time, we aim to meticulously respond to customer needs both in terms of hardware and software by making effective use of the stronger value chain that includes sales financing, component production and after-sales services.

Business Activities in Fiscal 2017

With the continued growth of the world's lift truck market in 2016, we carried out model changes of our mainstay lift trucks and worked to expand our lineup, while offering solutions designed to achieve greater logistics efficiencies, enhancing responsiveness to large-order customers and ensuring reliable after-sales services.

In quickly responding to growing environmental consciousness among customers and more strict emissions regulations, we released products such as a high-capacity internal-combustion model that satisfies the latest emissions



Telematics (operational management system)

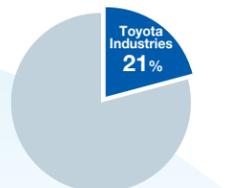
Toyota Material Handling Group Brands

Top: Region Bottom: Brand



Toyota Industries' Global Lift Truck Market Share

(Survey by Toyota Industries Corporation, 2016)



*2: ALOMA stands for Asia, Latin America, Oceania, Middle East and Africa.

standards and an electric model with a longer uptime. The extended lineup of such eco-friendly products enables us to accommodate customers' widely varying usage environments. In addition, to help customers achieve even higher logistics efficiencies, we responded to an increase in number and size of warehouses following an expansion of the e-commerce market and the resulting rise in logistics volume worldwide. We also enhanced the lineup of models equipped with telematics, which allows customers to manage the operational status of lift trucks on tablet devices.

Along with the enhancement of our lift trucks, we are stepping up our efforts to reinforce our capability to offer total solutions for logistics improvements. As part of these efforts, we made Bastian Solutions LLC, a major U.S. materials handling systems integrator*3, a subsidiary in April 2017. Bastian is a turnkey contractor that offers an all-in-one service package from the selection of hardware and software best matched to customers' logistics issues to system development, network building and maintenance. In May 2017, Netherlands-based Vanderlande Industries Holding B.V., a major materials handling systems provider*4, became a subsidiary. Vanderlande is a global market leader in the fields of materials handling systems for retail businesses and parcel/postal services as well as passenger baggage handling systems used in airports. It develops and manufactures materials handling equipment and related software in-house and has a particularly outstanding capability to start up large-scale projects in a short period. By strengthening our ties with these two companies, we intend to offer logistics solutions desired by customers on a global basis. Additionally, in the field of automated storage and retrieval systems and automatic guided vehicle (AGV) systems, we initiated feasibility tests of our experimental container transport AGVs and have been collecting data geared toward achieving efficient storage yard operations and building a safe working environment through full automation.

Meanwhile, Aichi Corporation, which possesses the top brand*5 in the field of aerial work platforms in Japan, witnessed strong demand for equipment renewal by the electric power, telecommunication and railway industries as well as continued demand for social infrastructure work despite a cautious stance toward capital investment by certain companies in the leasing industry. Amid this environment, Aichi introduced new products and augmented its service structure. As a result, sales of aerial work platforms, its mainstay product, expanded, and Aichi posted sales exceeding the previous fiscal year's level.



Aichi Corporation's aerial work platform

*3: A form of business upon customer request that conducts logistics systems engineering and delivers a total solution package incorporating equipment mainly procured from outside sources

*4: A form of business to provide solutions to customer logistics issues through a logistics system that includes both equipment and software
*5: Survey by Aichi Corporation

Business Activities by Regional Market

Japanese Market

With the Japanese lift truck market showing steady growth in 2016, Toyota Industries released eco-conscious products, undertook activities to expand sales of existing models and enhanced responsiveness to large-order customers. As a result, unit sales in fiscal 2017 increased 4% year-on-year to 42,000 units. Unit sales of Toyota Industries' lift trucks maintained the top position*6 in calendar 2016 for the 51st consecutive year.

In the field of lift trucks, we released a high-capacity internal-combustion model that clears the most current emissions standards. With the release of this product, we became the first manufacturer in the industry*7 to satisfy the latest 2014 standards in all models of our diesel-powered internal-combustion lift trucks. Regarding electric lift trucks, for which needs have been expanding in line with growing environmental consciousness among customers and an increasing number of larger warehouses, we initiated sales of the gene B, a new series of 1.0- to 3.5-ton electric lift trucks, in November 2016. In addition to operator comfort and safety, which have already gained high customer recognition in the previous model, the gene B offers greater performance and functionality, such as a longer uptime and higher water resistance. We also offer TOYOTA T_Site*8, an operational management system based on Internet of Things (IoT) technology, as an option to assist customers in achieving greater logistics efficiencies. Moreover, we launched sales of electric lift trucks equipped with lithium-ion batteries and FC lift trucks, thereby responding to customers' growing environmental consciousness and diversifying needs.



New gene B electric lift truck (released in November 2016)

In the field of logistics solutions, we are working to expand sales by leveraging our comprehensive strengths. We received an order from a leading delivery company for a total logistics support solution, covering everything from the establishment and operation of a distribution center to its continued improvements. Our solution meticulously meets the specific needs of the customer, such as a large volume shipment in a short time, and offers an IoT-based feature that combines smartphones and transmitters to monitor the work progress in real time. After the operation launch of the distribution center, we have been conducting follow-up activities to propose continued efficiency improvements and helping the customer achieve better logistics operations.

In September 2016, we participated in Logis-Tech Tokyo 2016. Under the concept of "building the future of logistics together with our customers," we exhibited our extensive product range, including internal-combustion lift trucks, electric lift trucks and FC lift trucks. Utilizing the largest-ever exhibition space, we also operated parts of a distribution center and an automobile production line to demonstrate our logistics solutions in an easy-to-understand manner.

*6: Calculated by Toyota Industries Corporation, using data published by the Japan Industrial Vehicles Association

*7: Survey by Toyota Industries Corporation

*8: Telematics service (operational management system) for lift trucks, sales of which were launched on March 29, 2016



Logis-Tech Tokyo 2016

North American Market

In the expanding North American lift truck market, Toyota Industries remained the market share leader in 2016*9 with combined unit sales of TOYOTA and RAYMOND brands of approximately 83,000 units, down 2% from the previous fiscal year.

Toyota expanded its product offering with the launch of a high-capacity internal-combustion lift truck to meet the needs of customers handling heavy materials such as ports and lumber mills. Raymond introduced various products including a counterbalanced electric lift truck with enhanced performance and ergonomics, such as visibility and boarding, while adding an automated model tow tractor.

Toyota and Raymond work to enhance logistics solutions such as fleet management systems which



High-capacity internal-combustion lift truck

contribute to customer lift truck management and efficient operations. Through iWAREHOUSE Evolution, Raymond integrates lift truck and operator data providing scalable solutions for measurable warehouse improvement. Toyota also introduced a similar system under the name of T-Matics, which helps customers maximize their fleet utilization, control costs and optimize operations.



iWAREHOUSE Evolution

Toyota and Raymond will continue to develop products leveraging both brands' strengths, while further enhancing materials handling systems and logistics solutions to contribute to customers' efficient logistics. Through these initiatives, we aim to further solidify our leadership position.

*9: Survey by Crist Information & Research, LLC, 2016

European Market

The European lift truck market expanded in 2016, with strong growth in most major markets (except the U.K.) and a recovery in the Russian market. Amid this condition, Toyota Industries posted sales of 91,000 units, up 23% from the previous fiscal year, as a result of an enhanced product

lineup and proactive sales promotion activities.

Toyota Industries launched various new models in Europe including a counterbalanced internal-combustion lift truck with improved environmental performance, electric stacker truck featuring enhanced agility and usability, as well as a new AGV. In November 2016, Toyota Industries acquired a majority stake in SIMAI S.p.A., an Italian leading manufacturer of various industrial vehicles with strength in producing tow tractors for outside usage. With SIMAI, we further improved our capability to meet diverse customer needs.



BT Staxio stacker-type electric lift truck

In the area of sales activities, Toyota Industries promotes sales expansion activities leveraging our extensive networks and support structures, broad range of products, and logistics solutions systems and know-how. Each sales and marketing company in Europe actively organized and participated in sales promotional events in the market, aiming to increase contacts with customers while demonstrating our total logistics capability. In June 2016, we exhibited such environmentally superior products as an FC lift truck, electric lift truck equipped with a lithium-ion battery and internal-combustion lift truck with improved fuel efficiency at CeMAT 2016 held in Germany. In addition, we presented our operational management system that utilizes information and communications technologies as well as our lift truck automation technology for more efficient logistics



Toyota Industries booth at CeMAT 2016

operations. Through these efforts, a major French cold chain logistics supplier reached a fleet management agreement with Toyota Industries to manage their lift trucks throughout Europe in high recognition of our products and services.

We will continue developing products that meet diverse needs of customers, while further improving our proposal capability, thereby contributing to the efficiency of our customers' logistics operations.

ALOMA*10 and Chinese Markets

Toyota Industries covers the ALOMA markets of Asia, Latin America, Oceania, the Middle East and Africa as well as the Chinese market. We are serving these markets with a lineup consisting of TOYOTA, BT and RAYMOND brands.

In 2016, while the ALOMA market was weak, the Chinese market expanded. Amid this market condition, although Toyota Industries enhanced its sales structure and after-sales service capability, unit sales declined 6% from the previous fiscal year to 37,000 units in fiscal 2017.

In China, needs for internal-combustion lift trucks increased amid robust investment in the public sector while demand for electric lift trucks was strong mainly at distribution centers for retail industries. In this business environment, we responded to diversifying customer needs by enhancing sales and after-sales service networks, promoting sales of warehouse trucks and engaging in other activities. We will strive to meet needs for wider price range in collaboration with Tailift Co., Ltd., a consolidated subsidiary.

The lift truck market in India was strong thanks to its robust economic environment. New product launches as well as various sales expansion and service activities led to strong business performance. We will aim to further expand sales by accurately identifying specific customer needs by business type and engaging in finely tuned marketing approaches.

Toyota Industries will continue to enhance sales networks and structures in ALOMA and Chinese markets, while strengthening marketing capabilities by setting up regional offices in major countries along with other efforts, and pursue further sales expansion. In addition, we will further bolster relationships with distributors in each country through such efforts as distributor conferences and work with distributors to offer products and services that satisfy customer needs.

*10: ALOMA is a Toyota Industries term for Asia, Latin America, Oceania, Middle East and Africa.



Automobile

In the fields ranging from vehicle assembly to engines, car air-conditioning compressors and car electronics, Toyota Industries continues to meet the expectations and trust of its customers.

Strengths

- Highest-level production efficiency and quality among all Toyota-affiliated automobile body manufacturers (Vehicle assembly)
- Know-how on the development and production of diesel engines and turbo chargers (Engine)
- Ability to develop excellent products with greater fuel efficiency, quieter operation, compactness, weight reduction and easiness to mount on vehicles (Car air-conditioning compressor)
- Global top-share* products for use in a full range of vehicles, from internal-combustion vehicles to hybrid vehicles (HV), plug-in hybrid vehicles (PHV), electric vehicles (EV) and fuel cell vehicles (FCV) (Car air-conditioning compressor)
- Global production structure based on the concept of local production and local consumption (Car air-conditioning compressor)
- Higher technological capabilities cultivated through the development and production of products for Toyota Motor Corporation (TMC) for external sales and for internal use (Car electronics)
- Development, production and top-level quality of electronic parts and devices for electric-powered vehicles (Car electronics)

* Survey by Toyota Industries Corporation

Opportunities

- Increasing needs for energy-saving products due to stricter environmental regulations and growing environmental consciousness
- Sales expansion of energy-saving products in line with growth of the automobile market

Risks

- Shrinking of the automobile market caused by economic slowdown
- Customers becoming reluctant to buy energy-saving products following less stringent environmental regulations
- A drop in product competitiveness due to the yen's appreciation or a rise in raw material costs



Net Sales (IFRS)

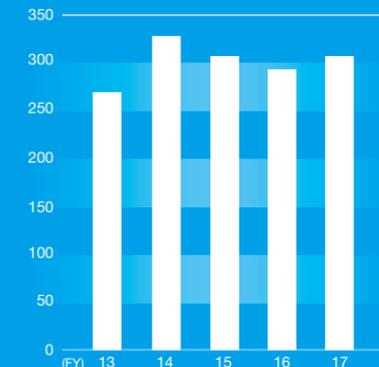
FY2016: ¥556.5 billion → FY2017: ¥562.6 billion

Operating Profit (IFRS)

FY2016: ¥32.7 billion → FY2017: ¥24.9 billion

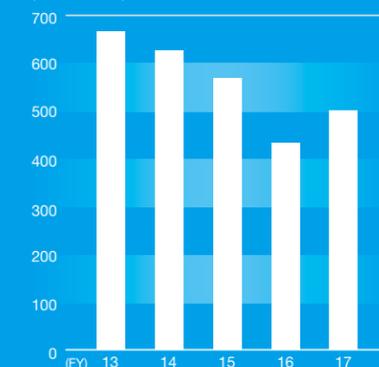
Vehicle Sales

(Thousand units)



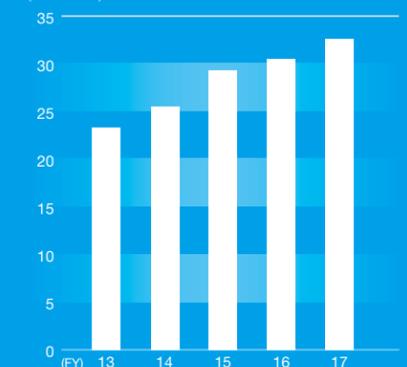
Engine Sales

(Thousand units)



Compressor Sales

(Million units)



Vehicle

Business Overview in Fiscal 2017

The automobile market expanded on a global basis, with Europe, North America and Japan registering strong sales among developed countries and China posting an increase among emerging countries.

In fiscal 2017, unit sales of the Vitz (Yaris outside Japan) and the RAV4 increased by 14,000 units, or 5%, over the previous fiscal year to 307,000 units. Various factors, including the addition of hybrid versions of the Vitz following the RAV4, served to push up net sales by ¥3.0 billion, or 4%, to ¥73.1 billion.

Highest-Level SEQCD to Contribute to Production of Attractive Toyota Cars

Toyota Industries' comprehensive strengths lie in the highest level of safety, quality, cost and delivery among all Toyota-affiliated automobile body manufacturers. In 2016, we received the Special Award from TMC in recognition of earning the Toyota Quality Control Award program for five consecutive years.

In January 2017, following a minor model change of the Vitz, we initiated production of a hybrid model of the Vitz in addition to the conventional internal-combustion models. We are further strengthening our already superior level of safety, the environment, quality, cost and delivery (SEQCD). We also are working to leverage our ability to quickly start up production and a flexible structure in terms of vehicle models and production volume to contribute to production in Japan of Toyota vehicles.

Development and Production of Plastic Glazing

Toyota Industries' plastic glazing has been used in the panoramic roof of TMC's hybrid vehicle Prius α (Prius + in Europe and Prius v in North America) and in rear and quarter windows of the 86 GRMN, a limited-edition model released by TMC.

Our plastic glazing retains the beautiful surface quality typical of a glass roof yet is approximately 40%* lighter than its glass counterpart, improving vehicle fuel efficiency, which has become increasingly important, and thus contributing to the reduction of CO₂ emissions.

Toyota Industries will continue to develop attractive new products that leverage the distinctive characteristics of plastic glazing.

* Survey by Toyota Industries Corporation

"Our Vitz and RAV4" Initiative for Enhancing Appeal of the Two Car Models

As the sole producer of the Vitz in Japan and with the aim of turning the vehicle into a long-selling series, Toyota Industries collaborates with TMC and its dealers to make various suggestions under the banner "Taking the Lead in Making Our Cars More Attractive." In 2016, we co-produced the Vitz Shine, a regionally limited premium model. Similarly, to boost the appeal of the RAV4, we plan and develop special-edition vehicles that directly reflect the voice of our customers. Through these endeavors, we seek ways to create more appealing and satisfying vehicles for customers worldwide.

At the same time, we also undertake activities to expand our customer base by enhancing the appeal of the Vitz through our support to motorsports events.



Vitz at the opening competition of the 2017 Japanese Rally Competition Association

TOPIC

The Nagakusa Plant in Aichi Prefecture, currently engaging in production of the Vitz and RAV4, marked a milestone reaching cumulative production of 10 million automobiles in October 2016, after 49 years and five months since its commencement of operation as a dedicated vehicle assembly plant in May 1967. Commemorating its 50th anniversary in 2017, the Nagakusa Plant intends to make a further leap forward by extending its business lines from production of quality automobiles to include product planning and development.



Ceremony to commemorate cumulative production of 10 million automobiles

Engine

Business Overview in Fiscal 2017

Despite a decline in sales of KD diesel engines, an increase in sales of GD diesel engines pushed up unit sales in fiscal 2017 by 67,000, or 15%, over the previous fiscal year to 501,000 units. Net sales increased by ¥11.4 billion, or 15% year-on-year, to ¥90.0 billion.

Toyota Industries' Diesel Engines Highly Acclaimed by Customers Worldwide

Toyota Industries' diesel engines, mounted in a variety of Toyota vehicles sold around the world, have gained high market recognition for their clean emissions, fuel efficiency and high performance. The V-type 8-cylinder VD diesel engine is installed in the Land Cruiser for markets outside Japan, including Australia, Russia and the Middle East. As a successor model of KD diesel engines, we commenced production of GD diesel engines in June 2015. These engines, which are installed in TMC's Land Cruiser Prado and other vehicles, are equipped with a turbocharger, for which we participated in the development and started production in-house, and boast significantly higher performance.

An additional production line went into operation in January 2016 at our Hekinan Plant in Aichi Prefecture to manufacture the turbocharger to be mounted on GD diesel engines. In March, Toyota Industries Engine India Pvt. Ltd. (TIEI), a consolidated subsidiary in India engaging in the manufacture of engines, also initiated production of GD diesel engines. Going forward, we will seek to increase the ratio of locally procured parts and further improve productivity at this production base in India.



GD diesel engine



Turbocharger (mounted on GD diesel engines)



Ceremony to commemorate the opening of TIEI

Developing Competitive Diesel and Gas/Gasoline Engines in Non-Automotive Fields

Toyota Industries' engines are highly renowned for their excellent environmental performance in non-automotive fields as well. These engines are used for a wide variety of applications, including our lift trucks, and adopted by GHP*1 manufacturers in Japan and CHP*2 manufacturers worldwide.

We expanded our lineup of industrial engines with the addition of the Toyota 1KD industrial diesel engine, which is equipped with a turbocharger developed in-house, and the Toyota 1FS gas/gasoline engine in March 2013, followed in December 2013 by the Toyota 1ZS industrial diesel engine also equipped with a turbocharger developed in-house.

These three engines offer downsized displacement compared with conventional models with equivalent output, which results in higher fuel efficiency, cleaner emissions and a reduction in size.

*1: Short for gas heat pump; air conditioner driven by a gas engine
*2: Short for combined heat and power; co-generation system

For the Creation of Better Engines

Fuel efficiency and emissions standards are becoming more and more strict, as called for in the twenty-first session of the Conference of the Parties (COP21) held in Paris, France, in November 2015 and as evidenced by India imposing increasingly severe regulations on diesel engines. On the other hand, we expect a continued and constant level of demand for powerful diesel-engine automobiles for use as commercial vehicles and sports utility vehicles (SUV) mainly in emerging countries. Under these circumstances, even before such trends toward more strict standards became prevalent, Toyota Industries has been carrying out development of next-generation automobile engines that can clear Euro 6 and other stringent emission standards, as well as engines for materials handling equipment and general purposes featuring greater fuel efficiency and lower costs. While gradually consolidating diesel engine development and production functions from TMC into the operations of Toyota Industries, we will further improve our development efficiency and reduce the time required for development in seeking to develop and manufacture more competitive diesel engines with higher environmental performance.

For our gas/gasoline engines, we will strive to develop and manufacture products with higher efficiency and greater fuel economy to bring satisfaction to customers worldwide.

Car Air-Conditioning Compressor

Business Overview in Fiscal 2017

In fiscal 2017, unit sales of car air-conditioning compressors rose 2.18 million units, or 7%, over the previous fiscal year to 32.55 million units as we posted an increase in sales globally, including Japan, Europe, China and North America. However, affected by exchange rate fluctuations, net sales dropped ¥8.2 billion, or 2%, from the previous fiscal year to ¥334.7 billion.

Development Efforts Based on 3Es (Energy, Environmental Protection and Ecological Thinking)

More stringent fuel efficiency standards have been enforced in the United States, Europe, Japan and China, requiring automobiles to provide extremely high fuel efficiency performance.

Against this backdrop, in the field of car air-conditioning compressors to be mounted in internal-combustion vehicles, needs for greater fuel efficiency have been growing in both fixed-displacement and variable-displacement type products. In the United States, in particular, there was an accelerated shift from fixed-displacement type products to more fuel efficient variable-displacement type products.

Our variable-displacement type compressors, which are renowned for high fuel efficiency and reduced weight, have been adopted by the world's leading automakers, including TMC, Daimler AG, General Motors Company (GM), Volkswagen AG and Hyundai Motor Company.

In the United States, our SES series became the first compressor to be approved under the country's off-cycle credits program. The program gives off-cycle credits to technologies that can effectively improve fuel efficiency under its emissions regulations.



6SES14 compressor (variable-displacement type)

We are also focusing on an optimum balance between performance and prices of fixed-displacement type products targeting emerging countries while concentrating on development of a variable-displacement type compressor with considerably greater fuel efficiency.

In the field of fixed-displacement type compressors, we newly developed the SVE series vane type compressor for compact vehicles. We successfully improved air-conditioning capability by 20% without increasing its size and made it the lightest among other compressors in the same class. It has been adopted in Suzuki Motor Corporation's new Swift. We aim to promote unit sales by increasing the number of models fitted with the compressor.



SVE08 (fixed-displacement, vane type)

Since initially being installed in the second-generation Prius, our electric compressors for HVs and EVs have been mounted in all of TMC's HVs from the fourth-generation Prius to the LS600h.

To offer attractive products to the growing number of automakers worldwide now actively engaged in the development of HVs, we developed the ESB series, which is even more compact, fuel efficient and lighter weight. The ESBG27 compressor mounted in the new Prius Plug-in Hybrid uses a Gas Injection Cycle to improve its heating capability in cold regions by roughly 30%* and help the vehicle extend its electric motor driving range. It is the first time in the world that a compressor with the Gas Injection Cycle has been adopted in a mass-produced car. (See Special Feature 1 on pages 24-27 for details.)

Besides TMC, Ford Motor Company, Renault S.A.S., Honda Motor Co., Ltd., Nissan Motor Co., Ltd. and other automakers, which are already using our electric compressors in their respective HVs, PHVs and EVs, we will continue to ramp up our efforts to expand sales to other automakers.

* Compared with conventional heat pump heating system under -10°C environment. Survey by Toyota Industries Corporation and DENSO Corporation



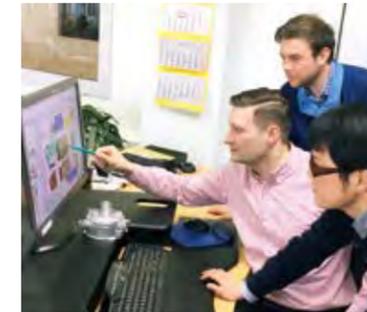
ESBG27 compressor (electric type)

Augmenting Technical Support Capabilities

We station our sales engineers in the United States, Germany, Italy and China and provide technical support locally, promoting sales expansion and activities to prevent

quality issues from occurring.

In fiscal 2014, two of our consolidated subsidiaries, namely, Michigan Automotive Compressor, Inc. (MACI) in the United States and TD Deutsche Klimakompressor GmbH (TDDK) in Germany, began to conduct design operations locally. A reduction in development lead time resulting from our local design operations has been received favorably by automakers. We plan to continue this initiative in the future.



Local design operations at TDDK

Through these and similar initiatives, we aim to improve the quality of our compressors through faster evaluation processes and better evaluation techniques while preventing external leaks of our development and evaluation know-how.

Enhancing Development Capability by Creating Evaluation Facilities In-House

We are creating more evaluation facilities in-house for achieving even higher superiority in terms of technology development.

Our mother plants in Japan have been reinforcing their evaluation functions by designing and creating evaluation facilities in-house that simulate more realistic vehicle environments. With the goal of executing swift and detailed evaluations jointly with local automakers, we are globalizing our evaluation functions in a phased manner.

Establishing Optimum Global Production and Supply Structures

To respond to growing demand for variable-displacement type compressors triggered by the enforcement of more stringent fuel efficiency standards, we are proceeding with augmentation of corresponding production capacities and commenced local production of key functional parts at our production bases in North America. In Europe, ASEAN countries and China as well, we are expanding production capacities and increasing the ratio of locally procured parts to accommodate growing demand for car air-conditioning compressors.

TOPIC

TDDK initiated operation as a production base outside Japan for Toyota Industries' car air-conditioning compressors for Europe in April 2000, and its cumulative production reached a milestone of 40 million units in June 2016. Currently, TDDK mainly manufactures variable-displacement type products with high efficiency and fuel economy as well as low environmental impact. In March 2015, TDDK moved ahead of its competitors and obtained ISO 50001 certification, an energy management system standard that has been drawing much attention recently. By conducting energy reduction activities at a higher level, TDDK is contributing to the curbing of global warming.



TDDK's plant

Worldwide Bases of Car Air-Conditioning Compressors (As of March 31, 2017)



Consolidated production bases Licensed manufacturers Technical service stations

Toyota Industries' car air-conditioning compressors are widely adopted by automakers around the world, garnering the No. 1* position in global sales.

* Survey by Toyota Industries Corporation

Car Electronics

Business Overview in Fiscal 2017

Net sales of electronics products increased, mainly supported by sales of DC-DC converters, DC-AC inverters and other devices to TMC.

Performance and Significant Role in Electric-Powered Vehicle Field

Toyota Industries develops and produces electronic components and devices for electric-powered vehicles, including HVs, PHVs, EVs and FCVs. In addition to TMC, we are promoting new business to other automakers across the world.

Auxiliary Power Source Devices

An on-board charger converts AC voltage from the power grid into DC voltage of high-voltage batteries in vehicles.

We developed an on-board charger for the new Prius Plug-in Hybrid. The product realized better battery charging output that is 1.7 times higher than that of conventional models and has improved charging efficiency thanks to our proprietary control system. By integrating a charging system electronic control unit (ECU) and by increasing cooling performance, we succeeded in reducing its size by 50%, thereby making it easier to mount on a vehicle.

A DC-DC converter converts the high voltage of HV batteries into a lower voltage level to supply power to standard electrical devices such as ECUs, lights and wipers.

For the fourth-generation Prius, by developing the world's first thick copper substrate with excellent heat dissipation capability and highly integrated components on the circuit board, we reduced the volume by 50% and weight by 60% compared with the product used in the third-generation Prius.

Backed by our technologies acquired in the field of DC-DC converters for HVs, in 2013 we successfully developed and started sales of a DC-DC converter for start-stop systems, which can compensate for a voltage drop at the time of engine restart, and have been promoting its sales to automakers.

A DC-AC inverter is equipped to use home electric appliances in a vehicle and has drawn a great deal of public recognition for its use as an emergency power source after the Great East Japan Earthquake. Since commencing production in 1995, we have achieved total production of 20 million units in March 2017.

In addition, we develop and produce inverters for electric car air-conditioning compressors for HVs and other electric-powered vehicles. These inverters have been contributing to increasing the product appeal of our car air-conditioning compressors.

We have also leveraged our inverter technologies related to electric car air-conditioning compressors and successfully developed a highly efficient, low-cost inverter for hydrogen circulation pumps. The new inverter has been adopted in TMC's MIRAI FCV.

Core Components for Drive Systems

The new fourth-generation Prius offers a four-wheel drive (4WD) model for the first time in the series and is fitted with our rear inverter for 4WD. This product converts the DC voltage of HV batteries to AC voltage and feeds power to the 4WD rear motor. The adoption of a forced air-cooling system eliminates the need to install cooling water piping, thereby providing greater ease in mounting the inverter on vehicles. The inverter also features quieter operation as it is mounted near the cargo space.



4WD rear inverter mounted in the new Prius

Charging Infrastructure

Toyota Industries sells public-use charging stands and home-use charging units for PHVs and EVs, which have been jointly developed with Nitto Kogyo Corporation. Cumulative unit sales reached 13,000 units in March 2017.

Our new public-use charging stand, which was released in October 2015, consists of one main control stand that offers charging functionality as well as such features as communication, IC card-based user authentication and billing, and low-cost, charging-only sub-stands. One main control stand can control up to 10 sub-stands, thereby reducing the initial costs of installing multiple charging stands. We are positioning this new charging stand as a standard model of the charging infrastructure.



Charging stand for PHVs and EVs

Accelerating Development Activities to Contribute to a Low-Carbon Society

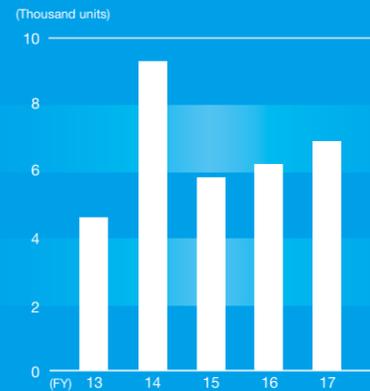
Electrification is expected to become more widespread with the enforcement of more stringent fuel efficiency standards by many countries and higher environmental consciousness among customers. Targeting the high-growth, electric-powered vehicle market not only in the field of automobiles but also in the field of materials handling equipment and other non-automotive products, we will accelerate our development efforts to enhance the appeal of our products in the fields of HVs, PHVs, EVs and FCVs and will also work to augment our production structure with the aim of contributing to a low-carbon society.

Textile Machinery

Carrying on the philosophy of founder Sakichi Toyoda, which reflects his strong commitment to manufacturing, Toyota Industries responds to a broad range of needs with its extensive product lineup, from air-jet looms, for which we enjoy the world-leading market share*1 in unit sales, to ring spinning frames and roving frames.

*1: Survey by Toyota Industries Corporation

Air-Jet Loom Sales



Strengths

- Global, well-developed service network
- Ability to develop products that excel in high-speed operations, reliability and energy-saving performance
- Broad product lineup both in the spinning and weaving machinery fields
- World-leading market share in unit sales of air-jet looms

Opportunities

- A rise in textile demand in line with an increase in the world population
- Increasing need for high-quality and highly functional yarn and textile products, following the economic growth of emerging countries

Risks

- Changes in each government's policies concerning promotion of the country's textile industry
- Economic slowdown
- A decline in capital investment due to a drop in raw cotton and yarn prices
- Weaker sales due to intensifying competition

Net Sales (IFRS)

FY2016

¥65.6 billion

FY2017

¥66.2 billion

Operating Profit (IFRS)

FY2016

¥6.5 billion

FY2017

¥6.8 billion

Business Overview in Fiscal 2017

The textile machinery market was on a recovery path mainly in the primary markets of China and other emerging countries in Asia. While sales of spinning machinery declined, sales of weaving machinery expanded with unit sales of air-jet looms increasing 700 units, or 10% year-on-year, to 6,900 units. As a result, net sales were on par with the previous fiscal year at ¥66.2 billion.

Model Change of Water-Jet Loom



LWT810

In October 2016, Toyota Industries participated in ITMA ASIA + CITME 2016, an international textile machinery exhibition held in Shanghai, China, and launched sales of the LWT810 water-jet loom.

This product utilizes the upgraded version of our

beating-up*2 technology, which we have accumulated in the past, and enables more stable production of complex textiles. Customer reviews have been favorable for its greater ease of use through a new function panel and less space requirement realized by adopting a new SC inverter.

*2: A process in weaving of pushing the last weft yarn inserted through the warp yarn to the fell to keep it securely in place

Participation in India ITME 2016

Toyota Industries participated in India International Textile Machinery Exhibition (India ITME) 2016 held in Mumbai, India, in December 2016, jointly with Kirloskar Toyota Textile Machinery Pvt. Ltd. (KTTM), a consolidated subsidiary producing textile machinery in India. Toyota Industries exhibited the JAT810 air-jet loom to showcase its wide electronic shedding device that allows the weaving of a broader range of fabrics and demonstrated the weaving of denim. KTTM displayed the RX300 high-speed ring spinning

frame and demonstrated the spinning of mosaic yarn*3. The exhibition provided an opportunity to appeal the Toyota Industries Group's broad range of technologies.

*3: A special yarn newly developed by Toyota Industries, which is made by alternating or mixing two rovings in different colors, offering a considerable degree of freedom in color and design choices



KTTM booth



Toyota Industries booth

Uster's Product Winning a Red Dot Award

Uster Technologies AG, a Swiss-based consolidated subsidiary producing yarn quality measurement instruments, received a Red Dot Award*4 in the product design category for its yarn evenness tester, USTER® TESTER 6. The award recognized the product's excellent functionality and beautiful exterior design.

*4: One of the world's largest design competition hosted by Design Zentrum Nordrhein Westfalen of Germany



USTER® TESTER 6