

Environmentally Friendly Products

■ Automobile ■

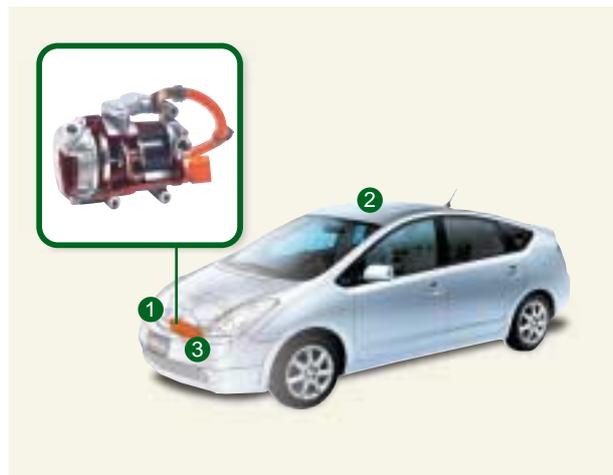
Toyota Industries develops and manufactures engines and car air-conditioning compressors, both major components of automobiles. The company's product development efforts are aimed at addressing the increasingly strict environment regulations placed on automobiles, including the need for improved fuel efficiency, cleaner exhaust gas emissions, and elimination of fluorinated gases.

■ ES18 Electric Compressor ①

The ES18 electric compressor was developed for the air-conditioning system of the latest version of the Prius, and is the world's first mass-produced electric compressor. By using a battery power source, the compressor continues to provide cooling even when the Prius engine is shut off, while idling or when stationary. This feature contributes to the overall comfort of the Prius vehicle. The new compressor is also smaller, lighter, contributes more efficiently to improved fuel efficiency, and produces less vibration.

■ Upper Body for New Toyota Prius ②

The latest version of the Toyota Prius hybrid vehicle, manufactured and sold by Toyota Motors Corporation, utilizes a new upper body developed by Toyota Industries. The upper body is significantly lighter than its predecessor and contributes to improved fuel efficiency, while also meeting the strictest collision safety standards in numerous countries.



■ Electronics ■

Toyota Industries develops electronic products that meet the increasingly diversified needs of the automobile industry, such as DC-DC converters. These products are based on the company's power electronics technology developed for its battery-powered forklift trucks. Toyota Industries is also working on the development of a low-power LCD.

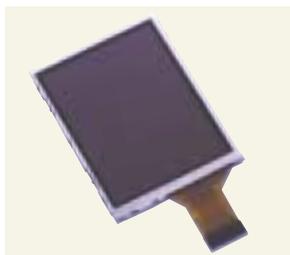
■ Strip Light with Organic Light Emitting Diode (OLED)* Device Technology

In collaboration with the Japan Broadcasting Corporation (NHK), Toyota Industries developed a strip light fixture for film stages that use OLED devices. Compared with conventional fluorescent lighting fixtures, the strip lights consume less power, while eliminating heat generated from the light source.



■ LCD

ST Liquid Crystal Display Corp., an affiliate of Toyota Industries, manufactures high quality, high resolution LCDs for use in video camcorders and other applications. These products offer high reliability and low power consumption.



■ DC-DC Converter (See ③ in illustration above)

Toyota Industries' DC-DC converter, installed in the Prius as a key device of the hybrid car, converts the high voltage current of the main battery to a lower DC current that is supplied to the electric control unit (ECU), stereo, car navigation systems, and other in-car devices.



■ 1.5 kW DC-AC Inverter for Hybrid Vehicles

The DC-AC inverter changes direct current (DC) from the special battery of a hybrid car into an alternating current (AC), allowing for a wider range of high-consumption electrical appliances, such as microwave ovens, to be used in the vehicles.



*OLED: a material that produces direct light emission by impressing a voltage on a thin film comprised of emissive organic compounds, and which has been inserted between two electrodes. OLED displays are expected to lead the way for the next generation of displays.

■ Industrial Equipment ■

Toyota Industries develops and manufactures a full line of forklift trucks ranging in capacity from 0.5 to more than 40 tons, as well as other industrial vehicles such as wheel loaders and tow tractors. The company places an emphasis on improving worker safety and the environmental performance of its industrial vehicles, and is focused on developing engines that produce cleaner emissions and on improving the performance of its electric vehicles.

■ 14Z Engine for 5 to 8-Ton-Capacity Forklift Trucks

Toyota Industries recently introduced a new version of its 14Z direct injection diesel engine used in the company's 5 to 8-ton-capacity forklift trucks. The revised engine meets 2003 exhaust gas regulations for special vehicles in Japan and generates lower NOx, hydrocarbon, and particulate matter emissions.



■ 4SDT

Toyota Industries recently updated its line of 4SDTs, which are typically used for jobs such as snow removal and crop transport. The new products meet the exhaust gas regulations and new noise standards issued by Japan's Ministry of Land, Infrastructure and Transport for construction equipment.



■ Vector C15 Very Narrow Aisle Truck (BT Industries)

In 2003, BT Industries, a subsidiary of Toyota Industries that develops and manufactures warehouse trucks, released a new version of its BT Vector C15 truck model. The updated model features several environmentally friendly enhancements, including an energy saving AC motor and an ultra-efficient energy regeneration system*. The company is also intent on reducing the amount of substances of concern used in the production of the vehicle. For example, capacitors containing hexavalent chromium and cadmium have been phased out from production.



■ Textile Machinery ■

Toyota Industries develops and manufactures weaving and spinning machinery for the textile industry. The company is focusing its environmental efforts on actively incorporating control technology, communication technology, and mechatronics in its textile machinery in order to reduce energy consumption, noise, and vibration in its products.

■ Roving Frame

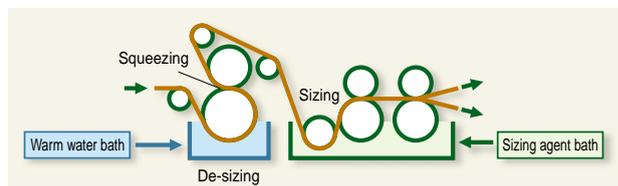
Toyota Industries has reduced its use of lead in its roving frame machinery. Lead was previously used to perform balance adjustments for the high-speed rotating flyer system in roving frame machinery, but is steadily being replaced with a substitute material.



■ Pre-wetting System (Kawamoto System Corporation)

Kawamoto System Corporation, a subsidiary of Toyota Industries, has developed a new sizing machine that offers improved yarn strength and a pre-wetting system for spun yarn. Sizing agent consumption has been reduced by up to 40% by switching to a process in which sizing is performed after exposing the yarn to a warm water bath, which leads to greater uniformity in the sizing agent application. This also reduces the amount of sizing agent removed after weaving, which results in less industrial waste.

■ New Sizing Machine



*The regeneration system efficiently stores energy, from braking, in the vehicle's battery.