RESEARCH AND DEVELOPMENT

Guided by the corporate philosophy of *providing innovative products to the world and generating new trends to contribute to the creation of an affluent society*, THK continually strives to create original products as a company focused on creation and development.

A Global R&D System for the Next Generation

THK is endeavoring to use its core linear motion system technology and expertise to develop its mainstay linear motion systems, mechatronic devices such as XY precision stages and linear motor actuators, and products in the consumer goods-related fields of automotive parts, seismic isolation and damping systems, medical equipment, aircraft, robotics, and renewable energy at our R&D facility, the Technology Center (Tokyo).

In 2010, the THK Group established the R&D Center in China. This facility, which was THK's first R&D facility outside of Japan, began full operation in 2012. With the addition of THK RHYTHM AUTOMOTIVE's German R&D facility in 2015, the THK Group is on its way to building R&D structures oriented toward the Americas, Europe, and Asia in order to more accurately meet the needs of customers around the world.

Fiscal Year 2016 Initiatives

To meet the varied needs of its customers in the industrial machinery field, THK has expanded its lineup of LM guide products and developed products that contribute to the automation of customers' production lines, including lightweight electric actuators and cross roller rings that allow for more lightweight robots. Furthermore, THK is committed to research and development in consumer goods-related fields such as renewable energy, where it has developed a low-torque shaft unit for vertical-axis wind turbines that conforms to safety standards for small wind turbines. In another such field, robotics, THK has been working to expand its SEED Solutions lineup, a series of components for robot technology systems for next-generation robots.

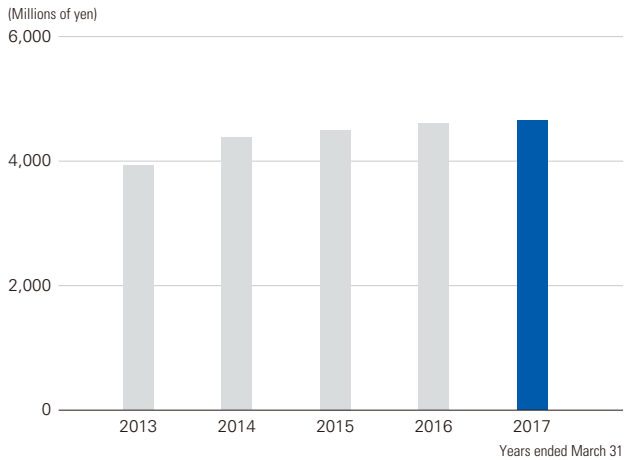
In the automotive and transportation industry, THK has utilized new production methods to introduce aluminum products to the market in order to meet the customer need for more lightweight automobiles. The Company has also improved upon its production methods to further expand future sales. Even in the new production methods it has developed, both in cold forging and precision press technology, THK has distinguished itself from its competitors. Furthermore, THK plans to use the unified research and development efforts of THK, THK RHYTHM, and TRA to expand the use of linear motion products in the automotive industry.

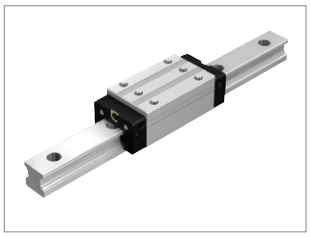
Policies and Initiatives for Fiscal Year 2017

The THK Group plans to continuously focus its efforts in the fiscal year 2017 on the efficient development of new products with the aim of further expanding applications for THK's technology. Above all, with the acceleration in AI, the IoT, and robotization, THK will work to develop new products that incorporate IoT technology into its linear motion products. Furthermore, with its strengthened capacity for development on a global scale, THK will work with THK RHYTHM and TRA to incorporate its accumulated core linear motion technology into the development of products used in the automotive industry. In this manner, these members of the THK Group will work to maximize the synergistic effect of putting their respective technologies to use in one another's fields to contribute to the development of new products.

Technology Center (Tokyo)

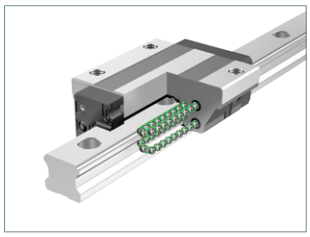
R&D Expenses





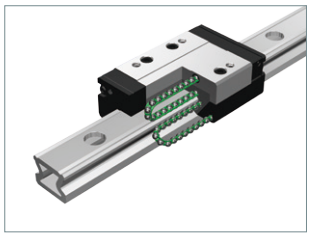
DB Type LM Guide Model HDR

This product's DB structure heightens its rigidity, making it ideal for use in applications that require movement along a single axis, such as train station platform doors.



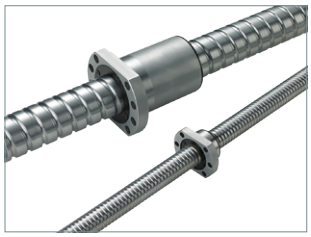
Caged Ball LM Guide Model SHS-M

This product is made of stainless steel, giving it greater corrosion resistance and making it capable of handling a range of different environments.



Light LM Guide Model SHS-N

This product uses a hollow rail, which weighs approximately 40% less than a typical rail, contributing to an increase in equipment speed and energy efficiency.



Caged Ball Screw Model SDA-V

This ball screw complies with DIN specifications, an industry standard in Germany. The Model SDA-V is intended to spearhead the Group's efforts to secure a firm foothold in Europe and emerging markets such as China where DIN specifications are typically accepted. This product expands THK's lineup of large lead ball screws and allows for even higher speeds.

Cross Roller Ring for Robots Model RF

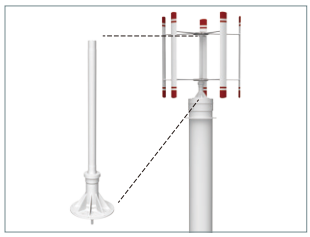
This product has an attached mounting flange, which both shortens the assembly time for the customer and helps to make robots and other machines more lightweight.

Lightweight Actuator Model CFK

Carbon is used in the material for the outer rail, making this product weigh 50% less than a typical actuator.

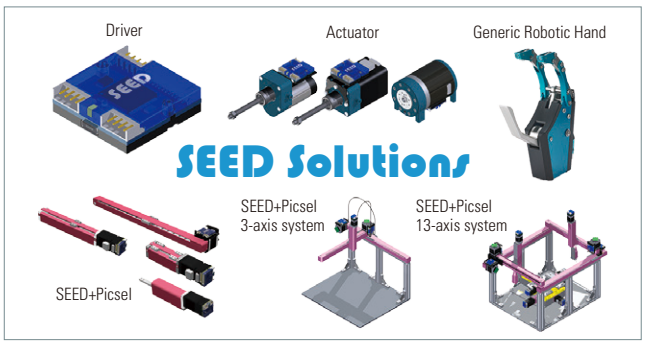
Lightweight Actuator Model ALK

This product uses components made of aluminum, making it significantly more lightweight. Available in a wide array of colors, this product can also be used in consumer goods-related fields.



Low-Torque Shaft Unit for Vertical-Axis Wind Turbines Model WLS

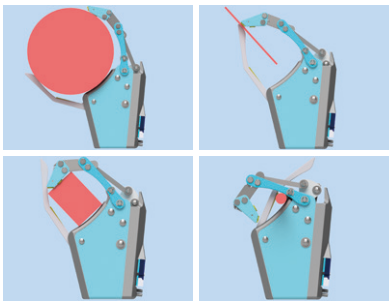
This product greatly lowers torque resistance, thereby reducing energy loss and contributing to greater efficiency in energy output. In addition, this product conforms to safety standards for small wind turbines, making it a very reliable product.



Components for Robot Technology Systems SEED Solutions

With SEED Solutions, THK is expanding its lineup of smart actuators and other products that enable the easy construction of service robots. THK is working to expand the use of one product on this lineup, the Robot Hand TRX, by selling it to educational institutions at a special price.

Robot Hand TRX (Academic package)



Just like a human hand, the TRX can grasp objects of various shapes and sizes.