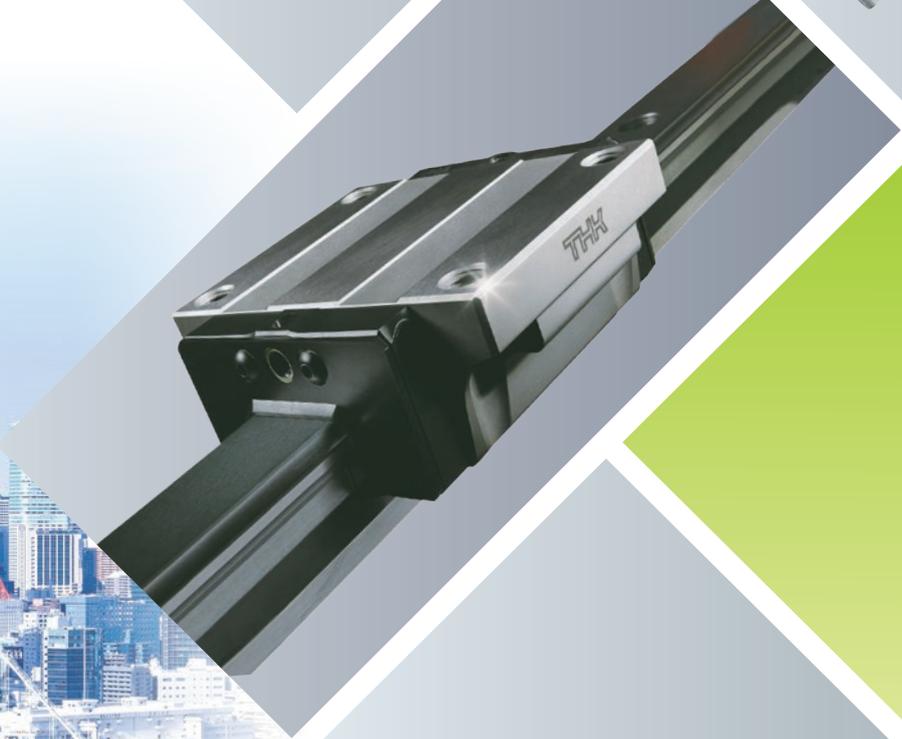




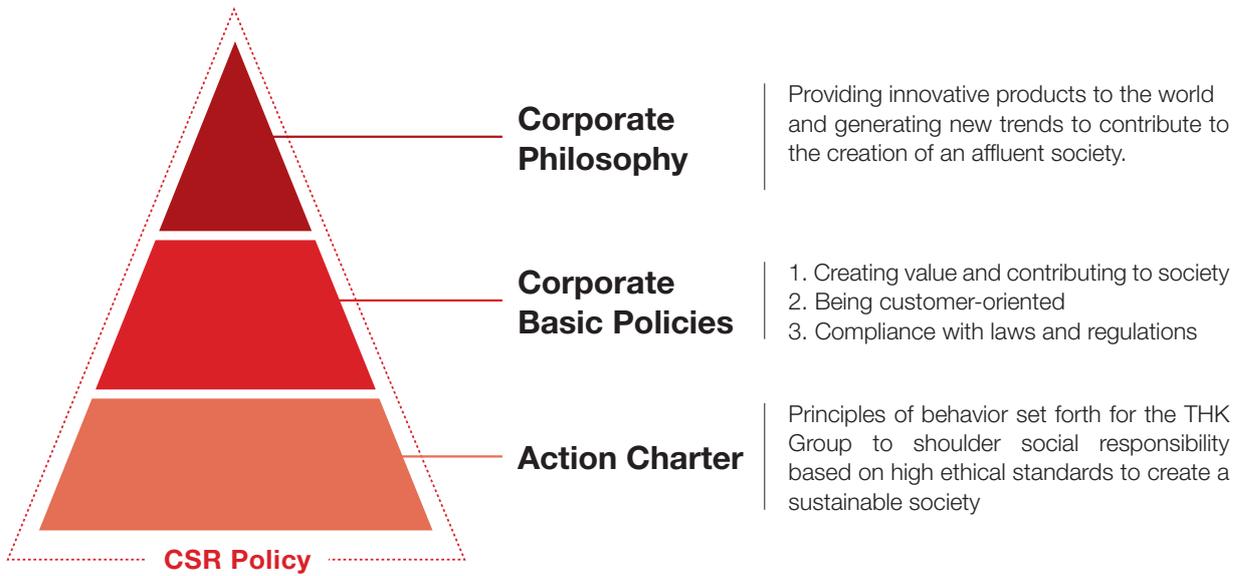
# THK Sustainability Report 2022



Sustainability Report 2022

# CSR Policy

We endeavor to improve our long-term corporate value with our CSR policy, which is founded on our Corporate Philosophy that represents our entrepreneurial spirit, our Action Charter that serves as a guide for our actions, and the Corporate Basic Policies that we must follow as we perform our duties.



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## Signing the UN Global Compact

THK signed the UN Global Compact in February 2020. THK works to support the sustainable growth of society based on the universal principles regarding human rights, labor, the environment, and anti-corruption through its global corporate activities.



## Company Overview

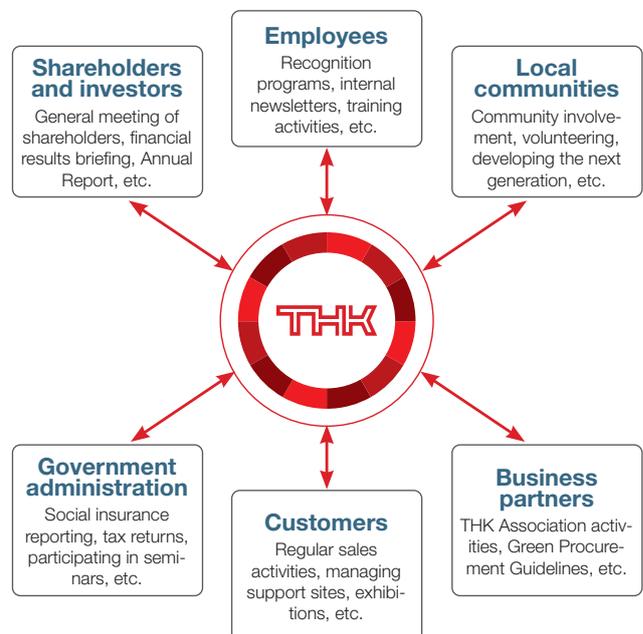
Trade Name	THK CO., LTD.
Date Established	April 10, 1971
Headquarters Location	2-12-10 Shibaura, Minato-ku, Tokyo 108-8506, Japan
Employees	Non-consolidated: 3,968 (Male: 3,362, Female: 606) Consolidated: 13,073 (Male: 9,965, Female: 3,108, Japanese: 5,649, Non-Japanese: 7,424)
Facilities	Sales (Japan: 47, Outside of Japan: 73) Production (Japan: 12, Outside of Japan: 25)

## Report Overview

Reporting Period	January 1 to December 31, 2021 (This report also covers activities during and around this period.)
Month Issued	Issued annually in June. The 2021 edition was issued in June of the same year.
Scope*	This report covers THK CO., LTD. and its consolidated and unconsolidated subsidiaries.
Reference Guidelines	This report was prepared in accordance with the GRI standard and the Ministry of Environment's "Environmental Reporting Guidelines" (2018).

\* The time range included in specific data is noted in each section.

## How THK Connects with Stakeholders



## DX-Certified Operator

In April 2021, THK was accredited as a DX-certified operator through the Ministry of Economy, Trade and Industry's Digital Transformation (DX) Certification initiative, which aims at promoting DX among businesses.



# Transforming into a Manufacturing and Innovative Services Company



**THK CO., LTD.** President and CEO  
Akihiro Teramachi

寺町 章博

## Creating Systems Capable of Keeping Up with the Times

Last year, THK celebrated its 50<sup>th</sup> anniversary. Since our founding, we have faithfully maintained our drive to provide innovative products to the world, which comes from our corporate philosophy, and we have instilled in our employees the spirit of thinking from the customer's perspective. Furthermore, in order to rapidly respond to diversifying needs, we have established integrated production and sales structures in regions where demand exists. At present, we have expanded our business operations to include 59 locations in Japan (47 sales offices and 12 factories) as well as 98 locations abroad (73 sales offices and 25 factories).

Taking a look at how the times are changing, the coronavirus pandemic that began in early 2020 accelerated innovation that normally might have taken five years, such as developments in electric vehicles, remote work, and teleconferencing with external parties. Even before these changes in the social climate, we have worked to expand our business domains through the pillars of our growth strategy: full-scale globalization, the development of new business areas, and a change in business style. One example is the development of our “Omni THK” virtual platform for communicating with customers and “**OMNI edge**,” our IoT service for the manufacturing industry. Meanwhile, we have also developed various types of remote and contactless robots during the pandemic. By developing these and other products that meet the needs of the present, we are actively working to realize CSV<sup>1</sup> and contribute to the SDGs. Currently, we are also promoting further DX (digital transformation) activities and working to develop the kind of talent that is needed in the digital age.

## Contributing to Society through Long-Cultivated Technology

There are two projects we are currently working on in addition to the aforementioned Omni THK and

**OMNI edge.** The first is the THK Education Outreach Program, which began in 2017. Designed for young students, this program is aimed at cultivating future creators and developers who will experience the joy of making things while working with their peers to come up with a solution to a problem facing society. Since the program launched, a total of 129 middle and high schools have signed up to participate. We will continue this effort and hope that it will spark an interest in technology among young people.

The second project is EntSherpa,<sup>2</sup> a technical support service aimed at startup companies that launched in April 2021. Based on the expertise we have accumulated since our founding, we provide comprehensive operational support for startup companies through a dedicated team that helps those businesses bring their ideas to fruition and solve technical challenges. As trail guides leading companies toward their aspirations, we provide various types of support, including technical consultations for early-stage idea realization, advice on selecting products, and free product samples. Several companies in Japan are already using this service, and we will be expanding this service to startup companies around the world.

## The Carbon Neutrality Pledge

At the 2021 United Nations Climate Change Conference (COP26) last fall, each country declared their future initiatives to promote global efforts against climate change. Global warming is an urgent challenge that we must solve for the sake of future generations. THK is also advancing a series of efforts aimed at reducing our burden on the environment, and last year, large-scale solar power generation systems were installed at the THK RHYTHM Hamamatsu and Kyushu plants. In addition, in August, we established medium- and long-term targets to achieve carbon neutrality. Our entire company will work together to promote initiatives aimed at achieving our goals.

### THK's Medium- and Long-Term Targets for Carbon Neutrality

#### Medium-Term Target

CO<sub>2</sub> emissions in 2030: 50% of 2018 levels

Scope: THK Japan and Group companies in Japan

#### Long-Term Target

CO<sub>2</sub> emissions in 2050: Net-zero

Scope: Entire THK Group

## Future Developments

Our 50<sup>th</sup> anniversary is merely a point along our journey. We will respond appropriately to any changes in our external environment and establish a solid foundation to heighten our corporate value. Based on that, in order to create a sustainable and affluent society, we will strive to meet everyone's expectations as a manufacturing and innovative services company that goes beyond simply creating things, expanding our business to include everything from before to after the sale.

With new variants of the coronavirus emerging, we still find ourselves in unpredictable circumstances. We will continue to thoroughly prevent the spread of infections within our company, and with pride as an essential business, we will fulfill our responsibility to provide products to our customers.

<sup>1</sup> CSV is an abbreviation of "creating shared value." This is a strategy of using a company's strengths to solve social challenges and lead to sustained corporate growth.

<sup>2</sup> "EntSherpa" is a portmanteau of "entrepreneur" and "Sherpa," a group of people who are known for working as guides in the Himalayas.

# 50 Years of History and Future Business Developments

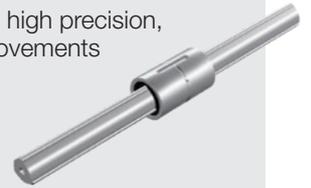
1971

- ① High quality and durability under severe conditions
- ② Link ball
- ③ **RBL**



1971

- ① Linear motion that achieves high precision, high rigidity, and smooth movements
- ② Ball spline
- ③ **LBS**
- ④ Shift from point contact to surface contact
- ⑤ 1979: Grand Prize from Japan Society for the Advancement of Inventions



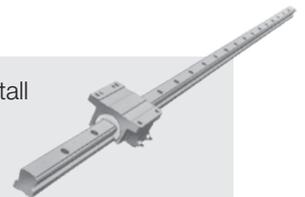
1972

- ① Linear motion that eliminates deflection in spline shafts and achieves higher rigidity
- ② LM Guide
- ③ **LSR**
- ④ Shift from point contact to surface contact
- ⑤ 2021: Registered in National Museum of Nature and Science's database of materials on the history of industrial technology



1973

- ① Compact and easy to both install and achieve accuracy
- ② LM Guide
- ③ **NSR-BC**
- ④ Cold drawing technology used to combine the spline shaft and mounting base



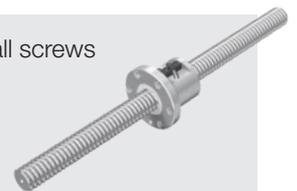
1975

- ① Greater reduction in size
- ② LM Guide
- ③ **NSR-BA**
- ④ Combined spline nut and housing



1979

- ① Availability of off-the-shelf ball screws
- ② Ball screw
- ③ **BNF**
- ④ Standard screws and end machining available



## Development of LM Guide and ball screw

1971

April ①

① First headquarters (Yutenji)



1977

April ②

② Japanese production facility Kofu Plant



1978

July ③

③ First headquarters relocation (Meguro)



1981

March ④

④ North American sales office THK America, Inc.



1982

October ⑤

⑤ European sales office THK Europe GmbH



In April 2021, THK celebrated its 50<sup>th</sup> anniversary. Since our founding, we have faithfully followed our corporate philosophy and worked to develop products that the market needs. In this special feature, we take a look back at how THK has grown over the past 50 years, along with photos and a timeline of our main products and major expansions into each region (Japan, China, South Korea, Taiwan, India, Europe, and North America).

Finally, we examine future business developments related to how we will contribute to a sustainable society through our work.

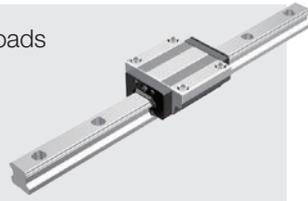
Legend

Year

- ① Market need
- ② Product developed
- ③ Model
- ④ Special features
- ⑤ Awards and recognitions

1981

- ① LM Guide that can bear loads equally in every direction
- ② LM Guide ③ **HSR**
- ④ Four-way equal load type



1982

- ① Compact and able to bear loads from every direction
- ② Cross-roller ring
- ③ **RB**
- ④ Cylindrical rollers arranged orthogonally



1989

- ① High-speed, high-precision ball screw
- ② Rotary ball screw
- ③ **BLR**
- ④ Combined ball screw nut and support bearing



1989

- ① Combined ball screw and ball spline
- ② Ball screw/spline
- ③ **BNS**
- ④ One shaft capable of rotary, linear, and spiral motion



1990

- ① Simplified ball screw
- ② Ball screw
- ③ **BIF**
- ④ Reduces backlash with one nut



1990

- ① Compact, highly rigid, and easy to work with
- ② LM Guide actuator
- ③ **KR**
- ④ Combined LM Guide and ball screw



1984

January ⑥

⑥ Second headquarters relocation (Meguro)



1989

January ⑦ November ⑧

⑦ Taiwanese sales office THK TAIWAN CO., LTD.



⑧ Debuted on the over-the-counter stock market



1991

October ⑨

⑨ South Korean sales and production facility Samick Industrial (Currently SAMICK THK)



1992

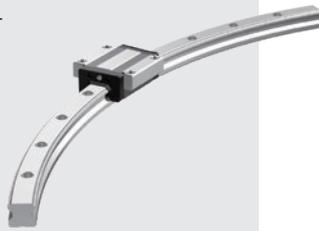
August ⑩

⑩ Irish production facility THK Manufacturing of Ireland Ltd.



1992

- ① Simply designed product for curved motion
- ② R Guide
- ③ **HCR**
- ④ Circular motion achieved by combining rails



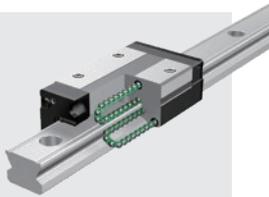
1994

- ① Light weight
- ② Stabilizer link
- ③ **BW**
- ④ Made of aluminum



1996

- ① Long service life, long-term maintenance-free operation, and low noise
- ② Caged Ball LM Guide
- ③ **SSR**
- ④ Balls are covered by a resin cage, with grease between both surfaces. Achieves SSE (smooth, silent, ecological) operations.
- ⑤ 2000: Technology Award from Japan Society for Precision Engineering



1997

- ① Even longer period of maintenance-free operation
- ② Lubricator for the LM Guide
- ③ **QZ**
- ④ Supplies the necessary amount of lubricant to the ball raceways



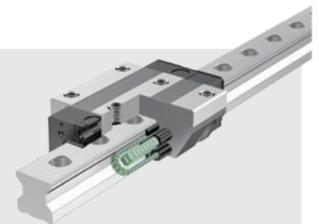
1999

- ① Smaller caged product
- ② Caged Ball LM Guide
- ③ **SRS**
- ④ Able to perform 500 back-and-forth cycles per minute



2000

- ① Highly rigid LM Guide
- ② LM Guide
- ③ **SRG**
- ④ Roller guide that reduces skew through caged technology



Development of LM Guide and ball screw

Introduction of caged technology

Full-scale global

1993

May <sup>11</sup> October <sup>12</sup>

<sup>11</sup> Third headquarters relocation (Fudomae)



<sup>12</sup> Central and South American sales office THK Brazil LTDA.



1996

March <sup>13</sup>

<sup>13</sup> Chinese production facility DALIAN THK CO., LTD.



1997

August <sup>14</sup>

<sup>14</sup> North American production facility THK Manufacturing of America, Inc.



2000

February <sup>15</sup>

<sup>15</sup> European production facility THK Manufacturing of Europe S.A.S.



2002

- ① Ball screw compatible with motorization of high-load domains such as injection molding machines
- ② High-Load Ball Screw
- ③ **HBN**
- ④ Improved load rating for high-load applications



2007

- ① Seismic isolation system for servers and other equipment
- ② Seismic Isolation Table
- ③ **TSD**
- ④ LM Guide used in guiding portion to deflect tremors



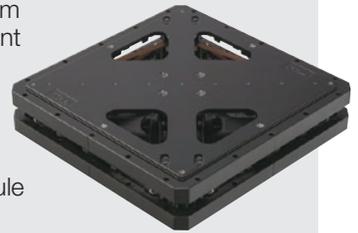
2011

- ① Nanometer-level precision
- ② Caged Ball LM Guide
- ③ **SPR/SPS**
- ④ Features eight ball raceways to achieve ultra-low waving on par with static pressure guides
- ⑤ 2009: Technology Award from Japan Society for Precision Engineering



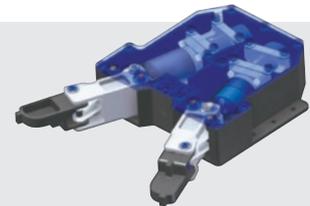
2011

- ① Seismic isolation system for floors and equipment with a damping structure and the ability to be freely designed
- ② Seismic Isolation Module
- ③ **TGS**
- ④ Enables the optimal seismic isolation system by combining modules



2012

- ① Robot hand that can be used in space
- ② Robot hand
- ③ **REX-J**
- ④ Trial performed in space



Expansion and the development of new business areas

2001

February <sup>16</sup>

<sup>16</sup>  
Listed on First Section of Tokyo Stock Exchange



2005

July <sup>17</sup> September <sup>18</sup>

<sup>17</sup>  
Japanese R&D branch Technology Center



<sup>18</sup>  
Chinese sales office THK (CHINA) CO., LTD.



2007

May <sup>19</sup>

<sup>19</sup>  
Acquisition of all shares of THK RHYTHM



2010

April <sup>20</sup>

<sup>20</sup>  
Chinese R&D branch Chinese engineering department



\* Expansion into China included the establishment of the Beijing Representative Office in August 1993 and THK (SHANGHAI) CO., LTD. in August 2003.

2015

- ① Small, simple actuator
- ② **SEED Smart Actuator**
- ③ **TRX**
- ④ A robot hand with a built-in controller that can pinch, grab, and grip with a single motor
- ⑤ 2012: 5<sup>th</sup> Robot Award from METI



2017

- ① Affordable, efficient wind power generator that rotates in slight winds
- ② Low-Torque Shaft Unit
- ③ **WLS** ④ Compact
- ⑤ 2013: Paper Award from Japan Wind Energy Association  
2018: New Energy Award and Chairman's Award from New Energy Foundation



2018

- ① Heightened demand for CASE\* in the automotive industry
- ② Ball screw for automatic braking system
- ③ **DK**
- ④ Essential component for self-driving CASE technology



2020

- ① Digitalize timing of machine component replacements instead of relying on experience and intuition
- ② IoT service for the manufacturing industry
- ③ **OMNI edge**
- ④ Attaching a sensor to an LM Guide or other machine component enables the visualization and quantification of its damage and lubrication status



2020

- ① Reliable transfer robot that can easily be used even in harsh environments
- ② Transfer robot ③ **SG**
- ④ Simple to set up and change routes, reliable performance when faced with changes in the environment, and low-maintenance
- ⑤ 2019: 5<sup>th</sup> Award for Contributions to the Promotion of RT-Middleware from Japan Robot Association Robot Business Promotion Council



2021

- ① Service robot platform
- ② **SEED Platform Robots**
- ③ PFR7 Series
- ④ Easy to construct various service robots by combining units



\* CASE stands for Connected, Autonomous, Shared & Services, and Electric.

2021 Transforming

2016 Change in business style

Full-scale globalization and the development of new business areas

2012

February <sup>21</sup> November <sup>22</sup>

<sup>21</sup>

Central and South American production facility  
THK RHYTHM MEXICANA, S.A. DE C.V.



<sup>22</sup>

Indian sales office  
THK India Private Limited



2015

August <sup>23</sup>

<sup>23</sup>

Acquisition of TRA L&S business and European R&D branch  
TRA GmbH



2017

October <sup>24</sup>

<sup>24</sup>

Fourth headquarters relocation  
(Tamachi)



2021

November <sup>25</sup>

<sup>25</sup>

Indian production facility  
THK India Manufacturing of Sri City



(Representative office established October 1997)

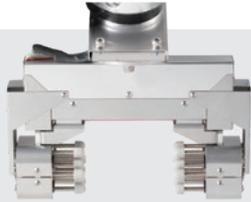
2021

- ① Light resistance, highly rigid, and stable motion for fast takt times, such as for semiconductors
- ② Cross-roller guide
- ③ **VRG**
- ④ Prevents cage misalignment and demonstrates stable performance even with fast takt times



2021

- ① Robot hands for different types of workpieces
- ② Adaptive Hand
- ③ **TNH**
- ④ Compact, lightweight, general-purpose robot hand that can suction or grip complex workpieces through its adaptive mechanism
- ⑤ 2021: Grand Manufacturing Prize for Machine and Robot Components



2021

- ① Even higher load carrying capacity and durability than conventional slide rails
- ② Slide rail
- ③ **ATG**
- ④ Thin, compact, and easy to install



into a manufacturing and innovative services company

Facilities

As of December 31, 2021

	Sales	Production	R&D
Japan	47	12	1
China	30	6	1
Asia	21	9	0
Europe	12	4	1
USA	10	6	0
Total	120	37	3

Future Developments

All THK employees will work together to achieve the creation of a sustainable society.

Strengthening the governance structure

We will further strengthen our governance structure, which is the framework of the company.

Understanding market and customer needs

We will stay apprised of what kinds of products are in demand by the market and customers, and we will develop new products that adapt to the changing times.

Strengthening the power of individual employees

We will refine everyone's abilities and develop talent that can provide added value to customers.

Reduce CO<sub>2</sub> emissions

We will steadily implement the necessary measures to achieve the Carbon Neutrality Pledge and help prevent global warming.

Change in business style

We will thoroughly utilize new technologies such as AI and robots to revolutionize our business practices and structures and expand our business domains.

Transform into a manufacturing and innovative services company

We will consider our business to include everything from before to after the sale and expand our interactions with customers.

Create an affluent society through CSV

We will connect with society through our business activities and heighten our corporate value by contributing to society through our products and services.

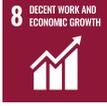
## Significant Challenges and Their Relationship with SDGs

# Efforts to Promote the **SDGs**

As a company focused on creation and development, we have generated markets and introduced the world to products that reflect the desires of customers ever since our founding.

With the conviction that our business itself is our corporate social responsibility, we aim to cultivate good relationships with all our stakeholders and continue working to achieve an affluent society—in other words, to solve the social challenges addressed by the SDGs—while practicing CSV.\*

\* CSV is an abbreviation of “creating shared value.” This is a strategy of using a company’s strengths to solve social challenges and lead to sustained corporate growth.

Material Issues	SDGs	THK’s Approach
Establishing a BCP (business continuity plan) for infectious diseases	 3. Good health and well-being	We work to ensure the safety of our employees and their families, and we establish business continuity.
Development of core technology and next-generation products	 7. Affordable and clean energy	We use the rolling technology we have cultivated through the LM Guide to develop new products for the renewable energy field.
	 9. Industry, innovation, and infrastructure	We supply high-quality products with high added value that meet the needs of our customers.
	 11. Sustainable cities and communities	We supply products that work to reduce earthquake damage by protecting homes and other property as well as historical buildings and other aspects of cultural heritage.
Creating a pleasant work environment	 8. Decent work and economic growth	We prohibit discrimination, child and forced labor, and other human rights violations. In addition, we maintain a work environment that is easy for people with disabilities to work in, and we promote the employment of diverse talent.
Strengthening relationships with stakeholders	 8. Decent work and economic growth	We provide forums to teach others about how enjoyable and meaningful it is to work in manufacturing.
Reducing environmental impact	 12. Responsible consumption and production	We cut down on energy use in our business activities and continually promote the reduction of energy consumption and greenhouse gas emissions.
	 13. Climate action	In addition to complying with environmental laws, we set self-imposed standards that are reviewed regularly to improve the efficiency and effectiveness of our environmental management.

The SDGs (Sustainable Development Goals) are an international agenda of 17 goals and 169 targets related to the environment and development for the world to achieve by 2030. These goals are held in common by every national and local government, non-governmental organization, and non-profit organization, as well as by public corporations and individuals with the aim of facilitating sustainable livelihoods and societies under the banner of leaving no one behind.



THK's Activities	KPIs
<p>During times of trouble, we institute a number of measures based on our Emergency Response Manual to quickly establish a task force and have persons responsible for every region gather and share information.</p>	<p>Corporate activities to fulfill our responsibility to supply products as an essential business</p>
<p>We developed and released the Model WLS Low-Torque Shaft Unit, which provides sufficient strength and durability, guarantees a high level of safety, and conforms to 61400-2 international standards for wind turbines and Japan's JSWTA 0001 standards.</p>	<p>Expand existing wind turbine technology applications to hydroelectric power generation for irrigation channels</p>
<p>We cultivate our core technology centered on the LM Guide, ball screw, and other rolling technologies that provide energy savings in the manufacturing industry, and we develop new products and improvements in addition to our IoT system, which visualizes machine component status.</p>	<p>Continue releasing new products to global markets and updating existing products</p>
<p>We developed and released seismic isolation systems based on the LM Guide, including the Linear Re-circulating Guide CLB for buildings and the Seismic Isolation Module Model TGS and Seismic Isolation Table Model TSD for equipment, and systems based on the ball screw, including the Viscous Damping System RDT and the Internal Rotary Damping Tube iRDT.</p>	<p>Develop products that fit the needs of previously untapped markets and expand the sale of seismic isolation systems</p>
<p>We implemented several systems to create a more accommodating workplace, including our rehiring program introduced in 2019 (which provides reemployment opportunities to former employees who want to return after having to leave for personal circumstances such as marriage, childcare, or elderly care, if they meet work history and other criteria).</p>	<p>Achieve a ratio where women constitute 20% or more of new hires in the sales, administrative, and engineering divisions, and accelerate the promotion of women to management and leadership positions</p>
<p>We launched the THK Education Outreach Program and developed learning materials to provide classrooms with educational opportunities to develop their students' cognitive, decision-making, and presentation skills through manufacturing.</p>	<p>Develop new educational materials and continue visiting middle schools in six local areas around our Japanese production facilities</p>
<p>We installed high-efficiency equipment, upgraded air conditioning units, switched to LED lighting, and introduced new energy systems.</p>	<p>Reduce energy consumption rate by 1% from where it was at a baseline year specified by THK and each Group company</p>
<p>We purchase components in accordance with our Green Procurement Guidelines and reduce our use of PRTR substances and promote alternatives as we conform to regulations related to the management of chemical substances.</p>	<p>Comply with the RoHS Directive and other regulations and reduce PRTR substance use by 3% each year from where it was at a baseline year specified by THK and each Group company</p>

# Strengthening the Supply Chain

In order to achieve a sustainable society, THK continues to strengthen its supply chain and generate corporate value through its business activities, all while never forgetting its pride as an essential business.

<p><b>Policies and Mindset</b></p>	<ul style="list-style-type: none"> <li>• Developing products based on core technology</li> <li>• Developing products that aim to solve customer needs and concerns</li> </ul>	<ul style="list-style-type: none"> <li>• Promoting green, global procurement in the optimal locations</li> <li>• Accelerating work speed and boosting efficiency with AI</li> <li>• Establishing a structure with suppliers to increase production and promote improvement activities</li> </ul>
<p><b>THK's Strengths</b></p>	<ul style="list-style-type: none"> <li>• Developing products that meet market needs</li> <li>• Cultivating new markets with core technology</li> <li>• Extensive product lineup</li> <li>• Services such as technical calculations based on usage conditions</li> </ul>	<ul style="list-style-type: none"> <li>• Global procurement network</li> <li>• Building a production framework with business partners</li> <li>• Distributing disaster risk by purchasing from multiple suppliers</li> <li>• Achieving high durability and long service life with proprietary materials</li> </ul>

 **Development/ Design**

 **Procurement/ Purchasing**

<p><b>Activities Aimed at Promoting ESG</b></p>	<ul style="list-style-type: none"> <li>• Actively promoting the shift from sliding to rolling</li> <li>• Developing products to replace hydraulic with electric</li> <li>• Developing products that require less maintenance</li> <li>• Developing products that can handle high speeds and fast takt times</li> <li>• Developing products related to renewable energy</li> </ul>	<ul style="list-style-type: none"> <li>• Preemptively replacing materials based on each country's banned substance information</li> <li>• Investigating compliance with domestic and international regulations</li> <li>• Collaborating with all purchasing-related departments regarding legal requirements</li> </ul>
<p><b>Future Challenges</b></p>	<ul style="list-style-type: none"> <li>• Developing products to achieve carbon neutrality</li> <li>• Refining core technology (long service life, high-speed performance, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>• Cultivating new suppliers and building a robust system of collaboration with existing suppliers</li> <li>• Effectively using renewable materials to reduce waste</li> <li>• Promoting DX activities and collaborating with other THK departments</li> </ul>

**Strengthening Positive Impact**

 **9 INDUSTRY, INNOVATION AND INFRASTRUCTURE**  **13 CLIMATE ACTION**

- Developing products with low environmental impact
- Developing products that meet the needs of the times

 **13 CLIMATE ACTION**

- Green procurement

**Minimizing Negative Impact**

 **13 CLIMATE ACTION**

- Reducing the volume of paper used

 **5 GENDER EQUALITY**  **10 REDUCED INEQUALITIES**

- Addressing human rights issues

- Increasing productivity and improving customer satisfaction through on-time delivery

- Establishing a production structure in domestic and international areas of demand
- Establishing alternative production structures, including overseas factories, in case of a major disaster

- Employing transportation methods that reduce CO<sub>2</sub> emissions
- Considering load efficiency and productivity in logistics
- Reducing CO<sub>2</sub> emissions year on year

- Establishing transportation that reflects supplier feedback
- No delivery errors
- Securing transportation channels during a disaster

- Entering new markets
- Strengthening proposal-based sales
- Strengthening global collaboration

- Brand strength as the top linear motion manufacturer
- Sales network covering Japan and other countries



## Production



## Distribution



## Sales

- Activities to reduce CO<sub>2</sub> emissions
- Holding regular energy conservation meetings to improve environmental awareness among employees
- Complying with ISO 14001/45001 and confirming environmental measures

- Working even more to reduce CO<sub>2</sub> emissions
- Promoting energy-saving activities
- Promoting DX activities

- Reducing CO<sub>2</sub> by utilizing reusable containers
- Promoting modal shifts and joint delivery

- Selecting optimal transportation methods through DX activities
- Reducing labor needs by utilizing AI

- Proposing electric and labor-saving products
- Conducting remote sales activities such as online visits

- Entering new markets such as medicine and electric vehicles
- Developing new business such as seismic isolation and robots



- Reducing CO<sub>2</sub> emissions
- Strengthening health and safety
- Reducing plastic use



- Reducing CO<sub>2</sub> emissions
- Reducing packaging



- Developing products that reduce environmental impact
- Developing labor-saving products for a society with an aging population and declining birthrate
- Developing products for mitigating disasters



- Reducing CO<sub>2</sub> emissions, waste, and workplace accidents



- Reducing CO<sub>2</sub> emissions



- Eliminating traffic accidents

# Our Business

## Industrial Machinery

### Further Strengthening THK's Global Production Structure

#### Akihiko Kambe

Managing Executive Officer  
Senior General Manager of Production Division  
Industrial Machinery Headquarters



#### Strengthening THK's Production Structure

As of the end of 2021, 60% of our production occurs in Japan, and 40% takes place in other countries. We will expand our framework for increasing production globally in order to achieve our medium-term management plan for the industrial machinery business. Our domestic factories will consider the automation and robotization they have implemented to increase productivity and expand those measures to our facilities outside of Japan.

In terms of our global factories, our plant in India began operations in November. Furthermore, in order to further strengthen our capability to meet the rising demand in China, we are building new facilities at THK MANUFACTURING OF CHINA (CHANGZHOU) CO., LTD. and THK MANUFACTURING OF CHINA (LIAONING) CO., LTD., which are scheduled to be completed in early 2023.

#### BCP Structure

We have devised a variety of countermeasures in response to the threat of natural disasters such as earthquakes and typhoons. We participate in life-saving and firefighting training with our fire brigade, take measures to prevent equipment storage shelves from toppling, stock food and rescue equipment, and collaborate with local public institutions. In addition, with regards to the coronavirus, we have gained the understanding of not only our employees but also their families with regard to taking temperatures, thoroughly washing hands and wearing masks, and refraining from going out as we continue to live our lives while also maintaining our product supply system for our customers. Furthermore, we promote talent development to improve our employees' abilities to quickly fix machines (maintenance skills), work flexibly (cross-training), and perfect quality (improvement skills). For our mainstay products such as the LM Guide and ball screws, we have developed a global production structure so factories in each region can support each other in the event of an emergency.

#### Responding to the Carbon Neutrality Pledge

We have launched the Carbon Neutrality Promotion Project with the medium-term goal of reducing CO<sub>2</sub> emissions in 2030 by 50% of what they were in the base year of 2018. We ac-

#### Industrial Machinery Facilities

Production facilities are mainly centered in Japan and have expanded to the Americas, Europe, and Asia.

#### Japan

Yamagata, Tokyo, Kofu, Gifu, Mie, Yamaguchi, Niigata

#### Outside of Japan

Ohio (USA); Ensisheim (France); Dublin (Ireland); Wuxi, Liaoning, Changzhou, Dalian (China); Bac Ninh (Vietnam); Sri City (India)★; Daegu (South Korea)



tively promoted the introduction of machinery and equipment with high energy-saving effects and the utilization of renewable energy PPAs,<sup>1</sup> and in December, we installed solar panels on the roofs of Factories 1 and 3 at the Yamaguchi plant. Meanwhile, in order to make employees more aware of energy conservation, we have implemented measures such as "energy-saving patrols" and departmental checks on the state of energy savings.

#### Promoting DX and Future Developments

The first general hurdle is to free ourselves from the culture of physical signatures and paper. We are building systems that utilize digital technology and IT in order for our production facilities to go paperless with inspection, drawing, and maintenance information. Similarly, our support departments are also automating and optimizing with RPA<sup>2</sup> and BI.<sup>3</sup> Furthermore, by promoting the THK DX Project, we have built a system to centrally manage information from order receipt to shipment, and we are working to improve overall productivity by optimizing production and shifting our talent to operations with high added value. Making improvements and boosting productivity through digital technology is the eternal concern of the Production Division, and we will further broaden the scope of our activities in the pursuit of becoming a "Smart" company.

<sup>1</sup> PPA stands for "power purchase agreement." It refers to an agreement between a producer of electricity and the utility company that sells the energy to the user.

<sup>2</sup> RPA stands for "robotic process automation." This is a technology that automates work processes.

<sup>3</sup> BI stands for "business intelligence." This is a technology that gathers, stores, analyzes, and reports on a company's organizational data to assist in management-related decision-making.

## Automotive and Transportation Equipment

### Understanding Market Trends and Increasing the Value We Offer

#### Masato Sawada

Managing Executive Officer  
Deputy General Manager of Automotive & Transportation Headquarters  
Director and Executive Vice Chairman of THK RHYTHM CO., LTD.



#### Creating a Structure That Responds to Changing Markets

The automotive and transportation business includes THK, THK RHYTHM, and TRA,<sup>1</sup> and it encompasses 6 sales offices (1 in Japan and 5 overseas), 16 production facilities (4 in Japan and 12 overseas), and 3 development bases (2 in Japan and 1 overseas). 2021 was a tumultuous year for the automotive industry, with production adjustments caused by the coronavirus pandemic lockdown in Malaysia and supply chain delays in several countries due to semiconductor factory fires. This led to production dropping from the 9.8 million vehicles manufactured in 2019 down to 8.4 million. (The semiconductor shortage accounted for 1.15 million vehicles.) Some expect the semiconductor shortage to continue into 2023, and it is difficult to respond to this unexpected situation with traditional management methods. We also need to build a framework that can quickly adapt to movements such as CASE,<sup>2</sup> MaaS,<sup>3</sup> and carbon neutrality, so we are focusing our efforts on the following three areas this year.

1. Promote production activities that respond to heightened industry demand and measures for safety, stability, and the environment. Propose lightweight products to customers; facilitate compact designs; and ensure quality, durability, and reliability.
2. Promote the integration of THK RHYTHM and TRA sales and production. Reevaluate our organization, roles, and systems to achieve greater sustained growth.
3. Cultivate new markets emerging from the proliferation of electric vehicles. Expand sales of products for electric brakes and parking brakes produced as electric vehicle offerings at the Yamagata and THK RHYTHM Hamamatsu plants. Cultivate new areas of need by developing new products based on the technology we have accumulated over many years. In addition, double customer satisfaction based on monthly scores given by our customers.

#### Future Automotive and Transportation Developments

Automotive manufacturers are currently grappling with a number of challenges, including electric vehicles, self-driving ve-

Automotive and Transportation-Related Locations (Sales, Production, and R&D)



Red: TRA Blue: THK RHYTHM Green: THK CO., LTD. (Detroit management is split between TRA and THK RHYTHM)  
R&D · Tokyo, Hamamatsu (Japan) Sales · Tokyo (Japan) · Shanghai (China) · Detroit (USA)  
· Düsseldorf (Germany) · Düsseldorf (Germany), Paris (France), Turin (Italy)

icles, emissions regulations, changes in fuel efficiency testing methods, and strengthened collision safety standards. There is also a shift from treating vehicles as a simple method of transportation to integrating them more fully in daily life as a product with high added value. An emerging area of development is focused on diverse types of mobility and electronic systems. There are also numerous possibilities when it comes to digitalization, smartphone/robot compatibility, combining cars and quadruped robots, navigation controls, infotainment systems,<sup>4</sup> head-up displays,<sup>5</sup> autonomous travel support, cars that run on new types of energy, flying cars,<sup>6</sup> and more. The things we can pursue as a division in terms of safety, convenience, and comfort are endless. The key will be how much value we can create and provide to the automotive industry. We will keep a steady eye on market trends and enhance the value we offer.

<sup>1</sup> TRA: The entity created with the 2015 acquisition of TRW's European and North American linkage and suspension business.

<sup>2</sup> CASE stands for Connected, Autonomous, Shared & Services, and Electric.

<sup>3</sup> MaaS, which is short for "Mobility as a Service," refers to IT-based systems that make transportation more efficient and convenient to use.

<sup>4</sup> Infotainment system: A system that provides both information and entertainment.

<sup>5</sup> Head-up display: A display that provides drivers with informational images on the windshield.



Example of a head-up display  
Source: C-net Japan



<sup>6</sup> Flying car (car and delivery drone)  
Source: SKYDRIVE

# In Our Customers' Words

## A Reliable Partner for Start-Ups

**inaho Inc.**

Yutaka Hishiki

Co-Founder & CEO



### Founding the Start-Up

When you think of Kamakura, what images come to mind? You may picture temples or the seaside, but this fertile region surrounded by mountains and the sea is actually where the famous Kamakura vegetables are grown. I am from this area, so I interact regularly with a number of farmers I know. I helped out with a harvest one time, and it was much more difficult work than I imagined. Wanting to lighten the burden of farm work, I established our AI start-up on January 17, 2017 (a date referred to in Japanese as “Good Ear of Rice (Inaho) Day” as a play on words). We started expanding our RaaS<sup>1</sup> business in Japan in 2019, and we now have 20 employees divided among four offices in Japan (Kamakura, Saga, Niigata, and Kagawa) and one overseas (Netherlands).

### Developing the Harvesting Robot

Currently, we have developed robots that harvest asparagus and tomatoes, and they are being used on local farms. The AI sensors and cameras built into the robot detect the growth conditions of these crops, harvesting only asparagus that has grown to a certain height or tomatoes that match a certain red hue. THK's ball bearings are used in the rotating parts of the asparagus robots.

THK was well-known among our engineers as a reliable machine component manufacturer, so we have incorporated their products from the very first robot we developed in 2019. Agricultural work takes place in harsh service environments, including the scaffolding the robots move on, so we needed components that would last even in a bad environment. We ran millions of durability test cycles before releasing our product, and no issues occurred. Naturally, we have not heard of a single problem occurring with the rotating parts of the robots we have delivered. We used the standard products at first, but after several meetings with their sales team, we decided the optimal THK product for us to adopt was the Ball Bearing BB.

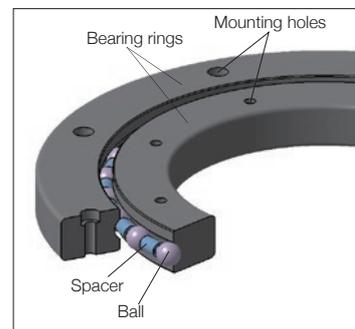
I heard about the EntSherpa Project that was launched for start-ups in April this year, but during the development of our robot, THK provided technical support to help bring our ideas

to life, so I feel that the inaugural spirit of this initiative was already there in 2019.

### Future Robot Development Plans

The agricultural industry is facing a labor shortage, particularly with a decreasing number of young people employed in the field. That is why we are now developing robots that can harvest crops other than asparagus and tomatoes in order to reduce the burden on farmers. Therefore, we hope THK will propose good products for our robots and discuss technical topics and exchange ideas with us. On the other hand, as a robot developer, perhaps our robot technology may prove useful for THK someday. That is another reason why I hope to increase the opportunities we have to communicate with each other.

<sup>1</sup> RaaS stands for “Retail as a Service.” It is a new type of arrangement in which retailers with revolutionary systems partner with IT companies to provide services to other retailers.



Internal structure of the BB



Asparagus-harvesting robot

## Working to Generate New Value

### NTT Ltd Japan Corporation

Yusuke Imaeda

Business Operations Manager  
Group ICTI  
Data Center Services APAC

#### THK's Robot Technology Is Essential to the ExTorch Program

The NTT group utilized its extensive technology, infrastructure, and services to develop its ExTorch program, in which “light will expand beyond expectations and create a world that transcends innovation through joint partnerships with external partners” in pursuit of generating new and unprecedented value. Of the program’s five themes, I work on “Creating fully automated, next-generation data centers.” I was not considering bringing in robots at first, but when I visited THK and experienced the robot technology they were offering, I realized this was an essential element to making automated data centers. In particular, the robot is easy to operate, so you do not need to reference the manual or instructions. When you move the control rod, the robot recreates the same movement. That means even people who are not experienced with machinery can operate them, and you can purchase the hardware platform by itself at a reasonable price. That allowed us to capitalize on the ability for us to freely customize the program and set it up to achieve our two goals: (1) reduce the labor needed for data center operations and (2) expand and provide this as a service for other types of work, such as for infrastructure facilities and factories.

#### Proof-of-Concept Trial

We have a data center in Kawasaki where we develop and test out new businesses and services to promote DX with our business partners. This is where we are testing automated op-

Proof-of-Concept Trial



**SEED-roid** performing the same movements at the data center



Author using the tracer controls



erations using robots. In order to achieve our ultimate goal of full automation, our first step was to remotely operate a robot in our test center from our office in Otemachi and thoroughly verify the robot’s movements. We then worked on modifications for those areas where the current structure of the data center prevented the robot from working. As one example, we modified the doors and racks inside the room so the robot could open and close them. As a result of steadily repeating this process to improve the operability of the robot, when we unveiled five demos at an event for internal and external parties in October, the robot was well-received by the participants, who granted it the Audience Award through a vote, and some even inquired about purchasing the system.

#### Advancing the Project

We will present our work to our upper management, who will then make the final decision about implementing the robot. If approved, the next step will be to begin operating robots at an actual data center. This will present two challenges. The first is whether we can customize the hardware. We have inquired several times about verifying the movements and other matters, but if we were able to conduct simple repairs ourselves, it would enable both parties to use our time more effectively. The second concern is that we would like THK to increase the peripheral support that will further improve the operability of the robot.

We hope that THK will continue to provide ample support for the success of this project.

# Corporate Governance and Tax Matters

## Corporate Governance Framework

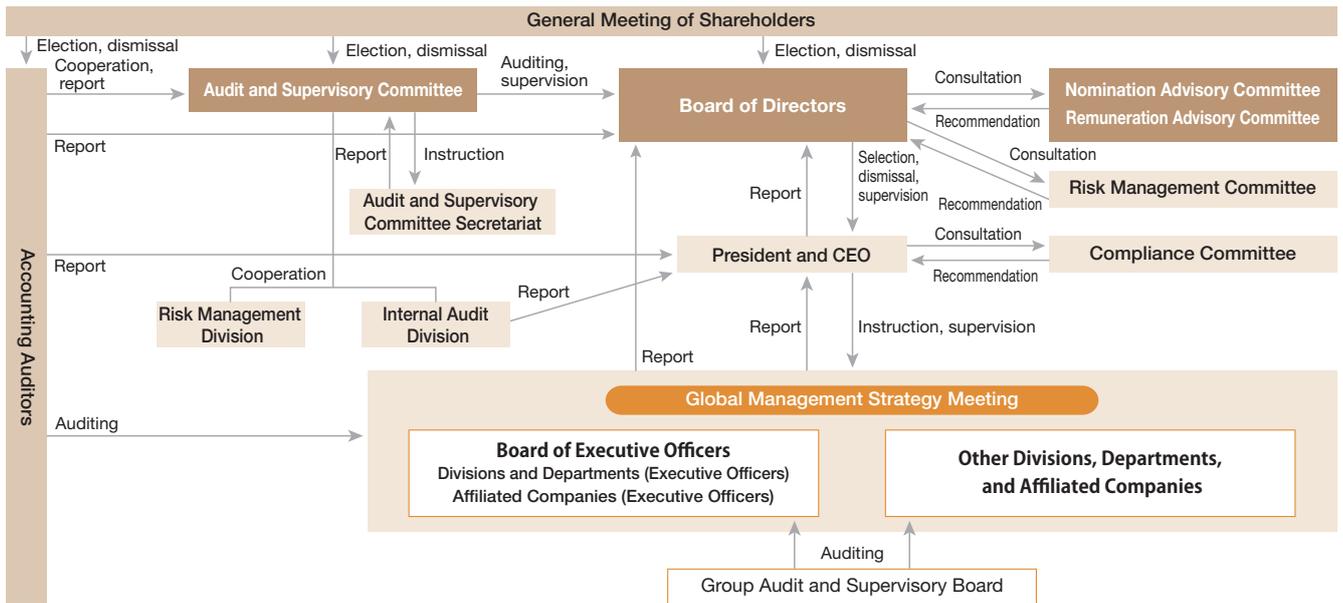
Based on our CSR policy, which consists of our Corporate Philosophy, Corporate Basic Policies, and Action Charter, we improve the transparency of THK Group operations for all stakeholders, including shareholders, as well as conduct appropriate and efficient management with the aim of maximizing our corporate value. Furthermore, we work toward achieving our fundamental policy of attaining sustainable growth and improving our corporate value over the medium to long term based on appropriate cooperation with all of our stakeholders.

For our institutional design, in conjunction with our establishment of an Audit and Supervisory Committee, we also instituted a non-mandatory Nominee Advisory Committee and a Remuneration Advisory Committee, with half of the

members of both committees being outside directors to ensure further transparency and fairness in management personnel and remuneration. We have also introduced an executive officer system. In doing so, THK has strengthened the auditing functions of the Board of Directors in addition to bringing greater speed and efficiency to management-related decision-making and the management of corporate affairs. Furthermore, over one-third of the Board of Directors comprises independent outside directors in order to enhance the neutrality and objectivity of management.

Sixteen Board of Directors meetings were held this year, and as in the previous year, some members attended via video conference as a precaution for the coronavirus, depending on the circumstances.

### Governance Structure



## Tax Matters

### Basic Policy

The THK Group appropriately files tax returns and pays taxes in accordance with both international tax regulations and the laws of each country and region in which it does business.

### Tax Risks

In addition to closely reviewing any transaction that may incur tax risks, we handle such matters appropriately by seeking advice from outside experts and consulting with the relevant tax authorities. Furthermore, we seek to control tax risks by utilizing advance pricing agreements (APA).

### Our Relationship with Tax Authorities

The THK Group strives to maintain a relationship of trust with tax authorities by disclosing required information in good faith.

### Ensuring Transparency

The THK Group appropriately discloses information in accordance with each country's laws and disclosure standards. Furthermore, we submit a Master File as well as a Country-by-Country Report in accordance with Japanese tax rules.

# Internal Audit, Internal Controls, and Information Security

## Internal Audit

As a matter of basic policy, we conduct internal audits that contribute to management and the departments being audited. Internal auditors monitor the business activities of each department as a group directly reporting to the CEO that is independent from any other department.

The Internal Audit Department carries the dual responsibilities of conducting internal audits and evaluating internal controls.

During internal audits, the business activities of each department and Group company are audited. These audits are generally performed on-site every year, and the results are summarized in an internal audit report and distributed to both

management and the departments under audit. In 2021, as the coronavirus pandemic continued, these audits were instead conducted virtually at 67 offices and departments.

During evaluations of internal controls, internal controls related to financial reporting are evaluated based on the Financial Instruments and Exchange Act. With the release of internal control reports, management evaluates the effectiveness of internal controls and undergoes an audit by accounting auditors on an annual basis. In 2021, the overall internal controls were evaluated at 21 locations, and the internal controls related to business processes were evaluated at 13 locations.

## Internal Controls

We have established and properly enforce our internal control policy to ensure that each THK employee complies with laws and the articles of incorporation as we maintain sound and transparent operations and achieve our corporate philosophy.

We have established the “Regulations for Internal Control over Financial Reporting” to comply with the internal control reporting system, which is based on the Financial Instruments and Exchange Act. In accordance with the basic framework

outlined in the Financial Services Agency standards, we have established and enforce the “Regulations for Internal Control over Financial Reporting,” and we improve them as necessary.

In 2021, the evaluation was primarily conducted in a virtual format due to the coronavirus pandemic, and no critical deficiencies requiring disclosure were found. The final evaluation results were summarized in the internal control report submitted and disclosed to the Prime Minister (Kanto Local Finance Bureau) in March 2022.

## Information Security

**Policy** Establish, instill, and maintain the THK Group information security structure.

### Information Security Management

The standing Information Security Committee, chaired by the CEO, convened four times this year. This committee, which is attended by outside directors and legal counsel, makes decisions concerning policies related to the establishment of an information security structure and discusses responses to information security concerns.

As training for employees, we: (1) distributed explanatory materials on the management and preservation of confi-

dential information to the information administrator of each relevant department with the goal of ensuring awareness of the rules, (2) provided e-learning materials on the rules for handling confidential information and measures to prevent leaks, and (3) conducted targeted e-mail attack drills. In addition to these, we also conduct information security surveys with our employees in order to identify problem points and improvements.

# Compliance and Intellectual Property

## Compliance Structure

**Policy** Thoroughly instill compliance awareness and create a work environment that does not allow wrongful acts.

To thoroughly instill compliance awareness, we maintain structures and conduct various programs with the aim of complying with laws, internal standards, and ethical norms.

### Compliance Committee

The Compliance Committee is headed by our CEO and convenes four times a year. This committee, which is attended by outside directors and a legal advisor, properly approves the annual activity plan and reports on the execution of those activities, as well as on the handling of compliance violations by employees and other matters reported internally.

### THK Group Helpline (Internal Reporting System)

The THK Group Helpline was established to prevent compliance violations and to enable quick and appropriate action in the event of an employee committing a violation. There are two internal contacts (the Risk Management Department and

Audit and Supervisory Committee) and one external contact (our legal advisor) for reporting. Reports can be made anonymously, and we faithfully enforce our rules ensuring confidentiality regarding their contents and prohibiting unfavorable treatment on the basis of having made a report. There were fourteen cases reported in 2021, and we worked with the necessary divisions to handle each case appropriately.

### Establishing the THK Group Anti-Bribery Policy

The THK Group has long worked in accordance with the THK Group Action Charter in order to prevent bribery. However, awareness of bribery involving foreign public officials and other forms of corruption has rapidly heightened around the globe in recent years. This in combination with the principle of anti-corruption established in the UN Global Compact, which was signed by THK in 2020, led to the establishment of the THK Group Anti-Bribery Policy in December, which is aimed at promoting efforts to prevent bribery.

#### Compliance Structure



<p><b>THK Group Anti-Bribery Policy</b></p> <p style="text-align: right;">Established December 2021</p> <p>Based on the fundamental principle of prioritizing legal compliance over short-term gains, the THK Group adheres to the following provisions as it promotes efforts to prevent bribery.</p> <ol style="list-style-type: none"> <li>1. Prohibition of Bribery               <ol style="list-style-type: none"> <li>(1) The THK Group does not directly or indirectly commit bribery, nor make offers or promises thereof to anyone.</li> <li>(2) The THK Group does not make facilitation payments (small bribes for the purpose of</li> </ol> </li> </ol>
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THK Group Anti-Bribery Policy excerpt

## Intellectual Property

**Policy** THK values and promotes the creation and full utilization of its intellectual property to continue contributing to the creation of an affluent society through the development of innovative products.

This year, as THK actively promoted R&D related to new business exemplified by our “OMNI edge” service for digital transformation, we took appropriate measures to preserve intellectual property, including acquiring rights in accordance with our business strategies and conducting various surveys and analyses. Furthermore, in order to respond to the increasing number of imitation products and unauthorized uses of our brand, we continuously imple-

mented measures such as prohibiting infringing products at the border through customs, further expanding our rights on a global scale, and working to prevent the acquisition of rights by others in order to prevent unauthorized use.

During the next year and beyond, we will work to maintain and strengthen our brand in addition to expanding our intellectual property rights for new business from an intellectual property investment perspective.

# Risk Management Committee and BCP

## Risk Management Committee

**Policy** We facilitate assertive governance with elements of bold risk-taking.

We maintain a forward-looking risk management structure that actively involves management in order to support appropriate risk-taking by executive staff.

The Risk Management Committee convenes annually and is headed by the CEO. The committee, which is attended by outside directors and legal counsel, approves the annual activity plan and works to establish, promote, and maintain the risk management structure by controlling risks throughout the entire Group.

### Risk Management System



## BCP

**Policy** As a pillar of global industry, it is THK’s critical social responsibility to supply products and minimize the impact on society even when an unforeseen disaster has occurred.

This year, we promoted BCM\* as a method to strengthen the effectiveness of our established BCP, investigating the status of various preparatory measures and the ability of each plant to respond to a disaster through means such as desktop simulations conducted mainly by BCP Promotion Council members at our production facilities.

As a separate initiative, the 3<sup>rd</sup> BCP Promotion Council convened in December with the theme of maintaining operations during a disaster. Around fifty people in charge of BCP in their respective production and sales departments were in attendance. Prior to the meeting, these BCP promoters were asked to think about the effectiveness of the measures in place at their location while considering the opinions of experts and a survey that asked about hypothetical scenarios at the location of an earthquake. At the meeting, members of the Yamagata and THK INTECHS Sendai plants who experienced the Great East Japan Earthquake shared photos and stories about the aftermath and their response. In doing so, participants gained a stronger understanding of and ability to accomplish what they need to do at their workplaces.

Looking at the recent frequency of earthquakes, there are significantly heightened concerns of a major earthquake occurring. In order to fulfill our mission of supplying products to customers even during an emergency, we will continue to improve our BCP measures and the ability of employees to respond to disasters at their location.

Next year and beyond, we will clearly identify the depart-

ments that will respond to the challenges identified during the simulations, determine priorities, establish a collaborative structure within and outside the Group, and formulate conduct guidelines in order to strengthen the capabilities of each plant. Furthermore, in order to promptly understand the impact of an emergency on our materials, components, and other elements of our supply chain, we will develop an information-gathering system that uses RPA and visualizes supplier locations. Through these efforts, we will strive to minimize the amount of harm.

### BCP Strategies for a Large-Scale Disaster

Activity	Description
Supplying products	<ul style="list-style-type: none"> <li>Confirming back-up domestic and international Group factories to make products in place of a facility suffering a disaster</li> <li>Expanding production capabilities of international Group factories</li> </ul>
Servers	<ul style="list-style-type: none"> <li>Maintaining main and backup servers in separate data centers</li> <li>Practicing switching to backup servers in case main servers were to go down (once per year)</li> </ul>
Earthquake-proofing	<ul style="list-style-type: none"> <li>Production facilities: installing equipment to prevent toppling of shelves that hold components, fixtures, and tools</li> <li>Sales offices: installing equipment to prevent toppling of printers, cabinets, etc.</li> </ul>
Emergency supplies	<ul style="list-style-type: none"> <li>All production and sales facilities: potable water, food, sanitary items, emergency supplies, and rescue equipment</li> </ul>
Emergency drills	<ul style="list-style-type: none"> <li>Annual drills at all locations</li> <li>Annual satellite phone test</li> </ul>

\* BCM: An abbreviation of “business continuity management.”

Whereas BCP is concerned with business continuity during a disaster, BCM is focused on planning, implementation, execution, and improvement in order to manage BCP smoothly.

# Together with Our Customers, Together with Our Suppliers

## Sales Activities

- Policy** **1. Increase market share** Strengthen collaboration between global branches
- 2. Enter new markets** Generate new demand
- 3. Strengthen proposal-based sales** Discover customers' problems and propose solutions

Our company name incorporates three principles: Toughness (tough, durable products), High Quality (the world's top-quality products), and Know-how (expertise for our customers). Under these principles, we conduct our daily sales activities with a customer-focused approach where we think, act, and verify results from the customer's perspective. Currently, we have established an integrated production and sales structure with 122 sales offices and 37 production facilities close to centers of demand in order to produce and sell locally in four regions: Japan, the Americas, Europe, and Asia.

In the past few years, we have been expanding into fields that are different from our conventional ones in order to implement continuous initiatives in new business areas. Due to the influence of the coronavirus pandemic, we have been actively entering the medical device industry since last year, and our products have been adopted for use in many new

pieces of equipment such as PCR testing machines. As we did last year, we held meetings with customers online in order to conduct business activities even during a state of emergency. For exhibitions outside of Japan as well, although there were time differences, we used the internet to link Japan with local sites, meet with outside executives, and conduct technical discussions.

Next year and beyond, we will maintain a sales attitude that is in line with market trends and considerate of customers.

	In-person	Online
Technical seminars	0	52
Exhibitions in Japan	19	9
Exhibitions outside of Japan	6	2
Private shows	13	3

## Together with Our Suppliers

- Policy** **1. Global procurement, optimizing procurement locations, and promoting green procurement**
- 2. Accelerating work speed and boosting work efficiency with AI**
- 3. Establishing a structure with suppliers to increase production and promoting improvement activities**

Our daily operations are performed in accordance with our policy to manufacture products in the optimal location and to conduct our business and improve our technology in a way that meets the needs of our customers. Throughout our supply chain, from design to sales, we also strive to adhere to social norms and be environmentally conscious with our activities in order to create a sustainable society.

This year saw a sudden increase in orders, but thanks to the tremendous cooperation of our business partners, we were able to keep production facilities in and outside of Japan supplied without any delays. On the other hand, the pandemic made in-person meetings with our affiliates even more difficult than last year, and remote meetings became the norm even for THK Association events.

The response to the European RoHS restrictions on lead, which we have been working on since last year, is expected

to be completed in the first quarter of 2022 as relevant components are gradually replaced with lead-free alternatives.

In addition, there is an increasing trend of customers requesting environmental surveys such as SVHC and TSCA and surveys related to various laws and regulations, and we have received cooperation from our business partners on a scale larger than usual.

From the next fiscal year onward, it will be necessary to take measures to further increase production, so we will rapidly consider, coordinate, and implement enhancement measures with our business partners in Japan. In consideration of global transportation issues caused by the pandemic, such as the shipping container shortage and resultant lengthening of lead times, we will continue to make adjustments as needed in Japan and around the world to procure materials and ensure production.

# Together with Our Shareholders

## Together with Our Shareholders

### Mindset

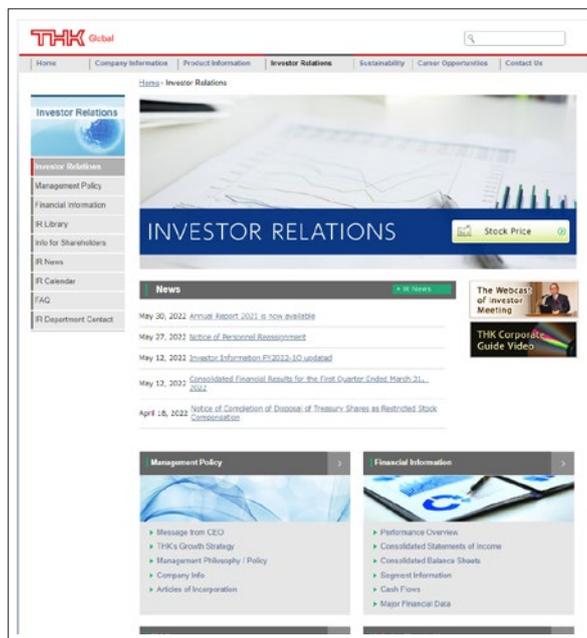
We engage in IR activities in an effort to disclose information in a manner that is fair, impartial, expedient, accurate, and easy to understand. We strive to provide more thor-

ough and valuable information through IR events such as financial results briefings and IR tools such as our investor relations website and Annual Report.

### Primary IR Activities

Investor relations events	IR meetings	Due to the coronavirus, these meetings were conducted over the phone. About 300 meetings were held during the year.
	Financial results briefing	Post presentation materials and videos on the IR website mid-year and at year end
	General Meeting of Shareholders	Scheduled on a Saturday during a period when few shareholder meetings are scheduled, accompanied by an exhibition*
IR tools	IR website	Publish various IR tools and content oriented towards individual investors
	Annual Report	Compile company overview, management targets, and medium- to long-term strategies
	Investor information (fact book)	Compile detailed financial data

### The IR Website



### IR Library

In addition to documents related to financial statements, including investor information compiled from summaries of financial results and detailed financial data, the library also includes Annual Reports and Sustainability Reports. Presentation materials and videos are available here following the financial results briefings held every year in February and August.

### IR Information E-mail Delivery Service (RIMSNET)

This service sends an electronic newsletter announcing financial results to registrants, who are primarily individual investors.

#### Register at:

<https://rims.tr.mufg.jp/?sn=6481>



\*The IR Information E-mail Delivery Service is managed by Mitsubishi UFJ Trust and Banking Corporation.

### General Meeting of Shareholders

#### For Our Individual Investors

Since 1998, we have held our General Meeting of Shareholders, which is based on the concept of an open meeting, on Saturdays during periods when few shareholder meetings are scheduled. We provide seats for observers so that

many people, including business partners, can participate.

We also hold an exhibition\* after the meeting, where we introduce the various fields where our products are utilized, such as machine tools, industrial robots, automotive and transportation equipment, and seismic isolation systems.

\* As a precaution for the coronavirus, there were no seats for observers or a product exhibition at the 52<sup>nd</sup> General Meeting of Shareholders.

# Quality Assurance: Trust and Safety

## Quality Assurance Structure

**Policy** We supply reliable and safe products of superior quality to all customers and provide a complete quality assurance system with global considerations in mind.

THK has established a quality assurance system in which each production facility both in and outside of Japan is certified with the ISO 9001 Quality Management System. We provide a quality assurance system for the industrial machinery business that produces machine tools, semiconductor manufacturing equipment, medical devices, robots, and seismic isolation and damping systems. With this as our base, we obtain certifications in quality standards adapted for new fields such as the automotive and transportation business and the aerospace industry.

In addition, as the cooperation of our suppliers is critical to improving our product quality, we work to establish trusting relationships with our vendors and conduct quality audits in compliance with our quality management system in order to maintain and improve quality.

Furthermore, as part of managing our product development process, we review the solutions implemented for any issues during the planning, design, prototype, trial, and mass-production stages, and we work to manage the stability and maintenance of quality levels after mass production.

We have also established a system that allows quality data to be shared globally. In addition to gathering feedback from customers in each region, analyzing it, and providing rapid and appropriate service, we endeavor to develop products that meet market needs and improve quality.

### Quality System Overview



### Quality Management System Certification Status

	(Facilities)		
	ISO 9001	JIS Q 9100 Aerospace Industry	IATF 16949 Automotive Industry
Japan	11	1	4
Outside of Japan	13	-	7
Total	24	1	11

### Quality Management Process



### Global Quality Assurance Structure



# Health and Safety

## Management Structure

### Policy

1. We consider the improvement of occupational health and safety to be one of the most important issues for the Production Division, and as we conduct our business activities at each factory, we promote the creation of a safe, healthy, and comfortable workplace by eliminating harmful work environments that may lead to injury or illness.
2. We continuously improve our health and safety management system by setting appropriate occupational health and safety goals at each factory and reviewing them annually.
3. We strive to improve occupational health and safety by complying with laws such as the Industrial Safety and Health Act and rules relating to occupational health and safety established by the company and workplace.
4. Each facility eliminates hazards and causes of harm in the workplace through risk assessments and promotes activities with the goal of completely eliminating all potential hazards.
5. Each facility promotes the occupational health and safety management system with the active participation and consultation of all employees.
6. We acknowledge that the occurrence of accidents and injuries is a direct reflection of the nature and culture of the workplace, and we promote activities to develop correct habits through the use of the occupational health and safety management system.
7. This occupational health and safety policy is disseminated to all employees at each plant through education, training, and awareness campaigns, and we facilitate the timely release of information relating to occupational health and safety within and outside the Production Division.

In order to achieve a safe and comfortable workplace and zero workplace accidents, we conduct activities to raise awareness of safety in particular through education and training. We ensure that all employees at each production facility have the mindset for an accident-free workplace, and we disclose information on occupational health and safety in a timely manner. Next year and beyond, we will continue to promote health and safety activities and obtain information on revised laws and regulations at all times. The Kofu plant achieved 3.1 million consecutive accident-free hours\* in August and is in the process of applying to the Kofu Labor Standards Inspection Office for class 1 certification. In April, THK RHYTHM's Hamamatsu plant achieved 13.2 million accident-free hours, and in July, the plant received a class 4 accident-free record certificate from the Hamamatsu Labor Standards Inspection Office.

\* Accident free hours: Number of employees × total labor hours

### Occupational Health and Safety Activities and Goals

Goal	Description
Prevent work-related injuries and illnesses <ul style="list-style-type: none"> <li>• Work-related accidents: 0</li> <li>• Achieve 3.1 million hours without any accidents (class 1 accident-free record)</li> </ul>	<ol style="list-style-type: none"> <li>1. Implement risk assessments</li> <li>2. Conduct workplace health and safety training</li> <li>3. Promote hazard prediction training and submission of proposals to prevent near misses (production: 1/month per group, support: 1/month per department)</li> </ol>
Continuously improve occupational health and safety performance	<ol style="list-style-type: none"> <li>4. File and provide up-to-date information pertaining to relevant regulations (chemical substance risk assessments)</li> <li>5. Promote health and safety committee activities</li> <li>6. Perform internal audits and management reviews</li> <li>7. Promote traffic safety activities (achieve zero traffic accidents)</li> <li>8. Conduct workplace safety patrols</li> </ol>
Provide a safe and healthy workplace	<ol style="list-style-type: none"> <li>9. Promote mental health</li> <li>10. Receive guidance from industrial physicians and implement disease prevention activities</li> <li>11. Perform regular and special health checks</li> <li>12. Manage long work hours (overtime)</li> </ol>

# Supporting Development

- Policy**
- 1. In addition to promoting work-life balance, we establish a human resources system that treats employees in a way that facilitates the employment of a diverse workforce.**
  - 2. We respect the individuality of each employee and support the development of their careers and abilities through education, training, and other opportunities.**

We are working to support the development of our employees in order to empower individuals. In addition, we are promoting specific measures to accomplish this goal in alignment with our three growth strategies.

### Empowering individuals in alignment with our growth strategies

- 1. Full-scale globalization:** Developing talent that can succeed globally
- 2. Development of new business areas:** Conducting the 66 Project\* and our basic technical training program
- 3. Change in business style:** Developing talent that utilizes data to be able to quickly adapt to a digital society

\* 66 (“Six-Six”) Project: Six people from across the Engineering Division lead six project teams to conduct research activities to cultivate new markets.

## New Hire and Follow-Up Training

Due to the coronavirus pandemic, the new hire training was conducted in a hybrid virtual and in-person format. After the conclusion of training in late April, new employees underwent a period of practical training at various production facilities and then were sent to their assigned workplaces. The central theme of this training was developing talent capable of promoting digital transformation, so a significant amount of content about

data utilization was added. For the people who joined the company a year ago, because they have mostly been working from home since receiving their official assignments, we have also been conducting monthly online check-ins with each individual to assess their motivation level, and we have also followed up with training about communication and other topics.

## Data Utilization Training

In pursuit of our President’s Policy to “Fully operate as a ‘Smart company,’” and in order to further accelerate DX efforts throughout THK, we began conducting data utilization training in 2019 with the aim of teaching employees about data utilization and related techniques. This year, in order to increase data utilization skills company-wide and engender a culture of utilizing

data for work, we used our e-learning tool to train all headquarters and sales staff on the fundamentals of data utilization. Next year and beyond, this same training will be expanded to members of the production division to bring the entire company to the next level. We also plan to offer intermediate and advanced training next year.

### Activity Details

Levels of Training and Their Contents

Advanced	Intermediate	Basic	New Employee
<ul style="list-style-type: none"> <li>Image analysis</li> <li>Time series analysis</li> <li>Project management</li> </ul>	<ul style="list-style-type: none"> <li>Forecasting models via machine learning</li> <li>Basic Python (programming language)</li> </ul>	<ul style="list-style-type: none"> <li>Conducted for all employees via e-learning</li> <li>Basic skills</li> </ul>	<ul style="list-style-type: none"> <li>Aimed at new graduates</li> <li>Three-week course covering topics from statistics to programming</li> </ul>

# THK Education Outreach Program

Now in its fifth year, the THK Education Outreach Program began in 2017 as a special project in anticipation of our 50<sup>th</sup> anniversary in 2021 and with the desire to introduce children to the joy of manufacturing. The objective is to use manufacturing education to foster talent that can create and develop, thinking about issues with classmates and arriving at solutions.

For the second year in a row, the pandemic forced us to suspend the lessons our employees would conduct at middle schools. However, we did develop new educational materials that could be used in technical classes at middle schools. We solicited new lesson ideas internally and selected “a trash can that you want to use” as the theme, creating a lesson module in which students add a sorting element that automatically separates trash that can be recycled. This program was designed so many schools can adopt it as long as they have the materials. This year, we recruited schools for a trial, and the official release will

be next year. Materials will be distributed to schools as a means to foster problem solving through manufacturing.

For students who are conducting manufacturing-related R&D, we hosted our 5<sup>th</sup> Science Castle Grant THK Prize. Out of 28 school entries, we provided development support to 10 teams for six months, which included a technical mentorship with a THK employee. For the first time in two years, we held our annual gathering at the end of December to present everyone’s results in person. In addition to presentations from the schools selected in 2021, we also invited past participants to share their activities after receiving their awards. Our project office was thrilled to see that these students were continuing their research and their passion for manufacturing was as strong as ever.

We will continue our outreach program next year and beyond, and in addition to maintaining our THK Prize, we plan to release manufacturing education materials designed for middle school engineering and home economics courses.

## Rakusei Senior High School (Kyoto): Winner of the Science Castle Grant THK Prize for Best Development

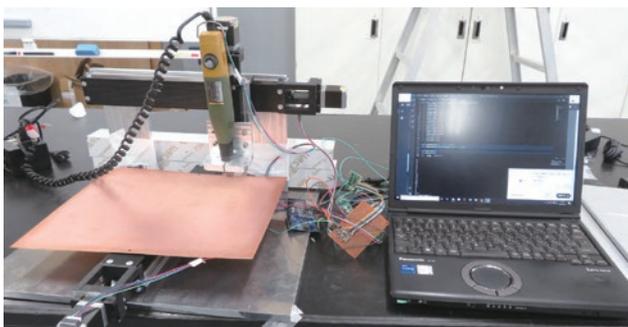
### Project to Develop a Desktop Circuit Board Manufacturing Device

As part of my high school robot research club, I research engineering topics that I am interested in, which includes creating robots and programs. In June 2021, I participated in RoboCupJunior Worldwide and won in the Rescue League, which is a contest of accuracy and speed as autonomous robots search for victims inside a maze that simulates a disaster site. The process of making printed circuit boards for the tournament was inconvenient, so when I was working on developing a device that could make them more easily, I wanted to get a professional engineer’s feedback on the design, so I applied for a Science Castle grant.

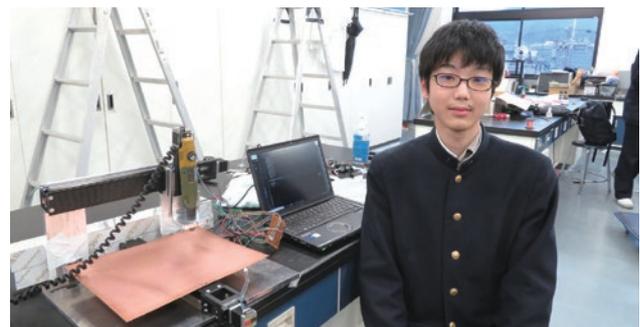
Normally, you use an etching solution to dissolve the copper plating on a circuit board and make the circuit, but that produces liquid waste, so I went with a method where

you cut the circuit board with the copper plate attached and you do not have to do any waste liquid treatment. The device uses a dental drill that is moved in all directions by LM Guide units. I am very close to being able to process one side of the circuit board, but I want to be able to create two-sided circuit boards for robots. An engineer from THK gave me advice about controlling systems with actuators and other tips.

In the future, I want to study engineering and do research that will solve the problems people face in their daily lives. I have not narrowed down exactly what I want to do yet, but I hope that my research will get more people involved in manufacturing and help contribute to the development of industry in Japan.



Desktop circuit board “Alnilam”



Ikenoue next to the circuit board he developed

# Local Communities

## THK's Approach

As a good corporate citizen, our company actively contributes to society. Our activities include:

1. Establishing a basic philosophy of contributing to society through our business activities
2. Identifying areas to prioritize our efforts and using our corporate resources to promote specific contributions based on our corporate philosophy
3. Coordinating and cooperating with various stakeholders, including NPOs, NGOs, local communities, governments, and international institutions
4. Supporting employees' own community contributions and involvement
5. Participating in the social efforts of the industry and business community

## Community Involvement

In 2021, we contributed to our local communities around the world through the following means. To learn more about the activities marked with an asterisk, please visit our homepage.

### Donations

Date	Purpose	Recipient
February 2021	Support/membership dues	Japan Science Foundation
March 2021	Special member fee	Japan Philharmonic Orchestra
July 2021	Activity funds	Japanese Red Cross
Throughout 2021	Activity funds	City of Dačice
December 2021	Food and toys	St. Catharines and Thorold

### Activities

Facility	Details
Five plants outside of Japan (TRA Michigan, DALIAN THK, THK Wuxi, TRA Czech, TRA St. Catharines)	Hosted a total of 131 interns.
THK NIIGATA*	<p>Provided space for a workplace coronavirus vaccination site, which was utilized by 1,091 employees, family members, temporary workers, and people from nearby companies.</p> <p>Noted traffic safety repairs that were needed when working as traffic guards, including faded road markings and dirty traffic mirrors, and petitioned the Agano city government and police department to make those improvements.</p>
THK INTECHS Mishima*	Received an award from the Shizuoka Prefecture Society for Safe Driving Management for having an accident-free record while commuting.
TRA St. Catharines*	Sold work uniforms with the THK logo, and 5 Canadian dollars from each purchase were donated to charity, for a total of 7,000 Canadian dollars.
DALIAN THK*	Provided space for a coronavirus PCR testing site, and several employees volunteered with the pandemic response in their local areas.
THK Changzhou*	Monitored traffic conditions on the highway for 14 days during the pandemic.
	Performed cleaning tasks at the Ankang nursing home once a month.
	Organized books at the Changzhou Library once a month.
TRA Michigan*	Supported the Riverfront Park Revitalization Project.

## Value Creation

### DX-Certified Operator

In April 2021, THK was accredited as a DX-certified operator through the Ministry of Economy, Trade and Industry's Digital Transformation (DX) Certification initiative, which aims at promoting DX among businesses.

The DX Certification system is based on the Partial Revision of Act on Facilitation of Information Processing, which came into effect on May 15, 2020. This is an accredita-

tion for business operators that have formulated a vision for promoting DX and established a strategy and formal structure.

一般事業主の氏名又は名称	代表者の氏名	住所	法人番号
手続登録番号	認定の有効期日	認定の機関	申請書
THK株式会社	中野 彰博	東京都港区芝浦2丁目1-2番10号	3010701006176
DXC-2021-04-0010-01	2021年4月1日	通用社JPO2年替 (2023年3月31日まで)	97504-F

Mention on METI's website

### Autonomously Moving Signage Robot (SEED-Sign-Mover) Selected for Robot Demonstrations

THK's autonomously moving signage robot combines a digital display with an autonomously moving trolley that can move in all directions and turn 360° in tight spaces. It can be

used to display multimedia content, and it can be operated remotely. This year, this robot was selected for demonstrations in Aichi Prefecture and Kanagawa Prefecture.

#### Example Application in Aichi Prefecture

This product was selected for the AICHI ROBOT TRANSFORMATION demonstration in January sponsored by Aichi Prefecture. As the coronavirus pandemic has brought service robots to the forefront as a new part of daily life, this proof-of-concept trial showed successful examples of using robots that collaborate with people in various scenarios.

This year, THK's robot was selected for a proof-of-concept trial at Toyota Stadium, demonstrating its use as a mobile advertising pillar and a means to provide administrative support remotely.



Autonomously moving signage robot trial at Toyota Stadium

#### Example Application in Kanagawa Prefecture

In September, THK's robot was selected for the guiding robot trial conducted at the Okinawa Tokushukai Shonan Kamakura General Hospital as part of Kanagawa Prefecture's 2021 Project for the Implementation of Robots as a Coronavirus Countermeasure.

The purpose of the trial at the hospital was to guide visitors to examination rooms or other destinations through remote operation or the robot's autonomous movement function. The height of the display could also be adjusted through remote operation to match the height of the visitor and allow the operator to communicate with them more directly.

### Registered in a Database

In April, the LM Guide Model LSR we developed in 1972 as the world's first commercial product of its kind was registered in the History of Japanese Industrial Technology database\* maintained by the National Museum of Nature and Science in Japan.

The entry recognizes the Model LSR for using our proprietary technology to enable the linear motion of machines through rolling motion and becoming the world's first commercialized linear motion guide (LM Guide), which drasti-

cally improved machine performance. This greatly contributed to the linear motion guide's widespread adoption and proliferation within Japan's key machine tool and semiconductor industries.

直動転がり案内 LSR	
資料番号	105212040017
所在等	THK株式会社
所在地	東京都港区
製作(製造)年	1972
調査機関団体	一般社団法人日本工作機器工業会

Entry in the History of Japanese Industrial Technology database

\* History of Japanese Industrial Technology database: A collection of valuable materials related to the development of technology in post-war Japan. This online database is maintained by the National Museum of Nature and Science's Center of the History of Japanese Industrial Technology in order to preserve this history for future generations.

# THK Group Business Activity Environmental Impact Overview<sup>1</sup>

(Data collection period: January to December)

INPUT				01 Development
	Product design		LM Guide high-speed durability tester	
<b>Production Materials Used</b>				02 Material Procurement
	2020	2021	Change	
Main raw materials (t)	56,542	117,084	107%	
Main indirect materials (t)	1,186	1,667	40%	03 Production
Packaging materials (t)	6,459	7,588	17%	
<b>Resources Used</b>				
	2020	2021	Change	
Bunker A fuel oil (kL)	2,554	2,505	-2%	
Liquefied natural gas (t)	128	247	92%	
Propane (t)	1,222	1,598	31%	
Kerosene (kL)	9	9	8%	
Electricity (MWh)	232,690	307,007	32%	
Water (1,000 m <sup>3</sup> )	493	623	26%	
<b>Renewable Energy<sup>2</sup></b>				
	2020	2021	Change	
Solar power generated (MWh)	99	2,826	2,776%	
	THK RHYTHM Hamamatsu Plant Solar power generation		THK RHYTHM Kyushu Plant Solar power generation	
<b>Fuel for Vehicles<sup>3</sup></b>				04 Logistics
	2020	2021	Change	
Gasoline (kL)	61	101	66%	
Diesel (kL)	1,217	1,569	29%	

## Objectives and Targets (12 production facilities in Japan)

Item	Objective	Target
Conserving energy	Reduce energy consumption	Reduce energy consumption rate's* 5-year average by 1% * Consumption rate (value added)
Preventing global warming	Reduce CO <sub>2</sub> emissions	
Recycling and reducing waste	Achieve and maintain zero emissions	Maintain zero emissions (final disposal volume of less than 0.5%)
Green procurement (hazardous material management)	Reduce PRTR substances	Reduce use by 3% every year compared to the baseline year
	Manage chemicals contained in products	Comply with regulations such as the RoHS Directive
Sustainability activities	Environmental conservation	Conduct independent conservation activities specific to the local circumstances at every factory

<sup>1</sup> The overview of our environmental impact and environmental accounting data is based on the following production facilities: Twelve production facilities in Japan: Yamagata, Kofu, Gifu, Mie, Yamaguchi, THK NIIGATA, THK INTECHS (Sendai and Mishima), NIPPON SLIDE, and THK RHYTHM (Hamamatsu, Inasa, and Kyushu)  
 Eight production facilities outside of Japan: TMA (USA), TME (France), TMI (Ireland), DALIAN THK (China), Wuxi (China), Liaoning (China), Changzhou (China), and TMV (Vietnam)  
<sup>2</sup> Data was collected from the Toyota branch, Yamaguchi plant, THK INTECHS Mishima plant, and THK RHYTHM Hamamatsu plant.  
<sup>3</sup> Data was collected from five production facilities in Japan (Yamagata, Kofu, Gifu, Mie, and Yamaguchi); three distribution centers (Tokyo, Chubu, and Yamaguchi); and three factory centers (Yamagata, Kofu, and Mie).  
<sup>4</sup> Data was collected from the 12 production facilities in Japan.

## OUTPUT

### E<sup>3</sup> Concept (Endless, Ecological, Economical)



- Development of products that reduce environmental impact
- Components for the renewable energy field

- Green procurement
- Supplier CSR procurement

- Energy conservation
- Resource conservation
- Hazardous material management
- Global warming prevention
- Zero emissions

- Green logistics
- Streamlining shipping methods
- Low-pollution forklifts
- Packaging material improvements

#### Production Volume

	2020	2021	Change
Production volume (t)	51,521	77,590	51%

#### Waste

	2020	2021	Change
Total waste (t)	15,456	22,432	45%
Recycled (t)	13,544	19,442	44%
Disposed (t)	1,527	2,399	57%

#### Air Emissions<sup>4</sup>

	2020	2021	Change
Air emissions of PRTR substances (kg)	877	963	10%

#### Air Emissions (Production)

	2020	2021	Change
CO <sub>2</sub> emissions (t-CO <sub>2</sub> )	152,929	183,809	20%

#### Water Discharge

	2020	2021	Change
Water discharge (1,000 m <sup>3</sup> )	275	306	11%

#### Air Emissions (Transport)<sup>3</sup>

	2020	2021	Change
CO <sub>2</sub> emissions (t-CO <sub>2</sub> )	3,293	4,297	31%



### Result

### Main Initiatives for 2021

Target consumption rate was 0.545. Result was 0.614.	1. Conserve energy on existing equipment 2. Improve system for energy use 3. Upgrade air conditioning 4. Replace light fixtures 5. Reduce frequency of shipments
Target was 0.50. Result was 0.09.	1. Sort and recycle waste 2. Reduce material use
Target was 50,791 kg. Result was 33,950 kg.	1. Reduce PRTR substances 2. Review solvents used
Promoted the replacement of substances identified as RoHS Directive exemptions	1. Promote the replacement of substances identified as RoHS Directive exemptions
Conducted activities at every factory	1. Collect plastic bottle caps and aluminum pull-tabs * Local outreach activities were not conducted.

# Environmental Policy

The THK Group contributes to both society and the economy through our pioneering role as manufacturers of the Linear Motion Guide and other products. We also believe that it is a company's social responsibility to leave the glob-

al environment in a healthy state for the next generation, which is why we are promoting the following initiatives to continually decrease our environmental impact and to sustain and improve the natural environment.

## THK Group's Basic Environmental Policy

1. We consider conservation of the environment to be a major management challenge, and we are striving to accurately understand how our business activities, products, and services impact the environment. All divisions set appropriate environmental goals to address this challenge.
2. In addition to complying with environmental laws, we have set self-imposed standards that are reviewed regularly to improve the efficiency and effectiveness of our environmental management.
3. We will continually promote the development of products that help reduce environmental impact.
4. We will cut down energy use in our business activities and continually promote the reduction of energy consumption and greenhouse gas emissions.
5. With a particular focus on the reduction and recycling of waste, we will not only continue to promote the saving and recycling of resources, but also strive to prevent pollution.
6. We recognize the impact our business activities have on biodiversity, and we will actively work toward the conservation of all life on Earth.
7. To achieve greater collaboration with regard to our environmental activities, we provide guidance and support to our affiliate companies and business partners, and also strive to work in cooperation and harmony with the community.
8. This basic environmental policy is disseminated to all divisions in the group through education, training, and awareness campaigns, and we facilitate the timely release of information on the environment both within and outside the Group.

Revised on August 21, 2019

## Structure for the Promotion of Environmental Activities

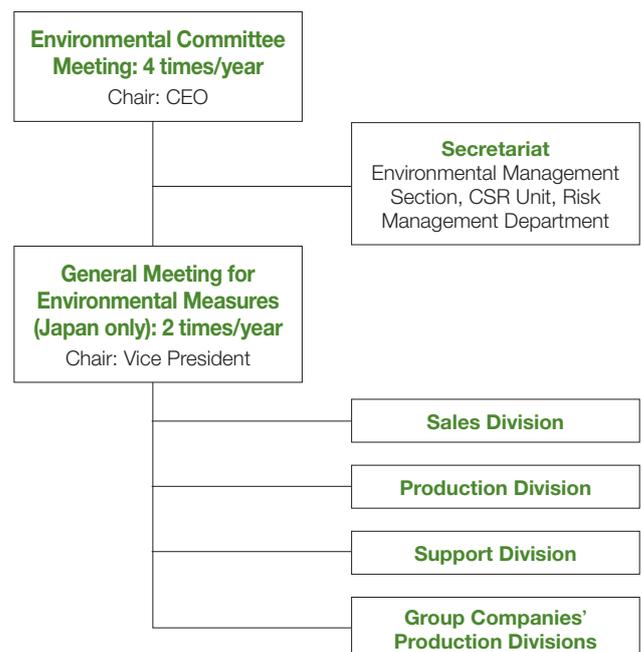
THK has developed a structure that promotes various initiatives aimed at reducing the environmental impact of its business activities.

The Environmental Committee, chaired by the CEO, convenes quarterly and approves each year's environmental targets and environmental promotion schedule. In addition to reporting on the state of energy conservation activities, the management of hazardous materials, and the status of compliance with various other environmental laws and regulations, it also considers necessary improvements as appropriate.

The General Meeting for Environmental Measures convenes twice a year, headed by the Vice President. Representatives from each production facility and office department gather to recognize the necessity of proactive efforts toward reducing environmental impact. They share useful data, such as the status of energy use at each facility and examples of the results of energy-saving projects, and connect this information to improvement initiatives.

Specifically, they report on activities to reduce environmental impact that are suitable to each business location, such as the discovery and elimination of wasteful uses of energy, the transition to energy-efficient production equipment and HVAC systems, the installation of solar panels in open spaces, the conversion of lighting to LED bulbs, and so on.

### Structure for the Promotion of Environmental Activities



# Energy Conservation

As exemplified by sustainability, society and corporations generate common value through corporate activities that minimize the negative impacts and strengthen the positive. With this mindset of working for the benefit of all in addition to our individual interests, THK is promoting various initiatives to achieve the creation of a sustainable society.

The world is facing risks driven by climate change from global warming, and in response, the THK Group has established medium- and long-term targets for lowering its emissions of greenhouse gases. (These targets were ap-

proved by the Board of Directors in August 2021.)

To minimize our negative impact, we have established the Carbon Neutrality Promotion Project, which is working to further reduce the CO<sub>2</sub> emitted through our business activities. Meanwhile, to strengthen our positive impact, we are expanding our offerings of linear motion and other products and services that contribute to energy conservation. We will accelerate our various initiatives in order to achieve these goals.

## Medium- and Long-Term Targets for Carbon Neutrality

### Medium-Term Target

- CO<sub>2</sub> emissions in 2030: 50% of 2018 levels
- Scope: THK Japan and Group companies in Japan
- 2018 emissions: 106,514 tons of CO<sub>2</sub>

### Long-Term Target

- CO<sub>2</sub> emissions in 2050: Net-zero
- Scope: Entire THK Group

### Contributions from our products and services (strengthening positive impact)

Expansion of linear motion products (contributing to energy savings and longer service life)



Expansion of products for renewable energy (direct contribution)



Shaft unit for wind turbines

Expansion of products that contribute to smaller and lighter vehicles for the shift toward electric automobiles



### Reduction of CO<sub>2</sub> emissions from our business activities (minimizing negative impact)

#### Carbon Neutrality Promotion Project



#### Recent major initiatives:

- Upgraded to LED lighting
- Installed or upgraded equipment for higher efficiency
- Installed renewable energy equipment
- Actively utilized existing renewable energy equipment
- Implemented various creative energy conservation activities
- Monitored our usage of air conditioning and lighting

# Recycling, Reducing Waste, and Green Distribution

## Achieving and Maintaining Zero Emissions

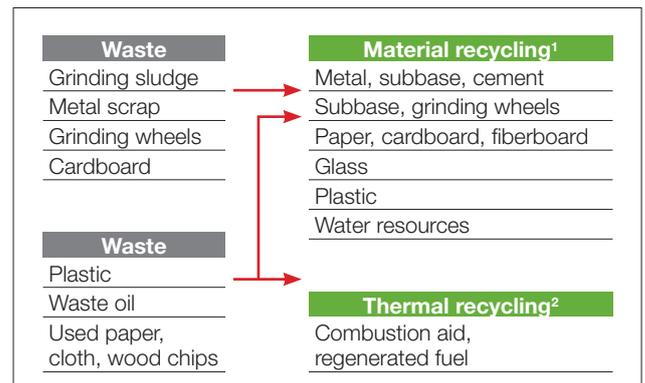
The aim of zero emissions is to recycle waste generated during production processes, switch to beneficial materials that can be put to other industrial uses, and get as close to discharging zero waste as possible. We promote zero-emissions activities through controlling the use of direct and indirect materials, emissions and final waste, and reusing and recycling.

The waste produced by our business activities includes metal scrap, oil and liquid waste, grinding sludge, packaging, and plastic waste. By thoroughly separating our waste, we reuse or transform waste into usable materials, such as by turning steel scrap into steel-making material, sludge with grinding wheel dust into cement material, and oil and plastic waste into fuel.

As we work to conserve resources and promote zero emissions, we achieved an emissions rate (volume of

waste disposed/total discharged) of 0.09% in 2021, once again reaching our annual target of less than 0.50%.

### Waste Recycling Methods



<sup>1</sup> Material recycling: Reusing waste as raw material for another product  
<sup>2</sup> Thermal recycling: Using waste as combustion material

## Initiatives for Green Distribution

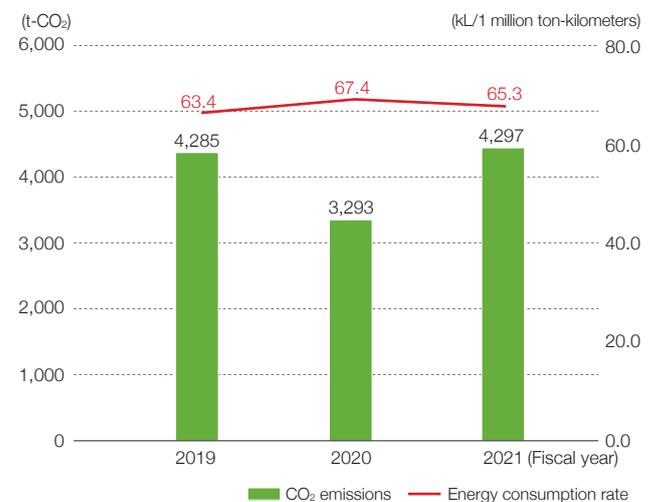
- Policy**
1. Propose shipping methods that minimize CO<sub>2</sub> emissions while considering customers' due dates
  2. Consider load efficiency and labor efficiency in logistics
  3. Reduce CO<sub>2</sub> emissions year on year and reduce fuel consumption rate by 1% (per ton-kilometer of shipping)

Distribution departments\* are constantly considering shipping methods to reduce CO<sub>2</sub> emissions while giving top priority to meeting customer delivery dates. Since June, we have switched some overseas shipping from the conventional air freight to transport by ferry.

From the next fiscal year onward, we will actively utilize DX to reduce CO<sub>2</sub> emissions through more efficient shipping, such as by using advance understanding of shipment volumes to determine optimal loading on pallets. In addition, we will use AI to review operations and implement initiatives to save labor.

\* Distribution departments: Two distribution centers (Chubu and Yamaguchi); three factory centers (Yamagata, Kofu, and Mie); and THK NIIGATA

### CO<sub>2</sub> Emissions and Energy Consumption from Transportation



Data collection period: January to December

Data includes five production facilities in Japan (Yamagata, Kofu, Gifu, Mie, and Yamaguchi); two distribution centers (Chubu and Yamaguchi); and three factory centers (Yamagata, Kofu, and Mie).

# Hazardous Material Management and ISO 14001

## Hazardous Material Management Activities

Environmentally hazardous materials are defined as materials that may be harmful to the human body or ecosystems when contained in a product. In principle, we prohibit the use of such materials in our components and raw materials. For hazardous substances that may be present as impurities, we have established tolerances and handle such materials accordingly.

With regard to the Restriction of Hazardous Substances Directive (RoHS)<sup>1</sup> and REACH Regulation<sup>2</sup> in the EU and the Administrative Measure on the Control of Pollution Caused by Electronic Information Products<sup>3</sup> in China, we have adopted our Green Procurement Guidelines at our production facilities in and outside of Japan and provide information necessary to meeting our customers' requirements. In addition, we submit REACH reports to the relevant authorities as required.

We stringently manage chemicals specified in the PRTR Law<sup>4</sup> and are working to switch to products that do not contain such substances. Our goal is to reduce our handling of these chemicals by 3% each year, and we achieved a reduction from last year, going from 37,962 kg in 2020 to 33,950 kg in 2021. Please visit our homepage for details about our initiatives at each production facility.

<sup>1</sup> RoHS Directive: Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment

<sup>2</sup> REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals) Regulation: A regulation that requires almost all chemicals sold in the EU to be evaluated for safety and to be registered

<sup>3</sup> Administrative Measure on the Control of Pollution Caused by Electronic Information Products: A law, also called "China RoHS," that requires disclosure when certain hazardous substances are present in electronic information products and components

<sup>4</sup> PRTR Law: The Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof

### PRTR Substance Amount and Air Emissions (kg)

Substance	Amount	Air Emissions
Xylene	1,308	191
Toluene	2,525	458
Ethylbenzene	375	60
Benzene	120	28
Methylnaphthalene	26,166	55
Other	3,456	172
Total	33,950	963

Data includes 12 production facilities in Japan: Yamagata, Kofu, Gifu, Mie, Yamaguchi, THK NIIGATA, THK INTECHS (Sendai and Mishima), NIPPON SLIDE, and THK RHYTHM (Hamamatsu, Inasa, and Kyushu).

## ISO 14001 Certified Facilities

### Japan

Production Facility	Country	Certifying Body
Yamagata Plant, Kofu Plant, Gifu Plant, Mie Plant, Yamaguchi Plant, THK NIIGATA	Japan	JQA
THK RHYTHM Headquarters, Hamamatsu Plant, Inasa Plant, Kyushu Plant		JIA
THK INTECHS Headquarters, Mishima Plant, Sendai Plant		ClassNK

### The Americas

Production Facility	Country	Certifying Body
THK Manufacturing of America	USA	SAI GLOBAL
THK RHYTHM NORTH AMERICA		SQA
THK RHYTHM AUTOMOTIVE MICHIGAN		DQS
THK RHYTHM AUTOMOTIVE CANADA (Tillsonburg)	Canada	DQS
THK RHYTHM AUTOMOTIVE CANADA (St. Catharines)		DQS

### Europe

Production Facility	Country	Certifying Body
THK Manufacturing of Europe	France	AFAQ
THK RHYTHM AUTOMOTIVE GmbH	Germany	DQS
THK RHYTHM AUTOMOTIVE CZECH	Czech Republic	DQS

### Asia

Production Facility	Country	Certifying Body
THK MANUFACTURING OF CHINA (WUXI)	China	TÜV
DALIAN THK, THK MANUFACTURING OF CHINA (LIAONING)		TÜV
THK RHYTHM CHANGZHOU		BUREAU VERITAS
THK RHYTHM GUANGZHOU		SGS
THK RHYTHM MALAYSIA	Malaysia	DQS
THK RHYTHM (THAILAND)	Thailand	URS

## Third-Party Opinion

I hereby present my third-party opinion on the 2022 THK Sustainability Report (hereinafter referred to as “this report”).

### The Carbon Neutrality Pledge and the Establishment of Medium- and Long-Term Targets

One could say that the largest development in terms of sustainability management in 2021 was the Carbon Neutrality Pledge and the establishment of medium- and long-term targets. Prior to this, environmental targets and KPIs would generally be set by building upon the current state (an inside-out approach), but in order to achieve carbon neutrality, now medium- and long-term targets are being formulated by calculating backwards from the ideal state (an outside-in approach), and commitments have been made to stakeholders as targets approved by the Board of Directors. With regard to their fundamental approach to such measures, I highly commend THK from a sustainability management perspective, for not only launching their Carbon Neutrality Promotion Project to work toward the “reduction of CO<sub>2</sub> emissions from [their] business activities (minimizing negative impact),” but also concerning themselves with “contributions from [their] products and services (strengthening positive impact)” in the supply chain through their business. As a technical matter, I look forward to continued progress in the future, including the disclosure of information based on a framework such as TCFD (Task Force on Climate-Related Financial Disclosures), which I mention below.

### “Efforts to Promote the SDGs” and “Strengthening the Supply Chain”

The special features include “Efforts to Promote the SDGs” as in previous years, but the “Strengthening the Supply Chain” section on the following pages is a new addition. This caught my attention alongside the inclusion of “Strengthening Positive Impact” (opportunities for profit) and “Minimizing Negative Impact” (risk reduction), which were tied in with the SDGs, due to the fact that responding to these kinds of sustainability issues is a critical challenge for management, and it is connected to the improvement of corporate value over the medium to long term. In the future, I would like to see the relationship between “Efforts to Promote the SDGs” and “Strengthening the Supply Chain” reorganized, with information about THK’s professed sustainability management presented in a format that is made clearer for stakeholders.

In light of the aforementioned medium- to long-term goals for carbon neutrality and “Strengthening the Supply Chain” section, THK should reexamine the KPIs outlined in “Efforts to Promote the SDGs” and adjust them if necessary.

Meanwhile, as THK celebrated its 50<sup>th</sup> anniversary in 2021, President Teramachi made a commitment in his “Top Message” to “transform THK into a manufacturing and innovative services company” that goes beyond simply creating things, expanding its business to include everything from before to after the sale. This new management strategy is also related to strengthening the supply chain, so I would like for THK to integrate this into its conception of sustainability management and also consider the disclosure of information.

### Global Partnerships through the “EntSherpa” Technical Support Service for Startup Companies

With regard to the newly launched EntSherpa service mentioned in the “Top Message,” when I read the “A Reliable Partner for Start-Ups” article in the “In Our Customers’ Words” special feature, it was clearly evident how this service could be used to contribute to the various objectives of the SDGs through partnerships with startup companies. Besides those objectives outlined on the pages related to the SDGs, this service also falls under Goal 17, “Strengthen the means of implementation and revitalize the global partnership for sustainable development.” I look forward to the global expansion and future development of this endeavor. Of course, I think the THK Education Outreach Program, which launched in 2017 and is aimed at young students, is another positive example of such partnership.

### Toward Further Developments in Sustainability Management

The THK Corporate Governance Report updated in December 2021 lists “establishing diversity in the appointment of core staff (e.g. women, foreigners, and mid-career hires);” “establishing a committee for the promotion of sustainability;” and “implementing disclosures based on the internationally established TCFD disclosure framework or an equivalent framework” as items for consideration. In this way, the challenges for THK’s sustainability management are clear, so I hope THK will make concrete strides towards the aforementioned items and disclose information about the progress in next year’s report.



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**Profile:** Born in 1957. Graduated from the Department of Engineering at Tohoku University and joined Mitsubishi Materials Corporation in 1982. After working at MS&AD InterRisk Research & Consulting, Inc., has held current position since April 2018.

**Publications:** *Evolutional Strategy on Environmental Risk for Financial Institutions* (coauthor, Kinzai Institute for Financial Affairs, Inc.), *Practical Guidance on SDGs for Corporate Environmental Staff* (coauthor, Nikkan Kogyo), and many more.

## Editor's Note

THK celebrated its 50<sup>th</sup> anniversary in April. This is entirely the result of everyone's support, so we would like to express our gratitude here. In the special features of this report, under "50 Years of History and Future Business Developments," we examine how we have reflected contemporary market demands in our product development—in other words, how we have quickly engaged with the concept of CSV and worked to increase our corporate value—and outline the future direction we must move in. Furthermore, under "Strengthening the Supply Chain," we introduce our efforts at improving our corporate value over the medium to long term, also including "Strengthening Positive Impact" (opportunities for profit) and "Minimizing Negative Impact" (risk reduction), which are tied in with the SDGs. In the "In Our Customers' Words" section, we feature two companies that both are related to the EntSherpa service, which launched in April, and use our products to generate new value. Additionally, we invite you to visit our homepage, which provides details about the activities of each of our facilities and our affiliates in relation to our management structure, involvement in society, and harmony with the environment.

We will continue to promote initiatives that will earn the trust of our stakeholders and disclose that information in a suitable manner. To that end, we would like to hear your thoughts about this report. Your opinions are valued and will guide us in our future CSR endeavors and the creation of future reports, so please use the attached survey or the website below to send us your honest thoughts and opinions.

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**URL:**  
[www.thk.com/eng/csr/a2022/](http://www.thk.com/eng/csr/a2022/)

Access from your smartphone or tablet here ▶



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