# Automotive Suspension Springs
# Automotive Seating
# Strategy Briefing


**TSE Prime: 5991**

**NHK Spring Co., Ltd.**

**September 10, 2025**

# Agenda

1. Greeting
2. Automotive Suspension Springs Business
3. Automotive Seating Business

Thank you very much for taking time out of your busy schedule to attend the NHK Spring Strategy Briefing today.
The agenda for today is as shown here.

# Agenda

1. Greeting
2. Automotive Suspension Springs Business
3. Automotive Seating Business




Now, I would like to invite our President, Mr. Uemura, to deliver the greeting.

Greeting

# Appreciation for your continuing support

**We would like to express our sincere gratitude for your ongoing patronage.**

**We would also like to extend our heartfelt thanks that you have taken time out of your busy schedule to attend today's business briefing.**

Thank you!

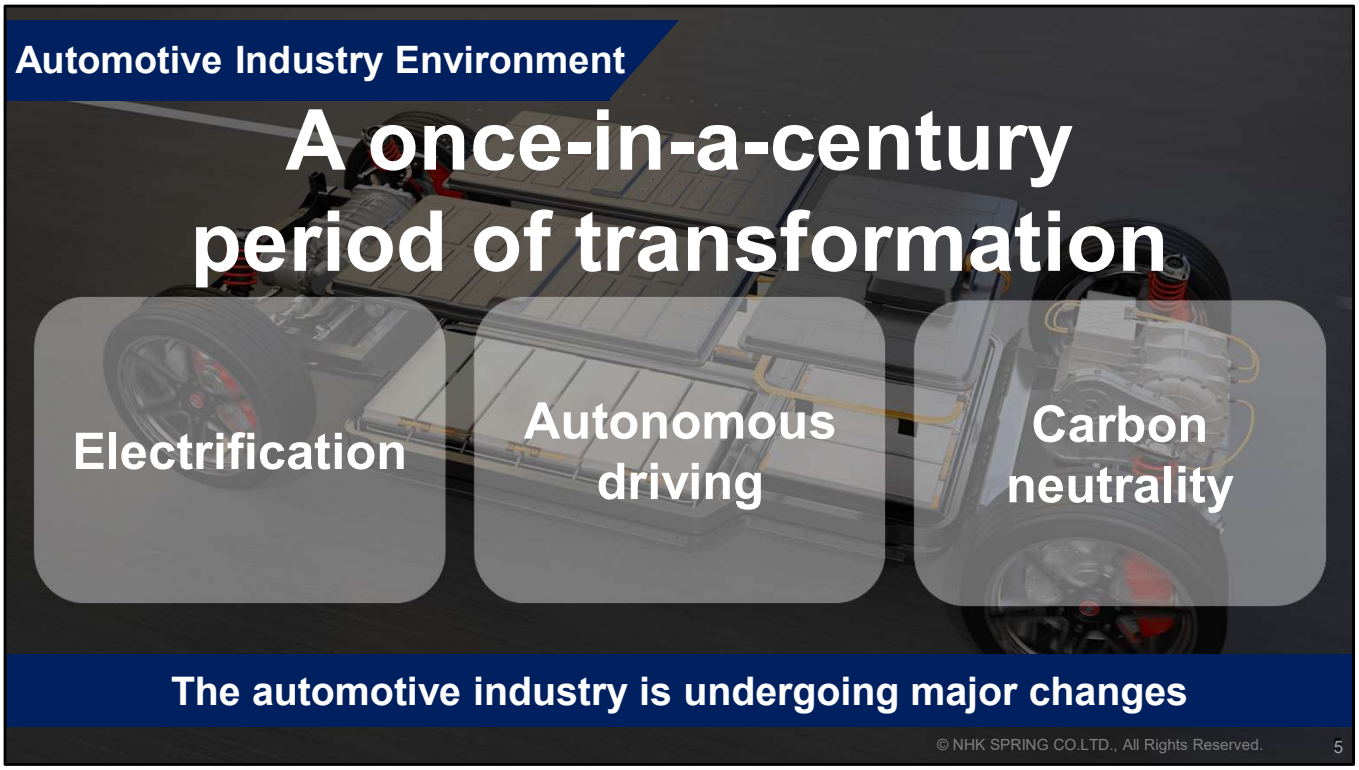
 

I am Uemura, President of NHK Spring Co., Ltd.

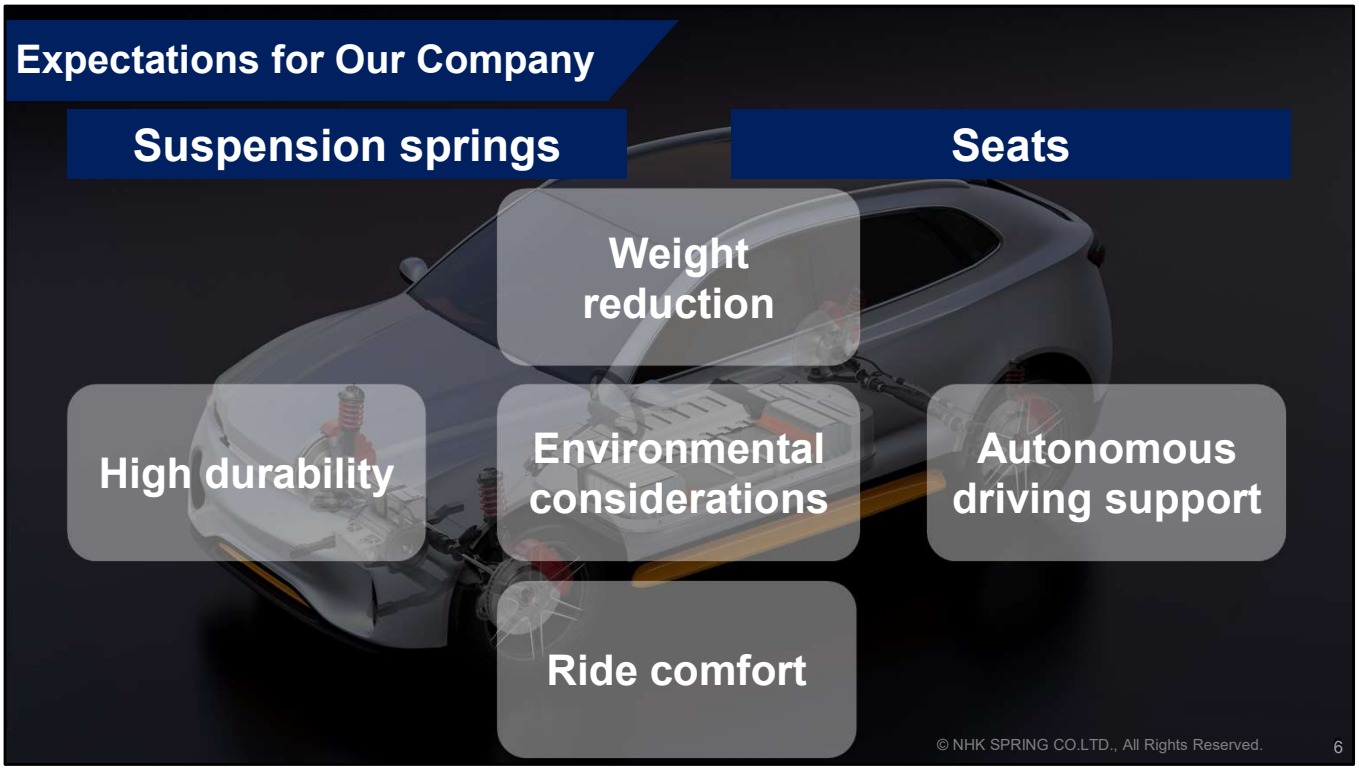
Thank you very much for taking time out of your busy schedules to attend our Strategy Briefing today.
First, I would like to express my sincere gratitude for your continued understanding and generous support of our business activities.
It is thanks to your support that we can continue to take on challenges every day and strive for sustainable growth.

Today, I would like to share with you the direction in which our company will expand its business going forward, as well as the thinking behind our strategies.

Our business has advanced together with the evolution of automobiles. The suspension springs and seats we will introduce today not only contribute to the basic vehicle functions of running, turning, and stopping but play a vital role in ride comfort. These components are indispensable key components that support both performance and comfort—they are truly the unsung heroes of the automobile.




The automotive industry is now in a once-in-a-century period of transformation. Wide-ranging initiatives including electrification, autonomous driving, environmental compliance, carbon neutrality, the reassessment of regional strategies, and the utilization of digital technologies represent tremendous opportunities for our company to move to the next stage. Through these initiatives, we are called upon to create new value rather than to merely continue along the same trajectory as before.




In our suspension springs business, we are developing reduced weight, high-durability springs for EVs, some of which have already been adopted in some vehicles. Since EVs differ from conventional vehicles in terms of their weight and vibration characteristics, new design concepts are required to ensure spring performance. Leveraging the technological expertise we have cultivated over the years, we are taking on the challenge of creating products worthy of next-generation vehicles. In the North American market, we are pursuing improved selling prices as well as further enhancements in productivity, working to strengthen our profit structure. In India, we are reinforcing both product development and production systems, which are tailored to local needs.
Through these initiatives, we will further enhance our competitiveness in the global market.

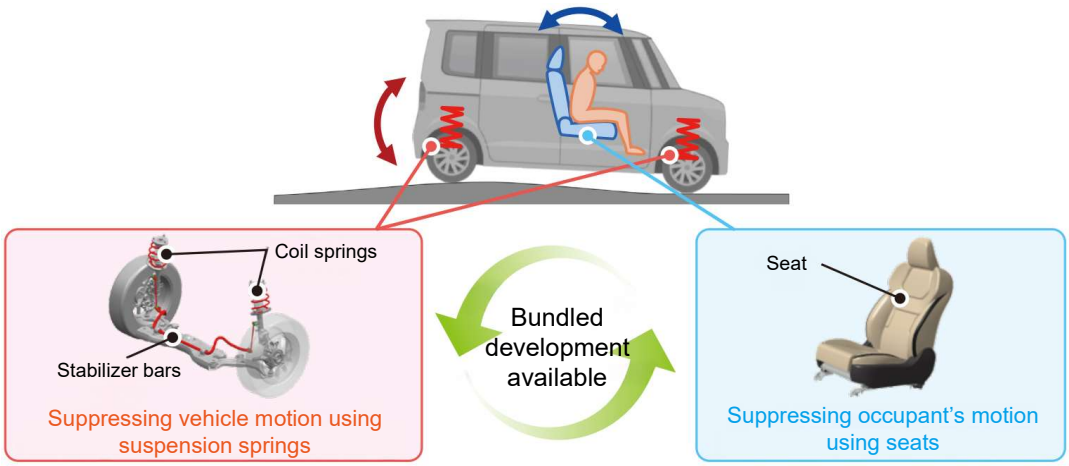
In our seating business as well, we are engaged in a variety of development initiatives to respond to the evolution of mobility, including electrification and autonomous driving, and are striving to create the value required for next-generation vehicles. As part of these efforts, today we have prepared our Comfort Concept Seat, our Human-Friendly Seat, and our Environmentally Friendly Seat. We hope you will take the opportunity to experience these seats firsthand and appreciate our technological capabilities and the comfort

we provide.

## Proposal for BEVs: Suspension Springs + Seats

**Point**

We are the only company that handles both suspension springs and seats.




The highlight of today's program is the test drive of an electric vehicle that showcases the synergy between our suspension springs and seats. We are the only company in the world that develops both suspension springs and seats, and we hope you will experience our unique technology and come to truly feel that these components are "indispensable key components."

## 2026 Medium-Term Management Plan


**Respect for people**

- Strengthening trust with stakeholders
- Build a safe and secure company and a rewarding and comfortable
- Supporting the growth and development of a diverse employee base

**Contribute to society**

- Providing indispensable key components
- Speeding up actions towards global environmental changes
- Contributing to the local community

**Purchase appropriately, manufacture accurately, market and sell properly**

- "Quality First" & elevating the power of manufacturing
- Promoting Digital Transformation (DX) & strengthening competitiveness
- Promoting fair transactions and strengthening CSR in procuremens

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Finally, since FY2024, we have set out our Group Basic Policy in the Medium-Term Management Plan under three pillars: “Respect for people,” “Contribute to society,” and “Purchase appropriately, manufacture accurately, market and sell properly.”

First, “Respect for people.” It is people who make our products, people who generate improvements, and people who listen to the voices of customers and strive to deliver something better. That is why we place the utmost importance on workplace safety, job satisfaction, and growth opportunities. By respecting diverse values and incorporating voices from the field into management, we will continue to evolve into a stronger, more resilient organization. Under this policy, we are carrying out improvement activities aimed at eliminating heavy labor on the manufacturing floor, thereby both reducing workloads and raising productivity. This initiative is not merely about improving work efficiency; it is about protecting the health and safety of our employees and building a workplace where everyone can work. We hope you will observe these efforts during today’s factory tour.

Next, “Contribute to society.” In addition to supporting vehicle safety and comfort, our products also contribute to enhanced environmental performance. Through the use of environmentally conscious materials and

the development of products for EVs, we are helping to realize a sustainable society. Coexistence with local communities is another key theme. We are committed to fulfilling our corporate responsibilities by collaborating with the regions where our factories are located, creating jobs, and supporting education.

And finally, “Purchase appropriately, manufacture accurately, market and sell properly.”

For NHK Spring to continue contributing to society, we must continue to generate sound profits. To do so, it is essential to “Purchase appropriately, manufacture accurately, market and sell properly.” This means engaging in fair transactions with our partner companies, manufacturing quality products, delivering them to our customers, and getting customers to recognize the value we provide. We believe that carrying out this series of activities methodically and reliably is the source of our competitiveness and the foundation of the trust we enjoy as a company.

Going forward, guided by these three principles, we will continue to integrate technology with the strengths of our people, striving to remain a company that society truly needs.

Today, in addition to outlining our business strategies for suspension springs and seats, we will invite you to tour our production facilities. We hope you will gain a sense of our manufacturing philosophy and the passion of our colleagues who are working in the field.

Thank you very much for your attention, and we sincerely appreciate your continued support.

# Agenda

1. Greeting
2. Automotive Suspension Springs Business
3. Automotive Seating Business




I am Umeno from the Suspension Springs Division.

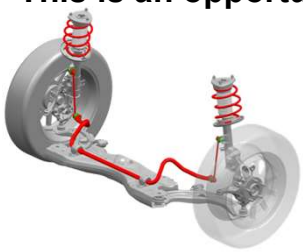
I would now like to introduce our automotive suspension springs business.

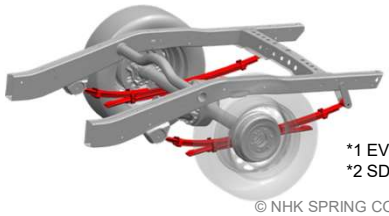
## Automotive Suspension Springs Business

**Suspension springs are components that maintain vehicle posture and determine ride comfort.**

**We produce a wide range of suspension springs to meet the needs of passenger cars, light cars, and trucks, primarily for Japanese automakers.**

**Adoption of EVs*1 has led to increased vehicle weights, while SDVs*2 have improved ride comfort.**
**→ This is an opportunity to enhance added value!**





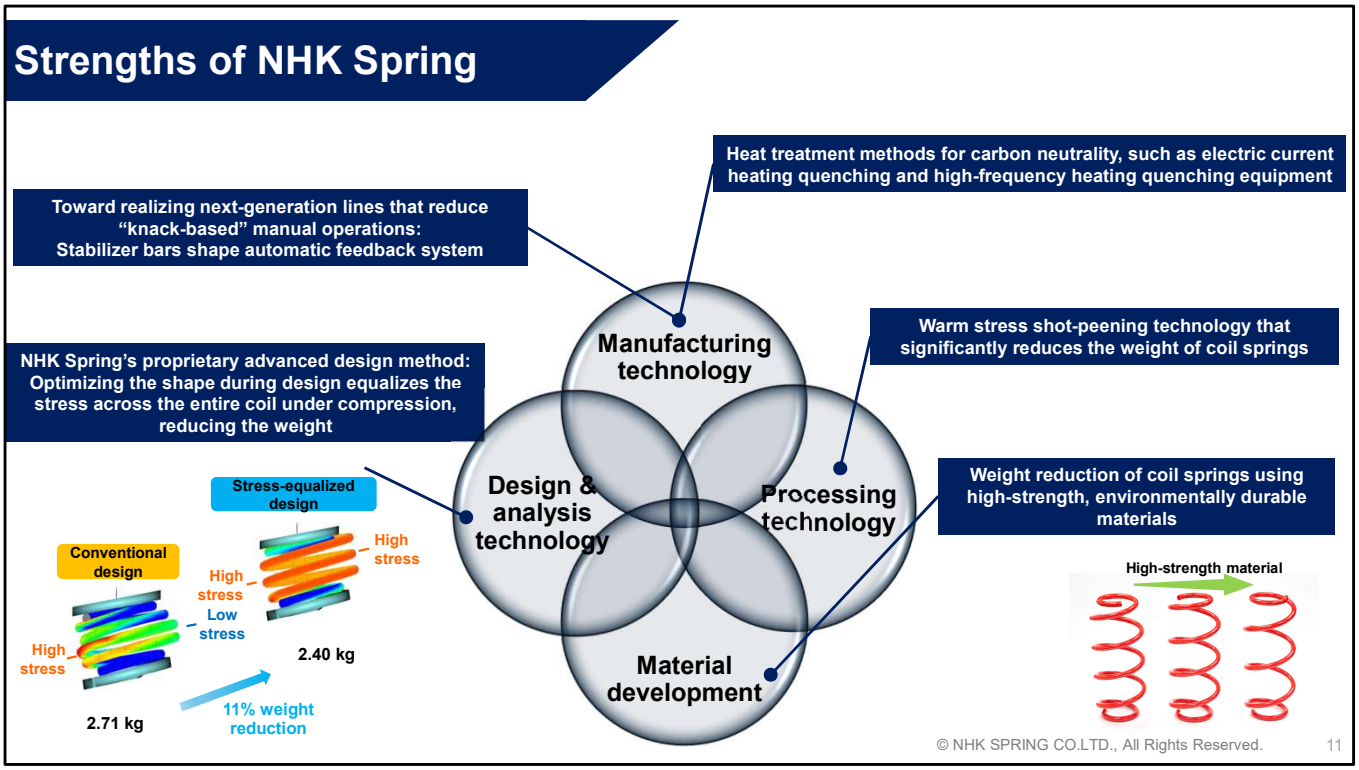
*1 EV: Electric Vehicle
*2 SDV: Software Defined Vehicle




Suspension springs are key components that maintain vehicle posture and determine ride comfort.

At NHK Spring, we produce a wide range of suspension springs to meet the needs of many customers—from light cars to passenger cars and trucks—serving mainly Japanese car makers as well as overseas car makers.

In today's automotive industry, which is now in a once-in-a-century period of transformation, the increased vehicle weight associated with electrification and the demand for enhanced ride comfort associated with the shift to SDVs represent opportunities to further enhance the added value of suspension springs.




Next, I will introduce the strengths of our suspension springs business.

While we work with some partner suppliers to develop materials and processing equipment, NHK Spring itself develops the technologies essential for weight reduction of suspension springs, such as material development and design analysis. We also develop processing technologies such as heat treatment and plastic forming, which form the foundation of manufacturing, as well as production technologies to improve quality and to achieve carbon neutrality.

By carrying out such development in-house, we not only strengthen our core technologies but accumulate peripheral technologies as our own proprietary technologies. This is one of our key strengths.

## Strengthening Competitiveness (Development Products)

| Development Theme | Initiative | Aims | | | |
|---|---|---|---|---|---|
| | | Weight reduction | Compact design | Large diameter adaptation | Improved ride comfort |
| 1. Exploration of optimal suspension spring design [DX Initiative] | Set-based design and manufacturing feedback system | ✓ | | | |
| 2. Development of heat treatment methods after raw material forming | Raw material forming line and development of process elements | | | ✓ | |
| 3. Development of XT coil material processing and mass-production line | XT rolling processing technology and XT coil manufacturing technology | ✓ | ✓ | | |
| 4. Joint development of springs, seats, and the R&D center | Proposals to improve ride comfort and convenience, made possible by NHK Spring's unique capability to develop springs, stabilizer bars, and seats together | | | | ✓ |

Promoting technological development that contributes to vehicle electrification



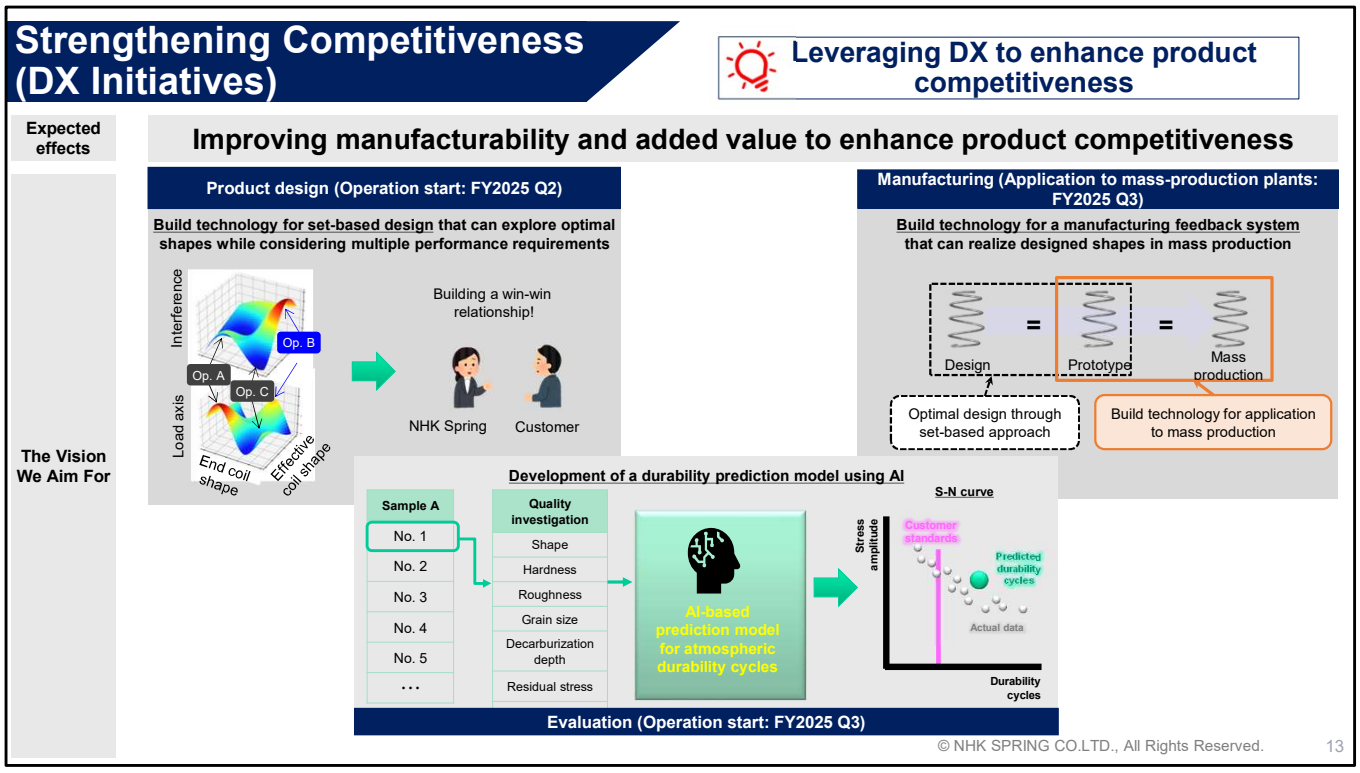

Next, I will explain our initiatives to strengthen our competitiveness.

First, I will introduce four initiatives related to technology development.

These include building foundational technologies for design, evaluation, and manufacturing through DX; the development of raw material forming, which is the world's first coil spring forming method; and the development of the XT coil, another world-first innovation. I will describe the details of these later.

In addition, NHK Spring develops both suspension springs and seats. In collaboration with our Research and Development Division, we are making proposals to improve ride comfort. These will be explained later when we talk about the seating business.

All of these technologies contribute to vehicle electrification, and we will continue to advance their development.




Now I will introduce our DX initiatives.

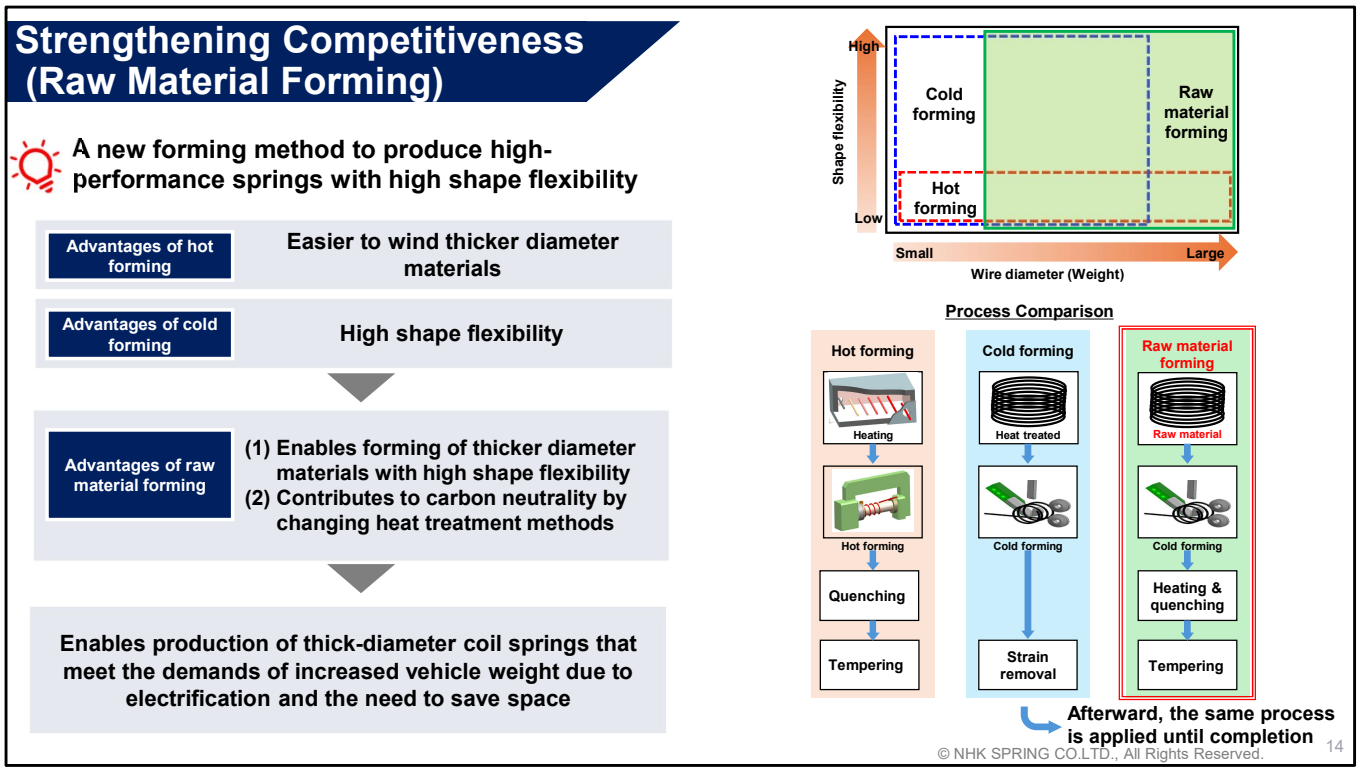
First, in product design, we are building technologies for set-based design, which allows us to explore optimal shapes while considering multiple performance requirements from our customers.
Unlike conventional point-based design, in which designers derive a single shape by balancing multiple requirements, set-based design enables us to simultaneously explore shapes that consider both customer requirements and manufacturability. This enables us to propose product specifications that create win-win relationships for both our customers and NHK Spring.

Next, in manufacturing, we are working to build a manufacturing feedback system that realizes stable quality and no-waste productivity by materializing the designed shapes. We also believe that this technology can contribute to knowledge transfer in regions such as Europe and the United States, where high labor mobility makes such transfer difficult.

Furthermore, we are using AI to develop a predictive model for durability cycles.

By integrating and advancing these three technologies, NHK Spring is

pursuing prototype-free evaluation, carbon neutrality, and accelerated development.




Next, I will introduce Raw Material Forming with post-forming heat treatment, which is a world-first new method for manufacturing coil springs.

Traditionally, there have been two methods: hot forming, which is suitable for producing thick wire diameters, and cold forming, which offers high shape flexibility. However, hot forming makes it difficult to achieve complex shapes, while cold forming presents challenges in winding thick materials.

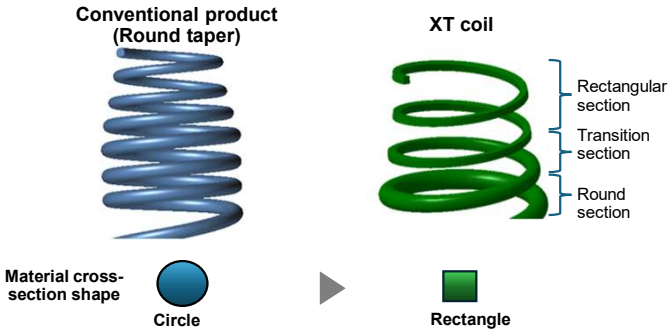
Raw Material Forming is a new method that combines the advantages of both hot and cold forming. Because the material is formed prior to heat treatment, it has high shape flexibility even with thick wire diameters. In addition, by newly developing post-forming heat treatment processes, this method can significantly contribute to carbon neutrality.

This new Raw Material Forming method enables the production of coil springs with high shape flexibility using thick materials, thus making it possible to meet the demands of increased vehicle weight due to electrification and the need to save space.

Mass production of coil springs using this method is scheduled to begin in spring 2026 at NHK Spring Hungary, our European base.

## Strengthening Competitiveness – XT Coil (eXtreme Taper)

**The world's lightest non-linear coil spring achieved through new taper forming technology**




| Features | Conventional product | XT coil |
|---|---|---|
| Mass | Heavy | Light |
| Non-linear stroke range | Narrow | Wide |
| Mounting space | Wide | Narrow |

### XT taper rolling process technology

**Establishment of XT taper forming technology that does not rely on manual "knack-based" operations**

Conventional: **Cutting process** ▶ New: **Rolling process** ▶ **Reduction of material waste**

### XT coil manufacturing technology

**Establishment of optimal manufacturing conditions for XT coils**




I will now introduce the world's first XT coil spring.

The XT coil spring is the lightest coil spring with nonlinear characteristics that provides optimal ride comfort in response to changes in vehicle weight due to the number of passengers or cargo load.
Though there are various types of nonlinear coil springs such as barrel springs, the most widely used is the round taper coil spring, in which the diameter of a single spring wire gradually changes from thick to thin as shown here.

The XT coil spring we have developed also changes from a thick wire diameter to a thin one, but its distinctive feature is that the thin section changes from a round cross-section to a rectangular cross-section. This modification reduces mass compared to conventional products, allows for a wider nonlinear range, and enables installation even in narrow vehicle mounting spaces. In developing the XT coil spring, we created a new long-length rolling process technology and machinery, which reduces material waste compared to conventional cutting process.

We are currently setting up the rolling process and optimal manufacturing conditions, with mass production scheduled to begin in spring 2027 at NASCO

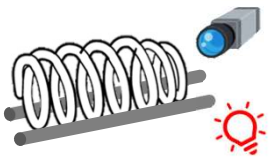
(NHK of America Suspension Components), our North American production base.

## Strengthening Competitiveness (Production Equipment and Productivity Improvement)

◆Toward reducing equipment, maintenance, and manual operations

### Coil spring

New transfer system



Rotate the spring, detect end positions with a camera or sensor, and position accordingly

Improvements through higher positioning accuracy:
- Stabilized quality
- Reduced troubles
- Reduced scrap

| # | Item | Effects |
|---|---|---|
| ① | New transfer system | Stabilized quality, improved productivity, reduced scrap |
| ② | Improved shape measuring machine | Improved productivity |
| ③ | Automatic coiling setup | Improved productivity, reduced scrap, enhanced safety measures |
| ④ | New SP method | Improved productivity, reduced weight |
| ⑤ | Improved painting method | Improved productivity, reduced scrap, reduced auxiliary materials and costs |

### Stabilizer bars

Automatic shape correction

Laser-based shape measurement with automatic calculation of correction values

Benefits of stabilized quality:
- Improved productivity
- Reduced scrap

| # | Item | Effects |
|---|---|---|
| ① | Automatic shape correction | Stable quality, reduced scrap |
| ② | Equipment monitoring | Numerical control, predictive maintenance, enhanced safety measures |
| ③ | Automated inspection | Reduced man-hours, standardized inspections |
| ④ | Simplification of equipment | Reduced minor stops and repair costs |
| ⑤ | Sequential changeover | Reduced line downtime |




Here, I will introduce our initiatives for production equipment and productivity improvements to strengthen our competitiveness.

As you know, the number of people engaged in manufacturing is expected to decline in the future. In addition, at our overseas bases, high labor mobility makes it difficult to pass down technical skills. Given such circumstances, NHK Spring is advancing various element developments to realize reduction of equipment, maintenance, and manual operations.

For coil springs, we are developing a new transfer system. By changing the transfer method, we can reduce equipment and maintenance tasks, which not only stabilizes quality but reduces the occurrence of trouble.

For stabilizers, by feeding back the difference between the formed shape and the specified shape described in the drawings to the forming machine, we can stabilize quality and reduce scrap. This system has already been put into operation at our Shiga Plant in Japan and at our overseas sites in the United States, Mexico, and Hungary.

We will continue to advance these element developments and sequentially introduce them to our production bases.

## Strengthening Competitiveness (Improvement of Heavy Duty Work Operations)

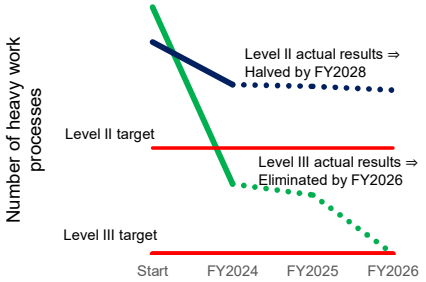
### Transporting plastic containers



### Other improvements in heavy duty work operations

| | |
|---|---|
| Coil springs: Work to clean chemical solution piping | Weight reduction by changing the piping from steel pipe to resin hose |
| Coil and leaf springs: Transport of heavy carts | Adoption of high-resilience urethane casters reduces rolling resistance |
| Railway coil springs (20 kg): Loading operations | Direct pallet loading ⇒ Installation of lifters to improve loading/unloading posture |

### Improvement progress by level




| | Weight |
|---|---|
| Level III | Over 25 kg |
| Level II | 15–25 kg |
| Level I | 10–15 kg |
| Level 0 | 10 kg or less |

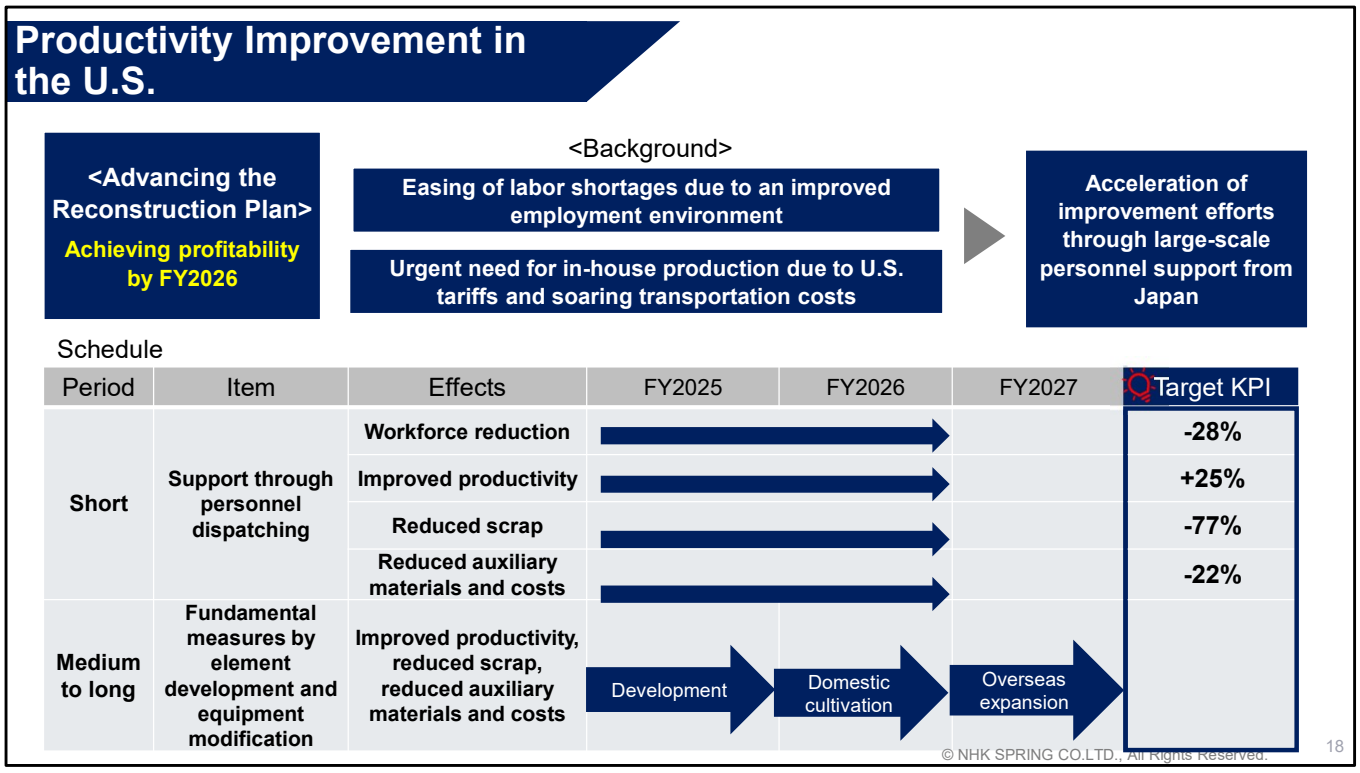



Since fiscal 2024, NHK Spring has established four core values as part of the Group Basic Policy in our Medium-Term Management Plan.

Among these values, based on the policy of respect for people according to the “value of people,” we are reducing heavy labor and improving workplace environments. We are advancing these initiatives within the Suspension Springs Division as well, and I would like to share a specific example.

The photos show the case of switching the method of transferring plastic containers. By moving away from conventional manual loading and instead utilizing the gravitational drop of transferred items, we have successfully eliminated the loading operation. Aiming to create people-friendly production processes, we will continue to actively promote various improvements to reduce work processes involving heavy physical work.

As for progress management, we set target process numbers and deadlines according to weight-based levels, visualize progress, and proceed accordingly.

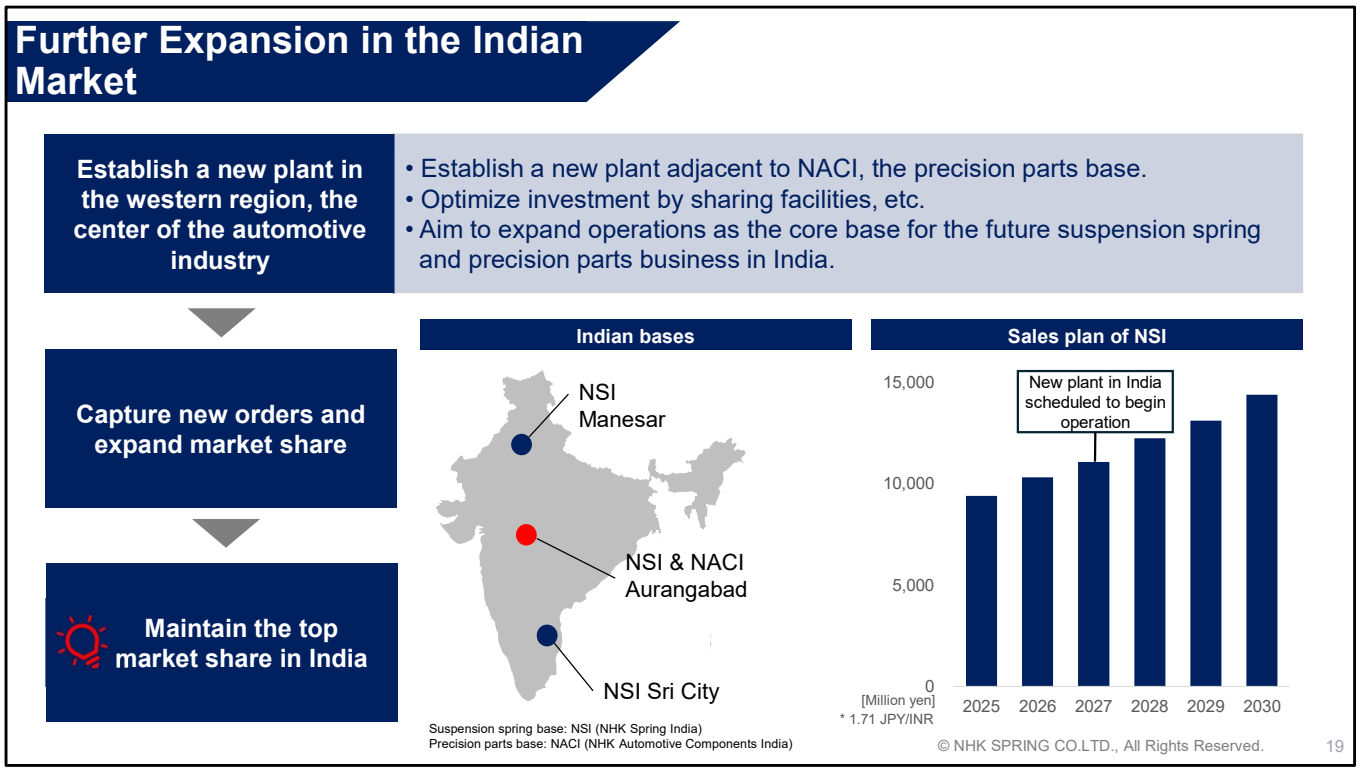



I will now introduce our productivity improvement initiatives at our U.S. operations.

First, we have brought forward our restructuring plan at our U.S. operations to achieve profitability in FY2026. The background to this includes the need to address both the easing of labor shortages due to the improved employment environment and the surge in U.S. tariffs and transportation costs.

To achieve profitability in FY2026, in the short term we are accelerating improvements, such as productivity enhancements and scrap reduction, by providing personnel support by dispatching several dozen people from Japan.

Over the medium to long term, we will carry out equipment modifications through the element developments I introduced earlier, aiming to achieve further productivity improvements and build a robust production structure.




Next, I will describe the establishment of our new production site in India.

Our suspension spring bases in India are located to serve the many Japanese car makers in Manesar, which is near Delhi in the north, and in Sri City, which is near Chennai in the south. At these sites, we currently hold the top market share for suspension springs in India. At present, most coil spring production is carried out at our Manesar site, but orders from local OEM manufacturers are increasing.

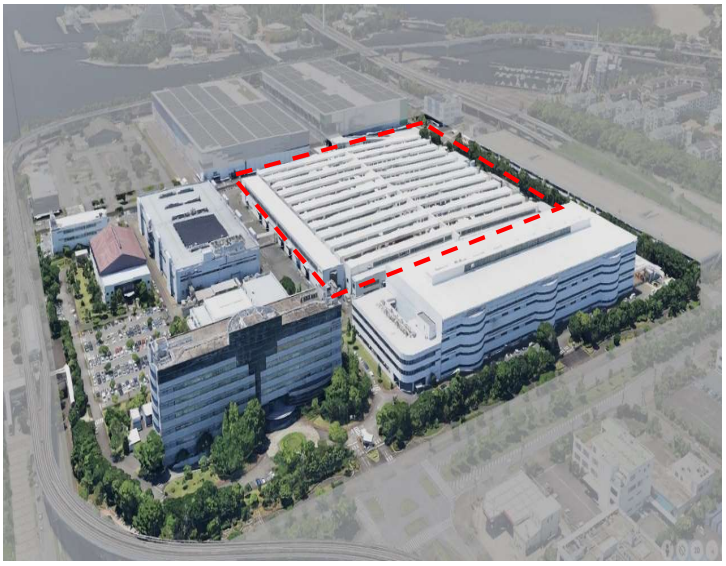
As the Indian market is expected to achieve high growth over the medium to long term, we anticipate expanding our share by capturing these new orders. To reliably secure the top share in India, NHK Spring has decided to establish a new production site in western India, which is the center of the country's domestic automotive industry.

This new site will be located adjacent to NACI (NHK Automotive Components India), our precision spring production base in Aurangabad, western India. Through optimal investment, we aim to expand this site into a core base for our suspension springs and precision parts businesses in India.

At the new production site, preparations are underway to begin production

of coil springs and solid stabilizers in 2027, followed by hollow stabilizers in 2028.

## Overview of Yokohama Plant (Suspension Springs)

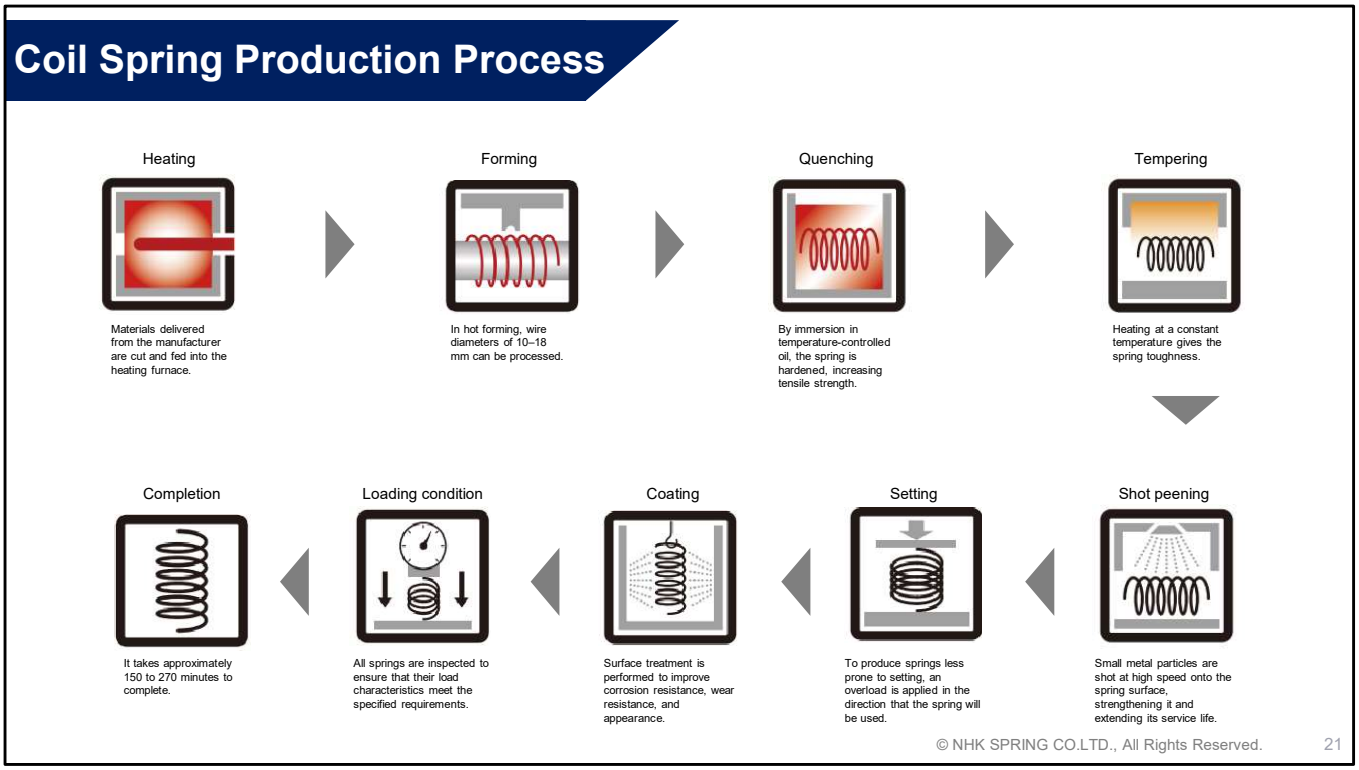


| | |
|---|---|
| **Start of operation** | **1987 (relocated from Isogo Plant)** |
| **Site area** | **Entire Yokohama Office: 123,749 m²** |
| **Building area** | **Spring building: 35,915 m²** |
| **Floor area** | **Spring building: 38,835 m²** |
| **Employees** | **378 (As of end of April 2025)** |
| **Building structure** | **Single-story** |




This is an overview of the Yokohama Suspension Springs Plant.

The area enclosed by the red dotted line is the Yokohama Suspension Springs Plant. The site area is as listed, and there are 378 employees.




This slide gives an overview of the coil spring production process.

The material is heated and wound around a tool called a mandrel to form the material into the shape of a spring.

The material then undergoes heat treatment, specifically quenching and tempering, which is followed by a process called shot peening.

Shot peening involves striking the spring with small steel balls to improve its durability.

Next is the setting process, in which the spring is compressed. This reduces spring sagging.

Finally, powder coating and load testing are carried out, completing the process.

# Agenda

1. Greeting
2. Automotive Suspension Springs Business
3. Automotive Seating Business




I am Yamaguchi from the Seating Division.

In the Seating Division, based on the Group Basic Policy set forth in the FY2026 Medium-Term Plan, namely “Respect for people,” “Contribute to society,” and “Purchase appropriately, manufacture accurately, market and sell properly,” we strive to become a partner that our customers can truly rely on from a foundation of “Safety First” and “Quality First.”

## Automotive Seating Business

**As an Non-affiliated relationship seat manufacturer, we produce a wide range of seats that meet customer needs, from those for SUVs to light cars and trucks.**

**Our seat development and design capabilities achieve both strength and weight reduction, delivering superior ride comfort.**
**(World-class safety performance, seats that reduce fatigue even when sitting for long periods, and various components that support autonomous driving and electrification)**

**Our cutting-edge manufacturing is based on TPS, with a strong focus on safety, quality, and the environment.**
**(Automation, AI utilization, carbon neutrality initiatives, DX, and co-creation with partners)**

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I will now explain the three characteristics of our seating business.

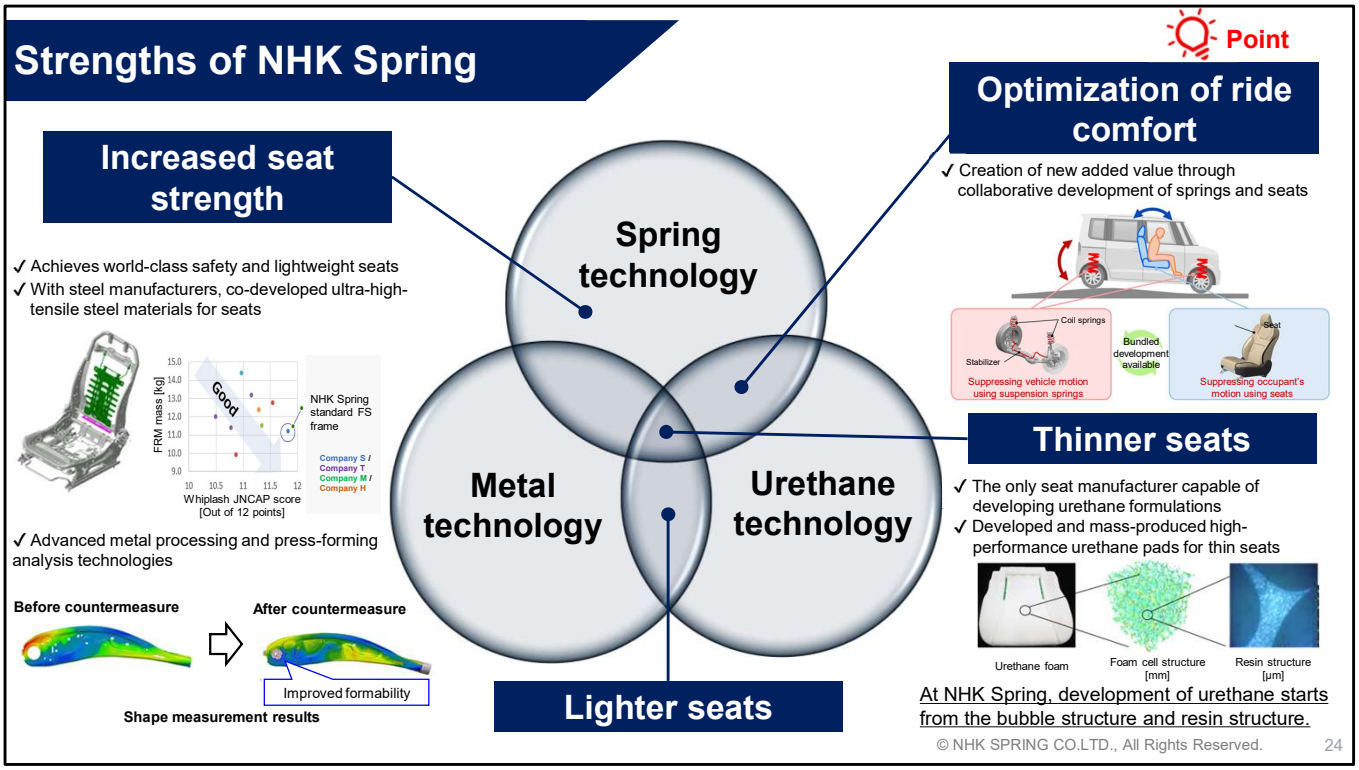
The first characteristic is that NHK Spring is a Non-affiliated relationship seat manufacturer. Leveraging this position, we have built strong business relationships with many Japanese car makers and produce a wide range of seats, from passenger vehicles such as sedans, SUVs, and light cars to commercial vehicles such as trucks.

The second characteristic is design and development. Our seats are distinguished by our development and design capabilities that achieve both strength and weight reduction through metal processing technologies, as well as superior ride comfort realized by our in-house urethane production.

The third characteristic is our manufacturing approach. At NHK Spring, we implement manufacturing based on the Toyota Production System (TPS). Seats are products with an extremely large number of parts and processes, and therefore every fraction of a second in process time counts. We are committed to improving productivity by thoroughly eliminating waste and inefficiency in our processes.

In the seating business, where many components are involved, collaboration

with partner companies is an essential element. We will continue to pursue manufacturing through co-creation with our partners.



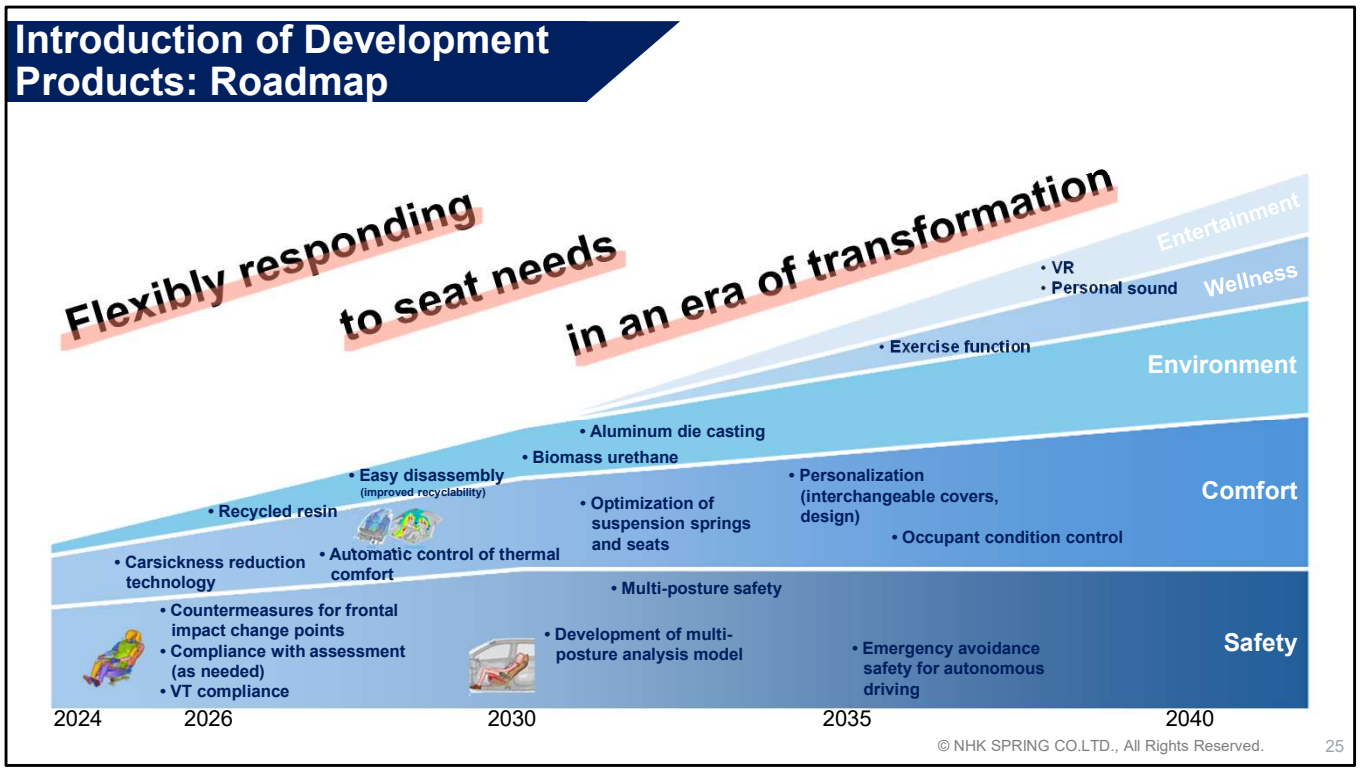

Next, I will explain the strengths of NHK Spring's seating business.

The core technologies that underpin our strengths are spring technology, metal technology, and urethane technology.

First, regarding increased seat strength: our seat frames, which use ultra-high-tensile materials, achieve world-class safety and weight reduction.
In terms of seat safety, our Whiplash Reduction Seat mitigates the impact on the driver in the event a rear-end collision occurs while driving. Our customers have evaluated these safety features very highly.

Second, with respect to optimization of ride comfort, we are making proposals for optimizing ride comfort in BEVs that combine our spring and seat technologies.

Third is thinner seats and weight reduction. NHK Spring develops, formulates, and manufactures urethane in-house, and these urethane technologies significantly contribute to achieving thinner, lighter seats.



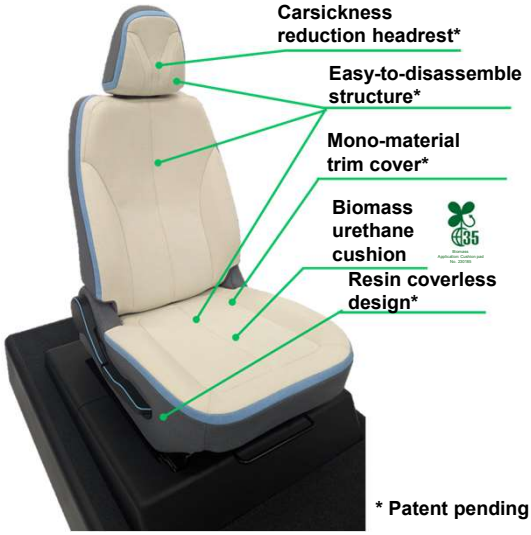

This is the development roadmap for our seats.

Since the automotive industry is undergoing rapid transformation, we continuously conduct market research and gather customer feedback, keeping our development roadmap up-to-date.

At NHK Spring, we advance development based on the core elements of automotive seats—safety performance and comfort performance. Building on this foundation, we are also developing technologies related to environmental considerations, wellness (technologies that help to maintain physical and mental health), and even entertainment.

## Introduction of Development Products: Environmentally Friendly Seat

**What seats can do for the future of our planet**

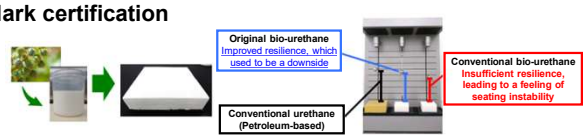



### Recycling

- Can be disassembled in about half the usual amount of time
- Improves recyclability and contributes to the realization of a sustainable society


### Biomass materials

- Eco-friendly cushion pad that has obtained Biomass Mark certification




### Comfort

- Relaxation headrest that reduces the degree of carsickness to about one-third
- Eco-friendly seat that is comfortable for driving thanks to optimized thin cushions and suspension mats




I will now introduce some of our seat development projects.

First, the Environmentally Friendly Seat. One challenge with recycling seats is that they contain components that are bonded or welded, making the seats difficult to dismantle. A key feature of this seat is that it can be disassembled more easily than conventional seats. In addition, we improved recyclability by adopting a mono-material structure using only PET material.

Furthermore, we have developed biomass urethane by partially substituting petroleum-based raw materials with plant-based materials, and we have obtained the Biomass Mark certification. While the use of biomass materials in conventional seats typically results in reduced performance, NHK Spring's formulation technology and optimization of suspension mats have enabled us to develop seats that maintain ride comfort without compromise.

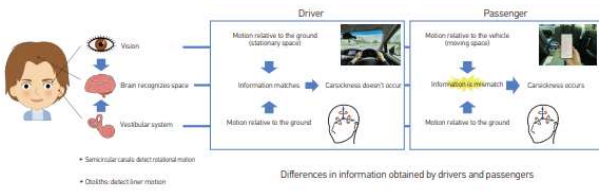
## Introduction of Development Products: Carsickness Reduction Seat

### The need to reduce carsickness

- Passengers may experience carsickness, which often worsens when using smartphones or watching videos.
- During autonomous driving, drivers are also freed from the need to operate the vehicle, which raises concerns of carsickness like that of passengers.

### The mechanism of carsickness

- Humans perceive body tilt and movement through information from their vision and the vestibular system.
- Carsickness can be alleviated by reducing mismatches in such information.

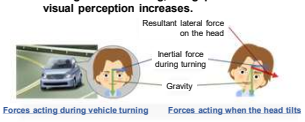


Differences in information obtained by drivers and passengers

### Countermeasures for and effects of carsickness reduction

**Approach to reduce mismatches based on vestibular information**

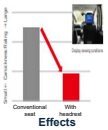
[Cause of carsickness]
When the head tilts while the vehicle is turning or accelerating, the gap with visual perception increases.




[Countermeasure]
Supporting the head with a headrest and proper seating posture suppress head roll/pitch motion.

[Effects]
- Carsickness while watching an in-vehicle display is reduced to one-third.
- Additionally, display visibility is improved.


Carsickness reduction seat



Effects

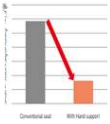
**Approach to reduce mismatches based on visual information**

[Cause of carsickness]
When using a smartphone while looking downward, it is difficult to see the outside scenery, and the smartphone's movement increases the information mismatch.

[Countermeasure]
Supporting the hands and elbows with a hand support enables the smartphone to be held in a higher position.

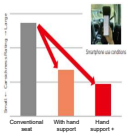
[Effects]
- Hand support reduces carsickness when using a smartphone by half, and combined with a headrest, reduces carsickness to one-third.
- In addition, head fatigue is reduced to about one-fourth, and smartphone screen visibility is improved.


Field of view when using hand support



Effect of hand support alone


Concept seat for reducing carsickness



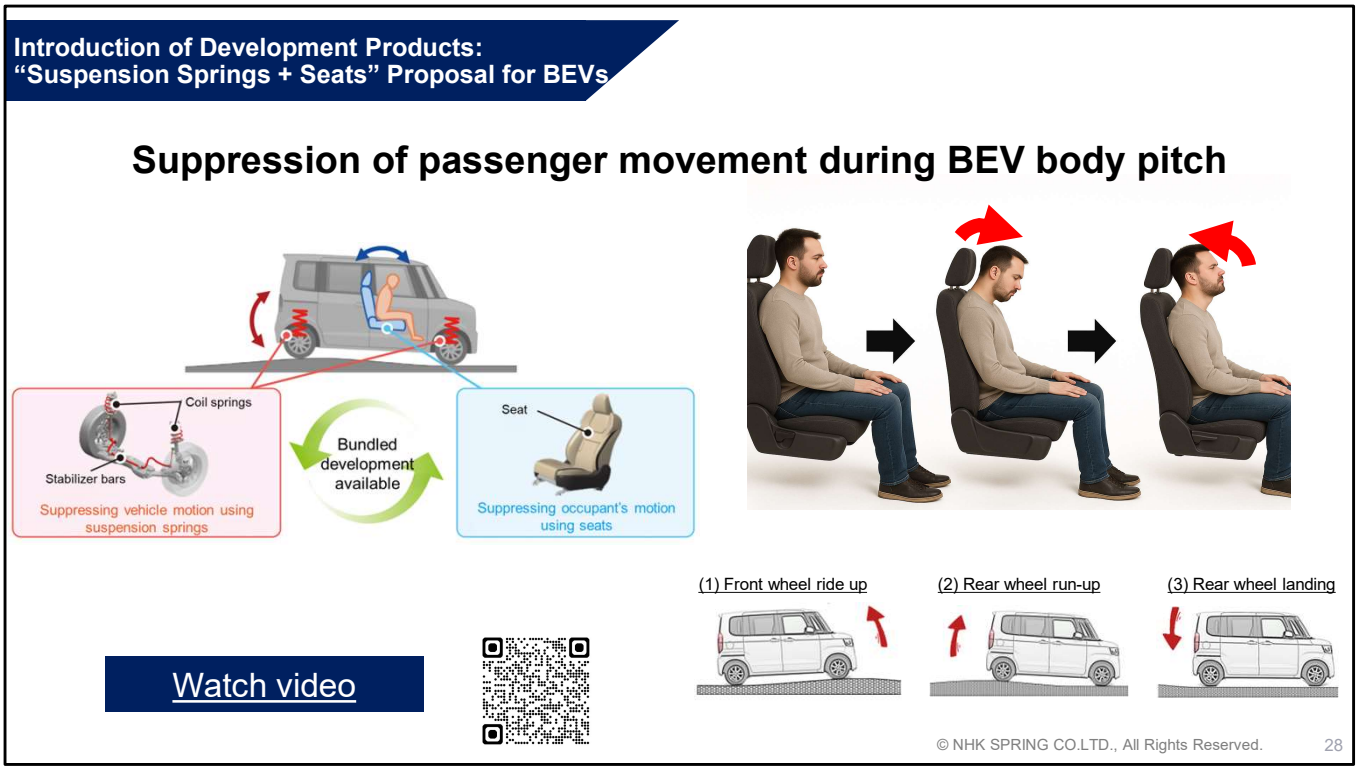
Effect of headrest + hand support




Next is the Carsickness Reduction Seat.

Autonomous driving frees drivers from the need to perform driving operations, so drivers, like passengers, will become more prone to carsickness. Carsickness is said to result from mismatches between visual information and signals from the vestibular system (inner ear). At NHK Spring, we have developed a seat that reduces susceptibility to carsickness by controlling head movement through an innovative headrest design.

In addition, for smartphone use, we propose hand support that enables occupants to view their phones while keeping their line of sight directed upward. This prevents external visual information from being blocked and reduces so-called “text neck” fatigue to one third.




This is our “Suspension Springs + Seats” proposal for BEVs.

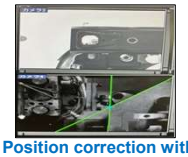
NHK Spring is the only manufacturer that develops both suspension springs and seats. By combining these two products, we can make proposals to our customers for the expanding BEV market.

For more details, please watch the video.

## Strengthening Competitiveness: Automation Initiatives

### Automation of heavy load transfer

Manual replacement



Position correction with 3D cameras + Automatic supply to conveyor lines by collaborative robots

**Automation of seat frame (approx. 10–15 kg) transfer, reducing the burden on workers**

### Automation of cart transport operations

Manual cart transport

Automation of transport using automated guided vehicles (AGVs)/autonomous mobile robots (AMRs)

**Automating transport operations to reduce the burden of walking**




From here, I will explain our initiatives to strengthen our competitiveness.

First, let me introduce our efforts in automation.

Under our company policy of “Respect for people,” we are promoting the introduction of automation items with a dual focus: eliminating heavy labor and streamlining operations through workforce reduction.

First, I will explain automation of heavy load transfer. Seat frames can weigh as much as 15 to 20 kg, and in the past, workers had to manually set them onto jigs. This heavy object transfer work has now been replaced by automatic supply using collaborative robots.

Next is automation of cart transport operations. Tasks that were previously carried out manually with carts have now been replaced by automated transport using automated guided vehicles (AGVs) and autonomous mobile robots (AMRs).

## Strengthening Competitiveness: Automation Initiatives

### Automation of bolt fastening

Tightening with hand tools

Setting seat frames on unmanned transport vehicles and tightening them with robots

**Automation of 2,000 repetitive tasks per shift, reducing the burden on workers (less strain on wrists and fingers)**

### Automation of heavy material handling

Manual replacement

Automatic supply of seat frames transported by unmanned vehicles to conveyor lines

**Automated transfer of seat frames (approx. 10–15 kg × 500 times per shift), reducing the burden on workers**




Next is automation of bolt fastening. In the seat assembly process, we have changed the bolt fastening work from the conventional manual method to a robotic fastening method.

As a result, the repetitive task of fastening bolts approximately 2,000 times per shift has been eliminated, significantly reducing the strain on workers' wrists and fingers.

Next is automation of heavy material handling.

In this case, seat frames weighing around 15 kg each had to be manually loaded onto the finished product line about 500 times per shift.

Automating this transfer work greatly reduced the physical burden on workers.

## Strengthening Competitiveness: Improvement of Heavy Duty Work Operations

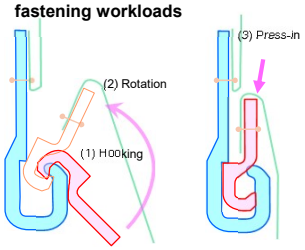
**Automation of heavy material handling**

600–800 boxes per shift (each box weighing over 10 kg)

**Work improvement through process and product development**

Establishing NHK's original fastener structure (patent pending)

**Development of tools to reduce fastening workloads**

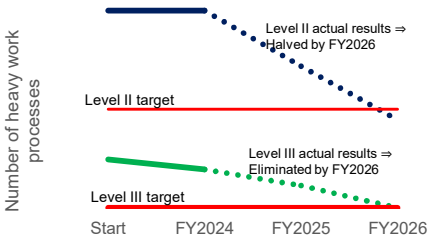



**Definition of workload levels in heavy duty work**

[Evaluation points]
(1) Posture & weight score: Defined by weight, posture, and frequency
(2) Upper limb score: Defined by the load applied to the upper limbs

| | Male | Female | Senior |
|---|---|---|---|
| Level III | × | × | × |
| Level II | ○ | × | × |
| Level I | ○ | ○ | × |
| Level 0 | ○ | ○ | ○ |

**Improvement progress by level**



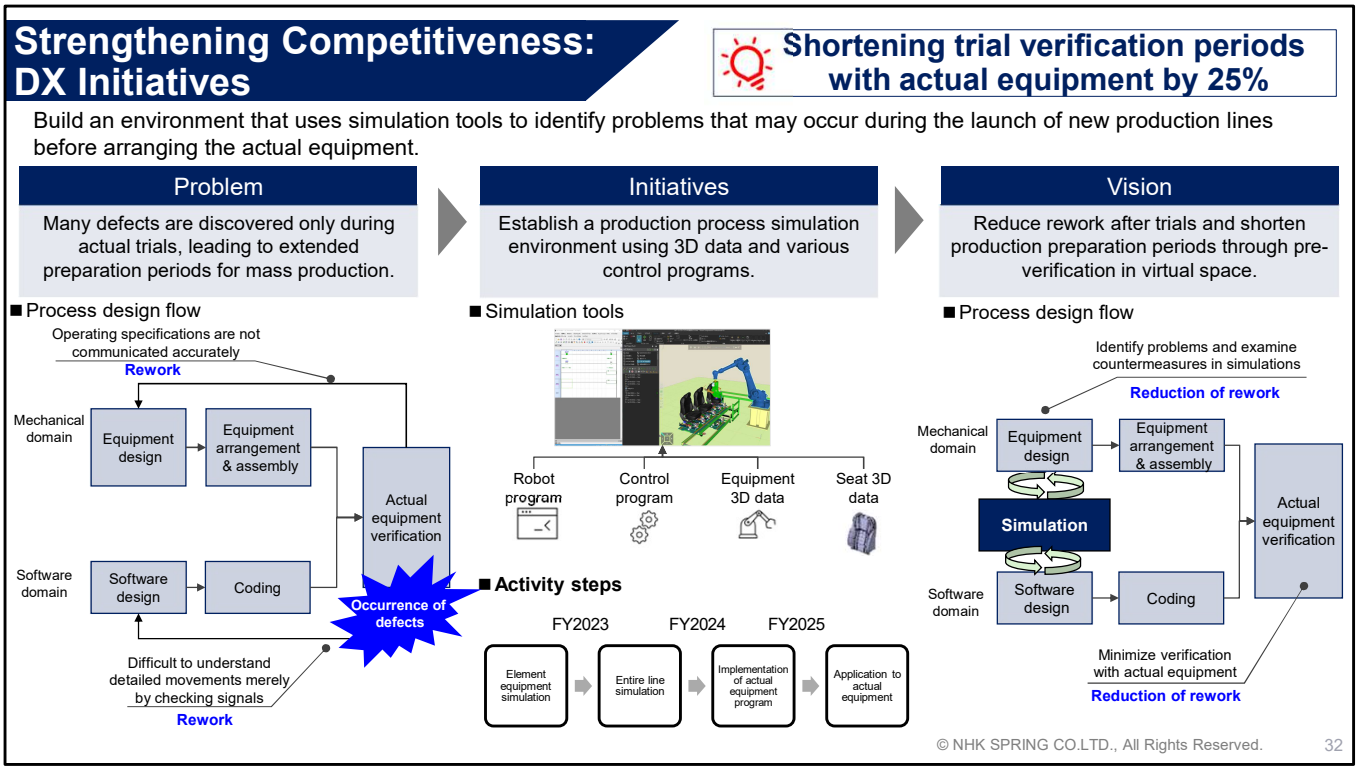




These also represent part of our efforts to improve heavy duty work operations.

The first initiative is automation of plastic container palletizing. This task is the most frequent daily task and is one of the most work-intensive operations. Although we had attempted automation before, our efforts were not successful due to the high level of difficulty. Beginning this fiscal year, we restarted this as a challenging initiative.

The second initiative is work improvement through product development. In seat production, there is a process called covering, which places strain on workers' fingertips. By redesigning the product structure so that it does not strain the fingertips, we aim to reduce the workload associated with this process.




Now, I will explain our DX initiatives.

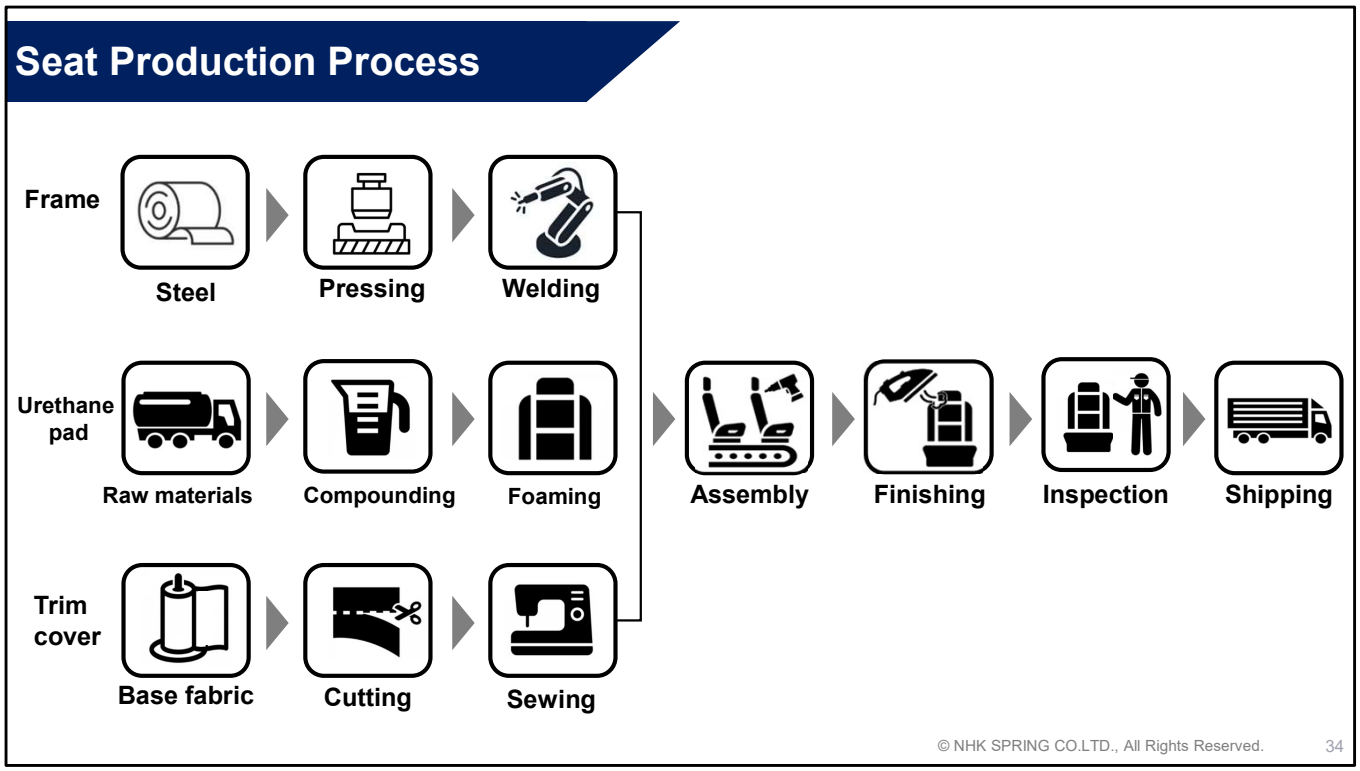
In conventional process design, we conducted verification using actual equipment and machinery. Today, by carrying out this process design virtually, we can conduct various verifications without using actual equipment. This reduces development periods and production preparation lead times.

## Overview of Yokohama Plant (Seating)

| | |
|---|---|
| **Start of operation** | **1990 (relocated from Kawasaki Plant)** |
| **Site area** | **Entire Yokohama Office: 123,749 m²** |
| **Building area** | **Seat building: 12,613 m²** |
| **Floor area** | **Seat building: 35,840 m²** |
| **Employees** | **250 (As of end of June 2025)** |
| **Building structure** | **1F Production area<br>2F Production area<br>3F Prototyping and evaluation testing area** |




This is an overview of the Yokohama Seating Plant.
It began operations in 1990, currently employs 250 people, and the plant has three floors.




Next, I will briefly explain the seat production process.

The frame is pressed from purchased steel and then welded. The urethane pad is made by blending and foaming purchased raw materials. The trim cover is cut and sewn from purchased base fabric rolls. The frame, urethane pad, trim cover, and electrical components are then assembled, followed by finishing, inspection, and shipping.

# Supplementary Information

# History of the Automotive Suspension Springs Business

1940
Start of leaf spring production

1955
Three-leaf spring

1941
Start of coil spring production

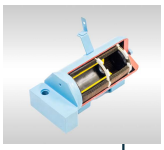
1958
Start of torsion bar production

1957
Start of solid stabilizer production

1985
Start of hollow stabilizer bars production

1985
FRP leaf spring

1989
Accumulator



1992
Stabilizer link

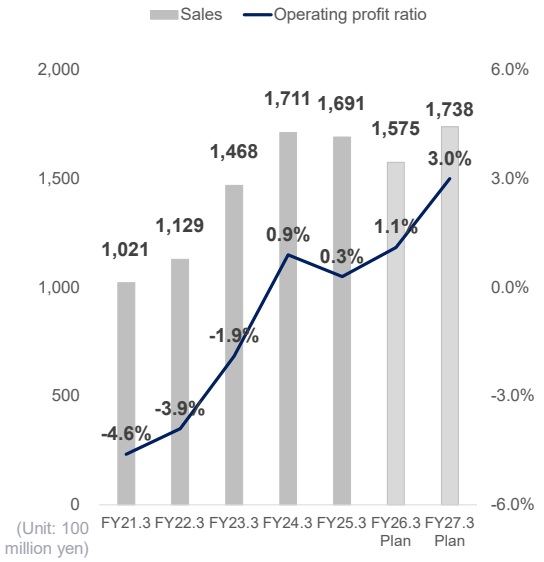

1999
L-type spring

2015
Bush-bonded stabilizer

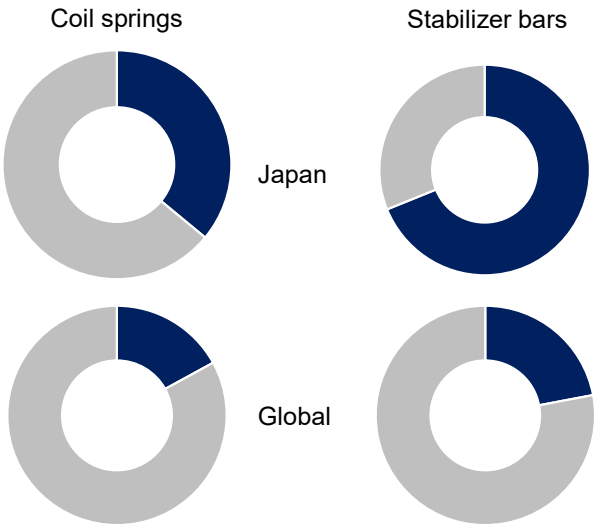
2004
Brake-use accumulator

# Automotive Suspension Springs Business: Sales and Profit

## Sales and profit




## Market share by product




Source: FY2024 Results, NHK Spring survey

# History of the Automotive Seating Business

**1956**
Nagoya (present-day Toyota) Plant established
Start of seat spring production
* For Toyota

**1964**
Start of integrated-foam urethane seat production

**1962**
Kawasaki Plant established
Seat production for Nissan and Isuzu begins

**1969**
Gunma Plant established
Seat production for SUBARU begins

**1973**
Start of seat production at NHK Spring (Thailand)

**1986**
SNIC established
Increased production for Suzuki

**1987**
Seat production begins in the U.S.
(GSA established)

**1995**
ITES established
Increased production for Isuzu

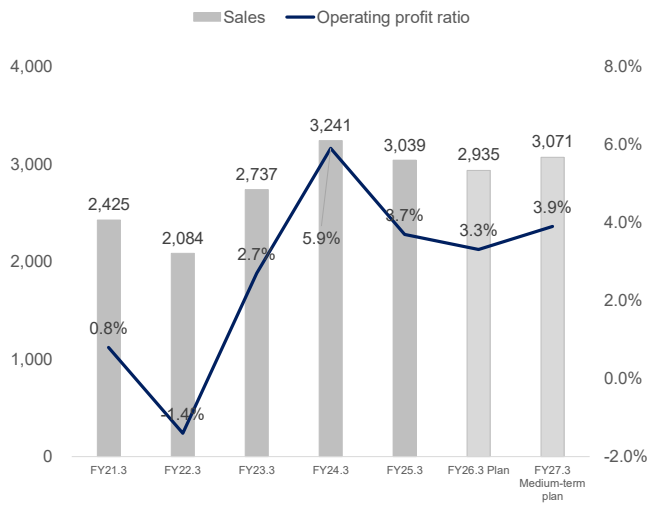
**2001**
Faurecia-NHK and Faurecia-NHK Kyushu established
Increased production for Nissan

**2016**
Seat production begins in Indonesia
(NKS established)

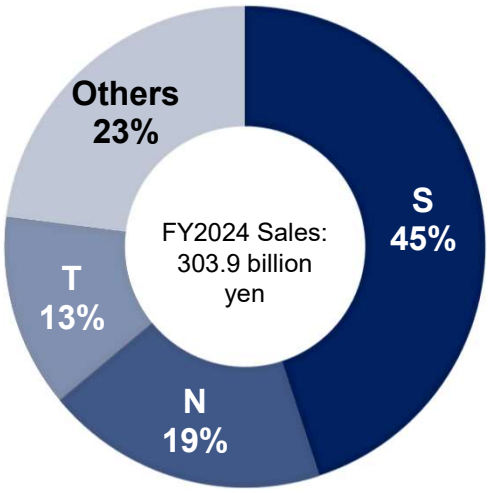
**2017**
NHK Spring Mizushima established
Increased production for Mitsubishi

# Automotive Seating Business: Sales and Profit

## Sales and profit




## Sales composition ratio by customer




- The predictions and plans by NHK Spring Co., Ltd. listed in this document are forecasts related to future results and performance, and contain risks and uncertainties. Please note that the actual results may differ from the forecasts due to fluctuations in important variables, such as economic conditions, market trends, foreign exchange trends, and so forth.
- The data listed in this document is included for the purpose of providing information, it is not designed to encourage investment.
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