# **Suspension Springs**

•FY2019 Results

¥126.3 billion Net sales Operating income ¥2.7 billion







Jiro Oyama Executive Corporate Officer President of Suspension Spring Division

## **Growth Initiatives**

To achieve business growth in an environment where domestic automotive production volume has plateaued, new markets in the suspension springs field must be created through new product research and development. Demand already exists for value-added products that feature more lightweight design and ride comfort than conventional springs, and providing solutions to these needs will lead to an expansion of suspension springs business. Specific examples of our ongoing product development projects, both domestic and overseas, include FRP (fiber-reinforced plastic)

springs, attitude control accumulators, and tubular coil springs.

From a sales growth perspective, proactive operations deployment worldwide will be needed to take advantage of the economies of scale available overseas. Since NHK Spring has already established its key overseas facilities and production-ready infrastructure, we are positioned to efficiently deploy our manufacturing capabilities globally for products including those under development.

#### Strengths

- Possession of high-level proprietary spring manufacturing technology
- Global business deployment
- Integrated capabilities encompassing quality, price, development and lead time

## **Opportunities**

- Weight reduction proposals for vehicles focused on environmental performance such as HEVs and EVs
- Ride comfort proposals for automated driving and driverless cars
- Increasing added value in response to demand for higher quality levels

#### **Risks**

- Loss of domestic economies of scale due to domestic market shrinkage
- Intensification of competition

## Main products

• Coil springs • Leaf springs • Stabilizer bars • Accumulators • Torsion bars • Stabilizer links • Stabilizer and others



Coil springs



Leaf springs



Stabilizer bars



Accumulators

**Business Overview** 

# Seating

•FY2019 Results

Net sales ¥302.5 billion Operating income ¥6.9 billion Net sales and 45.5%





Tatsuro Ono Senior Corporate Officer President of Seating Division

## **Growth Initiatives**

We are advancing business operations in the automotive seating segment through a two-pronged approach of thorough customer-first consciousness and continual quality maintenance.

The goal of customer-first consciousness is to be able to respond reliably and as quickly as customers expect by enhancing our systems which closely support customers at each of their manufacturing sites. Continual quality maintenance involves reviewing and revising development procedures to reliably meet customer expectations.

In terms of ensuring profitability as well, we are enhancing our development and manufacturing competitiveness to differentiate ourselves from other companies and boost profitability.

Operating profits in the seating business are being squeezed by increasingly severe competition with other companies as well as rising development costs from higher customer safety and quality requirements in recent years. Although the environment is challenging, we are aiming for more growth by fully accomplishing each of the initiatives described above.

## Strengths

- Ability to offer proposals tailored to customer needs through in-house manufacturing that includes the wide range of processes needed for seats, such as metals processing, urethane forming, and sewing
- Comprehensive development, design, and benchmarking capabilities for finished seating products based on business relationships with each automaker

## **Opportunities**

- Increasing added value in response to changing performance requirements for seating, such as comfort and new functions associated with advances in self-driving vehicles
- Possibility to expand sales to each automaker as an independent seating supplier

#### **Risks**

Response to fierce competition in terms of quality, price, development, etc. as an independent seating supplier

#### Main products

• Automotive seats • Mechanical seating components • Interior trim products and others



Thin suspension seats



Minivan seats



Automotive seat assembly lines



Front seat frames

# **Precision Springs and** Components

**Precision Springs** 

•FY2019 Results

Operating income ¥6.2 billion







Kazuhiko Otake Senior Corporate Officer President of Precision Spring and Components Division

## **Growth Initiatives**

The precision spring segment covers products in a wide range of fields, from automotive components such as engine and transmission parts to HDD (hard disk drive) mechanical components, semiconductor inspection probes, and more. In recent years, we have been particularly focused on expanding our motor core business based on high precision stamping technology to meet vehicle electrification needs in the automotive industry, which is undergoing what could be called a once-in-a-century, epoch-making transformation. We are working to expand business as we continue to increase earnings potential through the revision of manufacturing methods while keeping a close eye on profitability.

In addition, we anticipate increasing demand for semiconductor inspection probes in association with semiconductor market expansion due to future

adoption of such technologies as 5G and IoT. We are proactively seeking opportunities to grow sales as we focus efforts on the development of next-generation high-frequency, high-current microcontactors using spring micromachining technology.

At the same time, the shift in motor vehicles toward electrification is anticipated to result in a gradual future decline in existing engine parts, and we can no longer expect to see increasing demand for transmission-related wire springs as we have in the past. Competition is expected to intensify as the size of the market levels off. To enhance product competitiveness as well as further improve revenue in the wire springs business, we are working to improve production efficiency through the global rollout of the fruits of our Manufacturing Innovation campaign in progress since last fiscal year.

## Strengths

- High precision machining and miniaturization technologies
- Design analysis technology
- Materials development, heat treatment and surface treatment technologies

## **Opportunities**

- Burgeoning demand in product fields related to the shift toward vehicle electrification
- Semiconductor market expansion (increasing demand for inspection probe units)

#### **Risks**

Receding demand for existing engine parts due to the shift toward electrification (intensification of competition)

#### Main products

- HDD mechanical components Wire springs Motor cores Probe units for inspection of liquid crystal panels and semiconductors
- Fasteners (screws) Precision machined components and others



HDD mechanical components



Lock-up clutch dampers (wire springs)



Motor cores



Microcontactors/units

**Business Overview** 

# **Precision Springs and Components**

**HDD Suspensions** 





Tetsuya Fujiwara Senior Corporate Officer President of DDS (Disk Drive Suspension) Division

#### **Growth Initiatives**

Amid a decline in shipment volumes of HDD (hard disk drive) suspensions for portable HDDs due to increased SSD (solid state drive) use, our quick actions in the HDD suspension segment—the development of suspensions for data center HDDs which use more suspension components per unit, and the investment in mass production lines—have captured market share and expanded sales.

As the need for high-capacity HDDs for data centers increases, the technology required in suspension specifications is also rising to an extremely high level. To be a trusted partner to our customers, we are strengthening collaboration at the design and development stage and providing proactive support through design proposals and performance

evaluations.

In addition, we have been able to achieve the same level of quality control at every manufacturing site through standardization of production technology and key parameters at the Komagane Plant as the mother factory. Along with product quality improvement, we are working to cut fixed costs and promote streamlining wherever appropriate by automating lines, improving takt times, and increasing productivity.

Our production division has adopted "One Team" as its slogan as we collectively mobilize the resources of each manufacturing site and conduct business effectively. In so doing, we are setting our sights higher and forging ahead day by day to be a key supplier supporting data centers of the future.

## Strengths

- World's top share of suspensions for data center HDDs
- Ability to partner with each customer from the development stage, enabling us to propose manufacturable designs that meet customer specifications
- A flexible supply network with locations in Japan, China, and Thailand, providing identical quality suspensions tailored to demand at each customer location

## **Opportunities**

 Sales expansion accompanying an increase in the number of suspensions used per product due to increased demand for multi-disk HDDs for data centers

#### Risks

• Response to customer demands for lower costs

#### Main products

HDD suspensions



HDD suspensions



DSA for high-capacity HDD



CLA for ultra-high capacity HDD



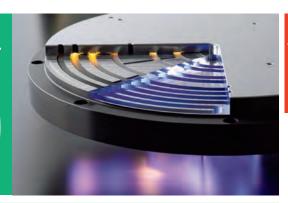
Production of HDD suspensions

# Industrial Machinery and Equipment, and Other Operations

•FY2019 Results

Net sales ¥92.6 billion
Operating income ¥4.8 billion







Hironobu Sugiura Senior Corporate Officer President of Industrial Machinery and Equipment Division

#### **Growth Initiatives**

Our business operations in the industrial machinery field are diverse, including integrated metal substrates and semiconductor process components which are at the core of our growth over the near future.

The COVID-19 pandemic is expected to thrust the automotive industry into a worldwide struggle in fiscal year 2020. Even so, our integrated metal substrates are capturing a large share of the car electronics market, which has a particularly favorable outlook for expansion in areas such as power modules, secondary battery-related parts, and LED lighting-related parts. We are preparing for anticipated additional market growth in the future by strengthening our capabilities in terms of both improved quality and productivity through domestic and overseas plant facility updates and layout optimization.

We are also working to expand sales by developing

products with new materials and new structures to meet the increasing need for high-current/highvoltage electronic control as more transportation becomes electrified in the future.

Additionally, for our semiconductor process components business, we built a new plant in Nagano Prefecture with state-of-the-art facilities, thereby equipping NHK Spring with a highly efficient mass production supply framework to support the cutting edge technologies required by top manufacturers of semiconductor manufacturing equipment in Japan and worldwide.

Our development of bonding technology has also resulted in numerous orders for prototype products in new product fields, and we expect to begin full-scale mass production during the period covered by our next medium-term management plan.

## Strengths

- Six business units, each supplying essential parts in its field, and each holding the top or second-ranked market share
- The ability to grasp business opportunities in all industrial fields due to an extremely broad customer base in which new products can emerge
- High degrees of independence and functionality in each business unit, enabling rapid decision-making

## **Opportunities**

• Breadth of industrial fields covered by our business operations

## Risks

- Greater impact of order fluctuations due to high-mix, low-volume production as the main business model
- Quality control capabilities to handle production conditions frequently characterized by first-time orders, changes to orders, and orders placed after a long absence
- Understanding business risk when entering new fields in which we have no business experience

#### Main products

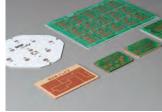
- Semiconductor process components Ceramic products Spring mechanisms Pipe support systems
- Polyurethane foam products
   Integrated metal substrates
   Parking systems
   Security products
   Lighting equipment
- Golf club shafts and others



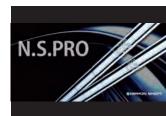
Semiconductor process components



Tension balancers for railway use



Integrated metal substrates



N.S. PRO brand golf shafts