

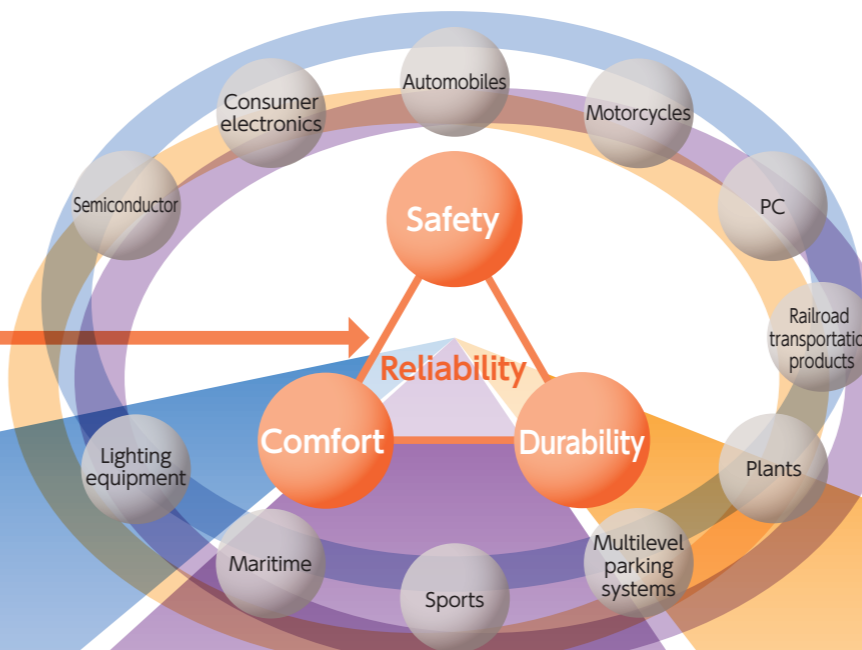
Value to Society Provided by NHK Spring Group

NHK Spring produces key components for many applications with products that utilize the characteristics of springs at the core, including automobiles, data communications, industry, and lifestyle.

We will introduce some of our products as a representation of how we contribute to society through building innovative products and providing value to the world.

Metal heat treatment and plastic fabrication technologies

Core spring technology and analysis



Automobiles

Automotive suspension springs

Coil springs absorb shock and vibration from the road surface. Stabilizer bars help prevent automobiles from tilting during cornering and lane changes. Leaf springs help ensure both a comfortable ride and stability while driving. Designing our products to be smaller and more lightweight also helps improve fuel efficiency of automobiles.



Valve springs

We are constantly improving durability and heat resistance through the development of materials and processing methods. These products are highly reliable in their support of high-revving engines.



Arc springs

These arc-shaped springs are designed with a long stroke for suitable applications. These springs are used to achieve low stiffness and expanded torsion angles for clutch dampers used in automatic and manual transmissions in automobiles, which helps reduce vibration and improve fuel efficiency.



Disc springs

These springs are small, yet capable of handling significant loads, and so are often used in CVT and automatic transmissions in automobiles.



Automotive seats

We produce automotive seats with excellent levels of comfort and safety, completely in-house from design and development through assembly. Our seats must pass through our strict testing criteria to ensure that we provide only the best seats to users in terms of design, durability, comfort, and other expected qualities.



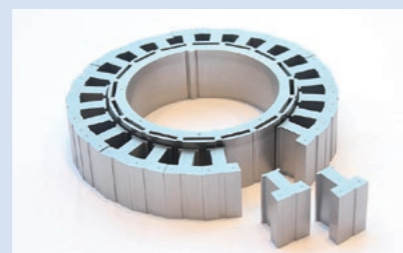
TOPICS

Emphasizing Product Development for Electric Vehicles

NHK Spring set up the Electrification Business Promotion Dept. was set up as an organization under the direct control of the President & Chief Executive Officer in April 2018. As the automotive industry advances electric vehicles, NHK Spring leverages its core technologies and strengths to focus on the development of new products for electric vehicles. We will further emphasize research and development of products in the future by expanding manufacturing of motor cores and metal base wiring boards for all electric vehicles in the initial stage of these activities.

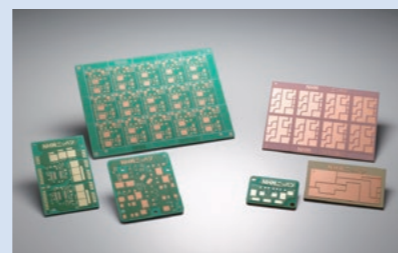
Motor Core

These motor cores are used in EV/HEV drive motors. The motor is made up of the magnetic cores of the rotor and stator. This product requires high-precision press fabrication technology.



Metal base printed wiring boards

Each core provides superior heat dissipation by combining metal such as aluminum and high-heat conductive insulation. These boards protect electronic devices from heat, which improves reliability and facilitates compact designs.



Data communications

HDD suspensions and mechanical components

Suspensions support the magnetic heads in HDD devices used in personal computers and other consumer electronic devices. Our HDD components are trusted around the world to make HDDs smaller, faster, and with higher capacities.



Semiconductor equipment parts

We produce high-performance products such as heater and cooler units used in semiconductor manufacturing equipment and even electrostatic chucks integrated with both heaters and coolers.



Super Seal / Super Sheet

These materials are made of special urethane foam and used in applications to create waterproof and airtight seals as well as provide sound absorption and cushioning. These products maintain stability and have excellent resiliency even under low compression, which is why they are used in many industries such as automotive, electronics, architecture and civil engineering.



Industry and lifestyle

Mechanical multilevel parking systems

The palette lift rises vertically and also moves left and right, which is made possible by spring and metal processing technologies. Effectively utilizing land in this way helps resolve the social problem of ensuring sufficient parking space.



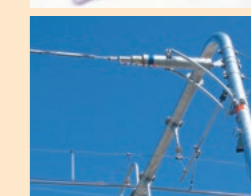
Pipe support systems

These systems are used to reduce noise and vibration produced by plant and hydraulic equipment, which helps improve safety of facilities.



Tension balancers

Tension balancers absorb flexion that occurs in cables that provide electricity to the railroad pantograph, which helps ensure a constant tension and safe operation of traincars.



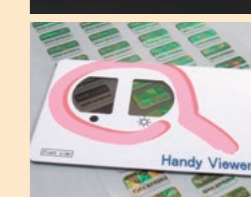
Golf club shafts (Nippon Shaft)

We offer the N.S. PRO line of lightweight steel shafts. This brand is famous all over the globe for the control and distance these shafts offer golfers.



"Trustgram" and "Hypergram" anti-counterfeit labels

These label stickers help protect the counterfeiting of name-brand goods such as consumer electronics devices, personal computer components, automobile parts, sporting goods, and others.



Maritime related products (NHK MEC)

We offer products renowned for their high reliability to various fields in maritime.

