Concept Book

NIDEC COMPONENTS CORPORATION

Nidec
All for dreams


Nidec Components
A new future together

Message

Sustaining social development with the power of components

Kazushi Ishida, Representative Director and President

Nidec Components

We at Nidec Components are an electronic components manufacturer that has been engaged in the development, manufacture and sales of trimmer potentiometers, sensors and actuators for more than half a century since our establishment in 1967. We are continuing to produce high-quality, value-added products that play an important role behind the scenes in a wide range of products, especially industrial equipment.

Currently, we have three business divisions: the Electronic & Mechanical Components Division, which mainly handles circuit components; the Sensor Division, which handles various strain sensors for pressure, torque, etc.; and the Actuator Division, which handles motors, polygon mirrors, potentiometers, etc. The three divisions have built a strong presence and levels of trust in their respective markets.

We have an extremely diverse lineup of standard circuit components to precisely meet the needs of our customers. We also have abundant experience and a proven track record in the development and production of custom (OEM) products such as sensors that require close communication and a joint relationship with our customers.

As a member of the Nidec Group, we believe that our great strength lies in our potential to meet the diverse needs of our customers through collaboration with group companies and technical research centers.

Vision behind our new company name

In April 2023, we changed our company name to “Nidec Components,” renewing our long-accustomed trading name. The new company name is a fusion of “Nidec,” our group brand name, and “Components,” which pertains to our core business.

We have been making components for a wide variety of customer products with a mission to “contribute to the development of social infrastructure.” The company name is based on the word “components” in the broad sense of the word in that it is not limited to specific products or fields. Based on our technological capabilities, we help customers realize valuable products by creating, producing, and globally supplying the components needed by customers. Through such efforts, we hope to support the development of a wide range of social infrastructures. Going forward, we will continue to take on new challenges and create the components that are in demand, and thereby play a role in shaping the society of tomorrow.

Initiatives for future leaps forward

As Nidec Components enters a new stage of growth, we are focusing on two themes. The first is circuit components, which is also our core business. We will do our utmost to thoroughly refine QCD (quality, cost, and delivery) to better support our customers' production activities and supply chains.

The second is to develop growth markets by leveraging our unique technological capabilities, with a particular focus on the sensing sector. At the core of this technology are pressure sensors and torque sensors, all of which are manufactured in-house starting from the sensor element, and we are working to expand the range of applications based on this technology. We are proud to be the world's largest supplier of polygon mirrors, and this technology is being utilized in the "LiDAR (Light Detection and Ranging)" laser sensor, which will play an important role in the transition from current advanced driver assistance systems (ADAS) to autonomous driving in the future. We will continue to tackle all such challenges and contribute to the development of social infrastructure.

All of our components have social value only when they are incorporated into our customers’ end-products. Not forgetting this basic principle, we will do our utmost to meet the expectations of all our stakeholders and society while placing importance on technology, quality, and communication.

All our efforts
for the development and prosperity of society

In the spirit of our founding as a self-reliant and independent company, we have established the following standards with the aim of instilling them as our basic management principles and thereby contribute to society

Core Value
(Management principles)

Contribute to the development and prosperity of society with a clear sense of corporate social responsibility

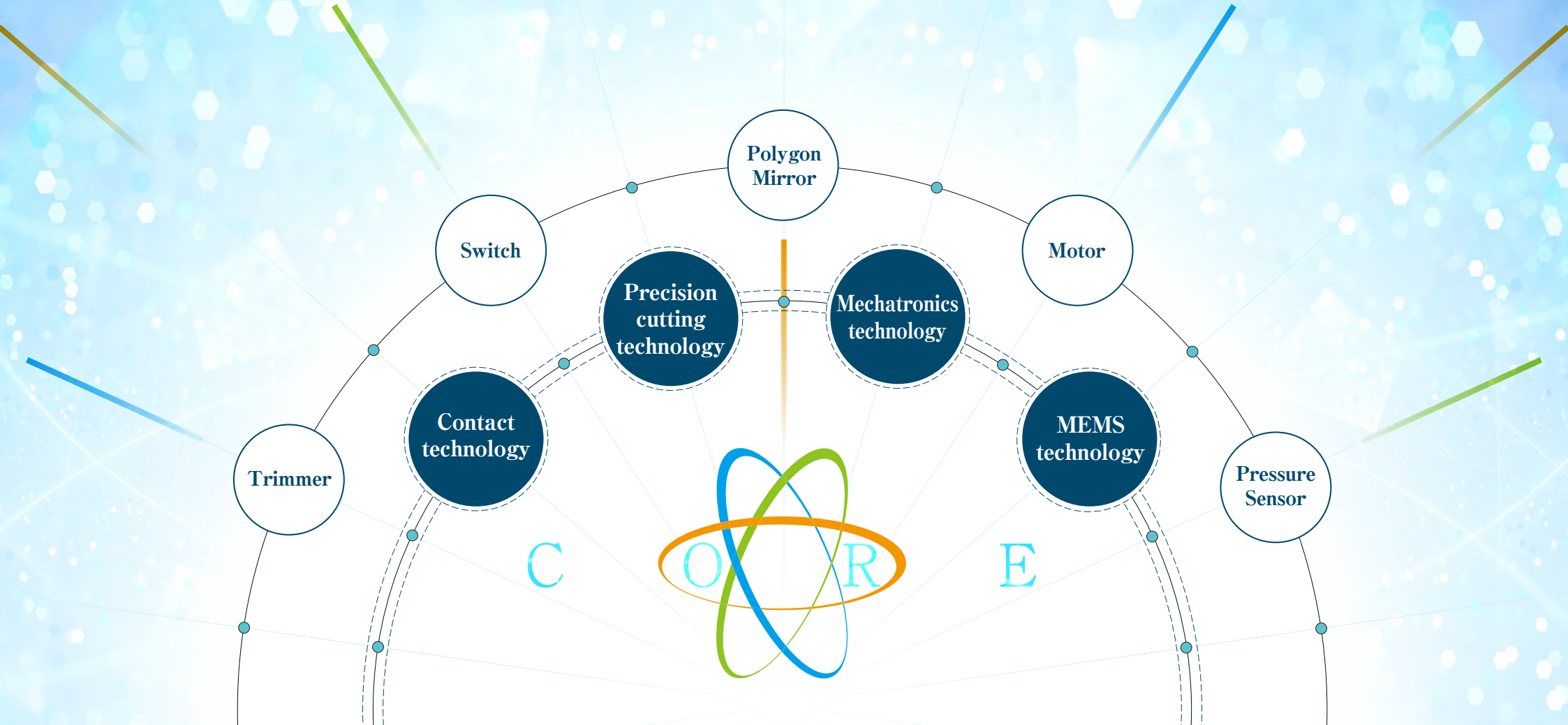
Forge our own path with a sense of self-help and progress while never losing sight of our spirit of adventure

Foster a creative and free-spirited corporate culture and continually challenge ourselves for self-improvement

As a development-oriented company, we aim to constantly introduce new products to the market

Core Technology

Based on the development of elemental technologies such as contact technology and MEMS technology, Nidec Components develops and manufactures products ranging from mechatronics design to cutting as its main technologies. We respond flexibly to changing market needs by combining our core technologies, and by leveraging synergies, we are able to create highly competitive products in the global marketplace.



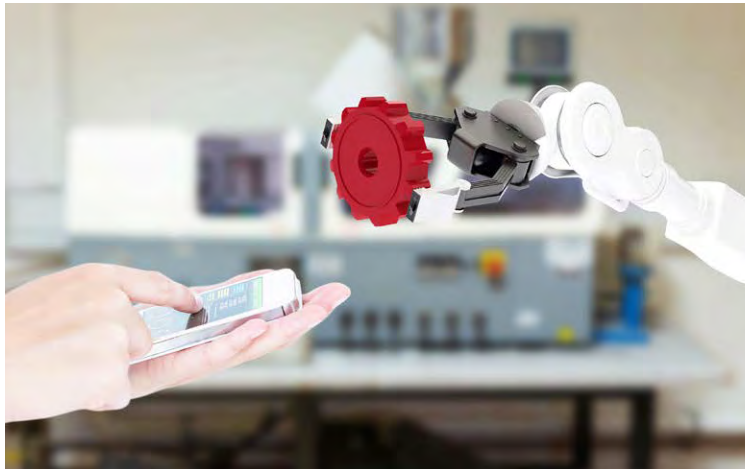
The World Created by Nidec Components

ROBOTICS

A Society where humans and robots coexist

We are entering an era in which it is commonplace for robots to take over the arduous, monotonous, and dangerous tasks that have been performed by humans in the past. Nowadays, their place of work is no longer limited to manufacturing sites and has expanded to include logistics, food services, hospitals, and nursing care facilities. As robots coexist around us, people are freed from physical strain, stress, and danger. Nidec Components is focusing on the possibilities offered by such robotics and is studying sensing technologies that are compatible with next-generation robot control.

Sensing technology to support growing robotics sophistication



Expansion of new robotics that coexist with and assist people

Industrial robots are incorporated into the production lines of large-scale automobile and machine manufacturing plants, etc., and repeatedly perform simple tasks in an environment isolated from humans. By contrast, a cooperative robot is a robot that places itself in the same space and environment as a human and cooperates with the human to accomplish tasks together.
Compared to industrial robots, cooperative robots excel at more intricate work and are flexible enough to handle a variety of tasks, bringing many benefits such as labor savings, reduced errors, and increased productivity in situations with limited manpower. In addition, the introduction of cooperative robots has been progressing in many fields because they do not require a large installation space like industrial robots and can be implemented in a relatively short period of time and at a relatively low cost.
On the other hand, the day when robots can perform advanced tasks such as "crafts work", which until now has had to rely on human hands, has become a reality.

Breaking new ground in robotics with traditional and advanced sensor technology

Sensing technology plays an extremely important role in the achieving new robotics such as cooperative robots and high-precision robot arms. The intricate movements of a robot cannot be realized without high-precision sensors. Nidec Components is currently working on the development and commercialization of "force sensors for wrists" and "torque sensors for joints" for use in next-generation robots.
Force sensors measure the magnitude and direction of forces and moments. When a robot is equipped with a force sensor, it can sense the shape, texture, and substance of an object, making it possible to perform precision fitting, mass measurement, and subtle force control that require minute force adjustments. Robo Torque sensors are measurement devices that detect the force applied to an axis when torque is applied to it, and are used to control robots. By incorporating this sensor into a robot arm, it is possible to control force, position, and velocity to perform movements similar to those of a human arm. It is also possible to attain high accuracy by, for example, direct teaching, which allows the robot to memorize human movements without complex programming, and collision detection that prevents endangering its co-working human.

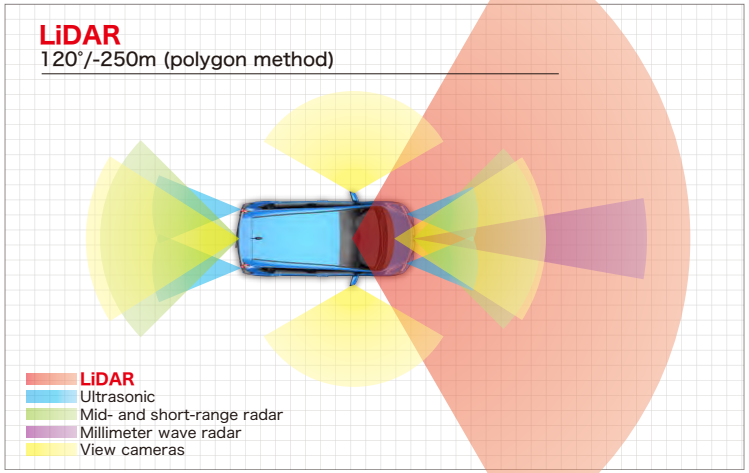
The World Created by Nidec Components

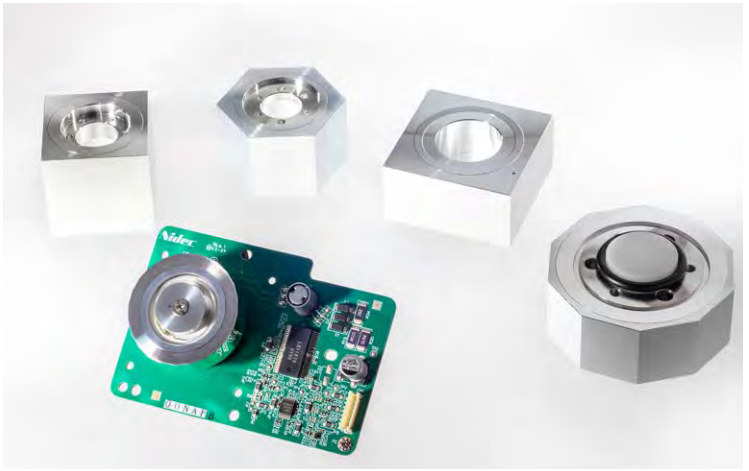
MOBILITY

A more comfortable and safer future of mobility

Autonomous driving technology allows a car to drive autonomously to its destination without the need to operate the gas pedal, brake, or steering wheel. If the system is put to full practical use, we can expect to see many ripple effects, including increasingly comfortable travel experiences for people, solutions to problems such as traffic accidents and congestion, and even a paradigm shift in public transportation and logistics. An indispensable part of the growing sophistication of autonomous driving is the development of sensors that can instantly assess a car's surroundings while driving. Nidec Components is vigorously pursuing the development of the core technologies that will play a key role in this field.

Polygon mirrors - fast making the dream of autonomous driving a reality





"LiDAR," an optical sensor technology that raises the bar for autonomous driving

Autonomous vehicles would be equipped with a variety of devices such as GPS, inertial navigation systems, view cameras, and millimeter wave radar to identify the car's own position and its surroundings. Among these is "LiDAR," which can measure the distance and position to of an object and identify its physical properties by irradiating a laser beam onto the object. LiDAR has a higher resolution than conventional radar.
Superior visual recognition capabilities to create the necessary 3D maps for autonomous driving by accurately detecting the surrounding environment consisting of other vehicles, pedestrians, and obstacles. Superior to that of view cameras and millimeter wave radar, LiDAR detects objects with low radio wave reflectivity, such as signs and trees; thus, attracting attention as a technology that can raise the bar of autonomous driving.

Supporting the development of high-precision "LiDAR" by mastering polygon mirror technology

Nidec Components is actively researching and developing polygon mirror technology to maximize the performance of LiDAR. LiDAR equipped with polygons outperforms all other methods in terms of detection distance, resolution, repeatability, and field-of-view. The polygon mirror method has especially achieved the best results in long-distance object detection. Nidec Components already has a proven track record of supplying polygon mirrors and polygon laser scanners to a wide range of industrial applications, including medical and office equipment, and boasts the world's largest share of the polygon mirror market. We are leveraging this experience and technological skill to develop polygon mirrors for LiDAR.
Although the size of polygon mirror LiDAR is slightly larger than other methods due to its mechanical structure, the processing technology that facilitates downsizing and the production capacity that enables mass production of high-quality units allow LiDAR to be used in a wide range of vehicle types, from automatic passenger cars to commercial vehicles. We will help sustain the development of autonomous driving with our unique technology and contribute to the innovation of next-generation mobility.

Electronic & Mechanical Components

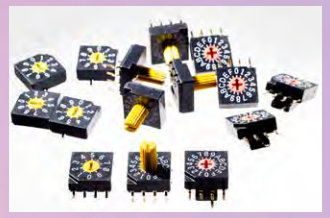
Core business founded on insight and technological skills accumulated since our founding

As a core business since our founding, Nidec Components has mainly been engaged in the development and manufacture of trimmer potentiometers (semi-fixed resistors) and switches for setting and operating. These product lines have established a brand presence in the global market due to their high quality & precision.

Trimmer potentiometers are components that compensate for variations in voltage and current caused by the characteristics of semiconductor components, etc., adjust the oscillation frequency, and adjust signal timing. Our unique technologies such as thick film manufacturing, contact point, and reliability evaluation technologies enable us to achieve both high quality and cost responsiveness, and are used in a wide range of fields such as industrial machinery, measuring instruments, FA equipment, and communication devices.

A setting switch is a component used in digital circuits built into control equipment, etc., for switching address settings and programs, and switching between device input/output, and current/voltage between circuits. Combining contact technology that guarantees long-term setting stability and durability with high usability, we have acquired a sizable market share in the sectors of housing equipment, measuring instruments, factory automation equipment, and communication devices.

The operating switches, which are mainly used for power supply and signal switching, have a highly durable contact structure and can be supplied not only as standard products but also as custom-made products to meet individual needs for power tools, construction equipment, disaster prevention equipment, amusement equipment, etc. We contribute to the stable operation of equipment.



Rotary code switches

Trimmer potentiometers

Rocker switches

Actuators

Creating actuators that are both original and advanced

We are responsible for the development and manufacture of actuator products used in the industrial field, with a focus on stepping motors, brushless motors, and polygon mirrors. Our value-added product manufacturing that integrates specific technologies has been highly praised by the market.
A typical example is a brushless motor that uses pneumatic hydrodynamic bearings that employ advanced fluid and processing technologies. By realizing a non-contact structure during rotation, this revolutionary product simultaneously achieves ultra-high-speed rotation, longevity, and low vibration.
Micro blowers, which also employ pneumatic bearings, are in growing demand as key devices for medical equipment, fuel cells, and other applications.

Stepping motors specialize in permanent magnet type (PM type), with a lineup of rotary and linear types. We boast a proven track record mainly in the amusement equipment, medical, and printing equipment industries.
Polygon laser scanners, which are used in office equipment and medical devices, are also increasingly attracting attention as scanning devices for "LiDAR (Light Detection and Ranging)," an optical sensor technology that supports the practical application of autonomous driving. This metal polygon mirror used in this product is also manufactured completely in-house with advanced processing technology, and the company has achieved the world's No. 1 share in outside sales of stand-alone mirrors.


Micro blowers


Stepping motors

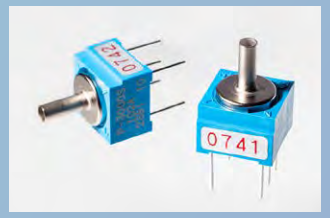

Polygon laser scanners

Sensors

Deeply cultivating sensing technology with unlimited possibilities

Leveraging technological capabilities cultivated over many years, we develop and manufacture a wide variety of sensors, with a focus on pressure sensors that detect and measure the pressure of gases, liquids, and other substances. The adoption of our products is expanding into a wide range of fields, including semiconductor manufacturing equipment, industrial machinery, medical equipment, analytical equipment, measuring instruments, and hydraulic equipment.
The product lineup covers each type from module to built-in amplifier type, pressure switch, and pressure gauge. Si-MEMS and metal thin-film methods are used for the sensor element, and in the Si-MEMS method, we have a silicon single-crystal diaphragm and a double diaphragm configuration for corrosive media such as liquids, which are deployed in end products according to their characteristics.

Responding quickly to the needs of the times, in recent years we have been proactively releasing small ratiometric output types with built-in amplifiers and sensors that use thin-film elements and are compatible with high vacuum and high temperature ranges.
In pursuit of high quality, all of our products ranging from sensor chips to final products are manufactured entirely in Japan. We have established a system that enables us to implement the entire process ranging from product development and design to sensor element manufacturing, product assembly, and calibration under a strict quality control system. We also flexibly respond to requests for custom orders and joint development to meet individual requirements based on small-lot multi-product production.



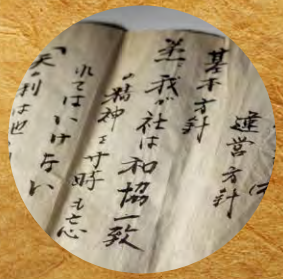
Pressure sensors


Pressure gauges


Pressure sensors with built-in amplifiers

History

Footprints of Nidec Components



- 2023 Company name changed to Nidec Components Corporation
  Acquired Midori Precisions Co., Ltd. as a subsidiary through stock acquisition
- 2019 Potentiometer and encoder business transferred from Nidec Copal Corporation
- 2014 Became a wholly owned subsidiary by Nidec Corporation
- 2013 Merged with consolidated subsidiary Fujisoku Corporation
- 2010 Established a joint venture in Fuyang, Zhejiang Province, China, as a manufacturing consignment and sales company in China
- 2007 Completed Development Center (Sano Plant)
- 2006 Acquired Fujisoku Corporation as a subsidiary through a tender offer
- 2004 ISO 9001 certification acquired by manufacturing subsidiary in China
  ISO 14001 certification acquired by manufacturing subsidiary in China
- 2002 Established a local subsidiary in Pinghu, Zhejiang Province, China as a manufacturing subsidiary
- 2000 ISO 14001 certification obtained at all domestic production sites
- 1999 Company name changed to "Nidec Copal Electronics Corporation"
- 1998 Nidec Corporation makes equity participation in the Company
- 1996 ISO 9001 certification obtained at all business units in Japan
  Head office relocated to Shinjuku-ku, Tokyo. Established Globa Sales Co., Ltd. as a sales subsidiary.
- 1995 Established Globa Service, Inc. as a logistics subsidiary.
- 1986 Opened Sano Plant in Japan
- 1983 Began production and sales of polygon laser scanners
- 1980 Began production and sales of semiconductor pressure sensors
- 1978 Began production and sales of rotary cord switches
- 1976 Began production and sales of actuators
- 1972 Began production and sales of cermet trimmers
- 1967 Copal Electronics Co., Ltd. established in Minato-ku, Tokyo to research, develop and sell electronic components

Network

Domestic and Overseas Offices

Delivering well-honed quality and potential to the world

Nidec Components has established an extensive sales and production network in Japan and overseas to ensure prompt product supply and smooth communication with and support for our customers. We are also teaming up with numerous domestic and global partners to meet the needs of a broader market.

[Domestic manufacturing and sales network]

[Overseas manufacturing and sales network]