

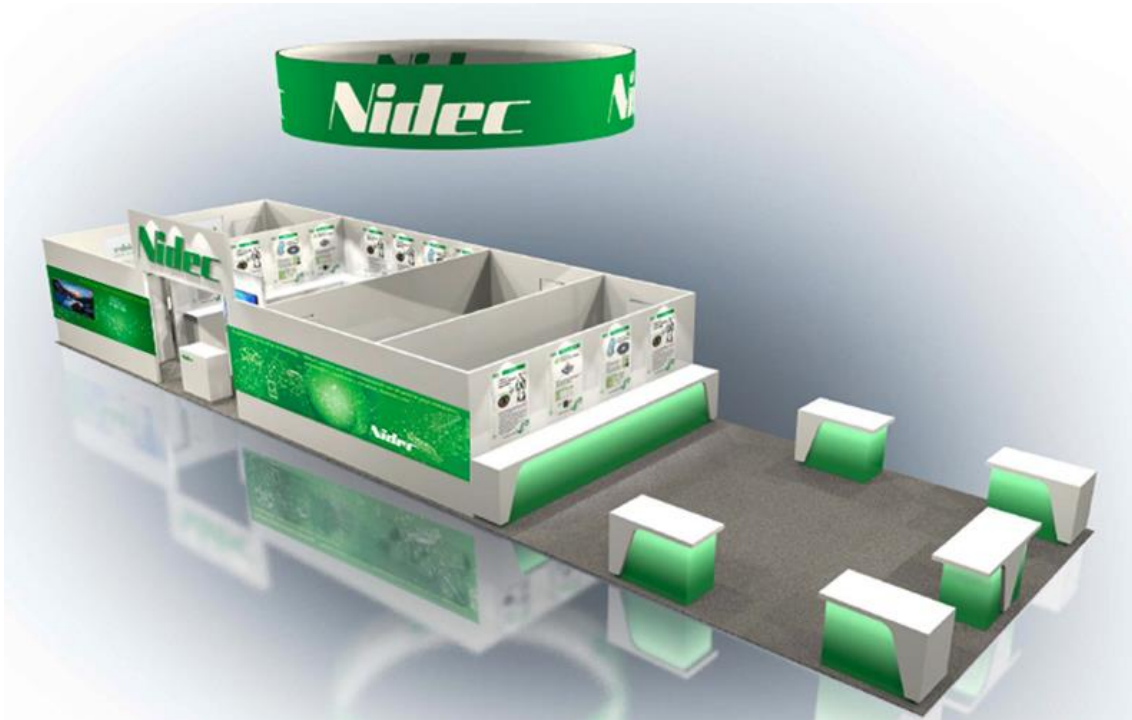


**FOR IMMEDIATE RELEASE**

**Nidec Corporation**  
Tokyo Stock Exchange code: 6594

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**The Nidec Group to Exhibit Latest Robotic Components,  
Haptic Devices and More at CES 2019**



*• Leveraging its experience as the world's No. 1 comprehensive motor manufacturer, the Nidec group has developed cutting-edge components designed to advance the possibilities of robots, human-machine interaction and smart home solutions.*

*• Nidec's booth at CES 2019 will feature demonstrations of motors and high-precision gearboxes for robotic applications, and haptic devices with innovative new applications, among other carefully engineered products.*

*• This time, Nidec will exhibit in the AI & Robotics zone of CES 2019 in LVCC, South Hall 2, booth #26418.*

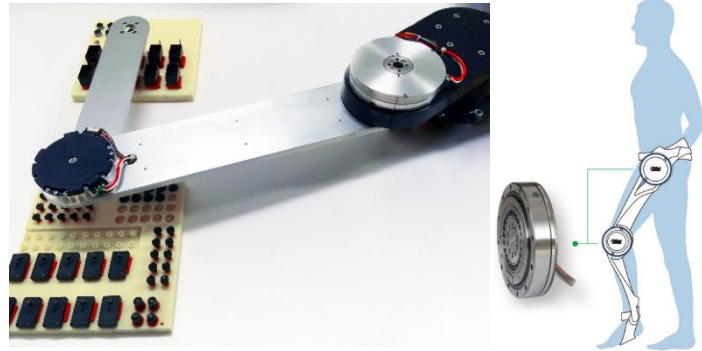
Autonomous machines are set to play an indispensable role in the future—not only in factories and warehouses, but also in our homes. In addition to improving the efficiency of manufacturing lines, robots also have the potential to make our lives more comfortable by taking care of menial tasks, or augmenting human capabilities through technologies like powered exoskeletons.

Highly sophisticated robots use dozens—sometimes even hundreds—of motors and gearboxes; by making these components lighter, more compact and less expensive, while also improving their performance, we can accelerate the arrival of a comfortable society supported by robotic technology.

## Booth Highlights

### Robotic Components

Nidec's booth will feature a demonstration of our super flat actuator that combines our motor and gearbox technologies into a compact and flat drive unit that is the thinnest of its kind in the world, making it especially suited for powered exoskeletons. The compactness and precision of the actuator will be showcased with a



SCARA robot that picks up and puts down objects with precise movements. A previous model of this product won the grand prize in the Top Manufacturing Parts Awards presented during the Japan Manufacturing Conference 2017.

Other robotic components to be displayed include a full closed loop stepping motor system—specialized for short-stroke and short-pitch operation—designed to replace AC servo motors in robotic applications. Robots, due to their many moving parts that require precise control of speed and precision, traditionally use AC servo motors with feedback mechanisms that allow precise control. This new full closed loop stepping motor system, developed by the Nidec group, enables precise control while eliminating some of the disadvantages of AC motors such as proneness to hunting (when the motor moves back and forth near the desired position like a pendulum) and the need to adjust the control loop gains when changing the load of the motor.

Also on display will be a compact and lightweight advanced servo motor with integrated gears, control board and controller. The silent and smooth movements of this motor makes it optimal for use in social robots that interact with humans.

### Human-Machine Interface

Haptic technology is another area that is receiving attention for its potential uses. Small vibrating motors and actuators that recreate physical sensations can be used in touch screens to simulate the feeling of pressing a physical button, or in the steering wheels and seats of automobiles to alert drivers to dangers on the road, adding a new dimension to human-machine interaction. Nidec's haptic solutions showcased at CES 2019 are based on the Nidec group's extensive experience as a company group that supplies 40% of all vibration motors for cell phones in the world.

Visitors to Nidec's booth will be able to see demonstrations of haptic devices for automotive applications, including seat vibration and in-car touch screen displays, as well as solutions for immersive entertainment like augmented & virtual reality.



### **Technologies for Smart Homes and Automobiles**

In addition to our new solutions for robots and HMI, our booth will also feature newly developed products for smart home and lifestyle applications such as geared motors for electronic lock systems and a high-torque micro-actuator— among the smallest of its kind in the world— suited for a wide range of applications including adjustable smartphone cameras. Our latest technologies for automobiles, including long range and ultra-wide band short range radars for ADAS applications such as obstacle detecting and automatic parking; air-flow optimized car-seat cooling fans; laser scanners for LiDAR radars; and our integrated traction motor system— the main motor that powers the car— , will be displayed in a walled-off space and shown on a limited basis.

As a comprehensive electrical equipment manufacturer group with over 300 subsidiaries across the world Nidec has an extensive lineup that covers motors, reduction drives and many other related components for practically all types of robots used in manufacturing, logistics, the service industry and in our homes. Nidec's expertise is built upon our track record of serving a wide range of industries— IT, appliances, manufacturing, commercial and the auto industry to name a few— and combining the technologies we have nurtured in our group to develop optimized solutions with high added value.

We invite you to visit us at CES 2019 and experience for yourself the components behind the devices and functions that will define our future.

**Contact information**

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