

*A Message for the special issue on
"Robotics and Sensing Products and Machine Tool"*



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As the population of productive age decreases in all sectors, creating a major social problem, measures against labor shortage due to the upcoming accelerated aging population and dwindling birthrate are strongly required. The market for collaborative robots is expected to grow, as these robots are able to work in a variety of manufacturing sites such as handling, assembly and testing on behalf of the workers. On the other hand, with the labor shortage as a backdrop, the demand for additional monitoring capabilities in industrial machinery is increasing, and approaches for further advancing unmanned or reduced manpower operations by leveraging the widespread adoption of IoT and sensing technology are actively being discussed.

NTN has developed a compact and high-speed appearance inspection device combining its wrist joint module "i-WRIST" with a unique link mechanism and camera as a solution to the issue of labor shortage and quality improvement in manufacturing operations. NTN is promoting this device as one approach toward new business development.

In addition, bearings, which are NTN's platform product and are used in rotational components of all kinds of machinery, are also expected to have higher functionality, acting as the machine element for data collection by including sensing capability with various embedded sensors. NTN is engaged in the joint research and technology development with Osaka University for allowing trend control and damage prevention during bearing operation by integrating multi-function sensors in the bearings.

At the 29th Japan International Machine Tool Fair (JIMTOF2018) held from Nov. 1 to Nov. 6 with the theme of "CONNECT by technology for the future," we are publishing a special issue of Technical Review No. 86 "Robotics, Sensing Products and Machine Tools." In this issue, we discuss the technical trends and features of one of our platform products, industrial robot bearings, which utilize NTN's base technologies including materials, heat treatment and tribology. The issue also introduces newly developed products such as sensor integrated bearing units for machine tool spindles, machine tool main spindle bearings with air cooling spacer for grease lubrication for high speed operation, and angular contact ball bearings for high-speed and heavy-cutting machine tools.

NTN marked its 100th anniversary in March 2018. We began a new three-year mid-term management plan "DRIVE NTN100" in April 2018 to accelerate our business structure transformation for our next 100 years. Under our philosophy of "We shall contribute to international society through creating new technology and developing new products (For New Technology Network: Networking the World With New Technology)," we will promote the research and technology development that will support the next 100 years by strengthening our unique competitive platform businesses, creating new businesses, and leveraging our core competence which targets sustainable growth of economic society.