

1 New Initiatives Targeting Growth

Build and expand the condition monitoring system (CMS) business

–Acquisition of a leading specialist in the CMS market, becoming a driver of growth in the CMS business–

On December 10, 2020, NSK signed an agreement to acquire the CMS business brand Brüel & Kjær Vibro (BKV) and completed the deal on March 1, 2021. BKV is a worldwide leader in facility maintenance and condition monitoring solutions for rotating machinery such as pumps, turbines, compressors, and generators.

In recent years, there have been expectations that the analysis of data, gained through condition monitoring of facilities and manufacturing lines, followed by diagnostics, would contribute to enhanced maintenance, productivity, and quality, and this has been garnering attention as a means to achieving production innovation.

NSK products are important components that have a direct impact on the functionality and performance of machinery. The

synergies that arise with NSK's wealth of data and associated technology, matched together with BKV's exceptional customer base, technology, brand, human resources, and access to big data will accelerate CMS business development and will address societal needs such as for automation, labor-saving, smart technology, and environmental measures.

As trends toward a higher ratio of renewable energy, including wind power, gain momentum on a global basis, the technologies held by NSK and BKV will underpin the stable operation of wind power, hydropower, the manufacturing industry, and other essential infrastructure that supports people's daily lifestyles.



Steering & Actuator Business

Higher power single pinion electric power steering

–New product jointly developed with Volkswagen–

Electric power steering (EPS) handles the turning function that is necessary for vehicles and enables higher fuel efficiency and as-desired steering for essential safety and a comfortable driving experience.

The assist power required for EPS differs in accordance with factors such as vehicle size and weight. For compact vehicles, the most appropriate is our mainstay column-type EPS, which provides power assistance near the wheel. For medium to large vehicles that require a high level of assist power, pinion- and rack-

type EPS serve to provide assistance from near the tires.

Based on the experience and expertise in development and production gained from column-type EPS, NSK has worked jointly with VW to develop a higher power single pinion EPS and has secured an order for a next-generation electric vehicle. Initial production will start in 2023 at an NSK plant with supply to VW's electric vehicle plants globally. Taking advantage of jointly developed technology, we will propose outstanding products to other customers as well and aim for growth in the EPS business.

Product Features

1 Securing a balance between each of the diverse compact and high output perspectives

Conventional single pinion EPS assist capabilities served comparatively compact vehicles. The new jointly developed single pinion EPS realizes assist power that can meet the needs of medium to large vehicles as well. In addition, it offers a simple, compact construction.

2 Quietness

Compared to conventional gasoline-powered vehicles, EVs require exceptional silence. The new jointly developed single pinion EPS goes far beyond the level of quietness conventionally offered.



Higher power single pinion EPS