

RESEARCH AND DEVELOPMENT

The Group aims to achieve the corporate mission of “Serving Society with Superior Quality.” It conducts R&D activities in accordance with the Mid-Term Management Plan (MTP) to establish a fiercely competitive business on a global basis through innovation in technology and business models, and by strengthening design capabilities that creatively link corporate activities with customers and society. Moreover, the Group promotes the optimization of its R&D structure on a global basis and proactively cooperates with external parties to further enhance the effectiveness of R&D activities.

Tire

The tires segment is based on the development philosophy of “peace-of-mind” for stakeholders and seeks to create newly added value through commitment to the environment, safety, and comfort.

The Group provides customers with high value-added, high-quality products by furthering the utilization of “ULTIMAT EYE,” a tire analysis technology which enables the evaluation, prediction, and visualization of contact conditions between the tire and the ground. Additionally, the Group has developed and deployed the tire assembling system “EXAMATION” which implements artificial intelligence (AI) in combination with its proprietary ICT. In addition, the Group has successfully synthesized polyisoprene rubber with a highly-controlled molecular structure that surpasses the abilities of natural rubber, and is currently pursuing the development of new technology that makes the “expansion and diversification of renewable resources” possible.

As a part of its efforts to collaborate with external parties, the Group participates in the “Impulsing Paradigm Change through Disruptive Technologies Program (ImpACT),” and through these collaboration efforts among industries, government, and academia, tries to develop robust materials that exceed the boundaries of existing technologies.

Diversified Products

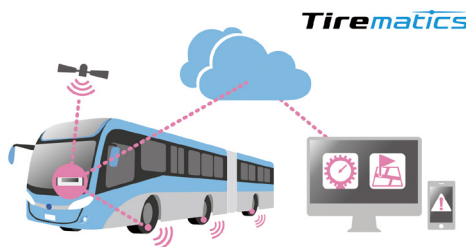
In the diversified products segment, the Group started to commercialize the “Smart Siphon” drainage system, which helps improve the flexibility in the layout of water supply equipment in buildings. The Group conducts R&D activities to deliver products that improve customer satisfaction by accurately meeting constantly changing needs and developing a business that supports social infrastructures.

Additionally, the Company has reinforced its R&D activities to strengthen the competitiveness of its solutions business to deliver value to customers beyond the boundary of existing services. The Company combines technology from both the tire and diversified products domains, along with ICT, and packages them as a new service to our customers. The Company has commenced verification tests of a remote monitoring system for air pressure and temperature of commercial truck and bus tires called “Tirematics” to expand its fleet solutions business. In addition to offering individual products such as tires, anti-vibration rubber, and seat pads, the Company has also been engaged in R&D aimed at proposing “NVH* solutions,” which combines multiple aspects of the individual products and technologies.

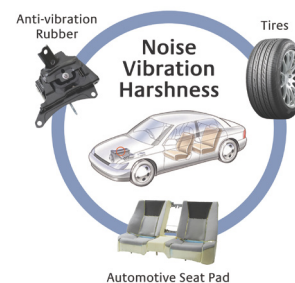
* NVH stands for Noise, Vibration, and Harshness.



Exterior of EXAMATION system unit



Tirematics fleet solutions



NVH solutions