



Product-related Initiatives for the Environment



Website listed
information:

Management of environment-affecting
substances incorporated in products

Basic Approach

The majority of products manufactured by the Minebea Group, such as bearings and motors, are components in products sold by our customers, and are not immediately visible. But precisely because our components are incorporated into such a wide variety of products, the Minebea Group believes it is important to offer products that are safe and free from harmful substances that might damage the environment, while contributing to the overall product life cycle by being energy- and resource-efficient as well as long-lasting.

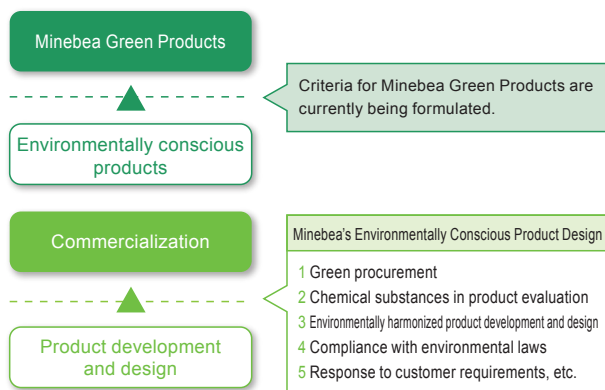
Minebea Green Products

What are Minebea Green Products?

From the development and design stages, the products that the Minebea Group manufactures and sells are environmentally conscious products. This means that they satisfy various countries' environmental laws and customers' environmental requirements as well as undergo voluntary product chemical substance evaluations and product assessments.

The Minebea Group carries out investigations to certify Minebea Green Products as products with particularly superior environmental performance and characteristics in terms of their energy efficiency, contribution to the prevention of global warming, resource efficiency, and contribution to a recycling-oriented society.

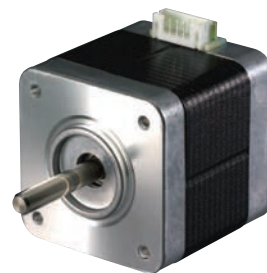
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Product Example: High-torque Hybrid Stepping Motor with Rare Earth-free Magnet

In FY2012, the Minebea Group developed a high-torque hybrid stepping motor with a powerful magnet delivering high magnetic force which is free of rare earth minerals, such as neodymium and dysprosium, and also features a resource-efficient design.

The switch to rare earth-free magnets will help to stabilize raw materials procurement, lower costs, and stabilize product supply. The resource-efficient design approach enabled us to halve the number of magnets compared with previous products, while reducing the amount of copper wire by 25% compared with our previous products.



High-torque 42mm hybrid stepping motor

Development of High-performance VR Resolver for EV Drive Motors

The Minebea Group has developed and begun delivering a high-performance VR resolver for electric vehicle (EV) drive motors. As a core part of the drive motor, the VR resolver is an angle sensor critical to accurately controlling motor rotation. The resolver has a major impact on the electric power consumption rate and drive performance of electric vehicles (EV) and hybrid electric vehicles (HEV).

During the development process, we ran simulations leveraging various magnetic field analysis technologies and made continual design improvements, resulting in the successful development of a high-performance VR resolver featuring an ideal winding specification for raising drive motor performance and a rotor stator configuration.



VR resolver

Future Issues and Goals

The Minebea Group will continue to accurately grasp the needs of society to make contributions to the development of products which are safe, energy-efficient, and resource efficient.