

News Release

October 7, 2022

Akebono's NR22 Brake Caliper for Endurance Racing Wins FY2022 Good Design Award and Selection as Finalist for International Design Excellence Awards 2022

Tokyo, Japan – (Oct. 7, 2022) - Akebono Brake Industry Co., Ltd. is pleased to announce that the NR22 brake caliper for endurance racing has received the FY2022 Good Design Award (organized by Japan Institute of Design Promotion). This is the first Good Design Award to be won by an automobile brake caliper.*¹ This brake caliper was also selected as a Finalist in the International Design Excellence Awards 2022 (organized by the Industrial Designers Society of America), said to be the most prestigious design award in the world.

The award-winning NR22 is a disc brake caliper for endurance racing that pursues an excellent balance between weight reduction and high durability. With a shape optimized by structural analysis, the caliper body component achieves a 7%*² reduction in weight, while also achieving high durability, thereby realizing directness of brake operation. With a mirror-finish surface, the brake caliper is protected from radiant heat and can continue providing drivers with a stable brake feeling even under the high-temperature conditions found during endurance races that continue over long periods of time.

Reduction of automobile weight is a key element that influences such factors as dynamic performance and fuel consumption. For brake calipers used in racing, high durability is required as well as reduced weight. Achieving a balance between these at a high level will also contribute to enhancement of driver feeling.

This expertise is based on technology Akebono has cultivated in motor sports including Formula 1 and World Endurance Championships and has been put to effective use in creating a new method of structural analysis that works to achieve an excellent balance between durability and lightness of weight while also realizing a caliper body form styled according to the functional beauty of the racing car.

*¹ Based on an in-house study

*² Comparison with previous Akebono products



Features of the Award-Winning Product

1. Hydraulic flow path also used as strength member in cross-shaped rib structure that achieves an excellent balance between weight reduction and high durability

The shape is optimized using a newly devised method of structural analysis, and the ribs that cross above the cylinders function as more than just strength members. The rib interiors also serve as hydraulic flow paths, thereby efficiently achieving an excellent balance between weight reduction and high rigidity.

2. Mirror-finish plating prevents temperature rise from radiant heat and enhances heat resistance

By applying a mirror-finish plating to the surface, the caliper body is protected from temperature increase due to radiant heat. In addition to enabling use under high temperatures, this finish highlights the gently curved surfaces and sharp ridges, enhancing the design quality of the product exterior.

3. Optimal piston placement brings out 100% brake pad performance

The size and placement of each piston are optimized by means of proprietary technology for brake pad surface pressure analysis. This helps prevent uneven wear of brake pads and realizes both longer brake pad life and stable brake feeling in the prolonged harsh operating environment of endurance races.

Evaluation Comments by Good Design Award Judging Committee Members

The brake caliper is a component of the brake system that has tended to become visually exposed in recent years with the increase in tire and wheel diameter and the use of thinner spokes. The NR22 has pursued the utmost in functional performance under the demanding conditions of automobile endurance races, and in doing so has realized a beautiful form that is refined in addition to being well-organized and modern in appearance. This must be helping to enhance the brand image of Akebono Brake Industry Co., Ltd., a company that puts safety first.

Good Design Award

The Good Design Products Selection System established in 1957 is carried on in this activity for evaluating and promoting design that represents Japan. Large numbers of corporations and organizations inside and outside Japan take part in this global design award program, which has been conducted every year both as a way to raise the quality of life and to apply design to solutions for issues and themes faced by society. The G Mark symbol of Good Design Award winners has become widely familiar as a mark of superior design.

Good Design Award official website: <https://www.g-mark.org/>



International Design Excellence Awards (IDEA)

Established in 1980, these design awards are organized by the Industrial Designers Society of America (IDSA). They are ranked with the iF Design Award and the Red Dot Design Award, and together these three are considered the greatest design awards in the world. When it comes to product design, the IDEA awards are said to be the world's most prestigious award. Awards are given in 20 categories, including Automotive & Transportation, and entries are judged in terms of design innovation, user experience (UX), benefit to the customer, benefit to society, and appropriate aesthetics.

International Design Excellence Awards official website: <https://www.idsa.org/IDEA>



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About the Akebono Group

Akebono Brake Industry Co., Ltd. (TSE: 7238), founded in 1929, is a world leader in advanced brake and friction material development and manufacturing. With a focus on brake products for the automotive industry, we are determined to provide safety and peace of mind to our customers. We are a global supplier of friction materials including brake pads and brake linings, and mechanical parts such as disc brakes and drum brakes. We also supply brakes for motorcycles, rolling stock including bullet trains, forklifts, and other industrial machinery. Our expertise in vibration analysis technology has also been leveraged to expand business in other fields such as the development of sensor products for various applications.