

The Tadano Group will lead the industry with various “Changes” in preparation for the achievement of a decarbonized society and future changes in construction projects

Aim for Net Zero Carbon Emissions

To achieve “Net Zero Carbon Emissions by 2050,” we will release various solutions to the market, including the world’s first electric rough terrain crane.

In March 2023, the Tadano Group unveiled a new product lineup at CONEXPO-CON/AGG 2023 (“CONEXPO”), one of the world’s largest construction machinery trade shows held in Las Vegas, US. We take pride in being able to provide customers with excellent usability and efficiency while using innovative technologies, such as electrification, to reduce our environmental impact. Under the environmental strategy of “Tadano Green Solutions,” we will continue to lead the lifting equipment industry aiming for Net Zero Carbon Emissions.

GR-250N EVOLT

GR-250N EVOLT is a 25-ton class electric rough terrain crane for the Japanese market.

Since announcing in April 2022 our plan to commercialize it as the world’s first electric rough terrain crane, we have received various reactions from not only our customers but also the construction industry and suppliers. Development is still ongoing, with the market launch targeted for 2023.

<Product features>

- A single charging provides up to 11 hours of crane work.
- The crane can travel 40 km and have enough energy for about five hours of crane work.
- It can be fully charged in 2.5 hours using CHAdeMO, a fast-charging system for electric vehicles.

GR-1000XLL EVOLT

GR-1000XLL EVOLT is a 100-US-ton class electric rough terrain crane for the US and Canada markets. A first prototype of the machine was displayed at CONEXPO, and we received strong reaction at the exhibition. The market launch is targeted for 2024.

The electric rough terrain crane is a revolutionary product that completely eliminates CO₂ emissions by using electricity for both travel and crane operations. Even with electrification, its mobility and power are comparable to those of conventional machines.

e-PACK

We launched the electro-hydraulic system “e-PACK” for rough terrain cranes in the Japanese market in January 2022.

The e-PACK enables crane work without starting the engine by activating the electric motor-driven hydraulic pump with an external power supply.

As a result, the e-PACK achieves zero CO₂ emissions during crane operations.

APU (Auxiliary Power Unit)

We exhibited the APU mounted on GR-800XL-4 rough terrain crane at CONEXPO. Adding the APU to a conventional rough terrain crane with a diesel engine reduces fuel consumption and CO₂ emissions by 25% during standby and idle time, while maintaining functions inside the crane cockpit. The APU has already been approved for use in North America, and we are hopeful for its future launch.

Electrification of Crawler Crane and Other Products

Thinking of electric-powered operations at ports, we are also testing electrification of CC 88.1600-1 crawler crane and developing electric aerial work platforms. We will continue to challenge ourselves as a group to achieve Net Zero Carbon Emissions by 2050 and, as a mid-term milestone, to aim for our long-term environmental target of a 35% reduction in CO₂ emissions from product use by 2030 (compared with the FY 2019 baseline).

Contribution to Expanding Offshore Wind Power

The offshore wind power field has been seeing large-scale projects in Japan and around the world. The Tadano Group believes that its product lineup can play a role for the future of offshore wind power and contribute to the decarbonization of society.

There are new offshore wind power projects underway in Japan to realize a decarbonized society.

It is expected that wind turbine components transported by cargo ships and trailer trucks are first transported to port facilities, pre-assembled, and then loaded onto transport ships.

CC 88.3200-1 TWIN, the world’s largest lattice boom crawler crane (3,200-ton lifting capacity), was added to the Tadano Group’s product lineup as a result of the 2019 acquisition of the Demag Mobile Cranes business. This machine plays an important role in the pre-assembly of increasingly large wind turbines and supports safe and high-quality construction work.

With the know-how we have acquired in Germany, which is a leading country in wind power generation, we strive for making further contribution to this field by demonstrating the unique advantages of the Tadano Group in having development and production locations in both Japan and Germany. Furthermore, we provide various solutions, including a davit crane that performs loading operations for repair and maintenance of wind turbines, and AT-530CG, an aerial work platform with a maximum platform height of 52.8 meters, which is the highest among Japanese models.

The Tadano Group supports the construction and maintenance sites for wind power generation, whether onshore or offshore, and plays a role in the creation of clean energy that helps realize a decarbonized society.

AI Research and Development to Support Future Construction Sites

We will fearlessly take on new challenges, including the demonstration test of unmanned operations. The use of AI should make it easier and safer to operate cranes.

The construction industry faces an increasingly serious problem of fewer construction workers, a problem exacerbated especially in Japan due to the declining working-age population stemming from a lower birthrate and aging population. As the number of skilled crane operators declines, we are working on technological innovations that will simplify and partially automate crane operations. With the eventual goal of achieving autonomous crane operations, we aim to improve the safety level at construction sites.

Our current AI applications have already delivered good results in terms of reducing the load sway that can result from the difficulty in the concurrent slewing, boom elevation, and load hoisting that comprise the main operations of any crane lift. In our 2022 demonstration test, we utilized data showing load weights and positions related to the crane’s operational status, and then we executed repeated virtual simulations to make the AI system engage in deep learning. Lifts executed with this AI system saw improved scores related to load sway reduction, and actual test cranes featuring the AI system were able to move real loads quickly and smoothly. We think that AI technology will also help crane operators to make various operational decisions. For example, AI systems can help determine the optimal trajectory for moving a suspended load by sensing obstacles in the work environment. We will continue to incorporate the deep know-how of our research partners and refine our lifting technologies in order to make safer crane operations a reality.