

## **“OUR TRUE MISSION: ZERO EMISSIONS”: TADANO PRESENTS NEW SLOGAN AT CONEXPO 2023**

**WITH ITS GREEN SOLUTIONS, THE JAPANESE GROUP IS MAKING A WORLDWIDE CONTRIBUTION TO THE GOAL OF A DECARBONIZED SOCIETY**

Tadano’s commitment to protecting our environment and contributing to the fight against climate change is manifesting itself in increasingly tangible ways. With its new slogan, “Our True Mission: Zero Emissions,” the company is highlighting its commitment to reducing CO<sub>2</sub> emissions from its business activities by 25 percent and from the use of its products by 35 percent by 2030. Moreover, the goal is to be completely climate neutral by 2050 – zero emissions. To achieve these objectives, the company has grouped together its solutions for greater sustainability under the name of Tadano Green Solutions (TGS). The result of all this, which is being presented at ConExpo, is crystal clear:

### **Fully electric rough terrain cranes**

In April 2021, Tadano announced that it was working on a fully electric rough terrain crane, which is now scheduled to be showcased at this year’s ConExpo to industry members for the first time ever as a fully functional prototype. Its name? The **GR-1000XLL EVOLT**. The crane can travel to work sites and take care of all lifting operations there exclusively with energy supplied by its batteries, making fully zero-emission operation possible. A single battery charge is enough for up to nine hours of crane operation, or five hours of crane operation with a travel distance of up to 12.5 miles (20 km). Meanwhile, the charging time is a mere two hours with fast charging on a US-COMBO CCS1 connection and only about seven hours with normal charging on a three-phase 240 VAC, 100 A commercial power supply connection. In addition, unlimited operation with the crane plugged into a power outlet is available as well. The powerful electric motor delivers a maximum output of 194 kW, ensuring that the GR-1000XLL EVOLT has the equivalent lifting capacity and operating speed as its diesel-driven sibling, the GR-1000XLL-4. But where the GR-1000XLL EVOLT truly stands apart from its diesel counterpart is environmental friendliness, with Tadano calculating savings of around 2,200 gallons of diesel and a resulting reduction of close to 22 metric tons of CO<sub>2</sub> emissions a year for an average crane usage scenario. The corresponding launch is scheduled for 2024 in the USA and Canada at first.

Meanwhile, the **GR-250N EVOLT**, another fully electric rough terrain crane, is intended for the Japanese market. Its launch is scheduled for later in 2023. The GR-250N EVOLT is a powerful and extremely fast 194-kW 25-metric-ton machine that shines when traveling under difficult road conditions in particular. In fact, the crane can reach top speeds of up to 30.5 mph (49 km/h), enabling it to reach even remote work sites very quickly. And once there, a single battery charge is enough to take care of work assignments of up to nine hours. In practice, for example, this means that the GR-250N EVOLT can travel 25 miles (40 km) and still have energy to spare for a full five hours of crane operation. It is fully ready for use after a mere two and a half hours of charging on a CHAdeMO system, and a full charge on a standard three-phase 200 VAC / 100 A power connection takes around eight hours. Finally, generally unlimited crane operation at the work site is possible in plug-in mode after the crane has been connected to an external power supply. With all these advances, it should come as no surprise that Tadano has already announced the launch of more fully electric rough terrain cranes for international markets.

#### **APU auxiliary power unit reduces fuel consumption and CO<sub>2</sub> emissions by 25 percent**

Tadano will be introducing its diesel-driven APU auxiliary power unit at ConExpo 2023 for the first time ever on a GR-800XL-4 rough terrain crane. The unit is already currently approved for use as an optional accessory for new orders of Tadano RT models GR-1000XLL and GT-1000XL-4 in the USA and Canada. The nine-hp two-cylinder engine on the unit has an extremely low fuel consumption rate of only 0.2 gallons of diesel fuel per hour. Moreover, by producing an output of 972 W, the APU is able to supply electric power for numerous important crane functions while the onboard engine is off. This includes the floodlights and aviation obstruction beacon, the wipers for the windshield and roof, the HVAC system, the USB outlet, and, of course, all important display functions inside the cockpit. Tadano calculates that the APU can reduce fuel consumption and CO<sub>2</sub> emissions by around a fourth when compared to the onboard diesel engine's idle running.

#### **In development:**

##### **Electrified CC 88.1600-1 lattice boom crawler crane**

It is worth mentioning that the flagship of the Tadano CC range of cranes will also be available with an electric drive in the future: As of this writing, the engineers at Tadano are working on giving the CC 88.1600-1, the company's biggest crane, an electrified sibling. An electrical cable connection will ensure that the giant will be able to run with absolutely zero CO<sub>2</sub> emissions, with the lattice boom crawler crane's electric motor planned to have a power of 2 x 390 kW so that it can deliver the same lifting capacity as its diesel-driven counterpart. In addition, there

will be flexible options for supplying power, with 6,000 V and 6,600 V 50 Hz connections and 6,600V 60 Hz connections all working for this purpose.

### **Electric aerial work platform**

A truck-based electric aerial work platform for the Japanese market is also currently in development, and in fact is already undergoing prototype testing. Both its travel and lifting operation with a maximum working height of 56 ft (17.1 m) will be purely electric. It is also worth adding that the development partner for this Tadano Green Solutions project is Australian company SEA Electric, which specializes in electrifying trucks and buses.

With its compact dimensions, the electrically driven vehicle is being explicitly designed for traveling and working on tight Japanese roads. Nevertheless, the compact truck wheelbase of only 8 ft 3 in (2.515 m) has not kept the developers from integrating a suitably large and powerful battery into the unit: Its capacity will be around 100 kW/h, ensuring that a single battery charge will be enough for a travel distance of around 62 miles (100 km) and five hours of operation. In addition, the vehicle's top speed is also remarkable, as it is just under 62 mph (100 km/h). The vehicle is planned to be presented for the first time in 2024, with its launch to follow in 2025.

### **Electro-hydraulic “e-PACK” makes zero-emission crane operation possible**

Tadano introduced its e-PACK in Europe all the way back in 2019. It is an electro-hydraulic system featuring an integrated 32-kW electric motor that works with zero emissions and nearly zero noise – and without any loss in lifting capacity to boot. All that is needed is for the crane to set down the e-PACK where it will be used so that it can be connected to an external 400 V / 63 A or 400 V / 32 A power supply. The e-PACK is currently available for all new Tadano AC cranes with lifting capacities of up to 80 metric tons, as well as a retrofit for existing cranes.

### **Hybrid tech demo: All terrain crane with electrified superstructure**

Both Tadano customers and the entire industry were thrilled at last year's bauma in Germany after seeing a tech demo for a Tadano all terrain crane, based on the AC 4.070-1, with a fully electrified superstructure. The special thing about it: The crane was fully functional and completely self-sufficient under all operating conditions thanks to a flexible power supply concept. More specifically, the electric superstructure was able to run on any of the three following options: the integrated battery, an external power connection, or a generator on the diesel engine that delivered power for the electric motor.

The electric motor's working speed and delivered lifting capacity were exactly at the same level as those of a diesel engine, not to mention that its sound emissions were much lower under

all lifting conditions. Also remarkable was the fact that the tech demo achieved a system efficiency of around 85 percent, which is more than double the energy efficiency of an efficient diesel engine. This resulted in the tech demo having a significantly better carbon footprint, including a CO<sub>2</sub> reduction of up to 50 percent when compared to diesel-operated superstructures.

### **Blazing a trail**

“This all shows that we’re on the right path with Our True Mission: Zero Emissions and our Tadano Green Solutions. I’m confident that we’ll be able to achieve our sustainability goals in our role as a highly innovative company that is aware of its responsibility towards our world, and that we’ll take on a trailblazer role in our industry with our technologically leading solutions,” says Tadano CEO Toshiaki Ujii.

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### **About the Tadano Group**

Since Tadano developed Japan’s first hydraulic truck crane in 1955, the company has grown globally, while constantly striving to implement our Corporate Philosophy of Creation, Contribution, and Cooperation. The Tadano Group delivers our Core Values – Safety, Quality, and Efficiency Based on Compliance (C+SQE) – in each and every one of our products and services.