

Hinowa: lithium-ion offers better performance and lower costs for aerial platforms.

As capable as a combustion engine, but more efficient and frugal; lithium-ion is revolutionising aerial lifts.

Hinowa launched the first tracked aerial platforms powered by lithium-ion technology in 2008. Over the past eight years they have spread worldwide to become an international success, with the technology even adopted by other manufacturers. The lithium-ion system has been optimised over the years by Hinowa, to the point of setting new benchmarks in terms of productivity and reliability.

Hinowa's president Dante Fracca stated: "*The lithium-ion technology available on Hinowa platforms guarantees an extension of the operational capacity of the machines and constitutes true economic investment efficiency by end customers and renters. More functional, lower costs, lower consumption, and more respect for the environment.*

We are proud to have been pioneers investing in what today, 10 years later, is still defined as the technology of the future."

The right choice for any operational application

Tracked booms with Li-Ion battery packs offer a smaller footprint, lighter weight, lower overall investment cost, better working envelope and increased flexibility of use compared to other self-propelled or towable boom lifts.

The lithium-powered electric motor makes it possible to operate the machine in total safety in any





environment, free of any power cables. This eliminates the need to find an electrical plug nearby, a common challenge for mains-powered machines. For typical use, the battery will last more than one day of work, so it can be conveniently recharged overnight.

Virtually silent and completely free of polluting emissions, Hinowa aerial platforms with a lithium-ion battery pack are useful in all those enclosed areas normally prohibited to machines powered by a combustion engine. Besides not emitting any noxious gases while operating, the lithium-ion batteries do not emit acids even during recharging

and therefore there is no risk of saturating a space with vapours or dangerous substances.

In fact, one of the most interesting characteristics is the flexibility of use of lithium-ion powered platforms. Thanks to reduced noise emissions and the total absence of exhaust fumes, they can be used without restriction of time, even in closed spaces like malls, churches, museums, airports, or, without disturbing normal activities, even in recreational spaces like villages and cruise liners. The "clean" attributes of this technology make it an attractive option even for the production areas of food and chemical industries.

Cleaner, more efficient, more savings

During the last eight years Hinowa's research programmes have focused on the continuous improvement of performance and reduction of electrical energy consumption. Hinowa tracked aerial platforms use Start/Stop technology similar to that found in modern cars, ensuring that power is provided to the electric motor only when movement is actually required, providing a significant energy savings.

The comparison is immediate and intuitive: a machine



with a combustion engine requires a warm-up phase during which the engine runs freely. The intrinsic inefficiency of this operating logic is evident and requires no explanation. On the other hand, with the Hinowa lithium-ion system the energy is stored until required. Always available, it can be fully used immediately when the operator actually needs motor functions.

There is no discernible difference in the performance of aerial platforms powered by a lithium-ion system compared to equivalent machines equipped with combustion engines, particularly in terms of operational power and speed in the aerial part of the machine. In fact, the inverter that manages the electric motor's operation actually increases torque optimisation across five different operation speeds. Even from a structural point of view the two machines look the same. The only difference is the battery compartment positioned where the traditional engine would be, and since the size is the same the machine's compact dimensions are not altered.



Simple maintenance and superior reliability



Platforms equipped with lithium-ion have integrated diagnostic systems that make it possible for the operator to identify any anomalies, and to monitor the battery pack's primary operational parameters directly from the remote display. First an icon and an acoustic signal, then the progressive slowing down of the machine's movements alert the operator when the battery is about to run out. In case of malfunction, the operator is notified with specific error codes shown directly on the display.

LITHIUM ION

Compared to old lead batteries, besides being lighter, the new lithium-ion system offers many other advantages. Li-Ion batteries are zero maintenance; the machine can be used even during recharging; and Li-Ion is not impacted by "memory effect" – this enables the operator to plug in for an opportune recharge whenever it is convenient, without reducing the batteries' useful life.

The lithium-ion battery pack is designed to allow for at least 2,000 complete discharge-recharge cycles, therefore for the full life of the machine, which means that its viability abundantly exceeds the investment return time.



The reliability of the lithium-ion system is demonstrated by the hundreds of aerial platforms equipped with this technology already sold by Hinowa throughout the world. It is a hi-tech product that is the result of innovation, intuition and research that, from its launch, marked a decisive step forward in the evolution of self-propelled aerial platforms.

The lithium-ion system is available on all models of Hinowa tracked aerial platforms, which provide maximum platform heights from 14m to 26m. For further information, visit www.hinowa.com.