

Forklift Fast Charging: Frequently Asked Questions

Can a multi-shift operation
avoid battery changes?

**With fast charging,
the answer is “yes.”**



What is fast charging?

Fast charging utilizes advanced power electronic technology to return energy to industrial batteries faster than conventional charging. Fast charging delivers 40 to 50 amps per 100 ampere hours of battery capacity. This eliminates the need to change batteries on electric trucks, increasing productivity and reducing costs.

How fast are Aker Wade chargers?

Aker Wade fast chargers charge 12 to 80 volt industrial lead-acid batteries at currents of up to 650 amps. Depending on size, a battery's state of charge (SoC) can increase from 30% to 90% in only 1.5 hours.

Can fast charging save money?

Absolutely. Fast charging eliminates the need for battery changes, allowing multi-shift operations to run each truck on one battery. This translates into higher labor productivity, lower capital investments and increased availability of floor space for a quick ROI.

What does “opportunity” charging mean?

Opportunity charging means that operators charge their trucks' batteries during regular breaks. With fast charging, operators maintain an SOC between 30% and 90%, eliminating the need to take the truck out of service for battery changes.

What applications are suitable for Aker Wade fast chargers?

Any multi-shift materials handling operation that is changing batteries or using internal combustion (IC) lift trucks. Facilities that change batteries increase productivity and reduce costs. IC fleets that convert with fast-charging avoid the need to build a battery room and stock extra batteries. Fast charging helps any electric truck operation meet lean, green and safety initiatives.

Is special training required for fast charging?

Operators need only the basic instruction in how to connect and operate the unit. The charger does the rest.



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Forklift Fast Charging: FAQ

What is Insulated Gate Bipolar Transistor (IGBT) technology?

IGBT semiconductor technology is the most durable power electronic circuitry available for high-power industrial applications. The IGBT is a high frequency switch that enables high current outputs with the greatest efficiency and power factor. This reduces electrical draw and minimizes electrical infrastructure costs.

What is the difference between ferroresonant, SCR and IGBT?

A ferroresonant charger is capable of charging only one battery voltage. It has a relatively low efficiency rating. And SCR charger has multi-voltage capability; however, the power factor varies depending on the specific battery voltage being charged. An IGBT charger is also multi-voltage, with a high power factor across the range of battery voltages. The IGBT system monitors the battery voltage response more than 10,000 times per second and safely maximizes the charging current without significant losses.

How does fast charging affect the gassing of the battery?

The effect of fast charging on the battery is no different from conventional charging. Gassing only occurs during the finish / equalization charge. The biggest difference is that there are fewer batteries and they only need to be finished and equalized once a week. So the net effect of fast charging is less gassing, less often.

What kind of data is collected?

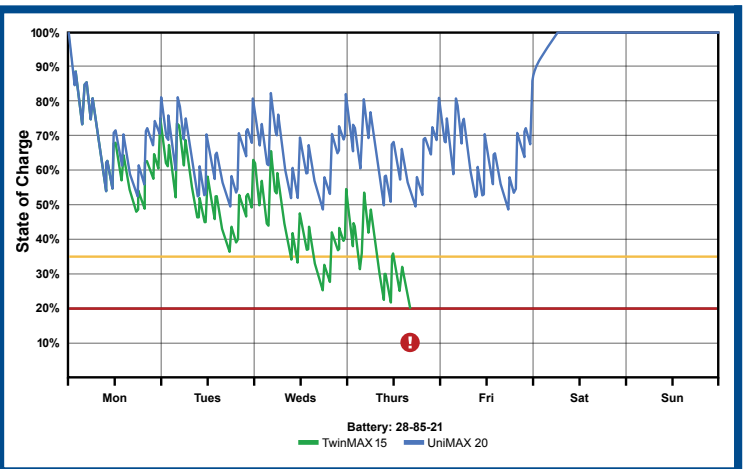
Aker Wade fast chargers collect data on battery temperature, SoC, ampere hour throughput, finish / equalization charges, time on charge and time between charges. Data can be downloaded and analyzed with our suite of software tools, which provide managers and battery specialists with the information needed to run a fast charge fleet.

How is the right fast charger selected for an application?

Our advanced modeling software visualizes weekly energy usage.

Is fast charging safe?

Yes, for both batteries and operators. Aker Wade's closed loop battery-monitoring system reacts to changes in the battery's temperature and voltage. This optimizes the charge session, improves battery life and makes the system inherently safer as the charger will cut back or shut down if the data are out of parameter. Our chargers meet regional certification requirements, such as UL or CE. Additionally, eliminating battery changes reduces workplace accidents and cuts cross-facility traffic.



How will fast charging affect battery life?

Fast charging keeps batteries working at a higher state of charge (SoC) throughout the day, which is good for both battery and truck. Electronically controlled charge algorithms ensure a safe and effective battery recharge. With proper equalization and finish charges, fast charging creates no more wear and tear on batteries than conventional charging. The total ampere hour life of the battery is the same.