Choosing Right Electric Forklift Batteries: Features & Guidelines

Normally when we talk about batteries, we talk in terms of size and type. It's no different in the case of electric forklift batteries as well. The decision becomes critical when you are required to select the right battery technology when it comes to forklifts. It's crucial that you conduct a thorough study on the various battery options available and understand the right one for your forklift as it can directly impact on the performance of your forklift and in turn the productivity of your business.

Selecting the Right Battery Technology

Predominantly, the battery technologies available now are of two types – Lead-acid technology and Lithium-ion technology. Let's understand how these technologies differ in the technology, maintenance, charging requirements and costs. Understanding the technologies in depth will help you make the right decision. To begin with, let's understand the working of these technologies and tips on the size of the battery.

Forklift Battery Technology

Let's try to understand the two types of battery technologies used in forklift batteries these days.

Lead-acid Batteries

Lead – acid battery technology makes use of the lead plates as the electrodes which are immersed in the electrolytic solution consisting of sulfuric acid and water. The chemical reaction between sulfuric acid and lead generates electricity. During this chemical reaction, water is lost and hence to maintain the required level of water, constant refilling is necessary in the battery.

Lithium-ion Battery Technology

Based on the type of cathode used, several types of Lithium-ion batteries are available nowadays. The main options available with lithium-ion batteries are Litum-ion phosphate (LFP) and Lithium Manganese Oxide. Out of these two battery options, LFP is widely preferred in the modern material handling industry. This is due to the fact that LFP is highly safe, offers current and more eco-friendly in comparison to other lithium-ion batteries.

Sizing of Forklift Batteries

It's important to select the right battery in terms of size to make sure the forklift is at its optimal performance and lift the load it's supposed to. When it comes to sizing the battery, the following are the important points to be considered.

Battery Voltage and Ampere Hour

Forklift batteries come in four different voltage options and choosing the correct one is considered as the most important part when it comes to battery sizing. Oversized batteries can result in serious irreversible damage. Hence, it's very important to understand what amount of voltage your forklift can handle. The correct voltage details can be seen on the specifications of forklifts.

The ideal way to choose the right battery is to select the one with high ampere hour for the voltage approved in order to generate maximum power for the forklift.

Referring to the below table, helps you get a better understanding of the battery voltages and equipment suitable for it. Do not forget to check with the local battery supplier on the size of the battery suitable for your requirement.

Voltage Range	Forklift Type
24-Volt / 36-Volt batteries	Narrow Aisle Forklift Pallet Jacks Stackers Order Pickers Rider Forklifts
48-Volt / 80 Volt Batteries	Counterbalanced Electric Forklifts Reach Trucks
120 Volt Batteries and above	Shunt Trucks Yard Vehicles

Dimensions of batteries

Once you decide on the size and type of the battery, the next step is to make sure the battery compartment of the forklift has an appropriate size to fit the battery well. Batteries that are too big or too small in size will possess greater risks with doubt.

Weight of the battery

Information on the requirements of minimum and maximum battery weight can be checked either on the specification sheet or specification plate of the forklift. Choosing a battery that is heavier than the maximum allowed weight will lead to a huge risk of imposing unwanted strain on the forklift which will lead to rejection of warranty from the manufacturer. In several cases, batteries act as a counterbalance for your forklift.

In cases where you use batteries that are lighter than the allowed minimum weight will affect the lifting capacity of the trucks thereby leading to safety issues. In cases of changing the battery, it's mandatory to have a new specification plate to define the revised forklift capacity based on the change in battery weight. In electric forklifts, batteries act as a counterweight to the forklift and are crucial to its lifting capacity.

Battery Comparison

In this section, let's do a comparison study on lead-acid vs Lithium-ion batteries.

Single-Shift Vs Multi-Shift Operation

Even though there is a difference in the charging duration, both battery types last for 6-8 hours once fully charged. In case of single -shift operation and situations where the fleet size is small, lead-acid batteries can be made use of. As and when the size of your fleet and operations becomes higher, it's best to make use of lithium-ion batteries to have uninterrupted operations.

Charging Resources and Infrastructure

If you are looking for batteries with super-fast charging, simple charging process as well as those that take very little space, you need to go with Lithium-ion batteries. When you choose to go with lead-acid batteries, you should find adequate storage space and the costs associated with the provision of respective charging resources.

In the case of Lithium-ion batteries, even though they take up very little space and offer fast charging, it's necessary that you need to upgrade the electrical infrastructure to facilitate higher input current of their chargers.

Maintenance

To maintain the output of lead-acid batteries, regular watering is important. This process is not required with Lithium-ion batteries. Lead=acid batteries always require hectic and expensive maintenance.

Safety

Talking about safety, Lithium-ion batteries are considered safer than lead-acid batteries. In any job environment, health and safety are utmost important and you are required to consider the costs related to infrastructure and labor, training etc. in the case of lead-acid batteries.

Battery Lifespan

The question of how often the forklift batteries have to be replaced depends on the battery lifespan. Lithium-ion batteries are good at saving the recurring costs with battery replacement as they are considered to have double the lifespan in comparison to lead-acid batteries.

Energy Efficiency

Lithium-ion batteries are good at reducing the costs associated with usage of electricity as these batteries provide greater output with lesser energy loss. Savings up to 30% are achieved in comparison to lead-acid batteries which are popular for energy bleeding.

Upfront Cost

Lead-acid batteries are considered a suitable choice for certain businesses as the upfront cost is extremely low.

Conclusion

Now that we have got an overview on the forklift batteries, often the question arises where we can get the best batteries for our forklift requirements. If you are looking for high-quality forklift batteries and

chargers, SBR Batteries are the right choice. They deliver their products around the globe and always hold a signature in their business line.

If you want to enquire about electric forklift battery and its best models, Please check our website or feel free to give a call at +971545084969 or mail us at surjith@sbrbatteries.com , we are always happy to help you.