

Electric Forklift

Used Electric Forklift United States - An electric forklift is a forklift truck that uses an electric motor to generate power as opposed to an internal combustion model. Electricity comes from a fuel cell or internal industrial batteries. If internal batteries provide the electrical source, the batteries can be recharged by joining the battery to something electrically compatible. Rechargeable battery options include lithium-ion or lead-acid. Electrical production with a fuel cell is close to a battery source but requires refueling to be recharged instead of connecting to an electrical source. Internal combustion engine forklift models and electrical forklifts can complete the same types of jobs. That is, they usually use two power-operated horizontal forks to load, transport for short distances and unload materials. The only substantial difference between an electrical forklift and an internal combustion engine forklift is the source of power. Most electric forklift models are used for internal applications including warehouses and similar locations that cannot function with comprised air quality.

Electric Forklift Classifications

The electric forklift truck can fall into one or more forklift truck classifications. They are:

1. Class 1: Electric Motor Rider Trucks These forklifts can have pneumatic or cushion tires. Pneumatic tires are used on forklifts primarily operated outdoors in dry areas and on uneven surfaces whereas cushion tires are better on forklifts used primarily indoors, on smooth surfaces.
2. Class 2: Electric Motor Narrow Aisle Trucks The Class 2 Electric Motor Narrow Aisle Trucks are another classification. These units function within very narrow aisle locations with limited space. This design enables maximum storage space. Class 2 models feature a modified design to limit the amount of space the forklift takes up.
3. Class 3: Electric Motor Hand or Hand-Rider Trucks These forklifts are hand-controlled, which means they do not ride on the forklift but rather is positioned in front of the forklift. The operator controls the forklift using a steering tiller.
4. Class 6: Electric and Internal Combustion Engine Tractors The Class 6 Electric and Internal Combustion Engine Tractors are another classification. This includes models that can be used for broad application. The electric versions can be used outdoors in dry applications or used indoors.

A list of forklift trucks that are typically powered by electricity are:

Sources of Electricity for Electric Forklifts

Mostly, electric forklift models are used for interior applications on even, flat floors. Battery powered forklifts prevent the emission of harmful gases and are suggested for indoor facilities, such as healthcare and food-processing facilities. Fuel cell powered forklifts also produce no local emissions and are often used in refrigerated warehouses because, unlike batteries, their performance is not reduced by the lower temperatures.

Lead-acid battery

Lead-acid batteries are the most commonly used type of rechargeable battery. The battery's ability to produce high surge currents ensures a large power-to-weight ratio. Electric forklift trucks rely on lead-acid batteries that are affordable and durable. However, lead-acid batteries are susceptible to freezing in colder temperatures. They also require maintenance which, if ignored, can shorten the life of the battery.

Lithium-ion Battery

Another type of rechargeable battery used in electric forklift trucks is lithium-ion or li-ion batteries. Explosions or fires may result in these batteries if they are improperly charged or damaged due to the flammable electrolyte they contain. Additionally, Li-ion batteries cost more compared to lead-acid batteries initially; although they need zero maintenance and provide better efficiency compared to lead-acid batteries. The Li-ion batteries can function with a broader temperature range compared to lead-acid batteries.

Fuel Cell Forklifts

with fuel-cell power showcase the benefits of both battery-operated forklift trucks and internal combustion models. Fuel cell-powered forklifts provide no emissions like battery-powered forklift trucks. One of the fuel cell power disadvantages is that they are approximately half as efficient as li-ion batteries. Conversely, fuel cell power provides more energy density, translating to longer running time for electric forklift trucks. The fuel cell models perform better in colder environments compared to lithium-ion batteries. The fuel cell models are preferred for colder applications such as warehouses that are refrigerated. Fuel cells need a fuel source in order to create an electrical current and need refueling. While rechargeable batteries take a long time to recharge, fuel cells can be refilled in roughly three minutes.

Because of this, large operations which run several shifts and larger fleets of forklifts tend to benefit from the ability to keep the forklift operating without having to account for lengthy charging times. Pros and Cons of Electrically Powered Forklifts Advantages of Electric Forklifts Electric forklift trucks can often be a better option than internal combustion engine forklifts where a lift capacity does not exceed 12,000 pounds. Numerous factors are considered to determine if the electric forklift truck is the most accurate choice. It is necessary to discover the pros and cons of internal combustion engine forklift models versus electric forklift models prior to making a decision. Specific advantages of electric powered forklift models vs. internal combustion engine models are listed below. 1. Operating costs can be much lower for battery powered electrical forklifts because of the ongoing and often increasing cost of fuel. 2. The cost of electricity is more predictable and more stable compared to combustible fuel; making electric forklifts a better choice when taking budgets and operating expenses into account. 3. Electric forklift trucks rely on recharging stations which eliminates the requirement of fuel transportation and storage for both the equipment and the job site. 4. Electrical forklifts, both battery and fuel cell powered, produce no emissions or noise pollution. The only exception to this is the noise associated with the necessary back-up alarm. However, that is characteristic of internal combustion engine forklifts as well. 5. The automatic braking systems on electrical forklifts helps to reduce wear and operator fatigue. 6. Electrical forklifts have longer intervals between maintenance than do internal combustion engine forklifts. This is largely due to the fewer moving parts required in a battery or fuel cell powered forklift. Disadvantages of Electric Forklifts Internal combustion forklifts have become less popular than electric forklifts over recent years. However, there are still several applications that make electrical forklifts a less practical option. Key disadvantages of the electric forklifts in comparison to internal combustion engine are discussed below. 1. Since electric forklifts have a lift capacity of approximately 12,000 lbs. many jobs still choose to use an internal combustion model where there are heavy lifting requirements, even when they are only occasionally needed. 2. Battery powered electrical forklifts must be recharged and therefore require sufficient recharging stations to be installed at facilities where none are already present. This could amount to a significantly increased initial expense to the buyer. 3. Batteries also require that attention be given to the timing and length of a charge. This is because the life of batteries can be reduced if charged too frequently or not enough. 4. Internal combustion engine forklifts are also less expensive compared to electric forklift models. 5. Older facilities may require electrical upgrades for increased voltage systems to power battery forklifts. 6. Battery-powered units may rely on machinery to lower and lift the heavy replacement batteries during replacement. Electric forklift trucks have a wide range of benefits. They may not be adequate in certain working environments due to their weather and weight restrictions so check your job list accordingly.