

Electric Forklift

Used Electric Forklift Fairfield - An electric forklift is a forklift truck that uses an electric motor to generate power as opposed to an internal combustion model. The electricity is sourced from either internal industrial batteries or fuel cell. If internal batteries provide the electrical source, the batteries can be recharged by joining the battery to something electrically compatible. The rechargeable batteries are lithium-ion or lead-acid batteries. 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. Electrically powered forklifts are typically used in warehouses and other indoor facilities where an internal combustion engine would cause poor air quality for workers.

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
The Class 3 Electric Hand-Rider Trucks or Electric Motor Hand models are hand controlled. This means the operator uses a steering tiller and is positioned in front of the machine as opposed to riding on the forklift.
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. The types of forklift trucks that are usually electrically powered include: electric counterbalanced trucks, pallet jacks, scissor lifts, rider low lift trucks, order pickers, cushion tire forklifts, rider low stacker, reach truck, walkie low lift trucks, towing tractor trucks and walkie low stackers.

Sources of Electricity for Electric Forklifts

Electric forklifts are predominantly used indoors on flat, even surfaces. Battery powered forklifts prevent the emission of harmful gases and are suggested for indoor facilities, such as healthcare and food-processing facilities. Refrigerated jobs prefer to use fuel cell forklifts. They make no emissions and are capable of working in colder locations without a power reduction, unlike battery-operated models.

Lead-acid battery

The main type of rechargeable battery is lead-acid batteries. Their capacity to supply high current surges allows for a significant ratio of power-to-weight. This, coupled with its affordability, make lead-acid batteries a popular option for use in electric forklift trucks. It's important to know that lead-acid batteries can possibly freeze during frigid temperatures and this type of battery requires on-going maintenance.

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

Forklifts that rely on fuel-cell power feature some benefits of both internal combustion and battery-operated forklift trucks. Similar to battery-powered forklifts, there are no local emissions delivered from fuel cell models. One of the fuel cell power disadvantages is that they are approximately half as efficient as li-ion batteries. However, fuel cell power has a higher energy density which can allow electrical forklifts to run longer. Fuel cell powered forklifts also have the advantage of performing better in lower temperatures as lithium-ion batteries.

Refrigerated warehouses rely on fuel cell models due to their ability to function in cooler locations. Fuel cells are different from batteries in that they require a source of fuel to produce electrical current and so require refueling. Fuel cells only require approximately 3 minutes to refuel instead of the much longer recharging time for rechargeable batteries. Many larger companies that have multiple forklifts in their fleet running numerous shifts benefit from using fuel cell models that can keep operating without long periods of time spent charging. Pros and Cons of Electrically Powered Forklifts Advantages of Electric Forklifts When a lift capacity doesn't have to be greater than 12,000 lbs. electric forklift trucks are often a better option compared to combustion engine forklift trucks. 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. Certain advantages of the different types of forklift models are discussed below.

1. Battery-powered electric forklift models have lower operating costs due to the increasing cost of fuel required constantly by internal combustion models.
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. Battery powered electric forklifts also allow for recharging at charging stations. This eliminates the necessity for fuel transportation and fuel storage, both at the worksite and onboard the forklift itself.
4. Electrical forklifts, both battery and fuel cell powered, produce no emissions or noise pollution. Both internal combustion engine forklifts and electric models have a back-up alarm that is noisy but necessary.
5. Operator fatigue and equipment wear and tear are reduced in electric forklift models with the automatic braking system.
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 For a variety of reasons, electric forklifts have become more popular in recent years over internal combustion models. There are numerous working conditions however that make electrical models less practical. Some of the disadvantages the electrical forklift has when compared to internal combustion engine forklifts are set out below.

1. Electric forklifts typically have a limited lifting capacity of approximately 12,000 pounds or less which eliminates them as an option from larger jobs. Sometimes this means an internal combustion engine forklift is chosen even for jobsites where heavy jobs are few and far between but still a requirement.
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. Electric forklift trucks cost more than internal combustion engine units.
5. In some older facilities, the electrical system may need to be upgraded to accommodate an increased voltage requirement of battery powered forklifts.
6. Electric forklift trucks may need to use machinery to lift and lower the batteries into the unit during replacement due to their heavy nature.

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.