

Electric Forklift

Used Electric Forklift Antioch - By definition, an electric forklift is a forklift truck which derives its power from an electric motor rather than an internal combustion engine. Electricity comes from a fuel cell or internal industrial batteries. Internal batteries often provide the electrical source. They are capable of being recharged by connecting the battery to a source that is 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. They both rely on two horizontal forks that are power supplied to transport and unload and load items for short distances. The main difference between these different forklift models is their 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 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 Internal Combustion Engine and Electric Tractors are another lineup. This category includes forklifts that can be utilized for many jobs. The electric units may be used in exterior applications in dry situations and also function well indoors.

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

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 most popular type of rechargeable battery is lead-acid models. 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 A Li-ion or lithium-ion battery is a different kind of rechargeable battery commonly used in electric forklift models. The main issue with these batteries is they contain a flammable electrolyte and pose a safety hazard if damaged or charged improperly which may lead to fires or explosions. Lithium-ion batteries are also more expensive than lead-acid batteries, at least initially. However, they provide more efficiency than lead-acid batteries and require no maintenance. Another benefit is that the lithium-ion batteries can operate with a wider temperature range and better energy densities compared to lead-acid varieties.

Fuel Cell 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 disadvantage is that fuel cell power efficiency is 40 to 50 percent which is about half the efficiency of lithium-ion batteries. Conversely, fuel cell power provides more energy density, translating to longer running time for electric forklift trucks. Fuel cell forklift trucks operate better in cooler temperatures compared to li-ion battery models. The fuel cell models are preferred for colder applications such as warehouses that are refrigerated. 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. It is beneficial for businesses that rely on many forklifts that operate numerous shifts to use fuel cell models since they don't have the same downtime for charging batteries.

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. Of course, there are many considerations to decide if the electric forklift model is the best choice for a particular application. It is essential to discover the pros and cons of one forklift type to another prior to choosing a model. 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. Electricity costs are more predictable than fluctuating fuel costs. This makes electric forklifts a more reliable choice in terms of operating expenses and budgets.
3. There are recharging stations for battery-powered electric forklift. This system eliminates the necessity for fuel storage and transportation for both the machine and the worksite.
4. Electrical forklifts, both battery and fuel cell powered, produce no emissions or noise pollution. The back-up alarm is the main exception; however, this is a normal characteristic of internal combustion forklifts as well.
5. Operator equipment and fatigue is reduced in electric forklift models thanks to the automatic braking technology.
6. There are longer intervals between maintenance requirements for electric forklifts compared to internal combustion models due to less moving parts used by a battery-powered or a fuel cell unit.

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. Electric forklifts rely on battery power and require recharging stations to be installed. If there are none at the facility, this could greatly increase the overall cost.
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. 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.