Electric Forklift

Used Electric Forklift Surprise - By definition, an electric forklift is a forklift truck which derives its power from an electric motor rather than an internal combustion engine. 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. Rechargeable battery options include lithium-ion or lead-acid. Producing electricity with a fuel cell is similar to using a battery source; however, the fuel cell needs refueling and will bot be recharged from connecting to anything electrical. Electrical forklifts perform the same types of jobs as internal combustion engine forklifts. They both rely on two horizontal forks that are power supplied to transport and unload and load items for short distances. 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 Electric forklift models are mainly used on even, flat surfaces indoors. Battery-powered forklifts are better suited for interior jobs as they do not emit poisonous gases; making them ideal for food-processing and healthcare applications. 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 lead-acid battery’s ability to supply high surge currents means that it has a relatively large power-to-weight ratio. Electric forklift trucks rely on lead-acid batteries that are affordable and durable. 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. The main drawback of lithium-ion batteries is that they can be a safety hazard since they contain a flammable electrolyte that, if incorrectly charged or damaged can cause explosions and fires. 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. 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 with fuel-cell power showcase the benefits of both battery-operated forklift trucks and internal combustion models. Like forklifts powered by battery, fuel cell power produces no local emissions. Fuel cell power efficiency is only forty to fifty percent which is roughly half as much as lithium- ion batteries. Conversely, fuel cell power provides more energy density, translating to longer running time for electric forklift trucks. Fuel cell powered forklifts also have the advantage of performing better in lower temperatures as lithium-ion batteries. 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. However, they can be refueled in about three minutes, whereas batteries take much longer to recharge. 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. There are many factors to consider in each specific application in order to determine whether an electric forklift is the best option. It is essential to discover the pros and cons of one forklift type to another prior to choosing a model. Specific advantages of electric powered forklift models vs. internal combustion engine models are listed 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 price of electricity is usually more stable and predictable than combustible fuel. This makes electrical forklifts a benefit when considering budget needs for projected operating expenses. 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. Both fuel cell and battery-powered electric forklifts produce zero noise pollution or emissions. Both internal combustion engine forklifts and electric models have a back-up alarm that is noisy but necessary. 5. The automatic braking systems on electrical forklifts helps to reduce wear and operator fatigue. 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. However, there are still several applications that make electrical forklifts a less practical option. 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 are also initially more expensive than internal combustion engine forklifts. 5. Older facilities may require electrical upgrades for increased voltage systems to power battery forklifts. 6. Battery powered forklifts sometimes require machinery to lift or lower the heavy batteries when replacement of batteries is necessary. Overall, electric forklift trucks provide numerous advantages compared to internal combustion engines however, they may not work in a variety of outdoor applications with their weight and weather restrictions.