Electric Forklift

Used Electric Forklift Peoria - 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 the electrical source is by means of internal batteries, the batteries are rechargeable by connecting the battery to a compatible electrical source. These rechargeable batteries are lead-acid or lithium-ion battery. Electrical production by means of a fuel cell is similar to a battery source but cannot be recharged by connecting to an electrical source, instead requiring refueling. 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 source of power is the main difference between an internal combustion engine and an electrical forklift model. 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 The Class 1 Electric Motor Rider Trucks are one of the classifications. These models have cushion or pneumatic tires. Cushion tires are generally used on smooth indoor surfaces and pneumatic tires are mostly used for exterior applications. 2. Class 2: Electric Motor Narrow Aisle Trucks These types of forklifts operate in very narrow aisles, where space is limited. This allows for maximum use of storage space. Class 2 forklifts have a modified design to minimize the amount of space taken up by the forklift. 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. 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 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. Forklifts that rely on fuel cells produce zero emissions, making them popular in refrigerated warehouses since their performance is not affected by lower temperatures the way batteries are. 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. These affordable models consistently make lead-acid models popular batteries for electrical forklifts. Lead-acid batteries require maintenance and may freeze during colder temperatures. These factors can shorten their lifespan. 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 Fuel-cell powered forklifts have some of the benefits of both battery operated forklifts and internal combustion engine forklifts. 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. 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. For this reason, fuel cell

powered forklifts are often preferred for use in colder temperatures, such as refrigerated warehouses. Fuel cells need a fuel source in order to create an electrical current and need 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 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. Of course, there are many considerations to decide if the electric forklift model is the best choice for a particular application. 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. Operating costs can be much lower for battery powered electrical forklifts because of the ongoing and often increasing cost of fuel. 2. Electricity costs are more predictable than fluctuating fuel costs. This makes electric forklifts are 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. Both fuel cell and battery-powered electric forklifts produce zero noise pollution or emissions. 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. 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 Internal combustion forklifts have become less popular than electric forklifts over recent years. Numerous circumstances however still prefer internal combustion forklifts. Key disadvantages of the electric forklifts in comparison to internal combustion engine are discussed 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. Facilities require recharging stations to accommodate electric forklift trucks. If there are none currently installed, this will cost significantly more. 3. Batteries need to be monitored to ensure adequate timing regarding how long they are charged. This is important since battery life can be reduced if they are charged too frequently or infrequently. 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 forklifts sometimes require machinery to lift or lower the heavy batteries when replacement of batteries is necessary. All in all, electric forklifts have many advantages over internal combustion engine forklifts but still are not appropriate in many outdoor applications, mostly due to weather and weight restrictions.