Electric Forklift

Used Electric Forklift Nova Scotia - 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 source is derived from either 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. The rechargeable batteries are lithium-ion or lead-acid batteries. 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 can do the same type of work 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 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 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 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 Another classification is the Class 3 Electric Motor Hand or Hand-Rider Trucks. These machines are hand-controlled. The operator is positioned in front of the machine and relies on a steering tiller instead of riding on the forklift. 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 operated forklifts stop the emission of dangerous gases and are preferred for interior locations including food-processing facilities and healthcare. 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 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. Lead-acid batteries require maintenance and may freeze during colder temperatures. These factors can shorten their lifespan. Lithium-ion Battery A lithium-ion battery or li-ion battery is another type of rechargeable battery used in electric forklifts. 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. 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 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. Fuel cell power efficiency is only forty to fifty percent which is roughly half as much as lithium- ion batteries. Fuels cell power offers better energy density and provides electric forklift trucks 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. However, they can be refueled in about three minutes, whereas batteries take much longer to recharge. 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 forklifts are often a popular choice compared to internal combustion models if the lifting capacity doesn't 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 necessary to discover the pros and cons of internal combustion engine forklift models versus electric forklift models prior to making a decision. Some of the advantages of an electrically powered forklift over an internal combustion engine are listed below. 1. The operating costs of battery-powered electric forklifts are significantly lower compared to internal combustion models since fuel costs continue to increase. 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. Both fuel cell and battery-powered electric forklifts produce zero noise pollution or emissions. 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. Numerous circumstances however still prefer internal combustion forklifts. Certain electric forklift models disadvantages as compared to combustion models are listed 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. Electric forklift trucks may need to use machinery to lift and lower the batteries into the unit during replacement due to their heavy nature. 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.